NORTH SCOTTSDALE FLOODPLAIN DELINEATION STUDY

Report and Technical Data Notebook

MAIN REPORT

VOLUME 4 of 4

FCD CONTRACT

NO. 2003C008

Submitted April 2005

PREPARED FOR:

Flood Control District of Maricopa County
2801 W. Durango Street
Phoenix, AZ 85009
(602) 506-1501

A FEMA Cooperative Technical Partner

IN CONJUNCTION WITH:

City of Scottsdale
3939 N. Drinkwater Boulevard
Scottsdale, AZ 85251

and

City of Carefree
100 Easy St.
Carefree, AZ 85377

PREPARED BY:

DEI Professional Services, LLC
6225 North 24th Street, Suite 200
Phoenix, AZ 85016

TECHNICAL DATA NOTEBOOK
for
NORTH SCOTTSDALE
FLOODPLAIN DELINEATION STUDY
FCD 2003C008

VOLUME 4 OF 4

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2801 W. Durango
Phoenix, AZ 85009

Hydrology Submitted: May 08, 2002
Final Report - September 2003
Revised: April 2005

Prepared for:

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY
2801 W. Durango
Phoenix, AZ 85009
(602) 506-1501

Prepared by:

DEI PROFESSIONAL SERVICES, LLC
6225 N. 24th Street, Suite 200
Phoenix, AZ 85016
(602) 954-0038
Fax (602) 944-8605

Registered Professional Engineer (Civil)
CERTIFICATE NO. 16379
HAL E. MARRON
Date Signed 1-15-
ARIZONA, U.S.A.

E.5 HYDRAULIC CALCULATIONS

HEC-RAS Version 3.1.2 April 2004
U.S. Army Corp of Engineers
Hydrologic Engineering Center
609 Second Street
Davis, California

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

PROJECT DATA
Project Title: North Scottsdale Delineation Study, SCP
Project File : SCP.prj
Run Date and Time: 3/29/2005 8:48:06 AM

Project in English units

Project Description:
Study Name: North Scottsdale Floodplain Delineation Study
Contract No.: FCD 2003 C008

Purpose of Study: Delineation of the inundation limits of the 100-yr, 6-hr storm event for Stagecoach Pass Wash.

Model Name: North Scottsdale Delineation Study, SCP

Model Description: This study determined the flood plain and flood way limits of the 100-yr-6-hr storm event for Stagecoach Pass Wash.
Profile #1, 100-yr 6-hr,models the flood plain.
Profile #2, Method 1, models the flood way.
Culvert information can be found in APPENDIX E.4 of the main report.

Mapping: Scottsdale Mapping: IGA 93-07
FCD Contract No.: FCD-XX-XX
Project Type: Topographic Mapping
Starting Date: 1-14-94
Ending Date: 1-14-97

Flow Profiles: Profile #1, 100-yr, 6-hr
Sections 6.93 to 6.85, Q= 453 cfs
Sections 6.80 to 6.23, Q= 631 cfs
Sections 6.17 to 5.37, Q= 758 cfs
Sections 5.27 to 4.81, Q= 844 cfs
Sections 4.77 to 4.34, Q= 836 cfs
Section 4.30, Q= 1,116 cfs
Sections 4.24 to 3.62, Q= 1,308 cfs
Sections 3.57 to 3.06, Q= 1,487 cfs
Sections 3.03 to 2.76, Q= 1,792 cfs
Sections 2.70 to 2.50, Q= 1,828 cfs
Sections 2.49 to 2.23, Q= 1,851 cfs
Sections 2.15 to 0.93, Q= 1,996 cfs

Profile #2, Method 1
Sections 6.93 to 6.85, Q= 453 cfs
Sections 6.80 to 6.23, Q= 631 cfs
Sections 6.17 to 5.37, Q= 758 cfs
Sections 5.27 to 4.81, Q= 844 cfs
Sections 4.77 to 4.34, Q= 836 cfs
Section 4.30, Q= 1,116 cfs
Sections 4.24 to 3.62, Q= 1,308 cfs
Sections 3.57 to 3.06, Q= 1,487 cfs
Sections 3.03 to 2.76, Q= 1,792 cfs

Sections 2.70 to 2.50, Q= 1,828 cfs
Sections 2.49 to 2.23, Q= 1,851 cfs
Sections 2.15 to 0.93, Q= 1,996 cfs

HEC-RAS Version: Version 3.1.2, April 2004

Consultant: DEI Professional Services, LLC
6225 N. 24th Street, Suite 200
Phoenix, AZ 85016
(602) 954-0038 Phone
(602) 944-8605 Fax

PLAN DATA

Plan Title: Plan 01
Plan File : j:\Projects\03062\Calcs\HEC-RAS Final\SCP.p01

Geometry Title: Base Conditions Geometry COS X-Sec
Geometry File : j:\Projects\03062\Calcs\HEC-RAS Final\SCP.g01

Flow Title : 1 Flow Profiles
Flow File : j:\Projects\03062\Calcs\HEC-RAS Final\SCP.f01

Plan Summary Information:

Number of:	Cross Sections =	103	Multiple Openings =	0
	Culverts =	8	Inline Structures =	0
	Bridges =	0	Lateral Structures =	0

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

Computation Options
Critical depth computed only where necessary
Conveyance Calculation Method: At breaks in n values only
Friction Slope Method: Average Conveyance
Computational Flow Regime: Subcritical Flow

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

River = Stagecoach Pass Reach = StagecoachPass-1

RS	Profile	Method	Value1	Value2
6.93	Method 1	1	9995.821	0024.62
6.88	Method 1	1	9966.961	0014.37
6.85	Method 1	1	9985.361	0029.06
6.8	Method 1	1	9947.61	0022.78
6.73	Method 1	1	9899.991	0042.61
6.63	Method 1	1	9979.281	0138.82
6.59	Method 1	1	9978.481	0142.02
6.55	Method 1	1	9909.361	0078.29
6.545	Method 1	4	1	
6.54	Method 1	1	9910.71	10030
6.51	Method 1	1	9898.551	0036.24
6.505	Method 1	4	1	
6.5	Method 1	1	9941.451	0033.73
6.45	Method 1	1	9975	10025
6.37	Method 1	1	9935.121	0043.01
6.31	Method 1	1	9969.431	0033.65
6.23	Method 1	1	9930	10026.84
6.17	Method 1	1	9916.421	0029.45
6.07	Method 1	1	9930	10025

5.98	Method 1	1	9977.4510068.17
5.91	Method 1	1	9964.4210067.92
5.9	Method 1	4	1
5.89	Method 1	1	9930.7710051.25
5.81	Method 1	1	9907.5810012.71
5.72	Method 1	1	9967.7 10067.3
5.64	Method 1	1	9943.310021.34
5.61	Method 1	1	9951.610060.54
5.55	Method 1	1	9971.53 10123.8
5.51	Method 1	1	9948.1610050.28
5.46	Method 1	1	9944.2910058.25
5.43	Method 1	1	9938.8 10026.2
5.37	Method 1	1	9988.3810059.89
5.27	Method 1	1	9950.1910101.45
5.18	Method 1	1	9855.5 10059.4
5.12	Method 1	1	9925.4 10016.5
5.08	Method 1	1	9945.9910053.25
5.02	Method 1	1	9940.6910060.97
4.94	Method 1	1	9945.1310045.35
4.84	Method 1	1	9985.9310062.25
4.81	Method 1	1	9980.08 10040.2
4.77	Method 1	1	9991.1 10028.1
4.72	Method 1	1	9983.2410070.27
4.62	Method 1	1	9977.9310069.65
4.53	Method 1	1	9968.5910069.85
4.43	Method 1	1	9978.6810046.49
4.34	Method 1	1	9979.5 10045.5
4.3	Method 1	1	9988.2410016.71
4.24	Method 1	1	997410013.56
4.19	Method 1	1	996010014.44
4.09	Method 1	1	9975.5510017.96
4.01	Method 1	1	9977.4110024.96
3.96	Method 1	1	9976.4110006.55
3.9	Method 1	1	9913.9210011.67
3.82	Method 1	1	9957.8810022.21
3.72	Method 1	1	9971.810052.68
3.66	Method 1	1	9947.8110017.59
3.64	Method 1	1	9939.7110029.76
3.63	Method 1	4	1
3.62	Method 1	1	9965.6310029.76
3.57	Method 1	1	9966.910027.31
3.53	Method 1	1	9937.2610039.79
3.44	Method 1	1	9981.6110024.23
3.35	Method 1	1	9975.8410017.07
3.31	Method 1	1	9967.3210034.58
3.25	Method 1	1	9974.8910016.53
3.16	Method 1	1	9971.910034.86
3.06	Method 1	1	9960.8610020.87
3.03	Method 1	1	9971.1710023.22
2.97	Method 1	1	9937.110051.58
2.96	Method 1	4	1
2.95	Method 1	1	9962.9610051.58
2.92	Method 1	1	9992.4710042.27
2.86	Method 1	1	9984.9910051.38
2.8	Method 1	1	9996.9210092.45
2.76	Method 1	1	9924.01 10043.9
2.7	Method 1	1	9984.74 10031
2.61	Method 1	1	9974.6610038.01
2.58	Method 1	1	9959.4510040.07
2.5	Method 1	1	9980.2710025.74
2.495	Method 1	4	1
2.49	Method 1	1	9983.9210023.42
2.41	Method 1	1	9924.0610016.11
2.36	Method 1	1	9983.1810049.92
2.3	Method 1	1	9967.3410045.99
2.23	Method 1	1	9984.4310159.71
2.15	Method 1	1	994810039.32
2.145	Method 1	1	9885.4110145.93
2.14	Method 1	1	9942.4610031.36
2.08	Method 1	1	9973.0210035.34
2.02	Method 1	1	9961.4510041.22

1.94	Method 1	1	9987.8210024.22
1.92	Method 1	1	9965.9610016.49
1.88	Method 1	1	9977.1910017.25
1.81	Method 1	1	9925 10030
1.76	Method 1	1	990010033.66
1.72	Method 1	1	9946.8910118.53
1.66	Method 1	1	9896.4110032.05
1.57	Method 1	1	9949.8910082.16
1.53	Method 1	1	9934.4410031.39
1.47	Method 1	1	9931.4410037.82
1.44	Method 1	1	9980 10070
1.36	Method 1	1	9965.0410063.23
1.29	Method 1	1	9973.1910038.46
1.19	Method 1	1	9963 10063
1.13	Method 1	1	9936.1810041.74
1.1	Method 1	1	9981.6310055.38
1.07	Method 1	1	9973.6910050.24
1.01	Method 1	1	9939.4410047.08
0.99	Method 1	4	1
0.98	Method 1	1	9939.44 10020
0.93	Method 1	1	9962.2110027.58

River = Stagecoach Pass Reach = StagecoachPass-1

RS	Profile	Method	Value1	Value2
6.93	Meth 4-1.0ft	4	1	
6.88	Meth 4-1.0ft	4	1	
6.85	Meth 4-1.0ft	4	1	
6.8	Meth 4-1.0ft	4	1	
6.73	Meth 4-1.0ft	4	1	
6.63	Meth 4-1.0ft	4	1	
6.59	Meth 4-1.0ft	4	1	
6.55	Meth 4-1.0ft	4	1	
6.545	Meth 4-1.0ft	4	1	
6.54	Meth 4-1.0ft	4	1	
6.51	Meth 4-1.0ft	4	1	
6.505	Meth 4-1.0ft	4	1	
6.5	Meth 4-1.0ft	4	1	
6.45	Meth 4-1.0ft	4	1	
6.37	Meth 4-1.0ft	4	1	
6.31	Meth 4-1.0ft	4	1	
6.23	Meth 4-1.0ft	4	1	
6.17	Meth 4-1.0ft	4	1	
6.07	Meth 4-1.0ft	4	1	
5.98	Meth 4-1.0ft	4	1	
5.91	Meth 4-1.0ft	4	1	
5.9	Meth 4-1.0ft	4	1	
5.89	Meth 4-1.0ft	4	1	
5.81	Meth 4-1.0ft	4	1	
5.72	Meth 4-1.0ft	4	1	
5.64	Meth 4-1.0ft	4	1	
5.61	Meth 4-1.0ft	4	1	
5.55	Meth 4-1.0ft	4	1	
5.51	Meth 4-1.0ft	4	1	
5.46	Meth 4-1.0ft	4	1	
5.43	Meth 4-1.0ft	4	1	
5.37	Meth 4-1.0ft	4	1	
5.27	Meth 4-1.0ft	4	1	
5.18	Meth 4-1.0ft	4	1	
5.12	Meth 4-1.0ft	4	1	
5.08	Meth 4-1.0ft	4	1	
5.02	Meth 4-1.0ft	4	1	
4.94	Meth 4-1.0ft	4	1	
4.84	Meth 4-1.0ft	4	1	
4.81	Meth 4-1.0ft	4	1	
4.77	Meth 4-1.0ft	4	1	
4.72	Meth 4-1.0ft	4	1	
4.62	Meth 4-1.0ft	4	1	
4.53	Meth 4-1.0ft	4	1	
4.43	Meth 4-1.0ft	4	1	
4.34	Meth 4-1.0ft	4	1	
4.3	Meth 4-1.0ft	4	1	

4.24	Meth 4-1.0ft	4	1
4.19	Meth 4-1.0ft	4	1
4.09	Meth 4-1.0ft	4	1
4.01	Meth 4-1.0ft	4	1
3.96	Meth 4-1.0ft	4	1
3.9	Meth 4-1.0ft	4	1
3.82	Meth 4-1.0ft	4	1
3.72	Meth 4-1.0ft	4	1
3.66	Meth 4-1.0ft	4	1
3.64	Meth 4-1.0ft	4	1
3.63	Meth 4-1.0ft	4	1
3.62	Meth 4-1.0ft	4	1
3.57	Meth 4-1.0ft	4	1
3.53	Meth 4-1.0ft	4	1
3.44	Meth 4-1.0ft	4	1
3.35	Meth 4-1.0ft	4	1
3.31	Meth 4-1.0ft	4	1
3.25	Meth 4-1.0ft	4	1
3.16	Meth 4-1.0ft	4	1
3.06	Meth 4-1.0ft	4	1
3.03	Meth 4-1.0ft	4	1
2.97	Meth 4-1.0ft	4	1
2.96	Meth 4-1.0ft	4	1
2.95	Meth 4-1.0ft	4	1
2.92	Meth 4-1.0ft	4	1
2.86	Meth 4-1.0ft	4	1
2.8	Meth 4-1.0ft	4	1
2.76	Meth 4-1.0ft	4	1
2.7	Meth 4-1.0ft	4	1
2.61	Meth 4-1.0ft	4	1
2.58	Meth 4-1.0ft	4	1
2.5	Meth 4-1.0ft	4	1
2.495	Meth 4-1.0ft	4	1
2.49	Meth 4-1.0ft	4	1
2.41	Meth 4-1.0ft	4	1
2.36	Meth 4-1.0ft	4	1
2.3	Meth 4-1.0ft	4	1
2.23	Meth 4-1.0ft	4	1
2.15	Meth 4-1.0ft	4	1
2.145	Meth 4-1.0ft	4	1
2.14	Meth 4-1.0ft	4	1
2.08	Meth 4-1.0ft	4	1
2.02	Meth 4-1.0ft	4	1
1.94	Meth 4-1.0ft	4	1
1.92	Meth 4-1.0ft	4	1
1.88	Meth 4-1.0ft	4	1
1.81	Meth 4-1.0ft	4	1
1.76	Meth 4-1.0ft	4	1
1.72	Meth 4-1.0ft	4	1
1.66	Meth 4-1.0ft	4	1
1.57	Meth 4-1.0ft	4	1
1.53	Meth 4-1.0ft	4	1
1.47	Meth 4-1.0ft	4	1
1.44	Meth 4-1.0ft	4	1
1.36	Meth 4-1.0ft	4	1
1.29	Meth 4-1.0ft	4	1
1.19	Meth 4-1.0ft	4	1
1.13	Meth 4-1.0ft	4	1
1.1	Meth 4-1.0ft	4	1
1.07	Meth 4-1.0ft	4	1
1.01	Meth 4-1.0ft	4	1
0.99	Meth 4-1.0ft	4	1
0.98	Meth 4-1.0ft	4	1
0.93	Meth 4-1.0ft	4	1

River = Stagecoach Pass Reach = StagecoachPass-1

RS	Profile	Method	Value1	Value2
6.93	Meth 4-0.8ft	4	.8	
6.88	Meth 4-0.8ft	4	.8	
6.85	Meth 4-0.8ft	4	.8	
6.8	Meth 4-0.8ft	4	.8	

6.73	Meth 4-0.8ft	4	.8
6.63	Meth 4-0.8ft	4	.8
6.59	Meth 4-0.8ft	4	.8
6.55	Meth 4-0.8ft	4	.8
6.545	Meth 4-0.8ft	4	.8
6.54	Meth 4-0.8ft	4	.8
6.51	Meth 4-0.8ft	4	.8
6.505	Meth 4-0.8ft	4	.8
6.5	Meth 4-0.8ft	4	.8
6.45	Meth 4-0.8ft	4	.8
6.37	Meth 4-0.8ft	4	.8
6.31	Meth 4-0.8ft	4	.8
6.23	Meth 4-0.8ft	4	.8
6.17	Meth 4-0.8ft	4	.8
6.07	Meth 4-0.8ft	4	.8
5.98	Meth 4-0.8ft	4	.8
5.91	Meth 4-0.8ft	4	.8
5.9	Meth 4-0.8ft	4	.8
5.89	Meth 4-0.8ft	4	.8
5.81	Meth 4-0.8ft	4	.8
5.72	Meth 4-0.8ft	4	.8
5.64	Meth 4-0.8ft	4	.8
5.61	Meth 4-0.8ft	4	.8
5.55	Meth 4-0.8ft	4	.8
5.51	Meth 4-0.8ft	4	.8
5.46	Meth 4-0.8ft	4	.8
5.43	Meth 4-0.8ft	4	.8
5.37	Meth 4-0.8ft	4	.8
5.27	Meth 4-0.8ft	4	.8
5.18	Meth 4-0.8ft	4	.8
5.12	Meth 4-0.8ft	4	.8
5.08	Meth 4-0.8ft	4	.8
5.02	Meth 4-0.8ft	4	.8
4.94	Meth 4-0.8ft	4	.8
4.84	Meth 4-0.8ft	4	.8
4.81	Meth 4-0.8ft	4	.8
4.77	Meth 4-0.8ft	4	.8
4.72	Meth 4-0.8ft	4	.8
4.62	Meth 4-0.8ft	4	.8
4.53	Meth 4-0.8ft	4	.8
4.43	Meth 4-0.8ft	4	.8
4.34	Meth 4-0.8ft	4	.8
4.3	Meth 4-0.8ft	4	.8
4.24	Meth 4-0.8ft	4	.8
4.19	Meth 4-0.8ft	4	.8
4.09	Meth 4-0.8ft	4	.8
4.01	Meth 4-0.8ft	4	.8
3.96	Meth 4-0.8ft	4	.8
3.9	Meth 4-0.8ft	4	.8
3.82	Meth 4-0.8ft	4	.8
3.72	Meth 4-0.8ft	4	.8
3.66	Meth 4-0.8ft	4	.8
3.64	Meth 4-0.8ft	4	.8
3.63	Meth 4-0.8ft	4	.8
3.62	Meth 4-0.8ft	4	.8
3.57	Meth 4-0.8ft	4	.8
3.53	Meth 4-0.8ft	4	.8
3.44	Meth 4-0.8ft	4	.8
3.35	Meth 4-0.8ft	4	.8
3.31	Meth 4-0.8ft	4	.8
3.25	Meth 4-0.8ft	4	.8
3.16	Meth 4-0.8ft	4	.8
3.06	Meth 4-0.8ft	4	.8
3.03	Meth 4-0.8ft	4	.8
2.97	Meth 4-0.8ft	4	.8
2.96	Meth 4-0.8ft	4	.8
2.95	Meth 4-0.8ft	4	.8
2.92	Meth 4-0.8ft	4	.8
2.86	Meth 4-0.8ft	4	.8
2.8	Meth 4-0.8ft	4	.8
2.76	Meth 4-0.8ft	4	.8

2.7	Meth 4-0.8ft	4	.8
2.61	Meth 4-0.8ft	4	.8
2.58	Meth 4-0.8ft	4	.8
2.5	Meth 4-0.8ft	4	.8
2.495	Meth 4-0.8ft	4	.8
2.49	Meth 4-0.8ft	4	.8
2.41	Meth 4-0.8ft	4	.8
2.36	Meth 4-0.8ft	4	.8
2.3	Meth 4-0.8ft	4	.8
2.23	Meth 4-0.8ft	4	.8
2.15	Meth 4-0.8ft	4	.8
2.145	Meth 4-0.8ft	4	.8
2.14	Meth 4-0.8ft	4	.8
2.08	Meth 4-0.8ft	4	.8
2.02	Meth 4-0.8ft	4	.8
1.94	Meth 4-0.8ft	4	.8
1.92	Meth 4-0.8ft	4	.8
1.88	Meth 4-0.8ft	4	.8
1.81	Meth 4-0.8ft	4	.8
1.76	Meth 4-0.8ft	4	.8
1.72	Meth 4-0.8ft	4	.8
1.66	Meth 4-0.8ft	4	.8
1.57	Meth 4-0.8ft	4	.8
1.53	Meth 4-0.8ft	4	.8
1.47	Meth 4-0.8ft	4	.8
1.44	Meth 4-0.8ft	4	.8
1.36	Meth 4-0.8ft	4	.8
1.29	Meth 4-0.8ft	4	.8
1.19	Meth 4-0.8ft	4	.8
1.13	Meth 4-0.8ft	4	.8
1.1	Meth 4-0.8ft	4	.8
1.07	Meth 4-0.8ft	4	.8
1.01	Meth 4-0.8ft	4	.8
0.99	Meth 4-0.8ft	4	.8
0.98	Meth 4-0.8ft	4	.8
0.93	Meth 4-0.8ft	4	.8

FLOW DATA

Flow Title: 1 Flow Profiles
Flow File : j:\Projects\03062\Calcs\HEC-RAS Final\SCP.f01

Flow Data (cfs)

River	Reach	RS	100-yr	6-yr	Method 1	Meth 4-1.0ft	Meth 4-0.8ft
Stagecoach Pass	StagecoachPass	-16.93	453		453	453	453
Stagecoach Pass	StagecoachPass	-16.88	453		453	453	453
Stagecoach Pass	StagecoachPass	-16.8	631		631	631	631
Stagecoach Pass	StagecoachPass	-16.17	758		758	758	758
Stagecoach Pass	StagecoachPass	-15.27	844		844	844	844
Stagecoach Pass	StagecoachPass	-14.77	836		836	836	836
Stagecoach Pass	StagecoachPass	-14.3	1116		1116	1116	1116
Stagecoach Pass	StagecoachPass	-14.24	1308		1308	1308	1308
Stagecoach Pass	StagecoachPass	-13.57	1487		1487	1487	1487
Stagecoach Pass	StagecoachPass	-13.03	1792		1792	1792	1792
Stagecoach Pass	StagecoachPass	-12.7	1828		1828	1828	1828

```
  Stagecoach Pass StagecoachPass-12.49                    1851            1851            1851
1851
  Stagecoach Pass StagecoachPass-12.15                    1996            1996            1996
1996


Boundary Conditions

  River           Reach           Profile                         Upstream                  Downstream

  Stagecoach Pass StagecoachPass-1100-yr 6-yr                                               Normal S =
0.02
  Stagecoach Pass StagecoachPass-1Method 1                                                  Normal S =
0.02
  Stagecoach Pass StagecoachPass-1Meth 4-1.0ft                                              Normal S =
0.02
  Stagecoach Pass StagecoachPass-1Meth 4-0.8ft                                              Normal S =
0.02



GEOMETRY DATA

Geometry Title: Base Conditions Geometry COS X-Sec
Geometry File : j:\Projects\03062\Calcs\HEC-RAS Final\SCP.g01

CROSS SECTION


RIVER: Stagecoach Pass
REACH: StagecoachPass-1   RS: 6.93

INPUT
Description: Cross Section 6.93 is located on the north boundary of the study
             for Stage Coach Pass Wash.  This section is located downstream of
             Lone Mountain Parkway.

Topography and Aerial indicate wash and
             surrounding undeveloped desert.
T6NR5E Section 28
Q100 = 453 cfs
Station Elevation Data    num=      17
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
  9935.7 2962.42 9942.49    2962 9946.69 2961.73  9978.7    2962 9985.22 2962.25
 9993.18    2962 9995.82    2961 9998.45    2960   10000 2959.8510001.41    2960
10012.67 2960.4910024.62    296110047.83    296210066.79    2962 10068.5    2962
10092.84    296410114.87    2966

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
  9935.7    .064 9995.82    .04410024.62    .064

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9995.8210024.62           225.25  231.79   232.5             .1       .3

CROSS SECTION OUTPUT  Profile #100-yr 6-yr

  E.G. Elev (ft)           2962.87    Element                  Left OB    Channel   Right OB
  Vel Head (ft)               0.42    Wt. n-Val.                0.064      0.044      0.064
  W.S. Elev (ft)           2962.45    Reach Len. (ft)          225.25     231.79     232.50
  Crit W.S. (ft)           2962.45    Flow Area (sq ft)         30.07      57.82      32.62
  E.G. Slope (ft/ft)      0.012178    Area (sq ft)              30.07      57.82      32.62
  Q Total (cfs)             453.00    Flow (cfs)                48.41     341.23      63.36
  Top Width (ft)            138.28    Top Width (ft)            60.12      28.80      49.36
  Vel Total (ft/s)            3.76    Avg. Vel. (ft/s)           1.61       5.90       1.94
  Max Chl Dpth (ft)           2.60    Hydr. Depth (ft)           0.50       2.01       0.66
  Conv. Total (cfs)         4105.0    Conv. (cfs)               438.7     3092.2      574.2
  Length Wtd. (ft)          231.07    Wetted Per. (ft)          60.37      29.02      49.40
  Min Ch El (ft)           2959.85    Shear (lb/sq ft)           0.38       1.51       0.50
  Alpha                       1.91    Stream Power (lb/ft s)     0.61       8.94       0.98
```

Frctn Loss (ft)	3.39	Cum Volume (acre-ft)	14.54	120.65	25.31
C & E Loss (ft)	0.00	Cum SA (acres)	16.03	59.53	28.58

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

CROSS SECTION OUTPUT Profile #Method 1

E.G. Elev (ft)	2963.40	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.00	Wt. n-Val.		0.044	
W.S. Elev (ft)	2962.40	Reach Len. (ft)	225.25	231.79	232.50
Crit W.S. (ft)	2962.40	Flow Area (sq ft)		56.47	
E.G. Slope (ft/ft)	0.026263	Area (sq ft)		56.47	
Q Total (cfs)	453.00	Flow (cfs)		453.00	
Top Width (ft)	28.80	Top Width (ft)		28.80	
Vel Total (ft/s)	8.02	Avg. Vel. (ft/s)		8.02	
Max Chl Dpth (ft)	2.55	Hydr. Depth (ft)		1.96	
Conv. Total (cfs)	2795.3	Conv. (cfs)		2795.3	
Length Wtd. (ft)	231.79	Wetted Per. (ft)		31.83	
Min Ch El (ft)	2959.85	Shear (lb/sq ft)		2.91	
Alpha	1.00	Stream Power (lb/ft s)		23.34	
Frctn Loss (ft)	6.18	Cum Volume (acre-ft)	1.47	124.93	3.67
C & E Loss (ft)	0.08	Cum SA (acres)	1.49	59.55	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 energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
depth, the 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: Stagecoach Pass
REACH: StagecoachPass-1 RS: 6.88

INPUT
Description: Topography and Aerial indicate wash and surrounding undeveloped
desert.
T6NR5E Section 28
Q100 = 453 cfs
Station Elevation Data num= 9

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9817.41	2956	9966.96	2954.72	9989.84	2954	10000	2953.25	10010.24	2954
10014.37	2955	10018.5	2956	10037.56	2958	10075.21	2960		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9817.41	.064	9966.96	.044	10014.37	.064

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9966.96	10014.37	181.52	182.97	185	.1	.3

CROSS SECTION OUTPUT Profile #100-yr 6-yr

E.G. Elev (ft)	2955.95	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.45	Wt. n-Val.	0.064	0.044	0.064
W.S. Elev (ft)	2955.50	Reach Len. (ft)	181.52	182.97	185.00
Crit W.S. (ft)	2955.50	Flow Area (sq ft)	35.25	68.31	0.51
E.G. Slope (ft/ft)	0.018007	Area (sq ft)	35.25	68.31	0.51
Q Total (cfs)	453.00	Flow (cfs)	58.47	393.91	0.62
Top Width (ft)	140.22	Top Width (ft)	90.76	47.41	2.05
Vel Total (ft/s)	4.35	Avg. Vel. (ft/s)	1.66	5.77	1.21
Max Chl Dpth (ft)	2.25	Hydr. Depth (ft)	0.39	1.44	0.25
Conv. Total (cfs)	3375.8	Conv. (cfs)	435.7	2935.4	4.6
Length Wtd. (ft)	183.44	Wetted Per. (ft)	90.77	47.60	2.11
Min Ch El (ft)	2953.25	Shear (lb/sq ft)	0.44	1.61	0.27
Alpha	1.55	Stream Power (lb/ft s)	0.72	9.30	0.33
Frctn Loss (ft)	4.90	Cum Volume (acre-ft)	14.37	120.31	25.22
C & E Loss (ft)	0.03	Cum SA (acres)	15.64	59.32	28.44

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 conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
depth, the 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 OUTPUT Profile #Method 1

E.G. Elev (ft)	2956.18	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.72	Wt. n-Val.		0.044	
W.S. Elev (ft)	2955.46	Reach Len. (ft)	181.52	182.97	185.00
Crit W.S. (ft)	2955.46	Flow Area (sq ft)		66.39	
E.G. Slope (ft/ft)	0.027069	Area (sq ft)		66.39	
Q Total (cfs)	453.00	Flow (cfs)		453.00	
Top Width (ft)	47.41	Top Width (ft)		47.41	
Vel Total (ft/s)	6.82	Avg. Vel. (ft/s)		6.82	
Max Chl Dpth (ft)	2.21	Hydr. Depth (ft)		1.40	
Conv. Total (cfs)	2753.3	Conv. (cfs)		2753.3	
Length Wtd. (ft)	182.97	Wetted Per. (ft)		48.79	
Min Ch El (ft)	2953.25	Shear (lb/sq ft)		2.30	
Alpha	1.00	Stream Power (lb/ft s)		15.69	
Frctn Loss (ft)	4.87	Cum Volume (acre-ft)	1.47	124.61	3.67
C & E Loss (ft)	0.00	Cum SA (acres)	1.49	59.35	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 energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
depth, the 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: Stagecoach Pass
REACH: StagecoachPass-1 RS: 6.85

INPUT
Description: Cross Section 6.85 is located upstream of the northern boundary of

Mirabel.

Topography and Aerial indicate wash and surrounding
undeveloped desert.
T6NR5E Section 28
Q100 = 453 cfs
Station Elevation Data num= 11

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9835.29	2950	9897.73	2948.75	9971.68	2949.34	9985.36	2948.56	9995.29	2948
10012.06	2948	10029.06	2948.57	10045.06	2949.11	10098.67	2948	10140.97	2948
10172.83	2950								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9835.29	.064	9985.36	.044	10029.06	.064

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9985.36	10029.06	286.1	275.18	250.78	.1	.3

Left Levee Station= 9971.68 Elevation= 2949.34

CROSS SECTION OUTPUT Profile #100-yr 6-yr

E.G. Elev (ft)	2949.29	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.35	Wt. n-Val.	0.064	0.044	0.064
W.S. Elev (ft)	2948.94	Reach Len. (ft)	286.10	275.18	250.78
Crit W.S. (ft)	2948.94	Flow Area (sq ft)	1.25	33.37	70.19
E.G. Slope (ft/ft)	0.043677	Area (sq ft)	1.25	33.37	70.19
Q Total (cfs)	453.00	Flow (cfs)	2.00	196.73	254.27
Top Width (ft)	164.42	Top Width (ft)	6.63	43.70	114.08
Vel Total (ft/s)	4.32	Avg. Vel. (ft/s)	1.60	5.89	3.62
Max Chl Dpth (ft)	0.94	Hydr. Depth (ft)	0.19	0.76	0.62
Conv. Total (cfs)	2167.6	Conv. (cfs)	9.6	941.3	1216.7
Length Wtd. (ft)	265.72	Wetted Per. (ft)	6.64	43.72	114.13
Min Ch El (ft)	2948.00	Shear (lb/sq ft)	0.51	2.08	1.68
Alpha	1.20	Stream Power (lb/ft s)	0.82	12.27	6.08
Frctn Loss (ft)	6.38	Cum Volume (acre-ft)	14.29	120.10	25.07
C & E Loss (ft)	0.03	Cum SA (acres)	15.44	59.13	28.20

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: Divided flow computed for this cross-section.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
depth, the calculated water surface came back below critical depth. This indicates that there is
not a valid subcritical answer. The program defaulted to critical depth.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water
surface was used.

CROSS SECTION OUTPUT Profile #Method 1

E.G. Elev (ft)	2950.42	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.74	Wt. n-Val.		0.044	
W.S. Elev (ft)	2949.67	Reach Len. (ft)	286.10	275.18	250.78
Crit W.S. (ft)	2949.67	Flow Area (sq ft)		65.50	
E.G. Slope (ft/ft)	0.026140	Area (sq ft)		65.50	
Q Total (cfs)	453.00	Flow (cfs)		453.00	
Top Width (ft)	43.70	Top Width (ft)		43.70	
Vel Total (ft/s)	6.92	Avg. Vel. (ft/s)		6.92	
Max Chl Dpth (ft)	1.67	Hydr. Depth (ft)		1.50	
Conv. Total (cfs)	2801.9	Conv. (cfs)		2801.9	
Length Wtd. (ft)		Wetted Per. (ft)		45.94	
Min Ch El (ft)	2948.00	Shear (lb/sq ft)		2.33	
Alpha	1.00	Stream Power (lb/ft s)		16.09	

Frctn Loss (ft)	Cum Volume (acre-ft)	1.47	124.33	3.67
C & E Loss (ft)	Cum SA (acres)	1.49	59.16	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 energy loss was 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: Stagecoach Pass
REACH: StagecoachPass-1 RS: 6.8

INPUT
Description: Cross Section 6.80 is located within Mirabel.

Topography and
Aerial indicate wash and surrounding undeveloped desert.
T6NR5E
Section 28
Q100 = 631 cfs
Station Elevation Data num= 22

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9554.46	2948	9585.73	2946	9607.94	2944	9622.53	2942	9645.83	2940
9650.14	2940	9733.79	2942	9745.56	2942.33	9842.66	2942	9882.75	2941.85
9898.5	2942	9934.96	2942.24	9947.6	2942	10000	2940.32	10022.78	2941.88
10065.63	2942	10097.3	2942	10187.49	2941.28	10213.48	2942	10245.35	2944
10284.86	2946	10305.57	2946						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9554.46	.064	9947.6	.044	10022.78	.064

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9947.61	10022.78	342.46	357.07	348.2	.1	.3

Left Levee Station= 9745.56 Elevation= 2944

CROSS SECTION OUTPUT Profile #100-yr 6-yr

E.G. Elev (ft)	2942.52	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.25	Wt. n-Val.	0.064	0.044	0.064
W.S. Elev (ft)	2942.27	Reach Len. (ft)	342.46	357.07	348.20
Crit W.S. (ft)	2942.27	Flow Area (sq ft)	37.76	84.98	96.90
E.G. Slope (ft/ft)	0.017088	Area (sq ft)	37.76	84.98	96.90
Q Total (cfs)	631.00	Flow (cfs)	39.72	406.81	184.47
Top Width (ft)	455.24	Top Width (ft)	185.02	75.18	195.04
Vel Total (ft/s)	2.87	Avg. Vel. (ft/s)	1.05	4.79	1.90
Max Chl Dpth (ft)	2.27	Hydr. Depth (ft)	0.20	1.13	0.50
Conv. Total (cfs)	4827.1	Conv. (cfs)	303.9	3112.1	1411.1
Length Wtd. (ft)	354.05	Wetted Per. (ft)	185.02	75.26	195.06
Min Ch El (ft)	2940.32	Shear (lb/sq ft)	0.22	1.20	0.53
Alpha	1.93	Stream Power (lb/ft s)	0.23	5.77	1.01
Frctn Loss (ft)	8.64	Cum Volume (acre-ft)	14.16	119.73	24.59
C & E Loss (ft)	0.01	Cum SA (acres)	14.81	58.76	27.31

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.

Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water
surface was used.

CROSS SECTION OUTPUT Profile #Method 1

E.G. Elev (ft)	2943.09	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.65	Wt. n-Val.		0.044	
W.S. Elev (ft)	2942.44	Reach Len. (ft)	342.46	357.07	348.20
Crit W.S. (ft)	2942.44	Flow Area (sq ft)		97.30	
E.G. Slope (ft/ft)	0.026646	Area (sq ft)		97.30	
Q Total (cfs)	631.00	Flow (cfs)		631.00	
Top Width (ft)	75.18	Top Width (ft)		75.18	
Vel Total (ft/s)	6.49	Avg. Vel. (ft/s)		6.49	
Max Chl Dpth (ft)	2.12	Hydr. Depth (ft)		1.29	
Conv. Total (cfs)	3865.6	Conv. (cfs)		3865.6	
Length Wtd. (ft)	357.07	Wetted Per. (ft)		76.25	
Min Ch El (ft)	2940.32	Shear (lb/sq ft)		2.12	
Alpha	1.00	Stream Power (lb/ft s)		13.77	
Frctn Loss (ft)	8.95	Cum Volume (acre-ft)	1.47	123.82	3.67
C & E Loss (ft)	0.09	Cum SA (acres)	1.49	58.78	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 energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
depth, the 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: Stagecoach Pass
REACH: StagecoachPass-1 RS: 6.73

INPUT
Description: Cross Section 6.73 is located within Mirabel.

Topography and
Aerial indicate wash and surrounding undeveloped desert.
T6NR5E
Section 28
Q100 = 631 cfs
Station Elevation Data num= 18

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9734.42	2940	9751.01	2938	9769.41	2936	9791.06	2934	9814.11	2932
9899.99	2930	9962.38	2930	9987.3	2930	10000	2928.3	10006.14	2930
10042.61	2930.6	10085.88	2930	10090.05	2928	10093.02	2928	10099.71	2930
10235.66	2932	10249.46	2934	10265.83	2936				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9734.42	.064	9899.99	.044	10042.61	.064

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9899.99	10042.61	506.93	520.11	514.82	.1	.3

CROSS SECTION OUTPUT Profile #100-yr 6-yr

E.G. Elev (ft)	2930.94	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.31	Wt. n-Val.	0.064	0.044	0.064
W.S. Elev (ft)	2930.63	Reach Len. (ft)	506.93	520.11	514.82
Crit W.S. (ft)	2930.63	Flow Area (sq ft)	8.38	93.12	51.50

E.G. Slope (ft/ft)	0.037635	Area (sq ft)	8.38	93.12	51.50
Q Total (cfs)	631.00	Flow (cfs)	17.37	462.58	151.05
Top Width (ft)	264.77	Top Width (ft)	26.83	140.68	97.26
Vel Total (ft/s)	4.12	Avg. Vel. (ft/s)	2.07	4.97	2.93
Max Chl Dpth (ft)	2.62	Hydr. Depth (ft)	0.31	0.66	0.53
Conv. Total (cfs)	3252.6	Conv. (cfs)	89.6	2384.4	778.6
Length Wtd. (ft)	518.03	Wetted Per. (ft)	26.83	141.03	98.02
Min Ch El (ft)	2928.30	Shear (lb/sq ft)	0.73	1.55	1.23
Alpha	1.19	Stream Power (lb/ft s)	1.52	7.71	3.62
Frctn Loss (ft)	8.47	Cum Volume (acre-ft)	13.98	119.00	24.00
C & E Loss (ft)	0.07	Cum SA (acres)	13.98	57.87	26.14

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: Divided flow computed for this cross-section.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
depth, the calculated water surface came back below critical depth. This indicates that there is
not a valid subcritical answer. The program defaulted to critical depth.

CROSS SECTION OUTPUT Profile #Method 1

E.G. Elev (ft)	2931.25	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.37	Wt. n-Val.		0.044	
W.S. Elev (ft)	2930.88	Reach Len. (ft)	506.93	520.11	514.82
Crit W.S. (ft)	2930.82	Flow Area (sq ft)		130.10	
E.G. Slope (ft/ft)	0.023636	Area (sq ft)		130.10	
Q Total (cfs)	631.00	Flow (cfs)		631.00	
Top Width (ft)	142.62	Top Width (ft)		142.62	
Vel Total (ft/s)	4.85	Avg. Vel. (ft/s)		4.85	
Max Chl Dpth (ft)	2.58	Hydr. Depth (ft)		0.91	
Conv. Total (cfs)	4104.4	Conv. (cfs)		4104.4	
Length Wtd. (ft)	520.11	Wetted Per. (ft)		144.08	
Min Ch El (ft)	2928.30	Shear (lb/sq ft)		1.33	
Alpha	1.00	Stream Power (lb/ft s)		6.46	
Frctn Loss (ft)	13.87	Cum Volume (acre-ft)	1.47	122.88	3.67
C & E Loss (ft)	0.00	Cum SA (acres)	1.49	57.89	2.43

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.
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: Stagecoach Pass
REACH: StagecoachPass-1 RS: 6.63

INPUT
Description: Cross Section 6.63 is located within Mirabel.

Topography and
Aerial indicate wash and surrounding undeveloped desert.
T6NR5E
Section 28
Q100 = 631 cfs
Station Elevation Data num= 21

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9935.27	2924	9946.89	2922	9958.61	2920	9970.09	2918	9979.28	2917
9988.46	2916	10000	2915.4	10013.4	2916	10064.95	2916	10138.82	2916.97

```
10164.72    291610192.03    291610199.44    291610216.11    291610231.87    2916
10298.96    291610343.99    291810372.63    292010392.25    292210408.12    2924
10432.83    2926

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
 9935.27    .064 9979.28    .04410138.82    .064

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9979.2810138.82           207.15  206.41  201.89            .1        .3
Right Levee     Station=10138.82      Elevation= 2916.97

CROSS SECTION OUTPUT  Profile #100-yr 6-yr

  E.G. Elev (ft)           2917.06    Element                    Left OB    Channel   Right OB
  Vel Head (ft)               0.09    Wt. n-Val.                            0.044      0.064
  W.S. Elev (ft)           2916.97    Reach Len. (ft)            207.15    206.41     201.89
  Crit W.S. (ft)           2916.97    Flow Area (sq ft)                    121.86     153.41
  E.G. Slope (ft/ft)      0.009087    Area (sq ft)                         121.86     153.41
  Q Total (cfs)             631.00    Flow (cfs)                           328.06     302.94
  Top Width (ft)            341.25    Top Width (ft)                       159.27     181.98
  Vel Total (ft/s)            2.29    Avg. Vel. (ft/s)                       2.69       1.97
  Max Chl Dpth (ft)           1.57    Hydr. Depth (ft)                       0.77       0.84
  Conv. Total (cfs)         6619.2    Conv. (cfs)                          3441.4     3177.9
  Length Wtd. (ft)          205.32    Wetted Per. (ft)                     159.35     182.02
  Min Ch El (ft)           2915.40    Shear (lb/sq ft)                       0.43       0.48
  Alpha                       1.07    Stream Power (lb/ft s)                 1.17       0.94
  Frctn Loss (ft)             3.11    Cum Volume (acre-ft)        13.93    117.71      22.79
  C & E Loss (ft)             0.03    Cum SA (acres)              13.82     56.08      24.49


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 conveyance ratio (upstream conveyance divided by downstream conveyance) is less than
         0.7 or greater than 1.4.  This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross
section.
         This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to
critical
         depth, the 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 OUTPUT  Profile #Method 1

  E.G. Elev (ft)           2917.39    Element                    Left OB    Channel   Right OB
  Vel Head (ft)               0.39    Wt. n-Val.                            0.044
  W.S. Elev (ft)           2917.00    Reach Len. (ft)            207.15    206.41     201.89
  Crit W.S. (ft)           2917.00    Flow Area (sq ft)                    125.79
  E.G. Slope (ft/ft)      0.030308    Area (sq ft)                         125.79
  Q Total (cfs)             631.00    Flow (cfs)                           631.00
  Top Width (ft)            159.49    Top Width (ft)                       159.49
  Vel Total (ft/s)            5.02    Avg. Vel. (ft/s)                       5.02
  Max Chl Dpth (ft)           1.59    Hydr. Depth (ft)                       0.79
  Conv. Total (cfs)         3624.5    Conv. (cfs)                          3624.5
  Length Wtd. (ft)                    Wetted Per. (ft)                     159.61
  Min Ch El (ft)           2915.40    Shear (lb/sq ft)                       1.49
  Alpha                       1.00    Stream Power (lb/ft s)                 7.48
  Frctn Loss (ft)                     Cum Volume (acre-ft)         1.47    121.36       3.67
  C & E Loss (ft)                     Cum SA (acres)               1.49     56.09       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 energy loss was 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: Stagecoach Pass
REACH: StagecoachPass-1 RS: 6.59

INPUT
Description: Cross Section 6.59 is located within Mirabel.

Topography and
Aerial indicate wash and surrounding undeveloped desert.
T6NR5E
Section 28
Q100 = 631 cfs
Station Elevation Data num= 23

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9927.65	2916	9949.99	2914	9966.42	2912	9978.48	2910.5	9982.5	2910
10000	2908.4	10016.64	2910	10023.37	2910	10042.36	2910	10044.16	2910
10066.09	2910	10078.47	2910	10105.95	2910	10126.63	2910	10138.82	2910
10142.02	2910.29	10151.6	2911.14	10211.8	2912	10226.81	2912	10235.04	2910
10238.44	2910	10274.14	2912	10332.87	2914				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9927.65	.064	9978.48	.044	10142.02	.064

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9978.48	10142.02	223.51	228.93	253.87	.3	.5

Right Levee Station= 10211.8 Elevation= 2912

CROSS SECTION OUTPUT Profile #100-yr 6-yr

			Left OB	Channel	Right OB
E.G. Elev (ft)	2911.00	Element			
Vel Head (ft)	0.38	Wt. n-Val.	0.064	0.044	0.064
W.S. Elev (ft)	2910.62	Reach Len. (ft)	223.51	228.93	253.87
Crit W.S. (ft)	2910.62	Flow Area (sq ft)	0.06	127.34	0.62
E.G. Slope (ft/ft)	0.030030	Area (sq ft)	0.06	127.34	0.62
Q Total (cfs)	631.00	Flow (cfs)	0.04	630.22	0.74
Top Width (ft)	168.24	Top Width (ft)	0.97	163.54	3.73
Vel Total (ft/s)	4.93	Avg. Vel. (ft/s)	0.62	4.95	1.21
Max Chl Dpth (ft)	2.22	Hydr. Depth (ft)	0.06	0.78	0.17
Conv. Total (cfs)	3641.3	Conv. (cfs)	0.2	3636.8	4.3
Length Wtd. (ft)	229.40	Wetted Per. (ft)	0.98	163.73	3.74
Min Ch El (ft)	2908.40	Shear (lb/sq ft)	0.11	1.46	0.31
Alpha	1.01	Stream Power (lb/ft s)	0.07	7.22	0.37
Frctn Loss (ft)	0.11	Cum Volume (acre-ft)	13.93	117.12	22.43
C & E Loss (ft)	0.18	Cum SA (acres)	13.82	55.32	24.06

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

CROSS SECTION OUTPUT Profile #Method 1

			Left OB	Channel	Right OB
E.G. Elev (ft)	2911.00	Element			
Vel Head (ft)	0.39	Wt. n-Val.		0.044	
W.S. Elev (ft)	2910.61	Reach Len. (ft)	223.51	228.93	253.87
Crit W.S. (ft)	2910.61	Flow Area (sq ft)		126.14	
E.G. Slope (ft/ft)	0.031178	Area (sq ft)		126.14	
Q Total (cfs)	631.00	Flow (cfs)		631.00	

Top Width (ft)	163.54	Top Width (ft)		163.54		
Vel Total (ft/s)	5.00	Avg. Vel. (ft/s)		5.00		
Max Chl Dpth (ft)	2.21	Hydr. Depth (ft)		0.77		
Conv. Total (cfs)	3573.6	Conv. (cfs)		3573.6		
Length Wtd. (ft)	228.93	Wetted Per. (ft)		164.17		
Min Ch El (ft)	2908.40	Shear (lb/sq ft)		1.50		
Alpha	1.00	Stream Power (lb/ft s)		7.48		
Frctn Loss (ft)	0.16	Cum Volume (acre-ft)	1.47	120.76	3.67	
C & E Loss (ft)	0.19	Cum SA (acres)	1.49	55.32	2.43	

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

CROSS SECTION

RIVER: Stagecoach Pass
REACH: StagecoachPass-1 RS: 6.55

INPUT
Description: Cross Section 6.55 is located within Mirabel. This section is located upstream of Mirabel Club Drive East. There are 3-10 x 3 concrete conspan arches located under Mirabel Club Drive East.

Topography indicates wash and surrounding undeveloped desert.
Aerial shows wash, surrounding undeveloped desert, and Mirabel Club Drive East.
T6NR5E Section 28
Q100 = 631 cfs
Station Elevation Data num= 15

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9694.83	2908	9732.71	2906	9767.33	2904	9810.54	2904	9854.92	2906
9871.74	2906	9909.36	2904	9974.21	2902.85	9994.1	2902	10006.16	2902
10015.48	2902	10047.5	2902	10078.29	2904	10195.13	2906	10327.66	2908

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9694.83	.064	9909.36	.044	10078.29	.064

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9909.36	10078.29	51.62	54.36	48.5	.3	.5

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
9694.83	9909.36	2904.7	F
10078.29	10327.66	2904.7	F

Left Levee Station= 9871.74 Elevation= 2906
Right Levee Station=10078.29 Elevation= 2904

CROSS SECTION OUTPUT Profile #100-yr 6-yr

E.G. Elev (ft)	2906.19	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.01	Wt. n-Val.	0.064	0.044	0.064
W.S. Elev (ft)	2906.18	Reach Len. (ft)	51.62	54.36	48.50
Crit W.S. (ft)	2903.37	Flow Area (sq ft)	234.52	573.88	138.50
E.G. Slope (ft/ft)	0.000138	Area (sq ft)	234.52	573.88	138.50

Q Total (cfs)	631.00	Flow (cfs)	76.35	514.91	39.74
Top Width (ft)	477.46	Top Width (ft)	179.99	168.93	128.54
Vel Total (ft/s)	0.67	Avg. Vel. (ft/s)	0.33	0.90	0.29
Max Chl Dpth (ft)	4.18	Hydr. Depth (ft)	1.30	3.40	1.08
Conv. Total (cfs)	53651.1	Conv. (cfs)	6491.4	43780.4	3379.2
Length Wtd. (ft)	54.36	Wetted Per. (ft)	180.15	169.02	128.55
Min Ch El (ft)	2902.00	Shear (lb/sq ft)	0.01	0.03	0.01
Alpha	1.52	Stream Power (lb/ft s)	0.00	0.03	0.00
Frctn Loss (ft)		Cum Volume (acre-ft)	13.33	115.28	22.03
C & E Loss (ft)		Cum SA (acres)	13.35	54.44	23.67

Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid,
energy was used.

CROSS SECTION OUTPUT Profile #Method 1

E.G. Elev (ft)	2906.24	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.02	Wt. n-Val.		0.044	
W.S. Elev (ft)	2906.22	Reach Len. (ft)	51.62	54.36	48.50
Crit W.S. (ft)	2903.37	Flow Area (sq ft)		580.81	
E.G. Slope (ft/ft)	0.000207	Area (sq ft)		580.81	
Q Total (cfs)	631.00	Flow (cfs)		631.00	
Top Width (ft)	168.93	Top Width (ft)		168.93	
Vel Total (ft/s)	1.09	Avg. Vel. (ft/s)		1.09	
Max Chl Dpth (ft)	4.22	Hydr. Depth (ft)		3.44	
Conv. Total (cfs)	43900.3	Conv. (cfs)		43900.3	
Length Wtd. (ft)	54.36	Wetted Per. (ft)		173.46	
Min Ch El (ft)	2902.00	Shear (lb/sq ft)		0.04	
Alpha	1.00	Stream Power (lb/ft s)		0.05	
Frctn Loss (ft)		Cum Volume (acre-ft)	1.47	118.90	3.67
C & E Loss (ft)		Cum SA (acres)	1.49	54.45	2.43

Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid,
energy was used.

CULVERT

RIVER: Stagecoach Pass
REACH: StagecoachPass-1 RS: 6.545

INPUT
Description: Conspan arches at Mirablel Club Drive East crossing.
Distance from Upstream XS = 1
Deck/Roadway Width = 50
Weir Coefficient = 2.6
Upstream Deck/Roadway Coordinates
num= 5

Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord
9700	2906.38		9963.61	2906.38		10058.69	2906.4	
10137.53	2904.18		10400	2904.18				

Upstream Bridge Cross Section Data
Station Elevation Data num= 15

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9694.83	2908	9732.71	2906	9767.33	2904	9810.54	2904	9854.92	2906
9871.74	2906	9909.36	2904	9974.21	2902.85	9994.1	290210006.16		2902
10015.48	2902	10047.5	290210078.29		290410195.13		290610327.66		2908

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9694.83	.064	9909.36	.04410078.29		.064

Bank Sta: Left Right Coeff Contr. Expan.
9909.3610078.29 .3 .5
Ineffective Flow num= 2
Sta L Sta R Elev Permanent

```
 9694.83 9909.36  2904.7       F
10078.2910327.66  2904.7       F
Left Levee      Station= 9871.74      Elevation=    2906
Right Levee     Station=10078.29      Elevation=    2904

Downstream  Deck/Roadway Coordinates
    num=       5
     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord
    9700 2906.38         9927.06 2906.38        10022.07  2906.4
10100.85 2904.18           10200 2904.18

Downstream Bridge Cross Section Data
Station Elevation Data    num=      11
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
 9756.37    2908 9768.35    2906 9780.64    2904 9794.12    2902 9833.03    2902
 9910.71    2902 9981.59 2901.08 9995.01    2900 10003.3    290010015.51    2902
10097.86 2903.03

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
 9756.37    .064 9910.71    .04410015.51    .064

Bank Sta: Left   Right    Coeff Contr.   Expan.
       9910.7110015.51             .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
 9756.37 9910.71 2904.26       F
 10028.210097.86 2904.26       F
Right Levee     Station=10097.86      Elevation=    2907

Upstream Embankment side slope              =       0 horiz. to 1.0 vertical
Downstream Embankment side slope            =       0 horiz. to 1.0 vertical
Maximum allowable submergence for weir flow =     .95
Elevation at which weir flow begins         =
Energy head used in spillway design         =
Spillway height used in design              =
Weir crest shape                            = Broad Crested

Number of Culverts =  1

Culvert Name     Shape      Rise    Span
CULVERT#1   Conspan Arch       3      10
FHWA Chart # 60- Span/Rise ratio approximate 2:1
FHWA Scale # 1 - 0 degree wing wall angle
Solution Criteria = Highest U.S. EG
Culvert Upstrm Dist  Length    Top n  Bottom n  Depth Blocked  Entrance Loss Coef   Exit Loss Coef
                 3      48     .015     .015        0                   .4                 1
Number of Barrels =  3
Upstream   Elevation =  2901.81
Centerline Stations
    Sta.    Sta.    Sta.
10008.83 10019.610030.98
Downstream Elevation =  2900.36
Centerline Stations
    Sta.    Sta.    Sta.
 9998.2810008.4110019.84

CROSS SECTION


RIVER: Stagecoach Pass
REACH: StagecoachPass-1   RS: 6.54

INPUT
Description: Cross Section 6.54 is located within Mirabel.  This section is
             located downstream of Mirabel Club Drive East. There are 3-10 x 3
             concrete conspan arches located under Mirabel Club Drive East.


Topography  indicates wash and surrounding undeveloped
             desert.
```

Aerial shows wash, surrounding undeveloped desert, and
Mirabel Club Drive East.
T6NR5E Section 28
Q100 = 631 cfs

Station Elevation Data num= 11

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9756.37	2908	9768.35	2906	9780.64	2904	9794.12	2902	9833.03	2902
9910.71	2902	9981.59	2901.08	9995.01	2900	10003.3	2900	10015.51	2902
10097.86	2903.03								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9756.37	.064	9910.71	.044	10015.51	.064

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9910.71	10015.51	113.43	130.13	143.65	.3	.5

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
9756.37	9910.71	2904.26	F
10028.21	10097.86	2904.26	F

Right Levee Station=10097.86 Elevation= 2907

CROSS SECTION OUTPUT Profile #100-yr 6-yr

			Left OB	Channel	Right OB
E.G. Elev (ft)	2902.78	Element			
Vel Head (ft)	0.50	Wt. n-Val.		0.044	0.064
W.S. Elev (ft)	2902.28	Reach Len. (ft)	113.43	130.13	143.65
Crit W.S. (ft)	2902.28	Flow Area (sq ft)		110.05	2.51
E.G. Slope (ft/ft)	0.026803	Area (sq ft)	32.59	110.05	3.08
Q Total (cfs)	631.00	Flow (cfs)		627.76	3.24
Top Width (ft)	245.43	Top Width (ft)	118.46	104.80	22.17
Vel Total (ft/s)	5.61	Avg. Vel. (ft/s)		5.70	1.29
Max Chl Dpth (ft)	2.28	Hydr. Depth (ft)		1.05	0.20
Conv. Total (cfs)	3854.3	Conv. (cfs)		3834.4	19.8
Length Wtd. (ft)	129.74	Wetted Per. (ft)		105.01	12.69
Min Ch El (ft)	2900.00	Shear (lb/sq ft)		1.75	0.33
Alpha	1.03	Stream Power (lb/ft s)		10.00	0.43
Frctn Loss (ft)	0.23	Cum Volume (acre-ft)	13.17	114.85	21.95
C & E Loss (ft)	0.23	Cum SA (acres)	13.18	54.27	23.59

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 conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
depth, the calculated water surface came back below critical depth. This indicates that there is
not a valid subcritical answer. The program defaulted to critical depth.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid,
energy was used.

CROSS SECTION OUTPUT Profile #Method 1

			Left OB	Channel	Right OB
E.G. Elev (ft)	2902.78	Element			
Vel Head (ft)	0.50	Wt. n-Val.		0.044	0.064
W.S. Elev (ft)	2902.29	Reach Len. (ft)	113.43	130.13	143.65
Crit W.S. (ft)	2902.29	Flow Area (sq ft)		110.84	2.61
E.G. Slope (ft/ft)	0.026249	Area (sq ft)		110.84	2.82
Q Total (cfs)	631.00	Flow (cfs)		627.58	3.42
Top Width (ft)	119.29	Top Width (ft)		104.80	14.49
Vel Total (ft/s)	5.56	Avg. Vel. (ft/s)		5.66	1.31
Max Chl Dpth (ft)	2.28	Hydr. Depth (ft)		1.06	0.21
Conv. Total (cfs)	3894.7	Conv. (cfs)		3873.6	21.1
Length Wtd. (ft)	130.17	Wetted Per. (ft)		105.30	12.69
Min Ch El (ft)	2900.00	Shear (lb/sq ft)		1.73	0.34

Alpha	1.03	Stream Power (lb/ft s)		9.77	0.44
Frctn Loss (ft)	0.20	Cum Volume (acre-ft)	1.47	118.47	3.67
C & E Loss (ft)	0.23	Cum SA (acres)	1.49	54.28	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 conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
depth, the calculated water surface came back below critical depth. This indicates that there is
not a valid subcritical answer. The program defaulted to critical depth.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid,
energy was used.

CROSS SECTION

RIVER: Stagecoach Pass
REACH: StagecoachPass-1 RS: 6.51

INPUT
Description: Cross Section 6.51 is located within Mirabel. This section is located upstream of Mirabel Club Drive West. There are 3-10 x 3 concrete conspan arches located under Mirabel Club Drive West.

Topography indicates wash and surrounding undeveloped desert.
Aerial shows wash, surrounding undeveloped desert, and Mirabel Club Drive West.
T6NR5E Section 28
Q100 = 631 cfs
Station Elevation Data num= 12

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9776.27	2908	9787.16	2906	9799.96	2904	9819.29	2902	9841.65	2900
9867.95	2900	9898.55	2900	9933.74	2898.31	10000	2898.21	10036.24	2900
10173.92	2902	10206.18	2902.61						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9776.27	.064	9898.55	.044	10036.24	.064

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9898.55	10036.24	65.03	70.74	68	.3	.5

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
9776.27	9898.55	2900.6	F
10036.24	10206.18	2900.6	F

CROSS SECTION OUTPUT Profile #100-yr 6-yr

			Left OB	Channel	Right OB
E.G. Elev (ft)	2901.33	Element			
Vel Head (ft)	0.03	Wt. n-Val.	0.064	0.044	0.064
W.S. Elev (ft)	2901.30	Reach Len. (ft)	65.03	70.74	68.00
Crit W.S. (ft)	2899.50	Flow Area (sq ft)	83.45	357.05	58.22
E.G. Slope (ft/ft)	0.000593	Area (sq ft)	83.45	357.05	58.22
Q Total (cfs)	631.00	Flow (cfs)	52.31	553.99	24.70
Top Width (ft)	298.66	Top Width (ft)	71.44	137.69	89.53
Vel Total (ft/s)	1.27	Avg. Vel. (ft/s)	0.63	1.55	0.42
Max Chl Dpth (ft)	3.10	Hydr. Depth (ft)	1.17	2.59	0.65
Conv. Total (cfs)	25911.8	Conv. (cfs)	2148.0	22749.3	1014.5
Length Wtd. (ft)	70.74	Wetted Per. (ft)	71.50	137.78	89.54
Min Ch El (ft)	2898.20	Shear (lb/sq ft)	0.04	0.10	0.02
Alpha	1.35	Stream Power (lb/ft s)	0.03	0.15	0.01

Frctn Loss (ft)		Cum Volume (acre-ft)	13.02	114.16	21.85
C & E Loss (ft)		Cum SA (acres)	12.93	53.91	23.40

Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid,
energy was used.

CROSS SECTION OUTPUT Profile #Method 1

			Left OB	Channel	Right OB
E.G. Elev (ft)	2901.72	Element			
Vel Head (ft)	0.04	Wt. n-Val.		0.044	
W.S. Elev (ft)	2901.68	Reach Len. (ft)	65.03	70.74	68.00
Crit W.S. (ft)	2899.50	Flow Area (sq ft)		409.15	
E.G. Slope (ft/ft)	0.000505	Area (sq ft)		409.15	
Q Total (cfs)	631.00	Flow (cfs)		631.00	
Top Width (ft)	137.69	Top Width (ft)		137.69	
Vel Total (ft/s)	1.54	Avg. Vel. (ft/s)		1.54	
Max Chl Dpth (ft)	3.48	Hydr. Depth (ft)		2.97	
Conv. Total (cfs)	28092.8	Conv. (cfs)		28092.8	
Length Wtd. (ft)	70.74	Wetted Per. (ft)		141.13	
Min Ch El (ft)	2898.20	Shear (lb/sq ft)		0.09	
Alpha	1.00	Stream Power (lb/ft s)		0.14	
Frctn Loss (ft)		Cum Volume (acre-ft)	1.47	117.69	3.66
C & E Loss (ft)		Cum SA (acres)	1.49	53.91	2.40

Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid,
energy was used.

CULVERT

RIVER: Stagecoach Pass
REACH: StagecoachPass-1 RS: 6.505

INPUT
Description: Conspan arches at Mirablel Club Drive West crossing.
Distance from Upstream XS = 1
Deck/Roadway Width = 65
Weir Coefficient = 2.6
Upstream Deck/Roadway Coordinates
num= 4

Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord
9700	2903.68		9972.47	2903.68		10028.59	2902.1	
10112.07	2899.55							

Upstream Bridge Cross Section Data
Station Elevation Data num= 12

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9776.27	2908	9787.16	2906	9799.96	2904	9819.29	2902	9841.65	2900
9867.95	2900	9898.55	2900	9933.74	2898.31	10000	2898.21	10036.24	2900
10173.92	2902	10206.18	2902.61						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9776.27	.064	9898.55	.0441	10036.24	.064

Bank Sta: Left	Right	Coeff Contr.	Expan.
9898.55	10036.24	.3	.5

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
9776.27	9898.55	2900.6	F
10036.24	10206.18	2900.6	F

Downstream Deck/Roadway Coordinates
num= 4

Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord
9700	2903.68		9937.77	2903.68		9993.91	2902.1	
10077.42	2899.55							

```
Downstream Bridge Cross Section Data
Station Elevation Data    num=      14
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
 9778.17    2908 9778.35    2908 9814.66    2906 9828.57    2904 9850.74    2902
 9874.91    2900 9892.87    2898 9941.45    2897 9990.02    289610012.62    2896
10033.73    289710054.83    2898 10086.4    2900 10090.7    2900

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
 9778.17    .064 9941.45    .04410033.73    .064

Bank Sta: Left   Right    Coeff Contr.   Expan.
       9941.4510033.73             .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
 9778.17 9941.45 2899.43       F
10033.73 10090.7 2899.43       F
Right Levee     Station= 10090.7      Elevation=    2904

Upstream Embankment side slope              =       0 horiz. to 1.0 vertical
Downstream Embankment side slope            =       0 horiz. to 1.0 vertical
Maximum allowable submergence for weir flow =     .95
Elevation at which weir flow begins         =
Energy head used in spillway design         =
Spillway height used in design              =
Weir crest shape                            = Broad Crested

Number of Culverts =  1

Culvert Name     Shape      Rise    Span
CULVERT#1   Conspan Arch       3      10
FHWA Chart # 60- Span/Rise ratio approximate 2:1
FHWA Scale # 1 - 0 degree wing wall angle
Solution Criteria = Highest U.S. EG
Culvert Upstrm Dist  Length    Top n  Bottom n  Depth Blocked  Entrance Loss Coef   Exit Loss Coef
                3.2      65     .015     .015        0                    .4                 1
Number of Barrels =  3
Upstream   Elevation =  2897.24
Centerline Stations
    Sta.    Sta.    Sta.
 9990.3810001.3810012.38
Downstream Elevation =  2896.27
Centerline Stations
    Sta.    Sta.    Sta.
 9968.32 9979.32 9990.32

CROSS SECTION


RIVER: Stagecoach Pass
REACH: StagecoachPass-1   RS: 6.5

INPUT
Description: Cross Section 6.50 is located within Mirabel.  This section is
             located downstream of Mirabel Club Drive West. There are 3-10 x 3
             concrete conspan arches located under Mirabel Club Drive West.


Topography  indicates wash and surrounding undeveloped
             desert.
Aerial shows wash, surrounding undeveloped desert, and
             Mirabel Club Drive West.
T6NR5E Section 28
Q100 = 631 cfs
Station Elevation Data    num=      14
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
 9778.17    2908 9778.35    2908 9814.66    2906 9828.57    2904 9850.74    2902
 9874.91    2900 9892.87    2898 9941.45    2897 9990.02    289610012.62    2896
10033.73    289710054.83    2898 10086.4    2900 10090.7    2900
```

```
Manning's n Values          num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
 9778.17    .064 9941.45    .04410033.73    .064

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9941.4510033.73           306.51  265.12  203.45            .3        .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
 9778.17 9941.45 2899.43       F
10033.73 10090.7 2899.43       F
Right Levee     Station= 10090.7      Elevation=    2904
```

CROSS SECTION OUTPUT Profile #100-yr 6-yr

E.G. Elev (ft)	2898.08	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.57	Wt. n-Val.		0.044	
W.S. Elev (ft)	2897.51	Reach Len. (ft)	306.51	265.12	203.45
Crit W.S. (ft)	2897.51	Flow Area (sq ft)		104.21	
E.G. Slope (ft/ft)	0.027349	Area (sq ft)	6.24	104.21	2.71
Q Total (cfs)	631.00	Flow (cfs)		631.00	
Top Width (ft)	127.60	Top Width (ft)	24.62	92.28	10.69
Vel Total (ft/s)	6.06	Avg. Vel. (ft/s)		6.06	
Max Chl Dpth (ft)	1.51	Hydr. Depth (ft)		1.13	
Conv. Total (cfs)	3815.5	Conv. (cfs)		3815.5	
Length Wtd. (ft)	263.85	Wetted Per. (ft)		92.31	
Min Ch El (ft)	2896.00	Shear (lb/sq ft)		1.93	
Alpha	1.00	Stream Power (lb/ft s)		11.67	
Frctn Loss (ft)	5.59	Cum Volume (acre-ft)	12.96	113.78	21.80
C & E Loss (ft)	0.05	Cum SA (acres)	12.86	53.72	23.33

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.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid,
energy was used.

CROSS SECTION OUTPUT Profile #Method 1

E.G. Elev (ft)	2898.08	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.56	Wt. n-Val.		0.044	
W.S. Elev (ft)	2897.52	Reach Len. (ft)	306.51	265.12	203.45
Crit W.S. (ft)	2897.51	Flow Area (sq ft)		105.16	
E.G. Slope (ft/ft)	0.026935	Area (sq ft)		105.16	
Q Total (cfs)	631.00	Flow (cfs)		631.00	
Top Width (ft)	92.28	Top Width (ft)		92.28	
Vel Total (ft/s)	6.00	Avg. Vel. (ft/s)		6.00	
Max Chl Dpth (ft)	1.52	Hydr. Depth (ft)		1.14	
Conv. Total (cfs)	3844.8	Conv. (cfs)		3844.8	
Length Wtd. (ft)	264.96	Wetted Per. (ft)		93.35	
Min Ch El (ft)	2896.00	Shear (lb/sq ft)		1.89	
Alpha	1.00	Stream Power (lb/ft s)		11.37	
Frctn Loss (ft)	6.29	Cum Volume (acre-ft)	1.47	117.28	3.66
C & E Loss (ft)	0.10	Cum SA (acres)	1.49	53.73	2.40

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid,
energy was used.

CROSS SECTION

RIVER: Stagecoach Pass
REACH: StagecoachPass-1 RS: 6.45

INPUT
Description: Cross Section 6.45 is located within Mirabel.

Topography and
Aerial indicate wash and surrounding undeveloped desert.
T6NR5E
Section 28
Q100 = 631 cfs
Station Elevation Data num= 13

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9928.79	2898	9936.94	2896	9945.33	2894	9953.69	2892	9980.39	2890
9999.62	2888	10007.41	2888	10020.72	2890	10117.24	2892	10148.17	2894
10168.34	2896	10186.23	2898	10207.87	2900				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9928.79	.064	9980.39	.044	10020.72	.064

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9980.39	10020.72	378.71	404.49	416.22	.1	.3

CROSS SECTION OUTPUT Profile #100-yr 6-yr

			Left OB	Channel	Right OB
E.G. Elev (ft)	2891.61	Element			
Vel Head (ft)	0.73	Wt. n-Val.	0.064	0.044	0.064
W.S. Elev (ft)	2890.87	Reach Len. (ft)	378.71	404.49	416.22
Crit W.S. (ft)	2890.87	Flow Area (sq ft)	5.07	83.28	18.34
E.G. Slope (ft/ft)	0.016898	Area (sq ft)	5.07	83.28	18.34
Q Total (cfs)	631.00	Flow (cfs)	8.79	590.39	31.82
Top Width (ft)	94.04	Top Width (ft)	11.64	40.33	42.07
Vel Total (ft/s)	5.91	Avg. Vel. (ft/s)	1.73	7.09	1.73
Max Chl Dpth (ft)	2.87	Hydr. Depth (ft)	0.44	2.06	0.44
Conv. Total (cfs)	4854.1	Conv. (cfs)	67.6	4541.7	244.8
Length Wtd. (ft)	404.61	Wetted Per. (ft)	11.67	40.58	42.08
Min Ch El (ft)	2888.00	Shear (lb/sq ft)	0.46	2.16	0.46
Alpha	1.35	Stream Power (lb/ft s)	0.79	15.35	0.80
Frctn Loss (ft)	8.78	Cum Volume (acre-ft)	12.92	113.21	21.75
C & E Loss (ft)	0.06	Cum SA (acres)	12.73	53.32	23.20

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.

CROSS SECTION OUTPUT Profile #Method 1

			Left OB	Channel	Right OB
E.G. Elev (ft)	2891.69	Element			
Vel Head (ft)	0.90	Wt. n-Val.	0.064	0.044	0.064
W.S. Elev (ft)	2890.79	Reach Len. (ft)	378.71	404.49	416.22
Crit W.S. (ft)	2890.79	Flow Area (sq ft)	3.17	79.96	3.19
E.G. Slope (ft/ft)	0.021058	Area (sq ft)	3.17	79.96	3.19
Q Total (cfs)	631.00	Flow (cfs)	7.14	615.88	7.98
Top Width (ft)	50.00	Top Width (ft)	5.39	40.33	4.28
Vel Total (ft/s)	7.31	Avg. Vel. (ft/s)	2.25	7.70	2.50
Max Chl Dpth (ft)	2.79	Hydr. Depth (ft)	0.59	1.98	0.75
Conv. Total (cfs)	4348.4	Conv. (cfs)	49.2	4244.2	55.0
Length Wtd. (ft)	404.42	Wetted Per. (ft)	5.79	40.58	4.98
Min Ch El (ft)	2888.00	Shear (lb/sq ft)	0.72	2.59	0.84

Alpha	1.09	Stream Power (lb/ft s)	1.62	19.95	2.11
Frctn Loss (ft)	9.97	Cum Volume (acre-ft)	1.46	116.71	3.66
C & E Loss (ft)	0.11	Cum SA (acres)	1.47	53.32	2.39

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 cross section had to be extended vertically during the critical depth calculations.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
depth, the 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: Stagecoach Pass
REACH: StagecoachPass-1 RS: 6.37

INPUT
Description: Cross Section 6.37 is located within Mirabel.

Topography and
Aerial indicate wash and surrounding undeveloped desert.
T6NR5E
Section 28
Q100 = 631 cfs
Station Elevation Data num= 17

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9851.38	2886	9877.44	2884	9901.57	2882	9920.24	2880	9935.12	2879
9949.99	2878	9965.36	2878	9978.79	2878	10000	2877.25	10014.99	2878
10043.01	2879	10071.03	2880	10092.16	2882	10111.16	2884	10164.42	2884
10182.62	2884	10201.88	2886						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9851.38	.064	9935.12	.044	10043.01	.064

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9935.12	10043.01	332.86	330.12	324.31	.1	.3

CROSS SECTION OUTPUT Profile #100-yr 6-yr

			Left OB	Channel	Right OB
E.G. Elev (ft)	2879.60	Element			
Vel Head (ft)	0.52	Wt. n-Val.	0.064	0.044	0.064
W.S. Elev (ft)	2879.09	Reach Len. (ft)	332.86	330.12	324.31
Crit W.S. (ft)	2879.09	Flow Area (sq ft)	0.05	109.19	0.10
E.G. Slope (ft/ft)	0.028845	Area (sq ft)	0.05	109.19	0.10
Q Total (cfs)	631.00	Flow (cfs)	0.03	630.93	0.05
Top Width (ft)	111.54	Top Width (ft)	1.26	107.89	2.38
Vel Total (ft/s)	5.77	Avg. Vel. (ft/s)	0.48	5.78	0.48
Max Chl Dpth (ft)	1.83	Hydr. Depth (ft)	0.04	1.01	0.04
Conv. Total (cfs)	3715.3	Conv. (cfs)	0.2	3714.9	0.3
Length Wtd. (ft)	329.57	Wetted Per. (ft)	1.27	107.97	2.38
Min Ch El (ft)	2877.25	Shear (lb/sq ft)	0.08	1.82	0.08
Alpha	1.00	Stream Power (lb/ft s)	0.04	10.52	0.04
Frctn Loss (ft)	6.88	Cum Volume (acre-ft)	12.89	112.32	21.66
C & E Loss (ft)	0.04	Cum SA (acres)	12.67	52.63	22.99

Warning: The energy equation could not be 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 OUTPUT Profile #Method 1

E.G. Elev (ft)	2879.60	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.52	Wt. n-Val.		0.044	
W.S. Elev (ft)	2879.08	Reach Len. (ft)	332.86	330.12	324.31
Crit W.S. (ft)	2879.08	Flow Area (sq ft)		108.79	
E.G. Slope (ft/ft)	0.029261	Area (sq ft)		108.79	
Q Total (cfs)	631.00	Flow (cfs)		631.00	
Top Width (ft)	107.89	Top Width (ft)		107.89	
Vel Total (ft/s)	5.80	Avg. Vel. (ft/s)		5.80	
Max Chl Dpth (ft)	1.83	Hydr. Depth (ft)		1.01	
Conv. Total (cfs)	3688.8	Conv. (cfs)		3688.8	
Length Wtd. (ft)	330.12	Wetted Per. (ft)		108.14	
Min Ch El (ft)	2877.25	Shear (lb/sq ft)		1.84	
Alpha	1.00	Stream Power (lb/ft s)		10.66	
Frctn Loss (ft)	8.54	Cum Volume (acre-ft)	1.44	115.84	3.64
C & E Loss (ft)	0.02	Cum SA (acres)	1.44	52.63	2.37

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.

CROSS SECTION

RIVER: Stagecoach Pass
REACH: StagecoachPass-1 RS: 6.31

INPUT
Description: Cross Section 6.31 is located within Mirabel.

Topography and
Aerial indicate wash and surrounding undeveloped desert.
T6NR5E
Section 28 and 33
Q100 = 631 cfs
Station Elevation Data num= 10

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9894.06	2876	9915.05	2874	9936.07	2872	9969.43	2870	9994.6	2868
10005.2	2868	10033.65	2869.35	10176.39	2870	10199.39	2872	10221.2	2874

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9894.06	.064	9969.43	.044	10033.65	.064

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9969.43	10033.65	432.85	453.1	447.56	.1	.3

CROSS SECTION OUTPUT Profile #100-yr 6-yr

E.G. Elev (ft)	2870.53	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.38	Wt. n-Val.	0.064	0.044	0.064
W.S. Elev (ft)	2870.15	Reach Len. (ft)	432.85	453.10	447.56
Crit W.S. (ft)	2870.15	Flow Area (sq ft)	0.19	93.69	67.91
E.G. Slope (ft/ft)	0.015804	Area (sq ft)	0.19	93.69	67.91

Q Total (cfs)	631.00	Flow (cfs)	0.10	511.07	119.83
Top Width (ft)	211.18	Top Width (ft)	2.50	64.22	144.46
Vel Total (ft/s)	3.90	Avg. Vel. (ft/s)	0.52	5.45	1.76
Max Chl Dpth (ft)	2.15	Hydr. Depth (ft)	0.07	1.46	0.47
Conv. Total (cfs)	5019.4	Conv. (cfs)	0.8	4065.4	953.2
Length Wtd. (ft)	452.31	Wetted Per. (ft)	2.50	64.33	144.47
Min Ch El (ft)	2868.00	Shear (lb/sq ft)	0.07	1.44	0.46
Alpha	1.62	Stream Power (lb/ft s)	0.04	7.84	0.82
Frctn Loss (ft)	7.47	Cum Volume (acre-ft)	12.89	111.55	21.41
C & E Loss (ft)	0.02	Cum SA (acres)	12.66	51.98	22.44

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 energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
depth, the 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 OUTPUT Profile #Method 1

E.G. Elev (ft)	2870.86	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.68	Wt. n-Val.		0.044	
W.S. Elev (ft)	2870.18	Reach Len. (ft)	432.85	453.10	447.56
Crit W.S. (ft)	2870.13	Flow Area (sq ft)		95.57	
E.G. Slope (ft/ft)	0.023018	Area (sq ft)		95.57	
Q Total (cfs)	631.00	Flow (cfs)		631.00	
Top Width (ft)	64.22	Top Width (ft)		64.22	
Vel Total (ft/s)	6.60	Avg. Vel. (ft/s)		6.60	
Max Chl Dpth (ft)	2.18	Hydr. Depth (ft)		1.49	
Conv. Total (cfs)	4159.0	Conv. (cfs)		4159.0	
Length Wtd. (ft)	453.04	Wetted Per. (ft)		65.34	
Min Ch El (ft)	2868.00	Shear (lb/sq ft)		2.10	
Alpha	1.00	Stream Power (lb/ft s)		13.88	
Frctn Loss (ft)	10.06	Cum Volume (acre-ft)	1.44	115.06	3.64
C & E Loss (ft)	0.00	Cum SA (acres)	1.44	51.98	2.37

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.
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: Stagecoach Pass
REACH: StagecoachPass-1 RS: 6.23

INPUT
Description: Cross Section 6.23 is located within Mirabel. This section is located upstream of concentration point CSCP10 in the HEC-1 model.

Topography and Aerial indicate wash and surrounding undeveloped desert.
T6NR5E Section 33 and 32
Q100 = 631 cfs
Station Elevation Data num= 11

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9835.65	2862	9861.97	2862	9890.33	2860	9946.56	2860	9965.28	2860
9986.07	2858	10000	2857.71	10008.91	2858	10026.84	2860	10041.61	2862
10061.34	2864								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9835.65	.064	9965.28	.044	10026.84	.064

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9965.28	10026.84	308.38	309.69	308.4	.1	.3

CROSS SECTION OUTPUT Profile #100-yr 6-yr

E.G. Elev (ft)	2860.77	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.57	Wt. n-Val.	0.064	0.044	0.064
W.S. Elev (ft)	2860.20	Reach Len. (ft)	308.38	309.69	308.40
Crit W.S. (ft)	2860.20	Flow Area (sq ft)	15.48	100.30	0.15
E.G. Slope (ft/ft)	0.017264	Area (sq ft)	15.48	100.30	0.15
Q Total (cfs)	631.00	Flow (cfs)	16.09	614.81	0.10
Top Width (ft)	140.88	Top Width (ft)	77.82	61.56	1.50
Vel Total (ft/s)	5.44	Avg. Vel. (ft/s)	1.04	6.13	0.66
Max Chl Dpth (ft)	2.50	Hydr. Depth (ft)	0.20	1.63	0.10
Conv. Total (cfs)	4802.4	Conv. (cfs)	122.4	4679.2	0.8
Length Wtd. (ft)	309.37	Wetted Per. (ft)	77.83	61.78	1.51
Min Ch El (ft)	2857.70	Shear (lb/sq ft)	0.21	1.75	0.11
Alpha	1.24	Stream Power (lb/ft s)	0.22	10.73	0.07
Frctn Loss (ft)	6.91	Cum Volume (acre-ft)	12.81	110.54	21.06
C & E Loss (ft)	0.09	Cum SA (acres)	12.26	51.33	21.69

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

CROSS SECTION OUTPUT Profile #Method 1

E.G. Elev (ft)	2860.79	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.67	Wt. n-Val.	0.064	0.044	
W.S. Elev (ft)	2860.12	Reach Len. (ft)	308.38	309.69	308.40
Crit W.S. (ft)	2860.12	Flow Area (sq ft)	4.25	95.24	
E.G. Slope (ft/ft)	0.021430	Area (sq ft)	4.25	95.24	
Q Total (cfs)	631.00	Flow (cfs)	3.51	627.49	
Top Width (ft)	96.84	Top Width (ft)	35.28	61.56	
Vel Total (ft/s)	6.34	Avg. Vel. (ft/s)	0.83	6.59	
Max Chl Dpth (ft)	2.42	Hydr. Depth (ft)	0.12	1.55	
Conv. Total (cfs)	4310.5	Conv. (cfs)	24.0	4286.5	
Length Wtd. (ft)	309.69	Wetted Per. (ft)	35.40	61.90	
Min Ch El (ft)	2857.70	Shear (lb/sq ft)	0.16	2.06	
Alpha	1.07	Stream Power (lb/ft s)	0.13	13.56	
Frctn Loss (ft)	7.43	Cum Volume (acre-ft)	1.42	114.07	3.64
C & E Loss (ft)	0.04	Cum SA (acres)	1.27	51.33	2.37

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.

CROSS SECTION

RIVER: Stagecoach Pass
REACH: StagecoachPass-1 RS: 6.17

INPUT
Description: Topography indicates wash and surrounding undeveloped desert.
Aerial shows wash, undeveloped desert, building pads, homes and Hollow Drive.
T6NR5E Section 32
Q100 = 758 cfs
Station Elevation Data num= 16

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9866.12	2860	9882.32	2858	9890.27	2856	9898.72	2854	9909.07	2852
9916.42	2850	9953.95	2850	9976.38	2850	10000	2849.61	0029.45	2849.74
10153.99	2850	10174.27	2852	10197.46	2854	10215.89	2856	10237.89	2858
10270.31	2860								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9866.12	.064	9916.42	.044	10029.45	.064

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9916.42	10029.45	492.53	488.62	468.84	.1	.3

CROSS SECTION OUTPUT Profile #100-yr 6-yr

			Left OB	Channel	Right OB
E.G. Elev (ft)	2850.93	Element			
Vel Head (ft)	0.28	Wt. n-Val.	0.064	0.044	0.064
W.S. Elev (ft)	2850.66	Reach Len. (ft)	492.53	488.62	468.84
Crit W.S. (ft)	2850.57	Flow Area (sq ft)	0.79	88.62	100.10
E.G. Slope (ft/ft)	0.028458	Area (sq ft)	0.79	88.62	100.10
Q Total (cfs)	758.00	Flow (cfs)	1.44	429.23	327.33
Top Width (ft)	246.64	Top Width (ft)	2.41	113.03	131.19
Vel Total (ft/s)	4.00	Avg. Vel. (ft/s)	1.82	4.84	3.27
Max Chl Dpth (ft)	1.06	Hydr. Depth (ft)	0.33	0.78	0.76
Conv. Total (cfs)	4493.3	Conv. (cfs)	8.5	2544.4	1940.4
Length Wtd. (ft)	484.13	Wetted Per. (ft)	2.50	113.03	131.23
Min Ch El (ft)	2849.60	Shear (lb/sq ft)	0.56	1.39	1.36
Alpha	1.12	Stream Power (lb/ft s)	1.02	6.75	4.43
Frctn Loss (ft)	12.48	Cum Volume (acre-ft)	12.76	109.87	20.70
C & E Loss (ft)	0.03	Cum SA (acres)	11.98	50.71	21.22

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 OUTPUT Profile #Method 1

			Left OB	Channel	Right OB
E.G. Elev (ft)	2851.55	Element			
Vel Head (ft)	0.54	Wt. n-Val.		0.044	
W.S. Elev (ft)	2851.01	Reach Len. (ft)	492.53	488.62	468.84
Crit W.S. (ft)	2850.98	Flow Area (sq ft)		128.41	
E.G. Slope (ft/ft)	0.026471	Area (sq ft)		128.41	
Q Total (cfs)	758.00	Flow (cfs)		758.00	
Top Width (ft)	113.03	Top Width (ft)		113.03	
Vel Total (ft/s)	5.90	Avg. Vel. (ft/s)		5.90	
Max Chl Dpth (ft)	1.41	Hydr. Depth (ft)		1.14	
Conv. Total (cfs)	4658.9	Conv. (cfs)		4658.9	
Length Wtd. (ft)	488.62	Wetted Per. (ft)		115.31	
Min Ch El (ft)	2849.60	Shear (lb/sq ft)		1.84	
Alpha	1.00	Stream Power (lb/ft s)		10.86	
Frctn Loss (ft)	13.06	Cum Volume (acre-ft)	1.41	113.28	3.64
C & E Loss (ft)	0.01	Cum SA (acres)	1.14	50.71	2.37

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: Stagecoach Pass
REACH: StagecoachPass-1 RS: 6.07

INPUT
Description: Topography and Aerial indicate wash and surrounding undeveloped desert.
T6NR5E Section 32
Q100 = 758 cfs
Station Elevation Data num= 14

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9801.1	2846	9832.24	2844	9863.34	2842	9883.71	2840	9910.05	2838
9930	2837.28	9955.58	2836.35	10000	2836.4	10025	2837.11	10056.53	2838
10073.22	2840	10090.21	2842	10107.17	2844	10137.79	2844		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9801.1	.064	9930	.044	10025	.064

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9930	10025	521.46	512.01	504.03	.1	.3

CROSS SECTION OUTPUT Profile #100-yr 6-yr

E.G. Elev (ft)	2838.42	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.55	Wt. n-Val.	0.064	0.044	0.064
W.S. Elev (ft)	2837.86	Reach Len. (ft)	521.46	512.01	504.03
Crit W.S. (ft)	2837.86	Flow Area (sq ft)	4.72	120.65	10.06
E.G. Slope (ft/ft)	0.023473	Area (sq ft)	4.72	120.65	10.06
Q Total (cfs)	758.00	Flow (cfs)	7.38	731.97	18.65
Top Width (ft)	137.86	Top Width (ft)	16.17	95.00	26.69
Vel Total (ft/s)	5.60	Avg. Vel. (ft/s)	1.56	6.07	1.85
Max Chl Dpth (ft)	1.51	Hydr. Depth (ft)	0.29	1.27	0.38
Conv. Total (cfs)	4947.5	Conv. (cfs)	48.2	4777.6	121.7
Length Wtd. (ft)	511.88	Wetted Per. (ft)	16.18	95.03	26.70
Min Ch El (ft)	2836.35	Shear (lb/sq ft)	0.43	1.86	0.55
Alpha	1.14	Stream Power (lb/ft s)	0.67	11.29	1.02
Frctn Loss (ft)	11.85	Cum Volume (acre-ft)	12.73	108.69	20.11
C & E Loss (ft)	0.00	Cum SA (acres)	11.87	49.54	20.37

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.

CROSS SECTION OUTPUT Profile #Method 1

E.G. Elev (ft)	2838.48	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.63	Wt. n-Val.		0.044	
W.S. Elev (ft)	2837.84	Reach Len. (ft)	521.46	512.01	504.03
Crit W.S. (ft)	2837.84	Flow Area (sq ft)		118.80	
E.G. Slope (ft/ft)	0.026991	Area (sq ft)		118.80	
Q Total (cfs)	758.00	Flow (cfs)		758.00	
Top Width (ft)	95.00	Top Width (ft)		95.00	
Vel Total (ft/s)	6.38	Avg. Vel. (ft/s)		6.38	
Max Chl Dpth (ft)	1.49	Hydr. Depth (ft)		1.25	
Conv. Total (cfs)	4613.8	Conv. (cfs)		4613.8	
Length Wtd. (ft)	512.01	Wetted Per. (ft)		96.32	
Min Ch El (ft)	2836.35	Shear (lb/sq ft)		2.08	
Alpha	1.00	Stream Power (lb/ft s)		13.26	
Frctn Loss (ft)	13.74	Cum Volume (acre-ft)	1.41	111.89	3.64
C & E Loss (ft)	0.00	Cum SA (acres)	1.14	49.54	2.37

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.

CROSS SECTION

RIVER: Stagecoach Pass
REACH: StagecoachPass-1 RS: 5.98

INPUT
Description: Topography and Aerial indicate wash and surrounding undeveloped
desert.
T6NR5E Section 32
Q100 = 758 cfs
Station Elevation Data num= 13

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9911	2830	9930.87	2828	9942.71	2826	9954.97	2824	9977.45	2823.05
10000	2822.11	10044.44	2822.47	10068.17	2822.98	10091.9	2823.49	10115.63	2824
10135.72	2826	10159.27	2828	10180.35	2830				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9911	.064	9977.45	.044	10068.17	.064

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9977.45	10068.17	380.53	371.19	343.6	.3	.5

CROSS SECTION OUTPUT Profile #100-yr 6-yr

E.G. Elev (ft)	2824.32	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.55	Wt. n-Val.	0.064	0.044	0.064
W.S. Elev (ft)	2823.78	Reach Len. (ft)	380.53	371.19	343.60
Crit W.S. (ft)	2823.78	Flow Area (sq ft)	6.22	118.18	14.70
E.G. Slope (ft/ft)	0.022824	Area (sq ft)	6.22	118.18	14.70
Q Total (cfs)	758.00	Flow (cfs)	11.08	719.05	27.87
Top Width (ft)	144.86	Top Width (ft)	17.15	90.72	36.99
Vel Total (ft/s)	5.45	Avg. Vel. (ft/s)	1.78	6.08	1.90
Max Chl Dpth (ft)	1.67	Hydr. Depth (ft)	0.36	1.30	0.40
Conv. Total (cfs)	5017.4	Conv. (cfs)	73.3	4759.5	184.5
Length Wtd. (ft)	367.38	Wetted Per. (ft)	17.17	90.75	36.99
Min Ch El (ft)	2822.10	Shear (lb/sq ft)	0.52	1.86	0.57
Alpha	1.19	Stream Power (lb/ft s)	0.92	11.29	1.07
Frctn Loss (ft)	0.09	Cum Volume (acre-ft)	12.66	107.29	19.97
C & E Loss (ft)	0.27	Cum SA (acres)	11.67	48.45	20.01

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 conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
depth, the 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 OUTPUT Profile #Method 1

E.G. Elev (ft)	2824.41	Element	Left OB	Channel	Right OB

Vel Head (ft)	0.65	Wt. n-Val.		0.044	
W.S. Elev (ft)	2823.76	Reach Len. (ft)	380.53	371.19	343.60
Crit W.S. (ft)	2823.76	Flow Area (sq ft)		117.14	
E.G. Slope (ft/ft)	0.026699	Area (sq ft)		117.14	
Q Total (cfs)	758.00	Flow (cfs)		758.00	
Top Width (ft)	90.72	Top Width (ft)		90.72	
Vel Total (ft/s)	6.47	Avg. Vel. (ft/s)		6.47	
Max Chl Dpth (ft)	1.66	Hydr. Depth (ft)		1.29	
Conv. Total (cfs)	4639.0	Conv. (cfs)		4639.0	
Length Wtd. (ft)	371.19	Wetted Per. (ft)		92.24	
Min Ch El (ft)	2822.10	Shear (lb/sq ft)		2.12	
Alpha	1.00	Stream Power (lb/ft s)		13.70	
Frctn Loss (ft)	0.20	Cum Volume (acre-ft)	1.41	110.50	3.64
C & E Loss (ft)	0.31	Cum SA (acres)	1.14	48.45	2.37

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 conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
depth, the 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: Stagecoach Pass
REACH: StagecoachPass-1 RS: 5.91

INPUT
Description: Cross Section 5.91 is located upstream of 102nd Street. There are 2-6 X 3 concrete box culverts located under 102nd Street.

Topography indicates wash and surrounding undeveloped desert.
Aerial shows wash, surrounding undeveloped desert, and 102nd Street.
T6NR5E Section 32
Q100 = 758 cfs
Station Elevation Data num= 14

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9880.61	2820	9903.27	2818	9926.84	2816	9952.44	2814	9964.42	2813
9976.39	2812	10027.84	2812	10067.92	2813	10107.99	2814	10131.17	2814
10164.49	2814	10184.75	2816	10200.87	2818	10219.06	2820		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9880.61	.064	9964.42	.044	10067.92	.064

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9964.42	10067.92	96.23	93.98	97.38	.3	.5

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
9880.61	9964.42	2816.53	F
10067.92	10219.06	2816.53	F

CROSS SECTION OUTPUT Profile #100-yr 6-yr

E.G. Elev (ft)	2817.77	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.01	Wt. n-Val.	0.064	0.044	0.064
W.S. Elev (ft)	2817.76	Reach Len. (ft)	96.23	93.98	97.38
Crit W.S. (ft)	2813.43	Flow Area (sq ft)	139.77	569.83	451.16

E.G. Slope (ft/ft)	0.000071	Area (sq ft)	139.77	569.83	451.16
Q Total (cfs)	758.00	Flow (cfs)	49.05	507.18	201.77
Top Width (ft)	292.78	Top Width (ft)	58.29	103.50	130.99
Vel Total (ft/s)	0.65	Avg. Vel. (ft/s)	0.35	0.89	0.45
Max Chl Dpth (ft)	5.76	Hydr. Depth (ft)	2.40	5.51	3.44
Conv. Total (cfs)	89643.9	Conv. (cfs)	5801.1	59980.5	23862.4
Length Wtd. (ft)	93.98	Wetted Per. (ft)	58.48	103.55	131.21
Min Ch El (ft)	2812.00	Shear (lb/sq ft)	0.01	0.02	0.02
Alpha	1.39	Stream Power (lb/ft s)	0.00	0.02	0.01
Frctn Loss (ft)		Cum Volume (acre-ft)	12.02	104.36	18.13
C & E Loss (ft)		Cum SA (acres)	11.34	47.62	19.34

Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid,
energy was used.

CROSS SECTION OUTPUT Profile #Method 1

E.G. Elev (ft)	2818.05	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.02	Wt. n-Val.		0.044	
W.S. Elev (ft)	2818.03	Reach Len. (ft)	96.23	93.98	97.38
Crit W.S. (ft)	2813.43	Flow Area (sq ft)		597.60	
E.G. Slope (ft/ft)	0.000154	Area (sq ft)		597.60	
Q Total (cfs)	758.00	Flow (cfs)		758.00	
Top Width (ft)	103.50	Top Width (ft)		103.50	
Vel Total (ft/s)	1.27	Avg. Vel. (ft/s)		1.27	
Max Chl Dpth (ft)	6.03	Hydr. Depth (ft)		5.77	
Conv. Total (cfs)	61042.5	Conv. (cfs)		61042.5	
Length Wtd. (ft)	93.98	Wetted Per. (ft)		113.61	
Min Ch El (ft)	2812.00	Shear (lb/sq ft)		0.05	
Alpha	1.00	Stream Power (lb/ft s)		0.06	
Frctn Loss (ft)		Cum Volume (acre-ft)	1.41	107.46	3.64
C & E Loss (ft)		Cum SA (acres)	1.14	47.62	2.37

Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid,
energy was used.

CULVERT

RIVER: Stagecoach Pass
REACH: StagecoachPass-1 RS: 5.9

INPUT
Description: Box culverts at 102nd Street crossing.
Distance from Upstream XS = 11
Deck/Roadway Width = 58
Weir Coefficient = 2.6
Upstream Deck/Roadway Coordinates
num= 5

Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord
9800	2818.09		9915.46	2818.09		10022.04	2816.53	
10090.61	2817.04		10280.61	2817.04				

Upstream Bridge Cross Section Data
Station Elevation Data num= 14

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9880.61	2820	9903.27	2818	9926.84	2816	9952.44	2814	9964.42	2813
9976.39	2812	10027.84	2812	10067.92	2813	10107.99	2814	10131.17	2814
10164.49	2814	10184.75	2816	10200.87	2818	10219.06	2820		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9880.61	.064	9964.42	.044	10067.92	.064

Bank Sta: Left	Right	Coeff Contr.	Expan.
9964.42	10067.92	.3	.5

Ineffective Flow num= 2

```
   Sta L   Sta R    Elev  Permanent
 9880.61 9964.42 2816.53       F
10067.9210219.06 2816.53       F

Downstream  Deck/Roadway Coordinates
    num=       5
     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord
    9800 2818.09         9911.84 2818.09        10018.52 2816.53
10087.14 2817.04           10300 2817.04

Downstream Bridge Cross Section Data
Station Elevation Data    num=      12
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
 9832.45    2818 9850.94    2816 9867.91    2814 9900.53    2812 9930.77    2811
    9961    281010041.39    281010051.25    2811 10061.1    2812 10188.2    2814
10206.81    281610220.25    2818

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
 9832.45    .064 9930.77    .04410051.25    .064

Bank Sta: Left   Right    Coeff Contr.   Expan.
       9930.7710051.25             .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
 9832.45 9930.77 2816.53       F
10051.2510220.25 2816.53       F

Upstream Embankment side slope              =       0 horiz. to 1.0 vertical
Downstream Embankment side slope            =       0 horiz. to 1.0 vertical
Maximum allowable submergence for weir flow =     .95
Elevation at which weir flow begins         =
Energy head used in spillway design         =
Spillway height used in design              =
Weir crest shape                            = Broad Crested

Number of Culverts =  1

Culvert Name     Shape      Rise    Span
CULVERT#1            Box       3       6
FHWA Chart # 8 - flared wingwalls
FHWA Scale # 1 - Wingwall flared 30 to 75 deg.
Solution Criteria = Highest U.S. EG
Culvert Upstrm Dist  Length    Top n  Bottom n  Depth Blocked  Entrance Loss Coef   Exit Loss Coef
                 11      58     .015     .015        0                  .4                 1
Number of Barrels =  2
Upstream   Elevation =  2812.31
Centerline Stations
    Sta.    Sta.
10020.4410027.14
Downstream Elevation =  2811.62
Centerline Stations
    Sta.    Sta.
10016.24 10022.6

CROSS SECTION


RIVER: Stagecoach Pass
REACH: StagecoachPass-1   RS: 5.89

INPUT
Description: Cross Section 5.89 is located downstream of 102nd Street. There
             are 2-6 X 3 concrete box culverts located under 102nd Street.


Topography  indicates wash and surrounding undeveloped
            desert.
Aerial shows wash, surrounding undeveloped desert, and
            102nd Street.
T6NR5E Section 32
```

Q100 = 758 cfs

Station Elevation Data num= 12

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9832.45	2818	9850.94	2816	9867.91	2814	9900.53	2812	9930.77	2811
9961	2810	10041.39	2810	10051.25	2811	10061.1	2812	10188.2	2814
10206.81	2816	10220.25	2818						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9832.45	.064	9930.77	.044	10051.25	.064

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9930.77	10051.25	371.46	393.22	397.4	.3	.5

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
9832.45	9930.77	2816.53	F
10051.25	10220.25	2816.53	F

CROSS SECTION OUTPUT Profile #100-yr 6-yr

			Left OB	Channel	Right OB
E.G. Elev (ft)	2811.78	Element			
Vel Head (ft)	0.49	Wt. n-Val.		0.044	
W.S. Elev (ft)	2811.29	Reach Len. (ft)	371.46	393.22	397.40
Crit W.S. (ft)	2811.23	Flow Area (sq ft)		134.88	
E.G. Slope (ft/ft)	0.023841	Area (sq ft)	1.24	134.88	0.40
Q Total (cfs)	758.00	Flow (cfs)		758.00	
Top Width (ft)	131.94	Top Width (ft)	8.65	120.48	2.82
Vel Total (ft/s)	5.62	Avg. Vel. (ft/s)		5.62	
Max Chl Dpth (ft)	1.29	Hydr. Depth (ft)		1.12	
Conv. Total (cfs)	4909.2	Conv. (cfs)		4909.2	
Length Wtd. (ft)	393.16	Wetted Per. (ft)		120.55	
Min Ch El (ft)	2810.00	Shear (lb/sq ft)		1.67	
Alpha	1.00	Stream Power (lb/ft s)		9.36	
Frctn Loss (ft)	9.79	Cum Volume (acre-ft)	11.87	103.60	17.62
C & E Loss (ft)	0.02	Cum SA (acres)	11.27	47.38	19.19

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.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid,
energy was used.

CROSS SECTION OUTPUT Profile #Method 1

			Left OB	Channel	Right OB
E.G. Elev (ft)	2811.78	Element			
Vel Head (ft)	0.48	Wt. n-Val.		0.044	
W.S. Elev (ft)	2811.30	Reach Len. (ft)	371.46	393.22	397.40
Crit W.S. (ft)	2811.23	Flow Area (sq ft)		136.38	
E.G. Slope (ft/ft)	0.023129	Area (sq ft)		136.38	
Q Total (cfs)	758.00	Flow (cfs)		758.00	
Top Width (ft)	120.48	Top Width (ft)		120.48	
Vel Total (ft/s)	5.56	Avg. Vel. (ft/s)		5.56	
Max Chl Dpth (ft)	1.30	Hydr. Depth (ft)		1.13	
Conv. Total (cfs)	4984.1	Conv. (cfs)		4984.1	
Length Wtd. (ft)	393.22	Wetted Per. (ft)		121.14	
Min Ch El (ft)	2810.00	Shear (lb/sq ft)		1.63	
Alpha	1.00	Stream Power (lb/ft s)		9.03	
Frctn Loss (ft)	9.77	Cum Volume (acre-ft)	1.41	106.67	3.64
C & E Loss (ft)	0.03	Cum SA (acres)	1.14	47.38	2.37

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.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid,
energy was used.

CROSS SECTION

RIVER: Stagecoach Pass
REACH: StagecoachPass-1 RS: 5.81

INPUT
Description: Topography and Aerial indicate wash and surrounding undeveloped desert.
T6NR5E Section 32
Q100 = 758 cfs
Station Elevation Data num= 17

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9694.06	2810	9714.43	2808	9733.95	2806	9748.11	2806	9767.03	2806
9812.41	2804	9865.21	2802	9907.58	2801	9949.94	2800	10009.87	2800
10012.71	2801	10015.54	2802	10021.45	2804	10027.42	2806	10033.43	2808
10039.72	2810	10044.91	2810						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9694.06	.064	9907.58	.044	10012.71	.064

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9907.58	10012.71	555.84	515.5	496.64	.1	.3

CROSS SECTION OUTPUT Profile #100-yr 6-yr

			Left OB	Channel	Right OB
E.G. Elev (ft)	2801.97	Element			
Vel Head (ft)	0.57	Wt. n-Val.	0.064	0.044	0.064
W.S. Elev (ft)	2801.39	Reach Len. (ft)	555.84	515.50	496.64
Crit W.S. (ft)	2801.39	Flow Area (sq ft)	3.29	123.98	0.22
E.G. Slope (ft/ft)	0.026057	Area (sq ft)	3.29	123.98	0.22
Q Total (cfs)	758.00	Flow (cfs)	4.18	753.55	0.27
Top Width (ft)	122.95	Top Width (ft)	16.71	105.13	1.12
Vel Total (ft/s)	5.95	Avg. Vel. (ft/s)	1.27	6.08	1.22
Max Chl Dpth (ft)	1.39	Hydr. Depth (ft)	0.20	1.18	0.20
Conv. Total (cfs)	4695.7	Conv. (cfs)	25.9	4668.2	1.7
Length Wtd. (ft)	515.60	Wetted Per. (ft)	16.71	105.31	1.18
Min Ch El (ft)	2800.00	Shear (lb/sq ft)	0.32	1.92	0.30
Alpha	1.04	Stream Power (lb/ft s)	0.41	11.64	0.37
Frctn Loss (ft)	12.08	Cum Volume (acre-ft)	11.85	102.43	17.62
C & E Loss (ft)	0.01	Cum SA (acres)	11.16	46.36	19.18

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.

CROSS SECTION OUTPUT Profile #Method 1

			Left OB	Channel	Right OB
E.G. Elev (ft)	2801.98	Element			
Vel Head (ft)	0.58	Wt. n-Val.		0.044	
W.S. Elev (ft)	2801.39	Reach Len. (ft)	555.84	515.50	496.64
Crit W.S. (ft)	2801.38	Flow Area (sq ft)		123.80	
E.G. Slope (ft/ft)	0.026757	Area (sq ft)		123.80	
Q Total (cfs)	758.00	Flow (cfs)		758.00	
Top Width (ft)	105.13	Top Width (ft)		105.13	
Vel Total (ft/s)	6.12	Avg. Vel. (ft/s)		6.12	
Max Chl Dpth (ft)	1.39	Hydr. Depth (ft)		1.18	
Conv. Total (cfs)	4633.9	Conv. (cfs)		4633.9	
Length Wtd. (ft)	515.50	Wetted Per. (ft)		106.10	
Min Ch El (ft)	2800.00	Shear (lb/sq ft)		1.95	
Alpha	1.00	Stream Power (lb/ft s)		11.93	
Frctn Loss (ft)	12.16	Cum Volume (acre-ft)	1.41	105.49	3.64

C & E Loss (ft)	0.02	Cum SA (acres)	1.14	46.36	2.37

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: Stagecoach Pass
REACH: StagecoachPass-1 RS: 5.72

INPUT
Description: Topography and Aerial indicate wash and surrounding undeveloped desert.
T6NR5E Section 32
Q100 = 758 cfs
Station Elevation Data num= 23

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9842.7	2798	9861.8	2796	9878.18	2796	9914.64	2796	9931.19	2794
9946.28	2792	9960.24	2790	9967.7	2789	9975.16	2788	10000	2787
10028.21	2788	10067.3	2789	10106.38	2790	10145.71	2792	10161.76	2792
10225.92	2792	10241.1	2794	10253.99	2796	10263.92	2798	10276.66	2800
10329.45	2802	10341.15	2802	10364.91	2800				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9842.7	.064	9967.7	.044	10067.3	.064

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9967.7	10067.3	341.05	382.86	397.4	.1	.3

CROSS SECTION OUTPUT Profile #100-yr 6-yr

			Left OB	Channel	Right OB
E.G. Elev (ft)	2789.80	Element			
Vel Head (ft)	0.53	Wt. n-Val.	0.064	0.044	0.064
W.S. Elev (ft)	2789.27	Reach Len. (ft)	341.05	382.86	397.40
Crit W.S. (ft)	2789.19	Flow Area (sq ft)	0.27	129.40	1.39
E.G. Slope (ft/ft)	0.021174	Area (sq ft)	0.27	129.40	1.39
Q Total (cfs)	758.00	Flow (cfs)	0.23	756.54	1.22
Top Width (ft)	112.01	Top Width (ft)	1.99	99.60	10.42
Vel Total (ft/s)	5.78	Avg. Vel. (ft/s)	0.88	5.85	0.88
Max Chl Dpth (ft)	2.27	Hydr. Depth (ft)	0.13	1.30	0.13
Conv. Total (cfs)	5209.2	Conv. (cfs)	1.6	5199.2	8.4
Length Wtd. (ft)	382.86	Wetted Per. (ft)	2.01	99.72	10.42
Min Ch El (ft)	2787.00	Shear (lb/sq ft)	0.17	1.72	0.18
Alpha	1.02	Stream Power (lb/ft s)	0.15	10.03	0.16
Frctn Loss (ft)	8.90	Cum Volume (acre-ft)	11.82	100.93	17.61
C & E Loss (ft)	0.02	Cum SA (acres)	11.04	45.15	19.11

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.

CROSS SECTION OUTPUT Profile #Method 1

			Left OB	Channel	Right OB
E.G. Elev (ft)	2789.80	Element			
Vel Head (ft)	0.53	Wt. n-Val.		0.044	
W.S. Elev (ft)	2789.28	Reach Len. (ft)	341.05	382.86	397.40
Crit W.S. (ft)	2789.18	Flow Area (sq ft)		130.23	
E.G. Slope (ft/ft)	0.020962	Area (sq ft)		130.23	
Q Total (cfs)	758.00	Flow (cfs)		758.00	
Top Width (ft)	99.60	Top Width (ft)		99.60	
Vel Total (ft/s)	5.82	Avg. Vel. (ft/s)		5.82	
Max Chl Dpth (ft)	2.27	Hydr. Depth (ft)		1.31	
Conv. Total (cfs)	5235.5	Conv. (cfs)		5235.5	
Length Wtd. (ft)	382.86	Wetted Per. (ft)		100.27	
Min Ch El (ft)	2787.00	Shear (lb/sq ft)		1.70	
Alpha	1.00	Stream Power (lb/ft s)		9.89	

Frctn Loss (ft)	8.91	Cum Volume (acre-ft)	1.41	103.99	3.64
C & E Loss (ft)	0.02	Cum SA (acres)	1.14	45.15	2.37

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: Stagecoach Pass
REACH: StagecoachPass-1 RS: 5.64

INPUT
Description: Topography indicates wash and surrounding undeveloped desert.
Aerial shows wash, dirt road, and surrounding undeveloped desert.
T6NR5E Section 32
Q100 = 758 cfs
Station Elevation Data num= 10

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9824.97	2788	9849.63	2786	9875.38	2784	9902.66	2782	9943.3	2780
9983.71	2778	10005.03	2778	10021.34	2780	10042.78	2782	10104.71	2784

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9824.97	.064	9943.3	.044	10021.34	.064

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9943.3	10021.34	162.68	161.27	158.95	.1	.3

CROSS SECTION OUTPUT Profile #100-yr 6-yr

E.G. Elev (ft)	2780.87	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.72	Wt. n-Val.	0.064	0.044	0.064
W.S. Elev (ft)	2780.15	Reach Len. (ft)	162.68	161.27	158.95
Crit W.S. (ft)	2780.15	Flow Area (sq ft)	0.23	110.98	0.12
E.G. Slope (ft/ft)	0.025635	Area (sq ft)	0.23	110.98	0.12
Q Total (cfs)	758.00	Flow (cfs)	0.15	757.77	0.08
Top Width (ft)	82.66	Top Width (ft)	3.03	78.04	1.60
Vel Total (ft/s)	6.81	Avg. Vel. (ft/s)	0.66	6.83	0.66
Max Chl Dpth (ft)	2.15	Hydr. Depth (ft)	0.07	1.42	0.07
Conv. Total (cfs)	4734.2	Conv. (cfs)	0.9	4732.8	0.5
Length Wtd. (ft)	161.27	Wetted Per. (ft)	3.03	78.21	1.60
Min Ch El (ft)	2778.00	Shear (lb/sq ft)	0.12	2.27	0.12
Alpha	1.01	Stream Power (lb/ft s)	0.08	15.51	0.08
Frctn Loss (ft)	4.00	Cum Volume (acre-ft)	11.82	99.87	17.61
C & E Loss (ft)	0.06	Cum SA (acres)	11.02	44.37	19.06

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.

CROSS SECTION OUTPUT Profile #Method 1

E.G. Elev (ft)	2780.87	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.73	Wt. n-Val.		0.044	
W.S. Elev (ft)	2780.15	Reach Len. (ft)	162.68	161.27	158.95
Crit W.S. (ft)	2780.15	Flow Area (sq ft)		110.73	
E.G. Slope (ft/ft)	0.025971	Area (sq ft)		110.73	

Q Total (cfs)	758.00	Flow (cfs)		758.00	
Top Width (ft)	78.04	Top Width (ft)		78.04	
Vel Total (ft/s)	6.85	Avg. Vel. (ft/s)		6.85	
Max Chl Dpth (ft)	2.15	Hydr. Depth (ft)		1.42	
Conv. Total (cfs)	4703.5	Conv. (cfs)		4703.5	
Length Wtd. (ft)	161.27	Wetted Per. (ft)		78.50	
Min Ch El (ft)	2778.00	Shear (lb/sq ft)		2.29	
Alpha	1.00	Stream Power (lb/ft s)		15.66	
Frctn Loss (ft)	4.09	Cum Volume (acre-ft)	1.41	102.93	3.64
C & E Loss (ft)	0.06	Cum SA (acres)	1.14	44.37	2.37

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.

CROSS SECTION

RIVER: Stagecoach Pass
REACH: StagecoachPass-1 RS: 5.61

INPUT
Description: A portion of cross section 5.61 is located within
Mirabel.

Topography and aerial indicate wash and surrounding
undeveloped desert.
T6NR5E Section 32
Q100 = 758 cfs
Station Elevation Data num= 12

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9868.06	2784	9881.98	2782	9901.04	2780	9921.1	2778	9951.6	2776
9979.14	2774.46	10000	2774.2	10012.81	2774.6	310060.54	2776	10090.76	2778
10113.89	2780	10127.8	2780						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9868.06	.064	9951.6	.044	10060.54	.064

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9951.6	10060.54	337.12	323.15	291.38	.1	.3

CROSS SECTION OUTPUT Profile #100-yr 6-yr

E.G. Elev (ft)	2776.72	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.53	Wt. n-Val.	0.064	0.044	0.064
W.S. Elev (ft)	2776.19	Reach Len. (ft)	337.12	323.15	291.38
Crit W.S. (ft)	2776.14	Flow Area (sq ft)	0.26	129.21	0.26
E.G. Slope (ft/ft)	0.024034	Area (sq ft)	0.26	129.21	0.26
Q Total (cfs)	758.00	Flow (cfs)	0.19	757.62	0.19
Top Width (ft)	114.56	Top Width (ft)	2.82	108.94	2.80
Vel Total (ft/s)	5.84	Avg. Vel. (ft/s)	0.74	5.86	0.74
Max Chl Dpth (ft)	1.99	Hydr. Depth (ft)	0.09	1.19	0.09
Conv. Total (cfs)	4889.4	Conv. (cfs)	1.2	4886.9	1.2
Length Wtd. (ft)	323.15	Wetted Per. (ft)	2.83	109.01	2.80
Min Ch El (ft)	2774.20	Shear (lb/sq ft)	0.14	1.78	0.14
Alpha	1.01	Stream Power (lb/ft s)	0.10	10.43	0.10
Frctn Loss (ft)	7.53	Cum Volume (acre-ft)	11.82	99.43	17.61
C & E Loss (ft)	0.04	Cum SA (acres)	11.01	44.02	19.05

Warning: The energy loss was 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 OUTPUT Profile #Method 1

E.G. Elev (ft)	2776.72	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.54	Wt. n-Val.		0.044	
W.S. Elev (ft)	2776.18	Reach Len. (ft)	337.12	323.15	291.38
Crit W.S. (ft)	2776.13	Flow Area (sq ft)		128.30	
E.G. Slope (ft/ft)	0.024735	Area (sq ft)		128.30	
Q Total (cfs)	758.00	Flow (cfs)		758.00	
Top Width (ft)	108.94	Top Width (ft)		108.94	
Vel Total (ft/s)	5.91	Avg. Vel. (ft/s)		5.91	
Max Chl Dpth (ft)	1.98	Hydr. Depth (ft)		1.18	
Conv. Total (cfs)	4819.6	Conv. (cfs)		4819.6	
Length Wtd. (ft)	323.15	Wetted Per. (ft)		109.37	
Min Ch El (ft)	2774.20	Shear (lb/sq ft)		1.81	
Alpha	1.00	Stream Power (lb/ft s)		10.70	
Frctn Loss (ft)	7.52	Cum Volume (acre-ft)	1.41	102.49	3.64
C & E Loss (ft)	0.05	Cum SA (acres)	1.14	44.02	2.37

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: Stagecoach Pass
REACH: StagecoachPass-1 RS: 5.55

INPUT
Description: Cross Section 5.55 is located within Mirabel.

Topography and
aerial indicate wash and surrounding undeveloped desert.
T6NR5E
Section 32
Q100 = 758 cfs
Station Elevation Data num= 16

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9898.1	2774	9953.04	2772	9963.38	2770	9968.81	2769	9971.53	2768.5
9974.24	2768	10000	2766.71	10042.33	2768	10052.3	2768	10101.13	2768
10123.8	2768.69	10140.12	2769.18	10191.81	2770	10210.72	2772	10227.95	2774
10238.03	2774								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9898.1	.064	9971.53	.044	10123.8	.064

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9971.53	10123.8	228.59	215.69	208.49	.1	.3

CROSS SECTION OUTPUT Profile #100-yr 6-yr

E.G. Elev (ft)	2769.15	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.39	Wt. n-Val.	0.064	0.044	0.064
W.S. Elev (ft)	2768.75	Reach Len. (ft)	228.59	215.69	208.49
Crit W.S. (ft)	2768.67	Flow Area (sq ft)	0.17	150.45	0.07
E.G. Slope (ft/ft)	0.022629	Area (sq ft)	0.17	150.45	0.07
Q Total (cfs)	758.00	Flow (cfs)	0.15	757.82	0.02
Top Width (ft)	155.75	Top Width (ft)	1.38	152.27	2.11
Vel Total (ft/s)	5.03	Avg. Vel. (ft/s)	0.87	5.04	0.35
Max Chl Dpth (ft)	2.05	Hydr. Depth (ft)	0.13	0.99	0.03
Conv. Total (cfs)	5038.9	Conv. (cfs)	1.0	5037.7	0.2
Length Wtd. (ft)	215.69	Wetted Per. (ft)	1.40	152.38	2.11
Min Ch El (ft)	2766.70	Shear (lb/sq ft)	0.18	1.39	0.04
Alpha	1.00	Stream Power (lb/ft s)	0.15	7.03	0.02
Frctn Loss (ft)	5.26	Cum Volume (acre-ft)	11.82	98.39	17.60

C & E Loss (ft)	0.02	Cum SA (acres)	10.99	43.05	19.03

Warning: The energy loss was 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 OUTPUT Profile #Method 1

			Left OB	Channel	Right OB
E.G. Elev (ft)	2769.15	Element			
Vel Head (ft)	0.39	Wt. n-Val.		0.044	
W.S. Elev (ft)	2768.76	Reach Len. (ft)	228.59	215.69	208.49
Crit W.S. (ft)	2768.68	Flow Area (sq ft)		152.05	
E.G. Slope (ft/ft)	0.021920	Area (sq ft)		152.05	
Q Total (cfs)	758.00	Flow (cfs)		758.00	
Top Width (ft)	152.27	Top Width (ft)		152.27	
Vel Total (ft/s)	4.99	Avg. Vel. (ft/s)		4.99	
Max Chl Dpth (ft)	2.06	Hydr. Depth (ft)		1.00	
Conv. Total (cfs)	5119.7	Conv. (cfs)		5119.7	
Length Wtd. (ft)	215.69	Wetted Per. (ft)		152.72	
Min Ch El (ft)	2766.70	Shear (lb/sq ft)		1.36	
Alpha	1.00	Stream Power (lb/ft s)		6.79	
Frctn Loss (ft)	5.26	Cum Volume (acre-ft)	1.41	101.45	3.64
C & E Loss (ft)	0.02	Cum SA (acres)	1.14	43.05	2.37

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: Stagecoach Pass
REACH: StagecoachPass-1 RS: 5.51

INPUT
Description: Cross Section 5.51 is located within Mirabel.

Topography and
aerial indicate wash and surrounding undeveloped desert.
T6NR5E
Section 32
Q100 = 758 cfs
Station Elevation Data num= 13

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9816.8	2770	9834.64	2768	9893.37	2766	9924.81	2764	9948.16	2763
9971.51	2762	10000	2761.51	10030.84	2762	10050.28	2763	10069.71	2764
10087.35	2766	10102.92	2768	10122.94	2770				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9816.8	.064	9948.16	.044	10050.28	.064

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9948.16	10050.28	249.39	264.64	289.79	.1	.3

CROSS SECTION OUTPUT Profile #100-yr 6-yr

			Left OB	Channel	Right OB
E.G. Elev (ft)	2763.86	Element			
Vel Head (ft)	0.59	Wt. n-Val.	0.064	0.044	0.064
W.S. Elev (ft)	2763.26	Reach Len. (ft)	249.39	264.64	289.79
Crit W.S. (ft)	2763.26	Flow Area (sq ft)	0.80	122.31	0.67
E.G. Slope (ft/ft)	0.026397	Area (sq ft)	0.80	122.31	0.67
Q Total (cfs)	758.00	Flow (cfs)	0.78	756.57	0.65
Top Width (ft)	113.33	Top Width (ft)	6.12	102.12	5.09
Vel Total (ft/s)	6.12	Avg. Vel. (ft/s)	0.97	6.19	0.97
Max Chl Dpth (ft)	1.76	Hydr. Depth (ft)	0.13	1.20	0.13
Conv. Total (cfs)	4665.5	Conv. (cfs)	4.8	4656.7	4.0
Length Wtd. (ft)	264.64	Wetted Per. (ft)	6.12	102.18	5.10
Min Ch El (ft)	2761.50	Shear (lb/sq ft)	0.22	1.97	0.22

Alpha	1.02	Stream Power (lb/ft s)	0.21	12.20	0.21
Frctn Loss (ft)	6.02	Cum Volume (acre-ft)	11.82	97.72	17.60
C & E Loss (ft)	0.04	Cum SA (acres)	10.98	42.42	19.01

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 energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
depth, the 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 OUTPUT Profile #Method 1

E.G. Elev (ft)	2763.86	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.60	Wt. n-Val.		0.044	
W.S. Elev (ft)	2763.25	Reach Len. (ft)	249.39	264.64	289.79
Crit W.S. (ft)	2763.25	Flow Area (sq ft)		121.46	
E.G. Slope (ft/ft)	0.027297	Area (sq ft)		121.46	
Q Total (cfs)	758.00	Flow (cfs)		758.00	
Top Width (ft)	102.12	Top Width (ft)		102.12	
Vel Total (ft/s)	6.24	Avg. Vel. (ft/s)		6.24	
Max Chl Dpth (ft)	1.75	Hydr. Depth (ft)		1.19	
Conv. Total (cfs)	4587.8	Conv. (cfs)		4587.8	
Length Wtd. (ft)	264.64	Wetted Per. (ft)		102.68	
Min Ch El (ft)	2761.50	Shear (lb/sq ft)		2.02	
Alpha	1.00	Stream Power (lb/ft s)		12.58	
Frctn Loss (ft)	6.13	Cum Volume (acre-ft)	1.41	100.77	3.64
C & E Loss (ft)	0.04	Cum SA (acres)	1.14	42.43	2.37

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.

CROSS SECTION

RIVER: Stagecoach Pass
REACH: StagecoachPass-1 RS: 5.46

INPUT
Description: Cross Section 5.46 is located within Mirabel.

Topography and
aerial indicate wash and surrounding undeveloped desert.
T6NR5E
Section 32
Q100 = 758 cfs
Station Elevation Data num= 17

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9806.15	2768	9828.42	2766	9851.38	2764	9871.36	2762	9895.84	2760
9925.16	2758	9944.29	2757	9963.42	2756	10000	2755.2	10020.34	2756
10028.07	2756	10054.19	2756	10058.25	2757	10062.3	2758	10070.75	2760
10080.09	2762	10090.36	2764						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val

9806.15 .064 9944.29 .04410058.25 .064

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9944.29	10058.25	167.77	172.64	180.13	.1	.3

CROSS SECTION OUTPUT Profile #100-yr 6-yr

			Left OB	Channel	Right OB
E.G. Elev (ft)	2757.58	Element			
Vel Head (ft)	0.46	Wt. n-Val.	0.064	0.044	0.064
W.S. Elev (ft)	2757.13	Reach Len. (ft)	167.77	172.64	180.13
Crit W.S. (ft)	2757.01	Flow Area (sq ft)	0.15	139.44	0.03
E.G. Slope (ft/ft)	0.019836	Area (sq ft)	0.15	139.44	0.03
Q Total (cfs)	758.00	Flow (cfs)	0.08	757.91	0.02
Top Width (ft)	116.87	Top Width (ft)	2.40	113.96	0.51
Vel Total (ft/s)	5.43	Avg. Vel. (ft/s)	0.52	5.44	0.51
Max Chl Dpth (ft)	1.93	Hydr. Depth (ft)	0.06	1.22	0.06
Conv. Total (cfs)	5382.0	Conv. (cfs)	0.6	5381.4	0.1
Length Wtd. (ft)	172.64	Wetted Per. (ft)	2.40	114.13	0.52
Min Ch El (ft)	2755.20	Shear (lb/sq ft)	0.08	1.51	0.08
Alpha	1.00	Stream Power (lb/ft s)	0.04	8.22	0.04
Frctn Loss (ft)	3.93	Cum Volume (acre-ft)	11.81	96.92	17.60
C & E Loss (ft)	0.02	Cum SA (acres)	10.95	41.77	19.00

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.

CROSS SECTION OUTPUT Profile #Method 1

			Left OB	Channel	Right OB
E.G. Elev (ft)	2757.58	Element			
Vel Head (ft)	0.46	Wt. n-Val.		0.044	
W.S. Elev (ft)	2757.13	Reach Len. (ft)	167.77	172.64	180.13
Crit W.S. (ft)	2757.01	Flow Area (sq ft)		139.38	
E.G. Slope (ft/ft)	0.019925	Area (sq ft)		139.38	
Q Total (cfs)	758.00	Flow (cfs)		758.00	
Top Width (ft)	113.96	Top Width (ft)		113.96	
Vel Total (ft/s)	5.44	Avg. Vel. (ft/s)		5.44	
Max Chl Dpth (ft)	1.93	Hydr. Depth (ft)		1.22	
Conv. Total (cfs)	5369.9	Conv. (cfs)		5369.9	
Length Wtd. (ft)	172.64	Wetted Per. (ft)		114.38	
Min Ch El (ft)	2755.20	Shear (lb/sq ft)		1.52	
Alpha	1.00	Stream Power (lb/ft s)		8.24	
Frctn Loss (ft)	3.93	Cum Volume (acre-ft)	1.41	99.98	3.64
C & E Loss (ft)	0.02	Cum SA (acres)	1.14	41.77	2.37

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: Stagecoach Pass
REACH: StagecoachPass-1 RS: 5.43

INPUT
Description: Cross Section 5.43 is located within Mirabel.

Topography and
aerial indicate wash and surrounding undeveloped desert.
T6NR5E
Section 32
Q100 = 758 cfs
Station Elevation Data num= 14

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9812.66	2762	9832.09	2760	9850.29	2758	9870.51	2756	9918.18	2754
9938.8	2753	9959.33	2752	10000	2750.61	10021.45	2752	10026.2	2753.01
10030.87	2754	10038.44	2756	10045.74	2758	10053.11	2760		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9812.66	.064	9938.8	.044	10026.2	.064

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9938.8	10026.2	347.43	330.83	326.15	.1	.3

CROSS SECTION OUTPUT Profile #100-yr 6-yr

E.G. Elev (ft)	2753.64	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.68	Wt. n-Val.		0.044	
W.S. Elev (ft)	2752.96	Reach Len. (ft)	347.43	330.83	326.15
Crit W.S. (ft)	2752.96	Flow Area (sq ft)		114.59	
E.G. Slope (ft/ft)	0.026366	Area (sq ft)		114.59	
Q Total (cfs)	758.00	Flow (cfs)		758.00	
Top Width (ft)	86.30	Top Width (ft)		86.30	
Vel Total (ft/s)	6.61	Avg. Vel. (ft/s)		6.61	
Max Chl Dpth (ft)	2.36	Hydr. Depth (ft)		1.33	
Conv. Total (cfs)	4668.2	Conv. (cfs)		4668.2	
Length Wtd. (ft)	329.64	Wetted Per. (ft)		86.49	
Min Ch El (ft)	2750.60	Shear (lb/sq ft)		2.18	
Alpha	1.00	Stream Power (lb/ft s)		14.43	
Frctn Loss (ft)	7.56	Cum Volume (acre-ft)	11.81	96.42	17.60
C & E Loss (ft)	0.12	Cum SA (acres)	10.95	41.37	18.99

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.

CROSS SECTION OUTPUT Profile #Method 1

E.G. Elev (ft)	2753.64	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.68	Wt. n-Val.		0.044	
W.S. Elev (ft)	2752.96	Reach Len. (ft)	347.43	330.83	326.15
Crit W.S. (ft)	2752.96	Flow Area (sq ft)		114.78	
E.G. Slope (ft/ft)	0.026243	Area (sq ft)		114.78	
Q Total (cfs)	758.00	Flow (cfs)		758.00	
Top Width (ft)	86.36	Top Width (ft)		86.36	
Vel Total (ft/s)	6.60	Avg. Vel. (ft/s)		6.60	
Max Chl Dpth (ft)	2.36	Hydr. Depth (ft)		1.33	
Conv. Total (cfs)	4679.1	Conv. (cfs)		4679.1	
Length Wtd. (ft)	330.83	Wetted Per. (ft)		86.55	
Min Ch El (ft)	2750.60	Shear (lb/sq ft)		2.17	
Alpha	1.00	Stream Power (lb/ft s)		14.35	
Frctn Loss (ft)	7.99	Cum Volume (acre-ft)	1.41	99.47	3.64
C & E Loss (ft)	0.00	Cum SA (acres)	1.14	41.37	2.37

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.

CROSS SECTION

RIVER: Stagecoach Pass
REACH: StagecoachPass-1 RS: 5.37

INPUT
Description: Cross Section 5.37 is located within Mirabel. This section is located upstream of concentration point CSCP09 in the HEC-1 model.

Topography and aerial indicate wash and surrounding undeveloped desert.
T6NR5E Section 32
Q100 = 758 cfs
Station Elevation Data num= 18

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9884.09	2752	9927.63	2750	9965.03	2748	9978.22	2746	9988.38	2744
10000	2742.4	10012.8	2742.6	110059.89	2744	10084.76	2744	10113.71	2742
10127.07	2742	10162.51	2744	10178.5	2746	10194.14	2748	10209.62	2750
10225.74	2752	10239.28	2754	10252.74	2756				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9884.09	.064	9988.38	.044	10059.89	.064

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9988.38	10059.89	488.63	493.75	498.6	.1	.3

CROSS SECTION OUTPUT Profile #100-yr 6-yr

			Left OB	Channel	Right OB
E.G. Elev (ft)	2744.48	Element			
Vel Head (ft)	0.28	Wt. n-Val.	0.064	0.044	0.064
W.S. Elev (ft)	2744.20	Reach Len. (ft)	488.63	493.75	498.60
Crit W.S. (ft)	2743.91	Flow Area (sq ft)	0.10	75.32	111.59
E.G. Slope (ft/ft)	0.020153	Area (sq ft)	0.10	75.32	111.59
Q Total (cfs)	758.00	Flow (cfs)	0.07	373.32	384.61
Top Width (ft)	176.72	Top Width (ft)	1.01	71.51	104.20
Vel Total (ft/s)	4.05	Avg. Vel. (ft/s)	0.70	4.96	3.45
Max Chl Dpth (ft)	2.20	Hydr. Depth (ft)	0.10	1.05	1.07
Conv. Total (cfs)	5339.5	Conv. (cfs)	0.5	2629.7	2709.3
Length Wtd. (ft)	494.91	Wetted Per. (ft)	1.03	71.64	104.34
Min Ch El (ft)	2742.40	Shear (lb/sq ft)	0.12	1.32	1.35
Alpha	1.10	Stream Power (lb/ft s)	0.09	6.56	4.64
Frctn Loss (ft)	11.80	Cum Volume (acre-ft)	11.81	95.70	17.18
C & E Loss (ft)	0.02	Cum SA (acres)	10.94	40.77	18.60

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 OUTPUT Profile #Method 1

			Left OB	Channel	Right OB
E.G. Elev (ft)	2745.42	Element			
Vel Head (ft)	0.70	Wt. n-Val.		0.044	
W.S. Elev (ft)	2744.72	Reach Len. (ft)	488.63	493.75	498.60
Crit W.S. (ft)	2744.65	Flow Area (sq ft)		112.61	
E.G. Slope (ft/ft)	0.022324	Area (sq ft)		112.61	
Q Total (cfs)	758.00	Flow (cfs)		758.00	
Top Width (ft)	71.51	Top Width (ft)		71.51	
Vel Total (ft/s)	6.73	Avg. Vel. (ft/s)		6.73	
Max Chl Dpth (ft)	2.32	Hydr. Depth (ft)		1.57	
Conv. Total (cfs)	5073.2	Conv. (cfs)		5073.2	
Length Wtd. (ft)	493.75	Wetted Per. (ft)		73.08	
Min Ch El (ft)	2742.40	Shear (lb/sq ft)		2.15	
Alpha	1.00	Stream Power (lb/ft s)		14.46	
Frctn Loss (ft)	12.72	Cum Volume (acre-ft)	1.41	98.61	3.64
C & E Loss (ft)	0.06	Cum SA (acres)	1.14	40.77	2.37

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: Stagecoach Pass
REACH: StagecoachPass-1 RS: 5.27

INPUT
Description: Topography and aerial indicate wash and surrounding undeveloped desert.
T6NR5E Section 32
Q100 = 844 cfs
Station Elevation Data num= 15

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9825.37	2742	9836.86	2740	9848.03	2738	9860.24	2736	9877.25	2734
9950.19	2732	9982.57	2730.56	10000	2730.1	10026.9	2731.05	10101.45	2732
10119.97	2734	10138.4	2736	10158.02	2738	10188.64	2740	10206.71	2742

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9825.37	.064	9950.19	.044	10101.45	.064

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9950.19	10101.45	450.97	481.66	511.67	.1	.3

CROSS SECTION OUTPUT Profile #100-yr 6-yr

			Left OB	Channel	Right OB
E.G. Elev (ft)	2732.65	Element			
Vel Head (ft)	0.49	Wt. n-Val.	0.064	0.044	0.064
W.S. Elev (ft)	2732.16	Reach Len. (ft)	450.97	481.66	511.67
Crit W.S. (ft)	2732.16	Flow Area (sq ft)	0.45	149.94	0.11
E.G. Slope (ft/ft)	0.028096	Area (sq ft)	0.45	149.94	0.11
Q Total (cfs)	844.00	Flow (cfs)	0.32	843.60	0.08
Top Width (ft)	158.45	Top Width (ft)	5.73	151.26	1.46
Vel Total (ft/s)	5.61	Avg. Vel. (ft/s)	0.71	5.63	0.71
Max Chl Dpth (ft)	2.06	Hydr. Depth (ft)	0.08	0.99	0.08
Conv. Total (cfs)	5035.2	Conv. (cfs)	1.9	5032.8	0.5
Length Wtd. (ft)	481.63	Wetted Per. (ft)	5.74	151.32	1.46
Min Ch El (ft)	2730.10	Shear (lb/sq ft)	0.14	1.74	0.14
Alpha	1.01	Stream Power (lb/ft s)	0.10	9.78	0.10
Frctn Loss (ft)	11.18	Cum Volume (acre-ft)	11.81	94.42	16.54
C & E Loss (ft)	0.05	Cum SA (acres)	10.90	39.51	18.00

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.

CROSS SECTION OUTPUT Profile #Method 1

			Left OB	Channel	Right OB
E.G. Elev (ft)	2732.65	Element			
Vel Head (ft)	0.51	Wt. n-Val.		0.044	
W.S. Elev (ft)	2732.14	Reach Len. (ft)	450.97	481.66	511.67
Crit W.S. (ft)	2732.14	Flow Area (sq ft)		147.80	
E.G. Slope (ft/ft)	0.029579	Area (sq ft)		147.80	
Q Total (cfs)	844.00	Flow (cfs)		844.00	
Top Width (ft)	151.26	Top Width (ft)		151.26	
Vel Total (ft/s)	5.71	Avg. Vel. (ft/s)		5.71	
Max Chl Dpth (ft)	2.04	Hydr. Depth (ft)		0.98	
Conv. Total (cfs)	4907.4	Conv. (cfs)		4907.4	
Length Wtd. (ft)	481.66	Wetted Per. (ft)		151.61	
Min Ch El (ft)	2730.10	Shear (lb/sq ft)		1.80	

Alpha	1.00	Stream Power (lb/ft s)		10.28	
Frctn Loss (ft)	11.34	Cum Volume (acre-ft)	1.41	97.13	3.64
C & E Loss (ft)	0.06	Cum SA (acres)	1.14	39.51	2.37

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: Stagecoach Pass
REACH: StagecoachPass-1 RS: 5.18

INPUT
Description: Topography and aerial indicate wash and surrounding undeveloped desert.
T6NR5E Section 32
Q100 = 844 cfs
Station Elevation Data num= 18

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9774.69	2728	9803.26	2726	9819.05	2724	9831.46	2722	9847.48	2721
9855.5	2720.5	9863.49	2720	9914.17	2720	9997.98	2720	10057.76	2720
10059.4	2720.5	110061.01	2721	10064.25	2722	10071.01	2724	10087.55	2724
10098.22	2722	10109.09	2720	10113.17	2720				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9774.69	.064	9855.5	.044	10059.4	.064

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9855.5	10059.4	292.43	326.88	332.47	.1	.3

Right Levee Station=10071.01 Elevation= 2724

CROSS SECTION OUTPUT Profile #100-yr 6-yr

E.G. Elev (ft)	2721.25	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.31	Wt. n-Val.	0.064	0.044	0.064
W.S. Elev (ft)	2720.94	Reach Len. (ft)	292.43	326.88	332.47
Crit W.S. (ft)	2720.83	Flow Area (sq ft)	1.52	188.34	0.30
E.G. Slope (ft/ft)	0.019487	Area (sq ft)	1.52	188.34	0.30
Q Total (cfs)	844.00	Flow (cfs)	1.78	841.88	0.33
Top Width (ft)	212.28	Top Width (ft)	6.99	203.90	1.40
Vel Total (ft/s)	4.44	Avg. Vel. (ft/s)	1.17	4.47	1.12
Max Chl Dpth (ft)	0.94	Hydr. Depth (ft)	0.22	0.92	0.21
Conv. Total (cfs)	6046.0	Conv. (cfs)	12.8	6030.9	2.4
Length Wtd. (ft)	326.84	Wetted Per. (ft)	7.00	203.99	1.46
Min Ch El (ft)	2720.00	Shear (lb/sq ft)	0.26	1.12	0.25
Alpha	1.01	Stream Power (lb/ft s)	0.31	5.02	0.28
Frctn Loss (ft)	7.26	Cum Volume (acre-ft)	11.80	92.55	16.54
C & E Loss (ft)	0.04	Cum SA (acres)	10.84	37.54	17.98

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water
surface was used.

CROSS SECTION OUTPUT Profile #Method 1

E.G. Elev (ft)	2721.25	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.31	Wt. n-Val.		0.044	
W.S. Elev (ft)	2720.94	Reach Len. (ft)	292.43	326.88	332.47
Crit W.S. (ft)	2720.83	Flow Area (sq ft)		189.84	
E.G. Slope (ft/ft)	0.019186	Area (sq ft)		189.84	
Q Total (cfs)	844.00	Flow (cfs)		844.00	
Top Width (ft)	203.90	Top Width (ft)		203.90	
Vel Total (ft/s)	4.45	Avg. Vel. (ft/s)		4.45	

Max Chl Dpth (ft)	0.94	Hydr. Depth (ft)		0.93	
Conv. Total (cfs)	6093.3	Conv. (cfs)		6093.3	
Length Wtd. (ft)	326.88	Wetted Per. (ft)		204.87	
Min Ch El (ft)	2720.00	Shear (lb/sq ft)		1.11	
Alpha	1.00	Stream Power (lb/ft s)		4.93	
Frctn Loss (ft)	7.26	Cum Volume (acre-ft)	1.41	95.27	3.64
C & E Loss (ft)	0.04	Cum SA (acres)	1.14	37.55	2.37

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.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water
surface was used.

CROSS SECTION

RIVER: Stagecoach Pass
REACH: StagecoachPass-1 RS: 5.12

INPUT
Description: Topography and aerial indicate wash and surrounding undeveloped
desert.
T6NR5E Section 32
Q100 = 844 cfs
Station Elevation Data num= 21

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9757.75	2734	9773.52	2732	9784.58	2730	9794.83	2728	9807.7	2726
9828.27	2724	9860.19	2722	9871.83	2720	9885.15	2718	9899.91	2716
9914.3	2714	9925.4	2713	9936.57	2712	10000	2711.5	10012.12	2712
10016.5	2712.99	10020.97	2714	10030.45	2716	10039.64	2718	10050.76	2720
10069.52	2722								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9757.75	.064	9925.4	.044	10016.5	.064

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9925.4	10016.5	263.58	234.69	196.36	.1	.3

CROSS SECTION OUTPUT Profile #100-yr 6-yr

			Left OB	Channel	Right OB
E.G. Elev (ft)	2713.96	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.69	Wt. n-Val.	0.064	0.044	0.064
W.S. Elev (ft)	2713.26	Reach Len. (ft)	263.58	234.69	196.36
Crit W.S. (ft)	2713.26	Flow Area (sq ft)	0.38	126.05	0.16
E.G. Slope (ft/ft)	0.025525	Area (sq ft)	0.38	126.05	0.16
Q Total (cfs)	844.00	Flow (cfs)	0.36	843.48	0.16
Top Width (ft)	95.20	Top Width (ft)	2.90	91.10	1.20
Vel Total (ft/s)	6.67	Avg. Vel. (ft/s)	0.95	6.69	0.96
Max Chl Dpth (ft)	1.76	Hydr. Depth (ft)	0.13	1.38	0.14
Conv. Total (cfs)	5282.8	Conv. (cfs)	2.3	5279.5	1.0
Length Wtd. (ft)	234.67	Wetted Per. (ft)	2.91	91.27	1.23
Min Ch El (ft)	2711.50	Shear (lb/sq ft)	0.21	2.20	0.21
Alpha	1.01	Stream Power (lb/ft s)	0.20	14.73	0.20
Frctn Loss (ft)	6.10	Cum Volume (acre-ft)	11.79	91.37	16.54
C & E Loss (ft)	0.02	Cum SA (acres)	10.81	36.44	17.97

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

CROSS SECTION OUTPUT Profile #Method 1

E.G. Elev (ft)	2713.96	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.70	Wt. n-Val.		0.044	
W.S. Elev (ft)	2713.26	Reach Len. (ft)	263.58	234.69	196.36
Crit W.S. (ft)	2713.26	Flow Area (sq ft)		125.65	
E.G. Slope (ft/ft)	0.026026	Area (sq ft)		125.65	
Q Total (cfs)	844.00	Flow (cfs)		844.00	
Top Width (ft)	91.10	Top Width (ft)		91.10	
Vel Total (ft/s)	6.72	Avg. Vel. (ft/s)		6.72	
Max Chl Dpth (ft)	1.76	Hydr. Depth (ft)		1.38	
Conv. Total (cfs)	5231.6	Conv. (cfs)		5231.6	
Length Wtd. (ft)	234.69	Wetted Per. (ft)		91.79	
Min Ch El (ft)	2711.50	Shear (lb/sq ft)		2.22	
Alpha	1.00	Stream Power (lb/ft s)		14.94	
Frctn Loss (ft)	5.95	Cum Volume (acre-ft)	1.41	94.08	3.64
C & E Loss (ft)	0.03	Cum SA (acres)	1.14	36.44	2.37

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.

CROSS SECTION

RIVER: Stagecoach Pass
REACH: StagecoachPass-1 RS: 5.08

INPUT
Description: Topography and aerial indicate wash and surrounding undeveloped desert.
T6NR5E Section 32
Q100 = 844 cfs
Station Elevation Data num= 19

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9900.02	2720	9906.49	2720	9912.07	2718	9917.3	2716	9922.35	2714
9927.56	2712	9933.72	2710	9940.05	2708	9945.99	2706	9982.28	2704.47
10000	2704.21	10053.25	2706	10121.81	2708	10144.81	2710	10158.42	2712
10170.13	2714	10188.54	2716	10199.88	2718	10210.23	2720		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9900.02	.064	9945.99	.044	10053.25	.064

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9945.99	10053.25	293.34	291.18	333	.1	.3

CROSS SECTION OUTPUT Profile #100-yr 6-yr

E.G. Elev (ft)	2706.88	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.62	Wt. n-Val.	0.064	0.044	0.064
W.S. Elev (ft)	2706.26	Reach Len. (ft)	293.34	291.18	333.00
Crit W.S. (ft)	2706.26	Flow Area (sq ft)	0.10	132.98	1.15
E.G. Slope (ft/ft)	0.026467	Area (sq ft)	0.10	132.98	1.15
Q Total (cfs)	844.00	Flow (cfs)	0.09	842.80	1.11
Top Width (ft)	116.91	Top Width (ft)	0.77	107.26	8.88
Vel Total (ft/s)	6.29	Avg. Vel. (ft/s)	0.93	6.34	0.97
Max Chl Dpth (ft)	2.06	Hydr. Depth (ft)	0.13	1.24	0.13
Conv. Total (cfs)	5187.9	Conv. (cfs)	0.6	5180.5	6.8
Length Wtd. (ft)	291.23	Wetted Per. (ft)	0.81	107.32	8.88
Min Ch El (ft)	2704.20	Shear (lb/sq ft)	0.20	2.05	0.21
Alpha	1.01	Stream Power (lb/ft s)	0.19	12.98	0.21

Frctn Loss (ft)	6.69	Cum Volume (acre-ft)	11.79	90.67	16.54
C & E Loss (ft)	0.03	Cum SA (acres)	10.79	35.90	17.95

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 energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
depth, the 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 OUTPUT Profile #Method 1

E.G. Elev (ft)	2706.89	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.60	Wt. n-Val.		0.044	
W.S. Elev (ft)	2706.29	Reach Len. (ft)	293.34	291.18	333.00
Crit W.S. (ft)	2706.25	Flow Area (sq ft)		136.22	
E.G. Slope (ft/ft)	0.024668	Area (sq ft)		136.22	
Q Total (cfs)	844.00	Flow (cfs)		844.00	
Top Width (ft)	107.26	Top Width (ft)		107.26	
Vel Total (ft/s)	6.20	Avg. Vel. (ft/s)		6.20	
Max Chl Dpth (ft)	2.09	Hydr. Depth (ft)		1.27	
Conv. Total (cfs)	5373.7	Conv. (cfs)		5373.7	
Length Wtd. (ft)	291.19	Wetted Per. (ft)		107.90	
Min Ch El (ft)	2704.20	Shear (lb/sq ft)		1.94	
Alpha	1.00	Stream Power (lb/ft s)		12.05	
Frctn Loss (ft)	7.17	Cum Volume (acre-ft)	1.41	93.38	3.64
C & E Loss (ft)	0.00	Cum SA (acres)	1.14	35.91	2.37

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: Stagecoach Pass
REACH: StagecoachPass-1 RS: 5.02

INPUT
Description: Topography and aerial indicate wash and surrounding undeveloped
desert.
T6NR5E Section 32
Q100 = 844 cfs
Station Elevation Data num= 26

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9845.33	2712	9852.89	2710	9861.02	2708	9870.65	2706	9880.73	2704
9891.04	2702	9915.52	2700	9943.62	2699	9943.82	698.994	9948.82	698.816
9951.56	2698.718	9971.72	2698	9991.46	2697.56	10000	2697.51	0056.65	2698
10059.52	698.73	110060.55	2699	10064.45	2700	10071.27	2702	10077.86	2704
10084.18	2706	10090.42	2708	10096.94	2710	10104.4	2712	10112.36	2714
10120.38	2716								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9845.33	.064	9951.56	.044	10059.5	.064

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9951.56	10059.5	434.77	434.52	440.27	.1	.3

CROSS SECTION OUTPUT Profile #100-yr 6-yr

E.G. Elev (ft)	2699.73	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.52	Wt. n-Val.	0.064	0.044	0.064
W.S. Elev (ft)	2699.21	Reach Len. (ft)	434.77	434.52	440.27
Crit W.S. (ft)	2699.11	Flow Area (sq ft)	3.34	144.34	0.44

E.G. Slope (ft/ft)	0.020144	Area (sq ft)	3.34	144.34	0.44
Q Total (cfs)	844.00	Flow (cfs)	4.29	839.16	0.54
Top Width (ft)	123.50	Top Width (ft)	13.71	107.94	1.85
Vel Total (ft/s)	5.70	Avg. Vel. (ft/s)	1.29	5.81	1.24
Max Chl Dpth (ft)	1.71	Hydr. Depth (ft)	0.24	1.34	0.24
Conv. Total (cfs)	5946.6	Conv. (cfs)	30.3	5912.5	3.8
Length Wtd. (ft)	434.53	Wetted Per. (ft)	13.72	108.05	1.91
Min Ch El (ft)	2697.50	Shear (lb/sq ft)	0.31	1.68	0.29
Alpha	1.04	Stream Power (lb/ft s)	0.39	9.77	0.36
Frctn Loss (ft)	9.66	Cum Volume (acre-ft)	11.78	89.75	16.53
C & E Loss (ft)	0.01	Cum SA (acres)	10.75	35.18	17.91

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 OUTPUT Profile #Method 1

E.G. Elev (ft)	2699.72	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.59	Wt. n-Val.	0.064	0.044	0.064
W.S. Elev (ft)	2699.13	Reach Len. (ft)	434.77	434.52	440.27
Crit W.S. (ft)	2699.13	Flow Area (sq ft)	2.37	136.15	0.31
E.G. Slope (ft/ft)	0.024555	Area (sq ft)	2.37	136.15	0.31
Q Total (cfs)	844.00	Flow (cfs)	3.12	840.49	0.39
Top Width (ft)	120.28	Top Width (ft)	10.87	107.94	1.47
Vel Total (ft/s)	6.08	Avg. Vel. (ft/s)	1.32	6.17	1.25
Max Chl Dpth (ft)	1.63	Hydr. Depth (ft)	0.22	1.26	0.21
Conv. Total (cfs)	5386.1	Conv. (cfs)	19.9	5363.7	2.5
Length Wtd. (ft)	434.52	Wetted Per. (ft)	10.90	108.05	1.54
Min Ch El (ft)	2697.50	Shear (lb/sq ft)	0.33	1.93	0.31
Alpha	1.03	Stream Power (lb/ft s)	0.44	11.92	0.38
Frctn Loss (ft)	9.16	Cum Volume (acre-ft)	1.40	92.47	3.64
C & E Loss (ft)	0.02	Cum SA (acres)	1.11	35.19	2.36

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.
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: Stagecoach Pass
REACH: StagecoachPass-1 RS: 4.94

INPUT
Description: Topography and aerial indicate wash and surrounding undeveloped
desert.
T6NR5E Section 32
Q100 = 844 cfs
Station Elevation Data num= 13

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9841.08	2696	9860.03	2694	9886.41	2692	9914.03	2690	9945.13	2689
9976.22	2688	10000	2687.25	10019.73	2688	10045.35	2689	10070.96	2690
10082.5	2692	10093.18	2694	10105.96	2696				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9841.08	.064	9945.13	.044	10045.35	.064

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9945.1	10045.35	502.07	510.22	489.46	.1	.3

CROSS SECTION OUTPUT Profile #100-yr 6-yr

E.G. Elev (ft)	2690.06	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.62	Wt. n-Val.	0.064	0.044	0.064
W.S. Elev (ft)	2689.43	Reach Len. (ft)	502.07	510.22	489.46
Crit W.S. (ft)	2689.43	Flow Area (sq ft)	2.92	131.61	2.40
E.G. Slope (ft/ft)	0.024680	Area (sq ft)	2.92	131.61	2.40
Q Total (cfs)	844.00	Flow (cfs)	3.84	837.00	3.16
Top Width (ft)	124.79	Top Width (ft)	13.48	100.22	11.10
Vel Total (ft/s)	6.16	Avg. Vel. (ft/s)	1.32	6.36	1.32
Max Chl Dpth (ft)	2.18	Hydr. Depth (ft)	0.22	1.31	0.22
Conv. Total (cfs)	5372.5	Conv. (cfs)	24.4	5327.9	20.1
Length Wtd. (ft)	509.41	Wetted Per. (ft)	13.48	100.28	11.11
Min Ch El (ft)	2687.25	Shear (lb/sq ft)	0.33	2.02	0.33
Alpha	1.06	Stream Power (lb/ft s)	0.44	12.86	0.44
Frctn Loss (ft)	10.98	Cum Volume (acre-ft)	11.75	88.37	16.52
C & E Loss (ft)	0.01	Cum SA (acres)	10.61	34.15	17.84

Warning: The energy loss was 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 OUTPUT Profile #Method 1

E.G. Elev (ft)	2690.09	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.52	Wt. n-Val.		0.044	
W.S. Elev (ft)	2689.57	Reach Len. (ft)	502.07	510.22	489.46
Crit W.S. (ft)	2689.41	Flow Area (sq ft)		145.36	
E.G. Slope (ft/ft)	0.018292	Area (sq ft)		145.36	
Q Total (cfs)	844.00	Flow (cfs)		844.00	
Top Width (ft)	100.22	Top Width (ft)		100.22	
Vel Total (ft/s)	5.81	Avg. Vel. (ft/s)		5.81	
Max Chl Dpth (ft)	2.32	Hydr. Depth (ft)		1.45	
Conv. Total (cfs)	6240.3	Conv. (cfs)		6240.3	
Length Wtd. (ft)	510.22	Wetted Per. (ft)		101.42	
Min Ch El (ft)	2687.25	Shear (lb/sq ft)		1.64	
Alpha	1.00	Stream Power (lb/ft s)		9.50	
Frctn Loss (ft)	10.84	Cum Volume (acre-ft)	1.39	91.06	3.64
C & E Loss (ft)	0.03	Cum SA (acres)	1.05	34.15	2.36

Warning: The energy loss was 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: Stagecoach Pass
REACH: StagecoachPass-1 RS: 4.84

INPUT
Description: Topography and aerial indicate wash and surrounding undeveloped desert.
T6NR5E Section 32
Q100 = 844 cfs
Station Elevation Data num= 17

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9953.34	2686	9963.37	2686	9969.52	2684	9975.07	2682	9980.53	2680
9985.93	2678	9991.56	2676	10000	2675.6	10010.15	2676	10021.28	2676.93
10062.25	2678	10078.89	2678	10124.27	2678	10148.41	2680	10174.66	2682
10274.84	2684	10288.21	2686						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9953.34	.064	9985.93	.044	10062.25	.064

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9985.9	310062.25	155.72	156	155.62	.1	.3

CROSS SECTION OUTPUT Profile #100-yr 6-yr

E.G. Elev (ft)	2679.08	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.59	Wt. n-Val.	0.064	0.044	0.064
W.S. Elev (ft)	2678.49	Reach Len. (ft)	155.72	156.00	155.62
Crit W.S. (ft)	2678.49	Flow Area (sq ft)	0.32	122.87	31.79
E.G. Slope (ft/ft)	0.018974	Area (sq ft)	0.32	122.87	31.79
Q Total (cfs)	844.00	Flow (cfs)	0.39	782.34	61.27
Top Width (ft)	145.57	Top Width (ft)	1.32	76.32	67.92
Vel Total (ft/s)	5.45	Avg. Vel. (ft/s)	1.20	6.37	1.93
Max Chl Dpth (ft)	2.89	Hydr. Depth (ft)	0.24	1.61	0.47
Conv. Total (cfs)	6127.1	Conv. (cfs)	2.8	5679.5	444.8
Length Wtd. (ft)	155.98	Wetted Per. (ft)	1.41	76.74	67.95
Min Ch El (ft)	2675.60	Shear (lb/sq ft)	0.27	1.90	0.55
Alpha	1.28	Stream Power (lb/ft s)	0.33	12.08	1.07
Frctn Loss (ft)	1.84	Cum Volume (acre-ft)	11.73	86.88	16.32
C & E Loss (ft)	0.04	Cum SA (acres)	10.52	33.11	17.40

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 conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
depth, the 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 OUTPUT Profile #Method 1

E.G. Elev (ft)	2679.22	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.78	Wt. n-Val.		0.044	
W.S. Elev (ft)	2678.44	Reach Len. (ft)	155.72	156.00	155.62
Crit W.S. (ft)	2678.44	Flow Area (sq ft)		118.96	
E.G. Slope (ft/ft)	0.024974	Area (sq ft)		118.96	
Q Total (cfs)	844.00	Flow (cfs)		844.00	
Top Width (ft)	76.32	Top Width (ft)		76.32	
Vel Total (ft/s)	7.09	Avg. Vel. (ft/s)		7.09	
Max Chl Dpth (ft)	2.84	Hydr. Depth (ft)		1.56	
Conv. Total (cfs)	5340.7	Conv. (cfs)		5340.7	
Length Wtd. (ft)	156.00	Wetted Per. (ft)		77.61	
Min Ch El (ft)	2675.60	Shear (lb/sq ft)		2.39	
Alpha	1.00	Stream Power (lb/ft s)		16.95	
Frctn Loss (ft)	2.08	Cum Volume (acre-ft)	1.39	89.52	3.64
C & E Loss (ft)	0.09	Cum SA (acres)	1.05	33.11	2.36

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.

CROSS SECTION

RIVER: Stagecoach Pass
REACH: StagecoachPass-1 RS: 4.81

INPUT
Description: Cross Section 4.81 is located east of the City of Scottsdale and the Town of Carefree boundary. It is located upstream of concentration point CSCP08 in the HEC-1 model.

Topography and aerial indicate wash and surrounding undeveloped desert.
T6NR5E
Section 32
Q100 = 844 cfs
Station Elevation Data num= 15

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9893.11	2676	9918.98	2678	9929.04	2678	9973.46	2676	9980.08	2675
9986.7	2674	10000	2673.41	10033.72	2674	10040.2	2675.01	10046.61	2676
10065.97	2678	10087.95	2680	10111.72	2682	10193.17	2684	10223.94	2686

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9893.11	.064	9980.08	.044	10040.2	.064

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9980.08	10040.2	202.82	218.24	230.15	.1	.3

Left Levee Station= 9929.04 Elevation= 2678

CROSS SECTION OUTPUT Profile #100-yr 6-yr

E.G. Elev (ft)	2676.82	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.47	Wt. n-Val.	0.064	0.044	0.064
W.S. Elev (ft)	2676.36	Reach Len. (ft)	202.82	218.24	230.15
Crit W.S. (ft)	2675.73	Flow Area (sq ft)	7.11	149.33	6.09
E.G. Slope (ft/ft)	0.008002	Area (sq ft)	7.11	149.33	6.09
Q Total (cfs)	844.00	Flow (cfs)	9.12	825.77	9.11
Top Width (ft)	84.59	Top Width (ft)	14.59	60.12	9.88
Vel Total (ft/s)	5.19	Avg. Vel. (ft/s)	1.28	5.53	1.50
Max Chl Dpth (ft)	2.96	Hydr. Depth (ft)	0.49	2.48	0.62
Conv. Total (cfs)	9435.2	Conv. (cfs)	101.9	9231.4	101.9
Length Wtd. (ft)	218.25	Wetted Per. (ft)	14.67	60.29	9.98
Min Ch El (ft)	2673.40	Shear (lb/sq ft)	0.24	1.24	0.31
Alpha	1.11	Stream Power (lb/ft s)	0.31	6.84	0.46
Frctn Loss (ft)	2.72	Cum Volume (acre-ft)	11.72	86.39	16.26
C & E Loss (ft)	0.08	Cum SA (acres)	10.50	32.87	17.26

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.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.

CROSS SECTION OUTPUT Profile #Method 1

E.G. Elev (ft)	2676.89	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.47	Wt. n-Val.		0.044	
W.S. Elev (ft)	2676.41	Reach Len. (ft)	202.82	218.24	230.15
Crit W.S. (ft)	2675.70	Flow Area (sq ft)		152.67	
E.G. Slope (ft/ft)	0.008251	Area (sq ft)		152.67	
Q Total (cfs)	844.00	Flow (cfs)		844.00	
Top Width (ft)	60.12	Top Width (ft)		60.12	
Vel Total (ft/s)	5.53	Avg. Vel. (ft/s)		5.53	
Max Chl Dpth (ft)	3.01	Hydr. Depth (ft)		2.54	
Conv. Total (cfs)	9291.4	Conv. (cfs)		9291.4	
Length Wtd. (ft)	218.24	Wetted Per. (ft)		63.11	

Min Ch El (ft)	2673.40	Shear (lb/sq ft)		1.25	
Alpha	1.00	Stream Power (lb/ft s)		6.89	
Frctn Loss (ft)	2.78	Cum Volume (acre-ft)	1.39	89.03	3.64
C & E Loss (ft)	0.07	Cum SA (acres)	1.05	32.87	2.36

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 conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water
surface was used.

CROSS SECTION

RIVER: Stagecoach Pass
REACH: StagecoachPass-1 RS: 4.77

INPUT
Description: Cross Section 4.77 is located within Carefree. A home is sitting on the the cross section. The finish floor elevation is indicated by a blocked obstruction.

Topography indicates wash and surrounding undeveloped desert.
Aerial shows wash, homes, and undeveloped desert.
T6NR5E Section 32
Q100 = 836 cfs
Station Elevation Data num= 15

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9804.86	2680	9835.68	2678	9853.42	2676	9875.89	2674	9969.18	2672
9977.6	2670	9991.1	2670	10000	2669.67	10014.31	2670	10028.1	2672
10043.2	2674	10057.35	2676	10070.89	2678	10095.14	2680	10095.74	2680

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9804.86	.064	9991.1	.044	10028.1	.064

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9991.1	10028.1	279.24	277.64	280.33	.1	.3

Blocked Obstructions num= 1

Sta L	Sta R	Elev
9804.86	9991.21	2674.19

CROSS SECTION OUTPUT Profile #100-yr 6-yr

E.G. Elev (ft)	2674.03	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.22	Wt. n-Val.		0.044	0.064
W.S. Elev (ft)	2672.81	Reach Len. (ft)	279.24	277.64	280.33
Crit W.S. (ft)	2672.81	Flow Area (sq ft)		93.51	2.45
E.G. Slope (ft/ft)	0.022229	Area (sq ft)		93.51	2.45
Q Total (cfs)	836.00	Flow (cfs)		831.41	4.59
Top Width (ft)	42.97	Top Width (ft)		36.89	6.08
Vel Total (ft/s)	8.71	Avg. Vel. (ft/s)		8.89	1.88
Max Chl Dpth (ft)	3.14	Hydr. Depth (ft)		2.53	0.40
Conv. Total (cfs)	5607.3	Conv. (cfs)		5576.5	30.8
Length Wtd. (ft)	277.68	Wetted Per. (ft)		39.85	6.13
Min Ch El (ft)	2669.67	Shear (lb/sq ft)		3.26	0.55
Alpha	1.04	Stream Power (lb/ft s)		28.95	1.04
Frctn Loss (ft)	6.36	Cum Volume (acre-ft)	11.70	85.78	16.23
C & E Loss (ft)	0.17	Cum SA (acres)	10.46	32.62	17.22

Warning: The energy equation could not be 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 OUTPUT Profile #Method 1

E.G. Elev (ft)	2674.05	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.21	Wt. n-Val.		0.044	
W.S. Elev (ft)	2672.84	Reach Len. (ft)	279.24	277.64	280.33
Crit W.S. (ft)	2672.77	Flow Area (sq ft)		94.63	
E.G. Slope (ft/ft)	0.022230	Area (sq ft)		94.63	
Q Total (cfs)	836.00	Flow (cfs)		836.00	
Top Width (ft)	36.89	Top Width (ft)		36.89	
Vel Total (ft/s)	8.83	Avg. Vel. (ft/s)		8.83	
Max Chl Dpth (ft)	3.17	Hydr. Depth (ft)		2.57	
Conv. Total (cfs)	5607.0	Conv. (cfs)		5607.0	
Length Wtd. (ft)	277.64	Wetted Per. (ft)		40.72	
Min Ch El (ft)	2669.67	Shear (lb/sq ft)		3.23	
Alpha	1.00	Stream Power (lb/ft s)		28.49	
Frctn Loss (ft)	6.71	Cum Volume (acre-ft)	1.39	88.41	3.64
C & E Loss (ft)	0.15	Cum SA (acres)	1.05	32.63	2.36

Warning: The energy loss was 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: Stagecoach Pass
REACH: StagecoachPass-1 RS: 4.72

INPUT
Description: Cross Section 4.72 is located within Carefree.

Topography
indicates wash and surrounding undeveloped desert.
Aerial shows
wash, homes, and Romping Road.
T6NR5E Section 32
Q100 = 836 cfs
Station Elevation Data num= 13

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9944.19	2672	9962.97	2670	9978.6	2668	9983.24	2666	9991.53	2664.77
10000	2664.11	10037.65	2665.23	10070.27	2666	10073.23	2666	10089.88	2666
10098.06	2668	10192.65	2670	10238.29	2670				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9944.19	.064	9983.24	.044	10070.27	.064

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9983.24	10070.27	497.16	491.79	470.19	.1	.3

CROSS SECTION OUTPUT Profile #100-yr 6-yr

E.G. Elev (ft)	2667.15	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.65	Wt. n-Val.	0.064	0.044	0.064
W.S. Elev (ft)	2666.49	Reach Len. (ft)	497.16	491.79	470.19
Crit W.S. (ft)	2666.49	Flow Area (sq ft)	0.28	123.99	10.14
E.G. Slope (ft/ft)	0.023617	Area (sq ft)	0.28	123.99	10.14
Q Total (cfs)	836.00	Flow (cfs)	0.37	813.82	21.81
Top Width (ft)	109.79	Top Width (ft)	1.14	87.03	21.62

Vel Total (ft/s)	6.22	Avg. Vel. (ft/s)	1.32	6.56	2.15
Max Chl Dpth (ft)	2.39	Hydr. Depth (ft)	0.25	1.42	0.47
Conv. Total (cfs)	5439.9	Conv. (cfs)	2.4	5295.6	141.9
Length Wtd. (ft)	491.28	Wetted Per. (ft)	1.24	87.17	21.68
Min Ch El (ft)	2664.10	Shear (lb/sq ft)	0.33	2.10	0.69
Alpha	1.09	Stream Power (lb/ft s)	0.44	13.76	1.48
Frctn Loss (ft)	10.50	Cum Volume (acre-ft)	11.70	85.09	16.19
C & E Loss (ft)	0.03	Cum SA (acres)	10.46	32.23	17.13

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

CROSS SECTION OUTPUT Profile #Method 1

E.G. Elev (ft)	2667.20	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.72	Wt. n-Val.		0.044	
W.S. Elev (ft)	2666.48	Reach Len. (ft)	497.16	491.79	470.19
Crit W.S. (ft)	2666.47	Flow Area (sq ft)		122.48	
E.G. Slope (ft/ft)	0.026337	Area (sq ft)		122.48	
Q Total (cfs)	836.00	Flow (cfs)		836.00	
Top Width (ft)	87.03	Top Width (ft)		87.03	
Vel Total (ft/s)	6.83	Avg. Vel. (ft/s)		6.83	
Max Chl Dpth (ft)	2.37	Hydr. Depth (ft)		1.41	
Conv. Total (cfs)	5151.3	Conv. (cfs)		5151.3	
Length Wtd. (ft)	491.79	Wetted Per. (ft)		88.12	
Min Ch El (ft)	2664.10	Shear (lb/sq ft)		2.29	
Alpha	1.00	Stream Power (lb/ft s)		15.60	
Frctn Loss (ft)	10.80	Cum Volume (acre-ft)	1.39	87.72	3.64
C & E Loss (ft)	0.05	Cum SA (acres)	1.05	32.23	2.36

Warning: The energy loss was 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: Stagecoach Pass
REACH: StagecoachPass-1 RS: 4.62

INPUT
Description: Cross Section 4.62 is located within Carefree.

Topography
indicates wash and surrounding undeveloped desert.
Aerial shows
wash, homes, and Romping Road.
T6NR5E Section 32
Q100 = 836 cfs
Station Elevation Data num= 15

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9937.66	2662	9943.13	2660	9956.15	2658	9973.14	2656	9977.93	2655
9982.73	2654	10000	2653.8	10022.45	2654.4	10069.65	2655.06		
10116.85	2656	10141.36	2658	10159.09	2660	10176.61	2662	10198.45	2664

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9937.66	.064	9977.93	.044	10069.65	.064

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9977.93	10069.65	522.24	516.48	506.7	.1	.3

CROSS SECTION OUTPUT Profile #100-yr 6-yr

E.G. Elev (ft)	2656.30	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.56	Wt. n-Val.	0.064	0.044	0.064
W.S. Elev (ft)	2655.74	Reach Len. (ft)	522.24	516.48	506.70
Crit W.S. (ft)	2655.67	Flow Area (sq ft)	1.31	134.38	11.63
E.G. Slope (ft/ft)	0.019437	Area (sq ft)	1.31	134.38	11.63
Q Total (cfs)	836.00	Flow (cfs)	2.16	815.49	18.35
Top Width (ft)	129.45	Top Width (ft)	3.55	91.72	34.18
Vel Total (ft/s)	5.67	Avg. Vel. (ft/s)	1.65	6.07	1.58
Max Chl Dpth (ft)	1.94	Hydr. Depth (ft)	0.37	1.47	0.34
Conv. Total (cfs)	5996.5	Conv. (cfs)	15.5	5849.3	131.6
Length Wtd. (ft)	516.35	Wetted Per. (ft)	3.62	91.84	34.19
Min Ch El (ft)	2653.80	Shear (lb/sq ft)	0.44	1.78	0.41
Alpha	1.12	Stream Power (lb/ft s)	0.72	10.77	0.65
Frctn Loss (ft)	10.93	Cum Volume (acre-ft)	11.69	83.63	16.07
C & E Loss (ft)	0.00	Cum SA (acres)	10.43	31.22	16.83

Warning: The energy loss was 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 OUTPUT Profile #Method 1

E.G. Elev (ft)	2656.35	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.56	Wt. n-Val.		0.044	
W.S. Elev (ft)	2655.79	Reach Len. (ft)	522.24	516.48	506.70
Crit W.S. (ft)	2655.64	Flow Area (sq ft)		139.15	
E.G. Slope (ft/ft)	0.018589	Area (sq ft)		139.15	
Q Total (cfs)	836.00	Flow (cfs)		836.00	
Top Width (ft)	91.72	Top Width (ft)		91.72	
Vel Total (ft/s)	6.01	Avg. Vel. (ft/s)		6.01	
Max Chl Dpth (ft)	1.99	Hydr. Depth (ft)		1.52	
Conv. Total (cfs)	6131.7	Conv. (cfs)		6131.7	
Length Wtd. (ft)	516.48	Wetted Per. (ft)		93.36	
Min Ch El (ft)	2653.80	Shear (lb/sq ft)		1.73	
Alpha	1.00	Stream Power (lb/ft s)		10.39	
Frctn Loss (ft)	10.95	Cum Volume (acre-ft)	1.39	86.24	3.64
C & E Loss (ft)	0.00	Cum SA (acres)	1.05	31.22	2.36

Warning: The energy loss was 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: Stagecoach Pass
REACH: StagecoachPass-1 RS: 4.53

INPUT
Description: Cross Section 4.53 is located within Carefree.

Topography
indicates wash and surrounding undeveloped desert.
Aerial shows
wash, and homes.
T6NR5E Section 32
Q100 = 836 cfs
Station Elevation Data num= 11

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9864.97	2652	9883.05	2650	9913.38	2648	9950.23	2646	9968.59	2644
10000	2643	10009.31	2643.06	10069.85	2644	10097.15	2646	10115.32	2648
10130.16	2650								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9864.97	.064	9968.59	.044	10069.85	.064

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9968.5	910069.85	492.56	500.82	499.6	.1	.3

CROSS SECTION OUTPUT Profile #100-yr 6-yr

			Left OB	Channel	Right OB
E.G. Elev (ft)	2645.37	Element			
Vel Head (ft)	0.58	Wt. n-Val.	0.064	0.044	0.064
W.S. Elev (ft)	2644.79	Reach Len. (ft)	492.56	500.82	499.60
Crit W.S. (ft)	2644.76	Flow Area (sq ft)	2.87	133.29	4.27
E.G. Slope (ft/ft)	0.023151	Area (sq ft)	2.87	133.29	4.27
Q Total (cfs)	836.00	Flow (cfs)	5.45	822.44	8.11
Top Width (ft)	119.32	Top Width (ft)	7.26	101.26	10.80
Vel Total (ft/s)	5.95	Avg. Vel. (ft/s)	1.90	6.17	1.90
Max Chl Dpth (ft)	1.79	Hydr. Depth (ft)	0.40	1.32	0.40
Conv. Total (cfs)	5494.4	Conv. (cfs)	35.8	5405.3	53.3
Length Wtd. (ft)	500.79	Wetted Per. (ft)	7.30	101.28	10.83
Min Ch El (ft)	2643.00	Shear (lb/sq ft)	0.57	1.90	0.57
Alpha	1.06	Stream Power (lb/ft s)	1.08	11.74	1.08
Frctn Loss (ft)	10.50	Cum Volume (acre-ft)	11.67	82.05	15.98
C & E Loss (ft)	0.01	Cum SA (acres)	10.37	30.08	16.57

Warning: The energy loss was 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 OUTPUT Profile #Method 1

			Left OB	Channel	Right OB
E.G. Elev (ft)	2645.40	Element			
Vel Head (ft)	0.61	Wt. n-Val.		0.044	
W.S. Elev (ft)	2644.79	Reach Len. (ft)	492.56	500.82	499.60
Crit W.S. (ft)	2644.75	Flow Area (sq ft)		133.33	
E.G. Slope (ft/ft)	0.024390	Area (sq ft)		133.33	
Q Total (cfs)	836.00	Flow (cfs)		836.00	
Top Width (ft)	101.26	Top Width (ft)		101.26	
Vel Total (ft/s)	6.27	Avg. Vel. (ft/s)		6.27	
Max Chl Dpth (ft)	1.79	Hydr. Depth (ft)		1.32	
Conv. Total (cfs)	5353.0	Conv. (cfs)		5353.0	
Length Wtd. (ft)	500.82	Wetted Per. (ft)		102.87	
Min Ch El (ft)	2643.00	Shear (lb/sq ft)		1.97	
Alpha	1.00	Stream Power (lb/ft s)		12.37	
Frctn Loss (ft)	10.53	Cum Volume (acre-ft)	1.39	84.63	3.64
C & E Loss (ft)	0.01	Cum SA (acres)	1.05	30.08	2.36

Warning: The energy loss was 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: Stagecoach Pass
REACH: StagecoachPass-1 RS: 4.43

INPUT
Description: Cross Section 4.43 is located within Carefree.

Topography
indicates wash and surrounding undeveloped desert.
Aerial shows
wash, homes, and desert.
T6NR5E Section 32
Q100 = 836 cfs
Station Elevation Data num= 12

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9824.45	2640	9846.77	2638	9875.74	2636	9978.68	2634	9993.2	2632
10000	2631	10023.41	2632	10046.49	2634	10057.7	2636	10066	2638
10074.61	2640	10138.4	2640						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9824.45	.064	9978.68	.04	10046.49	.064

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9978.68	10046.49	481.7	463.26	444.73	.1	.3

CROSS SECTION OUTPUT Profile #100-yr 6-yr

E.G. Elev (ft)	2634.86	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.73	Wt. n-Val.	0.064	0.044	0.064
W.S. Elev (ft)	2634.13	Reach Len. (ft)	481.70	463.26	444.73
Crit W.S. (ft)	2633.99	Flow Area (sq ft)	0.41	121.70	0.04
E.G. Slope (ft/ft)	0.019078	Area (sq ft)	0.41	121.70	0.04
Q Total (cfs)	836.00	Flow (cfs)	0.21	835.77	0.02
Top Width (ft)	75.03	Top Width (ft)	6.51	67.81	0.71
Vel Total (ft/s)	6.84	Avg. Vel. (ft/s)	0.51	6.87	0.50
Max Chl Dpth (ft)	3.13	Hydr. Depth (ft)	0.06	1.79	0.06
Conv. Total (cfs)	6052.5	Conv. (cfs)	1.5	6050.8	0.2
Length Wtd. (ft)	463.25	Wetted Per. (ft)	6.51	68.13	0.72
Min Ch El (ft)	2631.00	Shear (lb/sq ft)	0.08	2.13	0.07
Alpha	1.01	Stream Power (lb/ft s)	0.04	14.61	0.04
Frctn Loss (ft)	9.70	Cum Volume (acre-ft)	11.65	80.58	15.96
C & E Loss (ft)	0.01	Cum SA (acres)	10.29	29.10	16.50

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.

CROSS SECTION OUTPUT Profile #Method 1

E.G. Elev (ft)	2634.87	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.71	Wt. n-Val.		0.044	
W.S. Elev (ft)	2634.15	Reach Len. (ft)	481.70	463.26	444.73
Crit W.S. (ft)	2634.00	Flow Area (sq ft)		123.46	
E.G. Slope (ft/ft)	0.018308	Area (sq ft)		123.46	
Q Total (cfs)	836.00	Flow (cfs)		836.00	
Top Width (ft)	67.81	Top Width (ft)		67.81	
Vel Total (ft/s)	6.77	Avg. Vel. (ft/s)		6.77	
Max Chl Dpth (ft)	3.15	Hydr. Depth (ft)		1.82	
Conv. Total (cfs)	6178.5	Conv. (cfs)		6178.5	
Length Wtd. (ft)	463.26	Wetted Per. (ft)		68.43	
Min Ch El (ft)	2631.00	Shear (lb/sq ft)		2.06	
Alpha	1.00	Stream Power (lb/ft s)		13.96	
Frctn Loss (ft)	9.69	Cum Volume (acre-ft)	1.39	83.15	3.64
C & E Loss (ft)	0.01	Cum SA (acres)	1.05	29.11	2.36

Warning: The energy loss was 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: Stagecoach Pass
REACH: StagecoachPass-1 RS: 4.34

INPUT
Description: Cross Section 4.34 is located within Carefree. This section is located upstream of concentration point CSCP7e in the HEC-1 Model.

Topography indicates wash and surrounding undeveloped desert.
Aerial shows wash, homes, and desert.
T6NR5E Section 32
Q100 = 836 cfs
Station Elevation Data num= 15

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9949.5	2630	9961.03	2628	9969.69	2626	9979.5	2624	9989.86	2622.7
9993.76	2622	10000	2621	10012.42	2622	10021.84	2622.57	10045.5	2624
10087.17	2626	10159.44	2626	10164.81	2626	10225.41	2628	10293.65	2630

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9949.5	.064	9979.5	.044	10045.5	.064

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9979.5	10045.5	243.05	254.69	277.33	.1	.3

CROSS SECTION OUTPUT Profile #100-yr 6-yr

			Left OB	Channel	Right OB
E.G. Elev (ft)	2625.15	Element			
Vel Head (ft)	0.84	Wt. n-Val.	0.064	0.044	0.064
W.S. Elev (ft)	2624.31	Reach Len. (ft)	243.05	254.69	277.33
Crit W.S. (ft)	2624.31	Flow Area (sq ft)	0.24	113.60	1.03
E.G. Slope (ft/ft)	0.023103	Area (sq ft)	0.24	113.60	1.03
Q Total (cfs)	836.00	Flow (cfs)	0.24	834.70	1.05
Top Width (ft)	74.08	Top Width (ft)	1.54	66.00	6.54
Vel Total (ft/s)	7.28	Avg. Vel. (ft/s)	1.01	7.35	1.03
Max Chl Dpth (ft)	3.31	Hydr. Depth (ft)	0.16	1.72	0.16
Conv. Total (cfs)	5500.1	Conv. (cfs)	1.6	5491.6	6.9
Length Wtd. (ft)	255.07	Wetted Per. (ft)	1.57	66.32	6.54
Min Ch El (ft)	2621.00	Shear (lb/sq ft)	0.22	2.47	0.23
Alpha	1.02	Stream Power (lb/ft s)	0.22	18.15	0.23
Frctn Loss (ft)	4.16	Cum Volume (acre-ft)	11.64	79.33	15.95
C & E Loss (ft)	0.05	Cum SA (acres)	10.24	28.39	16.46

Warning: The energy equation could not be 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 OUTPUT Profile #Method 1

			Left OB	Channel	Right OB
E.G. Elev (ft)	2625.16	Element			
Vel Head (ft)	0.86	Wt. n-Val.		0.044	
W.S. Elev (ft)	2624.30	Reach Len. (ft)	243.05	254.69	277.33
Crit W.S. (ft)	2624.30	Flow Area (sq ft)		112.64	
E.G. Slope (ft/ft)	0.024120	Area (sq ft)		112.64	
Q Total (cfs)	836.00	Flow (cfs)		836.00	
Top Width (ft)	66.00	Top Width (ft)		66.00	
Vel Total (ft/s)	7.42	Avg. Vel. (ft/s)		7.42	
Max Chl Dpth (ft)	3.30	Hydr. Depth (ft)		1.71	
Conv. Total (cfs)	5382.9	Conv. (cfs)		5382.9	
Length Wtd. (ft)	254.69	Wetted Per. (ft)		66.92	
Min Ch El (ft)	2621.00	Shear (lb/sq ft)		2.53	
Alpha	1.00	Stream Power (lb/ft s)		18.81	
Frctn Loss (ft)	4.68	Cum Volume (acre-ft)	1.39	81.89	3.64
C & E Loss (ft)	0.05	Cum SA (acres)	1.05	28.39	2.36

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

This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
depth, the 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: Stagecoach Pass
REACH: StagecoachPass-1 RS: 4.3

INPUT
Description: Cross Section 4.30 is located within Carefree. This section is located upstream of concentration point CSCP07 in the HEC-1 Model.

Topography indicates wash and surrounding undeveloped desert.
Aerial shows wash, and desert.
T6NR5E Section 32
Q100 =
1116 cfs
Station Elevation Data num= 15

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9880.52	2624	9957.95	2622	9971.22	2620	9983.62	2618	9988.24	2616
9992.46	2614	10010.54	2614	10016.71	2616	10022.86	2618	10054.76	2618
10068.79	2618	10074.47	2618	10089.1	2618	10098.32	2620	10144.36	2622

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9880.52	.064	9988.24	.044	10016.71	.064

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9988.24	10016.71	289.58	313.61	327.45	.1	.3

CROSS SECTION OUTPUT Profile #100-yr 6-yr

E.G. Elev (ft)	2619.63	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.32	Wt. n-Val.	0.064	0.044	0.064
W.S. Elev (ft)	2618.31	Reach Len. (ft)	289.58	313.61	327.45
Crit W.S. (ft)	2617.82	Flow Area (sq ft)	6.33	112.23	28.60
E.G. Slope (ft/ft)	0.013015	Area (sq ft)	6.33	112.23	28.60
Q Total (cfs)	1116.00	Flow (cfs)	15.74	1060.12	40.14
Top Width (ft)	108.80	Top Width (ft)	6.52	28.47	73.81
Vel Total (ft/s)	7.58	Avg. Vel. (ft/s)	2.49	9.45	1.40
Max Chl Dpth (ft)	4.31	Hydr. Depth (ft)	0.97	3.94	0.39
Conv. Total (cfs)	9782.4	Conv. (cfs)	138.0	9292.5	351.8
Length Wtd. (ft)	313.64	Wetted Per. (ft)	6.96	29.24	74.16
Min Ch El (ft)	2614.00	Shear (lb/sq ft)	0.74	3.12	0.31
Alpha	1.48	Stream Power (lb/ft s)	1.84	29.46	0.44
Frctn Loss (ft)	4.64	Cum Volume (acre-ft)	11.63	78.67	15.86
C & E Loss (ft)	0.01	Cum SA (acres)	10.22	28.12	16.21

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 OUTPUT Profile #Method 1

E.G. Elev (ft)	2619.89	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.40	Wt. n-Val.		0.044	
W.S. Elev (ft)	2618.49	Reach Len. (ft)	289.58	313.61	327.45
Crit W.S. (ft)		Flow Area (sq ft)		117.39	
E.G. Slope (ft/ft)	0.015312	Area (sq ft)		117.39	
Q Total (cfs)	1116.00	Flow (cfs)		1116.00	
Top Width (ft)	28.47	Top Width (ft)		28.47	
Vel Total (ft/s)	9.51	Avg. Vel. (ft/s)		9.51	
Max Chl Dpth (ft)	4.49	Hydr. Depth (ft)		4.12	

Conv. Total (cfs)	9018.7	Conv. (cfs)		9018.7	
Length Wtd. (ft)	313.61	Wetted Per. (ft)		34.21	
Min Ch El (ft)	2614.00	Shear (lb/sq ft)		3.28	
Alpha	1.00	Stream Power (lb/ft s)		31.18	
Frctn Loss (ft)	4.80	Cum Volume (acre-ft)	1.39	81.22	3.64
C & E Loss (ft)	0.03	Cum SA (acres)	1.05	28.12	2.36

Warning: The energy loss was 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: Stagecoach Pass
REACH: StagecoachPass-1 RS: 4.24

INPUT
Description: Cross Section 4.24 is located within Carefree.

Topography
indicates wash and surrounding undeveloped desert.
Aerial shows
wash, homes, and desert.
T6NR5E Section 32
Q100 = 1308 cfs
Station Elevation Data num= 13

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9861.3	2618	9897.69	2616	9968.01	2614	9974	2612	9982.11	2610
10000	2609.27	10006.64	2610	10013.56	2612	10018.08	2614	10021.6	2616
10028.91	2618	10039.63	2620	10061.07	2622				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9861.3	.064	9974	.044	10013.56	.064

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9974	10013.56	249.51	249.86	252.44	.1	.3

CROSS SECTION OUTPUT Profile #100-yr 6-yr

			Left OB	Channel	Right OB
E.G. Elev (ft)	2614.97	Element			
Vel Head (ft)	1.45	Wt. n-Val.	0.064	0.044	0.064
W.S. Elev (ft)	2613.53	Reach Len. (ft)	249.51	249.86	252.44
Crit W.S. (ft)	2613.41	Flow Area (sq ft)	3.48	133.37	2.63
E.G. Slope (ft/ft)	0.016635	Area (sq ft)	3.48	133.37	2.63
Q Total (cfs)	1308.00	Flow (cfs)	8.40	1293.41	6.19
Top Width (ft)	47.57	Top Width (ft)	4.57	39.56	3.45
Vel Total (ft/s)	9.38	Avg. Vel. (ft/s)	2.41	9.70	2.35
Max Chl Dpth (ft)	4.25	Hydr. Depth (ft)	0.76	3.37	0.76
Conv. Total (cfs)	10141.5	Conv. (cfs)	65.1	10028.4	48.0
Length Wtd. (ft)	249.86	Wetted Per. (ft)	4.82	40.14	3.77
Min Ch El (ft)	2609.27	Shear (lb/sq ft)	0.75	3.45	0.72
Alpha	1.06	Stream Power (lb/ft s)	1.81	33.46	1.71
Frctn Loss (ft)	3.88	Cum Volume (acre-ft)	11.59	77.78	15.74
C & E Loss (ft)	0.04	Cum SA (acres)	10.19	27.87	15.92

Warning: The energy loss was 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 OUTPUT Profile #Method 1

			Left OB	Channel	Right OB
E.G. Elev (ft)	2615.06	Element			
Vel Head (ft)	1.31	Wt. n-Val.		0.044	
W.S. Elev (ft)	2613.75	Reach Len. (ft)	249.51	249.86	252.44
Crit W.S. (ft)	2613.38	Flow Area (sq ft)		142.35	
E.G. Slope (ft/ft)	0.015306	Area (sq ft)		142.35	
Q Total (cfs)	1308.00	Flow (cfs)		1308.00	

Top Width (ft)	39.56	Top Width (ft)		39.56	
Vel Total (ft/s)	9.19	Avg. Vel. (ft/s)		9.19	
Max Chl Dpth (ft)	4.48	Hydr. Depth (ft)		3.60	
Conv. Total (cfs)	10572.5	Conv. (cfs)		10572.5	
Length Wtd. (ft)	249.85	Wetted Per. (ft)		43.64	
Min Ch El (ft)	2609.27	Shear (lb/sq ft)		3.12	
Alpha	1.00	Stream Power (lb/ft s)		28.64	
Frctn Loss (ft)	3.98	Cum Volume (acre-ft)	1.39	80.29	3.64
C & E Loss (ft)	0.01	Cum SA (acres)	1.05	27.87	2.36

Warning: The energy loss was 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: Stagecoach Pass
REACH: StagecoachPass-1 RS: 4.19

INPUT
Description: Cross Section 4.19 is located within Carefree. This section is located north of the City of Scottsdale and Town of Carefree boundary. It is located upstream of the intersection of Stage Coach Pass Road and Stage Coach Pass Wash. Flow travels overland through a dip section.

Topography indicates wash and surrounding undeveloped desert.
Aerial shows wash, homes, and desert.
T6NR5E Section 32
Q100 = 1308 cfs
Station Elevation Data num= 15

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9836.16	2616	9854.89	2614	9875.43	2612	9940.16	2610	9979.19	2608
9986.71	2606	10000	2605.23	10010.1	2606	10014.44	2608	10019.18	2610
10062.54	2612	10075.02	2612	10097.66	2612	10123.72	2614	10149.8	2616

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9836.16	.064	9979.19	.044	10014.44	.064

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9979.19	10014.44	522.81	502.12	499.86	.1	.3

CROSS SECTION OUTPUT Profile #100-yr 6-yr

			Left OB	Channel	Right OB
E.G. Elev (ft)	2611.06	Element			
Vel Head (ft)	1.32	Wt. n-Val.	0.064	0.044	0.064
W.S. Elev (ft)	2609.73	Reach Len. (ft)	522.81	502.12	499.86
Crit W.S. (ft)	2609.73	Flow Area (sq ft)	29.33	128.76	3.56
E.G. Slope (ft/ft)	0.014510	Area (sq ft)	29.33	128.76	3.56
Q Total (cfs)	1308.00	Flow (cfs)	74.50	1224.93	8.57
Top Width (ft)	73.19	Top Width (ft)	33.83	35.25	4.11
Vel Total (ft/s)	8.09	Avg. Vel. (ft/s)	2.54	9.51	2.41
Max Chl Dpth (ft)	4.50	Hydr. Depth (ft)	0.87	3.65	0.87
Conv. Total (cfs)	10858.5	Conv. (cfs)	618.5	10168.9	71.2
Length Wtd. (ft)	502.72	Wetted Per. (ft)	33.88	36.00	4.46
Min Ch El (ft)	2605.23	Shear (lb/sq ft)	0.78	3.24	0.72
Alpha	1.30	Stream Power (lb/ft s)	1.99	30.82	1.74
Frctn Loss (ft)	7.29	Cum Volume (acre-ft)	11.50	77.03	15.72
C & E Loss (ft)	0.02	Cum SA (acres)	10.08	27.66	15.90

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

Warning: During the standard step iterations, when the assumed water surface was set equal to critical
depth, the 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 OUTPUT Profile #Method 1

E.G. Elev (ft)	2611.07	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.40	Wt. n-Val.	0.064	0.044	
W.S. Elev (ft)	2609.67	Reach Len. (ft)	522.81	502.12	499.86
Crit W.S. (ft)	2609.67	Flow Area (sq ft)	22.62	126.53	
E.G. Slope (ft/ft)	0.016591	Area (sq ft)	22.62	126.53	
Q Total (cfs)	1308.00	Flow (cfs)	73.67	1234.33	
Top Width (ft)	54.44	Top Width (ft)	19.19	35.25	
Vel Total (ft/s)	8.77	Avg. Vel. (ft/s)	3.26	9.76	
Max Chl Dpth (ft)	4.44	Hydr. Depth (ft)	1.18	3.59	
Conv. Total (cfs)	10154.9	Conv. (cfs)	572.0	9583.0	
Length Wtd. (ft)	502.70	Wetted Per. (ft)	19.90	37.67	
Min Ch El (ft)	2605.23	Shear (lb/sq ft)	1.18	3.48	
Alpha	1.18	Stream Power (lb/ft s)	3.83	33.94	
Frctn Loss (ft)	8.07	Cum Volume (acre-ft)	1.32	79.52	3.64
C & E Loss (ft)	0.01	Cum SA (acres)	1.00	27.66	2.36

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 cross section had to be extended vertically during the critical depth calculations.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
depth, the 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: Stagecoach Pass
REACH: StagecoachPass-1 RS: 4.09

INPUT
Description: Cross Section 4.09 is located within Scottsdale. This section is located south of the City of Scottsdale and Town of Carefree boundary. It is located downstream of the intersection of Stage Coach Pass Road and Stage Coach Pass Wash. Flow travels overland through a dip section.

Topography indicates wash and
surrounding undeveloped desert.
Aerial shows wash, and
desert.
T5NR5E Section 6
Q100 = 1308 cfs
Station Elevation Data num= 17

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9817.03	2606	9830.14	2604	9851.32	2602	9900.79	2602	9902.87	2602
9922.38	2602	9957.87	2602	9975.55	2600	9983.1	2598	10000	2596
10014.94	2598	10017.96	2600	10020.87	2602	10026.96	2604	10041.84	2606
10062.21	2608	10092.82	2610						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9817.03	.056	9975.55	.038	10017.96	.076

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

9975.5510017.96 447.83 440.53 431.07 .1 .3

CROSS SECTION OUTPUT Profile #100-yr 6-yr

E.G. Elev (ft)	2602.13	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.51	Wt. n-Val.	0.056	0.038	0.076
W.S. Elev (ft)	2600.62	Reach Len. (ft)	447.83	440.53	431.07
Crit W.S. (ft)	2600.62	Flow Area (sq ft)	1.68	132.20	0.28
E.G. Slope (ft/ft)	0.014493	Area (sq ft)	1.68	132.20	0.28
Q Total (cfs)	1308.00	Flow (cfs)	2.43	1305.31	0.26
Top Width (ft)	48.75	Top Width (ft)	5.44	42.41	0.90
Vel Total (ft/s)	9.75	Avg. Vel. (ft/s)	1.45	9.87	0.94
Max Chl Dpth (ft)	4.62	Hydr. Depth (ft)	0.31	3.12	0.31
Conv. Total (cfs)	10865.0	Conv. (cfs)	20.2	10842.7	2.2
Length Wtd. (ft)	440.52	Wetted Per. (ft)	5.48	43.52	1.09
Min Ch El (ft)	2596.00	Shear (lb/sq ft)	0.28	2.75	0.23
Alpha	1.02	Stream Power (lb/ft s)	0.40	27.14	0.22
Frctn Loss (ft)	6.40	Cum Volume (acre-ft)	11.31	75.53	15.70
C & E Loss (ft)	0.04	Cum SA (acres)	9.84	27.21	15.87

Warning: The energy equation could not be 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 OUTPUT Profile #Method 1

E.G. Elev (ft)	2602.14	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.55	Wt. n-Val.		0.038	
W.S. Elev (ft)	2600.59	Reach Len. (ft)	447.83	440.53	431.07
Crit W.S. (ft)	2600.59	Flow Area (sq ft)		130.99	
E.G. Slope (ft/ft)	0.015548	Area (sq ft)		130.99	
Q Total (cfs)	1308.00	Flow (cfs)		1308.00	
Top Width (ft)	42.41	Top Width (ft)		42.41	
Vel Total (ft/s)	9.99	Avg. Vel. (ft/s)		9.99	
Max Chl Dpth (ft)	4.59	Hydr. Depth (ft)		3.09	
Conv. Total (cfs)	10489.8	Conv. (cfs)		10489.8	
Length Wtd. (ft)	440.53	Wetted Per. (ft)		44.70	
Min Ch El (ft)	2596.00	Shear (lb/sq ft)		2.84	
Alpha	1.00	Stream Power (lb/ft s)		28.40	
Frctn Loss (ft)	6.69	Cum Volume (acre-ft)	1.19	78.03	3.64
C & E Loss (ft)	0.05	Cum SA (acres)	0.88	27.21	2.36

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.

CROSS SECTION

RIVER: Stagecoach Pass
REACH: StagecoachPass-1 RS: 4.01

INPUT
Description: Topography and Aerial indicate wash and surrounding undeveloped desert.

T5NR5E Section 6
Q100 = 1308 cfs

Station Elevation Data num= 27

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9813.74	2604	9833.31	2604	9849.3	2602	9862.53	2600	9882.06	2598
9917.85	2598	9930.64	2600	9945.48	2602	9956.04	2602	9960.4	2600
9964.62	2598	9968.97	2596	9973.14	2594	9977.41	2592	9984.07	2590
10000	2588.8	10014.78	2590	10024.96	2592	10046.56	2594	10065.6	2596
10099.03	2596	10234.19	2596	10282.63	2598	10321.11	2600	10352.56	2602
10372.89	2604	10386.53	2606						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9813.74	.056	9977.41	.038	10024.96	.076

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9977.41	10024.96	257.45	259.46	259.12	.1	.3

CROSS SECTION OUTPUT Profile #100-yr 6-yr

			Left OB	Channel	Right OB
E.G. Elev (ft)	2594.24	Element			
Vel Head (ft)	1.39	Wt. n-Val.	0.056	0.038	0.076
W.S. Elev (ft)	2592.85	Reach Len. (ft)	257.45	259.46	259.12
Crit W.S. (ft)	2592.85	Flow Area (sq ft)	0.77	137.17	3.91
E.G. Slope (ft/ft)	0.014573	Area (sq ft)	0.77	137.17	3.91
Q Total (cfs)	1308.00	Flow (cfs)	1.31	1301.48	5.21
Top Width (ft)	58.56	Top Width (ft)	1.82	47.55	9.19
Vel Total (ft/s)	9.22	Avg. Vel. (ft/s)	1.70	9.49	1.33
Max Chl Dpth (ft)	4.05	Hydr. Depth (ft)	0.43	2.88	0.43
Conv. Total (cfs)	10835.1	Conv. (cfs)	10.9	10781.1	43.2
Length Wtd. (ft)	259.45	Wetted Per. (ft)	2.01	48.13	9.23
Min Ch El (ft)	2588.80	Shear (lb/sq ft)	0.35	2.59	0.39
Alpha	1.05	Stream Power (lb/ft s)	0.60	24.60	0.51
Frctn Loss (ft)	3.60	Cum Volume (acre-ft)	11.30	74.17	15.68
C & E Loss (ft)	0.04	Cum SA (acres)	9.80	26.75	15.82

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 energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
depth, the 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 OUTPUT Profile #Method 1

			Left OB	Channel	Right OB
E.G. Elev (ft)	2594.27	Element			
Vel Head (ft)	1.38	Wt. n-Val.		0.038	
W.S. Elev (ft)	2592.89	Reach Len. (ft)	257.45	259.46	259.12
Crit W.S. (ft)	2592.81	Flow Area (sq ft)		138.89	
E.G. Slope (ft/ft)	0.014816	Area (sq ft)		138.89	
Q Total (cfs)	1308.00	Flow (cfs)		1308.00	
Top Width (ft)	47.55	Top Width (ft)		47.55	
Vel Total (ft/s)	9.42	Avg. Vel. (ft/s)		9.42	
Max Chl Dpth (ft)	4.09	Hydr. Depth (ft)		2.92	
Conv. Total (cfs)	10746.0	Conv. (cfs)		10746.0	
Length Wtd. (ft)	259.46	Wetted Per. (ft)		49.91	
Min Ch El (ft)	2588.80	Shear (lb/sq ft)		2.57	
Alpha	1.00	Stream Power (lb/ft s)		24.24	
Frctn Loss (ft)	4.07	Cum Volume (acre-ft)	1.19	76.67	3.64
C & E Loss (ft)	0.06	Cum SA (acres)	0.88	26.76	2.36

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: Stagecoach Pass
REACH: StagecoachPass-1 RS: 3.96

INPUT
Description: Topography and Aerial indicate wash and surrounding undeveloped desert.
T5NR5E Section 6
Q100 = 1308 cfs
Station Elevation Data num= 18

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9860.17	2598	9887.15	2596	9911.13	2594	9930.29	2592	9968.09	2590
9972.19	2588	9976.41	2586	9988.77	2584	10000	2583.131	10003.01	2584
10006.55	2586	10010.39	2588	10051.01	2590	10102.74	2590	10220.39	2590
10236.26	2592	10250.07	2594	10264.01	2596				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9860.17	.056	9976.41	.038	10006.55	.076

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9976.41	10006.55	274.78	302.81	308.46	.1	.3

CROSS SECTION OUTPUT Profile #100-yr 6-yr

			Left OB	Channel	Right OB
E.G. Elev (ft)	2590.04	Element			
Vel Head (ft)	1.82	Wt. n-Val.	0.056	0.038	0.076
W.S. Elev (ft)	2588.22	Reach Len. (ft)	274.78	302.81	308.46
Crit W.S. (ft)	2588.22	Flow Area (sq ft)	5.20	117.53	5.19
E.G. Slope (ft/ft)	0.013193	Area (sq ft)	5.20	117.53	5.19
Q Total (cfs)	1308.00	Flow (cfs)	15.92	1283.91	8.17
Top Width (ft)	43.15	Top Width (ft)	4.67	30.14	8.34
Vel Total (ft/s)	10.23	Avg. Vel. (ft/s)	3.06	10.92	1.58
Max Chl Dpth (ft)	5.09	Hydr. Depth (ft)	1.11	3.90	0.62
Conv. Total (cfs)	11387.8	Conv. (cfs)	138.6	11178.0	71.1
Length Wtd. (ft)	302.97	Wetted Per. (ft)	5.17	30.98	8.83
Min Ch El (ft)	2583.13	Shear (lb/sq ft)	0.83	3.12	0.48
Alpha	1.12	Stream Power (lb/ft s)	2.53	34.13	0.76
Frctn Loss (ft)	4.06	Cum Volume (acre-ft)	11.28	73.41	15.65
C & E Loss (ft)	0.36	Cum SA (acres)	9.78	26.52	15.77

Warning: The energy equation could not be 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 OUTPUT Profile #Method 1

			Left OB	Channel	Right OB
E.G. Elev (ft)	2590.15	Element			
Vel Head (ft)	1.94	Wt. n-Val.		0.038	
W.S. Elev (ft)	2588.20	Reach Len. (ft)	274.78	302.81	308.46
Crit W.S. (ft)	2588.20	Flow Area (sq ft)		116.96	
E.G. Slope (ft/ft)	0.016613	Area (sq ft)		116.96	
Q Total (cfs)	1308.00	Flow (cfs)		1308.00	
Top Width (ft)	30.14	Top Width (ft)		30.14	
Vel Total (ft/s)	11.18	Avg. Vel. (ft/s)		11.18	
Max Chl Dpth (ft)	5.07	Hydr. Depth (ft)		3.88	
Conv. Total (cfs)	10147.9	Conv. (cfs)		10147.9	

Length Wtd. (ft)	302.81	Wetted Per. (ft)		35.39	
Min Ch El (ft)	2583.13	Shear (lb/sq ft)		3.43	
Alpha	1.00	Stream Power (lb/ft s)		38.34	
Frctn Loss (ft)	5.24	Cum Volume (acre-ft)	1.19	75.90	3.64
C & E Loss (ft)	0.32	Cum SA (acres)	0.88	26.53	2.36

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: Stagecoach Pass
REACH: StagecoachPass-1 RS: 3.9

INPUT
Description: Topography and Aerial indicate wash and surrounding undeveloped desert.
T5NR5E Section 6
Q100 = 1308 cfs
Station Elevation Data num= 26

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9791.56	2592	9808.97	2590	9849.55	2588	9882.68	2586	9905.82	2584
9913.92	2582	9917.71	2580	9933.59	2580	9944.04	2582	9965.14	2582
9978.46	2580	10000	2578.38	10007.24	2580	10011.67	2582	10107.95	2582
10146.45	2580	10148.33	2580	10151.2	2582	10153.87	2584	10156.57	2586
10159.23	2588	10165.65	2590	10174.55	2590	10210.93	2590	10236.26	2592
10281	2594								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9791.56	.056	9913.92	.038	10011.67	.076

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9913.92	10011.67	458.51	440.49	446.67	.1	.3

CROSS SECTION OUTPUT Profile #100-yr 6-yr

			Left OB	Channel	Right OB
E.G. Elev (ft)	2582.92	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.61	Wt. n-Val.	0.056	0.038	0.076
W.S. Elev (ft)	2582.31	Reach Len. (ft)	458.51	440.49	446.67
Crit W.S. (ft)	2582.31	Flow Area (sq ft)	0.19	174.72	88.15
E.G. Slope (ft/ft)	0.013582	Area (sq ft)	0.19	174.72	88.15
Q Total (cfs)	1308.00	Flow (cfs)	0.17	1160.79	147.04
Top Width (ft)	238.94	Top Width (ft)	1.25	97.75	139.94
Vel Total (ft/s)	4.97	Avg. Vel. (ft/s)	0.87	6.64	1.67
Max Chl Dpth (ft)	3.93	Hydr. Depth (ft)	0.15	1.79	0.63
Conv. Total (cfs)	11223.5	Conv. (cfs)	1.4	9960.3	1261.7
Length Wtd. (ft)	441.08	Wetted Per. (ft)	1.28	99.25	140.72
Min Ch El (ft)	2578.38	Shear (lb/sq ft)	0.13	1.49	0.53
Alpha	1.60	Stream Power (lb/ft s)	0.11	9.92	0.89
Frctn Loss (ft)	6.50	Cum Volume (acre-ft)	11.27	72.39	15.32
C & E Loss (ft)	0.03	Cum SA (acres)	9.76	26.08	15.24

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

Warning: During the standard step iterations, when the assumed water surface was set equal to critical
depth, the 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 OUTPUT Profile #Method 1

E.G. Elev (ft)	2583.18	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.89	Wt. n-Val.		0.038	
W.S. Elev (ft)	2582.29	Reach Len. (ft)	458.51	440.49	446.67
Crit W.S. (ft)	2582.29	Flow Area (sq ft)		172.83	
E.G. Slope (ft/ft)	0.018019	Area (sq ft)		172.83	
Q Total (cfs)	1308.00	Flow (cfs)		1308.00	
Top Width (ft)	97.75	Top Width (ft)		97.75	
Vel Total (ft/s)	7.57	Avg. Vel. (ft/s)		7.57	
Max Chl Dpth (ft)	3.91	Hydr. Depth (ft)		1.77	
Conv. Total (cfs)	9744.1	Conv. (cfs)		9744.1	
Length Wtd. (ft)	440.49	Wetted Per. (ft)		99.83	
Min Ch El (ft)	2578.38	Shear (lb/sq ft)		1.95	
Alpha	1.00	Stream Power (lb/ft s)		14.74	
Frctn Loss (ft)	8.39	Cum Volume (acre-ft)	1.19	74.90	3.64
C & E Loss (ft)	0.02	Cum SA (acres)	0.88	26.08	2.36

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.

CROSS SECTION

RIVER: Stagecoach Pass
REACH: StagecoachPass-1 RS: 3.82

INPUT
Description: Topography and Aerial indicate wash and surrounding undeveloped
desert.
T5NR5E Section 6
Q100 = 1308 cfs
Station Elevation Data num= 18

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9844.47	2582	9870.25	2580	9892.7	2578	9908.38	2576	9921.2	2574
9957.88	2572	9958.9	2572	9959.95	2572	9982.85	2570	10000	2569.62
10012.13	2570	10022.21	2572	10168.08	2574	10192.01	2576	10207.54	2578
10237.26	2580	10253.64	2582	10306.83	2582				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9844.47	.056	9957.88	.044	10022.21	.076

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9957.88	10022.21	526.18	508.72	513.48	.1	.3

CROSS SECTION OUTPUT Profile #100-yr 6-yr

E.G. Elev (ft)	2573.86	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.90	Wt. n-Val.	0.056	0.044	0.076
W.S. Elev (ft)	2572.96	Reach Len. (ft)	526.18	508.72	513.48
Crit W.S. (ft)	2572.96	Flow Area (sq ft)	8.50	159.03	33.79
E.G. Slope (ft/ft)	0.016023	Area (sq ft)	8.50	159.03	33.79
Q Total (cfs)	1308.00	Flow (cfs)	17.51	1239.12	51.36
Top Width (ft)	152.20	Top Width (ft)	17.66	64.33	70.21
Vel Total (ft/s)	6.50	Avg. Vel. (ft/s)	2.06	7.79	1.52

Max Chl Dpth (ft)	3.34	Hydr. Depth (ft)	0.48	2.47	0.48
Conv. Total (cfs)	10333.2	Conv. (cfs)	138.4	9789.0	405.8
Length Wtd. (ft)	508.93	Wetted Per. (ft)	17.68	64.62	70.22
Min Ch El (ft)	2569.62	Shear (lb/sq ft)	0.48	2.46	0.48
Alpha	1.37	Stream Power (lb/ft s)	0.99	19.18	0.73
Frctn Loss (ft)	8.39	Cum Volume (acre-ft)	11.22	70.70	14.70
C & E Loss (ft)	0.01	Cum SA (acres)	9.66	25.26	14.16

Warning: The energy equation could not be 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 OUTPUT Profile #Method 1

E.G. Elev (ft)	2574.01	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.11	Wt. n-Val.		0.044	
W.S. Elev (ft)	2572.90	Reach Len. (ft)	526.18	508.72	513.48
Crit W.S. (ft)	2572.82	Flow Area (sq ft)		154.98	
E.G. Slope (ft/ft)	0.020184	Area (sq ft)		154.98	
Q Total (cfs)	1308.00	Flow (cfs)		1308.00	
Top Width (ft)	64.33	Top Width (ft)		64.33	
Vel Total (ft/s)	8.44	Avg. Vel. (ft/s)		8.44	
Max Chl Dpth (ft)	3.28	Hydr. Depth (ft)		2.41	
Conv. Total (cfs)	9206.8	Conv. (cfs)		9206.8	
Length Wtd. (ft)	508.72	Wetted Per. (ft)		66.42	
Min Ch El (ft)	2569.62	Shear (lb/sq ft)		2.94	
Alpha	1.00	Stream Power (lb/ft s)		24.81	
Frctn Loss (ft)	9.56	Cum Volume (acre-ft)	1.19	73.24	3.64
C & E Loss (ft)	0.02	Cum SA (acres)	0.88	25.26	2.36

Warning: The energy loss was 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: Stagecoach Pass
REACH: StagecoachPass-1 RS: 3.72

INPUT
Description: Topography and Aerial indicate wash and surrounding undeveloped desert.
T5NR5E Section 6
Q100 = 1308 cfs
Station Elevation Data num= 18

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9868.94	2574	9885.07	2572	9898.9	2570	9947.63	2568	9961.57	2566
9969.8	2564	9971.8	2563	9973.79	2562	10000	2560.31	10038.69	2562
10052.68	2563	10066.66	2564	10170.42	2566	10183.34	2568	10196.25	2570
10210.37	2572	10238.14	2574	10292.14	2574				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9868.94	.056	9971.8	.038	10052.68	.076

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9971.8	10052.68	351.62	342.71	341.81	.1	.3

CROSS SECTION OUTPUT Profile #100-yr 6-yr

E.G. Elev (ft)	2564.43	Element	Left OB	Channel	Right OB

Vel Head (ft)	1.01	Wt. n-Val.	0.056	0.038	0.076
W.S. Elev (ft)	2563.42	Reach Len. (ft)	351.62	342.71	341.81
Crit W.S. (ft)	2563.42	Flow Area (sq ft)	0.18	162.00	1.23
E.G. Slope (ft/ft)	0.016955	Area (sq ft)	0.18	162.00	1.23
Q Total (cfs)	1308.00	Flow (cfs)	0.20	1306.70	1.10
Top Width (ft)	87.59	Top Width (ft)	0.84	80.88	5.87
Vel Total (ft/s)	8.00	Avg. Vel. (ft/s)	1.13	8.07	0.90
Max Chl Dpth (ft)	3.12	Hydr. Depth (ft)	0.21	2.00	0.21
Conv. Total (cfs)	10045.2	Conv. (cfs)	1.5	10035.2	8.5
Length Wtd. (ft)	342.71	Wetted Per. (ft)	0.94	81.25	5.88
Min Ch El (ft)	2560.30	Shear (lb/sq ft)	0.20	2.11	0.22
Alpha	1.01	Stream Power (lb/ft s)	0.23	17.02	0.20
Frctn Loss (ft)	5.62	Cum Volume (acre-ft)	11.17	68.83	14.49
C & E Loss (ft)	0.01	Cum SA (acres)	9.55	24.41	13.71

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 energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
depth, the 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 OUTPUT Profile #Method 1

E.G. Elev (ft)	2564.43	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.02	Wt. n-Val.		0.038	
W.S. Elev (ft)	2563.41	Reach Len. (ft)	351.62	342.71	341.81
Crit W.S. (ft)	2563.41	Flow Area (sq ft)		161.13	
E.G. Slope (ft/ft)	0.017529	Area (sq ft)		161.13	
Q Total (cfs)	1308.00	Flow (cfs)		1308.00	
Top Width (ft)	80.88	Top Width (ft)		80.88	
Vel Total (ft/s)	8.12	Avg. Vel. (ft/s)		8.12	
Max Chl Dpth (ft)	3.11	Hydr. Depth (ft)		1.99	
Conv. Total (cfs)	9879.5	Conv. (cfs)		9879.5	
Length Wtd. (ft)	342.71	Wetted Per. (ft)		82.06	
Min Ch El (ft)	2560.30	Shear (lb/sq ft)		2.15	
Alpha	1.00	Stream Power (lb/ft s)		17.44	
Frctn Loss (ft)	5.94	Cum Volume (acre-ft)	1.19	71.39	3.64
C & E Loss (ft)	0.01	Cum SA (acres)	0.88	24.41	2.36

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.

CROSS SECTION

RIVER: Stagecoach Pass
REACH: StagecoachPass-1 RS: 3.66

INPUT
Description: Topography and Aerial indicate wash and surrounding undeveloped desert.
T5NR5E Section 6
Q100 = 1308 cfs
Station Elevation Data num= 18

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9926.01	2566	9934.67	2564	9942.7	2562	9946.57	2560	9947.19	2558

```
 9947.81    2556 9988.01    2554   10000  2553.4 10013.2    255410017.59    2556
10041.28    255810080.18    255810136.05    255810150.31    256010160.11    2562
10174.89    256210217.34    256210260.67    2564

Manning's n Values          num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
 9926.01    .056 9947.81    .03810017.59    .076

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9947.8110017.59            91.95    94.2   93.79             .3       .5
```

CROSS SECTION OUTPUT Profile #100-yr 6-yr

E.G. Elev (ft)	2557.85	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.09	Wt. n-Val.	0.056	0.038	0.076
W.S. Elev (ft)	2556.76	Reach Len. (ft)	91.95	94.20	93.79
Crit W.S. (ft)	2556.76	Flow Area (sq ft)	0.09	155.67	3.43
E.G. Slope (ft/ft)	0.015887	Area (sq ft)	0.09	155.67	3.43
Q Total (cfs)	1308.00	Flow (cfs)	0.07	1303.50	4.44
Top Width (ft)	79.04	Top Width (ft)	0.24	69.78	9.02
Vel Total (ft/s)	8.22	Avg. Vel. (ft/s)	0.78	8.37	1.29
Max Chl Dpth (ft)	3.36	Hydr. Depth (ft)	0.38	2.23	0.38
Conv. Total (cfs)	10377.4	Conv. (cfs)	0.6	10341.6	35.2
Length Wtd. (ft)	94.20	Wetted Per. (ft)	0.80	70.29	9.05
Min Ch El (ft)	2553.40	Shear (lb/sq ft)	0.11	2.20	0.38
Alpha	1.04	Stream Power (lb/ft s)	0.09	18.39	0.49
Frctn Loss (ft)	0.60	Cum Volume (acre-ft)	11.17	67.58	14.47
C & E Loss (ft)	0.35	Cum SA (acres)	9.55	23.82	13.66

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 conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
depth, the 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 OUTPUT Profile #Method 1

E.G. Elev (ft)	2557.86	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.12	Wt. n-Val.		0.038	
W.S. Elev (ft)	2556.73	Reach Len. (ft)	91.95	94.20	93.79
Crit W.S. (ft)	2556.73	Flow Area (sq ft)		153.76	
E.G. Slope (ft/ft)	0.017134	Area (sq ft)		153.76	
Q Total (cfs)	1308.00	Flow (cfs)		1308.00	
Top Width (ft)	69.78	Top Width (ft)		69.78	
Vel Total (ft/s)	8.51	Avg. Vel. (ft/s)		8.51	
Max Chl Dpth (ft)	3.33	Hydr. Depth (ft)		2.20	
Conv. Total (cfs)	9992.6	Conv. (cfs)		9992.6	
Length Wtd. (ft)	94.20	Wetted Per. (ft)		71.76	
Min Ch El (ft)	2553.40	Shear (lb/sq ft)		2.29	
Alpha	1.00	Stream Power (lb/ft s)		19.50	
Frctn Loss (ft)	0.60	Cum Volume (acre-ft)	1.19	70.15	3.64
C & E Loss (ft)	0.38	Cum SA (acres)	0.88	23.82	2.36

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

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
depth, the 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: Stagecoach Pass
REACH: StagecoachPass-1 RS: 3.64

INPUT
Description: Cross Section 3.64 is located upstream of the intersection of Pima Road and Stage Coach Pass Wash. There are 2-8 X 4 concrete box culverts located under Pima Road. This section is located upstream of concentration point CSCP06 in the HEC-1 model.

Topography indicates wash, Pima Road, and surrounding undeveloped desert.
Aerial shows wash, building, desert and Pima Road.
T5NR5E Section 6
Q100 = 1308 cfs
Station Elevation Data num= 15

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9866.65	2566	9886.2	2564	9906.72	2562	9917.83	2560	9926.01	2558
9932.89	2556	9939.71	2554	9998.37	2549.97	10014.17	2550.05	10019.78	2554
10064.58	2556	10117.06	2558	10216.38	2560	10241.77	2562	10242.64	2562

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9866.65	.056	9939.71	.038	10019.78	.076

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9939.71	10019.78	148.5	132.05	131.3	.3	.5

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
9866.65	9939.71	2553.02	F
10019.78	10242.64	2553.02	F

CROSS SECTION OUTPUT Profile #100-yr 6-yr

			Left OB	Channel	Right OB
E.G. Elev (ft)	2555.25	Element			
Vel Head (ft)	0.38	Wt. n-Val.	0.056	0.038	0.076
W.S. Elev (ft)	2554.87	Reach Len. (ft)	148.50	132.05	131.30
Crit W.S. (ft)	2553.54	Flow Area (sq ft)	1.28	261.60	8.38
E.G. Slope (ft/ft)	0.003416	Area (sq ft)	1.28	261.60	8.38
Q Total (cfs)	1308.00	Flow (cfs)	1.10	1301.42	5.48
Top Width (ft)	102.40	Top Width (ft)	2.95	80.07	19.38
Vel Total (ft/s)	4.82	Avg. Vel. (ft/s)	0.86	4.97	0.65
Max Chl Dpth (ft)	4.90	Hydr. Depth (ft)	0.43	3.27	0.43
Conv. Total (cfs)	22379.0	Conv. (cfs)	18.8	22266.5	93.7
Length Wtd. (ft)	132.05	Wetted Per. (ft)	3.07	81.46	19.40
Min Ch El (ft)	2549.97	Shear (lb/sq ft)	0.09	0.68	0.09
Alpha	1.06	Stream Power (lb/ft s)	0.08	3.41	0.06
Frctn Loss (ft)		Cum Volume (acre-ft)	11.17	67.13	14.46
C & E Loss (ft)		Cum SA (acres)	9.55	23.66	13.63

CROSS SECTION OUTPUT Profile #Method 1

			Left OB	Channel	Right OB
E.G. Elev (ft)	2555.29	Element			
Vel Head (ft)	0.37	Wt. n-Val.		0.038	0.076
W.S. Elev (ft)	2554.91	Reach Len. (ft)	148.50	132.05	131.30
Crit W.S. (ft)	2553.54	Flow Area (sq ft)		265.37	6.88
E.G. Slope (ft/ft)	0.003309	Area (sq ft)		265.37	6.88

Q Total (cfs)	1308.00	Flow (cfs)		1302.14	5.86
Top Width (ft)	90.05	Top Width (ft)		80.07	9.98
Vel Total (ft/s)	4.80	Avg. Vel. (ft/s)		4.91	0.85
Max Chl Dpth (ft)	4.94	Hydr. Depth (ft)		3.31	0.69
Conv. Total (cfs)	22737.4	Conv. (cfs)		22635.6	101.8
Length Wtd. (ft)	132.05	Wetted Per. (ft)		82.37	10.46
Min Ch El (ft)	2549.97	Shear (lb/sq ft)		0.67	0.14
Alpha	1.04	Stream Power (lb/ft s)		3.27	0.12
Frctn Loss (ft)		Cum Volume (acre-ft)	1.19	69.70	3.63
C & E Loss (ft)		Cum SA (acres)	0.88	23.66	2.35

CULVERT

RIVER: Stagecoach Pass
REACH: StagecoachPass-1 RS: 3.63

INPUT
Description: Box culvets at Pima Road crossing.
Distance from Upstream XS = 50
Deck/Roadway Width = 54
Weir Coefficient = 2.6
Upstream Deck/Roadway Coordinates
num= 5

Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord
9867.52	2553.02		9986.17	2553.02		10007.96	2553.18	
10035.69	2552.96		10267.52	2552.96				

Upstream Bridge Cross Section Data
Station Elevation Data num= 15

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9866.65	2566	9886.2	2564	9906.72	2562	9917.83	2560	9926.01	2558
9932.89	2556	9939.71	2554	9998.37	2549.97	10014.17	2550.05	10019.78	2554
10064.58	2556	10117.06	2558	10216.38	2560	10241.77	2562	10242.64	2562

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9866.65	.056	9939.71	.038	10019.78	.076

Bank Sta: Left	Right	Coeff Contr.	Expan.
9939.71	10019.78	.3	.5

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
9866.65	9939.71	2553.02	F
10019.78	10242.64	2553.02	F

Downstream Deck/Roadway Coordinates
num= 5

Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord
9836.34	2553.02		9955.11	2553.02		9976.87	2553.18	
10004.57	2552.96		10336.34	2552.96				

Downstream Bridge Cross Section Data
Station Elevation Data num= 20

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9828.76	2562	9853.96	2560	9870.01	2558	9887.19	2556	9914.1	2556
9929.63	2556	9954.89	2554	9965.63	2552	9973.68	2548.25	10022.75	2548.25
10029.76	2552	10036.91	2554	10092.64	2555.75	10115.81	2554	10127.25	2552
10161.06	2552	10204.54	2552	10219.11	2552	10262.34	2554	10309.6	2556

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9828.76	.056	9965.63	.038	10029.76	.076

Bank Sta: Left	Right	Coeff Contr.	Expan.
9965.63	10029.76	.3	.5

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
9828.76	9965.63	2553.02	F
10029.76	10309.6	2553.02	F

```
Right Levee     Station=10092.64      Elevation= 2555.75

Upstream Embankment side slope              =       0 horiz. to 1.0 vertical
Downstream Embankment side slope            =       0 horiz. to 1.0 vertical
Maximum allowable submergence for weir flow =     .95
Elevation at which weir flow begins         =
Energy head used in spillway design         =
Spillway height used in design              =
Weir crest shape                            = Broad Crested

Number of Culverts =  1

Culvert Name     Shape      Rise    Span
CULVERT#1            Box       4       8
FHWA Chart # 8 - flared wingwalls
FHWA Scale # 1 - Wingwall flared 30 to 75 deg.
Solution Criteria = Highest U.S. EG
Culvert Upstrm Dist  Length    Top n  Bottom n  Depth Blocked  Entrance Loss Coef   Exit Loss Coef
                 50      66     .015     .015        0                    .4                 1
Number of Barrels =  2
Upstream   Elevation =  2548.49
Centerline Stations
    Sta.    Sta.
 9996.9210010.59
Downstream Elevation =  2547.64
Centerline Stations
    Sta.    Sta.
 9998.9610012.64

CROSS SECTION


RIVER: Stagecoach Pass
REACH: StagecoachPass-1   RS: 3.62

INPUT
Description: Cross Section 3.62 is located downstream of the intersection of
             Pima Road and Stage Coach Pass Wash.  There are 2-8 x 4 concrete
             box culverts located under Pima Road.

Topography indicates
             wash, Pima Road, and surrounding undeveloped desert.
Aerial shows
             wash, building, desert and Pima Road.
T5NR4E Section 1
Q100 =
             1380 cfs
Station Elevation Data    num=      20
     Sta     Elev     Sta     Elev     Sta     Elev     Sta     Elev     Sta     Elev
 9828.76     2562 9853.96     2560 9870.01     2558 9887.19     2556  9914.1     2556
 9929.63     2556 9954.89     2554 9965.63     2552 9973.68 2548.2510022.75 2548.25
10029.76     255210036.91     255410092.64 2555.7510115.81     255410127.25     2552
10161.06     255210204.54     255210219.11     255210262.34     2554 10309.6     2556

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
 9828.76    .056 9965.63    .03810029.76    .076

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9965.6310029.76            249.65  239.22  239.56             .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
 9828.76 9965.63 2553.02       F
10029.76 10309.6 2553.02       F
Right Levee     Station=10092.64      Elevation= 2555.75

CROSS SECTION OUTPUT  Profile #100-yr 6-yr

  E.G. Elev (ft)           2552.18    Element                    Left OB    Channel   Right OB
  Vel Head (ft)               1.23    Wt. n-Val.                            0.038
  W.S. Elev (ft)           2550.95    Reach Len. (ft)           249.65    239.22     239.56
```

Crit W.S. (ft)	2550.95	Flow Area (sq ft)		146.99	
E.G. Slope (ft/ft)	0.016091	Area (sq ft)		146.99	
Q Total (cfs)	1308.00	Flow (cfs)		1308.00	
Top Width (ft)	59.90	Top Width (ft)		59.90	
Vel Total (ft/s)	8.90	Avg. Vel. (ft/s)		8.90	
Max Chl Dpth (ft)	2.70	Hydr. Depth (ft)		2.45	
Conv. Total (cfs)	10311.2	Conv. (cfs)		10311.2	
Length Wtd. (ft)	239.25	Wetted Per. (ft)		61.18	
Min Ch El (ft)	2548.25	Shear (lb/sq ft)		2.41	
Alpha	1.00	Stream Power (lb/ft s)		21.48	
Frctn Loss (ft)	3.55	Cum Volume (acre-ft)	11.16	66.51	14.45
C & E Loss (ft)	0.01	Cum SA (acres)	9.54	23.44	13.60

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

CROSS SECTION OUTPUT Profile #Method 1

E.G. Elev (ft)	2552.19	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.12	Wt. n-Val.		0.038	
W.S. Elev (ft)	2551.07	Reach Len. (ft)	249.65	239.22	239.56
Crit W.S. (ft)	2550.96	Flow Area (sq ft)		154.14	
E.G. Slope (ft/ft)	0.013895	Area (sq ft)		154.14	
Q Total (cfs)	1308.00	Flow (cfs)		1308.00	
Top Width (ft)	60.38	Top Width (ft)		60.38	
Vel Total (ft/s)	8.49	Avg. Vel. (ft/s)		8.49	
Max Chl Dpth (ft)	2.82	Hydr. Depth (ft)		2.55	
Conv. Total (cfs)	11096.4	Conv. (cfs)		11096.4	
Length Wtd. (ft)	239.22	Wetted Per. (ft)		61.71	
Min Ch El (ft)	2548.25	Shear (lb/sq ft)		2.17	
Alpha	1.00	Stream Power (lb/ft s)		18.39	
Frctn Loss (ft)	3.61	Cum Volume (acre-ft)	1.19	69.07	3.62
C & E Loss (ft)	0.07	Cum SA (acres)	0.88	23.45	2.33

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid,
energy was used.

CROSS SECTION

RIVER: Stagecoach Pass
REACH: StagecoachPass-1 RS: 3.57

INPUT
Description: Topography indicates wash, and surrounding undeveloped
desert.
Aerial shows wash, homes, and desert.
T5NR4E Section
1
Q100 = 1487 cfs
Station Elevation Data num= 15

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9666.03	2554	9791.74	2552	9944.58	2550	9958.76	2548	9966.9	2546

```
 9981.35 2544.37 9997.06    254410016.06    254410027.31    254610067.04    2548
10081.77    255010105.26    255210173.61    255410200.48    255610234.83    2558

Manning's n Values          num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
 9666.03    .056  9966.9    .03810027.31    .076

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        9966.910027.31             197.3  194.82  193.59            .1        .3
```

CROSS SECTION OUTPUT Profile #100-yr 6-yr

			Left OB	Channel	Right OB
E.G. Elev (ft)	2548.43	Element			
Vel Head (ft)	1.21	Wt. n-Val.	0.056	0.038	0.076
W.S. Elev (ft)	2547.22	Reach Len. (ft)	197.30	194.82	193.59
Crit W.S. (ft)	2547.22	Flow Area (sq ft)	3.04	163.32	14.82
E.G. Slope (ft/ft)	0.013878	Area (sq ft)	3.04	163.32	14.82
Q Total (cfs)	1487.00	Flow (cfs)	6.70	1455.75	24.55
Top Width (ft)	89.64	Top Width (ft)	4.97	60.41	24.26
Vel Total (ft/s)	8.21	Avg. Vel. (ft/s)	2.21	8.91	1.66
Max Chl Dpth (ft)	3.22	Hydr. Depth (ft)	0.61	2.70	0.61
Conv. Total (cfs)	12622.5	Conv. (cfs)	56.9	12357.3	208.4
Length Wtd. (ft)	194.81	Wetted Per. (ft)	5.12	60.68	24.29
Min Ch El (ft)	2544.00	Shear (lb/sq ft)	0.51	2.33	0.53
Alpha	1.16	Stream Power (lb/ft s)	1.13	20.79	0.88
Frctn Loss (ft)	2.90	Cum Volume (acre-ft)	11.15	65.66	14.41
C & E Loss (ft)	0.10	Cum SA (acres)	9.53	23.11	13.53

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.

CROSS SECTION OUTPUT Profile #Method 1

			Left OB	Channel	Right OB
E.G. Elev (ft)	2548.51	Element			
Vel Head (ft)	1.34	Wt. n-Val.		0.038	
W.S. Elev (ft)	2547.17	Reach Len. (ft)	197.30	194.82	193.59
Crit W.S. (ft)	2547.17	Flow Area (sq ft)		160.02	
E.G. Slope (ft/ft)	0.016301	Area (sq ft)		160.02	
Q Total (cfs)	1487.00	Flow (cfs)		1487.00	
Top Width (ft)	60.41	Top Width (ft)		60.41	
Vel Total (ft/s)	9.29	Avg. Vel. (ft/s)		9.29	
Max Chl Dpth (ft)	3.17	Hydr. Depth (ft)		2.65	
Conv. Total (cfs)	11646.8	Conv. (cfs)		11646.8	
Length Wtd. (ft)	194.82	Wetted Per. (ft)		63.02	
Min Ch El (ft)	2544.00	Shear (lb/sq ft)		2.58	
Alpha	1.00	Stream Power (lb/ft s)		24.01	
Frctn Loss (ft)	3.33	Cum Volume (acre-ft)	1.19	68.20	3.62
C & E Loss (ft)	0.12	Cum SA (acres)	0.88	23.11	2.33

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.

CROSS SECTION

RIVER: Stagecoach Pass
REACH: StagecoachPass-1 RS: 3.53

INPUT
Description: Topography indicates wash, and surrounding undeveloped desert.
Aerial shows wash, homes, and desert.
T5NR4E Section 1
Q100 = 1487 cfs
Station Elevation Data num= 17

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9728.74	2550	9749.82	2548	9771.83	2546	9802.6	2546	9932.28	2546
9935.66	2544	9937.26	2543	9938.86	2542	9962.19	2542	10000	2540.98
10022.5	2542	10039.79	2543	10057.08	2544	10073.57	2546	10084.1	2548
10099.57	2550	10115.62	2552						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9728.74	.056	9937.26	.038	10039.79	.076

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9937.26	10039.79	502.23	494.74	496.39	.1	.3

CROSS SECTION OUTPUT Profile #100-yr 6-yr

			Left OB	Channel	Right OB
E.G. Elev (ft)	2544.59	Element			
Vel Head (ft)	0.89	Wt. n-Val.	0.056	0.038	0.076
W.S. Elev (ft)	2543.70	Reach Len. (ft)	502.23	494.74	496.39
Crit W.S. (ft)	2543.66	Flow Area (sq ft)	0.39	195.28	4.20
E.G. Slope (ft/ft)	0.016011	Area (sq ft)	0.39	195.28	4.20
Q Total (cfs)	1487.00	Flow (cfs)	0.58	1481.29	5.14
Top Width (ft)	115.69	Top Width (ft)	1.11	102.53	12.05
Vel Total (ft/s)	7.44	Avg. Vel. (ft/s)	1.49	7.59	1.22
Max Chl Dpth (ft)	2.72	Hydr. Depth (ft)	0.35	1.90	0.35
Conv. Total (cfs)	11751.7	Conv. (cfs)	4.6	11706.5	40.6
Length Wtd. (ft)	494.75	Wetted Per. (ft)	1.31	102.88	12.07
Min Ch El (ft)	2540.98	Shear (lb/sq ft)	0.30	1.90	0.35
Alpha	1.04	Stream Power (lb/ft s)	0.44	14.39	0.43
Frctn Loss (ft)	7.77	Cum Volume (acre-ft)	11.15	64.86	14.36
C & E Loss (ft)	0.06	Cum SA (acres)	9.51	22.75	13.45

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The energy loss was 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 OUTPUT Profile #Method 1

			Left OB	Channel	Right OB
E.G. Elev (ft)	2544.60	Element			
Vel Head (ft)	0.95	Wt. n-Val.		0.038	
W.S. Elev (ft)	2543.65	Reach Len. (ft)	502.23	494.74	496.39
Crit W.S. (ft)	2543.65	Flow Area (sq ft)		190.20	
E.G. Slope (ft/ft)	0.017913	Area (sq ft)		190.20	
Q Total (cfs)	1487.00	Flow (cfs)		1487.00	
Top Width (ft)	102.53	Top Width (ft)		102.53	
Vel Total (ft/s)	7.82	Avg. Vel. (ft/s)		7.82	
Max Chl Dpth (ft)	2.67	Hydr. Depth (ft)		1.86	
Conv. Total (cfs)	11110.3	Conv. (cfs)		11110.3	
Length Wtd. (ft)	494.74	Wetted Per. (ft)		104.18	
Min Ch El (ft)	2540.98	Shear (lb/sq ft)		2.04	
Alpha	1.00	Stream Power (lb/ft s)		15.96	
Frctn Loss (ft)	7.66	Cum Volume (acre-ft)	1.19	67.42	3.62
C & E Loss (ft)	0.03	Cum SA (acres)	0.88	22.75	2.33

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.

CROSS SECTION

RIVER: Stagecoach Pass
REACH: StagecoachPass-1 RS: 3.44

INPUT
Description: Topography indicates wash, and surrounding undeveloped
desert.
Aerial shows wash, homes, and desert.
T5NR4E Section
1
Q100 = 1487 cfs
Station Elevation Data num= 19

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9629.68	2540	9647.16	2538	9657.55	2536	9665.15	2536	9682.03	2536
9688.82	2534	9695.05	2534	9700.08	2536	9745.29	2538	9960.18	2538
9979.14	2536	9981.61	2534	9984.14	2532	10000	2530.93	10019.38	2532
10024.23	2534	10030.05	2536	10039.12	2538	10058.71	2540		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9629.68	.064	9981.61	.044	10024.23	.064

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9981.61	10024.23	460.64	467.05	475.12	.1	.3

Left Levee Station= 9960.18 Elevation= 2538

CROSS SECTION OUTPUT Profile #100-yr 6-yr

E.G. Elev (ft)	2536.77	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.44	Wt. n-Val.	0.064	0.044	0.064
W.S. Elev (ft)	2535.32	Reach Len. (ft)	460.64	467.05	475.12
Crit W.S. (ft)	2535.13	Flow Area (sq ft)	1.08	153.16	2.55
E.G. Slope (ft/ft)	0.015406	Area (sq ft)	1.08	153.16	2.55
Q Total (cfs)	1487.00	Flow (cfs)	2.01	1479.61	5.38
Top Width (ft)	48.11	Top Width (ft)	1.64	42.62	3.85
Vel Total (ft/s)	9.48	Avg. Vel. (ft/s)	1.85	9.66	2.11
Max Chl Dpth (ft)	4.39	Hydr. Depth (ft)	0.66	3.59	0.66
Conv. Total (cfs)	11980.3	Conv. (cfs)	16.2	11920.8	43.4
Length Wtd. (ft)	467.04	Wetted Per. (ft)	2.10	43.78	4.07
Min Ch El (ft)	2530.93	Shear (lb/sq ft)	0.50	3.37	0.60
Alpha	1.03	Stream Power (lb/ft s)	0.92	32.51	1.27
Frctn Loss (ft)	7.77	Cum Volume (acre-ft)	11.14	62.88	14.33
C & E Loss (ft)	0.02	Cum SA (acres)	9.50	21.93	13.36

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water
surface was used.

CROSS SECTION OUTPUT Profile #Method 1

E.G. Elev (ft)	2536.86	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.27	Wt. n-Val.		0.044	
W.S. Elev (ft)	2535.59	Reach Len. (ft)	460.64	467.05	475.12

Crit W.S. (ft)	2535.10	Flow Area (sq ft)		164.29	
E.G. Slope (ft/ft)	0.013521	Area (sq ft)		164.29	
Q Total (cfs)	1487.00	Flow (cfs)		1487.00	
Top Width (ft)	42.62	Top Width (ft)		42.62	
Vel Total (ft/s)	9.05	Avg. Vel. (ft/s)		9.05	
Max Chl Dpth (ft)	4.66	Hydr. Depth (ft)		3.85	
Conv. Total (cfs)	12788.0	Conv. (cfs)		12788.0	
Length Wtd. (ft)	467.05	Wetted Per. (ft)		46.95	
Min Ch El (ft)	2530.93	Shear (lb/sq ft)		2.95	
Alpha	1.00	Stream Power (lb/ft s)		26.74	
Frctn Loss (ft)	7.77	Cum Volume (acre-ft)	1.19	65.41	3.62
C & E Loss (ft)	0.04	Cum SA (acres)	0.88	21.93	2.33

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water
surface was used.

CROSS SECTION

RIVER: Stagecoach Pass
REACH: StagecoachPass-1 RS: 3.35

INPUT
Description: Topography indicates wash, and surrounding undeveloped
desert.
Aerial shows wash, homes, and desert.
T5NR4E Section
1
Q100 = 1487 cfs
Station Elevation Data num= 24

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9607.36	2536	9622.9	2536	9645.23	2534	9675.49	2532	9719.69	2530
9729.76	2528	9748.63	2528	9809.82	2528	9823.88	2528	9845.65	2530
9892.65	2530	9932.53	2528	9954.2	2528	9964.36	2528	9975.84	2526
9984.17	2524	10000	2522.94	10014.09	2524	10017.07	2526	10020	2528
10022.91	2530	10071.15	2530	10076.93	2530	10145.1	2530		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9607.36	.064	9975.84	.044	10017.07	.064

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9975.84	10017.07	212.63	217.05	218.09	.1	.3

Left Levee Station= 9892.86 Elevation= 2529.99

CROSS SECTION OUTPUT Profile #100-yr 6-yr

E.G. Elev (ft)	2528.99	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.62	Wt. n-Val.	0.064	0.044	0.064
W.S. Elev (ft)	2527.37	Reach Len. (ft)	212.63	217.05	218.09
Crit W.S. (ft)	2527.37	Flow Area (sq ft)	5.38	143.48	1.37
E.G. Slope (ft/ft)	0.018004	Area (sq ft)	5.38	143.48	1.37
Q Total (cfs)	1487.00	Flow (cfs)	12.90	1471.17	2.93
Top Width (ft)	51.10	Top Width (ft)	7.86	41.23	2.01
Vel Total (ft/s)	9.90	Avg. Vel. (ft/s)	2.40	10.25	2.13
Max Chl Dpth (ft)	4.43	Hydr. Depth (ft)	0.68	3.48	0.68
Conv. Total (cfs)	11082.3	Conv. (cfs)	96.1	10964.4	21.8
Length Wtd. (ft)	217.03	Wetted Per. (ft)	7.98	42.15	2.43
Min Ch El (ft)	2522.94	Shear (lb/sq ft)	0.76	3.83	0.64
Alpha	1.06	Stream Power (lb/ft s)	1.82	39.23	1.35
Frctn Loss (ft)	3.22	Cum Volume (acre-ft)	11.10	61.29	14.30
C & E Loss (ft)	0.22	Cum SA (acres)	9.45	21.48	13.33

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.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water
surface was used.

CROSS SECTION OUTPUT Profile #Method 1

E.G. Elev (ft)	2529.04	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.72	Wt. n-Val.		0.044	
W.S. Elev (ft)	2527.32	Reach Len. (ft)	212.63	217.05	218.09
Crit W.S. (ft)	2527.32	Flow Area (sq ft)		141.35	
E.G. Slope (ft/ft)	0.020964	Area (sq ft)		141.35	
Q Total (cfs)	1487.00	Flow (cfs)		1487.00	
Top Width (ft)	41.23	Top Width (ft)		41.23	
Vel Total (ft/s)	10.52	Avg. Vel. (ft/s)		10.52	
Max Chl Dpth (ft)	4.38	Hydr. Depth (ft)		3.43	
Conv. Total (cfs)	10270.1	Conv. (cfs)		10270.1	
Length Wtd. (ft)	217.05	Wetted Per. (ft)		44.79	
Min Ch El (ft)	2522.94	Shear (lb/sq ft)		4.13	
Alpha	1.00	Stream Power (lb/ft s)		43.45	
Frctn Loss (ft)	3.25	Cum Volume (acre-ft)	1.19	63.77	3.62
C & E Loss (ft)	0.27	Cum SA (acres)	0.88	21.48	2.33

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.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water
surface was used.

CROSS SECTION

RIVER: Stagecoach Pass
REACH: StagecoachPass-1 RS: 3.31

INPUT
Description: Topography indicates wash, and surrounding undeveloped
desert.
Aerial shows wash, homes, and desert.
T5NR4E Section
1
Q100 = 1487 cfs
Station Elevation Data num= 15

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9801.03	2530	9838.59	2528	9856.71	2526	9868.54	2524	9914.27	2524
9918.66	2524	9928.43	2524	9963.06	2524	9967.32	2522	9973.37	2520
10000	2519.35	10030.12	2520	10034.58	2522	10039.22	2524	10195.53	2526

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9801.03	.064	9967.32	.044	10034.58	.064

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9967.3	210034.58	342.61	322.59	303.02	.1	.3

CROSS SECTION OUTPUT Profile #100-yr 6-yr

E.G. Elev (ft)	2523.68	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.90	Wt. n-Val.	0.064	0.044	0.064
W.S. Elev (ft)	2522.79	Reach Len. (ft)	342.61	322.59	303.02
Crit W.S. (ft)	2522.35	Flow Area (sq ft)	0.66	195.31	0.72
E.G. Slope (ft/ft)	0.012425	Area (sq ft)	0.66	195.31	0.72
Q Total (cfs)	1487.00	Flow (cfs)	0.85	1485.21	0.94
Top Width (ft)	70.76	Top Width (ft)	1.67	67.26	1.82
Vel Total (ft/s)	7.56	Avg. Vel. (ft/s)	1.30	7.60	1.31
Max Chl Dpth (ft)	3.44	Hydr. Depth (ft)	0.39	2.90	0.39
Conv. Total (cfs)	13340.2	Conv. (cfs)	7.7	13324.1	8.4
Length Wtd. (ft)	322.56	Wetted Per. (ft)	1.85	68.02	1.99
Min Ch El (ft)	2519.35	Shear (lb/sq ft)	0.28	2.23	0.28
Alpha	1.01	Stream Power (lb/ft s)	0.36	16.94	0.37
Frctn Loss (ft)	4.78	Cum Volume (acre-ft)	11.09	60.44	14.30
C & E Loss (ft)	0.07	Cum SA (acres)	9.42	21.21	13.32

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 energy loss was 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 OUTPUT Profile #Method 1

E.G. Elev (ft)	2523.74	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.83	Wt. n-Val.		0.044	
W.S. Elev (ft)	2522.91	Reach Len. (ft)	342.61	322.59	303.02
Crit W.S. (ft)	2522.35	Flow Area (sq ft)		203.57	
E.G. Slope (ft/ft)	0.011237	Area (sq ft)		203.57	
Q Total (cfs)	1487.00	Flow (cfs)		1487.00	
Top Width (ft)	67.26	Top Width (ft)		67.26	
Vel Total (ft/s)	7.30	Avg. Vel. (ft/s)		7.30	
Max Chl Dpth (ft)	3.56	Hydr. Depth (ft)		3.03	
Conv. Total (cfs)	14027.6	Conv. (cfs)		14027.6	
Length Wtd. (ft)	322.59	Wetted Per. (ft)		69.84	
Min Ch El (ft)	2519.35	Shear (lb/sq ft)		2.04	
Alpha	1.00	Stream Power (lb/ft s)		14.94	
Frctn Loss (ft)	4.79	Cum Volume (acre-ft)	1.19	62.91	3.62
C & E Loss (ft)	0.09	Cum SA (acres)	0.88	21.21	2.33

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: Stagecoach Pass
REACH: StagecoachPass-1 RS: 3.25

INPUT
Description: Topography indicates wash, and surrounding undeveloped desert.
Aerial shows wash, homes, and desert.
T5NR4E Section 1
Q100 = 1487 cfs
Station Elevation Data num= 16

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9861.43	2520	9868.17	2518	9874.97	2516	9881.25	2516	9890.17	2518
9954.49	2520	9966.44	2520	9970.66	2518	9974.89	2516	9978.67	2514

10000 2512.8410011.79 251410016.53 2516 10026.5 251810121.38 2520
10274.45 2522

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9861.43	.064	9974.89	.04410016.53		.064

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9974.8910016.53		475.73	491.87	504.29	.1	.3

Left Levee Station= 9966.44 Elevation= 2520

CROSS SECTION OUTPUT Profile #100-yr 6-yr

E.G. Elev (ft)	2518.82	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.61	Wt. n-Val.	0.064	0.044	0.064
W.S. Elev (ft)	2517.21	Reach Len. (ft)	475.73	491.87	504.29
Crit W.S. (ft)	2517.21	Flow Area (sq ft)	1.55	144.44	3.66
E.G. Slope (ft/ft)	0.017983	Area (sq ft)	1.55	144.44	3.66
Q Total (cfs)	1487.00	Flow (cfs)	3.24	1475.70	8.06
Top Width (ft)	50.25	Top Width (ft)	2.56	41.64	6.04
Vel Total (ft/s)	9.94	Avg. Vel. (ft/s)	2.08	10.22	2.20
Max Chl Dpth (ft)	4.37	Hydr. Depth (ft)	0.61	3.47	0.61
Conv. Total (cfs)	11088.6	Conv. (cfs)	24.2	11004.3	60.1
Length Wtd. (ft)	491.89	Wetted Per. (ft)	2.84	42.63	6.16
Min Ch El (ft)	2512.84	Shear (lb/sq ft)	0.62	3.80	0.67
Alpha	1.05	Stream Power (lb/ft s)	1.28	38.86	1.47
Frctn Loss (ft)	9.50	Cum Volume (acre-ft)	11.08	59.19	14.28
C & E Loss (ft)	0.10	Cum SA (acres)	9.41	20.80	13.29

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.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water
surface was used.

CROSS SECTION OUTPUT Profile #Method 1

E.G. Elev (ft)	2518.86	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.69	Wt. n-Val.		0.044	
W.S. Elev (ft)	2517.17	Reach Len. (ft)	475.73	491.87	504.29
Crit W.S. (ft)	2517.17	Flow Area (sq ft)		142.46	
E.G. Slope (ft/ft)	0.020526	Area (sq ft)		142.46	
Q Total (cfs)	1487.00	Flow (cfs)		1487.00	
Top Width (ft)	41.64	Top Width (ft)		41.64	
Vel Total (ft/s)	10.44	Avg. Vel. (ft/s)		10.44	
Max Chl Dpth (ft)	4.32	Hydr. Depth (ft)		3.42	
Conv. Total (cfs)	10379.1	Conv. (cfs)		10379.1	
Length Wtd. (ft)	491.87	Wetted Per. (ft)		44.96	
Min Ch El (ft)	2512.84	Shear (lb/sq ft)		4.06	
Alpha	1.00	Stream Power (lb/ft s)		42.38	
Frctn Loss (ft)	10.39	Cum Volume (acre-ft)	1.19	61.63	3.62
C & E Loss (ft)	0.12	Cum SA (acres)	0.88	20.80	2.33

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.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water
surface was used.

CROSS SECTION

RIVER: Stagecoach Pass
REACH: StagecoachPass-1 RS: 3.16

INPUT
Description: Topography indicates wash, and surrounding undeveloped
desert.
Aerial shows wash, homes, and desert.
T5NR4E Section
1
Q100 = 1487 cfs
Station Elevation Data num= 14

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9905.88	2510	9958.79	2510	9966.19	2508	9971.9	2506	9977.2	2504
10000	2503.67	10028.79	2504	10034.86	2506	10040.82	2508	10206.07	2508
10206.36	2508	10217.12	2510	10241.3	2510	10279.68	2510		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9905.88	.064	9971.9	.044	10034.86	.064

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9971.9	10034.86	495.93	494.48	498.52	.1	.3

CROSS SECTION OUTPUT Profile #100-yr 6-yr

			Left OB	Channel	Right OB
E.G. Elev (ft)	2507.92	Element			
Vel Head (ft)	1.29	Wt. n-Val.	0.064	0.044	0.064
W.S. Elev (ft)	2506.63	Reach Len. (ft)	495.93	494.48	498.52
Crit W.S. (ft)	2506.63	Flow Area (sq ft)	0.57	162.91	0.60
E.G. Slope (ft/ft)	0.020819	Area (sq ft)	0.57	162.91	0.60
Q Total (cfs)	1487.00	Flow (cfs)	0.86	1485.25	0.90
Top Width (ft)	66.65	Top Width (ft)	1.81	62.96	1.89
Vel Total (ft/s)	9.06	Avg. Vel. (ft/s)	1.50	9.12	1.50
Max Chl Dpth (ft)	2.96	Hydr. Depth (ft)	0.32	2.59	0.32
Conv. Total (cfs)	10305.8	Conv. (cfs)	5.9	10293.7	6.2
Length Wtd. (ft)	494.51	Wetted Per. (ft)	1.91	63.65	1.99
Min Ch El (ft)	2503.67	Shear (lb/sq ft)	0.39	3.33	0.39
Alpha	1.01	Stream Power (lb/ft s)	0.58	30.33	0.59
Frctn Loss (ft)	7.74	Cum Volume (acre-ft)	11.07	57.45	14.26
C & E Loss (ft)	0.10	Cum SA (acres)	9.38	20.21	13.24

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 energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
depth, the 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 OUTPUT Profile #Method 1

			Left OB	Channel	Right OB
E.G. Elev (ft)	2507.93	Element			
Vel Head (ft)	1.31	Wt. n-Val.		0.044	
W.S. Elev (ft)	2506.62	Reach Len. (ft)	495.93	494.48	498.52
Crit W.S. (ft)	2506.62	Flow Area (sq ft)		162.15	
E.G. Slope (ft/ft)	0.021746	Area (sq ft)		162.15	
Q Total (cfs)	1487.00	Flow (cfs)		1487.00	

Top Width (ft)	62.96	Top Width (ft)		62.96		
Vel Total (ft/s)	9.17	Avg. Vel. (ft/s)		9.17		
Max Chl Dpth (ft)	2.95	Hydr. Depth (ft)		2.58		
Conv. Total (cfs)	10083.8	Conv. (cfs)		10083.8		
Length Wtd. (ft)	494.48	Wetted Per. (ft)		64.89		
Min Ch El (ft)	2503.67	Shear (lb/sq ft)		3.39		
Alpha	1.00	Stream Power (lb/ft s)		31.11		
Frctn Loss (ft)	5.85	Cum Volume (acre-ft)	1.19	59.91	3.62	
C & E Loss (ft)	0.18	Cum SA (acres)	0.88	20.21	2.33	

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 conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
depth, the 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: Stagecoach Pass
REACH: StagecoachPass-1 RS: 3.06

INPUT
Description: Cross Section 3.06 is located upstream of concentration point
CSCP4a in the HEC-1 model.

Topography indicates wash, and
surrounding undeveloped desert.
Aerial shows wash, homes, and
desert.
T5NR4E Section 1
Q100 = 1487 cfs
Station Elevation Data num= 13

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9845.35	2500	9920.06	2500	9957.55	2498	9960.86	2497	9964.17	2496
10000	2494.14	10017.01	2496	10020.87	2497	10024.72	2498	10030.46	2498
10053.56	2498	10067.71	2500	10098.76	2502				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9845.35	.064	9960.86	.044	10020.87	.064

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9960.86	10020.87	229.34	192.88	170.32	.1	.3

CROSS SECTION OUTPUT Profile #100-yr 6-yr

E.G. Elev (ft)	2499.29	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.95	Wt. n-Val.	0.064	0.044	0.064
W.S. Elev (ft)	2498.34	Reach Len. (ft)	229.34	192.88	170.32
Crit W.S. (ft)	2497.93	Flow Area (sq ft)	3.83	185.75	13.31
E.G. Slope (ft/ft)	0.012186	Area (sq ft)	3.83	185.75	13.31
Q Total (cfs)	1487.00	Flow (cfs)	5.25	1463.91	17.84
Top Width (ft)	104.69	Top Width (ft)	9.61	60.01	35.07
Vel Total (ft/s)	7.33	Avg. Vel. (ft/s)	1.37	7.88	1.34
Max Chl Dpth (ft)	4.20	Hydr. Depth (ft)	0.40	3.10	0.38
Conv. Total (cfs)	13470.2	Conv. (cfs)	47.6	13261.0	161.6
Length Wtd. (ft)	191.23	Wetted Per. (ft)	9.77	60.43	35.22
Min Ch El (ft)	2494.14	Shear (lb/sq ft)	0.30	2.34	0.29
Alpha	1.14	Stream Power (lb/ft s)	0.41	18.43	0.39
Frctn Loss (ft)	2.61	Cum Volume (acre-ft)	11.04	55.47	14.18

C & E Loss (ft)	0.02	Cum SA (acres)	9.32	19.51	13.03

Warning: The energy loss was 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 OUTPUT Profile #Method 1

E.G. Elev (ft)	2499.65	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.69	Wt. n-Val.		0.044	
W.S. Elev (ft)	2498.96	Reach Len. (ft)	229.34	192.88	170.32
Crit W.S. (ft)	2497.91	Flow Area (sq ft)		223.13	
E.G. Slope (ft/ft)	0.007421	Area (sq ft)		223.13	
Q Total (cfs)	1487.00	Flow (cfs)		1487.00	
Top Width (ft)	60.01	Top Width (ft)		60.01	
Vel Total (ft/s)	6.66	Avg. Vel. (ft/s)		6.66	
Max Chl Dpth (ft)	4.82	Hydr. Depth (ft)		3.72	
Conv. Total (cfs)	17261.8	Conv. (cfs)		17261.8	
Length Wtd. (ft)	192.88	Wetted Per. (ft)		64.35	
Min Ch El (ft)	2494.14	Shear (lb/sq ft)		1.61	
Alpha	1.00	Stream Power (lb/ft s)		10.71	
Frctn Loss (ft)	2.32	Cum Volume (acre-ft)	1.19	57.72	3.62
C & E Loss (ft)	0.10	Cum SA (acres)	0.88	19.51	2.33

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: Stagecoach Pass
REACH: StagecoachPass-1 RS: 3.03

INPUT
Description: Topography indicates wash, and surrounding undeveloped desert.
Cross section composed of cross section data collected by the City of Scottsdale Survey Department.
Aerial shows wash, homes, and desert.
T5NR4E Section 1
Q100 = 1792 cfs
Station Elevation Data num= 15

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9908.26	2504.87	9928.42	2502.24	9960.5	2497.86	9967.98	2495.51	9971.17	2494.51
9979.59	2491.85	9997.65	2491.85	10014.23	2491.86	10016.55	2491.86	10023.22	2494.47
10043.24	2494.63	10065.22	2493.38	10089.72	2496.18	10119.87	2499.71	10136.66	2501.57

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9908.26	.064	9971.17	.044	10023.22	.064

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9971.17	10023.22	280.29	289.8	286.61	.3	.5

CROSS SECTION OUTPUT Profile #100-yr 6-yr

E.G. Elev (ft)	2496.66	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.13	Wt. n-Val.	0.064	0.044	0.064
W.S. Elev (ft)	2495.53	Reach Len. (ft)	280.29	289.80	286.61
Crit W.S. (ft)	2495.53	Flow Area (sq ft)	1.64	171.21	73.07
E.G. Slope (ft/ft)	0.015104	Area (sq ft)	1.64	171.21	73.07
Q Total (cfs)	1792.00	Flow (cfs)	2.89	1553.75	235.36
Top Width (ft)	116.06	Top Width (ft)	3.24	52.05	60.77
Vel Total (ft/s)	7.29	Avg. Vel. (ft/s)	1.76	9.08	3.22
Max Chl Dpth (ft)	3.68	Hydr. Depth (ft)	0.51	3.29	1.20
Conv. Total (cfs)	14581.3	Conv. (cfs)	23.5	12642.6	1915.1

Length Wtd. (ft)	288.58	Wetted Per. (ft)	3.39	52.95	60.93
Min Ch El (ft)	2491.85	Shear (lb/sq ft)	0.46	3.05	1.13
Alpha	1.37	Stream Power (lb/ft s)	0.80	27.67	3.64
Frctn Loss (ft)	0.50	Cum Volume (acre-ft)	11.03	54.68	14.01
C & E Loss (ft)	0.52	Cum SA (acres)	9.28	19.27	12.84

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.

CROSS SECTION OUTPUT Profile #Method 1

E.G. Elev (ft)	2497.23	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.65	Wt. n-Val.		0.044	
W.S. Elev (ft)	2495.57	Reach Len. (ft)	280.29	289.80	286.61
Crit W.S. (ft)	2495.57	Flow Area (sq ft)		173.66	
E.G. Slope (ft/ft)	0.020212	Area (sq ft)		173.66	
Q Total (cfs)	1792.00	Flow (cfs)		1792.00	
Top Width (ft)	52.05	Top Width (ft)		52.05	
Vel Total (ft/s)	10.32	Avg. Vel. (ft/s)		10.32	
Max Chl Dpth (ft)	3.72	Hydr. Depth (ft)		3.34	
Conv. Total (cfs)	12604.7	Conv. (cfs)		12604.7	
Length Wtd. (ft)	289.77	Wetted Per. (ft)		55.12	
Min Ch El (ft)	2491.85	Shear (lb/sq ft)		3.98	
Alpha	1.00	Stream Power (lb/ft s)		41.03	
Frctn Loss (ft)	0.55	Cum Volume (acre-ft)	1.19	56.84	3.62
C & E Loss (ft)	0.76	Cum SA (acres)	0.88	19.27	2.33

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 conveyance ratio (upstream conveyance divided 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: Stagecoach Pass
REACH: StagecoachPass-1 RS: 2.97

INPUT
Description: Cross Section 2.97 is located along the east boundary of Sandflower. It is located upstream of the intersection of 84th Street and Stage Coach Pass Wash. There are 5-6 X 4 concrete box culverts located under 84th Street.

Topography indicates
wash, and surrounding undeveloped desert. Cross section composed of cross section data collected by the City of Scottsdale Survey Department.
Aerial shows wash, 84th Street, and desert.
T5NR4E
Section 1
Q100 = 1792 cfs
Station Elevation Data num= 16

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9784.66	2494.85	9807.38	2490.85	9851.7	2488.83	9864.75	2488.17	9879.66	2487.89
9891.84	2490.37	9906.31	2490.5	9921.39	2490.51	9937.1	2490.55	9946.7	2486.16
9989.73	2486.32	10028.96	2486.37	10029.7	2490.44	10058.41	2492.33	10108.14	2492.88
10116.66	2493.34								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9784.66	.064	9937.1	.044	10029.7	.064

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9937.1	10029.7	70.25	94.15	72.3	.3	.5

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
9784.66	9937.1	2491.23	F
10029.7	10116.66	2491.23	F

CROSS SECTION OUTPUT Profile #100-yr 6-yr

			Left OB	Channel	Right OB
E.G. Elev (ft)	2492.38	Element			
Vel Head (ft)	0.09	Wt. n-Val.	0.064	0.044	0.064
W.S. Elev (ft)	2492.29	Reach Len. (ft)	70.25	94.15	72.30
Crit W.S. (ft)	2488.72	Flow Area (sq ft)	347.28	534.16	25.98
E.G. Slope (ft/ft)	0.000624	Area (sq ft)	347.28	534.16	25.98
Q Total (cfs)	1792.00	Flow (cfs)	372.04	1405.68	14.28
Top Width (ft)	258.59	Top Width (ft)	137.90	92.60	28.09
Vel Total (ft/s)	1.97	Avg. Vel. (ft/s)	1.07	2.63	0.55
Max Chl Dpth (ft)	6.13	Hydr. Depth (ft)	2.52	5.77	0.92
Conv. Total (cfs)	71736.5	Conv. (cfs)	14893.2	56271.5	571.8
Length Wtd. (ft)	94.15	Wetted Per. (ft)	138.34	96.95	28.16
Min Ch El (ft)	2486.16	Shear (lb/sq ft)	0.10	0.21	0.04
Alpha	1.45	Stream Power (lb/ft s)	0.10	0.56	0.02
Frctn Loss (ft)		Cum Volume (acre-ft)	9.91	52.33	13.68
C & E Loss (ft)		Cum SA (acres)	8.83	18.78	12.55

Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid,
energy was used.

CROSS SECTION OUTPUT Profile #Method 1

			Left OB	Channel	Right OB
E.G. Elev (ft)	2493.21	Element			
Vel Head (ft)	0.13	Wt. n-Val.		0.044	0.064
W.S. Elev (ft)	2493.08	Reach Len. (ft)	70.25	94.15	72.30
Crit W.S. (ft)	2488.72	Flow Area (sq ft)		607.57	42.06
E.G. Slope (ft/ft)	0.000655	Area (sq ft)		607.57	42.06
Q Total (cfs)	1792.00	Flow (cfs)		1754.77	37.23
Top Width (ft)	114.48	Top Width (ft)		92.60	21.88
Vel Total (ft/s)	2.76	Avg. Vel. (ft/s)		2.89	0.89
Max Chl Dpth (ft)	6.92	Hydr. Depth (ft)		6.56	1.92
Conv. Total (cfs)	70007.8	Conv. (cfs)		68553.2	1454.6
Length Wtd. (ft)	94.15	Wetted Per. (ft)		99.49	23.13
Min Ch El (ft)	2486.16	Shear (lb/sq ft)		0.25	0.07
Alpha	1.08	Stream Power (lb/ft s)		0.72	0.07
Frctn Loss (ft)		Cum Volume (acre-ft)	1.19	54.24	3.48
C & E Loss (ft)		Cum SA (acres)	0.88	18.78	2.26

Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid,

energy was used.

CULVERT

```
RIVER: Stagecoach Pass
REACH: StagecoachPass-1   RS: 2.96

INPUT
Description: Box culverts at 84th Street crossing.
Distance from Upstream XS =      10
Deck/Roadway Width        =      78
Weir Coefficient          =     2.6
Upstream  Deck/Roadway Coordinates
    num=       7
     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord
 9784.66 2490.96         9860.52    2491         9948.57 2491.23
   10000 2491.67        10049.12 2492.19           10093  2492.8
10145.79 2493.47

Upstream Bridge Cross Section Data
Station Elevation Data    num=      16
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
 9784.66 2494.85 9807.38 2490.85  9851.7 2488.83 9864.75 2488.17 9879.66 2487.89
 9891.84 2490.37 9906.31  2490.5 9921.39 2490.51  9937.1 2490.55  9946.7 2486.16
 9989.73 2486.3210028.96 2486.37 10029.7 2490.4410058.41 2492.3310108.14 2492.88
10116.66 2493.34

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
 9784.66    .064  9937.1    .044 10029.7    .064

Bank Sta: Left   Right    Coeff Contr.   Expan.
        9937.1 10029.7             .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
 9784.66  9937.1 2491.23       F
 10029.710116.66 2491.23       F

Downstream  Deck/Roadway Coordinates
    num=      10
     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord
    9750 2490.25         9845.14 2490.25         9892.97 2490.56
 9942.74 2490.77         9994.52    2491         10043.8 2491.23
10095.15 2491.67        10144.33 2492.19        10188.27  2492.8
10240.92 2493.47

Downstream Bridge Cross Section Data
Station Elevation Data    num=      16
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
 9784.64 2489.09 9831.26 2489.49 9903.99 2490.02 9955.92 2489.55 9961.79 2489.18
 9962.96    2486 9963.92 2483.3810001.96 2482.7210044.87 2483.7510051.58    2486
 10057.7 2488.0510094.14 2489.8410124.27 2491.8810143.91 2493.4810195.77 2493.01
   10236 2492.75

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
 9784.64    .064 9962.96    .04410051.58    .064

Bank Sta: Left   Right    Coeff Contr.   Expan.
       9962.9610051.58             .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
 9784.64 9962.96 2490.86       F
10051.58   10236 2490.86       F

Upstream Embankment side slope              =       0 horiz. to 1.0 vertical
Downstream Embankment side slope            =       0 horiz. to 1.0 vertical
Maximum allowable submergence for weir flow =     .95
Elevation at which weir flow begins         =
Energy head used in spillway design         =
```

```
Spillway height used in design                =
Weir crest shape                              = Broad Crested

Number of Culverts =  1

Culvert Name      Shape      Rise    Span
CULVERT#1            Box       4       6
FHWA Chart # 8 - flared wingwalls
FHWA Scale # 1 - Wingwall flared 30 to 75 deg.
Solution Criteria = Highest U.S. EG
Culvert Upstrm Dist  Length    Top n  Bottom n  Depth Blocked  Entrance Loss Coef   Exit Loss Coef
                 10      78     .015     .015        0                  .4                 1
Number of Barrels =  5
Upstream   Elevation =  2486.3
Centerline Stations
    Sta.    Sta.    Sta.    Sta.    Sta.
 9973.11 9980.02 9986.94 9993.8610000.77
Downstream Elevation =  2484.41
Centerline Stations
    Sta.    Sta.    Sta.    Sta.    Sta.
10004.7410011.6610018.5810025.4910032.41

CROSS SECTION


RIVER: Stagecoach Pass
REACH: StagecoachPass-1   RS: 2.95

INPUT
Description: Cross Section 2.95 is located within Sandflower.  It is located
             downstream of the intersection of 84th Street and Stage Coach Pass
             Wash.  There are 5-6 X 4 concrete box culverts located under 84th
             Street.

Topography indicates wash, and surrounding
             undeveloped desert. Cross section composed of cross section data
             collected by the City of Scottsdale Survey Department.
Aerial
             shows wash, 84th Street, and  desert.
T5NR4E Section 1
Q100 =
             1792 cfs
Station Elevation Data    num=      16
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
 9784.64 2489.09 9831.26 2489.49 9903.99 2490.02 9955.92 2489.55 9961.79 2489.18
 9962.96    2486 9963.92 2483.3810001.96 2482.7210044.87 2483.7510051.58    2486
 10057.7 2488.0510094.14 2489.8410124.27 2491.8810143.91 2493.4810195.77 2493.01
   10236 2492.75

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
 9784.64    .064 9962.96    .04410051.58    .064

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9962.9610051.58           170.97  200.97 2393.91            .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
 9784.64 9962.96 2490.86       F
10051.58   10236 2490.86       F

CROSS SECTION OUTPUT  Profile #100-yr 6-yr

  E.G. Elev (ft)          2487.62    Element                    Left OB    Channel   Right OB
  Vel Head (ft)              0.42    Wt. n-Val.                            0.044
  W.S. Elev (ft)          2487.21    Reach Len. (ft)            170.97     200.97    2393.91
  Crit W.S. (ft)          2485.62    Flow Area (sq ft)                     346.62
  E.G. Slope (ft/ft)     0.003930    Area (sq ft)                0.27      346.62       2.17
  Q Total (cfs)           1792.00    Flow (cfs)                           1792.00
  Top Width (ft)            92.67    Top Width (ft)              0.44       88.62       3.60
  Vel Total (ft/s)           5.17    Avg. Vel. (ft/s)                        5.17
  Max Chl Dpth (ft)          4.49    Hydr. Depth (ft)                        3.91
```

Conv. Total (cfs)	28584.3	Conv. (cfs)		28584.3	
Length Wtd. (ft)	342.35	Wetted Per. (ft)		90.84	
Min Ch El (ft)	2482.72	Shear (lb/sq ft)		0.94	
Alpha	1.00	Stream Power (lb/ft s)		4.84	
Frctn Loss (ft)	2.36	Cum Volume (acre-ft)	9.63	51.38	13.66
C & E Loss (ft)	0.22	Cum SA (acres)	8.72	18.59	12.53

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 energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid,
energy was used.

CROSS SECTION OUTPUT Profile #Method 1

E.G. Elev (ft)	2487.62	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.41	Wt. n-Val.		0.044	
W.S. Elev (ft)	2487.21	Reach Len. (ft)	170.97	200.97	2393.91
Crit W.S. (ft)	2485.62	Flow Area (sq ft)		346.77	
E.G. Slope (ft/ft)	0.004064	Area (sq ft)		346.77	
Q Total (cfs)	1792.00	Flow (cfs)		1792.00	
Top Width (ft)	88.62	Top Width (ft)		88.62	
Vel Total (ft/s)	5.17	Avg. Vel. (ft/s)		5.17	
Max Chl Dpth (ft)	4.49	Hydr. Depth (ft)		3.91	
Conv. Total (cfs)	28108.7	Conv. (cfs)		28108.7	
Length Wtd. (ft)	200.97	Wetted Per. (ft)		93.25	
Min Ch El (ft)	2482.72	Shear (lb/sq ft)		0.94	
Alpha	1.00	Stream Power (lb/ft s)		4.88	
Frctn Loss (ft)	1.56	Cum Volume (acre-ft)	1.19	53.21	3.45
C & E Loss (ft)	0.38	Cum SA (acres)	0.88	18.59	2.24

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid,
energy was used.

CROSS SECTION

RIVER: Stagecoach Pass
REACH: StagecoachPass-1 RS: 2.92

INPUT
Description: Cross Section 2.92 is located within Sandflower.

Topography
and Aerial indicate wash, and surrounding undeveloped desert.
Cross section composed of cross section data collected by the City of Scottsdale Survey Department.
T5NR4E Section 1
Q100 = 1792 cfs
Station Elevation Data num= 22

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9878.44	2489.6	9888.93	2489.35	9890.85	2489.64	9892.18	2488.94	9900.88	2483.36
9909.73	2483.4	9912.92	2485.32	9920.62	2484.34	9971.43	2484.12	9988.04	2482.89
9992.47	2482.56	9998.02	2479.9	10018.2	2480.31	10032.18	2480.35	10038.2	2481.59
10042.27	2482.11	10049.51	2483.02	10055.04	2482.86	10087.94	2482.22	10104.62	2483.89
10210.05	2483.94	10237.22	2484.41						

```
Manning's n Values          num=        3
     Sta   n Val      Sta   n Val      Sta   n Val
 9878.44    .064 9992.47    .04410042.27    .064

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9992.4710042.27           303.07  292.98  270.76            .1        .3
Left Levee      Station= 9912.92      Elevation= 2485.32
```

CROSS SECTION OUTPUT Profile #100-yr 6-yr

			Left OB	Channel	Right OB
E.G. Elev (ft)	2485.04	Element			
Vel Head (ft)	1.15	Wt. n-Val.	0.064	0.044	0.064
W.S. Elev (ft)	2483.89	Reach Len. (ft)	303.07	292.98	270.76
Crit W.S. (ft)	2483.89	Flow Area (sq ft)	11.83	166.58	72.93
E.G. Slope (ft/ft)	0.015189	Area (sq ft)	11.83	166.58	72.93
Q Total (cfs)	1792.00	Flow (cfs)	25.66	1534.93	231.41
Top Width (ft)	129.97	Top Width (ft)	17.87	49.80	62.30
Vel Total (ft/s)	7.13	Avg. Vel. (ft/s)	2.17	9.21	3.17
Max Chl Dpth (ft)	3.99	Hydr. Depth (ft)	0.66	3.34	1.17
Conv. Total (cfs)	14540.3	Conv. (cfs)	208.2	12454.4	1877.7
Length Wtd. (ft)	291.59	Wetted Per. (ft)	17.92	50.57	62.45
Min Ch El (ft)	2479.90	Shear (lb/sq ft)	0.63	3.12	1.11
Alpha	1.46	Stream Power (lb/ft s)	1.36	28.78	3.51
Frctn Loss (ft)	4.31	Cum Volume (acre-ft)	9.60	50.20	11.60
C & E Loss (ft)	0.02	Cum SA (acres)	8.68	18.27	10.71

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 energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
depth, the 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 OUTPUT Profile #Method 1

			Left OB	Channel	Right OB
E.G. Elev (ft)	2485.68	Element			
Vel Head (ft)	1.69	Wt. n-Val.		0.044	
W.S. Elev (ft)	2483.99	Reach Len. (ft)	303.07	292.98	270.76
Crit W.S. (ft)	2483.99	Flow Area (sq ft)		171.65	
E.G. Slope (ft/ft)	0.020388	Area (sq ft)		171.65	
Q Total (cfs)	1792.00	Flow (cfs)		1792.00	
Top Width (ft)	49.80	Top Width (ft)		49.80	
Vel Total (ft/s)	10.44	Avg. Vel. (ft/s)		10.44	
Max Chl Dpth (ft)	4.09	Hydr. Depth (ft)		3.45	
Conv. Total (cfs)	12550.1	Conv. (cfs)		12550.1	
Length Wtd. (ft)	292.98	Wetted Per. (ft)		53.88	
Min Ch El (ft)	2479.90	Shear (lb/sq ft)		4.05	
Alpha	1.00	Stream Power (lb/ft s)		42.33	
Frctn Loss (ft)	5.18	Cum Volume (acre-ft)	1.19	52.02	3.45
C & E Loss (ft)	0.08	Cum SA (acres)	0.88	18.27	2.24

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 cross section had to be extended vertically during the critical depth calculations.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
depth, the 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: Stagecoach Pass
REACH: StagecoachPass-1 RS: 2.86

INPUT
Description: Cross Section 2.86 is located within Sandflower. This section is
upstream of the diversion dyke.

Topography indicates wash, and
surrounding undeveloped desert. Cross section composed of cross
section data collected by the City of Scottsdale Survey
Department.
Aerial shows the realigned wash, desert, and
diversion dyke.
T5NR4E Section 1
Q100 = 1792 cfs
Station Elevation Data num= 17

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9878.72	2485.27	9910.54	2483.26	9951.42	2484.23	9973.79	2481.84	9975.64	2481.64
9984.99	2477.801	9990.79	2475.42	10005.55	2474.71	10017.99	2476.09	10030.9	2475.19
10044.82	2475.96	10051.38	2477.83	10077.07	2479.38	10082.7	2479.32	10124.87	2478.84
10145.03	2477.88	10160.12	2479.45						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9878.72	.056	9984.99	.038	10051.38	.086

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9984.99	10051.38	324.59	316.48	292.31	.1	.3

Right Levee Station=10077.07 Elevation= 2479.38

CROSS SECTION OUTPUT Profile #100-yr 6-yr

			Left OB	Channel	Right OB
E.G. Elev (ft)	2479.89	Element			
Vel Head (ft)	1.37	Wt. n-Val.	0.056	0.038	0.086
W.S. Elev (ft)	2478.53	Reach Len. (ft)	324.59	316.48	292.31
Crit W.S. (ft)	2478.53	Flow Area (sq ft)	0.64	190.31	4.02
E.G. Slope (ft/ft)	0.014409	Area (sq ft)	0.64	190.31	4.02
Q Total (cfs)	1792.00	Flow (cfs)	0.99	1786.89	4.13
Top Width (ft)	79.71	Top Width (ft)	1.77	66.39	11.55
Vel Total (ft/s)	9.19	Avg. Vel. (ft/s)	1.54	9.39	1.03
Max Chl Dpth (ft)	3.83	Hydr. Depth (ft)	0.36	2.87	0.35
Conv. Total (cfs)	14928.6	Conv. (cfs)	8.2	14886.0	34.4
Length Wtd. (ft)	316.45	Wetted Per. (ft)	1.91	67.27	11.57
Min Ch El (ft)	2474.70	Shear (lb/sq ft)	0.30	2.54	0.31
Alpha	1.04	Stream Power (lb/ft s)	0.46	23.90	0.32
Frctn Loss (ft)	4.84	Cum Volume (acre-ft)	9.56	49.00	11.36
C & E Loss (ft)	0.08	Cum SA (acres)	8.61	17.88	10.49

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

CROSS SECTION OUTPUT Profile #Method 1

E.G. Elev (ft)	2479.90	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.41	Wt. n-Val.		0.038	
W.S. Elev (ft)	2478.49	Reach Len. (ft)	324.59	316.48	292.31
Crit W.S. (ft)	2478.49	Flow Area (sq ft)		188.01	
E.G. Slope (ft/ft)	0.015498	Area (sq ft)		188.01	
Q Total (cfs)	1792.00	Flow (cfs)		1792.00	
Top Width (ft)	66.39	Top Width (ft)		66.39	
Vel Total (ft/s)	9.53	Avg. Vel. (ft/s)		9.53	
Max Chl Dpth (ft)	3.79	Hydr. Depth (ft)		2.83	
Conv. Total (cfs)	14394.7	Conv. (cfs)		14394.7	
Length Wtd. (ft)	316.48	Wetted Per. (ft)		68.62	
Min Ch El (ft)	2474.70	Shear (lb/sq ft)		2.65	
Alpha	1.00	Stream Power (lb/ft s)		25.27	
Frctn Loss (ft)	5.09	Cum Volume (acre-ft)	1.19	50.81	3.45
C & E Loss (ft)	0.09	Cum SA (acres)	0.88	17.88	2.24

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 cross section had to be extended vertically during the critical depth calculations.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
depth, the 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: Stagecoach Pass
REACH: StagecoachPass-1 RS: 2.8

INPUT
Description: Cross Section 2.80 is located within Sandflower. This section
crosses the diversion dyke.The levee point represents the
diversion dyke location.

Topography indicates wash, and
surrounding undeveloped desert. Cross section composed of cross
section data collected by the City of Scottsdale Survey
Department.
Aerial shows the realigned wash, desert, and
diversion dyke.
T5NR4E Section 1
Q100 = 1792 cfs
Station Elevation Data num= 20

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9955.29	2474.96	9963.3	2474.97	9988.69	2473.92	9992.73	2473.75	9996.92	2472
10002.29	2469.76	10019.1	2470.21	10029.8	2471.62	10034.96	2470.16	10064.85	2469.59
10088.63	2469.73	10090.03	2469.74	10092.45	2472	10093.68	2473.15	10121.13	2475.23
10141.39	2473.64	10152.9	2472.23	10171.46	2473.74	10172.91	2472.95	10178.54	2473.14

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9955.29	.056	9996.92	.038	10092.45	.086

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
9996.92 10092.45 216.25 217.99 214.73 .1 .3
Right Levee Station=10121.13 Elevation= 2475.23

CROSS SECTION OUTPUT Profile #100-yr 6-yr

E.G. Elev (ft)	2473.42	Element	Left OB	Channel	Right OB

Vel Head (ft)	1.10	Wt. n-Val.	0.056	0.038	0.086
W.S. Elev (ft)	2472.32	Reach Len. (ft)	216.25	217.99	214.73
Crit W.S. (ft)	2472.32	Flow Area (sq ft)	0.12	212.84	0.05
E.G. Slope (ft/ft)	0.016296	Area (sq ft)	0.12	212.84	0.05
Q Total (cfs)	1792.00	Flow (cfs)	0.12	1791.86	0.03
Top Width (ft)	96.64	Top Width (ft)	0.77	95.53	0.34
Vel Total (ft/s)	8.41	Avg. Vel. (ft/s)	0.95	8.42	0.53
Max Chl Dpth (ft)	2.73	Hydr. Depth (ft)	0.16	2.23	0.16
Conv. Total (cfs)	14037.9	Conv. (cfs)	0.9	14036.8	0.2
Length Wtd. (ft)	217.99	Wetted Per. (ft)	0.83	97.18	0.47
Min Ch El (ft)	2469.59	Shear (lb/sq ft)	0.15	2.23	0.12
Alpha	1.00	Stream Power (lb/ft s)	0.14	18.76	0.06
Frctn Loss (ft)	2.64	Cum Volume (acre-ft)	9.56	47.53	11.34
C & E Loss (ft)	0.13	Cum SA (acres)	8.60	17.29	10.45

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.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water
surface was used.

CROSS SECTION OUTPUT Profile #Method 1

E.G. Elev (ft)	2473.42	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.11	Wt. n-Val.		0.038	
W.S. Elev (ft)	2472.31	Reach Len. (ft)	216.25	217.99	214.73
Crit W.S. (ft)	2472.31	Flow Area (sq ft)		211.77	
E.G. Slope (ft/ft)	0.016716	Area (sq ft)		211.77	
Q Total (cfs)	1792.00	Flow (cfs)		1792.00	
Top Width (ft)	95.53	Top Width (ft)		95.53	
Vel Total (ft/s)	8.46	Avg. Vel. (ft/s)		8.46	
Max Chl Dpth (ft)	2.72	Hydr. Depth (ft)		2.22	
Conv. Total (cfs)	13860.4	Conv. (cfs)		13860.4	
Length Wtd. (ft)	217.99	Wetted Per. (ft)		97.79	
Min Ch El (ft)	2469.59	Shear (lb/sq ft)		2.26	
Alpha	1.00	Stream Power (lb/ft s)		19.12	
Frctn Loss (ft)	2.44	Cum Volume (acre-ft)	1.19	49.35	3.45
C & E Loss (ft)	0.15	Cum SA (acres)	0.88	17.29	2.24

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 conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
depth, the 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: Stagecoach Pass

REACH: StagecoachPass-1 RS: 2.76

INPUT
Description: Cross Section 2.76 is located within Sandflower. This section crosses the diversion dyke. The levee point represents the diversion dyke location. It is located upstream of concentration point CSCP03 in the HEC-1 model.

Topography indicates wash, and surrounding undeveloped desert. Cross section composed of cross section data collected by the City of Scottsdale Survey Department.
Aerial shows the realigned wash, desert, and diversion dyke.
T5NR4E Section 1
Q100 = 1792 cfs
Station Elevation Data num= 18

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9886.29	2472.88	9901.6	2472.18	9914.68	2470.49	9916.17	2470.09	9924.01	2468
9934.51	2465.2	9952.9	2466.52	9992.22	2466.45	10024.56	2465.31	10028	2465.33
10037.72	2465.39	10038.66	2467.01	10043.9	2468	10049.08	2468.98	10074.64	2471.73
10084.98	2471.55	10112.23	2467.08	10121.03	2470.15				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9886.29	.056	9924.01	.038	10043.9	.086

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9924.01	10043.9	273.12	309.32	322.62	.1	.3

Right Levee Station=10074.64 Elevation= 2471.73

CROSS SECTION OUTPUT Profile #100-yr 6-yr

			Left OB	Channel	Right OB
E.G. Elev (ft)	2469.11	Element			
Vel Head (ft)	0.66	Wt. n-Val.	0.056	0.038	0.086
W.S. Elev (ft)	2468.45	Reach Len. (ft)	273.12	309.32	322.62
Crit W.S. (ft)	2468.07	Flow Area (sq ft)	0.37	274.80	0.53
E.G. Slope (ft/ft)	0.009345	Area (sq ft)	0.37	274.80	0.53
Q Total (cfs)	1792.00	Flow (cfs)	0.34	1791.34	0.32
Top Width (ft)	123.92	Top Width (ft)	1.67	119.89	2.36
Vel Total (ft/s)	6.50	Avg. Vel. (ft/s)	0.92	6.52	0.61
Max Chl Dpth (ft)	3.25	Hydr. Depth (ft)	0.22	2.29	0.22
Conv. Total (cfs)	18537.0	Conv. (cfs)	3.6	18530.2	3.3
Length Wtd. (ft)	309.15	Wetted Per. (ft)	1.73	121.35	2.40
Min Ch El (ft)	2465.20	Shear (lb/sq ft)	0.13	1.32	0.13
Alpha	1.01	Stream Power (lb/ft s)	0.12	8.61	0.08
Frctn Loss (ft)	3.33	Cum Volume (acre-ft)	9.56	46.31	11.34
C & E Loss (ft)	0.10	Cum SA (acres)	8.60	16.75	10.44

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.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.

CROSS SECTION OUTPUT Profile #Method 1

			Left OB	Channel	Right OB
E.G. Elev (ft)	2469.16	Element			
Vel Head (ft)	0.60	Wt. n-Val.		0.038	
W.S. Elev (ft)	2468.56	Reach Len. (ft)	273.12	309.32	322.62
Crit W.S. (ft)	2468.07	Flow Area (sq ft)		289.00	
E.G. Slope (ft/ft)	0.008005	Area (sq ft)		289.00	
Q Total (cfs)	1792.00	Flow (cfs)		1792.00	
Top Width (ft)	119.89	Top Width (ft)		119.89	
Vel Total (ft/s)	6.20	Avg. Vel. (ft/s)		6.20	
Max Chl Dpth (ft)	3.36	Hydr. Depth (ft)		2.41	
Conv. Total (cfs)	20028.9	Conv. (cfs)		20028.9	

Length Wtd. (ft)	309.33	Wetted Per. (ft)		122.48	
Min Ch El (ft)	2465.20	Shear (lb/sq ft)		1.18	
Alpha	1.00	Stream Power (lb/ft s)		7.31	
Frctn Loss (ft)	3.28	Cum Volume (acre-ft)	1.19	48.10	3.45
C & E Loss (ft)	0.12	Cum SA (acres)	0.88	16.75	2.24

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water
surface was used.

CROSS SECTION

RIVER: Stagecoach Pass
REACH: StagecoachPass-1 RS: 2.7

INPUT
Description: Cross Section 2.70 is located within Sandflower. This section is downstream of the diversion dyke. There is potential of having flow travel north out the the model.

Topography indicates wash,
and surrounding undeveloped desert. Cross section composed of cross section data collected by the City of Scottsdale Survey Department.
Aerial shows the realigned wash, desert, and
diversion dyke.
T5NR4E Section 1
Q100 = 1828 cfs
Station Elevation Data num= 38

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9906.34	2464.02	9920.23	2462.07	9944.01	2462.19	9959.9	2466	9964.38	2465.94
9973.64	2464.29	9984.74	2462.32	9990.99	2459.96	10003.12	2459.84	10024.21	2460.03
10024.6	2460.16	10030.32	2462.00	110036.21	2463.91	10061.65	2463.83	10093.15	2463.55
10103.41	2463.17	10107.92	2462.17	10120.32	2462.31	0124.58	2462.24	10132.14	2463.14
10140.09	2461.99	10147.19	2462.31	0155.18	2463.36	10163.14	2461.08	10173.03	2461.01
10177.44	2462.03	10183.07	2461.92	10215.2	2462.28	10219.97	2460.21	10226.99	2459.88
10232.92	2460.07	10236.85	2462.23	10256.35	2462.68	10306.8	2463.23	10361.04	2462.61
10380.08	2463.35	10395.56	2463.89	10410	2463.9				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9906.34	.056	9984.74	.038	10030.3	.086

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9984.74	10030.3	489.12	483.63	473.08	.1	.3

Left Levee Station= 9959.9 Elevation= 2466
Right Levee Station=10036.21 Elevation= 2465

CROSS SECTION OUTPUT Profile #100-yr 6-yr

E.G. Elev (ft)	2465.67	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.67	Wt. n-Val.	0.056	0.038	0.086
W.S. Elev (ft)	2464.00	Reach Len. (ft)	489.12	483.63	473.08
Crit W.S. (ft)	2464.00	Flow Area (sq ft)	7.96	171.53	6.18
E.G. Slope (ft/ft)	0.012499	Area (sq ft)	7.96	171.53	6.18
Q Total (cfs)	1828.00	Flow (cfs)	20.81	1795.42	11.78
Top Width (ft)	60.94	Top Width (ft)	9.47	45.56	5.91
Vel Total (ft/s)	9.85	Avg. Vel. (ft/s)	2.61	10.47	1.91
Max Chl Dpth (ft)	4.16	Hydr. Depth (ft)	0.84	3.77	1.05
Conv. Total (cfs)	16350.5	Conv. (cfs)	186.1	16059.1	105.3
Length Wtd. (ft)	483.21	Wetted Per. (ft)	9.62	46.30	6.30
Min Ch El (ft)	2459.84	Shear (lb/sq ft)	0.65	2.89	0.77
Alpha	1.11	Stream Power (lb/ft s)	1.69	30.26	1.46
Frctn Loss (ft)	6.17	Cum Volume (acre-ft)	9.53	44.73	11.32

C & E Loss (ft)	0.15	Cum SA (acres)	8.56	16.16	10.41

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.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water
surface was used.

CROSS SECTION OUTPUT Profile #Method 1

E.G. Elev (ft)	2465.76	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.84	Wt. n-Val.		0.038	0.086
W.S. Elev (ft)	2463.92	Reach Len. (ft)	489.12	483.63	473.08
Crit W.S. (ft)	2463.92	Flow Area (sq ft)		167.70	1.26
E.G. Slope (ft/ft)	0.014591	Area (sq ft)		167.70	1.26
Q Total (cfs)	1828.00	Flow (cfs)		1826.30	1.70
Top Width (ft)	46.26	Top Width (ft)		45.56	0.70
Vel Total (ft/s)	10.82	Avg. Vel. (ft/s)		10.89	1.35
Max Chl Dpth (ft)	4.08	Hydr. Depth (ft)		3.68	1.80
Conv. Total (cfs)	15133.3	Conv. (cfs)		15119.2	14.1
Length Wtd. (ft)	483.63	Wetted Per. (ft)		47.90	2.43
Min Ch El (ft)	2459.84	Shear (lb/sq ft)		3.19	0.47
Alpha	1.01	Stream Power (lb/ft s)		34.73	0.64
Frctn Loss (ft)	7.40	Cum Volume (acre-ft)	1.19	46.48	3.44
C & E Loss (ft)	0.10	Cum SA (acres)	0.88	16.16	2.24

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 energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
depth, the 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: Stagecoach Pass
REACH: StagecoachPass-1 RS: 2.61

INPUT
Description: Cross Section 2.61 is located within Sandflower.

Topography
indicates wash, and surrounding undeveloped desert. Cross section
composed of cross section data collected by the City of Scottsdale
Survey Department.
Aerial shows wash, desert, and building
pads.
T5NR4E Section 1
Q100 = 1828 cfs
Station Elevation Data num= 11

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev

9949.1 2457.51 9974.39 2452.69 9974.66 2452.64 9988.75 2450.910008.05 2450.74
10022.32 2451.6710038.01 2452.710065.45 2453.110077.29 2456.51 10090.3 2458.06
10107.37 2457.27

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9949.1	.061	9974.66	.03810038.01		.056

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9974.6	10038.01	131.55	142.72	154.55	.1	.3

CROSS SECTION OUTPUT Profile #100-yr 6-yr

			Left OB	Channel	Right OB
E.G. Elev (ft)	2455.51	Element			
Vel Head (ft)	1.17	Wt. n-Val.	0.061	0.038	0.056
W.S. Elev (ft)	2454.35	Reach Len. (ft)	131.55	142.72	154.55
Crit W.S. (ft)	2454.35	Flow Area (sq ft)	7.64	183.05	42.36
E.G. Slope (ft/ft)	0.013027	Area (sq ft)	7.64	183.05	42.36
Q Total (cfs)	1828.00	Flow (cfs)	18.90	1654.28	154.82
Top Width (ft)	104.07	Top Width (ft)	8.96	63.35	31.76
Vel Total (ft/s)	7.84	Avg. Vel. (ft/s)	2.47	9.04	3.66
Max Chl Dpth (ft)	3.61	Hydr. Depth (ft)	0.85	2.89	1.33
Conv. Total (cfs)	16016.3	Conv. (cfs)	165.6	14494.2	1356.5
Length Wtd. (ft)	143.35	Wetted Per. (ft)	9.12	63.52	31.94
Min Ch El (ft)	2450.74	Shear (lb/sq ft)	0.68	2.34	1.08
Alpha	1.22	Stream Power (lb/ft s)	1.69	21.18	3.94
Frctn Loss (ft)	1.87	Cum Volume (acre-ft)	9.44	42.76	11.05
C & E Loss (ft)	0.04	Cum SA (acres)	8.46	15.56	10.20

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.

CROSS SECTION OUTPUT Profile #Method 1

			Left OB	Channel	Right OB
E.G. Elev (ft)	2455.89	Element			
Vel Head (ft)	1.49	Wt. n-Val.		0.038	
W.S. Elev (ft)	2454.40	Reach Len. (ft)	131.55	142.72	154.55
Crit W.S. (ft)	2454.40	Flow Area (sq ft)		186.42	
E.G. Slope (ft/ft)	0.016063	Area (sq ft)		186.42	
Q Total (cfs)	1828.00	Flow (cfs)		1828.00	
Top Width (ft)	63.35	Top Width (ft)		63.35	
Vel Total (ft/s)	9.81	Avg. Vel. (ft/s)		9.81	
Max Chl Dpth (ft)	3.66	Hydr. Depth (ft)		2.94	
Conv. Total (cfs)	14423.2	Conv. (cfs)		14423.2	
Length Wtd. (ft)	142.72	Wetted Per. (ft)		66.98	
Min Ch El (ft)	2450.74	Shear (lb/sq ft)		2.79	
Alpha	1.00	Stream Power (lb/ft s)		27.37	
Frctn Loss (ft)	2.29	Cum Volume (acre-ft)	1.19	44.51	3.44
C & E Loss (ft)	0.07	Cum SA (acres)	0.88	15.56	2.24

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 energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
depth, the 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: Stagecoach Pass
REACH: StagecoachPass-1 RS: 2.58

INPUT
Description: Cross Section 2.58 is located within Sandflower.

Topography
indicates wash, and surrounding undeveloped desert. Cross section composed of cross section data collected by the City of Scottsdale Survey Department.
Aerial shows wash, desert, and building pads.
T5NR4E Section 1
Q100 = 1828 cfs
Station Elevation Data num= 12

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9906.51	2453.89	9927.2	2453.1	9954.3	2450.68	9959.45	2450.06	9966.81	2449.18
9986.83	2449.01	10007.76	2447.73	10020.86	2448.08	10020.88	2448.08	10040.07	2450.29
10067.68	2450.63	10087.1	2451.83						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9906.51	.061	9959.45	.038	10040.07	.056

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9959.45	10040.07	448.51	444.76	442.88	.3	.5

CROSS SECTION OUTPUT Profile #100-yr 6-yr

			Left OB	Channel	Right OB
E.G. Elev (ft)	2452.40	Element			
Vel Head (ft)	1.04	Wt. n-Val.	0.061	0.038	0.056
W.S. Elev (ft)	2451.36	Reach Len. (ft)	448.51	444.76	442.88
Crit W.S. (ft)	2451.36	Flow Area (sq ft)	7.68	207.73	29.13
E.G. Slope (ft/ft)	0.013049	Area (sq ft)	7.68	207.73	29.13
Q Total (cfs)	1828.00	Flow (cfs)	15.17	1740.68	72.14
Top Width (ft)	132.79	Top Width (ft)	12.76	80.62	39.41
Vel Total (ft/s)	7.48	Avg. Vel. (ft/s)	1.98	8.38	2.48
Max Chl Dpth (ft)	3.63	Hydr. Depth (ft)	0.60	2.58	0.74
Conv. Total (cfs)	16002.6	Conv. (cfs)	132.8	15238.2	631.6
Length Wtd. (ft)	444.75	Wetted Per. (ft)	12.82	80.84	39.43
Min Ch El (ft)	2447.73	Shear (lb/sq ft)	0.49	2.09	0.60
Alpha	1.20	Stream Power (lb/ft s)	0.96	17.54	1.49
Frctn Loss (ft)	5.63	Cum Volume (acre-ft)	9.42	42.12	10.93
C & E Loss (ft)	0.18	Cum SA (acres)	8.43	15.32	10.08

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 energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
depth, the 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 OUTPUT Profile #Method 1

			Left OB	Channel	Right OB
E.G. Elev (ft)	2452.56	Element			
Vel Head (ft)	1.25	Wt. n-Val.		.0.038	
W.S. Elev (ft)	2451.31	Reach Len. (ft)	448.51	444.76	442.88
Crit W.S. (ft)	2451.31	Flow Area (sq ft)		203.36	
E.G. Slope (ft/ft)	0.016026	Area (sq ft)		203.36	
Q Total (cfs)	1828.00	Flow (cfs)		1828.00	
Top Width (ft)	80.62	Top Width (ft)		80.62	

Vel Total (ft/s)	8.99	Avg. Vel. (ft/s)		8.99		
Max Chl Dpth (ft)	3.57	Hydr. Depth (ft)		2.52		
Conv. Total (cfs)	14439.9	Conv. (cfs)		14439.9		
Length Wtd. (ft)	444.76	Wetted Per. (ft)		83.10		
Min Ch El (ft)	2447.73	Shear (lb/sq ft)		2.45		
Alpha	1.00	Stream Power (lb/ft s)		22.01		
Frctn Loss (ft)	5.08	Cum Volume (acre-ft)	1.19	43.88	3.44	
C & E Loss (ft)	0.01	Cum SA (acres)	0.88	15.32	2.24	

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 energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
depth, the 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: Stagecoach Pass
REACH: StagecoachPass-1 RS: 2.5

INPUT
Description: Cross Section 2.50 is located within Sandflower. It is located upstream of concentration point CSCP2b in the HEC-1 Model and upstream of the intersection of 81st Street and Stage Coach Pass Wash. There are 5-6 X 4 concrete box culverts located under 81st Street.

Topography indicates wash, and surrounding undeveloped desert. Cross section composed of cross section data collected by the City of Scottsdale Survey Depar
Aerial shows wash, desert, 81st Street, and homes.
T5NR4E Section 1
Q100 = 1828 cfs
Station Elevation Data num= 15

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9803.45	2447.36	9853.22	2446.87	9912.67	2444.92	9960.16	2443.8	9980.27	2443.05
9982.55	2442.87	9983.61	2442.79	9988.73	2438.45	10009.11	2438.67	10025.74	2443.29
10043.55	2443.98	10060.95	2444.66	10071.72	2443.97	10087.93	2442.23	10110.49	2443.12

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9803.45	.061	9980.27	.038	10025.74	.056

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9980.27	10025.74	70.56	65.75	65.14	.3	.5

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
9803.45	9980.27	2443.53	F
10025.74	10110.49	2443.53	F

Right Levee Station=10060.95 Elevation= 2444.66
Blocked Obstructions num= 1

Sta L	Sta R	Elev
10110.49	10110.49	2446

CROSS SECTION OUTPUT Profile #100-yr 6-yr

E.G. Elev (ft)	2445.49	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.64	Wt. n-Val.	0.061	0.038	0.056
W.S. Elev (ft)	2443.86	Reach Len. (ft)	70.56	65.75	65.14
Crit W.S. (ft)	2443.86	Flow Area (sq ft)	8.71	175.41	4.12

E.G. Slope (ft/ft)	0.012272	Area (sq ft)	8.71	175.41	4.12
Q Total (cfs)	1828.00	Flow (cfs)	12.50	1810.29	5.21
Top Width (ft)	82.49	Top Width (ft)	22.44	45.47	14.58
Vel Total (ft/s)	9.71	Avg. Vel. (ft/s)	1.44	10.32	1.26
Max Chl Dpth (ft)	5.41	Hydr. Depth (ft)	0.39	3.86	0.28
Conv. Total (cfs)	16501.1	Conv. (cfs)	112.8	16341.2	47.0
Length Wtd. (ft)	65.75	Wetted Per. (ft)	22.45	47.70	14.59
Min Ch El (ft)	2438.45	Shear (lb/sq ft)	0.30	2.82	0.22
Alpha	1.12	Stream Power (lb/ft s)	0.43	29.07	0.27
Frctn Loss (ft)		Cum Volume (acre-ft)	9.33	40.16	10.76
C & E Loss (ft)		Cum SA (acres)	8.25	14.68	9.80

Warning: During subcritical analysis, the water surface upstream of culvert went to critical depth.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid,
energy was used.

CROSS SECTION OUTPUT Profile #Method 1

E.G. Elev (ft)	2445.70	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.29	Wt. n-Val.		0.038	
W.S. Elev (ft)	2444.41	Reach Len. (ft)	70.56	65.75	65.14
Crit W.S. (ft)	2443.67	Flow Area (sq ft)		200.77	
E.G. Slope (ft/ft)	0.008538	Area (sq ft)		200.77	
Q Total (cfs)	1828.00	Flow (cfs)		1828.00	
Top Width (ft)	45.47	Top Width (ft)		45.47	
Vel Total (ft/s)	9.10	Avg. Vel. (ft/s)		9.10	
Max Chl Dpth (ft)	5.96	Hydr. Depth (ft)		4.42	
Conv. Total (cfs)	19783.5	Conv. (cfs)		19783.5	
Length Wtd. (ft)	65.75	Wetted Per. (ft)		50.19	
Min Ch El (ft)	2438.45	Shear (lb/sq ft)		2.13	
Alpha	1.00	Stream Power (lb/ft s)		19.41	
Frctn Loss (ft)		Cum Volume (acre-ft)	1.19	41.81	3.44
C & E Loss (ft)		Cum SA (acres)	0.88	14.68	2.24

Warning: The cross section had to be extended vertically during the critical depth calculations.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid,
energy was used.

CULVERT

RIVER: Stagecoach Pass
REACH: StagecoachPass-1 RS: 2.495

INPUT
Description: Box culverts at 81st Street crossing.
Distance from Upstream XS = 2
Deck/Roadway Width = 61
Weir Coefficient = 2.6
Upstream Deck/Roadway Coordinates
num= 5

Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord
9803.45	2443.27		9984.07	2443.53		10022.82	2444.15	
10067.01	2444.69		10110.49	2445.04				

Upstream Bridge Cross Section Data
Station Elevation Data num= 15

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9803.45	2447.36	9853.22	2446.87	9912.67	2444.92	9960.16	2443.8	9980.27	2443.05
9982.55	2442.87	9983.61	2442.79	9988.73	2438.45	10009.11	2438.67	10025.74	2443.29
10043.55	2443.98	10060.95	2444.66	10071.72	2443.97	10087.93	2442.23	10110.49	2443.12

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9803.45	.061	9980.27	.038	10025.74	.056

Bank Sta: Left Right Coeff Contr. Expan.

```
      9980.2710025.74              .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
 9803.45 9980.27 2443.53       F
10025.7410110.49 2443.53       F
Right Levee      Station=10060.95      Elevation= 2444.66
Blocked Obstructions     num=       1
   Sta L   Sta R    Elev
10110.4910110.49    2446

Downstream  Deck/Roadway Coordinates
    num=       7
     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord
  9936.6 2441.52         9950.87 2442.63         9980.87 2443.53
10019.84 2444.15        10060.69 2444.69        10102.79 2445.04
10190.12 2445.04

Downstream Bridge Cross Section Data
Station Elevation Data    num=      21
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
 9801.72  2438.5 9833.72 2438.17 9840.66  2433.9 9846.75 2434.14 9852.72 2438.02
 9883.75 2437.77    9903 2438.42 9934.49 2439.96 9960.17 2440.58 9976.03 2442.26
  9983.4 2440.68 9983.95 2437.19 9988.03 2434.9810004.19 2435.2410019.78 2434.61
10023.42 2437.0110023.94 2441.2410057.65 2440.3810098.78 2441.6410163.09 2441.41
10190.12 2440.84

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
 9801.72    .061 9983.95    .03810023.42    .056

Bank Sta: Left   Right    Coeff Contr.   Expan.
       9983.9510023.42              .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
 9801.72 9983.95 2443.53       F
10023.4210190.12 2443.53       F
Left Levee       Station= 9976.03      Elevation=    2444

Upstream Embankment side slope              =       0 horiz. to 1.0 vertical
Downstream Embankment side slope            =       0 horiz. to 1.0 vertical
Maximum allowable submergence for weir flow =     .95
Elevation at which weir flow begins         =
Energy head used in spillway design         =
Spillway height used in design              =
Weir crest shape                            = Broad Crested

Number of Culverts =  1

Culvert Name      Shape      Rise    Span
CULVERT#1            Box       4       6
FHWA Chart # 8 - flared wingwalls
FHWA Scale # 1 - Wingwall flared 30 to 75 deg.
Solution Criteria = Highest U.S. EG
Culvert Upstrm Dist  Length    Top n  Bottom n  Depth Blocked  Entrance Loss Coef   Exit Loss Coef
                 4      55     .015     .015        0                   .4                 1
Number of Barrels =  5
Upstream   Elevation =  2438.05
Centerline Stations
    Sta.    Sta.    Sta.    Sta.    Sta.
 9985.92 9992.42 9998.9210005.4210011.92
Downstream Elevation =  2437.48
Centerline Stations
    Sta.    Sta.    Sta.    Sta.    Sta.
 9991.19 9997.6910004.1910010.6910017.19

CROSS SECTION


RIVER: Stagecoach Pass
REACH: StagecoachPass-1   RS: 2.49
```

INPUT

Description: Cross Section 2.49 is located within Sandflower. It is located upstream of the intersection of 81st Street and Stage Coach Pass Wash. There are 5-6 X 4 concrete box culverts located under 81st Street.

Topography indicates wash, and surrounding undeveloped desert. Cross section composed of cross section data collected by the City of Scottsdale Survey Department.

Aerial shows wash, desert, 81st Street, and homes.

T5NR4E Section 1

Q100 = 1851 cfs

Station Elevation Data num= 21

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9801.72	2438.5	9833.72	2438.17	9840.66	2433.9	9846.75	2434.14	9852.72	2438.02
9883.75	2437.77	9903	2438.42	9934.49	2439.96	9960.17	2440.58	9976.03	2442.26
9983.4	2440.68	9983.95	2437.19	9988.03	2434.98	10004.19	2435.24	10019.78	2434.61
10023.42	2437.01	10023.94	2441.24	10057.65	2440.38	10098.78	2441.64	10163.09	2441.41
10190.12	2440.84								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9801.72	.061	9983.95	.038	10023.42	.056

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9983.95	10023.42	401.49	416.01	406.55	.3	.5

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
9801.72	9983.95	2443.53	F
10023.42	10190.12	2443.53	F

Left Levee Station= 9976.03 Elevation= 2444

CROSS SECTION OUTPUT Profile #100-yr 6-yr

E.G. Elev (ft)	2441.33	Element	Left OB	Channel	Right OB
Vel Head (ft)	2.06	Wt. n-Val.		0.038	
W.S. Elev (ft)	2439.27	Reach Len. (ft)	401.49	416.01	406.55
Crit W.S. (ft)	2439.27	Flow Area (sq ft)		160.61	
E.G. Slope (ft/ft)	0.013959	Area (sq ft)	0.34	160.61	0.31
Q Total (cfs)	1851.00	Flow (cfs)		1851.00	
Top Width (ft)	40.08	Top Width (ft)	0.33	39.47	0.28
Vel Total (ft/s)	11.52	Avg. Vel. (ft/s)		11.52	
Max Chl Dpth (ft)	5.37	Hydr. Depth (ft)		4.07	
Conv. Total (cfs)	15666.7	Conv. (cfs)		15666.7	
Length Wtd. (ft)	416.00	Wetted Per. (ft)		40.76	
Min Ch El (ft)	2434.61	Shear (lb/sq ft)		3.43	
Alpha	1.00	Stream Power (lb/ft s)		39.57	
Frctn Loss (ft)	6.14	Cum Volume (acre-ft)	9.33	39.91	10.76
C & E Loss (ft)	0.46	Cum SA (acres)	8.23	14.62	9.79

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.

Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid,
energy was used.

CROSS SECTION OUTPUT Profile #Method 1

E.G. Elev (ft)	2441.33	Element	Left OB	Channel	Right OB

Vel Head (ft)	2.06	Wt. n-Val.		0.038	
W.S. Elev (ft)	2439.27	Reach Len. (ft)	401.49	416.01	406.55
Crit W.S. (ft)	2439.27	Flow Area (sq ft)		160.61	
E.G. Slope (ft/ft)	0.015001	Area (sq ft)	0.06	160.61	
Q Total (cfs)	1851.00	Flow (cfs)		1851.00	
Top Width (ft)	39.50	Top Width (ft)	0.03	39.47	
Vel Total (ft/s)	11.52	Avg. Vel. (ft/s)		11.52	
Max Chl Dpth (ft)	4.66	Hydr. Depth (ft)		4.07	
Conv. Total (cfs)	15112.9	Conv. (cfs)		15112.9	
Length Wtd. (ft)	416.01	Wetted Per. (ft)		43.03	
Min Ch El (ft)	2434.61	Shear (lb/sq ft)		3.50	
Alpha	1.00	Stream Power (lb/ft s)		40.29	
Frctn Loss (ft)	6.56	Cum Volume (acre-ft)	1.19	41.54	3.44
C & E Loss (ft)	0.45	Cum SA (acres)	0.88	14.62	2.24

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.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid,
energy was used.

CROSS SECTION

RIVER: Stagecoach Pass
REACH: StagecoachPass-1 RS: 2.41

INPUT
Description: Cross Section 2.41 is located within Sandflower.

Topography
indicates wash, and surrounding undeveloped desert. Cross section
composed of cross section data collected by the City of Scottsdale
Survey Department.
Aerial shows wash, desert, and homes.
T5NR4E
Section 1
Q100 = 1851 cfs
Station Elevation Data num= 17

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9888.4	2431.82	9907.22	2432.81	9924.06	2430	9936.28	2427.96	9940.07	2427.82
9954.7	2428.99	9956.83	2428.94	10006.15	2427.81	10013.94	2428	10016.11	2429.95
10016.12	2431.47	10036.56	2431.16	10068.1	2430.68	10102.39	2432.96	10106.05	2430.86
10111.63	2430.86	10119.79	2431.08						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9888.4	.061	9924.06	.038	10016.11	.056

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9924.06	10016.11	272.35	269.4	261.76	.1	.3

Right Levee Station=10016.12 Elevation= 2431.47

CROSS SECTION OUTPUT Profile #100-yr 6-yr

E.G. Elev (ft)	2431.91	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.14	Wt. n-Val.	0.061	0.038	0.000
W.S. Elev (ft)	2430.77	Reach Len. (ft)	272.35	269.40	261.76
Crit W.S. (ft)	2430.77	Flow Area (sq ft)	1.79	215.80	0.00
E.G. Slope (ft/ft)	0.015622	Area (sq ft)	1.79	215.80	0.00

Q Total (cfs)	1851.00	Flow (cfs)	2.86	1848.14	0.00
Top Width (ft)	96.68	Top Width (ft)	4.63	92.05	
Vel Total (ft/s)	8.51	Avg. Vel. (ft/s)	1.60	8.56	0.06
Max Chl Dpth (ft)	2.96	Hydr. Depth (ft)	0.39	2.34	0.44
Conv. Total (cfs)	14809.3	Conv. (cfs)	22.9	14786.4	0.0
Length Wtd. (ft)	269.35	Wetted Per. (ft)	4.69	93.03	0.82
Min Ch El (ft)	2427.81	Shear (lb/sq ft)	0.37	2.26	
Alpha	1.01	Stream Power (lb/ft s)	0.59	19.37	
Frctn Loss (ft)	3.86	Cum Volume (acre-ft)	9.32	38.11	10.75
C & E Loss (ft)	0.01	Cum SA (acres)	8.20	13.99	9.79

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

CROSS SECTION OUTPUT Profile #Method 1

E.G. Elev (ft)	2431.92	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.17	Wt. n-Val.		0.038	
W.S. Elev (ft)	2430.75	Reach Len. (ft)	272.35	269.40	261.76
Crit W.S. (ft)	2430.75	Flow Area (sq ft)		213.59	
E.G. Slope (ft/ft)	0.016576	Area (sq ft)		213.59	
Q Total (cfs)	1851.00	Flow (cfs)		1851.00	
Top Width (ft)	92.05	Top Width (ft)		92.05	
Vel Total (ft/s)	8.67	Avg. Vel. (ft/s)		8.67	
Max Chl Dpth (ft)	2.94	Hydr. Depth (ft)		2.32	
Conv. Total (cfs)	14376.8	Conv. (cfs)		14376.8	
Length Wtd. (ft)	269.40	Wetted Per. (ft)		94.58	
Min Ch El (ft)	2427.81	Shear (lb/sq ft)		2.34	
Alpha	1.00	Stream Power (lb/ft s)		20.25	
Frctn Loss (ft)	4.36	Cum Volume (acre-ft)	1.19	39.75	3.44
C & E Loss (ft)	0.03	Cum SA (acres)	0.88	13.99	2.24

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 energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
depth, the 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: Stagecoach Pass
REACH: StagecoachPass-1 RS: 2.36

INPUT
Description: Cross Section 2.36 is located within Sandflower.

Topography
indicates wash, and surrounding undeveloped desert.
Aerial shows

wash, desert, and homes.

T5NR4E Section 1
Q100 = 1851 cfs

Station Elevation Data num= 16

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9910.57	2424.79	9940.01	2424.86	9948.8	2424.85	9960.49	2427.96	9961.61	2428.26
9965.66	2428.27	9983.18	2423.999	9989	2422.581	10011.95	2422.141	10029.87	2422.6
10049.92	2424.271	10068.02	2425.781	10068.02	2424.831	10104.84	2424.571	10144.06	2424.32
10238.56	2425.14								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9910.57	.061	9983.18	.038	10049.92	.056

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9983.181	10049.92	308.98	287.94	276.39	.1	.3

Left Levee Station= 9965.66 Elevation= 2428.27
Right Levee Station=10068.02 Elevation= 2425.78

CROSS SECTION OUTPUT Profile #100-yr 6-yr

			Left OB	Channel	Right OB
E.G. Elev (ft)	2426.99	Element			
Vel Head (ft)	1.28	Wt. n-Val.	0.061	0.038	0.056
W.S. Elev (ft)	2425.71	Reach Len. (ft)	308.98	287.94	276.39
Crit W.S. (ft)	2425.71	Flow Area (sq ft)	5.99	196.34	12.40
E.G. Slope (ft/ft)	0.013192	Area (sq ft)	5.99	196.34	12.40
Q Total (cfs)	1851.00	Flow (cfs)	14.82	1805.91	30.27
Top Width (ft)	91.00	Top Width (ft)	7.01	66.74	17.24
Vel Total (ft/s)	8.62	Avg. Vel. (ft/s)	2.47	9.20	2.44
Max Chl Dpth (ft)	3.57	Hydr. Depth (ft)	0.85	2.94	0.72
Conv. Total (cfs)	16115.6	Conv. (cfs)	129.0	15723.0	263.5
Length Wtd. (ft)	287.95	Wetted Per. (ft)	7.22	66.99	17.30
Min Ch El (ft)	2422.14	Shear (lb/sq ft)	0.68	2.41	0.59
Alpha	1.11	Stream Power (lb/ft s)	1.69	22.20	1.44
Frctn Loss (ft)	4.01	Cum Volume (acre-ft)	9.29	36.84	10.72
C & E Loss (ft)	0.01	Cum SA (acres)	8.17	13.50	9.74

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

CROSS SECTION OUTPUT Profile #Method 1

			Left OB	Channel	Right OB
E.G. Elev (ft)	2427.09	Element			
Vel Head (ft)	1.44	Wt. n-Val.		0.038	
W.S. Elev (ft)	2425.65	Reach Len. (ft)	308.98	287.94	276.39
Crit W.S. (ft)	2425.65	Flow Area (sq ft)		192.13	
E.G. Slope (ft/ft)	0.015799	Area (sq ft)		192.13	
Q Total (cfs)	1851.00	Flow (cfs)		1851.00	
Top Width (ft)	66.74	Top Width (ft)		66.74	
Vel Total (ft/s)	9.63	Avg. Vel. (ft/s)		9.63	
Max Chl Dpth (ft)	3.51	Hydr. Depth (ft)		2.88	
Conv. Total (cfs)	14726.3	Conv. (cfs)		14726.3	
Length Wtd. (ft)	287.94	Wetted Per. (ft)		70.01	
Min Ch El (ft)	2422.14	Shear (lb/sq ft)		2.71	
Alpha	1.00	Stream Power (lb/ft s)		26.08	
Frctn Loss (ft)	4.52	Cum Volume (acre-ft)	1.19	38.50	3.44
C & E Loss (ft)	0.05	Cum SA (acres)	0.88	13.50	2.24

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 energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
depth, the 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: Stagecoach Pass
REACH: StagecoachPass-1 RS: 2.3

INPUT
Description: Cross Section 2.30 is located within Sandflower.

Topography
indicates wash, and surrounding undeveloped desert. Cross section
composed of cross section data collected by the City of Scottsdale
Survey Department.
Aerial shows wash, desert, and homes.
T5NR4E
Section 1
Q100 = 1851 cfs
Station Elevation Data num= 20

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9878.06	2419.72	9912.71	2420.2	9938.9	2416.72	9951.17	2419.66	9967.34	2418.5
9976.03	2417.88	9985.78	2415.97	10001.12	2415.91	10014.13	2416.23	10020.02	2416.38
10038.35	2416.23	10045.99	2418.51	10056.21	2421.54	10062.37	2421.95	10074.66	2419.42
10117.9	2419.07	10134.84	2422.98	10145.65	2423.61	10248.17	2423.79	10256.72	2424.05

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9878.06	.061	9967.34	.038	10045.99	.056

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9967.34	10045.99	362.45	369.47	383.86	.1	.3

Left Levee Station= 9951.17 Elevation= 2419.66
Right Levee Station=10062.37 Elevation= 2421.95

CROSS SECTION OUTPUT Profile #100-yr 6-yr

E.G. Elev (ft)	2420.44	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.25	Wt. n-Val.	0.061	0.038	0.056
W.S. Elev (ft)	2419.20	Reach Len. (ft)	362.45	369.47	383.86
Crit W.S. (ft)	2419.20	Flow Area (sq ft)	3.39	205.59	0.82
E.G. Slope (ft/ft)	0.014758	Area (sq ft)	3.39	205.59	0.82
Q Total (cfs)	1851.00	Flow (cfs)	4.95	1844.78	1.27
Top Width (ft)	90.71	Top Width (ft)	9.72	78.65	2.34
Vel Total (ft/s)	8.82	Avg. Vel. (ft/s)	1.46	8.97	1.55
Max Chl Dpth (ft)	3.29	Hydr. Depth (ft)	0.35	2.61	0.35
Conv. Total (cfs)	15236.8	Conv. (cfs)	40.8	15185.6	10.4
Length Wtd. (ft)	371.86	Wetted Per. (ft)	9.74	79.19	2.44
Min Ch El (ft)	2415.91	Shear (lb/sq ft)	0.32	2.39	0.31
Alpha	1.03	Stream Power (lb/ft s)	0.47	21.46	0.48
Frctn Loss (ft)	3.86	Cum Volume (acre-ft)	9.26	35.51	10.68
C & E Loss (ft)	0.12	Cum SA (acres)	8.11	13.02	9.68

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.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water
surface was used.

CROSS SECTION OUTPUT Profile #Method 1

E.G. Elev (ft)	2420.46	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.28	Wt. n-Val.		0.038	
W.S. Elev (ft)	2419.18	Reach Len. (ft)	362.45	369.47	383.86
Crit W.S. (ft)	2419.18	Flow Area (sq ft)		204.12	
E.G. Slope (ft/ft)	0.015568	Area (sq ft)		204.12	
Q Total (cfs)	1851.00	Flow (cfs)		1851.00	
Top Width (ft)	78.65	Top Width (ft)		78.65	
Vel Total (ft/s)	9.07	Avg. Vel. (ft/s)		9.07	
Max Chl Dpth (ft)	3.27	Hydr. Depth (ft)		2.60	
Conv. Total (cfs)	14835.1	Conv. (cfs)		14835.1	
Length Wtd. (ft)	371.89	Wetted Per. (ft)		80.55	
Min Ch El (ft)	2415.91	Shear (lb/sq ft)		2.46	
Alpha	1.00	Stream Power (lb/ft s)		22.33	
Frctn Loss (ft)	4.01	Cum Volume (acre-ft)	1.19	37.19	3.44
C & E Loss (ft)	0.13	Cum SA (acres)	0.88	13.02	2.24

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 energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
depth, the 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: Stagecoach Pass
REACH: StagecoachPass-1 RS: 2.23

INPUT
Description: Cross Section 2.23 is upstream of the boundary seperating
Sandflower and the Boulders. This section is located upstream of
concentration point CSCP02 in the HEC-1 Model. The levee location
is a projection of the home in the cross section area. The finish
floor of the home is 2411.74.

Topography indicates wash, and
surrounding undeveloped desert.
Aerial shows wash, desert, and
homes.
T5NR4E Section 1
Q100 = 1851 cfs
Station Elevation Data num= 23

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9911.81	2414.17	9922.75	2411.23	9932.61	2410.96	9944.01	2411.03	9953.31	2413.08
9982.03	2412.14	9984.43	2411	9994.54	2406.21	10003.02	2406.12	10011.75	2406.2
10015.02	2410.91	10037.36	2410.84	10047.99	2409.37	10052.72	2410.14	10080.44	2411.12
10135.92	2409.62	10181.18	2410.34	10228.19	2411.24	10281.16	2410.51	10291.49	2408.65
10328.66	2406.26	10361.84	2404.26	10375.18	2405				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val

9911.81 .061 9984.43 .03810015.02 .056

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
9984.4310015.02 480.63 452.86 425.7 .3 .5
Left Levee Station= 9953.31 Elevation= 2413.08
Right Levee Station=10159.71 Elevation= 2412

CROSS SECTION OUTPUT Profile #100-yr 6-yr

E.G. Elev (ft)	2412.66	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.85	Wt. n-Val.	0.061	0.038	0.056
W.S. Elev (ft)	2411.81	Reach Len. (ft)	480.63	452.86	425.70
Crit W.S. (ft)	2411.81	Flow Area (sq ft)	0.69	140.24	208.93
E.G. Slope (ft/ft)	0.007700	Area (sq ft)	0.69	140.24	208.93
Q Total (cfs)	1851.00	Flow (cfs)	0.76	1234.47	615.78
Top Width (ft)	176.99	Top Width (ft)	1.71	30.59	144.69
Vel Total (ft/s)	5.29	Avg. Vel. (ft/s)	1.09	8.80	2.95
Max Chl Dpth (ft)	7.55	Hydr. Depth (ft)	0.41	4.58	1.44
Conv. Total (cfs)	21093.9	Conv. (cfs)	8.6	14068.0	7017.4
Length Wtd. (ft)	448.30	Wetted Per. (ft)	1.89	34.13	146.71
Min Ch El (ft)	2406.12	Shear (lb/sq ft)	0.18	1.98	0.68
Alpha	1.95	Stream Power (lb/ft s)	0.19	17.39	2.02
Frctn Loss (ft)	1.28	Cum Volume (acre-ft)	9.24	34.04	9.75
C & E Loss (ft)	0.29	Cum SA (acres)	8.06	12.55	9.03

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 velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
depth, the 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 OUTPUT Profile #Method 1

E.G. Elev (ft)	2412.65	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.84	Wt. n-Val.		0.038	0.056
W.S. Elev (ft)	2411.81	Reach Len. (ft)	480.63	452.86	425.70
Crit W.S. (ft)	2411.81	Flow Area (sq ft)		140.15	208.51
E.G. Slope (ft/ft)	0.007897	Area (sq ft)		140.15	208.51
Q Total (cfs)	1851.00	Flow (cfs)		1229.50	621.50
Top Width (ft)	175.28	Top Width (ft)		30.59	144.69
Vel Total (ft/s)	5.31	Avg. Vel. (ft/s)		8.77	2.98
Max Chl Dpth (ft)	5.69	Hydr. Depth (ft)		4.58	1.44
Conv. Total (cfs)	20829.5	Conv. (cfs)		13835.7	6993.8
Length Wtd. (ft)	448.47	Wetted Per. (ft)		34.94	146.70
Min Ch El (ft)	2406.12	Shear (lb/sq ft)		1.98	0.70
Alpha	1.92	Stream Power (lb/ft s)		17.35	2.09
Frctn Loss (ft)	0.67	Cum Volume (acre-ft)	1.19	35.73	2.52
C & E Loss (ft)	0.34	Cum SA (acres)	0.88	12.55	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 velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.

This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
depth, the 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: Stagecoach Pass
REACH: StagecoachPass-1 RS: 2.15

INPUT
Description: Cross Section 2.15 is located within The Boulders. It is located upstream of the intersection of 79th Way and Stage Coach Pass Wash. There are 4-10 X 4 concrete box culverts located under 79th Way.

Topography indicates wash, and surrounding undeveloped desert.
Aerial shows wash, desert, and 79th Way.
T5NR4E Section 2
Q100 = 1996 cfs
Station Elevation Data num= 14

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9741.97	2400	9872.96	2402	9885.41	2402	99362400.384		9948	2400
9960.38	2398	9963	2397	9967.59	239610025.54		239610028.54		2397
10031.67	239810039.32		240010145.93		240210158.17		2404		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9741.97	.061	9948	.03910039.32		.056

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
994810039.32		43.85	37.46	39.36	.3	.5

Left Levee Station= 9885.41 Elevation= 2402

CROSS SECTION OUTPUT Profile #100-yr 6-yr

E.G. Elev (ft)	2401.93	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.27	Wt. n-Val.	0.061	0.039	0.056
W.S. Elev (ft)	2401.66	Reach Len. (ft)	43.85	37.46	39.36
Crit W.S. (ft)	2399.14	Flow Area (sq ft)	43.20	444.53	73.61
E.G. Slope (ft/ft)	0.001535	Area (sq ft)	43.20	444.53	73.61
Q Total (cfs)	1996.00	Flow (cfs)	36.42	1891.95	67.63
Top Width (ft)	231.91	Top Width (ft)	52.00	91.32	88.58
Vel Total (ft/s)	3.56	Avg. Vel. (ft/s)	0.84	4.26	0.92
Max Chl Dpth (ft)	5.66	Hydr. Depth (ft)	0.83	4.87	0.83
Conv. Total (cfs)	50941.2	Conv. (cfs)	929.5	48285.6	1726.1
Length Wtd. (ft)	37.46	Wetted Per. (ft)	52.03	92.35	88.60
Min Ch El (ft)	2396.00	Shear (lb/sq ft)	0.08	0.46	0.08
Alpha	1.36	Stream Power (lb/ft s)	0.07	1.96	0.07
Frctn Loss (ft)		Cum Volume (acre-ft)	9.00	31.00	8.37
C & E Loss (ft)		Cum SA (acres)	7.77	11.92	7.89

Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid,
energy was used.

CROSS SECTION OUTPUT Profile #Method 1

E.G. Elev (ft)	2403.67	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.16	Wt. n-Val.		0.039	
W.S. Elev (ft)	2403.50	Reach Len. (ft)	43.85	37.46	39.36
Crit W.S. (ft)	2399.13	Flow Area (sq ft)		612.66	

E.G. Slope (ft/ft)	0.000647	Area (sq ft)		612.66	
Q Total (cfs)	1996.00	Flow (cfs)		1996.00	
Top Width (ft)	91.32	Top Width (ft)		91.32	
Vel Total (ft/s)	3.26	Avg. Vel. (ft/s)		3.26	
Max Chl Dpth (ft)	7.50	Hydr. Depth (ft)		6.71	
Conv. Total (cfs)	78494.4	Conv. (cfs)		78494.4	
Length Wtd. (ft)	37.46	Wetted Per. (ft)		99.35	
Min Ch El (ft)	2396.00	Shear (lb/sq ft)		0.25	
Alpha	1.00	Stream Power (lb/ft s)		0.81	
Frctn Loss (ft)		Cum Volume (acre-ft)	1.19	31.82	1.50
C & E Loss (ft)		Cum SA (acres)	0.88	11.92	0.89

Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid,
energy was used.

CULVERT

RIVER: Stagecoach Pass
REACH: StagecoachPass-1 RS: 2.145

INPUT
Description: Box culverts at 79th Way crossing.
Distance from Upstream XS = 1
Deck/Roadway Width = 36
Weir Coefficient = 2.6
Upstream Deck/Roadway Coordinates
num= 6

Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord
9948	2400		9955.17	2402.07		9973.59	2404.49	
10015.98	2404.32		10028.93	2401.61		10039.32	2400	

Upstream Bridge Cross Section Data
Station Elevation Data num= 14

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9741.97	2400	9872.96	2402	9885.41	2402	9936	2400.384	9948	2400
9960.38	2398	9963	2397	9967.59	2396	10025.54	2396	10028.54	2397
10031.67	2398	10039.32	2400	10145.93	2402	10158.17	2404		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9741.97	.061	9948	.039	10039.32	.056

Bank Sta: Left Right Coeff Contr. Expan.
994 810039.32 .3 .5
Left Levee Station= 9885.41 Elevation= 2402

Downstream Deck/Roadway Coordinates
num= 6

Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord
9942.46	2398		9962.7	2400.6		9973.36	2403.81	
10015.88	2403.7		10024.97	2400.19		10031.36	2398	

Downstream Bridge Cross Section Data
Station Elevation Data num= 8

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9872.75	2400	9918.52	2400	9942.46	2398	9950.17	2396	10027.53	2396
10031.36	2398	10099.09	2400	10131.8	2402				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9872.75	.056	9942.46	.038	10031.36	.056

Bank Sta: Left Right Coeff Contr. Expan.
9942.46 10031.36 .3 .5
Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
9872.75	9942.46	2398	F
10031.36	10131.8	2398	F

```
Upstream Embankment side slope              =       0 horiz. to 1.0 vertical
Downstream Embankment side slope            =       0 horiz. to 1.0 vertical
Maximum allowable submergence for weir flow =     .95
Elevation at which weir flow begins         =
Energy head used in spillway design         =
Spillway height used in design              =
Weir crest shape                            = Broad Crested

Number of Culverts =  1

Culvert Name     Shape      Rise    Span
CULVERT#1            Box       4      10
FHWA Chart # 8 - flared wingwalls
FHWA Scale # 1 - Wingwall flared 30 to 75 deg.
Solution Criteria = Highest U.S. EG
Culvert Upstrm Dist  Length    Top n  Bottom n  Depth Blocked  Entrance Loss Coef   Exit Loss Coef
                 4      30     .015     .015        0                  .4                 1
Number of Barrels =  4
Upstream   Elevation =  2395.84
Centerline Stations
    Sta.    Sta.    Sta.    Sta.
 9981.71 9992.6210003.5410014.46
Downstream Elevation =  2394.65
Centerline Stations
    Sta.    Sta.    Sta.    Sta.
 9978.17 9989.08   1000010010.92

CROSS SECTION


RIVER: Stagecoach Pass
REACH: StagecoachPass-1   RS: 2.14

INPUT
Description: Cross Section 2.14 is located within The Boulders. It is located
             downstream of the intersection of 79th Way and Stage Coach Pass
             Wash.  There are 4-10 X 4 concrete box culverts located under 79th
             Way.

Topography indicates wash, and surrounding undeveloped
             desert.
Aerial shows wash, desert, and 79th Way.
T5NR4E Section
             2
Q100 = 1996 cfs
Station Elevation Data    num=       8
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
 9872.75    2400 9918.52    2400 9942.46    2398 9950.17    239610027.53    2396
10031.36    239810099.09    2400 10131.8    2402

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
 9872.75    .056 9942.46    .03810031.36    .056

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9942.4610031.36           298.75  303.82  341.22            .3        .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
 9872.75 9942.46    2398       F
10031.36 10131.8    2398       F

CROSS SECTION OUTPUT  Profile #100-yr 6-yr

  E.G. Elev (ft)          2399.85    Element                  Left OB    Channel   Right OB
  Vel Head (ft)              1.17    Wt. n-Val.                0.056      0.038     0.056
  W.S. Elev (ft)          2398.69    Reach Len. (ft)          298.75     303.82    341.22
  Crit W.S. (ft)          2398.69    Flow Area (sq ft)          2.83     227.38      8.00
  E.G. Slope (ft/ft)     0.014324    Area (sq ft)               2.83     227.38      8.00
  Q Total (cfs)           1996.00    Flow (cfs)                 4.40    1979.13     12.47
  Top Width (ft)           120.41    Top Width (ft)             8.23      88.90     23.28
```

Vel Total (ft/s)	8.38	Avg. Vel. (ft/s)	1.55	8.70	1.56
Max Chl Dpth (ft)	2.69	Hydr. Depth (ft)	0.34	2.56	0.34
Conv. Total (cfs)	16677.4	Conv. (cfs)	36.7	16536.5	104.2
Length Wtd. (ft)	304.00	Wetted Per. (ft)	8.26	89.65	23.29
Min Ch El (ft)	2396.00	Shear (lb/sq ft)	0.31	2.27	0.31
Alpha	1.07	Stream Power (lb/ft s)	0.48	19.74	0.48
Frctn Loss (ft)	4.12	Cum Volume (acre-ft)	8.98	30.72	8.33
C & E Loss (ft)	0.08	Cum SA (acres)	7.73	11.84	7.84

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

CROSS SECTION OUTPUT Profile #Method 1

E.G. Elev (ft)	2399.88	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.26	Wt. n-Val.		0.038	
W.S. Elev (ft)	2398.63	Reach Len. (ft)	298.75	303.82	341.22
Crit W.S. (ft)	2398.63	Flow Area (sq ft)		221.89	
E.G. Slope (ft/ft)	0.016101	Area (sq ft)		221.89	
Q Total (cfs)	1996.00	Flow (cfs)		1996.00	
Top Width (ft)	88.90	Top Width (ft)		88.90	
Vel Total (ft/s)	9.00	Avg. Vel. (ft/s)		9.00	
Max Chl Dpth (ft)	2.63	Hydr. Depth (ft)		2.50	
Conv. Total (cfs)	15730.2	Conv. (cfs)		15730.2	
Length Wtd. (ft)	303.82	Wetted Per. (ft)		90.90	
Min Ch El (ft)	2396.00	Shear (lb/sq ft)		2.45	
Alpha	1.00	Stream Power (lb/ft s)		22.07	
Frctn Loss (ft)	4.72	Cum Volume (acre-ft)	1.19	31.46	1.50
C & E Loss (ft)	0.09	Cum SA (acres)	0.88	11.84	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 energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
depth, the 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: Stagecoach Pass
REACH: StagecoachPass-1 RS: 2.08

INPUT
Description: Cross Section 2.08 is located within The Boulders.

Topography
indicates wash, and surrounding undeveloped desert.
Aerial shows
wash, desert, homes and golf course.
T5NR4E Section 2
Q100 =
1996 cfs
Station Elevation Data num= 15

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9868.34	2394	9910.07	2392	9918.94	2390	9922.37	2390	9940.95	2392
9945.83	2392	9973.02	2390	9981.37	2388	10000	2387.56	10026.83	2388

10035.34 239010046.48 239210049.91 239210075.31 239210102.96 2394

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9868.34	.056	9973.02	.03810035.34	.056	

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
9973.0210035.34 330.12 310.48 317.31 .1 .3
Left Levee Station= 9945.83 Elevation= 2392

CROSS SECTION OUTPUT Profile #100-yr 6-yr

E.G. Elev (ft)	2392.78	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.42	Wt. n-Val.	0.056	0.038	0.056
W.S. Elev (ft)	2391.35	Reach Len. (ft)	330.12	310.48	317.31
Crit W.S. (ft)	2391.35	Flow Area (sq ft)	12.46	202.16	5.11
E.G. Slope (ft/ft)	0.012872	Area (sq ft)	12.46	202.16	5.11
Q Total (cfs)	1996.00	Flow (cfs)	28.87	1955.40	11.73
Top Width (ft)	88.27	Top Width (ft)	18.41	62.32	7.54
Vel Total (ft/s)	9.08	Avg. Vel. (ft/s)	2.32	9.67	2.30
Max Chl Dpth (ft)	3.79	Hydr. Depth (ft)	0.68	3.24	0.68
Conv. Total (cfs)	17593.1	Conv. (cfs)	254.5	17235.3	103.4
Length Wtd. (ft)	310.66	Wetted Per. (ft)	18.46	62.80	7.66
Min Ch El (ft)	2387.56	Shear (lb/sq ft)	0.54	2.59	0.54
Alpha	1.11	Stream Power (lb/ft s)	1.26	25.02	1.23
Frctn Loss (ft)	4.31	Cum Volume (acre-ft)	8.93	29.22	8.28
C & E Loss (ft)	0.03	Cum SA (acres)	7.64	11.31	7.72

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.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water
surface was used.

CROSS SECTION OUTPUT Profile #Method 1

E.G. Elev (ft)	2392.87	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.57	Wt. n-Val.		0.038	
W.S. Elev (ft)	2391.30	Reach Len. (ft)	330.12	310.48	317.31
Crit W.S. (ft)	2391.30	Flow Area (sq ft)		198.57	
E.G. Slope (ft/ft)	0.015026	Area (sq ft)		198.57	
Q Total (cfs)	1996.00	Flow (cfs)		1996.00	
Top Width (ft)	62.32	Top Width (ft)		62.32	
Vel Total (ft/s)	10.05	Avg. Vel. (ft/s)		10.05	
Max Chl Dpth (ft)	3.74	Hydr. Depth (ft)		3.19	
Conv. Total (cfs)	16282.9	Conv. (cfs)		16282.9	
Length Wtd. (ft)	310.48	Wetted Per. (ft)		65.39	
Min Ch El (ft)	2387.56	Shear (lb/sq ft)		2.85	
Alpha	1.00	Stream Power (lb/ft s)		28.64	
Frctn Loss (ft)	4.81	Cum Volume (acre-ft)	1.19	29.99	1.50
C & E Loss (ft)	0.06	Cum SA (acres)	0.88	11.31	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 cross section had to be extended vertically during the critical depth calculations.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical

depth, the 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: Stagecoach Pass
REACH: StagecoachPass-1 RS: 2.02

INPUT
Description: Cross Section 2.02 is located within The Boulders.

Topography
indicates wash, and surrounding undeveloped desert.
Aerial shows
wash, desert, and golf course.
T5NR4E Section 2
Q100 = 1996 cfs
Station Elevation Data num= 10

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9884.54	2386	9940.4	2386	9954.74	2386	9958.18	2384	9961.45	2382
9964.76	2380	10016.06	2380	10041.22	2382	10053.09	2384	10078.52	2386

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9884.54	.056	9961.45	.038	10041.22	.056

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9961.45	10041.22	422.41	410.88	400.28	.1	.3

CROSS SECTION OUTPUT Profile #100-yr 6-yr

			Left OB	Channel	Right OB
E.G. Elev (ft)	2384.37	Element			
Vel Head (ft)	1.32	Wt. n-Val.	0.056	0.038	0.056
W.S. Elev (ft)	2383.06	Reach Len. (ft)	422.41	410.88	400.28
Crit W.S. (ft)	2383.06	Flow Area (sq ft)	0.91	215.28	3.31
E.G. Slope (ft/ft)	0.014991	Area (sq ft)	0.91	215.28	3.31
Q Total (cfs)	1996.00	Flow (cfs)	1.74	1987.31	6.95
Top Width (ft)	87.76	Top Width (ft)	1.73	79.77	6.27
Vel Total (ft/s)	9.09	Avg. Vel. (ft/s)	1.91	9.23	2.10
Max Chl Dpth (ft)	3.06	Hydr. Depth (ft)	0.53	2.70	0.53
Conv. Total (cfs)	16302.4	Conv. (cfs)	14.2	16231.4	56.8
Length Wtd. (ft)	409.47	Wetted Per. (ft)	2.02	80.41	6.35
Min Ch El (ft)	2380.00	Shear (lb/sq ft)	0.42	2.51	0.49
Alpha	1.03	Stream Power (lb/ft s)	0.80	23.13	1.02
Frctn Loss (ft)	4.00	Cum Volume (acre-ft)	8.87	27.73	8.25
C & E Loss (ft)	0.02	Cum SA (acres)	7.57	10.81	7.67

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.

CROSS SECTION OUTPUT Profile #Method 1

			Left OB	Channel	Right OB
E.G. Elev (ft)	2384.39	Element			
Vel Head (ft)	1.35	Wt. n-Val.		0.038	
W.S. Elev (ft)	2383.04	Reach Len. (ft)	422.41	410.88	400.28

Crit W.S. (ft)	2383.04	Flow Area (sq ft)		213.84		
E.G. Slope (ft/ft)	0.015999	Area (sq ft)		213.84		
Q Total (cfs)	1996.00	Flow (cfs)		1996.00		
Top Width (ft)	79.77	Top Width (ft)		79.77		
Vel Total (ft/s)	9.33	Avg. Vel. (ft/s)		9.33		
Max Chl Dpth (ft)	3.04	Hydr. Depth (ft)		2.68		
Conv. Total (cfs)	15780.3	Conv. (cfs)		15780.3		
Length Wtd. (ft)	410.44	Wetted Per. (ft)		82.48		
Min Ch El (ft)	2380.00	Shear (lb/sq ft)		2.59		
Alpha	1.00	Stream Power (lb/ft s)		24.17		
Frctn Loss (ft)	5.78	Cum Volume (acre-ft)	1.19	28.52	1.50	
C & E Loss (ft)	0.11	Cum SA (acres)	0.88	10.81	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 velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
depth, the 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: Stagecoach Pass
REACH: StagecoachPass-1 RS: 1.94

INPUT
Description: Cross Section 1.94 is located within The Boulders.

Topography
indicates wash, and surrounding undeveloped desert.
Aerial shows
wash, desert, and golf course.
T5NR4E Section 11
Q100 = 1996 cfs
Station Elevation Data num= 20

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9886.74	2380	9920.84	2378	9979.42	2376	9982.65	2374	9985.28	2372
9987.82	2370	9990.64	2368	10000	2366.48	10006.29	2368	10009.67	2370
10013.35	2372	10048.55	2372.54	10076.83	2372	10087.19	2371.53	10100.41	2372
10110.17	2374	10125.91	2376	10139.66	2378	10149.43	2380	10157.99	2382

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9886.74	.056	9987.82	.038	10009.67	.056

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9987.82	10009.67	148.83	149.34	138.33	.1	.3

CROSS SECTION OUTPUT Profile #100-yr 6-yr

			Left OB	Channel	Right OB
E.G. Elev (ft)	2375.16	Element			
Vel Head (ft)	1.24	Wt. n-Val.	0.056	0.038	0.056
W.S. Elev (ft)	2373.92	Reach Len. (ft)	148.83	149.34	138.33
Crit W.S. (ft)	2373.92	Flow Area (sq ft)	9.84	135.03	175.21
E.G. Slope (ft/ft)	0.006869	Area (sq ft)	9.84	135.03	175.21
Q Total (cfs)	1996.00	Flow (cfs)	28.80	1410.29	556.91
Top Width (ft)	127.02	Top Width (ft)	5.06	21.85	100.11
Vel Total (ft/s)	6.24	Avg. Vel. (ft/s)	2.93	10.44	3.18
Max Chl Dpth (ft)	7.44	Hydr. Depth (ft)	1.94	6.18	1.75
Conv. Total (cfs)	24083.6	Conv. (cfs)	347.5	17016.5	6719.6
Length Wtd. (ft)	147.73	Wetted Per. (ft)	6.40	23.34	100.84
Min Ch El (ft)	2366.48	Shear (lb/sq ft)	0.66	2.48	0.75
Alpha	2.06	Stream Power (lb/ft s)	1.93	25.91	2.37

Frctn Loss (ft)	1.35	Cum Volume (acre-ft)	8.82	26.08	7.43
C & E Loss (ft)	0.04	Cum SA (acres)	7.53	10.33	7.18

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

CROSS SECTION OUTPUT Profile #Method 1

E.G. Elev (ft)	2376.62	Element	Left OB	Channel	Right OB
Vel Head (ft)	2.43	Wt. n-Val.		0.038	0.056
W.S. Elev (ft)	2374.19	Reach Len. (ft)	148.83	149.34	138.33
Crit W.S. (ft)	2374.19	Flow Area (sq ft)		140.95	34.64
E.G. Slope (ft/ft)	0.012509	Area (sq ft)		140.95	34.64
Q Total (cfs)	1996.00	Flow (cfs)		1831.28	164.72
Top Width (ft)	36.40	Top Width (ft)		21.85	14.55
Vel Total (ft/s)	11.37	Avg. Vel. (ft/s)		12.99	4.75
Max Chl Dpth (ft)	7.71	Hydr. Depth (ft)		6.45	2.38
Conv. Total (cfs)	17846.6	Conv. (cfs)		16373.9	1472.8
Length Wtd. (ft)	148.89	Wetted Per. (ft)		27.53	17.08
Min Ch El (ft)	2366.48	Shear (lb/sq ft)		4.00	1.58
Alpha	1.21	Stream Power (lb/ft s)		51.95	7.53
Frctn Loss (ft)	2.06	Cum Volume (acre-ft)	1.19	26.85	1.34
C & E Loss (ft)	0.18	Cum SA (acres)	0.88	10.33	0.82

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: Stagecoach Pass
REACH: StagecoachPass-1 RS: 1.92

INPUT
Description: Cross Section 1.92 is located within The Boulders.

Topography
indicates wash, and surrounding undeveloped desert.
Aerial shows
wash, desert, and golf course.
T5NR4E Section 11
Q100 = 1996 cfs
Station Elevation Data num= 16

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9918.53	2376	9931.83	2374	9942.48	2372	9958.79	2370	9965.96	2368
9987.52	2366	9989.99	2364	10005.85	2364	10009.75	2366	10016.49	2368
10034.73	2370	10041.64	2372	10049.05	2374	10063.62	2376	10090.24	2378

10138.43 2380

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9918.53	.056	9965.96	.03810016.49		.056

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9965.96	10016.49	164.2	172.47	183.53	.1	.3

CROSS SECTION OUTPUT Profile #100-yr 6-yr

E.G. Elev (ft)	2371.18	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.65	Wt. n-Val.	0.056	0.038	0.056
W.S. Elev (ft)	2369.53	Reach Len. (ft)	164.20	172.47	183.53
Crit W.S. (ft)	2369.53	Flow Area (sq ft)	4.22	188.37	10.73
E.G. Slope (ft/ft)	0.012745	Area (sq ft)	4.22	188.37	10.73
Q Total (cfs)	1996.00	Flow (cfs)	10.33	1958.84	26.84
Top Width (ft)	70.02	Top Width (ft)	5.50	50.53	13.99
Vel Total (ft/s)	9.82	Avg. Vel. (ft/s)	2.45	10.40	2.50
Max Chl Dpth (ft)	5.53	Hydr. Depth (ft)	0.77	3.73	0.77
Conv. Total (cfs)	17680.3	Conv. (cfs)	91.5	17351.1	237.7
Length Wtd. (ft)	174.25	Wetted Per. (ft)	5.71	52.10	14.08
Min Ch El (ft)	2364.00	Shear (lb/sq ft)	0.59	2.88	0.61
Alpha	1.10	Stream Power (lb/ft s)	1.44	29.91	1.52
Frctn Loss (ft)	2.17	Cum Volume (acre-ft)	8.80	25.52	7.14
C & E Loss (ft)	0.17	Cum SA (acres)	7.52	10.20	7.00

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
depth, the 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 OUTPUT Profile #Method 1

E.G. Elev (ft)	2371.28	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.82	Wt. n-Val.		0.038	
W.S. Elev (ft)	2369.45	Reach Len. (ft)	164.20	172.47	183.53
Crit W.S. (ft)	2369.45	Flow Area (sq ft)		184.14	
E.G. Slope (ft/ft)	0.015344	Area (sq ft)		184.14	
Q Total (cfs)	1996.00	Flow (cfs)		1996.00	
Top Width (ft)	50.53	Top Width (ft)		50.53	
Vel Total (ft/s)	10.84	Avg. Vel. (ft/s)		10.84	
Max Chl Dpth (ft)	5.45	Hydr. Depth (ft)		3.64	
Conv. Total (cfs)	16113.7	Conv. (cfs)		16113.7	
Length Wtd. (ft)	172.47	Wetted Per. (ft)		55.01	
Min Ch El (ft)	2364.00	Shear (lb/sq ft)		3.21	
Alpha	1.00	Stream Power (lb/ft s)		34.76	
Frctn Loss (ft)	2.66	Cum Volume (acre-ft)	1.19	26.29	1.28
C & E Loss (ft)	0.03	Cum SA (acres)	0.88	10.20	0.80

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.

CROSS SECTION

RIVER: Stagecoach Pass
REACH: StagecoachPass-1 RS: 1.88

INPUT
Description: Cross Section 1.88 is located within The Boulders.

Topography
indicates wash, and surrounding undeveloped desert.
Aerial shows
wash, desert, and homes.
T5NR4E Section 11
Q100 = 1996 cfs
Station Elevation Data num= 16

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9929.5	2372	9937.92	2370	9952.45	2368	9963.2	2366	9977.19	2364
9982.5	2362	10000	2360.66	10007.9	2362	10017.25	2364	10021.01	2364
10061.67	2363	10093.75	2364	10109.44	2366	10124.39	2368	10150.25	2370
10151.3	2370								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9929.5	.056	9977.19	.038	10017.25	.056

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9977.19	10017.25	390.55	379.42	365.92	.1	.3

CROSS SECTION OUTPUT Profile #100-yr 6-yr

			Left OB	Channel	Right OB
E.G. Elev (ft)	2366.48	Element			
Vel Head (ft)	1.08	Wt. n-Val.	0.056	0.038	0.056
W.S. Elev (ft)	2365.40	Reach Len. (ft)	390.55	379.42	365.92
Crit W.S. (ft)	2365.40	Flow Area (sq ft)	6.81	138.37	150.74
E.G. Slope (ft/ft)	0.012160	Area (sq ft)	6.81	138.37	150.74
Q Total (cfs)	1996.00	Flow (cfs)	15.57	1346.87	633.57
Top Width (ft)	137.27	Top Width (ft)	9.76	40.06	87.45
Vel Total (ft/s)	6.74	Avg. Vel. (ft/s)	2.29	9.73	4.20
Max Chl Dpth (ft)	4.74	Hydr. Depth (ft)	0.70	3.45	1.72
Conv. Total (cfs)	18100.8	Conv. (cfs)	141.2	12214.1	5745.5
Length Wtd. (ft)	377.41	Wetted Per. (ft)	9.86	40.80	87.56
Min Ch El (ft)	2360.66	Shear (lb/sq ft)	0.52	2.57	1.31
Alpha	1.53	Stream Power (lb/ft s)	1.20	25.06	5.49
Frctn Loss (ft)	4.46	Cum Volume (acre-ft)	8.78	24.88	6.80
C & E Loss (ft)	0.00	Cum SA (acres)	7.49	10.03	6.78

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

CROSS SECTION OUTPUT Profile #Method 1

			Left OB	Channel	Right OB
E.G. Elev (ft)	2368.33	Element			
Vel Head (ft)	2.15	Wt. n-Val.		0.038	
W.S. Elev (ft)	2366.18	Reach Len. (ft)	390.55	379.42	365.92
Crit W.S. (ft)	2366.18	Flow Area (sq ft)		169.73	
E.G. Slope (ft/ft)	0.015476	Area (sq ft)		169.73	
Q Total (cfs)	1996.00	Flow (cfs)		1996.00	
Top Width (ft)	40.06	Top Width (ft)		40.06	
Vel Total (ft/s)	11.76	Avg. Vel. (ft/s)		11.76	
Max Chl Dpth (ft)	5.52	Hydr. Depth (ft)		4.24	

Conv. Total (cfs)	16044.6	Conv. (cfs)		16044.6		
Length Wtd. (ft)	379.51	Wetted Per. (ft)		45.16		
Min Ch El (ft)	2360.66	Shear (lb/sq ft)		3.63		
Alpha	1.00	Stream Power (lb/ft s)		42.71		
Frctn Loss (ft)	5.34	Cum Volume (acre-ft)	1.19	25.59	1.28	
C & E Loss (ft)	0.28	Cum SA (acres)	0.88	10.03	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 velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
depth, the 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: Stagecoach Pass
REACH: StagecoachPass-1 RS: 1.81

INPUT
Description: Cross Section 1.81 is located within The Boulders.

Topography
indicates wash, golf course and surrounding undeveloped desert.
Aerial shows wash, desert, homes and golf course.
T5NR4E
Section 11
Q100 = 1996 cfs
Station Elevation Data num= 13

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9806.61	2360	9836.19	2358	9949.06	2356	9960.81	2354	9965.49	2354
9996.02	2354	10000	2353.47	10020.67	2354	10023.91	2356	10071.08	2358
10101.33	2358	10217.55	2358	10234.73	2360				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9806.61	.056	9949.06	.038	10023.91	.056

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9949.06	10023.91	281.52	288.71	293.17	.1	.3

CROSS SECTION OUTPUT Profile #100-yr 6-yr

E.G. Elev (ft)	2358.18	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.10	Wt. n-Val.	0.056	0.038	0.056
W.S. Elev (ft)	2357.08	Reach Len. (ft)	281.52	288.71	293.17
Crit W.S. (ft)	2357.08	Flow Area (sq ft)	32.81	221.96	13.71
E.G. Slope (ft/ft)	0.011505	Area (sq ft)	32.81	221.96	13.71
Q Total (cfs)	1996.00	Flow (cfs)	61.86	1908.30	25.84
Top Width (ft)	161.14	Top Width (ft)	60.86	74.85	25.43
Vel Total (ft/s)	7.43	Avg. Vel. (ft/s)	1.89	8.60	1.88
Max Chl Dpth (ft)	3.61	Hydr. Depth (ft)	0.54	2.97	0.54
Conv. Total (cfs)	18609.1	Conv. (cfs)	576.7	17791.4	240.9
Length Wtd. (ft)	288.28	Wetted Per. (ft)	60.87	75.63	25.46
Min Ch El (ft)	2353.47	Shear (lb/sq ft)	0.39	2.11	0.39
Alpha	1.28	Stream Power (lb/ft s)	0.73	18.12	0.73
Frctn Loss (ft)	3.10	Cum Volume (acre-ft)	8.60	23.31	6.11
C & E Loss (ft)	0.10	Cum SA (acres)	7.17	9.52	6.31

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.

CROSS SECTION OUTPUT Profile #Method 1

E.G. Elev (ft)	2358.21	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.20	Wt. n-Val.	0.056	0.038	0.056
W.S. Elev (ft)	2357.01	Reach Len. (ft)	281.52	288.71	293.17
Crit W.S. (ft)	2357.01	Flow Area (sq ft)	19.05	216.46	5.33
E.G. Slope (ft/ft)	0.012850	Area (sq ft)	19.05	216.46	5.33
Q Total (cfs)	1996.00	Flow (cfs)	48.26	1934.15	13.59
Top Width (ft)	105.00	Top Width (ft)	24.06	74.85	6.09
Vel Total (ft/s)	8.29	Avg. Vel. (ft/s)	2.53	8.94	2.55
Max Chl Dpth (ft)	3.53	Hydr. Depth (ft)	0.79	2.89	0.88
Conv. Total (cfs)	17608.3	Conv. (cfs)	425.7	17062.7	119.9
Length Wtd. (ft)	288.54	Wetted Per. (ft)	24.64	75.63	6.84
Min Ch El (ft)	2353.47	Shear (lb/sq ft)	0.62	2.30	0.63
Alpha	1.13	Stream Power (lb/ft s)	1.57	20.52	1.59
Frctn Loss (ft)	3.75	Cum Volume (acre-ft)	1.10	23.91	1.26
C & E Loss (ft)	0.05	Cum SA (acres)	0.77	9.52	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 energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
depth, the 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: Stagecoach Pass
REACH: StagecoachPass-1 RS: 1.76

INPUT
Description: Cross Section 1.76 is located within The Boulders.

Topography
indicates wash, golf course, and surrounding undeveloped
desert.
Aerial shows wash, desert, homes and golf course.
T5NR4E
Section 11
Q100 = 1996 cfs
Station Elevation Data num= 19

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9728.46	2362	9734.9	2360	9738.22	2358	9741.88	2356	9747.45	2354
9764.83	2352	9790.91	2350	9940.04	2349.89	9953.78	2348	9976.61	2348
9979.22	2348	10000	2347.110	026.22	2348	10033.66	2350	10063.3	2352
10080.34	2352	10119.04	2352	10173.62	2354	10222.5	2356		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9728.46	.056	9940.04	.038	10033.66	.056

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9940.04	10033.66	191.07	201.39	222.44	.1	.3

CROSS SECTION OUTPUT Profile #100-yr 6-yr

E.G. Elev (ft)	2351.36	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.77	Wt. n-Val.	0.056	0.038	0.056
W.S. Elev (ft)	2350.59	Reach Len. (ft)	191.07	201.39	222.44
Crit W.S. (ft)	2350.59	Flow Area (sq ft)	98.52	243.23	2.58
E.G. Slope (ft/ft)	0.010093	Area (sq ft)	98.52	243.23	2.58
Q Total (cfs)	1996.00	Flow (cfs)	192.62	1800.34	3.05
Top Width (ft)	259.20	Top Width (ft)	156.83	93.62	8.75
Vel Total (ft/s)	5.80	Avg. Vel. (ft/s)	1.96	7.40	1.18
Max Chl Dpth (ft)	3.49	Hydr. Depth (ft)	0.63	2.60	0.30
Conv. Total (cfs)	19867.7	Conv. (cfs)	1917.3	17920.1	30.3
Length Wtd. (ft)	200.84	Wetted Per. (ft)	156.85	94.05	8.77
Min Ch El (ft)	2347.10	Shear (lb/sq ft)	0.40	1.63	0.19
Alpha	1.48	Stream Power (lb/ft s)	0.77	12.06	0.22
Frctn Loss (ft)	2.57	Cum Volume (acre-ft)	8.18	21.77	6.05
C & E Loss (ft)	0.01	Cum SA (acres)	6.47	8.97	6.19

Warning: The energy equation could not be 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 OUTPUT Profile #Method 1

E.G. Elev (ft)	2351.54	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.03	Wt. n-Val.	0.056	0.038	
W.S. Elev (ft)	2350.51	Reach Len. (ft)	191.07	201.39	222.44
Crit W.S. (ft)	2350.51	Flow Area (sq ft)	24.25	235.73	
E.G. Slope (ft/ft)	0.013153	Area (sq ft)	24.25	235.73	
Q Total (cfs)	1996.00	Flow (cfs)	52.30	1943.70	
Top Width (ft)	133.66	Top Width (ft)	40.04	93.62	
Vel Total (ft/s)	7.68	Avg. Vel. (ft/s)	2.16	8.25	
Max Chl Dpth (ft)	3.41	Hydr. Depth (ft)	0.61	2.52	
Conv. Total (cfs)	17403.9	Conv. (cfs)	456.1	16947.8	
Length Wtd. (ft)	201.25	Wetted Per. (ft)	40.63	94.56	
Min Ch El (ft)	2347.10	Shear (lb/sq ft)	0.49	2.05	
Alpha	1.13	Stream Power (lb/ft s)	1.06	16.88	
Frctn Loss (ft)	3.11	Cum Volume (acre-ft)	0.96	22.41	1.24
C & E Loss (ft)	0.07	Cum SA (acres)	0.57	8.97	0.75

Warning: The energy equation could not be 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.
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: Stagecoach Pass
REACH: StagecoachPass-1 RS: 1.72

INPUT

Description: Cross Section 1.72 is located within The Boulders.

Topography
indicates wash, golf course and surrounding undeveloped desert.
Aerial shows wash, desert, homes and golf course.
T5NR4E
Section 11
Q100 = 1996 cfs
Station Elevation Data num= 27

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9859.06	2350	9871.26	2348	9884.45	2346	9926.08	2345	9946.89	2344.5
9967.7	2344	9980.95	2344	9988.54	2344	10000	2342.4	10011.21	2344
10033.23	2344	10060.56	2344	10072.86	2344	10113.18	2344	10118.53	2344.5
10123.88	2345	10134.58	2346	10145.49	2348	10153.67	2348	10174.71	2346
10199.46	2346	10324.82	2348	10345.69	2348	10362.87	2346	10371.75	2346
10403.93	2348	10432.1	2348						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9859.06	.056	9946.89	.038	10118.53	.056

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9946.89	10118.53	324.14	319.48	271.25	.1	.3

CROSS SECTION OUTPUT Profile #100-yr 6-yr

			Left OB	Channel	Right OB
E.G. Elev (ft)	2346.28	Element			
Vel Head (ft)	0.73	Wt. n-Val.	0.056	0.038	0.056
W.S. Elev (ft)	2345.55	Reach Len. (ft)	324.14	319.48	271.25
Crit W.S. (ft)	2345.55	Flow Area (sq ft)	22.97	277.73	5.90
E.G. Slope (ft/ft)	0.016686	Area (sq ft)	22.97	277.73	5.90
Q Total (cfs)	1996.00	Flow (cfs)	51.24	1931.63	13.14
Top Width (ft)	226.61	Top Width (ft)	43.73	171.64	11.24
Vel Total (ft/s)	6.51	Avg. Vel. (ft/s)	2.23	6.96	2.22
Max Chl Dpth (ft)	3.15	Hydr. Depth (ft)	0.53	1.62	0.53
Conv. Total (cfs)	15452.0	Conv. (cfs)	396.7	14953.6	101.7
Length Wtd. (ft)	318.28	Wetted Per. (ft)	43.74	171.89	11.29
Min Ch El (ft)	2342.40	Shear (lb/sq ft)	0.55	1.68	0.54
Alpha	1.11	Stream Power (lb/ft s)	1.22	11.71	1.21
Frctn Loss (ft)	5.13	Cum Volume (acre-ft)	7.91	20.56	6.03
C & E Loss (ft)	0.01	Cum SA (acres)	6.03	8.35	6.14

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 energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
depth, the 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 OUTPUT Profile #Method 1

			Left OB	Channel	Right OB
E.G. Elev (ft)	2346.35	Element			
Vel Head (ft)	0.81	Wt. n-Val.		0.038	
W.S. Elev (ft)	2345.54	Reach Len. (ft)	324.14	319.48	271.25
Crit W.S. (ft)	2345.54	Flow Area (sq ft)		276.60	
E.G. Slope (ft/ft)	0.018354	Area (sq ft)		276.60	
Q Total (cfs)	1996.00	Flow (cfs)		1996.00	
Top Width (ft)	171.64	Top Width (ft)		171.64	
Vel Total (ft/s)	7.22	Avg. Vel. (ft/s)		7.22	
Max Chl Dpth (ft)	3.14	Hydr. Depth (ft)		1.61	
Conv. Total (cfs)	14733.2	Conv. (cfs)		14733.2	
Length Wtd. (ft)	319.48	Wetted Per. (ft)		173.98	
Min Ch El (ft)	2342.40	Shear (lb/sq ft)		1.82	
Alpha	1.00	Stream Power (lb/ft s)		13.15	
Frctn Loss (ft)	5.64	Cum Volume (acre-ft)	0.91	21.23	1.24

C & E Loss (ft)	0.01	Cum SA (acres)	0.48	8.35	0.75

Warning: The energy equation could not be 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: Stagecoach Pass
REACH: StagecoachPass-1 RS: 1.66

INPUT
Description: Cross Section 1.66 is located within The Boulders.

Topography
indicates wash, golf course and surrounding undeveloped desert.
Aerial shows wash, desert, homes and golf course.
T5NR4E
Section 11
Q100 = 1996 cfs
Station Elevation Data num= 22

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9856.71	2348	9862.53	2346	9866.59	2344	9874.12	2342	9881.75	2340
9896.41	2338	9991.87	2336	10003.77	2336	10032.05	2338	10042.96	2338
10058.68	2338	10067.71	2340	10069.34	2340	10083.23	2338	10091.48	2338
10125.97	2340	10137.23	2340	10142.62	2338	10158.22	2338	10222.17	2340
10240.95	2342	10260.59	2344						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9856.71	.056	9896.41	.038	10032.05	.056

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9896.41	10032.05	459.93	447.13	377.45	.1	.3

Right Levee Station=10125.97 Elevation= 2340

CROSS SECTION OUTPUT Profile #100-yr 6-yr

			Left OB	Channel	Right OB
E.G. Elev (ft)	2339.62	Element			
Vel Head (ft)	0.82	Wt. n-Val.	0.056	0.038	0.056
W.S. Elev (ft)	2338.80	Reach Len. (ft)	459.93	447.13	377.45
Crit W.S. (ft)	2338.80	Flow Area (sq ft)	2.32	255.36	36.80
E.G. Slope (ft/ft)	0.015590	Area (sq ft)	2.32	255.36	36.80
Q Total (cfs)	1996.00	Flow (cfs)	4.12	1900.09	91.79
Top Width (ft)	199.16	Top Width (ft)	5.83	135.64	57.70
Vel Total (ft/s)	6.78	Avg. Vel. (ft/s)	1.78	7.44	2.49
Max Chl Dpth (ft)	2.79	Hydr. Depth (ft)	0.40	1.88	0.64
Conv. Total (cfs)	15986.0	Conv. (cfs)	33.0	15217.8	735.2
Length Wtd. (ft)	445.54	Wetted Per. (ft)	5.88	135.73	57.86
Min Ch El (ft)	2336.00	Shear (lb/sq ft)	0.38	1.83	0.62
Alpha	1.15	Stream Power (lb/ft s)	0.68	13.62	1.54
Frctn Loss (ft)	7.21	Cum Volume (acre-ft)	7.81	18.61	5.90
C & E Loss (ft)	0.01	Cum SA (acres)	5.84	7.23	5.93

Warning: The energy equation could not be balanced within the specified number of iterations. The program selected the water surface that had the least amount of error between computed and assumed values.
Warning: Divided flow computed for this cross-section.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.

This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
depth, the calculated water surface came back below critical depth. This indicates that there is
not a valid subcritical answer. The program defaulted to critical depth.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water
surface was used.

CROSS SECTION OUTPUT Profile #Method 1

E.G. Elev (ft)	2339.74	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.93	Wt. n-Val.		0.038	
W.S. Elev (ft)	2338.81	Reach Len. (ft)	459.93	447.13	377.45
Crit W.S. (ft)	2338.81	Flow Area (sq ft)		257.42	
E.G. Slope (ft/ft)	0.017017	Area (sq ft)		257.42	
Q Total (cfs)	1996.00	Flow (cfs)		1996.00	
Top Width (ft)	135.64	Top Width (ft)		135.64	
Vel Total (ft/s)	7.75	Avg. Vel. (ft/s)		7.75	
Max Chl Dpth (ft)	2.81	Hydr. Depth (ft)		1.90	
Conv. Total (cfs)	15300.8	Conv. (cfs)		15300.8	
Length Wtd. (ft)		Wetted Per. (ft)		137.35	
Min Ch El (ft)	2336.00	Shear (lb/sq ft)		1.99	
Alpha	1.00	Stream Power (lb/ft s)		15.44	
Frctn Loss (ft)		Cum Volume (acre-ft)	0.91	19.27	1.24
C & E Loss (ft)		Cum SA (acres)	0.48	7.23	0.75

Warning: The energy equation could not be 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.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water
surface was used.

CROSS SECTION

RIVER: Stagecoach Pass
REACH: StagecoachPass-1 RS: 1.57

INPUT
Description: Cross Section 1.57 is located within The Boulders.

Topography
indicates wash, and surrounding undeveloped desert.
Aerial shows
wash, desert, and golf course.
T5NR4E Section 11
Q100 = 1996 cfs
Station Elevation Data num= 17

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9871.81	2332	9911.2	2332	9920.48	2332	9934.2	2334	9939.06	2334
9946.42	2332	9949.89	2331	9953.35	2330	10000	2328	10065.02	2330
10082.16	2331	10099.29	2332	10118.69	2334	10126.61	2336	10136.1	2338
10162.42	2340	10170.42	2342						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9871.81	.056	9949.89	.038	10082.16	.056

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
9949.89 10082.16 211.6 230.84 263.52 .1 .3
Left Levee Station= 9939.06 Elevation= 2334

CROSS SECTION OUTPUT Profile #100-yr 6-yr

E.G. Elev (ft)	2332.11	Element	Left OB	Channel	Right OB

Vel Head (ft)	0.95	Wt. n-Val.	0.056	0.038	0.056
W.S. Elev (ft)	2331.16	Reach Len. (ft)	211.60	230.84	263.52
Crit W.S. (ft)	2331.16	Flow Area (sq ft)	0.04	254.66	0.22
E.G. Slope (ft/ft)	0.016812	Area (sq ft)	0.04	254.66	0.22
Q Total (cfs)	1996.00	Flow (cfs)	0.03	1995.84	0.14
Top Width (ft)	135.54	Top Width (ft)	0.55	132.27	2.72
Vel Total (ft/s)	7.83	Avg. Vel. (ft/s)	0.62	7.84	0.64
Max Chl Dpth (ft)	3.16	Hydr. Depth (ft)	0.08	1.93	0.08
Conv. Total (cfs)	15393.8	Conv. (cfs)	0.2	15392.6	1.1
Length Wtd. (ft)	230.83	Wetted Per. (ft)	0.57	132.51	2.73
Min Ch El (ft)	2328.00	Shear (lb/sq ft)	0.08	2.02	0.08
Alpha	1.00	Stream Power (lb/ft s)	0.05	15.81	0.05
Frctn Loss (ft)	3.73	Cum Volume (acre-ft)	7.80	15.99	5.74
C & E Loss (ft)	0.02	Cum SA (acres)	5.81	5.85	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 energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
depth, the 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 OUTPUT Profile #Method 1

E.G. Elev (ft)	2332.11	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.95	Wt. n-Val.		0.038	
W.S. Elev (ft)	2331.16	Reach Len. (ft)	211.60	230.84	263.52
Crit W.S. (ft)	2331.16	Flow Area (sq ft)		254.66	
E.G. Slope (ft/ft)	0.016869	Area (sq ft)		254.66	
Q Total (cfs)	1996.00	Flow (cfs)		1996.00	
Top Width (ft)	132.27	Top Width (ft)		132.27	
Vel Total (ft/s)	7.84	Avg. Vel. (ft/s)		7.84	
Max Chl Dpth (ft)	3.16	Hydr. Depth (ft)		1.93	
Conv. Total (cfs)	15368.0	Conv. (cfs)		15368.0	
Length Wtd. (ft)	230.84	Wetted Per. (ft)		132.83	
Min Ch El (ft)	2328.00	Shear (lb/sq ft)		2.02	
Alpha	1.00	Stream Power (lb/ft s)		15.82	
Frctn Loss (ft)	3.85	Cum Volume (acre-ft)	0.91	16.64	1.24
C & E Loss (ft)	0.02	Cum SA (acres)	0.48	5.85	0.75

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

CROSS SECTION

RIVER: Stagecoach Pass
REACH: StagecoachPass-1 RS: 1.53

INPUT
Description: Cross Section 1.53 is located within The Boulders.

Topography
indicates wash, and surrounding undeveloped desert.
Aerial shows
wash, desert, and golf course.
T5NR4E Section 11
Q100 = 1996 cfs
Station Elevation Data num= 15

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9821.76	2330	9843.35	2328	9854.37	2326	9859.2	2326	9882.98	2326
9934.44	2324	9982.11	2322	9986.84	2320	10000	2319.73	10007.37	2320
10014.25	2322	10031.39	2324	10047.64	2326	10086.55	2328	10109.28	2330

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9821.76	.056	9934.44	.038	10031.39	.056

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9934.44	10031.39	315.13	315.68	326.48	.1	.3

CROSS SECTION OUTPUT Profile #100-yr 6-yr

			Left OB	Channel	Right OB
E.G. Elev (ft)	2325.63	Element			
Vel Head (ft)	1.16	Wt. n-Val.	0.056	0.038	0.056
W.S. Elev (ft)	2324.47	Reach Len. (ft)	315.13	315.68	326.48
Crit W.S. (ft)	2324.47	Flow Area (sq ft)	2.89	230.47	0.91
E.G. Slope (ft/ft)	0.015568	Area (sq ft)	2.89	230.47	0.91
Q Total (cfs)	1996.00	Flow (cfs)	3.66	1991.19	1.15
Top Width (ft)	112.99	Top Width (ft)	12.19	96.95	3.85
Vel Total (ft/s)	8.52	Avg. Vel. (ft/s)	1.27	8.64	1.26
Max Chl Dpth (ft)	4.74	Hydr. Depth (ft)	0.24	2.38	0.24
Conv. Total (cfs)	15997.4	Conv. (cfs)	29.3	15958.9	9.2
Length Wtd. (ft)	315.69	Wetted Per. (ft)	12.20	97.81	3.88
Min Ch El (ft)	2319.73	Shear (lb/sq ft)	0.23	2.29	0.23
Alpha	1.03	Stream Power (lb/ft s)	0.29	19.79	0.29
Frctn Loss (ft)	4.95	Cum Volume (acre-ft)	7.80	14.70	5.73
C & E Loss (ft)	0.02	Cum SA (acres)	5.78	5.24	5.65

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

CROSS SECTION OUTPUT Profile #Method 1

			Left OB	Channel	Right OB
E.G. Elev (ft)	2325.64	Element			
Vel Head (ft)	1.19	Wt. n-Val.		0.038	
W.S. Elev (ft)	2324.45	Reach Len. (ft)	315.13	315.68	326.48
Crit W.S. (ft)	2324.45	Flow Area (sq ft)		227.66	
E.G. Slope (ft/ft)	0.016495	Area (sq ft)		227.66	
Q Total (cfs)	1996.00	Flow (cfs)		1996.00	
Top Width (ft)	96.95	Top Width (ft)		96.95	
Vel Total (ft/s)	8.77	Avg. Vel. (ft/s)		8.77	
Max Chl Dpth (ft)	4.71	Hydr. Depth (ft)		2.35	
Conv. Total (cfs)	15541.0	Conv. (cfs)		15541.0	
Length Wtd. (ft)	315.68	Wetted Per. (ft)		98.70	
Min Ch El (ft)	2319.73	Shear (lb/sq ft)		2.38	
Alpha	1.00	Stream Power (lb/ft s)		20.83	
Frctn Loss (ft)	4.72	Cum Volume (acre-ft)	0.91	15.36	1.24
C & E Loss (ft)	0.06	Cum SA (acres)	0.48	5.24	0.75

Warning: The energy equation could not be 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: Stagecoach Pass
REACH: StagecoachPass-1 RS: 1.47

INPUT
Description: Cross Section 1.47 is located within The Boulders.

Topography
indicates wash, and surrounding undeveloped desert.
Aerial shows
wash, desert, homes and golf course.
T5NR4E Section 11
Q100 =
1996 cfs
Station Elevation Data num= 12

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9764.58	2316	9876.14	2318	9923.15	2318	9931.44	2316	9959.72	2314
9964.26	2314	9993.08	2314	10000	2312.98	10026.32	2314	10037.82	2316
10057.57	2318	10242.89	2320						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9764.58	.056	9931.44	.038	10037.82	.056

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9931.44	10037.82	167.91	168.69	171.42	.1	.3

Left Levee Station= 9923.15 Elevation= 2318

CROSS SECTION OUTPUT Profile #100-yr 6-yr

			Left OB	Channel	Right OB
E.G. Elev (ft)	2317.54	Element			
Vel Head (ft)	1.09	Wt. n-Val.	0.056	0.038	0.056
W.S. Elev (ft)	2316.45	Reach Len. (ft)	167.91	168.69	171.42
Crit W.S. (ft)	2316.45	Flow Area (sq ft)	0.42	237.98	1.01
E.G. Slope (ft/ft)	0.015763	Area (sq ft)	0.42	237.98	1.01
Q Total (cfs)	1996.00	Flow (cfs)	0.51	1994.25	1.24
Top Width (ft)	112.71	Top Width (ft)	1.87	106.38	4.46
Vel Total (ft/s)	8.34	Avg. Vel. (ft/s)	1.21	8.38	1.23
Max Chl Dpth (ft)	3.47	Hydr. Depth (ft)	0.23	2.24	0.23
Conv. Total (cfs)	15897.9	Conv. (cfs)	4.1	15883.9	9.9
Length Wtd. (ft)	169.07	Wetted Per. (ft)	1.93	106.72	4.48
Min Ch El (ft)	2312.98	Shear (lb/sq ft)	0.22	2.19	0.22
Alpha	1.01	Stream Power (lb/ft s)	0.26	18.39	0.27
Frctn Loss (ft)	1.94	Cum Volume (acre-ft)	7.78	13.01	5.72
C & E Loss (ft)	0.13	Cum SA (acres)	5.73	4.51	5.62

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
depth, the 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 OUTPUT Profile #Method 1

E.G. Elev (ft)	2317.55	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.99	Wt. n-Val.		0.038	
W.S. Elev (ft)	2316.56	Reach Len. (ft)	167.91	168.69	171.42
Crit W.S. (ft)	2316.43	Flow Area (sq ft)		249.85	
E.G. Slope (ft/ft)	0.013615	Area (sq ft)		249.85	
Q Total (cfs)	1996.00	Flow (cfs)		1996.00	
Top Width (ft)	106.38	Top Width (ft)		106.38	
Vel Total (ft/s)	7.99	Avg. Vel. (ft/s)		7.99	
Max Chl Dpth (ft)	3.58	Hydr. Depth (ft)		2.35	
Conv. Total (cfs)	17105.9	Conv. (cfs)		17105.9	
Length Wtd. (ft)	169.02	Wetted Per. (ft)		107.84	
Min Ch El (ft)	2312.98	Shear (lb/sq ft)		1.97	
Alpha	1.00	Stream Power (lb/ft s)		15.73	
Frctn Loss (ft)	2.28	Cum Volume (acre-ft)	0.91	13.63	1.24
C & E Loss (ft)	0.03	Cum SA (acres)	0.48	4.51	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.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water
surface was used.

CROSS SECTION

RIVER: Stagecoach Pass
REACH: StagecoachPass-1 RS: 1.44

INPUT
Description: Cross Section 1.44 is located within The Boulders.

Topography
indicates wash, house pads and surrounding undeveloped
desert.
Aerial shows wash, desert, homes and golf course.
T5NR4E
Section 11
Q100 = 1996 cfs
Station Elevation Data num= 17

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9744.06	2318	9781.45	2316	9789.57	2314	9856.92	2314	9940.53	2314
9949.51	2312	9968.97	2312	9981.32	2312	9987.13	2310	10000	2309.8
10008.36	2310	10023.68	2312	10041.38	2312	10127.24	2310	10138.89	2310
10188.17	2312	10221.45	2314						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9744.06	.056	9981.32	.038	10023.68	.056

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9981.32	10023.68	394.75	388	372.36	.1	.3

Blocked Obstructions num= 1

Sta L	Sta R	Elev
10073.12	10221.45	2312.9

CROSS SECTION OUTPUT Profile #100-yr 6-yr

E.G. Elev (ft)	2314.46	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.65	Wt. n-Val.	0.056	0.038	0.056
W.S. Elev (ft)	2313.81	Reach Len. (ft)	394.75	388.00	372.36
Crit W.S. (ft)	2313.81	Flow Area (sq ft)	64.95	142.41	226.55
E.G. Slope (ft/ft)	0.008703	Area (sq ft)	64.95	142.41	226.55
Q Total (cfs)	1996.00	Flow (cfs)	221.62	1157.32	617.06
Top Width (ft)	276.92	Top Width (ft)	39.94	42.36	194.62
Vel Total (ft/s)	4.60	Avg. Vel. (ft/s)	3.41	8.13	2.72
Max Chl Dpth (ft)	4.01	Hydr. Depth (ft)	1.63	3.36	1.16

Conv. Total (cfs)	21395.2	Conv. (cfs)	2375.6	12405.3	6614.3
Length Wtd. (ft)	385.49	Wetted Per. (ft)	40.14	42.83	196.29
Min Ch El (ft)	2309.80	Shear (lb/sq ft)	0.88	1.81	0.63
Alpha	1.98	Stream Power (lb/ft s)	3.00	14.68	1.71
Frctn Loss (ft)	4.12	Cum Volume (acre-ft)	7.66	12.27	5.28
C & E Loss (ft)	0.03	Cum SA (acres)	5.65	4.22	5.22

Warning: The energy equation could not be 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 OUTPUT Profile #Method 1

E.G. Elev (ft)	2315.25	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.33	Wt. n-Val.	0.056	0.038	0.056
W.S. Elev (ft)	2313.92	Reach Len. (ft)	394.75	388.00	372.36
Crit W.S. (ft)	2313.92	Flow Area (sq ft)	2.53	146.96	98.38
E.G. Slope (ft/ft)	0.013328	Area (sq ft)	2.53	146.96	98.38
Q Total (cfs)	1996.00	Flow (cfs)	6.58	1509.23	480.19
Top Width (ft)	90.00	Top Width (ft)	1.32	42.36	46.32
Vel Total (ft/s)	8.05	Avg. Vel. (ft/s)	2.60	10.27	4.88
Max Chl Dpth (ft)	4.12	Hydr. Depth (ft)	1.92	3.47	2.12
Conv. Total (cfs)	17289.4	Conv. (cfs)	57.0	13073.0	4159.4
Length Wtd. (ft)	386.13	Wetted Per. (ft)	3.24	42.83	48.91
Min Ch El (ft)	2309.80	Shear (lb/sq ft)	0.65	2.86	1.67
Alpha	1.32	Stream Power (lb/ft s)	1.69	29.32	8.17
Frctn Loss (ft)	5.68	Cum Volume (acre-ft)	0.90	12.86	1.05
C & E Loss (ft)	0.05	Cum SA (acres)	0.48	4.22	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: Stagecoach Pass
REACH: StagecoachPass-1 RS: 1.36

INPUT
Description: Cross Section 1.36 is located within The Boulders.

Topography
indicates wash, house pads and surrounding undeveloped desert.
Aerial shows wash, desert, homes and golf course.
T5NR4E
Section 11
Q100 = 1996 cfs
Station Elevation Data num= 15

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9621.47	2306	9741.16	2308	9753.03	2308	9768.95	2306	9769.75	2306
9939.23	2306	9965.04	2304.5	9973.64	2304	9982.67	2302	10011.71	2302
10017.14	2304	10063.23	2304.5	10201.49	2306	10216.89	2308	10252.44	2310

```
Manning's n Values          num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
 9621.47    .056 9965.04    .03810063.23    .056

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9965.0410063.23           377.04  389.76   400.9            .1        .3
Left Levee      Station= 9753.03      Elevation=    2308
Blocked Obstructions     num=       1
   Sta L   Sta R    Elev
10106.0810252.44  2307.7
```

CROSS SECTION OUTPUT Profile #100-yr 6-yr

E.G. Elev (ft)	2306.66	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.92	Wt. n-Val.	0.056	0.038	0.056
W.S. Elev (ft)	2305.74	Reach Len. (ft)	377.04	389.76	400.90
Crit W.S. (ft)	2305.74	Flow Area (sq ft)	13.29	230.01	43.30
E.G. Slope (ft/ft)	0.013468	Area (sq ft)	13.29	230.01	43.30
Q Total (cfs)	1996.00	Flow (cfs)	29.77	1833.57	132.66
Top Width (ft)	162.43	Top Width (ft)	21.39	98.19	42.85
Vel Total (ft/s)	6.96	Avg. Vel. (ft/s)	2.24	7.97	3.06
Max Chl Dpth (ft)	3.74	Hydr. Depth (ft)	0.62	2.34	1.01
Conv. Total (cfs)	17199.5	Conv. (cfs)	256.5	15799.9	1143.1
Length Wtd. (ft)	390.05	Wetted Per. (ft)	21.42	98.78	43.63
Min Ch El (ft)	2302.00	Shear (lb/sq ft)	0.52	1.96	0.83
Alpha	1.22	Stream Power (lb/ft s)	1.17	15.61	2.56
Frctn Loss (ft)	5.23	Cum Volume (acre-ft)	7.30	10.61	4.12
C & E Loss (ft)	0.05	Cum SA (acres)	5.37	3.59	4.21

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 energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
depth, the 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 OUTPUT Profile #Method 1

E.G. Elev (ft)	2306.91	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.16	Wt. n-Val.		0.038	
W.S. Elev (ft)	2305.75	Reach Len. (ft)	377.04	389.76	400.90
Crit W.S. (ft)	2305.75	Flow Area (sq ft)		230.80	
E.G. Slope (ft/ft)	0.016313	Area (sq ft)		230.80	
Q Total (cfs)	1996.00	Flow (cfs)		1996.00	
Top Width (ft)	98.19	Top Width (ft)		98.19	
Vel Total (ft/s)	8.65	Avg. Vel. (ft/s)		8.65	
Max Chl Dpth (ft)	3.75	Hydr. Depth (ft)		2.35	
Conv. Total (cfs)	15627.8	Conv. (cfs)		15627.8	
Length Wtd. (ft)	389.76	Wetted Per. (ft)		101.29	
Min Ch El (ft)	2302.00	Shear (lb/sq ft)		2.32	
Alpha	1.00	Stream Power (lb/ft s)		20.07	
Frctn Loss (ft)	6.19	Cum Volume (acre-ft)	0.89	11.18	0.63
C & E Loss (ft)	0.04	Cum SA (acres)	0.47	3.59	0.47

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

Warning: During the standard step iterations, when the assumed water surface was set equal to critical
depth, the 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: Stagecoach Pass
REACH: StagecoachPass-1 RS: 1.29

INPUT
Description: Cross Section 1.29 is located within The Boulders.

Topography
indicates wash, house pads and surrounding undeveloped
desert.
Aerial shows wash, desert, and homes.
T5NR4E Section
11
Q100 = 1996 cfs
Station Elevation Data num= 19

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9715.05	2304	9744.86	2302	9785.42	2302	9852.64	2304	9854.41	2304
9899.3	2302	9949.61	2300	9959.12	2298	9973.19	2296	9980.67	2294
10000	2293.26	10026.22	2294	10038.46	2296	10059.6	2298	10064.06	2300
10068.85	2302	10073.19	2304	10077.41	2306	10083.83	2308		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9715.05	.056	9973.19	.038	10038.46	.056

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9973.19	10038.46	520.07	520.26	518.56	.1	.3

CROSS SECTION OUTPUT Profile #100-yr 6-yr

E.G. Elev (ft)	2298.60	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.42	Wt. n-Val.	0.056	0.038	0.056
W.S. Elev (ft)	2297.18	Reach Len. (ft)	520.07	520.26	518.56
Crit W.S. (ft)	2297.18	Flow Area (sq ft)	4.89	204.64	7.35
E.G. Slope (ft/ft)	0.013326	Area (sq ft)	4.89	204.64	7.35
Q Total (cfs)	1996.00	Flow (cfs)	10.46	1969.76	15.78
Top Width (ft)	86.03	Top Width (ft)	8.30	65.27	12.46
Vel Total (ft/s)	9.20	Avg. Vel. (ft/s)	2.14	9.63	2.15
Max Chl Dpth (ft)	3.92	Hydr. Depth (ft)	0.59	3.14	0.59
Conv. Total (cfs)	17290.6	Conv. (cfs)	90.7	17063.2	136.7
Length Wtd. (ft)	520.19	Wetted Per. (ft)	8.38	65.72	12.52
Min Ch El (ft)	2293.26	Shear (lb/sq ft)	0.49	2.59	0.49
Alpha	1.08	Stream Power (lb/ft s)	1.04	24.94	1.05
Frctn Loss (ft)	6.22	Cum Volume (acre-ft)	7.22	8.67	3.89
C & E Loss (ft)	0.08	Cum SA (acres)	5.24	2.86	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 energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
depth, the 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 OUTPUT Profile #Method 1

E.G. Elev (ft)	2298.66	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.55	Wt. n-Val.		0.038	
W.S. Elev (ft)	2297.11	Reach Len. (ft)	520.07	520.26	518.56
Crit W.S. (ft)	2297.11	Flow Area (sq ft)		199.91	
E.G. Slope (ft/ft)	0.015462	Area (sq ft)		199.91	
Q Total (cfs)	1996.00	Flow (cfs)		1996.00	
Top Width (ft)	65.27	Top Width (ft)		65.27	
Vel Total (ft/s)	9.98	Avg. Vel. (ft/s)		9.98	
Max Chl Dpth (ft)	3.85	Hydr. Depth (ft)		3.06	
Conv. Total (cfs)	16052.2	Conv. (cfs)		16052.2	
Length Wtd. (ft)	520.20	Wetted Per. (ft)		67.93	
Min Ch El (ft)	2293.26	Shear (lb/sq ft)		2.84	
Alpha	1.00	Stream Power (lb/ft s)		28.36	
Frctn Loss (ft)	7.03	Cum Volume (acre-ft)	0.89	9.25	0.63
C & E Loss (ft)	0.09	Cum SA (acres)	0.47	2.86	0.47

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 energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
depth, the 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: Stagecoach Pass
REACH: StagecoachPass-1 RS: 1.19

INPUT
Description: Cross Section 1.19 is located within The Boulders.

Topography
indicates wash, house pads and surrounding undeveloped
desert.
Aerial shows wash, desert, and homes .
T5NR4E Section
11
Q100 = 1996 cfs
Station Elevation Data num= 15

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9634.53	2290	9645.65	2288	9665.86	2286	9685.73	2286	9714.7	2286
9753.23	2286	9766.01	2288	9954.59	2288	9968.38	2286	9983.6	2284
10000	2283.8	10015.4	2284	10030.19	2286	10104.3	2288	10145.97	2290

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9634.53	.056	9968.38	.038	10030.19	.056

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9968.38	10030.19	339.29	351.73	352.16	.1	.3

Left Levee Station= 9954.59 Elevation= 2288

CROSS SECTION OUTPUT Profile #100-yr 6-yr

E.G. Elev (ft)	2288.89	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.16	Wt. n-Val.	0.056	0.038	0.056
W.S. Elev (ft)	2287.73	Reach Len. (ft)	339.29	351.73	352.16
Crit W.S. (ft)	2287.73	Flow Area (sq ft)	10.36	203.93	55.67
E.G. Slope (ft/ft)	0.010793	Area (sq ft)	10.36	203.93	55.67
Q Total (cfs)	1996.00	Flow (cfs)	25.78	1830.76	139.46
Top Width (ft)	137.99	Top Width (ft)	11.95	61.81	64.23
Vel Total (ft/s)	7.39	Avg. Vel. (ft/s)	2.49	8.98	2.51
Max Chl Dpth (ft)	3.93	Hydr. Depth (ft)	0.87	3.30	0.87
Conv. Total (cfs)	19212.9	Conv. (cfs)	248.1	17622.3	1342.4
Length Wtd. (ft)	350.55	Wetted Per. (ft)	12.08	62.08	64.25

Min Ch El (ft)	2283.80	Shear (lb/sq ft)	0.58	2.21	0.58
Alpha	1.36	Stream Power (lb/ft s)	1.44	19.87	1.46
Frctn Loss (ft)	2.54	Cum Volume (acre-ft)	7.13	6.23	3.52
C & E Loss (ft)	0.25	Cum SA (acres)	5.12	2.10	3.50

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 velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
depth, the 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 OUTPUT Profile #Method 1

E.G. Elev (ft)	2288.90	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.25	Wt. n-Val.	0.056	0.038	0.056
W.S. Elev (ft)	2287.66	Reach Len. (ft)	339.29	351.73	352.16
Crit W.S. (ft)	2287.66	Flow Area (sq ft)	6.80	199.07	39.77
E.G. Slope (ft/ft)	0.011898	Area (sq ft)	6.80	199.07	39.77
Q Total (cfs)	1996.00	Flow (cfs)	20.70	1846.49	128.80
Top Width (ft)	100.00	Top Width (ft)	5.38	61.81	32.81
Vel Total (ft/s)	8.13	Avg. Vel. (ft/s)	3.04	9.28	3.24
Max Chl Dpth (ft)	3.85	Hydr. Depth (ft)	1.26	3.22	1.21
Conv. Total (cfs)	18298.7	Conv. (cfs)	189.8	16928.1	1180.8
Length Wtd. (ft)	351.68	Wetted Per. (ft)	6.31	62.08	33.59
Min Ch El (ft)	2283.80	Shear (lb/sq ft)	0.80	2.38	0.88
Alpha	1.22	Stream Power (lb/ft s)	2.44	22.09	2.85
Frctn Loss (ft)	2.76	Cum Volume (acre-ft)	0.85	6.87	0.39
C & E Loss (ft)	0.20	Cum SA (acres)	0.44	2.10	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 cross section had to be extended vertically during the critical depth calculations.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
depth, the 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: Stagecoach Pass
REACH: StagecoachPass-1 RS: 1.13

INPUT
Description: Cross Section 1.13 is located within The Boulders.

Topography
indicates wash, and surrounding undeveloped desert.
Aerial shows
wash, desert, and golf course.
T5NR4E Section 11
Q100 = 1996 cfs

Station Elevation Data num= 13

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9720.88	2282	9811.11	2280	9894.49	2279	9936.18	2278.5	9977.86	2278
10000	2277.39	10016.5	2278	10041.74	2278.5	10066.98	2279	10117.46	2280
10130.32	2281	10143.17	2282	10177.35	2284				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9720.88	.056	9936.18	.038	10041.74	.056

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9936.18	10041.74	146.89	146.65	147.55	.1	.3

CROSS SECTION OUTPUT Profile #100-yr 6-yr

			Left OB	Channel	Right OB
E.G. Elev (ft)	2280.90	Element			
Vel Head (ft)	0.32	Wt. n-Val.	0.056	0.038	0.056
W.S. Elev (ft)	2280.58	Reach Len. (ft)	146.89	146.65	147.55
Crit W.S. (ft)		Flow Area (sq ft)	173.98	267.44	102.90
E.G. Slope (ft/ft)	0.005213	Area (sq ft)	173.98	267.44	102.90
Q Total (cfs)	1996.00	Flow (cfs)	365.90	1403.00	227.10
Top Width (ft)	339.99	Top Width (ft)	151.25	105.56	83.18
Vel Total (ft/s)	3.67	Avg. Vel. (ft/s)	2.10	5.25	2.21
Max Chl Dpth (ft)	3.19	Hydr. Depth (ft)	1.15	2.53	1.24
Conv. Total (cfs)	27644.4	Conv. (cfs)	5067.7	19431.4	3145.3
Length Wtd. (ft)	146.75	Wetted Per. (ft)	151.27	105.59	83.22
Min Ch El (ft)	2277.39	Shear (lb/sq ft)	0.37	0.82	0.40
Alpha	1.54	Stream Power (lb/ft s)	0.79	4.32	0.89
Frctn Loss (ft)	1.04	Cum Volume (acre-ft)	6.42	4.32	2.87
C & E Loss (ft)	0.05	Cum SA (acres)	4.48	1.43	2.90

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 OUTPUT Profile #Method 1

			Left OB	Channel	Right OB
E.G. Elev (ft)	2281.74	Element			
Vel Head (ft)	0.57	Wt. n-Val.		0.038	
W.S. Elev (ft)	2281.18	Reach Len. (ft)	146.89	146.65	147.55
Crit W.S. (ft)		Flow Area (sq ft)		330.53	
E.G. Slope (ft/ft)	0.005564	Area (sq ft)		330.53	
Q Total (cfs)	1996.00	Flow (cfs)		1996.00	
Top Width (ft)	105.56	Top Width (ft)		105.56	
Vel Total (ft/s)	6.04	Avg. Vel. (ft/s)		6.04	
Max Chl Dpth (ft)	3.79	Hydr. Depth (ft)		3.13	
Conv. Total (cfs)	26759.9	Conv. (cfs)		26759.9	
Length Wtd. (ft)	146.65	Wetted Per. (ft)		110.94	
Min Ch El (ft)	2277.39	Shear (lb/sq ft)		1.03	
Alpha	1.00	Stream Power (lb/ft s)		6.25	
Frctn Loss (ft)	1.28	Cum Volume (acre-ft)	0.82	4.73	0.23
C & E Loss (ft)	0.09	Cum SA (acres)	0.42	1.43	0.14

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 conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was 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: Stagecoach Pass
REACH: StagecoachPass-1 RS: 1.1

INPUT
Description: Cross Section 1.10 is located within The Boulders.

Topography
indicates wash, and surrounding undeveloped desert.
Aerial shows
wash, desert, and golf course.
T5NR4E Section 11
Q100 = 1996 cfs
Station Elevation Data num= 11

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9857.15	2280	9864.15	2278	9905.76	2278	9981.63	2278	9990.13	2276
10000	2274.39	10027.02	2276	10053.33	2278	10055.38	2278	10098.74	2280
10112.67	2282								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9857.15	.056	9981.63	.038	10055.38	.056

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9981.63	10055.38	160.04	157.68	153.1	.1	.3

CROSS SECTION OUTPUT Profile #100-yr 6-yr

			Left OB	Channel	Right OB
E.G. Elev (ft)	2279.82	Element			
Vel Head (ft)	0.82	Wt. n-Val.	0.056	0.038	0.056
W.S. Elev (ft)	2278.99	Reach Len. (ft)	160.04	157.68	153.10
Crit W.S. (ft)	2278.99	Flow Area (sq ft)	118.28	211.46	10.67
E.G. Slope (ft/ft)	0.010078	Area (sq ft)	118.28	211.46	10.67
Q Total (cfs)	1996.00	Flow (cfs)	310.19	1668.01	17.80
Top Width (ft)	216.21	Top Width (ft)	120.95	73.75	21.51
Vel Total (ft/s)	5.86	Avg. Vel. (ft/s)	2.62	7.89	1.67
Max Chl Dpth (ft)	4.60	Hydr. Depth (ft)	0.98	2.87	0.50
Conv. Total (cfs)	19883.0	Conv. (cfs)	3089.9	16615.8	177.3
Length Wtd. (ft)	158.00	Wetted Per. (ft)	121.09	74.24	21.53
Min Ch El (ft)	2274.39	Shear (lb/sq ft)	0.61	1.79	0.31
Alpha	1.54	Stream Power (lb/ft s)	1.61	14.14	0.52
Frctn Loss (ft)	1.76	Cum Volume (acre-ft)	5.92	3.52	2.68
C & E Loss (ft)	0.03	Cum SA (acres)	4.03	1.13	2.73

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 energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
depth, the 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 OUTPUT Profile #Method 1

			Left OB	Channel	Right OB
E.G. Elev (ft)	2280.38	Element			
Vel Head (ft)	1.42	Wt. n-Val.		0.038	
W.S. Elev (ft)	2278.95	Reach Len. (ft)	160.04	157.68	153.10
Crit W.S. (ft)	2278.95	Flow Area (sq ft)		208.40	
E.G. Slope (ft/ft)	0.015669	Area (sq ft)		208.40	
Q Total (cfs)	1996.00	Flow (cfs)		1996.00	
Top Width (ft)	73.75	Top Width (ft)		73.75	
Vel Total (ft/s)	9.58	Avg. Vel. (ft/s)		9.58	
Max Chl Dpth (ft)	4.56	Hydr. Depth (ft)		2.83	
Conv. Total (cfs)	15945.7	Conv. (cfs)		15945.7	
Length Wtd. (ft)	157.68	Wetted Per. (ft)		76.14	

Min Ch El (ft)	2274.39	Shear (lb/sq ft)		2.68	
Alpha	1.00	Stream Power (lb/ft s)		25.64	
Frctn Loss (ft)	2.49	Cum Volume (acre-ft)	0.82	3.82	0.23
C & E Loss (ft)	0.02	Cum SA (acres)	0.42	1.13	0.14

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 energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
depth, the 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: Stagecoach Pass
REACH: StagecoachPass-1 RS: 1.07

INPUT
Description: Cross Section 1.07 is located within The Boulders.

Topography
indicates wash, building pad and surrounding undeveloped desert.
Aerial shows wash, desert, and building.
T5NR4E Section
11
Q100 = 1996 cfs
Station Elevation Data num= 11

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9660.69	2278	9707.85	2278	9727.47	2278	9796.71	2276	9948.84	2274
9973.69	2274	9987.44	2274	10000	2272.26	10050.24	2274	10100.57	2276
10270.52	2276								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9660.69	.056	9973.69	.038	10050.24	.056

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
9973.69 10050.24 306.9 308.3 295.73 .3 .5
Right Levee Station= 10134.7 Elevation= 2280

CROSS SECTION OUTPUT Profile #100-yr 6-yr

E.G. Elev (ft)	2276.43	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.73	Wt. n-Val.	0.056	0.038	0.056
W.S. Elev (ft)	2275.71	Reach Len. (ft)	306.90	308.30	295.73
Crit W.S. (ft)	2275.71	Flow Area (sq ft)	152.87	185.12	36.56
E.G. Slope (ft/ft)	0.012401	Area (sq ft)	152.87	185.12	36.56
Q Total (cfs)	1996.00	Flow (cfs)	448.48	1450.46	97.06
Top Width (ft)	273.96	Top Width (ft)	154.51	76.55	42.90
Vel Total (ft/s)	5.33	Avg. Vel. (ft/s)	2.93	7.84	2.65
Max Chl Dpth (ft)	3.44	Hydr. Depth (ft)	0.99	2.42	0.85
Conv. Total (cfs)	17923.8	Conv. (cfs)	4027.3	13025.0	871.6
Length Wtd. (ft)	307.67	Wetted Per. (ft)	154.52	76.70	42.93
Min Ch El (ft)	2272.26	Shear (lb/sq ft)	0.77	1.87	0.66
Alpha	1.65	Stream Power (lb/ft s)	2.25	14.64	1.75
Frctn Loss (ft)	3.68	Cum Volume (acre-ft)	5.42	2.80	2.60
C & E Loss (ft)	0.37	Cum SA (acres)	3.52	0.85	2.61

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

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
depth, the 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 OUTPUT Profile #Method 1

E.G. Elev (ft)	2277.43	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.37	Wt. n-Val.		0.038	
W.S. Elev (ft)	2276.06	Reach Len. (ft)	306.90	308.30	295.73
Crit W.S. (ft)	2276.06	Flow Area (sq ft)		212.44	
E.G. Slope (ft/ft)	0.015914	Area (sq ft)		212.44	
Q Total (cfs)	1996.00	Flow (cfs)		1996.00	
Top Width (ft)	76.55	Top Width (ft)		76.55	
Vel Total (ft/s)	9.40	Avg. Vel. (ft/s)		9.40	
Max Chl Dpth (ft)	3.80	Hydr. Depth (ft)		2.78	
Conv. Total (cfs)	15822.1	Conv. (cfs)		15822.1	
Length Wtd. (ft)	308.13	Wetted Per. (ft)		80.82	
Min Ch El (ft)	2272.26	Shear (lb/sq ft)		2.61	
Alpha	1.00	Stream Power (lb/ft s)		24.54	
Frctn Loss (ft)	4.10	Cum Volume (acre-ft)	0.82	3.06	0.23
C & E Loss (ft)	0.17	Cum SA (acres)	0.42	0.85	0.14

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 energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
depth, the 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: Stagecoach Pass
REACH: StagecoachPass-1 RS: 1.01

INPUT
Description: Cross Section 1.01 is located within The Boulders. It is located upstream of the intersection of Scottsdale Road and Stage Coach Pass Wash. There are 4-10 X 4 concrete box culverts located under Scottsdale Road. This section is the downstream boundary of the detailed study.

Topography indicates wash,Scottsdale Road (old alignment), and surrounding undeveloped desert.
Aerial shows wash, desert, and Scottsdale Road.
T5NR4E Section 11 and 10
Q100
= 1996 cfs
Station Elevation Data num= 18

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9493.18	2272	9681.36	2270	9868	2268	9899.69	2268	9952.02	2268
9964.76	2268	9987.86	2268	9990.52	2266	9993.51	2264	10015.24	2264

```
10018.67    226610021.99    226810047.08    226810081.51    226810137.48    2268
10144.62    226810273.32    227010287.45    2271

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
 9493.18    .056 9987.86    .03810021.99    .056

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9987.8610021.99           120.05   115.2   115.9              .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
 9493.18 9978.94  2271.7       F
10029.7210287.45  2271.7       F
```

CROSS SECTION OUTPUT Profile #100-yr 6-yr

E.G. Elev (ft)	2271.51	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.96	Wt. n-Val.	0.056	0.038	0.056
W.S. Elev (ft)	2269.55	Reach Len. (ft)	120.05	115.20	115.90
Crit W.S. (ft)	2269.55	Flow Area (sq ft)	13.83	165.08	11.98
E.G. Slope (ft/ft)	0.011552	Area (sq ft)	298.03	165.08	267.50
Q Total (cfs)	1996.00	Flow (cfs)	52.84	1897.37	45.79
Top Width (ft)	521.09	Top Width (ft)	264.56	34.13	222.41
Vel Total (ft/s)	10.46	Avg. Vel. (ft/s)	3.82	11.49	3.82
Max Chl Dpth (ft)	5.55	Hydr. Depth (ft)	1.55	4.84	1.55
Conv. Total (cfs)	18571.2	Conv. (cfs)	491.6	17653.5	426.0
Length Wtd. (ft)	115.20	Wetted Per. (ft)	8.92	36.50	7.73
Min Ch El (ft)	2264.00	Shear (lb/sq ft)	1.12	3.26	1.12
Alpha	1.16	Stream Power (lb/ft s)	4.27	37.49	4.27
Frctn Loss (ft)		Cum Volume (acre-ft)	3.84	1.56	1.57
C & E Loss (ft)		Cum SA (acres)	2.04	0.46	1.71

Warning: During subcritical analysis, the water surface upstream of culvert went to critical depth.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid,
energy was used.

CROSS SECTION OUTPUT Profile #Method 1

E.G. Elev (ft)	2271.51	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.93	Wt. n-Val.	0.056	0.038	0.056
W.S. Elev (ft)	2269.58	Reach Len. (ft)	120.05	115.20	115.90
Crit W.S. (ft)	2269.58	Flow Area (sq ft)	14.10	166.10	12.22
E.G. Slope (ft/ft)	0.011293	Area (sq ft)	76.52	166.10	39.65
Q Total (cfs)	1996.00	Flow (cfs)	53.93	1895.34	46.73
Top Width (ft)	107.64	Top Width (ft)	48.42	34.13	25.09
Vel Total (ft/s)	10.37	Avg. Vel. (ft/s)	3.83	11.41	3.83
Max Chl Dpth (ft)	5.58	Hydr. Depth (ft)	1.58	4.87	1.58
Conv. Total (cfs)	18782.3	Conv. (cfs)	507.5	17835.1	439.7
Length Wtd. (ft)	115.20	Wetted Per. (ft)	8.92	36.50	7.73
Min Ch El (ft)	2264.00	Shear (lb/sq ft)	1.11	3.21	1.11
Alpha	1.16	Stream Power (lb/ft s)	4.26	36.61	4.26
Frctn Loss (ft)		Cum Volume (acre-ft)	0.55	1.72	0.10
C & E Loss (ft)		Cum SA (acres)	0.25	0.46	0.05

Warning: During subcritical analysis, the water surface upstream of culvert went to critical depth.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid,
energy was used.

CULVERT

RIVER: Stagecoach Pass
REACH: StagecoachPass-1 RS: 0.99

INPUT
Description: Box culverts at Scottsdale Road crossing.
Distance from Upstream XS = 4

```
Deck/Roadway Width          =     108
Weir Coefficient            =     2.6
Upstream  Deck/Roadway Coordinates
    num=       2
     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord
    9400  2271.7           10300  2271.7

Upstream Bridge Cross Section Data
Station Elevation Data    num=      18
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
 9493.18    2272 9681.36    2270    9868    2268 9899.69    2268 9952.02    2268
 9964.76    2268 9987.86    2268 9990.52    2266 9993.51    226410015.24    2264
10018.67    226610021.99    226810047.08    226810081.51    226810137.48    2268
10144.62    226810273.32    227010287.45    2271

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
 9493.18    .056 9987.86    .03810021.99    .056

Bank Sta: Left   Right    Coeff Contr.   Expan.
       9987.8610021.99             .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
 9493.18 9978.94  2271.7       F
10029.7210287.45  2271.7       F

Downstream  Deck/Roadway Coordinates
    num=       2
     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord
    9600  2271.7           10200  2271.7

Downstream Bridge Cross Section Data
Station Elevation Data    num=      14
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
 9672.48    2266 9679.56    2266 9766.86    2264    9814    2264 9873.62    2264
 9898.34    2264 9976.76    2264 9983.49    2262  9991.5    226210007.49    2262
10012.61    226210016.16    226410065.12    226610165.24    2268

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
 9672.48    .056 9976.76    .03810016.16    .056

Bank Sta: Left   Right    Coeff Contr.   Expan.
       9976.7610016.16             .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
 9672.48 9973.48  2271.7       F
10022.6310165.24  2271.7       F

Upstream Embankment side slope              =       0 horiz. to 1.0 vertical
Downstream Embankment side slope            =       0 horiz. to 1.0 vertical
Maximum allowable submergence for weir flow =     .95
Elevation at which weir flow begins         =
Energy head used in spillway design         =
Spillway height used in design              =
Weir crest shape                            = Broad Crested

Number of Culverts =  1

Culvert Name      Shape      Rise    Span
CULVERT#1           Box       4      10
FHWA Chart # 8 - flared wingwalls
FHWA Scale # 1 - Wingwall flared 30 to 75 deg.
Solution Criteria = Highest U.S. EG
Culvert Upstrm Dist  Length    Top n  Bottom n  Depth Blocked  Entrance Loss Coef   Exit Loss Coef
                 4     107     .015     .015         0                .4                 1
Number of Barrels =  4
Upstream   Elevation =  2265.83
Centerline Stations
    Sta.    Sta.    Sta.    Sta.
 9987.94 9998.88 10009.810020.72
```

Downstream Elevation = 2260.72
Centerline Stations

Sta.	Sta.	Sta.	Sta.
9981.68	9992.59	10003.51	10014.43

CROSS SECTION

RIVER: Stagecoach Pass
REACH: StagecoachPass-1 RS: 0.98

INPUT
Description: Cross Section 0.98 is located downstream of the intersection of Scottsdale Road and Stage Coach Pass Wash. There are 4-10 X 4 concrete box culverts located under Scottsdale Road.

Topography indicates wash,Scottsdale Road (old alignment), and surrounding undeveloped desert.
Aerial shows wash, desert, and Scottsdale Road.
T5NR4E Section 10
Q100 = 1996 cfs
Station Elevation Data num= 14

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9672.48	2266	9679.56	2266	9766.86	2264	9814	2264	9873.62	2264
9898.34	2264	9976.76	2264	9983.49	2262	9991.5	2262	10007.49	2262
10012.61	2262	10016.16	2264	10065.12	2266	10165.24	2268		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9672.48	.056	9976.76	.038	10016.16	.056

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9976.76	10016.16	300.24	303.37	314.11	.3	.5

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
9672.48	9973.48	2271.7	F
10022.63	10165.24	2271.7	F

CROSS SECTION OUTPUT Profile #100-yr 6-yr

E.G. Elev (ft)	2268.35	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.90	Wt. n-Val.	0.056	0.038	0.056
W.S. Elev (ft)	2266.45	Reach Len. (ft)	300.24	303.37	314.11
Crit W.S. (ft)	2266.45	Flow Area (sq ft)	8.04	165.14	15.01
E.G. Slope (ft/ft)	0.012798	Area (sq ft)	644.68	165.14	76.21
Q Total (cfs)	1996.00	Flow (cfs)	43.89	1873.19	78.91
Top Width (ft)	415.27	Top Width (ft)	304.28	39.40	71.59
Vel Total (ft/s)	10.61	Avg. Vel. (ft/s)	5.46	11.34	5.26
Max Chl Dpth (ft)	4.45	Hydr. Depth (ft)	2.45	4.19	2.32
Conv. Total (cfs)	17643.9	Conv. (cfs)	388.0	16558.3	697.6
Length Wtd. (ft)	304.74	Wetted Per. (ft)	3.28	40.22	6.48
Min Ch El (ft)	2262.00	Shear (lb/sq ft)	1.96	3.28	1.85
Alpha	1.09	Stream Power (lb/ft s)	10.69	37.21	9.74
Frctn Loss (ft)	3.54	Cum Volume (acre-ft)	2.54	1.12	1.11
C & E Loss (ft)	0.70	Cum SA (acres)	1.26	0.36	1.32

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 cross-section end points had to be extended vertically for the computed water surface.
Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
depth, the calculated water surface came back below critical depth. This indicates that there is

not a valid subcritical answer. The program defaulted to critical depth.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid,
energy was used.

CROSS SECTION OUTPUT Profile #Method 1

E.G. Elev (ft)	2268.47	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.98	Wt. n-Val.	0.056	0.038	0.056
W.S. Elev (ft)	2266.49	Reach Len. (ft)	300.24	303.37	314.11
Crit W.S. (ft)	2266.49	Flow Area (sq ft)	8.17	166.73	9.27
E.G. Slope (ft/ft)	0.012939	Area (sq ft)	93.03	166.73	9.27
Q Total (cfs)	1996.00	Flow (cfs)	45.36	1913.97	36.67
Top Width (ft)	80.56	Top Width (ft)	37.32	39.40	3.84
Vel Total (ft/s)	10.84	Avg. Vel. (ft/s)	5.55	11.48	3.96
Max Chl Dpth (ft)	4.49	Hydr. Depth (ft)	2.49	4.23	2.41
Conv. Total (cfs)	17547.2	Conv. (cfs)	398.7	16826.0	322.4
Length Wtd. (ft)	303.43	Wetted Per. (ft)	3.28	40.22	6.18
Min Ch El (ft)	2262.00	Shear (lb/sq ft)	2.01	3.35	1.21
Alpha	1.08	Stream Power (lb/ft s)	11.17	38.44	4.79
Frctn Loss (ft)	4.25	Cum Volume (acre-ft)	0.32	1.28	0.03
C & E Loss (ft)	0.23	Cum SA (acres)	0.13	0.36	0.01

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

CROSS SECTION

RIVER: Stagecoach Pass
REACH: StagecoachPass-1 RS: 0.93

INPUT
Description: Topography indicates wash, and surrounding undeveloped
desert.
Aerial shows wash, desert, and homes.
T5NR4E Section 10

Q100 = 1996 cfs
Station Elevation Data num= 18

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9612.07	2266	9643.6	2264	9700.68	2262	9873.38	2262	9883.59	2262
9912.88	2260	9929.88	2258	9942.67	2258	9947.03	2260	9962.21	2260
9978.22	2258	10017.54	2258	10027.58	2260	10208.09	2260	10307.71	2260
10343.57	2262	10396.95	2264	10439.86	2264				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9612.07	.056	9962.21	.03	10027.58	.056

Bank Sta: Left	Right	Coeff Contr.	Expan.
9962.21	10027.58	.1	.3

CROSS SECTION OUTPUT Profile #100-yr 6-yr

E.G. Elev (ft)	2261.32	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.51	Wt. n-Val.	0.056	0.038	0.056
W.S. Elev (ft)	2260.81	Reach Len. (ft)			
Crit W.S. (ft)	2260.81	Flow Area (sq ft)	91.45	157.37	231.58

E.G. Slope (ft/ft)	0.010580	Area (sq ft)	91.45	157.37	231.58
Q Total (cfs)	1996.00	Flow (cfs)	324.42	1133.24	538.34
Top Width (ft)	421.08	Top Width (ft)	61.13	65.37	294.58
Vel Total (ft/s)	4.15	Avg. Vel. (ft/s)	3.55	7.20	2.32
Max Chl Dpth (ft)	2.81	Hydr. Depth (ft)	1.50	2.41	0.79
Conv. Total (cfs)	19405.5	Conv. (cfs)	3154.1	11017.6	5233.9
Length Wtd. (ft)		Wetted Per. (ft)	61.71	65.69	294.60
Min Ch El (ft)	2258.00	Shear (lb/sq ft)	0.98	1.58	0.52
Alpha	1.91	Stream Power (lb/ft s)	3.47	11.39	1.21
Frctn Loss (ft)		Cum Volume (acre-ft)			
C & E Loss (ft)		Cum SA (acres)			

Warning: Slope too steep for slope area to converge during supercritical flow calculations (normal depth is
below critical depth). Water surface set to critical depth.

CROSS SECTION OUTPUT Profile #Method 1

E.G. Elev (ft)	2263.01	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.52	Wt. n-Val.		0.038	
W.S. Elev (ft)	2261.49	Reach Len. (ft)			
Crit W.S. (ft)	2261.49	Flow Area (sq ft)		201.85	
E.G. Slope (ft/ft)	0.015186	Area (sq ft)		201.85	
Q Total (cfs)	1996.00	Flow (cfs)		1996.00	
Top Width (ft)	65.37	Top Width (ft)		65.37	
Vel Total (ft/s)	9.89	Avg. Vel. (ft/s)		9.89	
Max Chl Dpth (ft)	3.49	Hydr. Depth (ft)		3.09	
Conv. Total (cfs)	16197.4	Conv. (cfs)		16197.4	
Length Wtd. (ft)		Wetted Per. (ft)		68.66	
Min Ch El (ft)	2258.00	Shear (lb/sq ft)		2.79	
Alpha	1.00	Stream Power (lb/ft s)		27.56	
Frctn Loss (ft)		Cum Volume (acre-ft)			
C & E Loss (ft)		Cum SA (acres)			

Warning: Slope too steep for slope area to converge during supercritical flow calculations (normal depth is
below critical depth). Water surface set to critical depth.
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.

SUMMARY OF MANNING'S N VALUES

River:Stagecoach Pass

Reach	River Sta.	n1	n2	n3
StagecoachPass-1	6.93	.064	.044	.064
StagecoachPass-1	6.88	.064	.044	.064
StagecoachPass-1	6.85	.064	.044	.064
StagecoachPass-1	6.8	.064	.044	.064
StagecoachPass-1	6.73	.064	.044	.064
StagecoachPass-1	6.63	.064	.044	.064
StagecoachPass-1	6.59	.064	.044	.064
StagecoachPass-1	6.55	.064	.044	.064
StagecoachPass-1	6.545	Culvert		
StagecoachPass-1	6.54	.064	.044	.064
StagecoachPass-1	6.51	.064	.044	.064
StagecoachPass-1	6.505	Culvert		
StagecoachPass-1	6.5	.064	.044	.064
StagecoachPass-1	6.45	.064	.044	.064
StagecoachPass-1	6.37	.064	.044	.064
StagecoachPass-1	6.31	.064	.044	.064
StagecoachPass-1	6.23	.064	.044	.064
StagecoachPass-1	6.17	.064	.044	.064
StagecoachPass-1	6.07	.064	.044	.064
StagecoachPass-1	5.98	.064	.044	.064

StagecoachPass-1	5.91	.064	.044	.064
StagecoachPass-1	5.9	Culvert		
StagecoachPass-1	5.89	.064	.044	.064
StagecoachPass-1	5.81	.064	.044	.064
StagecoachPass-1	5.72	.064	.044	.064
StagecoachPass-1	5.64	.064	.044	.064
StagecoachPass-1	5.61	.064	.044	.064
StagecoachPass-1	5.55	.064	.044	.064
StagecoachPass-1	5.51	.064	.044	.064
StagecoachPass-1	5.46	.064	.044	.064
StagecoachPass-1	5.43	.064	.044	.064
StagecoachPass-1	5.37	.064	.044	.064
StagecoachPass-1	5.27	.064	.044	.064
StagecoachPass-1	5.18	.064	.044	.064
StagecoachPass-1	5.12	.064	.044	.064
StagecoachPass-1	5.08	.064	.044	.064
StagecoachPass-1	5.02	.064	.044	.064
StagecoachPass-1	4.94	.064	.044	.064
StagecoachPass-1	4.84	.064	.044	.064
StagecoachPass-1	4.81	.064	.044	.064
StagecoachPass-1	4.77	.064	.044	.064
StagecoachPass-1	4.72	.064	.044	.064
StagecoachPass-1	4.62	.064	.044	.064
StagecoachPass-1	4.53	.064	.044	.064
StagecoachPass-1	4.43	.064	.044	.064
StagecoachPass-1	4.34	.064	.044	.064
StagecoachPass-1	4.3	.064	.044	.064
StagecoachPass-1	4.24	.064	.044	.064
StagecoachPass-1	4.19	.064	.044	.064
StagecoachPass-1	4.09	.056	.038	.076
StagecoachPass-1	4.01	.056	.038	.076
StagecoachPass-1	3.96	.056	.038	.076
StagecoachPass-1	3.9	.056	.038	.076
StagecoachPass-1	3.82	.056	.044	.076
StagecoachPass-1	3.72	.056	.038	.076
StagecoachPass-1	3.66	.056	.038	.076
StagecoachPass-1	3.64	.056	.038	.076
StagecoachPass-1	3.63	Culvert		
StagecoachPass-1	3.62	.056	.038	.076
StagecoachPass-1	3.57	.056	.038	.076
StagecoachPass-1	3.53	.056	.038	.076
StagecoachPass-1	3.44	.064	.044	.064
StagecoachPass-1	3.35	.064	.044	.064
StagecoachPass-1	3.31	.064	.044	.064
StagecoachPass-1	3.25	.064	.044	.064
StagecoachPass-1	3.16	.064	.044	.064
StagecoachPass-1	3.06	.064	.044	.064
StagecoachPass-1	3.03	.064	.044	.064
StagecoachPass-1	2.97	.064	.044	.064
StagecoachPass-1	2.96	Culvert		
StagecoachPass-1	2.95	.064	.044	.064
StagecoachPass-1	2.92	.064	.044	.064
StagecoachPass-1	2.86	.056	.038	.086
StagecoachPass-1	2.8	.056	.038	.086
StagecoachPass-1	2.76	.056	.038	.086
StagecoachPass-1	2.7	.056	.038	.086
StagecoachPass-1	2.61	.061	.038	.056
StagecoachPass-1	2.58	.061	.038	.056
StagecoachPass-1	2.5	.061	.038	.056
StagecoachPass-1	2.495	Culvert		
StagecoachPass-1	2.49	.061	.038	.056
StagecoachPass-1	2.41	.061	.038	.056
StagecoachPass-1	2.36	.061	.038	.056
StagecoachPass-1	2.3	.061	.038	.056
StagecoachPass-1	2.23	.061	.038	.056
StagecoachPass-1	2.15	.061	.039	.056
StagecoachPass-1	2.145	Culvert		
StagecoachPass-1	2.14	.056	.038	.056
StagecoachPass-1	2.08	.056	.038	.056
StagecoachPass-1	2.02	.056	.038	.056
StagecoachPass-1	1.94	.056	.038	.056

StagecoachPass-1	1.92	.056	.038	.056
StagecoachPass-1	1.88	.056	.038	.056
StagecoachPass-1	1.81	.056	.038	.056
StagecoachPass-1	1.76	.056	.038	.056
StagecoachPass-1	1.72	.056	.038	.056
StagecoachPass-1	1.66	.056	.038	.056
StagecoachPass-1	1.57	.056	.038	.056
StagecoachPass-1	1.53	.056	.038	.056
StagecoachPass-1	1.47	.056	.038	.056
StagecoachPass-1	1.44	.056	.038	.056
StagecoachPass-1	1.36	.056	.038	.056
StagecoachPass-1	1.29	.056	.038	.056
StagecoachPass-1	1.19	.056	.038	.056
StagecoachPass-1	1.13	.056	.038	.056
StagecoachPass-1	1.1	.056	.038	.056
StagecoachPass-1	1.07	.056	.038	.056
StagecoachPass-1	1.01	.056	.038	.056
StagecoachPass-1	0.99	Culvert		
StagecoachPass-1	0.98	.056	.038	.056
StagecoachPass-1	0.93	.056	.038	.056

SUMMARY OF REACH LENGTHS

River: Stagecoach Pass

Reach	River Sta.	Left	Channel	Right
StagecoachPass-1	6.93	225.25	231.79	232.5
StagecoachPass-1	6.88	181.52	182.97	185
StagecoachPass-1	6.85	286.1	275.18	250.78
StagecoachPass-1	6.8	342.46	357.07	348.2
StagecoachPass-1	6.73	506.93	520.11	514.82
StagecoachPass-1	6.63	207.15	206.41	201.89
StagecoachPass-1	6.59	223.51	228.93	253.87
StagecoachPass-1	6.55	51.62	54.36	48.5
StagecoachPass-1	6.545	Culvert		
StagecoachPass-1	6.54	113.43	130.13	143.65
StagecoachPass-1	6.51	65.03	70.74	68
StagecoachPass-1	6.505	Culvert		
StagecoachPass-1	6.5	306.51	265.12	203.45
StagecoachPass-1	6.45	378.71	404.49	416.22
StagecoachPass-1	6.37	332.86	330.12	324.31
StagecoachPass-1	6.31	432.85	453.1	447.56
StagecoachPass-1	6.23	308.38	309.69	308.4
StagecoachPass-1	6.17	492.53	488.62	468.84
StagecoachPass-1	6.07	521.46	512.01	504.03
StagecoachPass-1	5.98	380.53	371.19	343.6
StagecoachPass-1	5.91	96.23	93.98	97.38
StagecoachPass-1	5.9	Culvert		
StagecoachPass-1	5.89	371.46	393.22	397.4
StagecoachPass-1	5.81	555.84	515.5	496.64
StagecoachPass-1	5.72	341.05	382.86	397.4
StagecoachPass-1	5.64	162.68	161.27	158.95
StagecoachPass-1	5.61	337.12	323.15	291.38
StagecoachPass-1	5.55	228.59	215.69	208.49
StagecoachPass-1	5.51	249.39	264.64	289.79
StagecoachPass-1	5.46	167.77	172.64	180.13
StagecoachPass-1	5.43	347.43	330.83	326.15
StagecoachPass-1	5.37	488.63	493.75	498.6
StagecoachPass-1	5.27	450.97	481.66	511.67
StagecoachPass-1	5.18	292.43	326.88	332.47
StagecoachPass-1	5.12	263.58	234.69	196.36
StagecoachPass-1	5.08	293.34	291.18	333
StagecoachPass-1	5.02	434.77	434.52	440.27
StagecoachPass-1	4.94	502.07	510.22	489.46
StagecoachPass-1	4.84	155.72	156	155.62
StagecoachPass-1	4.81	202.82	218.24	230.15
StagecoachPass-1	4.77	279.24	277.64	280.33

StagecoachPass-1	4.72	497.16	491.79	470.19
StagecoachPass-1	4.62	522.24	516.48	506.7
StagecoachPass-1	4.53	492.56	500.82	499.6
StagecoachPass-1	4.43	481.7	463.26	444.73
StagecoachPass-1	4.34	243.05	254.69	277.33
StagecoachPass-1	4.3	289.58	313.61	327.45
StagecoachPass-1	4.24	249.51	249.86	252.44
StagecoachPass-1	4.19	522.81	502.12	499.86
StagecoachPass-1	4.09	447.83	440.53	431.07
StagecoachPass-1	4.01	257.45	259.46	259.12
StagecoachPass-1	3.96	274.78	302.81	308.46
StagecoachPass-1	3.9	458.51	440.49	446.67
StagecoachPass-1	3.82	526.18	508.72	513.48
StagecoachPass-1	3.72	351.62	342.71	341.81
StagecoachPass-1	3.66	91.95	94.2	93.79
StagecoachPass-1	3.64	148.5	132.05	131.3
StagecoachPass-1	3.63	Culvert		
StagecoachPass-1	3.62	249.65	239.22	239.56
StagecoachPass-1	3.57	197.3	194.82	193.59
StagecoachPass-1	3.53	502.23	494.74	496.39
StagecoachPass-1	3.44	460.64	467.05	475.12
StagecoachPass-1	3.35	212.63	217.05	218.09
StagecoachPass-1	3.31	342.61	322.59	303.02
StagecoachPass-1	3.25	475.73	491.87	504.29
StagecoachPass-1	3.16	495.93	494.48	498.52
StagecoachPass-1	3.06	229.34	192.88	170.32
StagecoachPass-1	3.03	280.29	289.8	286.61
StagecoachPass-1	2.97	70.25	94.15	72.3
StagecoachPass-1	2.96	Culvert		
StagecoachPass-1	2.95	170.97	200.97	2393.91
StagecoachPass-1	2.92	303.07	292.98	270.76
StagecoachPass-1	2.86	324.59	316.48	292.31
StagecoachPass-1	2.8	216.25	217.99	214.73
StagecoachPass-1	2.76	273.12	309.32	322.62
StagecoachPass-1	2.7	489.12	483.63	473.08
StagecoachPass-1	2.61	131.55	142.72	154.55
StagecoachPass-1	2.58	448.51	444.76	442.88
StagecoachPass-1	2.5	70.56	65.75	65.14
StagecoachPass-1	2.495	Culvert		
StagecoachPass-1	2.49	401.49	416.01	406.55
StagecoachPass-1	2.41	272.35	269.4	261.76
StagecoachPass-1	2.36	308.98	287.94	276.39
StagecoachPass-1	2.3	362.45	369.47	383.86
StagecoachPass-1	2.23	480.63	452.86	425.7
StagecoachPass-1	2.15	43.85	37.46	39.36
StagecoachPass-1	2.145	Culvert		
StagecoachPass-1	2.14	298.75	303.82	341.22
StagecoachPass-1	2.08	330.12	310.48	317.31
StagecoachPass-1	2.02	422.41	410.88	400.28
StagecoachPass-1	1.94	148.83	149.34	138.33
StagecoachPass-1	1.92	164.2	172.47	183.53
StagecoachPass-1	1.88	390.55	379.42	365.92
StagecoachPass-1	1.81	281.52	288.71	293.17
StagecoachPass-1	1.76	191.07	201.39	222.44
StagecoachPass-1	1.72	324.14	319.48	271.25
StagecoachPass-1	1.66	459.93	447.13	377.45
StagecoachPass-1	1.57	211.6	230.84	263.52
StagecoachPass-1	1.53	315.13	315.68	326.48
StagecoachPass-1	1.47	167.91	168.69	171.42
StagecoachPass-1	1.44	394.75	388	372.36
StagecoachPass-1	1.36	377.04	389.76	400.9
StagecoachPass-1	1.29	520.07	520.26	518.56
StagecoachPass-1	1.19	339.29	351.73	352.16
StagecoachPass-1	1.13	146.89	146.65	147.55
StagecoachPass-1	1.1	160.04	157.68	153.1
StagecoachPass-1	1.07	306.9	308.3	295.73
StagecoachPass-1	1.01	120.05	115.2	115.9
StagecoachPass-1	0.99	Culvert		
StagecoachPass-1	0.98	300.24	303.37	314.11
StagecoachPass-1	0.93			

SUMMARY OF CONTRACTION AND EXPANSION COEFFICIENTS
River: Stagecoach Pass

Reach	River Sta.	Contr.	Expan.
StagecoachPass-1	6.93	.1	.3
StagecoachPass-1	6.88	.1	.3
StagecoachPass-1	6.85	.1	.3
StagecoachPass-1	6.8	.1	.3
StagecoachPass-1	6.73	.1	.3
StagecoachPass-1	6.63	.1	.3
StagecoachPass-1	6.59	.3	.5
StagecoachPass-1	6.55	.3	.5
StagecoachPass-1	6.545	Culvert	
StagecoachPass-1	6.54	.3	.5
StagecoachPass-1	6.51	.3	.5
StagecoachPass-1	6.505	Culvert	
StagecoachPass-1	6.5	.3	.5
StagecoachPass-1	6.45	.1	.3
StagecoachPass-1	6.37	.1	.3
StagecoachPass-1	6.31	.1	.3
StagecoachPass-1	6.23	.1	.3
StagecoachPass-1	6.17	.1	.3
StagecoachPass-1	6.07	.1	.3
StagecoachPass-1	5.98	.3	.5
StagecoachPass-1	5.91	.3	.5
StagecoachPass-1	5.9	Culvert	
StagecoachPass-1	5.89	.3	.5
StagecoachPass-1	5.81	.1	.3
StagecoachPass-1	5.72	.1	.3
StagecoachPass-1	5.64	.1	.3
StagecoachPass-1	5.61	.1	.3
StagecoachPass-1	5.55	.1	.3
StagecoachPass-1	5.51	.1	.3
StagecoachPass-1	5.46	.1	.3
StagecoachPass-1	5.43	.1	.3
StagecoachPass-1	5.37	.1	.3
StagecoachPass-1	5.27	.1	.3
StagecoachPass-1	5.18	.1	.3
StagecoachPass-1	5.12	.1	.3
StagecoachPass-1	5.08	.1	.3
StagecoachPass-1	5.02	.1	.3
StagecoachPass-1	4.94	.1	.3
StagecoachPass-1	4.84	.1	.3
StagecoachPass-1	4.81	.1	.3
StagecoachPass-1	4.77	.1	.3
StagecoachPass-1	4.72	.1	.3
StagecoachPass-1	4.62	.1	.3
StagecoachPass-1	4.53	.1	.3
StagecoachPass-1	4.43	.1	.3
StagecoachPass-1	4.34	.1	.3
StagecoachPass-1	4.3	.1	.3
StagecoachPass-1	4.24	.1	.3
StagecoachPass-1	4.19	.1	.3
StagecoachPass-1	4.09	.1	.3
StagecoachPass-1	4.01	.1	.3
StagecoachPass-1	3.96	.1	.3
StagecoachPass-1	3.9	.1	.3
StagecoachPass-1	3.82	.1	.3
StagecoachPass-1	3.72	.1	.3
StagecoachPass-1	3.66	.3	.5
StagecoachPass-1	3.64	.3	.5
StagecoachPass-1	3.63	Culvert	
StagecoachPass-1	3.62	.3	.5
StagecoachPass-1	3.57	.1	.3
StagecoachPass-1	3.53	.1	.3
StagecoachPass-1	3.44	.1	.3

StagecoachPass-1	3.35		.1	.3
StagecoachPass-1	3.31		.1	.3
StagecoachPass-1	3.25		.1	.3
StagecoachPass-1	3.16		.1	.3
StagecoachPass-1	3.06		.1	.3
StagecoachPass-1	3.03		.3	.5
StagecoachPass-1	2.97		.3	.5
StagecoachPass-1	2.96	Culvert		
StagecoachPass-1	2.95		.3	.5
StagecoachPass-1	2.92		.1	.3
StagecoachPass-1	2.86		.1	.3
StagecoachPass-1	2.8		.1	.3
StagecoachPass-1	2.76		.1	.3
StagecoachPass-1	2.7		.1	.3
StagecoachPass-1	2.61		.1	.3
StagecoachPass-1	2.58		.3	.5
StagecoachPass-1	2.5		.3	.5
StagecoachPass-1	2.495	Culvert		
StagecoachPass-1	2.49		.3	.5
StagecoachPass-1	2.41		.1	.3
StagecoachPass-1	2.36		.1	.3
StagecoachPass-1	2.3		.1	.3
StagecoachPass-1	2.23		.3	.5
StagecoachPass-1	2.15		.3	.5
StagecoachPass-1	2.145	Culvert		
StagecoachPass-1	2.14		.3	.5
StagecoachPass-1	2.08		.1	.3
StagecoachPass-1	2.02		.1	.3
StagecoachPass-1	1.94		.1	.3
StagecoachPass-1	1.92		.1	.3
StagecoachPass-1	1.88		.1	.3
StagecoachPass-1	1.81		.1	.3
StagecoachPass-1	1.76		.1	.3
StagecoachPass-1	1.72		.1	.3
StagecoachPass-1	1.66		.1	.3
StagecoachPass-1	1.57		.1	.3
StagecoachPass-1	1.53		.1	.3
StagecoachPass-1	1.47		.1	.3
StagecoachPass-1	1.44		.1	.3
StagecoachPass-1	1.36		.1	.3
StagecoachPass-1	1.29		.1	.3
StagecoachPass-1	1.19		.1	.3
StagecoachPass-1	1.13		.1	.3
StagecoachPass-1	1.1		.1	.3
StagecoachPass-1	1.07		.3	.5
StagecoachPass-1	1.01		.3	.5
StagecoachPass-1	0.99	Culvert		
StagecoachPass-1	0.98		.3	.5
StagecoachPass-1	0.93		.1	.3

Profile Output Table - Standard Table 1

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
StagecoachPass-1	6.93	100-yr 6-yr	453.00	2959.85	2962.45	2962.45	2962.87	0.012178	5.90	120.51	138.28	0.73
StagecoachPass-1	6.93	Method 1	453.00	2959.85	2962.40	2962.40	2963.40	0.026263	8.02	56.47	28.80	1.01
StagecoachPass-1	6.88	100-yr 6-yr	453.00	2953.25	2955.50	2955.50	2955.95	0.018007	5.77	104.08	140.22	0.85
StagecoachPass-1	6.88	Method 1	453.00	2953.25	2955.46	2955.46	2956.18	0.027069	6.82	66.39	47.41	1.02
StagecoachPass-1	6.85	100-yr 6-yr	453.00	2948.00	2948.94	2948.94	2949.29	0.043677	5.89	104.82	164.42	1.19

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  StagecoachPass-1  6.85          Method 1          453.00    2948.00    2949.67    2949.67
2950.42    0.026140       6.92     65.50      43.70          1.00

  StagecoachPass-1  6.8           100-yr 6-yr       631.00    2940.32    2942.27    2942.27
2942.52    0.017088       4.79    219.64     455.24          0.79
  StagecoachPass-1  6.8           Method 1          631.00    2940.32    2942.44    2942.44
2943.09    0.026646       6.49     97.30      75.18          1.00

  StagecoachPass-1  6.73          100-yr 6-yr       631.00    2928.30    2930.63    2930.63
2930.94    0.037635       4.97    153.00     264.77          1.08
  StagecoachPass-1  6.73          Method 1          631.00    2928.30    2930.88    2930.82
2931.25    0.023636       4.85    130.10     142.62          0.89

  StagecoachPass-1  6.63          100-yr 6-yr       631.00    2915.40    2916.97    2916.97
2917.06    0.009087       2.69    275.27     341.25          0.54
  StagecoachPass-1  6.63          Method 1          631.00    2915.40    2917.00    2917.00
2917.39    0.030308       5.02    125.79     159.49          1.00

  StagecoachPass-1  6.59          100-yr 6-yr       631.00    2908.40    2910.62    2910.62
2911.00    0.030030       4.95    128.01     168.24          0.99
  StagecoachPass-1  6.59          Method 1          631.00    2908.40    2910.61    2910.61
2911.00    0.031178       5.00    126.14     163.54          1.00

  StagecoachPass-1  6.55          100-yr 6-yr       631.00    2902.00    2906.18    2903.37
2906.19    0.000138       0.90    946.89     477.46          0.09
  StagecoachPass-1  6.55          Method 1          631.00    2902.00    2906.22    2903.37
2906.24    0.000207       1.09    580.81     168.93          0.10

  StagecoachPass-1  6.545                                Culvert

  StagecoachPass-1  6.54          100-yr 6-yr       631.00    2900.00    2902.28    2902.28
2902.78    0.026803       5.70    112.56     245.43          0.98
  StagecoachPass-1  6.54          Method 1          631.00    2900.00    2902.29    2902.29
2902.78    0.026249       5.66    113.45     119.29          0.97

  StagecoachPass-1  6.51          100-yr 6-yr       631.00    2898.20    2901.30    2899.50
2901.33    0.000593       1.55    498.72     298.66          0.17
  StagecoachPass-1  6.51          Method 1          631.00    2898.20    2901.68    2899.50
2901.72    0.000505       1.54    409.15     137.69          0.16

  StagecoachPass-1  6.505                                Culvert

  StagecoachPass-1  6.5           100-yr 6-yr       631.00    2896.00    2897.51    2897.51
2898.08    0.027349       6.06    104.21     127.60          1.00
  StagecoachPass-1  6.5           Method 1          631.00    2896.00    2897.52    2897.51
2898.08    0.026935       6.00    105.16      92.28          0.99

  StagecoachPass-1  6.45          100-yr 6-yr       631.00    2888.00    2890.87    2890.87
2891.61    0.016898       7.09    106.70      94.04          0.87
  StagecoachPass-1  6.45          Method 1          631.00    2888.00    2890.79    2890.79
2891.69    0.021058       7.70     86.32      50.00          0.96

  StagecoachPass-1  6.37          100-yr 6-yr       631.00    2877.25    2879.09    2879.09
2879.60    0.028845       5.78    109.34     111.54          1.01
  StagecoachPass-1  6.37          Method 1          631.00    2877.25    2879.08    2879.08
2879.60    0.029261       5.80    108.79     107.89          1.02

  StagecoachPass-1  6.31          100-yr 6-yr       631.00    2868.00    2870.15    2870.15
2870.53    0.015804       5.45    161.79     211.18          0.80
  StagecoachPass-1  6.31          Method 1          631.00    2868.00    2870.18    2870.13
2870.86    0.023018       6.60     95.57      64.22          0.95

  StagecoachPass-1  6.23          100-yr 6-yr       631.00    2857.70    2860.20    2860.20
2860.77    0.017264       6.13    115.93     140.88          0.85
  StagecoachPass-1  6.23          Method 1          631.00    2857.70    2860.12    2860.12
2860.79    0.021430       6.59     99.48      96.84          0.93

  StagecoachPass-1  6.17          100-yr 6-yr       758.00    2849.60    2850.66    2850.57
2850.93    0.028458       4.84    189.51     246.64          0.96
  StagecoachPass-1  6.17          Method 1          758.00    2849.60    2851.01    2850.98
2851.55    0.026471       5.90    128.41     113.03          0.98
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StagecoachPass-1	6.07		100-yr 6-yr		758.00	2836.35	2837.86	2837.86	
2838.42	0.023473	6.07	135.43	137.86		0.95			
StagecoachPass-1	6.07		Method 1		758.00	2836.35	2837.84	2837.84	
2838.48	0.026991	6.38	118.80	95.00		1.01			
StagecoachPass-1	5.98		100-yr 6-yr		758.00	2822.10	2823.78	2823.78	
2824.32	0.022824	6.08	139.10	144.86		0.94			
StagecoachPass-1	5.98		Method 1		758.00	2822.10	2823.76	2823.76	
2824.41	0.026699	6.47	117.14	90.72		1.00			
StagecoachPass-1	5.91		100-yr 6-yr		758.00	2812.00	2817.76	2813.43	
2817.77	0.000071	0.89	1160.76	292.78		0.07			
StagecoachPass-1	5.91		Method 1		758.00	2812.00	2818.03	2813.43	
2818.05	0.000154	1.27	597.60	103.50		0.09			
StagecoachPass-1	5.9				Culvert				
StagecoachPass-1	5.89		100-yr 6-yr		758.00	2810.00	2811.29	2811.23	
2811.78	0.023841	5.62	134.88	131.94		0.94			
StagecoachPass-1	5.89		Method 1		758.00	2810.00	2811.30	2811.23	
2811.78	0.023129	5.56	136.38	120.48		0.92			
StagecoachPass-1	5.81		100-yr 6-yr		758.00	2800.00	2801.39	2801.39	
2801.97	0.026057	6.08	127.49	122.95		0.99			
StagecoachPass-1	5.81		Method 1		758.00	2800.00	2801.39	2801.38	
2801.98	0.026757	6.12	123.80	105.13		0.99			
StagecoachPass-1	5.72		100-yr 6-yr		758.00	2787.00	2789.27	2789.19	
2789.80	0.021174	5.85	131.06	112.01		0.90			
StagecoachPass-1	5.72		Method 1		758.00	2787.00	2789.28	2789.18	
2789.80	0.020962	5.82	130.23	99.60		0.90			
StagecoachPass-1	5.64		100-yr 6-yr		758.00	2778.00	2780.15	2780.15	
2780.87	0.025635	6.83	111.33	82.66		1.01			
StagecoachPass-1	5.64		Method 1		758.00	2778.00	2780.15	2780.15	
2780.87	0.025971	6.85	110.73	78.04		1.01			
StagecoachPass-1	5.61		100-yr 6-yr		758.00	2774.20	2776.19	2776.14	
2776.72	0.024034	5.86	129.73	114.56		0.95			
StagecoachPass-1	5.61		Method 1		758.00	2774.20	2776.18	2776.13	
2776.72	0.024735	5.91	128.30	108.94		0.96			
StagecoachPass-1	5.55		100-yr 6-yr		758.00	2766.70	2768.75	2768.67	
2769.15	0.022629	5.04	150.69	155.75		0.89			
StagecoachPass-1	5.55		Method 1		758.00	2766.70	2768.76	2768.68	
2769.15	0.021920	4.99	152.05	152.27		0.88			
StagecoachPass-1	5.51		100-yr 6-yr		758.00	2761.50	2763.26	2763.26	
2763.86	0.026397	6.19	123.78	113.33		1.00			
StagecoachPass-1	5.51		Method 1		758.00	2761.50	2763.25	2763.25	
2763.86	0.027297	6.24	121.46	102.12		1.01			
StagecoachPass-1	5.46		100-yr 6-yr		758.00	2755.20	2757.13	2757.01	
2757.58	0.019836	5.44	139.62	116.87		0.87			
StagecoachPass-1	5.46		Method 1		758.00	2755.20	2757.13	2757.01	
2757.58	0.019925	5.44	139.38	113.96		0.87			
StagecoachPass-1	5.43		100-yr 6-yr		758.00	2750.60	2752.96	2752.96	
2753.64	0.026366	6.61	114.59	86.30		1.01			
StagecoachPass-1	5.43		Method 1		758.00	2750.60	2752.96	2752.96	
2753.64	0.026243	6.60	114.78	86.36		1.01			
StagecoachPass-1	5.37		100-yr 6-yr		758.00	2742.40	2744.20	2743.91	
2744.48	0.020153	4.96	187.00	176.72		0.85			
StagecoachPass-1	5.37		Method 1		758.00	2742.40	2744.72	2744.65	
2745.42	0.022324	6.73	112.61	71.51		0.95			
StagecoachPass-1	5.27		100-yr 6-yr		844.00	2730.10	2732.16	2732.16	
2732.65	0.028096	5.63	150.51	158.45		1.00			

StagecoachPass-1	5.27		Method 1		844.00	2730.10	2732.14	2732.14		
2732.65	0.029579	5.71	147.80	151.26		1.02				
StagecoachPass-1	5.18		100-yr 6-yr		844.00	2720.00	2720.94	2720.83		
2721.25	0.019487	4.47	190.16	212.28		0.82				
StagecoachPass-1	5.18		Method 1		844.00	2720.00	2720.94	2720.83		
2721.25	0.019186	4.45	189.84	203.90		0.81				
StagecoachPass-1	5.12		100-yr 6-yr		844.00	2711.50	2713.26	2713.26		
2713.96	0.025525	6.69	126.60	95.20		1.00				
StagecoachPass-1	5.12		Method 1		844.00	2711.50	2713.26	2713.26		
2713.96	0.026026	6.72	125.65	91.10		1.01				
StagecoachPass-1	5.08		100-yr 6-yr		844.00	2704.20	2706.26	2706.26		
2706.88	0.026467	6.34	134.23	116.91		1.00				
StagecoachPass-1	5.08		Method 1		844.00	2704.20	2706.29	2706.25		
2706.89	0.024668	6.20	136.22	107.26		0.97				
StagecoachPass-1	5.02		100-yr 6-yr		844.00	2697.50	2699.21	2699.11		
2699.73	0.020144	5.81	148.12	123.50		0.89				
StagecoachPass-1	5.02		Method 1		844.00	2697.50	2699.13	2699.13		
2699.72	0.024555	6.17	138.83	120.28		0.97				
StagecoachPass-1	4.94		100-yr 6-yr		844.00	2687.25	2689.43	2689.43		
2690.06	0.024680	6.36	136.94	124.79		0.98				
StagecoachPass-1	4.94		Method 1		844.00	2687.25	2689.57	2689.41		
2690.09	0.018292	5.81	145.36	100.22		0.85				
StagecoachPass-1	4.84		100-yr 6-yr		844.00	2675.60	2678.49	2678.49		
2679.08	0.018974	6.37	154.99	145.57		0.88				
StagecoachPass-1	4.84		Method 1		844.00	2675.60	2678.44	2678.44		
2679.22	0.024974	7.09	118.96	76.32		1.00				
StagecoachPass-1	4.81		100-yr 6-yr		844.00	2673.40	2676.36	2675.73		
2676.82	0.008002	5.53	162.53	84.59		0.62				
StagecoachPass-1	4.81		Method 1		844.00	2673.40	2676.41	2675.70		
2676.89	0.008251	5.53	152.67	60.12		0.61				
StagecoachPass-1	4.77		100-yr 6-yr		836.00	2669.67	2672.81	2672.81		
2674.03	0.022229	8.89	95.96	42.97		0.98				
StagecoachPass-1	4.77		Method 1		836.00	2669.67	2672.84	2672.77		
2674.05	0.022230	8.83	94.63	36.89		0.97				
StagecoachPass-1	4.72		100-yr 6-yr		836.00	2664.10	2666.49	2666.49		
2667.15	0.023617	6.56	134.41	109.79		0.97				
StagecoachPass-1	4.72		Method 1		836.00	2664.10	2666.48	2666.47		
2667.20	0.026337	6.83	122.48	87.03		1.01				
StagecoachPass-1	4.62		100-yr 6-yr		836.00	2653.80	2655.74	2655.67		
2656.30	0.019437	6.07	147.33	129.45		0.88				
StagecoachPass-1	4.62		Method 1		836.00	2653.80	2655.79	2655.64		
2656.35	0.018589	6.01	139.15	91.72		0.86				
StagecoachPass-1	4.53		100-yr 6-yr		836.00	2643.00	2644.79	2644.76		
2645.37	0.023151	6.17	140.43	119.32		0.95				
StagecoachPass-1	4.53		Method 1		836.00	2643.00	2644.79	2644.75		
2645.40	0.024390	6.27	133.33	101.26		0.96				
StagecoachPass-1	4.43		100-yr 6-yr		836.00	2631.00	2634.13	2633.99		
2634.86	0.019078	6.87	122.16	75.03		0.90				
StagecoachPass-1	4.43		Method 1		836.00	2631.00	2634.15	2634.00		
2634.87	0.018308	6.77	123.46	67.81		0.88				
StagecoachPass-1	4.34		100-yr 6-yr		836.00	2621.00	2624.31	2624.31		
2625.15	0.023103	7.35	114.86	74.08		0.99				
StagecoachPass-1	4.34		Method 1		836.00	2621.00	2624.30	2624.30		
2625.16	0.024120	7.42	112.64	66.00		1.00				
StagecoachPass-1	4.3		100-yr 6-yr		1116.00	2614.00	2618.31	2617.82		
2619.63	0.013015	9.45	147.17	108.80		0.84				

StagecoachPass-1	4.3		Method 1		1116.00	2614.00	2618.49		
2619.89	0.015312	9.51	117.39	28.47		0.83			
StagecoachPass-1	4.24		100-yr 6-yr		1308.00	2609.27	2613.53	2613.41	
2614.97	0.016635	9.70	139.48	47.57		0.93			
StagecoachPass-1	4.24		Method 1		1308.00	2609.27	2613.75	2613.38	
2615.06	0.015306	9.19	142.35	39.56		0.85			
StagecoachPass-1	4.19		100-yr 6-yr		1308.00	2605.23	2609.73	2609.73	
2611.06	0.014510	9.51	161.64	73.19		0.88			
StagecoachPass-1	4.19		Method 1		1308.00	2605.23	2609.67	2609.67	
2611.07	0.016591	9.76	149.15	54.44		0.91			
StagecoachPass-1	4.09		100-yr 6-yr		1308.00	2596.00	2600.62	2600.62	
2602.13	0.014493	9.87	134.16	48.75		0.99			
StagecoachPass-1	4.09		Method 1		1308.00	2596.00	2600.59	2600.59	
2602.14	0.015548	9.99	130.99	42.41		1.00			
StagecoachPass-1	4.01		100-yr 6-yr		1308.00	2588.80	2592.85	2592.85	
2594.24	0.014573	9.49	141.85	58.56		0.98			
StagecoachPass-1	4.01		Method 1		1308.00	2588.80	2592.89	2592.81	
2594.27	0.014816	9.42	138.89	47.55		0.97			
StagecoachPass-1	3.96		100-yr 6-yr		1308.00	2583.13	2588.22	2588.22	
2590.04	0.013193	10.92	127.92	43.15		0.97			
StagecoachPass-1	3.96		Method 1		1308.00	2583.13	2588.20	2588.20	
2590.15	0.016613	11.18	116.96	30.14		1.00			
StagecoachPass-1	3.9		100-yr 6-yr		1308.00	2578.38	2582.31	2582.31	
2582.92	0.013582	6.64	263.06	238.94		0.88			
StagecoachPass-1	3.9		Method 1		1308.00	2578.38	2582.29	2582.29	
2583.18	0.018019	7.57	172.83	97.75		1.00			
StagecoachPass-1	3.82		100-yr 6-yr		1308.00	2569.62	2572.96	2572.96	
2573.86	0.016023	7.79	201.32	152.20		0.87			
StagecoachPass-1	3.82		Method 1		1308.00	2569.62	2572.90	2572.82	
2574.01	0.020184	8.44	154.98	64.33		0.96			
StagecoachPass-1	3.72		100-yr 6-yr		1308.00	2560.30	2563.42	2563.42	
2564.43	0.016955	8.07	163.40	87.59		1.00			
StagecoachPass-1	3.72		Method 1		1308.00	2560.30	2563.41	2563.41	
2564.43	0.017529	8.12	161.13	80.88		1.01			
StagecoachPass-1	3.66		100-yr 6-yr		1308.00	2553.40	2556.76	2556.76	
2557.85	0.015887	8.37	159.19	79.04		0.99			
StagecoachPass-1	3.66		Method 1		1308.00	2553.40	2556.73	2556.73	
2557.86	0.017134	8.51	153.76	69.78		1.01			
StagecoachPass-1	3.64		100-yr 6-yr		1308.00	2549.97	2554.87	2553.54	
2555.25	0.003416	4.97	271.26	102.40		0.49			
StagecoachPass-1	3.64		Method 1		1308.00	2549.97	2554.91	2553.54	
2555.29	0.003309	4.91	272.26	90.05		0.47			
StagecoachPass-1	3.63				Culvert				
StagecoachPass-1	3.62		100-yr 6-yr		1308.00	2548.25	2550.95	2550.95	
2552.18	0.016091	8.90	146.99	59.90		1.00			
StagecoachPass-1	3.62		Method 1		1308.00	2548.25	2551.07	2550.96	
2552.19	0.013895	8.49	154.14	60.38		0.94			
StagecoachPass-1	3.57		100-yr 6-yr		1487.00	2544.00	2547.22	2547.22	
2548.43	0.013878	8.91	181.18	89.64		0.96			
StagecoachPass-1	3.57		Method 1		1487.00	2544.00	2547.17	2547.17	
2548.51	0.016301	9.29	160.02	60.41		1.01			
StagecoachPass-1	3.53		100-yr 6-yr		1487.00	2540.98	2543.70	2543.66	
2544.59	0.016011	7.59	199.87	115.69		0.97			
StagecoachPass-1	3.53		Method 1		1487.00	2540.98	2543.65	2543.65	
2544.60	0.017913	7.82	190.20	102.53		1.01			

StagecoachPass-1	3.44		100-yr 6-yr		1487.00	2530.93	2535.32	2535.13		
2536.77	0.015406	9.66	156.80	48.11		0.90				
StagecoachPass-1	3.44		Method 1		1487.00	2530.93	2535.59	2535.10		
2536.86	0.013521	9.05	164.29	42.62		0.81				
StagecoachPass-1	3.35		100-yr 6-yr		1487.00	2522.94	2527.37	2527.37		
2528.99	0.018004	10.25	150.24	51.10		0.97				
StagecoachPass-1	3.35		Method 1		1487.00	2522.94	2527.32	2527.32		
2529.04	0.020964	10.52	141.35	41.23		1.00				
StagecoachPass-1	3.31		100-yr 6-yr		1487.00	2519.35	2522.79	2522.35		
2523.68	0.012425	7.60	196.68	70.76		0.79				
StagecoachPass-1	3.31		Method 1		1487.00	2519.35	2522.91	2522.35		
2523.74	0.011237	7.30	203.57	67.26		0.74				
StagecoachPass-1	3.25		100-yr 6-yr		1487.00	2512.84	2517.21	2517.21		
2518.82	0.017983	10.22	149.66	50.25		0.97				
StagecoachPass-1	3.25		Method 1		1487.00	2512.84	2517.17	2517.17		
2518.86	0.020526	10.44	142.46	41.64		0.99				
StagecoachPass-1	3.16		100-yr 6-yr		1487.00	2503.67	2506.63	2506.63		
2507.92	0.020819	9.12	164.07	66.65		1.00				
StagecoachPass-1	3.16		Method 1		1487.00	2503.67	2506.62	2506.62		
2507.93	0.021746	9.17	162.15	62.96		1.01				
StagecoachPass-1	3.06		100-yr 6-yr		1487.00	2494.14	2498.34	2497.93		
2499.29	0.012186	7.88	202.89	104.69		0.79				
StagecoachPass-1	3.06		Method 1		1487.00	2494.14	2498.96	2497.91		
2499.65	0.007421	6.66	223.13	60.01		0.61				
StagecoachPass-1	3.03		100-yr 6-yr		1792.00	2491.85	2495.53	2495.53		
2496.66	0.015104	9.08	245.93	116.06		0.88				
StagecoachPass-1	3.03		Method 1		1792.00	2491.85	2495.57	2495.57		
2497.23	0.020212	10.32	173.66	52.05		1.00				
StagecoachPass-1	2.97		100-yr 6-yr		1792.00	2486.16	2492.29	2488.72		
2492.38	0.000624	2.63	907.42	258.59		0.19				
StagecoachPass-1	2.97		Method 1		1792.00	2486.16	2493.08	2488.72		
2493.21	0.000655	2.89	649.62	114.48		0.20				
StagecoachPass-1	2.96				Culvert					
StagecoachPass-1	2.95		100-yr 6-yr		1792.00	2482.72	2487.21	2485.62		
2487.62	0.003930	5.17	346.62	92.67		0.46				
StagecoachPass-1	2.95		Method 1		1792.00	2482.72	2487.21	2485.62		
2487.62	0.004064	5.17	346.77	88.62		0.46				
StagecoachPass-1	2.92		100-yr 6-yr		1792.00	2479.90	2483.89	2483.89		
2485.04	0.015189	9.21	251.34	129.97		0.89				
StagecoachPass-1	2.92		Method 1		1792.00	2479.90	2483.99	2483.99		
2485.68	0.020388	10.44	171.65	49.80		0.99				
StagecoachPass-1	2.86		100-yr 6-yr		1792.00	2474.70	2478.53	2478.53		
2479.89	0.014409	9.39	194.98	79.71		0.98				
StagecoachPass-1	2.86		Method 1		1792.00	2474.70	2478.49	2478.49		
2479.90	0.015498	9.53	188.01	66.39		1.00				
StagecoachPass-1	2.8		100-yr 6-yr		1792.00	2469.59	2472.32	2472.32		
2473.42	0.016296	8.42	213.02	96.64		0.99				
StagecoachPass-1	2.8		Method 1		1792.00	2469.59	2472.31	2472.31		
2473.42	0.016716	8.46	211.77	95.53		1.00				
StagecoachPass-1	2.76		100-yr 6-yr		1792.00	2465.20	2468.45	2468.07		
2469.11	0.009345	6.52	275.70	123.92		0.76				
StagecoachPass-1	2.76		Method 1		1792.00	2465.20	2468.56	2468.07		
2469.16	0.008005	6.20	289.00	119.89		0.70				
StagecoachPass-1	2.7		100-yr 6-yr		1828.00	2459.84	2464.00	2464.00		
2465.67	0.012499	10.47	185.67	60.94		0.95				
StagecoachPass-1	2.7		Method 1		1828.00	2459.84	2463.92	2463.92		
2465.76	0.014591	10.89	168.96	46.26		1.00				

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  StagecoachPass-1  2.61          100-yr 6-yr       1828.00    2450.74    2454.35    2454.35
2455.51    0.013027       9.04    233.05     104.07            0.94
  StagecoachPass-1  2.61          Method 1          1828.00    2450.74    2454.40    2454.40
2455.89    0.016063       9.81    186.42      63.35            1.01

  StagecoachPass-1  2.58          100-yr 6-yr       1828.00    2447.73    2451.36    2451.36
2452.40    0.013049       8.38    244.53     132.79            0.92
  StagecoachPass-1  2.58          Method 1          1828.00    2447.73    2451.31    2451.31
2452.56    0.016026       8.99    203.36      80.62            1.00

  StagecoachPass-1  2.5           100-yr 6-yr       1828.00    2438.45    2443.86    2443.86
2445.49    0.012272      10.32    188.24      82.49            0.93
  StagecoachPass-1  2.5           Method 1          1828.00    2438.45    2444.41    2443.67
2445.70    0.008538       9.10    200.77      45.47            0.76

  StagecoachPass-1  2.495                                Culvert

  StagecoachPass-1  2.49          100-yr 6-yr       1851.00    2434.61    2439.27    2439.27
2441.33    0.013959      11.52    160.61      40.08            1.01
  StagecoachPass-1  2.49          Method 1          1851.00    2434.61    2439.27    2439.27
2441.33    0.015001      11.52    160.61      39.50            1.01

  StagecoachPass-1  2.41          100-yr 6-yr       1851.00    2427.81    2430.77    2430.77
2431.91    0.015622       8.56    217.59      96.68            0.99
  StagecoachPass-1  2.41          Method 1          1851.00    2427.81    2430.75    2430.75
2431.92    0.016576       8.67    213.59      92.05            1.00

  StagecoachPass-1  2.36          100-yr 6-yr       1851.00    2422.14    2425.71    2425.71
2426.99    0.013192       9.20    214.73      91.00            0.95
  StagecoachPass-1  2.36          Method 1          1851.00    2422.14    2425.65    2425.65
2427.09    0.015799       9.63    192.13      66.74            1.00

  StagecoachPass-1  2.3           100-yr 6-yr       1851.00    2415.91    2419.20    2419.20
2420.44    0.014758       8.97    209.80      90.71            0.98
  StagecoachPass-1  2.3           Method 1          1851.00    2415.91    2419.18    2419.18
2420.46    0.015568       9.07    204.12      78.65            0.99

  StagecoachPass-1  2.23          100-yr 6-yr       1851.00    2406.12    2411.81    2411.81
2412.66    0.007700       8.80    349.86     176.99            0.72
  StagecoachPass-1  2.23          Method 1          1851.00    2406.12    2411.81    2411.81
2412.65    0.007897       8.77    348.66     175.28            0.72

  StagecoachPass-1  2.15          100-yr 6-yr       1996.00    2396.00    2401.66    2399.14
2401.93    0.001535       4.26    561.34     231.91            0.34
  StagecoachPass-1  2.15          Method 1          1996.00    2396.00    2403.50    2399.13
2403.67    0.000647       3.26    612.66      91.32            0.22

  StagecoachPass-1  2.145                                Culvert

  StagecoachPass-1  2.14          100-yr 6-yr       1996.00    2396.00    2398.69    2398.69
2399.85    0.014324       8.70    238.21     120.41            0.96
  StagecoachPass-1  2.14          Method 1          1996.00    2396.00    2398.63    2398.63
2399.88    0.016101       9.00    221.89      88.90            1.00

  StagecoachPass-1  2.08          100-yr 6-yr       1996.00    2387.56    2391.35    2391.35
2392.78    0.012872       9.67    219.73      88.27            0.95
  StagecoachPass-1  2.08          Method 1          1996.00    2387.56    2391.30    2391.30
2392.87    0.015026      10.05    198.57      62.32            0.99

  StagecoachPass-1  2.02          100-yr 6-yr       1996.00    2380.00    2383.06    2383.06
2384.37    0.014991       9.23    219.50      87.76            0.99
  StagecoachPass-1  2.02          Method 1          1996.00    2380.00    2383.04    2383.04
2384.39    0.015999       9.33    213.84      79.77            1.00

  StagecoachPass-1  1.94          100-yr 6-yr       1996.00    2366.48    2373.92    2373.92
2375.16    0.006869      10.44    320.08     127.02            0.74
  StagecoachPass-1  1.94          Method 1          1996.00    2366.48    2374.19    2374.19
2376.62    0.012509      12.99    175.60      36.40            0.90
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StagecoachPass-1	1.92		100-yr 6-yr		1996.00	2364.00	2369.53	2369.53			
2371.18	0.012745	10.40	203.33	70.02		0.95					
StagecoachPass-1	1.92		Method 1		1996.00	2364.00	2369.45	2369.45			
2371.28	0.015344	10.84	184.14	50.53		1.00					
StagecoachPass-1	1.88		100-yr 6-yr		1996.00	2360.66	2365.40	2365.40			
2366.48	0.012160	9.73	295.93	137.27		0.92					
StagecoachPass-1	1.88		Method 1		1996.00	2360.66	2366.18	2366.18			
2368.33	0.015476	11.76	169.73	40.06		1.01					
StagecoachPass-1	1.81		100-yr 6-yr		1996.00	2353.47	2357.08	2357.08			
2358.18	0.011505	8.60	268.49	161.14		0.88					
StagecoachPass-1	1.81		Method 1		1996.00	2353.47	2357.01	2357.01			
2358.21	0.012850	8.94	240.84	105.00		0.93					
StagecoachPass-1	1.76		100-yr 6-yr		1996.00	2347.10	2350.59	2350.59			
2351.36	0.010093	7.40	344.33	259.20		0.81					
StagecoachPass-1	1.76		Method 1		1996.00	2347.10	2350.51	2350.51			
2351.54	0.013153	8.25	259.98	133.66		0.92					
StagecoachPass-1	1.72		100-yr 6-yr		1996.00	2342.40	2345.55	2345.55			
2346.28	0.016686	6.96	306.60	226.61		0.96					
StagecoachPass-1	1.72		Method 1		1996.00	2342.40	2345.54	2345.54			
2346.35	0.018354	7.22	276.60	171.64		1.00					
StagecoachPass-1	1.66		100-yr 6-yr		1996.00	2336.00	2338.80	2338.80			
2339.62	0.015590	7.44	294.47	199.16		0.96					
StagecoachPass-1	1.66		Method 1		1996.00	2336.00	2338.81	2338.81			
2339.74	0.017017	7.75	257.42	135.64		0.99					
StagecoachPass-1	1.57		100-yr 6-yr		1996.00	2328.00	2331.16	2331.16			
2332.11	0.016812	7.84	254.92	135.54		1.00					
StagecoachPass-1	1.57		Method 1		1996.00	2328.00	2331.16	2331.16			
2332.11	0.016869	7.84	254.66	132.27		1.00					
StagecoachPass-1	1.53		100-yr 6-yr		1996.00	2319.73	2324.47	2324.47			
2325.63	0.015568	8.64	234.27	112.99		0.99					
StagecoachPass-1	1.53		Method 1		1996.00	2319.73	2324.45	2324.45			
2325.64	0.016495	8.77	227.66	96.95		1.01					
StagecoachPass-1	1.47		100-yr 6-yr		1996.00	2312.98	2316.45	2316.45			
2317.54	0.015763	8.38	239.41	112.71		0.99					
StagecoachPass-1	1.47		Method 1		1996.00	2312.98	2316.56	2316.43			
2317.55	0.013615	7.99	249.85	106.38		0.92					
StagecoachPass-1	1.44		100-yr 6-yr		1996.00	2309.80	2313.81	2313.81			
2314.46	0.008703	8.13	433.91	276.92		0.78					
StagecoachPass-1	1.44		Method 1		1996.00	2309.80	2313.92	2313.92			
2315.25	0.013328	10.27	247.87	90.00		0.97					
StagecoachPass-1	1.36		100-yr 6-yr		1996.00	2302.00	2305.74	2305.74			
2306.66	0.013468	7.97	286.60	162.43		0.92					
StagecoachPass-1	1.36		Method 1		1996.00	2302.00	2305.75	2305.75			
2306.91	0.016313	8.65	230.80	98.19		0.99					
StagecoachPass-1	1.29		100-yr 6-yr		1996.00	2293.26	2297.18	2297.18			
2298.60	0.013326	9.63	216.88	86.03		0.96					
StagecoachPass-1	1.29		Method 1		1996.00	2293.26	2297.11	2297.11			
2298.66	0.015462	9.98	199.91	65.27		1.01					
StagecoachPass-1	1.19		100-yr 6-yr		1996.00	2283.80	2287.73	2287.73			
2288.89	0.010793	8.98	269.96	137.99		0.87					
StagecoachPass-1	1.19		Method 1		1996.00	2283.80	2287.66	2287.66			
2288.90	0.011898	9.28	245.64	100.00		0.91					
StagecoachPass-1	1.13		100-yr 6-yr		1996.00	2277.39	2280.58				
2280.90	0.005213	5.25	544.31	339.99		0.58					
StagecoachPass-1	1.13		Method 1		1996.00	2277.39	2281.18				
2281.74	0.005564	6.04	330.53	105.56		0.60					

```
  StagecoachPass-1  1.1          100-yr 6-yr       1996.00    2274.39    2278.99    2278.99
2279.82    0.010078       7.89    340.42     216.21           0.82
  StagecoachPass-1  1.1          Method 1          1996.00    2274.39    2278.95    2278.95
2280.38    0.015669       9.58    208.40      73.75           1.00

  StagecoachPass-1  1.07         100-yr 6-yr       1996.00    2272.26    2275.71    2275.71
2276.43    0.012401       7.84    374.55     273.96           0.89
  StagecoachPass-1  1.07         Method 1          1996.00    2272.26    2276.06    2276.06
2277.43    0.015914       9.40    212.44      76.55           0.99

  StagecoachPass-1  1.01         100-yr 6-yr       1996.00    2264.00    2269.55    2269.55
2271.51    0.011552      11.49    190.90     521.09           0.92
  StagecoachPass-1  1.01         Method 1          1996.00    2264.00    2269.58    2269.58
2271.51    0.011293      11.41    192.41     107.64           0.91

  StagecoachPass-1  0.99                           Culvert

  StagecoachPass-1  0.98         100-yr 6-yr       1996.00    2262.00    2266.45    2266.45
2268.35    0.012798      11.34    188.19     415.27           0.98
  StagecoachPass-1  0.98         Method 1          1996.00    2262.00    2266.49    2266.49
2268.47    0.012939      11.48    184.18      80.56           0.98

  StagecoachPass-1  0.93         100-yr 6-yr       1996.00    2258.00    2260.81    2260.81
2261.32    0.010580       7.20    480.41     421.08           0.82
  StagecoachPass-1  0.93         Method 1          1996.00    2258.00    2261.49    2261.49
2263.01    0.015186       9.89    201.85      65.37           0.99
```

HEC-RAS Version 3.1.2 April 2004
U.S. Army Corp of Engineers
Hydrologic Engineering Center
609 Second Street
Davis, California

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

PROJECT DATA
Project Title: SCP-Split Flow
Project File : SCPsplit.prj
Run Date and Time: 11/15/2004 6:14:30 PM

Project in English units

Project Description:
Study Name: North Scottsdale Floodplain Delineation Study
Contract No.: FCD 2003 C008

Purpose of Study: Delineation of the inundation limits of the 100-yr, 6-hr storm event for Stagecoach Pass Wash.

Model Name: North Scottsdale Delineation Study, SCP

Model Description: This study determined the flood plain and flood way limits of the 100-yr-6-hr storm event for Stagecoach Pass Wash.
Profile #1, 100-yr 6-hr,models the flood plain.
Profile #2, Method 1, models the flood way.
Culvert information can be found in APPENDIX E.4 of the main report.

Mapping: Scottsdale Mapping: IGA 93-07
FCD Contract No.: FCD-XX-XX
Project Type: Topographic Mapping
Starting Date: 1-14-94
Ending Date: 1-14-97

Flow Profiles: Profile #1, 100-yr, 6-hr
Sections 6.93 to 6.85, Q= 453 cfs
Sections 6.80 to 6.23, Q= 631 cfs
Sections 6.17 to 5.37, Q= 758 cfs
Sections 5.27 to 4.81, Q= 844 cfs
Sections 4.77 to 4.34, Q= 836 cfs
Section 4.30, Q= 1,116 cfs
Sections 4.24 to 3.62, Q= 1,308 cfs
Sections 3.57 to 3.06, Q= 1,487 cfs
Sections 3.03 to 2.76, Q= 1,792 cfs
Sections 2.70 to 2.62, Q= 716 cfs
Sections 2.7 to 2.50, Q= 1,828 cfs
Sections 2.49 to 2.23, Q= 1,851 cfs
Sections 2.15 to 0.93, Q= 1,996 cfs

Profile #2, Method 1
Sections 6.93 to 6.85, Q= 453 cfs
Sections 6.80 to 6.23, Q= 631 cfs
Sections 6.17 to 5.37, Q= 758 cfs
Sections 5.27 to 4.81, Q= 844 cfs
Sections 4.77 to 4.34, Q= 836 cfs
Section 4.30, Q= 1,116 cfs
Sections 4.24 to 3.62, Q= 1,308 cfs
Sections 3.57 to 3.06, Q= 1,487 cfs

Sections 3.03 to 2.76, Q= 1,792 cfs
Sections 2.70 to 2.62, Q= 716 cfs
Sections 2.7 to 2.50, Q= 1,828 cfs
Sections 2.49 to 2.23, Q= 1,851 cfs
Sections 2.15 to 0.93, Q= 1,996 cfs

HEC-RAS Version: Version 3.1.2, April 2004

Consultant: DEI Professional Services, LLC
6225 N. 24th Street, Suite 200
Phoenix, AZ 85016
(602) 954-0038 Phone
(602) 944-8605 Fax

PLAN DATA

Plan Title: Plan 01
Plan File : j:\Projects\03062\Calcs\HEC-RAS Final\SCPsplit.p01

Geometry Title: Base Conditions Geometry COS X-Sec
Geometry File : j:\Projects\03062\Calcs\HEC-RAS Final\SCPsplit.g01

Flow Title : 1 Flow Profiles
Flow File : j:\Projects\03062\Calcs\HEC-RAS Final\SCPsplit.f01

Plan Summary Information:

Number of:	Cross Sections =	105	Multiple Openings =	0
	Culverts =	8	Inline Structures =	0
	Bridges =	0	Lateral Structures =	0

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

Computation Options
Critical depth computed only where necessary
Conveyance Calculation Method: At breaks in n values only
Friction Slope Method: Average Conveyance
Computational Flow Regime: Subcritical Flow

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

River = Stagecoach Pass Reach = StagecoachPass-1

RS	Profile	Method	Value1	Value2
6.93	Method 1	1	9995.821	24.62
6.88	Method 1	1	9966.961	14.37
6.85	Method 1	1	9985.361	29.06
6.8	Method 1	1	9947.61	22.78
6.73	Method 1	1	9899.991	42.61
6.63	Method 1	1	9979.281	38.82
6.59	Method 1	1	9978.481	42.02
6.55	Method 1	1	9909.361	78.29
6.545	Method 1	4	1	
6.54	Method 1	1	9910.71	10030
6.51	Method 1	1	9898.551	36.24
6.505	Method 1	4	1	
6.5	Method 1	1	9941.451	33.73
6.45	Method 1	1	9975	10025
6.37	Method 1	1	9935.121	43.01
6.31	Method 1	1	9969.431	33.65

6.23	Method 1	1	993010026.84
6.17	Method 1	1	9916.4210029.45
6.07	Method 1	1	9930 10025
5.98	Method 1	1	9977.4510068.17
5.91	Method 1	1	9964.4210067.92
5.9	Method 1	4	1
5.89	Method 1	1	9930.7710051.25
5.81	Method 1	1	9907.5810012.71
5.72	Method 1	1	9967.7 10067.3
5.64	Method 1	1	9943.310021.34
5.61	Method 1	1	9951.610060.54
5.55	Method 1	1	9971.53 10123.8
5.51	Method 1	1	9948.1610050.28
5.46	Method 1	1	9944.2910058.25
5.43	Method 1	1	9938.8 10026.2
5.37	Method 1	1	9988.3810059.89
5.27	Method 1	1	9950.1910101.45
5.18	Method 1	1	9855.5 10059.4
5.12	Method 1	1	9925.4 10016.5
5.08	Method 1	1	9945.9910053.25
5.02	Method 1	1	9943.6210060.55
4.94	Method 1	1	9945.1310045.35
4.84	Method 1	1	9985.9310062.25
4.81	Method 1	1	9980.08 10040.2
4.77	Method 1	1	9991.1 10028.1
4.72	Method 1	1	9983.2410070.27
4.62	Method 1	1	9977.9310069.65
4.53	Method 1	1	9968.5910069.85
4.43	Method 1	1	9978.6810046.49
4.34	Method 1	1	9979.5 10045.5
4.3	Method 1	1	9988.2410016.71
4.24	Method 1	1	997410013.56
4.19	Method 1	1	996010014.44
4.09	Method 1	1	9975.5510017.96
4.01	Method 1	1	9977.4110024.96
3.96	Method 1	1	9976.4110006.55
3.9	Method 1	1	9913.9210011.67
3.82	Method 1	1	9957.8810022.21
3.72	Method 1	1	9971.810052.68
3.66	Method 1	1	9947.8110017.59
3.64	Method 1	1	9939.7110029.76
3.63	Method 1	4	1
3.62	Method 1	1	9965.6310029.76
3.57	Method 1	1	9966.910027.31
3.53	Method 1	1	9937.2610039.79
3.44	Method 1	1	9981.6110024.23
3.35	Method 1	1	9975.8410017.07
3.31	Method 1	1	9967.3210034.58
3.25	Method 1	1	9974.8910016.53
3.16	Method 1	1	9971.910034.86
3.06	Method 1	1	9960.8610020.87
3.03	Method 1	1	9971.1710023.22
2.97	Method 1	1	9937.110051.58
2.96	Method 1	4	1
2.95	Method 1	1	9962.9610051.58
2.92	Method 1	1	9992.4710042.27
2.86	Method 1	1	9984.9910051.38
2.8	Method 1	1	9996.9210092.45
2.76	Method 1	1	9924.01 10043.9

River = Stagecoach Pass Reach = StagecoachPass-1

RS	Profile	Method	Value1	Value2
6.93	Meth 4-1.0ft	4	1	
6.88	Meth 4-1.0ft	4	1	
6.85	Meth 4-1.0ft	4	1	
6.8	Meth 4-1.0ft	4	1	
6.73	Meth 4-1.0ft	4	1	
6.63	Meth 4-1.0ft	4	1	
6.59	Meth 4-1.0ft	4	1	
6.55	Meth 4-1.0ft	4	1	
6.545	Meth 4-1.0ft	4	1	

6.54	Meth 4-1.0ft	4	1
6.51	Meth 4-1.0ft	4	1
6.505	Meth 4-1.0ft	4	1
6.5	Meth 4-1.0ft	4	1
6.45	Meth 4-1.0ft	4	1
6.37	Meth 4-1.0ft	4	1
6.31	Meth 4-1.0ft	4	1
6.23	Meth 4-1.0ft	4	1
6.17	Meth 4-1.0ft	4	1
6.07	Meth 4-1.0ft	4	1
5.98	Meth 4-1.0ft	4	1
5.91	Meth 4-1.0ft	4	1
5.9	Meth 4-1.0ft	4	1
5.89	Meth 4-1.0ft	4	1
5.81	Meth 4-1.0ft	4	1
5.72	Meth 4-1.0ft	4	1
5.64	Meth 4-1.0ft	4	1
5.61	Meth 4-1.0ft	4	1
5.55	Meth 4-1.0ft	4	1
5.51	Meth 4-1.0ft	4	1
5.46	Meth 4-1.0ft	4	1
5.43	Meth 4-1.0ft	4	1
5.37	Meth 4-1.0ft	4	1
5.27	Meth 4-1.0ft	4	1
5.18	Meth 4-1.0ft	4	1
5.12	Meth 4-1.0ft	4	1
5.08	Meth 4-1.0ft	4	1
5.02	Meth 4-1.0ft	4	1
4.94	Meth 4-1.0ft	4	1
4.84	Meth 4-1.0ft	4	1
4.81	Meth 4-1.0ft	4	1
4.77	Meth 4-1.0ft	4	1
4.72	Meth 4-1.0ft	4	1
4.62	Meth 4-1.0ft	4	1
4.53	Meth 4-1.0ft	4	1
4.43	Meth 4-1.0ft	4	1
4.34	Meth 4-1.0ft	4	1
4.3	Meth 4-1.0ft	4	1
4.24	Meth 4-1.0ft	4	1
4.19	Meth 4-1.0ft	4	1
4.09	Meth 4-1.0ft	4	1
4.01	Meth 4-1.0ft	4	1
3.96	Meth 4-1.0ft	4	1
3.9	Meth 4-1.0ft	4	1
3.82	Meth 4-1.0ft	4	1
3.72	Meth 4-1.0ft	4	1
3.66	Meth 4-1.0ft	4	1
3.64	Meth 4-1.0ft	4	1
3.63	Meth 4-1.0ft	4	1
3.62	Meth 4-1.0ft	4	1
3.57	Meth 4-1.0ft	4	1
3.53	Meth 4-1.0ft	4	1
3.44	Meth 4-1.0ft	4	1
3.35	Meth 4-1.0ft	4	1
3.31	Meth 4-1.0ft	4	1
3.25	Meth 4-1.0ft	4	1
3.16	Meth 4-1.0ft	4	1
3.06	Meth 4-1.0ft	4	1
3.03	Meth 4-1.0ft	4	1
2.97	Meth 4-1.0ft	4	1
2.96	Meth 4-1.0ft	4	1
2.95	Meth 4-1.0ft	4	1
2.92	Meth 4-1.0ft	4	1
2.86	Meth 4-1.0ft	4	1
2.8	Meth 4-1.0ft	4	1
2.76	Meth 4-1.0ft	4	1

River = Stagecoach Pass Reach = StagecoachPass-1

RS	Profile	Method	Value1	Value2
6.93	Meth 4-0.8ft	4	.8	
6.88	Meth 4-0.8ft	4	.8	

6.85	Meth 4-0.8ft	4	.8
6.8	Meth 4-0.8ft	4	.8
6.73	Meth 4-0.8ft	4	.8
6.63	Meth 4-0.8ft	4	.8
6.59	Meth 4-0.8ft	4	.8
6.55	Meth 4-0.8ft	4	.8
6.545	Meth 4-0.8ft	4	.8
6.54	Meth 4-0.8ft	4	.8
6.51	Meth 4-0.8ft	4	.8
6.505	Meth 4-0.8ft	4	.8
6.5	Meth 4-0.8ft	4	.8
6.45	Meth 4-0.8ft	4	.8
6.37	Meth 4-0.8ft	4	.8
6.31	Meth 4-0.8ft	4	.8
6.23	Meth 4-0.8ft	4	.8
6.17	Meth 4-0.8ft	4	.8
6.07	Meth 4-0.8ft	4	.8
5.98	Meth 4-0.8ft	4	.8
5.91	Meth 4-0.8ft	4	.8
5.9	Meth 4-0.8ft	4	.8
5.89	Meth 4-0.8ft	4	.8
5.81	Meth 4-0.8ft	4	.8
5.72	Meth 4-0.8ft	4	.8
5.64	Meth 4-0.8ft	4	.8
5.61	Meth 4-0.8ft	4	.8
5.55	Meth 4-0.8ft	4	.8
5.51	Meth 4-0.8ft	4	.8
5.46	Meth 4-0.8ft	4	.8
5.43	Meth 4-0.8ft	4	.8
5.37	Meth 4-0.8ft	4	.8
5.27	Meth 4-0.8ft	4	.8
5.18	Meth 4-0.8ft	4	.8
5.12	Meth 4-0.8ft	4	.8
5.08	Meth 4-0.8ft	4	.8
5.02	Meth 4-0.8ft	4	.8
4.94	Meth 4-0.8ft	4	.8
4.84	Meth 4-0.8ft	4	.8
4.81	Meth 4-0.8ft	4	.8
4.77	Meth 4-0.8ft	4	.8
4.72	Meth 4-0.8ft	4	.8
4.62	Meth 4-0.8ft	4	.8
4.53	Meth 4-0.8ft	4	.8
4.43	Meth 4-0.8ft	4	.8
4.34	Meth 4-0.8ft	4	.8
4.3	Meth 4-0.8ft	4	.8
4.24	Meth 4-0.8ft	4	.8
4.19	Meth 4-0.8ft	4	.8
4.09	Meth 4-0.8ft	4	.8
4.01	Meth 4-0.8ft	4	.8
3.96	Meth 4-0.8ft	4	.8
3.9	Meth 4-0.8ft	4	.8
3.82	Meth 4-0.8ft	4	.8
3.72	Meth 4-0.8ft	4	.8
3.66	Meth 4-0.8ft	4	.8
3.64	Meth 4-0.8ft	4	.8
3.63	Meth 4-0.8ft	4	.8
3.62	Meth 4-0.8ft	4	.8
3.57	Meth 4-0.8ft	4	.8
3.53	Meth 4-0.8ft	4	.8
3.44	Meth 4-0.8ft	4	.8
3.35	Meth 4-0.8ft	4	.8
3.31	Meth 4-0.8ft	4	.8
3.25	Meth 4-0.8ft	4	.8
3.16	Meth 4-0.8ft	4	.8
3.06	Meth 4-0.8ft	4	.8
3.03	Meth 4-0.8ft	4	.8
2.97	Meth 4-0.8ft	4	.8
2.96	Meth 4-0.8ft	4	.8
2.95	Meth 4-0.8ft	4	.8
2.92	Meth 4-0.8ft	4	.8
2.86	Meth 4-0.8ft	4	.8

2.8	Meth 4-0.8ft	4	.8
2.76	Meth 4-0.8ft	4	.8

FLOW DATA

Flow Title: 1 Flow Profiles
Flow File : j:\Projects\03062\Calcs\HEC-RAS Final\SCPsplit.f01

Flow Data (cfs)

River	Reach	RS	100-yr 6-yr	Method 1	Meth 4-1.0ft	Meth 4-0.8ft
Stagecoach Pass	StagecoachPass	-16.93	453	453	453	453
Stagecoach Pass	StagecoachPass	-16.88	453	453	453	453
Stagecoach Pass	StagecoachPass	-16.8	631	631	631	631
Stagecoach Pass	StagecoachPass	-16.17	758	758	758	758
Stagecoach Pass	StagecoachPass	-15.27	844	844	844	844
Stagecoach Pass	StagecoachPass	-14.77	836	836	836	836
Stagecoach Pass	StagecoachPass	-14.3	1116	1116	1116	1116
Stagecoach Pass	StagecoachPass	-14.24	1308	1308	1308	1308
Stagecoach Pass	StagecoachPass	-13.57	1487	1487	1487	1487
Stagecoach Pass	StagecoachPass	-13.03	1792	1792	1792	1792
Stagecoach Pass	Levee Breakout	2.70	716	716	716	716
Stagecoach Pass	StagecoachPass	-22.7	1828	1828	1828	1828
Stagecoach Pass	StagecoachPass	-22.49	1851	1851	1851	1851
Stagecoach Pass	StagecoachPass	-22.15	1996	1996	1996	1996

Boundary Conditions

River	Reach	Profile	Upstream	Downstream
Stagecoach Pass	Levee Breakout	100-yr 6-yr		Critical
Stagecoach Pass	Levee Breakout	Method 1		Critical
Stagecoach Pass	Levee Breakout	Meth 4-1.0ft		Critical
Stagecoach Pass	Levee Breakout	Meth 4-0.8ft		Critical
Stagecoach Pass	StagecoachPass-21	00-yr 6-yr		Normal S = 0.02
Stagecoach Pass	StagecoachPass-2	Method 1		Normal S = 0.02
Stagecoach Pass	StagecoachPass-2	Meth 4-1.0ft		Normal S = 0.02
Stagecoach Pass	StagecoachPass-2	Meth 4-0.8ft		Normal S = 0.02

GEOMETRY DATA

Geometry Title: Base Conditions Geometry COS X-Sec
Geometry File : j:\Projects\03062\Calcs\HEC-RAS Final\SCPsplit.g01

Reach Connection Table

STAGECOACH PASS WASH

River	Reach	Upstream Boundary	Downstream Boundary
Stagecoach Pass	StagecoachPass-1		Levee
Stagecoach Pass	Levee Breakout	Levee	
Stagecoach Pass	StagecoachPass-2	Levee	

JUNCTION INFORMATION

Name: Levee
Description:
Energy computation Method

Length across Junction		Tributary			
River	Reach	River	Reach	Length	Angle
Stagecoach Pass	StagecoachPass-1 to	Stagecoach Pass	StagecoachPass-2	309.32	0
Stagecoach Pass	StagecoachPass-1 to	Stagecoach Pass	Levee Breakout	0	0

CROSS SECTION

RIVER: Stagecoach Pass
REACH: StagecoachPass-1 RS: 6.93

INPUT
Description: Cross Section 6.93 is located on the north boundary of the study for Stage Coach Pass Wash. This section is located downstream of Lone Mountain Parkway.

Topography and Aerial indicate wash and surrounding undeveloped desert.
T6NR5E Section 28
Q100 = 453 cfs
Station Elevation Data num= 17

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9935.7	2962.42	9942.49	2962	9946.69	2961.73	9978.7	2962	9985.22	2962.25
9993.18	2962	9995.82	2961	9998.45	2960	10000	2959.85	10001.41	2960
10012.67	2960.49	10024.62	2961	10047.83	2962	10066.79	2962	10068.5	2962
10092.84	2964	10114.87	2966						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9935.7	.064	9995.82	.044	10024.62	.064

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9995.82	10024.62	225.25	231.79	232.5	.1	.3

CROSS SECTION OUTPUT Profile #100-yr 6-yr

E.G. Elev (ft)	2962.87	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.42	Wt. n-Val.	0.064	0.044	0.064
W.S. Elev (ft)	2962.45	Reach Len. (ft)	225.25	231.79	232.50
Crit W.S. (ft)	2962.45	Flow Area (sq ft)	30.07	57.82	32.62
E.G. Slope (ft/ft)	0.012178	Area (sq ft)	30.07	57.82	32.62
Q Total (cfs)	453.00	Flow (cfs)	48.41	341.23	63.36
Top Width (ft)	138.28	Top Width (ft)	60.12	28.80	49.36
Vel Total (ft/s)	3.76	Avg. Vel. (ft/s)	1.61	5.90	1.94
Max Chl Dpth (ft)	2.60	Hydr. Depth (ft)	0.50	2.01	0.66
Conv. Total (cfs)	4105.0	Conv. (cfs)	438.7	3092.2	574.2
Length Wtd. (ft)	231.07	Wetted Per. (ft)	60.37	29.02	49.40
Min Ch El (ft)	2959.85	Shear (lb/sq ft)	0.38	1.51	0.50
Alpha	1.91	Stream Power (lb/ft s)	0.61	8.94	0.98
Frctn Loss (ft)	3.39	Cum Volume (acre-ft)	4.97	75.16	14.44
C & E Loss (ft)	0.00	Cum SA (acres)	7.37	42.84	18.68

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 end points had to be extended vertically for the computed water surface.

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

CROSS SECTION OUTPUT Profile #Method 1

E.G. Elev (ft)	2963.40	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.00	Wt. n-Val.		0.044	
W.S. Elev (ft)	2962.40	Reach Len. (ft)	225.25	231.79	232.50
Crit W.S. (ft)	2962.40	Flow Area (sq ft)		56.47	
E.G. Slope (ft/ft)	0.026263	Area (sq ft)		56.47	
Q Total (cfs)	453.00	Flow (cfs)		453.00	
Top Width (ft)	28.80	Top Width (ft)		28.80	
Vel Total (ft/s)	8.02	Avg. Vel. (ft/s)		8.02	
Max Chl Dpth (ft)	2.55	Hydr. Depth (ft)		1.96	
Conv. Total (cfs)	2795.3	Conv. (cfs)		2795.3	
Length Wtd. (ft)	231.79	Wetted Per. (ft)		31.83	
Min Ch El (ft)	2959.85	Shear (lb/sq ft)		2.91	
Alpha	1.00	Stream Power (lb/ft s)		23.34	
Frctn Loss (ft)	6.18	Cum Volume (acre-ft)	0.28	77.61	0.27
C & E Loss (ft)	0.08	Cum SA (acres)	0.51	42.86	0.19

Warning: The energy equation could not be 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: Stagecoach Pass
REACH: StagecoachPass-1 RS: 6.88

INPUT
Description: Topography and Aerial indicate wash and surrounding undeveloped
desert.
T6NR5E Section 28
Q100 = 453 cfs
Station Elevation Data num= 9

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9817.41	2956	9966.96	2954.72	9989.84	2954	10000	2953.25	10010.24	2954
10014.37	2955	10018.5	2956	10037.56	2958	10075.21	2960		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9817.41	.064	9966.96	.044	10014.37	.064

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9966.96	10014.37	181.52	182.97	185	.1	.3

CROSS SECTION OUTPUT Profile #100-yr 6-yr

E.G. Elev (ft)	2955.95	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.45	Wt. n-Val.	0.064	0.044	0.064
W.S. Elev (ft)	2955.50	Reach Len. (ft)	181.52	182.97	185.00
Crit W.S. (ft)	2955.50	Flow Area (sq ft)	35.25	68.31	0.51
E.G. Slope (ft/ft)	0.018007	Area (sq ft)	35.25	68.31	0.51
Q Total (cfs)	453.00	Flow (cfs)	58.47	393.91	0.62
Top Width (ft)	140.22	Top Width (ft)	90.76	47.41	2.05

Vel Total (ft/s)	4.35	Avg. Vel. (ft/s)	1.66	5.77	1.21
Max Chl Dpth (ft)	2.25	Hydr. Depth (ft)	0.39	1.44	0.25
Conv. Total (cfs)	3375.8	Conv. (cfs)	435.7	2935.4	4.6
Length Wtd. (ft)	183.44	Wetted Per. (ft)	90.77	47.60	2.11
Min Ch El (ft)	2953.25	Shear (lb/sq ft)	0.44	1.61	0.27
Alpha	1.55	Stream Power (lb/ft s)	0.72	9.30	0.33
Frctn Loss (ft)	4.90	Cum Volume (acre-ft)	4.80	74.82	14.35
C & E Loss (ft)	0.03	Cum SA (acres)	6.98	42.64	18.54

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 conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
depth, the 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 OUTPUT Profile #Method 1

E.G. Elev (ft)	2956.18	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.72	Wt. n-Val.		0.044	
W.S. Elev (ft)	2955.46	Reach Len. (ft)	181.52	182.97	185.00
Crit W.S. (ft)	2955.46	Flow Area (sq ft)		66.39	
E.G. Slope (ft/ft)	0.027069	Area (sq ft)		66.39	
Q Total (cfs)	453.00	Flow (cfs)		453.00	
Top Width (ft)	47.41	Top Width (ft)		47.41	
Vel Total (ft/s)	6.82	Avg. Vel. (ft/s)		6.82	
Max Chl Dpth (ft)	2.21	Hydr. Depth (ft)		1.40	
Conv. Total (cfs)	2753.3	Conv. (cfs)		2753.3	
Length Wtd. (ft)	182.97	Wetted Per. (ft)		48.79	
Min Ch El (ft)	2953.25	Shear (lb/sq ft)		2.30	
Alpha	1.00	Stream Power (lb/ft s)		15.69	
Frctn Loss (ft)	4.87	Cum Volume (acre-ft)	0.28	77.28	0.27
C & E Loss (ft)	0.00	Cum SA (acres)	0.51	42.66	0.19

Warning: The energy equation could not be 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.
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: Stagecoach Pass
REACH: StagecoachPass-1 RS: 6.85

INPUT
Description: Cross Section 6.85 is located upstream of the northern boundary of
Mirabel.

Topography and Aerial indicate wash and surrounding
undeveloped desert.
T6NR5E Section 28
Q100 = 453 cfs
Station Elevation Data num= 11

```
     Sta     Elev     Sta     Elev     Sta     Elev     Sta     Elev     Sta     Elev
 9835.29     2950 9897.73 2948.75 9971.68 2949.34 9985.36 2948.56 9995.29     2948
10012.06     294810029.06 2948.5710045.06  2949.110098.67     294810140.97     2948
10172.83     2950

Manning's n Values          num=        3
     Sta    n Val     Sta    n Val     Sta    n Val
 9835.29     .064 9985.36     .04410029.06     .064

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9985.3610029.06            286.1  275.18  250.78              .1       .3
Left Levee       Station= 9971.68       Elevation= 2949.34
```

CROSS SECTION OUTPUT Profile #100-yr 6-yr

E.G. Elev (ft)	2949.29	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.35	Wt. n-Val.	0.064	0.044	0.064
W.S. Elev (ft)	2948.94	Reach Len. (ft)	286.10	275.18	250.78
Crit W.S. (ft)	2948.94	Flow Area (sq ft)	1.25	33.37	70.19
E.G. Slope (ft/ft)	0.043677	Area (sq ft)	1.25	33.37	70.19
Q Total (cfs)	453.00	Flow (cfs)	2.00	196.73	254.27
Top Width (ft)	164.42	Top Width (ft)	6.63	43.70	114.08
Vel Total (ft/s)	4.32	Avg. Vel. (ft/s)	1.60	5.89	3.62
Max Chl Dpth (ft)	0.94	Hydr. Depth (ft)	0.19	0.76	0.62
Conv. Total (cfs)	2167.6	Conv. (cfs)	9.6	941.3	1216.7
Length Wtd. (ft)	265.72	Wetted Per. (ft)	6.64	43.72	114.13
Min Ch El (ft)	2948.00	Shear (lb/sq ft)	0.51	2.08	1.68
Alpha	1.20	Stream Power (lb/ft s)	0.82	12.27	6.08
Frctn Loss (ft)	6.38	Cum Volume (acre-ft)	4.73	74.61	14.20
C & E Loss (ft)	0.03	Cum SA (acres)	6.78	42.44	18.29

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: Divided flow computed for this cross-section.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
depth, the calculated water surface came back below critical depth. This indicates that there is
not a valid subcritical answer. The program defaulted to critical depth.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water
surface was used.

CROSS SECTION OUTPUT Profile #Method 1

E.G. Elev (ft)	2950.42	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.74	Wt. n-Val.		0.044	
W.S. Elev (ft)	2949.67	Reach Len. (ft)	286.10	275.18	250.78
Crit W.S. (ft)	2949.67	Flow Area (sq ft)		65.50	
E.G. Slope (ft/ft)	0.026140	Area (sq ft)		65.50	
Q Total (cfs)	453.00	Flow (cfs)		453.00	
Top Width (ft)	43.70	Top Width (ft)		43.70	
Vel Total (ft/s)	6.92	Avg. Vel. (ft/s)		6.92	
Max Chl Dpth (ft)	1.67	Hydr. Depth (ft)		1.50	
Conv. Total (cfs)	2801.9	Conv. (cfs)		2801.9	
Length Wtd. (ft)		Wetted Per. (ft)		45.94	
Min Ch El (ft)	2948.00	Shear (lb/sq ft)		2.33	
Alpha	1.00	Stream Power (lb/ft s)		16.09	
Frctn Loss (ft)		Cum Volume (acre-ft)	0.28	77.00	0.27
C & E Loss (ft)		Cum SA (acres)	0.51	42.47	0.19

Warning: The energy equation could not be 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.

CROSS SECTION

RIVER: Stagecoach Pass
REACH: StagecoachPass-1 RS: 6.8

INPUT
Description: Cross Section 6.80 is located within Mirabel.

Topography and
Aerial indicate wash and surrounding undeveloped desert.
T6NR5E
Section 28
Q100 = 631 cfs
Station Elevation Data num= 22

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9554.46	2948	9585.73	2946	9607.94	2944	9622.53	2942	9645.83	2940
9650.14	2940	9733.79	2942	9745.56	2942.33	9842.66	2942	9882.75	2941.85
9898.5	2942	9934.96	2942.24	9947.6	2942	10000	2940.32	10022.78	2941.88
10065.63	2942	10097.3	2942	10187.49	2941.28	10213.48	2942	10245.35	2944
10284.86	2946	10305.57	2946						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9554.46	.064	9947.6	.044	10022.78	.064

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9947.6	10022.78	342.46	357.07	348.2	.1	.3

Left Levee Station= 9745.56 Elevation= 2944

CROSS SECTION OUTPUT Profile #100-yr 6-yr

E.G. Elev (ft)	2942.52	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.25	Wt. n-Val.	0.064	0.044	0.064
W.S. Elev (ft)	2942.27	Reach Len. (ft)	342.46	357.07	348.20
Crit W.S. (ft)	2942.27	Flow Area (sq ft)	37.76	84.98	96.90
E.G. Slope (ft/ft)	0.017088	Area (sq ft)	37.76	84.98	96.90
Q Total (cfs)	631.00	Flow (cfs)	39.72	406.81	184.47
Top Width (ft)	455.24	Top Width (ft)	185.02	75.18	195.04
Vel Total (ft/s)	2.87	Avg. Vel. (ft/s)	1.05	4.79	1.90
Max Chl Dpth (ft)	2.27	Hydr. Depth (ft)	0.20	1.13	0.50
Conv. Total (cfs)	4827.1	Conv. (cfs)	303.9	3112.1	1411.1
Length Wtd. (ft)	354.05	Wetted Per. (ft)	185.02	75.26	195.06
Min Ch El (ft)	2940.32	Shear (lb/sq ft)	0.22	1.20	0.53
Alpha	1.93	Stream Power (lb/ft s)	0.23	5.77	1.01
Frctn Loss (ft)	8.64	Cum Volume (acre-ft)	4.60	74.24	13.72
C & E Loss (ft)	0.01	Cum SA (acres)	6.15	42.07	17.40

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 conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
depth, the 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 OUTPUT Profile #Method 1

E.G. Elev (ft)	2943.09	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.65	Wt. n-Val.		0.044	
W.S. Elev (ft)	2942.44	Reach Len. (ft)	342.46	357.07	348.20
Crit W.S. (ft)	2942.44	Flow Area (sq ft)		97.30	
E.G. Slope (ft/ft)	0.026646	Area (sq ft)		97.30	
Q Total (cfs)	631.00	Flow (cfs)		631.00	
Top Width (ft)	75.18	Top Width (ft)		75.18	
Vel Total (ft/s)	6.49	Avg. Vel. (ft/s)		6.49	
Max Chl Dpth (ft)	2.12	Hydr. Depth (ft)		1.29	
Conv. Total (cfs)	3865.6	Conv. (cfs)		3865.6	
Length Wtd. (ft)	357.07	Wetted Per. (ft)		76.25	
Min Ch El (ft)	2940.32	Shear (lb/sq ft)		2.12	
Alpha	1.00	Stream Power (lb/ft s)		13.77	
Frctn Loss (ft)	8.95	Cum Volume (acre-ft)	0.28	76.49	0.27
C & E Loss (ft)	0.09	Cum SA (acres)	0.51	42.09	0.19

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

CROSS SECTION

RIVER: Stagecoach Pass
REACH: StagecoachPass-1 RS: 6.73

INPUT
Description: Cross Section 6.73 is located within Mirabel.

Topography and
Aerial indicate wash and surrounding undeveloped desert.
T6NR5E
Section 28
Q100 = 631 cfs
Station Elevation Data num= 18

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9734.42	2940	9751.01	2938	9769.41	2936	9791.06	2934	9814.11	2932
9899.99	2930	9962.38	2930	9987.3	2930	10000	2928.31	10006.14	2930
10042.61	2930.66	10085.88	2930	10090.05	2928	10093.02	2928	10099.71	2930
10235.66	2932	10249.46	2934	10265.83	2936				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9734.42	.064	9899.99	.044	10042.61	.064

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9899.99	10042.61	506.93	520.11	514.82	.1	.3

CROSS SECTION OUTPUT Profile #100-yr 6-yr

E.G. Elev (ft)	2930.94	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.31	Wt. n-Val.	0.064	0.044	0.064
W.S. Elev (ft)	2930.63	Reach Len. (ft)	506.93	520.11	514.82
Crit W.S. (ft)	2930.63	Flow Area (sq ft)	8.38	93.12	51.50
E.G. Slope (ft/ft)	0.037635	Area (sq ft)	8.38	93.12	51.50
Q Total (cfs)	631.00	Flow (cfs)	17.37	462.58	151.05
Top Width (ft)	264.77	Top Width (ft)	26.83	140.68	97.26
Vel Total (ft/s)	4.12	Avg. Vel. (ft/s)	2.07	4.97	2.93
Max Chl Dpth (ft)	2.62	Hydr. Depth (ft)	0.31	0.66	0.53
Conv. Total (cfs)	3252.6	Conv. (cfs)	89.6	2384.4	778.6

Length Wtd. (ft)	518.03	Wetted Per. (ft)	26.83	141.03	98.02
Min Ch El (ft)	2928.30	Shear (lb/sq ft)	0.73	1.55	1.23
Alpha	1.19	Stream Power (lb/ft s)	1.52	7.71	3.62
Frctn Loss (ft)	8.47	Cum Volume (acre-ft)	4.42	73.51	13.13
C & E Loss (ft)	0.07	Cum SA (acres)	5.32	41.18	16.24

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: Divided flow computed for this cross-section.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
depth, the calculated water surface came back below critical depth. This indicates that there is
not a valid subcritical answer. The program defaulted to critical depth.

CROSS SECTION OUTPUT Profile #Method 1

E.G. Elev (ft)	2931.25	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.37	Wt. n-Val.		0.044	
W.S. Elev (ft)	2930.88	Reach Len. (ft)	506.93	520.11	514.82
Crit W.S. (ft)	2930.82	Flow Area (sq ft)		130.10	
E.G. Slope (ft/ft)	0.023636	Area (sq ft)		130.10	
Q Total (cfs)	631.00	Flow (cfs)		631.00	
Top Width (ft)	142.62	Top Width (ft)		142.62	
Vel Total (ft/s)	4.85	Avg. Vel. (ft/s)		4.85	
Max Chl Dpth (ft)	2.58	Hydr. Depth (ft)		0.91	
Conv. Total (cfs)	4104.4	Conv. (cfs)		4104.4	
Length Wtd. (ft)	520.11	Wetted Per. (ft)		144.08	
Min Ch El (ft)	2928.30	Shear (lb/sq ft)		1.33	
Alpha	1.00	Stream Power (lb/ft s)		6.46	
Frctn Loss (ft)	13.87	Cum Volume (acre-ft)	0.28	75.56	0.27
C & E Loss (ft)	0.00	Cum SA (acres)	0.51	41.20	0.19

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.
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: Stagecoach Pass
REACH: StagecoachPass-1 RS: 6.63

INPUT
Description: Cross Section 6.63 is located within Mirabel.

Topography and
Aerial indicate wash and surrounding undeveloped desert.
T6NR5E
Section 28
Q100 = 631 cfs
Station Elevation Data num= 21

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9935.27	2924	9946.89	2922	9958.61	2920	9970.09	2918	9979.28	2917
9988.46	2916	10000	2915.4	10013.4	291610064.95		291610138.82		2916.97
10164.72	291610192.03		291610199.44		291610216.11		291610231.87		2916
10298.96	291610343.99		291810372.63		292010392.25		292210408.12		2924
10432.83	2926								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val

9935.27 .064 9979.28 .04410138.82 .064

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
9979.2810138.82 207.15 206.41 201.89 .1 .3
Right Levee Station=10138.82 Elevation= 2916.97

CROSS SECTION OUTPUT Profile #100-yr 6-yr

E.G. Elev (ft)	2917.06	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.09	Wt. n-Val.		0.044	0.064
W.S. Elev (ft)	2916.97	Reach Len. (ft)	207.15	206.41	201.89
Crit W.S. (ft)	2916.97	Flow Area (sq ft)		121.86	153.41
E.G. Slope (ft/ft)	0.009087	Area (sq ft)		121.86	153.41
Q Total (cfs)	631.00	Flow (cfs)		328.06	302.94
Top Width (ft)	341.25	Top Width (ft)		159.27	181.98
Vel Total (ft/s)	2.29	Avg. Vel. (ft/s)		2.69	1.97
Max Chl Dpth (ft)	1.57	Hydr. Depth (ft)		0.77	0.84
Conv. Total (cfs)	6619.2	Conv. (cfs)		3441.4	3177.9
Length Wtd. (ft)	205.32	Wetted Per. (ft)		159.35	182.02
Min Ch El (ft)	2915.40	Shear (lb/sq ft)		0.43	0.48
Alpha	1.07	Stream Power (lb/ft s)		1.17	0.94
Frctn Loss (ft)	3.11	Cum Volume (acre-ft)	4.37	72.22	11.92
C & E Loss (ft)	0.03	Cum SA (acres)	5.16	39.39	14.59

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 conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
depth, the 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 OUTPUT Profile #Method 1

E.G. Elev (ft)	2917.39	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.39	Wt. n-Val.		0.044	
W.S. Elev (ft)	2917.00	Reach Len. (ft)	207.15	206.41	201.89
Crit W.S. (ft)	2917.00	Flow Area (sq ft)		125.79	
E.G. Slope (ft/ft)	0.030308	Area (sq ft)		125.79	
Q Total (cfs)	631.00	Flow (cfs)		631.00	
Top Width (ft)	159.49	Top Width (ft)		159.49	
Vel Total (ft/s)	5.02	Avg. Vel. (ft/s)		5.02	
Max Chl Dpth (ft)	1.59	Hydr. Depth (ft)		0.79	
Conv. Total (cfs)	3624.5	Conv. (cfs)		3624.5	
Length Wtd. (ft)		Wetted Per. (ft)		159.61	
Min Ch El (ft)	2915.40	Shear (lb/sq ft)		1.49	
Alpha	1.00	Stream Power (lb/ft s)		7.48	
Frctn Loss (ft)		Cum Volume (acre-ft)	0.28	74.03	0.27
C & E Loss (ft)		Cum SA (acres)	0.51	39.40	0.19

Warning: The energy equation could not be 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.

CROSS SECTION

RIVER: Stagecoach Pass
REACH: StagecoachPass-1 RS: 6.59

INPUT
Description: Cross Section 6.59 is located within Mirabel.

Topography and
Aerial indicate wash and surrounding undeveloped desert.
T6NR5E
Section 28
Q100 = 631 cfs

Station Elevation Data num= 23

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9927.65	2916	9949.99	2914	9966.42	2912	9978.48	2910.5	9982.5	2910
10000	2908.41	10016.64	2910	10023.37	2910	10042.36	2910	10044.16	2910
10066.09	2910	10078.47	2910	10105.95	2910	10126.63	2910	10138.82	2910
10142.02	2910.29	10151.6	2911.14	10211.8	2912	10226.81	2912	10235.04	2910
10238.44	2910	10274.14	2912	10332.87	2914				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9927.65	.064	9978.48	.044	10142.02	.064

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9978.48	10142.02	223.51	228.93	253.87	.3	.5

Right Levee Station= 10211.8 Elevation= 2912

CROSS SECTION OUTPUT Profile #100-yr 6-yr

			Left OB	Channel	Right OB
E.G. Elev (ft)	2911.00	Element			
Vel Head (ft)	0.38	Wt. n-Val.	0.064	0.044	0.064
W.S. Elev (ft)	2910.62	Reach Len. (ft)	223.51	228.93	253.87
Crit W.S. (ft)	2910.62	Flow Area (sq ft)	0.06	127.34	0.62
E.G. Slope (ft/ft)	0.030030	Area (sq ft)	0.06	127.34	0.62
Q Total (cfs)	631.00	Flow (cfs)	0.04	630.22	0.74
Top Width (ft)	168.24	Top Width (ft)	0.97	163.54	3.73
Vel Total (ft/s)	4.93	Avg. Vel. (ft/s)	0.62	4.95	1.21
Max Chl Dpth (ft)	2.22	Hydr. Depth (ft)	0.06	0.78	0.17
Conv. Total (cfs)	3641.3	Conv. (cfs)	0.2	3636.8	4.3
Length Wtd. (ft)	229.40	Wetted Per. (ft)	0.98	163.73	3.74
Min Ch El (ft)	2908.40	Shear (lb/sq ft)	0.11	1.46	0.31
Alpha	1.01	Stream Power (lb/ft s)	0.07	7.22	0.37
Frctn Loss (ft)	0.11	Cum Volume (acre-ft)	4.37	71.63	11.56
C & E Loss (ft)	0.18	Cum SA (acres)	5.16	38.63	14.16

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

CROSS SECTION OUTPUT Profile #Method 1

			Left OB	Channel	Right OB
E.G. Elev (ft)	2911.00	Element			
Vel Head (ft)	0.39	Wt. n-Val.		0.044	
W.S. Elev (ft)	2910.61	Reach Len. (ft)	223.51	228.93	253.87
Crit W.S. (ft)	2910.61	Flow Area (sq ft)		126.14	
E.G. Slope (ft/ft)	0.031178	Area (sq ft)		126.14	
Q Total (cfs)	631.00	Flow (cfs)		631.00	
Top Width (ft)	163.54	Top Width (ft)		163.54	
Vel Total (ft/s)	5.00	Avg. Vel. (ft/s)		5.00	
Max Chl Dpth (ft)	2.21	Hydr. Depth (ft)		0.77	
Conv. Total (cfs)	3573.6	Conv. (cfs)		3573.6	
Length Wtd. (ft)	228.93	Wetted Per. (ft)		164.17	
Min Ch El (ft)	2908.40	Shear (lb/sq ft)		1.50	

Alpha	1.00	Stream Power (lb/ft s)		7.48	
Frctn Loss (ft)	0.16	Cum Volume (acre-ft)	0.28	73.43	0.27
C & E Loss (ft)	0.19	Cum SA (acres)	0.51	38.63	0.19

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

CROSS SECTION

RIVER: Stagecoach Pass
REACH: StagecoachPass-1 RS: 6.55

INPUT
Description: Cross Section 6.55 is located within Mirabel. This section is located upstream of Mirabel Club Drive East. There are 3-10 x 3 concrete conspan arches located under Mirabel Club Drive East.

Topography indicates wash and surrounding undeveloped desert.
Aerial shows wash, surrounding undeveloped desert, and Mirabel Club Drive East.
T6NR5E Section 28
Q100 = 631 cfs
Station Elevation Data num= 15

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9694.83	2908	9732.71	2906	9767.33	2904	9810.54	2904	9854.92	2906
9871.74	2906	9909.36	2904	9974.21	2902.85	9994.1	290210006.16		2902
10015.48	2902	10047.5	290210078.29		290410195.13		290610327.66		2908

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9694.83	.064	9909.36	.04410078.29		.064

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9909.36	10078.29	51.62	54.36	48.5	.3	.5

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
9694.83	9909.36	2904.7	F
10078.29	10327.66	2904.7	F

Left Levee Station= 9871.74 Elevation= 2906
Right Levee Station=10078.29 Elevation= 2904

CROSS SECTION OUTPUT Profile #100-yr 6-yr

E.G. Elev (ft)	2906.19	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.01	Wt. n-Val.	0.064	0.044	0.064
W.S. Elev (ft)	2906.18	Reach Len. (ft)	51.62	54.36	48.50
Crit W.S. (ft)	2903.37	Flow Area (sq ft)	234.52	573.88	138.50
E.G. Slope (ft/ft)	0.000138	Area (sq ft)	234.52	573.88	138.50
Q Total (cfs)	631.00	Flow (cfs)	76.35	514.91	39.74
Top Width (ft)	477.46	Top Width (ft)	179.99	168.93	128.54
Vel Total (ft/s)	0.67	Avg. Vel. (ft/s)	0.33	0.90	0.29
Max Chl Dpth (ft)	4.18	Hydr. Depth (ft)	1.30	3.40	1.08
Conv. Total (cfs)	53651.1	Conv. (cfs)	6491.4	43780.4	3379.2
Length Wtd. (ft)	54.36	Wetted Per. (ft)	180.15	169.02	128.55

Min Ch El (ft)	2902.00	Shear (lb/sq ft)	0.01	0.03	0.01
Alpha	1.52	Stream Power (lb/ft s)	0.00	0.03	0.00
Frctn Loss (ft)		Cum Volume (acre-ft)	3.77	69.79	11.16
C & E Loss (ft)		Cum SA (acres)	4.69	37.75	13.77

Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid,
energy was used.

CROSS SECTION OUTPUT Profile #Method 1

E.G. Elev (ft)	2906.24	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.02	Wt. n-Val.		0.044	
W.S. Elev (ft)	2906.22	Reach Len. (ft)	51.62	54.36	48.50
Crit W.S. (ft)	2903.37	Flow Area (sq ft)		580.81	
E.G. Slope (ft/ft)	0.000207	Area (sq ft)		580.81	
Q Total (cfs)	631.00	Flow (cfs)		631.00	
Top Width (ft)	168.93	Top Width (ft)		168.93	
Vel Total (ft/s)	1.09	Avg. Vel. (ft/s)		1.09	
Max Chl Dpth (ft)	4.22	Hydr. Depth (ft)		3.44	
Conv. Total (cfs)	43900.3	Conv. (cfs)		43900.3	
Length Wtd. (ft)	54.36	Wetted Per. (ft)		173.46	
Min Ch El (ft)	2902.00	Shear (lb/sq ft)		0.04	
Alpha	1.00	Stream Power (lb/ft s)		0.05	
Frctn Loss (ft)		Cum Volume (acre-ft)	0.28	71.57	0.27
C & E Loss (ft)		Cum SA (acres)	0.51	37.76	0.19

Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid,
energy was used.

CULVERT

RIVER: Stagecoach Pass
REACH: StagecoachPass-1 RS: 6.545

INPUT
Description: Conspan arches at Mirablel Club Drive East crossing.
Distance from Upstream XS = 1
Deck/Roadway Width = 50
Weir Coefficient = 2.6
Upstream Deck/Roadway Coordinates
num= 5

Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord
9700	2906.38		9963.61	2906.38		10058.69	2906.4	
10137.53	2904.18		10400	2904.18				

Upstream Bridge Cross Section Data
Station Elevation Data num= 15

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9694.83	2908	9732.71	2906	9767.33	2904	9810.54	2904	9854.92	2906
9871.74	2906	9909.36	2904	9974.21	2902.85	9994.1	2902	10006.16	2902
10015.48	2902	10047.5	2902	10078.29	2904	10195.13	2906	10327.66	2908

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9694.83	.064	9909.36	.044	10078.29	.064

Bank Sta: Left	Right	Coeff Contr.	Expan.
9909.36	10078.29	.3	.5

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
9694.83	9909.36	2904.7	F
10078.29	10327.66	2904.7	F

Left Levee Station= 9871.74 Elevation= 2906
Right Levee Station=10078.29 Elevation= 2904

Downstream Deck/Roadway Coordinates

```
    num=       5
     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord
    9700 2906.38         9927.06 2906.38        10022.07  2906.4
10100.85 2904.18           10200 2904.18

Downstream Bridge Cross Section Data
Station Elevation Data    num=      11
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
 9756.37    2908 9768.35    2906 9780.64    2904 9794.12    2902 9833.03    2902
 9910.71    2902 9981.59 2901.08 9995.01    2900 10003.3    290010015.51    2902
10097.86 2903.03

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
 9756.37    .064 9910.71    .04410015.51    .064

Bank Sta: Left   Right    Coeff Contr.   Expan.
       9910.7110015.51             .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
 9756.37 9910.71 2904.26       F
 10028.210097.86 2904.26       F
Right Levee     Station=10097.86      Elevation=    2907

Upstream Embankment side slope              =       0 horiz. to 1.0 vertical
Downstream Embankment side slope            =       0 horiz. to 1.0 vertical
Maximum allowable submergence for weir flow =     .95
Elevation at which weir flow begins         =
Energy head used in spillway design         =
Spillway height used in design              =
Weir crest shape                            = Broad Crested

Number of Culverts =  1

Culvert Name     Shape      Rise    Span
CULVERT#1   Conspan Arch       3      10
FHWA Chart # 60- Span/Rise ratio approximate 2:1
FHWA Scale # 1 - 0 degree wing wall angle
Solution Criteria = Highest U.S. EG
Culvert Upstrm Dist  Length    Top n  Bottom n  Depth Blocked  Entrance Loss Coef   Exit Loss Coef
                 3      48     .015     .015        0                   .4                 1
Number of Barrels =  3
Upstream   Elevation =  2901.81
Centerline Stations
    Sta.    Sta.    Sta.
10008.83 10019.610030.98
Downstream Elevation =  2900.36
Centerline Stations
    Sta.    Sta.    Sta.
 9998.2810008.4110019.84

CROSS SECTION


RIVER: Stagecoach Pass
REACH: StagecoachPass-1   RS: 6.54

INPUT
Description: Cross Section 6.54 is located within Mirabel.  This section is
             located downstream of Mirabel Club Drive East. There are 3-10 x 3
             concrete conspan arches located under Mirabel Club Drive East.


Topography  indicates wash and surrounding undeveloped
             desert.
Aerial shows wash, surrounding undeveloped desert, and
             Mirabel Club Drive East.
T6NR5E Section 28
Q100 = 631 cfs
Station Elevation Data    num=      11
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
```

```
 9756.37    2908 9768.35    2906 9780.64    2904 9794.12    2902 9833.03    2902
 9910.71    2902 9981.59 2901.08 9995.01    2900 10003.3    290010015.51    2902
10097.86 2903.03

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
 9756.37    .064 9910.71    .04410015.51    .064

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9910.7110015.51           113.43  130.13  143.65            .3        .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
 9756.37 9910.71 2904.26       F
 10028.210097.86 2904.26       F
Right Levee     Station=10097.86      Elevation=    2907

CROSS SECTION OUTPUT  Profile #100-yr 6-yr

  E.G. Elev (ft)           2902.78    Element                  Left OB    Channel   Right OB
  Vel Head (ft)               0.50    Wt. n-Val.                          0.044     0.064
  W.S. Elev (ft)           2902.28    Reach Len. (ft)          113.43    130.13    143.65
  Crit W.S. (ft)           2902.28    Flow Area (sq ft)                  110.05      2.51
  E.G. Slope (ft/ft)      0.026803    Area (sq ft)              32.59    110.05      3.08
  Q Total (cfs)             631.00    Flow (cfs)                         627.76      3.24
  Top Width (ft)            245.43    Top Width (ft)           118.46    104.80     22.17
  Vel Total (ft/s)            5.61    Avg. Vel. (ft/s)                     5.70      1.29
  Max Chl Dpth (ft)           2.28    Hydr. Depth (ft)                     1.05      0.20
  Conv. Total (cfs)         3854.3    Conv. (cfs)                       3834.4      19.8
  Length Wtd. (ft)          129.74    Wetted Per. (ft)                  105.01     12.69
  Min Ch El (ft)           2900.00    Shear (lb/sq ft)                     1.75      0.33
  Alpha                       1.03    Stream Power (lb/ft s)              10.00      0.43
  Frctn Loss (ft)             0.23    Cum Volume (acre-ft)       3.61     69.36     11.08
  C & E Loss (ft)             0.23    Cum SA (acres)             4.52     37.58     13.69


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 conveyance ratio (upstream conveyance divided by downstream conveyance) is less than
         0.7 or greater than 1.4.  This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross
section.
         This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to
critical
         depth, the calculated water surface came back below critical depth.  This indicates that
there is
         not a valid subcritical answer.  The program defaulted to critical depth.
Note:    Multiple critical depths were found at this location.  The critical depth with the lowest,
valid,
         energy was used.

CROSS SECTION OUTPUT  Profile #Method 1

  E.G. Elev (ft)           2902.78    Element                  Left OB    Channel   Right OB
  Vel Head (ft)               0.50    Wt. n-Val.                          0.044     0.064
  W.S. Elev (ft)           2902.29    Reach Len. (ft)          113.43    130.13    143.65
  Crit W.S. (ft)           2902.29    Flow Area (sq ft)                  110.84      2.61
  E.G. Slope (ft/ft)      0.026249    Area (sq ft)                       110.84      2.82
  Q Total (cfs)             631.00    Flow (cfs)                         627.58      3.42
  Top Width (ft)            119.29    Top Width (ft)                     104.80     14.49
  Vel Total (ft/s)            5.56    Avg. Vel. (ft/s)                     5.66      1.31
  Max Chl Dpth (ft)           2.28    Hydr. Depth (ft)                     1.06      0.21
  Conv. Total (cfs)         3894.7    Conv. (cfs)                       3873.6      21.1
  Length Wtd. (ft)          130.17    Wetted Per. (ft)                  105.30     12.69
  Min Ch El (ft)           2900.00    Shear (lb/sq ft)                     1.73      0.34
  Alpha                       1.03    Stream Power (lb/ft s)               9.77      0.44
  Frctn Loss (ft)             0.20    Cum Volume (acre-ft)       0.28     71.14      0.27
  C & E Loss (ft)             0.23    Cum SA (acres)             0.51     37.59      0.18


Warning: The energy equation could not be balanced within the specified number of iterations.  The
```

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

CROSS SECTION

RIVER: Stagecoach Pass
REACH: StagecoachPass-1 RS: 6.51

INPUT
Description: Cross Section 6.51 is located within Mirabel. This section is located upstream of Mirabel Club Drive West. There are 3-10 x 3 concrete conspan arches located under Mirabel Club Drive West.

Topography indicates wash and surrounding undeveloped desert.
Aerial shows wash, surrounding undeveloped desert, and Mirabel Club Drive West.
T6NR5E Section 28
Q100 = 631 cfs
Station Elevation Data num= 12

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9776.27	2908	9787.16	2906	9799.96	2904	9819.29	2902	9841.65	2900
9867.95	2900	9898.55	2900	9933.74	2898.31	10000	2898.21	10036.24	2900
10173.92	2902	10206.18	2902.61						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9776.27	.064	9898.55	.044	10036.24	.064

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9898.55	10036.24	65.03	70.74	68	.3	.5

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
9776.27	9898.55	2900.6	F
10036.24	10206.18	2900.6	F

CROSS SECTION OUTPUT Profile #100-yr 6-yr

E.G. Elev (ft)	2901.33	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.03	Wt. n-Val.	0.064	0.044	0.064
W.S. Elev (ft)	2901.30	Reach Len. (ft)	65.03	70.74	68.00
Crit W.S. (ft)	2899.50	Flow Area (sq ft)	83.45	357.05	58.22
E.G. Slope (ft/ft)	0.000593	Area (sq ft)	83.45	357.05	58.22
Q Total (cfs)	631.00	Flow (cfs)	52.31	553.99	24.70
Top Width (ft)	298.66	Top Width (ft)	71.44	137.69	89.53
Vel Total (ft/s)	1.27	Avg. Vel. (ft/s)	0.63	1.55	0.42
Max Chl Dpth (ft)	3.10	Hydr. Depth (ft)	1.17	2.59	0.65
Conv. Total (cfs)	25911.8	Conv. (cfs)	2148.0	22749.3	1014.5
Length Wtd. (ft)	70.74	Wetted Per. (ft)	71.50	137.78	89.54
Min Ch El (ft)	2898.20	Shear (lb/sq ft)	0.04	0.10	0.02
Alpha	1.35	Stream Power (lb/ft s)	0.03	0.15	0.01
Frctn Loss (ft)		Cum Volume (acre-ft)	3.46	68.66	10.98
C & E Loss (ft)		Cum SA (acres)	4.27	37.22	13.50

Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid,

energy was used.

CROSS SECTION OUTPUT Profile #Method 1

E.G. Elev (ft)	2901.72	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.04	Wt. n-Val.		0.044	
W.S. Elev (ft)	2901.68	Reach Len. (ft)	65.03	70.74	68.00
Crit W.S. (ft)	2899.50	Flow Area (sq ft)		409.15	
E.G. Slope (ft/ft)	0.000505	Area (sq ft)		409.15	
Q Total (cfs)	631.00	Flow (cfs)		631.00	
Top Width (ft)	137.69	Top Width (ft)		137.69	
Vel Total (ft/s)	1.54	Avg. Vel. (ft/s)		1.54	
Max Chl Dpth (ft)	3.48	Hydr. Depth (ft)		2.97	
Conv. Total (cfs)	28092.8	Conv. (cfs)		28092.8	
Length Wtd. (ft)	70.74	Wetted Per. (ft)		141.13	
Min Ch El (ft)	2898.20	Shear (lb/sq ft)		0.09	
Alpha	1.00	Stream Power (lb/ft s)		0.14	
Frctn Loss (ft)		Cum Volume (acre-ft)	0.28	70.37	0.26
C & E Loss (ft)		Cum SA (acres)	0.51	37.22	0.16

Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid,
energy was used.

CULVERT

RIVER: Stagecoach Pass
REACH: StagecoachPass-1 RS: 6.505

INPUT
Description: Conspan arches at Mirablel Club Drive West crossing.
Distance from Upstream XS = 1
Deck/Roadway Width = 65
Weir Coefficient = 2.6
Upstream Deck/Roadway Coordinates
num= 4
Sta Hi Cord Lo Cord Sta Hi Cord Lo Cord Sta Hi Cord Lo Cord
9700 2903.68 9972.47 2903.68 10028.59 2902.1
10112.07 2899.55

Upstream Bridge Cross Section Data
Station Elevation Data num= 12

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9776.27	2908	9787.16	2906	9799.96	2904	9819.29	2902	9841.65	2900
9867.95	2900	9898.55	2900	9933.74	2898.31	10000	2898.21	10036.24	2900
10173.92	2902	10206.18	2902.61						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9776.27	.064	9898.55	.04	10036.24	.064

Bank Sta: Left Right Coeff Contr. Expan.
9898.55 10036.24 .3 .5
Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
9776.27	9898.55	2900.6	F
10036.24	10206.18	2900.6	F

Downstream Deck/Roadway Coordinates
num= 4
Sta Hi Cord Lo Cord Sta Hi Cord Lo Cord Sta Hi Cord Lo Cord
9700 2903.68 9937.77 2903.68 9993.91 2902.1
10077.42 2899.55

Downstream Bridge Cross Section Data
Station Elevation Data num= 14

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9778.17	2908	9778.35	2908	9814.66	2906	9828.57	2904	9850.74	2902
9874.91	2900	9892.87	2898	9941.45	2897	9990.02	2896	10012.62	2896

```
10033.73    289710054.83    2898 10086.4    2900 10090.7    2900

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
 9778.17    .064 9941.45    .04410033.73    .064

Bank Sta: Left   Right    Coeff Contr.   Expan.
       9941.4510033.73             .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
 9778.17 9941.45 2899.43       F
10033.73 10090.7 2899.43       F
Right Levee     Station= 10090.7      Elevation=    2904

Upstream Embankment side slope              =       0 horiz. to 1.0 vertical
Downstream Embankment side slope            =       0 horiz. to 1.0 vertical
Maximum allowable submergence for weir flow =     .95
Elevation at which weir flow begins         =
Energy head used in spillway design         =
Spillway height used in design              =
Weir crest shape                            = Broad Crested

Number of Culverts =  1

Culvert Name     Shape      Rise    Span
CULVERT#1   Conspan Arch       3      10
FHWA Chart # 60- Span/Rise ratio approximate 2:1
FHWA Scale # 1 - 0 degree wing wall angle
Solution Criteria = Highest U.S. EG
Culvert Upstrm Dist  Length    Top n  Bottom n  Depth Blocked  Entrance Loss Coef   Exit Loss Coef
                3.2      65     .015     .015        0                  .4                 1
Number of Barrels =  3
Upstream   Elevation =  2897.24
Centerline Stations
    Sta.    Sta.    Sta.
 9990.3810001.3810012.38
Downstream Elevation =  2896.27
Centerline Stations
    Sta.    Sta.    Sta.
 9968.32 9979.32 9990.32

CROSS SECTION


RIVER: Stagecoach Pass
REACH: StagecoachPass-1   RS: 6.5

INPUT
Description: Cross Section 6.50 is located within Mirabel.  This section is
             located downstream of Mirabel Club Drive West. There are 3-10 x 3
             concrete conspan arches located under Mirabel Club Drive West.


Topography  indicates wash and surrounding undeveloped
             desert.
Aerial shows wash, surrounding undeveloped desert, and
             Mirabel Club Drive West.
T6NR5E Section 28
Q100 = 631 cfs
Station Elevation Data    num=      14
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
 9778.17    2908 9778.35    2908 9814.66    2906 9828.57    2904 9850.74    2902
 9874.91    2900 9892.87    2898 9941.45    2897 9990.02    289610012.62    2896
10033.73    289710054.83    2898 10086.4    2900 10090.7    2900

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
 9778.17    .064 9941.45    .04410033.73    .064

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9941.4510033.73           306.51  265.12  203.45             .3       .5
```

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
9778.17	9941.45	2899.43	F
10033.73	10090.7	2899.43	F

Right Levee Station= 10090.7 Elevation= 2904

CROSS SECTION OUTPUT Profile #100-yr 6-yr

			Left OB	Channel	Right OB
E.G. Elev (ft)	2898.08	Element			
Vel Head (ft)	0.57	Wt. n-Val.		0.044	
W.S. Elev (ft)	2897.51	Reach Len. (ft)	306.51	265.12	203.45
Crit W.S. (ft)	2897.51	Flow Area (sq ft)		104.21	
E.G. Slope (ft/ft)	0.027349	Area (sq ft)	6.24	104.21	2.71
Q Total (cfs)	631.00	Flow (cfs)		631.00	
Top Width (ft)	127.60	Top Width (ft)	24.62	92.28	10.69
Vel Total (ft/s)	6.06	Avg. Vel. (ft/s)		6.06	
Max Chl Dpth (ft)	1.51	Hydr. Depth (ft)		1.13	
Conv. Total (cfs)	3815.5	Conv. (cfs)		3815.5	
Length Wtd. (ft)	263.85	Wetted Per. (ft)		92.31	
Min Ch El (ft)	2896.00	Shear (lb/sq ft)		1.93	
Alpha	1.00	Stream Power (lb/ft s)		11.67	
Frctn Loss (ft)	5.59	Cum Volume (acre-ft)	3.39	68.29	10.93
C & E Loss (ft)	0.05	Cum SA (acres)	4.20	37.04	13.42

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 energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
depth, the calculated water surface came back below critical depth. This indicates that there is
not a valid subcritical answer. The program defaulted to critical depth.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid,
energy was used.

CROSS SECTION OUTPUT Profile #Method 1

			Left OB	Channel	Right OB
E.G. Elev (ft)	2898.08	Element			
Vel Head (ft)	0.56	Wt. n-Val.		0.044	
W.S. Elev (ft)	2897.52	Reach Len. (ft)	306.51	265.12	203.45
Crit W.S. (ft)	2897.51	Flow Area (sq ft)		105.16	
E.G. Slope (ft/ft)	0.026935	Area (sq ft)		105.16	
Q Total (cfs)	631.00	Flow (cfs)		631.00	
Top Width (ft)	92.28	Top Width (ft)		92.28	
Vel Total (ft/s)	6.00	Avg. Vel. (ft/s)		6.00	
Max Chl Dpth (ft)	1.52	Hydr. Depth (ft)		1.14	
Conv. Total (cfs)	3844.8	Conv. (cfs)		3844.8	
Length Wtd. (ft)	264.96	Wetted Per. (ft)		93.35	
Min Ch El (ft)	2896.00	Shear (lb/sq ft)		1.89	
Alpha	1.00	Stream Power (lb/ft s)		11.37	
Frctn Loss (ft)	6.29	Cum Volume (acre-ft)	0.28	69.95	0.26
C & E Loss (ft)	0.10	Cum SA (acres)	0.51	37.04	0.16

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.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid,
energy was used.

CROSS SECTION

RIVER: Stagecoach Pass
REACH: StagecoachPass-1 RS: 6.45

INPUT
Description: Cross Section 6.45 is located within Mirabel.

Topography and
Aerial indicate wash and surrounding undeveloped desert.
T6NR5E
Section 28
Q100 = 631 cfs
Station Elevation Data num= 13

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9928.79	2898	9936.94	2896	9945.33	2894	9953.69	2892	9980.39	2890
9999.62	2888	10007.41	2888	10020.72	2890	10117.24	2892	10148.17	2894
10168.34	2896	10186.23	2898	10207.87	2900				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9928.79	.064	9980.39	.044	10020.72	.064

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9980.39	10020.72	378.71	404.49	416.22	.1	.3

CROSS SECTION OUTPUT Profile #100-yr 6-yr

E.G. Elev (ft)	2891.61	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.73	Wt. n-Val.	0.064	0.044	0.064
W.S. Elev (ft)	2890.87	Reach Len. (ft)	378.71	404.49	416.22
Crit W.S. (ft)	2890.87	Flow Area (sq ft)	5.07	83.28	18.34
E.G. Slope (ft/ft)	0.016898	Area (sq ft)	5.07	83.28	18.34
Q Total (cfs)	631.00	Flow (cfs)	8.79	590.39	31.82
Top Width (ft)	94.04	Top Width (ft)	11.64	40.33	42.07
Vel Total (ft/s)	5.91	Avg. Vel. (ft/s)	1.73	7.09	1.73
Max Chl Dpth (ft)	2.87	Hydr. Depth (ft)	0.44	2.06	0.44
Conv. Total (cfs)	4854.1	Conv. (cfs)	67.6	4541.7	244.8
Length Wtd. (ft)	404.61	Wetted Per. (ft)	11.67	40.58	42.08
Min Ch El (ft)	2888.00	Shear (lb/sq ft)	0.46	2.16	0.46
Alpha	1.35	Stream Power (lb/ft s)	0.79	15.35	0.80
Frctn Loss (ft)	8.78	Cum Volume (acre-ft)	3.35	67.72	10.88
C & E Loss (ft)	0.06	Cum SA (acres)	4.07	36.63	13.30

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 energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
depth, the 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 OUTPUT Profile #Method 1

E.G. Elev (ft)	2891.69	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.90	Wt. n-Val.	0.064	0.044	0.064
W.S. Elev (ft)	2890.79	Reach Len. (ft)	378.71	404.49	416.22
Crit W.S. (ft)	2890.79	Flow Area (sq ft)	3.17	79.96	3.19
E.G. Slope (ft/ft)	0.021058	Area (sq ft)	3.17	79.96	3.19
Q Total (cfs)	631.00	Flow (cfs)	7.14	615.88	7.98
Top Width (ft)	50.00	Top Width (ft)	5.39	40.33	4.28
Vel Total (ft/s)	7.31	Avg. Vel. (ft/s)	2.25	7.70	2.50
Max Chl Dpth (ft)	2.79	Hydr. Depth (ft)	0.59	1.98	0.75
Conv. Total (cfs)	4348.4	Conv. (cfs)	49.2	4244.2	55.0
Length Wtd. (ft)	404.42	Wetted Per. (ft)	5.79	40.58	4.98
Min Ch El (ft)	2888.00	Shear (lb/sq ft)	0.72	2.59	0.84
Alpha	1.09	Stream Power (lb/ft s)	1.62	19.95	2.11
Frctn Loss (ft)	9.97	Cum Volume (acre-ft)	0.26	69.38	0.26
C & E Loss (ft)	0.11	Cum SA (acres)	0.49	36.63	0.15

Warning: The energy equation could not be 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: Stagecoach Pass
REACH: StagecoachPass-1 RS: 6.37

INPUT
Description: Cross Section 6.37 is located within Mirabel.

Topography and
Aerial indicate wash and surrounding undeveloped desert.
T6NR5E
Section 28
Q100 = 631 cfs
Station Elevation Data num= 17

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9851.38	2886	9877.44	2884	9901.57	2882	9920.24	2880	9935.12	2879
9949.99	2878	9965.36	2878	9978.79	2878	10000	2877.25	10014.99	2878
10043.01	2879	10071.03	2880	10092.16	2882	10111.16	2884	10164.42	2884
10182.62	2884	10201.88	2886						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9851.38	.064	9935.12	.044	10043.01	.064

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9935.12	10043.01	332.86	330.12	324.31	.1	.3

CROSS SECTION OUTPUT Profile #100-yr 6-yr

			Left OB	Channel	Right OB
E.G. Elev (ft)	2879.60	Element			
Vel Head (ft)	0.52	Wt. n-Val.	0.064	0.044	0.064
W.S. Elev (ft)	2879.09	Reach Len. (ft)	332.86	330.12	324.31
Crit W.S. (ft)	2879.09	Flow Area (sq ft)	0.05	109.19	0.10
E.G. Slope (ft/ft)	0.028845	Area (sq ft)	0.05	109.19	0.10
Q Total (cfs)	631.00	Flow (cfs)	0.03	630.93	0.05
Top Width (ft)	111.54	Top Width (ft)	1.26	107.89	2.38
Vel Total (ft/s)	5.77	Avg. Vel. (ft/s)	0.48	5.78	0.48
Max Chl Dpth (ft)	1.83	Hydr. Depth (ft)	0.04	1.01	0.04
Conv. Total (cfs)	3715.3	Conv. (cfs)	0.2	3714.9	0.3
Length Wtd. (ft)	329.57	Wetted Per. (ft)	1.27	107.97	2.38
Min Ch El (ft)	2877.25	Shear (lb/sq ft)	0.08	1.82	0.08
Alpha	1.00	Stream Power (lb/ft s)	0.04	10.52	0.04
Frctn Loss (ft)	6.88	Cum Volume (acre-ft)	3.33	66.83	10.79
C & E Loss (ft)	0.04	Cum SA (acres)	4.01	35.94	13.09

Warning: The energy equation could not be 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 OUTPUT Profile #Method 1

E.G. Elev (ft)	2879.60	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.52	Wt. n-Val.		0.044	
W.S. Elev (ft)	2879.08	Reach Len. (ft)	332.86	330.12	324.31
Crit W.S. (ft)	2879.08	Flow Area (sq ft)		108.79	
E.G. Slope (ft/ft)	0.029261	Area (sq ft)		108.79	
Q Total (cfs)	631.00	Flow (cfs)		631.00	
Top Width (ft)	107.89	Top Width (ft)		107.89	
Vel Total (ft/s)	5.80	Avg. Vel. (ft/s)		5.80	
Max Chl Dpth (ft)	1.83	Hydr. Depth (ft)		1.01	
Conv. Total (cfs)	3688.8	Conv. (cfs)		3688.8	
Length Wtd. (ft)	330.12	Wetted Per. (ft)		108.14	
Min Ch El (ft)	2877.25	Shear (lb/sq ft)		1.84	
Alpha	1.00	Stream Power (lb/ft s)		10.66	
Frctn Loss (ft)	8.54	Cum Volume (acre-ft)	0.25	68.51	0.24
C & E Loss (ft)	0.02	Cum SA (acres)	0.47	35.95	0.13

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.

CROSS SECTION

RIVER: Stagecoach Pass
REACH: StagecoachPass-1 RS: 6.31

INPUT
Description: Cross Section 6.31 is located within Mirabel.

Topography and
Aerial indicate wash and surrounding undeveloped desert.
T6NR5E
Section 28 and 33
Q100 = 631 cfs
Station Elevation Data num= 10

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9894.06	2876	9915.05	2874	9936.07	2872	9969.43	2870	9994.6	2868
10005.2	2868	10033.65	2869.35	10176.39	2870	10199.39	2872	10221.2	2874

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9894.06	.064	9969.43	.044	10033.65	.064

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9969.43	10033.65	432.85	453.1	447.56	.1	.3

CROSS SECTION OUTPUT Profile #100-yr 6-yr

E.G. Elev (ft)	2870.53	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.38	Wt. n-Val.	0.064	0.044	0.064
W.S. Elev (ft)	2870.15	Reach Len. (ft)	432.85	453.10	447.56
Crit W.S. (ft)	2870.15	Flow Area (sq ft)	0.19	93.69	67.91
E.G. Slope (ft/ft)	0.015804	Area (sq ft)	0.19	93.69	67.91
Q Total (cfs)	631.00	Flow (cfs)	0.10	511.07	119.83
Top Width (ft)	211.18	Top Width (ft)	2.50	64.22	144.46
Vel Total (ft/s)	3.90	Avg. Vel. (ft/s)	0.52	5.45	1.76
Max Chl Dpth (ft)	2.15	Hydr. Depth (ft)	0.07	1.46	0.47
Conv. Total (cfs)	5019.4	Conv. (cfs)	0.8	4065.4	953.2
Length Wtd. (ft)	452.31	Wetted Per. (ft)	2.50	64.33	144.47

Min Ch El (ft)	2868.00	Shear (lb/sq ft)	0.07	1.44	0.46
Alpha	1.62	Stream Power (lb/ft s)	0.04	7.84	0.82
Frctn Loss (ft)	7.47	Cum Volume (acre-ft)	3.33	66.06	10.54
C & E Loss (ft)	0.02	Cum SA (acres)	4.00	35.29	12.54

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.

CROSS SECTION OUTPUT Profile #Method 1

E.G. Elev (ft)	2870.86	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.68	Wt. n-Val.		0.044	
W.S. Elev (ft)	2870.18	Reach Len. (ft)	432.85	453.10	447.56
Crit W.S. (ft)	2870.13	Flow Area (sq ft)		95.57	
E.G. Slope (ft/ft)	0.023018	Area (sq ft)		95.57	
Q Total (cfs)	631.00	Flow (cfs)		631.00	
Top Width (ft)	64.22	Top Width (ft)		64.22	
Vel Total (ft/s)	6.60	Avg. Vel. (ft/s)		6.60	
Max Chl Dpth (ft)	2.18	Hydr. Depth (ft)		1.49	
Conv. Total (cfs)	4159.0	Conv. (cfs)		4159.0	
Length Wtd. (ft)	453.04	Wetted Per. (ft)		65.34	
Min Ch El (ft)	2868.00	Shear (lb/sq ft)		2.10	
Alpha	1.00	Stream Power (lb/ft s)		13.88	
Frctn Loss (ft)	10.06	Cum Volume (acre-ft)	0.25	67.73	0.24
C & E Loss (ft)	0.00	Cum SA (acres)	0.47	35.29	0.13

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.
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: Stagecoach Pass
REACH: StagecoachPass-1 RS: 6.23

INPUT
Description: Cross Section 6.23 is located within Mirabel. This section is located upstream of concentration point CSCP10 in the HEC-1 model.

Topography and Aerial indicate wash and surrounding undeveloped desert.
T6NR5E Section 33 and 32
Q100 = 631 cfs
Station Elevation Data num= 11

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9835.65	2862	9861.97	2862	9890.33	2860	9946.56	2860	9965.28	2860
9986.07	2858	10000	2857.7	10008.91	2858	10026.84	2860	10041.61	2862
10061.34	2864								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9835.65	.064	9965.28	.044	10026.84	.064

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9965.28	10026.84	308.38	309.69	308.4	.1	.3

CROSS SECTION OUTPUT Profile #100-yr 6-yr

E.G. Elev (ft)	2860.77	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.57	Wt. n-Val.	0.064	0.044	0.064
W.S. Elev (ft)	2860.20	Reach Len. (ft)	308.38	309.69	308.40
Crit W.S. (ft)	2860.20	Flow Area (sq ft)	15.48	100.30	0.15
E.G. Slope (ft/ft)	0.017264	Area (sq ft)	15.48	100.30	0.15
Q Total (cfs)	631.00	Flow (cfs)	16.09	614.81	0.10
Top Width (ft)	140.88	Top Width (ft)	77.82	61.56	1.50
Vel Total (ft/s)	5.44	Avg. Vel. (ft/s)	1.04	6.13	0.66
Max Chl Dpth (ft)	2.50	Hydr. Depth (ft)	0.20	1.63	0.10
Conv. Total (cfs)	4802.4	Conv. (cfs)	122.4	4679.2	0.8
Length Wtd. (ft)	309.37	Wetted Per. (ft)	77.83	61.78	1.51
Min Ch El (ft)	2857.70	Shear (lb/sq ft)	0.21	1.75	0.11
Alpha	1.24	Stream Power (lb/ft s)	0.22	10.73	0.07
Frctn Loss (ft)	6.91	Cum Volume (acre-ft)	3.25	65.05	10.19
C & E Loss (ft)	0.09	Cum SA (acres)	3.60	34.64	11.79

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.

CROSS SECTION OUTPUT Profile #Method 1

E.G. Elev (ft)	2860.79	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.67	Wt. n-Val.	0.064	0.044	
W.S. Elev (ft)	2860.12	Reach Len. (ft)	308.38	309.69	308.40
Crit W.S. (ft)	2860.12	Flow Area (sq ft)	4.25	95.24	
E.G. Slope (ft/ft)	0.021430	Area (sq ft)	4.25	95.24	
Q Total (cfs)	631.00	Flow (cfs)	3.51	627.49	
Top Width (ft)	96.84	Top Width (ft)	35.28	61.56	
Vel Total (ft/s)	6.34	Avg. Vel. (ft/s)	0.83	6.59	
Max Chl Dpth (ft)	2.42	Hydr. Depth (ft)	0.12	1.55	
Conv. Total (cfs)	4310.5	Conv. (cfs)	24.0	4286.5	
Length Wtd. (ft)	309.69	Wetted Per. (ft)	35.40	61.90	
Min Ch El (ft)	2857.70	Shear (lb/sq ft)	0.16	2.06	
Alpha	1.07	Stream Power (lb/ft s)	0.13	13.56	
Frctn Loss (ft)	7.43	Cum Volume (acre-ft)	0.23	66.74	0.24
C & E Loss (ft)	0.04	Cum SA (acres)	0.30	34.64	0.13

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

CROSS SECTION

RIVER: Stagecoach Pass
REACH: StagecoachPass-1 RS: 6.17

INPUT
Description: Topography indicates wash and surrounding undeveloped desert.
Aerial shows wash, undeveloped desert, building pads, homes and Hollow Drive.

T6NR5E Section 32
Q100 = 758 cfs

Station Elevation Data num= 16

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9866.12	2860	9882.32	2858	9890.27	2856	9898.72	2854	9909.07	2852
9916.42	2850	9953.95	2850	9976.38	2850	10000	2849.61	10029.45	2849.74
10153.99	2850	10174.27	2852	10197.46	2854	10215.89	2856	10237.89	2858
10270.31	2860								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9866.12	.064	9916.42	.044	10029.45	.064

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9916.42	10029.45	492.53	488.62	468.84	.1	.3

CROSS SECTION OUTPUT Profile #100-yr 6-yr

			Left OB	Channel	Right OB
E.G. Elev (ft)	2850.93	Element			
Vel Head (ft)	0.28	Wt. n-Val.	0.064	0.044	0.064
W.S. Elev (ft)	2850.66	Reach Len. (ft)	492.53	488.62	468.84
Crit W.S. (ft)	2850.57	Flow Area (sq ft)	0.79	88.62	100.10
E.G. Slope (ft/ft)	0.028458	Area (sq ft)	0.79	88.62	100.10
Q Total (cfs)	758.00	Flow (cfs)	1.44	429.23	327.33
Top Width (ft)	246.64	Top Width (ft)	2.41	113.03	131.19
Vel Total (ft/s)	4.00	Avg. Vel. (ft/s)	1.82	4.84	3.27
Max Chl Dpth (ft)	1.06	Hydr. Depth (ft)	0.33	0.78	0.76
Conv. Total (cfs)	4493.3	Conv. (cfs)	8.5	2544.4	1940.4
Length Wtd. (ft)	484.13	Wetted Per. (ft)	2.50	113.03	131.23
Min Ch El (ft)	2849.60	Shear (lb/sq ft)	0.56	1.39	1.36
Alpha	1.12	Stream Power (lb/ft s)	1.02	6.75	4.43
Frctn Loss (ft)	12.48	Cum Volume (acre-ft)	3.19	64.38	9.83
C & E Loss (ft)	0.03	Cum SA (acres)	3.32	34.02	11.32

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 OUTPUT Profile #Method 1

			Left OB	Channel	Right OB
E.G. Elev (ft)	2851.55	Element			
Vel Head (ft)	0.54	Wt. n-Val.		0.044	
W.S. Elev (ft)	2851.01	Reach Len. (ft)	492.53	488.62	468.84
Crit W.S. (ft)	2850.98	Flow Area (sq ft)		128.41	
E.G. Slope (ft/ft)	0.026471	Area (sq ft)		128.41	
Q Total (cfs)	758.00	Flow (cfs)		758.00	
Top Width (ft)	113.03	Top Width (ft)		113.03	
Vel Total (ft/s)	5.90	Avg. Vel. (ft/s)		5.90	
Max Chl Dpth (ft)	1.41	Hydr. Depth (ft)		1.14	
Conv. Total (cfs)	4658.9	Conv. (cfs)		4658.9	
Length Wtd. (ft)	488.62	Wetted Per. (ft)		115.31	
Min Ch El (ft)	2849.60	Shear (lb/sq ft)		1.84	
Alpha	1.00	Stream Power (lb/ft s)		10.86	
Frctn Loss (ft)	13.06	Cum Volume (acre-ft)	0.21	65.95	0.24
C & E Loss (ft)	0.01	Cum SA (acres)	0.17	34.02	0.13

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: Stagecoach Pass
REACH: StagecoachPass-1 RS: 6.07

INPUT
Description: Topography and Aerial indicate wash and surrounding undeveloped desert.

T6NR5E Section 32
Q100 = 758 cfs

Station Elevation Data num= 14

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9801.1	2846	9832.24	2844	9863.34	2842	9883.71	2840	9910.05	2838
9930	2837.28	9955.58	2836.35	10000	2836.4	10025	2837.11	10056.53	2838
10073.22	2840	10090.21	2842	10107.17	2844	10137.79	2844		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9801.1	.064	9930	.044	10025	.064

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9930	10025	521.46	512.01	504.03	.1	.3

CROSS SECTION OUTPUT Profile #100-yr 6-yr

			Left OB	Channel	Right OB
E.G. Elev (ft)	2838.42	Element			
Vel Head (ft)	0.55	Wt. n-Val.	0.064	0.044	0.064
W.S. Elev (ft)	2837.86	Reach Len. (ft)	521.46	512.01	504.03
Crit W.S. (ft)	2837.86	Flow Area (sq ft)	4.72	120.65	10.06
E.G. Slope (ft/ft)	0.023473	Area (sq ft)	4.72	120.65	10.06
Q Total (cfs)	758.00	Flow (cfs)	7.38	731.97	18.65
Top Width (ft)	137.86	Top Width (ft)	16.17	95.00	26.69
Vel Total (ft/s)	5.60	Avg. Vel. (ft/s)	1.56	6.07	1.85
Max Chl Dpth (ft)	1.51	Hydr. Depth (ft)	0.29	1.27	0.38
Conv. Total (cfs)	4947.5	Conv. (cfs)	48.2	4777.6	121.7
Length Wtd. (ft)	511.88	Wetted Per. (ft)	16.18	95.03	26.70
Min Ch El (ft)	2836.35	Shear (lb/sq ft)	0.43	1.86	0.55
Alpha	1.14	Stream Power (lb/ft s)	0.67	11.29	1.02
Frctn Loss (ft)	11.85	Cum Volume (acre-ft)	3.16	63.20	9.24
C & E Loss (ft)	0.00	Cum SA (acres)	3.21	32.85	10.47

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 energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
depth, the 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 OUTPUT Profile #Method 1

			Left OB	Channel	Right OB
E.G. Elev (ft)	2838.48	Element			
Vel Head (ft)	0.63	Wt. n-Val.		0.044	
W.S. Elev (ft)	2837.84	Reach Len. (ft)	521.46	512.01	504.03
Crit W.S. (ft)	2837.84	Flow Area (sq ft)		118.80	
E.G. Slope (ft/ft)	0.026991	Area (sq ft)		118.80	
Q Total (cfs)	758.00	Flow (cfs)		758.00	
Top Width (ft)	95.00	Top Width (ft)		95.00	
Vel Total (ft/s)	6.38	Avg. Vel. (ft/s)		6.38	
Max Chl Dpth (ft)	1.49	Hydr. Depth (ft)		1.25	
Conv. Total (cfs)	4613.8	Conv. (cfs)		4613.8	
Length Wtd. (ft)	512.01	Wetted Per. (ft)		96.32	
Min Ch El (ft)	2836.35	Shear (lb/sq ft)		2.08	
Alpha	1.00	Stream Power (lb/ft s)		13.26	
Frctn Loss (ft)	13.74	Cum Volume (acre-ft)	0.21	64.56	0.24
C & E Loss (ft)	0.00	Cum SA (acres)	0.17	32.85	0.13

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

depth, the calculated water surface came back below critical depth. This indicates that there is
not a valid subcritical answer. The program defaulted to critical depth.

CROSS SECTION

RIVER: Stagecoach Pass
REACH: StagecoachPass-1 RS: 5.98

INPUT
Description: Topography and Aerial indicate wash and surrounding undeveloped desert.
T6NR5E Section 32
Q100 = 758 cfs
Station Elevation Data num= 13

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9911	2830	9930.87	2828	9942.71	2826	9954.97	2824	9977.45	2823.05
10000	2822.11	10044.44	2822.47	10068.17	2822.98	10091.9	2823.49	10115.63	2824
10135.72	2826	10159.27	2828	10180.35	2830				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9911	.064	9977.45	.044	10068.17	.064

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9977.45	10068.17	380.53	371.19	343.6	.3	.5

CROSS SECTION OUTPUT Profile #100-yr 6-yr

			Left OB	Channel	Right OB
E.G. Elev (ft)	2824.32	Element			
Vel Head (ft)	0.55	Wt. n-Val.	0.064	0.044	0.064
W.S. Elev (ft)	2823.78	Reach Len. (ft)	380.53	371.19	343.60
Crit W.S. (ft)	2823.78	Flow Area (sq ft)	6.22	118.18	14.70
E.G. Slope (ft/ft)	0.022824	Area (sq ft)	6.22	118.18	14.70
Q Total (cfs)	758.00	Flow (cfs)	11.08	719.05	27.87
Top Width (ft)	144.86	Top Width (ft)	17.15	90.72	36.99
Vel Total (ft/s)	5.45	Avg. Vel. (ft/s)	1.78	6.08	1.90
Max Chl Dpth (ft)	1.67	Hydr. Depth (ft)	0.36	1.30	0.40
Conv. Total (cfs)	5017.4	Conv. (cfs)	73.3	4759.5	184.5
Length Wtd. (ft)	367.38	Wetted Per. (ft)	17.17	90.75	36.99
Min Ch El (ft)	2822.10	Shear (lb/sq ft)	0.52	1.86	0.57
Alpha	1.19	Stream Power (lb/ft s)	0.92	11.29	1.07
Frctn Loss (ft)	0.09	Cum Volume (acre-ft)	3.10	61.80	9.10
C & E Loss (ft)	0.27	Cum SA (acres)	3.01	31.76	10.10

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
depth, the 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 OUTPUT Profile #Method 1

			Left OB	Channel	Right OB
E.G. Elev (ft)	2824.41	Element			
Vel Head (ft)	0.65	Wt. n-Val.		0.044	
W.S. Elev (ft)	2823.76	Reach Len. (ft)	380.53	371.19	343.60
Crit W.S. (ft)	2823.76	Flow Area (sq ft)		117.14	
E.G. Slope (ft/ft)	0.026699	Area (sq ft)		117.14	
Q Total (cfs)	758.00	Flow (cfs)		758.00	
Top Width (ft)	90.72	Top Width (ft)		90.72	

Vel Total (ft/s)	6.47	Avg. Vel. (ft/s)		6.47	
Max Chl Dpth (ft)	1.66	Hydr. Depth (ft)		1.29	
Conv. Total (cfs)	4639.0	Conv. (cfs)		4639.0	
Length Wtd. (ft)	371.19	Wetted Per. (ft)		92.24	
Min Ch El (ft)	2822.10	Shear (lb/sq ft)		2.12	
Alpha	1.00	Stream Power (lb/ft s)		13.70	
Frctn Loss (ft)	0.20	Cum Volume (acre-ft)	0.21	63.17	0.24
C & E Loss (ft)	0.31	Cum SA (acres)	0.17	31.76	0.13

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
depth, the 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: Stagecoach Pass
REACH: StagecoachPass-1 RS: 5.91

INPUT
Description: Cross Section 5.91 is located upstream of 102nd Street. There are 2-6 X 3 concrete box culverts located under 102nd Street.

Topography indicates wash and surrounding undeveloped desert.
Aerial shows wash, surrounding undeveloped desert, and 102nd Street.
T6NR5E Section 32
Q100 = 758 cfs
Station Elevation Data num= 14

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9880.61	2820	9903.27	2818	9926.84	2816	9952.44	2814	9964.42	2813
9976.39	2812	10027.84	2812	10067.92	2813	10107.99	2814	10131.17	2814
10164.49	2814	10184.75	2816	10200.87	2818	10219.06	2820		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9880.61	.064	9964.42	.044	10067.92	.064

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9964.42	10067.92	96.23	93.98	97.38	.3	.5

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
9880.61	9964.42	2816.53	F
10067.92	10219.06	2816.53	F

CROSS SECTION OUTPUT Profile #100-yr 6-yr

E.G. Elev (ft)	2817.77	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.01	Wt. n-Val.	0.064	0.044	0.064
W.S. Elev (ft)	2817.76	Reach Len. (ft)	96.23	93.98	97.38
Crit W.S. (ft)	2813.43	Flow Area (sq ft)	139.77	569.83	451.16
E.G. Slope (ft/ft)	0.000071	Area (sq ft)	139.77	569.83	451.16
Q Total (cfs)	758.00	Flow (cfs)	49.05	507.18	201.77
Top Width (ft)	292.78	Top Width (ft)	58.29	103.50	130.99
Vel Total (ft/s)	0.65	Avg. Vel. (ft/s)	0.35	0.89	0.45
Max Chl Dpth (ft)	5.76	Hydr. Depth (ft)	2.40	5.51	3.44
Conv. Total (cfs)	89643.9	Conv. (cfs)	5801.1	59980.5	23862.4

Length Wtd. (ft)	93.98	Wetted Per. (ft)	58.48	103.55	131.21
Min Ch El (ft)	2812.00	Shear (lb/sq ft)	0.01	0.02	0.02
Alpha	1.39	Stream Power (lb/ft s)	0.00	0.02	0.01
Frctn Loss (ft)		Cum Volume (acre-ft)	2.46	58.87	7.26
C & E Loss (ft)		Cum SA (acres)	2.68	30.93	9.44

Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid,
energy was used.

CROSS SECTION OUTPUT Profile #Method 1

E.G. Elev (ft)	2817.98	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.03	Wt. n-Val.		0.044	
W.S. Elev (ft)	2817.96	Reach Len. (ft)	96.23	93.98	97.38
Crit W.S. (ft)	2813.43	Flow Area (sq ft)		590.58	
E.G. Slope (ft/ft)	0.000160	Area (sq ft)		590.58	
Q Total (cfs)	758.00	Flow (cfs)		758.00	
Top Width (ft)	103.50	Top Width (ft)		103.50	
Vel Total (ft/s)	1.28	Avg. Vel. (ft/s)		1.28	
Max Chl Dpth (ft)	5.96	Hydr. Depth (ft)		5.71	
Conv. Total (cfs)	59899.0	Conv. (cfs)		59899.0	
Length Wtd. (ft)	93.98	Wetted Per. (ft)		113.47	
Min Ch El (ft)	2812.00	Shear (lb/sq ft)		0.05	
Alpha	1.00	Stream Power (lb/ft s)		0.07	
Frctn Loss (ft)		Cum Volume (acre-ft)	0.21	60.16	0.24
C & E Loss (ft)		Cum SA (acres)	0.17	30.93	0.13

Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid,
energy was used.

CULVERT

RIVER: Stagecoach Pass
REACH: StagecoachPass-1 RS: 5.9

INPUT
Description: Box culverts at 102nd Street crossing.
Distance from Upstream XS = 11
Deck/Roadway Width = 58
Weir Coefficient = 2.6
Upstream Deck/Roadway Coordinates
num= 5

Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord
9800	2818.09		9915.46	2818.09		10022.04	2816.53	
10090.61	2817.04		10280.61	2817.04				

Upstream Bridge Cross Section Data
Station Elevation Data num= 14

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9880.61	2820	9903.27	2818	9926.84	2816	9952.44	2814	9964.42	2813
9976.39	281210027.84		281210067.92		281310107.99		281410131.17		2814
10164.49	281410184.75		281610200.87		281810219.06		2820		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9880.61	.064	9964.42	.04410067.92		.064

Bank Sta: Left	Right	Coeff Contr.	Expan.
9964.42	10067.92	.3	.5

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
9880.61	9964.42	2816.53	F
10067.92	10219.06	2816.53	F

Downstream Deck/Roadway Coordinates
num= 5

```
     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord
    9800 2818.09         9911.84 2818.09        10018.52 2816.53
10087.14 2817.04           10300 2817.04

Downstream Bridge Cross Section Data
Station Elevation Data    num=      12
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
 9832.45    2818 9850.94    2816 9867.91    2814 9900.53    2812 9930.77    2811
    9961    281010041.39    281010051.25    2811 10061.1    2812 10188.2    2814
10206.81    281610220.25    2818

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
 9832.45    .064 9930.77    .04410051.25    .064

Bank Sta: Left   Right    Coeff Contr.   Expan.
       9930.7710051.25             .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
 9832.45 9930.77 2816.53       F
10051.2510220.25 2816.53       F

Upstream Embankment side slope              =       0 horiz. to 1.0 vertical
Downstream Embankment side slope            =       0 horiz. to 1.0 vertical
Maximum allowable submergence for weir flow =     .95
Elevation at which weir flow begins         =
Energy head used in spillway design         =
Spillway height used in design              =
Weir crest shape                            = Broad Crested

Number of Culverts =  1

Culvert Name      Shape      Rise    Span
CULVERT#1            Box       3       6
FHWA Chart # 8 - flared wingwalls
FHWA Scale # 1 - Wingwall flared 30 to 75 deg.
Solution Criteria = Highest U.S. EG
Culvert Upstrm Dist  Length    Top n  Bottom n  Depth Blocked  Entrance Loss Coef   Exit Loss Coef
                 11      58     .015     .015        0                   .4                 1
Number of Barrels =  2
Upstream   Elevation =  2812.31
Centerline Stations
    Sta.    Sta.
10020.4410027.14
Downstream Elevation =  2811.62
Centerline Stations
    Sta.    Sta.
10016.24 10022.6

CROSS SECTION


RIVER: Stagecoach Pass
REACH: StagecoachPass-1   RS: 5.89

INPUT
Description: Cross Section 5.89 is located downstream of 102nd Street. There
             are 2-6 X 3 concrete box culverts located under 102nd Street.


Topography  indicates wash and surrounding undeveloped
             desert.
Aerial shows wash, surrounding undeveloped desert, and
             102nd Street.
T6NR5E Section 32
Q100 = 758 cfs
Station Elevation Data    num=      12
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
 9832.45    2818 9850.94    2816 9867.91    2814 9900.53    2812 9930.77    2811
    9961    281010041.39    281010051.25    2811 10061.1    2812 10188.2    2814
10206.81    281610220.25    2818
```

```
Manning's n Values          num=        3
     Sta   n Val     Sta   n Val     Sta   n Val
 9832.45    .064 9930.77    .04410051.25    .064

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9930.7710051.25           371.46  393.22   397.4            .3        .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
 9832.45 9930.77 2816.53       F
10051.2510220.25 2816.53       F
```

CROSS SECTION OUTPUT Profile #100-yr 6-yr

E.G. Elev (ft)	2811.78	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.49	Wt. n-Val.		0.044	
W.S. Elev (ft)	2811.29	Reach Len. (ft)	371.46	393.22	397.40
Crit W.S. (ft)	2811.23	Flow Area (sq ft)		134.88	
E.G. Slope (ft/ft)	0.023841	Area (sq ft)	1.24	134.88	0.40
Q Total (cfs)	758.00	Flow (cfs)		758.00	
Top Width (ft)	131.94	Top Width (ft)	8.65	120.48	2.82
Vel Total (ft/s)	5.62	Avg. Vel. (ft/s)		5.62	
Max Chl Dpth (ft)	1.29	Hydr. Depth (ft)		1.12	
Conv. Total (cfs)	4909.2	Conv. (cfs)		4909.2	
Length Wtd. (ft)	393.16	Wetted Per. (ft)		120.55	
Min Ch El (ft)	2810.00	Shear (lb/sq ft)		1.67	
Alpha	1.00	Stream Power (lb/ft s)		9.36	
Frctn Loss (ft)	9.79	Cum Volume (acre-ft)	2.30	58.11	6.76
C & E Loss (ft)	0.02	Cum SA (acres)	2.61	30.69	9.29

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid,
energy was used.

CROSS SECTION OUTPUT Profile #Method 1

E.G. Elev (ft)	2811.78	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.48	Wt. n-Val.		0.044	
W.S. Elev (ft)	2811.30	Reach Len. (ft)	371.46	393.22	397.40
Crit W.S. (ft)	2811.23	Flow Area (sq ft)		136.38	
E.G. Slope (ft/ft)	0.023129	Area (sq ft)		136.38	
Q Total (cfs)	758.00	Flow (cfs)		758.00	
Top Width (ft)	120.48	Top Width (ft)		120.48	
Vel Total (ft/s)	5.56	Avg. Vel. (ft/s)		5.56	
Max Chl Dpth (ft)	1.30	Hydr. Depth (ft)		1.13	
Conv. Total (cfs)	4984.1	Conv. (cfs)		4984.1	
Length Wtd. (ft)	393.22	Wetted Per. (ft)		121.14	
Min Ch El (ft)	2810.00	Shear (lb/sq ft)		1.63	
Alpha	1.00	Stream Power (lb/ft s)		9.03	
Frctn Loss (ft)	9.77	Cum Volume (acre-ft)	0.21	59.37	0.24
C & E Loss (ft)	0.03	Cum SA (acres)	0.17	30.69	0.13

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.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid,
energy was used.

CROSS SECTION

RIVER: Stagecoach Pass
REACH: StagecoachPass-1 RS: 5.81

INPUT

Description: Topography and Aerial indicate wash and surrounding undeveloped desert.
T6NR5E Section 32
Q100 = 758 cfs

Station Elevation Data num= 17

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9694.06	2810	9714.43	2808	9733.95	2806	9748.11	2806	9767.03	2806
9812.41	2804	9865.21	2802	9907.58	2801	9949.94	2800	10009.87	2800
10012.71	2801	10015.54	2802	10021.45	2804	10027.42	2806	10033.43	2808
10039.72	2810	10044.91	2810						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9694.06	.064	9907.58	.044	10012.71	.064

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9907.58	10012.71	555.84	515.5	496.64	.1	.3

CROSS SECTION OUTPUT Profile #100-yr 6-yr

E.G. Elev (ft)	2801.97	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.57	Wt. n-Val.	0.064	0.044	0.064
W.S. Elev (ft)	2801.39	Reach Len. (ft)	555.84	515.50	496.64
Crit W.S. (ft)	2801.39	Flow Area (sq ft)	3.29	123.98	0.22
E.G. Slope (ft/ft)	0.026057	Area (sq ft)	3.29	123.98	0.22
Q Total (cfs)	758.00	Flow (cfs)	4.18	753.55	0.27
Top Width (ft)	122.95	Top Width (ft)	16.71	105.13	1.12
Vel Total (ft/s)	5.95	Avg. Vel. (ft/s)	1.27	6.08	1.22
Max Chl Dpth (ft)	1.39	Hydr. Depth (ft)	0.20	1.18	0.20
Conv. Total (cfs)	4695.7	Conv. (cfs)	25.9	4668.2	1.7
Length Wtd. (ft)	515.60	Wetted Per. (ft)	16.71	105.31	1.18
Min Ch El (ft)	2800.00	Shear (lb/sq ft)	0.32	1.92	0.30
Alpha	1.04	Stream Power (lb/ft s)	0.41	11.64	0.37
Frctn Loss (ft)	12.08	Cum Volume (acre-ft)	2.28	56.94	6.75
C & E Loss (ft)	0.01	Cum SA (acres)	2.50	29.67	9.27

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.

CROSS SECTION OUTPUT Profile #Method 1

E.G. Elev (ft)	2801.98	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.58	Wt. n-Val.		0.044	
W.S. Elev (ft)	2801.39	Reach Len. (ft)	555.84	515.50	496.64
Crit W.S. (ft)	2801.38	Flow Area (sq ft)		123.80	
E.G. Slope (ft/ft)	0.026757	Area (sq ft)		123.80	
Q Total (cfs)	758.00	Flow (cfs)		758.00	
Top Width (ft)	105.13	Top Width (ft)		105.13	
Vel Total (ft/s)	6.12	Avg. Vel. (ft/s)		6.12	
Max Chl Dpth (ft)	1.39	Hydr. Depth (ft)		1.18	
Conv. Total (cfs)	4633.9	Conv. (cfs)		4633.9	
Length Wtd. (ft)	515.50	Wetted Per. (ft)		106.10	
Min Ch El (ft)	2800.00	Shear (lb/sq ft)		1.95	
Alpha	1.00	Stream Power (lb/ft s)		11.93	
Frctn Loss (ft)	12.16	Cum Volume (acre-ft)	0.21	58.20	0.24
C & E Loss (ft)	0.02	Cum SA (acres)	0.17	29.67	0.13

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: Stagecoach Pass
REACH: StagecoachPass-1 RS: 5.72

INPUT
Description: Topography and Aerial indicate wash and surrounding undeveloped desert.
T6NR5E Section 32
Q100 = 758 cfs
Station Elevation Data num= 23

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9842.7	2798	9861.8	2796	9878.18	2796	9914.64	2796	9931.19	2794
9946.28	2792	9960.24	2790	9967.7	2789	9975.16	2788	10000	2787
10028.21	2788	10067.3	2789	10106.38	2790	10145.71	2792	10161.76	2792
10225.92	2792	10241.1	2794	10253.99	2796	10263.92	2798	10276.66	2800
10329.45	2802	10341.15	2802	10364.91	2800				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9842.7	.064	9967.7	.044	10067.3	.064

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9967.7	10067.3	341.05	382.86	397.4	.1	.3

CROSS SECTION OUTPUT Profile #100-yr 6-yr

			Left OB	Channel	Right OB
E.G. Elev (ft)	2789.80	Element			
Vel Head (ft)	0.53	Wt. n-Val.	0.064	0.044	0.064
W.S. Elev (ft)	2789.27	Reach Len. (ft)	341.05	382.86	397.40
Crit W.S. (ft)	2789.19	Flow Area (sq ft)	0.27	129.40	1.39
E.G. Slope (ft/ft)	0.021174	Area (sq ft)	0.27	129.40	1.39
Q Total (cfs)	758.00	Flow (cfs)	0.23	756.54	1.22
Top Width (ft)	112.01	Top Width (ft)	1.99	99.60	10.42
Vel Total (ft/s)	5.78	Avg. Vel. (ft/s)	0.88	5.85	0.88
Max Chl Dpth (ft)	2.27	Hydr. Depth (ft)	0.13	1.30	0.13
Conv. Total (cfs)	5209.2	Conv. (cfs)	1.6	5199.2	8.4
Length Wtd. (ft)	382.86	Wetted Per. (ft)	2.01	99.72	10.42
Min Ch El (ft)	2787.00	Shear (lb/sq ft)	0.17	1.72	0.18
Alpha	1.02	Stream Power (lb/ft s)	0.15	10.03	0.16
Frctn Loss (ft)	8.90	Cum Volume (acre-ft)	2.26	55.44	6.74
C & E Loss (ft)	0.02	Cum SA (acres)	2.38	28.46	9.21

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 OUTPUT Profile #Method 1

			Left OB	Channel	Right OB
E.G. Elev (ft)	2789.80	Element			
Vel Head (ft)	0.53	Wt. n-Val.		0.044	
W.S. Elev (ft)	2789.28	Reach Len. (ft)	341.05	382.86	397.40
Crit W.S. (ft)	2789.18	Flow Area (sq ft)		130.23	
E.G. Slope (ft/ft)	0.020962	Area (sq ft)		130.23	
Q Total (cfs)	758.00	Flow (cfs)		758.00	
Top Width (ft)	99.60	Top Width (ft)		99.60	
Vel Total (ft/s)	5.82	Avg. Vel. (ft/s)		5.82	
Max Chl Dpth (ft)	2.27	Hydr. Depth (ft)		1.31	
Conv. Total (cfs)	5235.5	Conv. (cfs)		5235.5	
Length Wtd. (ft)	382.86	Wetted Per. (ft)		100.27	
Min Ch El (ft)	2787.00	Shear (lb/sq ft)		1.70	
Alpha	1.00	Stream Power (lb/ft s)		9.89	
Frctn Loss (ft)	8.91	Cum Volume (acre-ft)	0.21	56.70	0.24
C & E Loss (ft)	0.02	Cum SA (acres)	0.17	28.46	0.13

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: Stagecoach Pass
REACH: StagecoachPass-1 RS: 5.64

INPUT
Description: Topography indicates wash and surrounding undeveloped desert.
Aerial shows wash, dirt road, and surrounding undeveloped desert.
T6NR5E Section 32
Q100 = 758 cfs
Station Elevation Data num= 10

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9824.97	2788	9849.63	2786	9875.38	2784	9902.66	2782	9943.3	2780
9983.71	2778	10005.03	2778	10021.34	2780	10042.78	2782	10104.71	2784

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9824.97	.064	9943.3	.044	10021.34	.064

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9943.3	10021.34	162.68	161.27	158.95	.1	.3

CROSS SECTION OUTPUT Profile #100-yr 6-yr

E.G. Elev (ft)	2780.87	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.72	Wt. n-Val.	0.064	0.044	0.064
W.S. Elev (ft)	2780.15	Reach Len. (ft)	162.68	161.27	158.95
Crit W.S. (ft)	2780.15	Flow Area (sq ft)	0.23	110.98	0.12
E.G. Slope (ft/ft)	0.025635	Area (sq ft)	0.23	110.98	0.12
Q Total (cfs)	758.00	Flow (cfs)	0.15	757.77	0.08
Top Width (ft)	82.66	Top Width (ft)	3.03	78.04	1.60
Vel Total (ft/s)	6.81	Avg. Vel. (ft/s)	0.66	6.83	0.66
Max Chl Dpth (ft)	2.15	Hydr. Depth (ft)	0.07	1.42	0.07
Conv. Total (cfs)	4734.2	Conv. (cfs)	0.9	4732.8	0.5
Length Wtd. (ft)	161.27	Wetted Per. (ft)	3.03	78.21	1.60
Min Ch El (ft)	2778.00	Shear (lb/sq ft)	0.12	2.27	0.12
Alpha	1.01	Stream Power (lb/ft s)	0.08	15.51	0.08
Frctn Loss (ft)	4.00	Cum Volume (acre-ft)	2.26	54.38	6.74
C & E Loss (ft)	0.06	Cum SA (acres)	2.36	27.68	9.15

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.

CROSS SECTION OUTPUT Profile #Method 1

E.G. Elev (ft)	2780.87	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.73	Wt. n-Val.		0.044	
W.S. Elev (ft)	2780.15	Reach Len. (ft)	162.68	161.27	158.95
Crit W.S. (ft)	2780.15	Flow Area (sq ft)		110.73	
E.G. Slope (ft/ft)	0.025971	Area (sq ft)		110.73	
Q Total (cfs)	758.00	Flow (cfs)		758.00	
Top Width (ft)	78.04	Top Width (ft)		78.04	
Vel Total (ft/s)	6.85	Avg. Vel. (ft/s)		6.85	
Max Chl Dpth (ft)	2.15	Hydr. Depth (ft)		1.42	
Conv. Total (cfs)	4703.5	Conv. (cfs)		4703.5	
Length Wtd. (ft)	161.27	Wetted Per. (ft)		78.50	

Min Ch El (ft)	2778.00	Shear (lb/sq ft)		2.29	
Alpha	1.00	Stream Power (lb/ft s)		15.66	
Frctn Loss (ft)	4.09	Cum Volume (acre-ft)	0.21	55.64	0.24
C & E Loss (ft)	0.06	Cum SA (acres)	0.17	27.68	0.13

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.

CROSS SECTION

RIVER: Stagecoach Pass
REACH: StagecoachPass-1 RS: 5.61

INPUT
Description: A portion of cross section 5.61 is located within
Mirabel.

Topography and aerial indicate wash and surrounding
undeveloped desert.
T6NR5E Section 32
Q100 = 758 cfs
Station Elevation Data num= 12

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9868.06	2784	9881.98	2782	9901.04	2780	9921.1	2778	9951.6	2776
9979.14	2774.46	10000	2774.21	10012.81	2774.63	10060.54	2776	10090.76	2778
10113.89	2780	10127.8	2780						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9868.06	.064	9951.6	.044	10060.54	.064

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9951.61	10060.54	337.12	323.15	291.38	.1	.3

CROSS SECTION OUTPUT Profile #100-yr 6-yr

E.G. Elev (ft)	2776.72	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.53	Wt. n-Val.	0.064	0.044	0.064
W.S. Elev (ft)	2776.19	Reach Len. (ft)	337.12	323.15	291.38
Crit W.S. (ft)	2776.14	Flow Area (sq ft)	0.26	129.21	0.26
E.G. Slope (ft/ft)	0.024034	Area (sq ft)	0.26	129.21	0.26
Q Total (cfs)	758.00	Flow (cfs)	0.19	757.62	0.19
Top Width (ft)	114.56	Top Width (ft)	2.82	108.94	2.80
Vel Total (ft/s)	5.84	Avg. Vel. (ft/s)	0.74	5.86	0.74
Max Chl Dpth (ft)	1.99	Hydr. Depth (ft)	0.09	1.19	0.09
Conv. Total (cfs)	4889.4	Conv. (cfs)	1.2	4886.9	1.2
Length Wtd. (ft)	323.15	Wetted Per. (ft)	2.83	109.01	2.80
Min Ch El (ft)	2774.20	Shear (lb/sq ft)	0.14	1.78	0.14
Alpha	1.01	Stream Power (lb/ft s)	0.10	10.43	0.10
Frctn Loss (ft)	7.53	Cum Volume (acre-ft)	2.26	53.94	6.74
C & E Loss (ft)	0.04	Cum SA (acres)	2.35	27.33	9.15

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 OUTPUT Profile #Method 1

E.G. Elev (ft)	2776.72	Element	Left OB	Channel	Right OB

Vel Head (ft)	0.54	Wt. n-Val.		0.044	
W.S. Elev (ft)	2776.18	Reach Len. (ft)	337.12	323.15	291.38
Crit W.S. (ft)	2776.13	Flow Area (sq ft)		128.30	
E.G. Slope (ft/ft)	0.024735	Area (sq ft)		128.30	
Q Total (cfs)	758.00	Flow (cfs)		758.00	
Top Width (ft)	108.94	Top Width (ft)		108.94	
Vel Total (ft/s)	5.91	Avg. Vel. (ft/s)		5.91	
Max Chl Dpth (ft)	1.98	Hydr. Depth (ft)		1.18	
Conv. Total (cfs)	4819.6	Conv. (cfs)		4819.6	
Length Wtd. (ft)	323.15	Wetted Per. (ft)		109.37	
Min Ch El (ft)	2774.20	Shear (lb/sq ft)		1.81	
Alpha	1.00	Stream Power (lb/ft s)		10.70	
Frctn Loss (ft)	7.52	Cum Volume (acre-ft)	0.21	55.20	0.24
C & E Loss (ft)	0.05	Cum SA (acres)	0.17	27.33	0.13

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: Stagecoach Pass
REACH: StagecoachPass-1 RS: 5.55

INPUT
Description: Cross Section 5.55 is located within Mirabel.

Topography and
aerial indicate wash and surrounding undeveloped desert.
T6NR5E
Section 32
Q100 = 758 cfs
Station Elevation Data num= 16

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9898.1	2774	9953.04	2772	9963.38	2770	9968.81	2769	9971.53	2768.5
9974.24	2768	10000	2766.7	10042.33	2768	10052.3	2768	10101.13	2768
10123.8	2768.6	910140.12	2769.1	810191.81	2770	10210.72	2772	10227.95	2774
10238.03	2774								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9898.1	.064	9971.53	.044	10123.8	.064

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9971.53	10123.8	228.59	215.69	208.49	.1	.3

CROSS SECTION OUTPUT Profile #100-yr 6-yr

E.G. Elev (ft)	2769.15	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.39	Wt. n-Val.	0.064	0.044	0.064
W.S. Elev (ft)	2768.75	Reach Len. (ft)	228.59	215.69	208.49
Crit W.S. (ft)	2768.67	Flow Area (sq ft)	0.17	150.45	0.07
E.G. Slope (ft/ft)	0.022629	Area (sq ft)	0.17	150.45	0.07
Q Total (cfs)	758.00	Flow (cfs)	0.15	757.82	0.02
Top Width (ft)	155.75	Top Width (ft)	1.38	152.27	2.11
Vel Total (ft/s)	5.03	Avg. Vel. (ft/s)	0.87	5.04	0.35
Max Chl Dpth (ft)	2.05	Hydr. Depth (ft)	0.13	0.99	0.03
Conv. Total (cfs)	5038.9	Conv. (cfs)	1.0	5037.7	0.2
Length Wtd. (ft)	215.69	Wetted Per. (ft)	1.40	152.38	2.11
Min Ch El (ft)	2766.70	Shear (lb/sq ft)	0.18	1.39	0.04
Alpha	1.00	Stream Power (lb/ft s)	0.15	7.03	0.02
Frctn Loss (ft)	5.26	Cum Volume (acre-ft)	2.26	52.90	6.74
C & E Loss (ft)	0.02	Cum SA (acres)	2.33	26.36	9.13

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 OUTPUT Profile #Method 1

E.G. Elev (ft)	2769.15	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.39	Wt. n-Val.		0.044	
W.S. Elev (ft)	2768.76	Reach Len. (ft)	228.59	215.69	208.49
Crit W.S. (ft)	2768.68	Flow Area (sq ft)		152.05	
E.G. Slope (ft/ft)	0.021920	Area (sq ft)		152.05	
Q Total (cfs)	758.00	Flow (cfs)		758.00	
Top Width (ft)	152.27	Top Width (ft)		152.27	
Vel Total (ft/s)	4.99	Avg. Vel. (ft/s)		4.99	
Max Chl Dpth (ft)	2.06	Hydr. Depth (ft)		1.00	
Conv. Total (cfs)	5119.7	Conv. (cfs)		5119.7	
Length Wtd. (ft)	215.69	Wetted Per. (ft)		152.72	
Min Ch El (ft)	2766.70	Shear (lb/sq ft)		1.36	
Alpha	1.00	Stream Power (lb/ft s)		6.79	
Frctn Loss (ft)	5.26	Cum Volume (acre-ft)	0.21	54.16	0.24
C & E Loss (ft)	0.02	Cum SA (acres)	0.17	26.37	0.13

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: Stagecoach Pass
REACH: StagecoachPass-1 RS: 5.51

INPUT
Description: Cross Section 5.51 is located within Mirabel.

Topography and
aerial indicate wash and surrounding undeveloped desert.
T6NR5E
Section 32
Q100 = 758 cfs
Station Elevation Data num= 13

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9816.8	2770	9834.64	2768	9893.37	2766	9924.81	2764	9948.16	2763
9971.51	2762	10000	2761.5	10030.84	2762	10050.28	2763	10069.71	2764
10087.35	2766	10102.92	2768	10122.94	2770				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9816.8	.064	9948.16	.044	10050.28	.064

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9948.16	10050.28	249.39	264.64	289.79	.1	.3

CROSS SECTION OUTPUT Profile #100-yr 6-yr

E.G. Elev (ft)	2763.86	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.59	Wt. n-Val.	0.064	0.044	0.064
W.S. Elev (ft)	2763.26	Reach Len. (ft)	249.39	264.64	289.79
Crit W.S. (ft)	2763.26	Flow Area (sq ft)	0.80	122.31	0.67
E.G. Slope (ft/ft)	0.026397	Area (sq ft)	0.80	122.31	0.67
Q Total (cfs)	758.00	Flow (cfs)	0.78	756.57	0.65
Top Width (ft)	113.33	Top Width (ft)	6.12	102.12	5.09
Vel Total (ft/s)	6.12	Avg. Vel. (ft/s)	0.97	6.19	0.97
Max Chl Dpth (ft)	1.76	Hydr. Depth (ft)	0.13	1.20	0.13
Conv. Total (cfs)	4665.5	Conv. (cfs)	4.8	4656.7	4.0
Length Wtd. (ft)	264.64	Wetted Per. (ft)	6.12	102.18	5.10
Min Ch El (ft)	2761.50	Shear (lb/sq ft)	0.22	1.97	0.22
Alpha	1.02	Stream Power (lb/ft s)	0.21	12.20	0.21
Frctn Loss (ft)	6.02	Cum Volume (acre-ft)	2.25	52.23	6.73
C & E Loss (ft)	0.04	Cum SA (acres)	2.32	25.73	9.11

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.

CROSS SECTION OUTPUT Profile #Method 1

E.G. Elev (ft)	2763.86	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.60	Wt. n-Val.		0.044	
W.S. Elev (ft)	2763.25	Reach Len. (ft)	249.39	264.64	289.79
Crit W.S. (ft)	2763.25	Flow Area (sq ft)		121.46	
E.G. Slope (ft/ft)	0.027297	Area (sq ft)		121.46	
Q Total (cfs)	758.00	Flow (cfs)		758.00	
Top Width (ft)	102.12	Top Width (ft)		102.12	
Vel Total (ft/s)	6.24	Avg. Vel. (ft/s)		6.24	
Max Chl Dpth (ft)	1.75	Hydr. Depth (ft)		1.19	
Conv. Total (cfs)	4587.8	Conv. (cfs)		4587.8	
Length Wtd. (ft)	264.64	Wetted Per. (ft)		102.68	
Min Ch El (ft)	2761.50	Shear (lb/sq ft)		2.02	
Alpha	1.00	Stream Power (lb/ft s)		12.58	
Frctn Loss (ft)	6.13	Cum Volume (acre-ft)	0.21	53.48	0.24
C & E Loss (ft)	0.04	Cum SA (acres)	0.17	25.74	0.13

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.

CROSS SECTION

RIVER: Stagecoach Pass
REACH: StagecoachPass-1 RS: 5.46

INPUT
Description: Cross Section 5.46 is located within Mirabel.

Topography and
aerial indicate wash and surrounding undeveloped desert.
T6NR5E
Section 32
Q100 = 758 cfs
Station Elevation Data num= 17

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9806.15	2768	9828.42	2766	9851.38	2764	9871.36	2762	9895.84	2760
9925.16	2758	9944.29	2757	9963.42	2756	10000	2755.2	10020.34	2756
10028.07	2756	10054.19	2756	10058.25	2757	10062.3	2758	10070.75	2760
10080.09	2762	10090.36	2764						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9806.15	.064	9944.29	.044	10058.25	.064

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9944.29	10058.25	167.77	172.64	180.13	.1	.3

CROSS SECTION OUTPUT Profile #100-yr 6-yr

E.G. Elev (ft)	2757.58	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.46	Wt. n-Val.	0.064	0.044	0.064
W.S. Elev (ft)	2757.13	Reach Len. (ft)	167.77	172.64	180.13
Crit W.S. (ft)	2757.01	Flow Area (sq ft)	0.15	139.44	0.03
E.G. Slope (ft/ft)	0.019836	Area (sq ft)	0.15	139.44	0.03
Q Total (cfs)	758.00	Flow (cfs)	0.08	757.91	0.02
Top Width (ft)	116.87	Top Width (ft)	2.40	113.96	0.51
Vel Total (ft/s)	5.43	Avg. Vel. (ft/s)	0.52	5.44	0.51
Max Chl Dpth (ft)	1.93	Hydr. Depth (ft)	0.06	1.22	0.06
Conv. Total (cfs)	5382.0	Conv. (cfs)	0.6	5381.4	0.1
Length Wtd. (ft)	172.64	Wetted Per. (ft)	2.40	114.13	0.52
Min Ch El (ft)	2755.20	Shear (lb/sq ft)	0.08	1.51	0.08
Alpha	1.00	Stream Power (lb/ft s)	0.04	8.22	0.04
Frctn Loss (ft)	3.93	Cum Volume (acre-ft)	2.25	51.43	6.73
C & E Loss (ft)	0.02	Cum SA (acres)	2.29	25.08	9.09

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.

CROSS SECTION OUTPUT Profile #Method 1

E.G. Elev (ft)	2757.58	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.46	Wt. n-Val.		0.044	
W.S. Elev (ft)	2757.13	Reach Len. (ft)	167.77	172.64	180.13
Crit W.S. (ft)	2757.01	Flow Area (sq ft)		139.38	
E.G. Slope (ft/ft)	0.019925	Area (sq ft)		139.38	
Q Total (cfs)	758.00	Flow (cfs)		758.00	
Top Width (ft)	113.96	Top Width (ft)		113.96	
Vel Total (ft/s)	5.44	Avg. Vel. (ft/s)		5.44	
Max Chl Dpth (ft)	1.93	Hydr. Depth (ft)		1.22	
Conv. Total (cfs)	5369.9	Conv. (cfs)		5369.9	
Length Wtd. (ft)	172.64	Wetted Per. (ft)		114.38	
Min Ch El (ft)	2755.20	Shear (lb/sq ft)		1.52	
Alpha	1.00	Stream Power (lb/ft s)		8.24	
Frctn Loss (ft)	3.93	Cum Volume (acre-ft)	0.21	52.69	0.24
C & E Loss (ft)	0.02	Cum SA (acres)	0.17	25.08	0.13

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: Stagecoach Pass
REACH: StagecoachPass-1 RS: 5.43

INPUT
Description: Cross Section 5.43 is located within Mirabel.

Topography and
aerial indicate wash and surrounding undeveloped desert.
T6NR5E
Section 32
Q100 = 758 cfs
Station Elevation Data num= 14

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9812.66	2762	9832.09	2760	9850.29	2758	9870.51	2756	9918.18	2754
9938.8	2753	9959.33	2752	10000	2750.6	10021.45	2752	10026.2	2753.01
10030.87	2754	10038.44	2756	10045.74	2758	10053.11	2760		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9812.66	.064	9938.8	.044	10026.2	.064

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9938.8	10026.2	347.43	330.83	326.15	.1	.3

CROSS SECTION OUTPUT Profile #100-yr 6-yr

E.G. Elev (ft)	2753.64	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.68	Wt. n-Val.		0.044	
W.S. Elev (ft)	2752.96	Reach Len. (ft)	347.43	330.83	326.15
Crit W.S. (ft)	2752.96	Flow Area (sq ft)		114.59	
E.G. Slope (ft/ft)	0.026366	Area (sq ft)		114.59	
Q Total (cfs)	758.00	Flow (cfs)		758.00	
Top Width (ft)	86.30	Top Width (ft)		86.30	
Vel Total (ft/s)	6.61	Avg. Vel. (ft/s)		6.61	
Max Chl Dpth (ft)	2.36	Hydr. Depth (ft)		1.33	
Conv. Total (cfs)	4668.2	Conv. (cfs)		4668.2	
Length Wtd. (ft)	329.64	Wetted Per. (ft)		86.49	
Min Ch El (ft)	2750.60	Shear (lb/sq ft)		2.18	
Alpha	1.00	Stream Power (lb/ft s)		14.43	
Frctn Loss (ft)	7.56	Cum Volume (acre-ft)	2.25	50.93	6.73
C & E Loss (ft)	0.12	Cum SA (acres)	2.29	24.68	9.09

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.

CROSS SECTION OUTPUT Profile #Method 1

E.G. Elev (ft)	2753.64	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.68	Wt. n-Val.		0.044	
W.S. Elev (ft)	2752.96	Reach Len. (ft)	347.43	330.83	326.15
Crit W.S. (ft)	2752.96	Flow Area (sq ft)		114.78	
E.G. Slope (ft/ft)	0.026243	Area (sq ft)		114.78	
Q Total (cfs)	758.00	Flow (cfs)		758.00	
Top Width (ft)	86.36	Top Width (ft)		86.36	
Vel Total (ft/s)	6.60	Avg. Vel. (ft/s)		6.60	
Max Chl Dpth (ft)	2.36	Hydr. Depth (ft)		1.33	
Conv. Total (cfs)	4679.1	Conv. (cfs)		4679.1	
Length Wtd. (ft)	330.83	Wetted Per. (ft)		86.55	
Min Ch El (ft)	2750.60	Shear (lb/sq ft)		2.17	
Alpha	1.00	Stream Power (lb/ft s)		14.35	
Frctn Loss (ft)	7.99	Cum Volume (acre-ft)	0.21	52.18	0.24
C & E Loss (ft)	0.00	Cum SA (acres)	0.17	24.68	0.13

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.

CROSS SECTION

RIVER: Stagecoach Pass
REACH: StagecoachPass-1 RS: 5.37

INPUT
Description: Cross Section 5.37 is located within Mirabel. This section is located upstream of concentration point CSCP09 in the HEC-1

model.

Topography and aerial indicate wash and surrounding
undeveloped desert.
T6NR5E Section 32
Q100 = 758 cfs
Station Elevation Data num= 18

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9884.09	2752	9927.63	2750	9965.03	2748	9978.22	2746	9988.38	2744
10000	2742.4	10012.8	2742.6	110059.89	2744	10084.76	2744	10113.71	2742
10127.07	2742	10162.51	2744	10178.5	2746	10194.14	2748	10209.62	2750
10225.74	2752	10239.28	2754	10252.74	2756				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9884.09	.064	9988.38	.044	10059.89	.064

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9988.38	10059.89	488.63	493.75	498.6	.1	.3

CROSS SECTION OUTPUT Profile #100-yr 6-yr

			Left OB	Channel	Right OB
E.G. Elev (ft)	2744.48	Element			
Vel Head (ft)	0.28	Wt. n-Val.	0.064	0.044	0.064
W.S. Elev (ft)	2744.20	Reach Len. (ft)	488.63	493.75	498.60
Crit W.S. (ft)	2743.91	Flow Area (sq ft)	0.10	75.32	111.59
E.G. Slope (ft/ft)	0.020153	Area (sq ft)	0.10	75.32	111.59
Q Total (cfs)	758.00	Flow (cfs)	0.07	373.32	384.61
Top Width (ft)	176.72	Top Width (ft)	1.01	71.51	104.20
Vel Total (ft/s)	4.05	Avg. Vel. (ft/s)	0.70	4.96	3.45
Max Chl Dpth (ft)	2.20	Hydr. Depth (ft)	0.10	1.05	1.07
Conv. Total (cfs)	5339.5	Conv. (cfs)	0.5	2629.7	2709.3
Length Wtd. (ft)	494.91	Wetted Per. (ft)	1.03	71.64	104.34
Min Ch El (ft)	2742.40	Shear (lb/sq ft)	0.12	1.32	1.35
Alpha	1.10	Stream Power (lb/ft s)	0.09	6.56	4.64
Frctn Loss (ft)	11.80	Cum Volume (acre-ft)	2.25	50.21	6.31
C & E Loss (ft)	0.02	Cum SA (acres)	2.28	24.08	8.70

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 OUTPUT Profile #Method 1

			Left OB	Channel	Right OB
E.G. Elev (ft)	2745.42	Element			
Vel Head (ft)	0.70	Wt. n-Val.		0.044	
W.S. Elev (ft)	2744.72	Reach Len. (ft)	488.63	493.75	498.60
Crit W.S. (ft)	2744.65	Flow Area (sq ft)		112.61	
E.G. Slope (ft/ft)	0.022324	Area (sq ft)		112.61	
Q Total (cfs)	758.00	Flow (cfs)		758.00	
Top Width (ft)	71.51	Top Width (ft)		71.51	
Vel Total (ft/s)	6.73	Avg. Vel. (ft/s)		6.73	
Max Chl Dpth (ft)	2.32	Hydr. Depth (ft)		1.57	
Conv. Total (cfs)	5073.2	Conv. (cfs)		5073.2	
Length Wtd. (ft)	493.75	Wetted Per. (ft)		73.08	
Min Ch El (ft)	2742.40	Shear (lb/sq ft)		2.15	
Alpha	1.00	Stream Power (lb/ft s)		14.46	
Frctn Loss (ft)	12.72	Cum Volume (acre-ft)	0.21	51.32	0.24
C & E Loss (ft)	0.06	Cum SA (acres)	0.17	24.08	0.13

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: Stagecoach Pass
REACH: StagecoachPass-1 RS: 5.27

INPUT
Description: Topography and aerial indicate wash and surrounding undeveloped desert.
T6NR5E Section 32
Q100 = 844 cfs

Station Elevation Data num= 15

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9825.37	2742	9836.86	2740	9848.03	2738	9860.24	2736	9877.25	2734
9950.19	2732	9982.57	2730.56	10000	2730.1	10026.9	2731.05	10101.45	2732
10119.97	2734	10138.4	2736	10158.02	2738	10188.64	2740	10206.71	2742

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9825.37	.064	9950.19	.044	10101.45	.064

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9950.19	10101.45	450.97	481.66	511.67	.1	.3

CROSS SECTION OUTPUT Profile #100-yr 6-yr

E.G. Elev (ft)	2732.65	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.49	Wt. n-Val.	0.064	0.044	0.064
W.S. Elev (ft)	2732.16	Reach Len. (ft)	450.97	481.66	511.67
Crit W.S. (ft)	2732.16	Flow Area (sq ft)	0.45	149.94	0.11
E.G. Slope (ft/ft)	0.028096	Area (sq ft)	0.45	149.94	0.11
Q Total (cfs)	844.00	Flow (cfs)	0.32	843.60	0.08
Top Width (ft)	158.45	Top Width (ft)	5.73	151.26	1.46
Vel Total (ft/s)	5.61	Avg. Vel. (ft/s)	0.71	5.63	0.71
Max Chl Dpth (ft)	2.06	Hydr. Depth (ft)	0.08	0.99	0.08
Conv. Total (cfs)	5035.2	Conv. (cfs)	1.9	5032.8	0.5
Length Wtd. (ft)	481.63	Wetted Per. (ft)	5.74	151.32	1.46
Min Ch El (ft)	2730.10	Shear (lb/sq ft)	0.14	1.74	0.14
Alpha	1.01	Stream Power (lb/ft s)	0.10	9.78	0.10
Frctn Loss (ft)	11.18	Cum Volume (acre-ft)	2.25	48.93	5.67
C & E Loss (ft)	0.05	Cum SA (acres)	2.24	22.82	8.10

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.

CROSS SECTION OUTPUT Profile #Method 1

E.G. Elev (ft)	2732.65	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.51	Wt. n-Val.		0.044	
W.S. Elev (ft)	2732.14	Reach Len. (ft)	450.97	481.66	511.67
Crit W.S. (ft)	2732.14	Flow Area (sq ft)		147.80	
E.G. Slope (ft/ft)	0.029579	Area (sq ft)		147.80	
Q Total (cfs)	844.00	Flow (cfs)		844.00	
Top Width (ft)	151.26	Top Width (ft)		151.26	
Vel Total (ft/s)	5.71	Avg. Vel. (ft/s)		5.71	
Max Chl Dpth (ft)	2.04	Hydr. Depth (ft)		0.98	
Conv. Total (cfs)	4907.4	Conv. (cfs)		4907.4	
Length Wtd. (ft)	481.66	Wetted Per. (ft)		151.61	
Min Ch El (ft)	2730.10	Shear (lb/sq ft)		1.80	
Alpha	1.00	Stream Power (lb/ft s)		10.28	
Frctn Loss (ft)	11.34	Cum Volume (acre-ft)	0.21	49.84	0.24
C & E Loss (ft)	0.06	Cum SA (acres)	0.17	22.82	0.13

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: Stagecoach Pass
REACH: StagecoachPass-1 RS: 5.18

INPUT
Description: Topography and aerial indicate wash and surrounding undeveloped desert.
T6NR5E Section 32
Q100 = 844 cfs
Station Elevation Data num= 18

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9774.69	2728	9803.26	2726	9819.05	2724	9831.46	2722	9847.48	2721
9855.5	2720.5	9863.49	2720	9914.17	2720	9997.98	2720	10057.76	2720
10059.4	2720.5	110061.01	2721	10064.25	2722	10071.01	2724	10087.55	2724
10098.22	2722	10109.09	2720	10113.17	2720				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9774.69	.064	9855.5	.044	10059.4	.064

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9855.5	10059.4	292.43	326.88	332.47	.1	.3

Right Levee Station=10071.01 Elevation= 2724

CROSS SECTION OUTPUT Profile #100-yr 6-yr

			Left OB	Channel	Right OB
E.G. Elev (ft)	2721.25	Element			
Vel Head (ft)	0.31	Wt. n-Val.	0.064	0.044	0.064
W.S. Elev (ft)	2720.94	Reach Len. (ft)	292.43	326.88	332.47
Crit W.S. (ft)	2720.83	Flow Area (sq ft)	1.52	188.34	0.30
E.G. Slope (ft/ft)	0.019487	Area (sq ft)	1.52	188.34	0.30
Q Total (cfs)	844.00	Flow (cfs)	1.78	841.88	0.33
Top Width (ft)	212.28	Top Width (ft)	6.99	203.90	1.40
Vel Total (ft/s)	4.44	Avg. Vel. (ft/s)	1.17	4.47	1.12
Max Chl Dpth (ft)	0.94	Hydr. Depth (ft)	0.22	0.92	0.21
Conv. Total (cfs)	6046.0	Conv. (cfs)	12.8	6030.9	2.4
Length Wtd. (ft)	326.84	Wetted Per. (ft)	7.00	203.99	1.46
Min Ch El (ft)	2720.00	Shear (lb/sq ft)	0.26	1.12	0.25
Alpha	1.01	Stream Power (lb/ft s)	0.31	5.02	0.28
Frctn Loss (ft)	7.26	Cum Volume (acre-ft)	2.24	47.06	5.67
C & E Loss (ft)	0.04	Cum SA (acres)	2.18	20.86	8.08

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.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water
surface was used.

CROSS SECTION OUTPUT Profile #Method 1

			Left OB	Channel	Right OB
E.G. Elev (ft)	2721.25	Element			
Vel Head (ft)	0.31	Wt. n-Val.		0.044	
W.S. Elev (ft)	2720.94	Reach Len. (ft)	292.43	326.88	332.47
Crit W.S. (ft)	2720.83	Flow Area (sq ft)		189.84	
E.G. Slope (ft/ft)	0.019186	Area (sq ft)		189.84	
Q Total (cfs)	844.00	Flow (cfs)		844.00	
Top Width (ft)	203.90	Top Width (ft)		203.90	
Vel Total (ft/s)	4.45	Avg. Vel. (ft/s)		4.45	
Max Chl Dpth (ft)	0.94	Hydr. Depth (ft)		0.93	
Conv. Total (cfs)	6093.3	Conv. (cfs)		6093.3	
Length Wtd. (ft)	326.88	Wetted Per. (ft)		204.87	
Min Ch El (ft)	2720.00	Shear (lb/sq ft)		1.11	
Alpha	1.00	Stream Power (lb/ft s)		4.93	
Frctn Loss (ft)	7.26	Cum Volume (acre-ft)	0.21	47.98	0.24
C & E Loss (ft)	0.04	Cum SA (acres)	0.17	20.86	0.13

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.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water
surface was used.

CROSS SECTION

RIVER: Stagecoach Pass
REACH: StagecoachPass-1 RS: 5.12

INPUT
Description: Topography and aerial indicate wash and surrounding undeveloped
desert.
T6NR5E Section 32
Q100 = 844 cfs
Station Elevation Data num= 21

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9757.75	2734	9773.52	2732	9784.58	2730	9794.83	2728	9807.7	2726
9828.27	2724	9860.19	2722	9871.83	2720	9885.15	2718	9899.91	2716
9914.3	2714	9925.4	2713	9936.57	2712	10000	2711.5	10012.12	2712
10016.5	2712.99	10020.97	2714	10030.45	2716	10039.64	2718	10050.76	2720
10069.52	2722								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9757.75	.064	9925.4	.044	10016.5	.064

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9925.4	10016.5	263.58	234.69	196.36	.1	.3

CROSS SECTION OUTPUT Profile #100-yr 6-yr

			Left OB	Channel	Right OB
E.G. Elev (ft)	2713.96	Element			
Vel Head (ft)	0.69	Wt. n-Val.	0.064	0.044	0.064
W.S. Elev (ft)	2713.26	Reach Len. (ft)	263.58	234.69	196.36
Crit W.S. (ft)	2713.26	Flow Area (sq ft)	0.38	126.05	0.16
E.G. Slope (ft/ft)	0.025525	Area (sq ft)	0.38	126.05	0.16
Q Total (cfs)	844.00	Flow (cfs)	0.36	843.48	0.16
Top Width (ft)	95.20	Top Width (ft)	2.90	91.10	1.20
Vel Total (ft/s)	6.67	Avg. Vel. (ft/s)	0.95	6.69	0.96
Max Chl Dpth (ft)	1.76	Hydr. Depth (ft)	0.13	1.38	0.14
Conv. Total (cfs)	5282.8	Conv. (cfs)	2.3	5279.5	1.0
Length Wtd. (ft)	234.67	Wetted Per. (ft)	2.91	91.27	1.23
Min Ch El (ft)	2711.50	Shear (lb/sq ft)	0.21	2.20	0.21
Alpha	1.01	Stream Power (lb/ft s)	0.20	14.73	0.20
Frctn Loss (ft)	6.09	Cum Volume (acre-ft)	2.23	45.88	5.67
C & E Loss (ft)	0.02	Cum SA (acres)	2.15	19.75	8.07

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

CROSS SECTION OUTPUT Profile #Method 1

			Left OB	Channel	Right OB
E.G. Elev (ft)	2713.96	Element			
Vel Head (ft)	0.70	Wt. n-Val.		0.044	
W.S. Elev (ft)	2713.26	Reach Len. (ft)	263.58	234.69	196.36
Crit W.S. (ft)	2713.26	Flow Area (sq ft)		125.65	

E.G. Slope (ft/ft)	0.026026	Area (sq ft)		125.65	
Q Total (cfs)	844.00	Flow (cfs)		844.00	
Top Width (ft)	91.10	Top Width (ft)		91.10	
Vel Total (ft/s)	6.72	Avg. Vel. (ft/s)		6.72	
Max Chl Dpth (ft)	1.76	Hydr. Depth (ft)		1.38	
Conv. Total (cfs)	5231.6	Conv. (cfs)		5231.6	
Length Wtd. (ft)	234.69	Wetted Per. (ft)		91.79	
Min Ch El (ft)	2711.50	Shear (lb/sq ft)		2.22	
Alpha	1.00	Stream Power (lb/ft s)		14.94	
Frctn Loss (ft)	5.68	Cum Volume (acre-ft)	0.21	46.79	0.24
C & E Loss (ft)	0.04	Cum SA (acres)	0.17	19.75	0.13

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

CROSS SECTION

RIVER: Stagecoach Pass
REACH: StagecoachPass-1 RS: 5.08

INPUT
Description: Topography and aerial indicate wash and surrounding undeveloped
desert.
T6NR5E Section 32
Q100 = 844 cfs
Station Elevation Data num= 19

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9900.02	2720	9906.49	2720	9912.07	2718	9917.3	2716	9922.35	2714
9927.56	2712	9933.72	2710	9940.05	2708	9945.99	2706	9982.28	2704.47
10000	2704.21	10053.25	2706	10121.81	2708	10144.81	2710	10158.42	2712
10170.13	2714	10188.54	2716	10199.88	2718	10210.23	2720		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9900.02	.064	9945.99	.044	10053.25	.064

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9945.99	10053.25	293.34	291.18	333	.1	.3

CROSS SECTION OUTPUT Profile #100-yr 6-yr

			Left OB	Channel	Right OB
E.G. Elev (ft)	2706.88	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.62	Wt. n-Val.	0.064	0.044	0.064
W.S. Elev (ft)	2706.26	Reach Len. (ft)	293.34	291.18	333.00
Crit W.S. (ft)	2706.26	Flow Area (sq ft)	0.10	133.08	1.16
E.G. Slope (ft/ft)	0.026397	Area (sq ft)	0.10	133.08	1.16
Q Total (cfs)	844.00	Flow (cfs)	0.09	842.78	1.12
Top Width (ft)	116.95	Top Width (ft)	0.77	107.26	8.91
Vel Total (ft/s)	6.28	Avg. Vel. (ft/s)	0.93	6.33	0.97
Max Chl Dpth (ft)	2.06	Hydr. Depth (ft)	0.13	1.24	0.13
Conv. Total (cfs)	5194.7	Conv. (cfs)	0.6	5187.3	6.9
Length Wtd. (ft)	291.21	Wetted Per. (ft)	0.82	107.32	8.92
Min Ch El (ft)	2704.20	Shear (lb/sq ft)	0.20	2.04	0.21
Alpha	1.01	Stream Power (lb/ft s)	0.19	12.94	0.21
Frctn Loss (ft)	6.67	Cum Volume (acre-ft)	2.23	45.18	5.67
C & E Loss (ft)	0.04	Cum SA (acres)	2.13	19.21	8.05

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

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

CROSS SECTION OUTPUT Profile #Method 1

E.G. Elev (ft)	2706.89	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.56	Wt. n-Val.		0.044	
W.S. Elev (ft)	2706.33	Reach Len. (ft)	293.34	291.18	333.00
Crit W.S. (ft)	2706.25	Flow Area (sq ft)		140.02	
E.G. Slope (ft/ft)	0.022528	Area (sq ft)		140.02	
Q Total (cfs)	844.00	Flow (cfs)		844.00	
Top Width (ft)	107.26	Top Width (ft)		107.26	
Vel Total (ft/s)	6.03	Avg. Vel. (ft/s)		6.03	
Max Chl Dpth (ft)	2.12	Hydr. Depth (ft)		1.31	
Conv. Total (cfs)	5623.2	Conv. (cfs)		5623.2	
Length Wtd. (ft)	291.18	Wetted Per. (ft)		107.97	
Min Ch El (ft)	2704.20	Shear (lb/sq ft)		1.82	
Alpha	1.00	Stream Power (lb/ft s)		10.99	
Frctn Loss (ft)	7.19	Cum Volume (acre-ft)	0.21	46.08	0.24
C & E Loss (ft)	0.00	Cum SA (acres)	0.17	19.22	0.13

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: Stagecoach Pass
REACH: StagecoachPass-1 RS: 5.02

INPUT
Description: Topography and aerial indicate wash and surrounding undeveloped
desert.
T6NR5E Section 32
Q100 = 844 cfs
Station Elevation Data num= 22

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9845.33	2712	9852.89	2710	9861.02	2708	9870.65	2706	9880.73	2704
9891.04	2702	9915.52	2700	9943.62	2699	9971.72	2698	9991.46	2697.56
10000	2697.5	10056.65	2698	10060.55	2699	10064.45	2700	10071.27	2702
10077.86	2704	10084.18	2706	10090.42	2708	10096.94	2710	10104.4	2712
10112.36	2714	10120.38	2716						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9845.33	.064	9943.62	.044	10060.55	.064

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9943.62	10060.55	434.77	434.52	440.27	.1	.3

CROSS SECTION OUTPUT Profile #100-yr 6-yr

E.G. Elev (ft)	2699.72	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.49	Wt. n-Val.	0.064	0.044	0.064
W.S. Elev (ft)	2699.22	Reach Len. (ft)	434.77	434.52	440.27
Crit W.S. (ft)	2699.11	Flow Area (sq ft)	0.71	149.66	0.10
E.G. Slope (ft/ft)	0.020075	Area (sq ft)	0.71	149.66	0.10
Q Total (cfs)	844.00	Flow (cfs)	0.54	843.39	0.07
Top Width (ft)	124.10	Top Width (ft)	6.30	116.93	0.87
Vel Total (ft/s)	5.61	Avg. Vel. (ft/s)	0.76	5.64	0.75
Max Chl Dpth (ft)	1.72	Hydr. Depth (ft)	0.11	1.28	0.11
Conv. Total (cfs)	5956.9	Conv. (cfs)	3.8	5952.6	0.5
Length Wtd. (ft)	434.53	Wetted Per. (ft)	6.30	117.08	0.90

Min Ch El (ft)	2697.50	Shear (lb/sq ft)	0.14	1.60	0.14
Alpha	1.01	Stream Power (lb/ft s)	0.11	9.03	0.10
Frctn Loss (ft)	9.65	Cum Volume (acre-ft)	2.23	44.24	5.66
C & E Loss (ft)	0.01	Cum SA (acres)	2.11	18.46	8.01

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 OUTPUT Profile #Method 1

E.G. Elev (ft)	2699.71	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.59	Wt. n-Val.		0.044	
W.S. Elev (ft)	2699.12	Reach Len. (ft)	434.77	434.52	440.27
Crit W.S. (ft)	2699.11	Flow Area (sq ft)		136.87	
E.G. Slope (ft/ft)	0.027148	Area (sq ft)		136.87	
Q Total (cfs)	844.00	Flow (cfs)		844.00	
Top Width (ft)	116.93	Top Width (ft)		116.93	
Vel Total (ft/s)	6.17	Avg. Vel. (ft/s)		6.17	
Max Chl Dpth (ft)	1.61	Hydr. Depth (ft)		1.17	
Conv. Total (cfs)	5122.4	Conv. (cfs)		5122.4	
Length Wtd. (ft)	434.52	Wetted Per. (ft)		117.31	
Min Ch El (ft)	2697.50	Shear (lb/sq ft)		1.98	
Alpha	1.00	Stream Power (lb/ft s)		12.19	
Frctn Loss (ft)	9.59	Cum Volume (acre-ft)	0.21	45.15	0.24
C & E Loss (ft)	0.02	Cum SA (acres)	0.17	18.47	0.13

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: Stagecoach Pass
REACH: StagecoachPass-1 RS: 4.94

INPUT
Description: Topography and aerial indicate wash and surrounding undeveloped desert.
T6NR5E Section 32
Q100 = 844 cfs
Station Elevation Data num= 13

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9841.08	2696	9860.03	2694	9886.41	2692	9914.03	2690	9945.13	2689
9976.22	2688	10000	2687.25	10019.73	2688	10045.35	2689	10070.96	2690
10082.5	2692	10093.18	2694	10105.96	2696				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9841.08	.064	9945.13	.044	10045.35	.064

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9945.13	10045.35	502.07	510.22	489.46	.1	.3

CROSS SECTION OUTPUT Profile #100-yr 6-yr

E.G. Elev (ft)	2690.06	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.62	Wt. n-Val.	0.064	0.044	0.064
W.S. Elev (ft)	2689.43	Reach Len. (ft)	502.07	510.22	489.46
Crit W.S. (ft)	2689.43	Flow Area (sq ft)	2.92	131.61	2.40
E.G. Slope (ft/ft)	0.024680	Area (sq ft)	2.92	131.61	2.40
Q Total (cfs)	844.00	Flow (cfs)	3.84	837.00	3.16
Top Width (ft)	124.79	Top Width (ft)	13.48	100.22	11.10
Vel Total (ft/s)	6.16	Avg. Vel. (ft/s)	1.32	6.36	1.32
Max Chl Dpth (ft)	2.18	Hydr. Depth (ft)	0.22	1.31	0.22
Conv. Total (cfs)	5372.5	Conv. (cfs)	24.4	5327.9	20.1
Length Wtd. (ft)	509.41	Wetted Per. (ft)	13.48	100.28	11.11
Min Ch El (ft)	2687.25	Shear (lb/sq ft)	0.33	2.02	0.33

Alpha	1.06	Stream Power (lb/ft s)	0.44	12.86	0.44
Frctn Loss (ft)	10.98	Cum Volume (acre-ft)	2.21	42.83	5.65
C & E Loss (ft)	0.01	Cum SA (acres)	2.01	17.38	7.95

Warning: The energy loss was 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 OUTPUT Profile #Method 1

			Left OB	Channel	Right OB
E.G. Elev (ft)	2690.09	Element			
Vel Head (ft)	0.52	Wt. n-Val.		0.044	
W.S. Elev (ft)	2689.57	Reach Len. (ft)	502.07	510.22	489.46
Crit W.S. (ft)	2689.41	Flow Area (sq ft)		145.36	
E.G. Slope (ft/ft)	0.018292	Area (sq ft)		145.36	
Q Total (cfs)	844.00	Flow (cfs)		844.00	
Top Width (ft)	100.22	Top Width (ft)		100.22	
Vel Total (ft/s)	5.81	Avg. Vel. (ft/s)		5.81	
Max Chl Dpth (ft)	2.32	Hydr. Depth (ft)		1.45	
Conv. Total (cfs)	6240.3	Conv. (cfs)		6240.3	
Length Wtd. (ft)	510.22	Wetted Per. (ft)		101.42	
Min Ch El (ft)	2687.25	Shear (lb/sq ft)		1.64	
Alpha	1.00	Stream Power (lb/ft s)		9.50	
Frctn Loss (ft)	10.84	Cum Volume (acre-ft)	0.21	43.74	0.24
C & E Loss (ft)	0.03	Cum SA (acres)	0.17	17.38	0.13

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: Stagecoach Pass
REACH: StagecoachPass-1 RS: 4.84

INPUT
Description: Topography and aerial indicate wash and surrounding undeveloped desert.
T6NR5E Section 32
Q100 = 844 cfs
Station Elevation Data num= 17

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9953.34	2686	9963.37	2686	9969.52	2684	9975.07	2682	9980.53	2680
9985.93	2678	9991.56	2676	10000	2675.6	10010.15	2676	10021.28	2676.93
10062.25	2678	10078.89	2678	10124.27	2678	10148.41	2680	10174.66	2682
10274.84	2684	10288.21	2686						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9953.34	.064	9985.93	.044	10062.25	.064

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9985.93	10062.25	155.72	156	155.62	.1	.3

CROSS SECTION OUTPUT Profile #100-yr 6-yr

			Left OB	Channel	Right OB
E.G. Elev (ft)	2679.08	Element			
Vel Head (ft)	0.59	Wt. n-Val.	0.064	0.044	0.064
W.S. Elev (ft)	2678.49	Reach Len. (ft)	155.72	156.00	155.62
Crit W.S. (ft)	2678.49	Flow Area (sq ft)	0.32	122.87	31.79
E.G. Slope (ft/ft)	0.018974	Area (sq ft)	0.32	122.87	31.79
Q Total (cfs)	844.00	Flow (cfs)	0.39	782.34	61.27
Top Width (ft)	145.57	Top Width (ft)	1.32	76.32	67.92
Vel Total (ft/s)	5.45	Avg. Vel. (ft/s)	1.20	6.37	1.93
Max Chl Dpth (ft)	2.89	Hydr. Depth (ft)	0.24	1.61	0.47
Conv. Total (cfs)	6127.1	Conv. (cfs)	2.8	5679.5	444.8
Length Wtd. (ft)	155.98	Wetted Per. (ft)	1.41	76.74	67.95
Min Ch El (ft)	2675.60	Shear (lb/sq ft)	0.27	1.90	0.55

Alpha	1.28	Stream Power (lb/ft s)	0.33	12.08	1.07
Frctn Loss (ft)	1.84	Cum Volume (acre-ft)	2.19	41.34	5.46
C & E Loss (ft)	0.04	Cum SA (acres)	1.93	16.35	7.51

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.

CROSS SECTION OUTPUT Profile #Method 1

E.G. Elev (ft)	2679.22	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.78	Wt. n-Val.		0.044	
W.S. Elev (ft)	2678.44	Reach Len. (ft)	155.72	156.00	155.62
Crit W.S. (ft)	2678.44	Flow Area (sq ft)		118.96	
E.G. Slope (ft/ft)	0.024974	Area (sq ft)		118.96	
Q Total (cfs)	844.00	Flow (cfs)		844.00	
Top Width (ft)	76.32	Top Width (ft)		76.32	
Vel Total (ft/s)	7.09	Avg. Vel. (ft/s)		7.09	
Max Chl Dpth (ft)	2.84	Hydr. Depth (ft)		1.56	
Conv. Total (cfs)	5340.7	Conv. (cfs)		5340.7	
Length Wtd. (ft)	156.00	Wetted Per. (ft)		77.61	
Min Ch El (ft)	2675.60	Shear (lb/sq ft)		2.39	
Alpha	1.00	Stream Power (lb/ft s)		16.95	
Frctn Loss (ft)	2.08	Cum Volume (acre-ft)	0.21	42.20	0.24
C & E Loss (ft)	0.09	Cum SA (acres)	0.17	16.35	0.13

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.

CROSS SECTION

RIVER: Stagecoach Pass
REACH: StagecoachPass-1 RS: 4.81

INPUT
Description: Cross Section 4.81 is located east of the City of Scottsdale and
the Town of Carefree boundary. It is located upstream of
concentration point CSCP08 in the HEC-1 model.

Topography and
aerial indicate wash and surrounding undeveloped desert.
T6NR5E
Section 32
Q100 = 844 cfs
Station Elevation Data num= 15

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9893.11	2676	9918.98	2678	9929.04	2678	9973.46	2676	9980.08	2675

```
  9986.7    2674   10000  2673.410033.72    2674 10040.2 2675.0110046.61    2676
10065.97    267810087.95    268010111.72    268210193.17    268410223.94    2686

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
 9893.11    .064 9980.08    .044 10040.2    .064

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9980.08 10040.2           202.82  218.24  230.15            .1        .3
Left Levee      Station= 9929.04      Elevation=    2678

CROSS SECTION OUTPUT  Profile #100-yr 6-yr

  E.G. Elev (ft)          2676.82    Element                  Left OB    Channel   Right OB
  Vel Head (ft)              0.47    Wt. n-Val.                0.064      0.044      0.064
  W.S. Elev (ft)          2676.36    Reach Len. (ft)          202.82     218.24     230.15
  Crit W.S. (ft)          2675.73    Flow Area (sq ft)          7.11     149.33       6.09
  E.G. Slope (ft/ft)     0.008002    Area (sq ft)               7.11     149.33       6.09
  Q Total (cfs)            844.00    Flow (cfs)                 9.12     825.77       9.11
  Top Width (ft)            84.59    Top Width (ft)            14.59      60.12       9.88
  Vel Total (ft/s)           5.19    Avg. Vel. (ft/s)           1.28       5.53       1.50
  Max Chl Dpth (ft)          2.96    Hydr. Depth (ft)           0.49       2.48       0.62
  Conv. Total (cfs)         9435.2   Conv. (cfs)               101.9     9231.4      101.9
  Length Wtd. (ft)          218.25   Wetted Per. (ft)          14.67      60.29       9.98
  Min Ch El (ft)          2673.40    Shear (lb/sq ft)           0.24       1.24       0.31
  Alpha                      1.11    Stream Power (lb/ft s)     0.31       6.84       0.46
  Frctn Loss (ft)            2.72    Cum Volume (acre-ft)       2.18      40.86       5.39
  C & E Loss (ft)            0.08    Cum SA (acres)             1.90      16.10       7.37


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.
Note:    Multiple critical depths were found at this location.  The critical depth with the lowest,
valid, water
         surface was used.

CROSS SECTION OUTPUT  Profile #Method 1

  E.G. Elev (ft)          2676.89    Element                  Left OB    Channel   Right OB
  Vel Head (ft)              0.47    Wt. n-Val.                           0.044
  W.S. Elev (ft)          2676.41    Reach Len. (ft)          202.82     218.24     230.15
  Crit W.S. (ft)          2675.70    Flow Area (sq ft)                   152.67
  E.G. Slope (ft/ft)     0.008251    Area (sq ft)                        152.67
  Q Total (cfs)            844.00    Flow (cfs)                          844.00
  Top Width (ft)            60.12    Top Width (ft)                       60.12
  Vel Total (ft/s)           5.53    Avg. Vel. (ft/s)                      5.53
  Max Chl Dpth (ft)          3.01    Hydr. Depth (ft)                      2.54
  Conv. Total (cfs)         9291.4   Conv. (cfs)                         9291.4
  Length Wtd. (ft)          218.24   Wetted Per. (ft)                     63.11
  Min Ch El (ft)          2673.40    Shear (lb/sq ft)                      1.25
  Alpha                      1.00    Stream Power (lb/ft s)                6.89
  Frctn Loss (ft)            2.78    Cum Volume (acre-ft)       0.21      41.71       0.24
  C & E Loss (ft)            0.07    Cum SA (acres)             0.17      16.11       0.13


Warning: The velocity head has changed by more than 0.5 ft (0.15 m).  This may indicate the need for
         additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than
         0.7 or greater than 1.4.  This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross
section.
         This may indicate the need for additional cross sections.
Note:    Multiple critical depths were found at this location.  The critical depth with the lowest,
valid, water
         surface was used.
```

CROSS SECTION

RIVER: Stagecoach Pass
REACH: StagecoachPass-1 RS: 4.77

INPUT
Description: Cross Section 4.77 is located within Carefree. A home is sitting on the the cross section. The finish floor elevation is indicated by a blocked obstruction.

Topography indicates wash and surrounding undeveloped desert.
Aerial shows wash, homes, and undeveloped desert.
T6NR5E Section 32
Q100 = 836 cfs
Station Elevation Data num= 15

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9804.86	2680	9835.68	2678	9853.42	2676	9875.89	2674	9969.18	2672
9977.6	2670	9991.1	2670	10000	2669.67	10014.31	2670	10028.1	2672
10043.2	2674	10057.35	2676	10070.89	2678	10095.14	2680	10095.74	2680

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9804.86	.064	9991.1	.044	10028.1	.064

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
9991.1 10028.1 279.24 277.64 280.33 .1 .3
Blocked Obstructions num= 1

Sta L	Sta R	Elev
9804.86	9991.21	2674.19

CROSS SECTION OUTPUT Profile #100-yr 6-yr

E.G. Elev (ft)	2674.03	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.22	Wt. n-Val.		0.044	0.064
W.S. Elev (ft)	2672.81	Reach Len. (ft)	279.24	277.64	280.33
Crit W.S. (ft)	2672.81	Flow Area (sq ft)		93.51	2.45
E.G. Slope (ft/ft)	0.022229	Area (sq ft)		93.51	2.45
Q Total (cfs)	836.00	Flow (cfs)		831.41	4.59
Top Width (ft)	42.97	Top Width (ft)		36.89	6.08
Vel Total (ft/s)	8.71	Avg. Vel. (ft/s)		8.89	1.88
Max Chl Dpth (ft)	3.14	Hydr. Depth (ft)		2.53	0.40
Conv. Total (cfs)	5607.3	Conv. (cfs)		5576.5	30.8
Length Wtd. (ft)	277.68	Wetted Per. (ft)		39.85	6.13
Min Ch El (ft)	2669.67	Shear (lb/sq ft)		3.26	0.55
Alpha	1.04	Stream Power (lb/ft s)		28.95	1.04
Frctn Loss (ft)	6.36	Cum Volume (acre-ft)	2.16	40.25	5.37
C & E Loss (ft)	0.17	Cum SA (acres)	1.86	15.86	7.32

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.

CROSS SECTION OUTPUT. Profile #Method 1

E.G. Elev (ft)	2674.05	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.21	Wt. n-Val.		0.044	
W.S. Elev (ft)	2672.84	Reach Len. (ft)	279.24	277.64	280.33
Crit W.S. (ft)	2672.77	Flow Area (sq ft)		94.63	

E.G. Slope (ft/ft)	0.022230	Area (sq ft)		94.63	
Q Total (cfs)	836.00	Flow (cfs)		836.00	
Top Width (ft)	36.89	Top Width (ft)		36.89	
Vel Total (ft/s)	8.83	Avg. Vel. (ft/s)		8.83	
Max Chl Dpth (ft)	3.17	Hydr. Depth (ft)		2.57	
Conv. Total (cfs)	5607.0	Conv. (cfs)		5607.0	
Length Wtd. (ft)	277.64	Wetted Per. (ft)		40.72	
Min Ch El (ft)	2669.67	Shear (lb/sq ft)		3.23	
Alpha	1.00	Stream Power (lb/ft s)		28.49	
Frctn Loss (ft)	6.71	Cum Volume (acre-ft)	0.21	41.09	0.24
C & E Loss (ft)	0.15	Cum SA (acres)	0.17	15.86	0.13

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: Stagecoach Pass
REACH: StagecoachPass-1 RS: 4.72

INPUT
Description: Cross Section 4.72 is located within Carefree.

Topography
indicates wash and surrounding undeveloped desert.
Aerial shows
wash, homes, and Romping Road.
T6NR5E Section 32
Q100 = 836 cfs
Station Elevation Data num= 13

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9944.19	2672	9962.97	2670	9978.6	2668	9983.24	2666	9991.53	2664.77
10000	2664.11	10037.65	2665.23	10070.27	2666	10073.23	2666	10089.88	2666
10098.06	2668	10192.65	2670	10238.29	2670				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9944.19	.064	9983.24	.044	10070.27	.064

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9983.24	10070.27	497.16	491.79	470.19	.1	.3

CROSS SECTION OUTPUT Profile #100-yr 6-yr

			Left OB	Channel	Right OB
E.G. Elev (ft)	2667.15	Element			
Vel Head (ft)	0.65	Wt. n-Val.	0.064	0.044	0.064
W.S. Elev (ft)	2666.49	Reach Len. (ft)	497.16	491.79	470.19
Crit W.S. (ft)	2666.49	Flow Area (sq ft)	0.28	123.99	10.14
E.G. Slope (ft/ft)	0.023617	Area (sq ft)	0.28	123.99	10.14
Q Total (cfs)	836.00	Flow (cfs)	0.37	813.82	21.81
Top Width (ft)	109.79	Top Width (ft)	1.14	87.03	21.62
Vel Total (ft/s)	6.22	Avg. Vel. (ft/s)	1.32	6.56	2.15
Max Chl Dpth (ft)	2.39	Hydr. Depth (ft)	0.25	1.42	0.47
Conv. Total (cfs)	5439.9	Conv. (cfs)	2.4	5295.6	141.9
Length Wtd. (ft)	491.28	Wetted Per. (ft)	1.24	87.17	21.68
Min Ch El (ft)	2664.10	Shear (lb/sq ft)	0.33	2.10	0.69
Alpha	1.09	Stream Power (lb/ft s)	0.44	13.76	1.48
Frctn Loss (ft)	10.50	Cum Volume (acre-ft)	2.16	39.55	5.33
C & E Loss (ft)	0.03	Cum SA (acres)	1.86	15.47	7.24

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 energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section:
This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical

depth, the 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 OUTPUT Profile #Method 1

E.G. Elev (ft)	2667.20	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.72	Wt. n-Val.		0.044	
W.S. Elev (ft)	2666.48	Reach Len. (ft)	497.16	491.79	470.19
Crit W.S. (ft)	2666.47	Flow Area (sq ft)		122.48	
E.G. Slope (ft/ft)	0.026337	Area (sq ft)		122.48	
Q Total (cfs)	836.00	Flow (cfs)		836.00	
Top Width (ft)	87.03	Top Width (ft)		87.03	
Vel Total (ft/s)	6.83	Avg. Vel. (ft/s)		6.83	
Max Chl Dpth (ft)	2.37	Hydr. Depth (ft)		1.41	
Conv. Total (cfs)	5151.3	Conv. (cfs)		5151.3	
Length Wtd. (ft)	491.79	Wetted Per. (ft)		88.12	
Min Ch El (ft)	2664.10	Shear (lb/sq ft)		2.29	
Alpha	1.00	Stream Power (lb/ft s)		15.60	
Frctn Loss (ft)	10.80	Cum Volume (acre-ft)	0.21	40.40	0.24
C & E Loss (ft)	0.05	Cum SA (acres)	0.17	15.47	0.13

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: Stagecoach Pass
REACH: StagecoachPass-1 RS: 4.62

INPUT
Description: Cross Section 4.62 is located within Carefree.

Topography
indicates wash and surrounding undeveloped desert.
Aerial shows
wash, homes, and Romping Road.
T6NR5E Section 32
Q100 = 836 cfs
Station Elevation Data num= 15

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9937.66	2662	9943.13	2660	9956.15	2658	9973.14	2656	9977.93	2655
9982.73	2654	10000	2653.8	10022.45	2654	10037.25	2654.41	10069.65	2655.06
10116.85	2656	10141.36	2658	10159.09	2660	10176.61	2662	10198.45	2664

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9937.66	.064	9977.93	.044	10069.65	.064

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9977.93	10069.65	522.24	516.48	506.7	.1	.3

CROSS SECTION OUTPUT Profile #100-yr 6-yr

E.G. Elev (ft)	2656.30	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.56	Wt. n-Val.	0.064	0.044	0.064
W.S. Elev (ft)	2655.74	Reach Len. (ft)	522.24	516.48	506.70
Crit W.S. (ft)	2655.67	Flow Area (sq ft)	1.31	134.38	11.63
E.G. Slope (ft/ft)	0.019437	Area (sq ft)	1.31	134.38	11.63
Q Total (cfs)	836.00	Flow (cfs)	2.16	815.49	18.35
Top Width (ft)	129.45	Top Width (ft)	3.55	91.72	34.18
Vel Total (ft/s)	5.67	Avg. Vel. (ft/s)	1.65	6.07	1.58
Max Chl Dpth (ft)	1.94	Hydr. Depth (ft)	0.37	1.47	0.34
Conv. Total (cfs)	5996.5	Conv. (cfs)	15.5	5849.3	131.6
Length Wtd. (ft)	516.35	Wetted Per. (ft)	3.62	91.84	34.19
Min Ch El (ft)	2653.80	Shear (lb/sq ft)	0.44	1.78	0.41
Alpha	1.12	Stream Power (lb/ft s)	0.72	10.77	0.65
Frctn Loss (ft)	10.93	Cum Volume (acre-ft)	2.15	38.10	5.21

C & E Loss (ft)	0.00	Cum SA (acres)	1.83	14.46	6.93

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 OUTPUT Profile #Method 1

E.G. Elev (ft)	2656.35	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.56	Wt. n-Val.		0.044	
W.S. Elev (ft)	2655.79	Reach Len. (ft)	522.24	516.48	506.70
Crit W.S. (ft)	2655.64	Flow Area (sq ft)		139.15	
E.G. Slope (ft/ft)	0.018589	Area (sq ft)		139.15	
Q Total (cfs)	836.00	Flow (cfs)		836.00	
Top Width (ft)	91.72	Top Width (ft)		91.72	
Vel Total (ft/s)	6.01	Avg. Vel. (ft/s)		6.01	
Max Chl Dpth (ft)	1.99	Hydr. Depth (ft)		1.52	
Conv. Total (cfs)	6131.7	Conv. (cfs)		6131.7	
Length Wtd. (ft)	516.48	Wetted Per. (ft)		93.36	
Min Ch El (ft)	2653.80	Shear (lb/sq ft)		1.73	
Alpha	1.00	Stream Power (lb/ft s)		10.39	
Frctn Loss (ft)	10.95	Cum Volume (acre-ft)	0.21	38.92	0.24
C & E Loss (ft)	0.00	Cum SA (acres)	0.17	14.46	0.13

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: Stagecoach Pass
REACH: StagecoachPass-1 RS: 4.53

INPUT
Description: Cross Section 4.53 is located within Carefree.

Topography
indicates wash and surrounding undeveloped desert.
Aerial shows
wash, and homes.
T6NR5E Section 32
Q100 = 836 cfs
Station Elevation Data num= 11

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9864.97	2652	9883.05	2650	9913.38	2648	9950.23	2646	9968.59	2644
10000	2643	10009.31	2643.06	10069.85	2644	10097.15	2646	10115.32	2648
10130.16	2650								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9864.97	.064	9968.59	.044	10069.85	.064

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9968.59	10069.85	492.56	500.82	499.6	.1	.3

CROSS SECTION OUTPUT Profile #100-yr 6-yr

E.G. Elev (ft)	2645.37	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.58	Wt. n-Val.	0.064	0.044	0.064
W.S. Elev (ft)	2644.79	Reach Len. (ft)	492.56	500.82	499.60
Crit W.S. (ft)	2644.76	Flow Area (sq ft)	2.87	133.29	4.27
E.G. Slope (ft/ft)	0.023151	Area (sq ft)	2.87	133.29	4.27
Q Total (cfs)	836.00	Flow (cfs)	5.45	822.44	8.11
Top Width (ft)	119.32	Top Width (ft)	7.26	101.26	10.80
Vel Total (ft/s)	5.95	Avg. Vel. (ft/s)	1.90	6.17	1.90
Max Chl Dpth (ft)	1.79	Hydr. Depth (ft)	0.40	1.32	0.40
Conv. Total (cfs)	5494.4	Conv. (cfs)	35.8	5405.3	53.3
Length Wtd. (ft)	500.79	Wetted Per. (ft)	7.30	101.28	10.83

Min Ch El (ft)	2643.00	Shear (lb/sq ft)	0.57	1.90	0.57
Alpha	1.06	Stream Power (lb/ft s)	1.08	11.74	1.08
Frctn Loss (ft)	10.50	Cum Volume (acre-ft)	2.13	36.51	5.12
C & E Loss (ft)	0.01	Cum SA (acres)	1.77	13.31	6.67

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 OUTPUT Profile #Method 1

E.G. Elev (ft)	2645.40	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.61	Wt. n-Val.		0.044	
W.S. Elev (ft)	2644.79	Reach Len. (ft)	492.56	500.82	499.60
Crit W.S. (ft)	2644.75	Flow Area (sq ft)		133.33	
E.G. Slope (ft/ft)	0.024390	Area (sq ft)		133.33	
Q Total (cfs)	836.00	Flow (cfs)		836.00	
Top Width (ft)	101.26	Top Width (ft)		101.26	
Vel Total (ft/s)	6.27	Avg. Vel. (ft/s)		6.27	
Max Chl Dpth (ft)	1.79	Hydr. Depth (ft)		1.32	
Conv. Total (cfs)	5353.0	Conv. (cfs)		5353.0	
Length Wtd. (ft)	500.82	Wetted Per. (ft)		102.87	
Min Ch El (ft)	2643.00	Shear (lb/sq ft)		1.97	
Alpha	1.00	Stream Power (lb/ft s)		12.37	
Frctn Loss (ft)	10.53	Cum Volume (acre-ft)	0.21	37.31	0.24
C & E Loss (ft)	0.01	Cum SA (acres)	0.17	13.31	0.13

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: Stagecoach Pass
REACH: StagecoachPass-1 RS: 4.43

INPUT
Description: Cross Section 4.43 is located within Carefree.

Topography
indicates wash and surrounding undeveloped desert.
Aerial shows
wash, homes, and desert.
T6NR5E Section 32
Q100 = 836 cfs
Station Elevation Data num= 12

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9824.45	2640	9846.77	2638	9875.74	2636	9978.68	2634	9993.2	2632
10000	2631	10023.41	2632	10046.49	2634	10057.7	2636	10066	2638
10074.61	2640	10138.4	2640						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9824.45	.064	9978.68	.044	10046.49	.064

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9978.68	10046.49	481.7	463.26	444.73	.1	.3

CROSS SECTION OUTPUT Profile #100-yr 6-yr

E.G. Elev (ft)	2634.86	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.73	Wt. n-Val.	0.064	0.044	0.064
W.S. Elev (ft)	2634.13	Reach Len. (ft)	481.70	463.26	444.73
Crit W.S. (ft)	2633.99	Flow Area (sq ft)	0.41	121.70	0.04
E.G. Slope (ft/ft)	0.019078	Area (sq ft)	0.41	121.70	0.04
Q Total (cfs)	836.00	Flow (cfs)	0.21	835.77	0.02
Top Width (ft)	75.03	Top Width (ft)	6.51	67.81	0.71
Vel Total (ft/s)	6.84	Avg. Vel. (ft/s)	0.51	6.87	0.50

Max Chl Dpth (ft)	3.13	Hydr. Depth (ft)	0.06	1.79	0.06
Conv. Total (cfs)	6052.5	Conv. (cfs)	1.5	6050.8	0.2
Length Wtd. (ft)	463.25	Wetted Per. (ft)	6.51	68.13	0.72
Min Ch El (ft)	2631.00	Shear (lb/sq ft)	0.08	2.13	0.07
Alpha	1.01	Stream Power (lb/ft s)	0.04	14.61	0.04
Frctn Loss (ft)	9.70	Cum Volume (acre-ft)	2.11	35.04	5.09
C & E Loss (ft)	0.01	Cum SA (acres)	1.69	12.34	6.61

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 OUTPUT Profile #Method 1

E.G. Elev (ft)	2634.87	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.71	Wt. n-Val.		0.044	
W.S. Elev (ft)	2634.15	Reach Len. (ft)	481.70	463.26	444.73
Crit W.S. (ft)	2634.00	Flow Area (sq ft)		123.46	
E.G. Slope (ft/ft)	0.018308	Area (sq ft)		123.46	
Q Total (cfs)	836.00	Flow (cfs)		836.00	
Top Width (ft)	67.81	Top Width (ft)		67.81	
Vel Total (ft/s)	6.77	Avg. Vel. (ft/s)		6.77	
Max Chl Dpth (ft)	3.15	Hydr. Depth (ft)		1.82	
Conv. Total (cfs)	6178.5	Conv. (cfs)		6178.5	
Length Wtd. (ft)	463.26	Wetted Per. (ft)		68.43	
Min Ch El (ft)	2631.00	Shear (lb/sq ft)		2.06	
Alpha	1.00	Stream Power (lb/ft s)		13.96	
Frctn Loss (ft)	9.69	Cum Volume (acre-ft)	0.21	35.83	0.24
C & E Loss (ft)	0.01	Cum SA (acres)	0.17	12.34	0.13

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: Stagecoach Pass
REACH: StagecoachPass-1 RS: 4.34

INPUT
Description: Cross Section 4.34 is located within Carefree. This section is located upstream of concentration point CSCP7e in the HEC-1 Model.

Topography indicates wash and surrounding undeveloped desert.
Aerial shows wash, homes, and desert.
T6NR5E Section 32
Q100 = 836 cfs
Station Elevation Data num= 15

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9949.5	2630	9961.03	2628	9969.69	2626	9979.5	2624	9989.86	2622.7
9993.76	2622	10000	2621	10012.42	2622	10021.84	2622.57	10045.5	2624
10087.17	2626	10159.44	2626	10164.81	2626	10225.41	2628	10293.65	2630

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9949.5	.064	9979.5	.044	10045.5	.064

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9979.5	10045.5	243.05	254.69	277.33	.1	.3

CROSS SECTION OUTPUT Profile #100-yr 6-yr

E.G. Elev (ft)	2625.15	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.84	Wt. n-Val.	0.064	0.044	0.064
W.S. Elev (ft)	2624.31	Reach Len. (ft)	243.05	254.69	277.33

Crit W.S. (ft)	2624.31	Flow Area (sq ft)	0.24	113.60	1.03
E.G. Slope (ft/ft)	0.023103	Area (sq ft)	0.24	113.60	1.03
Q Total (cfs)	836.00	Flow (cfs)	0.24	834.70	1.05
Top Width (ft)	74.08	Top Width (ft)	1.54	66.00	6.54
Vel Total (ft/s)	7.28	Avg. Vel. (ft/s)	1.01	7.35	1.03
Max Chl Dpth (ft)	3.31	Hydr. Depth (ft)	0.16	1.72	0.16
Conv. Total (cfs)	5500.1	Conv. (cfs)	1.6	5491.6	6.9
Length Wtd. (ft)	255.07	Wetted Per. (ft)	1.57	66.32	6.54
Min Ch El (ft)	2621.00	Shear (lb/sq ft)	0.22	2.47	0.23
Alpha	1.02	Stream Power (lb/ft s)	0.22	18.15	0.23
Frctn Loss (ft)	4.16	Cum Volume (acre-ft)	2.10	33.79	5.09
C & E Loss (ft)	0.05	Cum SA (acres)	1.65	11.63	6.57

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 conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
depth, the 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 OUTPUT Profile #Method 1

E.G. Elev (ft)	2625.16	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.86	Wt. n-Val.		0.044	
W.S. Elev (ft)	2624.30	Reach Len. (ft)	243.05	254.69	277.33
Crit W.S. (ft)	2624.30	Flow Area (sq ft)		112.64	
E.G. Slope (ft/ft)	0.024120	Area (sq ft)		112.64	
Q Total (cfs)	836.00	Flow (cfs)		836.00	
Top Width (ft)	66.00	Top Width (ft)		66.00	
Vel Total (ft/s)	7.42	Avg. Vel. (ft/s)		7.42	
Max Chl Dpth (ft)	3.30	Hydr. Depth (ft)		1.71	
Conv. Total (cfs)	5382.9	Conv. (cfs)		5382.9	
Length Wtd. (ft)	254.69	Wetted Per. (ft)		66.92	
Min Ch El (ft)	2621.00	Shear (lb/sq ft)		2.53	
Alpha	1.00	Stream Power (lb/ft s)		18.81	
Frctn Loss (ft)	4.68	Cum Volume (acre-ft)	0.21	34.57	0.24
C & E Loss (ft)	0.05	Cum SA (acres)	0.17	11.63	0.13

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
depth, the 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: Stagecoach Pass
REACH: StagecoachPass-1 RS: 4.3

INPUT
Description: Cross Section 4.30 is located within Carefree. This section is located upstream of concentration point CSCP07 in the HEC-1 Model.

Topography indicates wash and surrounding undeveloped
desert.
Aerial shows wash, and desert.
T6NR5E Section 32
Q100 =
1116 cfs

Station Elevation Data num= 15

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9880.52	2624	9957.95	2622	9971.22	2620	9983.62	2618	9988.24	2616
9992.46	2614	10010.54	2614	10016.71	2616	10022.86	2618	10054.76	2618
10068.79	2618	10074.47	2618	10089.1	2618	10098.32	2620	10144.36	2622

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9880.52	.064	9988.24	.044	10016.71	.064

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9988.24	10016.71	289.58	313.61	327.45	.1	.3

CROSS SECTION OUTPUT Profile #100-yr 6-yr

			Left OB	Channel	Right OB
E.G. Elev (ft)	2619.63	Element			
Vel Head (ft)	1.32	Wt. n-Val.	0.064	0.044	0.064
W.S. Elev (ft)	2618.31	Reach Len. (ft)	289.58	313.61	327.45
Crit W.S. (ft)	2617.82	Flow Area (sq ft)	6.33	112.23	28.60
E.G. Slope (ft/ft)	0.013015	Area (sq ft)	6.33	112.23	28.60
Q Total (cfs)	1116.00	Flow (cfs)	15.74	1060.12	40.14
Top Width (ft)	108.80	Top Width (ft)	6.52	28.47	73.81
Vel Total (ft/s)	7.58	Avg. Vel. (ft/s)	2.49	9.45	1.40
Max Chl Dpth (ft)	4.31	Hydr. Depth (ft)	0.97	3.94	0.39
Conv. Total (cfs)	9782.4	Conv. (cfs)	138.0	9292.5	351.8
Length Wtd. (ft)	313.64	Wetted Per. (ft)	6.96	29.24	74.16
Min Ch El (ft)	2614.00	Shear (lb/sq ft)	0.74	3.12	0.31
Alpha	1.48	Stream Power (lb/ft s)	1.84	29.46	0.44
Frctn Loss (ft)	4.64	Cum Volume (acre-ft)	2.09	33.13	4.99
C & E Loss (ft)	0.01	Cum SA (acres)	1.62	11.35	6.31

Warning: The energy loss was 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 OUTPUT Profile #Method 1

			Left OB	Channel	Right OB
E.G. Elev (ft)	2619.89	Element			
Vel Head (ft)	1.40	Wt. n-Val.		0.044	
W.S. Elev (ft)	2618.49	Reach Len. (ft)	289.58	313.61	327.45
Crit W.S. (ft)		Flow Area (sq ft)		117.39	
E.G. Slope (ft/ft)	0.015312	Area (sq ft)		117.39	
Q Total (cfs)	1116.00	Flow (cfs)		1116.00	
Top Width (ft)	28.47	Top Width (ft)		28.47	
Vel Total (ft/s)	9.51	Avg. Vel. (ft/s)		9.51	
Max Chl Dpth (ft)	4.49	Hydr. Depth (ft)		4.12	
Conv. Total (cfs)	9018.7	Conv. (cfs)		9018.7	
Length Wtd. (ft)	313.61	Wetted Per. (ft)		34.21	
Min Ch El (ft)	2614.00	Shear (lb/sq ft)		3.28	
Alpha	1.00	Stream Power (lb/ft s)		31.18	
Frctn Loss (ft)	4.80	Cum Volume (acre-ft)	0.21	33.90	0.24
C & E Loss (ft)	0.03	Cum SA (acres)	0.17	11.35	0.13

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: Stagecoach Pass
REACH: StagecoachPass-1 RS: 4.24

INPUT
Description: Cross Section 4.24 is located within Carefree.

Topography
indicates wash and surrounding undeveloped desert.
Aerial shows
wash, homes, and desert.
T6NR5E Section 32
Q100 = 1308 cfs
Station Elevation Data num= 13

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9861.3	2618	9897.69	2616	9968.01	2614	9974	2612	9982.11	2610
10000	2609.27	10006.64	2610	10013.56	2612	10018.08	2614	10021.6	2616
10028.91	2618	10039.63	2620	10061.07	2622				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9861.3	.064	9974	.044	10013.56	.064

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9974	10013.56	249.51	249.86	252.44	.1	.3

CROSS SECTION OUTPUT Profile #100-yr 6-yr

			Left OB	Channel	Right OB
E.G. Elev (ft)	2614.97	Element			
Vel Head (ft)	1.45	Wt. n-Val.	0.064	0.044	0.064
W.S. Elev (ft)	2613.53	Reach Len. (ft)	249.51	249.86	252.44
Crit W.S. (ft)	2613.41	Flow Area (sq ft)	3.48	133.37	2.63
E.G. Slope (ft/ft)	0.016635	Area (sq ft)	3.48	133.37	2.63
Q Total (cfs)	1308.00	Flow (cfs)	8.40	1293.41	6.19
Top Width (ft)	47.57	Top Width (ft)	4.57	39.56	3.45
Vel Total (ft/s)	9.38	Avg. Vel. (ft/s)	2.41	9.70	2.35
Max Chl Dpth (ft)	4.25	Hydr. Depth (ft)	0.76	3.37	0.76
Conv. Total (cfs)	10141.5	Conv. (cfs)	65.1	10028.4	48.0
Length Wtd. (ft)	249.86	Wetted Per. (ft)	4.82	40.14	3.77
Min Ch El (ft)	2609.27	Shear (lb/sq ft)	0.75	3.45	0.72
Alpha	1.06	Stream Power (lb/ft s)	1.81	33.46	1.71
Frctn Loss (ft)	3.88	Cum Volume (acre-ft)	2.05	32.25	4.87
C & E Loss (ft)	0.04	Cum SA (acres)	1.59	11.11	6.02

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 OUTPUT Profile #Method 1

			Left OB	Channel	Right OB
E.G. Elev (ft)	2615.06	Element			
Vel Head (ft)	1.31	Wt. n-Val.		0.044	
W.S. Elev (ft)	2613.75	Reach Len. (ft)	249.51	249.86	252.44
Crit W.S. (ft)	2613.38	Flow Area (sq ft)		142.35	
E.G. Slope (ft/ft)	0.015306	Area (sq ft)		142.35	
Q Total (cfs)	1308.00	Flow (cfs)		1308.00	
Top Width (ft)	39.56	Top Width (ft)		39.56	
Vel Total (ft/s)	9.19	Avg. Vel. (ft/s)		9.19	
Max Chl Dpth (ft)	4.48	Hydr. Depth (ft)		3.60	
Conv. Total (cfs)	10572.5	Conv. (cfs)		10572.5	
Length Wtd. (ft)	249.85	Wetted Per. (ft)		43.64	
Min Ch El (ft)	2609.27	Shear (lb/sq ft)		3.12	
Alpha	1.00	Stream Power (lb/ft s)		28.64	
Frctn Loss (ft)	3.98	Cum Volume (acre-ft)	0.21	32.97	0.24
C & E Loss (ft)	0.01	Cum SA (acres)	0.17	11.11	0.13

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: Stagecoach Pass
REACH: StagecoachPass-1 RS: 4.19

INPUT
Description: Cross Section 4.19 is located within Carefree. This section is located north of the City of Scottsdale and Town of Carefree boundary. It is located upstream of the intersection of Stage Coach Pass Road and Stage Coach Pass Wash. Flow travels overland through a dip section.

Topography indicates wash and surrounding undeveloped desert.
Aerial shows wash, homes, and desert.
T6NR5E Section 32
Q100 = 1308 cfs
Station Elevation Data num= 15

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9836.16	2616	9854.89	2614	9875.43	2612	9940.16	2610	9979.19	2608
9986.71	2606	10000	2605.23	10010.1	2606	10014.44	2608	10019.18	2610
10062.54	2612	10075.02	2612	10097.66	2612	10123.72	2614	10149.8	2616

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9836.16	.064	9979.19	.044	10014.44	.064

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9979.19	10014.44	522.81	502.12	499.86	.1	.3

CROSS SECTION OUTPUT Profile #100-yr 6-yr

			Left OB	Channel	Right OB
E.G. Elev (ft)	2611.06	Element			
Vel Head (ft)	1.32	Wt. n-Val.	0.064	0.044	0.064
W.S. Elev (ft)	2609.73	Reach Len. (ft)	522.81	502.12	499.86
Crit W.S. (ft)	2609.73	Flow Area (sq ft)	29.33	128.76	3.56
E.G. Slope (ft/ft)	0.014510	Area (sq ft)	29.33	128.76	3.56
Q Total (cfs)	1308.00	Flow (cfs)	74.50	1224.93	8.57
Top Width (ft)	73.19	Top Width (ft)	33.83	35.25	4.11
Vel Total (ft/s)	8.09	Avg. Vel. (ft/s)	2.54	9.51	2.41
Max Chl Dpth (ft)	4.50	Hydr. Depth (ft)	0.87	3.65	0.87
Conv. Total (cfs)	10858.5	Conv. (cfs)	618.5	10168.9	71.2
Length Wtd. (ft)	502.72	Wetted Per. (ft)	33.88	36.00	4.46
Min Ch El (ft)	2605.23	Shear (lb/sq ft)	0.78	3.24	0.72
Alpha	1.30	Stream Power (lb/ft s)	1.99	30.82	1.74
Frctn Loss (ft)	7.29	Cum Volume (acre-ft)	1.96	31.50	4.86
C & E Loss (ft)	0.02	Cum SA (acres)	1.48	10.89	6.00

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.

CROSS SECTION OUTPUT Profile #Method 1

			Left OB	Channel	Right OB
E.G. Elev (ft)	2611.07	Element			
Vel Head (ft)	1.40	Wt. n-Val.	0.064	0.044	
W.S. Elev (ft)	2609.67	Reach Len. (ft)	522.81	502.12	499.86
Crit W.S. (ft)	2609.67	Flow Area (sq ft)	22.62	126.53	
E.G. Slope (ft/ft)	0.016591	Area (sq ft)	22.62	126.53	
Q Total (cfs)	1308.00	Flow (cfs)	73.67	1234.33	
Top Width (ft)	54.44	Top Width (ft)	19.19	35.25	
Vel Total (ft/s)	8.77	Avg. Vel. (ft/s)	3.26	9.76	
Max Chl Dpth (ft)	4.44	Hydr. Depth (ft)	1.18	3.59	

Conv. Total (cfs)	10154.9	Conv. (cfs)	572.0	9583.0	
Length Wtd. (ft)	502.70	Wetted Per. (ft)	19.90	37.67	
Min Ch El (ft)	2605.23	Shear (lb/sq ft)	1.18	3.48	
Alpha	1.18	Stream Power (lb/ft s)	3.83	33.94	
Frctn Loss (ft)	8.07	Cum Volume (acre-ft)	0.15	32.20	0.24
C & E Loss (ft)	0.01	Cum SA (acres)	0.12	10.90	0.13

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: The cross section had to be extended vertically during the critical depth calculations.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
depth, the 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: Stagecoach Pass
REACH: StagecoachPass-1 RS: 4.09

INPUT
Description: Cross Section 4.09 is located within Scottsdale. This section is located south of the City of Scottsdale and Town of Carefree boundary. It is located downstream of the intersection of Stage Coach Pass Road and Stage Coach Pass Wash. Flow travels overland through a dip section.

Topography indicates wash and
surrounding undeveloped desert.
Aerial shows wash, and
desert.
T5NR5E Section 6
Q100 = 1308 cfs
Station Elevation Data num= 17

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9817.03	2606	9830.14	2604	9851.32	2602	9900.79	2602	9902.87	2602
9922.38	2602	9957.87	2602	9975.55	2600	9983.1	2598	10000	2596
10014.94	2598	10017.96	2600	10020.87	2602	10026.96	2604	10041.84	2606
10062.21	2608	10092.82	2610						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9817.03	.056	9975.55	.038	10017.96	.076

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9975.55	10017.96	447.83	440.53	431.07	.1	.3

CROSS SECTION OUTPUT Profile #100-yr 6-yr

			Left OB	Channel	Right OB
E.G. Elev (ft)	2602.13	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.51	Wt. n-Val.	0.056	0.038	0.076
W.S. Elev (ft)	2600.62	Reach Len. (ft)	447.83	440.53	431.07
Crit W.S. (ft)	2600.62	Flow Area (sq ft)	1.68	132.20	0.28
E.G. Slope (ft/ft)	0.014493	Area (sq ft)	1.68	132.20	0.28
Q Total (cfs)	1308.00	Flow (cfs)	2.43	1305.31	0.26
Top Width (ft)	48.75	Top Width (ft)	5.44	42.41	0.90
Vel Total (ft/s)	9.75	Avg. Vel. (ft/s)	1.45	9.87	0.94
Max Chl Dpth (ft)	4.62	Hydr. Depth (ft)	0.31	3.12	0.31
Conv. Total (cfs)	10865.0	Conv. (cfs)	20.2	10842.7	2.2
Length Wtd. (ft)	440.52	Wetted Per. (ft)	5.48	43.52	1.09
Min Ch El (ft)	2596.00	Shear (lb/sq ft)	0.28	2.75	0.23
Alpha	1.02	Stream Power (lb/ft s)	0.40	27.14	0.22

Frctn Loss (ft)	6.40	Cum Volume (acre-ft)	1.77	29.99	4.83
C & E Loss (ft)	0.04	Cum SA (acres)	1.24	10.45	5.97

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

CROSS SECTION OUTPUT Profile #Method 1

E.G. Elev (ft)	2602.14	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.55	Wt. n-Val.		0.038	
W.S. Elev (ft)	2600.59	Reach Len. (ft)	447.83	440.53	431.07
Crit W.S. (ft)	2600.59	Flow Area (sq ft)		130.99	
E.G. Slope (ft/ft)	0.015548	Area (sq ft)		130.99	
Q Total (cfs)	1308.00	Flow (cfs)		1308.00	
Top Width (ft)	42.41	Top Width (ft)		42.41	
Vel Total (ft/s)	9.99	Avg. Vel. (ft/s)		9.99	
Max Chl Dpth (ft)	4.59	Hydr. Depth (ft)		3.09	
Conv. Total (cfs)	10489.8	Conv. (cfs)		10489.8	
Length Wtd. (ft)	440.53	Wetted Per. (ft)		44.70	
Min Ch El (ft)	2596.00	Shear (lb/sq ft)		2.84	
Alpha	1.00	Stream Power (lb/ft s)		28.40	
Frctn Loss (ft)	6.69	Cum Volume (acre-ft)	0.01	30.71	0.24
C & E Loss (ft)	0.05	Cum SA (acres)		10.45	0.13

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

CROSS SECTION

RIVER: Stagecoach Pass
REACH: StagecoachPass-1 RS: 4.01

INPUT
Description: Topography and Aerial indicate wash and surrounding undeveloped desert.
T5NR5E Section 6
Q100 = 1308 cfs
Station Elevation Data num= 27

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9813.74	2604	9833.31	2604	9849.3	2602	9862.53	2600	9882.06	2598
9917.85	2598	9930.64	2600	9945.48	2602	9956.04	2602	9960.4	2600
9964.62	2598	9968.97	2596	9973.14	2594	9977.41	2592	9984.07	2590
10000	2588.8	10014.78	2590	10024.96	2592	10046.56	2594	10065.6	2596
10099.03	2596	10234.19	2596	10282.63	2598	10321.11	2600	10352.56	2602
10372.89	2604	10386.53	2606						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9813.74	.056	9977.41	.038	10024.96	.076

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9977.41	10024.96	257.45	259.46	259.12	.1	.3

CROSS SECTION OUTPUT Profile #100-yr 6-yr

E.G. Elev (ft)	2594.24	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.39	Wt. n-Val.	0.056	0.038	0.076
W.S. Elev (ft)	2592.85	Reach Len. (ft)	257.45	259.46	259.12
Crit W.S. (ft)	2592.85	Flow Area (sq ft)	0.77	137.17	3.91
E.G. Slope (ft/ft)	0.014573	Area (sq ft)	0.77	137.17	3.91
Q Total (cfs)	1308.00	Flow (cfs)	1.31	1301.48	5.21
Top Width (ft)	58.56	Top Width (ft)	1.82	47.55	9.19
Vel Total (ft/s)	9.22	Avg. Vel. (ft/s)	1.70	9.49	1.33
Max Chl Dpth (ft)	4.05	Hydr. Depth (ft)	0.43	2.88	0.43
Conv. Total (cfs)	10835.1	Conv. (cfs)	10.9	10781.1	43.2
Length Wtd. (ft)	259.45	Wetted Per. (ft)	2.01	48.13	9.23
Min Ch El (ft)	2588.80	Shear (lb/sq ft)	0.35	2.59	0.39
Alpha	1.05	Stream Power (lb/ft s)	0.60	24.60	0.51
Frctn Loss (ft)	3.60	Cum Volume (acre-ft)	1.76	28.63	4.81
C & E Loss (ft)	0.04	Cum SA (acres)	1.20	9.99	5.92

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.

CROSS SECTION OUTPUT Profile #Method 1

E.G. Elev (ft)	2594.27	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.38	Wt. n-Val.		0.038	
W.S. Elev (ft)	2592.89	Reach Len. (ft)	257.45	259.46	259.12
Crit W.S. (ft)	2592.81	Flow Area (sq ft)		138.89	
E.G. Slope (ft/ft)	0.014816	Area (sq ft)		138.89	
Q Total (cfs)	1308.00	Flow (cfs)		1308.00	
Top Width (ft)	47.55	Top Width (ft)		47.55	
Vel Total (ft/s)	9.42	Avg. Vel. (ft/s)		9.42	
Max Chl Dpth (ft)	4.09	Hydr. Depth (ft)		2.92	
Conv. Total (cfs)	10746.0	Conv. (cfs)		10746.0	
Length Wtd. (ft)	259.46	Wetted Per. (ft)		49.91	
Min Ch El (ft)	2588.80	Shear (lb/sq ft)		2.57	
Alpha	1.00	Stream Power (lb/ft s)		24.24	
Frctn Loss (ft)	4.07	Cum Volume (acre-ft)	0.01	29.35	0.24
C & E Loss (ft)	0.06	Cum SA (acres)		9.99	0.13

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The energy loss was 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: Stagecoach Pass
REACH: StagecoachPass-1 RS: 3.96

INPUT
Description: Topography and Aerial indicate wash and surrounding undeveloped desert.
T5NR5E Section 6
Q100 = 1308 cfs
Station Elevation Data num= 18

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9860.17	2598	9887.15	2596	9911.13	2594	9930.29	2592	9968.09	2590
9972.19	2588	9976.41	2586	9988.77	2584	10000	2583.131	10003.01	2584

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10006.55    258610010.39    258810051.01    259010102.74    259010220.39    2590
10236.26    259210250.07    259410264.01    2596

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
 9860.17    .056 9976.41    .03810006.55    .076

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9976.4110006.55           274.78  302.81  308.46             .1       .3

CROSS SECTION OUTPUT  Profile #100-yr 6-yr

  E.G. Elev (ft)           2590.04    Element                  Left OB    Channel   Right OB
  Vel Head (ft)               1.82    Wt. n-Val.                0.056      0.038      0.076
  W.S. Elev (ft)           2588.22    Reach Len. (ft)          274.78     302.81     308.46
  Crit W.S. (ft)           2588.22    Flow Area (sq ft)          5.20     117.53       5.19
  E.G. Slope (ft/ft)      0.013193    Area (sq ft)               5.20     117.53       5.19
  Q Total (cfs)            1308.00    Flow (cfs)                15.92    1283.91       8.17
  Top Width (ft)             43.15    Top Width (ft)             4.67      30.14       8.34
  Vel Total (ft/s)           10.23    Avg. Vel. (ft/s)           3.06      10.92       1.58
  Max Chl Dpth (ft)           5.09    Hydr. Depth (ft)           1.11       3.90       0.62
  Conv. Total (cfs)        11387.8    Conv. (cfs)               138.6    11178.0       71.1
  Length Wtd. (ft)          302.97    Wetted Per. (ft)           5.17      30.98       8.83
  Min Ch El (ft)           2583.13    Shear (lb/sq ft)           0.83       3.12       0.48
  Alpha                       1.12    Stream Power (lb/ft s)     2.53      34.13       0.76
  Frctn Loss (ft)             4.06    Cum Volume (acre-ft)       1.74      27.87       4.79
  C & E Loss (ft)             0.36    Cum SA (acres)             1.18       9.76       5.87


Warning: The energy equation could not be 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 OUTPUT  Profile #Method 1

  E.G. Elev (ft)           2590.15    Element                  Left OB    Channel   Right OB
  Vel Head (ft)               1.94    Wt. n-Val.                          0.038
  W.S. Elev (ft)           2588.20    Reach Len. (ft)          274.78     302.81     308.46
  Crit W.S. (ft)           2588.20    Flow Area (sq ft)                   116.96
  E.G. Slope (ft/ft)      0.016613    Area (sq ft)                        116.96
  Q Total (cfs)            1308.00    Flow (cfs)                         1308.00
  Top Width (ft)             30.14    Top Width (ft)                      30.14
  Vel Total (ft/s)           11.18    Avg. Vel. (ft/s)                    11.18
  Max Chl Dpth (ft)           5.07    Hydr. Depth (ft)                     3.88
  Conv. Total (cfs)        10147.9    Conv. (cfs)                       10147.9
  Length Wtd. (ft)          302.81    Wetted Per. (ft)                    35.39
  Min Ch El (ft)           2583.13    Shear (lb/sq ft)                     3.43
  Alpha                       1.00    Stream Power (lb/ft s)              38.34
  Frctn Loss (ft)             5.24    Cum Volume (acre-ft)       0.01     28.58       0.24
  C & E Loss (ft)             0.32    Cum SA (acres)                       9.76       0.13


Warning: The energy equation could not be balanced within the specified number of iterations.  The
         program used critical depth for the water surface and continued on with the calculations.
Warning: The velocity head has changed by more than 0.5 ft (0.15 m).  This may indicate the need for
         additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross
section.
         This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to
critical
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depth, the 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: Stagecoach Pass
REACH: StagecoachPass-1 RS: 3.9

INPUT
Description: Topography and Aerial indicate wash and surrounding undeveloped desert.
T5NR5E Section 6
Q100 = 1308 cfs
Station Elevation Data num= 26

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9791.56	2592	9808.97	2590	9849.55	2588	9882.68	2586	9905.82	2584
9913.92	2582	9917.71	2580	9933.59	2580	9944.04	2582	9965.14	2582
9978.46	2580	10000	2578.38	10007.24	2580	10011.67	2582	10107.95	2582
10146.45	2580	10148.33	2580	10151.2	2582	10153.87	2584	10156.57	2586
10159.23	2588	10165.65	2590	10174.55	2590	10210.93	2590	10236.26	2592
10281	2594								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9791.56	.056	9913.92	.038	10011.67	.076

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9913.92	10011.67	458.51	440.49	446.67	.1	.3

CROSS SECTION OUTPUT Profile #100-yr 6-yr

E.G. Elev (ft)	2582.92	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.61	Wt. n-Val.	0.056	0.038	0.076
W.S. Elev (ft)	2582.31	Reach Len. (ft)	458.51	440.49	446.67
Crit W.S. (ft)	2582.31	Flow Area (sq ft)	0.19	174.72	88.15
E.G. Slope (ft/ft)	0.013582	Area (sq ft)	0.19	174.72	88.15
Q Total (cfs)	1308.00	Flow (cfs)	0.17	1160.79	147.04
Top Width (ft)	238.94	Top Width (ft)	1.25	97.75	139.94
Vel Total (ft/s)	4.97	Avg. Vel. (ft/s)	0.87	6.64	1.67
Max Chl Dpth (ft)	3.93	Hydr. Depth (ft)	0.15	1.79	0.63
Conv. Total (cfs)	11223.5	Conv. (cfs)	1.4	9960.3	1261.7
Length Wtd. (ft)	441.08	Wetted Per. (ft)	1.28	99.25	140.72
Min Ch El (ft)	2578.38	Shear (lb/sq ft)	0.13	1.49	0.53
Alpha	1.60	Stream Power (lb/ft s)	0.11	9.92	0.89
Frctn Loss (ft)	6.50	Cum Volume (acre-ft)	1.73	26.86	4.46
C & E Loss (ft)	0.03	Cum SA (acres)	1.17	9.31	5.35

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 energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
depth, the 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 OUTPUT Profile #Method 1

E.G. Elev (ft)	2583.18	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.89	Wt. n-Val.		0.038	
W.S. Elev (ft)	2582.29	Reach Len. (ft)	458.51	440.49	446.67
Crit W.S. (ft)	2582.29	Flow Area (sq ft)		172.83	
E.G. Slope (ft/ft)	0.018019	Area (sq ft)		172.83	
Q Total (cfs)	1308.00	Flow (cfs)		1308.00	
Top Width (ft)	97.75	Top Width (ft)		97.75	
Vel Total (ft/s)	7.57	Avg. Vel. (ft/s)		7.57	

Max Chl Dpth (ft)	3.91	Hydr. Depth (ft)		1.77	
Conv. Total (cfs)	9744.1	Conv. (cfs)		9744.1	
Length Wtd. (ft)	440.49	Wetted Per. (ft)		99.83	
Min Ch El (ft)	2578.38	Shear (lb/sq ft)		1.95	
Alpha	1.00	Stream Power (lb/ft s)		14.74	
Frctn Loss (ft)	8.39	Cum Volume (acre-ft)	0.01	27.58	0.24
C & E Loss (ft)	0.02	Cum SA (acres)		9.32	0.13

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

CROSS SECTION

RIVER: Stagecoach Pass
REACH: StagecoachPass-1 RS: 3.82

INPUT
Description: Topography and Aerial indicate wash and surrounding undeveloped
desert.
T5NR5E Section 6
Q100 = 1308 cfs
Station Elevation Data num= 18

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9844.47	2582	9870.25	2580	9892.7	2578	9908.38	2576	9921.2	2574
9957.88	2572	9958.9	2572	9959.95	2572	9982.85	2570	10000	2569.62
10012.13	2570	10022.21	2572	10168.08	2574	10192.01	2576	10207.54	2578
10237.26	2580	10253.64	2582	10306.83	2582				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9844.47	.056	9957.88	.044	10022.21	.076

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9957.88	10022.21	526.18	508.72	513.48	.1	.3

CROSS SECTION OUTPUT Profile #100-yr 6-yr

E.G. Elev (ft)	2573.86	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.90	Wt. n-Val.	0.056	0.044	0.076
W.S. Elev (ft)	2572.96	Reach Len. (ft)	526.18	508.72	513.48
Crit W.S. (ft)	2572.96	Flow Area (sq ft)	8.50	159.03	33.79
E.G. Slope (ft/ft)	0.016023	Area (sq ft)	8.50	159.03	33.79
Q Total (cfs)	1308.00	Flow (cfs)	17.51	1239.12	51.36
Top Width (ft)	152.20	Top Width (ft)	17.66	64.33	70.21
Vel Total (ft/s)	6.50	Avg. Vel. (ft/s)	2.06	7.79	1.52
Max Chl Dpth (ft)	3.34	Hydr. Depth (ft)	0.48	2.47	0.48
Conv. Total (cfs)	10333.2	Conv. (cfs)	138.4	9789.0	405.8
Length Wtd. (ft)	508.93	Wetted Per. (ft)	17.68	64.62	70.22
Min Ch El (ft)	2569.62	Shear (lb/sq ft)	0.48	2.46	0.48
Alpha	1.37	Stream Power (lb/ft s)	0.99	19.18	0.73
Frctn Loss (ft)	8.39	Cum Volume (acre-ft)	1.68	25.17	3.83
C & E Loss (ft)	0.01	Cum SA (acres)	1.07	8.50	4.27

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 energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical

depth, the 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 OUTPUT Profile #Method 1

E.G. Elev (ft)	2574.01	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.11	Wt. n-Val.		0.044	
W.S. Elev (ft)	2572.90	Reach Len. (ft)	526.18	508.72	513.48
Crit W.S. (ft)	2572.82	Flow Area (sq ft)		154.98	
E.G. Slope (ft/ft)	0.020184	Area (sq ft)		154.98	
Q Total (cfs)	1308.00	Flow (cfs)		1308.00	
Top Width (ft)	64.33	Top Width (ft)		64.33	
Vel Total (ft/s)	8.44	Avg. Vel. (ft/s)		8.44	
Max Chl Dpth (ft)	3.28	Hydr. Depth (ft)		2.41	
Conv. Total (cfs)	9206.8	Conv. (cfs)		9206.8	
Length Wtd. (ft)	508.72	Wetted Per. (ft)		66.42	
Min Ch El (ft)	2569.62	Shear (lb/sq ft)		2.94	
Alpha	1.00	Stream Power (lb/ft s)		24.81	
Frctn Loss (ft)	9.56	Cum Volume (acre-ft)	0.01	25.92	0.24
C & E Loss (ft)	0.02	Cum SA (acres)		8.50	0.13

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: Stagecoach Pass
REACH: StagecoachPass-1 RS: 3.72

INPUT
Description: Topography and Aerial indicate wash and surrounding undeveloped desert.
T5NR5E Section 6
Q100 = 1308 cfs
Station Elevation Data num= 18

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9868.94	2574	9885.07	2572	9898.9	2570	9947.63	2568	9961.57	2566
9969.8	2564	9971.8	2563	9973.79	2562	10000	2560.3	10038.69	2562
10052.68	2563	10066.66	2564	10170.42	2566	10183.34	2568	10196.25	2570
10210.37	2572	10238.14	2574	10292.14	2574				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9868.94	.056	9971.8	.038	10052.68	.076

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9971.8	10052.68	351.62	342.71	341.81	.1	.3

CROSS SECTION OUTPUT Profile #100-yr 6-yr

E.G. Elev (ft)	2564.43	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.01	Wt. n-Val.	0.056	0.038	0.076
W.S. Elev (ft)	2563.42	Reach Len. (ft)	351.62	342.71	341.81
Crit W.S. (ft)	2563.42	Flow Area (sq ft)	0.18	162.00	1.23
E.G. Slope (ft/ft)	0.016955	Area (sq ft)	0.18	162.00	1.23
Q Total (cfs)	1308.00	Flow (cfs)	0.20	1306.70	1.10
Top Width (ft)	87.59	Top Width (ft)	0.84	80.88	5.87
Vel Total (ft/s)	8.00	Avg. Vel. (ft/s)	1.13	8.07	0.90
Max Chl Dpth (ft)	3.12	Hydr. Depth (ft)	0.21	2.00	0.21
Conv. Total (cfs)	10045.2	Conv. (cfs)	1.5	10035.2	8.5
Length Wtd. (ft)	342.71	Wetted Per. (ft)	0.94	81.25	5.88
Min Ch El (ft)	2560.30	Shear (lb/sq ft)	0.20	2.11	0.22
Alpha	1.01	Stream Power (lb/ft s)	0.23	17.02	0.20
Frctn Loss (ft)	5.62	Cum Volume (acre-ft)	1.63	23.29	3.63
C & E Loss (ft)	0.01	Cum SA (acres)	0.96	7.65	3.82

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 energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
depth, the 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 OUTPUT Profile #Method 1

E.G. Elev (ft)	2564.43	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.02	Wt. n-Val.		0.038	
W.S. Elev (ft)	2563.41	Reach Len. (ft)	351.62	342.71	341.81
Crit W.S. (ft)	2563.41	Flow Area (sq ft)		161.13	
E.G. Slope (ft/ft)	0.017529	Area (sq ft)		161.13	
Q Total (cfs)	1308.00	Flow (cfs)		1308.00	
Top Width (ft)	80.88	Top Width (ft)		80.88	
Vel Total (ft/s)	8.12	Avg. Vel. (ft/s)		8.12	
Max Chl Dpth (ft)	3.11	Hydr. Depth (ft)		1.99	
Conv. Total (cfs)	9879.5	Conv. (cfs)		9879.5	
Length Wtd. (ft)	342.71	Wetted Per. (ft)		82.06	
Min Ch El (ft)	2560.30	Shear (lb/sq ft)		2.15	
Alpha	1.00	Stream Power (lb/ft s)		17.44	
Frctn Loss (ft)	5.94	Cum Volume (acre-ft)	0.01	24.07	0.24
C & E Loss (ft)	0.01	Cum SA (acres)		7.65	0.13

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

CROSS SECTION

RIVER: Stagecoach Pass
REACH: StagecoachPass-1 RS: 3.66

INPUT
Description: Topography and Aerial indicate wash and surrounding undeveloped desert.
T5NR5E Section 6
Q100 = 1308 cfs
Station Elevation Data num= 18

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9926.01	2566	9934.67	2564	9942.7	2562	9946.57	2560	9947.19	2558
9947.81	2556	9988.01	2554	10000	2553.4	10013.2	2554	10017.59	2556
10041.28	2558	10080.18	2558	10136.05	2558	10150.31	2560	10160.11	2562
10174.89	2562	10217.34	2562	10260.67	2564				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9926.01	.056	9947.81	.038	10017.59	.076

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9947.81	10017.59	91.95	94.2	93.79	.3	.5

CROSS SECTION OUTPUT Profile #100-yr 6-yr

E.G. Elev (ft)	2557.85	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.09	Wt. n-Val.	0.056	0.038	0.076
W.S. Elev (ft)	2556.76	Reach Len. (ft)	91.95	94.20	93.79

Crit W.S. (ft)	2556.76	Flow Area (sq ft)	0.09	155.67	3.43
E.G. Slope (ft/ft)	0.015887	Area (sq ft)	0.09	155.67	3.43
Q Total (cfs)	1308.00	Flow (cfs)	0.07	1303.50	4.44
Top Width (ft)	79.04	Top Width (ft)	0.24	69.78	9.02
Vel Total (ft/s)	8.22	Avg. Vel. (ft/s)	0.78	8.37	1.29
Max Chl Dpth (ft)	3.36	Hydr. Depth (ft)	0.38	2.23	0.38
Conv. Total (cfs)	10377.4	Conv. (cfs)	0.6	10341.6	35.2
Length Wtd. (ft)	94.20	Wetted Per. (ft)	0.80	70.29	9.05
Min Ch El (ft)	2553.40	Shear (lb/sq ft)	0.11	2.20	0.38
Alpha	1.04	Stream Power (lb/ft s)	0.09	18.39	0.49
Frctn Loss (ft)	0.60	Cum Volume (acre-ft)	1.63	22.04	3.61
C & E Loss (ft)	0.35	Cum SA (acres)	0.95	7.05	3.76

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
depth, the 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 OUTPUT Profile #Method 1

			Left OB	Channel	Right OB
E.G. Elev (ft)	2557.86	Element			
Vel Head (ft)	1.12	Wt. n-Val.		0.038	
W.S. Elev (ft)	2556.73	Reach Len. (ft)	91.95	94.20	93.79
Crit W.S. (ft)	2556.73	Flow Area (sq ft)		153.76	
E.G. Slope (ft/ft)	0.017134	Area (sq ft)		153.76	
Q Total (cfs)	1308.00	Flow (cfs)		1308.00	
Top Width (ft)	69.78	Top Width (ft)		69.78	
Vel Total (ft/s)	8.51	Avg. Vel. (ft/s)		8.51	
Max Chl Dpth (ft)	3.33	Hydr. Depth (ft)		2.20	
Conv. Total (cfs)	9992.6	Conv. (cfs)		9992.6	
Length Wtd. (ft)	94.20	Wetted Per. (ft)		71.76	
Min Ch El (ft)	2553.40	Shear (lb/sq ft)		2.29	
Alpha	1.00	Stream Power (lb/ft s)		19.50	
Frctn Loss (ft)	0.57	Cum Volume (acre-ft)	0.01	22.83	0.24
C & E Loss (ft)	0.38	Cum SA (acres)		7.06	0.13

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
depth, the 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: Stagecoach Pass
REACH: StagecoachPass-1 RS: 3.64

INPUT
Description: Cross Section 3.64 is located upstream of the intersection of Pima

Road and Stage Coach Pass Wash. There are 2-8 X 4 concrete box culverts located under Pima Road. This section is located upstream of concentration point CSCP06 in the HEC-1 model.

Topography indicates wash, Pima Road, and surrounding undeveloped desert.
Aerial shows wash, building, desert and Pima Road.
T5NR5E Section 6
Q100 = 1308 cfs

Station Elevation Data num= 15

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9866.65	2566	9886.2	2564	9906.72	2562	9917.83	2560	9926.01	2558
9932.89	2556	9939.71	2554	9998.37	2549.97	10014.17	2550.05	10019.78	2554
10064.58	2556	10117.06	2558	10216.38	2560	10241.77	2562	10242.64	2562

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9866.65	.056	9939.71	.038	10019.78	.076

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9939.71	10019.78	148.5	132.05	131.3	.3	.5

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
9866.65	9939.71	2553.02	F
10019.78	10242.64	2553.02	F

CROSS SECTION OUTPUT Profile #100-yr 6-yr

			Left OB	Channel	Right OB
E.G. Elev (ft)	2555.25	Element			
Vel Head (ft)	0.38	Wt. n-Val.	0.056	0.038	0.076
W.S. Elev (ft)	2554.87	Reach Len. (ft)	148.50	132.05	131.30
Crit W.S. (ft)	2553.54	Flow Area (sq ft)	1.28	261.60	8.38
E.G. Slope (ft/ft)	0.003416	Area (sq ft)	1.28	261.60	8.38
Q Total (cfs)	1308.00	Flow (cfs)	1.10	1301.42	5.48
Top Width (ft)	102.40	Top Width (ft)	2.95	80.07	19.38
Vel Total (ft/s)	4.82	Avg. Vel. (ft/s)	0.86	4.97	0.65
Max Chl Dpth (ft)	4.90	Hydr. Depth (ft)	0.43	3.27	0.43
Conv. Total (cfs)	22379.0	Conv. (cfs)	18.8	22266.5	93.7
Length Wtd. (ft)	132.05	Wetted Per. (ft)	3.07	81.46	19.40
Min Ch El (ft)	2549.97	Shear (lb/sq ft)	0.09	0.68	0.09
Alpha	1.06	Stream Power (lb/ft s)	0.08	3.41	0.06
Frctn Loss (ft)		Cum Volume (acre-ft)	1.62	21.59	3.59
C & E Loss (ft)		Cum SA (acres)	0.95	6.89	3.73

CROSS SECTION OUTPUT Profile #Method 1

			Left OB	Channel	Right OB
E.G. Elev (ft)	2555.34	Element			
Vel Head (ft)	0.36	Wt. n-Val.		0.038	0.076
W.S. Elev (ft)	2554.98	Reach Len. (ft)	148.50	132.05	131.30
Crit W.S. (ft)	2553.54	Flow Area (sq ft)		271.06	7.59
E.G. Slope (ft/ft)	0.003083	Area (sq ft)		271.06	7.59
Q Total (cfs)	1308.00	Flow (cfs)		1301.37	6.63
Top Width (ft)	90.05	Top Width (ft)		80.07	9.98
Vel Total (ft/s)	4.69	Avg. Vel. (ft/s)		4.80	0.87
Max Chl Dpth (ft)	5.01	Hydr. Depth (ft)		3.39	0.76
Conv. Total (cfs)	23555.9	Conv. (cfs)		23436.5	119.3
Length Wtd. (ft)	132.05	Wetted Per. (ft)		82.44	10.53
Min Ch El (ft)	2549.97	Shear (lb/sq ft)		0.63	0.14
Alpha	1.04	Stream Power (lb/ft s)		3.04	0.12
Frctn Loss (ft)		Cum Volume (acre-ft)	0.01	22.38	0.23
C & E Loss (ft)		Cum SA (acres)		6.89	0.12

CULVERT

RIVER: Stagecoach Pass
REACH: StagecoachPass-1 RS: 3.63

```
INPUT
Description: Box culvets at Pima Road crossing.
Distance from Upstream XS =       1
Deck/Roadway Width        =     130
Weir Coefficient          =     2.6
Upstream  Deck/Roadway Coordinates
    num=       5
     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord
 9867.52 2553.02         9986.17 2553.02        10007.96 2553.18
10035.69 2552.96        10267.52 2552.96

Upstream Bridge Cross Section Data
Station Elevation Data    num=      15
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
 9866.65    2566  9886.2    2564 9906.72    2562 9917.83    2560 9926.01    2558
 9932.89    2556 9939.71    2554 9998.37 2549.9710014.17 2550.0510019.78    2554
10064.58    255610117.06    255810216.38    256010241.77    256210242.64    2562

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
 9866.65    .056 9939.71    .03810019.78    .076

Bank Sta: Left   Right    Coeff Contr.   Expan.
       9939.7110019.78             .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
 9866.65 9939.71 2553.02       F
10019.7810242.64 2553.02       F

Downstream  Deck/Roadway Coordinates
    num=       5
     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord
 9836.34 2553.02         9955.11 2553.02         9976.87 2553.18
10004.57 2552.96        10336.34 2552.96

Downstream Bridge Cross Section Data
Station Elevation Data    num=      20
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
 9828.76    2562 9853.96    2560 9870.01    2558 9887.19    2556  9914.1    2556
 9929.63    2556 9954.89    2554 9965.63    2552 9973.68 2548.2510022.75 2548.25
10029.76    255210036.91    255410092.64 2555.7510115.81    255410127.25    2552
10161.06    255210204.54    255210219.11    255210262.34    2554 10309.6    2556

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
 9828.76    .056 9965.63    .03810029.76    .076

Bank Sta: Left   Right    Coeff Contr.   Expan.
       9965.6310029.76             .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
 9828.76 9965.63 2553.02       F
10029.76 10309.6 2553.02       F
Right Levee     Station=10092.64      Elevation= 2555.75

Upstream Embankment side slope              =       0 horiz. to 1.0 vertical
Downstream Embankment side slope            =       0 horiz. to 1.0 vertical
Maximum allowable submergence for weir flow =     .95
Elevation at which weir flow begins         =
Energy head used in spillway design         =
Spillway height used in design              =
Weir crest shape                            = Broad Crested

Number of Culverts =  1

Culvert Name      Shape      Rise    Span
CULVERT#1            Box       4       8
FHWA Chart # 8 - flared wingwalls
FHWA Scale # 1 - Wingwall flared 30 to 75 deg.
Solution Criteria = Highest U.S. EG
```

Culvert	Upstrm Dist	Length	Top n	Bottom n	Depth Blocked	Entrance Loss Coef	Exit Loss Coef
	4.3	66	.015	.015	0	.4	1

Number of Barrels = 2
Upstream Elevation = 2548.49
Centerline Stations
Sta. Sta.
9996.9210010.59
Downstream Elevation = 2547.64
Centerline Stations
Sta. Sta.
9998.9610012.64

CROSS SECTION

RIVER: Stagecoach Pass
REACH: StagecoachPass-1 RS: 3.62

INPUT
Description: Cross Section 3.62 is located downstream of the intersection of Pima Road and Stage Coach Pass Wash. There are 2-8 x 4 concrete box culverts located under Pima Road.

Topography indicates
wash, Pima Road, and surrounding undeveloped desert.
Aerial shows
wash, building, desert and Pima Road.
T5NR4E Section 1
Q100 =
1487 cfs
Station Elevation Data num= 20

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9828.76	2562	9853.96	2560	9870.01	2558	9887.19	2556	9914.1	2556
9929.63	2556	9954.89	2554	9965.63	2552	9973.68	2548:25	10022.75	2548:25
10029.76	2552	10036.91	2554	10092.64	2555.75	10115.81	2554	10127.25	2552
10161.06	2552	10204.54	2552	10219.11	2552	10262.34	2554	10309.6	2556

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9828.76	.056	9965.63	.038	10029.76	.076

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9965.63	10029.76	249.65	239.22	239.56	.3	.5

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
9828.76	9965.63	2553.02	F
10029.76	10309.6	2553.02	F

Right Levee Station=10092.64 Elevation= 2555.75

CROSS SECTION OUTPUT Profile #100-yr 6-yr

			Left OB	Channel	Right OB
E.G. Elev (ft)	2552.18	Element			
Vel Head (ft)	1.23	Wt. n-Val.		0.038	
W.S. Elev (ft)	2550.95	Reach Len. (ft)	249.65	239.22	239.56
Crit W.S. (ft)	2550.95	Flow Area (sq ft)		146.99	
E.G. Slope (ft/ft)	0.016091	Area (sq ft)		146.99	
Q Total (cfs)	1308.00	Flow (cfs)		1308.00	
Top Width (ft)	59.90	Top Width (ft)		59.90	
Vel Total (ft/s)	8.90	Avg. Vel. (ft/s)		8.90	
Max Chl Dpth (ft)	2.70	Hydr. Depth (ft)		2.45	
Conv. Total (cfs)	10311.2	Conv. (cfs)		10311.2	
Length Wtd. (ft)	239.25	Wetted Per. (ft)		61.18	
Min Ch El (ft)	2548.25	Shear (lb/sq ft)		2.41	
Alpha	1.00	Stream Power (lb/ft s)		21.48	
Frctn Loss (ft)	3.55	Cum Volume (acre-ft)	1.62	20.97	3.58
C & E Loss (ft)	0.01	Cum SA (acres)	0.94	6.68	3.70

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.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid,
energy was used.

CROSS SECTION OUTPUT Profile #Method 1

E.G. Elev (ft)	2552.19	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.12	Wt. n-Val.		0.038	
W.S. Elev (ft)	2551.07	Reach Len. (ft)	249.65	239.22	239.56
Crit W.S. (ft)	2550.96	Flow Area (sq ft)		154.14	
E.G. Slope (ft/ft)	0.013895	Area (sq ft)		154.14	
Q Total (cfs)	1308.00	Flow (cfs)		1308.00	
Top Width (ft)	60.38	Top Width (ft)		60.38	
Vel Total (ft/s)	8.49	Avg. Vel. (ft/s)		8.49	
Max Chl Dpth (ft)	2.82	Hydr. Depth (ft)		2.55	
Conv. Total (cfs)	11096.4	Conv. (cfs)		11096.4	
Length Wtd. (ft)	239.22	Wetted Per. (ft)		61.71	
Min Ch El (ft)	2548.25	Shear (lb/sq ft)		2.17	
Alpha	1.00	Stream Power (lb/ft s)		18.39	
Frctn Loss (ft)	3.61	Cum Volume (acre-ft)	0.01	21.73	0.22
C & E Loss (ft)	0.07	Cum SA (acres)		6.68	0.10

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.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid,
energy was used.

CROSS SECTION

RIVER: Stagecoach Pass
REACH: StagecoachPass-1 RS: 3.57

INPUT
Description: Topography indicates wash, and surrounding undeveloped
desert.
Aerial shows wash, homes, and desert.
T5NR4E Section
1
Q100 = 1487 cfs
Station Elevation Data num= 15

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9666.03	2554	9791.74	2552	9944.58	2550	9958.76	2548	9966.9	2546
9981.35	2544.37	9997.06	2544	10016.06	2544	10027.31	2546	10067.04	2548
10081.77	2550	10105.26	2552	10173.61	2554	10200.48	2556	10234.83	2558

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9666.03	.056	9966.9	.038	10027.31	.076

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9966.91	10027.31	197.3	194.82	193.59	.1	.3

CROSS SECTION OUTPUT Profile #100-yr 6-yr

E.G. Elev (ft)	2548.43	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.21	Wt. n-Val.	0.056	0.038	0.076
W.S. Elev (ft)	2547.22	Reach Len. (ft)	197.30	194.82	193.59
Crit W.S. (ft)	2547.22	Flow Area (sq ft)	3.04	163.32	14.82
E.G. Slope (ft/ft)	0.013878	Area (sq ft)	3.04	163.32	14.82

Q Total (cfs)	1487.00	Flow (cfs)	6.70	1455.75	24.55
Top Width (ft)	89.64	Top Width (ft)	4.97	60.41	24.26
Vel Total (ft/s)	8.21	Avg. Vel. (ft/s)	2.21	8.91	1.66
Max Chl Dpth (ft)	3.22	Hydr. Depth (ft)	0.61	2.70	0.61
Conv. Total (cfs)	12622.5	Conv. (cfs)	56.9	12357.3	208.4
Length Wtd. (ft)	194.81	Wetted Per. (ft)	5.12	60.68	24.29
Min Ch El (ft)	2544.00	Shear (lb/sq ft)	0.51	2.33	0.53
Alpha	1.16	Stream Power (lb/ft s)	1.13	20.79	0.88
Frctn Loss (ft)	2.90	Cum Volume (acre-ft)	1.61	20.12	3.54
C & E Loss (ft)	0.10	Cum SA (acres)	0.93	6.35	3.64

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 energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
depth, the 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 OUTPUT Profile #Method 1

E.G. Elev (ft)	2548.51	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.34	Wt. n-Val.		0.038	
W.S. Elev (ft)	2547.17	Reach Len. (ft)	197.30	194.82	193.59
Crit W.S. (ft)	2547.17	Flow Area (sq ft)		160.02	
E.G. Slope (ft/ft)	0.016301	Area (sq ft)		160.02	
Q Total (cfs)	1487.00	Flow (cfs)		1487.00	
Top Width (ft)	60.41	Top Width (ft)		60.41	
Vel Total (ft/s)	9.29	Avg. Vel. (ft/s)		9.29	
Max Chl Dpth (ft)	3.17	Hydr. Depth (ft)		2.65	
Conv. Total (cfs)	11646.8	Conv. (cfs)		11646.8	
Length Wtd. (ft)	194.82	Wetted Per. (ft)		63.02	
Min Ch El (ft)	2544.00	Shear (lb/sq ft)		2.58	
Alpha	1.00	Stream Power (lb/ft s)		24.01	
Frctn Loss (ft)	3.33	Cum Volume (acre-ft)	0.01	20.87	0.22
C & E Loss (ft)	0.12	Cum SA (acres)		6.35	0.10

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
depth, the 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: Stagecoach Pass
REACH: StagecoachPass-1 RS: 3.53

INPUT
Description: Topography indicates wash, and surrounding undeveloped
desert.
Aerial shows wash, homes, and desert.
T5NR4E Section
1
Q100 = 1487 cfs
Station Elevation Data num= 17

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9728.74	2550	9749.82	2548	9771.83	2546	9802.6	2546	9932.28	2546
9935.66	2544	9937.26	2543	9938.86	2542	9962.19	2542	10000	2540.98

```
 10022.5    254210039.79    254310057.08    254410073.57    2546 10084.1    2548
10099.57    255010115.62    2552

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
 9728.74    .056 9937.26    .03810039.79    .076

Bank Sta: Left   Right    Lengths: Left Channel  Right     Coeff Contr.   Expan.
       9937.2610039.79           502.23  494.74  496.39            .1        .3
```

CROSS SECTION OUTPUT Profile #100-yr 6-yr

			Left OB	Channel	Right OB
E.G. Elev (ft)	2544.59	Element			
Vel Head (ft)	0.89	Wt. n-Val.	0.056	0.038	0.076
W.S. Elev (ft)	2543.70	Reach Len. (ft)	502.23	494.74	496.39
Crit W.S. (ft)	2543.66	Flow Area (sq ft)	0.39	195.28	4.20
E.G. Slope (ft/ft)	0.016011	Area (sq ft)	0.39	195.28	4.20
Q Total (cfs)	1487.00	Flow (cfs)	0.58	1481.29	5.14
Top Width (ft)	115.69	Top Width (ft)	1.11	102.53	12.05
Vel Total (ft/s)	7.44	Avg. Vel. (ft/s)	1.49	7.59	1.22
Max Chl Dpth (ft)	2.72	Hydr. Depth (ft)	0.35	1.90	0.35
Conv. Total (cfs)	11751.7	Conv. (cfs)	4.6	11706.5	40.6
Length Wtd. (ft)	494.75	Wetted Per. (ft)	1.31	102.88	12.07
Min Ch El (ft)	2540.98	Shear (lb/sq ft)	0.30	1.90	0.35
Alpha	1.04	Stream Power (lb/ft s)	0.44	14.39	0.43
Frctn Loss (ft)	7.77	Cum Volume (acre-ft)	1.61	19.32	3.50
C & E Loss (ft)	0.06	Cum SA (acres)	0.91	5.99	3.55

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 energy loss was 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 OUTPUT Profile #Method 1

			Left OB	Channel	Right OB
E.G. Elev (ft)	2544.60	Element			
Vel Head (ft)	0.95	Wt. n-Val.		0.038	
W.S. Elev (ft)	2543.65	Reach Len. (ft)	502.23	494.74	496.39
Crit W.S. (ft)	2543.65	Flow Area (sq ft)		190.20	
E.G. Slope (ft/ft)	0.017913	Area (sq ft)		190.20	
Q Total (cfs)	1487.00	Flow (cfs)		1487.00	
Top Width (ft)	102.53	Top Width (ft)		102.53	
Vel Total (ft/s)	7.82	Avg. Vel. (ft/s)		7.82	
Max Chl Dpth (ft)	2.67	Hydr. Depth (ft)		1.86	
Conv. Total (cfs)	11110.3	Conv. (cfs)		11110.3	
Length Wtd. (ft)	494.74	Wetted Per. (ft)		104.18	
Min Ch El (ft)	2540.98	Shear (lb/sq ft)		2.04	
Alpha	1.00	Stream Power (lb/ft s)		15.96	
Frctn Loss (ft)	7.66	Cum Volume (acre-ft)	0.01	20.09	0.22
C & E Loss (ft)	0.03	Cum SA (acres)		5.99	0.10

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.

CROSS SECTION

RIVER: Stagecoach Pass
REACH: StagecoachPass-1 RS: 3.44

INPUT
Description: Topography indicates wash, and surrounding undeveloped desert.
Aerial shows wash, homes, and desert.
T5NR4E Section 1
Q100 = 1487 cfs

Station Elevation Data num= 19

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9629.68	2540	9647.16	2538	9657.55	2536	9665.15	2536	9682.03	2536
9688.82	2534	9695.05	2534	9700.08	2536	9745.29	2538	9960.18	2538
9979.14	2536	9981.61	2534	9984.14	2532	10000	2530.93	10019.38	2532
10024.23	2534	10030.05	2536	10039.12	2538	10058.71	2540		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9629.68	.064	9981.61	.044	10024.23	.064

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9981.61	10024.23	460.64	467.05	475.12	.1	.3

Left Levee Station= 9960.18 Elevation= 2538

CROSS SECTION OUTPUT Profile #100-yr 6-yr

			Left OB	Channel	Right OB
E.G. Elev (ft)	2536.77	Element			
Vel Head (ft)	1.44	Wt. n-Val.	0.064	0.044	0.064
W.S. Elev (ft)	2535.32	Reach Len. (ft)	460.64	467.05	475.12
Crit W.S. (ft)	2535.13	Flow Area (sq ft)	1.08	153.16	2.55
E.G. Slope (ft/ft)	0.015406	Area (sq ft)	1.08	153.16	2.55
Q Total (cfs)	1487.00	Flow (cfs)	2.01	1479.61	5.38
Top Width (ft)	48.11	Top Width (ft)	1.64	42.62	3.85
Vel Total (ft/s)	9.48	Avg. Vel. (ft/s)	1.85	9.66	2.11
Max Chl Dpth (ft)	4.39	Hydr. Depth (ft)	0.66	3.59	0.66
Conv. Total (cfs)	11980.3	Conv. (cfs)	16.2	11920.8	43.4
Length Wtd. (ft)	467.04	Wetted Per. (ft)	2.10	43.78	4.07
Min Ch El (ft)	2530.93	Shear (lb/sq ft)	0.50	3.37	0.60
Alpha	1.03	Stream Power (lb/ft s)	0.92	32.51	1.27
Frctn Loss (ft)	7.77	Cum Volume (acre-ft)	1.60	17.34	3.46
C & E Loss (ft)	0.02	Cum SA (acres)	0.90	5.16	3.46

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.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.

CROSS SECTION OUTPUT Profile #Method 1

			Left OB	Channel	Right OB
E.G. Elev (ft)	2536.86	Element			
Vel Head (ft)	1.27	Wt. n-Val.		0.044	
W.S. Elev (ft)	2535.59	Reach Len. (ft)	460.64	467.05	475.12
Crit W.S. (ft)	2535.10	Flow Area (sq ft)		164.29	
E.G. Slope (ft/ft)	0.013521	Area (sq ft)		164.29	
Q Total (cfs)	1487.00	Flow (cfs)		1487.00	
Top Width (ft)	42.62	Top Width (ft)		42.62	
Vel Total (ft/s)	9.05	Avg. Vel. (ft/s)		9.05	
Max Chl Dpth (ft)	4.66	Hydr. Depth (ft)		3.85	
Conv. Total (cfs)	12788.0	Conv. (cfs)		12788.0	
Length Wtd. (ft)	467.05	Wetted Per. (ft)		46.95	
Min Ch El (ft)	2530.93	Shear (lb/sq ft)		2.95	
Alpha	1.00	Stream Power (lb/ft s)		26.74	
Frctn Loss (ft)	7.77	Cum Volume (acre-ft)	0.01	18.07	0.22
C & E Loss (ft)	0.04	Cum SA (acres)		5.16	0.10

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.

Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water
surface was used.

CROSS SECTION

RIVER: Stagecoach Pass
REACH: StagecoachPass-1 RS: 3.35

INPUT
Description: Topography indicates wash, and surrounding undeveloped
desert.
Aerial shows wash, homes, and desert.
T5NR4E Section
1
Q100 = 1487 cfs
Station Elevation Data num= 24

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9607.36	2536	9622.9	2536	9645.23	2534	9675.49	2532	9719.69	2530
9729.76	2528	9748.63	2528	9809.82	2528	9823.88	2528	9845.65	2530
9892.65	2530	9932.53	2528	9954.2	2528	9964.36	2528	9975.84	2526
9984.17	2524	10000	2522.94	10014.09	2524	10017.07	2526	10020	2528
10022.91	2530	10071.15	2530	10076.93	2530	10145.1	2530		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9607.36	.064	9975.84	.044	10017.07	.064

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9975.84	10017.07	212.63	217.05	218.09	.1	.3

Left Levee Station= 9892.86 Elevation= 2529.99

CROSS SECTION OUTPUT Profile #100-yr 6-yr

E.G. Elev (ft)	2528.99	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.62	Wt. n-Val.	0.064	0.044	0.064
W.S. Elev (ft)	2527.37	Reach Len. (ft)	212.63	217.05	218.09
Crit W.S. (ft)	2527.37	Flow Area (sq ft)	5.38	143.48	1.37
E.G. Slope (ft/ft)	0.018004	Area (sq ft)	5.38	143.48	1.37
Q Total (cfs)	1487.00	Flow (cfs)	12.90	1471.17	2.93
Top Width (ft)	51.10	Top Width (ft)	7.86	41.23	2.01
Vel Total (ft/s)	9.90	Avg. Vel. (ft/s)	2.40	10.25	2.13
Max Chl Dpth (ft)	4.43	Hydr. Depth (ft)	0.68	3.48	0.68
Conv. Total (cfs)	11082.3	Conv. (cfs)	96.1	10964.4	21.8
Length Wtd. (ft)	217.03	Wetted Per. (ft)	7.98	42.15	2.43
Min Ch El (ft)	2522.94	Shear (lb/sq ft)	0.76	3.83	0.64
Alpha	1.06	Stream Power (lb/ft s)	1.82	39.23	1.35
Frctn Loss (ft)	3.22	Cum Volume (acre-ft)	1.56	15.75	3.44
C & E Loss (ft)	0.22	Cum SA (acres)	0.85	4.71	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 velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
depth, the 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 OUTPUT Profile #Method 1

E.G. Elev (ft)	2529.04	Element	Left OB	Channel	Right OB

Vel Head (ft)	1.72	Wt. n-Val.		0.044	
W.S. Elev (ft)	2527.32	Reach Len. (ft)	212.63	217.05	218.09
Crit W.S. (ft)	2527.32	Flow Area (sq ft)		141.35	
E.G. Slope (ft/ft)	0.020964	Area (sq ft)		141.35	
Q Total (cfs)	1487.00	Flow (cfs)		1487.00	
Top Width (ft)	41.23	Top Width (ft)		41.23	
Vel Total (ft/s)	10.52	Avg. Vel. (ft/s)		10.52	
Max Chl Dpth (ft)	4.38	Hydr. Depth (ft)		3.43	
Conv. Total (cfs)	10270.1	Conv. (cfs)		10270.1	
Length Wtd. (ft)	217.05	Wetted Per. (ft)		44.79	
Min Ch El (ft)	2522.94	Shear (lb/sq ft)		4.13	
Alpha	1.00	Stream Power (lb/ft s)		43.45	
Frctn Loss (ft)	3.25	Cum Volume (acre-ft)	0.01	16.43	0.22
C & E Loss (ft)	0.27	Cum SA (acres)		4.71	0.10

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
depth, the 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: Stagecoach Pass
REACH: StagecoachPass-1 RS: 3.31

INPUT
Description: Topography indicates wash, and surrounding undeveloped
desert.
Aerial shows wash, homes, and desert.
T5NR4E Section
1
Q100 = 1487 cfs
Station Elevation Data num= 15

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9801.03	2530	9838.59	2528	9856.71	2526	9868.54	2524	9914.27	2524
9918.66	2524	9928.43	2524	9963.06	2524	9967.32	2522	9973.37	2520
10000	2519.35	10030.12	2520	10034.58	2522	10039.22	2524	10195.53	2526

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9801.03	.064	9967.32	.044	10034.58	.064

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9967.32	10034.58	342.61	322.59	303.02	.1	.3

CROSS SECTION OUTPUT Profile #100-yr 6-yr

E.G. Elev (ft)	2523.68	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.90	Wt. n-Val.	0.064	0.044	0.064
W.S. Elev (ft)	2522.79	Reach Len. (ft)	342.61	322.59	303.02
Crit W.S. (ft)	2522.35	Flow Area (sq ft)	0.66	195.31	0.72
E.G. Slope (ft/ft)	0.012425	Area (sq ft)	0.66	195.31	0.72
Q Total (cfs)	1487.00	Flow (cfs)	0.85	1485.21	0.94
Top Width (ft)	70.76	Top Width (ft)	1.67	67.26	1.82
Vel Total (ft/s)	7.56	Avg. Vel. (ft/s)	1.30	7.60	1.31
Max Chl Dpth (ft)	3.44	Hydr. Depth (ft)	0.39	2.90	0.39
Conv. Total (cfs)	13340.2	Conv. (cfs)	7.7	13324.1	8.4
Length Wtd. (ft)	322.56	Wetted Per. (ft)	1.85	68.02	1.99

Min Ch El (ft)	2519.35	Shear (lb/sq ft)	0.28	2.23	0.28
Alpha	1.01	Stream Power (lb/ft s)	0.36	16.94	0.37
Frctn Loss (ft)	4.78	Cum Volume (acre-ft)	1.55	14.91	3.43
C & E Loss (ft)	0.07	Cum SA (acres)	0.83	4.44	3.42

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.

CROSS SECTION OUTPUT Profile #Method 1

E.G. Elev (ft)	2523.74	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.83	Wt. n-Val.		0.044	
W.S. Elev (ft)	2522.91	Reach Len. (ft)	342.61	322.59	303.02
Crit W.S. (ft)	2522.35	Flow Area (sq ft)		203.57	
E.G. Slope (ft/ft)	0.011237	Area (sq ft)		203.57	
Q Total (cfs)	1487.00	Flow (cfs)		1487.00	
Top Width (ft)	67.26	Top Width (ft)		67.26	
Vel Total (ft/s)	7.30	Avg. Vel. (ft/s)		7.30	
Max Chl Dpth (ft)	3.56	Hydr. Depth (ft)		3.03	
Conv. Total (cfs)	14027.6	Conv. (cfs)		14027.6	
Length Wtd. (ft)	322.59	Wetted Per. (ft)		69.84	
Min Ch El (ft)	2519.35	Shear (lb/sq ft)		2.04	
Alpha	1.00	Stream Power (lb/ft s)		14.94	
Frctn Loss (ft)	4.79	Cum Volume (acre-ft)	0.01	15.57	0.22
C & E Loss (ft)	0.09	Cum SA (acres)		4.44	0.10

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The energy loss was 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: Stagecoach Pass
REACH: StagecoachPass-1 RS: 3.25

INPUT
Description: Topography indicates wash, and surrounding undeveloped desert.
Aerial shows wash, homes, and desert.
T5NR4E Section 1
Q100 = 1487 cfs
Station Elevation Data num= 16

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9861.43	2520	9868.17	2518	9874.97	2516	9881.25	2516	9890.17	2518
9954.49	2520	9966.44	2520	9970.66	2518	9974.89	2516	9978.67	2514
10000	2512.84	10011.79	2514	10016.53	2516	10026.5	2518	10121.38	2520
10274.45	2522								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9861.43	.064	9974.89	.044	10016.53	.064

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9974.89	10016.53	475.73	491.87	504.29	.1	.3

Left Levee Station= 9966.44 Elevation= 2520

CROSS SECTION OUTPUT Profile #100-yr 6-yr

E.G. Elev (ft)	2518.82	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.61	Wt. n-Val.	0.064	0.044	0.064
W.S. Elev (ft)	2517.21	Reach Len. (ft)	475.73	491.87	504.29
Crit W.S. (ft)	2517.21	Flow Area (sq ft)	1.55	144.44	3.66

E.G. Slope (ft/ft)	0.017983	Area (sq ft)	1.55	144.44	3.66
Q Total (cfs)	1487.00	Flow (cfs)	3.24	1475.70	8.06
Top Width (ft)	50.25	Top Width (ft)	2.56	41.64	6.04
Vel Total (ft/s)	9.94	Avg. Vel. (ft/s)	2.08	10.22	2.20
Max Chl Dpth (ft)	4.37	Hydr. Depth (ft)	0.61	3.47	0.61
Conv. Total (cfs)	11088.6	Conv. (cfs)	24.2	11004.3	60.1
Length Wtd. (ft)	491.89	Wetted Per. (ft)	2.84	42.63	6.16
Min Ch El (ft)	2512.84	Shear (lb/sq ft)	0.62	3.80	0.67
Alpha	1.05	Stream Power (lb/ft s)	1.28	38.86	1.47
Frctn Loss (ft)	9.50	Cum Volume (acre-ft)	1.54	13.65	3.42
C & E Loss (ft)	0.10	Cum SA (acres)	0.81	4.04	3.39

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 energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
depth, the 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 OUTPUT Profile #Method 1

E.G. Elev (ft)	2518.86	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.69	Wt. n-Val.		0.044	
W.S. Elev (ft)	2517.17	Reach Len. (ft)	475.73	491.87	504.29
Crit W.S. (ft)	2517.17	Flow Area (sq ft)		142.46	
E.G. Slope (ft/ft)	0.020526	Area (sq ft)		142.46	
Q Total (cfs)	1487.00	Flow (cfs)		1487.00	
Top Width (ft)	41.64	Top Width (ft)		41.64	
Vel Total (ft/s)	10.44	Avg. Vel. (ft/s)		10.44	
Max Chl Dpth (ft)	4.32	Hydr. Depth (ft)		3.42	
Conv. Total (cfs)	10379.1	Conv. (cfs)		10379.1	
Length Wtd. (ft)	491.87	Wetted Per. (ft)		44.96	
Min Ch El (ft)	2512.84	Shear (lb/sq ft)		4.06	
Alpha	1.00	Stream Power (lb/ft s)		42.38	
Frctn Loss (ft)	10.39	Cum Volume (acre-ft)	0.01	14.29	0.22
C & E Loss (ft)	0.12	Cum SA (acres)		4.04	0.10

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
depth, the 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: Stagecoach Pass
REACH: StagecoachPass-1 RS: 3.16

INPUT
Description: Topography indicates wash, and surrounding undeveloped
desert.
Aerial shows wash, homes, and desert.
T5NR4E Section

```
            1
Q100 = 1487 cfs
Station Elevation Data     num=       14
     Sta     Elev     Sta     Elev     Sta     Elev     Sta     Elev     Sta     Elev
 9905.88     2510 9958.79     2510 9966.19     2508  9971.9     2506  9977.2     2504
   10000 2503.6710028.79     250410034.86     250610040.82     250810206.07     2508
10206.36     250810217.12     2510 10241.3     251010279.68     2510

Manning's n Values         num=        3
     Sta   n Val     Sta   n Val     Sta   n Val
 9905.88    .064  9971.9    .04410034.86    .064

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        9971.910034.86            495.93  494.48  498.52             .1       .3

CROSS SECTION OUTPUT  Profile #100-yr 6-yr

  E.G. Elev (ft)          2507.92    Element                  Left OB    Channel   Right OB
  Vel Head (ft)              1.29    Wt. n-Val.                0.064      0.044     0.064
  W.S. Elev (ft)          2506.63    Reach Len. (ft)          495.93     494.48    498.52
  Crit W.S. (ft)          2506.63    Flow Area (sq ft)          0.57     162.91      0.60
  E.G. Slope (ft/ft)     0.020819    Area (sq ft)               0.57     162.91      0.60
  Q Total (cfs)           1487.00    Flow (cfs)                 0.86    1485.25      0.90
  Top Width (ft)            66.65    Top Width (ft)             1.81      62.96      1.89
  Vel Total (ft/s)           9.06    Avg. Vel. (ft/s)           1.50       9.12      1.50
  Max Chl Dpth (ft)          2.96    Hydr. Depth (ft)           0.32       2.59      0.32
  Conv. Total (cfs)       10305.8    Conv. (cfs)                 5.9   10293.7       6.2
  Length Wtd. (ft)         494.51    Wetted Per. (ft)           1.91      63.65      1.99
  Min Ch El (ft)          2503.67    Shear (lb/sq ft)           0.39       3.33      0.39
  Alpha                      1.01    Stream Power (lb/ft s)     0.58      30.33      0.59
  Frctn Loss (ft)            7.74    Cum Volume (acre-ft)       1.53      11.91      3.39
  C & E Loss (ft)            0.10    Cum SA (acres)             0.78       3.45      3.35


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 energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross
section.
         This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to
critical
         depth, the 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 OUTPUT  Profile #Method 1

  E.G. Elev (ft)          2507.93    Element                  Left OB    Channel   Right OB
  Vel Head (ft)              1.31    Wt. n-Val.                           0.044
  W.S. Elev (ft)          2506.62    Reach Len. (ft)          495.93     494.48    498.52
  Crit W.S. (ft)          2506.62    Flow Area (sq ft)                   162.15
  E.G. Slope (ft/ft)     0.021746    Area (sq ft)                        162.15
  Q Total (cfs)           1487.00    Flow (cfs)                         1487.00
  Top Width (ft)            62.96    Top Width (ft)                      62.96
  Vel Total (ft/s)           9.17    Avg. Vel. (ft/s)                     9.17
  Max Chl Dpth (ft)          2.95    Hydr. Depth (ft)                     2.58
  Conv. Total (cfs)       10083.8    Conv. (cfs)                       10083.8
  Length Wtd. (ft)         494.48    Wetted Per. (ft)                    64.89
  Min Ch El (ft)          2503.67    Shear (lb/sq ft)                     3.39
  Alpha                      1.00    Stream Power (lb/ft s)              31.11
  Frctn Loss (ft)            5.85    Cum Volume (acre-ft)       0.01     12.57      0.22
  C & E Loss (ft)            0.18    Cum SA (acres)                       3.45      0.10


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

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
depth, the 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: Stagecoach Pass
REACH: StagecoachPass-1 RS: 3.06

INPUT
Description: Cross Section 3.06 is located upstream of concentration point
CSCP4a in the HEC-1 model.

Topography indicates wash, and
surrounding undeveloped desert.
Aerial shows wash, homes, and
desert.
T5NR4E Section 1
Q100 = 1487 cfs
Station Elevation Data num= 13

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9845.35	2500	9920.06	2500	9957.55	2498	9960.86	2497	9964.17	2496
10000	2494.14	10017.01	2496	10020.87	2497	10024.72	2498	10030.46	2498
10053.56	2498	10067.71	2500	10098.76	2502				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9845.35	.064	9960.86	.044	10020.87	.064

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9960.86	10020.87	229.34	192.88	170.32	.1	.3

CROSS SECTION OUTPUT Profile #100-yr 6-yr

E.G. Elev (ft)	2499.29	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.95	Wt. n-Val.	0.064	0.044	0.064
W.S. Elev (ft)	2498.34	Reach Len. (ft)	229.34	192.88	170.32
Crit W.S. (ft)	2497.93	Flow Area (sq ft)	3.83	185.75	13.31
E.G. Slope (ft/ft)	0.012186	Area (sq ft)	3.83	185.75	13.31
Q Total (cfs)	1487.00	Flow (cfs)	5.25	1463.91	17.84
Top Width (ft)	104.69	Top Width (ft)	9.61	60.01	35.07
Vel Total (ft/s)	7.33	Avg. Vel. (ft/s)	1.37	7.88	1.34
Max Chl Dpth (ft)	4.20	Hydr. Depth (ft)	0.40	3.10	0.38
Conv. Total (cfs)	13470.2	Conv. (cfs)	47.6	13261.0	161.6
Length Wtd. (ft)	191.23	Wetted Per. (ft)	9.77	60.43	35.22
Min Ch El (ft)	2494.14	Shear (lb/sq ft)	0.30	2.34	0.29
Alpha	1.14	Stream Power (lb/ft s)	0.41	18.43	0.39
Frctn Loss (ft)	2.61	Cum Volume (acre-ft)	1.50	9.93	3.31
C & E Loss (ft)	0.02	Cum SA (acres)	0.72	2.75	3.14

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 OUTPUT Profile #Method 1

E.G. Elev (ft)	2499.65	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.69	Wt. n-Val.		0.044	
W.S. Elev (ft)	2498.96	Reach Len. (ft)	229.34	192.88	170.32
Crit W.S. (ft)	2497.91	Flow Area (sq ft)		223.13	
E.G. Slope (ft/ft)	0.007421	Area (sq ft)		223.13	
Q Total (cfs)	1487.00	Flow (cfs)		1487.00	
Top Width (ft)	60.01	Top Width (ft)		60.01	
Vel Total (ft/s)	6.66	Avg. Vel. (ft/s)		6.66	

Max Chl Dpth (ft)	4.82	Hydr. Depth (ft)		3.72	
Conv. Total (cfs)	17261.8	Conv. (cfs)		17261.8	
Length Wtd. (ft)	192.88	Wetted Per. (ft)		64.35	
Min Ch El (ft)	2494.14	Shear (lb/sq ft)		1.61	
Alpha	1.00	Stream Power (lb/ft s)		10.71	
Frctn Loss (ft)	2.32	Cum Volume (acre-ft)	0.01	10.39	0.22
C & E Loss (ft)	0.10	Cum SA (acres)		2.75	0.10

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The energy loss was 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: Stagecoach Pass
REACH: StagecoachPass-1 RS: 3.03

INPUT
Description: Topography indicates wash, and surrounding undeveloped desert.
Cross section composed of cross section data collected by the City of Scottsdale Survey Department.
Aerial shows wash, homes, and desert.
T5NR4E Section 1
Q100 = 1792 cfs
Station Elevation Data num= 15

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9908.26	2504.87	9928.42	2502.24	9960.5	2497.86	9967.98	2495.51	9971.17	2494.51
9979.59	2491.85	9997.65	2491.85	10014.23	2491.86	10016.55	2491.86	10023.22	2494.47
10043.24	2494.63	10065.22	2493.38	10089.72	2496.18	10119.87	2499.71	10136.66	2501.57

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9908.26	.064	9971.17	.044	10023.22	.064

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9971.17	10023.22	280.29	289.8	286.61	.3	.5

CROSS SECTION OUTPUT Profile #100-yr 6-yr

			Left OB	Channel	Right OB
E.G. Elev (ft)	2496.66	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.13	Wt. n-Val.	0.064	0.044	0.064
W.S. Elev (ft)	2495.53	Reach Len. (ft)	280.29	289.80	286.61
Crit W.S. (ft)	2495.53	Flow Area (sq ft)	1.64	171.21	73.07
E.G. Slope (ft/ft)	0.015104	Area (sq ft)	1.64	171.21	73.07
Q Total (cfs)	1792.00	Flow (cfs)	2.89	1553.75	235.36
Top Width (ft)	116.06	Top Width (ft)	3.24	52.05	60.77
Vel Total (ft/s)	7.29	Avg. Vel. (ft/s)	1.76	9.08	3.22
Max Chl Dpth (ft)	3.68	Hydr. Depth (ft)	0.51	3.29	1.20
Conv. Total (cfs)	14581.3	Conv. (cfs)	23.5	12642.6	1915.1
Length Wtd. (ft)	288.58	Wetted Per. (ft)	3.39	52.95	60.93
Min Ch El (ft)	2491.85	Shear (lb/sq ft)	0.46	3.05	1.13
Alpha	1.37	Stream Power (lb/ft s)	0.80	27.67	3.64
Frctn Loss (ft)	0.50	Cum Volume (acre-ft)	1.49	9.14	3.14
C & E Loss (ft)	0.52	Cum SA (acres)	0.69	2.50	2.95

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

Warning: During the standard step iterations, when the assumed water surface was set equal to critical
depth, the 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 OUTPUT Profile #Method 1

E.G. Elev (ft)	2497.23	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.65	Wt. n-Val.		0.044	
W.S. Elev (ft)	2495.57	Reach Len. (ft)	280.29	289.80	286.61
Crit W.S. (ft)	2495.57	Flow Area (sq ft)		173.66	
E.G. Slope (ft/ft)	0.020212	Area (sq ft)		173.66	
Q Total (cfs)	1792.00	Flow (cfs)		1792.00	
Top Width (ft)	52.05	Top Width (ft)		52.05	
Vel Total (ft/s)	10.32	Avg. Vel. (ft/s)		10.32	
Max Chl Dpth (ft)	3.72	Hydr. Depth (ft)		3.34	
Conv. Total (cfs)	12604.7	Conv. (cfs)		12604.7	
Length Wtd. (ft)	289.77	Wetted Per. (ft)		55.12	
Min Ch El (ft)	2491.85	Shear (lb/sq ft)		3.98	
Alpha	1.00	Stream Power (lb/ft s)		41.03	
Frctn Loss (ft)	0.52	Cum Volume (acre-ft)	0.01	9.51	0.22
C & E Loss (ft)	0.77	Cum SA (acres)		2.50	0.10

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided 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: Stagecoach Pass
REACH: StagecoachPass-1 RS: 2.97

INPUT
Description: Cross Section 2.97 is located along the east boundary of
Sandflower. It is located upstream of the intersection of 84th
Street and Stage Coach Pass Wash. There are 5-6 X 4 concrete box
culverts located under 84th Street.

Topography indicates
wash, and surrounding undeveloped desert. Cross section composed
of cross section data collected by the City of Scottsdale Survey
Department.
Aerial shows wash, 84th Street, and desert.
T5NR4E
Section 1
Q100 = 1792 cfs
Station Elevation Data num= 16

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9784.66	2494.85	9807.38	2490.85	9851.7	2488.83	9864.75	2488.17	9879.66	2487.89
9891.84	2490.37	9906.31	2490.5	9921.39	2490.51	9937.1	2490.55	9946.7	2486.16
9989.73	2486.32	10028.96	2486.37	10029.7	2490.44	10058.41	2492.33	10108.14	2492.88
10116.66	2493.34								

```
Manning's n Values          num=       3
    Sta   n Val     Sta   n Val     Sta   n Val
 9784.66    .064  9937.1    .044 10029.7    .064

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        9937.1 10029.7            70.25   94.15    72.3             .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
 9784.66  9937.1 2491.23       F
 10029.710116.66 2491.23       F
```

CROSS SECTION OUTPUT Profile #100-yr 6-yr

E.G. Elev (ft)	2492.38	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.09	Wt. n-Val.	0.064	0.044	0.064
W.S. Elev (ft)	2492.29	Reach Len. (ft)	70.25	94.15	72.30
Crit W.S. (ft)	2488.72	Flow Area (sq ft)	347.28	534.16	25.98
E.G. Slope (ft/ft)	0.000624	Area (sq ft)	347.28	534.16	25.98
Q Total (cfs)	1792.00	Flow (cfs)	372.04	1405.68	14.28
Top Width (ft)	258.59	Top Width (ft)	137.90	92.60	28.09
Vel Total (ft/s)	1.97	Avg. Vel. (ft/s)	1.07	2.63	0.55
Max Chl Dpth (ft)	6.13	Hydr. Depth (ft)	2.52	5.77	0.92
Conv. Total (cfs)	71736.5	Conv. (cfs)	14893.2	56271.5	571.8
Length Wtd. (ft)	94.15	Wetted Per. (ft)	138.34	96.95	28.16
Min Ch El (ft)	2486.16	Shear (lb/sq ft)	0.10	0.21	0.04
Alpha	1.45	Stream Power (lb/ft s)	0.10	0.56	0.02
Frctn Loss (ft)		Cum Volume (acre-ft)	0.37	6.80	2.82
C & E Loss (ft)		Cum SA (acres)	0.23	2.02	2.66

Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid,
energy was used.

CROSS SECTION OUTPUT Profile #Method 1

E.G. Elev (ft)	2493.30	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.12	Wt. n-Val.		0.044	0.064
W.S. Elev (ft)	2493.18	Reach Len. (ft)	70.25	94.15	72.30
Crit W.S. (ft)	2488.72	Flow Area (sq ft)		616.41	44.14
E.G. Slope (ft/ft)	0.000624	Area (sq ft)		616.41	44.14
Q Total (cfs)	1792.00	Flow (cfs)		1752.72	39.28
Top Width (ft)	114.48	Top Width (ft)		92.60	21.88
Vel Total (ft/s)	2.71	Avg. Vel. (ft/s)		2.84	0.89
Max Chl Dpth (ft)	7.02	Hydr. Depth (ft)		6.66	2.02
Conv. Total (cfs)	71751.4	Conv. (cfs)		70178.7	1572.7
Length Wtd. (ft)	94.15	Wetted Per. (ft)		99.58	23.22
Min Ch El (ft)	2486.16	Shear (lb/sq ft)		0.24	0.07
Alpha	1.08	Stream Power (lb/ft s)		0.69	0.07
Frctn Loss (ft)		Cum Volume (acre-ft)	0.01	6.88	0.08
C & E Loss (ft)		Cum SA (acres)		2.02	0.03

Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid,
energy was used.

CULVERT

RIVER: Stagecoach Pass
REACH: StagecoachPass-1 RS: 2.96

INPUT
Description: Box culverts at 84th Street crossing.
Distance from Upstream XS = 10
Deck/Roadway Width = 78
Weir Coefficient = 2.6
Upstream Deck/Roadway Coordinates
num= 7
Sta Hi Cord Lo Cord Sta Hi Cord Lo Cord Sta Hi Cord Lo Cord

```
 9784.66 2490.96         9860.52    2491         9948.57 2491.23
   10000 2491.67        10049.12 2492.19           10093  2492.8
10145.79 2493.47

Upstream Bridge Cross Section Data
Station Elevation Data    num=      16
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
 9784.66 2494.85 9807.38 2490.85  9851.7 2488.83 9864.75 2488.17 9879.66 2487.89
 9891.84 2490.37 9906.31  2490.5 9921.39 2490.51  9937.1 2490.55  9946.7 2486.16
 9989.73 2486.3210028.96 2486.37 10029.7 2490.4410058.41 2492.3310108.14 2492.88
10116.66 2493.34

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
 9784.66    .064  9937.1    .044 10029.7    .064

Bank Sta: Left   Right    Coeff Contr.   Expan.
        9937.1 10029.7             .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
 9784.66  9937.1 2491.23       F
 10029.710116.66 2491.23       F

Downstream  Deck/Roadway Coordinates
    num=      10
     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord
    9750 2490.25         9845.14 2490.25         9892.97 2490.56
 9942.74 2490.77         9994.52    2491         10043.8 2491.23
10095.15 2491.67        10144.33 2492.19        10188.27  2492.8
10240.92 2493.47

Downstream Bridge Cross Section Data
Station Elevation Data    num=      16
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
 9784.64 2489.09 9831.26 2489.49 9903.99 2490.02 9955.92 2489.55 9961.79 2489.18
 9962.96    2486 9963.92 2483.3810001.96 2482.7210044.87 2483.7510051.58    2486
 10057.7 2488.0510094.14 2489.8410124.27 2491.8810143.91 2493.4810195.77 2493.01
   10236 2492.75

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
 9784.64    .064 9962.96    .04410051.58    .064

Bank Sta: Left   Right    Coeff Contr.   Expan.
       9962.9610051.58             .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
 9784.64 9962.96 2490.86       F
10051.58   10236 2490.86       F

Upstream Embankment side slope              =       0 horiz. to 1.0 vertical
Downstream Embankment side slope            =       0 horiz. to 1.0 vertical
Maximum allowable submergence for weir flow =     .95
Elevation at which weir flow begins         =
Energy head used in spillway design         =
Spillway height used in design              =
Weir crest shape                            = Broad Crested

Number of Culverts =  1

Culvert Name      Shape      Rise    Span
CULVERT#1           Box       4       6
FHWA Chart # 8 - flared wingwalls
FHWA Scale # 1 - Wingwall flared 30 to 75 deg.
Solution Criteria = Highest U.S. EG
Culvert Upstrm Dist  Length    Top n  Bottom n  Depth Blocked  Entrance Loss Coef   Exit Loss Coef
                10      78     .015     .015        0                  .4                 1
Number of Barrels =  5
Upstream   Elevation =  2486.3
Centerline Stations
    Sta.    Sta.    Sta.    Sta.    Sta.
```

9973.11 9980.02 9986.94 9993.8610000.77
Downstream Elevation = 2484.41
Centerline Stations
Sta. Sta. Sta. Sta. Sta.
10004.7410011.6610018.5810025.4910032.41

CROSS SECTION

RIVER: Stagecoach Pass
REACH: StagecoachPass-1 RS: 2.95

INPUT
Description: Cross Section 2.95 is located within Sandflower. It is located downstream of the intersection of 84th Street and Stage Coach Pass Wash. There are 5-6 X 4 concrete box culverts located under 84th Street.

Topography indicates wash, and surrounding undeveloped desert. Cross section composed of cross section data collected by the City of Scottsdale Survey Department.
Aerial
shows wash, 84th Street, and desert.
T5NR4E Section 1
Q100 =
1792 cfs
Station Elevation Data num= 16

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9784.64	2489.09	9831.26	2489.49	9903.99	2490.02	9955.92	2489.55	9961.79	2489.18
9962.96	2486	9963.92	2483.38	10001.96	2482.72	10044.87	2483.75	10051.58	2486
10057.7	2488.05	10094.14	2489.84	10124.27	2491.88	10143.91	2493.48	10195.77	2493.01
10236	2492.75								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9784.64	.064	9962.96	.044	10051.58	.064

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9962.96	10051.58	170.97	200.97	2393.91	.3	.5

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
9784.64	9962.96	2490.86	F
10051.58	10236	2490.86	F

CROSS SECTION OUTPUT Profile #100-yr 6-yr

E.G. Elev (ft)	2487.62	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.42	Wt. n-Val.		0.044	
W.S. Elev (ft)	2487.21	Reach Len. (ft)	170.97	200.97	2393.91
Crit W.S. (ft)	2485.62	Flow Area (sq ft)		346.62	
E.G. Slope (ft/ft)	0.003930	Area (sq ft)	0.27	346.62	2.17
Q Total (cfs)	1792.00	Flow (cfs)		1792.00	
Top Width (ft)	92.67	Top Width (ft)	0.44	88.62	3.60
Vel Total (ft/s)	5.17	Avg. Vel. (ft/s)		5.17	
Max Chl Dpth (ft)	4.49	Hydr. Depth (ft)		3.91	
Conv. Total (cfs)	28584.3	Conv. (cfs)		28584.3	
Length Wtd. (ft)	342.35	Wetted Per. (ft)		90.84	
Min Ch El (ft)	2482.72	Shear (lb/sq ft)		0.94	
Alpha	1.00	Stream Power (lb/ft s)		4.84	
Frctn Loss (ft)	2.36	Cum Volume (acre-ft)	0.09	5.85	2.80
C & E Loss (ft)	0.22	Cum SA (acres)	0.12	1.82	2.63

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

Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid,
energy was used.

CROSS SECTION OUTPUT Profile #Method 1

E.G. Elev (ft)	2487.62	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.41	Wt. n-Val.		0.044	
W.S. Elev (ft)	2487.21	Reach Len. (ft)	170.97	200.97	2393.91
Crit W.S. (ft)	2485.62	Flow Area (sq ft)		346.77	
E.G. Slope (ft/ft)	0.004064	Area (sq ft)		346.77	
Q Total (cfs)	1792.00	Flow (cfs)		1792.00	
Top Width (ft)	88.62	Top Width (ft)		88.62	
Vel Total (ft/s)	5.17	Avg. Vel. (ft/s)		5.17	
Max Chl Dpth (ft)	4.49	Hydr. Depth (ft)		3.91	
Conv. Total (cfs)	28108.7	Conv. (cfs)		28108.7	
Length Wtd. (ft)	200.97	Wetted Per. (ft)		93.25	
Min Ch El (ft)	2482.72	Shear (lb/sq ft)		0.94	
Alpha	1.00	Stream Power (lb/ft s)		4.88	
Frctn Loss (ft)	1.56	Cum Volume (acre-ft)	0.01	5.84	0.04
C & E Loss (ft)	0.38	Cum SA (acres)		1.82	0.01

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 conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid,
energy was used.

CROSS SECTION

RIVER: Stagecoach Pass
REACH: StagecoachPass-1 RS: 2.92

INPUT
Description: Cross Section 2.92 is located within Sandflower.

Topography
and Aerial indicate wash, and surrounding undeveloped desert.
Cross section composed of cross section data collected by the City of Scottsdale Survey Department.
T5NR4E Section 1
Q100 = 1792 cfs
Station Elevation Data num= 22

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9878.44	2489.6	9888.93	2489.35	9890.85	2489.64	9892.18	2488.94	9900.88	2483.36
9909.73	2483.4	9912.92	2485.32	9920.62	2484.34	9971.43	2484.12	9988.04	2482.89
9992.47	2482.56	9998.02	2479.9	10018.2	2480.31	10032.18	2480.35	10038.2	2481.59
10042.27	2482.11	10049.51	2483.02	10055.04	2482.86	10087.94	2482.22	10104.62	2483.89
10210.05	2483.94	10237.22	2484.41						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9878.44	.064	9992.47	.044	10042.27	.064

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9992.47	10042.27	303.07	292.98	270.76	.1	.3

Left Levee Station= 9912.92 Elevation= 2485.32

CROSS SECTION OUTPUT Profile #100-yr 6-yr

E.G. Elev (ft)	2485.04	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.15	Wt. n-Val.	0.064	0.044	0.064
W.S. Elev (ft)	2483.89	Reach Len. (ft)	303.07	292.98	270.76
Crit W.S. (ft)	2483.89	Flow Area (sq ft)	11.83	166.58	72.93

E.G. Slope (ft/ft)	0.015189	Area (sq ft)	11.83	166.58	72.93
Q Total (cfs)	1792.00	Flow (cfs)	25.66	1534.93	231.41
Top Width (ft)	129.97	Top Width (ft)	17.87	49.80	62.30
Vel Total (ft/s)	7.13	Avg. Vel. (ft/s)	2.17	9.21	3.17
Max Chl Dpth (ft)	3.99	Hydr. Depth (ft)	0.66	3.34	1.17
Conv. Total (cfs)	14540.3	Conv. (cfs)	208.2	12454.4	1877.7
Length Wtd. (ft)	291.59	Wetted Per. (ft)	17.92	50.57	62.45
Min Ch El (ft)	2479.90	Shear (lb/sq ft)	0.63	3.12	1.11
Alpha	1.46	Stream Power (lb/ft s)	1.36	28.78	3.51
Frctn Loss (ft)	4.31	Cum Volume (acre-ft)	0.06	4.66	0.73
C & E Loss (ft)	0.02	Cum SA (acres)	0.08	1.51	0.82

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 energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
depth, the 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 OUTPUT Profile #Method 1

E.G. Elev (ft)	2485.68	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.69	Wt. n-Val.		0.044	
W.S. Elev (ft)	2483.99	Reach Len. (ft)	303.07	292.98	270.76
Crit W.S. (ft)	2483.99	Flow Area (sq ft)		171.65	
E.G. Slope (ft/ft)	0.020388	Area (sq ft)		171.65	
Q Total (cfs)	1792.00	Flow (cfs)		1792.00	
Top Width (ft)	49.80	Top Width (ft)		49.80	
Vel Total (ft/s)	10.44	Avg. Vel. (ft/s)		10.44	
Max Chl Dpth (ft)	4.09	Hydr. Depth (ft)		3.45	
Conv. Total (cfs)	12550.1	Conv. (cfs)		12550.1	
Length Wtd. (ft)	292.98	Wetted Per. (ft)		53.88	
Min Ch El (ft)	2479.90	Shear (lb/sq ft)		4.05	
Alpha	1.00	Stream Power (lb/ft s)		42.33	
Frctn Loss (ft)	5.18	Cum Volume (acre-ft)	0.01	4.64	0.04
C & E Loss (ft)	0.08	Cum SA (acres)		1.51	0.01

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 cross section had to be extended vertically during the critical depth calculations.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
depth, the 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: Stagecoach Pass
REACH: StagecoachPass-1 RS: 2.86

INPUT
Description: Cross Section 2.86 is located within Sandflower. This section is upstream of the diversion dyke.

Topography indicates wash, and
surrounding undeveloped desert. Cross section composed of cross section data collected by the City of Scottsdale Survey Department.
Aerial shows the realigned wash, desert, and
diversion dyke.
T5NR4E Section 1
Q100 = 1792 cfs
Station Elevation Data num= 17

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9878.72	2485.27	9910.54	2483.26	9951.42	2484.23	9973.79	2481.84	9975.64	2481.64
9984.99	2477.801	9990.79	2475.42	10005.55	2474.71	10017.99	2476.09	10030.9	2475.19
10044.82	2475.96	10051.38	2477.83	10077.07	2479.38	10082.7	2479.32	10124.87	2478.84
10145.03	2477.88	10160.12	2479.45						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9878.72	.056	9984.99	.038	10051.38	.086

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9984.99	10051.38	324.59	316.48	292.31	.1	.3

Right Levee Station=10077.07 Elevation= 2479.38

CROSS SECTION OUTPUT Profile #100-yr 6-yr

E.G. Elev (ft)	2479.89	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.37	Wt. n-Val.	0.056	0.038	0.086
W.S. Elev (ft)	2478.53	Reach Len. (ft)	324.59	316.48	292.31
Crit W.S. (ft)	2478.53	Flow Area (sq ft)	0.64	190.31	4.02
E.G. Slope (ft/ft)	0.014409	Area (sq ft)	0.64	190.31	4.02
Q Total (cfs)	1792.00	Flow (cfs)	0.99	1786.89	4.13
Top Width (ft)	79.71	Top Width (ft)	1.77	66.39	11.55
Vel Total (ft/s)	9.19	Avg. Vel. (ft/s)	1.54	9.39	1.03
Max Chl Dpth (ft)	3.83	Hydr. Depth (ft)	0.36	2.87	0.35
Conv. Total (cfs)	14928.6	Conv. (cfs)	8.2	14886.0	34.4
Length Wtd. (ft)	316.42	Wetted Per. (ft)	1.91	67.27	11.57
Min Ch El (ft)	2474.70	Shear (lb/sq ft)	0.30	2.54	0.31
Alpha	1.04	Stream Power (lb/ft s)	0.46	23.90	0.32
Frctn Loss (ft)	4.63	Cum Volume (acre-ft)	0.02	3.46	0.49
C & E Loss (ft)	0.10	Cum SA (acres)	0.02	1.11	0.59

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.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water
surface was used.

CROSS SECTION OUTPUT Profile #Method 1

E.G. Elev (ft)	2479.90	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.41	Wt. n-Val.		0.038	
W.S. Elev (ft)	2478.49	Reach Len. (ft)	324.59	316.48	292.31
Crit W.S. (ft)	2478.49	Flow Area (sq ft)		188.01	
E.G. Slope (ft/ft)	0.015498	Area (sq ft)		188.01	
Q Total (cfs)	1792.00	Flow (cfs)		1792.00	
Top Width (ft)	66.39	Top Width (ft)		66.39	
Vel Total (ft/s)	9.53	Avg. Vel. (ft/s)		9.53	
Max Chl Dpth (ft)	3.79	Hydr. Depth (ft)		2.83	
Conv. Total (cfs)	14394.7	Conv. (cfs)		14394.7	
Length Wtd. (ft)	316.48	Wetted Per. (ft)		68.62	
Min Ch El (ft)	2474.70	Shear (lb/sq ft)		2.65	
Alpha	1.00	Stream Power (lb/ft s)		25.27	

Frctn Loss (ft)	5.12	Cum Volume (acre-ft)	0.01	3.43	0.04
C & E Loss (ft)	0.09	Cum SA (acres)		1.11	0.01

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 cross section had to be extended vertically during the critical depth calculations.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
depth, the 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: Stagecoach Pass
REACH: StagecoachPass-1 RS: 2.8

INPUT
Description: Cross Section 2.80 is located within Sandflower. This section crosses the diversion dyke.The levee point represents the diversion dyke location.

Topography indicates wash, and surrounding undeveloped desert. Cross section composed of cross section data collected by the City of Scottsdale Survey Department.
Aerial shows the realigned wash, desert, and diversion dyke.
T5NR4E Section 1
Q100 = 1792 cfs
Station Elevation Data num= 18

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9955.29	2474.96	9963.3	2474.97	9988.69	2473.92	9992.73	2473.75	9996.92	2472
10002.29	2469.76	10019.1	2470.21	10029.8	2471.62	10034.96	2470.16	10064.85	2469.59
10088.63	2469.73	10090.03	2469.74	10092.45	247	210092.45	2472.23	10152.9	2472.23
10171.46	2473.74	10172.91	2472.95	10178.54	2473.14				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9955.29	.056	9996.92	.038	10092.45	.086

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9996.92	10092.45	216.25	217.99	214.73	.1	.3

CROSS SECTION OUTPUT Profile #100-yr 6-yr

E.G. Elev (ft)	2473.41	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.03	Wt. n-Val.	0.056	0.038	0.086
W.S. Elev (ft)	2472.38	Reach Len. (ft)	216.25	217.99	214.73
Crit W.S. (ft)	2472.38	Flow Area (sq ft)	0.17	218.56	9.18
E.G. Slope (ft/ft)	0.014875	Area (sq ft)	0.17	218.56	9.18
Q Total (cfs)	1792.00	Flow (cfs)	0.17	1786.42	5.40
Top Width (ft)	158.73	Top Width (ft)	0.91	95.53	62.29
Vel Total (ft/s)	7.86	Avg. Vel. (ft/s)	1.01	8.17	0.59
Max Chl Dpth (ft)	2.79	Hydr. Depth (ft)	0.19	2.29	0.15
Conv. Total (cfs)	14693.1	Conv. (cfs)	1.4	14647.4	44.3
Length Wtd. (ft)	217.82	Wetted Per. (ft)	0.99	97.41	62.30
Min Ch El (ft)	2469.59	Shear (lb/sq ft)	0.16	2.08	0.14
Alpha	1.08	Stream Power (lb/ft s)	0.16	17.03	0.08
Frctn Loss (ft)	2.37	Cum Volume (acre-ft)	0.02	1.98	0.45
C & E Loss (ft)	0.15	Cum SA (acres)	0.01	0.53	0.34

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 velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
depth, the 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 OUTPUT Profile #Method 1

E.G. Elev (ft)	2473.42	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.12	Wt. n-Val.		0.038	
W.S. Elev (ft)	2472.30	Reach Len. (ft)	216.25	217.99	214.73
Crit W.S. (ft)	2472.30	Flow Area (sq ft)		210.93	
E.G. Slope (ft/ft)	0.016934	Area (sq ft)		210.93	
Q Total (cfs)	1792.00	Flow (cfs)		1792.00	
Top Width (ft)	95.53	Top Width (ft)		95.53	
Vel Total (ft/s)	8.50	Avg. Vel. (ft/s)		8.50	
Max Chl Dpth (ft)	2.71	Hydr. Depth (ft)		2.21	
Conv. Total (cfs)	13770.6	Conv. (cfs)		13770.6	
Length Wtd. (ft)	217.98	Wetted Per. (ft)		97.78	
Min Ch El (ft)	2469.59	Shear (lb/sq ft)		2.28	
Alpha	1.00	Stream Power (lb/ft s)		19.38	
Frctn Loss (ft)	2.69	Cum Volume (acre-ft)	0.01	1.98	0.04
C & E Loss (ft)	0.13	Cum SA (acres)		0.53	0.01

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
depth, the calculated water surface came back below critical depth. This indicates that there is
not a valid subcritical answer. The program defaulted to critical depth.
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: Stagecoach Pass
REACH: StagecoachPass-1 RS: 2.76

INPUT
Description: Cross Section 2.76 is located within Sandflower. This section crosses the diversion dyke. The levee point represents the diversion dyke location. It is located upstream of concentration point CSCP03 in the HEC-1 model.

Topography indicates wash, and
surrounding undeveloped desert. Cross section composed of cross section data collected by the City of Scottsdale Survey Department.
Aerial shows the realigned wash, desert, and
diversion dyke.
T5NR4E Section 1
Q100 = 1792 cfs
Station Elevation Data num= 15

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9886.29	2472.88	9901.6	2472.18	9914.68	2470.49	9916.17	2470.09	9924.01	2468
9934.51	2465.2	9952.9	2466.52	9992.22	2466.45	10024.56	2465.31	10028	2465.33
10037.72	2465.39	10038.66	2467.01	10038.97	2467.08	10112.23	2467.08	10121.03	2470.15

```
Manning's n Values          num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
 9886.29    .056 9924.01    .03810038.97    .086

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9924.0110038.97           273.12  309.32  322.62             .1        .3
```

CROSS SECTION OUTPUT Profile #100-yr 6-yr

E.G. Elev (ft)	2468.91	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.53	Wt. n-Val.	0.056	0.038	0.086
W.S. Elev (ft)	2468.38	Reach Len. (ft)	309.32	309.32	309.32
Crit W.S. (ft)	2468.02	Flow Area (sq ft)	0.27	263.04	97.85
E.G. Slope (ft/ft)	0.008274	Area (sq ft)	0.27	263.04	97.85
Q Total (cfs)	1792.00	Flow (cfs)	0.21	1611.69	180.10
Top Width (ft)	193.39	Top Width (ft)	1.43	114.96	76.99
Vel Total (ft/s)	4.96	Avg. Vel. (ft/s)	0.78	6.13	1.84
Max Chl Dpth (ft)	3.18	Hydr. Depth (ft)	0.19	2.29	1.27
Conv. Total (cfs)	19700.8	Conv. (cfs)	2.4	17718.5	1979.9
Length Wtd. (ft)	309.32	Wetted Per. (ft)	1.48	116.34	77.21
Min Ch El (ft)	2465.20	Shear (lb/sq ft)	0.10	1.17	0.65
Alpha	1.39	Stream Power (lb/ft s)	0.07	7.16	1.20
Frctn Loss (ft)	3.12	Cum Volume (acre-ft)	0.01	0.77	0.18
C & E Loss (ft)	0.11	Cum SA (acres)			

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: A flow split was encountered. The program first calculated the momentum of both channels below the junction. An energy balance was performed across the junction from the stream with
the highest momentum downstream to the section upstream.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.

CROSS SECTION OUTPUT Profile #Method 1

E.G. Elev (ft)	2469.11	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.67	Wt. n-Val.		0.038	0.086
W.S. Elev (ft)	2468.44	Reach Len. (ft)	309.32	309.32	309.32
Crit W.S. (ft)	2468.05	Flow Area (sq ft)		269.32	6.69
E.G. Slope (ft/ft)	0.009378	Area (sq ft)		269.32	6.69
Q Total (cfs)	1792.00	Flow (cfs)		1780.33	11.67
Top Width (ft)	119.89	Top Width (ft)		114.96	4.93
Vel Total (ft/s)	6.49	Avg. Vel. (ft/s)		6.61	1.74
Max Chl Dpth (ft)	3.24	Hydr. Depth (ft)		2.34	1.36
Conv. Total (cfs)	18504.4	Conv. (cfs)		18383.9	120.5
Length Wtd. (ft)	309.32	Wetted Per. (ft)		116.77	6.29
Min Ch El (ft)	2465.20	Shear (lb/sq ft)		1.35	0.62
Alpha	1.03	Stream Power (lb/ft s)		8.93	1.09
Frctn Loss (ft)	3.34	Cum Volume (acre-ft)	0.01	0.78	0.02
C & E Loss (ft)	0.10	Cum SA (acres)			

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: A flow split was encountered. The program first calculated the momentum of both channels below the junction. An energy balance was performed across the junction from the stream with
the highest momentum downstream to the section upstream.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
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: Stagecoach Pass
REACH: Levee Breakout RS: 2.70

INPUT
Description: Cross Section 2.70 is located within Sandflower. This section is downstream of the diversion dyke. There is potential of having flow travel north out the the model.

Topography indicates wash, and surrounding undeveloped desert. Cross section composed of cross section data collected by the City of Scottsdale Survey Department.
Aerial shows the realigned wash, desert, and diversion dyke.
T5NR4E Section 1
Q100 = 1828 cfs
Station Elevation Data num= 38

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9679.35	2464.02	9693.24	2462.07	9717.02	2462.19	9732.91	2466	9737.39	2465.94
9746.65	2464.29	9757.75	2462.32	9764	2459.96	9776.13	2459.84	9797.22	2460.03
9797.61	2460.16	9803.31	2462.001	9809.22	2463.91	9834.66	2463.83	9866.16	2463.55
9876.42	2463.17	9880.93	2462.17	9893.33	2462.3	9897.59	2462.24	9905.15	2463.14
9913.1	2461.99	9920.2	2462.3	9928.19	2463.36	9936.15	2461.08	9946.04	2461.01
9950.45	2462.03	9956.08	2461.92	9988.21	2462.28	9992.98	2460.21	10000	2459.88
10005.93	2460.07	10009.86	2462.23	10029.36	2462.68	10079.81	2463.23	10134.05	2462.61
10153.09	2463.35	10168.57	2463.89	10183.01	2463.9				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9679.35	.056	9866.16	.038	10079.81	.086

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9866.16	10079.81	833	833.39	833	.1	.3

Left Levee Station= 9809.22 Elevation= 2465
Right Levee Station=10079.81 Elevation= 2465

CROSS SECTION OUTPUT Profile #100-yr 6-yr

E.G. Elev (ft)	2463.35	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.23	Wt. n-Val.		0.038	
W.S. Elev (ft)	2463.12	Reach Len. (ft)	833.00	833.39	833.00
Crit W.S. (ft)	2462.82	Flow Area (sq ft)		185.59	
E.G. Slope (ft/ft)	0.010128	Area (sq ft)		185.59	
Q Total (cfs)	716.00	Flow (cfs)		716.00	
Top Width (ft)	189.48	Top Width (ft)		189.48	
Vel Total (ft/s)	3.86	Avg. Vel. (ft/s)		3.86	
Max Chl Dpth (ft)	3.27	Hydr. Depth (ft)		0.98	
Conv. Total (cfs)	7114.8	Conv. (cfs)		7114.8	
Length Wtd. (ft)	833.32	Wetted Per. (ft)		191.19	
Min Ch El (ft)	2459.88	Shear (lb/sq ft)		0.61	
Alpha	1.00	Stream Power (lb/ft s)		2.37	
Frctn Loss (ft)	9.29	Cum Volume (acre-ft)	0.20	2.36	0.89
C & E Loss (ft)	0.04	Cum SA (acres)	0.52	2.06	0.79

Warning: Divided flow computed for this cross-section.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.

CROSS SECTION OUTPUT Profile #Method 1

E.G. Elev (ft)	2463.35	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.23	Wt. n-Val.		0.038	
W.S. Elev (ft)	2463.12	Reach Len. (ft)	833.00	833.39	833.00
Crit W.S. (ft)	2462.82	Flow Area (sq ft)		185.77	
E.G. Slope (ft/ft)	0.010102	Area (sq ft)		185.77	

Q Total (cfs)	716.00	Flow (cfs)		716.00	
Top Width (ft)	189.60	Top Width (ft)		189.60	
Vel Total (ft/s)	3.85	Avg. Vel. (ft/s)		3.85	
Max Chl Dpth (ft)	3.28	Hydr. Depth (ft)		0.98	
Conv. Total (cfs)	7123.6	Conv. (cfs)		7123.6	
Length Wtd. (ft)	833.32	Wetted Per. (ft)		191.31	
Min Ch El (ft)	2459.88	Shear (lb/sq ft)		0.61	
Alpha	1.00	Stream Power (lb/ft s)		2.36	
Frctn Loss (ft)	9.29	Cum Volume (acre-ft)	0.20	2.36	0.89
C & E Loss (ft)	0.04	Cum SA (acres)	0.51	2.06	0.79

Warning: Divided flow computed for this cross-section.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water
surface was used.

CROSS SECTION

RIVER: Stagecoach Pass
REACH: Levee Breakout RS: 2.62

INPUT
Description:
Station Elevation Data num= 19

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9800.3	2456	9835.07	2454	9848.97	2454	9872.71	2454.5	9889.12	2454
9905.68	2453	9960.76	2453.8	9987.66	2452	9989.12	2451.763	10000	2450
10013.34	2452	10021.03	2452.5	10029.38	2452	10045.07	2451.5	10060.05	2452
10064.74	2454	10080.32	2452	10111.35	2454	10193.78	2456		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9800.3	.056	9987.66	.038	10013.34	.086

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9987.66	10013.34	397	397	397	.1	.3

CROSS SECTION OUTPUT Profile #100-yr 6-yr

			Left OB	Channel	Right OB
E.G. Elev (ft)	2454.02	Element			
Vel Head (ft)	0.63	Wt. n-Val.	0.056	0.038	0.086
W.S. Elev (ft)	2453.39	Reach Len. (ft)			
Crit W.S. (ft)	2453.39	Flow Area (sq ft)	20.87	61.35	93.27
E.G. Slope (ft/ft)	0.012323	Area (sq ft)	20.87	61.35	93.27
Q Total (cfs)	716.00	Flow (cfs)	39.63	472.11	204.26
Top Width (ft)	161.99	Top Width (ft)	53.97	25.68	82.33
Vel Total (ft/s)	4.08	Avg. Vel. (ft/s)	1.90	7.70	2.19
Max Chl Dpth (ft)	3.39	Hydr. Depth (ft)	0.39	2.39	1.13
Conv. Total (cfs)	6450.0	Conv. (cfs)	357.0	4253.0	1840.0
Length Wtd. (ft)		Wetted Per. (ft)	54.03	25.99	82.80
Min Ch El (ft)	2450.00	Shear (lb/sq ft)	0.30	1.82	0.87
Alpha	2.44	Stream Power (lb/ft s)	0.56	13.97	1.90
Frctn Loss (ft)		Cum Volume (acre-ft)			
C & E Loss (ft)		Cum SA (acres)			

Warning: Divided flow computed for this cross-section.

CROSS SECTION OUTPUT Profile #Method 1

			Left OB	Channel	Right OB
E.G. Elev (ft)	2454.02	Element			
Vel Head (ft)	0.63	Wt. n-Val.	0.056	0.038	0.086
W.S. Elev (ft)	2453.39	Reach Len. (ft)			
Crit W.S. (ft)	2453.39	Flow Area (sq ft)	20.76	61.29	93.09
E.G. Slope (ft/ft)	0.012376	Area (sq ft)	20.76	61.29	93.09
Q Total (cfs)	716.00	Flow (cfs)	39.48	472.40	204.12

Top Width (ft)	161.71	Top Width (ft)	53.75	25.68	82.28
Vel Total (ft/s)	4.09	Avg. Vel. (ft/s)	1.90	7.71	2.19
Max Chl Dpth (ft)	3.39	Hydr. Depth (ft)	0.39	2.39	1.13
Conv. Total (cfs)	6436.2	Conv. (cfs)	354.9	4246.5	1834.9
Length Wtd. (ft)		Wetted Per. (ft)	53.81	25.99	82.74
Min Ch El (ft)	2450.00	Shear (lb/sq ft)	0.30	1.82	0.87
Alpha	2.44	Stream Power (lb/ft s)	0.57	14.04	1.91
Frctn Loss (ft)		Cum Volume (acre-ft)			
C & E Loss (ft)		Cum SA (acres)			

Warning: Divided flow computed for this cross-section.

CROSS SECTION

RIVER: Stagecoach Pass
REACH: StagecoachPass-2 RS: 2.7

INPUT
Description: Cross Section 2.70 is located within Sandflower. This section is downstream of the diversion dyke. There is potential of having flow travel north out the the model.

Topography indicates wash, and surrounding undeveloped desert. Cross section composed of cross section data collected by the City of Scottsdale Survey Department.
Aerial shows the realigned wash, desert, and diversion dyke.
T5NR4E Section 1
Q100 = 1828 cfs
Station Elevation Data num= 38

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9906.34	2464.02	9920.23	2462.07	9944.01	2462.19	9959.9	2466	9964.38	2465.94
9973.64	2464.29	9984.74	2462.32	9990.99	2459.96	10003.12	2459.84	10024.21	2460.03
10024.6	2460.16	10030.32	2462.00	10036.21	2463.91	10061.65	2463.83	10093.15	2463.55
10103.41	2463.17	10107.92	2462.17	10120.32	2462.31	10124.58	2462.24	10132.14	2463.14
10140.09	2461.99	10147.19	2462.31	10155.18	2463.36	10163.14	2461.08	10173.03	2461.01
10177.44	2462.03	10183.07	2461.92	10215.2	2462.28	10219.97	2460.21	10226.99	2459.88
10232.92	2460.07	10236.85	2462.23	10256.35	2462.68	10306.8	2463.23	10361.04	2462.61
10380.08	2463.35	10395.56	2463.89	10410	2463.9				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9906.34	.056	9984.74	.038	10030.3	.086

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9984.74	10030.3	489.12	483.63	473.08	.1	.3

Left Levee Station= 9959.9 Elevation= 2466
Right Levee Station=10036.21 Elevation= 2465

CROSS SECTION OUTPUT Profile #100-yr 6-yr

			Left OB	Channel	Right OB
E.G. Elev (ft)	2465.67	Element			
Vel Head (ft)	1.67	Wt. n-Val.	0.056	0.038	0.086
W.S. Elev (ft)	2464.00	Reach Len. (ft)	489.12	483.63	473.08
Crit W.S. (ft)	2464.00	Flow Area (sq ft)	7.96	171.53	6.18
E.G. Slope (ft/ft)	0.012499	Area (sq ft)	7.96	171.53	6.18
Q Total (cfs)	1828.00	Flow (cfs)	20.81	1795.42	11.78
Top Width (ft)	60.94	Top Width (ft)	9.47	45.56	5.91
Vel Total (ft/s)	9.85	Avg. Vel. (ft/s)	2.61	10.47	1.91
Max Chl Dpth (ft)	4.16	Hydr. Depth (ft)	0.84	3.77	1.05
Conv. Total (cfs)	16350.5	Conv. (cfs)	186.1	16059.1	105.3
Length Wtd. (ft)	483.21	Wetted Per. (ft)	9.62	46.30	6.30
Min Ch El (ft)	2459.84	Shear (lb/sq ft)	0.65	2.89	0.77
Alpha	1.11	Stream Power (lb/ft s)	1.69	30.26	1.46
Frctn Loss (ft)	6.17	Cum Volume (acre-ft)	9.71	44.40	11.40
C & E Loss (ft)	0.15	Cum SA (acres)	8.63	16.05	10.44

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.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water
surface was used.

CROSS SECTION OUTPUT Profile #Method 1

E.G. Elev (ft)	2465.67	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.67	Wt. n-Val.	0.056	0.038	0.086
W.S. Elev (ft)	2464.00	Reach Len. (ft)	489.12	483.63	473.08
Crit W.S. (ft)	2464.00	Flow Area (sq ft)	7.96	171.53	6.18
E.G. Slope (ft/ft)	0.012499	Area (sq ft)	7.96	171.53	6.18
Q Total (cfs)	1828.00	Flow (cfs)	20.81	1795.42	11.78
Top Width (ft)	60.94	Top Width (ft)	9.47	45.56	5.91
Vel Total (ft/s)	9.85	Avg. Vel. (ft/s)	2.61	10.47	1.91
Max Chl Dpth (ft)	4.16	Hydr. Depth (ft)	0.84	3.77	1.05
Conv. Total (cfs)	16350.5	Conv. (cfs)	186.1	16059.1	105.3
Length Wtd. (ft)	483.21	Wetted Per. (ft)	9.62	46.30	6.30
Min Ch El (ft)	2459.84	Shear (lb/sq ft)	0.65	2.89	0.77
Alpha	1.11	Stream Power (lb/ft s)	1.69	30.26	1.46
Frctn Loss (ft)	6.17	Cum Volume (acre-ft)	9.71	44.40	11.40
C & E Loss (ft)	0.15	Cum SA (acres)	8.63	16.05	10.44

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.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water
surface was used.

CROSS SECTION

RIVER: Stagecoach Pass
REACH: StagecoachPass-2 RS: 2.61

INPUT
Description: Cross Section 2.61 is located within Sandflower.

Topography
indicates wash, and surrounding undeveloped desert. Cross section composed of cross section data collected by the City of Scottsdale Survey Department.
Aerial shows wash, desert, and building pads.
T5NR4E Section 1
Q100 = 1828 cfs
Station Elevation Data num= 11

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9949.1	2457.51	9974.39	2452.69	9974.66	2452.64	9988.75	2450.91	10008.05	2450.74

10022.32 2451.6710038.01 2452.710065.45 2453.110077.29 2456.51 10090.3 2458.06
10107.37 2457.27

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9949.1	.061	9974.66	.03810038.01		.056

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9974.6610038.01		131.55	142.72	154.55	.1	.3

CROSS SECTION OUTPUT Profile #100-yr 6-yr

E.G. Elev (ft)	2455.51	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.17	Wt. n-Val.	0.061	0.038	0.056
W.S. Elev (ft)	2454.35	Reach Len. (ft)	131.55	142.72	154.55
Crit W.S. (ft)	2454.35	Flow Area (sq ft)	7.64	183.05	42.36
E.G. Slope (ft/ft)	0.013027	Area (sq ft)	7.64	183.05	42.36
Q Total (cfs)	1828.00	Flow (cfs)	18.90	1654.28	154.82
Top Width (ft)	104.07	Top Width (ft)	8.96	63.35	31.76
Vel Total (ft/s)	7.84	Avg. Vel. (ft/s)	2.47	9.04	3.66
Max Chl Dpth (ft)	3.61	Hydr. Depth (ft)	0.85	2.89	1.33
Conv. Total (cfs)	16016.3	Conv. (cfs)	165.6	14494.2	1356.5
Length Wtd. (ft)	143.35	Wetted Per. (ft)	9.12	63.52	31.94
Min Ch El (ft)	2450.74	Shear (lb/sq ft)	0.68	2.34	1.08
Alpha	1.22	Stream Power (lb/ft s)	1.69	21.18	3.94
Frctn Loss (ft)	1.87	Cum Volume (acre-ft)	9.62	42.44	11.14
C & E Loss (ft)	0.04	Cum SA (acres)	8.53	15.45	10.23

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 energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
depth, the 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 OUTPUT Profile #Method 1

E.G. Elev (ft)	2455.51	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.17	Wt. n-Val.	0.061	0.038	0.056
W.S. Elev (ft)	2454.35	Reach Len. (ft)	131.55	142.72	154.55
Crit W.S. (ft)	2454.35	Flow Area (sq ft)	7.64	183.05	42.36
E.G. Slope (ft/ft)	0.013027	Area (sq ft)	7.64	183.05	42.36
Q Total (cfs)	1828.00	Flow (cfs)	18.90	1654.28	154.82
Top Width (ft)	104.07	Top Width (ft)	8.96	63.35	31.76
Vel Total (ft/s)	7.84	Avg. Vel. (ft/s)	2.47	9.04	3.66
Max Chl Dpth (ft)	3.61	Hydr. Depth (ft)	0.85	2.89	1.33
Conv. Total (cfs)	16016.3	Conv. (cfs)	165.6	14494.2	1356.5
Length Wtd. (ft)	143.35	Wetted Per. (ft)	9.12	63.52	31.94
Min Ch El (ft)	2450.74	Shear (lb/sq ft)	0.68	2.34	1.08
Alpha	1.22	Stream Power (lb/ft s)	1.69	21.18	3.94
Frctn Loss (ft)	1.87	Cum Volume (acre-ft)	9.62	42.44	11.14
C & E Loss (ft)	0.04	Cum SA (acres)	8.53	15.45	10.23

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 energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
depth, the 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: Stagecoach Pass
REACH: StagecoachPass-2 RS: 2.58

INPUT
Description: Cross Section 2.58 is located within Sandflower.

Topography
indicates wash, and surrounding undeveloped desert. Cross section composed of cross section data collected by the City of Scottsdale Survey Department.
Aerial shows wash, desert, and building pads.
T5NR4E Section 1
Q100 = 1828 cfs
Station Elevation Data num= 12

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9906.51	2453.89	9927.2	2453.1	9954.3	2450.68	9959.45	2450.06	9966.81	2449.18
9986.83	2449.01	10007.76	2447.73	10020.86	2448.08	10020.88	2448.08	10040.07	2450.29
10067.68	2450.63	10087.1	2451.83						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9906.51	.061	9959.45	.038	10040.07	.056

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9959.45	10040.07	448.51	444.76	442.88	.3	.5

CROSS SECTION OUTPUT Profile #100-yr 6-yr

			Left OB	Channel	Right OB
E.G. Elev (ft)	2452.40	Element			
Vel Head (ft)	1.04	Wt. n-Val.	0.061	0.038	0.056
W.S. Elev (ft)	2451.36	Reach Len. (ft)	448.51	444.76	442.88
Crit W.S. (ft)	2451.36	Flow Area (sq ft)	7.68	207.73	29.13
E.G. Slope (ft/ft)	0.013049	Area (sq ft)	7.68	207.73	29.13
Q Total (cfs)	1828.00	Flow (cfs)	15.17	1740.68	72.14
Top Width (ft)	132.79	Top Width (ft)	12.76	80.62	39.41
Vel Total (ft/s)	7.48	Avg. Vel. (ft/s)	1.98	8.38	2.48
Max Chl Dpth (ft)	3.63	Hydr. Depth (ft)	0.60	2.58	0.74
Conv. Total (cfs)	16002.6	Conv. (cfs)	132.8	15238.2	631.6
Length Wtd. (ft)	444.75	Wetted Per. (ft)	12.82	80.84	39.43
Min Ch El (ft)	2447.73	Shear (lb/sq ft)	0.49	2.09	0.60
Alpha	1.20	Stream Power (lb/ft s)	0.96	17.54	1.49
Frctn Loss (ft)	5.63	Cum Volume (acre-ft)	9.60	41.80	11.01
C & E Loss (ft)	0.18	Cum SA (acres)	8.49	15.21	10.11

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.

CROSS SECTION OUTPUT Profile #Method 1

			Left OB	Channel	Right OB
E.G. Elev (ft)	2452.40	Element			
Vel Head (ft)	1.04	Wt. n-Val.	0.061	0.038	0.056
W.S. Elev (ft)	2451.36	Reach Len. (ft)	448.51	444.76	442.88
Crit W.S. (ft)	2451.36	Flow Area (sq ft)	7.68	207.73	29.13
E.G. Slope (ft/ft)	0.013049	Area (sq ft)	7.68	207.73	29.13
Q Total (cfs)	1828.00	Flow (cfs)	15.17	1740.68	72.14
Top Width (ft)	132.79	Top Width (ft)	12.76	80.62	39.41
Vel Total (ft/s)	7.48	Avg. Vel. (ft/s)	1.98	8.38	2.48

Max Chl Dpth (ft)	3.63	Hydr. Depth (ft)	0.60	2.58	0.74
Conv. Total (cfs)	16002.6	Conv. (cfs)	132.8	15238.2	631.6
Length Wtd. (ft)	444.75	Wetted Per. (ft)	12.82	80.84	39.43
Min Ch El (ft)	2447.73	Shear (lb/sq ft)	0.49	2.09	0.60
Alpha	1.20	Stream Power (lb/ft s)	0.96	17.54	1.49
Frctn Loss (ft)	5.63	Cum Volume (acre-ft)	9.60	41.80	11.01
C & E Loss (ft)	0.18	Cum SA (acres)	8.49	15.21	10.11

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.

CROSS SECTION

RIVER: Stagecoach Pass
REACH: StagecoachPass-2 RS: 2.5

INPUT
Description: Cross Section 2.50 is located within Sandflower. It is located upstream of concentration point CSCP2b in the HEC-1 Model and upstream of the intersection of 81st Street and Stage Coach Pass Wash. There are 5-6 X 4 concrete box culverts located under 81st Street.

Topography indicates wash, and surrounding undeveloped desert. Cross section composed of cross section data collected by the City of Scottsdale Survey Depar
Aerial shows wash, desert, 81st Street, and homes.
T5NR4E Section 1
Q100 = 1828 cfs
Station Elevation Data num= 15

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9803.45	2447.36	9853.22	2446.87	9912.67	2444.92	9960.16	2443.8	9980.27	2443.05
9982.55	2442.87	9983.61	2442.79	9988.73	2438.45	10009.11	2438.67	10025.74	2443.29
10043.55	2443.98	10060.95	2444.66	10071.72	2443.97	10087.93	2442.23	10110.49	2443.12

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9803.45	.061	9980.27	.038	10025.74	.056

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9980.27	10025.74	70.56	65.75	65.14	.3	.5

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
9803.45	9980.27	2443.53	F
10025.74	10110.49	2443.53	F

Right Levee Station=10060.95 Elevation= 2444.66
Blocked Obstructions num= 1

Sta L	Sta R	Elev
10110.49	10110.49	2446

CROSS SECTION OUTPUT Profile #100-yr 6-yr

E.G. Elev (ft)	2445.49	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.64	Wt. n-Val.	0.061	0.038	0.056
W.S. Elev (ft)	2443.86	Reach Len. (ft)	70.56	65.75	65.14
Crit W.S. (ft)	2443.86	Flow Area (sq ft)	8.71	175.41	4.12
E.G. Slope (ft/ft)	0.012272	Area (sq ft)	8.71	175.41	4.12
Q Total (cfs)	1828.00	Flow (cfs)	12.50	1810.29	5.21

Top Width (ft)	82.49	Top Width (ft)	22.44	45.47	14.58
Vel Total (ft/s)	9.71	Avg. Vel. (ft/s)	1.44	10.32	1.26
Max Chl Dpth (ft)	5.41	Hydr. Depth (ft)	0.39	3.86	0.28
Conv. Total (cfs)	16501.1	Conv. (cfs)	112.8	16341.2	47.0
Length Wtd. (ft)	65.75	Wetted Per. (ft)	22.45	47.70	14.59
Min Ch El (ft)	2438.45	Shear (lb/sq ft)	0.30	2.82	0.22
Alpha	1.12	Stream Power (lb/ft s)	0.43	29.07	0.27
Frctn Loss (ft)		Cum Volume (acre-ft)	9.51	39.84	10.84
C & E Loss (ft)		Cum SA (acres)	8.31	14.57	9.83

Warning: During subcritical analysis, the water surface upstream of culvert went to critical depth.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid,
energy was used.

CROSS SECTION OUTPUT Profile #Method 1

E.G. Elev (ft)	2445.49	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.64	Wt. n-Val.	0.061	0.038	0.056
W.S. Elev (ft)	2443.86	Reach Len. (ft)	70.56	65.75	65.14
Crit W.S. (ft)	2443.86	Flow Area (sq ft)	8.71	175.41	4.12
E.G. Slope (ft/ft)	0.012272	Area (sq ft)	8.71	175.41	4.12
Q Total (cfs)	1828.00	Flow (cfs)	12.50	1810.29	5.21
Top Width (ft)	82.49	Top Width (ft)	22.44	45.47	14.58
Vel Total (ft/s)	9.71	Avg. Vel. (ft/s)	1.44	10.32	1.26
Max Chl Dpth (ft)	5.41	Hydr. Depth (ft)	0.39	3.86	0.28
Conv. Total (cfs)	16501.1	Conv. (cfs)	112.8	16341.2	47.0
Length Wtd. (ft)	65.75	Wetted Per. (ft)	22.45	47.70	14.59
Min Ch El (ft)	2438.45	Shear (lb/sq ft)	0.30	2.82	0.22
Alpha	1.12	Stream Power (lb/ft s)	0.43	29.07	0.27
Frctn Loss (ft)		Cum Volume (acre-ft)	9.51	39.84	10.84
C & E Loss (ft)		Cum SA (acres)	8.31	14.57	9.83

Warning: During subcritical analysis, the water surface upstream of culvert went to critical depth.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid,
energy was used.

CULVERT

RIVER: Stagecoach Pass
REACH: StagecoachPass-2 RS: 2.495

INPUT
Description: Box culverts at 81st Street crossing.
Distance from Upstream XS = 2
Deck/Roadway Width = 61
Weir Coefficient = 2.6
Upstream Deck/Roadway Coordinates
num= 5

Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord
9803.45	2443.27		9984.07	2443.53		10022.82	2444.15	
10067.01	2444.69		10110.49	2445.04				

Upstream Bridge Cross Section Data
Station Elevation Data num= 15

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9803.45	2447.36	9853.22	2446.87	9912.67	2444.92	9960.16	2443.8	9980.27	2443.05
9982.55	2442.87	9983.61	2442.79	9988.73	2438.45	10009.11	2438.67	10025.74	2443.29
10043.55	2443.98	10060.95	2444.66	10071.72	2443.97	10087.93	2442.23	10110.49	2443.12

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9803.45	.061	9980.27	.038	10025.74	.056

Bank Sta: Left	Right	Coeff Contr.	Expan.
9980.27	10025.74	.3	.5

Ineffective Flow num= 2

```
   Sta L   Sta R    Elev  Permanent
 9803.45 9980.27 2443.53       F
10025.7410110.49 2443.53       F
Right Levee     Station=10060.95      Elevation= 2444.66
Blocked Obstructions     num=       1
   Sta L   Sta R    Elev
10110.4910110.49    2446

Downstream  Deck/Roadway Coordinates
    num=       7
     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord
  9936.6 2441.52         9950.87 2442.63         9980.87 2443.53
10019.84 2444.15        10060.69 2444.69        10102.79 2445.04
10190.12 2445.04

Downstream Bridge Cross Section Data
Station Elevation Data    num=      21
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
 9801.72  2438.5 9833.72 2438.17 9840.66  2433.9 9846.75 2434.14 9852.72 2438.02
 9883.75 2437.77    9903 2438.42 9934.49 2439.96 9960.17 2440.58 9976.03 2442.26
  9983.4 2440.68 9983.95 2437.19 9988.03 2434.9810004.19 2435.2410019.78 2434.61
10023.42 2437.0110023.94 2441.2410057.65 2440.3810098.78 2441.6410163.09 2441.41
10190.12 2440.84

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
 9801.72    .061 9983.95    .03810023.42    .056

Bank Sta: Left   Right    Coeff Contr.   Expan.
       9983.9510023.42             .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
 9801.72 9983.95 2443.53       F
10023.4210190.12 2443.53       F
Left Levee      Station= 9976.03      Elevation=    2444

Upstream Embankment side slope              =       0 horiz. to 1.0 vertical
Downstream Embankment side slope            =       0 horiz. to 1.0 vertical
Maximum allowable submergence for weir flow =     .95
Elevation at which weir flow begins         =
Energy head used in spillway design         =
Spillway height used in design              =
Weir crest shape                            = Broad Crested

Number of Culverts =  1

Culvert Name     Shape      Rise    Span
CULVERT#1            Box       4       6
FHWA Chart # 8 - flared wingwalls
FHWA Scale # 1 - Wingwall flared 30 to 75 deg.
Solution Criteria = Highest U.S. EG
Culvert Upstrm Dist  Length    Top n  Bottom n  Depth Blocked  Entrance Loss Coef   Exit Loss Coef
                  4      55     .015      .015        0                    .4                 1
Number of Barrels =  5
Upstream   Elevation =  2438.05
Centerline Stations
    Sta.    Sta.    Sta.    Sta.    Sta.
 9985.92 9992.42 9998.9210005.4210011.92
Downstream Elevation =  2437.48
Centerline Stations
    Sta.    Sta.    Sta.    Sta.    Sta.
 9991.19 9997.6910004.1910010.6910017.19

CROSS SECTION


RIVER: Stagecoach Pass
REACH: StagecoachPass-2   RS: 2.49

INPUT
Description: Cross Section 2.49 is located within Sandflower.  It is located
```

upstream of the intersection of 81st Street and Stage Coach Pass Wash. There are 5-6 X 4 concrete box culverts located under 81st Street.

Topography indicates wash, and surrounding undeveloped desert. Cross section composed of cross section data collected by the City of Scottsdale Survey Department.

Aerial shows wash, desert, 81st Street, and homes.

T5NR4E Section 1

Q100 = 1851 cfs

Station Elevation Data num= 21

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9801.72	2438.5	9833.72	2438.17	9840.66	2433.9	9846.75	2434.14	9852.72	2438.02
9883.75	2437.77	9903	2438.42	9934.49	2439.96	9960.17	2440.58	9976.03	2442.26
9983.4	2440.68	9983.95	2437.19	9988.03	2434.98	10004.19	2435.24	10019.78	2434.61
10023.42	2437.01	10023.94	2441.24	10057.65	2440.38	10098.78	2441.64	10163.09	2441.41
10190.12	2440.84								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9801.72	.061	9983.95	.038	10023.42	.056

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9983.95	10023.42	401.49	416.01	406.55	.3	.5

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
9801.72	9983.95	2443.53	F
10023.42	10190.12	2443.53	F

Left Levee Station= 9976.03 Elevation= 2444

CROSS SECTION OUTPUT Profile #100-yr 6-yr

			Left OB	Channel	Right OB
E.G. Elev (ft)	2441.33	Element			
Vel Head (ft)	2.06	Wt. n-Val.		0.038	
W.S. Elev (ft)	2439.27	Reach Len. (ft)	401.49	416.01	406.55
Crit W.S. (ft)	2439.27	Flow Area (sq ft)		160.61	
E.G. Slope (ft/ft)	0.013959	Area (sq ft)	0.34	160.61	0.31
Q Total (cfs)	1851.00	Flow (cfs)		1851.00	
Top Width (ft)	40.08	Top Width (ft)	0.33	39.47	0.28
Vel Total (ft/s)	11.52	Avg. Vel. (ft/s)		11.52	
Max Chl Dpth (ft)	5.37	Hydr. Depth (ft)		4.07	
Conv. Total (cfs)	15666.7	Conv. (cfs)		15666.7	
Length Wtd. (ft)	416.00	Wetted Per. (ft)		40.76	
Min Ch El (ft)	2434.61	Shear (lb/sq ft)		3.43	
Alpha	1.00	Stream Power (lb/ft s)		39.57	
Frctn Loss (ft)	6.14	Cum Volume (acre-ft)	9.51	39.59	10.84
C & E Loss (ft)	0.46	Cum SA (acres)	8.29	14.50	9.82

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

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

Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid,
energy was used.

CROSS SECTION OUTPUT Profile #Method 1

			Left OB	Channel	Right OB
E.G. Elev (ft)	2441.33	Element			
Vel Head (ft)	2.06	Wt. n-Val.		0.038	
W.S. Elev (ft)	2439.27	Reach Len. (ft)	401.49	416.01	406.55

Crit W.S. (ft)	2439.27	Flow Area (sq ft)		160.61	
E.G. Slope (ft/ft)	0.013959	Area (sq ft)	0.34	160.61	0.31
Q Total (cfs)	1851.00	Flow (cfs)		1851.00	
Top Width (ft)	40.08	Top Width (ft)	0.33	39.47	0.28
Vel Total (ft/s)	11.52	Avg. Vel. (ft/s)		11.52	
Max Chl Dpth (ft)	5.37	Hydr. Depth (ft)		4.07	
Conv. Total (cfs)	15666.7	Conv. (cfs)		15666.7	
Length Wtd. (ft)	416.00	Wetted Per. (ft)		40.76	
Min Ch El (ft)	2434.61	Shear (lb/sq ft)		3.43	
Alpha	1.00	Stream Power (lb/ft s)		39.57	
Frctn Loss (ft)	6.14	Cum Volume (acre-ft)	9.51	39.59	10.84
C & E Loss (ft)	0.46	Cum SA (acres)	8.29	14.50	9.82

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 energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
depth, the calculated water surface came back below critical depth. This indicates that there is
not a valid subcritical answer. The program defaulted to critical depth.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid,
energy was used.

CROSS SECTION

RIVER: Stagecoach Pass
REACH: StagecoachPass-2 RS: 2.41

INPUT
Description: Cross Section 2.41 is located within Sandflower.

Topography
indicates wash, and surrounding undeveloped desert. Cross section
composed of cross section data collected by the City of Scottsdale
Survey Department.
Aerial shows wash, desert, and homes.
T5NR4E
Section 1
Q100 = 1851 cfs
Station Elevation Data num= 17

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9888.4	2431.82	9907.22	2432.81	9924.06	2430	9936.28	2427.96	9940.07	2427.82
9954.7	2428.99	9956.83	2428.94	10006.15	2427.81	10013.94	2428	10016.11	2429.95
10016.12	2431.47	10036.56	2431.16	10068.1	2430.68	10102.39	2432.96	10106.05	2430.86
10111.63	2430.86	10119.79	2431.08						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9888.4	.061	9924.06	.038	10016.11	.056

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9924.06	10016.11	272.35	269.4	261.76	.1	.3

Right Levee Station=10016.12 Elevation= 2431.47

CROSS SECTION OUTPUT Profile #100-yr 6-yr

E.G. Elev (ft)	2431.91	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.14	Wt. n-Val.	0.061	0.038	0.000
W.S. Elev (ft)	2430.77	Reach Len. (ft)	272.35	269.40	261.76
Crit W.S. (ft)	2430.77	Flow Area (sq ft)	1.79	215.80	0.00
E.G. Slope (ft/ft)	0.015622	Area (sq ft)	1.79	215.80	0.00
Q Total (cfs)	1851.00	Flow (cfs)	2.86	1848.14	0.00
Top Width (ft)	96.68	Top Width (ft)	4.63	92.05	

Vel Total (ft/s)	8.51	Avg. Vel. (ft/s)	1.60	8.56	0.06
Max Chl Dpth (ft)	2.96	Hydr. Depth (ft)	0.39	2.34	0.44
Conv. Total (cfs)	14809.3	Conv. (cfs)	22.9	14786.4	0.0
Length Wtd. (ft)	269.35	Wetted Per. (ft)	4.69	93.03	0.82
Min Ch El (ft)	2427.81	Shear (lb/sq ft)	0.37	2.26	
Alpha	1.01	Stream Power (lb/ft s)	0.59	19.37	
Frctn Loss (ft)	3.86	Cum Volume (acre-ft)	9.50	37.79	10.84
C & E Loss (ft)	0.01	Cum SA (acres)	8.27	13.88	9.82

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 energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
depth, the 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 OUTPUT Profile #Method 1

			Left OB	Channel	Right OB
E.G. Elev (ft)	2431.91	Element			
Vel Head (ft)	1.14	Wt. n-Val.	0.061	0.038	0.000
W.S. Elev (ft)	2430.77	Reach Len. (ft)	272.35	269.40	261.76
Crit W.S. (ft)	2430.77	Flow Area (sq ft)	1.79	215.80	0.00
E.G. Slope (ft/ft)	0.015622	Area (sq ft)	1.79	215.80	0.00
Q Total (cfs)	1851.00	Flow (cfs)	2.86	1848.14	0.00
Top Width (ft)	96.68	Top Width (ft)	4.63	92.05	
Vel Total (ft/s)	8.51	Avg. Vel. (ft/s)	1.60	8.56	0.06
Max Chl Dpth (ft)	2.96	Hydr. Depth (ft)	0.39	2.34	0.44
Conv. Total (cfs)	14809.3	Conv. (cfs)	22.9	14786.4	0.0
Length Wtd. (ft)	269.35	Wetted Per. (ft)	4.69	93.03	0.82
Min Ch El (ft)	2427.81	Shear (lb/sq ft)	0.37	2.26	
Alpha	1.01	Stream Power (lb/ft s)	0.59	19.37	
Frctn Loss (ft)	3.86	Cum Volume (acre-ft)	9.50	37.79	10.84
C & E Loss (ft)	0.01	Cum SA (acres)	8.27	13.88	9.82

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 energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
depth, the 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: Stagecoach Pass
REACH: StagecoachPass-2 RS: 2.36

INPUT
Description: Cross Section 2.36 is located within Sandflower.

Topography
indicates wash, and surrounding undeveloped desert.
Aerial shows
wash, desert, and homes.
T5NR4E Section 1

Q100 = 1851 cfs

```
Station Elevation Data    num=      16
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
 9910.57 2424.79 9940.01 2424.86  9948.8 2424.85 9960.49 2427.96 9961.61 2428.26
 9965.66 2428.27 9983.182423.999    9989 2422.5810011.95 2422.1410029.87  2422.6
10049.92 2424.2710068.02 2425.7810068.02 2424.8310104.84 2424.5710144.06 2424.32
10238.56 2425.14

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
 9910.57    .061 9983.18    .03810049.92    .056

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9983.1810049.92           308.98  287.94  276.39            .1        .3
Left Levee      Station= 9965.66      Elevation= 2428.27
Right Levee     Station=10068.02      Elevation= 2425.78

CROSS SECTION OUTPUT  Profile #100-yr 6-yr

  E.G. Elev (ft)          2426.99    Element                  Left OB    Channel   Right OB
  Vel Head (ft)              1.28    Wt. n-Val.                0.061      0.038     0.056
  W.S. Elev (ft)          2425.71    Reach Len. (ft)          308.98     287.94    276.39
  Crit W.S. (ft)          2425.71    Flow Area (sq ft)          5.99     196.34     12.40
  E.G. Slope (ft/ft)     0.013192    Area (sq ft)               5.99     196.34     12.40
  Q Total (cfs)           1851.00    Flow (cfs)                14.82    1805.91     30.27
  Top Width (ft)            91.00    Top Width (ft)             7.01      66.74     17.24
  Vel Total (ft/s)           8.62    Avg. Vel. (ft/s)           2.47       9.20      2.44
  Max Chl Dpth (ft)          3.57    Hydr. Depth (ft)           0.85       2.94      0.72
  Conv. Total (cfs)       16115.6    Conv. (cfs)               129.0    15723.0     263.5
  Length Wtd. (ft)         287.95    Wetted Per. (ft)           7.22      66.99     17.30
  Min Ch El (ft)          2422.14    Shear (lb/sq ft)           0.68       2.41      0.59
  Alpha                      1.11    Stream Power (lb/ft s)     1.69      22.20      1.44
  Frctn Loss (ft)            4.01    Cum Volume (acre-ft)       9.47      36.51     10.80
  C & E Loss (ft)            0.01    Cum SA (acres)             8.23      13.38      9.77


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

CROSS SECTION OUTPUT  Profile #Method 1

  E.G. Elev (ft)          2426.99    Element                  Left OB    Channel   Right OB
  Vel Head (ft)              1.28    Wt. n-Val.                0.061      0.038     0.056
  W.S. Elev (ft)          2425.71    Reach Len. (ft)          308.98     287.94    276.39
  Crit W.S. (ft)          2425.71    Flow Area (sq ft)          5.99     196.34     12.40
  E.G. Slope (ft/ft)     0.013192    Area (sq ft)               5.99     196.34     12.40
  Q Total (cfs)           1851.00    Flow (cfs)                14.82    1805.91     30.27
  Top Width (ft)            91.00    Top Width (ft)             7.01      66.74     17.24
  Vel Total (ft/s)           8.62    Avg. Vel. (ft/s)           2.47       9.20      2.44
  Max Chl Dpth (ft)          3.57    Hydr. Depth (ft)           0.85       2.94      0.72
  Conv. Total (cfs)       16115.6    Conv. (cfs)               129.0    15723.0     263.5
  Length Wtd. (ft)         287.95    Wetted Per. (ft)           7.22      66.99     17.30
  Min Ch El (ft)          2422.14    Shear (lb/sq ft)           0.68       2.41      0.59
  Alpha                      1.11    Stream Power (lb/ft s)     1.69      22.20      1.44
  Frctn Loss (ft)            4.01    Cum Volume (acre-ft)       9.47      36.51     10.80
  C & E Loss (ft)            0.01    Cum SA (acres)             8.23      13.38      9.77


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

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
depth, the calculated water surface came back below critical depth. This indicates that there is
not a valid subcritical answer. The program defaulted to critical depth.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water
surface was used.

CROSS SECTION

RIVER: Stagecoach Pass
REACH: StagecoachPass-2 RS: 2.3

INPUT
Description: Cross Section 2.30 is located within Sandflower.

Topography
indicates wash, and surrounding undeveloped desert. Cross section
composed of cross section data collected by the City of Scottsdale
Survey Department.
Aerial shows wash, desert, and homes.
T5NR4E
Section 1
Q100 = 1851 cfs
Station Elevation Data num= 20

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9878.06	2419.72	9912.71	2420.2	9938.9	2416.72	9951.17	2419.66	9967.34	2418.5
9976.03	2417.88	9985.78	2415.97	10001.12	2415.91	10014.13	2416.23	10020.02	2416.38
10038.35	2416.23	10045.99	2418.51	10056.21	2421.54	10062.37	2421.95	10074.66	2419.42
10117.9	2419.07	10134.84	2422.98	10145.65	2423.61	10248.17	2423.79	10256.72	2424.05

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9878.06	.061	9967.34	.038	10045.99	.056

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9967.34	10045.99	362.45	369.47	383.86	.1	.3

Left Levee Station= 9951.17 Elevation= 2419.66
Right Levee Station=10062.37 Elevation= 2421.95

CROSS SECTION OUTPUT Profile #100-yr 6-yr

E.G. Elev (ft)	2420.44	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.25	Wt. n-Val.	0.061	0.038	0.056
W.S. Elev (ft)	2419.20	Reach Len. (ft)	362.45	369.47	383.86
Crit W.S. (ft)	2419.20	Flow Area (sq ft)	3.39	205.59	0.82
E.G. Slope (ft/ft)	0.014758	Area (sq ft)	3.39	205.59	0.82
Q Total (cfs)	1851.00	Flow (cfs)	4.95	1844.78	1.27
Top Width (ft)	90.71	Top Width (ft)	9.72	78.65	2.34
Vel Total (ft/s)	8.82	Avg. Vel. (ft/s)	1.46	8.97	1.55
Max Chl Dpth (ft)	3.29	Hydr. Depth (ft)	0.35	2.61	0.35
Conv. Total (cfs)	15236.8	Conv. (cfs)	40.8	15185.6	10.4
Length Wtd. (ft)	371.86	Wetted Per. (ft)	9.74	79.19	2.44
Min Ch El (ft)	2415.91	Shear (lb/sq ft)	0.32	2.39	0.31
Alpha	1.03	Stream Power (lb/ft s)	0.47	21.46	0.48
Frctn Loss (ft)	3.86	Cum Volume (acre-ft)	9.44	35.19	10.76
C & E Loss (ft)	0.12	Cum SA (acres)	8.17	12.90	9.70

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.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water
surface was used.

CROSS SECTION OUTPUT Profile #Method 1

E.G. Elev (ft)	2420.44	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.25	Wt. n-Val.	0.061	0.038	0.056
W.S. Elev (ft)	2419.20	Reach Len. (ft)	362.45	369.47	383.86
Crit W.S. (ft)	2419.20	Flow Area (sq ft)	3.39	205.59	0.82
E.G. Slope (ft/ft)	0.014758	Area (sq ft)	3.39	205.59	0.82
Q Total (cfs)	1851.00	Flow (cfs)	4.95	1844.78	1.27
Top Width (ft)	90.71	Top Width (ft)	9.72	78.65	2.34
Vel Total (ft/s)	8.82	Avg. Vel. (ft/s)	1.46	8.97	1.55
Max Chl Dpth (ft)	3.29	Hydr. Depth (ft)	0.35	2.61	0.35
Conv. Total (cfs)	15236.8	Conv. (cfs)	40.8	15185.6	10.4
Length Wtd. (ft)	371.86	Wetted Per. (ft)	9.74	79.19	2.44
Min Ch El (ft)	2415.91	Shear (lb/sq ft)	0.32	2.39	0.31
Alpha	1.03	Stream Power (lb/ft s)	0.47	21.46	0.48
Frctn Loss (ft)	3.86	Cum Volume (acre-ft)	9.44	35.19	10.76
C & E Loss (ft)	0.12	Cum SA (acres)	8.17	12.90	9.70

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.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water
surface was used.

CROSS SECTION

RIVER: Stagecoach Pass
REACH: StagecoachPass-2 RS: 2.23

INPUT
Description: Cross Section 2.23 is upstream of the boundary seperating
Sandflower and the Boulders. This section is located upstream of
concentration point CSCP02 in the HEC-1 Model. The levee location
is a projection of the home in the cross section area. The finish
floor of the home is 2411.74.

Topography indicates wash, and
surrounding undeveloped desert.
Aerial shows wash, desert, and
homes.
T5NR4E Section 1
Q100 = 1851 cfs
Station Elevation Data num= 23

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9911.81	2414.17	9922.75	2411.23	9932.61	2410.96	9944.01	2411.03	9953.31	2413.08
9982.03	2412.14	9984.43	2411	9994.54	2406.21	10003.02	2406.12	10011.75	2406.2
10015.02	2410.91	10037.36	2410.84	10047.99	2409.37	10052.72	2410.14	10080.44	2411.12
10135.92	2409.62	10181.18	2410.34	10228.19	2411.24	10281.16	2410.51	10291.49	2408.65
10328.66	2406.26	10361.84	2404.26	10375.18	2405				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9911.81	.061	9984.43	.038	10015.02	.056

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9984.43	10015.02	480.63	452.86	425.7	.3	.5

Left Levee Station= 9953.31 Elevation= 2413.08
Right Levee Station=10159.71 Elevation= 2412

CROSS SECTION OUTPUT Profile #100-yr 6-yr

E.G. Elev (ft)	2412.66	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.85	Wt. n-Val.	0.061	0.038	0.056
W.S. Elev (ft)	2411.81	Reach Len. (ft)	480.63	452.86	425.70
Crit W.S. (ft)	2411.81	Flow Area (sq ft)	0.69	140.24	208.93
E.G. Slope (ft/ft)	0.007700	Area (sq ft)	0.69	140.24	208.93
Q Total (cfs)	1851.00	Flow (cfs)	0.76	1234.47	615.78
Top Width (ft)	176.99	Top Width (ft)	1.71	30.59	144.69
Vel Total (ft/s)	5.29	Avg. Vel. (ft/s)	1.09	8.80	2.95
Max Chl Dpth (ft)	7.55	Hydr. Depth (ft)	0.41	4.58	1.44
Conv. Total (cfs)	21093.9	Conv. (cfs)	8.6	14068.0	7017.4
Length Wtd. (ft)	448.44	Wetted Per. (ft)	1.89	34.13	146.71
Min Ch El (ft)	2406.12	Shear (lb/sq ft)	0.18	1.98	0.68
Alpha	1.95	Stream Power (lb/ft s)	0.19	17.39	2.02
Frctn Loss (ft)	1.28	Cum Volume (acre-ft)	9.42	33.72	9.83
C & E Loss (ft)	0.26	Cum SA (acres)	8.13	12.44	9.06

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 energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
depth, the 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 OUTPUT Profile #Method 1

E.G. Elev (ft)	2412.66	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.85	Wt. n-Val.	0.061	0.038	0.056
W.S. Elev (ft)	2411.81	Reach Len. (ft)	480.63	452.86	425.70
Crit W.S. (ft)	2411.81	Flow Area (sq ft)	0.69	140.24	208.93
E.G. Slope (ft/ft)	0.007700	Area (sq ft)	0.69	140.24	208.93
Q Total (cfs)	1851.00	Flow (cfs)	0.76	1234.47	615.78
Top Width (ft)	176.99	Top Width (ft)	1.71	30.59	144.69
Vel Total (ft/s)	5.29	Avg. Vel. (ft/s)	1.09	8.80	2.95
Max Chl Dpth (ft)	7.55	Hydr. Depth (ft)	0.41	4.58	1.44
Conv. Total (cfs)	21093.9	Conv. (cfs)	8.6	14068.0	7017.4
Length Wtd. (ft)	448.44	Wetted Per. (ft)	1.89	34.13	146.71
Min Ch El (ft)	2406.12	Shear (lb/sq ft)	0.18	1.98	0.68
Alpha	1.95	Stream Power (lb/ft s)	0.19	17.39	2.02
Frctn Loss (ft)	1.28	Cum Volume (acre-ft)	9.42	33.72	9.83
C & E Loss (ft)	0.26	Cum SA (acres)	8.13	12.44	9.06

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

Warning: During the standard step iterations, when the assumed water surface was set equal to critical
depth, the 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: Stagecoach Pass
REACH: StagecoachPass-2 RS: 2.15

INPUT
Description: Cross Section 2.15 is located within The Boulders. It is located upstream of the intersection of 79th Way and Stage Coach Pass Wash. There are 4-10 X 4 concrete box culverts located under 79th Way.

Topography indicates wash, and surrounding undeveloped desert.
Aerial shows wash, desert, and 79th Way.
T5NR4E Section 2
Q100 = 1996 cfs
Station Elevation Data num= 11

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9741.97	2400	9872.96	2402	9885.41	2402	9948	2400	9960.38	2398
9967.59	2396	10025.54	2396	10031.67	2398	10039.32	2400	10145.93	2402
10158.17	2404								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9741.97	.061	9960.38	.038	10031.67	.056

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9960.38	10031.67	43.85	37.46	39.36	.3	.5

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
9741.97	9960.38	2400	F
10031.67	10158.17	2400	F

Left Levee Station= 9885.41 Elevation= 2402

CROSS SECTION OUTPUT Profile #100-yr 6-yr

E.G. Elev (ft)	2401.94	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.32	Wt. n-Val.	0.061	0.038	0.056
W.S. Elev (ft)	2401.62	Reach Len. (ft)	43.85	37.46	39.36
Crit W.S. (ft)	2399.09	Flow Area (sq ft)	73.29	387.07	89.68
E.G. Slope (ft/ft)	0.001545	Area (sq ft)	73.29	387.07	89.68
Q Total (cfs)	1996.00	Flow (cfs)	77.50	1827.91	90.59
Top Width (ft)	228.09	Top Width (ft)	62.97	71.29	93.83
Vel Total (ft/s)	3.63	Avg. Vel. (ft/s)	1.06	4.72	1.01
Max Chl Dpth (ft)	5.62	Hydr. Depth (ft)	1.16	5.43	0.96
Conv. Total (cfs)	50777.1	Conv. (cfs)	1971.5	46501.1	2304.5
Length Wtd. (ft)	37.46	Wetted Per. (ft)	63.16	71.88	94.10
Min Ch El (ft)	2396.00	Shear (lb/sq ft)	0.11	0.52	0.09
Alpha	1.56	Stream Power (lb/ft s)	0.12	2.45	0.09
Frctn Loss (ft)		Cum Volume (acre-ft)	9.01	30.98	8.37
C & E Loss (ft)		Cum SA (acres)	7.77	11.91	7.89

Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid,
energy was used.

CROSS SECTION OUTPUT Profile #Method 1

E.G. Elev (ft)	2401.94	Element	Left OB	Channel	Right OB

Vel Head (ft)	0.32	Wt. n-Val.	0.061	0.038	0.056
W.S. Elev (ft)	2401.62	Reach Len. (ft)	43.85	37.46	39.36
Crit W.S. (ft)	2399.09	Flow Area (sq ft)	73.29	387.07	89.68
E.G. Slope (ft/ft)	0.001545	Area (sq ft)	73.29	387.07	89.68
Q Total (cfs)	1996.00	Flow (cfs)	77.50	1827.91	90.59
Top Width (ft)	228.09	Top Width (ft)	62.97	71.29	93.83
Vel Total (ft/s)	3.63	Avg. Vel. (ft/s)	1.06	4.72	1.01
Max Chl Dpth (ft)	5.62	Hydr. Depth (ft)	1.16	5.43	0.96
Conv. Total (cfs)	50777.1	Conv. (cfs)	1971.5	46501.1	2304.5
Length Wtd. (ft)	37.46	Wetted Per. (ft)	63.16	71.88	94.10
Min Ch El (ft)	2396.00	Shear (lb/sq ft)	0.11	0.52	0.09
Alpha	1.56	Stream Power (lb/ft s)	0.12	2.45	0.09
Frctn Loss (ft)		Cum Volume (acre-ft)	9.01	30.98	8.37
C & E Loss (ft)		Cum SA (acres)	7.77	11.91	7.89

Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid,
energy was used.

CULVERT

RIVER: Stagecoach Pass
REACH: StagecoachPass-2 RS: 2.145

INPUT
Description: Box culverts at 79th Way crossing.
Distance from Upstream XS = 1
Deck/Roadway Width = 36
Weir Coefficient = 2.6
Upstream Deck/Roadway Coordinates
num= 6

Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord
9948	2400		9955.17	2402.07		9973.59	2404.49	
10015.98	2404.32		10028.93	2401.61		10039.32	2400	

Upstream Bridge Cross Section Data
Station Elevation Data num= 11

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9741.97	2400	9872.96	2402	9885.41	2402	9948	2400	9960.38	2398
9967.59	2396	10025.54	2396	10031.67	2398	10039.32	2400	10145.93	2402
10158.17	2404								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9741.97	.061	9960.38	.038	10031.67	.056

Bank Sta: Left	Right	Coeff Contr.	Expan.
9960.38	10031.67	.3	.5

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
9741.97	9960.38	2400	F
10031.67	10158.17	2400	F

Left Levee Station= 9885.41 Elevation= 2402

Downstream Deck/Roadway Coordinates
num= 6

Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord
9942.46	2398		9962.7	2400.6		9973.36	2403.81	
10015.88	2403.7		10024.97	2400.19		10031.36	2398	

Downstream Bridge Cross Section Data
Station Elevation Data num= 8

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9872.75	2400	9918.52	2400	9942.46	2398	9950.17	2396	10027.53	2396
10031.36	2398	10099.09	2400	10131.8	2402				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9872.75	.056	9942.46	.038	10031.36	.056

```
Bank Sta: Left   Right    Coeff Contr.   Expan.
       9942.4610031.36            .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
 9872.75 9942.46    2398       F
10031.36 10131.8    2398       F

Upstream Embankment side slope              =       0 horiz. to 1.0 vertical
Downstream Embankment side slope            =       0 horiz. to 1.0 vertical
Maximum allowable submergence for weir flow =     .95
Elevation at which weir flow begins         =
Energy head used in spillway design         =
Spillway height used in design              =
Weir crest shape                            = Broad Crested

Number of Culverts =  1

Culvert Name     Shape      Rise    Span
CULVERT#1            Box       4      10
FHWA Chart # 8 - flared wingwalls
FHWA Scale # 1 - Wingwall flared 30 to 75 deg.
Solution Criteria = Highest U.S. EG
Culvert Upstrm Dist  Length    Top n  Bottom n  Depth Blocked  Entrance Loss Coef   Exit Loss Coef
                  4      30     .015     .015        0                  .4                 1
Number of Barrels =  4
Upstream   Elevation =  2395.84
Centerline Stations
    Sta.    Sta.    Sta.    Sta.
 9981.71 9992.6210003.5410014.46
Downstream Elevation =  2394.65
Centerline Stations
    Sta.    Sta.    Sta.    Sta.
 9978.17 9989.08   1000010010.92

CROSS SECTION


RIVER: Stagecoach Pass
REACH: StagecoachPass-2   RS: 2.14

INPUT
Description: Cross Section 2.14 is located within The Boulders. It is located
             downstream of the intersection of 79th Way and Stage Coach Pass
             Wash.  There are 4-10 X 4 concrete box culverts located under 79th
             Way.

Topography indicates wash, and surrounding undeveloped
             desert.
Aerial shows wash, desert, and 79th Way.
T5NR4E Section
             2
Q100 = 1996 cfs
Station Elevation Data    num=       8
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
 9872.75    2400 9918.52    2400 9942.46    2398 9950.17    239610027.53    2396
10031.36    239810099.09    2400 10131.8    2402

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
 9872.75    .056 9942.46    .03810031.36    .056

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9942.4610031.36           298.75  303.82  341.22              .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
 9872.75 9942.46    2398       F
10031.36 10131.8    2398       F

CROSS SECTION OUTPUT  Profile #100-yr 6-yr
```

E.G. Elev (ft)	2399.85	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.17	Wt. n-Val.	0.056	0.038	0.056
W.S. Elev (ft)	2398.69	Reach Len. (ft)	298.75	303.82	341.22
Crit W.S. (ft)	2398.69	Flow Area (sq ft)	2.83	227.38	8.00
E.G. Slope (ft/ft)	0.014324	Area (sq ft)	2.83	227.38	8.00
Q Total (cfs)	1996.00	Flow (cfs)	4.40	1979.13	12.47
Top Width (ft)	120.41	Top Width (ft)	8.23	88.90	23.28
Vel Total (ft/s)	8.38	Avg. Vel. (ft/s)	1.55	8.70	1.56
Max Chl Dpth (ft)	2.69	Hydr. Depth (ft)	0.34	2.56	0.34
Conv. Total (cfs)	16677.4	Conv. (cfs)	36.7	16536.5	104.2
Length Wtd. (ft)	304.00	Wetted Per. (ft)	8.26	89.65	23.29
Min Ch El (ft)	2396.00	Shear (lb/sq ft)	0.31	2.27	0.31
Alpha	1.07	Stream Power (lb/ft s)	0.48	19.74	0.48
Frctn Loss (ft)	4.12	Cum Volume (acre-ft)	8.98	30.71	8.33
C & E Loss (ft)	0.08	Cum SA (acres)	7.73	11.84	7.84

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

CROSS SECTION OUTPUT Profile #Method 1

E.G. Elev (ft)	2399.85	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.17	Wt. n-Val.	0.056	0.038	0.056
W.S. Elev (ft)	2398.69	Reach Len. (ft)	298.75	303.82	341.22
Crit W.S. (ft)	2398.69	Flow Area (sq ft)	2.83	227.38	8.00
E.G. Slope (ft/ft)	0.014324	Area (sq ft)	2.83	227.38	8.00
Q Total (cfs)	1996.00	Flow (cfs)	4.40	1979.13	12.47
Top Width (ft)	120.41	Top Width (ft)	8.23	88.90	23.28
Vel Total (ft/s)	8.38	Avg. Vel. (ft/s)	1.55	8.70	1.56
Max Chl Dpth (ft)	2.69	Hydr. Depth (ft)	0.34	2.56	0.34
Conv. Total (cfs)	16677.4	Conv. (cfs)	36.7	16536.5	104.2
Length Wtd. (ft)	304.00	Wetted Per. (ft)	8.26	89.65	23.29
Min Ch El (ft)	2396.00	Shear (lb/sq ft)	0.31	2.27	0.31
Alpha	1.07	Stream Power (lb/ft s)	0.48	19.74	0.48
Frctn Loss (ft)	4.12	Cum Volume (acre-ft)	8.98	30.71	8.33
C & E Loss (ft)	0.08	Cum SA (acres)	7.73	11.84	7.84

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

CROSS SECTION

RIVER: Stagecoach Pass
REACH: StagecoachPass-2 RS: 2.08

INPUT
Description: Cross Section 2.08 is located within The Boulders.

Topography
indicates wash, and surrounding undeveloped desert.
Aerial shows
wash, desert, homes and golf course.

T5NR4E Section 2
Q100 =
1996 cfs

Station Elevation Data num= 15

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9868.34	2394	9910.07	2392	9918.94	2390	9922.37	2390	9940.95	2392
9945.83	2392	9973.02	2390	9981.37	2388	10000	2387.56	10026.83	2388
10035.34	2390	10046.48	2392	10049.91	2392	10075.31	2392	10102.96	2394

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9868.34	.056	9973.02	.038	10035.34	.056

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9973.02	10035.34	330.12	310.48	317.31	.1	.3

Left Levee Station= 9945.83 Elevation= 2392

CROSS SECTION OUTPUT Profile #100-yr 6-yr

E.G. Elev (ft)	2392.78	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.42	Wt. n-Val.	0.056	0.038	0.056
W.S. Elev (ft)	2391.35	Reach Len. (ft)	330.12	310.48	317.31
Crit W.S. (ft)	2391.35	Flow Area (sq ft)	12.46	202.16	5.11
E.G. Slope (ft/ft)	0.012872	Area (sq ft)	12.46	202.16	5.11
Q Total (cfs)	1996.00	Flow (cfs)	28.87	1955.40	11.73
Top Width (ft)	88.27	Top Width (ft)	18.41	62.32	7.54
Vel Total (ft/s)	9.08	Avg. Vel. (ft/s)	2.32	9.67	2.30
Max Chl Dpth (ft)	3.79	Hydr. Depth (ft)	0.68	3.24	0.68
Conv. Total (cfs)	17593.1	Conv. (cfs)	254.5	17235.3	103.4
Length Wtd. (ft)	310.66	Wetted Per. (ft)	18.46	62.80	7.66
Min Ch El (ft)	2387.56	Shear (lb/sq ft)	0.54	2.59	0.54
Alpha	1.11	Stream Power (lb/ft s)	1.26	25.02	1.23
Frctn Loss (ft)	4.31	Cum Volume (acre-ft)	8.92	29.22	8.28
C & E Loss (ft)	0.03	Cum SA (acres)	7.64	11.31	7.72

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.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water
surface was used.

CROSS SECTION OUTPUT Profile #Method 1

E.G. Elev (ft)	2392.78	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.42	Wt. n-Val.	0.056	0.038	0.056
W.S. Elev (ft)	2391.35	Reach Len. (ft)	330.12	310.48	317.31
Crit W.S. (ft)	2391.35	Flow Area (sq ft)	12.46	202.16	5.11
E.G. Slope (ft/ft)	0.012872	Area (sq ft)	12.46	202.16	5.11
Q Total (cfs)	1996.00	Flow (cfs)	28.87	1955.40	11.73
Top Width (ft)	88.27	Top Width (ft)	18.41	62.32	7.54
Vel Total (ft/s)	9.08	Avg. Vel. (ft/s)	2.32	9.67	2.30
Max Chl Dpth (ft)	3.79	Hydr. Depth (ft)	0.68	3.24	0.68
Conv. Total (cfs)	17593.1	Conv. (cfs)	254.5	17235.3	103.4
Length Wtd. (ft)	310.66	Wetted Per. (ft)	18.46	62.80	7.66
Min Ch El (ft)	2387.56	Shear (lb/sq ft)	0.54	2.59	0.54
Alpha	1.11	Stream Power (lb/ft s)	1.26	25.02	1.23
Frctn Loss (ft)	4.31	Cum Volume (acre-ft)	8.92	29.22	8.28
C & E Loss (ft)	0.03	Cum SA (acres)	7.64	11.31	7.72

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.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water
surface was used.

CROSS SECTION

RIVER: Stagecoach Pass
REACH: StagecoachPass-2 RS: 2.02

INPUT
Description: Cross Section 2.02 is located within The Boulders.

Topography
indicates wash, and surrounding undeveloped desert.
Aerial shows
wash, desert, and golf course.
T5NR4E Section 2
Q100 = 1996 cfs
Station Elevation Data num= 10

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9884.54	2386	9940.4	2386	9954.74	2386	9958.18	2384	9961.45	2382
9964.76	2380	10016.06	2380	10041.22	2382	10053.09	2384	10078.52	2386

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9884.54	.056	9961.45	.038	10041.22	.056

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9961.45	10041.22	422.41	410.88	400.28	.1	.3

CROSS SECTION OUTPUT Profile #100-yr 6-yr

			Left OB	Channel	Right OB
E.G. Elev (ft)	2384.37	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.32	Wt. n-Val.	0.056	0.038	0.056
W.S. Elev (ft)	2383.06	Reach Len. (ft)	422.41	410.88	400.28
Crit W.S. (ft)	2383.06	Flow Area (sq ft)	0.91	215.28	3.31
E.G. Slope (ft/ft)	0.014991	Area (sq ft)	0.91	215.28	3.31
Q Total (cfs)	1996.00	Flow (cfs)	1.74	1987.31	6.95
Top Width (ft)	87.76	Top Width (ft)	1.73	79.77	6.27
Vel Total (ft/s)	9.09	Avg. Vel. (ft/s)	1.91	9.23	2.10
Max Chl Dpth (ft)	3.06	Hydr. Depth (ft)	0.53	2.70	0.53
Conv. Total (cfs)	16302.4	Conv. (cfs)	14.2	16231.4	56.8
Length Wtd. (ft)	409.47	Wetted Per. (ft)	2.02	80.41	6.35
Min Ch El (ft)	2380.00	Shear (lb/sq ft)	0.42	2.51	0.49
Alpha	1.03	Stream Power (lb/ft s)	0.80	23.13	1.02
Frctn Loss (ft)	4.00	Cum Volume (acre-ft)	8.87	27.73	8.25
C & E Loss (ft)	0.02	Cum SA (acres)	7.57	10.81	7.67

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.

CROSS SECTION OUTPUT Profile #Method 1

E.G. Elev (ft)	2384.37	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.32	Wt. n-Val.	0.056	0.038	0.056
W.S. Elev (ft)	2383.06	Reach Len. (ft)	422.41	410.88	400.28
Crit W.S. (ft)	2383.06	Flow Area (sq ft)	0.91	215.28	3.31
E.G. Slope (ft/ft)	0.014991	Area (sq ft)	0.91	215.28	3.31
Q Total (cfs)	1996.00	Flow (cfs)	1.74	1987.31	6.95
Top Width (ft)	87.76	Top Width (ft)	1.73	79.77	6.27
Vel Total (ft/s)	9.09	Avg. Vel. (ft/s)	1.91	9.23	2.10
Max Chl Dpth (ft)	3.06	Hydr. Depth (ft)	0.53	2.70	0.53
Conv. Total (cfs)	16302.4	Conv. (cfs)	14.2	16231.4	56.8
Length Wtd. (ft)	409.47	Wetted Per. (ft)	2.02	80.41	6.35
Min Ch El (ft)	2380.00	Shear (lb/sq ft)	0.42	2.51	0.49
Alpha	1.03	Stream Power (lb/ft s)	0.80	23.13	1.02
Frctn Loss (ft)	4.00	Cum Volume (acre-ft)	8.87	27.73	8.25
C & E Loss (ft)	0.02	Cum SA (acres)	7.57	10.81	7.67

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.

CROSS SECTION

RIVER: Stagecoach Pass
REACH: StagecoachPass-2 RS: 1.94

INPUT
Description: Cross Section 1.94 is located within The Boulders.

Topography
indicates wash, and surrounding undeveloped desert.
Aerial shows
wash, desert, and golf course.
T5NR4E Section 11
Q100 = 1996 cfs
Station Elevation Data num= 20

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9886.74	2380	9920.84	2378	9979.42	2376	9982.65	2374	9985.28	2372
9987.82	2370	9990.64	2368	10000	2366.48	10006.29	2368	10009.67	2370
10013.35	2372	10048.55	2372.54	10076.83	2372	10087.19	2371.53	10100.41	2372
10110.17	2374	10125.91	2376	10139.66	2378	10149.43	2380	10157.99	2382

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9886.74	.056	9987.82	.038	10009.67	.056

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9987.82	10009.67	148.83	149.34	138.33	.1	.3

CROSS SECTION OUTPUT Profile #100-yr 6-yr

E.G. Elev (ft)	2375.16	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.24	Wt. n-Val.	0.056	0.038	0.056
W.S. Elev (ft)	2373.92	Reach Len. (ft)	148.83	149.34	138.33
Crit W.S. (ft)	2373.92	Flow Area (sq ft)	9.84	135.03	175.21
E.G. Slope (ft/ft)	0.006869	Area (sq ft)	9.84	135.03	175.21
Q Total (cfs)	1996.00	Flow (cfs)	28.80	1410.29	556.91
Top Width (ft)	127.02	Top Width (ft)	5.06	21.85	100.11
Vel Total (ft/s)	6.24	Avg. Vel. (ft/s)	2.93	10.44	3.18

Max Chl Dpth (ft)	7.44	Hydr. Depth (ft)	1.94	6.18	1.75
Conv. Total (cfs)	24083.6	Conv. (cfs)	347.5	17016.5	6719.6
Length Wtd. (ft)	147.73	Wetted Per. (ft)	6.40	23.34	100.84
Min Ch El (ft)	2366.48	Shear (lb/sq ft)	0.66	2.48	0.75
Alpha	2.06	Stream Power (lb/ft s)	1.93	25.91	2.37
Frctn Loss (ft)	1.35	Cum Volume (acre-ft)	8.82	26.08	7.43
C & E Loss (ft)	0.04	Cum SA (acres)	7.53	10.33	7.18

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

CROSS SECTION OUTPUT Profile #Method 1

E.G. Elev (ft)	2375.16	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.24	Wt. n-Val.	0.056	0.038	0.056
W.S. Elev (ft)	2373.92	Reach Len. (ft)	148.83	149.34	138.33
Crit W.S. (ft)	2373.92	Flow Area (sq ft)	9.84	135.03	175.21
E.G. Slope (ft/ft)	0.006869	Area (sq ft)	9.84	135.03	175.21
Q Total (cfs)	1996.00	Flow (cfs)	28.80	1410.29	556.91
Top Width (ft)	127.02	Top Width (ft)	5.06	21.85	100.11
Vel Total (ft/s)	6.24	Avg. Vel. (ft/s)	2.93	10.44	3.18
Max Chl Dpth (ft)	7.44	Hydr. Depth (ft)	1.94	6.18	1.75
Conv. Total (cfs)	24083.6	Conv. (cfs)	347.5	17016.5	6719.6
Length Wtd. (ft)	147.73	Wetted Per. (ft)	6.40	23.34	100.84
Min Ch El (ft)	2366.48	Shear (lb/sq ft)	0.66	2.48	0.75
Alpha	2.06	Stream Power (lb/ft s)	1.93	25.91	2.37
Frctn Loss (ft)	1.35	Cum Volume (acre-ft)	8.82	26.08	7.43
C & E Loss (ft)	0.04	Cum SA (acres)	7.53	10.33	7.18

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

CROSS SECTION

RIVER: Stagecoach Pass
REACH: StagecoachPass-2 RS: 1.92

INPUT
Description: Cross Section 1.92 is located within The Boulders.

Topography
indicates wash, and surrounding undeveloped desert.
Aerial shows
wash, desert, and golf course.
T5NR4E Section 11
Q100 = 1996 cfs
Station Elevation Data num= 16

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9918.53	2376	9931.83	2374	9942.48	2372	9958.79	2370	9965.96	2368
9987.52	2366	9989.99	2364	10005.85	2364	10009.75	2366	10016.49	2368
10034.73	2370	10041.64	2372	10049.05	2374	10063.62	2376	10090.24	2378
10138.43	2380								

```
Manning's n Values          num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
 9918.53    .056 9965.96    .03810016.49    .056

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9965.9610016.49            164.2  172.47  183.53            .1        .3
```

CROSS SECTION OUTPUT Profile #100-yr 6-yr

			Left OB	Channel	Right OB
E.G. Elev (ft)	2371.18	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.65	Wt. n-Val.	0.056	0.038	0.056
W.S. Elev (ft)	2369.53	Reach Len. (ft)	164.20	172.47	183.53
Crit W.S. (ft)	2369.53	Flow Area (sq ft)	4.22	188.37	10.73
E.G. Slope (ft/ft)	0.012745	Area (sq ft)	4.22	188.37	10.73
Q Total (cfs)	1996.00	Flow (cfs)	10.33	1958.84	26.84
Top Width (ft)	70.02	Top Width (ft)	5.50	50.53	13.99
Vel Total (ft/s)	9.82	Avg. Vel. (ft/s)	2.45	10.40	2.50
Max Chl Dpth (ft)	5.53	Hydr. Depth (ft)	0.77	3.73	0.77
Conv. Total (cfs)	17680.3	Conv. (cfs)	91.5	17351.1	237.7
Length Wtd. (ft)	174.25	Wetted Per. (ft)	5.71	52.10	14.08
Min Ch El (ft)	2364.00	Shear (lb/sq ft)	0.59	2.88	0.61
Alpha	1.10	Stream Power (lb/ft s)	1.44	29.91	1.52
Frctn Loss (ft)	2.17	Cum Volume (acre-ft)	8.80	25.52	7.13
C & E Loss (ft)	0.17	Cum SA (acres)	7.52	10.20	7.00

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
depth, the 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 OUTPUT Profile #Method 1

			Left OB	Channel	Right OB
E.G. Elev (ft)	2371.18	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.65	Wt. n-Val.	0.056	0.038	0.056
W.S. Elev (ft)	2369.53	Reach Len. (ft)	164.20	172.47	183.53
Crit W.S. (ft)	2369.53	Flow Area (sq ft)	4.22	188.37	10.73
E.G. Slope (ft/ft)	0.012745	Area (sq ft)	4.22	188.37	10.73
Q Total (cfs)	1996.00	Flow (cfs)	10.33	1958.84	26.84
Top Width (ft)	70.02	Top Width (ft)	5.50	50.53	13.99
Vel Total (ft/s)	9.82	Avg. Vel. (ft/s)	2.45	10.40	2.50
Max Chl Dpth (ft)	5.53	Hydr. Depth (ft)	0.77	3.73	0.77
Conv. Total (cfs)	17680.3	Conv. (cfs)	91.5	17351.1	237.7
Length Wtd. (ft)	174.25	Wetted Per. (ft)	5.71	52.10	14.08
Min Ch El (ft)	2364.00	Shear (lb/sq ft)	0.59	2.88	0.61
Alpha	1.10	Stream Power (lb/ft s)	1.44	29.91	1.52
Frctn Loss (ft)	2.17	Cum Volume (acre-ft)	8.80	25.52	7.13
C & E Loss (ft)	0.17	Cum SA (acres)	7.52	10.20	7.00

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
depth, the 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: Stagecoach Pass
REACH: StagecoachPass-2 RS: 1.88

INPUT
Description: Cross Section 1.88 is located within The Boulders.

Topography
indicates wash, and surrounding undeveloped desert.
Aerial shows
wash, desert, and homes.
T5NR4E Section 11
Q100 = 1996 cfs
Station Elevation Data num= 16

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9929.5	2372	9937.92	2370	9952.45	2368	9963.2	2366	9977.19	2364
9982.5	2362	10000	2360.66	10007.9	2362	10017.25	2364	10021.01	2364
10061.67	2363	10093.75	2364	10109.44	2366	10124.39	2368	10150.25	2370
10151.3	2370								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9929.5	.056	9977.19	.038	10017.25	.056

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9977.19	10017.25	390.55	379.42	365.92	.1	.3

CROSS SECTION OUTPUT Profile #100-yr 6-yr

			Left OB	Channel	Right OB
E.G. Elev (ft)	2366.48	Element			
Vel Head (ft)	1.08	Wt. n-Val.	0.056	0.038	0.056
W.S. Elev (ft)	2365.40	Reach Len. (ft)	390.55	379.42	365.92
Crit W.S. (ft)	2365.40	Flow Area (sq ft)	6.81	138.37	150.74
E.G. Slope (ft/ft)	0.012160	Area (sq ft)	6.81	138.37	150.74
Q Total (cfs)	1996.00	Flow (cfs)	15.57	1346.87	633.57
Top Width (ft)	137.27	Top Width (ft)	9.76	40.06	87.45
Vel Total (ft/s)	6.74	Avg. Vel. (ft/s)	2.29	9.73	4.20
Max Chl Dpth (ft)	4.74	Hydr. Depth (ft)	0.70	3.45	1.72
Conv. Total (cfs)	18100.8	Conv. (cfs)	141.2	12214.1	5745.5
Length Wtd. (ft)	377.41	Wetted Per. (ft)	9.86	40.80	87.56
Min Ch El (ft)	2360.66	Shear (lb/sq ft)	0.52	2.57	1.31
Alpha	1.53	Stream Power (lb/ft s)	1.20	25.06	5.49
Frctn Loss (ft)	4.46	Cum Volume (acre-ft)	8.78	24.88	6.79
C & E Loss (ft)	0.00	Cum SA (acres)	7.49	10.03	6.78

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

CROSS SECTION OUTPUT Profile #Method 1

			Left OB	Channel	Right OB
E.G. Elev (ft)	2366.48	Element			
Vel Head (ft)	1.08	Wt. n-Val.	0.056	0.038	0.056
W.S. Elev (ft)	2365.40	Reach Len. (ft)	390.55	379.42	365.92
Crit W.S. (ft)	2365.40	Flow Area (sq ft)	6.81	138.37	150.74
E.G. Slope (ft/ft)	0.012160	Area (sq ft)	6.81	138.37	150.74
Q Total (cfs)	1996.00	Flow (cfs)	15.57	1346.87	633.57
Top Width (ft)	137.27	Top Width (ft)	9.76	40.06	87.45
Vel Total (ft/s)	6.74	Avg. Vel. (ft/s)	2.29	9.73	4.20
Max Chl Dpth (ft)	4.74	Hydr. Depth (ft)	0.70	3.45	1.72

Conv. Total (cfs)	18100.8	Conv. (cfs)	141.2	12214.1	5745.5
Length Wtd. (ft)	377.41	Wetted Per. (ft)	9.86	40.80	87.56
Min Ch El (ft)	2360.66	Shear (lb/sq ft)	0.52	2.57	1.31
Alpha	1.53	Stream Power (lb/ft s)	1.20	25.06	5.49
Frctn Loss (ft)	4.46	Cum Volume (acre-ft)	8.78	24.88	6.79
C & E Loss (ft)	0.00	Cum SA (acres)	7.49	10.03	6.78

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

CROSS SECTION

RIVER: Stagecoach Pass
REACH: StagecoachPass-2 RS: 1.81

INPUT
Description: Cross Section 1.81 is located within The Boulders.

Topography
indicates wash, golf course and surrounding undeveloped
desert.
Aerial shows wash, desert, homes and golf course.
T5NR4E
Section 11
Q100 = 1996 cfs
Station Elevation Data num= 13

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9806.61	2360	9836.19	2358	9949.06	2356	9960.81	2354	9965.49	2354
9996.02	2354	10000	2353.47	10020.67	2354	10023.91	2356	10071.08	2358
10101.33	2358	10217.55	2358	10234.73	2360				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9806.61	.056	9949.06	.038	10023.91	.056

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9949.06	10023.91	281.52	288.71	293.17	.1	.3

CROSS SECTION OUTPUT Profile #100-yr 6-yr

			Left OB	Channel	Right OB
E.G. Elev (ft)	2358.18	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.10	Wt. n-Val.	0.056	0.038	0.056
W.S. Elev (ft)	2357.08	Reach Len. (ft)	281.52	288.71	293.17
Crit W.S. (ft)	2357.08	Flow Area (sq ft)	32.81	221.96	13.71
E.G. Slope (ft/ft)	0.011505	Area (sq ft)	32.81	221.96	13.71
Q Total (cfs)	1996.00	Flow (cfs)	61.86	1908.30	25.84
Top Width (ft)	161.14	Top Width (ft)	60.86	74.85	25.43
Vel Total (ft/s)	7.43	Avg. Vel. (ft/s)	1.89	8.60	1.88
Max Chl Dpth (ft)	3.61	Hydr. Depth (ft)	0.54	2.97	0.54
Conv. Total (cfs)	18609.1	Conv. (cfs)	576.7	17791.4	240.9
Length Wtd. (ft)	288.28	Wetted Per. (ft)	60.87	75.63	25.46
Min Ch El (ft)	2353.47	Shear (lb/sq ft)	0.39	2.11	0.39
Alpha	1.28	Stream Power (lb/ft s)	0.73	18.12	0.73
Frctn Loss (ft)	3.10	Cum Volume (acre-ft)	8.60	23.31	6.10
C & E Loss (ft)	0.10	Cum SA (acres)	7.17	9.52	6.31

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.

CROSS SECTION OUTPUT Profile #Method 1

E.G. Elev (ft)	2358.18	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.10	Wt. n-Val.	0.056	0.038	0.056
W.S. Elev (ft)	2357.08	Reach Len. (ft)	281.52	288.71	293.17
Crit W.S. (ft)	2357.08	Flow Area (sq ft)	32.81	221.96	13.71
E.G. Slope (ft/ft)	0.011505	Area (sq ft)	32.81	221.96	13.71
Q Total (cfs)	1996.00	Flow (cfs)	61.86	1908.30	25.84
Top Width (ft)	161.14	Top Width (ft)	60.86	74.85	25.43
Vel Total (ft/s)	7.43	Avg. Vel. (ft/s)	1.89	8.60	1.88
Max Chl Dpth (ft)	3.61	Hydr. Depth (ft)	0.54	2.97	0.54
Conv. Total (cfs)	18609.1	Conv. (cfs)	576.7	17791.4	240.9
Length Wtd. (ft)	288.28	Wetted Per. (ft)	60.87	75.63	25.46
Min Ch El (ft)	2353.47	Shear (lb/sq ft)	0.39	2.11	0.39
Alpha	1.28	Stream Power (lb/ft s)	0.73	18.12	0.73
Frctn Loss (ft)	3.10	Cum Volume (acre-ft)	8.60	23.31	6.10
C & E Loss (ft)	0.10	Cum SA (acres)	7.17	9.52	6.31

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.

CROSS SECTION

RIVER: Stagecoach Pass
REACH: StagecoachPass-2 RS: 1.76

INPUT
Description: Cross Section 1.76 is located within The Boulders.

Topography
indicates wash, golf course, and surrounding undeveloped desert.
Aerial shows wash, desert, homes and golf course.
T5NR4E
Section 11
Q100 = 1996 cfs
Station Elevation Data num= 19

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9728.46	2362	9734.9	2360	9738.22	2358	9741.88	2356	9747.45	2354
9764.83	2352	9790.91	2350	9940.04	2349.89	9953.78	2348	9976.61	2348
9979.22	2348	10000	2347.11	0026.22	2348	10033.66	2350	10063.3	2352
10080.34	2352	10119.04	2352	10173.62	2354	10222.5	2356		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9728.46	.056	9940.04	.038	10033.66	.056

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9940.04	10033.66	191.07	201.39	222.44	.1	.3

CROSS SECTION OUTPUT Profile #100-yr 6-yr

E.G. Elev (ft)	2351.36	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.77	Wt. n-Val.	0.056	0.038	0.056

W.S. Elev (ft)	2350.59	Reach Len. (ft)	191.07	201.39	222.44
Crit W.S. (ft)	2350.59	Flow Area (sq ft)	98.52	243.23	2.58
E.G. Slope (ft/ft)	0.010093	Area (sq ft)	98.52	243.23	2.58
Q Total (cfs)	1996.00	Flow (cfs)	192.62	1800.34	3.05
Top Width (ft)	259.20	Top Width (ft)	156.83	93.62	8.75
Vel Total (ft/s)	5.80	Avg. Vel. (ft/s)	1.96	7.40	1.18
Max Chl Dpth (ft)	3.49	Hydr. Depth (ft)	0.63	2.60	0.30
Conv. Total (cfs)	19867.7	Conv. (cfs)	1917.3	17920.1	30.3
Length Wtd. (ft)	200.84	Wetted Per. (ft)	156.85	94.05	8.77
Min Ch El (ft)	2347.10	Shear (lb/sq ft)	0.40	1.63	0.19
Alpha	1.48	Stream Power (lb/ft s)	0.77	12.06	0.22
Frctn Loss (ft)	2.57	Cum Volume (acre-ft)	8.17	21.76	6.05
C & E Loss (ft)	0.01	Cum SA (acres)	6.47	8.97	6.19

Warning: The energy equation could not be 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 OUTPUT Profile #Method 1

E.G. Elev (ft)	2351.36	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.77	Wt. n-Val.	0.056	0.038	0.056
W.S. Elev (ft)	2350.59	Reach Len. (ft)	191.07	201.39	222.44
Crit W.S. (ft)	2350.59	Flow Area (sq ft)	98.52	243.23	2.58
E.G. Slope (ft/ft)	0.010093	Area (sq ft)	98.52	243.23	2.58
Q Total (cfs)	1996.00	Flow (cfs)	192.62	1800.34	3.05
Top Width (ft)	259.20	Top Width (ft)	156.83	93.62	8.75
Vel Total (ft/s)	5.80	Avg. Vel. (ft/s)	1.96	7.40	1.18
Max Chl Dpth (ft)	3.49	Hydr. Depth (ft)	0.63	2.60	0.30
Conv. Total (cfs)	19867.7	Conv. (cfs)	1917.3	17920.1	30.3
Length Wtd. (ft)	200.84	Wetted Per. (ft)	156.85	94.05	8.77
Min Ch El (ft)	2347.10	Shear (lb/sq ft)	0.40	1.63	0.19
Alpha	1.48	Stream Power (lb/ft s)	0.77	12.06	0.22
Frctn Loss (ft)	2.57	Cum Volume (acre-ft)	8.17	21.76	6.05
C & E Loss (ft)	0.01	Cum SA (acres)	6.47	8.97	6.19

Warning: The energy equation could not be 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: Stagecoach Pass
REACH: StagecoachPass-2 RS: 1.72

INPUT
Description: Cross Section 1.72 is located within The Boulders.

Topography
indicates wash, golf course and surrounding undeveloped desert.
Aerial shows wash, desert, homes and golf course.
T5NR4E
Section 11

Q100 = 1996 cfs

Station Elevation Data num= 27

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9859.06	2350	9871.26	2348	9884.45	2346	9926.08	2345	9946.89	2344.5
9967.7	2344	9980.95	2344	9988.54	2344	10000	2342.4	10011.21	2344
10033.23	2344	10060.56	2344	10072.86	2344	10113.18	2344	10118.53	2344.5
10123.88	2345	10134.58	2346	10145.49	2348	10153.67	2348	10174.71	2346
10199.46	2346	10324.82	2348	10345.69	2348	10362.87	2346	10371.75	2346
10403.93	2348	10432.1	2348						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9859.06	.056	9946.89	.038	10118.53	.056

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9946.89	10118.53	324.14	319.48	271.25	.1	.3

CROSS SECTION OUTPUT Profile #100-yr 6-yr

			Left OB	Channel	Right OB
E.G. Elev (ft)	2346.28	Element			
Vel Head (ft)	0.73	Wt. n-Val.	0.056	0.038	0.056
W.S. Elev (ft)	2345.55	Reach Len. (ft)	324.14	319.48	271.25
Crit W.S. (ft)	2345.55	Flow Area (sq ft)	22.97	277.73	5.90
E.G. Slope (ft/ft)	0.016686	Area (sq ft)	22.97	277.73	5.90
Q Total (cfs)	1996.00	Flow (cfs)	51.24	1931.63	13.14
Top Width (ft)	226.61	Top Width (ft)	43.73	171.64	11.24
Vel Total (ft/s)	6.51	Avg. Vel. (ft/s)	2.23	6.96	2.22
Max Chl Dpth (ft)	3.15	Hydr. Depth (ft)	0.53	1.62	0.53
Conv. Total (cfs)	15452.0	Conv. (cfs)	396.7	14953.6	101.7
Length Wtd. (ft)	318.28	Wetted Per. (ft)	43.74	171.89	11.29
Min Ch El (ft)	2342.40	Shear (lb/sq ft)	0.55	1.68	0.54
Alpha	1.11	Stream Power (lb/ft s)	1.22	11.71	1.21
Frctn Loss (ft)	5.13	Cum Volume (acre-ft)	7.91	20.56	6.02
C & E Loss (ft)	0.01	Cum SA (acres)	6.03	8.35	6.14

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 energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
depth, the 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 OUTPUT Profile #Method 1

			Left OB	Channel	Right OB
E.G. Elev (ft)	2346.28	Element			
Vel Head (ft)	0.73	Wt. n-Val.	0.056	0.038	0.056
W.S. Elev (ft)	2345.55	Reach Len. (ft)	324.14	319.48	271.25
Crit W.S. (ft)	2345.55	Flow Area (sq ft)	22.97	277.73	5.90
E.G. Slope (ft/ft)	0.016686	Area (sq ft)	22.97	277.73	5.90
Q Total (cfs)	1996.00	Flow (cfs)	51.24	1931.63	13.14
Top Width (ft)	226.61	Top Width (ft)	43.73	171.64	11.24
Vel Total (ft/s)	6.51	Avg. Vel. (ft/s)	2.23	6.96	2.22
Max Chl Dpth (ft)	3.15	Hydr. Depth (ft)	0.53	1.62	0.53
Conv. Total (cfs)	15452.0	Conv. (cfs)	396.7	14953.6	101.7
Length Wtd. (ft)	318.28	Wetted Per. (ft)	43.74	171.89	11.29
Min Ch El (ft)	2342.40	Shear (lb/sq ft)	0.55	1.68	0.54
Alpha	1.11	Stream Power (lb/ft s)	1.22	11.71	1.21
Frctn Loss (ft)	5.13	Cum Volume (acre-ft)	7.91	20.56	6.02
C & E Loss (ft)	0.01	Cum SA (acres)	6.03	8.35	6.14

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

Warning: During the standard step iterations, when the assumed water surface was set equal to critical
depth, the 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: Stagecoach Pass
REACH: StagecoachPass-2 RS: 1.66

INPUT
Description: Cross Section 1.66 is located within The Boulders.

Topography
indicates wash, golf course and surrounding undeveloped
desert.
Aerial shows wash, desert, homes and golf course.
T5NR4E
Section 11
Q100 = 1996 cfs
Station Elevation Data num= 22

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9856.71	2348	9862.53	2346	9866.59	2344	9874.12	2342	9881.75	2340
9896.41	2338	9991.87	233610003.77		233610032.05		233810042.96		2338
10058.68	233810067.71		234010069.34		234010083.23		233810091.48		2338
10125.97	234010137.23		234010142.62		233810158.22		233810222.17		2340
10240.95	234210260.59		2344						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9856.71	.056	9896.41	.03810032.05		.056

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9896.41	10032.05	459.93	447.13	377.45	.1	.3

Right Levee Station=10125.97 Elevation= 2340

CROSS SECTION OUTPUT Profile #100-yr 6-yr

E.G. Elev (ft)	2339.62	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.82	Wt. n-Val.	0.056	0.038	0.056
W.S. Elev (ft)	2338.80	Reach Len. (ft)	459.93	447.13	377.45
Crit W.S. (ft)	2338.80	Flow Area (sq ft)	2.32	255.36	36.80
E.G. Slope (ft/ft)	0.015590	Area (sq ft)	2.32	255.36	36.80
Q Total (cfs)	1996.00	Flow (cfs)	4.12	1900.09	91.79
Top Width (ft)	199.16	Top Width (ft)	5.83	135.64	57.70
Vel Total (ft/s)	6.78	Avg. Vel. (ft/s)	1.78	7.44	2.49
Max Chl Dpth (ft)	2.79	Hydr. Depth (ft)	0.40	1.88	0.64
Conv. Total (cfs)	15986.0	Conv. (cfs)	33.0	15217.8	735.2
Length Wtd. (ft)	445.54	Wetted Per. (ft)	5.88	135.73	57.86
Min Ch El (ft)	2336.00	Shear (lb/sq ft)	0.38	1.83	0.62
Alpha	1.15	Stream Power (lb/ft s)	0.68	13.62	1.54
Frctn Loss (ft)	7.21	Cum Volume (acre-ft)	7.81	18.61	5.89
C & E Loss (ft)	0.01	Cum SA (acres)	5.84	7.23	5.93

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

surface was used.

CROSS SECTION OUTPUT Profile #Method 1

E.G. Elev (ft)	2339.62	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.82	Wt. n-Val.	0.056	0.038	0.056
W.S. Elev (ft)	2338.80	Reach Len. (ft)	459.93	447.13	377.45
Crit W.S. (ft)	2338.80	Flow Area (sq ft)	2.32	255.36	36.80
E.G. Slope (ft/ft)	0.015590	Area (sq ft)	2.32	255.36	36.80
Q Total (cfs)	1996.00	Flow (cfs)	4.12	1900.09	91.79
Top Width (ft)	199.16	Top Width (ft)	5.83	135.64	57.70
Vel Total (ft/s)	6.78	Avg. Vel. (ft/s)	1.78	7.44	2.49
Max Chl Dpth (ft)	2.79	Hydr. Depth (ft)	0.40	1.88	0.64
Conv. Total (cfs)	15986.0	Conv. (cfs)	33.0	15217.8	735.2
Length Wtd. (ft)	445.54	Wetted Per. (ft)	5.88	135.73	57.86
Min Ch El (ft)	2336.00	Shear (lb/sq ft)	0.38	1.83	0.62
Alpha	1.15	Stream Power (lb/ft s)	0.68	13.62	1.54
Frctn Loss (ft)	7.21	Cum Volume (acre-ft)	7.81	18.61	5.89
C & E Loss (ft)	0.01	Cum SA (acres)	5.84	7.23	5.93

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

CROSS SECTION

RIVER: Stagecoach Pass
REACH: StagecoachPass-2 RS: 1.57

INPUT
Description: Cross Section 1.57 is located within The Boulders.

Topography
indicates wash, and surrounding undeveloped desert.
Aerial shows
wash, desert, and golf course.
T5NR4E Section 11
Q100 = 1996 cfs
Station Elevation Data num= 17

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9871.81	2332	9911.2	2332	9920.48	2332	9934.2	2334	9939.06	2334
9946.42	2332	9949.89	2331	9953.35	2330	10000	2328	10065.02	2330
10082.16	2331	10099.29	2332	10118.69	2334	10126.61	2336	10136.1	2338
10162.42	2340	10170.42	2342						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9871.81	.056	9949.89	.038	10082.16	.056

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9949.89	10082.16	211.6	230.84	263.52	.1	.3

Left Levee Station= 9939.06 Elevation= 2334

CROSS SECTION OUTPUT Profile #100-yr 6-yr

E.G. Elev (ft)	2332.11	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.95	Wt. n-Val.	0.056	0.038	0.056

W.S. Elev (ft)	2331.16	Reach Len. (ft)	211.60	230.84	263.52
Crit W.S. (ft)	2331.16	Flow Area (sq ft)	0.04	254.66	0.22
E.G. Slope (ft/ft)	0.016812	Area (sq ft)	0.04	254.66	0.22
Q Total (cfs)	1996.00	Flow (cfs)	0.03	1995.84	0.14
Top Width (ft)	135.54	Top Width (ft)	0.55	132.27	2.72
Vel Total (ft/s)	7.83	Avg. Vel. (ft/s)	0.62	7.84	0.64
Max Chl Dpth (ft)	3.16	Hydr. Depth (ft)	0.08	1.93	0.08
Conv. Total (cfs)	15393.8	Conv. (cfs)	0.2	15392.6	1.1
Length Wtd. (ft)	230.83	Wetted Per. (ft)	0.57	132.51	2.73
Min Ch El (ft)	2328.00	Shear (lb/sq ft)	0.08	2.02	0.08
Alpha	1.00	Stream Power (lb/ft s)	0.05	15.81	0.05
Frctn Loss (ft)	3.73	Cum Volume (acre-ft)	7.80	15.99	5.73
C & E Loss (ft)	0.02	Cum SA (acres)	5.81	5.85	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 energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
depth, the 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 OUTPUT Profile #Method 1

E.G. Elev (ft)	2332.11	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.95	Wt. n-Val.	0.056	0.038	0.056
W.S. Elev (ft)	2331.16	Reach Len. (ft)	211.60	230.84	263.52
Crit W.S. (ft)	2331.16	Flow Area (sq ft)	0.04	254.66	0.22
E.G. Slope (ft/ft)	0.016812	Area (sq ft)	0.04	254.66	0.22
Q Total (cfs)	1996.00	Flow (cfs)	0.03	1995.84	0.14
Top Width (ft)	135.54	Top Width (ft)	0.55	132.27	2.72
Vel Total (ft/s)	7.83	Avg. Vel. (ft/s)	0.62	7.84	0.64
Max Chl Dpth (ft)	3.16	Hydr. Depth (ft)	0.08	1.93	0.08
Conv. Total (cfs)	15393.8	Conv. (cfs)	0.2	15392.6	1.1
Length Wtd. (ft)	230.83	Wetted Per. (ft)	0.57	132.51	2.73
Min Ch El (ft)	2328.00	Shear (lb/sq ft)	0.08	2.02	0.08
Alpha	1.00	Stream Power (lb/ft s)	0.05	15.81	0.05
Frctn Loss (ft)	3.73	Cum Volume (acre-ft)	7.80	15.99	5.73
C & E Loss (ft)	0.02	Cum SA (acres)	5.81	5.85	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 energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
depth, the 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: Stagecoach Pass
REACH: StagecoachPass-2 RS: 1.53

INPUT
Description: Cross Section 1.53 is located within The Boulders.

Topography
indicates wash, and surrounding undeveloped desert.
Aerial shows
wash, desert, and golf course.
T5NR4E Section 11
Q100 = 1996 cfs
Station Elevation Data num= 15

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9821.76	2330	9843.35	2328	9854.37	2326	9859.2	2326	9882.98	2326
9934.44	2324	9982.11	2322	9986.84	2320	10000	2319.73	10007.37	2320
10014.25	2322	10031.39	2324	10047.64	2326	10086.55	2328	10109.28	2330

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9821.76	.056	9934.44	.038	10031.39	.056

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9934.44	10031.39	315.13	315.68	326.48	.1	.3

CROSS SECTION OUTPUT Profile #100-yr 6-yr

E.G. Elev (ft)	2325.63	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.16	Wt. n-Val.	0.056	0.038	0.056
W.S. Elev (ft)	2324.47	Reach Len. (ft)	315.13	315.68	326.48
Crit W.S. (ft)	2324.47	Flow Area (sq ft)	2.89	230.47	0.91
E.G. Slope (ft/ft)	0.015568	Area (sq ft)	2.89	230.47	0.91
Q Total (cfs)	1996.00	Flow (cfs)	3.66	1991.19	1.15
Top Width (ft)	112.99	Top Width (ft)	12.19	96.95	3.85
Vel Total (ft/s)	8.52	Avg. Vel. (ft/s)	1.27	8.64	1.26
Max Chl Dpth (ft)	4.74	Hydr. Depth (ft)	0.24	2.38	0.24
Conv. Total (cfs)	15997.4	Conv. (cfs)	29.3	15958.9	9.2
Length Wtd. (ft)	315.69	Wetted Per. (ft)	12.20	97.81	3.88
Min Ch El (ft)	2319.73	Shear (lb/sq ft)	0.23	2.29	0.23
Alpha	1.03	Stream Power (lb/ft s)	0.29	19.79	0.29
Frctn Loss (ft)	4.95	Cum Volume (acre-ft)	7.79	14.70	5.73
C & E Loss (ft)	0.02	Cum SA (acres)	5.78	5.24	5.65

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

CROSS SECTION OUTPUT Profile #Method 1

E.G. Elev (ft)	2325.63	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.16	Wt. n-Val.	0.056	0.038	0.056
W.S. Elev (ft)	2324.47	Reach Len. (ft)	315.13	315.68	326.48
Crit W.S. (ft)	2324.47	Flow Area (sq ft)	2.89	230.47	0.91
E.G. Slope (ft/ft)	0.015568	Area (sq ft)	2.89	230.47	0.91
Q Total (cfs)	1996.00	Flow (cfs)	3.66	1991.19	1.15
Top Width (ft)	112.99	Top Width (ft)	12.19	96.95	3.85
Vel Total (ft/s)	8.52	Avg. Vel. (ft/s)	1.27	8.64	1.26
Max Chl Dpth (ft)	4.74	Hydr. Depth (ft)	0.24	2.38	0.24
Conv. Total (cfs)	15997.4	Conv. (cfs)	29.3	15958.9	9.2
Length Wtd. (ft)	315.69	Wetted Per. (ft)	12.20	97.81	3.88
Min Ch El (ft)	2319.73	Shear (lb/sq ft)	0.23	2.29	0.23
Alpha	1.03	Stream Power (lb/ft s)	0.29	19.79	0.29
Frctn Loss (ft)	4.95	Cum Volume (acre-ft)	7.79	14.70	5.73
C & E Loss (ft)	0.02	Cum SA (acres)	5.78	5.24	5.65

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

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

CROSS SECTION

RIVER: Stagecoach Pass
REACH: StagecoachPass-2 RS: 1.47

INPUT
Description: Cross Section 1.47 is located within The Boulders.

Topography
indicates wash, and surrounding undeveloped desert.
Aerial shows
wash, desert, homes and golf course.
T5NR4E Section 11
Q100 =
1996 cfs

Station Elevation Data num= 12

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9764.58	2316	9876.14	2318	9923.15	2318	9931.44	2316	9959.72	2314
9964.26	2314	9993.08	2314	10000	2312.98	10026.32	2314	10037.82	2316
10057.57	2318	10242.89	2320						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9764.58	.056	9931.44	.038	10037.82	.056

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9931.44	10037.82	167.91	168.69	171.42	.1	.3

Left Levee Station= 9923.15 Elevation= 2318

CROSS SECTION OUTPUT Profile #100-yr 6-yr

			Left OB	Channel	Right OB
E.G. Elev (ft)	2317.54	Element			
Vel Head (ft)	1.09	Wt. n-Val.	0.056	0.038	0.056
W.S. Elev (ft)	2316.45	Reach Len. (ft)	167.91	168.69	171.42
Crit W.S. (ft)	2316.45	Flow Area (sq ft)	0.42	237.98	1.01
E.G. Slope (ft/ft)	0.015763	Area (sq ft)	0.42	237.98	1.01
Q Total (cfs)	1996.00	Flow (cfs)	0.51	1994.25	1.24
Top Width (ft)	112.71	Top Width (ft)	1.87	106.38	4.46
Vel Total (ft/s)	8.34	Avg. Vel. (ft/s)	1.21	8.38	1.23
Max Chl Dpth (ft)	3.47	Hydr. Depth (ft)	0.23	2.24	0.23
Conv. Total (cfs)	15897.9	Conv. (cfs)	4.1	15883.9	9.9
Length Wtd. (ft)	169.07	Wetted Per. (ft)	1.93	106.72	4.48
Min Ch El (ft)	2312.98	Shear (lb/sq ft)	0.22	2.19	0.22
Alpha	1.01	Stream Power (lb/ft s)	0.26	18.39	0.27
Frctn Loss (ft)	1.94	Cum Volume (acre-ft)	7.78	13.00	5.72
C & E Loss (ft)	0.13	Cum SA (acres)	5.73	4.51	5.62

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
depth, the 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 OUTPUT Profile #Method 1

E.G. Elev (ft)	2317.54	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.09	Wt. n-Val.	0.056	0.038	0.056
W.S. Elev (ft)	2316.45	Reach Len. (ft)	167.91	168.69	171.42
Crit W.S. (ft)	2316.45	Flow Area (sq ft)	0.42	237.98	1.01
E.G. Slope (ft/ft)	0.015763	Area (sq ft)	0.42	237.98	1.01
Q Total (cfs)	1996.00	Flow (cfs)	0.51	1994.25	1.24
Top Width (ft)	112.71	Top Width (ft)	1.87	106.38	4.46
Vel Total (ft/s)	8.34	Avg. Vel. (ft/s)	1.21	8.38	1.23
Max Chl Dpth (ft)	3.47	Hydr. Depth (ft)	0.23	2.24	0.23
Conv. Total (cfs)	15897.9	Conv. (cfs)	4.1	15883.9	9.9
Length Wtd. (ft)	169.07	Wetted Per. (ft)	1.93	106.72	4.48
Min Ch El (ft)	2312.98	Shear (lb/sq ft)	0.22	2.19	0.22
Alpha	1.01	Stream Power (lb/ft s)	0.26	18.39	0.27
Frctn Loss (ft)	1.94	Cum Volume (acre-ft)	7.78	13.00	5.72
C & E Loss (ft)	0.13	Cum SA (acres)	5.73	4.51	5.62

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
depth, the 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: Stagecoach Pass
REACH: StagecoachPass-2 RS: 1.44

INPUT
Description: Cross Section 1.44 is located within The Boulders.

Topography
indicates wash, house pads and surrounding undeveloped
desert.
Aerial shows wash, desert, homes and golf course.
T5NR4E
Section 11
Q100 = 1996 cfs
Station Elevation Data num= 17

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9744.06	2318	9781.45	2316	9789.57	2314	9856.92	2314	9940.53	2314
9949.51	2312	9968.97	2312	9981.32	2312	9987.13	2310	10000	2309.8
10008.36	2310	10023.68	2312	10041.38	2312	10127.24	2310	10138.89	2310
10188.17	2312	10221.45	2314						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9744.06	.056	9981.32	.038	10023.68	.056

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9981.32	10023.68	394.75	388	372.36	.1	.3

Blocked Obstructions num= 1

Sta L	Sta R	Elev
10073.12	10221.45	2312.9

CROSS SECTION OUTPUT Profile #100-yr 6-yr

E.G. Elev (ft)	2314.46	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.65	Wt. n-Val.	0.056	0.038	0.056

W.S. Elev (ft)	2313.81	Reach Len. (ft)	394.75	388.00	372.36
Crit W.S. (ft)	2313.81	Flow Area (sq ft)	64.95	142.41	226.55
E.G. Slope (ft/ft)	0.008703	Area (sq ft)	64.95	142.41	226.55
Q Total (cfs)	1996.00	Flow (cfs)	221.62	1157.32	617.06
Top Width (ft)	276.92	Top Width (ft)	39.94	42.36	194.62
Vel Total (ft/s)	4.60	Avg. Vel. (ft/s)	3.41	8.13	2.72
Max Chl Dpth (ft)	4.01	Hydr. Depth (ft)	1.63	3.36	1.16
Conv. Total (cfs)	21395.2	Conv. (cfs)	2375.6	12405.3	6614.3
Length Wtd. (ft)	385.49	Wetted Per. (ft)	40.14	42.83	196.29
Min Ch El (ft)	2309.80	Shear (lb/sq ft)	0.88	1.81	0.63
Alpha	1.98	Stream Power (lb/ft s)	3.00	14.68	1.71
Frctn Loss (ft)	4.12	Cum Volume (acre-ft)	7.66	12.27	5.27
C & E Loss (ft)	0.03	Cum SA (acres)	5.65	4.22	5.22

Warning: The energy equation could not be 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 OUTPUT Profile #Method 1

E.G. Elev (ft)	2314.46	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.65	Wt. n-Val.	0.056	0.038	0.056
W.S. Elev (ft)	2313.81	Reach Len. (ft)	394.75	388.00	372.36
Crit W.S. (ft)	2313.81	Flow Area (sq ft)	64.95	142.41	226.55
E.G. Slope (ft/ft)	0.008703	Area (sq ft)	64.95	142.41	226.55
Q Total (cfs)	1996.00	Flow (cfs)	221.62	1157.32	617.06
Top Width (ft)	276.92	Top Width (ft)	39.94	42.36	194.62
Vel Total (ft/s)	4.60	Avg. Vel. (ft/s)	3.41	8.13	2.72
Max Chl Dpth (ft)	4.01	Hydr. Depth (ft)	1.63	3.36	1.16
Conv. Total (cfs)	21395.2	Conv. (cfs)	2375.6	12405.3	6614.3
Length Wtd. (ft)	385.49	Wetted Per. (ft)	40.14	42.83	196.29
Min Ch El (ft)	2309.80	Shear (lb/sq ft)	0.88	1.81	0.63
Alpha	1.98	Stream Power (lb/ft s)	3.00	14.68	1.71
Frctn Loss (ft)	4.12	Cum Volume (acre-ft)	7.66	12.27	5.27
C & E Loss (ft)	0.03	Cum SA (acres)	5.65	4.22	5.22

Warning: The energy equation could not be 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: Stagecoach Pass
REACH: StagecoachPass-2 RS: 1.36

INPUT
Description: Cross Section 1.36 is located within The Boulders.

Topography
indicates wash, house pads and surrounding undeveloped desert.
Aerial shows wash, desert, homes and golf course.
T5NR4E
Section 11

Q100 = 1996 cfs

Station Elevation Data num= 15

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9621.47	2306	9741.16	2308	9753.03	2308	9768.95	2306	9769.75	2306
9939.23	2306	9965.04	2304.5	9973.64	2304	9982.67	2302	10011.71	2302
10017.14	2304	10063.23	2304.5	10201.49	2306	10216.89	2308	10252.44	2310

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9621.47	.056	9965.04	.038	10063.23	.056

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9965.04	10063.23	377.04	389.76	400.9	.1	.3

Left Levee Station= 9753.03 Elevation= 2308

Blocked Obstructions num= 1

Sta L	Sta R	Elev
10106.08	10252.44	2307.7

CROSS SECTION OUTPUT Profile #100-yr 6-yr

			Left OB	Channel	Right OB
E.G. Elev (ft)	2306.66	Element			
Vel Head (ft)	0.92	Wt. n-Val.	0.056	0.038	0.056
W.S. Elev (ft)	2305.74	Reach Len. (ft)	377.04	389.76	400.90
Crit W.S. (ft)	2305.74	Flow Area (sq ft)	13.29	230.01	43.30
E.G. Slope (ft/ft)	0.013468	Area (sq ft)	13.29	230.01	43.30
Q Total (cfs)	1996.00	Flow (cfs)	29.77	1833.57	132.66
Top Width (ft)	162.43	Top Width (ft)	21.39	98.19	42.85
Vel Total (ft/s)	6.96	Avg. Vel. (ft/s)	2.24	7.97	3.06
Max Chl Dpth (ft)	3.74	Hydr. Depth (ft)	0.62	2.34	1.01
Conv. Total (cfs)	17199.5	Conv. (cfs)	256.5	15799.9	1143.1
Length Wtd. (ft)	390.05	Wetted Per. (ft)	21.42	98.78	43.63
Min Ch El (ft)	2302.00	Shear (lb/sq ft)	0.52	1.96	0.83
Alpha	1.22	Stream Power (lb/ft s)	1.17	15.61	2.56
Frctn Loss (ft)	5.23	Cum Volume (acre-ft)	7.30	10.61	4.12
C & E Loss (ft)	0.05	Cum SA (acres)	5.37	3.59	4.21

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

Warning: During the standard step iterations, when the assumed water surface was set equal to critical
depth, the 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 OUTPUT Profile #Method 1

			Left OB	Channel	Right OB
E.G. Elev (ft)	2306.66	Element			
Vel Head (ft)	0.92	Wt. n-Val.	0.056	0.038	0.056
W.S. Elev (ft)	2305.74	Reach Len. (ft)	377.04	389.76	400.90
Crit W.S. (ft)	2305.74	Flow Area (sq ft)	13.29	230.01	43.30
E.G. Slope (ft/ft)	0.013468	Area (sq ft)	13.29	230.01	43.30
Q Total (cfs)	1996.00	Flow (cfs)	29.77	1833.57	132.66
Top Width (ft)	162.43	Top Width (ft)	21.39	98.19	42.85
Vel Total (ft/s)	6.96	Avg. Vel. (ft/s)	2.24	7.97	3.06
Max Chl Dpth (ft)	3.74	Hydr. Depth (ft)	0.62	2.34	1.01
Conv. Total (cfs)	17199.5	Conv. (cfs)	256.5	15799.9	1143.1
Length Wtd. (ft)	390.05	Wetted Per. (ft)	21.42	98.78	43.63
Min Ch El (ft)	2302.00	Shear (lb/sq ft)	0.52	1.96	0.83
Alpha	1.22	Stream Power (lb/ft s)	1.17	15.61	2.56
Frctn Loss (ft)	5.23	Cum Volume (acre-ft)	7.30	10.61	4.12
C & E Loss (ft)	0.05	Cum SA (acres)	5.37	3.59	4.21

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 energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
depth, the 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: Stagecoach Pass
REACH: StagecoachPass-2 RS: 1.29

INPUT
Description: Cross Section 1.29 is located within The Boulders.

Topography
indicates wash, house pads and surrounding undeveloped
desert.
Aerial shows wash, desert, and homes.
T5NR4E Section
11
Q100 = 1996 cfs
Station Elevation Data num= 19

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9715.05	2304	9744.86	2302	9785.42	2302	9852.64	2304	9854.41	2304
9899.3	2302	9949.61	2300	9959.12	2298	9973.19	2296	9980.67	2294
10000	2293.26	10026.22	2294	10038.46	2296	10059.6	2298	10064.06	2300
10068.85	2302	10073.19	2304	10077.41	2306	10083.83	2308		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9715.05	.056	9973.19	.038	10038.46	.056

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9973.19	10038.46	520.07	520.26	518.56	.1	.3

CROSS SECTION OUTPUT Profile #100-yr 6-yr

E.G. Elev (ft)	2298.60	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.42	Wt. n-Val.	0.056	0.038	0.056
W.S. Elev (ft)	2297.18	Reach Len. (ft)	520.07	520.26	518.56
Crit W.S. (ft)	2297.18	Flow Area (sq ft)	4.89	204.64	7.35
E.G. Slope (ft/ft)	0.013326	Area (sq ft)	4.89	204.64	7.35
Q Total (cfs)	1996.00	Flow (cfs)	10.46	1969.76	15.78
Top Width (ft)	86.03	Top Width (ft)	8.30	65.27	12.46
Vel Total (ft/s)	9.20	Avg. Vel. (ft/s)	2.14	9.63	2.15
Max Chl Dpth (ft)	3.92	Hydr. Depth (ft)	0.59	3.14	0.59
Conv. Total (cfs)	17290.6	Conv. (cfs)	90.7	17063.2	136.7
Length Wtd. (ft)	520.19	Wetted Per. (ft)	8.38	65.72	12.52
Min Ch El (ft)	2293.26	Shear (lb/sq ft)	0.49	2.59	0.49
Alpha	1.08	Stream Power (lb/ft s)	1.04	24.94	1.05
Frctn Loss (ft)	6.22	Cum Volume (acre-ft)	7.22	8.66	3.89
C & E Loss (ft)	0.08	Cum SA (acres)	5.24	2.86	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 energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.

Warning: During the standard step iterations, when the assumed water surface was set equal to critical
depth, the 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 OUTPUT Profile #Method 1

E.G. Elev (ft)	2298.60	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.42	Wt. n-Val.	0.056	0.038	0.056
W.S. Elev (ft)	2297.18	Reach Len. (ft)	520.07	520.26	518.56
Crit W.S. (ft)	2297.18	Flow Area (sq ft)	4.89	204.64	7.35
E.G. Slope (ft/ft)	0.013326	Area (sq ft)	4.89	204.64	7.35
Q Total (cfs)	1996.00	Flow (cfs)	10.46	1969.76	15.78
Top Width (ft)	86.03	Top Width (ft)	8.30	65.27	12.46
Vel Total (ft/s)	9.20	Avg. Vel. (ft/s)	2.14	9.63	2.15
Max Chl Dpth (ft)	3.92	Hydr. Depth (ft)	0.59	3.14	0.59
Conv. Total (cfs)	17290.6	Conv. (cfs)	90.7	17063.2	136.7
Length Wtd. (ft)	520.19	Wetted Per. (ft)	8.38	65.72	12.52
Min Ch El (ft)	2293.26	Shear (lb/sq ft)	0.49	2.59	0.49
Alpha	1.08	Stream Power (lb/ft s)	1.04	24.94	1.05
Frctn Loss (ft)	6.22	Cum Volume (acre-ft)	7.22	8.66	3.89
C & E Loss (ft)	0.08	Cum SA (acres)	5.24	2.86	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 energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
depth, the 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: Stagecoach Pass
REACH: StagecoachPass-2 RS: 1.19

INPUT
Description: Cross Section 1.19 is located within The Boulders.

Topography
indicates wash, house pads and surrounding undeveloped desert.
Aerial shows wash, desert, and homes .
T5NR4E Section
11
Q100 = 1996 cfs
Station Elevation Data num= 15

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9634.53	2290	9645.65	2288	9665.86	2286	9685.73	2286	9714.7	2286
9753.23	2286	9766.01	2288	9954.59	2288	9968.38	2286	9983.6	2284
10000	2283.8	10015.4	2284	10030.19	2286	10104.3	2288	10145.97	2290

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9634.53	.056	9968.38	.038	10030.19	.056

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9968.38	10030.19	339.29	351.73	352.16	.1	.3

Left Levee Station= 9954.59 Elevation= 2288

CROSS SECTION OUTPUT Profile #100-yr 6-yr

E.G. Elev (ft)	2288.89	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.16	Wt. n-Val.	0.056	0.038	0.056
W.S. Elev (ft)	2287.73	Reach Len. (ft)	339.29	351.73	352.16

Crit W.S. (ft)	2287.73	Flow Area (sq ft)	10.36	203.93	55.67
E.G. Slope (ft/ft)	0.010793	Area (sq ft)	10.36	203.93	55.67
Q Total (cfs)	1996.00	Flow (cfs)	25.78	1830.76	139.46
Top Width (ft)	137.99	Top Width (ft)	11.95	61.81	64.23
Vel Total (ft/s)	7.39	Avg. Vel. (ft/s)	2.49	8.98	2.51
Max Chl Dpth (ft)	3.93	Hydr. Depth (ft)	0.87	3.30	0.87
Conv. Total (cfs)	19212.9	Conv. (cfs)	248.1	17622.3	1342.4
Length Wtd. (ft)	350.55	Wetted Per. (ft)	12.08	62.08	64.25
Min Ch El (ft)	2283.80	Shear (lb/sq ft)	0.58	2.21	0.58
Alpha	1.36	Stream Power (lb/ft s)	1.44	19.87	1.46
Frctn Loss (ft)	2.54	Cum Volume (acre-ft)	7.13	6.22	3.51
C & E Loss (ft)	0.25	Cum SA (acres)	5.12	2.10	3.50

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 velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
depth, the 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 OUTPUT Profile #Method 1

E.G. Elev (ft)	2288.89	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.16	Wt. n-Val.	0.056	0.038	0.056
W.S. Elev (ft)	2287.73	Reach Len. (ft)	339.29	351.73	352.16
Crit W.S. (ft)	2287.73	Flow Area (sq ft)	10.36	203.93	55.67
E.G. Slope (ft/ft)	0.010793	Area (sq ft)	10.36	203.93	55.67
Q Total (cfs)	1996.00	Flow (cfs)	25.78	1830.76	139.46
Top Width (ft)	137.99	Top Width (ft)	11.95	61.81	64.23
Vel Total (ft/s)	7.39	Avg. Vel. (ft/s)	2.49	8.98	2.51
Max Chl Dpth (ft)	3.93	Hydr. Depth (ft)	0.87	3.30	0.87
Conv. Total (cfs)	19212.9	Conv. (cfs)	248.1	17622.3	1342.4
Length Wtd. (ft)	350.55	Wetted Per. (ft)	12.08	62.08	64.25
Min Ch El (ft)	2283.80	Shear (lb/sq ft)	0.58	2.21	0.58
Alpha	1.36	Stream Power (lb/ft s)	1.44	19.87	1.46
Frctn Loss (ft)	2.54	Cum Volume (acre-ft)	7.13	6.22	3.51
C & E Loss (ft)	0.25	Cum SA (acres)	5.12	2.10	3.50

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 velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
depth, the 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: Stagecoach Pass
REACH: StagecoachPass-2 RS: 1.13

INPUT
Description: Cross Section 1.13 is located within The Boulders.

Topography
indicates wash, and surrounding undeveloped desert.
Aerial shows
wash, desert, and golf course.
T5NR4E Section 11
Q100 = 1996 cfs
Station Elevation Data num= 13

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9720.88	2282	9811.11	2280	9894.49	2279	9936.18	2278.5	9977.86	2278
10000	2277.39	10016.5	2278	10041.74	2278.5	10066.98	2279	10117.46	2280
10130.32	2281	10143.17	2282	10177.35	2284				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9720.88	.056	9936.18	.038	10041.74	.056

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9936.18	10041.74	146.89	146.65	147.55	.1	.3

CROSS SECTION OUTPUT Profile #100-yr 6-yr

			Left OB	Channel	Right OB
E.G. Elev (ft)	2280.90	Element			
Vel Head (ft)	0.32	Wt. n-Val.	0.056	0.038	0.056
W.S. Elev (ft)	2280.58	Reach Len. (ft)	146.89	146.65	147.55
Crit W.S. (ft)		Flow Area (sq ft)	173.98	267.44	102.90
E.G. Slope (ft/ft)	0.005213	Area (sq ft)	173.98	267.44	102.90
Q Total (cfs)	1996.00	Flow (cfs)	365.90	1403.00	227.10
Top Width (ft)	339.99	Top Width (ft)	151.25	105.56	83.18
Vel Total (ft/s)	3.67	Avg. Vel. (ft/s)	2.10	5.25	2.21
Max Chl Dpth (ft)	3.19	Hydr. Depth (ft)	1.15	2.53	1.24
Conv. Total (cfs)	27644.4	Conv. (cfs)	5067.7	19431.4	3145.3
Length Wtd. (ft)	146.75	Wetted Per. (ft)	151.27	105.59	83.22
Min Ch El (ft)	2277.39	Shear (lb/sq ft)	0.37	0.82	0.40
Alpha	1.54	Stream Power (lb/ft s)	0.79	4.32	0.89
Frctn Loss (ft)	1.04	Cum Volume (acre-ft)	6.41	4.32	2.87
C & E Loss (ft)	0.05	Cum SA (acres)	4.48	1.43	2.90

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 OUTPUT Profile #Method 1

			Left OB	Channel	Right OB
E.G. Elev (ft)	2280.90	Element			
Vel Head (ft)	0.32	Wt. n-Val.	0.056	0.038	0.056
W.S. Elev (ft)	2280.58	Reach Len. (ft)	146.89	146.65	147.55
Crit W.S. (ft)		Flow Area (sq ft)	173.98	267.44	102.90
E.G. Slope (ft/ft)	0.005213	Area (sq ft)	173.98	267.44	102.90
Q Total (cfs)	1996.00	Flow (cfs)	365.90	1403.00	227.10
Top Width (ft)	339.99	Top Width (ft)	151.25	105.56	83.18
Vel Total (ft/s)	3.67	Avg. Vel. (ft/s)	2.10	5.25	2.21
Max Chl Dpth (ft)	3.19	Hydr. Depth (ft)	1.15	2.53	1.24
Conv. Total (cfs)	27644.4	Conv. (cfs)	5067.7	19431.4	3145.3
Length Wtd. (ft)	146.75	Wetted Per. (ft)	151.27	105.59	83.22
Min Ch El (ft)	2277.39	Shear (lb/sq ft)	0.37	0.82	0.40
Alpha	1.54	Stream Power (lb/ft s)	0.79	4.32	0.89
Frctn Loss (ft)	1.04	Cum Volume (acre-ft)	6.41	4.32	2.87
C & E Loss (ft)	0.05	Cum SA (acres)	4.48	1.43	2.90

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: Stagecoach Pass
REACH: StagecoachPass-2 RS: 1.1

INPUT
Description: Cross Section 1.10 is located within The Boulders.

Topography
indicates wash, and surrounding undeveloped desert.
Aerial shows
wash, desert, and golf course.
T5NR4E Section 11
Q100 = 1996 cfs
Station Elevation Data num= 11

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9857.15	2280	9864.15	2278	9905.76	2278	9981.63	2278	9990.13	2276
10000	2274.39	10027.02	2276	10053.33	2278	10055.38	2278	10098.74	2280
10112.67	2282								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9857.15	.056	9981.63	.038	10055.38	.056

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9981.63	10055.38	160.04	157.68	153.1	.1	.3

CROSS SECTION OUTPUT Profile #100-yr 6-yr

E.G. Elev (ft)	2279.82	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.82	Wt. n-Val.	0.056	0.038	0.056
W.S. Elev (ft)	2278.99	Reach Len. (ft)	160.04	157.68	153.10
Crit W.S. (ft)	2278.99	Flow Area (sq ft)	118.28	211.46	10.67
E.G. Slope (ft/ft)	0.010078	Area (sq ft)	118.28	211.46	10.67
Q Total (cfs)	1996.00	Flow (cfs)	310.19	1668.01	17.80
Top Width (ft)	216.21	Top Width (ft)	120.95	73.75	21.51
Vel Total (ft/s)	5.86	Avg. Vel. (ft/s)	2.62	7.89	1.67
Max Chl Dpth (ft)	4.60	Hydr. Depth (ft)	0.98	2.87	0.50
Conv. Total (cfs)	19883.0	Conv. (cfs)	3089.9	16615.8	177.3
Length Wtd. (ft)	158.00	Wetted Per. (ft)	121.09	74.24	21.53
Min Ch El (ft)	2274.39	Shear (lb/sq ft)	0.61	1.79	0.31
Alpha	1.54	Stream Power (lb/ft s)	1.61	14.14	0.52
Frctn Loss (ft)	1.76	Cum Volume (acre-ft)	5.92	3.52	2.68
C & E Loss (ft)	0.03	Cum SA (acres)	4.03	1.13	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.

CROSS SECTION OUTPUT Profile #Method 1

E.G. Elev (ft)	2279.82	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.82	Wt. n-Val.	0.056	0.038	0.056
W.S. Elev (ft)	2278.99	Reach Len. (ft)	160.04	157.68	153.10
Crit W.S. (ft)	2278.99	Flow Area (sq ft)	118.28	211.46	10.67
E.G. Slope (ft/ft)	0.010078	Area (sq ft)	118.28	211.46	10.67
Q Total (cfs)	1996.00	Flow (cfs)	310.19	1668.01	17.80

Top Width (ft)	216.21	Top Width (ft)	120.95	73.75	21.51
Vel Total (ft/s)	5.86	Avg. Vel. (ft/s)	2.62	7.89	1.67
Max Chl Dpth (ft)	4.60	Hydr. Depth (ft)	0.98	2.87	0.50
Conv. Total (cfs)	19883.0	Conv. (cfs)	3089.9	16615.8	177.3
Length Wtd. (ft)	158.00	Wetted Per. (ft)	121.09	74.24	21.53
Min Ch El (ft)	2274.39	Shear (lb/sq ft)	0.61	1.79	0.31
Alpha	1.54	Stream Power (lb/ft s)	1.61	14.14	0.52
Frctn Loss (ft)	1.76	Cum Volume (acre-ft)	5.92	3.52	2.68
C & E Loss (ft)	0.03	Cum SA (acres)	4.03	1.13	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.

CROSS SECTION

RIVER: Stagecoach Pass
REACH: StagecoachPass-2 RS: 1.07

INPUT
Description: Cross Section 1.07 is located within The Boulders.

Topography
indicates wash, building pad and surrounding undeveloped desert.
Aerial shows wash, desert, and building.
T5NR4E Section
11
Q100 = 1996 cfs
Station Elevation Data num= 11

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9660.69	2278	9707.85	2278	9727.47	2278	9796.71	2276	9948.84	2274
9973.69	2274	9987.44	2274	10000	2272.26	10050.24	2274	10100.57	2276
10270.52	2276								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9660.69	.056	9973.69	.038	10050.24	.056

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9973.69	10050.24	306.9	308.3	295.73	.3	.5

Right Levee Station= 10134.7 Elevation= 2280

CROSS SECTION OUTPUT Profile #100-yr 6-yr

E.G. Elev (ft)	2276.43	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.73	Wt. n-Val.	0.056	0.038	0.056
W.S. Elev (ft)	2275.71	Reach Len. (ft)	306.90	308.30	295.73
Crit W.S. (ft)	2275.71	Flow Area (sq ft)	152.87	185.12	36.56
E.G. Slope (ft/ft)	0.012401	Area (sq ft)	152.87	185.12	36.56
Q Total (cfs)	1996.00	Flow (cfs)	448.48	1450.46	97.06
Top Width (ft)	273.96	Top Width (ft)	154.51	76.55	42.90
Vel Total (ft/s)	5.33	Avg. Vel. (ft/s)	2.93	7.84	2.65
Max Chl Dpth (ft)	3.44	Hydr. Depth (ft)	0.99	2.42	0.85
Conv. Total (cfs)	17923.8	Conv. (cfs)	4027.3	13025.0	871.6
Length Wtd. (ft)	307.67	Wetted Per. (ft)	154.52	76.70	42.93
Min Ch El (ft)	2272.26	Shear (lb/sq ft)	0.77	1.87	0.66
Alpha	1.65	Stream Power (lb/ft s)	2.25	14.64	1.75
Frctn Loss (ft)	3.68	Cum Volume (acre-ft)	5.42	2.80	2.59
C & E Loss (ft)	0.37	Cum SA (acres)	3.52	0.85	2.61

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
depth, the 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 OUTPUT Profile #Method 1

E.G. Elev (ft)	2276.43	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.73	Wt. n-Val.	0.056	0.038	0.056
W.S. Elev (ft)	2275.71	Reach Len. (ft)	306.90	308.30	295.73
Crit W.S. (ft)	2275.71	Flow Area (sq ft)	152.87	185.12	36.56
E.G. Slope (ft/ft)	0.012401	Area (sq ft)	152.87	185.12	36.56
Q Total (cfs)	1996.00	Flow (cfs)	448.48	1450.46	97.06
Top Width (ft)	273.96	Top Width (ft)	154.51	76.55	42.90
Vel Total (ft/s)	5.33	Avg. Vel. (ft/s)	2.93	7.84	2.65
Max Chl Dpth (ft)	3.44	Hydr. Depth (ft)	0.99	2.42	0.85
Conv. Total (cfs)	17923.8	Conv. (cfs)	4027.3	13025.0	871.6
Length Wtd. (ft)	307.67	Wetted Per. (ft)	154.52	76.70	42.93
Min Ch El (ft)	2272.26	Shear (lb/sq ft)	0.77	1.87	0.66
Alpha	1.65	Stream Power (lb/ft s)	2.25	14.64	1.75
Frctn Loss (ft)	3.68	Cum Volume (acre-ft)	5.42	2.80	2.59
C & E Loss (ft)	0.37	Cum SA (acres)	3.52	0.85	2.61

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
depth, the 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: Stagecoach Pass
REACH: StagecoachPass-2 RS: 1.01

INPUT
Description: Cross Section 1.01 is located within The Boulders. It is located upstream of the intersection of Scottsdale Road and Stage Coach Pass Wash. There are 4-10 X 4 concrete box culverts located under Scottsdale Road. This section is the downstream boundary of the detailed study.

Topography indicates wash,Scottsdale Road (old
alignment), and surrounding undeveloped desert.
Aerial shows
wash, desert, and Scottsdale Road.
T5NR4E Section 11 and 10
Q100
= 1996 cfs

Station Elevation Data num= 18

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9493.18	2272	9681.36	2270	9868	2268	9899.69	2268	9952.02	2268
9964.76	2268	9987.86	2268	9990.52	2266	9993.51	2264	10015.24	2264
10018.67	2266	10021.99	2268	10047.08	2268	10081.51	2268	10137.48	2268
10144.62	2268	10273.32	2270	10287.45	2271				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9493.18	.056	9987.86	.038	10021.99	.056

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9987.86	10021.99	120.05	115.2	115.9	.3	.5

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
9493.18	9978.94	2271.7	F
10029.72	10287.45	2271.7	F

CROSS SECTION OUTPUT Profile #100-yr 6-yr

E.G. Elev (ft)	2271.51	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.96	Wt. n-Val.	0.056	0.038	0.056
W.S. Elev (ft)	2269.55	Reach Len. (ft)	120.05	115.20	115.90
Crit W.S. (ft)	2269.55	Flow Area (sq ft)	13.83	165.08	11.98
E.G. Slope (ft/ft)	0.011552	Area (sq ft)	298.03	165.08	267.50
Q Total (cfs)	1996.00	Flow (cfs)	52.84	1897.37	45.79
Top Width (ft)	521.09	Top Width (ft)	264.56	34.13	222.41
Vel Total (ft/s)	10.46	Avg. Vel. (ft/s)	3.82	11.49	3.82
Max Chl Dpth (ft)	5.55	Hydr. Depth (ft)	1.55	4.84	1.55
Conv. Total (cfs)	18571.2	Conv. (cfs)	491.6	17653.5	426.0
Length Wtd. (ft)	115.20	Wetted Per. (ft)	8.92	36.50	7.73
Min Ch El (ft)	2264.00	Shear (lb/sq ft)	1.12	3.26	1.12
Alpha	1.16	Stream Power (lb/ft s)	4.27	37.49	4.27
Frctn Loss (ft)		Cum Volume (acre-ft)	3.84	1.56	1.56
C & E Loss (ft)		Cum SA (acres)	2.04	0.46	1.71

Warning: During subcritical analysis, the water surface upstream of culvert went to critical depth.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid,
energy was used.

CROSS SECTION OUTPUT Profile #Method 1

E.G. Elev (ft)	2271.51	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.96	Wt. n-Val.	0.056	0.038	0.056
W.S. Elev (ft)	2269.55	Reach Len. (ft)	120.05	115.20	115.90
Crit W.S. (ft)	2269.55	Flow Area (sq ft)	13.83	165.08	11.98
E.G. Slope (ft/ft)	0.011552	Area (sq ft)	298.03	165.08	267.50
Q Total (cfs)	1996.00	Flow (cfs)	52.84	1897.37	45.79
Top Width (ft)	521.09	Top Width (ft)	264.56	34.13	222.41
Vel Total (ft/s)	10.46	Avg. Vel. (ft/s)	3.82	11.49	3.82
Max Chl Dpth (ft)	5.55	Hydr. Depth (ft)	1.55	4.84	1.55
Conv. Total (cfs)	18571.2	Conv. (cfs)	491.6	17653.5	426.0
Length Wtd. (ft)	115.20	Wetted Per. (ft)	8.92	36.50	7.73
Min Ch El (ft)	2264.00	Shear (lb/sq ft)	1.12	3.26	1.12
Alpha	1.16	Stream Power (lb/ft s)	4.27	37.49	4.27
Frctn Loss (ft)		Cum Volume (acre-ft)	3.84	1.56	1.56
C & E Loss (ft)		Cum SA (acres)	2.04	0.46	1.71

Warning: During subcritical analysis, the water surface upstream of culvert went to critical depth.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid,
energy was used.

CULVERT

RIVER: Stagecoach Pass
REACH: StagecoachPass-2 RS: 0.99

```
INPUT
Description: Box culverts at Scottsdale Road crossing.
Distance from Upstream XS =       4
Deck/Roadway Width        =     108
Weir Coefficient          =     2.6
Upstream  Deck/Roadway Coordinates
    num=       2
     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord
    9400  2271.7           10300  2271.7

Upstream Bridge Cross Section Data
Station Elevation Data    num=      18
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
 9493.18    2272 9681.36    2270    9868    2268 9899.69    2268 9952.02    2268
 9964.76    2268 9987.86    2268 9990.52    2266 9993.51    226410015.24    2264
10018.67    226610021.99    226810047.08    226810081.51    226810137.48    2268
10144.62    226810273.32    227010287.45    2271

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
 9493.18    .056 9987.86    .03810021.99    .056

Bank Sta: Left   Right    Coeff Contr.   Expan.
       9987.8610021.99             .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
 9493.18 9978.94  2271.7       F
10029.7210287.45  2271.7       F

Downstream  Deck/Roadway Coordinates
    num=       2
     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord
    9600  2271.7           10200  2271.7

Downstream Bridge Cross Section Data
Station Elevation Data    num=      14
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
 9672.48    2266 9679.56    2266 9766.86    2264    9814    2264 9873.62    2264
 9898.34    2264 9976.76    2264 9983.49    2262  9991.5    226210007.49    2262
10012.61    226210016.16    226410065.12    226610165.24    2268

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
 9672.48    .056 9976.76    .03810016.16    .056

Bank Sta: Left   Right    Coeff Contr.   Expan.
       9976.7610016.16             .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
 9672.48 9973.48  2271.7       F
10022.6310165.24  2271.7       F

Upstream Embankment side slope              =       0 horiz. to 1.0 vertical
Downstream Embankment side slope            =       0 horiz. to 1.0 vertical
Maximum allowable submergence for weir flow =     .95
Elevation at which weir flow begins         =
Energy head used in spillway design         =
Spillway height used in design              =
Weir crest shape                            = Broad Crested

Number of Culverts =  1

Culvert Name      Shape      Rise    Span
CULVERT#1           Box       4      10
FHWA Chart # 8 - flared wingwalls
FHWA Scale # 1 - Wingwall flared 30 to 75 deg.
Solution Criteria = Highest U.S. EG
Culvert Upstrm Dist  Length    Top n  Bottom n  Depth Blocked  Entrance Loss Coef   Exit Loss Coef
                  4     107     .015     .015        0                  .4                 1
Number of Barrels =  4
```

```
Upstream   Elevation =  2265.83
Centerline Stations
    Sta.    Sta.    Sta.    Sta.
 9987.94 9998.88 10009.810020.72
Downstream Elevation =  2260.72
Centerline Stations
    Sta.    Sta.    Sta.    Sta.
 9981.68 9992.5910003.5110014.43

CROSS SECTION


RIVER: Stagecoach Pass
REACH: StagecoachPass-2   RS: 0.98

INPUT
Description: Cross Section 0.98 is located downstream of the intersection of
             Scottsdale Road and Stage Coach Pass Wash.  There are 4-10 X 4
             concrete box culverts located under Scottsdale Road.


Topography indicates wash,Scottsdale Road (old alignment), and
             surrounding undeveloped desert.
Aerial shows wash, desert, and
             Scottsdale Road.
T5NR4E Section 10
Q100 = 1996 cfs
Station Elevation Data    num=      14
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
 9672.48    2266 9679.56    2266 9766.86    2264    9814    2264 9873.62    2264
 9898.34    2264 9976.76    2264 9983.49    2262  9991.5    226210007.49    2262
10012.61    226210016.16    226410065.12    226610165.24    2268

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
 9672.48    .056 9976.76    .03810016.16    .056

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9976.7610016.16           300.24  303.37  314.11             .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
 9672.48 9973.48  2271.7       F
10022.6310165.24  2271.7       F

CROSS SECTION OUTPUT  Profile #100-yr 6-yr

  E.G. Elev (ft)          2268.35   Element                  Left OB    Channel   Right OB
  Vel Head (ft)              1.90   Wt. n-Val.                0.056      0.038      0.056
  W.S. Elev (ft)          2266.45   Reach Len. (ft)          300.24     303.37     314.11
  Crit W.S. (ft)          2266.45   Flow Area (sq ft)          8.04     165.14      15.01
  E.G. Slope (ft/ft)     0.012798   Area (sq ft)             644.68     165.14      76.21
  Q Total (cfs)           1996.00   Flow (cfs)                43.89    1873.19      78.91
  Top Width (ft)           415.27   Top Width (ft)           304.28      39.40      71.59
  Vel Total (ft/s)          10.61   Avg. Vel. (ft/s)           5.46      11.34       5.26
  Max Chl Dpth (ft)          4.45   Hydr. Depth (ft)           2.45       4.19       2.32
  Conv. Total (cfs)       17643.9   Conv. (cfs)               388.0    16558.3      697.6
  Length Wtd. (ft)         304.74   Wetted Per. (ft)           3.28      40.22       6.48
  Min Ch El (ft)          2262.00   Shear (lb/sq ft)           1.96       3.28       1.85
  Alpha                      1.09   Stream Power (lb/ft s)    10.69      37.21       9.74
  Frctn Loss (ft)            3.56   Cum Volume (acre-ft)       2.54       1.12       1.11
  C & E Loss (ft)            0.69   Cum SA (acres)             1.26       0.36       1.32


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 cross-section end points had to be extended vertically for the computed water surface.
Warning: The velocity head has changed by more than 0.5 ft (0.15 m).  This may indicate the need for
         additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross
section.
         This may indicate the need for additional cross sections.
```

Warning: During the standard step iterations, when the assumed water surface was set equal to critical
depth, the calculated water surface came back below critical depth. This indicates that there is
not a valid subcritical answer. The program defaulted to critical depth.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid,
energy was used.

CROSS SECTION OUTPUT Profile #Method 1

E.G. Elev (ft)	2268.35	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.90	Wt. n-Val.	0.056	0.038	0.056
W.S. Elev (ft)	2266.45	Reach Len. (ft)	300.24	303.37	314.11
Crit W.S. (ft)	2266.45	Flow Area (sq ft)	8.04	165.14	15.01
E.G. Slope (ft/ft)	0.012798	Area (sq ft)	644.68	165.14	76.21
Q Total (cfs)	1996.00	Flow (cfs)	43.89	1873.19	78.91
Top Width (ft)	415.27	Top Width (ft)	304.28	39.40	71.59
Vel Total (ft/s)	10.61	Avg. Vel. (ft/s)	5.46	11.34	5.26
Max Chl Dpth (ft)	4.45	Hydr. Depth (ft)	2.45	4.19	2.32
Conv. Total (cfs)	17643.9	Conv. (cfs)	388.0	16558.3	697.6
Length Wtd. (ft)	304.74	Wetted Per. (ft)	3.28	40.22	6.48
Min Ch El (ft)	2262.00	Shear (lb/sq ft)	1.96	3.28	1.85
Alpha	1.09	Stream Power (lb/ft s)	10.69	37.21	9.74
Frctn Loss (ft)	3.56	Cum Volume (acre-ft)	2.54	1.12	1.11
C & E Loss (ft)	0.69	Cum SA (acres)	1.26	0.36	1.32

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 cross-section end points had to be extended vertically for the computed water surface.
Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
depth, the calculated water surface came back below critical depth. This indicates that there is
not a valid subcritical answer. The program defaulted to critical depth.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid,
energy was used.

CROSS SECTION

RIVER: Stagecoach Pass
REACH: StagecoachPass-2 RS: 0.93

INPUT
Description: Topography indicates wash, and surrounding undeveloped
desert.
Aerial shows wash, desert, and homes.
T5NR4E Section 10

Q100 = 1996 cfs
Station Elevation Data num= 18

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9612.07	2266	9643.6	2264	9700.68	2262	9873.38	2262	9883.59	2262
9912.88	2260	9929.88	2258	9942.67	2258	9947.03	2260	9962.21	2260
9978.22	2258	10017.54	2258	10027.58	2260	10208.09	2260	10307.71	2260
10343.57	2262	10396.95	2264	10439.86	2264				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9612.07	.056	9962.21	.038	10027.58	.056

Bank Sta: Left Right Coeff Contr. Expan.
9962.21 10027.58 .1 .3

CROSS SECTION OUTPUT Profile #100-yr 6-yr

E.G. Elev (ft)	2261.32	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.52	Wt. n-Val.	0.056	0.038	0.056
W.S. Elev (ft)	2260.80	Reach Len. (ft)			
Crit W.S. (ft)	2260.80	Flow Area (sq ft)	91.18	157.09	230.29
E.G. Slope (ft/ft)	0.010683	Area (sq ft)	91.18	157.09	230.29
Q Total (cfs)	1996.00	Flow (cfs)	324.64	1135.32	536.04
Top Width (ft)	420.94	Top Width (ft)	61.07	65.37	294.50
Vel Total (ft/s)	4.17	Avg. Vel. (ft/s)	3.56	7.23	2.33
Max Chl Dpth (ft)	2.80	Hydr. Depth (ft)	1.49	2.40	0.78
Conv. Total (cfs)	19311.1	Conv. (cfs)	3140.8	10984.1	5186.1
Length Wtd. (ft)		Wetted Per. (ft)	61.65	65.69	294.52
Min Ch El (ft)	2258.00	Shear (lb/sq ft)	0.99	1.59	0.52
Alpha	1.91	Stream Power (lb/ft s)	3.51	11.53	1.21
Frctn Loss (ft)		Cum Volume (acre-ft)			
C & E Loss (ft)		Cum SA (acres)			

Warning: Slope too steep for slope area to converge during supercritical flow calculations (normal depth is
below critical depth). Water surface set to critical depth.

CROSS SECTION OUTPUT Profile #Method 1

E.G. Elev (ft)	2261.32	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.52	Wt. n-Val.	0.056	0.038	0.056
W.S. Elev (ft)	2260.80	Reach Len. (ft)			
Crit W.S. (ft)	2260.80	Flow Area (sq ft)	91.18	157.09	230.29
E.G. Slope (ft/ft)	0.010683	Area (sq ft)	91.18	157.09	230.29
Q Total (cfs)	1996.00	Flow (cfs)	324.64	1135.32	536.04
Top Width (ft)	420.94	Top Width (ft)	61.07	65.37	294.50
Vel Total (ft/s)	4.17	Avg. Vel. (ft/s)	3.56	7.23	2.33
Max Chl Dpth (ft)	2.80	Hydr. Depth (ft)	1.49	2.40	0.78
Conv. Total (cfs)	19311.1	Conv. (cfs)	3140.8	10984.1	5186.1
Length Wtd. (ft)		Wetted Per. (ft)	61.65	65.69	294.52
Min Ch El (ft)	2258.00	Shear (lb/sq ft)	0.99	1.59	0.52
Alpha	1.91	Stream Power (lb/ft s)	3.51	11.53	1.21
Frctn Loss (ft)		Cum Volume (acre-ft)			
C & E Loss (ft)		Cum SA (acres)			

Warning: Slope too steep for slope area to converge during supercritical flow calculations (normal depth is
below critical depth). Water surface set to critical depth.

SUMMARY OF MANNING'S N VALUES

River:Stagecoach Pass

Reach	River Sta.	n1	n2	n3
StagecoachPass-1	6.93	.064	.044	.064
StagecoachPass-1	6.88	.064	.044	.064
StagecoachPass-1	6.85	.064	.044	.064
StagecoachPass-1	6.8	.064	.044	.064
StagecoachPass-1	6.73	.064	.044	.064
StagecoachPass-1	6.63	.064	.044	.064
StagecoachPass-1	6.59	.064	.044	.064
StagecoachPass-1	6.55	.064	.044	.064
StagecoachPass-1	6.545	Culvert		
StagecoachPass-1	6.54	.064	.044	.064
StagecoachPass-1	6.51	.064	.044	.064
StagecoachPass-1	6.505	Culvert		
StagecoachPass-1	6.5	.064	.044	.064
StagecoachPass-1	6.45	.064	.044	.064
StagecoachPass-1	6.37	.064	.044	.064
StagecoachPass-1	6.31	.064	.044	.064

StagecoachPass-1	6.23	.064	.044	.064
StagecoachPass-1	6.17	.064	.044	.064
StagecoachPass-1	6.07	.064	.044	.064
StagecoachPass-1	5.98	.064	.044	.064
StagecoachPass-1	5.91	.064	.044	.064
StagecoachPass-1	5.9	Culvert		
StagecoachPass-1	5.89	.064	.044	.064
StagecoachPass-1	5.81	.064	.044	.064
StagecoachPass-1	5.72	.064	.044	.064
StagecoachPass-1	5.64	.064	.044	.064
StagecoachPass-1	5.61	.064	.044	.064
StagecoachPass-1	5.55	.064	.044	.064
StagecoachPass-1	5.51	.064	.044	.064
StagecoachPass-1	5.46	.064	.044	.064
StagecoachPass-1	5.43	.064	.044	.064
StagecoachPass-1	5.37	.064	.044	.064
StagecoachPass-1	5.27	.064	.044	.064
StagecoachPass-1	5.18	.064	.044	.064
StagecoachPass-1	5.12	.064	.044	.064
StagecoachPass-1	5.08	.064	.044	.064
StagecoachPass-1	5.02	.064	.044	.064
StagecoachPass-1	4.94	.064	.044	.064
StagecoachPass-1	4.84	.064	.044	.064
StagecoachPass-1	4.81	.064	.044	.064
StagecoachPass-1	4.77	.064	.044	.064
StagecoachPass-1	4.72	.064	.044	.064
StagecoachPass-1	4.62	.064	.044	.064
StagecoachPass-1	4.53	.064	.044	.064
StagecoachPass-1	4.43	.064	.044	.064
StagecoachPass-1	4.34	.064	.044	.064
StagecoachPass-1	4.3	.064	.044	.064
StagecoachPass-1	4.24	.064	.044	.064
StagecoachPass-1	4.19	.064	.044	.064
StagecoachPass-1	4.09	.056	.038	.076
StagecoachPass-1	4.01	.056	.038	.076
StagecoachPass-1	3.96	.056	.038	.076
StagecoachPass-1	3.9	.056	.038	.076
StagecoachPass-1	3.82	.056	.044	.076
StagecoachPass-1	3.72	.056	.038	.076
StagecoachPass-1	3.66	.056	.038	.076
StagecoachPass-1	3.64	.056	.038	.076
StagecoachPass-1	3.63	Culvert		
StagecoachPass-1	3.62	.056	.038	.076
StagecoachPass-1	3.57	.056	.038	.076
StagecoachPass-1	3.53	.056	.038	.076
StagecoachPass-1	3.44	.064	.044	.064
StagecoachPass-1	3.35	.064	.044	.064
StagecoachPass-1	3.31	.064	.044	.064
StagecoachPass-1	3.25	.064	.044	.064
StagecoachPass-1	3.16	.064	.044	.064
StagecoachPass-1	3.06	.064	.044	.064
StagecoachPass-1	3.03	.064	.044	.064
StagecoachPass-1	2.97	.064	.044	.064
StagecoachPass-1	2.96	Culvert		
StagecoachPass-1	2.95	.064	.044	.064
StagecoachPass-1	2.92	.064	.044	.064
StagecoachPass-1	2.86	.056	.038	.086
StagecoachPass-1	2.8	.056	.038	.086
StagecoachPass-1	2.76	.056	.038	.086
Levee Breakout	2.70	.056	.038	.086
Levee Breakout	2.62	.056	.038	.086
StagecoachPass-2	2.7	.056	.038	.086
StagecoachPass-2	2.61	.061	.038	.056
StagecoachPass-2	2.58	.061	.038	.056
StagecoachPass-2	2.5	.061	.038	.056
StagecoachPass-2	2.495	Culvert		
StagecoachPass-2	2.49	.061	.038	.056
StagecoachPass-2	2.41	.061	.038	.056
StagecoachPass-2	2.36	.061	.038	.056
StagecoachPass-2	2.3	.061	.038	.056
StagecoachPass-2	2.23	.061	.038	.056

StagecoachPass-2	2.15	.061	.038	.056
StagecoachPass-2	2.145	Culvert		
StagecoachPass-2	2.14	.056	.038	.056
StagecoachPass-2	2.08	.056	.038	.056
StagecoachPass-2	2.02	.056	.038	.056
StagecoachPass-2	1.94	.056	.038	.056
StagecoachPass-2	1.92	.056	.038	.056
StagecoachPass-2	1.88	.056	.038	.056
StagecoachPass-2	1.81	.056	.038	.056
StagecoachPass-2	1.76	.056	.038	.056
StagecoachPass-2	1.72	.056	.038	.056
StagecoachPass-2	1.66	.056	.038	.056
StagecoachPass-2	1.57	.056	.038	.056
StagecoachPass-2	1.53	.056	.038	.056
StagecoachPass-2	1.47	.056	.038	.056
StagecoachPass-2	1.44	.056	.038	.056
StagecoachPass-2	1.36	.056	.038	.056
StagecoachPass-2	1.29	.056	.038	.056
StagecoachPass-2	1.19	.056	.038	.056
StagecoachPass-2	1.13	.056	.038	.056
StagecoachPass-2	1.1	.056	.038	.056
StagecoachPass-2	1.07	.056	.038	.056
StagecoachPass-2	1.01	.056	.038	.056
StagecoachPass-2	0.99	Culvert		
StagecoachPass-2	0.98	.056	.038	.056
StagecoachPass-2	0.93	.056	.038	.056

SUMMARY OF REACH LENGTHS

River: Stagecoach Pass

Reach	River Sta.	Left	Channel	Right
StagecoachPass-1	6.93	225.25	231.79	232.5
StagecoachPass-1	6.88	181.52	182.97	185
StagecoachPass-1	6.85	286.1	275.18	250.78
StagecoachPass-1	6.8	342.46	357.07	348.2
StagecoachPass-1	6.73	506.93	520.11	514.82
StagecoachPass-1	6.63	207.15	206.41	201.89
StagecoachPass-1	6.59	223.51	228.93	253.87
StagecoachPass-1	6.55	51.62	54.36	48.5
StagecoachPass-1	6.545	Culvert		
StagecoachPass-1	6.54	113.43	130.13	143.65
StagecoachPass-1	6.51	65.03	70.74	68
StagecoachPass-1	6.505	Culvert		
StagecoachPass-1	6.5	306.51	265.12	203.45
StagecoachPass-1	6.45	378.71	404.49	416.22
StagecoachPass-1	6.37	332.86	330.12	324.31
StagecoachPass-1	6.31	432.85	453.1	447.56
StagecoachPass-1	6.23	308.38	309.69	308.4
StagecoachPass-1	6.17	492.53	488.62	468.84
StagecoachPass-1	6.07	521.46	512.01	504.03
StagecoachPass-1	5.98	380.53	371.19	343.6
StagecoachPass-1	5.91	96.23	93.98	97.38
StagecoachPass-1	5.9	Culvert		
StagecoachPass-1	5.89	371.46	393.22	397.4
StagecoachPass-1	5.81	555.84	515.5	496.64
StagecoachPass-1	5.72	341.05	382.86	397.4
StagecoachPass-1	5.64	162.68	161.27	158.95
StagecoachPass-1	5.61	337.12	323.15	291.38
StagecoachPass-1	5.55	228.59	215.69	208.49
StagecoachPass-1	5.51	249.39	264.64	289.79
StagecoachPass-1	5.46	167.77	172.64	180.13
StagecoachPass-1	5.43	347.43	330.83	326.15
StagecoachPass-1	5.37	488.63	493.75	498.6
StagecoachPass-1	5.27	450.97	481.66	511.67
StagecoachPass-1	5.18	292.43	326.88	332.47
StagecoachPass-1	5.12	263.58	234.69	196.36

StagecoachPass-1	5.08	293.34	291.18	333
StagecoachPass-1	5.02	434.77	434.52	440.27
StagecoachPass-1	4.94	502.07	510.22	489.46
StagecoachPass-1	4.84	155.72	156	155.62
StagecoachPass-1	4.81	202.82	218.24	230.15
StagecoachPass-1	4.77	279.24	277.64	280.33
StagecoachPass-1	4.72	497.16	491.79	470.19
StagecoachPass-1	4.62	522.24	516.48	506.7
StagecoachPass-1	4.53	492.56	500.82	499.6
StagecoachPass-1	4.43	481.7	463.26	444.73
StagecoachPass-1	4.34	243.05	254.69	277.33
StagecoachPass-1	4.3	289.58	313.61	327.45
StagecoachPass-1	4.24	249.51	249.86	252.44
StagecoachPass-1	4.19	522.81	502.12	499.86
StagecoachPass-1	4.09	447.83	440.53	431.07
StagecoachPass-1	4.01	257.45	259.46	259.12
StagecoachPass-1	3.96	274.78	302.81	308.46
StagecoachPass-1	3.9	458.51	440.49	446.67
StagecoachPass-1	3.82	526.18	508.72	513.48
StagecoachPass-1	3.72	351.62	342.71	341.81
StagecoachPass-1	3.66	91.95	94.2	93.79
StagecoachPass-1	3.64	148.5	132.05	131.3
StagecoachPass-1	3.63	Culvert		
StagecoachPass-1	3.62	249.65	239.22	239.56
StagecoachPass-1	3.57	197.3	194.82	193.59
StagecoachPass-1	3.53	502.23	494.74	496.39
StagecoachPass-1	3.44	460.64	467.05	475.12
StagecoachPass-1	3.35	212.63	217.05	218.09
StagecoachPass-1	3.31	342.61	322.59	303.02
StagecoachPass-1	3.25	475.73	491.87	504.29
StagecoachPass-1	3.16	495.93	494.48	498.52
StagecoachPass-1	3.06	229.34	192.88	170.32
StagecoachPass-1	3.03	280.29	289.8	286.61
StagecoachPass-1	2.97	70.25	94.15	72.3
StagecoachPass-1	2.96	Culvert		
StagecoachPass-1	2.95	170.97	200.97	2393.91
StagecoachPass-1	2.92	303.07	292.98	270.76
StagecoachPass-1	2.86	324.59	316.48	292.31
StagecoachPass-1	2.8	216.25	217.99	214.73
StagecoachPass-1	2.76	273.12	309.32	322.62
Levee Breakout	2.70	833	833.39	833
Levee Breakout	2.62	397	397	397
StagecoachPass-2	2.7	489.12	483.63	473.08
StagecoachPass-2	2.61	131.55	142.72	154.55
StagecoachPass-2	2.58	448.51	444.76	442.88
StagecoachPass-2	2.5	70.56	65.75	65.14
StagecoachPass-2	2.495	Culvert		
StagecoachPass-2	2.49	401.49	416.01	406.55
StagecoachPass-2	2.41	272.35	269.4	261.76
StagecoachPass-2	2.36	308.98	287.94	276.39
StagecoachPass-2	2.3	362.45	369.47	383.86
StagecoachPass-2	2.23	480.63	452.86	425.7
StagecoachPass-2	2.15	43.85	37.46	39.36
StagecoachPass-2	2.145	Culvert		
StagecoachPass-2	2.14	298.75	303.82	341.22
StagecoachPass-2	2.08	330.12	310.48	317.31
StagecoachPass-2	2.02	422.41	410.88	400.28
StagecoachPass-2	1.94	148.83	149.34	138.33
StagecoachPass-2	1.92	164.2	172.47	183.53
StagecoachPass-2	1.88	390.55	379.42	365.92
StagecoachPass-2	1.81	281.52	288.71	293.17
StagecoachPass-2	1.76	191.07	201.39	222.44
StagecoachPass-2	1.72	324.14	319.48	271.25
StagecoachPass-2	1.66	459.93	447.13	377.45
StagecoachPass-2	1.57	211.6	230.84	263.52
StagecoachPass-2	1.53	315.13	315.68	326.48
StagecoachPass-2	1.47	167.91	168.69	171.42
StagecoachPass-2	1.44	394.75	388	372.36
StagecoachPass-2	1.36	377.04	389.76	400.9
StagecoachPass-2	1.29	520.07	520.26	518.56
StagecoachPass-2	1.19	339.29	351.73	352.16

StagecoachPass-2	1.13	146.89	146.65	147.55
StagecoachPass-2	1.1	160.04	157.68	153.1
StagecoachPass-2	1.07	306.9	308.3	295.73
StagecoachPass-2	1.01	120.05	115.2	115.9
StagecoachPass-2	0.99	Culvert		
StagecoachPass-2	0.98	300.24	303.37	314.11
StagecoachPass-2	0.93			

SUMMARY OF CONTRACTION AND EXPANSION COEFFICIENTS
River: Stagecoach Pass

Reach	River Sta.	Contr.	Expan.
StagecoachPass-1	6.93	.1	.3
StagecoachPass-1	6.88	.1	.3
StagecoachPass-1	6.85	.1	.3
StagecoachPass-1	6.8	.1	.3
StagecoachPass-1	6.73	.1	.3
StagecoachPass-1	6.63	.1	.3
StagecoachPass-1	6.59	.3	.5
StagecoachPass-1	6.55	.3	.5
StagecoachPass-1	6.545	Culvert	
StagecoachPass-1	6.54	.3	.5
StagecoachPass-1	6.51	.3	.5
StagecoachPass-1	6.505	Culvert	
StagecoachPass-1	6.5	.3	.5
StagecoachPass-1	6.45	.1	.3
StagecoachPass-1	6.37	.1	.3
StagecoachPass-1	6.31	.1	.3
StagecoachPass-1	6.23	.1	.3
StagecoachPass-1	6.17	.1	.3
StagecoachPass-1	6.07	.1	.3
StagecoachPass-1	5.98	.3	.5
StagecoachPass-1	5.91	.3	.5
StagecoachPass-1	5.9	Culvert	
StagecoachPass-1	5.89	.3	.5
StagecoachPass-1	5.81	.1	.3
StagecoachPass-1	5.72	.1	.3
StagecoachPass-1	5.64	.1	.3
StagecoachPass-1	5.61	.1	.3
StagecoachPass-1	5.55	.1	.3
StagecoachPass-1	5.51	.1	.3
StagecoachPass-1	5.46	.1	.3
StagecoachPass-1	5.43	.1	.3
StagecoachPass-1	5.37	.1	.3
StagecoachPass-1	5.27	.1	.3
StagecoachPass-1	5.18	.1	.3
StagecoachPass-1	5.12	.1	.3
StagecoachPass-1	5.08	.1	.3
StagecoachPass-1	5.02	.1	.3
StagecoachPass-1	4.94	.1	.3
StagecoachPass-1	4.84	.1	.3
StagecoachPass-1	4.81	.1	.3
StagecoachPass-1	4.77	.1	.3
StagecoachPass-1	4.72	.1	.3
StagecoachPass-1	4.62	.1	.3
StagecoachPass-1	4.53	.1	.3
StagecoachPass-1	4.43	.1	.3
StagecoachPass-1	4.34	.1	.3
StagecoachPass-1	4.3	.1	.3
StagecoachPass-1	4.24	.1	.3
StagecoachPass-1	4.19	.1	.3
StagecoachPass-1	4.09	.1	.3
StagecoachPass-1	4.01	.1	.3
StagecoachPass-1	3.96	.1	.3
StagecoachPass-1	3.9	.1	.3
StagecoachPass-1	3.82	.1	.3

StagecoachPass-1	3.72		.1	.3
StagecoachPass-1	3.66		.3	.5
StagecoachPass-1	3.64		.3	.5
StagecoachPass-1	3.63	Culvert		
StagecoachPass-1	3.62		.3	.5
StagecoachPass-1	3.57		.1	.3
StagecoachPass-1	3.53		.1	.3
StagecoachPass-1	3.44		.1	.3
StagecoachPass-1	3.35		.1	.3
StagecoachPass-1	3.31		.1	.3
StagecoachPass-1	3.25		.1	.3
StagecoachPass-1	3.16		.1	.3
StagecoachPass-1	3.06		.1	.3
StagecoachPass-1	3.03		.3	.5
StagecoachPass-1	2.97		.3	.5
StagecoachPass-1	2.96	Culvert		
StagecoachPass-1	2.95		.3	.5
StagecoachPass-1	2.92		.1	.3
StagecoachPass-1	2.86		.1	.3
StagecoachPass-1	2.8		.1	.3
StagecoachPass-1	2.76		.1	.3
Levee Breakout	2.70		.1	.3
Levee Breakout	2.62		.1	.3
StagecoachPass-2	2.7		.1	.3
StagecoachPass-2	2.61		.1	.3
StagecoachPass-2	2.58		.3	.5
StagecoachPass-2	2.5		.3	.5
StagecoachPass-2	2.495	Culvert		
StagecoachPass-2	2.49		.3	.5
StagecoachPass-2	2.41		.1	.3
StagecoachPass-2	2.36		.1	.3
StagecoachPass-2	2.3		.1	.3
StagecoachPass-2	2.23		.3	.5
StagecoachPass-2	2.15		.3	.5
StagecoachPass-2	2.145	Culvert		
StagecoachPass-2	2.14		.3	.5
StagecoachPass-2	2.08		.1	.3
StagecoachPass-2	2.02		.1	.3
StagecoachPass-2	1.94		.1	.3
StagecoachPass-2	1.92		.1	.3
StagecoachPass-2	1.88		.1	.3
StagecoachPass-2	1.81		.1	.3
StagecoachPass-2	1.76		.1	.3
StagecoachPass-2	1.72		.1	.3
StagecoachPass-2	1.66		.1	.3
StagecoachPass-2	1.57		.1	.3
StagecoachPass-2	1.53		.1	.3
StagecoachPass-2	1.47		.1	.3
StagecoachPass-2	1.44		.1	.3
StagecoachPass-2	1.36		.1	.3
StagecoachPass-2	1.29		.1	.3
StagecoachPass-2	1.19		.1	.3
StagecoachPass-2	1.13		.1	.3
StagecoachPass-2	1.1		.1	.3
StagecoachPass-2	1.07		.3	.5
StagecoachPass-2	1.01		.3	.5
StagecoachPass-2	0.99	Culvert		
StagecoachPass-2	0.98		.3	.5
StagecoachPass-2	0.93		.1	.3

Profile Output Table - Standard Table 1

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
StagecoachPass-1	6.93	100-yr 6-yr	453.00	2959.85	2962.45	2962.45	2962.87	0.012178	5.90	120.51	138.28	0.73

StagecoachPass-1	6.93		Method 1		453.00	2959.85	2962.40	2962.40	
2963.40	0.026263	8.02	56.47	28.80		1.01			
StagecoachPass-1	6.88		100-yr 6-yr		453.00	2953.25	2955.50	2955.50	
2955.95	0.018007	5.77	104.08	140.22		0.85			
StagecoachPass-1	6.88		Method 1		453.00	2953.25	2955.46	2955.46	
2956.18	0.027069	6.82	66.39	47.41		1.02			
StagecoachPass-1	6.85		100-yr 6-yr		453.00	2948.00	2948.94	2948.94	
2949.29	0.043677	5.89	104.82	164.42		1.19			
StagecoachPass-1	6.85		Method 1		453.00	2948.00	2949.67	2949.67	
2950.42	0.026140	6.92	65.50	43.70		1.00			
StagecoachPass-1	6.8		100-yr 6-yr		631.00	2940.32	2942.27	2942.27	
2942.52	0.017088	4.79	219.64	455.24		0.79			
StagecoachPass-1	6.8		Method 1		631.00	2940.32	2942.44	2942.44	
2943.09	0.026646	6.49	97.30	75.18		1.00			
StagecoachPass-1	6.73		100-yr 6-yr		631.00	2928.30	2930.63	2930.63	
2930.94	0.037635	4.97	153.00	264.77		1.08			
StagecoachPass-1	6.73		Method 1		631.00	2928.30	2930.88	2930.82	
2931.25	0.023636	4.85	130.10	142.62		0.89			
StagecoachPass-1	6.63		100-yr 6-yr		631.00	2915.40	2916.97	2916.97	
2917.06	0.009087	2.69	275.27	341.25		0.54			
StagecoachPass-1	6.63		Method 1		631.00	2915.40	2917.00	2917.00	
2917.39	0.030308	5.02	125.79	159.49		1.00			
StagecoachPass-1	6.59		100-yr 6-yr		631.00	2908.40	2910.62	2910.62	
2911.00	0.030030	4.95	128.01	168.24		0.99			
StagecoachPass-1	6.59		Method 1		631.00	2908.40	2910.61	2910.61	
2911.00	0.031178	5.00	126.14	163.54		1.00			
StagecoachPass-1	6.55		100-yr 6-yr		631.00	2902.00	2906.18	2903.37	
2906.19	0.000138	0.90	946.89	477.46		0.09			
StagecoachPass-1	6.55		Method 1		631.00	2902.00	2906.22	2903.37	
2906.24	0.000207	1.09	580.81	168.93		0.10			
StagecoachPass-1	6.545				Culvert				
StagecoachPass-1	6.54		100-yr 6-yr		631.00	2900.00	2902.28	2902.28	
2902.78	0.026803	5.70	112.56	245.43		0.98			
StagecoachPass-1	6.54		Method 1		631.00	2900.00	2902.29	2902.29	
2902.78	0.026249	5.66	113.45	119.29		0.97			
StagecoachPass-1	6.51		100-yr 6-yr		631.00	2898.20	2901.30	2899.50	
2901.33	0.000593	1.55	498.72	298.66		0.17			
StagecoachPass-1	6.51		Method 1		631.00	2898.20	2901.68	2899.50	
2901.72	0.000505	1.54	409.15	137.69		0.16			
StagecoachPass-1	6.505				Culvert				
StagecoachPass-1	6.5		100-yr 6-yr		631.00	2896.00	2897.51	2897.51	
2898.08	0.027349	6.06	104.21	127.60		1.00			
StagecoachPass-1	6.5		Method 1		631.00	2896.00	2897.52	2897.51	
2898.08	0.026935	6.00	105.16	92.28		0.99			
StagecoachPass-1	6.45		100-yr 6-yr		631.00	2888.00	2890.87	2890.87	
2891.61	0.016898	7.09	106.70	94.04		0.87			
StagecoachPass-1	6.45		Method 1		631.00	2888.00	2890.79	2890.79	
2891.69	0.021058	7.70	86.32	50.00		0.96			
StagecoachPass-1	6.37		100-yr 6-yr		631.00	2877.25	2879.09	2879.09	
2879.60	0.028845	5.78	109.34	111.54		1.01			
StagecoachPass-1	6.37		Method 1		631.00	2877.25	2879.08	2879.08	
2879.60	0.029261	5.80	108.79	107.89		1.02			
StagecoachPass-1	6.31		100-yr 6-yr		631.00	2868.00	2870.15	2870.15	
2870.53	0.015804	5.45	161.79	211.18		0.80			
StagecoachPass-1	6.31		Method 1		631.00	2868.00	2870.18	2870.13	
2870.86	0.023018	6.60	95.57	64.22		0.95			

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  StagecoachPass-1  6.23          100-yr 6-yr        631.00    2857.70    2860.20    2860.20
2860.77    0.017264       6.13     115.93     140.88           0.85
  StagecoachPass-1  6.23          Method 1           631.00    2857.70    2860.12    2860.12
2860.79    0.021430       6.59      99.48      96.84           0.93

  StagecoachPass-1  6.17          100-yr 6-yr        758.00    2849.60    2850.66    2850.57
2850.93    0.028458       4.84     189.51     246.64           0.96
  StagecoachPass-1  6.17          Method 1           758.00    2849.60    2851.01    2850.98
2851.55    0.026471       5.90     128.41     113.03           0.98

  StagecoachPass-1  6.07          100-yr 6-yr        758.00    2836.35    2837.86    2837.86
2838.42    0.023473       6.07     135.43     137.86           0.95
  StagecoachPass-1  6.07          Method 1           758.00    2836.35    2837.84    2837.84
2838.48    0.026991       6.38     118.80      95.00           1.01

  StagecoachPass-1  5.98          100-yr 6-yr        758.00    2822.10    2823.78    2823.78
2824.32    0.022824       6.08     139.10     144.86           0.94
  StagecoachPass-1  5.98          Method 1           758.00    2822.10    2823.76    2823.76
2824.41    0.026699       6.47     117.14      90.72           1.00

  StagecoachPass-1  5.91          100-yr 6-yr        758.00    2812.00    2817.76    2813.43
2817.77    0.000071       0.89    1160.76     292.78           0.07
  StagecoachPass-1  5.91          Method 1           758.00    2812.00    2817.96    2813.43
2817.98    0.000160       1.28     590.58     103.50           0.09

  StagecoachPass-1  5.9                                Culvert

  StagecoachPass-1  5.89          100-yr 6-yr        758.00    2810.00    2811.29    2811.23
2811.78    0.023841       5.62     134.88     131.94           0.94
  StagecoachPass-1  5.89          Method 1           758.00    2810.00    2811.30    2811.23
2811.78    0.023129       5.56     136.38     120.48           0.92

  StagecoachPass-1  5.81          100-yr 6-yr        758.00    2800.00    2801.39    2801.39
2801.97    0.026057       6.08     127.49     122.95           0.99
  StagecoachPass-1  5.81          Method 1           758.00    2800.00    2801.39    2801.38
2801.98    0.026757       6.12     123.80     105.13           0.99

  StagecoachPass-1  5.72          100-yr 6-yr        758.00    2787.00    2789.27    2789.19
2789.80    0.021174       5.85     131.06     112.01           0.90
  StagecoachPass-1  5.72          Method 1           758.00    2787.00    2789.28    2789.18
2789.80    0.020962       5.82     130.23      99.60           0.90

  StagecoachPass-1  5.64          100-yr 6-yr        758.00    2778.00    2780.15    2780.15
2780.87    0.025635       6.83     111.33      82.66           1.01
  StagecoachPass-1  5.64          Method 1           758.00    2778.00    2780.15    2780.15
2780.87    0.025971       6.85     110.73      78.04           1.01

  StagecoachPass-1  5.61          100-yr 6-yr        758.00    2774.20    2776.19    2776.14
2776.72    0.024034       5.86     129.73     114.56           0.95
  StagecoachPass-1  5.61          Method 1           758.00    2774.20    2776.18    2776.13
2776.72    0.024735       5.91     128.30     108.94           0.96

  StagecoachPass-1  5.55          100-yr 6-yr        758.00    2766.70    2768.75    2768.67
2769.15    0.022629       5.04     150.69     155.75           0.89
  StagecoachPass-1  5.55          Method 1           758.00    2766.70    2768.76    2768.68
2769.15    0.021920       4.99     152.05     152.27           0.88

  StagecoachPass-1  5.51          100-yr 6-yr        758.00    2761.50    2763.26    2763.26
2763.86    0.026397       6.19     123.78     113.33           1.00
  StagecoachPass-1  5.51          Method 1           758.00    2761.50    2763.25    2763.25
2763.86    0.027297       6.24     121.46     102.12           1.01

  StagecoachPass-1  5.46          100-yr 6-yr        758.00    2755.20    2757.13    2757.01
2757.58    0.019836       5.44     139.62     116.87           0.87
  StagecoachPass-1  5.46          Method 1           758.00    2755.20    2757.13    2757.01
2757.58    0.019925       5.44     139.38     113.96           0.87

  StagecoachPass-1  5.43          100-yr 6-yr        758.00    2750.60    2752.96    2752.96
2753.64    0.026366       6.61     114.59      86.30           1.01
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StagecoachPass-1	5.43		Method 1		758.00	2750.60	2752.96	2752.96	2753.64	0.026243
		6.60	114.78	86.36		1.01				
StagecoachPass-1	5.37		100-yr 6-yr		758.00	2742.40	2744.20	2743.91	2744.48	0.020153
		4.96	187.00	176.72		0.85				
StagecoachPass-1	5.37		Method 1		758.00	2742.40	2744.72	2744.65	2745.42	0.022324
		6.73	112.61	71.51		0.95				
StagecoachPass-1	5.27		100-yr 6-yr		844.00	2730.10	2732.16	2732.16	2732.65	0.028096
		5.63	150.51	158.45		1.00				
StagecoachPass-1	5.27		Method 1		844.00	2730.10	2732.14	2732.14	2732.65	0.029579
		5.71	147.80	151.26		1.02				
StagecoachPass-1	5.18		100-yr 6-yr		844.00	2720.00	2720.94	2720.83	2721.25	0.019487
		4.47	190.16	212.28		0.82				
StagecoachPass-1	5.18		Method 1		844.00	2720.00	2720.94	2720.83	2721.25	0.019186
		4.45	189.84	203.90		0.81				
StagecoachPass-1	5.12		100-yr 6-yr		844.00	2711.50	2713.26	2713.26	2713.96	0.025525
		6.69	126.60	95.20		1.00				
StagecoachPass-1	5.12		Method 1		844.00	2711.50	2713.26	2713.26	2713.96	0.026026
		6.72	125.65	91.10		1.01				
StagecoachPass-1	5.08		100-yr 6-yr		844.00	2704.20	2706.26	2706.26	2706.88	0.026397
		6.33	134.34	116.95		1.00				
StagecoachPass-1	5.08		Method 1		844.00	2704.20	2706.33	2706.25	2706.89	0.022528
		6.03	140.02	107.26		0.93				
StagecoachPass-1	5.02		100-yr 6-yr		844.00	2697.50	2699.22	2699.11	2699.72	0.020075
		5.64	150.46	124.10		0.88				
StagecoachPass-1	5.02		Method 1		844.00	2697.50	2699.12	2699.11	2699.71	0.027148
		6.17	136.87	116.93		1.00				
StagecoachPass-1	4.94		100-yr 6-yr		844.00	2687.25	2689.43	2689.43	2690.06	0.024680
		6.36	136.94	124.79		0.98				
StagecoachPass-1	4.94		Method 1		844.00	2687.25	2689.57	2689.41	2690.09	0.018292
		5.81	145.36	100.22		0.85				
StagecoachPass-1	4.84		100-yr 6-yr		844.00	2675.60	2678.49	2678.49	2679.08	0.018974
		6.37	154.99	145.57		0.88				
StagecoachPass-1	4.84		Method 1		844.00	2675.60	2678.44	2678.44	2679.22	0.024974
		7.09	118.96	76.32		1.00				
StagecoachPass-1	4.81		100-yr 6-yr		844.00	2673.40	2676.36	2675.73	2676.82	0.008002
		5.53	162.53	84.59		0.62				
StagecoachPass-1	4.81		Method 1		844.00	2673.40	2676.41	2675.70	2676.89	0.008251
		5.53	152.67	60.12		0.61				
StagecoachPass-1	4.77		100-yr 6-yr		836.00	2669.67	2672.81	2672.81	2674.03	0.022229
		8.89	95.96	42.97		0.98				
StagecoachPass-1	4.77		Method 1		836.00	2669.67	2672.84	2672.77	2674.05	0.022230
		8.83	94.63	36.89		0.97				
StagecoachPass-1	4.72		100-yr 6-yr		836.00	2664.10	2666.49	2666.49	2667.15	0.023617
		6.56	134.41	109.79		0.97				
StagecoachPass-1	4.72		Method 1		836.00	2664.10	2666.48	2666.47	2667.20	0.026337
		6.83	122.48	87.03		1.01				
StagecoachPass-1	4.62		100-yr 6-yr		836.00	2653.80	2655.74	2655.67	2656.30	0.019437
		6.07	147.33	129.45		0.88				
StagecoachPass-1	4.62		Method 1		836.00	2653.80	2655.79	2655.64	2656.35	0.018589
		6.01	139.15	91.72		0.86				
StagecoachPass-1	4.53		100-yr 6-yr		836.00	2643.00	2644.79	2644.76	2645.37	0.023151
		6.17	140.43	119.32		0.95				
StagecoachPass-1	4.53		Method 1		836.00	2643.00	2644.79	2644.75	2645.40	0.024390
		6.27	133.33	101.26		0.96				
StagecoachPass-1	4.43		100-yr 6-yr		836.00	2631.00	2634.13	2633.99	2634.86	0.019078
		6.87	122.16	75.03		0.90				

StagecoachPass-1	4.43		Method 1		836.00	2631.00	2634.15	2634.00		
2634.87	0.018308	6.77	123.46	67.81		0.88				
StagecoachPass-1	4.34		100-yr 6-yr		836.00	2621.00	2624.31	2624.31		
2625.15	0.023103	7.35	114.86	74.08		0.99				
StagecoachPass-1	4.34		Method 1		836.00	2621.00	2624.30	2624.30		
2625.16	0.024120	7.42	112.64	66.00		1.00				
StagecoachPass-1	4.3		100-yr 6-yr		1116.00	2614.00	2618.31	2617.82		
2619.63	0.013015	9.45	147.17	108.80		0.84				
StagecoachPass-1	4.3		Method 1		1116.00	2614.00	2618.49			
2619.89	0.015312	9.51	117.39	28.47		0.83				
StagecoachPass-1	4.24		100-yr 6-yr		1308.00	2609.27	2613.53	2613.41		
2614.97	0.016635	9.70	139.48	47.57		0.93				
StagecoachPass-1	4.24		Method 1		1308.00	2609.27	2613.75	2613.38		
2615.06	0.015306	9.19	142.35	39.56		0.85				
StagecoachPass-1	4.19		100-yr 6-yr		1308.00	2605.23	2609.73	2609.73		
2611.06	0.014510	9.51	161.64	73.19		0.88				
StagecoachPass-1	4.19		Method 1		1308.00	2605.23	2609.67	2609.67		
2611.07	0.016591	9.76	149.15	54.44		0.91				
StagecoachPass-1	4.09		100-yr 6-yr		1308.00	2596.00	2600.62	2600.62		
2602.13	0.014493	9.87	134.16	48.75		0.99				
StagecoachPass-1	4.09		Method 1		1308.00	2596.00	2600.59	2600.59		
2602.14	0.015548	9.99	130.99	42.41		1.00				
StagecoachPass-1	4.01		100-yr 6-yr		1308.00	2588.80	2592.85	2592.85		
2594.24	0.014573	9.49	141.85	58.56		0.98				
StagecoachPass-1	4.01		Method 1		1308.00	2588.80	2592.89	2592.81		
2594.27	0.014816	9.42	138.89	47.55		0.97				
StagecoachPass-1	3.96		100-yr 6-yr		1308.00	2583.13	2588.22	2588.22		
2590.04	0.013193	10.92	127.92	43.15		0.97				
StagecoachPass-1	3.96		Method 1		1308.00	2583.13	2588.20	2588.20		
2590.15	0.016613	11.18	116.96	30.14		1.00				
StagecoachPass-1	3.9		100-yr 6-yr		1308.00	2578.38	2582.31	2582.31		
2582.92	0.013582	6.64	263.06	238.94		0.88				
StagecoachPass-1	3.9		Method 1		1308.00	2578.38	2582.29	2582.29		
2583.18	0.018019	7.57	172.83	97.75		1.00				
StagecoachPass-1	3.82		100-yr 6-yr		1308.00	2569.62	2572.96	2572.96		
2573.86	0.016023	7.79	201.32	152.20		0.87				
StagecoachPass-1	3.82		Method 1		1308.00	2569.62	2572.90	2572.82		
2574.01	0.020184	8.44	154.98	64.33		0.96				
StagecoachPass-1	3.72		100-yr 6-yr		1308.00	2560.30	2563.42	2563.42		
2564.43	0.016955	8.07	163.40	87.59		1.00				
StagecoachPass-1	3.72		Method 1		1308.00	2560.30	2563.41	2563.41		
2564.43	0.017529	8.12	161.13	80.88		1.01				
StagecoachPass-1	3.66		100-yr 6-yr		1308.00	2553.40	2556.76	2556.76		
2557.85	0.015887	8.37	159.19	79.04		0.99				
StagecoachPass-1	3.66		Method 1		1308.00	2553.40	2556.73	2556.73		
2557.86	0.017134	8.51	153.76	69.78		1.01				
StagecoachPass-1	3.64		100-yr 6-yr		1308.00	2549.97	2554.87	2553.54		
2555.25	0.003416	4.97	271.26	102.40		0.49				
StagecoachPass-1	3.64		Method 1		1308.00	2549.97	2554.98	2553.54		
2555.34	0.003083	4.80	278.65	90.05		0.46				
StagecoachPass-1	3.63				Culvert					
StagecoachPass-1	3.62		100-yr 6-yr		1308.00	2548.25	2550.95	2550.95		
2552.18	0.016091	8.90	146.99	59.90		1.00				
StagecoachPass-1	3.62		Method 1		1308.00	2548.25	2551.07	2550.96		
2552.19	0.013895	8.49	154.14	60.38		0.94				

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  StagecoachPass-1  3.57          100-yr 6-yr        1487.00    2544.00    2547.22    2547.22
2548.43    0.013878       8.91    181.18      89.64            0.96
  StagecoachPass-1  3.57          Method 1           1487.00    2544.00    2547.17    2547.17
2548.51    0.016301       9.29    160.02      60.41            1.01

  StagecoachPass-1  3.53          100-yr 6-yr        1487.00    2540.98    2543.70    2543.66
2544.59    0.016011       7.59    199.87     115.69            0.97
  StagecoachPass-1  3.53          Method 1           1487.00    2540.98    2543.65    2543.65
2544.60    0.017913       7.82    190.20     102.53            1.01

  StagecoachPass-1  3.44          100-yr 6-yr        1487.00    2530.93    2535.32    2535.13
2536.77    0.015406       9.66    156.80      48.11            0.90
  StagecoachPass-1  3.44          Method 1           1487.00    2530.93    2535.59    2535.10
2536.86    0.013521       9.05    164.29      42.62            0.81

  StagecoachPass-1  3.35          100-yr 6-yr        1487.00    2522.94    2527.37    2527.37
2528.99    0.018004      10.25    150.24      51.10            0.97
  StagecoachPass-1  3.35          Method 1           1487.00    2522.94    2527.32    2527.32
2529.04    0.020964      10.52    141.35      41.23            1.00

  StagecoachPass-1  3.31          100-yr 6-yr        1487.00    2519.35    2522.79    2522.35
2523.68    0.012425       7.60    196.68      70.76            0.79
  StagecoachPass-1  3.31          Method 1           1487.00    2519.35    2522.91    2522.35
2523.74    0.011237       7.30    203.57      67.26            0.74

  StagecoachPass-1  3.25          100-yr 6-yr        1487.00    2512.84    2517.21    2517.21
2518.82    0.017983      10.22    149.66      50.25            0.97
  StagecoachPass-1  3.25          Method 1           1487.00    2512.84    2517.17    2517.17
2518.86    0.020526      10.44    142.46      41.64            0.99

  StagecoachPass-1  3.16          100-yr 6-yr        1487.00    2503.67    2506.63    2506.63
2507.92    0.020819       9.12    164.07      66.65            1.00
  StagecoachPass-1  3.16          Method 1           1487.00    2503.67    2506.62    2506.62
2507.93    0.021746       9.17    162.15      62.96            1.01

  StagecoachPass-1  3.06          100-yr 6-yr        1487.00    2494.14    2498.34    2497.93
2499.29    0.012186       7.88    202.89     104.69            0.79
  StagecoachPass-1  3.06          Method 1           1487.00    2494.14    2498.96    2497.91
2499.65    0.007421       6.66    223.13      60.01            0.61

  StagecoachPass-1  3.03          100-yr 6-yr        1792.00    2491.85    2495.53    2495.53
2496.66    0.015104       9.08    245.93     116.06            0.88
  StagecoachPass-1  3.03          Method 1           1792.00    2491.85    2495.57    2495.57
2497.23    0.020212      10.32    173.66      52.05            1.00

  StagecoachPass-1  2.97          100-yr 6-yr        1792.00    2486.16    2492.29    2488.72
2492.38    0.000624       2.63    907.42     258.59            0.19
  StagecoachPass-1  2.97          Method 1           1792.00    2486.16    2493.18    2488.72
2493.30    0.000624       2.84    660.55     114.48            0.19

  StagecoachPass-1  2.96                                Culvert

  StagecoachPass-1  2.95          100-yr 6-yr        1792.00    2482.72    2487.21    2485.62
2487.62    0.003930       5.17    346.62      92.67            0.46
  StagecoachPass-1  2.95          Method 1           1792.00    2482.72    2487.21    2485.62
2487.62    0.004064       5.17    346.77      88.62            0.46

  StagecoachPass-1  2.92          100-yr 6-yr        1792.00    2479.90    2483.89    2483.89
2485.04    0.015189       9.21    251.34     129.97            0.89
  StagecoachPass-1  2.92          Method 1           1792.00    2479.90    2483.99    2483.99
2485.68    0.020388      10.44    171.65      49.80            0.99

  StagecoachPass-1  2.86          100-yr 6-yr        1792.00    2474.70    2478.53    2478.53
2479.89    0.014409       9.39    194.98      79.71            0.98
  StagecoachPass-1  2.86          Method 1           1792.00    2474.70    2478.49    2478.49
2479.90    0.015498       9.53    188.01      66.39            1.00

  StagecoachPass-1  2.8           100-yr 6-yr        1792.00    2469.59    2472.38    2472.38
2473.41    0.014875       8.17    227.91     158.73            0.95
  StagecoachPass-1  2.8           Method 1           1792.00    2469.59    2472.30    2472.30
2473.42    0.016934       8.50    210.93      95.53            1.01
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  StagecoachPass-1  2.76          100-yr 6-yr       1792.00    2465.20    2468.38    2468.02
2468.91    0.008274       6.13     361.16     193.39           0.71
  StagecoachPass-1  2.76          Method 1          1792.00    2465.20    2468.44    2468.05
2469.11    0.009378       6.61     276.01     119.89           0.76

  StagecoachPass-2  2.7           100-yr 6-yr       1828.00    2459.84    2464.00    2464.00
2465.67    0.012499      10.47     185.67      60.94           0.95
  StagecoachPass-2  2.7           Method 1          1828.00    2459.84    2464.00    2464.00
2465.67    0.012499      10.47     185.67      60.94           0.95

  StagecoachPass-2  2.61          100-yr 6-yr       1828.00    2450.74    2454.35    2454.35
2455.51    0.013027       9.04     233.05     104.07           0.94
  StagecoachPass-2  2.61          Method 1          1828.00    2450.74    2454.35    2454.35
2455.51    0.013027       9.04     233.05     104.07           0.94

  StagecoachPass-2  2.58          100-yr 6-yr       1828.00    2447.73    2451.36    2451.36
2452.40    0.013049       8.38     244.53     132.79           0.92
  StagecoachPass-2  2.58          Method 1          1828.00    2447.73    2451.36    2451.36
2452.40    0.013049       8.38     244.53     132.79           0.92

  StagecoachPass-2  2.5           100-yr 6-yr       1828.00    2438.45    2443.86    2443.86
2445.49    0.012272      10.32     188.24      82.49           0.93
  StagecoachPass-2  2.5           Method 1          1828.00    2438.45    2443.86    2443.86
2445.49    0.012272      10.32     188.24      82.49           0.93

  StagecoachPass-2  2.495                                Culvert

  StagecoachPass-2  2.49          100-yr 6-yr       1851.00    2434.61    2439.27    2439.27
2441.33    0.013959      11.52     160.61      40.08           1.01
  StagecoachPass-2  2.49          Method 1          1851.00    2434.61    2439.27    2439.27
2441.33    0.013959      11.52     160.61      40.08           1.01

  StagecoachPass-2  2.41          100-yr 6-yr       1851.00    2427.81    2430.77    2430.77
2431.91    0.015622       8.56     217.59      96.68           0.99
  StagecoachPass-2  2.41          Method 1          1851.00    2427.81    2430.77    2430.77
2431.91    0.015622       8.56     217.59      96.68           0.99

  StagecoachPass-2  2.36          100-yr 6-yr       1851.00    2422.14    2425.71    2425.71
2426.99    0.013192       9.20     214.73      91.00           0.95
  StagecoachPass-2  2.36          Method 1          1851.00    2422.14    2425.71    2425.71
2426.99    0.013192       9.20     214.73      91.00           0.95

  StagecoachPass-2  2.3           100-yr 6-yr       1851.00    2415.91    2419.20    2419.20
2420.44    0.014758       8.97     209.80      90.71           0.98
  StagecoachPass-2  2.3           Method 1          1851.00    2415.91    2419.20    2419.20
2420.44    0.014758       8.97     209.80      90.71           0.98

  StagecoachPass-2  2.23          100-yr 6-yr       1851.00    2406.12    2411.81    2411.81
2412.66    0.007700       8.80     349.86     176.99           0.72
  StagecoachPass-2  2.23          Method 1          1851.00    2406.12    2411.81    2411.81
2412.66    0.007700       8.80     349.86     176.99           0.72

  StagecoachPass-2  2.15          100-yr 6-yr       1996.00    2396.00    2401.62    2399.09
2401.94    0.001545       4.72     550.05     228.09           0.36
  StagecoachPass-2  2.15          Method 1          1996.00    2396.00    2401.62    2399.09
2401.94    0.001545       4.72     550.05     228.09           0.36

  StagecoachPass-2  2.145                                Culvert

  StagecoachPass-2  2.14          100-yr 6-yr       1996.00    2396.00    2398.69    2398.69
2399.85    0.014324       8.70     238.21     120.41           0.96
  StagecoachPass-2  2.14          Method 1          1996.00    2396.00    2398.69    2398.69
2399.85    0.014324       8.70     238.21     120.41           0.96

  StagecoachPass-2  2.08          100-yr 6-yr       1996.00    2387.56    2391.35    2391.35
2392.78    0.012872       9.67     219.73      88.27           0.95
  StagecoachPass-2  2.08          Method 1          1996.00    2387.56    2391.35    2391.35
2392.78    0.012872       9.67     219.73      88.27           0.95
```

StagecoachPass-2	2.02		100-yr 6-yr		1996.00	2380.00	2383.06	2383.06		
2384.37	0.014991	9.23	219.50	87.76		0.99				
StagecoachPass-2	2.02		Method 1		1996.00	2380.00	2383.06	2383.06		
2384.37	0.014991	9.23	219.50	87.76		0.99				
StagecoachPass-2	1.94		100-yr 6-yr		1996.00	2366.48	2373.92	2373.92		
2375.16	0.006869	10.44	320.08	127.02		0.74				
StagecoachPass-2	1.94		Method 1		1996.00	2366.48	2373.92	2373.92		
2375.16	0.006869	10.44	320.08	127.02		0.74				
StagecoachPass-2	1.92		100-yr 6-yr		1996.00	2364.00	2369.53	2369.53		
2371.18	0.012745	10.40	203.33	70.02		0.95				
StagecoachPass-2	1.92		Method 1		1996.00	2364.00	2369.53	2369.53		
2371.18	0.012745	10.40	203.33	70.02		0.95				
StagecoachPass-2	1.88		100-yr 6-yr		1996.00	2360.66	2365.40	2365.40		
2366.48	0.012160	9.73	295.93	137.27		0.92				
StagecoachPass-2	1.88		Method 1		1996.00	2360.66	2365.40	2365.40		
2366.48	0.012160	9.73	295.93	137.27		0.92				
StagecoachPass-2	1.81		100-yr 6-yr		1996.00	2353.47	2357.08	2357.08		
2358.18	0.011505	8.60	268.49	161.14		0.88				
StagecoachPass-2	1.81		Method 1		1996.00	2353.47	2357.08	2357.08		
2358.18	0.011505	8.60	268.49	161.14		0.88				
StagecoachPass-2	1.76		100-yr 6-yr		1996.00	2347.10	2350.59	2350.59		
2351.36	0.010093	7.40	344.33	259.20		0.81				
StagecoachPass-2	1.76		Method 1		1996.00	2347.10	2350.59	2350.59		
2351.36	0.010093	7.40	344.33	259.20		0.81				
StagecoachPass-2	1.72		100-yr 6-yr		1996.00	2342.40	2345.55	2345.55		
2346.28	0.016686	6.96	306.60	226.61		0.96				
StagecoachPass-2	1.72		Method 1		1996.00	2342.40	2345.55	2345.55		
2346.28	0.016686	6.96	306.60	226.61		0.96				
StagecoachPass-2	1.66		100-yr 6-yr		1996.00	2336.00	2338.80	2338.80		
2339.62	0.015590	7.44	294.47	199.16		0.96				
StagecoachPass-2	1.66		Method 1		1996.00	2336.00	2338.80	2338.80		
2339.62	0.015590	7.44	294.47	199.16		0.96				
StagecoachPass-2	1.57		100-yr 6-yr		1996.00	2328.00	2331.16	2331.16		
2332.11	0.016812	7.84	254.92	135.54		1.00				
StagecoachPass-2	1.57		Method 1		1996.00	2328.00	2331.16	2331.16		
2332.11	0.016812	7.84	254.92	135.54		1.00				
StagecoachPass-2	1.53		100-yr 6-yr		1996.00	2319.73	2324.47	2324.47		
2325.63	0.015568	8.64	234.27	112.99		0.99				
StagecoachPass-2	1.53		Method 1		1996.00	2319.73	2324.47	2324.47		
2325.63	0.015568	8.64	234.27	112.99		0.99				
StagecoachPass-2	1.47		100-yr 6-yr		1996.00	2312.98	2316.45	2316.45		
2317.54	0.015763	8.38	239.41	112.71		0.99				
StagecoachPass-2	1.47		Method 1		1996.00	2312.98	2316.45	2316.45		
2317.54	0.015763	8.38	239.41	112.71		0.99				
StagecoachPass-2	1.44		100-yr 6-yr		1996.00	2309.80	2313.81	2313.81		
2314.46	0.008703	8.13	433.91	276.92		0.78				
StagecoachPass-2	1.44		Method 1		1996.00	2309.80	2313.81	2313.81		
2314.46	0.008703	8.13	433.91	276.92		0.78				
StagecoachPass-2	1.36		100-yr 6-yr		1996.00	2302.00	2305.74	2305.74		
2306.66	0.013468	7.97	286.60	162.43		0.92				
StagecoachPass-2	1.36		Method 1		1996.00	2302.00	2305.74	2305.74		
2306.66	0.013468	7.97	286.60	162.43		0.92				
StagecoachPass-2	1.29		100-yr 6-yr		1996.00	2293.26	2297.18	2297.18		
2298.60	0.013326	9.63	216.88	86.03		0.96				
StagecoachPass-2	1.29		Method 1		1996.00	2293.26	2297.18	2297.18		
2298.60	0.013326	9.63	216.88	86.03		0.96				

StagecoachPass-2	1.19		100-yr 6-yr		1996.00	2283.80	2287.73	2287.73
2288.89	0.010793	8.98	269.96	137.99		0.87		
StagecoachPass-2	1.19		Method 1		1996.00	2283.80	2287.73	2287.73
2288.89	0.010793	8.98	269.96	137.99		0.87		
StagecoachPass-2	1.13		100-yr 6-yr		1996.00	2277.39	2280.58	
2280.90	0.005213	5.25	544.31	339.99		0.58		
StagecoachPass-2	1.13		Method 1		1996.00	2277.39	2280.58	
2280.90	0.005213	5.25	544.31	339.99		0.58		
StagecoachPass-2	1.1		100-yr 6-yr		1996.00	2274.39	2278.99	2278.99
2279.82	0.010078	7.89	340.42	216.21		0.82		
StagecoachPass-2	1.1		Method 1		1996.00	2274.39	2278.99	2278.99
2279.82	0.010078	7.89	340.42	216.21		0.82		
StagecoachPass-2	1.07		100-yr 6-yr		1996.00	2272.26	2275.71	2275.71
2276.43	0.012401	7.84	374.55	273.96		0.89		
StagecoachPass-2	1.07		Method 1		1996.00	2272.26	2275.71	2275.71
2276.43	0.012401	7.84	374.55	273.96		0.89		
StagecoachPass-2	1.01		100-yr 6-yr		1996.00	2264.00	2269.55	2269.55
2271.51	0.011552	11.49	190.90	521.09		0.92		
StagecoachPass-2	1.01		Method 1		1996.00	2264.00	2269.55	2269.55
2271.51	0.011552	11.49	190.90	521.09		0.92		
StagecoachPass-2	0.99				Culvert			
StagecoachPass-2	0.98		100-yr 6-yr		1996.00	2262.00	2266.45	2266.45
2268.35	0.012798	11.34	188.19	415.27		0.98		
StagecoachPass-2	0.98		Method 1		1996.00	2262.00	2266.45	2266.45
2268.35	0.012798	11.34	188.19	415.27		0.98		
StagecoachPass-2	0.93		100-yr 6-yr		1996.00	2258.00	2260.80	2260.80
2261.32	0.010683	7.23	478.56	420.94		0.82		
StagecoachPass-2	0.93		Method 1		1996.00	2258.00	2260.80	2260.80
2261.32	0.010683	7.23	478.56	420.94		0.82		
Levee Breakout	2.70		100-yr 6-yr		716.00	2459.88	2463.12	2462.82
2463.35	0.010128	3.86	185.59	189.48		0.69		
Levee Breakout	2.70		Method 1		716.00	2459.88	2463.12	2462.82
2463.35	0.010102	3.85	185.77	189.60		0.69		
Levee Breakout	2.62		100-yr 6-yr		716.00	2450.00	2453.39	2453.39
2454.02	0.012323	7.70	175.50	161.99		0.88		
Levee Breakout	2.62		Method 1		716.00	2450.00	2453.39	2453.39
2454.02	0.012376	7.71	175.14	161.71		0.88		

UPPER BOULDERS WASH

HEC-RAS Version 3.1.2 April 2004
U.S. Army Corp of Engineers
Hydrologic Engineering Center
609 Second Street
Davis, California

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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: North Scottsdale Delineation Study, UBW
Project File : UBW.prj
Run Date and Time: 2/16/2005 3:30:26 PM

Project in English units

Project Description:
Study Name: North Scottsdale Floodplain Delineation Study
Contract No.: FCD 2003 C008

Purpose of Study: Delineation of the inundation limits of the 100-yr, 6-hr storm event for Upper Boulders Wash.

Model Name: North Scottsdale Delineation Study, UBW

Model Description: This study determined the flood plain and flood way limits of the 100-yr-6-hr storm event for Upper Boulders Wash.
Profile #1, 100-yr 6-hr, models the flood plain.
Profile #2, Method 1, models the flood way.
Culvert information can be found in APPENDIX E.4 in the main report.

Mapping: Scottsdale Mapping: IGA 93-07
FCD Contract No.: FCD-XX-XX
Project Type: Topographic Mapping
Starting Date: 1-14-94
Ending Date: 1-14-97

Flow Profiles: Profile #1, 100-yr, 6-hr
Sections 4.03 to 3.11, Q= 238 cfs
Sections 3.05 to 3.04, Q= 735 cfs
Sections 2.97 to 2.31, Q= 1,270 cfs
Sections 2.29 to 1.48, Q= 1,459 cfs
Sections 1.41 to 1.23, Q= 1,628 cfs
Sections 1.16 to 0.75, Q= 1,667 cfs
Sections 0.71 to 0.48, Q= 1,810 cfs
Sections 0.47 to 0.01, Q= 2,178 cfs

Profile #2, Method 1
Sections 4.03 to 3.11, Q= 238 cfs
Sections 3.05 to 3.04, Q= 735 cfs
Sections 2.97 to 2.31, Q= 1,270 cfs
Sections 2.29 to 1.48, Q= 1,459 cfs
Sections 1.41 to 1.23, Q= 1,628 cfs
Sections 1.16 to 0.75, Q= 1,667 cfs
Sections 0.71 to 0.48, Q= 1,810 cfs
Sections 0.47 to 0.01, Q= 2,178 cfs

HEC-RAS Version: Version 3.1.2, April 2004

Consultant: DEI Professional Services, LLC
6225 N. 24th Street, Suite 200
Phoenix, AZ 85016
(602) 954-0038 Phone
(602) 944-8605 Fax

PLAN DATA

Plan Title: Plan 01
Plan File : j:\Projects\03062\Calcs\HEC-RAS Final\UBW.p01

Geometry Title: Base Conditions Geometry
Geometry File : j:\Projects\03062\Calcs\HEC-RAS Final\UBW.g01

Flow Title : 100-yr, 6-hr
Flow File : j:\Projects\03062\Calcs\HEC-RAS Final\UBW.f01

Plan Summary Information:

Number of:	Cross Sections =	61	Multiple Openings =	0
	Culverts =	5	Inline Structures =	0
	Bridges =	0	Lateral Structures =	0

Computational Information

Water surface calculation tolerance =	0.01
Critical depth calculation tolerance =	0.01
Maximum number of iterations =	20
Maximum difference tolerance =	0.3
Flow tolerance factor =	0.001

Computation Options

Critical depth computed only where necessary	
Conveyance Calculation Method:	At breaks in n values only
Friction Slope Method:	Average Conveyance
Computational Flow Regime:	Subcritical Flow

Encroachment Data

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

River = Upper Boulders W Reach = UpperBoulders-1

RS	Profile	Method	Value1	Value2
4.03	Meth 1	1	9968.86	10018.92
3.94	Meth 1	1	9962.47	10019.52
3.87	Meth 1	1	9994.71	10025.86
3.8	Meth 1	1	9976.51	10038.17
3.77	Meth 1	1	9968.55	10019.89
3.67	Meth 1	1	9955.11	10031.14
3.66	Meth 1	1	9992.13	10026.32
3.64	Meth 1	4	1	
3.62	Meth 1	1	9988.77	10027.03
3.58	Meth 1	1	9981.51	10006.95
3.5	Meth 1	1	9983.56	10048.57
3.43	Meth 1	1	9981.73	10010.69
3.37	Meth 1	1	9988.13	10008.58
3.29	Meth 1	1	9997.72	10015.35
3.23	Meth 1	1	9987.32	10017
3.14	Meth 1	1	9999.54	10021.05
3.11	Meth 1	1	9984.36	10006.4
3.05	Meth 1	1	9960	10035
3.045	Meth 1	4	1	
3.04	Meth 1	1	9992.23	10023.89
2.97	Meth 1	1	9978.81	10023.37
2.88	Meth 1	1	9984.55	10019.19
2.85	Meth 1	1	9975.66	10007.87
2.8	Meth 1	1	9972	10055
2.75	Meth 1	1	9983.93	10024.52

2.71	Meth 1	1	9985.9	110034.85
2.64	Meth 1	1	9942.25	10045.08
2.55	Meth 1	1	9986.67	10044.1
2.5	Meth 1	1	9988.21	0033.53
2.44	Meth 1	1	9987.171	0028.47
2.38	Meth 1	1	9983.981	0029.87
2.31	Meth 1	1	9880.42	10020.3
2.29	Meth 1	1	9947.81	10009.3
2.24	Meth 1	1	9959.781	0034.65
2.17	Meth 1	1	9984.441	0012.72
2.08	Meth 1	1	9959.061	0065.52
1.98	Meth 1	1	9938.91	0074.34
1.92	Meth 1	1	9953.421	0056.79
1.87	Meth 1	1	9919.811	0026.58
1.78	Meth 1	1	9985.081	0065.11
1.72	Meth 1	1	9957.51	0063.58
1.65	Meth 1	1	9954.061	0038.43
1.58	Meth 1	1	9965.761	0063.27
1.55	Meth 1	1	9973.191	0016.46
1.48	Meth 1	1	9982.31	0019.87
1.41	Meth 1	1	9942.21	0029.79
1.36	Meth 1	1	9960	10055
1.3	Meth 1	1	9887.591	0005.51
1.23	Meth 1	1	9949.431	0047.68
1.18	Meth 1	1	9946.661	0039.93
1.17	Meth 1	4	1	
1.16	Meth 1	1	9869.131	0015.36
1.14	Meth 1	1	9927.491	0046.95
1.05	Meth 1	1	9947.561	0047.59
0.97	Meth 1	1	9989.31	0029.68
0.87	Meth 1	1	9979.571	0019.68
0.79	Meth 1	1	9972.781	0020.28
0.75	Meth 1	1	9924.351	0035.01
0.73	Meth 1	4	1	
0.71	Meth 1	1	9963.451	0035.98
0.66	Meth 1	1	9983.31	0077.11
0.57	Meth 1	1	9911.361	0087.92
0.50	Meth 1	1	9965	10063.44
0.49	Meth 1	4	1	
0.48	Meth 1	1	9972.591	0075.03
0.47	Meth 1	1	9912.251	0026.32

River = Upper Boulders W Reach = UpperBoulders-1

RS	Profile	Method	Value1	Value2
4.03	Meth 4-1.0ft	4	1	
3.94	Meth 4-1.0ft	4	1	
3.87	Meth 4-1.0ft	4	1	
3.8	Meth 4-1.0ft	4	1	
3.77	Meth 4-1.0ft	4	1	
3.67	Meth 4-1.0ft	4	1	
3.66	Meth 4-1.0ft	4	1	
3.64	Meth 4-1.0ft	4	1	
3.62	Meth 4-1.0ft	4	1	
3.58	Meth 4-1.0ft	4	1	
3.5	Meth 4-1.0ft	4	1	
3.43	Meth 4-1.0ft	4	1	
3.37	Meth 4-1.0ft	4	1	
3.29	Meth 4-1.0ft	4	1	
3.23	Meth 4-1.0ft	4	1	
3.14	Meth 4-1.0ft	4	1	
3.11	Meth 4-1.0ft	4	1	
3.05	Meth 4-1.0ft	4	1	
3.045	Meth 4-1.0ft	4	1	
3.04	Meth 4-1.0ft	4	1	
2.97	Meth 4-1.0ft	4	1	
2.88	Meth 4-1.0ft	4	1	
2.85	Meth 4-1.0ft	4	1	
2.8	Meth 4-1.0ft	4	1	
2.75	Meth 4-1.0ft	4	1	
2.71	Meth 4-1.0ft	4	1	
2.64	Meth 4-1.0ft	4	1	

2.55	Meth 4-1.0ft	4	1
2.5	Meth 4-1.0ft	4	1
2.44	Meth 4-1.0ft	4	1
2.38	Meth 4-1.0ft	4	1
2.31	Meth 4-1.0ft	4	1
2.29	Meth 4-1.0ft	4	1
2.24	Meth 4-1.0ft	4	1
2.17	Meth 4-1.0ft	4	1
2.08	Meth 4-1.0ft	4	1
1.98	Meth 4-1.0ft	4	1
1.92	Meth 4-1.0ft	4	1
1.87	Meth 4-1.0ft	4	1
1.78	Meth 4-1.0ft	4	1
1.72	Meth 4-1.0ft	4	1
1.65	Meth 4-1.0ft	4	1
1.58	Meth 4-1.0ft	4	1
1.55	Meth 4-1.0ft	4	1
1.48	Meth 4-1.0ft	4	1
1.41	Meth 4-1.0ft	4	1
1.36	Meth 4-1.0ft	4	1
1.3	Meth 4-1.0ft	4	1
1.23	Meth 4-1.0ft	4	1
1.18	Meth 4-1.0ft	4	1
1.17	Meth 4-1.0ft	4	1
1.16	Meth 4-1.0ft	4	1
1.14	Meth 4-1.0ft	4	1
1.05	Meth 4-1.0ft	4	1
0.97	Meth 4-1.0ft	4	1
0.87	Meth 4-1.0ft	4	1
0.79	Meth 4-1.0ft	4	1
0.75	Meth 4-1.0ft	4	1
0.73	Meth 4-1.0ft	4	1
0.71	Meth 4-1.0ft	4	1
0.66	Meth 4-1.0ft	4	1
0.57	Meth 4-1.0ft	4	1
0.50	Meth 4-1.0ft	4	1
0.49	Meth 4-1.0ft	4	1
0.48	Meth 4-1.0ft	4	1
0.47	Meth 4-1.0ft	4	1

River = Upper Boulders W Reach = UpperBoulders-1

RS	Profile	Method	Value1	Value2
4.03	Meth 4-0.8ft	4	.8	
3.94	Meth 4-0.8ft	4	.8	
3.87	Meth 4-0.8ft	4	.8	
3.8	Meth 4-0.8ft	4	.8	
3.77	Meth 4-0.8ft	4	.8	
3.67	Meth 4-0.8ft	4	.8	
3.66	Meth 4-0.8ft	4	.8	
3.64	Meth 4-0.8ft	4	.8	
3.62	Meth 4-0.8ft	4	.8	
3.58	Meth 4-0.8ft	4	.8	
3.5	Meth 4-0.8ft	4	.8	
3.43	Meth 4-0.8ft	4	.8	
3.37	Meth 4-0.8ft	4	.8	
3.29	Meth 4-0.8ft	4	.8	
3.23	Meth 4-0.8ft	4	.8	
3.14	Meth 4-0.8ft	4	.8	
3.11	Meth 4-0.8ft	4	.8	
3.05	Meth 4-0.8ft	4	.8	
3.045	Meth 4-0.8ft	4	.8	
3.04	Meth 4-0.8ft	4	.8	
2.97	Meth 4-0.8ft	4	.8	
2.88	Meth 4-0.8ft	4	.8	
2.85	Meth 4-0.8ft	4	.8	
2.8	Meth 4-0.8ft	4	.8	
2.75	Meth 4-0.8ft	4	.8	
2.71	Meth 4-0.8ft	4	.8	
2.64	Meth 4-0.8ft	4	.8	
2.55	Meth 4-0.8ft	4	.8	
2.5	Meth 4-0.8ft	4	.8	

2.44	Meth 4-0.8ft	4	.8
2.38	Meth 4-0.8ft	4	.8
2.31	Meth 4-0.8ft	4	.8
2.29	Meth 4-0.8ft	4	.8
2.24	Meth 4-0.8ft	4	.8
2.17	Meth 4-0.8ft	4	.8
2.08	Meth 4-0.8ft	4	.8
1.98	Meth 4-0.8ft	4	.8
1.92	Meth 4-0.8ft	4	.8
1.87	Meth 4-0.8ft	4	.8
1.78	Meth 4-0.8ft	4	.8
1.72	Meth 4-0.8ft	4	.8
1.65	Meth 4-0.8ft	4	.8
1.58	Meth 4-0.8ft	4	.8
1.55	Meth 4-0.8ft	4	.8
1.48	Meth 4-0.8ft	4	.8
1.41	Meth 4-0.8ft	4	.8
1.36	Meth 4-0.8ft	4	.8
1.3	Meth 4-0.8ft	4	.8
1.23	Meth 4-0.8ft	4	.8
1.18	Meth 4-0.8ft	4	.8
1.17	Meth 4-0.8ft	4	.8
1.16	Meth 4-0.8ft	4	.8
1.14	Meth 4-0.8ft	4	.8
1.05	Meth 4-0.8ft	4	.8
0.97	Meth 4-0.8ft	4	.8
0.87	Meth 4-0.8ft	4	.8
0.79	Meth 4-0.8ft	4	.8
0.75	Meth 4-0.8ft	4	.8
0.73	Meth 4-0.8ft	4	.8
0.71	Meth 4-0.8ft	4	.8
0.66	Meth 4-0.8ft	4	.8
0.57	Meth 4-0.8ft	4	.8
0.50	Meth 4-0.8ft	4	.8
0.49	Meth 4-0.8ft	4	.8
0.48	Meth 4-0.8ft	4	.8
0.47	Meth 4-0.8ft	4	.8

FLOW DATA

Flow Title: 100-yr, 6-hr
Flow File : j:\Projects\03062\Calcs\HEC-RAS Final\UBW.f01

Flow Data (cfs)

River	Reach	RS	100-yr 6-hr	Meth 1	Meth 4-1.0ft	Meth 4-0.8ft
Upper Boulders	WUpperBoulders-1	4.03	238	238	238	238
Upper Boulders	WUpperBoulders-1	3.05	735	735	735	735
Upper Boulders	WUpperBoulders-1	2.97	1270	1270	1270	1270
Upper Boulders	WUpperBoulders-1	2.29	1459	1459	1459	1459
Upper Boulders	WUpperBoulders-1	1.41	1628	1628	1628	1628
Upper Boulders	WUpperBoulders-1	1.16	1667	1667	1667	1667
Upper Boulders	WUpperBoulders-1	0.71	1810	1810	1810	1810
Upper Boulders	WUpperBoulders-1	0.47	2178	2178	2178	2178

Boundary Conditions

River	Reach	Profile	Upstream	Downstream

Upper Boulders WUpperBoulders-1 100-yr 6-hr		Critical
Upper Boulders WUpperBoulders-1 Meth 1		Critical
Upper Boulders WUpperBoulders-1 Meth 4-1.0ft		Critical
Upper Boulders WUpperBoulders-1 Meth 4-0.8ft		Critical

GEOMETRY DATA

Geometry Title: Base Conditions Geometry
Geometry File : j:\Projects\03062\Calcs\HEC~RAS Final\UBW.g01

CROSS SECTION

RIVER: Upper Boulders W
REACH: UpperBoulders-1 RS: 4.03

INPUT
Description: Cross Section 4.03 is the upstream boundary of the Upper Boulders Wash study area.

Topography and Aerial indicates wash and surrounding undeveloped desert.
T5NR5E Section 5 and Section 6
Q100 = 238 cfs
Station Elevation Data num= 18

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9879.43	2672	9903.64	2670	9944.63	2668	9952.51	2668	9958.58	2668
9965.43	2667	9968.86	2666.5	9972.28	2666	9982.04	2666	9989.39	2666
10000	2665.110	13.61	2666	10018.92	2666.510	024.22	2667	10034.83	2668
10045.67	2670	10055.99	2672	10067.02	2674				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9879.43	.051	9968.86	.044	10018.92	.056

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9968.86	10018.92	435.51	449.43	462.43	.1	.3

CROSS SECTION OUTPUT Profile #100-yr 6-hr

			Left OB	Channel	Right OB
E.G. Elev (ft)	2667.16	Element			
Vel Head (ft)	0.40	Wt. n-Val.	0.051	0.044	0.056
W.S. Elev (ft)	2666.75	Reach Len. (ft)	435.51	449.43	462.43
Crit W.S. (ft)	2666.71	Flow Area (sq ft)	0.22	46.48	0.34
E.G. Slope (ft/ft)	0.025333	Area (sq ft)	0.22	46.48	0.34
Q Total (cfs)	238.00	Flow (cfs)	0.26	237.38	0.37
Top Width (ft)	54.50	Top Width (ft)	1.75	50.06	2.70
Vel Total (ft/s)	5.06	Avg. Vel. (ft/s)	1.16	5.11	1.06
Max Chl Dpth (ft)	1.65	Hydr. Depth (ft)	0.13	0.93	0.13
Conv. Total (cfs)	1495.3	Conv. (cfs)	1.6	1491.4	2.3
Length Wtd. (ft)	449.43	Wetted Per. (ft)	1.76	50.19	2.71
Min Ch El (ft)	2665.10	Shear (lb/sq ft)	0.20	1.46	0.20
Alpha	1.02	Stream Power (lb/ft s)	0.23	7.48	0.21
Frctn Loss (ft)	8.14	Cum Volume (acre-ft)	21.55	58.15	16.23
C & E Loss (ft)	0.05	Cum SA (acres)	18.76	28.53	17.70

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 OUTPUT Profile #Meth 1

			Left OB	Channel	Right OB
E.G. Elev (ft)	2667.16	Element			
Vel Head (ft)	0.45	Wt. n-Val.		0.044	
W.S. Elev (ft)	2666.71	Reach Len. (ft)	435.51	449.43	462.43

Crit W.S. (ft)	2666.70	Flow Area (sq ft)		44.30	
E.G. Slope (ft/ft)	0.030213	Area (sq ft)		44.30	
Q Total (cfs)	238.00	Flow (cfs)		238.00	
Top Width (ft)	50.06	Top Width (ft)		50.06	
Vel Total (ft/s)	5.37	Avg. Vel. (ft/s)		5.37	
Max Chl Dpth (ft)	1.61	Hydr. Depth (ft)		0.89	
Conv. Total (cfs)	1369.2	Conv. (cfs)		1369.2	
Length Wtd. (ft)	449.43	Wetted Per. (ft)		50.61	
Min Ch El (ft)	2665.10	Shear (lb/sq ft)		1.65	
Alpha	1.00	Stream Power (lb/ft s)		8.87	
Frctn Loss (ft)	8.09	Cum Volume (acre-ft)	1.38	63.91	0.77
C & E Loss (ft)	0.07	Cum SA (acres)	0.45	28.53	0.60

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was 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: Upper Boulders W
REACH: UpperBoulders-1 RS: 3.94

INPUT
Description: Topography and Aerial indicates wash and surrounding undeveloped desert.
T5NR5E Section 6
Q100 = 238 cfs
Station Elevation Data num= 13

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9898.13	2664	9914.26	2662	9936.51	2660	9953.82	2659	9962.47	2658.5
9971.12	2658	10000	2657.110016.61		265810019.52		2658.510022.43		2659
10028.24	266010040.97		266210063.58		2664				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9898.13	.051	9962.47	.04410019.52		.056

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9962.4710019.52		371.32	389.07	380.52	.1	.3

CROSS SECTION OUTPUT Profile #100-yr 6-hr

E.G. Elev (ft)	2658.98	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.25	Wt. n-Val.	0.051	0.044	0.056
W.S. Elev (ft)	2658.73	Reach Len. (ft)	371.32	389.07	380.52
Crit W.S. (ft)		Flow Area (sq ft)	0.44	59.04	0.15
E.G. Slope (ft/ft)	0.013587	Area (sq ft)	0.44	59.04	0.15
Q Total (cfs)	238.00	Flow (cfs)	0.35	237.54	0.11
Top Width (ft)	62.29	Top Width (ft)	3.92	57.05	1.32
Vel Total (ft/s)	3.99	Avg. Vel. (ft/s)	0.79	4.02	0.72
Max Chl Dpth (ft)	1.63	Hydr. Depth (ft)	0.11	1.03	0.11
Conv. Total (cfs)	2041.8	Conv. (cfs)	3.0	2037.8	0.9
Length Wtd. (ft)	388.88	Wetted Per. (ft)	3.93	57.15	1.34
Min Ch El (ft)	2657.10	Shear (lb/sq ft)	0.10	0.88	0.09
Alpha	1.01	Stream Power (lb/ft s)	0.08	3.53	0.07
Frctn Loss (ft)	6.80	Cum Volume (acre-ft)	21.55	57.60	16.23
C & E Loss (ft)	0.03	Cum SA (acres)	18.73	27.97	17.68

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 OUTPUT Profile #Meth 1

E.G. Elev (ft)	2659.00	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.23	Wt. n-Val.		0.044	

W.S. Elev (ft)	2658.77	Reach Len. (ft)	371.32	389.07	380.52
Crit W.S. (ft)		Flow Area (sq ft)		61.69	
E.G. Slope (ft/ft)	0.011936	Area (sq ft)		61.69	
Q Total (cfs)	238.00	Flow (cfs)		238.00	
Top Width (ft)	57.05	Top Width (ft)		57.05	
Vel Total (ft/s)	3.86	Avg. Vel. (ft/s)		3.86	
Max Chl Dpth (ft)	1.67	Hydr. Depth (ft)		1.08	
Conv. Total (cfs)	2178.4	Conv. (cfs)		2178.4	
Length Wtd. (ft)	389.07	Wetted Per. (ft)		57.69	
Min Ch El (ft)	2657.10	Shear (lb/sq ft)		0.80	
Alpha	1.00	Stream Power (lb/ft s)		3.07	
Frctn Loss (ft)	6.76	Cum Volume (acre-ft)	1.38	63.36	0.77
C & E Loss (ft)	0.04	Cum SA (acres)	0.45	27.98	0.60

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was 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: Upper Boulders W
REACH: UpperBoulders-1 RS: 3.87

INPUT
Description: Topography and Aerial indicates wash and surrounding undeveloped desert.
T5NR5E Section 6
Q100 = 238 cfs
Station Elevation Data num= 14

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9943.01	2654	9973.96	2652	9989.53	2652	9992.1	2652	9994.7	2651
9997.29	2650	10004.81	2650	10025.86	2651	10046.9	2652	10059.49	2652
10088.56	2650	10095.19	2650	10109.82	2652	10124.18	2654		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9943.01	.051	9994.7	.044	10025.86	.056

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9994.7	10025.86	365.95	360.31	384.19	.1	.3

Right Levee Station= 10046.9 Elevation=

CROSS SECTION OUTPUT Profile #100-yr 6-hr

E.G. Elev (ft)	2652.15	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.53	Wt. n-Val.	0.051	0.044	0.056
W.S. Elev (ft)	2651.62	Reach Len. (ft)	365.95	360.31	384.19
Crit W.S. (ft)	2651.62	Flow Area (sq ft)	0.50	38.69	4.06
E.G. Slope (ft/ft)	0.023317	Area (sq ft)	0.50	38.69	4.06
Q Total (cfs)	238.00	Flow (cfs)	0.98	229.49	7.53
Top Width (ft)	45.84	Top Width (ft)	1.62	31.16	13.07
Vel Total (ft/s)	5.50	Avg. Vel. (ft/s)	1.95	5.93	1.86
Max Chl Dpth (ft)	1.62	Hydr. Depth (ft)	0.31	1.24	0.31
Conv. Total (cfs)	1558.6	Conv. (cfs)	6.4	1502.9	49.3
Length Wtd. (ft)	360.82	Wetted Per. (ft)	1.73	31.37	13.08
Min Ch El (ft)	2650.00	Shear (lb/sq ft)	0.42	1.80	0.45
Alpha	1.12	Stream Power (lb/ft s)	0.82	10.65	0.84
Frctn Loss (ft)	4.73	Cum Volume (acre-ft)	21.55	57.17	16.21
C & E Loss (ft)	0.11	Cum SA (acres)	18.71	27.58	17.62

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

This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
depth, the calculated water surface came back below critical depth. This indicates that there is
not a valid subcritical answer. The program defaulted to critical depth.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water
surface was used.

CROSS SECTION OUTPUT Profile #Meth 1

E.G. Elev (ft)	2652.21	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.60	Wt. n-Val.		0.044	
W.S. Elev (ft)	2651.60	Reach Len. (ft)	365.95	360.31	384.19
Crit W.S. (ft)	2651.60	Flow Area (sq ft)		38.18	
E.G. Slope (ft/ft)	0.027586	Area (sq ft)		38.18	
Q Total (cfs)	238.00	Flow (cfs)		238.00	
Top Width (ft)	31.16	Top Width (ft)		31.16	
Vel Total (ft/s)	6.23	Avg. Vel. (ft/s)		6.23	
Max Chl Dpth (ft)	1.60	Hydr. Depth (ft)		1.23	
Conv. Total (cfs)	1433.0	Conv. (cfs)		1433.0	
Length Wtd. (ft)	360.31	Wetted Per. (ft)		32.58	
Min Ch El (ft)	2650.00	Shear (lb/sq ft)		2.02	
Alpha	1.00	Stream Power (lb/ft s)		12.58	
Frctn Loss (ft)	4.91	Cum Volume (acre-ft)	1.38	62.92	0.77
C & E Loss (ft)	0.13	Cum SA (acres)	0.45	27.58	0.60

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 conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
depth, the 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: Upper Boulders W
REACH: UpperBoulders-1 RS: 3.8

INPUT
Description: Topography and Aerial indicates wash and surrounding undeveloped
desert.
T5NR5E Section 6
Q100 = 238 cfs
Station Elevation Data num= 13

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9911.43	2650	9924.39	2648	9957.03	2646	9970.01	2645	9976.5	2644.5
9982.99	2644	10000	2643	10022.15	2644	10038.17	2644.5	10054.18	2645
10086.21	2646	10108.73	2648	10132.39	2650				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9911.43	.051	9976.5	.044	10038.17	.056

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9976.5	10038.17	170.73	168.69	168.14	.1	.3

CROSS SECTION OUTPUT Profile #100-yr 6-hr

E.G. Elev (ft)	2645.08	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.17	Wt. n-Val.	0.051	0.044	0.056
W.S. Elev (ft)	2644.91	Reach Len. (ft)	170.73	168.69	168.14
Crit W.S. (ft)	2644.55	Flow Area (sq ft)	1.08	69.90	2.65
E.G. Slope (ft/ft)	0.008384	Area (sq ft)	1.08	69.90	2.65
Q Total (cfs)	238.00	Flow (cfs)	0.99	234.78	2.23
Top Width (ft)	80.00	Top Width (ft)	5.29	61.67	13.04
Vel Total (ft/s)	3.23	Avg. Vel. (ft/s)	0.92	3.36	0.84
Max Chl Dpth (ft)	1.91	Hydr. Depth (ft)	0.20	1.13	0.20
Conv. Total (cfs)	2599.3	Conv. (cfs)	10.8	2564.1	24.4
Length Wtd. (ft)	168.69	Wetted Per. (ft)	5.30	61.75	13.05
Min Ch El (ft)	2643.00	Shear (lb/sq ft)	0.11	0.59	0.11
Alpha	1.07	Stream Power (lb/ft s)	0.10	1.99	0.09
Frctn Loss (ft)	2.35	Cum Volume (acre-ft)	21.54	56.72	16.18
C & E Loss (ft)	0.03	Cum SA (acres)	18.68	27.20	17.51

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.
Warning: The energy loss was 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 OUTPUT Profile #Meth 1

E.G. Elev (ft)	2645.11	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.17	Wt. n-Val.		0.044	
W.S. Elev (ft)	2644.94	Reach Len. (ft)	170.73	168.69	168.14
Crit W.S. (ft)		Flow Area (sq ft)		71.59	
E.G. Slope (ft/ft)	0.008107	Area (sq ft)		71.59	
Q Total (cfs)	238.00	Flow (cfs)		238.00	
Top Width (ft)	61.67	Top Width (ft)		61.67	
Vel Total (ft/s)	3.32	Avg. Vel. (ft/s)		3.32	
Max Chl Dpth (ft)	1.93	Hydr. Depth (ft)		1.16	
Conv. Total (cfs)	2643.3	Conv. (cfs)		2643.3	
Length Wtd. (ft)	168.69	Wetted Per. (ft)		62.62	
Min Ch El (ft)	2643.00	Shear (lb/sq ft)		0.58	
Alpha	1.00	Stream Power (lb/ft s)		1.92	
Frctn Loss (ft)	2.38	Cum Volume (acre-ft)	1.38	62.46	0.77
C & E Loss (ft)	0.03	Cum SA (acres)	0.45	27.20	0.60

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was 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: Upper Boulders W
REACH: UpperBoulders-1 RS: 3.77

INPUT
Description: Topography and Aerial indicates wash and surrounding undeveloped desert.
T5NR5E Section 6
Q100 = 238 cfs
Station Elevation Data num= 15

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9920.47	2648	9929.17	2648	9945.08	2646	9955.48	2644	9964.19	2643
9968.55	2642.5	9972.9	2642	10000	2640.5	10016.14	2642	10019.89	2642.5
10023.63	2643	10031.12	2644	10045.52	2646	10059.59	2648	10074.28	2650

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9920.47	.051	9968.55	.044	10019.89	.056

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9968.55	10019.89	508.23	514.8	524.71	.1	.3

CROSS SECTION OUTPUT Profile #100-yr 6-hr

E.G. Elev (ft)	2642.71	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.44	Wt. n-Val.		0.044	
W.S. Elev (ft)	2642.27	Reach Len. (ft)	508.23	514.80	524.71
Crit W.S. (ft)	2642.24	Flow Area (sq ft)		44.52	
E.G. Slope (ft/ft)	0.027470	Area (sq ft)		44.52	
Q Total (cfs)	238.00	Flow (cfs)		238.00	
Top Width (ft)	47.55	Top Width (ft)		47.55	
Vel Total (ft/s)	5.35	Avg. Vel. (ft/s)		5.35	
Max Chl Dpth (ft)	1.77	Hydr. Depth (ft)		0.94	
Conv. Total (cfs)	1436.0	Conv. (cfs)		1436.0	
Length Wtd. (ft)	514.80	Wetted Per. (ft)		47.70	
Min Ch El (ft)	2640.50	Shear (lb/sq ft)		1.60	
Alpha	1.00	Stream Power (lb/ft s)		8.56	
Frctn Loss (ft)	10.13	Cum Volume (acre-ft)	21.54	56.50	16.18
C & E Loss (ft)	0.07	Cum SA (acres)	18.67	26.98	17.48

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.

CROSS SECTION OUTPUT Profile #Meth 1

E.G. Elev (ft)	2642.71	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.47	Wt. n-Val.		0.044	
W.S. Elev (ft)	2642.24	Reach Len. (ft)	508.23	514.80	524.71
Crit W.S. (ft)	2642.24	Flow Area (sq ft)		43.07	
E.G. Slope (ft/ft)	0.030257	Area (sq ft)		43.07	
Q Total (cfs)	238.00	Flow (cfs)		238.00	
Top Width (ft)	47.06	Top Width (ft)		47.06	
Vel Total (ft/s)	5.53	Avg. Vel. (ft/s)		5.53	
Max Chl Dpth (ft)	1.74	Hydr. Depth (ft)		0.92	
Conv. Total (cfs)	1368.2	Conv. (cfs)		1368.2	
Length Wtd. (ft)	514.80	Wetted Per. (ft)		47.20	
Min Ch El (ft)	2640.50	Shear (lb/sq ft)		1.72	
Alpha	1.00	Stream Power (lb/ft s)		9.53	
Frctn Loss (ft)	1.98	Cum Volume (acre-ft)	1.38	62.24	0.77
C & E Loss (ft)	0.13	Cum SA (acres)	0.45	26.99	0.60

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 conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
depth, the 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: Upper Boulders W
REACH: UpperBoulders-1 RS: 3.67

INPUT
Description: Topography and Aerial indicates wash and surrounding undeveloped
desert.
T5NR5E Section 6
Q100 = 238 cfs
Station Elevation Data num= 14

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9880.6	2640	9899.66	2638	9913.53	2636	9925.08	2634	9955.1	2632
9990.42	2631.12	10000	2630.92	10031.14	2632	10050.92	2634	10117.5	2636

10132.6 263810147.88 264010152.59 264010159.92 2638

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9880.6	.051	9955.1	.044	10031.14	.056

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9955.1	10031.14	49.54	49.24	49.36	.3	.5

CROSS SECTION OUTPUT Profile #100-yr 6-hr

			Left OB	Channel	Right OB
E.G. Elev (ft)	2632.51	Element			
Vel Head (ft)	0.21	Wt. n-Val.	0.051	0.044	0.056
W.S. Elev (ft)	2632.30	Reach Len. (ft)	49.54	49.24	49.36
Crit W.S. (ft)		Flow Area (sq ft)	0.67	64.45	0.44
E.G. Slope (ft/ft)	0.014783	Area (sq ft)	0.67	64.45	0.44
Q Total (cfs)	238.00	Flow (cfs)	0.67	236.94	0.40
Top Width (ft)	83.47	Top Width (ft)	4.48	76.04	2.95
Vel Total (ft/s)	3.63	Avg. Vel. (ft/s)	1.00	3.68	0.90
Max Chl Dpth (ft)	1.38	Hydr. Depth (ft)	0.15	0.85	0.15
Conv. Total (cfs)	1957.5	Conv. (cfs)	5.5	1948.7	3.3
Length Wtd. (ft)	49.27	Wetted Per. (ft)	4.49	76.07	2.97
Min Ch El (ft)	2630.92	Shear (lb/sq ft)	0.14	0.78	0.14
Alpha	1.02	Stream Power (lb/ft s)	0.14	2.87	0.12
Frctn Loss (ft)	0.18	Cum Volume (acre-ft)	21.53	55.85	16.18
C & E Loss (ft)	0.08	Cum SA (acres)	18.64	26.25	17.46

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 OUTPUT Profile #Meth 1

			Left OB	Channel	Right OB
E.G. Elev (ft)	2633.24	Element			
Vel Head (ft)	0.05	Wt. n-Val.		0.044	
W.S. Elev (ft)	2633.19	Reach Len. (ft)	49.54	49.24	49.36
Crit W.S. (ft)		Flow Area (sq ft)		131.99	
E.G. Slope (ft/ft)	0.001425	Area (sq ft)		131.99	
Q Total (cfs)	238.00	Flow (cfs)		238.00	
Top Width (ft)	76.04	Top Width (ft)		76.04	
Vel Total (ft/s)	1.80	Avg. Vel. (ft/s)		1.80	
Max Chl Dpth (ft)	2.27	Hydr. Depth (ft)		1.74	
Conv. Total (cfs)	6305.3	Conv. (cfs)		6305.3	
Length Wtd. (ft)	49.24	Wetted Per. (ft)		78.45	
Min Ch El (ft)	2630.92	Shear (lb/sq ft)		0.15	
Alpha	1.00	Stream Power (lb/ft s)		0.27	
Frctn Loss (ft)	0.07	Cum Volume (acre-ft)	1.38	61.21	0.77
C & E Loss (ft)	0.01	Cum SA (acres)	0.45	26.26	0.60

CROSS SECTION

RIVER: Upper Boulders W
REACH: UpperBoulders-1 RS: 3.66

INPUT
Description: Cross Section 3.66 is located upstream of the intersection of Upper Boulders Wash and Legend Trail Parkway. There are 2-36 inch concrete culverts located under Legend Trail Parkway.

Topography indicates wash and surrounding undeveloped desert.
Aerial shows roadway, wash and undeveloped desert.
T5NR5E Section 6
Q100 = 238 cfs
Station Elevation Data num= 11

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9917.21	2639.3	9924.34	2638	9944.28	2636	9954.61	2634	9971.59	2632

```
 9992.13  2630.5 9998.97    263010000.59    263010026.32  2630.510103.51    2632
 10149.8    2634

Manning's n Values          num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
 9917.21    .051 9992.13    .04410026.32    .056

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9992.1310026.32           205.89  204.99  206.89             .3       .5
Ineffective Flow      num=       2
   Sta L   Sta R    Elev  Permanent
 9917.21  9990.5 2631.25       F
10026.32 10149.8 2631.25       F

CROSS SECTION OUTPUT  Profile #100-yr 6-hr

  E.G. Elev (ft)           2632.25    Element                    Left OB    Channel   Right OB
  Vel Head (ft)               0.05    Wt. n-Val.                  0.051      0.044      0.056
  W.S. Elev (ft)           2632.20    Reach Len. (ft)            205.89     204.99     206.89
  Crit W.S. (ft)           2631.30    Flow Area (sq ft)           19.61      66.97      73.53
  E.G. Slope (ft/ft)      0.001638    Area (sq ft)                19.61      66.97      73.53
  Q Total (cfs)             238.00    Flow (cfs)                  21.24     143.20      73.56
  Top Width (ft)            138.15    Top Width (ft)              22.21      34.19      81.74
  Vel Total (ft/s)            1.49    Avg. Vel. (ft/s)             1.08       2.14       1.00
  Max Chl Dpth (ft)           2.20    Hydr. Depth (ft)             0.88       1.96       0.90
  Conv. Total (cfs)         5881.2    Conv. (cfs)                 524.8     3538.6     1817.8
  Length Wtd. (ft)          204.99    Wetted Per. (ft)            22.28      34.21      81.76
  Min Ch El (ft)           2630.00    Shear (lb/sq ft)             0.09       0.20       0.09
  Alpha                       1.43    Stream Power (lb/ft s)       0.10       0.43       0.09
  Frctn Loss (ft)                     Cum Volume (acre-ft)        21.52      55.78      16.13
  C & E Loss (ft)                     Cum SA (acres)              18.63      26.19      17.41


CROSS SECTION OUTPUT  Profile #Meth 1

  E.G. Elev (ft)           2633.15    Element                    Left OB    Channel   Right OB
  Vel Head (ft)               0.09    Wt. n-Val.                            0.044
  W.S. Elev (ft)           2633.05    Reach Len. (ft)            205.89     204.99     206.89
  Crit W.S. (ft)           2631.39    Flow Area (sq ft)                      96.28
  E.G. Slope (ft/ft)      0.001623    Area (sq ft)                           96.28
  Q Total (cfs)             238.00    Flow (cfs)                            238.00
  Top Width (ft)             34.19    Top Width (ft)                         34.19
  Vel Total (ft/s)            2.47    Avg. Vel. (ft/s)                        2.47
  Max Chl Dpth (ft)           3.05    Hydr. Depth (ft)                        2.82
  Conv. Total (cfs)         5906.9    Conv. (cfs)                           5906.9
  Length Wtd. (ft)          204.99    Wetted Per. (ft)                       39.32
  Min Ch El (ft)           2630.00    Shear (lb/sq ft)                        0.25
  Alpha                       1.00    Stream Power (lb/ft s)                  0.61
  Frctn Loss (ft)                     Cum Volume (acre-ft)        1.38       61.08       0.77
  C & E Loss (ft)                     Cum SA (acres)              0.45       26.20       0.60


CULVERT


RIVER: Upper Boulders W
REACH: UpperBoulders-1    RS: 3.64

INPUT
Description: Pipe Culverts at Legend Trail Parkway
Distance from Upstream XS =       3
Deck/Roadway Width        =     193
Weir Coefficient          =     2.6
Upstream  Deck/Roadway Coordinates
    num=       4
     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord
 9879.72 2634.48         10142.72 2629.88         10167.72 2629.48
10192.72 2629.18

Upstream Bridge Cross Section Data
Station Elevation Data    num=      11
```

```
     Sta     Elev     Sta     Elev     Sta     Elev     Sta     Elev     Sta     Elev
 9917.21  2639.3 9924.34    2638 9944.28    2636 9954.61    2634 9971.59    2632
 9992.13  2630.5 9998.97    263010000.59    263010026.32  2630.510103.51    2632
 10149.8    2634

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
 9917.21    .051 9992.13    .04410026.32    .056

Bank Sta: Left   Right    Coeff Contr.   Expan.
       9992.1310026.32             .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
 9917.21  9990.5 2631.25       F
10026.32 10149.8 2631.25       F

Downstream  Deck/Roadway Coordinates
    num=       7
     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord
 9724.99 2634.48         9987.99 2629.88        10012.99 2629.48
10037.99 2629.18        10062.99 2628.96        10087.99 2628.83
10287.99 2628.16

Downstream Bridge Cross Section Data
Station Elevation Data    num=      12
     Sta     Elev     Sta     Elev     Sta     Elev     Sta     Elev     Sta     Elev
  9881.3     2632 9900.67    2630 9963.15    2628 9988.77  2626.5 9997.31    2626
10015.89     262610027.03  2626.510070.53    262610101.01 2625.15 10119.8    2626
10136.93     262810151.49    2630

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
  9881.3    .051 9988.77    .04410027.03    .056

Bank Sta: Left   Right    Coeff Contr.   Expan.
       9988.7710027.03             .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
  9881.3  9984.5 2628.65       F
10027.0310151.49 2628.65       F

Upstream Embankment side slope              =       0 horiz. to 1.0 vertical
Downstream Embankment side slope            =       0 horiz. to 1.0 vertical
Maximum allowable submergence for weir flow =     .95
Elevation at which weir flow begins         =
Energy head used in spillway design         =
Spillway height used in design              =
Weir crest shape                            = Broad Crested

Number of Culverts =  1

Culvert Name     Shape      Rise    Span
Culvert #1      Circular       3
FHWA Chart # 1 - Concrete Pipe Culvert
FHWA Scale # 1 - Square edge entrance with headwall
Solution Criteria = Highest U.S. EG
Culvert Upstrm Dist  Length    Top n  Bottom n  Depth Blocked  Entrance Loss Coef   Exit Loss Coef
                  3     193     .015     .015        0                   .5                 1
Number of Barrels =  2
Upstream   Elevation =  2627
Centerline Stations
    Sta.    Sta.
  9996.5 10003.5
Downstream Elevation =  2623.1
Centerline Stations
    Sta.    Sta.
  9996.5 10003.5

CROSS SECTION
```

RIVER: Upper Boulders W
REACH: UpperBoulders-1 RS: 3.62

INPUT
Description: Cross Section 3.62 is located downstream of the intersection of Upper Boulders Wash and Legend Trail Parkway. There are 2-36 inch concrete culverts located under Legend Trail Parkway.

Topography indicates wash and surrounding undeveloped desert.
Aerial shows roadway, wash and undeveloped desert.
T5NR5E Section 6
Q100 = 238 cfs

Station Elevation Data num= 12

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9881.3	2632	9900.67	2630	9963.15	2628	9988.77	2626.5	9997.31	2626
10015.89	2626	10027.03	2626.5	10070.53	2626	10101.01	2625.15	10119.8	2626
10136.93	2628	10151.49	2630						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9881.3	.051	9988.77	.044	10027.03	.056

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9988.77	10027.03	215.28	210.66	208.67	.3	.5

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
9881.3	9984.5	2628.65	F
10027.03	10151.49	2628.65	F

CROSS SECTION OUTPUT Profile #100-yr 6-hr

E.G. Elev (ft)	2627.76	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.31	Wt. n-Val.	0.051	0.044	
W.S. Elev (ft)	2627.44	Reach Len. (ft)	215.28	210.66	208.67
Crit W.S. (ft)	2627.18	Flow Area (sq ft)	3.50	50.34	
E.G. Slope (ft/ft)	0.012490	Area (sq ft)	7.62	50.34	152.99
Q Total (cfs)	238.00	Flow (cfs)	9.96	228.04	
Top Width (ft)	159.53	Top Width (ft)	16.13	38.26	105.14
Vel Total (ft/s)	4.42	Avg. Vel. (ft/s)	2.85	4.53	
Max Chl Dpth (ft)	2.29	Hydr. Depth (ft)	0.82	1.32	
Conv. Total (cfs)	2129.6	Conv. (cfs)	89.1	2040.4	
Length Wtd. (ft)	210.79	Wetted Per. (ft)	4.28	38.29	
Min Ch El (ft)	2626.00	Shear (lb/sq ft)	0.64	1.03	
Alpha	1.02	Stream Power (lb/ft s)	1.82	4.64	
Frctn Loss (ft)	3.48	Cum Volume (acre-ft)	21.46	55.50	15.60
C & E Loss (ft)	0.10	Cum SA (acres)	18.54	26.02	16.97

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.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid,
energy was used.

CROSS SECTION OUTPUT Profile #Meth 1

E.G. Elev (ft)	2627.82	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.32	Wt. n-Val.		0.044	
W.S. Elev (ft)	2627.50	Reach Len. (ft)	215.28	210.66	208.67
Crit W.S. (ft)	2627.20	Flow Area (sq ft)		52.62	
E.G. Slope (ft/ft)	0.012567	Area (sq ft)		52.62	
Q Total (cfs)	238.00	Flow (cfs)		238.00	
Top Width (ft)	38.26	Top Width (ft)		38.26	
Vel Total (ft/s)	4.52	Avg. Vel. (ft/s)		4.52	
Max Chl Dpth (ft)	1.50	Hydr. Depth (ft)		1.38	
Conv. Total (cfs)	2123.1	Conv. (cfs)		2123.1	
Length Wtd. (ft)	210.66	Wetted Per. (ft)		40.29	

Min Ch El (ft)	2626.00	Shear (lb/sq ft)		1.02	
Alpha	1.00	Stream Power (lb/ft s)		4.63	
Frctn Loss (ft)	3.51	Cum Volume (acre-ft)	1.38	60.73	0.77
C & E Loss (ft)	0.09	Cum SA (acres)	0.45	26.03	0.60

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.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid,
energy was used.

CROSS SECTION

RIVER: Upper Boulders W
REACH: UpperBoulders-1 RS: 3.58

INPUT
Description: Topography and Aerial indicates wash and surrounding undeveloped desert.
T5NR5E Section 6
Q100 = 238 cfs
Station Elevation Data num= 15

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9796.15	2630	9817.17	2628	9912.28	2626	9934.14	2624	9958.31	2624
9970.5	2624	9981.51	2623	9992.52	2622	10000	2621.42	10004.72	2622
10006.95	2623	10009.18	2624	10014.65	2626	10021.12	2628	10036.53	2630

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9796.15	.051	9981.51	.044	10006.95	.056

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9981.51	10006.95	444.95	437.8	425.51	.1	.3

CROSS SECTION OUTPUT Profile #100-yr 6-hr

E.G. Elev (ft)	2624.19	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.63	Wt. n-Val.	0.051	0.044	0.056
W.S. Elev (ft)	2623.55	Reach Len. (ft)	444.95	437.80	425.51
Crit W.S. (ft)	2623.54	Flow Area (sq ft)	1.69	36.45	0.34
E.G. Slope (ft/ft)	0.022801	Area (sq ft)	1.69	36.45	0.34
Q Total (cfs)	238.00	Flow (cfs)	3.15	234.30	0.55
Top Width (ft)	32.77	Top Width (ft)	6.10	25.44	1.24
Vel Total (ft/s)	6.18	Avg. Vel. (ft/s)	1.86	6.43	1.60
Max Chl Dpth (ft)	2.13	Hydr. Depth (ft)	0.28	1.43	0.28
Conv. Total (cfs)	1576.2	Conv. (cfs)	20.9	1551.7	3.6
Length Wtd. (ft)	436.52	Wetted Per. (ft)	6.12	25.76	1.35
Min Ch El (ft)	2621.42	Shear (lb/sq ft)	0.39	2.01	0.36
Alpha	1.06	Stream Power (lb/ft s)	0.73	12.95	0.58
Frctn Loss (ft)	6.64	Cum Volume (acre-ft)	21.43	55.29	15.23
C & E Loss (ft)	0.15	Cum SA (acres)	18.48	25.87	16.72

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was 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 OUTPUT Profile #Meth 1

E.G. Elev (ft)	2624.22	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.63	Wt. n-Val.		0.044	
W.S. Elev (ft)	2623.59	Reach Len. (ft)	444.95	437.80	425.51
Crit W.S. (ft)	2623.51	Flow Area (sq ft)		37.31	
E.G. Slope (ft/ft)	0.023107	Area (sq ft)		37.31	
Q Total (cfs)	238.00	Flow (cfs)		238.00	
Top Width (ft)	25.44	Top Width (ft)		25.44	

Vel Total (ft/s)	6.38	Avg. Vel. (ft/s)		6.38	
Max Chl Dpth (ft)	2.17	Hydr. Depth (ft)		1.47	
Conv. Total (cfs)	1565.7	Conv. (cfs)		1565.7	
Length Wtd. (ft)	437.80	Wetted Per. (ft)		26.93	
Min Ch El (ft)	2621.42	Shear (lb/sq ft)		2.00	
Alpha	1.00	Stream Power (lb/ft s)		12.75	
Frctn Loss (ft)	6.47	Cum Volume (acre-ft)	1.38	60.51	0.77
C & E Loss (ft)	0.13	Cum SA (acres)	0.45	25.88	0.60

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was 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: Upper Boulders W
REACH: UpperBoulders-1 RS: 3.5

INPUT
Description: Topography and Aerial indicates wash and surrounding undeveloped desert.
T5NR5E Section 6
Q100 = 238 cfs
Station Elevation Data num= 12

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9958.96	2620	9974.95	2618	9983.56	2617	9992.17	2616	10000	2615.2
10007.49	2616	10048.57	2617.29	10072.33	2616	10074.16	2616	10092.6	2618
10120.37	2620	10152.07	2622						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9958.96	.051	9983.56	.044	10048.57	.056

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9983.56	10048.57	363.8	359.52	351.74	.1	.3

CROSS SECTION OUTPUT Profile #100-yr 6-hr

E.G. Elev (ft)	2617.41	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.14	Wt. n-Val.	0.051	0.044	0.056
W.S. Elev (ft)	2617.26	Reach Len. (ft)	363.80	359.52	351.74
Crit W.S. (ft)	2616.96	Flow Area (sq ft)	0.29	57.30	24.27
E.G. Slope (ft/ft)	0.010863	Area (sq ft)	0.29	57.30	24.27
Q Total (cfs)	238.00	Flow (cfs)	0.23	186.89	50.88
Top Width (ft)	103.00	Top Width (ft)	2.25	64.08	36.67
Vel Total (ft/s)	2.91	Avg. Vel. (ft/s)	0.78	3.26	2.10
Max Chl Dpth (ft)	2.06	Hydr. Depth (ft)	0.13	0.89	0.66
Conv. Total (cfs)	2283.5	Conv. (cfs)	2.2	1793.2	488.2
Length Wtd. (ft)	358.69	Wetted Per. (ft)	2.26	64.24	36.78
Min Ch El (ft)	2615.20	Shear (lb/sq ft)	0.09	0.60	0.45
Alpha	1.10	Stream Power (lb/ft s)	0.07	1.97	0.94
Frctn Loss (ft)	5.41	Cum Volume (acre-ft)	21.42	54.82	15.11
C & E Loss (ft)	0.04	Cum SA (acres)	18.44	25.42	16.53

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.

CROSS SECTION OUTPUT Profile #Meth 1

E.G. Elev (ft)	2617.62	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.19	Wt. n-Val.		0.044	
W.S. Elev (ft)	2617.43	Reach Len. (ft)	363.80	359.52	351.74

Crit W.S. (ft)	2617.08	Flow Area (sq ft)		68.02	
E.G. Slope (ft/ft)	0.010258	Area (sq ft)		68.02	
Q Total (cfs)	238.00	Flow (cfs)		238.00	
Top Width (ft)	65.01	Top Width (ft)		65.01	
Vel Total (ft/s)	3.50	Avg. Vel. (ft/s)		3.50	
Max Chl Dpth (ft)	2.23	Hydr. Depth (ft)		1.05	
Conv. Total (cfs)	2349.9	Conv. (cfs)		2349.9	
Length Wtd. (ft)	359.52	Wetted Per. (ft)		65.73	
Min Ch El (ft)	2615.20	Shear (lb/sq ft)		0.66	
Alpha	1.00	Stream Power (lb/ft s)		2.32	
Frctn Loss (ft)	5.60	Cum Volume (acre-ft)	1.38	59.98	0.77
C & E Loss (ft)	0.04	Cum SA (acres)	0.45	25.42	0.60

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was 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: Upper Boulders W
REACH: UpperBoulders-1 RS: 3.43

INPUT
Description: Topography and Aerial indicates wash and surrounding undeveloped desert.
T5NR5E Section 6
Q100 = 238 cfs
Station Elevation Data num= 19

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9819.66	2620	9835.62	2618	9851.74	2616	9874.24	2616	9877.65	2616
9912.66	2614	9941.42	2613	9970.18	2612	9981.73	2611	9993.28	2610
10000	2609	10006.51	2610	10010.69	2610.99	10014.93	2612	10031.69	2614
10053.36	2616	10070.83	2618	10157.9	2620	10158.24	2620		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9819.66	.051	9981.73	.044	10010.69	.056

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9981.73	10010.69	348.01	334.27	346.42	.1	.3

CROSS SECTION OUTPUT Profile #100-yr 6-hr

E.G. Elev (ft)	2611.96	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.57	Wt. n-Val.	0.051	0.044	0.056
W.S. Elev (ft)	2611.38	Reach Len. (ft)	348.01	334.27	346.42
Crit W.S. (ft)	2611.33	Flow Area (sq ft)	0.84	38.80	0.32
E.G. Slope (ft/ft)	0.022339	Area (sq ft)	0.84	38.80	0.32
Q Total (cfs)	238.00	Flow (cfs)	1.22	236.36	0.42
Top Width (ft)	35.02	Top Width (ft)	4.42	28.96	1.65
Vel Total (ft/s)	5.95	Avg. Vel. (ft/s)	1.44	6.09	1.31
Max Chl Dpth (ft)	2.38	Hydr. Depth (ft)	0.19	1.34	0.20
Conv. Total (cfs)	1592.4	Conv. (cfs)	8.1	1581.4	2.8
Length Wtd. (ft)	334.33	Wetted Per. (ft)	4.43	29.27	1.69
Min Ch El (ft)	2609.00	Shear (lb/sq ft)	0.27	1.85	0.27
Alpha	1.04	Stream Power (lb/ft s)	0.38	11.26	0.35
Frctn Loss (ft)	5.87	Cum Volume (acre-ft)	21.42	54.42	15.01
C & E Loss (ft)	0.00	Cum SA (acres)	18.41	25.03	16.38

Warning: The energy loss was 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 OUTPUT Profile #Meth 1

E.G. Elev (ft)	2611.96	Element	Left OB	Channel	Right OB

Vel Head (ft)	0.63	Wt. n-Val.		0.044	
W.S. Elev (ft)	2611.33	Reach Len. (ft)	348.01	334.27	346.42
Crit W.S. (ft)	2611.33	Flow Area (sq ft)		37.37	
E.G. Slope (ft/ft)	0.026460	Area (sq ft)		37.37	
Q Total (cfs)	238.00	Flow (cfs)		238.00	
Top Width (ft)	28.96	Top Width (ft)		28.96	
Vel Total (ft/s)	6.37	Avg. Vel. (ft/s)		6.37	
Max Chl Dpth (ft)	2.33	Hydr. Depth (ft)		1.29	
Conv. Total (cfs)	1463.1	Conv. (cfs)		1463.1	
Length Wtd. (ft)	334.27	Wetted Per. (ft)		29.95	
Min Ch El (ft)	2609.00	Shear (lb/sq ft)		2.06	
Alpha	1.00	Stream Power (lb/ft s)		13.13	
Frctn Loss (ft)	5.77	Cum Volume (acre-ft)	1.38	59.55	0.77
C & E Loss (ft)	0.04	Cum SA (acres)	0.45	25.03	0.60

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
depth, the 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: Upper Boulders W
REACH: UpperBoulders-1 RS: 3.37

INPUT
Description: Topography and Aerial indicates wash and surrounding undeveloped
desert.
T5NR5E Section 6
Q100 = 238 cfs
Station Elevation Data num= 13

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9873.39	2612	9901.58	2610	9975.97	2608	9986.17	2606	9988.13	2605
9990.09	2604	10000	2602.73	10006.4	2604	10008.58	2605	10010.75	2606
10038.72	2608	10060.05	2610	10084.97	2612				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9873.39	.051	9988.13	.044	10008.58	.056

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9988.13	10008.58	410.91	427.01	431.31	.1	.3

CROSS SECTION OUTPUT Profile #100-yr 6-hr

			Left OB	Channel	Right OB
E.G. Elev (ft)	2606.08	Element			
Vel Head (ft)	0.57	Wt. n-Val.	0.051	0.044	0.056
W.S. Elev (ft)	2605.51	Reach Len. (ft)	410.91	427.01	431.31
Crit W.S. (ft)	2605.20	Flow Area (sq ft)	0.25	39.13	0.28
E.G. Slope (ft/ft)	0.014168	Area (sq ft)	0.25	39.13	0.28
Q Total (cfs)	238.00	Flow (cfs)	0.33	237.34	0.33
Top Width (ft)	22.55	Top Width (ft)	1.00	20.45	1.10
Vel Total (ft/s)	6.00	Avg. Vel. (ft/s)	1.29	6.07	1.19
Max Chl Dpth (ft)	2.78	Hydr. Depth (ft)	0.25	1.91	0.25
Conv. Total (cfs)	1999.5	Conv. (cfs)	2.7	1994.0	2.8
Length Wtd. (ft)	427.01	Wetted Per. (ft)	1.12	21.11	1.21
Min Ch El (ft)	2602.73	Shear (lb/sq ft)	0.20	1.64	0.20
Alpha	1.02	Stream Power (lb/ft s)	0.26	9.94	0.24
Frctn Loss (ft)	7.40	Cum Volume (acre-ft)	21.41	54.13	15.01
C & E Loss (ft)	0.02	Cum SA (acres)	18.39	24.84	16.36

Warning: The energy loss was 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 OUTPUT Profile #Meth 1

E.G. Elev (ft)	2606.15	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.50	Wt. n-Val.		0.044	
W.S. Elev (ft)	2605.65	Reach Len. (ft)	410.91	427.01	431.31
Crit W.S. (ft)	2605.20	Flow Area (sq ft)		42.06	
E.G. Slope (ft/ft)	0.012130	Area (sq ft)		42.06	
Q Total (cfs)	238.00	Flow (cfs)		238.00	
Top Width (ft)	20.45	Top Width (ft)		20.45	
Vel Total (ft/s)	5.66	Avg. Vel. (ft/s)		5.66	
Max Chl Dpth (ft)	2.92	Hydr. Depth (ft)		2.06	
Conv. Total (cfs)	2161.0	Conv. (cfs)		2161.0	
Length Wtd. (ft)	427.01	Wetted Per. (ft)		22.42	
Min Ch El (ft)	2602.73	Shear (lb/sq ft)		1.42	
Alpha	1.00	Stream Power (lb/ft s)		8.04	
Frctn Loss (ft)	7.41	Cum Volume (acre-ft)	1.38	59.24	0.77
C & E Loss (ft)	0.04	Cum SA (acres)	0.45	24.84	0.60

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was 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: Upper Boulders W
REACH: UpperBoulders-1 RS: 3.29

INPUT
Description: Topography and Aerial indicates wash and surrounding undeveloped desert. Cross section composed of Cross Section Data collected by the city of Scottsdale Survey Department.
T5NR5E Section 6
Q100
= 238 cfs
Station Elevation Data num= 13

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9958.66	2605.22	9964.1	2605.27	9993.97	2599.79	9997.72	2597	9999.57	2595.62
10006.9	2595.63	10015.35	2597	10023.62	2598.34	10032.93	2597.67	10050.15	2600.77
10070.29	2600.69	10080.75	2597.56	10141.28	2606.92				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9958.66	.051	9997.72	.044	10015.35	.056

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9997.72	10015.35	307.01	315.56	315.64	.1	.3

Right Levee Station=10023.62 Elevation= 2598.34

CROSS SECTION OUTPUT Profile #100-yr 6-hr

E.G. Elev (ft)	2598.64	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.80	Wt. n-Val.	0.051	0.044	0.056
W.S. Elev (ft)	2597.84	Reach Len. (ft)	307.01	315.56	315.64
Crit W.S. (ft)	2597.84	Flow Area (sq ft)	0.48	32.02	2.20
E.G. Slope (ft/ft)	0.021712	Area (sq ft)	0.48	32.02	2.20
Q Total (cfs)	238.00	Flow (cfs)	1.00	232.21	4.79
Top Width (ft)	23.97	Top Width (ft)	1.13	17.63	5.21
Vel Total (ft/s)	6.86	Avg. Vel. (ft/s)	2.09	7.25	2.18
Max Chl Dpth (ft)	2.22	Hydr. Depth (ft)	0.42	1.82	0.42
Conv. Total (cfs)	1615.2	Conv. (cfs)	6.8	1575.9	32.5
Length Wtd. (ft)	315.50	Wetted Per. (ft)	1.41	18.20	5.27

Min Ch El (ft)	2595.62	Shear (lb/sq ft)	0.46	2.38	0.56
Alpha	1.09	Stream Power (lb/ft s)	0.96	17.30	1.23
Frctn Loss (ft)	4.90	Cum Volume (acre-ft)	21.41	53.78	15.00
C & E Loss (ft)	0.13	Cum SA (acres)	18.38	24.66	16.33

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.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water
surface was used.

CROSS SECTION OUTPUT Profile #Meth 1

E.G. Elev (ft)	2598.70	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.88	Wt. n-Val.		0.044	
W.S. Elev (ft)	2597.82	Reach Len. (ft)	307.01	315.56	315.64
Crit W.S. (ft)	2597.82	Flow Area (sq ft)		31.54	
E.G. Slope (ft/ft)	0.026891	Area (sq ft)		31.54	
Q Total (cfs)	238.00	Flow (cfs)		238.00	
Top Width (ft)	17.63	Top Width (ft)		17.63	
Vel Total (ft/s)	7.55	Avg. Vel. (ft/s)		7.55	
Max Chl Dpth (ft)	2.20	Hydr. Depth (ft)		1.79	
Conv. Total (cfs)	1451.4	Conv. (cfs)		1451.4	
Length Wtd. (ft)	315.56	Wetted Per. (ft)		19.83	
Min Ch El (ft)	2595.62	Shear (lb/sq ft)		2.67	
Alpha	1.00	Stream Power (lb/ft s)		20.15	
Frctn Loss (ft)	5.28	Cum Volume (acre-ft)	1.38	58.88	0.77
C & E Loss (ft)	0.16	Cum SA (acres)	0.45	24.66	0.60

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.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water
surface was used.

CROSS SECTION

RIVER: Upper Boulders W
REACH: UpperBoulders-1 RS: 3.23

INPUT
Description: Cross Section 3.23 is located upstream of the northern boundary of Legend Trail.

Topography and Aerial indicates wash and
surrounding undeveloped desert. Cross section composed of Cross

Section Data collected by the city of Scottsdale Survey Department.

T5NR5E Section 6
Q100 = 238 cfs

Station Elevation Data num= 13

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9926.54	2600.13	9953.99	2595.9	9987.32	2592	10001.36	2590.78	10013.66	2590.36
10017	2592	10021.12	2594.24	10051.23	2594.84	10113.65	2592.11	10116.22	2590.78
10123.77	2592.56	10212.01	2599.01	10242.78	2598.35				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9926.54	.051	9987.32	.044	10017	.056

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9987.32	10017	469.92	482.21	490.25	.1	.3

Right Levee Station=10051.23 Elevation= 2594.79

CROSS SECTION OUTPUT Profile #100-yr 6-hr

			Left OB	Channel	Right OB
E.G. Elev (ft)	2593.00	Element			
Vel Head (ft)	0.38	Wt. n-Val.	0.051	0.044	0.056
W.S. Elev (ft)	2592.63	Reach Len. (ft)	469.92	482.21	490.25
Crit W.S. (ft)	2592.30	Flow Area (sq ft)	1.69	47.55	0.36
E.G. Slope (ft/ft)	0.011663	Area (sq ft)	1.69	47.55	0.36
Q Total (cfs)	238.00	Flow (cfs)	2.45	235.11	0.44
Top Width (ft)	36.21	Top Width (ft)	5.37	29.68	1.16
Vel Total (ft/s)	4.80	Avg. Vel. (ft/s)	1.45	4.94	1.22
Max Chl Dpth (ft)	2.27	Hydr. Depth (ft)	0.31	1.60	0.31
Conv. Total (cfs)	2203.8	Conv. (cfs)	22.6	2177.1	4.1
Length Wtd. (ft)	482.15	Wetted Per. (ft)	5.41	30.12	1.32
Min Ch El (ft)	2590.36	Shear (lb/sq ft)	0.23	1.15	0.20
Alpha	1.05	Stream Power (lb/ft s)	0.33	5.68	0.24
Frctn Loss (ft)	8.00	Cum Volume (acre-ft)	21.40	53.49	14.99
C & E Loss (ft)	0.04	Cum SA (acres)	18.36	24.49	16.31

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.

CROSS SECTION OUTPUT Profile #Meth 1

			Left OB	Channel	Right OB
E.G. Elev (ft)	2593.05	Element			
Vel Head (ft)	0.37	Wt. n-Val.		0.044	
W.S. Elev (ft)	2592.68	Reach Len. (ft)	469.92	482.21	490.25
Crit W.S. (ft)	2592.29	Flow Area (sq ft)		49.09	
E.G. Slope (ft/ft)	0.011402	Area (sq ft)		49.09	
Q Total (cfs)	238.00	Flow (cfs)		238.00	
Top Width (ft)	29.68	Top Width (ft)		29.68	
Vel Total (ft/s)	4.85	Avg. Vel. (ft/s)		4.85	
Max Chl Dpth (ft)	2.32	Hydr. Depth (ft)		1.65	
Conv. Total (cfs)	2228.9	Conv. (cfs)		2228.9	
Length Wtd. (ft)	482.21	Wetted Per. (ft)		31.48	
Min Ch El (ft)	2590.36	Shear (lb/sq ft)		1.11	
Alpha	1.00	Stream Power (lb/ft s)		5.38	
Frctn Loss (ft)	8.02	Cum Volume (acre-ft)	1.38	58.59	0.77
C & E Loss (ft)	0.04	Cum SA (acres)	0.45	24.49	0.60

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

Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water
surface was used.

CROSS SECTION

RIVER: Upper Boulders W
REACH: UpperBoulders-1 RS: 3.14

INPUT
Description: Cross Section 3.14 is located within Legend Trail.

Topography
indicates wash and surrounding undeveloped desert. Cross section
composed of Cross Section Data collected by the city of Scottsdale
Survey Department.
Aerial shows wash, homes and 92nd Way.
T5NR5E
Section 6
Q100 = 238 cfs
Station Elevation Data num= 19

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9810.88	2588.31	9835.32	2587.95	9837.39	2587.63	9837.46	2587.61	9850.49	2587.82
9861.2	2587.72	9863.03	2588.34	9995.7	2589.18	9996.55	2584.94	9999.54	2584
10005.24	2582.21	10014.01	2581.93	10021.05	2584	10026.77	2585.68	10132.2	2588.78
10157.3	2588.18	10159.3	2587.92	10174.26	2587.99	10174.41	2588.05		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9810.88	.051	9999.54	.044	10021.05	.056

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9999.54	10021.05	169.1	171.27	172.58	.1	.3

CROSS SECTION OUTPUT Profile #100-yr 6-hr

			Left OB	Channel	Right OB
E.G. Elev (ft)	2584.98	Element			
Vel Head (ft)	0.78	Wt. n-Val.	0.051	0.044	0.056
W.S. Elev (ft)	2584.19	Reach Len. (ft)	169.10	171.27	172.58
Crit W.S. (ft)	2584.19	Flow Area (sq ft)	0.06	33.48	0.06
E.G. Slope (ft/ft)	0.025426	Area (sq ft)	0.06	33.48	0.06
Q Total (cfs)	238.00	Flow (cfs)	0.06	237.89	0.06
Top Width (ft)	22.79	Top Width (ft)	0.62	21.51	0.66
Vel Total (ft/s)	7.08	Avg. Vel. (ft/s)	0.95	7.11	0.87
Max Chl Dpth (ft)	2.26	Hydr. Depth (ft)	0.10	1.56	0.10
Conv. Total (cfs)	1492.6	Conv. (cfs)	0.4	1491.9	0.3
Length Wtd. (ft)	171.24	Wetted Per. (ft)	0.65	22.09	0.69
Min Ch El (ft)	2581.93	Shear (lb/sq ft)	0.15	2.41	0.15
Alpha	1.01	Stream Power (lb/ft s)	0.14	17.10	0.13
Frctn Loss (ft)	2.19	Cum Volume (acre-ft)	21.39	53.04	14.98
C & E Loss (ft)	0.14	Cum SA (acres)	18.33	24.20	16.30

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 conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
depth, the 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 OUTPUT Profile #Meth 1

			Left OB	Channel	Right OB
E.G. Elev (ft)	2584.98	Element			
Vel Head (ft)	0.79	Wt. n-Val.		0.044	

W.S. Elev (ft)	2584.19	Reach Len. (ft)	169.10	171.27	172.58
Crit W.S. (ft)	2584.19	Flow Area (sq ft)		33.31	
E.G. Slope (ft/ft)	0.026463	Area (sq ft)		33.31	
Q Total (cfs)	238.00	Flow (cfs)		238.00	
Top Width (ft)	21.51	Top Width (ft)		21.51	
Vel Total (ft/s)	7.14	Avg. Vel. (ft/s)		7.14	
Max Chl Dpth (ft)	2.26	Hydr. Depth (ft)		1.55	
Conv. Total (cfs)	1463.0	Conv. (cfs)		1463.0	
Length Wtd. (ft)	171.27	Wetted Per. (ft)		22.46	
Min Ch El (ft)	2581.93	Shear (lb/sq ft)		2.45	
Alpha	1.00	Stream Power (lb/ft s)		17.51	
Frctn Loss (ft)	2.96	Cum Volume (acre-ft)	1.38	58.13	0.77
C & E Loss (ft)	0.10	Cum SA (acres)	0.45	24.20	0.60

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 conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
depth, the 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: Upper Boulders W
REACH: UpperBoulders-1 RS: 3.11

INPUT
Description: Cross Section 3.11 is located within Legend Trail. It is located upstream of concentration point CUB10 in the HEC-1 model.

Topography indicates wash and surrounding undeveloped desert.
Cross section composed of Cross Section Data collected by the city of Scottsdale Survey Department.
Aerial shows wash, homes and
92nd Way.
T5NR5E Section 6
Q100 = 238 cfs
Station Elevation Data num= 11

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9971.22	2582.04	9971.22	2581.95	9984.36	2579	9986.36	2578.55	9995.18	2578.54
10005.71	2578.82	10006.4	2579	10016.97	2581.77	10028.22	2581.97	10036.7	2583.17
10039.59	2583.47								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9971.22	.051	9984.36	.044	10006.4	.056

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9984.36	10006.4	269.12	276.19	280	.3	.5

CROSS SECTION OUTPUT Profile #100-yr 6-hr

E.G. Elev (ft)	2581.00	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.32	Wt. n-Val.	0.051	0.044	0.056
W.S. Elev (ft)	2580.68	Reach Len. (ft)	269.12	276.19	280.00
Crit W.S. (ft)		Flow Area (sq ft)	6.27	44.87	5.37
E.G. Slope (ft/ft)	0.007700	Area (sq ft)	6.27	44.87	5.37
Q Total (cfs)	238.00	Flow (cfs)	14.03	213.10	10.88
Top Width (ft)	35.92	Top Width (ft)	7.47	22.04	6.40
Vel Total (ft/s)	4.21	Avg. Vel. (ft/s)	2.24	4.75	2.03
Max Chl Dpth (ft)	2.14	Hydr. Depth (ft)	0.84	2.04	0.84
Conv. Total (cfs)	2712.3	Conv. (cfs)	159.8	2428.5	124.0

Length Wtd. (ft)	276.13	Wetted Per. (ft)	7.66	22.12	6.62
Min Ch El (ft)	2578.54	Shear (lb/sq ft)	0.39	0.98	0.39
Alpha	1.17	Stream Power (lb/ft s)	0.88	4.63	0.79
Frctn Loss (ft)	0.84	Cum Volume (acre-ft)	21.38	52.89	14.97
C & E Loss (ft)	0.01	Cum SA (acres)	18.31	24.12	16.29

Warning: The conveyance ratio (upstream 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 OUTPUT Profile #Meth 1

E.G. Elev (ft)	2581.10	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.45	Wt. n-Val.		0.044	
W.S. Elev (ft)	2580.65	Reach Len. (ft)	269.12	276.19	280.00
Crit W.S. (ft)		Flow Area (sq ft)		44.17	
E.G. Slope (ft/ft)	0.012178	Area (sq ft)		44.17	
Q Total (cfs)	238.00	Flow (cfs)		238.00	
Top Width (ft)	22.04	Top Width (ft)		22.04	
Vel Total (ft/s)	5.39	Avg. Vel. (ft/s)		5.39	
Max Chl Dpth (ft)	2.11	Hydr. Depth (ft)		2.00	
Conv. Total (cfs)	2156.7	Conv. (cfs)		2156.7	
Length Wtd. (ft)	276.19	Wetted Per. (ft)		25.41	
Min Ch El (ft)	2578.54	Shear (lb/sq ft)		1.32	
Alpha	1.00	Stream Power (lb/ft s)		7.12	
Frctn Loss (ft)	0.90	Cum Volume (acre-ft)	1.38	57.98	0.77
C & E Loss (ft)	0.05	Cum SA (acres)	0.45	24.12	0.60

Warning: The conveyance ratio (upstream 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: Upper Boulders W
REACH: UpperBoulders-1 RS: 3.05

INPUT
Description: Cross Section 3.05 is located upstream of the intersection of Upper Boulders Wash and 92nd Way. There are 2-8 X 4 CBC located under 92nd Place.

Topography indicates wash and surrounding undeveloped desert. Cross section composed of Cross Section Data collected by the city of Scottsdale Survey Department.
Aerial shows roadway, wash and undeveloped desert.
T5NR5E Section 6
Q100 = 735 cfs
Station Elevation Data num= 15

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9933.44	2581.18	9933.44	2581.13	9954.28	2581.15	9978.82	2580.67	9986.09	2577.34
9990.98	2573.57	10001.08	2574.13	10013.31	2573.78	10013.85	2577.49	10018.57	2579.81
10032.53	2581.28	10032.67	2582.06	10053.5	2581.96	10057	2580.92	10057	2581.38

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9933.44	.051	9986.09	.044	10013.85	.056

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9986.09	10013.85	78.45	78.59	78.85	.3	.5

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
9933.44	9986.09	2581.18	F
10013.85	10057	2581.18	F

CROSS SECTION OUTPUT Profile #100-yr 6-hr

E.G. Elev (ft)	2580.15	Element	Left OB	Channel	Right OB

Vel Head (ft)	0.35	Wt. n-Val.		0.044	
W.S. Elev (ft)	2579.80	Reach Len. (ft)	78.45	78.59	78.85
Crit W.S. (ft)	2576.99	Flow Area (sq ft)		155.05	
E.G. Slope (ft/ft)	0.002430	Area (sq ft)	6.60	155.05	5.43
Q Total (cfs)	735.00	Flow (cfs)		735.00	
Top Width (ft)	37.83	Top Width (ft)	5.37	27.76	4.70
Vel Total (ft/s)	4.74	Avg. Vel. (ft/s)		4.74	
Max Chl Dpth (ft)	6.23	Hydr. Depth (ft)		5.59	
Conv. Total (cfs)	14909.1	Conv. (cfs)		14909.1	
Length Wtd. (ft)	78.59	Wetted Per. (ft)		32.27	
Min Ch El (ft)	2573.57	Shear (lb/sq ft)		0.73	
Alpha	1.00	Stream Power (lb/ft s)		3.46	
Frctn Loss (ft)		Cum Volume (acre-ft)	21.34	52.25	14.94
C & E Loss (ft)		Cum SA (acres)	18.27	23.96	16.25

Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid,
energy was used.

CROSS SECTION OUTPUT Profile #Meth 1

E.G. Elev (ft)	2580.15	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.35	Wt. n-Val.		0.044	
W.S. Elev (ft)	2579.80	Reach Len. (ft)	78.45	78.59	78.85
Crit W.S. (ft)	2576.99	Flow Area (sq ft)		155.05	
E.G. Slope (ft/ft)	0.002430	Area (sq ft)	6.60	155.05	5.43
Q Total (cfs)	735.00	Flow (cfs)		735.00	
Top Width (ft)	37.83	Top Width (ft)	5.37	27.76	4.70
Vel Total (ft/s)	4.74	Avg. Vel. (ft/s)		4.74	
Max Chl Dpth (ft)	6.23	Hydr. Depth (ft)		5.59	
Conv. Total (cfs)	14909.1	Conv. (cfs)		14909.1	
Length Wtd. (ft)	78.59	Wetted Per. (ft)		32.27	
Min Ch El (ft)	2573.57	Shear (lb/sq ft)		0.73	
Alpha	1.00	Stream Power (lb/ft s)		3.46	
Frctn Loss (ft)		Cum Volume (acre-ft)	1.36	57.35	0.75
C & E Loss (ft)		Cum SA (acres)	0.43	23.96	0.59

Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid,
energy was used.

CULVERT

RIVER: Upper Boulders W
REACH: UpperBoulders-1 RS: 3.045

INPUT
Description: Box Culverts at 92nd Place
Distance from Upstream XS = 20
Deck/Roadway Width = 24
Weir Coefficient = 2.6
Upstream Deck/Roadway Coordinates
num= 8

Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord
9928.57	2580.97		9957.53	2581.18		9987.96	2581.45	
10018.02	2581.63		10047.7	2581.79		10075.85	2581.7	
10102.85	2581.33		10124.72	2581.17				

Upstream Bridge Cross Section Data
Station Elevation Data num= 15

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9933.44	2581.18	9933.44	2581.13	9954.28	2581.15	9978.82	2580.67	9986.09	2577.34
9990.98	2573.57	10001.08	2574.13	10013.31	2573.78	10013.85	2577.49	10018.57	2579.81
10032.53	2581.28	10032.67	2582.06	10053.5	2581.96	10057	2580.92	10057	2581.38

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9933.44	.051	9986.09	.044	10013.85	.056

```
Bank Sta: Left   Right    Coeff Contr.   Expan.
       9986.0910013.85             .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
 9933.44 9986.09 2581.18       F
10013.85   10057 2581.18       F

Downstream  Deck/Roadway Coordinates
    num=       9
     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord
 9931.52 2580.97         9960.22 2581.18         9990.43 2581.45
10020.39 2581.63        10050.06 2581.79        10078.27  2581.7
10105.41 2581.33        10126.26 2581.17        10154.34 2581.39

Downstream Bridge Cross Section Data
Station Elevation Data    num=      14
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
 9940.74 2581.52 9940.84 2581.34 9945.72  2579.7 9954.22 2577.75 9981.97 2577.27
 9992.23 2576.1110000.79 2572.4510022.33 2572.5810023.89 2575.4810036.71 2575.28
10061.07 2576.6110095.86 2577.5310137.98 2579.1110161.66 2581.26

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
 9940.74    .051 9992.23    .04410023.89    .056

Bank Sta: Left   Right    Coeff Contr.   Expan.
       9992.2310023.89             .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
 9940.74 9992.23 2581.17       F
10023.8910161.66 2581.17       F

Upstream Embankment side slope              =       0 horiz. to 1.0 vertical
Downstream Embankment side slope            =       0 horiz. to 1.0 vertical
Maximum allowable submergence for weir flow =     .95
Elevation at which weir flow begins         =
Energy head used in spillway design         =
Spillway height used in design              =
Weir crest shape                            = Broad Crested

Number of Culverts =  1

Culvert Name     Shape      Rise    Span
Culvert #1           Box       4       8
FHWA Chart # 8 - flared wingwalls
FHWA Scale # 1 - Wingwall flared 30 to 75 deg.
Solution Criteria = Highest U.S. EG
Culvert Upstrm Dist  Length    Top n  Bottom n  Depth Blocked  Entrance Loss Coef   Exit Loss Coef
                  4      70     .015     .015        0                   .4                 1
Number of Barrels =  2
Upstream   Elevation =  2573.77
Centerline Stations
    Sta.    Sta.
  9997.9 10006.4
Downstream Elevation =  2572.64
Centerline Stations
    Sta.    Sta.
10007.3110015.81

CROSS SECTION


RIVER: Upper Boulders W
REACH: UpperBoulders-1    RS: 3.04

INPUT
Description: Cross Section 3.04 is located upstream of concentration point
             CUB11 in the HEC-1 model.  It is located downstream of the
             intersection of Upper Boulders Wash and 92nd Way.  There are 2-8 X
             4 CBC located under 92nd Place.
```

Topography indicates wash
and surrounding undeveloped desert. Cross section composed of
Cross Section Data collected by the city of Scottsdale Survey
Department.
Aerial shows roadway, wash and undeveloped
desert.
T5NR5E Section 6
Q100 = 735 cfs
Station Elevation Data num= 14

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9940.74	2581.52	9940.84	2581.34	9945.72	2579.7	9954.22	2577.75	9981.97	2577.27
9992.23	2576.11	10000.79	2572.45	10022.33	2572.58	10023.89	2575.48	10036.71	2575.28
10061.07	2576.61	10095.86	2577.53	10137.98	2579.11	10161.66	2581.26		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9940.74	.051	9992.23	.044	10023.89	.056

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9992.23	10023.89	343.62	344.75	348.5	.3	.5

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
9940.74	9992.23	2581.17	F
10023.89	10161.66	2581.17	F

CROSS SECTION OUTPUT Profile #100-yr 6-hr

E.G. Elev (ft)	2576.96	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.00	Wt. n-Val.		0.044	
W.S. Elev (ft)	2575.96	Reach Len. (ft)	343.62	344.75	348.50
Crit W.S. (ft)	2575.60	Flow Area (sq ft)		91.73	
E.G. Slope (ft/ft)	0.014851	Area (sq ft)		91.73	11.76
Q Total (cfs)	735.00	Flow (cfs)		735.00	
Top Width (ft)	56.66	Top Width (ft)		31.32	25.34
Vel Total (ft/s)	8.01	Avg. Vel. (ft/s)		8.01	
Max Chl Dpth (ft)	3.51	Hydr. Depth (ft)		2.93	
Conv. Total (cfs)	6031.3	Conv. (cfs)		6031.3	
Length Wtd. (ft)	344.75	Wetted Per. (ft)		33.77	
Min Ch El (ft)	2572.45	Shear (lb/sq ft)		2.52	
Alpha	1.00	Stream Power (lb/ft s)		20.18	
Frctn Loss (ft)	5.41	Cum Volume (acre-ft)	21.34	52.03	14.92
C & E Loss (ft)	0.07	Cum SA (acres)	18.27	23.91	16.22

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.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid,
energy was used.

CROSS SECTION OUTPUT Profile #Meth 1

E.G. Elev (ft)	2576.96	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.01	Wt. n-Val.		0.044	
W.S. Elev (ft)	2575.95	Reach Len. (ft)	343.62	344.75	348.50
Crit W.S. (ft)	2575.60	Flow Area (sq ft)		91.25	
E.G. Slope (ft/ft)	0.015370	Area (sq ft)		91.25	
Q Total (cfs)	735.00	Flow (cfs)		735.00	
Top Width (ft)	31.28	Top Width (ft)		31.28	
Vel Total (ft/s)	8.05	Avg. Vel. (ft/s)		8.05	
Max Chl Dpth (ft)	3.50	Hydr. Depth (ft)		2.92	
Conv. Total (cfs)	5928.6	Conv. (cfs)		5928.6	
Length Wtd. (ft)	344.75	Wetted Per. (ft)		34.20	
Min Ch El (ft)	2572.45	Shear (lb/sq ft)		2.56	
Alpha	1.00	Stream Power (lb/ft s)		20.62	
Frctn Loss (ft)	5.33	Cum Volume (acre-ft)	1.35	57.13	0.75
C & E Loss (ft)	0.06	Cum SA (acres)	0.43	23.91	0.58

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid,
energy was used.

CROSS SECTION

RIVER: Upper Boulders W
REACH: UpperBoulders-1 RS: 2.97

INPUT
Description: Cross Section 2.97 is located downstream of the west boundary of Legend Trail.

Topography and Aerial indicate the wash and surrounding undeveloped desert. Cross section composed of Cross Section Data collected by the city of Scottsdale Survey Department.
T5NR5E Section 6
Q100 = 1,270 cfs
Station Elevation Data num= 13

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9935.27	2573.97	9964.81	2569.53	9978.8	2570.03	9983.28	2566.71	10009.07	2566.24
10023.37	2569.62	10059.55	2571.93	10087.58	2570.61	10130.96	2571.58	10177.88	2571.33
10188.25	2568.82	10199.12	2570.51	10282.38	2577.07				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9935.27	.051	9978.8	.044	10023.37	.056

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9978.8	10023.37	472.25	469.32	478.67	.1	.3

Right Levee Station=10059.55 Elevation= 2571.93

CROSS SECTION OUTPUT Profile #100-yr 6-hr

			Left OB	Channel	Right OB
E.G. Elev (ft)	2571.48	Element			
Vel Head (ft)	1.23	Wt. n-Val.	0.051	0.044	0.056
W.S. Elev (ft)	2570.25	Reach Len. (ft)	472.25	469.32	478.67
Crit W.S. (ft)	2570.25	Flow Area (sq ft)	8.23	138.94	3.07
E.G. Slope (ft/ft)	0.016225	Area (sq ft)	8.23	138.94	3.07
Q Total (cfs)	1270.00	Flow (cfs)	17.60	1247.62	4.78
Top Width (ft)	73.13	Top Width (ft)	18.76	44.57	9.81
Vel Total (ft/s)	8.45	Avg. Vel. (ft/s)	2.14	8.98	1.56
Max Chl Dpth (ft)	4.01	Hydr. Depth (ft)	0.44	3.12	0.31
Conv. Total (cfs)	9970.5	Conv. (cfs)	138.2	9794.8	37.5
Length Wtd. (ft)	469.67	Wetted Per. (ft)	18.82	46.07	9.83
Min Ch El (ft)	2566.24	Shear (lb/sq ft)	0.44	3.05	0.32
Alpha	1.11	Stream Power (lb/ft s)	0.95	27.43	0.49
Frctn Loss (ft)	5.50	Cum Volume (acre-ft)	21.30	51.12	14.86
C & E Loss (ft)	0.15	Cum SA (acres)	18.19	23.61	16.08

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 energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
depth, the 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 OUTPUT Profile #Meth 1

E.G. Elev (ft)	2571.57	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.21	Wt. n-Val.		0.044	
W.S. Elev (ft)	2570.35	Reach Len. (ft)	472.25	469.32	478.67
Crit W.S. (ft)	2570.08	Flow Area (sq ft)		143.68	
E.G. Slope (ft/ft)	0.015496	Area (sq ft)		143.68	
Q Total (cfs)	1270.00	Flow (cfs)		1270.00	
Top Width (ft)	44.57	Top Width (ft)		44.57	
Vel Total (ft/s)	8.84	Avg. Vel. (ft/s)		8.84	
Max Chl Dpth (ft)	4.11	Hydr. Depth (ft)		3.22	
Conv. Total (cfs)	10202.1	Conv. (cfs)		10202.1	
Length Wtd. (ft)	469.32	Wetted Per. (ft)		47.13	
Min Ch El (ft)	2566.24	Shear (lb/sq ft)		2.95	
Alpha	1.00	Stream Power (lb/ft s)		26.07	
Frctn Loss (ft)	6.66	Cum Volume (acre-ft)	1.35	56.20	0.75
C & E Loss (ft)	0.00	Cum SA (acres)	0.43	23.61	0.58

Warning: The cross section had to be extended vertically during the critical depth calculations.
Warning: The energy loss was greater 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: Upper Boulders W
REACH: UpperBoulders-1 RS: 2.88

INPUT
Description: Topography and Aerial indicate the wash and surrounding
undeveloped desert. Cross section composed of Cross Section Data
collected by the city of Scottsdale Survey Department.
T5NR5E
Section 6
Q100 = 1,270 cfs
Station Elevation Data num= 13

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9727.68	2567.25	9769.1	2565.4	9769.33	2565.59	9865.97	2563.1	9871.37	2561.9
9875.05	2562.87	9925.9	2562.9	9984.55	2561.73	9991.17	2559.25	10014.1	2558.99
10019.19	2561.75	10021.1	2562.55	10065.22	2566.94				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9727.68	.051	9984.55	.044	10019.19	.056

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9984.55	10019.19	184.44	187.8	187.36	.1	.3

CROSS SECTION OUTPUT Profile #100-yr 6-hr

E.G. Elev (ft)	2564.16	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.74	Wt. n-Val.	0.051	0.044	0.056
W.S. Elev (ft)	2563.42	Reach Len. (ft)	184.44	187.80	187.36
Crit W.S. (ft)	2563.42	Flow Area (sq ft)	102.74	133.51	6.22
E.G. Slope (ft/ft)	0.008849	Area (sq ft)	102.74	133.51	6.22
Q Total (cfs)	1270.00	Flow (cfs)	239.14	1020.13	10.72
Top Width (ft)	176.27	Top Width (ft)	130.98	34.64	10.65
Vel Total (ft/s)	5.24	Avg. Vel. (ft/s)	2.33	7.64	1.72
Max Chl Dpth (ft)	4.43	Hydr. Depth (ft)	0.78	3.85	0.58

Conv. Total (cfs)	13500.9	Conv. (cfs)	2542.2	10844.7	114.0
Length Wtd. (ft)	187.22	Wetted Per. (ft)	131.26	35.79	10.85
Min Ch El (ft)	2558.99	Shear (lb/sq ft)	0.43	2.06	0.32
Alpha	1.75	Stream Power (lb/ft s)	1.01	15.75	0.55
Frctn Loss (ft)	2.11	Cum Volume (acre-ft)	20.70	49.65	14.81
C & E Loss (ft)	0.04	Cum SA (acres)	17.38	23.18	15.97

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.

CROSS SECTION OUTPUT Profile #Meth 1

E.G. Elev (ft)	2564.90	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.26	Wt. n-Val.		0.044	
W.S. Elev (ft)	2563.64	Reach Len. (ft)	184.44	187.80	187.36
Crit W.S. (ft)	2563.04	Flow Area (sq ft)		141.13	
E.G. Slope (ft/ft)	0.013039	Area (sq ft)		141.13	
Q Total (cfs)	1270.00	Flow (cfs)		1270.00	
Top Width (ft)	34.64	Top Width (ft)		34.64	
Vel Total (ft/s)	9.00	Avg. Vel. (ft/s)		9.00	
Max Chl Dpth (ft)	4.65	Hydr. Depth (ft)		4.07	
Conv. Total (cfs)	11122.0	Conv. (cfs)		11122.0	
Length Wtd. (ft)	187.80	Wetted Per. (ft)		39.59	
Min Ch El (ft)	2558.99	Shear (lb/sq ft)		2.90	
Alpha	1.00	Stream Power (lb/ft s)		26.11	
Frctn Loss (ft)	3.15	Cum Volume (acre-ft)	1.35	54.66	0.75
C & E Loss (ft)	0.06	Cum SA (acres)	0.43	23.18	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 cross section had to be extended vertically during the critical depth calculations.
Warning: The energy loss was greater 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: Upper Boulders W
REACH: UpperBoulders-1 RS: 2.85

INPUT
Description: Topography and Aerial indicate the wash and surrounding
undeveloped desert.
T5NR5E Section 6
Q100 = 1,270 cfs
Station Elevation Data num= 13

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9799.81	2564	9803.23	2564	9840.91	2562	9950.39	2560	9953.87	2558
9956.01	2558	9975.66	2558	9979.04	2556	10003.7	2556	10007.87	2558
10024.99	2560	10123.13	2562	10158.21	2562				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9799.81	.051	9975.66	.044	10007.87	.056

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

9975.6610007.87 300.79 247.31 247.75 .1 .3

CROSS SECTION OUTPUT Profile #100-yr 6-hr

E.G. Elev (ft)	2560.87	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.15	Wt. n-Val.	0.051	0.044	0.056
W.S. Elev (ft)	2559.72	Reach Len. (ft)	300.79	247.31	247.75
Crit W.S. (ft)	2559.72	Flow Area (sq ft)	39.99	112.19	12.63
E.G. Slope (ft/ft)	0.014869	Area (sq ft)	39.99	112.19	12.63
Q Total (cfs)	1270.00	Flow (cfs)	193.12	1040.14	36.74
Top Width (ft)	71.69	Top Width (ft)	24.78	32.21	14.70
Vel Total (ft/s)	7.71	Avg. Vel. (ft/s)	4.83	9.27	2.91
Max Chl Dpth (ft)	3.72	Hydr. Depth (ft)	1.61	3.48	0.86
Conv. Total (cfs)	10415.0	Conv. (cfs)	1583.7	8529.9	301.3
Length Wtd. (ft)	252.45	Wetted Per. (ft)	25.24	33.21	14.80
Min Ch El (ft)	2556.00	Shear (lb/sq ft)	1.47	3.14	0.79
Alpha	1.25	Stream Power (lb/ft s)	7.10	29.07	2.30
Frctn Loss (ft)	3.31	Cum Volume (acre-ft)	20.40	49.12	14.77
C & E Loss (ft)	0.07	Cum SA (acres)	17.05	23.03	15.92

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.

CROSS SECTION OUTPUT Profile #Meth 1

E.G. Elev (ft)	2561.70	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.84	Wt. n-Val.		0.044	
W.S. Elev (ft)	2559.86	Reach Len. (ft)	300.79	247.31	247.75
Crit W.S. (ft)	2559.86	Flow Area (sq ft)		116.79	
E.G. Slope (ft/ft)	0.022337	Area (sq ft)		116.79	
Q Total (cfs)	1270.00	Flow (cfs)		1270.00	
Top Width (ft)	32.21	Top Width (ft)		32.21	
Vel Total (ft/s)	10.87	Avg. Vel. (ft/s)		10.87	
Max Chl Dpth (ft)	3.86	Hydr. Depth (ft)		3.63	
Conv. Total (cfs)	8497.4	Conv. (cfs)		8497.4	
Length Wtd. (ft)	248.04	Wetted Per. (ft)		36.93	
Min Ch El (ft)	2556.00	Shear (lb/sq ft)		4.41	
Alpha	1.00	Stream Power (lb/ft s)		47.95	
Frctn Loss (ft)	4.15	Cum Volume (acre-ft)	1.35	54.11	0.75
C & E Loss (ft)	0.24	Cum SA (acres)	0.43	23.03	0.58

Warning: The energy equation could not be 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: Upper Boulders W
REACH: UpperBoulders-1 RS: 2.8

INPUT

Description: Topography and Aerial indicate the wash and surrounding
undeveloped desert.
T5NR5E Section 6
Q100 = 1,270 cfs
Station Elevation Data num= 10

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9821.19	2560	9875.51	2558	9957.85	2556	9978.14	2554	9985.58	2552
10000	2551.33	10006.15	2552	10011.75	2554	10095.29	2556	10116.24	2558

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9821.19	.051	9978.14	.044	10011.75	.056

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9978.14	10011.75	283.75	283.64	276.84	.1	.3

CROSS SECTION OUTPUT Profile #100-yr 6-hr

			Left OB	Channel	Right OB
E.G. Elev (ft)	2556.75	Element			
Vel Head (ft)	0.94	Wt. n-Val.	0.051	0.044	0.056
W.S. Elev (ft)	2555.82	Reach Len. (ft)	283.75	283.64	276.84
Crit W.S. (ft)	2555.82	Flow Area (sq ft)	16.71	122.07	68.80
E.G. Slope (ft/ft)	0.011623	Area (sq ft)	16.71	122.07	68.80
Q Total (cfs)	1270.00	Flow (cfs)	49.04	1036.54	184.43
Top Width (ft)	127.83	Top Width (ft)	18.41	33.61	75.81
Vel Total (ft/s)	6.12	Avg. Vel. (ft/s)	2.93	8.49	2.68
Max Chl Dpth (ft)	4.48	Hydr. Depth (ft)	0.91	3.63	0.91
Conv. Total (cfs)	11780.2	Conv. (cfs)	454.9	9614.7	1710.7
Length Wtd. (ft)	283.15	Wetted Per. (ft)	18.50	34.27	75.83
Min Ch El (ft)	2551.33	Shear (lb/sq ft)	0.66	2.58	0.66
Alpha	1.61	Stream Power (lb/ft s)	1.92	21.94	1.76
Frctn Loss (ft)	3.12	Cum Volume (acre-ft)	20.20	48.45	14.54
C & E Loss (ft)	0.10	Cum SA (acres)	16.90	22.85	15.66

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 OUTPUT Profile #Meth 1

			Left OB	Channel	Right OB
E.G. Elev (ft)	2556.78	Element			
Vel Head (ft)	1.04	Wt. n-Val.	0.051	0.044	0.056
W.S. Elev (ft)	2555.74	Reach Len. (ft)	283.75	283.64	276.84
Crit W.S. (ft)	2555.74	Flow Area (sq ft)	8.80	119.43	52.71
E.G. Slope (ft/ft)	0.012999	Area (sq ft)	8.80	119.43	52.71
Q Total (cfs)	1270.00	Flow (cfs)	33.12	1056.94	179.94
Top Width (ft)	83.00	Top Width (ft)	6.14	33.61	43.25
Vel Total (ft/s)	7.02	Avg. Vel. (ft/s)	3.76	8.85	3.41
Max Chl Dpth (ft)	4.41	Hydr. Depth (ft)	1.43	3.55	1.22
Conv. Total (cfs)	11139.1	Conv. (cfs)	290.5	9270.3	1578.2
Length Wtd. (ft)	283.16	Wetted Per. (ft)	7.30	34.27	43.96
Min Ch El (ft)	2551.33	Shear (lb/sq ft)	0.98	2.83	0.97
Alpha	1.36	Stream Power (lb/ft s)	3.68	25.03	3.32
Frctn Loss (ft)	4.30	Cum Volume (acre-ft)	1.32	53.44	0.60
C & E Loss (ft)	0.03	Cum SA (acres)	0.40	22.85	0.46

Warning: The energy equation could not be 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: Upper Boulders W
REACH: UpperBoulders-1 RS: 2.75

INPUT
Description: Topography and Aerial indicate the wash and surrounding
undeveloped desert.
T5NR5E Section 6
Q100 = 1,270 cfs
Station Elevation Data num= 14

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9806.09	2552	9832.39	2550	9850.87	2548	9858.66	2548	9866.76	2548.33
9892.84	2548.1	9923.96	2549.22	9958.24	2549.4	9983.93	2548	9996.53	2546
10015.04	2546	10024.52	2548	10028.6	2550	10066.72	2552		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9806.09	.051	9983.93	.044	10024.52	.056

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9983.93	10024.52	231.18	226.8	220.27	.1	.3

Left Levee Station= 9958.24 Elevation= 2549.4

CROSS SECTION OUTPUT Profile #100-yr 6-hr

E.G. Elev (ft)	2550.20	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.61	Wt. n-Val.	0.051	0.044	0.056
W.S. Elev (ft)	2549.59	Reach Len. (ft)	231.18	226.80	220.27
Crit W.S. (ft)	2549.59	Flow Area (sq ft)	133.14	123.71	2.58
E.G. Slope (ft/ft)	0.010488	Area (sq ft)	133.14	123.71	2.58
Q Total (cfs)	1270.00	Flow (cfs)	370.34	894.05	5.62
Top Width (ft)	191.61	Top Width (ft)	147.77	40.59	3.25
Vel Total (ft/s)	4.90	Avg. Vel. (ft/s)	2.78	7.23	2.17
Max Chl Dpth (ft)	3.59	Hydr. Depth (ft)	0.90	3.05	0.80
Conv. Total (cfs)	12400.8	Conv. (cfs)	3616.1	8729.8	54.8
Length Wtd. (ft)	227.56	Wetted Per. (ft)	147.92	40.96	3.62
Min Ch El (ft)	2546.00	Shear (lb/sq ft)	0.59	1.98	0.47
Alpha	1.63	Stream Power (lb/ft s)	1.64	14.29	1.02
Frctn Loss (ft)	2.83	Cum Volume (acre-ft)	19.72	47.65	14.31
C & E Loss (ft)	0.03	Cum SA (acres)	16.36	22.61	15.41

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 energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
depth, the 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 OUTPUT Profile #Meth 1

E.G. Elev (ft)	2551.24	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.39	Wt. n-Val.		0.044	
W.S. Elev (ft)	2549.86	Reach Len. (ft)	231.18	226.80	220.27
Crit W.S. (ft)	2549.68	Flow Area (sq ft)		134.41	
E.G. Slope (ft/ft)	0.018018	Area (sq ft)		134.41	

Q Total (cfs)	1270.00	Flow (cfs)		1270.00	
Top Width (ft)	40.59	Top Width (ft)		40.59	
Vel Total (ft/s)	9.45	Avg. Vel. (ft/s)		9.45	
Max Chl Dpth (ft)	3.86	Hydr. Depth (ft)		3.31	
Conv. Total (cfs)	9461.3	Conv. (cfs)		9461.3	
Length Wtd. (ft)	226.80	Wetted Per. (ft)		44.67	
Min Ch El (ft)	2546.00	Shear (lb/sq ft)		3.38	
Alpha	1.00	Stream Power (lb/ft s)		31.98	
Frctn Loss (ft)	4.52	Cum Volume (acre-ft)	1.29	52.61	0.43
C & E Loss (ft)	0.00	Cum SA (acres)	0.38	22.61	0.32

Warning: The cross section had to be extended vertically during the critical depth calculations.
Warning: The energy loss was 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: Upper Boulders W
REACH: UpperBoulders-1 RS: 2.71

INPUT
Description: Topography and Aerial indicate the wash and surrounding undeveloped desert.
T5NR5E Section 6
Q100 = 1,270 cfs
Station Elevation Data num= 10

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9911.91	2546	9918.27	2546	9970.34	2544	9980.31	2544	9985.91	2544
9990.64	2542	10011.02	2542	10034.85	2544	10073.59	2546	10097.05	2548

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9911.91	.051	9985.91	.044	10034.85	.056

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9985.91	10034.85	318.61	332.06	339.46	.1	.3

CROSS SECTION OUTPUT Profile #100-yr 6-hr

E.G. Elev (ft)	2546.22	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.89	Wt. n-Val.	0.051	0.044	0.056
W.S. Elev (ft)	2545.33	Reach Len. (ft)	318.61	332.06	339.46
Crit W.S. (ft)	2545.33	Flow Area (sq ft)	43.79	134.46	17.16
E.G. Slope (ft/ft)	0.015029	Area (sq ft)	43.79	134.46	17.16
Q Total (cfs)	1270.00	Flow (cfs)	142.69	1084.80	42.51
Top Width (ft)	124.95	Top Width (ft)	50.22	48.94	25.78
Vel Total (ft/s)	6.50	Avg. Vel. (ft/s)	3.26	8.07	2.48
Max Chl Dpth (ft)	3.33	Hydr. Depth (ft)	0.87	2.75	0.67
Conv. Total (cfs)	10359.4	Conv. (cfs)	1163.9	8848.7	346.8
Length Wtd. (ft)	328.55	Wetted Per. (ft)	50.25	49.43	25.82
Min Ch El (ft)	2542.00	Shear (lb/sq ft)	0.82	2.55	0.62
Alpha	1.35	Stream Power (lb/ft s)	2.66	20.59	1.54
Frctn Loss (ft)	6.78	Cum Volume (acre-ft)	19.25	46.98	14.26
C & E Loss (ft)	0.11	Cum SA (acres)	15.83	22.37	15.33

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 conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the 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 OUTPUT Profile #Meth 1

E.G. Elev (ft)	2546.72	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.39	Wt. n-Val.		0.044	
W.S. Elev (ft)	2545.33	Reach Len. (ft)	318.61	332.06	339.46
Crit W.S. (ft)	2545.33	Flow Area (sq ft)		134.23	
E.G. Slope (ft/ft)	0.022211	Area (sq ft)		134.23	
Q Total (cfs)	1270.00	Flow (cfs)		1270.00	
Top Width (ft)	48.94	Top Width (ft)		48.94	
Vel Total (ft/s)	9.46	Avg. Vel. (ft/s)		9.46	
Max Chl Dpth (ft)	3.33	Hydr. Depth (ft)		2.74	
Conv. Total (cfs)	8521.6	Conv. (cfs)		8521.6	
Length Wtd. (ft)	332.06	Wetted Per. (ft)		52.08	
Min Ch El (ft)	2542.00	Shear (lb/sq ft)		3.57	
Alpha	1.00	Stream Power (lb/ft s)		33.81	
Frctn Loss (ft)	7.58	Cum Volume (acre-ft)	1.29	51.91	0.43
C & E Loss (ft)	0.17	Cum SA (acres)	0.38	22.37	0.32

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.

CROSS SECTION

RIVER: Upper Boulders W
REACH: UpperBoulders-1 RS: 2.64

INPUT
Description: Topography and Aerial indicate the wash and surrounding
undeveloped desert.
T5NR5E Section 6
Q100 = 1,270 cfs
Station Elevation Data num= 28

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9678.53	2540	9700.95	2538	9720.75	2536	9729.78	2534	9733.41	2534
9741.89	2536	9780.49	2538	9810.34	2538	9883.66	2536	9916.8	2536
9942.25	2536.93	9989.99	2536	10014.47	2536	10024.88	2536	10025.59	2536
10045.08	2537	10064.56	2538	10111.61	2538	10144.68	2537.62	10188.48	2538
10207.23	2538.83	10221.06	2538	10248.93	2536.56	10276.16	2537.91	0303.33	2537.06
10331.02	2538	10363.87	2540	10390.59	2540				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9678.53	.051	9942.25	.044	10045.08	.056

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9942.25	10045.08	479.25	478.4	477.98	.1	.3

Left Levee Station= 9810.34 Elevation= 2538
Right Levee Station=10064.56 Elevation= 2538

CROSS SECTION OUTPUT Profile #100-yr 6-hr

E.G. Elev (ft)	2537.94	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.52	Wt. n-Val.	0.051	0.044	0.056
W.S. Elev (ft)	2537.43	Reach Len. (ft)	479.25	478.40	477.98
Crit W.S. (ft)	2537.43	Flow Area (sq ft)	109.02	114.72	1.77
E.G. Slope (ft/ft)	0.030074	Area (sq ft)	109.02	114.72	1.77
Q Total (cfs)	1270.00	Flow (cfs)	544.55	722.55	2.90

Top Width (ft)	222.01	Top Width (ft)	110.88	102.83	8.30
Vel Total (ft/s)	5.63	Avg. Vel. (ft/s)	4.99	6.30	1.64
Max Chl Dpth (ft)	3.43	Hydr. Depth (ft)	0.98	1.12	0.21
Conv. Total (cfs)	7323.3	Conv. (cfs)	3140.1	4166.5	16.7
Length Wtd. (ft)	478.60	Wetted Per. (ft)	110.91	102.86	8.31
Min Ch El (ft)	2536.00	Shear (lb/sq ft)	1.85	2.09	0.40
Alpha	1.05	Stream Power (lb/ft s)	9.22	13.19	0.66
Frctn Loss (ft)	9.13	Cum Volume (acre-ft)	18.69	46.03	14.19
C & E Loss (ft)	0.05	Cum SA (acres)	15.24	21.79	15.20

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.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water
surface was used.

CROSS SECTION OUTPUT Profile #Meth 1

E.G. Elev (ft)	2538.83	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.82	Wt. n-Val.		0.044	
W.S. Elev (ft)	2538.01	Reach Len. (ft)	479.25	478.40	477.98
Crit W.S. (ft)	2538.01	Flow Area (sq ft)		174.75	
E.G. Slope (ft/ft)	0.023469	Area (sq ft)		174.75	
Q Total (cfs)	1270.00	Flow (cfs)		1270.00	
Top Width (ft)	102.83	Top Width (ft)		102.83	
Vel Total (ft/s)	7.27	Avg. Vel. (ft/s)		7.27	
Max Chl Dpth (ft)	2.01	Hydr. Depth (ft)		1.70	
Conv. Total (cfs)	8290.0	Conv. (cfs)		8290.0	
Length Wtd. (ft)	478.40	Wetted Per. (ft)		104.95	
Min Ch El (ft)	2536.00	Shear (lb/sq ft)		2.44	
Alpha	1.00	Stream Power (lb/ft s)		17.73	
Frctn Loss (ft)	7.51	Cum Volume (acre-ft)	1.29	50.73	0.43
C & E Loss (ft)	0.02	Cum SA (acres)	0.38	21.79	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 conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
depth, the 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: Upper Boulders W
REACH: UpperBoulders-1 RS: 2.55

INPUT
Description: Topography and Aerial indicate the wash and surrounding
undeveloped desert.
T5NR5E Section 6

Q100 = 1,270 cfs

Station Elevation Data num= 15

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9878.13	2532	9896.47	2530	9922.51	2528	9986.67	2526	9995.22	2524
10009.74	2524	10044.1	2526	10053.43	2528	10078.95	2530	10122.07	2530
10261.34	2528	10300.59	2528	10317.24	2530	10341.23	2532	10361.77	2532

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9878.13	.061	9986.67	.038	10044.1	.056

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9986.67	10044.1	249.9	254.11	266.53	.1	.3

CROSS SECTION OUTPUT Profile #100-yr 6-hr

			Left OB	Channel	Right OB
E.G. Elev (ft)	2528.30	Element			
Vel Head (ft)	1.02	Wt. n-Val.	0.061	0.038	0.056
W.S. Elev (ft)	2527.28	Reach Len. (ft)	249.90	254.11	266.53
Crit W.S. (ft)	2527.28	Flow Area (sq ft)	26.20	145.35	3.81
E.G. Slope (ft/ft)	0.013168	Area (sq ft)	26.20	145.35	3.81
Q Total (cfs)	1270.00	Flow (cfs)	54.32	1207.20	8.48
Top Width (ft)	104.39	Top Width (ft)	41.00	57.43	5.96
Vel Total (ft/s)	7.24	Avg. Vel. (ft/s)	2.07	8.31	2.23
Max Chl Dpth (ft)	3.28	Hydr. Depth (ft)	0.64	2.53	0.64
Conv. Total (cfs)	11067.5	Conv. (cfs)	473.4	10520.2	73.9
Length Wtd. (ft)	256.15	Wetted Per. (ft)	41.02	57.72	6.10
Min Ch El (ft)	2524.00	Shear (lb/sq ft)	0.53	2.07	0.51
Alpha	1.25	Stream Power (lb/ft s)	1.09	17.19	1.14
Frctn Loss (ft)	3.46	Cum Volume (acre-ft)	17.94	44.60	14.16
C & E Loss (ft)	0.09	Cum SA (acres)	14.41	20.91	15.12

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 energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
depth, the 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 OUTPUT Profile #Meth 1

			Left OB	Channel	Right OB
E.G. Elev (ft)	2528.51	Element			
Vel Head (ft)	0.97	Wt. n-Val.		0.038	
W.S. Elev (ft)	2527.54	Reach Len. (ft)	249.90	254.11	266.53
Crit W.S. (ft)	2527.21	Flow Area (sq ft)		160.48	
E.G. Slope (ft/ft)	0.011229	Area (sq ft)		160.48	
Q Total (cfs)	1270.00	Flow (cfs)		1270.00	
Top Width (ft)	57.43	Top Width (ft)		57.43	
Vel Total (ft/s)	7.91	Avg. Vel. (ft/s)		7.91	
Max Chl Dpth (ft)	3.54	Hydr. Depth (ft)		2.79	
Conv. Total (cfs)	11984.7	Conv. (cfs)		11984.7	
Length Wtd. (ft)	254.11	Wetted Per. (ft)		60.80	
Min Ch El (ft)	2524.00	Shear (lb/sq ft)		1.85	
Alpha	1.00	Stream Power (lb/ft s)		14.64	
Frctn Loss (ft)	3.43	Cum Volume (acre-ft)	1.29	48.89	0.43
C & E Loss (ft)	0.05	Cum SA (acres)	0.38	20.91	0.32

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: Upper Boulders W

REACH: UpperBoulders-1 RS: 2.5

INPUT
Description: Topography and Aerial indicate the wash and surrounding
undeveloped desert.
T5NR5E Section 6
Q100 = 1,270 cfs
Station Elevation Data num= 21

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9784.03	2530	9822.23	2528	9854.36	2526	9885.89	2524	9973.79	2524
9982.59	2524	9988.2	2522	9993.39	2520	10000	2519.16	10002.99	2520
10033.53	2522	10073.39	2522	10077.1	2520	10082.45	2520	10085.47	2522
10116.69	2522	10136	2522	10156.14	2524	10185.34	2526	10205.82	2526
10221.98	2524								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9784.03	.061	9988.2	.0381	10033.53	.056

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9988.21	10033.53	327.75	329.77	328.62	.1	.3

CROSS SECTION OUTPUT Profile #100-yr 6-hr

			Left OB	Channel	Right OB
E.G. Elev (ft)	2523.74	Element			
Vel Head (ft)	0.72	Wt. n-Val.	0.061	0.038	0.056
W.S. Elev (ft)	2523.02	Reach Len. (ft)	327.75	329.77	328.62
Crit W.S. (ft)	2523.02	Flow Area (sq ft)	1.46	105.18	127.14
E.G. Slope (ft/ft)	0.013837	Area (sq ft)	1.46	105.18	127.14
Q Total (cfs)	1270.00	Flow (cfs)	2.56	840.43	427.01
Top Width (ft)	160.93	Top Width (ft)	2.86	45.33	112.74
Vel Total (ft/s)	5.43	Avg. Vel. (ft/s)	1.76	7.99	3.36
Max Chl Dpth (ft)	3.86	Hydr. Depth (ft)	0.51	2.32	1.13
Conv. Total (cfs)	10796.6	Conv. (cfs)	21.8	7144.7	3630.1
Length Wtd. (ft)	329.34	Wetted Per. (ft)	3.04	45.94	113.89
Min Ch El (ft)	2519.16	Shear (lb/sq ft)	0.41	1.98	0.96
Alpha	1.56	Stream Power (lb/ft s)	0.73	15.80	3.24
Frctn Loss (ft)	3.55	Cum Volume (acre-ft)	17.86	43.87	13.76
C & E Loss (ft)	0.04	Cum SA (acres)	14.28	20.62	14.76

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

CROSS SECTION OUTPUT Profile #Meth 1

			Left OB	Channel	Right OB
E.G. Elev (ft)	2525.05	Element			
Vel Head (ft)	1.45	Wt. n-Val.		0.038	
W.S. Elev (ft)	2523.60	Reach Len. (ft)	327.75	329.77	328.62
Crit W.S. (ft)	2523.60	Flow Area (sq ft)		131.31	
E.G. Slope (ft/ft)	0.016494	Area (sq ft)		131.31	
Q Total (cfs)	1270.00	Flow (cfs)		1270.00	
Top Width (ft)	45.33	Top Width (ft)		45.33	
Vel Total (ft/s)	9.67	Avg. Vel. (ft/s)		9.67	
Max Chl Dpth (ft)	4.44	Hydr. Depth (ft)		2.90	
Conv. Total (cfs)	9888.7	Conv. (cfs)		9888.7	
Length Wtd. (ft)	329.74	Wetted Per. (ft)		49.13	
Min Ch El (ft)	2519.16	Shear (lb/sq ft)		2.75	
Alpha	1.00	Stream Power (lb/ft s)		26.62	
Frctn Loss (ft)	5.02	Cum Volume (acre-ft)	1.29	48.04	0.43
C & E Loss (ft)	0.02	Cum SA (acres)	0.38	20.62	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 energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
depth, the 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: Upper Boulders W
REACH: UpperBoulders-1 RS: 2.44

INPUT
Description: Topography and Aerial indicate the wash and surrounding
undeveloped desert.
T5NR5E Section 6 and Section 7
Q100 = 1,270
cfs
Station Elevation Data num= 21

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9814.31	2524	9832.94	2522	9855.6	2520	9889.55	2518	9939.53	2518
9970.43	2518	9987.17	2516	9993.01	2514	10000	2513.17	10012.06	2514
10018.83	2516	10061.34	2516.63	10083.58	2516	10130.82	2516	10157.96	2516.73
10168.93	2516	10197.35	2516	10233.84	2518	10251.58	2520	10263.38	2522
10274.88	2524								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9814.31	.061	9987.17	.038	10018.83	.056

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9987.17	10018.83	303.12	301.74	296.79	.1	.3

CROSS SECTION OUTPUT Profile #100-yr 6-hr

			Left OB	Channel	Right OB
E.G. Elev (ft)	2517.83	Element			
Vel Head (ft)	0.57	Wt. n-Val.	0.061	0.038	0.056
W.S. Elev (ft)	2517.26	Reach Len. (ft)	303.12	301.74	296.79
Crit W.S. (ft)	2517.26	Flow Area (sq ft)	6.62	98.43	204.63
E.G. Slope (ft/ft)	0.008615	Area (sq ft)	6.62	98.43	204.63
Q Total (cfs)	1270.00	Flow (cfs)	10.93	749.99	509.08
Top Width (ft)	243.65	Top Width (ft)	10.53	31.66	201.46
Vel Total (ft/s)	4.10	Avg. Vel. (ft/s)	1.65	7.62	2.49
Max Chl Dpth (ft)	4.09	Hydr. Depth (ft)	0.63	3.11	1.02
Conv. Total (cfs)	13682.8	Conv. (cfs)	117.8	8080.3	5484.8
Length Wtd. (ft)	300.49	Wetted Per. (ft)	10.60	32.36	201.55
Min Ch El (ft)	2513.17	Shear (lb/sq ft)	0.34	1.64	0.55
Alpha	2.19	Stream Power (lb/ft s)	0.55	12.47	1.36
Frctn Loss (ft)	2.93	Cum Volume (acre-ft)	17.83	43.10	12.51
C & E Loss (ft)	0.03	Cum SA (acres)	14.23	20.32	13.57

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 energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
depth, the 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 OUTPUT Profile #Meth 1

			Left OB	Channel	Right OB
E.G. Elev (ft)	2519.40	Element			

Vel Head (ft)	1.62	Wt. n-Val.		0.038	0.056
W.S. Elev (ft)	2517.79	Reach Len. (ft)	303.12	301.74	296.79
Crit W.S. (ft)	2517.79	Flow Area (sq ft)		115.24	16.55
E.G. Slope (ft/ft)	0.014073	Area (sq ft)		115.24	16.55
Q Total (cfs)	1270.00	Flow (cfs)		1202.74	67.26
Top Width (ft)	41.30	Top Width (ft)		31.66	9.64
Vel Total (ft/s)	9.64	Avg. Vel. (ft/s)		10.44	4.06
Max Chl Dpth (ft)	4.62	Hydr. Depth (ft)		3.64	1.72
Conv. Total (cfs)	10705.8	Conv. (cfs)		10138.8	567.0
Length Wtd. (ft)	301.61	Wetted Per. (ft)		34.15	11.29
Min Ch El (ft)	2513.17	Shear (lb/sq ft)		2.96	1.29
Alpha	1.12	Stream Power (lb/ft s)		30.94	5.24
Frctn Loss (ft)	4.59	Cum Volume (acre-ft)	1.29	47.11	0.37
C & E Loss (ft)	0.05	Cum SA (acres)	0.38	20.32	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 cross section had to be extended vertically during the critical depth calculations.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
depth, the 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: Upper Boulders W
REACH: UpperBoulders-1 RS: 2.38

INPUT
Description: Topography and Aerial indicate the wash and surrounding
undeveloped desert.
T5NR5E Section 6 and Section 7
Q100 = 1,270
cfs
Station Elevation Data num= 16

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9823.87	2520	9839.27	2518	9868.53	2516	9890.11	2514	9912.74	2512
9983.98	2510	9989.9	2508	10000	2507.57	10010.4	2508	10029.87	2509.75
10060.05	2510	10074.3	2512	10089.76	2514	10115.97	2516	10134.73	2518
10150.54	2520								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9823.87	.061	9983.98	.038	10029.87	.056

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9983.98	10029.87	467.63	383.98	376.07	.1	.3

CROSS SECTION OUTPUT Profile #100-yr 6-hr

E.G. Elev (ft)	2512.15	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.91	Wt. n-Val.	0.061	0.038	0.056
W.S. Elev (ft)	2511.24	Reach Len. (ft)	467.63	383.98	376.07
Crit W.S. (ft)	2511.24	Flow Area (sq ft)	27.50	130.26	46.78
E.G. Slope (ft/ft)	0.011137	Area (sq ft)	27.50	130.26	46.78
Q Total (cfs)	1270.00	Flow (cfs)	51.47	1070.97	147.56
Top Width (ft)	129.19	Top Width (ft)	44.26	45.89	39.03
Vel Total (ft/s)	6.21	Avg. Vel. (ft/s)	1.87	8.22	3.15
Max Chl Dpth (ft)	3.67	Hydr. Depth (ft)	0.62	2.84	1.20
Conv. Total (cfs)	12034.3	Conv. (cfs)	487.7	10148.3	1398.3
Length Wtd. (ft)	385.52	Wetted Per. (ft)	44.28	46.31	39.12
Min Ch El (ft)	2507.57	Shear (lb/sq ft)	0.43	1.96	0.83

Alpha	1.51	Stream Power (lb/ft s)	0.81	16.08	2.62
Frctn Loss (ft)	5.45	Cum Volume (acre-ft)	17.72	42.31	11.65
C & E Loss (ft)	0.07	Cum SA (acres)	14.04	20.06	12.76

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

CROSS SECTION OUTPUT Profile #Meth 1

E.G. Elev (ft)	2512.72	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.45	Wt. n-Val.		0.038	
W.S. Elev (ft)	2511.27	Reach Len. (ft)	467.63	383.98	376.07
Crit W.S. (ft)	2511.27	Flow Area (sq ft)		131.30	
E.G. Slope (ft/ft)	0.016483	Area (sq ft)		131.30	
Q Total (cfs)	1270.00	Flow (cfs)		1270.00	
Top Width (ft)	45.89	Top Width (ft)		45.89	
Vel Total (ft/s)	9.67	Avg. Vel. (ft/s)		9.67	
Max Chl Dpth (ft)	3.70	Hydr. Depth (ft)		2.86	
Conv. Total (cfs)	9891.9	Conv. (cfs)		9891.9	
Length Wtd. (ft)	383.98	Wetted Per. (ft)		49.10	
Min Ch El (ft)	2507.57	Shear (lb/sq ft)		2.75	
Alpha	1.00	Stream Power (lb/ft s)		26.62	
Frctn Loss (ft)	5.24	Cum Volume (acre-ft)	1.29	46.25	0.31
C & E Loss (ft)	0.29	Cum SA (acres)	0.38	20.06	0.25

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.

CROSS SECTION

RIVER: Upper Boulders W
REACH: UpperBoulders-1 RS: 2.31

INPUT
Description: Cross Section 2.31 is located upstream of concentration point CUB09 in the HEC-1 model. This section is located upstream of the intersection of Upper Boulders Wash and Pima Road. There are no culverts under Pima Road, runoff flows over Pima Road and continues west.

Topography indicates the wash and
surrounding undeveloped desert.
Aerial shows wash, undeveloped
desert and Pima Road.
T5NR5E Section 7
Q100 = 1,270 cfs
Station Elevation Data num= 14

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9833.71	2508	9846.14	2506	9857.65	2504	9880.42	2503	9903.18	2502
9913.62	2502	9956.23	2502.87	9990.54	250210016.22		2502	10020.3	2503

10024.38 250410035.78 250610052.51 250810071.65 2510

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9833.71	.061	9880.42	.038	10020.3	.056

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9880.42	10020.3	99.9	118.63	121.6	.1	.3

CROSS SECTION OUTPUT Profile #100-yr 6-hr

			Left OB	Channel	Right OB
E.G. Elev (ft)	2504.37	Element			
Vel Head (ft)	0.66	Wt. n-Val.	0.061	0.038	0.056
W.S. Elev (ft)	2503.71	Reach Len. (ft)	99.90	118.63	121.60
Crit W.S. (ft)	2503.71	Flow Area (sq ft)	5.68	191.83	1.02
E.G. Slope (ft/ft)	0.018513	Area (sq ft)	5.68	191.83	1.02
Q Total (cfs)	1270.00	Flow (cfs)	9.41	1258.79	1.80
Top Width (ft)	158.85	Top Width (ft)	16.09	139.88	2.88
Vel Total (ft/s)	6.40	Avg. Vel. (ft/s)	1.66	6.56	1.77
Max Chl Dpth (ft)	1.71	Hydr. Depth (ft)	0.35	1.37	0.35
Conv. Total (cfs)	9334.0	Conv. (cfs)	69.1	9251.6	13.2
Length Wtd. (ft)	118.32	Wetted Per. (ft)	16.10	140.04	2.97
Min Ch El (ft)	2502.00	Shear (lb/sq ft)	0.41	1.58	0.40
Alpha	1.04	Stream Power (lb/ft s)	0.68	10.39	0.70
Frctn Loss (ft)	1.60	Cum Volume (acre-ft)	17.54	40.89	11.44
C & E Loss (ft)	0.00	Cum SA (acres)	13.72	19.24	12.57

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 conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
depth, the 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 OUTPUT Profile #Meth 1

			Left OB	Channel	Right OB
E.G. Elev (ft)	2504.44	Element			
Vel Head (ft)	0.50	Wt. n-Val.		0.038	
W.S. Elev (ft)	2503.93	Reach Len. (ft)	99.90	118.63	121.60
Crit W.S. (ft)		Flow Area (sq ft)		223.62	
E.G. Slope (ft/ft)	0.011504	Area (sq ft)		223.62	
Q Total (cfs)	1270.00	Flow (cfs)		1270.00	
Top Width (ft)	139.88	Top Width (ft)		139.88	
Vel Total (ft/s)	5.68	Avg. Vel. (ft/s)		5.68	
Max Chl Dpth (ft)	1.93	Hydr. Depth (ft)		1.60	
Conv. Total (cfs)	11841.0	Conv. (cfs)		11841.0	
Length Wtd. (ft)	118.63	Wetted Per. (ft)		141.91	
Min Ch El (ft)	2502.00	Shear (lb/sq ft)		1.13	
Alpha	1.00	Stream Power (lb/ft s)		6.43	
Frctn Loss (ft)	1.63	Cum Volume (acre-ft)	1.29	44.69	0.31
C & E Loss (ft)	0.08	Cum SA (acres)	0.38	19.24	0.25

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.

CROSS SECTION

RIVER: Upper Boulders W

REACH: UpperBoulders-1 RS: 2.29

INPUT
Description: Cross Section 2.29 is located downstream of concentration point CUB09 and upstream of DCUB09 in the HEC-1 model. This section is located downstream of the intersection of Upper Boulders Wash and Pima Road. There are no culverts under Pima Road, runoff flows over Pima Road and continues west.

Topography indicates the wash and surrounding undeveloped desert.
Aerial shows wash, undeveloped desert and Pima Road.
T5NR4E Section 12
Q100 = 1,459 cfs

Station Elevation Data num= 24

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9823.61	2508	9841.37	2506	9853.96	2504	9866.59	2502	9947.81	2500
9964.25	2498	9974.78	2498	10009.3	250010031.25		250210064.51		2502
10080.87	250210103.91		250410138.23		250410149.19		2502	10158.9	2502
10164.71	250210174.67		250010197.63		250010305.86		250210353.05		2504
10398.91	250610406.46		250610408.76		250610458.19		2508		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9823.61	.061	9947.81	.038	10009.3	.056

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9947.81	10009.3	243.41	275.56	279.14	.1	.3

CROSS SECTION OUTPUT Profile #100-yr 6-hr

			Left OB	Channel	Right OB
E.G. Elev (ft)	2502.06	Element			
Vel Head (ft)	0.71	Wt. n-Val.	0.061	0.038	0.056
W.S. Elev (ft)	2501.35	Reach Len. (ft)	243.41	275.56	279.14
Crit W.S. (ft)	2501.35	Flow Area (sq ft)	37.20	155.25	95.26
E.G. Slope (ft/ft)	0.010663	Area (sq ft)	37.20	155.25	95.26
Q Total (cfs)	1459.00	Flow (cfs)	72.11	1160.09	226.80
Top Width (ft)	234.26	Top Width (ft)	54.97	61.49	117.80
Vel Total (ft/s)	5.07	Avg. Vel. (ft/s)	1.94	7.47	2.38
Max Chl Dpth (ft)	3.35	Hydr. Depth (ft)	0.68	2.52	0.81
Conv. Total (cfs)	14128.9	Conv. (cfs)	698.3	11234.3	2196.3
Length Wtd. (ft)	274.99	Wetted Per. (ft)	54.98	61.67	118.01
Min Ch El (ft)	2498.00	Shear (lb/sq ft)	0.45	1.68	0.54
Alpha	1.77	Stream Power (lb/ft s)	0.87	12.52	1.28
Frctn Loss (ft)	3.53	Cum Volume (acre-ft)	17.49	40.42	11.31
C & E Loss (ft)	0.04	Cum SA (acres)	13.64	18.96	12.41

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: Divided flow computed for this cross-section.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
depth, the calculated water surface came back below critical depth. This indicates that there is
not a valid subcritical answer. The program defaulted to critical depth.

CROSS SECTION OUTPUT Profile #Meth 1

			Left OB	Channel	Right OB
E.G. Elev (ft)	2502.72	Element			
Vel Head (ft)	1.30	Wt. n-Val.		0.038	
W.S. Elev (ft)	2501.42	Reach Len. (ft)	243.41	275.56	279.14
Crit W.S. (ft)	2501.42	Flow Area (sq ft)		159.53	
E.G. Slope (ft/ft)	0.016360	Area (sq ft)		159.53	
Q Total (cfs)	1459.00	Flow (cfs)		1459.00	
Top Width (ft)	61.49	Top Width (ft)		61.49	

Vel Total (ft/s)	9.15	Avg. Vel. (ft/s)		9.15	
Max Chl Dpth (ft)	3.42	Hydr. Depth (ft)		2.59	
Conv. Total (cfs)	11406.7	Conv. (cfs)		11406.7	
Length Wtd. (ft)	275.56	Wetted Per. (ft)		64.52	
Min Ch El (ft)	2498.00	Shear (lb/sq ft)		2.53	
Alpha	1.00	Stream Power (lb/ft s)		23.10	
Frctn Loss (ft)	3.04	Cum Volume (acre-ft)	1.29	44.17	0.31
C & E Loss (ft)	0.17	Cum SA (acres)	0.38	18.96	0.25

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 conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
depth, the 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: Upper Boulders W
REACH: UpperBoulders-1 RS: 2.24

INPUT
Description: Topography and Aerial indicate the wash and surrounding
undeveloped desert.
T5NR4E Section 12
Q100 = 1,459 cfs
Station Elevation Data num= 17

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9879.91	2508	9896.77	2506	9907.05	2504	9917.6	2502	9926.89	2500
9934.94	2498	9946.82	2496	9959.78	2495	9972.74	2494	10000	2492.25
10030.6	2494	10034.65	2495	10038.7	2496	10049	2498	10059.5	2500
10070.29	2502	10085.78	2504						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9879.91	.061	9959.78	.038	10034.65	.056

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9959.78	10034.65	370.32	371	373.37	.1	.3

CROSS SECTION OUTPUT Profile #100-yr 6-hr

E.G. Elev (ft)	2496.84	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.12	Wt. n-Val.	0.061	0.038	0.056
W.S. Elev (ft)	2495.72	Reach Len. (ft)	370.32	371.00	373.37
Crit W.S. (ft)	2495.72	Flow Area (sq ft)	3.35	170.86	1.05
E.G. Slope (ft/ft)	0.015797	Area (sq ft)	3.35	170.86	1.05
Q Total (cfs)	1459.00	Flow (cfs)	5.18	1452.08	1.73
Top Width (ft)	87.11	Top Width (ft)	9.32	74.87	2.91
Vel Total (ft/s)	8.32	Avg. Vel. (ft/s)	1.55	8.50	1.65
Max Chl Dpth (ft)	3.47	Hydr. Depth (ft)	0.36	2.28	0.36
Conv. Total (cfs)	11608.4	Conv. (cfs)	41.2	11553.4	13.8
Length Wtd. (ft)	370.96	Wetted Per. (ft)	9.35	75.14	3.00
Min Ch El (ft)	2492.25	Shear (lb/sq ft)	0.35	2.24	0.34
Alpha	1.04	Stream Power (lb/ft s)	0.55	19.06	0.57
Frctn Loss (ft)	4.42	Cum Volume (acre-ft)	17.38	39.39	11.00
C & E Loss (ft)	0.03	Cum SA (acres)	13.46	18.53	12.02

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.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
depth, the 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 OUTPUT Profile #Meth 1

E.G. Elev (ft)	2497.01	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.73	Wt. n-Val.		0.038	
W.S. Elev (ft)	2496.29	Reach Len. (ft)	370.32	371.00	373.37
Crit W.S. (ft)	2495.70	Flow Area (sq ft)		213.36	
E.G. Slope (ft/ft)	0.007955	Area (sq ft)		213.36	
Q Total (cfs)	1459.00	Flow (cfs)		1459.00	
Top Width (ft)	74.87	Top Width (ft)		74.87	
Vel Total (ft/s)	6.84	Avg. Vel. (ft/s)		6.84	
Max Chl Dpth (ft)	4.04	Hydr. Depth (ft)		2.85	
Conv. Total (cfs)	16358.3	Conv. (cfs)		16358.3	
Length Wtd. (ft)	371.00	Wetted Per. (ft)		77.71	
Min Ch El (ft)	2492.25	Shear (lb/sq ft)		1.36	
Alpha	1.00	Stream Power (lb/ft s)		9.32	
Frctn Loss (ft)	4.11	Cum Volume (acre-ft)	1.29	42.99	0.31
C & E Loss (ft)	0.14	Cum SA (acres)	0.38	18.53	0.25

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 conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was 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: Upper Boulders W
REACH: UpperBoulders-1 RS: 2.17

INPUT
Description: Topography and Aerial indicate the wash and surrounding
undeveloped desert.
T5NR4E Section 12
Q100 = 1,459 cfs
Station Elevation Data num= 18

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9796.68	2498	9813.96	2496	9857.29	2494	9876.01	2492	9906.15	2490
9933.77	2488	9938.91	2488	9961.95	2489.17	9984.44	2488	9989.27	2486
10000	2485.52	10007.1	2486	10012.72	2488	10030.87	2490	10051.37	2492
10078.55	2494	10105.23	2496	10108.74	2496				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9796.68	.061	9984.44	.038	10012.72	.061

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9984.44	10012.72	469.73	461.79	453.9	.1	.3

CROSS SECTION OUTPUT Profile #100-yr 6-hr

E.G. Elev (ft)	2491.20	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.01	Wt. n-Val.	0.061	0.038	0.061
W.S. Elev (ft)	2490.20	Reach Len. (ft)	469.73	461.79	453.90
Crit W.S. (ft)	2490.20	Flow Area (sq ft)	118.14	112.55	21.95
E.G. Slope (ft/ft)	0.009325	Area (sq ft)	118.14	112.55	21.95
Q Total (cfs)	1459.00	Flow (cfs)	356.20	1048.41	54.39
Top Width (ft)	129.74	Top Width (ft)	81.28	28.28	20.18
Vel Total (ft/s)	5.77	Avg. Vel. (ft/s)	3.01	9.31	2.48
Max Chl Dpth (ft)	4.68	Hydr. Depth (ft)	1.45	3.98	1.09
Conv. Total (cfs)	15109.2	Conv. (cfs)	3688.7	10857.2	563.2

Length Wtd. (ft)	462.61	Wetted Per. (ft)	81.42	29.05	20.30
Min Ch El (ft)	2485.52	Shear (lb/sq ft)	0.84	2.26	0.63
Alpha	1.94	Stream Power (lb/ft s)	2.55	21.01	1.56
Frctn Loss (ft)	5.61	Cum Volume (acre-ft)	16.86	38.18	10.90
C & E Loss (ft)	0.04	Cum SA (acres)	13.07	18.09	11.92

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.

CROSS SECTION OUTPUT Profile #Meth 1

E.G. Elev (ft)	2492.75	Element	Left OB	Channel	Right OB
Vel Head (ft)	2.17	Wt. n-Val.		0.038	
W.S. Elev (ft)	2490.58	Reach Len. (ft)	469.73	461.79	453.90
Crit W.S. (ft)	2490.58	Flow Area (sq ft)		123.47	
E.G. Slope (ft/ft)	0.016501	Area (sq ft)		123.47	
Q Total (cfs)	1459.00	Flow (cfs)		1459.00	
Top Width (ft)	28.28	Top Width (ft)		28.28	
Vel Total (ft/s)	11.82	Avg. Vel. (ft/s)		11.82	
Max Chl Dpth (ft)	5.06	Hydr. Depth (ft)		4.37	
Conv. Total (cfs)	11358.1	Conv. (cfs)		11358.1	
Length Wtd. (ft)	461.79	Wetted Per. (ft)		34.22	
Min Ch El (ft)	2485.52	Shear (lb/sq ft)		3.72	
Alpha	1.00	Stream Power (lb/ft s)		43.92	
Frctn Loss (ft)	7.89	Cum Volume (acre-ft)	1.29	41.55	0.31
C & E Loss (ft)	0.38	Cum SA (acres)	0.38	18.09	0.25

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 cross section had to be extended vertically during the critical depth calculations.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
depth, the 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: Upper Boulders W
REACH: UpperBoulders-1 RS: 2.08

INPUT
Description: Topography and Aerial indicate the wash and surrounding
undeveloped desert.
T5NR4E Section 12
Q100 = 1,459 cfs
Station Elevation Data num= 15

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9776.92	2486	9804.34	2484	9827.59	2482	9899.37	2482	9922.46	2482.71
9940.68	2482	9959.06	2481	9977.44	2480	10000	2478.04	10039.74	2480
10065.52	2481	10091.29	2482	10104.57	2484	10124	2486	10167.72	2486

Manning's n Values *num=* 3

Sta	n Val	Sta	n Val	Sta	n Val
9776.92	.061	9959.06	.03810065.52		.061

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9959.06	10065.52	506.96	508.95	508.25	.1	.3

Left Levee Station= 9922.46 Elevation= 2482.71

CROSS SECTION OUTPUT Profile #100-yr 6-hr

E.G. Elev (ft)	2482.33	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.86	Wt. n-Val.	0.061	0.038	0.061
W.S. Elev (ft)	2481.46	Reach Len. (ft)	506.96	508.95	508.25
Crit W.S. (ft)	2481.46	Flow Area (sq ft)	1.94	194.40	2.73
E.G. Slope (ft/ft)	0.016418	Area (sq ft)	1.94	194.40	2.73
Q Total (cfs)	1459.00	Flow (cfs)	2.28	1453.53	3.19
Top Width (ft)	126.77	Top Width (ft)	8.45	106.46	11.85
Vel Total (ft/s)	7.33	Avg. Vel. (ft/s)	1.17	7.48	1.17
Max Chl Dpth (ft)	3.42	Hydr. Depth (ft)	0.23	1.83	0.23
Conv. Total (cfs)	11386.5	Conv. (cfs)	17.8	11343.8	24.9
Length Wtd. (ft)	508.93	Wetted Per. (ft)	8.47	106.64	11.86
Min Ch El (ft)	2478.04	Shear (lb/sq ft)	0.24	1.87	0.24
Alpha	1.04	Stream Power (lb/ft s)	0.28	13.97	0.28
Frctn Loss (ft)	8.37	Cum Volume (acre-ft)	16.21	36.55	10.77
C & E Loss (ft)	0.05	Cum SA (acres)	12.59	17.38	11.75

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

CROSS SECTION OUTPUT Profile #Meth 1

E.G. Elev (ft)	2482.33	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.91	Wt. n-Val.		0.038	
W.S. Elev (ft)	2481.43	Reach Len. (ft)	506.96	508.95	508.25
Crit W.S. (ft)	2481.43	Flow Area (sq ft)		191.07	
E.G. Slope (ft/ft)	0.017710	Area (sq ft)		191.07	
Q Total (cfs)	1459.00	Flow (cfs)		1459.00	
Top Width (ft)	106.46	Top Width (ft)		106.46	
Vel Total (ft/s)	7.64	Avg. Vel. (ft/s)		7.64	
Max Chl Dpth (ft)	3.39	Hydr. Depth (ft)		1.79	
Conv. Total (cfs)	10963.4	Conv. (cfs)		10963.4	
Length Wtd. (ft)	508.95	Wetted Per. (ft)		107.50	
Min Ch El (ft)	2478.04	Shear (lb/sq ft)		1.97	
Alpha	1.00	Stream Power (lb/ft s)		15.01	
Frctn Loss (ft)	8.42	Cum Volume (acre-ft)	1.29	39.89	0.31
C & E Loss (ft)	0.07	Cum SA (acres)	0.38	17.38	0.25

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 energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
depth, the 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: Upper Boulders W
REACH: UpperBoulders-1 RS: 1.98

INPUT
Description: Topography and Aerial indicate the wash and surrounding
undeveloped desert.
T5NR4E Section 12
Q100 = 1,459 cfs
Station Elevation Data num= 13

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9710.25	2482	9748.74	2480	9770.85	2478	9830.44	2476	9851.69	2474
9893.23	2472	9938.9	2471	9984.56	2470	10000	2469.5	10037.53	2470
10074.34	2471	10111.15	2472	10197.09	2474				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9710.25	.061	9938.9	.038	10074.34	.061

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9938.9	10074.34	361.59	346.55	251.89	.1	.3

CROSS SECTION OUTPUT Profile #100-yr 6-hr

			Left OB	Channel	Right OB
E.G. Elev (ft)	2472.45	Element			
Vel Head (ft)	0.69	Wt. n-Val.	0.061	0.038	0.061
W.S. Elev (ft)	2471.76	Reach Len. (ft)	361.59	346.55	251.89
Crit W.S. (ft)	2471.76	Flow Area (sq ft)	13.27	210.68	10.69
E.G. Slope (ft/ft)	0.016481	Area (sq ft)	13.27	210.68	10.69
Q Total (cfs)	1459.00	Flow (cfs)	21.80	1419.62	17.57
Top Width (ft)	198.31	Top Width (ft)	34.81	135.44	28.06
Vel Total (ft/s)	6.22	Avg. Vel. (ft/s)	1.64	6.74	1.64
Max Chl Dpth (ft)	2.26	Hydr. Depth (ft)	0.38	1.56	0.38
Conv. Total (cfs)	11364.8	Conv. (cfs)	169.8	11058.1	136.9
Length Wtd. (ft)	345.92	Wetted Per. (ft)	34.82	135.48	28.07
Min Ch El (ft)	2469.50	Shear (lb/sq ft)	0.39	1.60	0.39
Alpha	1.14	Stream Power (lb/ft s)	0.64	10.78	0.64
Frctn Loss (ft)	5.54	Cum Volume (acre-ft)	16.12	34.19	10.70
C & E Loss (ft)	0.01	Cum SA (acres)	12.34	15.96	11.52

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 energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
depth, the 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 OUTPUT Profile #Meth 1

			Left OB	Channel	Right OB
E.G. Elev (ft)	2472.51	Element			
Vel Head (ft)	0.69	Wt. n-Val.		0.038	
W.S. Elev (ft)	2471.83	Reach Len. (ft)	361.59	346.55	251.89
Crit W.S. (ft)	2471.74	Flow Area (sq ft)		219.31	
E.G. Slope (ft/ft)	0.015476	Area (sq ft)		219.31	
Q Total (cfs)	1459.00	Flow (cfs)		1459.00	
Top Width (ft)	135.44	Top Width (ft)		135.44	
Vel Total (ft/s)	6.65	Avg. Vel. (ft/s)		6.65	
Max Chl Dpth (ft)	2.33	Hydr. Depth (ft)		1.62	
Conv. Total (cfs)	11728.2	Conv. (cfs)		11728.2	

Length Wtd. (ft)	346.55	Wetted Per. (ft)		137.13	
Min Ch El (ft)	2469.50	Shear (lb/sq ft)		1.55	
Alpha	1.00	Stream Power (lb/ft s)		10.28	
Frctn Loss (ft)	5.72	Cum Volume (acre-ft)	1.29	37.49	0.31
C & E Loss (ft)	0.02	Cum SA (acres)	0.38	15.96	0.25

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: Upper Boulders W
REACH: UpperBoulders-1 RS: 1.92

INPUT
Description: Topography and Aerial indicate the wash and surrounding undeveloped desert.
T5NR4E Section 12
Q100 = 1,459 cfs
Station Elevation Data num= 15

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9863.44	2470	9888.76	2470	9911.4	2468	9916.54	2467	9921.68	2466
9953.42	2465	9985.15	2464	10000	2462.72	10017.08	2464	10030.55	2464
10044.13	2464	10056.79	2465	10069.45	2466	10097.54	2468	10119.69	2470

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9863.44	.061	9953.42	.038	10056.79	.061

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9953.42	10056.79	239.31	245.66	255.59	.1	.3

CROSS SECTION OUTPUT Profile #100-yr 6-hr

			Left OB	Channel	Right OB
E.G. Elev (ft)	2466.72	Element			
Vel Head (ft)	0.83	Wt. n-Val.	0.061	0.038	0.061
W.S. Elev (ft)	2465.89	Reach Len. (ft)	239.31	245.66	255.59
Crit W.S. (ft)	2465.89	Flow Area (sq ft)	12.42	193.07	4.96
E.G. Slope (ft/ft)	0.015593	Area (sq ft)	12.42	193.07	4.96
Q Total (cfs)	1459.00	Flow (cfs)	21.93	1428.33	8.73
Top Width (ft)	142.65	Top Width (ft)	28.08	103.37	11.20
Vel Total (ft/s)	6.93	Avg. Vel. (ft/s)	1.77	7.40	1.76
Max Chl Dpth (ft)	3.16	Hydr. Depth (ft)	0.44	1.87	0.44
Conv. Total (cfs)	11683.8	Conv. (cfs)	175.6	11438.2	69.9
Length Wtd. (ft)	245.63	Wetted Per. (ft)	28.10	103.53	11.24
Min Ch El (ft)	2462.72	Shear (lb/sq ft)	0.43	1.82	0.43
Alpha	1.12	Stream Power (lb/ft s)	0.76	13.43	0.76
Frctn Loss (ft)	3.91	Cum Volume (acre-ft)	16.02	32.58	10.65
C & E Loss (ft)	0.00	Cum SA (acres)	12.08	15.01	11.41

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.

CROSS SECTION OUTPUT Profile #Meth 1

			Left OB	Channel	Right OB
E.G. Elev (ft)	2466.77	Element			
Vel Head (ft)	0.92	Wt. n-Val.		0.038	
W.S. Elev (ft)	2465.85	Reach Len. (ft)	239.31	245.66	255.59

Crit W.S. (ft)	2465.85	Flow Area (sq ft)		189.59	
E.G. Slope (ft/ft)	0.017668	Area (sq ft)		189.59	
Q Total (cfs)	1459.00	Flow (cfs)		1459.00	
Top Width (ft)	103.37	Top Width (ft)		103.37	
Vel Total (ft/s)	7.70	Avg. Vel. (ft/s)		7.70	
Max Chl Dpth (ft)	3.13	Hydr. Depth (ft)		1.83	
Conv. Total (cfs)	10976.4	Conv. (cfs)		10976.4	
Length Wtd. (ft)	245.66	Wetted Per. (ft)		105.23	
Min Ch El (ft)	2462.72	Shear (lb/sq ft)		1.99	
Alpha	1.00	Stream Power (lb/ft s)		15.29	
Frctn Loss (ft)	4.17	Cum Volume (acre-ft)	1.29	35.86	0.31
C & E Loss (ft)	0.02	Cum SA (acres)	0.38	15.01	0.25

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.

CROSS SECTION

RIVER: Upper Boulders W
REACH: UpperBoulders-1 RS: 1.87

INPUT
Description: Topography and Aerial indicate the wash and surrounding
undeveloped desert.
T5NR4E Section 12
Q100 = 1,459 cfs
Station Elevation Data num= 17

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9866.38	2468	9874.72	2466	9883.06	2464	9891.32	2462	9919.81	2461
9948.29	2460	9965.57	2460	9970.53	2460	10000	2458.38	10015.18	2460
10026.58	2461	10037.97	2462	10073.07	2464	10087.75	2466	10100.82	2468
10111.95	2470	10126.29	2472						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9866.38	.061	9919.81	.038	10026.58	.061

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9919.81	10026.58	481.95	490.85	524.19	.1	.3

CROSS SECTION OUTPUT Profile #100-yr 6-hr

E.G. Elev (ft)	2462.52	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.85	Wt. n-Val.	0.061	0.038	0.061
W.S. Elev (ft)	2461.67	Reach Len. (ft)	481.95	490.85	524.19
Crit W.S. (ft)	2461.67	Flow Area (sq ft)	6.39	194.50	2.55
E.G. Slope (ft/ft)	0.016277	Area (sq ft)	6.39	194.50	2.55
Q Total (cfs)	1459.00	Flow (cfs)	9.57	1445.61	3.82
Top Width (ft)	133.48	Top Width (ft)	19.08	106.77	7.63
Vel Total (ft/s)	7.17	Avg. Vel. (ft/s)	1.50	7.43	1.49
Max Chl Dpth (ft)	3.29	Hydr. Depth (ft)	0.33	1.82	0.33
Conv. Total (cfs)	11435.7	Conv. (cfs)	75.0	11330.8	29.9
Length Wtd. (ft)	491.53	Wetted Per. (ft)	19.09	106.96	7.66
Min Ch El (ft)	2458.38	Shear (lb/sq ft)	0.34	1.85	0.34
Alpha	1.06	Stream Power (lb/ft s)	0.51	13.73	0.51
Frctn Loss (ft)	7.54	Cum Volume (acre-ft)	15.96	31.49	10.63
C & E Loss (ft)	0.01	Cum SA (acres)	11.95	14.42	11.35

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 energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
depth, the 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 OUTPUT Profile #Meth 1

E.G. Elev (ft)	2462.54	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.86	Wt. n-Val.		0.038	
W.S. Elev (ft)	2461.69	Reach Len. (ft)	481.95	490.85	524.19
Crit W.S. (ft)	2461.64	Flow Area (sq ft)		196.40	
E.G. Slope (ft/ft)	0.016327	Area (sq ft)		196.40	
Q Total (cfs)	1459.00	Flow (cfs)		1459.00	
Top Width (ft)	106.77	Top Width (ft)		106.77	
Vel Total (ft/s)	7.43	Avg. Vel. (ft/s)		7.43	
Max Chl Dpth (ft)	3.31	Hydr. Depth (ft)		1.84	
Conv. Total (cfs)	11418.5	Conv. (cfs)		11418.5	
Length Wtd. (ft)	490.85	Wetted Per. (ft)		108.34	
Min Ch El (ft)	2458.38	Shear (lb/sq ft)		1.85	
Alpha	1.00	Stream Power (lb/ft s)		13.73	
Frctn Loss (ft)	8.20	Cum Volume (acre-ft)	1.29	34.78	0.31
C & E Loss (ft)	0.02	Cum SA (acres)	0.38	14.42	0.25

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: Upper Boulders W
REACH: UpperBoulders-1 RS: 1.78

INPUT
Description: Topography and Aerial indicate the wash and surrounding
undeveloped desert.
T5NR4E Section 12
Q100 = 1,459 cfs
Station Elevation Data num= 17

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9847.88	2458	9877.92	2458	9946	2456	9962.65	2454	9971.25	2454
9978.8	2454	9985.08	2452	9990.53	245	10016.22	245	10034.39	2452
10040.58	245	210065.11	245	210134.95	245	410151.84	245	610189.16	2458
10209.23	246	010224.37	2462						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9847.88	.061	9985.08	.038	10065.11	.061

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9985.08	10065.11	271.21	292.35	328.88	.1	.3

CROSS SECTION OUTPUT Profile #100-yr 6-hr

E.G. Elev (ft)	2454.20	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.94	Wt. n-Val.	0.061	0.038	0.061
W.S. Elev (ft)	2453.26	Reach Len. (ft)	271.21	292.35	328.88
Crit W.S. (ft)	2453.26	Flow Area (sq ft)	2.49	175.88	27.74
E.G. Slope (ft/ft)	0.014491	Area (sq ft)	2.49	175.88	27.74
Q Total (cfs)	1459.00	Flow (cfs)	5.21	1394.01	59.78
Top Width (ft)	128.00	Top Width (ft)	3.96	80.03	44.02
Vel Total (ft/s)	7.08	Avg. Vel. (ft/s)	2.09	7.93	2.15
Max Chl Dpth (ft)	3.26	Hydr. Depth (ft)	0.63	2.20	0.63
Conv. Total (cfs)	12120.0	Conv. (cfs)	43.3	11580.1	496.6
Length Wtd. (ft)	293.06	Wetted Per. (ft)	4.15	80.50	44.03

Min Ch El (ft)	2450.00	Shear (lb/sq ft)	0.54	1.98	0.57
Alpha	1.20	Stream Power (lb/ft s)	1.13	15.67	1.23
Frctn Loss (ft)	4.67	Cum Volume (acre-ft)	15.92	29.40	10.45
C & E Loss (ft)	0.01	Cum SA (acres)	11.82	13.37	11.04

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 energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
depth, the 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 OUTPUT Profile #Meth 1

E.G. Elev (ft)	2454.33	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.09	Wt. n-Val.		0.038	
W.S. Elev (ft)	2453.24	Reach Len. (ft)	271.21	292.35	328.88
Crit W.S. (ft)	2453.24	Flow Area (sq ft)		174.16	
E.G. Slope (ft/ft)	0.017079	Area (sq ft)		174.16	
Q Total (cfs)	1459.00	Flow (cfs)		1459.00	
Top Width (ft)	80.03	Top Width (ft)		80.03	
Vel Total (ft/s)	8.38	Avg. Vel. (ft/s)		8.38	
Max Chl Dpth (ft)	3.24	Hydr. Depth (ft)		2.18	
Conv. Total (cfs)	11164.1	Conv. (cfs)		11164.1	
Length Wtd. (ft)	292.35	Wetted Per. (ft)		82.97	
Min Ch El (ft)	2450.00	Shear (lb/sq ft)		2.24	
Alpha	1.00	Stream Power (lb/ft s)		18.75	
Frctn Loss (ft)	5.12	Cum Volume (acre-ft)	1.29	32.69	0.31
C & E Loss (ft)	0.05	Cum SA (acres)	0.38	13.37	0.25

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 energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
depth, the 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: Upper Boulders W
REACH: UpperBoulders-1 RS: 1.72

INPUT
Description: Topography and Aerial indicate the wash and surrounding
undeveloped desert.
T5NR4E Section 12
Q100 = 1,459 cfs
Station Elevation Data num= 11

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9926.61	2450	9952.43	2448	9957.5	2447	9962.56	2446	10000	2444.83
10021.61	2446	10041.19	2445.69	10060.21	2446	10063.58	2447	10066.94	2448
10081.44	2450								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9926.61	.061	9957.5	.038	10063.58	.061

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9957.5	10063.58	374.16	382.49	364.91	.1	.3

CROSS SECTION OUTPUT Profile #100-yr 6-hr

E.G. Elev (ft)	2448.36	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.91	Wt. n-Val.	0.061	0.038	0.061
W.S. Elev (ft)	2447.46	Reach Len. (ft)	374.16	382.49	364.91
Crit W.S. (ft)	2447.46	Flow Area (sq ft)	0.52	190.61	0.35
E.G. Slope (ft/ft)	0.017580	Area (sq ft)	0.52	190.61	0.35
Q Total (cfs)	1459.00	Flow (cfs)	0.62	1457.97	0.41
Top Width (ft)	109.91	Top Width (ft)	2.30	106.08	1.53
Vel Total (ft/s)	7.62	Avg. Vel. (ft/s)	1.19	7.65	1.17
Max Chl Dpth (ft)	2.62	Hydr. Depth (ft)	0.23	1.80	0.23
Conv. Total (cfs)	11003.8	Conv. (cfs)	4.7	10996.1	3.1
Length Wtd. (ft)	382.31	Wetted Per. (ft)	2.35	106.38	1.59
Min Ch El (ft)	2444.83	Shear (lb/sq ft)	0.24	1.97	0.24
Alpha	1.01	Stream Power (lb/ft s)	0.29	15.04	0.28
Frctn Loss (ft)	6.08	Cum Volume (acre-ft)	15.91	28.17	10.34
C & E Loss (ft)	0.00	Cum SA (acres)	11.80	12.74	10.87

Warning: The energy equation could not be 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 OUTPUT Profile #Meth 1

E.G. Elev (ft)	2448.37	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.92	Wt. n-Val.		0.038	
W.S. Elev (ft)	2447.45	Reach Len. (ft)	374.16	382.49	364.91
Crit W.S. (ft)	2447.45	Flow Area (sq ft)		190.04	
E.G. Slope (ft/ft)	0.017982	Area (sq ft)		190.04	
Q Total (cfs)	1459.00	Flow (cfs)		1459.00	
Top Width (ft)	106.08	Top Width (ft)		106.08	
Vel Total (ft/s)	7.68	Avg. Vel. (ft/s)		7.68	
Max Chl Dpth (ft)	2.62	Hydr. Depth (ft)		1.79	
Conv. Total (cfs)	10880.2	Conv. (cfs)		10880.2	
Length Wtd. (ft)	382.49	Wetted Per. (ft)		107.28	
Min Ch El (ft)	2444.83	Shear (lb/sq ft)		1.99	
Alpha	1.00	Stream Power (lb/ft s)		15.27	
Frctn Loss (ft)	6.70	Cum Volume (acre-ft)	1.29	31.47	0.31
C & E Loss (ft)	0.01	Cum SA (acres)	0.38	12.74	0.25

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 energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
depth, the 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: Upper Boulders W
REACH: UpperBoulders-1 RS: 1.65

INPUT
Description: Topography and Aerial indicate the wash and surrounding
undeveloped desert.
T5NR4E Section 12
Q100 = 1,459 cfs

Station Elevation Data num= 17

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9855.07	2446	9890.5	2444	9915.73	2442	9933.3	2440	9954.06	2439
9974.82	2438	10000	2436.35	10016.42	2438	10038.43	2439	10060.43	2440
10079.18	2442	10090.76	2444	10098.77	2446	10100.76	2448	10102.75	2450
10104.8	2452	10106.83	2454						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9855.07	.061	9954.06	.038	10038.43	.061

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9954.06	10038.43	363.31	347.81	345.68	.1	.3

CROSS SECTION OUTPUT Profile #100-yr 6-hr

			Left OB	Channel	Right OB
E.G. Elev (ft)	2440.92	Element			
Vel Head (ft)	0.93	Wt. n-Val.	0.061	0.038	0.061
W.S. Elev (ft)	2440.00	Reach Len. (ft)	363.31	347.81	345.68
Crit W.S. (ft)	2440.00	Flow Area (sq ft)	10.32	181.43	10.94
E.G. Slope (ft/ft)	0.014474	Area (sq ft)	10.32	181.43	10.94
Q Total (cfs)	1459.00	Flow (cfs)	19.00	1419.87	20.14
Top Width (ft)	127.00	Top Width (ft)	20.70	84.37	21.94
Vel Total (ft/s)	7.20	Avg. Vel. (ft/s)	1.84	7.83	1.84
Max Chl Dpth (ft)	3.65	Hydr. Depth (ft)	0.50	2.15	0.50
Conv. Total (cfs)	12127.3	Conv. (cfs)	157.9	11802.0	167.4
Length Wtd. (ft)	347.90	Wetted Per. (ft)	20.72	84.55	21.96
Min Ch El (ft)	2436.35	Shear (lb/sq ft)	0.45	1.94	0.45
Alpha	1.15	Stream Power (lb/ft s)	0.83	15.17	0.83
Frctn Loss (ft)	4.47	Cum Volume (acre-ft)	15.86	26.54	10.29
C & E Loss (ft)	0.05	Cum SA (acres)	11.70	11.91	10.77

Warning: The energy equation could not be 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 OUTPUT Profile #Meth 1

			Left OB	Channel	Right OB
E.G. Elev (ft)	2441.00	Element			
Vel Head (ft)	1.05	Wt. n-Val.		0.038	
W.S. Elev (ft)	2439.95	Reach Len. (ft)	363.31	347.81	345.68
Crit W.S. (ft)	2439.95	Flow Area (sq ft)		177.08	
E.G. Slope (ft/ft)	0.017065	Area (sq ft)		177.08	
Q Total (cfs)	1459.00	Flow (cfs)		1459.00	
Top Width (ft)	84.37	Top Width (ft)		84.37	
Vel Total (ft/s)	8.24	Avg. Vel. (ft/s)		8.24	
Max Chl Dpth (ft)	3.60	Hydr. Depth (ft)		2.10	
Conv. Total (cfs)	11168.6	Conv. (cfs)		11168.6	
Length Wtd. (ft)	347.81	Wetted Per. (ft)		86.44	
Min Ch El (ft)	2436.35	Shear (lb/sq ft)		2.18	
Alpha	1.00	Stream Power (lb/ft s)		17.98	
Frctn Loss (ft)	4.00	Cum Volume (acre-ft)	1.29	29.85	0.31
C & E Loss (ft)	0.13	Cum SA (acres)	0.38	11.91	0.25

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

Warning: During the standard step iterations, when the assumed water surface was set equal to critical
depth, the 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: Upper Boulders W
REACH: UpperBoulders-1 RS: 1.58

INPUT
Description: Topography and Aerial indicate the wash and surrounding
undeveloped desert.
T5NR4E Section 12
Q100 = 1,459 cfs
Station Elevation Data num= 18

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9807.35	2440	9818.27	2440	9828.88	2438	9841.55	2436	9876.07	2434
9965.76	2432	9972.77	2430	10000	2428.95	10012.07	2430	10032.32	2430
10044.4	2430	10063.27	2432	10081.29	2432	10084.41	2432	10145.12	2434
10161.62	2436	10177.44	2438	10195.07	2440				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9807.35	.061	9965.76	.038	10063.27	.061

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9965.76	10063.27	200.95	198.94	202.2	.1	.3

CROSS SECTION OUTPUT Profile #100-yr 6-hr

			Left OB	Channel	Right OB
E.G. Elev (ft)	2432.95	Element			
Vel Head (ft)	0.75	Wt. n-Val.	0.061	0.038	0.061
W.S. Elev (ft)	2432.20	Reach Len. (ft)	200.95	198.94	202.20
Crit W.S. (ft)	2431.95	Flow Area (sq ft)	0.89	209.18	4.81
E.G. Slope (ft/ft)	0.011501	Area (sq ft)	0.89	209.18	4.81
Q Total (cfs)	1459.00	Flow (cfs)	0.50	1454.55	3.96
Top Width (ft)	133.61	Top Width (ft)	8.92	97.51	27.18
Vel Total (ft/s)	6.79	Avg. Vel. (ft/s)	0.56	6.95	0.82
Max Chl Dpth (ft)	3.25	Hydr. Depth (ft)	0.10	2.15	0.18
Conv. Total (cfs)	13604.8	Conv. (cfs)	4.6	13563.3	36.9
Length Wtd. (ft)	199.04	Wetted Per. (ft)	8.93	97.96	27.18
Min Ch El (ft)	2428.95	Shear (lb/sq ft)	0.07	1.53	0.13
Alpha	1.05	Stream Power (lb/ft s)	0.04	10.66	0.10
Frctn Loss (ft)	2.21	Cum Volume (acre-ft)	15.81	24.98	10.23
C & E Loss (ft)	0.05	Cum SA (acres)	11.58	11.18	10.58

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

CROSS SECTION OUTPUT Profile #Meth 1

			Left OB	Channel	Right OB
E.G. Elev (ft)	2433.05	Element			
Vel Head (ft)	0.61	Wt. n-Val.		0.038	
W.S. Elev (ft)	2432.43	Reach Len. (ft)	200.95	198.94	202.20
Crit W.S. (ft)		Flow Area (sq ft)		232.03	
E.G. Slope (ft/ft)	0.008287	Area (sq ft)		232.03	
Q Total (cfs)	1459.00	Flow (cfs)		1459.00	
Top Width (ft)	97.51	Top Width (ft)		97.51	
Vel Total (ft/s)	6.29	Avg. Vel. (ft/s)		6.29	
Max Chl Dpth (ft)	3.48	Hydr. Depth (ft)		2.38	
Conv. Total (cfs)	16027.5	Conv. (cfs)		16027.5	
Length Wtd. (ft)	198.94	Wetted Per. (ft)		98.83	
Min Ch El (ft)	2428.95	Shear (lb/sq ft)		1.21	
Alpha	1.00	Stream Power (lb/ft s)		7.64	
Frctn Loss (ft)	1.98	Cum Volume (acre-ft)	1.29	28.22	0.31
C & E Loss (ft)	0.08	Cum SA (acres)	0.38	11.18	0.25

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.

CROSS SECTION

RIVER: Upper Boulders W
REACH: UpperBoulders-1 RS: 1.55

INPUT
Description: Topography and Aerial indicate the wash and surrounding undeveloped desert.
T5NR4E Section 12
Q100 = 1,459 cfs
Station Elevation Data num= 15

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9830.77	2436	9861.13	2434	9878.74	2432	9904.33	2430	9911.71	2430
9936.98	2430	9973.19	2428	9977.82	2426	10000	2425.5	10011.04	2426
10016.46	2428	10066.35	2430	10091.17	2432	10115.28	2434	10119.98	2434

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9830.77	.061	9973.19	.038	10016.46	.061

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9973.19	10016.46	344.6	347.95	350.44	.1	.3

CROSS SECTION OUTPUT Profile #100-yr 6-hr

E.G. Elev (ft)	2430.70	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.21	Wt. n-Val.	0.061	0.038	0.061
W.S. Elev (ft)	2429.49	Reach Len. (ft)	344.60	347.95	350.44
Crit W.S. (ft)	2429.49	Flow Area (sq ft)	20.08	149.23	27.66
E.G. Slope (ft/ft)	0.010682	Area (sq ft)	20.08	149.23	27.66
Q Total (cfs)	1459.00	Flow (cfs)	41.48	1360.33	57.19
Top Width (ft)	107.38	Top Width (ft)	26.96	43.27	37.15
Vel Total (ft/s)	7.41	Avg. Vel. (ft/s)	2.07	9.12	2.07
Max Chl Dpth (ft)	3.99	Hydr. Depth (ft)	0.74	3.45	0.74
Conv. Total (cfs)	14116.4	Conv. (cfs)	401.4	13161.7	553.3
Length Wtd. (ft)	348.01	Wetted Per. (ft)	27.00	44.06	37.18
Min Ch El (ft)	2425.50	Shear (lb/sq ft)	0.50	2.26	0.50
Alpha	1.42	Stream Power (lb/ft s)	1.02	20.59	1.03
Frctn Loss (ft)	3.65	Cum Volume (acre-ft)	15.76	24.16	10.16
C & E Loss (ft)	0.13	Cum SA (acres)	11.49	10.86	10.43

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

CROSS SECTION OUTPUT Profile #Meth 1

E.G. Elev (ft)	2430.99	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.39	Wt. n-Val.		0.038	
W.S. Elev (ft)	2429.60	Reach Len. (ft)	344.60	347.95	350.44
Crit W.S. (ft)	2429.31	Flow Area (sq ft)		154.07	
E.G. Slope (ft/ft)	0.012132	Area (sq ft)		154.07	
Q Total (cfs)	1459.00	Flow (cfs)		1459.00	
Top Width (ft)	43.27	Top Width (ft)		43.27	

Vel Total (ft/s)	9.47	Avg. Vel. (ft/s)		9.47	
Max Chl Dpth (ft)	4.10	Hydr. Depth (ft)		3.56	
Conv. Total (cfs)	13246.2	Conv. (cfs)		13246.2	
Length Wtd. (ft)	347.95	Wetted Per. (ft)		47.26	
Min Ch El (ft)	2425.50	Shear (lb/sq ft)		2.47	
Alpha	1.00	Stream Power (lb/ft s)		23.38	
Frctn Loss (ft)	4.90	Cum Volume (acre-ft)	1.29	27.34	0.31
C & E Loss (ft)	0.04	Cum SA (acres)	0.38	10.86	0.25

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: Upper Boulders W
REACH: UpperBoulders-1 RS: 1.48

INPUT
Description: Cross Section 1.48 is located upstream of concentration point
CUB07 in the HEC-1 model.

Topography and Aerial indicate the
wash and surrounding undeveloped desert.
T5NR4E Section 12
Q100
= 1,459 cfs
Station Elevation Data num= 15

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9782.23	2428	9864.31	2426	9889.36	2424	9982.3	2422	9985.84	2420
9988.14	2420	10000	2420.06	10019.87	2422	10034.57	2422.96	10069.2	2422
10084.9	2422	10091.03	2424	10093.73	2426	10096.36	2428	10098.48	2430

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9782.23	.061	9982.3	.038	10019.87	.061

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9982.3	10019.87	347.9	346.27	350.07	.1	.3

CROSS SECTION OUTPUT Profile #100-yr 6-hr

E.G. Elev (ft)	2424.57	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.79	Wt. n-Val.	0.061	0.038	0.061
W.S. Elev (ft)	2423.78	Reach Len. (ft)	347.90	346.27	350.07
Crit W.S. (ft)	2423.78	Flow Area (sq ft)	73.98	117.82	97.24
E.G. Slope (ft/ft)	0.010324	Area (sq ft)	73.98	117.82	97.24
Q Total (cfs)	1459.00	Flow (cfs)	169.68	992.00	297.32
Top Width (ft)	190.99	Top Width (ft)	82.92	37.57	70.50
Vel Total (ft/s)	5.05	Avg. Vel. (ft/s)	2.29	8.42	3.06
Max Chl Dpth (ft)	3.78	Hydr. Depth (ft)	0.89	3.14	1.38
Conv. Total (cfs)	14359.5	Conv. (cfs)	1670.0	9763.3	2926.2
Length Wtd. (ft)	346.98	Wetted Per. (ft)	82.94	38.19	70.83
Min Ch El (ft)	2420.00	Shear (lb/sq ft)	0.57	1.99	0.88
Alpha	1.99	Stream Power (lb/ft s)	1.32	16.74	2.71
Frctn Loss (ft)	4.81	Cum Volume (acre-ft)	15.39	23.09	9.65
C & E Loss (ft)	0.03	Cum SA (acres)	11.06	10.54	9.99

Warning: The energy equation could not be 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 OUTPUT Profile #Meth 1

E.G. Elev (ft)	2426.06	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.82	Wt. n-Val.		0.038	
W.S. Elev (ft)	2424.24	Reach Len. (ft)	347.90	346.27	350.07
Crit W.S. (ft)	2424.24	Flow Area (sq ft)		134.80	
E.G. Slope (ft/ft)	0.016526	Area (sq ft)		134.80	
Q Total (cfs)	1459.00	Flow (cfs)		1459.00	
Top Width (ft)	37.57	Top Width (ft)		37.57	
Vel Total (ft/s)	10.82	Avg. Vel. (ft/s)		10.82	
Max Chl Dpth (ft)	4.24	Hydr. Depth (ft)		3.59	
Conv. Total (cfs)	11349.5	Conv. (cfs)		11349.5	
Length Wtd. (ft)	346.27	Wetted Per. (ft)		42.66	
Min Ch El (ft)	2420.00	Shear (lb/sq ft)		3.26	
Alpha	1.00	Stream Power (lb/ft s)		35.28	
Frctn Loss (ft)	5.84	Cum Volume (acre-ft)	1.29	26.18	0.31
C & E Loss (ft)	0.21	Cum SA (acres)	0.38	10.54	0.25

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.

CROSS SECTION

RIVER: Upper Boulders W
REACH: UpperBoulders-1 RS: 1.41

INPUT
Description: Topography indicates the wash and surrounding undeveloped
desert.
Aerial shows wash, undeveloped desert, and homes.
T5NR4E
Section 12
Q100 = 1,628 cfs
Station Elevation Data num= 16

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9780.67	2418	9793.15	2419.33	9812.05	2418	9871.72	2416	9912.33	2416
9942.2	2416.96	9978.03	2416	10000	2414.52	10020.89	2416	10025.34	2416
10029.79	2417	10034.24	2418	10045.39	2418	10058.75	2418	10101.71	2420
10122.24	2422								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9780.67	.061	9942.2	.038	10029.79	.061

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9942.2	10029.79	362.87	291.91	281.77	.1	.3

CROSS SECTION OUTPUT Profile #100-yr 6-hr

E.G. Elev (ft)	2418.27	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.70	Wt. n-Val.	0.061	0.038	0.061
W.S. Elev (ft)	2417.57	Reach Len. (ft)	362.87	291.91	281.77
Crit W.S. (ft)	2417.57	Flow Area (sq ft)	132.64	149.47	0.71
E.G. Slope (ft/ft)	0.018882	Area (sq ft)	132.64	149.47	0.71
Q Total (cfs)	1628.00	Flow (cfs)	482.02	1144.97	1.01
Top Width (ft)	207.32	Top Width (ft)	117.21	87.59	2.52
Vel Total (ft/s)	5.76	Avg. Vel. (ft/s)	3.63	7.66	1.42
Max Chl Dpth (ft)	3.05	Hydr. Depth (ft)	1.13	1.71	0.28

Conv. Total (cfs)	11847.5	Conv. (cfs)	3507.8	8332.3	7.4
Length Wtd. (ft)	302.20	Wetted Per. (ft)	117.25	87.82	2.58
Min Ch El (ft)	2414.52	Shear (lb/sq ft)	1.33	2.01	0.33
Alpha	1.36	Stream Power (lb/ft s)	4.85	15.37	0.46
Frctn Loss (ft)	4.13	Cum Volume (acre-ft)	14.57	22.03	9.26
C & E Loss (ft)	0.03	Cum SA (acres)	10.26	10.04	9.70

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.

CROSS SECTION OUTPUT Profile #Meth 1

E.G. Elev (ft)	2419.17	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.12	Wt. n-Val.		0.038	
W.S. Elev (ft)	2418.05	Reach Len. (ft)	362.87	291.91	281.77
Crit W.S. (ft)	2418.05	Flow Area (sq ft)		191.81	
E.G. Slope (ft/ft)	0.017166	Area (sq ft)		191.81	
Q Total (cfs)	1628.00	Flow (cfs)		1628.00	
Top Width (ft)	87.59	Top Width (ft)		87.59	
Vel Total (ft/s)	8.49	Avg. Vel. (ft/s)		8.49	
Max Chl Dpth (ft)	3.53	Hydr. Depth (ft)		2.19	
Conv. Total (cfs)	12425.9	Conv. (cfs)		12425.9	
Length Wtd. (ft)	291.77	Wetted Per. (ft)		89.95	
Min Ch El (ft)	2414.52	Shear (lb/sq ft)		2.29	
Alpha	1.00	Stream Power (lb/ft s)		19.39	
Frctn Loss (ft)	4.10	Cum Volume (acre-ft)	1.29	24.89	0.31
C & E Loss (ft)	0.00	Cum SA (acres)	0.38	10.04	0.25

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 energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
depth, the 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: Upper Boulders W
REACH: UpperBoulders-1 RS: 1.36

INPUT
Description: Topography indicates the wash and surrounding undeveloped
desert.
Aerial shows wash, undeveloped desert, and homes.
T5NR4E
Section 12
Q100 = 1,628 cfs
Station Elevation Data num= 11

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9942.86	2414	9943.05	2414	9955.54	2412	9965.01	2410	9980.82	2408
10009.97	2408	10017.56	2410	10128.11	2412	10162.67	2414	10185.07	2416
10203.69	2418								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9942.86	.061	9965.01	.038	10017.56	.061

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9965.01	10017.56	258.9	292.75	303.24	.1	.3

CROSS SECTION OUTPUT Profile #100-yr 6-hr

			Left OB	Channel	Right OB
E.G. Elev (ft)	2412.68	Element			
Vel Head (ft)	1.03	Wt. n-Val.	0.061	0.038	0.061
W.S. Elev (ft)	2411.65	Reach Len. (ft)	258.90	292.75	303.24
Crit W.S. (ft)	2411.65	Flow Area (sq ft)	6.46	168.49	75.39
E.G. Slope (ft/ft)	0.010341	Area (sq ft)	6.46	168.49	75.39
Q Total (cfs)	1628.00	Flow (cfs)	13.88	1449.76	164.36
Top Width (ft)	151.66	Top Width (ft)	7.82	52.55	91.29
Vel Total (ft/s)	6.50	Avg. Vel. (ft/s)	2.15	8.60	2.18
Max Chl Dpth (ft)	3.65	Hydr. Depth (ft)	0.83	3.21	0.83
Conv. Total (cfs)	16009.2	Conv. (cfs)	136.5	14256.5	1616.3
Length Wtd. (ft)	291.76	Wetted Per. (ft)	7.99	52.93	91.31
Min Ch El (ft)	2408.00	Shear (lb/sq ft)	0.52	2.05	0.53
Alpha	1.57	Stream Power (lb/ft s)	1.12	17.68	1.16
Frctn Loss (ft)	3.68	Cum Volume (acre-ft)	13.99	20.97	9.01
C & E Loss (ft)	0.09	Cum SA (acres)	9.74	9.57	9.40

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

CROSS SECTION OUTPUT Profile #Meth 1

			Left OB	Channel	Right OB
E.G. Elev (ft)	2412.72	Element			
Vel Head (ft)	1.16	Wt. n-Val.	0.061	0.038	0.061
W.S. Elev (ft)	2411.57	Reach Len. (ft)	258.90	292.75	303.24
Crit W.S. (ft)	2411.57	Flow Area (sq ft)	5.21	164.12	46.04
E.G. Slope (ft/ft)	0.011729	Area (sq ft)	5.21	164.12	46.04
Q Total (cfs)	1628.00	Flow (cfs)	13.04	1477.73	137.23
Top Width (ft)	95.00	Top Width (ft)	5.01	52.55	37.44
Vel Total (ft/s)	7.56	Avg. Vel. (ft/s)	2.50	9.00	2.98
Max Chl Dpth (ft)	3.57	Hydr. Depth (ft)	1.04	3.12	1.23
Conv. Total (cfs)	15032.4	Conv. (cfs)	120.4	13644.9	1267.2
Length Wtd. (ft)	293.06	Wetted Per. (ft)	5.63	52.93	38.34
Min Ch El (ft)	2408.00	Shear (lb/sq ft)	0.68	2.27	0.88
Alpha	1.30	Stream Power (lb/ft s)	1.70	20.44	2.62
Frctn Loss (ft)	4.23	Cum Volume (acre-ft)	1.27	23.69	0.16
C & E Loss (ft)	0.07	Cum SA (acres)	0.36	9.57	0.13

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: Upper Boulders W
REACH: UpperBoulders-1 RS: 1.3

INPUT
Description: Topography indicates the wash and surrounding undeveloped desert.
Aerial shows wash, undeveloped desert, and homes.
T5NR4E
Section 12
Q100 = 1,628 cfs
Station Elevation Data num= 24

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9694.75	2410	9726.95	2408	9765.31	2406	9846.83	2405	9887.59	2404.5
9928.35	2404	9938.24	2404	9940.58	2404	9977.34	2404	9993.97	2404
10000	2403.3	10004.14	2404	10005.51	2404.5	10006.88	2405	10009.61	2406
10025.25	2408	10051.26	2408	10077.67	2406.16	10108.78	2408	10147.96	2410
10166.8	2412	10183.62	2412	10223.73	2414	10228.69	2414		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9694.75	.076	9887.59	.038	10005.51	.076

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9887.59	10005.51	307.53	406.65	416.31	.1	.3

CROSS SECTION OUTPUT Profile #100-yr 6-hr

			Left OB	Channel	Right OB
E.G. Elev (ft)	2406.56	Element			
Vel Head (ft)	0.73	Wt. n-Val.	0.076	0.038	0.076
W.S. Elev (ft)	2405.83	Reach Len. (ft)	307.53	406.65	416.31
Crit W.S. (ft)	2405.83	Flow Area (sq ft)	71.55	208.22	2.40
E.G. Slope (ft/ft)	0.015732	Area (sq ft)	71.55	208.22	2.40
Q Total (cfs)	1628.00	Flow (cfs)	133.34	1490.37	4.29
Top Width (ft)	229.55	Top Width (ft)	108.01	117.92	3.62
Vel Total (ft/s)	5.77	Avg. Vel. (ft/s)	1.86	7.16	1.79
Max Chl Dpth (ft)	2.52	Hydr. Depth (ft)	0.66	1.77	0.66
Conv. Total (cfs)	12979.8	Conv. (cfs)	1063.1	11882.5	34.2
Length Wtd. (ft)	401.75	Wetted Per. (ft)	108.02	118.11	3.86
Min Ch El (ft)	2403.30	Shear (lb/sq ft)	0.65	1.73	0.61
Alpha	1.42	Stream Power (lb/ft s)	1.21	12.39	1.09
Frctn Loss (ft)	6.45	Cum Volume (acre-ft)	13.76	19.70	8.74
C & E Loss (ft)	0.02	Cum SA (acres)	9.40	9.00	9.07

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

CROSS SECTION OUTPUT Profile #Meth 1

			Left OB	Channel	Right OB
E.G. Elev (ft)	2406.77	Element			
Vel Head (ft)	0.92	Wt. n-Val.		0.038	
W.S. Elev (ft)	2405.86	Reach Len. (ft)	307.53	406.65	416.31
Crit W.S. (ft)	2405.86	Flow Area (sq ft)		212.05	
E.G. Slope (ft/ft)	0.018209	Area (sq ft)		212.05	
Q Total (cfs)	1628.00	Flow (cfs)		1628.00	
Top Width (ft)	117.92	Top Width (ft)		117.92	
Vel Total (ft/s)	7.68	Avg. Vel. (ft/s)		7.68	
Max Chl Dpth (ft)	2.56	Hydr. Depth (ft)		1.80	
Conv. Total (cfs)	12064.7	Conv. (cfs)		12064.7	
Length Wtd. (ft)	406.65	Wetted Per. (ft)		120.83	
Min Ch El (ft)	2403.30	Shear (lb/sq ft)		2.00	
Alpha	1.00	Stream Power (lb/ft s)		15.32	
Frctn Loss (ft)	7.19	Cum Volume (acre-ft)	1.26	22.43	

C & E Loss (ft)	0.01	Cum SA (acres)	0.35	9.00

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.

CROSS SECTION

RIVER: Upper Boulders W
REACH: UpperBoulders-1 RS: 1.23

INPUT
Description: Cross Section 1.23 is located upstream of concentration point
CUB05b in the HEC-1 Model. This section is locatd along the east
boundary of the Boulders subdivision.

Topography and Aerial
indicate the wash and surrounding undeveloped desert.
T5NR4E
Section 12
Q100 = 1,628 cfs
Station Elevation Data num= 16

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9643.49	2404	9671.08	2402	9710.03	2400	9806.85	2398	9829.83	2398
9842.42	2398	9902.38	2398	9907.39	2398	9949.43	2397	9991.46	2396
10000	2394.57	10038.08	2396	10047.68	2397	10057.27	2398	10088.54	2400
10097.7	2400								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9643.49	.076	9949.43	.038	10047.68	.076

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9949.43	10047.68	302.28	239.95	200.53	.3	.5

CROSS SECTION OUTPUT Profile #100-yr 6-hr

			Left OB	Channel	Right OB
E.G. Elev (ft)	2398.92	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.97	Wt. n-Val.	0.076	0.038	0.076
W.S. Elev (ft)	2397.95	Reach Len. (ft)	302.28	239.95	200.53
Crit W.S. (ft)	2397.95	Flow Area (sq ft)	18.91	198.96	4.31
E.G. Slope (ft/ft)	0.016405	Area (sq ft)	18.91	198.96	4.31
Q Total (cfs)	1628.00	Flow (cfs)	28.79	1592.66	6.55
Top Width (ft)	147.22	Top Width (ft)	39.87	98.25	9.10
Vel Total (ft/s)	7.33	Avg. Vel. (ft/s)	1.52	8.01	1.52
Max Chl Dpth (ft)	3.38	Hydr. Depth (ft)	0.47	2.02	0.47
Conv. Total (cfs)	12710.5	Conv. (cfs)	224.8	12434.6	51.1
Length Wtd. (ft)	239.44	Wetted Per. (ft)	39.89	98.46	9.15
Min Ch El (ft)	2394.57	Shear (lb/sq ft)	0.49	2.07	0.48
Alpha	1.17	Stream Power (lb/ft s)	0.74	16.57	0.73
Frctn Loss (ft)	0.33	Cum Volume (acre-ft)	13.44	17.80	8.71
C & E Loss (ft)	0.44	Cum SA (acres)	8.87	7.99	9.01

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

This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
depth, the 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 OUTPUT Profile #Meth 1

E.G. Elev (ft)	2398.99	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.02	Wt. n-Val.		0.038	
W.S. Elev (ft)	2397.96	Reach Len. (ft)	302.28	239.95	200.53
Crit W.S. (ft)	2397.96	Flow Area (sq ft)		200.42	
E.G. Slope (ft/ft)	0.017166	Area (sq ft)		200.42	
Q Total (cfs)	1628.00	Flow (cfs)		1628.00	
Top Width (ft)	98.25	Top Width (ft)		98.25	
Vel Total (ft/s)	8.12	Avg. Vel. (ft/s)		8.12	
Max Chl Dpth (ft)	3.39	Hydr. Depth (ft)		2.04	
Conv. Total (cfs)	12425.9	Conv. (cfs)		12425.9	
Length Wtd. (ft)	243.77	Wetted Per. (ft)		100.39	
Min Ch El (ft)	2394.57	Shear (lb/sq ft)		2.14	
Alpha	1.00	Stream Power (lb/ft s)		17.38	
Frctn Loss (ft)	0.55	Cum Volume (acre-ft)	1.26	20.50	
C & E Loss (ft)	0.42	Cum SA (acres)	0.35	7.99	

Warning: The energy equation could not be 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: Upper Boulders W
REACH: UpperBoulders-1 RS: 1.18

INPUT
Description: Cross Section 1.18 is located within the Boulders Subdivision.
This section is located upstream of the intersection of Hayden Road and Upper Boulders Wash. There are 2-6 X 4 concrete box culverts located under Hayden Road.

Topography indicates wash
and surrounding undeveloped desert.
Aerial shows wash,
undeveloped desert and Pima Road.
T5NR4E Section 12
Q100 = 1,667
cfs
Station Elevation Data num= 12

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9880.41	2400	9893.48	2398	9906.64	2396	9946.66	2394	9979.56	2392
9988.07	2390	9994.05	2390	10039.93	2392	10094.94	2393.53	10121.86	2394
10153.86	2396	10165.64	2398						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9880.41	.076	9979.56	.038	10039.93	.076

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

```
      9979.5610039.93            93.19   93.19   93.19            .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
 9880.41 9979.14    2396       F
10039.9310165.64    2396       F
Left Levee       Station= 9946.66      Elevation=    2394
```

CROSS SECTION OUTPUT Profile #100-yr 6-hr

E.G. Elev (ft)	2397.16	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.09	Wt. n-Val.	0.076	0.038	0.076
W.S. Elev (ft)	2397.07	Reach Len. (ft)	93.19	93.19	93.19
Crit W.S. (ft)	2393.72	Flow Area (sq ft)	220.38	372.33	395.20
E.G. Slope (ft/ft)	0.000480	Area (sq ft)	220.38	372.33	395.20
Q Total (cfs)	1628.00	Flow (cfs)	185.21	1069.04	373.74
Top Width (ft)	260.54	Top Width (ft)	79.95	60.37	120.22
Vel Total (ft/s)	1.65	Avg. Vel. (ft/s)	0.84	2.87	0.95
Max Chl Dpth (ft)	7.07	Hydr. Depth (ft)	2.76	6.17	3.29
Conv. Total (cfs)	74338.3	Conv. (cfs)	8457.2	48815.0	17066.0
Length Wtd. (ft)	93.19	Wetted Per. (ft)	80.14	60.65	120.40
Min Ch El (ft)	2390.00	Shear (lb/sq ft)	0.08	0.18	0.10
Alpha	2.10	Stream Power (lb/ft s)	0.07	0.53	0.09
Frctn Loss (ft)		Cum Volume (acre-ft)	12.61	16.23	7.79
C & E Loss (ft)		Cum SA (acres)	8.46	7.55	8.71

Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid,
energy was used.

CROSS SECTION OUTPUT Profile #Meth 1

E.G. Elev (ft)	2397.50	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.19	Wt. n-Val.	0.076	0.038	
W.S. Elev (ft)	2397.31	Reach Len. (ft)	93.19	93.19	93.19
Crit W.S. (ft)	2393.74	Flow Area (sq ft)	141.64	386.62	
E.G. Slope (ft/ft)	0.000845	Area (sq ft)	141.64	386.62	
Q Total (cfs)	1628.00	Flow (cfs)	199.58	1428.42	
Top Width (ft)	93.27	Top Width (ft)	32.90	60.37	
Vel Total (ft/s)	3.08	Avg. Vel. (ft/s)	1.41	3.69	
Max Chl Dpth (ft)	7.31	Hydr. Depth (ft)	4.31	6.40	
Conv. Total (cfs)	56020.4	Conv. (cfs)	6867.8	49152.6	
Length Wtd. (ft)	93.19	Wetted Per. (ft)	36.27	65.95	
Min Ch El (ft)	2390.00	Shear (lb/sq ft)	0.21	0.31	
Alpha	1.29	Stream Power (lb/ft s)	0.29	1.14	
Frctn Loss (ft)		Cum Volume (acre-ft)	0.76	18.89	
C & E Loss (ft)		Cum SA (acres)	0.23	7.55	

Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid,
energy was used.

CULVERT

RIVER: Upper Boulders W
REACH: UpperBoulders-1 RS: 1.17

INPUT
Description: Box Culverts at Hayden Road
Distance from Upstream XS = 1
Deck/Roadway Width = 91
Weir Coefficient = 2.6
Upstream Deck/Roadway Coordinates
num= 2

Sta Hi Cord	Lo Cord	Sta Hi Cord	Lo Cord
9800	2396	10500	2396

Upstream Bridge Cross Section Data
Station Elevation Data num= 12

```
     Sta     Elev     Sta     Elev     Sta     Elev     Sta     Elev     Sta     Elev
 9880.41     2400 9893.48     2398 9906.64     2396 9946.66     2394 9979.56     2392
 9988.07     2390 9994.05     239010039.93     239210094.94 2393.5310121.86     2394
10153.86     239610165.64     2398

Manning's n Values          num=        3
     Sta    n Val     Sta    n Val     Sta    n Val
 9880.41     .076 9979.56     .03810039.93     .076

Bank Sta: Left   Right    Coeff Contr.    Expan.
       9979.5610039.93              .3        .5
Ineffective Flow     num=        2
   Sta L   Sta R    Elev  Permanent
 9880.41 9979.14    2396        F
10039.9310165.64    2396        F
Left Levee       Station= 9946.66       Elevation=    2394

Downstream  Deck/Roadway Coordinates
    num=        3
     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord
    9750    2396           10000    2396           10300    2396

Downstream Bridge Cross Section Data
Station Elevation Data    num=       16
     Sta     Elev     Sta     Elev     Sta     Elev     Sta     Elev     Sta     Elev
 9786.82     2396 9786.82     2388 9810.42     2386 9820.96     2386 9900.92     2388
 9922.22     2388 9924.21     2388 9936.87 2388.49    10000 2388.6910015.36     2390
10050.98     2390 10063.1     239010212.64     239210220.94     239410228.98     2396
10237.57     2398

Manning's n Values          num=        3
     Sta    n Val     Sta    n Val     Sta    n Val
 9786.82     .076 9936.87     .03810015.36     .076

Bank Sta: Left   Right    Coeff Contr.    Expan.
       9936.8710015.36              .3        .5
Ineffective Flow     num=        2
   Sta L   Sta R    Elev  Permanent
 9786.82 9936.87    2396        F
10015.3610237.57    2396        F

Upstream Embankment side slope              =       0 horiz. to 1.0 vertical
Downstream Embankment side slope            =       0 horiz. to 1.0 vertical
Maximum allowable submergence for weir flow =     .95
Elevation at which weir flow begins         =
Energy head used in spillway design         =
Spillway height used in design              =
Weir crest shape                            = Broad Crested

Number of Culverts =  2

Culvert Name      Shape      Rise     Span
CULVERT#1            Box       4        6
FHWA Chart # 8 - flared wingwalls
FHWA Scale # 1 - Wingwall flared 30 to 75 deg.
Solution Criteria = Highest U.S. EG
Culvert Upstrm Dist  Length    Top n  Bottom n  Depth Blocked  Entrance Loss Coef   Exit Loss Coef
                 4.5      84     .015     .015        0                  .4                 1
Number of Barrels =  2
Upstream   Elevation =  2390
Centerline Stations
    Sta.    Sta.
 9983.14 9998.98
Downstream Elevation =  2389
Centerline Stations
    Sta.    Sta.
 9960.07  9975.9

Culvert Name      Shape      Rise     Span
Culvert #2           Box       4        8
FHWA Chart # 8 - flared wingwalls
```

FHWA Scale # 1 - Wingwall flared 30 to 75 deg.
Solution Criteria = Highest U.S. EG

Culvert	Upstrm Dist	Length	Top n	Bottom n	Depth Blocked	Entrance Loss Coef	Exit Loss Coef
	4.5	84	.03	.03	0	.4	1

Upstream Elevation = 2390
Centerline Station = 9991.06
Downstream Elevation = 2389
Centerline Station = 9967.99

CROSS SECTION

RIVER: Upper Boulders W
REACH: UpperBoulders-1 RS: 1.16

INPUT
Description: Cross Section 1.16 is located within the Boulders. This section is located downstream of the intersection of Hayden Road and Upper Boulders Wash. There are 2-6 X 4 CBC located under Hayden Road.

Topography indicates wash and surrounding undeveloped desert.
Aerial shows wash, undeveloped desert and Pima Road.
T5NR4E Section 11
Q100 = 1,667 cfs
Station Elevation Data num= 16

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9786.82	2396	9786.82	2388	9810.42	2386	9820.96	2386	9900.92	2388
9922.22	2388	9924.21	2388	9936.87	2388.49	10000	2388.69	10015.36	2390
10050.98	2390	10063.1	2390	10212.64	2392	10220.94	2394	10228.98	2396
10237.57	2398								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9786.82	.076	9936.87	.038	10015.36	.076

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9936.87	10015.36	125.94	147.34	162.71	.3	.5

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
9786.82	9936.87	2396	F
10015.36	10237.57	2396	F

CROSS SECTION OUTPUT Profile #100-yr 6-hr

E.G. Elev (ft)	2392.35	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.19	Wt. n-Val.		0.038	
W.S. Elev (ft)	2391.17	Reach Len. (ft)	125.94	147.34	162.71
Crit W.S. (ft)	2391.17	Flow Area (sq ft)		190.64	
E.G. Slope (ft/ft)	0.015332	Area (sq ft)	596.67	190.64	106.56
Q Total (cfs)	1667.00	Flow (cfs)		1667.00	
Top Width (ft)	363.50	Top Width (ft)	150.05	78.49	134.96
Vel Total (ft/s)	8.74	Avg. Vel. (ft/s)		8.74	
Max Chl Dpth (ft)	5.17	Hydr. Depth (ft)		2.43	
Conv. Total (cfs)	13462.8	Conv. (cfs)		13462.8	
Length Wtd. (ft)	144.69	Wetted Per. (ft)		78.55	
Min Ch El (ft)	2388.49	Shear (lb/sq ft)		2.32	
Alpha	1.00	Stream Power (lb/ft s)		20.31	
Frctn Loss (ft)	2.48	Cum Volume (acre-ft)	11.73	15.62	7.25
C & E Loss (ft)	0.33	Cum SA (acres)	8.21	7.40	8.43

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

Warning: During the standard step iterations, when the assumed water surface was set equal to critical
depth, the calculated water surface came back below critical depth. This indicates that there is
not a valid subcritical answer. The program defaulted to critical depth.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid,
energy was used.

CROSS SECTION OUTPUT Profile #Meth 1

E.G. Elev (ft)	2392.35	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.19	Wt. n-Val.		0.038	
W.S. Elev (ft)	2391.17	Reach Len. (ft)	125.94	147.34	162.71
Crit W.S. (ft)	2391.17	Flow Area (sq ft)		190.64	
E.G. Slope (ft/ft)	0.015636	Area (sq ft)	224.04	190.64	
Q Total (cfs)	1667.00	Flow (cfs)		1667.00	
Top Width (ft)	146.23	Top Width (ft)	67.74	78.49	
Vel Total (ft/s)	8.74	Avg. Vel. (ft/s)		8.74	
Max Chl Dpth (ft)	3.96	Hydr. Depth (ft)		2.43	
Conv. Total (cfs)	13331.1	Conv. (cfs)		13331.1	
Length Wtd. (ft)	147.34	Wetted Per. (ft)		79.71	
Min Ch El (ft)	2388.49	Shear (lb/sq ft)		2.33	
Alpha	1.00	Stream Power (lb/ft s)		20.41	
Frctn Loss (ft)	2.38	Cum Volume (acre-ft)	0.37	18.27	
C & E Loss (ft)	0.15	Cum SA (acres)	0.13	7.40	

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

CROSS SECTION

RIVER: Upper Boulders W
REACH: UpperBoulders-1 RS: 1.14

INPUT
Description: Cross Section 1.14 is located within the Boulders.

Topography
indicates wash and surrounding undeveloped desert.
Aerial shows
wash, undeveloped desert, golf course and Pima Road.
T5NR4E
Section 11
Q100 = 1,667 cfs
Station Elevation Data num= 11

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9774.9	2396	9810.73	2386	9837.28	2386	9927.49	2387.73	9981.46	2386
10000	2385.5	10011.32	2386	10046.95	2387.18	10210.58	2388	10216.95	2390
10220.26	2390								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9774.9	.076	9927.49	.03	10046.95	.076

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9927.49	10046.95	448.16	464.41	454.31	.1	.3

Left Levee Station= 9774.9 Elevation= 2396

CROSS SECTION OUTPUT Profile #100-yr 6-hr

E.G. Elev (ft)	2388.43	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.53	Wt. n-Val.	0.076	0.038	0.076
W.S. Elev (ft)	2387.90	Reach Len. (ft)	448.16	464.41	454.31
Crit W.S. (ft)	2387.90	Flow Area (sq ft)	150.33	166.78	51.78
E.G. Slope (ft/ft)	0.019295	Area (sq ft)	150.33	166.78	51.78
Q Total (cfs)	1667.00	Flow (cfs)	464.58	1131.22	71.20
Top Width (ft)	386.78	Top Width (ft)	123.57	119.46	143.75
Vel Total (ft/s)	4.52	Avg. Vel. (ft/s)	3.09	6.78	1.37
Max Chl Dpth (ft)	2.40	Hydr. Depth (ft)	1.22	1.40	0.36
Conv. Total (cfs)	12000.8	Conv. (cfs)	3344.5	8143.7	512.6
Length Wtd. (ft)	456.62	Wetted Per. (ft)	123.85	119.53	143.76
Min Ch El (ft)	2385.50	Shear (lb/sq ft)	1.46	1.68	0.43
Alpha	1.66	Stream Power (lb/ft s)	4.52	11.40	0.60
Frctn Loss (ft)	5.48	Cum Volume (acre-ft)	10.65	15.02	6.96
C & E Loss (ft)	0.12	Cum SA (acres)	7.82	7.07	7.91

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 conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
depth, the 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 OUTPUT Profile #Meth 1

E.G. Elev (ft)	2389.24	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.88	Wt. n-Val.		0.038	
W.S. Elev (ft)	2388.36	Reach Len. (ft)	448.16	464.41	454.31
Crit W.S. (ft)	2388.33	Flow Area (sq ft)		221.32	
E.G. Slope (ft/ft)	0.016647	Area (sq ft)		221.32	
Q Total (cfs)	1667.00	Flow (cfs)		1667.00	
Top Width (ft)	119.46	Top Width (ft)		119.46	
Vel Total (ft/s)	7.53	Avg. Vel. (ft/s)		7.53	
Max Chl Dpth (ft)	2.86	Hydr. Depth (ft)		1.85	
Conv. Total (cfs)	12920.3	Conv. (cfs)		12920.3	
Length Wtd. (ft)	464.41	Wetted Per. (ft)		121.33	
Min Ch El (ft)	2385.50	Shear (lb/sq ft)		1.90	
Alpha	1.00	Stream Power (lb/ft s)		14.28	
Frctn Loss (ft)	7.77	Cum Volume (acre-ft)	0.05	17.57	
C & E Loss (ft)	0.01	Cum SA (acres)	0.03	7.07	

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.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water
surface was used.

CROSS SECTION

RIVER: Upper Boulders W
REACH: UpperBoulders-1 RS: 1.05

INPUT
Description: Cross Section 1.05 is located within the Boulders.

Topography
indicates wash and surrounding undeveloped desert.
Aerial shows
wash, undeveloped desert, golf course and Pima Road.
T5NR4E
Section 11
Q100 = 1,667 cfs
Station Elevation Data num= 13

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9768.29	2380	9830.41	2378	9845.03	2376	9889.53	2376	9916.83	2378
9947.56	2379.56	9990.74	2378	10000	2377.62	10017.36	2378	10047.59	2378.6
10081.96	2378	10097.53	2378	10250.97	2380				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9768.29	.076	9947.56	.038	10047.59	.076

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9947.56	10047.59	424	426.33	445.35	.1	.3

Left Levee Station= 9947.56 Elevation= 2379.56

CROSS SECTION OUTPUT Profile #100-yr 6-hr

E.G. Elev (ft)	2379.71	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.14	Wt. n-Val.	0.076	0.038	0.076
W.S. Elev (ft)	2379.57	Reach Len. (ft)	424.00	426.33	445.35
Crit W.S. (ft)	2379.57	Flow Area (sq ft)	328.76	119.11	162.24
E.G. Slope (ft/ft)	0.008176	Area (sq ft)	328.76	119.11	162.24
Q Total (cfs)	1667.00	Flow (cfs)	916.20	473.01	277.79
Top Width (ft)	436.08	Top Width (ft)	165.84	100.03	170.21
Vel Total (ft/s)	2.73	Avg. Vel. (ft/s)	2.79	3.97	1.71
Max Chl Dpth (ft)	3.57	Hydr. Depth (ft)	1.98	1.19	0.95
Conv. Total (cfs)	18435.6	Conv. (cfs)	10132.4	5231.1	3072.2
Length Wtd. (ft)	427.39	Wetted Per. (ft)	166.11	100.08	170.22
Min Ch El (ft)	2377.62	Shear (lb/sq ft)	1.01	0.61	0.49
Alpha	1.24	Stream Power (lb/ft s)	2.82	2.41	0.83
Frctn Loss (ft)	3.74	Cum Volume (acre-ft)	8.19	13.49	5.84
C & E Loss (ft)	0.06	Cum SA (acres)	6.33	5.90	6.28

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 energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
depth, the 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 OUTPUT Profile #Meth 1

E.G. Elev (ft)	2381.45	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.01	Wt. n-Val.		0.038	
W.S. Elev (ft)	2380.44	Reach Len. (ft)	424.00	426.33	445.35
Crit W.S. (ft)	2380.44	Flow Area (sq ft)		206.49	
E.G. Slope (ft/ft)	0.016817	Area (sq ft)		206.49	
Q Total (cfs)	1667.00	Flow (cfs)		1667.00	
Top Width (ft)	100.03	Top Width (ft)		100.03	
Vel Total (ft/s)	8.07	Avg. Vel. (ft/s)		8.07	
Max Chl Dpth (ft)	2.82	Hydr. Depth (ft)		2.06	
Conv. Total (cfs)	12854.8	Conv. (cfs)		12854.8	
Length Wtd. (ft)	426.33	Wetted Per. (ft)		102.80	
Min Ch El (ft)	2377.62	Shear (lb/sq ft)		2.11	
Alpha	1.00	Stream Power (lb/ft s)		17.02	
Frctn Loss (ft)	6.97	Cum Volume (acre-ft)	0.05	15.29	
C & E Loss (ft)	0.09	Cum SA (acres)	0.03	5.90	

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 energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
depth, the 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: Upper Boulders W
REACH: UpperBoulders-1 RS: 0.97

INPUT
Description: Cross Section 0.97 is located within the Boulders.

Topography
indicates wash and surrounding undeveloped desert.
Aerial shows
wash, undeveloped desert, and roads.
T5NR4E Section 11
Q100 =
1,667 cfs
Station Elevation Data num= 14

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9733.61	2370	9804.4	2368	9838.12	2368	9841.25	2368	9875.67	2368
9883.87	2370	9989.3	2368	9996.06	2366	9997.32	2366	10006.81	2366
10022.18	2366	10029.68	2368	10101.44	2370	10101.56	2370		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9733.61	.076	9989.3	.038	10029.68	.076

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9989.3	10029.68	499.59	495.86	480.1	.1	.3

CROSS SECTION OUTPUT Profile #100-yr 6-hr

E.G. Elev (ft)	2370.36	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.72	Wt. n-Val.	0.076	0.038	0.076
W.S. Elev (ft)	2369.64	Reach Len. (ft)	499.59	495.86	480.10
Crit W.S. (ft)	2369.64	Flow Area (sq ft)	240.21	132.60	48.07
E.G. Slope (ft/ft)	0.009370	Area (sq ft)	240.21	132.60	48.07
Q Total (cfs)	1667.00	Flow (cfs)	488.51	1098.90	79.59
Top Width (ft)	321.33	Top Width (ft)	222.21	40.38	58.73
Vel Total (ft/s)	3.96	Avg. Vel. (ft/s)	2.03	8.29	1.66
Max Chl Dpth (ft)	3.64	Hydr. Depth (ft)	1.08	3.28	0.82
Conv. Total (cfs)	17221.0	Conv. (cfs)	5046.6	11352.2	822.2
Length Wtd. (ft)	493.71	Wetted Per. (ft)	222.45	40.93	58.76
Min Ch El (ft)	2366.00	Shear (lb/sq ft)	0.63	1.90	0.48
Alpha	2.97	Stream Power (lb/ft s)	1.28	15.71	0.79
Frctn Loss (ft)	4.79	Cum Volume (acre-ft)	5.42	12.26	4.77
C & E Loss (ft)	0.00	Cum SA (acres)	4.44	5.21	5.11

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: Divided flow computed for this cross-section.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical

depth, the calculated water surface came back below critical depth. This indicates that there is
not a valid subcritical answer. The program defaulted to critical depth.

CROSS SECTION OUTPUT Profile #Meth 1

E.G. Elev (ft)	2371.99	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.89	Wt. n-Val.		0.038	
W.S. Elev (ft)	2370.10	Reach Len. (ft)	499.59	495.86	480.10
Crit W.S. (ft)	2370.10	Flow Area (sq ft)		151.08	
E.G. Slope (ft/ft)	0.015893	Area (sq ft)		151.08	
Q Total (cfs)	1667.00	Flow (cfs)		1667.00	
Top Width (ft)	40.38	Top Width (ft)		40.38	
Vel Total (ft/s)	11.03	Avg. Vel. (ft/s)		11.03	
Max Chl Dpth (ft)	4.09	Hydr. Depth (ft)		3.74	
Conv. Total (cfs)	13222.9	Conv. (cfs)		13222.9	
Length Wtd. (ft)	495.86	Wetted Per. (ft)		45.12	
Min Ch El (ft)	2366.00	Shear (lb/sq ft)		3.32	
Alpha	1.00	Stream Power (lb/ft s)		36.66	
Frctn Loss (ft)	7.93	Cum Volume (acre-ft)	0.05	13.54	
C & E Loss (ft)	0.00	Cum SA (acres)	0.03	5.21	

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
depth, the 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: Upper Boulders W
REACH: UpperBoulders-1 RS: 0.87

INPUT
Description: Cross Section 0.87 is located within the Boulders.

Topography
indicates wash and surrounding undeveloped desert.
Aerial shows
wash, undeveloped desert, and roads.
T5NR4E Section 11
Q100 =
1,667 cfs
Station Elevation Data num= 11

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9922.92	2360	9946.35	2360	9979.57	2358	9986.06	2356	10000.3	2356
10019.68	2358	10103.38	2359.86	10161.39	2358	10188.19	2358	10257.02	2360
10265.31	2360								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9922.92	.076	9979.57	.038	10019.68	.076

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9979.57	10019.68	425.95	431.85	438.34	.1	.3

Blocked Obstructions num= 1

Sta L	Sta R	Elev
10257.02	10265.31	2359.75

CROSS SECTION OUTPUT Profile #100-yr 6-hr

E.G. Elev (ft)	2360.66	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.77	Wt. n-Val.	0.076	0.038	0.076
W.S. Elev (ft)	2359.89	Reach Len. (ft)	425.95	431.85	438.34

Crit W.S. (ft)	2359.89	Flow Area (sq ft)	29.53	129.98	247.10
E.G. Slope (ft/ft)	0.010051	Area (sq ft)	29.53	129.98	247.10
Q Total (cfs)	1667.00	Flow (cfs)	55.58	1108.39	503.03
Top Width (ft)	304.83	Top Width (ft)	31.32	40.11	233.40
Vel Total (ft/s)	4.10	Avg. Vel. (ft/s)	1.88	8.53	2.04
Max Chl Dpth (ft)	3.89	Hydr. Depth (ft)	0.94	3.24	1.06
Conv. Total (cfs)	16627.4	Conv. (cfs)	554.3	11055.6	5017.4
Length Wtd. (ft)	431.92	Wetted Per. (ft)	31.38	40.51	233.48
Min Ch El (ft)	2356.00	Shear (lb/sq ft)	0.59	2.01	0.66
Alpha	2.96	Stream Power (lb/ft s)	1.11	17.17	1.35
Frctn Loss (ft)	4.42	Cum Volume (acre-ft)	3.87	10.77	3.14
C & E Loss (ft)	0.00	Cum SA (acres)	2.98	4.75	3.50

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.

CROSS SECTION OUTPUT Profile #Meth 1

E.G. Elev (ft)	2362.30	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.90	Wt. n-Val.		0.038	
W.S. Elev (ft)	2360.40	Reach Len. (ft)	425.95	431.85	438.34
Crit W.S. (ft)	2360.40	Flow Area (sq ft)		150.76	
E.G. Slope (ft/ft)	0.016101	Area (sq ft)		150.76	
Q Total (cfs)	1667.00	Flow (cfs)		1667.00	
Top Width (ft)	40.11	Top Width (ft)		40.11	
Vel Total (ft/s)	11.06	Avg. Vel. (ft/s)		11.06	
Max Chl Dpth (ft)	4.40	Hydr. Depth (ft)		3.76	
Conv. Total (cfs)	13137.5	Conv. (cfs)		13137.5	
Length Wtd. (ft)	431.85	Wetted Per. (ft)		45.32	
Min Ch El (ft)	2356.00	Shear (lb/sq ft)		3.34	
Alpha	1.00	Stream Power (lb/ft s)		36.97	
Frctn Loss (ft)	6.83	Cum Volume (acre-ft)	0.05	11.83	
C & E Loss (ft)	0.06	Cum SA (acres)	0.03	4.75	

Warning: The energy equation could not be 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: Upper Boulders W
REACH: UpperBoulders-1 RS: 0.79

INPUT
Description: Cross Section 0.79 is located within the Boulders.

Topography
indicates wash and surrounding undeveloped desert.
Aerial shows
wash, undeveloped desert, and roads.
T5NR4E Section 11
Q100 =
1,667 cfs

Station Elevation Data num= 18

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9722.24	2352	9744.11	2350	9756.03	2350	9790.55	2352	9800.59	2352
9823.07	2350	9836.13	2348	9837.28	2348	9846.14	2350	9882.75	2350
9897.59	2350	9972.78	2350	9976.57	2348	10000	2347.41	10009.37	2348
10020.28	2350	10030.34	2352	10030.61	2352				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9722.24	.076	9972.78	.038	10020.28	.076

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9972.78	10020.28	204.14	221.73	242.26	.3	.5

Left Levee Station= 9800.59 Elevation= 2352

CROSS SECTION OUTPUT Profile #100-yr 6-hr

			Left OB	Channel	Right OB
E.G. Elev (ft)	2351.93	Element			
Vel Head (ft)	0.79	Wt. n-Val.	0.076	0.038	0.076
W.S. Elev (ft)	2351.14	Reach Len. (ft)	204.14	221.73	242.26
Crit W.S. (ft)	2351.14	Flow Area (sq ft)	202.06	144.25	3.26
E.G. Slope (ft/ft)	0.010438	Area (sq ft)	202.06	144.25	3.26
Q Total (cfs)	1667.00	Flow (cfs)	465.86	1196.72	4.42
Top Width (ft)	215.74	Top Width (ft)	162.51	47.50	5.73
Vel Total (ft/s)	4.77	Avg. Vel. (ft/s)	2.31	8.30	1.35
Max Chl Dpth (ft)	3.74	Hydr. Depth (ft)	1.24	3.04	0.57
Conv. Total (cfs)	16316.7	Conv. (cfs)	4559.9	11713.6	43.3
Length Wtd. (ft)	219.56	Wetted Per. (ft)	162.94	48.20	5.84
Min Ch El (ft)	2347.40	Shear (lb/sq ft)	0.81	1.95	0.36
Alpha	2.24	Stream Power (lb/ft s)	1.86	16.18	0.49
Frctn Loss (ft)	0.53	Cum Volume (acre-ft)	2.74	9.41	1.88
C & E Loss (ft)	0.33	Cum SA (acres)	2.04	4.32	2.29

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 conveyance ratio (upstream conveyance divided 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.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water
surface was used.

CROSS SECTION OUTPUT Profile #Meth 1

			Left OB	Channel	Right OB
E.G. Elev (ft)	2353.16	Element			
Vel Head (ft)	1.69	Wt. n-Val.		0.038	
W.S. Elev (ft)	2351.47	Reach Len. (ft)	204.14	221.73	242.26
Crit W.S. (ft)	2351.47	Flow Area (sq ft)		159.95	
E.G. Slope (ft/ft)	0.015531	Area (sq ft)		159.95	
Q Total (cfs)	1667.00	Flow (cfs)		1667.00	
Top Width (ft)	47.50	Top Width (ft)		47.50	
Vel Total (ft/s)	10.42	Avg. Vel. (ft/s)		10.42	
Max Chl Dpth (ft)	4.07	Hydr. Depth (ft)		3.37	
Conv. Total (cfs)	13376.4	Conv. (cfs)		13376.4	
Length Wtd. (ft)	221.73	Wetted Per. (ft)		51.14	
Min Ch El (ft)	2347.40	Shear (lb/sq ft)		3.03	
Alpha	1.00	Stream Power (lb/ft s)		31.60	
Frctn Loss (ft)	0.51	Cum Volume (acre-ft)	0.05	10.28	
C & E Loss (ft)	0.77	Cum SA (acres)	0.03	4.32	

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 conveyance ratio (upstream conveyance divided 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.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water
surface was used.

CROSS SECTION

RIVER: Upper Boulders W
REACH: UpperBoulders-1 RS: 0.75

INPUT
Description: Cross Section 0.75 is located within the Boulders. This section is upstream of concentration point UB05 in the HEC-1 Model. This section is located upstream of the intersection of Upper Boulders Wash and Westland Road. There are 5-6 X 3 concrete box culverts located under Westland Road.

Topography indicates wash and surrounding undeveloped desert.
Aerial shows wash, undeveloped desert, and Westland Road.
T5NR4E Section 11
Q100 = 1,667 cfs

Station Elevation Data num= 14

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9747.86	2350	9774.15	2348	9784.77	2348	9803.71	2348	9886.35	2346
9915.94	2346	9924.35	2346	9965.7	2344	10026.92	2344	10035.01	2346
10046.73	2346	10086.01	2346	10106.53	2346	10106.53	2350		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9747.86	.076	9924.35	.038	10035.01	.076

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9924.35	10035.01	208.68	211.29	204.74	.3	.5

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
9747.86	9924.35	2346.14	F
10035.01	10106.53	2346.14	F

CROSS SECTION OUTPUT Profile #100-yr 6-hr

E.G. Elev (ft)	2348.44	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.12	Wt. n-Val.	0.076	0.038	0.076
W.S. Elev (ft)	2348.32	Reach Len. (ft)	208.68	211.29	204.74
Crit W.S. (ft)	2346.47	Flow Area (sq ft)	207.31	428.57	165.90
E.G. Slope (ft/ft)	0.001038	Area (sq ft)	207.31	428.57	165.90
Q Total (cfs)	1667.00	Flow (cfs)	158.88	1328.90	179.22
Top Width (ft)	336.58	Top Width (ft)	154.40	110.66	71.52
Vel Total (ft/s)	2.08	Avg. Vel. (ft/s)	0.77	3.10	1.08
Max Chl Dpth (ft)	4.32	Hydr. Depth (ft)	1.34	3.87	2.32
Conv. Total (cfs)	51751.9	Conv. (cfs)	4932.4	41255.6	5564.0
Length Wtd. (ft)	211.29	Wetted Per. (ft)	154.44	110.95	73.84
Min Ch El (ft)	2344.00	Shear (lb/sq ft)	0.09	0.25	0.15
Alpha	1.82	Stream Power (lb/ft s)	0.07	0.78	0.16

Frctn Loss (ft)	Cum Volume (acre-ft)	1.78	7.95	1.41
C & E Loss (ft)	Cum SA (acres)	1.29	3.92	2.08

CROSS SECTION OUTPUT Profile #Meth 1

E.G. Elev (ft)	2349.36	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.16	Wt. n-Val.		0.038	
W.S. Elev (ft)	2349.21	Reach Len. (ft)	208.68	211.29	204.74
Crit W.S. (ft)	2346.38	Flow Area (sq ft)		526.91	
E.G. Slope (ft/ft)	0.000884	Area (sq ft)		526.91	
Q Total (cfs)	1667.00	Flow (cfs)		1667.00	
Top Width (ft)	110.66	Top Width (ft)		110.66	
Vel Total (ft/s)	3.16	Avg. Vel. (ft/s)		3.16	
Max Chl Dpth (ft)	5.21	Hydr. Depth (ft)		4.76	
Conv. Total (cfs)	56070.2	Conv. (cfs)		56070.2	
Length Wtd. (ft)	211.29	Wetted Per. (ft)		117.37	
Min Ch El (ft)	2344.00	Shear (lb/sq ft)		0.25	
Alpha	1.00	Stream Power (lb/ft s)		0.78	
Frctn Loss (ft)		Cum Volume (acre-ft)	0.05	8.54	
C & E Loss (ft)		Cum SA (acres)	0.03	3.92	

CULVERT

RIVER: Upper Boulders W
REACH: UpperBoulders-1 RS: 0.73

INPUT
Description: Box Culverts at Westland Road
Distance from Upstream XS = 20
Deck/Roadway Width = 170
Weir Coefficient = 2.6
Upstream Deck/Roadway Coordinates
num= 4

Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord
9583.83	2353.36		9767.83	2351.52		10131.83	2345.74	
10511.83	2336.45							

Upstream Bridge Cross Section Data
Station Elevation Data num= 14

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9747.86	2350	9774.15	2348	9784.77	2348	9803.71	2348	9886.35	2346
9915.94	2346	9924.35	2346	9965.7	2344	10026.92	2344	10035.01	2346
10046.73	2346	10086.01	2346	10106.53	2346	10106.53	2350		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9747.86	.076	9924.35	.038	10035.01	.076

Bank Sta: Left	Right	Coeff Contr.	Expan.
9924.35	10035.01	.3	.5

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
9747.86	9924.35	2346.14	F
10035.01	10106.53	2346.14	F

Downstream Deck/Roadway Coordinates
num= 3

Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord
9636.85	2351.52		10000.85	2345.74		10380.85	2336.45	

Downstream Bridge Cross Section Data
Station Elevation Data num= 9

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9787.5	2344	9919.56	2342	9945.5	2340	9963.45	2338	9986.92	2336
10021.38	2336	10035.98	2338	10104.96	2340	10128.96	2342		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val

```
  9787.5    .076 9963.45    .03810035.98    .076

Bank Sta: Left   Right    Coeff Contr.   Expan.
       9963.4510035.98              .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
  9787.5 9963.45 2342.61       F
10035.9810128.96 2342.61       F

Upstream Embankment side slope                =       0 horiz. to 1.0 vertical
Downstream Embankment side slope              =       0 horiz. to 1.0 vertical
Maximum allowable submergence for weir flow =     .95
Elevation at which weir flow begins           =
Energy head used in spillway design           =
Spillway height used in design                =
Weir crest shape                              = Broad Crested

Number of Culverts =  1

Culvert Name     Shape      Rise    Span
CULVERT#1            Box       3       6
FHWA Chart # 8 - flared wingwalls
FHWA Scale # 1 - Wingwall flared 30 to 75 deg.
Solution Criteria = Highest U.S. EG
Culvert Upstrm Dist  Length    Top n  Bottom n  Depth Blocked  Entrance Loss Coef   Exit Loss Coef
                 20     170     .015     .015        0                    .4                 1
Number of Barrels =  5
Upstream   Elevation =  2344
Centerline Stations
    Sta.    Sta.    Sta.    Sta.    Sta.
 9982.48 9989.39 9996.3110003.2310010.14
Downstream Elevation =  2338.5
Centerline Stations
    Sta.    Sta.    Sta.    Sta.    Sta.
 9990.32 9997.2310004.1510011.0710017.98

CROSS SECTION


RIVER: Upper Boulders W
REACH: UpperBoulders-1    RS: 0.71

INPUT
Description: Cross Section 0.71 is located within Winfeild. This section is
             located downstream of the intersection of Upper Boulders Wash and
             Westland Road.  There are 5-6 X 3 concrete box culverts located
             under Westland Road.

Topography indicates wash and surrounding
             undeveloped desert.
Aerial shows wash, undeveloped desert, and
             Westland Road.
T5NR4E Section 11
Q100 = 1,810 cfs
Station Elevation Data    num=       9
     Sta     Elev     Sta     Elev     Sta     Elev     Sta     Elev     Sta     Elev
  9787.5     2344 9919.56     2342  9945.5     2340 9963.45     2338 9986.92     2336
10021.38     233610035.98     233810104.96     234010128.96     2342

Manning's n Values        num=       3
     Sta    n Val     Sta    n Val     Sta    n Val
  9787.5     .076 9963.45     .03810035.98     .076

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9963.4510035.98           339.98  285.72  248.61              .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
  9787.5 9963.45 2342.61       F
10035.9810128.96 2342.61       F

CROSS SECTION OUTPUT  Profile #100-yr 6-hr
```

E.G. Elev (ft)	2340.55	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.35	Wt. n-Val.		0.038	
W.S. Elev (ft)	2339.21	Reach Len. (ft)	339.98	285.72	248.61
Crit W.S. (ft)	2339.21	Flow Area (sq ft)		194.36	
E.G. Slope (ft/ft)	0.015301	Area (sq ft)	6.51	194.36	25.02
Q Total (cfs)	1810.00	Flow (cfs)		1810.00	
Top Width (ft)	124.89	Top Width (ft)	10.81	72.53	41.55
Vel Total (ft/s)	9.31	Avg. Vel. (ft/s)		9.31	
Max Chl Dpth (ft)	3.20	Hydr. Depth (ft)		2.68	
Conv. Total (cfs)	14632.7	Conv. (cfs)		14632.7	
Length Wtd. (ft)	285.83	Wetted Per. (ft)		72.75	
Min Ch El (ft)	2336.00	Shear (lb/sq ft)		2.55	
Alpha	1.00	Stream Power (lb/ft s)		23.76	
Frctn Loss (ft)	4.43	Cum Volume (acre-ft)	1.27	6.44	0.96
C & E Loss (ft)	0.12	Cum SA (acres)	0.90	3.47	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.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid,
energy was used.

CROSS SECTION OUTPUT Profile #Meth 1

E.G. Elev (ft)	2340.55	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.35	Wt. n-Val.		0.038	
W.S. Elev (ft)	2339.21	Reach Len. (ft)	339.98	285.72	248.61
Crit W.S. (ft)	2339.21	Flow Area (sq ft)		194.36	
E.G. Slope (ft/ft)	0.015980	Area (sq ft)		194.36	
Q Total (cfs)	1810.00	Flow (cfs)		1810.00	
Top Width (ft)	72.53	Top Width (ft)		72.53	
Vel Total (ft/s)	9.31	Avg. Vel. (ft/s)		9.31	
Max Chl Dpth (ft)	3.20	Hydr. Depth (ft)		2.68	
Conv. Total (cfs)	14318.4	Conv. (cfs)		14318.4	
Length Wtd. (ft)	285.72	Wetted Per. (ft)		75.16	
Min Ch El (ft)	2336.00	Shear (lb/sq ft)		2.58	
Alpha	1.00	Stream Power (lb/ft s)		24.02	
Frctn Loss (ft)	4.68	Cum Volume (acre-ft)	0.05	6.79	
C & E Loss (ft)	0.10	Cum SA (acres)	0.03	3.47	

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

CROSS SECTION

RIVER: Upper Boulders W
REACH: UpperBoulders-1 RS: 0.66

INPUT
Description: Cross Section 0.66 is located within Winfield.

Topography
indicates wash, Westland Road and undeveloped desert.
Aerial
shows wash, Westland Road and undeveloped desert.
T5NR4E Section
11
Q100 = 1,810 cfs
Station Elevation Data num= 13

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9870.13	2338	9880.19	2338	9919.88	2336	9952.62	2334	9983.3	2332
9987.99	2330	10000	2329.7	10018.35	2330	10077.11	2332	10086.69	2334
10124.6	2336	10140.51	2338	10191.79	2338				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9870.13	.076	9983.3	.038	10077.11	.076

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9983.3	10077.11	430.71	431.79	421.29	.1	.3

CROSS SECTION OUTPUT Profile #100-yr 6-hr

			Left OB	Channel	Right OB
E.G. Elev (ft)	2334.00	Element			
Vel Head (ft)	1.10	Wt. n-Val.	0.076	0.038	0.076
W.S. Elev (ft)	2332.90	Reach Len. (ft)	430.71	431.79	421.29
Crit W.S. (ft)	2332.90	Flow Area (sq ft)	6.21	213.17	1.94
E.G. Slope (ft/ft)	0.015680	Area (sq ft)	6.21	213.17	1.94
Q Total (cfs)	1810.00	Flow (cfs)	8.92	1798.33	2.75
Top Width (ft)	111.93	Top Width (ft)	13.81	93.81	4.31
Vel Total (ft/s)	8.18	Avg. Vel. (ft/s)	1.44	8.44	1.42
Max Chl Dpth (ft)	3.20	Hydr. Depth (ft)	0.45	2.27	0.45
Conv. Total (cfs)	14454.7	Conv. (cfs)	71.3	14361.4	22.0
Length Wtd. (ft)	431.78	Wetted Per. (ft)	13.84	94.26	4.40
Min Ch El (ft)	2329.70	Shear (lb/sq ft)	0.44	2.21	0.43
Alpha	1.06	Stream Power (lb/ft s)	0.63	18.68	0.61
Frctn Loss (ft)	7.41	Cum Volume (acre-ft)	1.22	5.10	0.88
C & E Loss (ft)	0.10	Cum SA (acres)	0.80	2.93	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.

CROSS SECTION OUTPUT Profile #Meth 1

			Left OB	Channel	Right OB
E.G. Elev (ft)	2334.02	Element			
Vel Head (ft)	1.14	Wt. n-Val.		0.038	
W.S. Elev (ft)	2332.88	Reach Len. (ft)	430.71	431.79	421.29
Crit W.S. (ft)	2332.88	Flow Area (sq ft)		211.24	
E.G. Slope (ft/ft)	0.016780	Area (sq ft)		211.24	
Q Total (cfs)	1810.00	Flow (cfs)		1810.00	
Top Width (ft)	93.81	Top Width (ft)		93.81	
Vel Total (ft/s)	8.57	Avg. Vel. (ft/s)		8.57	
Max Chl Dpth (ft)	3.18	Hydr. Depth (ft)		2.25	
Conv. Total (cfs)	13972.7	Conv. (cfs)		13972.7	
Length Wtd. (ft)	431.79	Wetted Per. (ft)		96.02	
Min Ch El (ft)	2329.70	Shear (lb/sq ft)		2.30	
Alpha	1.00	Stream Power (lb/ft s)		19.75	
Frctn Loss (ft)	6.75	Cum Volume (acre-ft)	0.05	5.46	
C & E Loss (ft)	0.15	Cum SA (acres)	0.03	2.93	

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 energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
depth, the 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: Upper Boulders W
REACH: UpperBoulders-1 RS: 0.57

INPUT
Description: Cross Section 0.57 is located within Winfield.

Topography
indicates wash, Westland Road and undeveloped desert.
Aerial
shows wash, Westland Road and undeveloped desert.
T5NR4E Section
11
Q100 = 1,810 cfs
Station Elevation Data num= 12

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9883.29	2326	9896.09	2326	9911.36	2325	9926.62	2324	9938.45	2324
9945.32	2324	10000	2323.44	10081.41	2324	10087.92	2325	10090.46	2325.39
10199.86	2326	10272.38	2328						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9883.29	.076	9911.36	.038	10087.92	.076

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9911.36	10087.92	399.32	409	423.77	.3	.5

CROSS SECTION OUTPUT Profile #100-yr 6-hr

			Left OB	Channel	Right OB
E.G. Elev (ft)	2326.07	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.75	Wt. n-Val.	0.076	0.038	0.076
W.S. Elev (ft)	2325.32	Reach Len. (ft)	399.32	409.00	423.77
Crit W.S. (ft)	2325.32	Flow Area (sq ft)	0.78	260.12	0.33
E.G. Slope (ft/ft)	0.018886	Area (sq ft)	0.78	260.12	0.33
Q Total (cfs)	1810.00	Flow (cfs)	0.61	1809.13	0.26
Top Width (ft)	183.51	Top Width (ft)	4.87	176.56	2.08
Vel Total (ft/s)	6.93	Avg. Vel. (ft/s)	0.79	6.95	0.78
Max Chl Dpth (ft)	1.88	Hydr. Depth (ft)	0.16	1.47	0.16
Conv. Total (cfs)	13170.6	Conv. (cfs)	4.5	13164.2	1.9
Length Wtd. (ft)	408.36	Wetted Per. (ft)	4.88	176.67	2.10
Min Ch El (ft)	2323.44	Shear (lb/sq ft)	0.19	1.74	0.19
Alpha	1.01	Stream Power (lb/ft s)	0.15	12.07	0.15
Frctn Loss (ft)	5.62	Cum Volume (acre-ft)	1.18	2.76	0.87
C & E Loss (ft)	0.17	Cum SA (acres)	0.71	1.59	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.

CROSS SECTION OUTPUT Profile #Meth 1

E.G. Elev (ft)	2326.08	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.64	Wt. n-Val.		0.038	
W.S. Elev (ft)	2325.44	Reach Len. (ft)	399.32	409.00	423.77
Crit W.S. (ft)	2325.32	Flow Area (sq ft)		281.72	
E.G. Slope (ft/ft)	0.014588	Area (sq ft)		281.72	
Q Total (cfs)	1810.00	Flow (cfs)		1810.00	
Top Width (ft)	176.56	Top Width (ft)		176.56	
Vel Total (ft/s)	6.42	Avg. Vel. (ft/s)		6.42	
Max Chl Dpth (ft)	2.00	Hydr. Depth (ft)		1.60	
Conv. Total (cfs)	14985.8	Conv. (cfs)		14985.8	
Length Wtd. (ft)	408.93	Wetted Per. (ft)		177.56	
Min Ch El (ft)	2323.44	Shear (lb/sq ft)		1.45	
Alpha	1.00	Stream Power (lb/ft s)		9.28	
Frctn Loss (ft)	6.31	Cum Volume (acre-ft)	0.05	3.01	
C & E Loss (ft)	0.14	Cum SA (acres)	0.03	1.59	

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: Upper Boulders W
REACH: UpperBoulders-1 RS: 0.50

INPUT
Description: Cross Section 0.50 is located within Winfield. This section is located upstream of the interesection of Upper Boulders Wash and Winfield Drive and north of Shooting Star Way. There are 6-10 X 3 concrete box culverts located under Winfield Drive.

Topography
indicates wash and surrounding undeveloped desert.
Aerial shows
wash, undeveloped desert, Winfield Drive, and Shooting Star Way.
T5NR4E Section 11
Q100 = 1,810 cfs
Station Elevation Data num= 19

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9701.06	2320	9797.97	2320	9799.07	2320	9871.04	2318	9928.2	2316
9942.66	2314	9945.59	2314	9951.71	2316	9970.34	2316.94	9979.19	2316
10000	2315.5	10006.27	2316	10024.31	2316	10028.92	2316	10063.44	2317.55
10157.38	2317.33	10236.81	2317.94	10318.91	2318	10342.12	2319.02		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9701.06	.076	9970.34	.038	10063.44	.076

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9970.34	10063.44	76.04	74.39	73.41	.3	.5

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
9701.06	9970.34	2317.45	F
10063.44	10342.12	2317.45	F

CROSS SECTION OUTPUT Profile #100-yr 6-hr

E.G. Elev (ft)	2318.61	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.41	Wt. n-Val.	0.076	0.038	0.076
W.S. Elev (ft)	2318.20	Reach Len. (ft)	76.04	74.39	73.41
Crit W.S. (ft)	2317.92	Flow Area (sq ft)	179.80	180.76	135.85
E.G. Slope (ft/ft)	0.010478	Area (sq ft)	179.80	180.76	135.85
Q Total (cfs)	1810.00	Flow (cfs)	508.46	1125.19	176.35
Top Width (ft)	459.67	Top Width (ft)	106.53	93.10	260.04
Vel Total (ft/s)	3.65	Avg. Vel. (ft/s)	2.83	6.22	1.30
Max Chl Dpth (ft)	4.20	Hydr. Depth (ft)	1.69	1.94	0.52

Conv. Total (cfs)	17682.3	Conv. (cfs)	4967.3	10992.2	1722.8
Length Wtd. (ft)	74.39	Wetted Per. (ft)	107.05	93.21	260.05
Min Ch El (ft)	2315.50	Shear (lb/sq ft)	1.10	1.27	0.34
Alpha	1.99	Stream Power (lb/ft s)	3.11	7.90	0.44
Frctn Loss (ft)		Cum Volume (acre-ft)	0.36	0.69	0.21
C & E Loss (ft)		Cum SA (acres)	0.20	0.32	0.38

CROSS SECTION OUTPUT Profile #Meth 1

E.G. Elev (ft)	2319.62	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.11	Wt. n-Val.	0.076	0.038	
W.S. Elev (ft)	2318.51	Reach Len. (ft)	76.04	74.39	73.41
Crit W.S. (ft)	2318.51	Flow Area (sq ft)	9.09	209.33	
E.G. Slope (ft/ft)	0.016361	Area (sq ft)	9.09	209.33	
Q Total (cfs)	1810.00	Flow (cfs)	26.60	1783.40	
Top Width (ft)	98.44	Top Width (ft)	5.34	93.10	
Vel Total (ft/s)	8.29	Avg. Vel. (ft/s)	2.93	8.52	
Max Chl Dpth (ft)	3.01	Hydr. Depth (ft)	1.70	2.25	
Conv. Total (cfs)	14150.5	Conv. (cfs)	208.0	13942.6	
Length Wtd. (ft)	74.39	Wetted Per. (ft)	7.18	94.17	
Min Ch El (ft)	2315.50	Shear (lb/sq ft)	1.29	2.27	
Alpha	1.04	Stream Power (lb/ft s)	3.78	19.34	
Frctn Loss (ft)		Cum Volume (acre-ft)	0.01	0.71	
C & E Loss (ft)		Cum SA (acres)	0.00	0.32	

Warning: During subcritical analysis, the water surface upstream of culvert went to critical depth.

CULVERT

RIVER: Upper Boulders W
REACH: UpperBoulders-1 RS: 0.49

INPUT
Description: Box Culverts at Winfield Drive
Distance from Upstream XS = 1
Deck/Roadway Width = 70
Weir Coefficient = 2.6
Upstream Deck/Roadway Coordinates
num= 10

Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord
9701.06	2323.69		9922.33	2323.69		10022.33	2320.42	
10025.34	2320.26		10115.34	2317.1		10168.47	2316.36	
10189.55	2316.3		10205.34	2316.34		10304.37	2316.84	
10359.37	2317.94							

Upstream Bridge Cross Section Data
Station Elevation Data num= 19

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9701.06	2320	9797.97	2320	9799.07	2320	9871.04	2318	9928.2	2316
9942.66	2314	9945.59	2314	9951.71	2316	9970.34	2316.94	9979.19	2316
10000	2315.5	10006.27	2316	10024.31	2316	10028.92	2316	10063.44	2317.55
10157.38	2317.33	10236.81	2317.94	10318.91	2318	10342.12	2319.02		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9701.06	.076	9970.34	.038	10063.44	.076

Bank Sta: Left	Right	Coeff Contr.	Expan.
9970.34	10063.44	.3	.5

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
9701.06	9970.34	2317.45	F
10063.44	10342.12	2317.45	F

Downstream Deck/Roadway Coordinates
num= 10

Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord
9872.53	2324.13		9930.46	2323.69		10030.46	2320.42	

```
10033.47 2320.26        10123.47  2317.1         10176.6 2316.36
10197.68  2316.3        10213.47 2316.34         10312.5 2316.84
 10367.5 2317.94

Downstream Bridge Cross Section Data
Station Elevation Data    num=       8
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
 9917.41    2316 9937.98    2314 9950.21    2314 9972.59 2315.28 9988.64    2314
10031.19    231410075.03    231610153.84    2316

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
 9917.41    .076 9972.59    .03810075.03    .076

Bank Sta: Left   Right    Coeff Contr.   Expan.
       9972.5910075.03             .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
 9917.41 9972.59 2316.68       F
10075.0310153.84 2316.68       F
Right Levee     Station=10153.84      Elevation=    2320

Upstream Embankment side slope              =       0 horiz. to 1.0 vertical
Downstream Embankment side slope            =       0 horiz. to 1.0 vertical
Maximum allowable submergence for weir flow =     .95
Elevation at which weir flow begins         =
Energy head used in spillway design         =
Spillway height used in design              =
Weir crest shape                            = Broad Crested

Number of Culverts =  1

Culvert Name     Shape      Rise    Span
CULVERT#1            Box       3      10
FHWA Chart # 8 - flared wingwalls
FHWA Scale # 1 - Wingwall flared 30 to 75 deg.
Solution Criteria = Highest U.S. EG
Culvert Upstrm Dist  Length    Top n  Bottom n  Depth Blocked  Entrance Loss Coef   Exit Loss Coef
                3.2      68     .015     .015        0                   .4                 1
Number of Barrels =  6
Upstream   Elevation =  2314.32
Centerline Stations
    Sta.    Sta.    Sta.    Sta.    Sta.    Sta.
 9976.11 9987.03 9997.9410008.8610019.7810030.69
Downstream Elevation =  2313.82
Centerline Stations
    Sta.    Sta.    Sta.    Sta.    Sta.    Sta.
 9982.24 9993.1610004.0710014.9910025.9110036.82

CROSS SECTION


RIVER: Upper Boulders W
REACH: UpperBoulders-1    RS: 0.48

INPUT
Description: Cross Section 0.48 is located downstream of the interesection of
             Upper Boulders Wash and Winfield Drive, and upstream of
             concentration point CUB03 in the HEC-1 Model. There are 6-10 X 3
             CBC located under Winfield Drive

Topography indicates wash and
             surrounding undeveloped desert.
Aerial shows wash, undeveloped
             desert, Winfield Drive, and Shooting Star Way.
T5NR4E Section
             11
Q100 = 1,810 cfs
Station Elevation Data    num=       8
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
 9917.41    2316 9937.98    2314 9950.21    2314 9972.59 2315.28 9988.64    2314
```

```
10031.19    231410075.03    231610153.84    2316

Manning's n Values          num=       3
     Sta    n Val     Sta    n Val     Sta    n Val
 9917.41     .076 9972.59     .03810075.03     .076

Bank Sta: Left    Right     Lengths: Left Channel    Right      Coeff Contr.    Expan.
       9972.5910075.03             73.48    62.05    55.57              .3        .5
Ineffective Flow      num=       2
   Sta L    Sta R     Elev  Permanent
 9917.41 9972.59 2316.68       F
10075.0310153.84 2316.68       F
Right Levee      Station=10153.84      Elevation=    2320
```

CROSS SECTION OUTPUT Profile #100-yr 6-hr

			Left OB	Channel	Right OB
E.G. Elev (ft)	2317.19	Element			
Vel Head (ft)	0.50	Wt. n-Val.	0.076	0.038	0.076
W.S. Elev (ft)	2316.69	Reach Len. (ft)	73.48	62.05	55.57
Crit W.S. (ft)	2316.69	Flow Area (sq ft)	113.40	221.20	54.18
E.G. Slope (ft/ft)	0.009259	Area (sq ft)	113.40	221.20	54.18
Q Total (cfs)	1810.00	Flow (cfs)	341.49	1389.57	78.94
Top Width (ft)	236.43	Top Width (ft)	55.18	102.44	78.81
Vel Total (ft/s)	4.66	Avg. Vel. (ft/s)	3.01	6.28	1.46
Max Chl Dpth (ft)	2.69	Hydr. Depth (ft)	2.06	2.16	0.69
Conv. Total (cfs)	18810.0	Conv. (cfs)	3548.8	14440.7	820.4
Length Wtd. (ft)	62.87	Wetted Per. (ft)	56.00	102.54	79.50
Min Ch El (ft)	2314.00	Shear (lb/sq ft)	1.17	1.25	0.39
Alpha	1.48	Stream Power (lb/ft s)	3.52	7.83	0.57
Frctn Loss (ft)	0.73	Cum Volume (acre-ft)	0.10	0.35	0.05
C & E Loss (ft)	0.15	Cum SA (acres)	0.06	0.15	0.09

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: The cross-section end points had to be extended vertically for the computed water surface.
Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
depth, the 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 OUTPUT Profile #Meth 1

			Left OB	Channel	Right OB
E.G. Elev (ft)	2317.73	Element			
Vel Head (ft)	1.04	Wt. n-Val.		0.038	
W.S. Elev (ft)	2316.69	Reach Len. (ft)	73.48	62.05	55.57
Crit W.S. (ft)	2316.69	Flow Area (sq ft)		221.45	
E.G. Slope (ft/ft)	0.016080	Area (sq ft)		221.45	
Q Total (cfs)	1810.00	Flow (cfs)		1810.00	
Top Width (ft)	102.44	Top Width (ft)		102.44	
Vel Total (ft/s)	8.17	Avg. Vel. (ft/s)		8.17	
Max Chl Dpth (ft)	2.69	Hydr. Depth (ft)		2.16	
Conv. Total (cfs)	14273.7	Conv. (cfs)		14273.7	
Length Wtd. (ft)	62.05	Wetted Per. (ft)		104.64	
Min Ch El (ft)	2314.00	Shear (lb/sq ft)		2.12	
Alpha	1.00	Stream Power (lb/ft s)		17.36	
Frctn Loss (ft)	1.00	Cum Volume (acre-ft)		0.34	
C & E Loss (ft)	0.02	Cum SA (acres)		0.15	

Warning: The energy equation could not be 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,
energy was used.

CROSS SECTION

RIVER: Upper Boulders W
REACH: UpperBoulders-1 RS: 0.47

INPUT
Description: Cross Section 0.47 is located upstream of concentration point
CUB04 in the HEC-1 Model. This section designates the downstream
study boundary for Upper Boulders Wash.

Topography indicates
wash and surrounding undeveloped desert.
Aerial shows wash,
undeveloped desert, Winfield Drive, and homes.
T5NR4E Section
11
Q100 = 2,178 cfs
Station Elevation Data num= 8

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9876.5	2316	9912.25	2314	9929.29	2312	9970.63	2312	10000	2312.45
10026.32	2314	10185.98	2316	10186.34	2316				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9876.5	.076	9912.25	.038	10026.32	.076

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9912.25	10026.32	0	0	0	.1	.3

CROSS SECTION OUTPUT Profile #100-yr 6-hr

			Left OB	Channel	Right OB
E.G. Elev (ft)	2315.81	Element			
Vel Head (ft)	1.01	Wt. n-Val.	0.076	0.038	0.076
W.S. Elev (ft)	2314.80	Reach Len. (ft)			
Crit W.S. (ft)	2314.80	Flow Area (sq ft)	5.71	263.40	25.49
E.G. Slope (ft/ft)	0.014154	Area (sq ft)	5.71	263.40	25.49
Q Total (cfs)	2178.00	Flow (cfs)	7.19	2138.65	32.16
Top Width (ft)	192.14	Top Width (ft)	14.28	114.07	63.79
Vel Total (ft/s)	7.39	Avg. Vel. (ft/s)	1.26	8.12	1.26
Max Chl Dpth (ft)	2.80	Hydr. Depth (ft)	0.40	2.31	0.40
Conv. Total (cfs)	18307.3	Conv. (cfs)	60.5	17976.6	270.3
Length Wtd. (ft)		Wetted Per. (ft)	14.31	114.24	63.80
Min Ch El (ft)	2312.00	Shear (lb/sq ft)	0.35	2.04	0.35
Alpha	1.18	Stream Power (lb/ft s)	0.44	16.54	0.45
Frctn Loss (ft)		Cum Volume (acre-ft)			
C & E Loss (ft)		Cum SA (acres)			

CROSS SECTION OUTPUT Profile #Meth 1

			Left OB	Channel	Right OB
E.G. Elev (ft)	2315.86	Element			
Vel Head (ft)	1.12	Wt. n-Val.		0.038	
W.S. Elev (ft)	2314.74	Reach Len. (ft)			
Crit W.S. (ft)	2314.74	Flow Area (sq ft)		257.02	
E.G. Slope (ft/ft)	0.016206	Area (sq ft)		257.02	
Q Total (cfs)	2178.00	Flow (cfs)		2178.00	
Top Width (ft)	114.07	Top Width (ft)		114.07	
Vel Total (ft/s)	8.47	Avg. Vel. (ft/s)		8.47	
Max Chl Dpth (ft)	2.74	Hydr. Depth (ft)		2.25	
Conv. Total (cfs)	17108.9	Conv. (cfs)		17108.9	
Length Wtd. (ft)		Wetted Per. (ft)		115.72	

Min Ch El (ft)	2312.00	Shear (lb/sq ft)	2.25
Alpha	1.00	Stream Power (lb/ft s)	19.04
Frctn Loss (ft)		Cum Volume (acre-ft)	
C & E Loss (ft)		Cum SA (acres)	

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.

SUMMARY OF MANNING'S N VALUES

River:Upper Boulders W

Reach	River Sta.	n1	n2	n3
UpperBoulders-1	4.03	.051	.044	.056
UpperBoulders-1	3.94	.051	.044	.056
UpperBoulders-1	3.87	.051	.044	.056
UpperBoulders-1	3.8	.051	.044	.056
UpperBoulders-1	3.77	.051	.044	.056
UpperBoulders-1	3.67	.051	.044	.056
UpperBoulders-1	3.66	.051	.044	.056
UpperBoulders-1	3.64	Culvert		
UpperBoulders-1	3.62	.051	.044	.056
UpperBoulders-1	3.58	.051	.044	.056
UpperBoulders-1	3.5	.051	.044	.056
UpperBoulders-1	3.43	.051	.044	.056
UpperBoulders-1	3.37	.051	.044	.056
UpperBoulders-1	3.29	.051	.044	.056
UpperBoulders-1	3.23	.051	.044	.056
UpperBoulders-1	3.14	.051	.044	.056
UpperBoulders-1	3.11	.051	.044	.056
UpperBoulders-1	3.05	.051	.044	.056
UpperBoulders-1	3.045	Culvert		
UpperBoulders-1	3.04	.051	.044	.056
UpperBoulders-1	2.97	.051	.044	.056
UpperBoulders-1	2.88	.051	.044	.056
UpperBoulders-1	2.85	.051	.044	.056
UpperBoulders-1	2.8	.051	.044	.056
UpperBoulders-1	2.75	.051	.044	.056
UpperBoulders-1	2.71	.051	.044	.056
UpperBoulders-1	2.64	.051	.044	.056
UpperBoulders-1	2.55	.061	.038	.056
UpperBoulders-1	2.5	.061	.038	.056
UpperBoulders-1	2.44	.061	.038	.056
UpperBoulders-1	2.38	.061	.038	.056
UpperBoulders-1	2.31	.061	.038	.056
UpperBoulders-1	2.29	.061	.038	.056
UpperBoulders-1	2.24	.061	.038	.056
UpperBoulders-1	2.17	.061	.038	.061
UpperBoulders-1	2.08	.061	.038	.061
UpperBoulders-1	1.98	.061	.038	.061
UpperBoulders-1	1.92	.061	.038	.061
UpperBoulders-1	1.87	.061	.038	.061
UpperBoulders-1	1.78	.061	.038	.061
UpperBoulders-1	1.72	.061	.038	.061
UpperBoulders-1	1.65	.061	.038	.061
UpperBoulders-1	1.58	.061	.038	.061
UpperBoulders-1	1.55	.061	.038	.061
UpperBoulders-1	1.48	.061	.038	.061
UpperBoulders-1	1.41	.061	.038	.061
UpperBoulders-1	1.36	.061	.038	.061
UpperBoulders-1	1.3	.076	.038	.076
UpperBoulders-1	1.23	.076	.038	.076
UpperBoulders-1	1.18	.076	.038	.076
UpperBoulders-1	1.17	Culvert		
UpperBoulders-1	1.16	.076	.038	.076
UpperBoulders-1	1.14	.076	.038	.076

UpperBoulders-1	1.05	.076	.038	.076
UpperBoulders-1	0.97	.076	.038	.076
UpperBoulders-1	0.87	.076	.038	.076
UpperBoulders-1	0.79	.076	.038	.076
UpperBoulders-1	0.75	.076	.038	.076
UpperBoulders-1	0.73	Culvert		
UpperBoulders-1	0.71	.076	.038	.076
UpperBoulders-1	0.66	.076	.038	.076
UpperBoulders-1	0.57	.076	.038	.076
UpperBoulders-1	0.50	.076	.038	.076
UpperBoulders-1	0.49	Culvert		
UpperBoulders-1	0.48	.076	.038	.076
UpperBoulders-1	0.47	.076	.038	.076

SUMMARY OF REACH LENGTHS

River: Upper Boulders W

Reach	River Sta.	Left	Channel	Right
UpperBoulders-1	4.03	435.51	449.43	462.43
UpperBoulders-1	3.94	371.32	389.07	380.52
UpperBoulders-1	3.87	365.95	360.31	384.19
UpperBoulders-1	3.8	170.73	168.69	168.14
UpperBoulders-1	3.77	508.23	514.8	524.71
UpperBoulders-1	3.67	49.54	49.24	49.36
UpperBoulders-1	3.66	205.89	204.99	206.89
UpperBoulders-1	3.64	Culvert		
UpperBoulders-1	3.62	215.28	210.66	208.67
UpperBoulders-1	3.58	444.95	437.8	425.51
UpperBoulders-1	3.5	363.8	359.52	351.74
UpperBoulders-1	3.43	348.01	334.27	346.42
UpperBoulders-1	3.37	410.91	427.01	431.31
UpperBoulders-1	3.29	307.01	315.56	315.64
UpperBoulders-1	3.23	469.92	482.21	490.25
UpperBoulders-1	3.14	169.1	171.27	172.58
UpperBoulders-1	3.11	269.12	276.19	280
UpperBoulders-1	3.05	78.45	78.59	78.85
UpperBoulders-1	3.045	Culvert		
UpperBoulders-1	3.04	343.62	344.75	348.5
UpperBoulders-1	2.97	472.25	469.32	478.67
UpperBoulders-1	2.88	184.44	187.8	187.36
UpperBoulders-1	2.85	300.79	247.31	247.75
UpperBoulders-1	2.8	283.75	283.64	276.84
UpperBoulders-1	2.75	231.18	226.8	220.27
UpperBoulders-1	2.71	318.61	332.06	339.46
UpperBoulders-1	2.64	479.25	478.4	477.98
UpperBoulders-1	2.55	249.9	254.11	266.53
UpperBoulders-1	2.5	327.75	329.77	328.62
UpperBoulders-1	2.44	303.12	301.74	296.79
UpperBoulders-1	2.38	467.63	383.98	376.07
UpperBoulders-1	2.31	99.9	118.63	121.6
UpperBoulders-1	2.29	243.41	275.56	279.14
UpperBoulders-1	2.24	370.32	371	373.37
UpperBoulders-1	2.17	469.73	461.79	453.9
UpperBoulders-1	2.08	506.96	508.95	508.25
UpperBoulders-1	1.98	361.59	346.55	251.89
UpperBoulders-1	1.92	239.31	245.66	255.59
UpperBoulders-1	1.87	481.95	490.85	524.19
UpperBoulders-1	1.78	271.21	292.35	328.88
UpperBoulders-1	1.72	374.16	382.49	364.91
UpperBoulders-1	1.65	363.31	347.81	345.68
UpperBoulders-1	1.58	200.95	198.94	202.2
UpperBoulders-1	1.55	344.6	347.95	350.44
UpperBoulders-1	1.48	347.9	346.27	350.07
UpperBoulders-1	1.41	362.87	291.91	281.77
UpperBoulders-1	1.36	258.9	292.75	303.24
UpperBoulders-1	1.3	307.53	406.65	416.31

UpperBoulders-1	1.23	302.28	239.95	200.53
UpperBoulders-1	1.18	93.19	93.19	93.19
UpperBoulders-1	1.17	Culvert		
UpperBoulders-1	1.16	125.94	147.34	162.71
UpperBoulders-1	1.14	448.16	464.41	454.31
UpperBoulders-1	1.05	424	426.33	445.35
UpperBoulders-1	0.97	499.59	495.86	480.1
UpperBoulders-1	0.87	425.95	431.85	438.34
UpperBoulders-1	0.79	204.14	221.73	242.26
UpperBoulders-1	0.75	208.68	211.29	204.74
UpperBoulders-1	0.73	Culvert		
UpperBoulders-1	0.71	339.98	285.72	248.61
UpperBoulders-1	0.66	430.71	431.79	421.29
UpperBoulders-1	0.57	399.32	409	423.77
UpperBoulders-1	0.50	76.04	74.39	73.41
UpperBoulders-1	0.49	Culvert		
UpperBoulders-1	0.48	73.48	62.05	55.57
UpperBoulders-1	0.47	0	0	0

SUMMARY OF CONTRACTION AND EXPANSION COEFFICIENTS
River: Upper Boulders W

Reach	River Sta.	Contr.	Expan.
UpperBoulders-1	4.03	.1	.3
UpperBoulders-1	3.94	.1	.3
UpperBoulders-1	3.87	.1	.3
UpperBoulders-1	3.8	.1	.3
UpperBoulders-1	3.77	.1	.3
UpperBoulders-1	3.67	.3	.5
UpperBoulders-1	3.66	.3	.5
UpperBoulders-1	3.64	Culvert	
UpperBoulders-1	3.62	.3	.5
UpperBoulders-1	3.58	.1	.3
UpperBoulders-1	3.5	.1	.3
UpperBoulders-1	3.43	.1	.3
UpperBoulders-1	3.37	.1	.3
UpperBoulders-1	3.29	.1	.3
UpperBoulders-1	3.23	.1	.3
UpperBoulders-1	3.14	.1	.3
UpperBoulders-1	3.11	.3	.5
UpperBoulders-1	3.05	.3	.5
UpperBoulders-1	3.045	Culvert	
UpperBoulders-1	3.04	.3	.5
UpperBoulders-1	2.97	.1	.3
UpperBoulders-1	2.88	.1	.3
UpperBoulders-1	2.85	.1	.3
UpperBoulders-1	2.8	.1	.3
UpperBoulders-1	2.75	.1	.3
UpperBoulders-1	2.71	.1	.3
UpperBoulders-1	2.64	.1	.3
UpperBoulders-1	2.55	.1	.3
UpperBoulders-1	2.5	.1	.3
UpperBoulders-1	2.44	.1	.3
UpperBoulders-1	2.38	.1	.3
UpperBoulders-1	2.31	.1	.3
UpperBoulders-1	2.29	.1	.3
UpperBoulders-1	2.24	.1	.3
UpperBoulders-1	2.17	.1	.3
UpperBoulders-1	2.08	.1	.3
UpperBoulders-1	1.98	.1	.3
UpperBoulders-1	1.92	.1	.3
UpperBoulders-1	1.87	.1	.3
UpperBoulders-1	1.78	.1	.3
UpperBoulders-1	1.72	.1	.3
UpperBoulders-1	1.65	.1	.3
UpperBoulders-1	1.58	.1	.3

UpperBoulders-1	1.55	.1	.3
UpperBoulders-1	1.48	.1	.3
UpperBoulders-1	1.41	.1	.3
UpperBoulders-1	1.36	.1	.3
UpperBoulders-1	1.3	.1	.3
UpperBoulders-1	1.23	.3	.5
UpperBoulders-1	1.18	.3	.5
UpperBoulders-1	1.17	Culvert	
UpperBoulders-1	1.16	.3	.5
UpperBoulders-1	1.14	.1	.3
UpperBoulders-1	1.05	.1	.3
UpperBoulders-1	0.97	.1	.3
UpperBoulders-1	0.87	.1	.3
UpperBoulders-1	0.79	.3	.5
UpperBoulders-1	0.75	.3	.5
UpperBoulders-1	0.73	Culvert	
UpperBoulders-1	0.71	.3	.5
UpperBoulders-1	0.66	.1	.3
UpperBoulders-1	0.57	.3	.5
UpperBoulders-1	0.50	.3	.5
UpperBoulders-1	0.49	Culvert	
UpperBoulders-1	0.48	.3	.5
UpperBoulders-1	0.47	.1	.3

Profile Output Table - Standard Table 1

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
UpperBoulders-1	4.03	100-yr 6-hr	238.00	2665.10	2666.75	2666.71	2667.16	0.025333	5.11	47.05	54.50	0.93
UpperBoulders-1	4.03	Meth 1	238.00	2665.10	2666.71	2666.70	2667.16	0.030213	5.37	44.30	50.06	1.01
UpperBoulders-1	3.94	100-yr 6-hr	238.00	2657.10	2658.73		2658.98	0.013587	4.02	59.64	62.29	0.70
UpperBoulders-1	3.94	Meth 1	238.00	2657.10	2658.77		2659.00	0.011936	3.86	61.69	57.05	0.65
UpperBoulders-1	3.87	100-yr 6-hr	238.00	2650.00	2651.62	2651.62	2652.15	0.023317	5.93	43.25	45.84	0.94
UpperBoulders-1	3.87	Meth 1	238.00	2650.00	2651.60	2651.60	2652.21	0.027586	6.23	38.18	31.16	0.99
UpperBoulders-1	3.8	100-yr 6-hr	238.00	2643.00	2644.91	2644.55	2645.08	0.008384	3.36	73.63	80.00	0.56
UpperBoulders-1	3.8	Meth 1	238.00	2643.00	2644.94		2645.11	0.008107	3.32	71.59	61.67	0.54
UpperBoulders-1	3.77	100-yr 6-hr	238.00	2640.50	2642.27	2642.24	2642.71	0.027470	5.35	44.52	47.55	0.97
UpperBoulders-1	3.77	Meth 1	238.00	2640.50	2642.24	2642.24	2642.71	0.030257	5.53	43.07	47.06	1.02
UpperBoulders-1	3.67	100-yr 6-hr	238.00	2630.92	2632.30		2632.51	0.014783	3.68	65.56	83.47	0.70
UpperBoulders-1	3.67	Meth 1	238.00	2630.92	2633.19		2633.24	0.001425	1.80	131.99	76.04	0.24
UpperBoulders-1	3.66	100-yr 6-hr	238.00	2630.00	2632.20	2631.30	2632.25	0.001638	2.14	160.11	138.15	0.27
UpperBoulders-1	3.66	Meth 1	238.00	2630.00	2633.05	2631.39	2633.15	0.001623	2.47	96.28	34.19	0.26
UpperBoulders-1	3.64	Culvert										
UpperBoulders-1	3.62	100-yr 6-hr	238.00	2626.00	2627.44	2627.18	2627.76	0.012490	4.53	53.84	159.53	0.70

UpperBoulders-1	3.62		Meth 1		238.00	2626.00	2627.50	2627.20	
2627.82	0.012567	4.52	52.62	38.26		0.68			
UpperBoulders-1	3.58		100-yr 6-hr		238.00	2621.42	2623.55	2623.54	
2624.19	0.022801	6.43	38.48	32.77		0.95			
UpperBoulders-1	3.58		Meth 1		238.00	2621.42	2623.59	2623.51	
2624.22	0.023107	6.38	37.31	25.44		0.93			
UpperBoulders-1	3.5		100-yr 6-hr		238.00	2615.20	2617.26	2616.96	
2617.41	0.010863	3.26	81.87	103.00		0.61			
UpperBoulders-1	3.5		Meth 1		238.00	2615.20	2617.43	2617.08	
2617.62	0.010258	3.50	68.02	65.01		0.60			
UpperBoulders-1	3.43		100-yr 6-hr		238.00	2609.00	2611.38	2611.33	
2611.96	0.022339	6.09	39.97	35.02		0.93			
UpperBoulders-1	3.43		Meth 1		238.00	2609.00	2611.33	2611.33	
2611.96	0.026460	6.37	37.37	28.96		0.99			
UpperBoulders-1	3.37		100-yr 6-hr		238.00	2602.73	2605.51	2605.20	
2606.08	0.014168	6.07	39.67	22.55		0.77			
UpperBoulders-1	3.37		Meth 1		238.00	2602.73	2605.65	2605.20	
2606.15	0.012130	5.66	42.06	20.45		0.70			
UpperBoulders-1	3.29		100-yr 6-hr		238.00	2595.62	2597.84	2597.84	
2598.64	0.021712	7.25	34.69	23.97		0.95			
UpperBoulders-1	3.29		Meth 1		238.00	2595.62	2597.82	2597.82	
2598.70	0.026891	7.55	31.54	17.63		0.99			
UpperBoulders-1	3.23		100-yr 6-hr		238.00	2590.36	2592.63	2592.30	
2593.00	0.011663	4.94	49.60	36.21		0.69			
UpperBoulders-1	3.23		Meth 1		238.00	2590.36	2592.68	2592.29	
2593.05	0.011402	4.85	49.09	29.68		0.66			
UpperBoulders-1	3.14		100-yr 6-hr		238.00	2581.93	2584.19	2584.19	
2584.98	0.025426	7.11	33.60	22.79		1.00			
UpperBoulders-1	3.14		Meth 1		238.00	2581.93	2584.19	2584.19	
2584.98	0.026463	7.14	33.31	21.51		1.01			
UpperBoulders-1	3.11		100-yr 6-hr		238.00	2578.54	2580.68		
2581.00	0.007700	4.75	56.51	35.92		0.59			
UpperBoulders-1	3.11		Meth 1		238.00	2578.54	2580.65		
2581.10	0.012178	5.39	44.17	22.04		0.67			
UpperBoulders-1	3.05		100-yr 6-hr		735.00	2573.57	2579.80	2576.99	
2580.15	0.002430	4.74	155.05	37.83		0.35			
UpperBoulders-1	3.05		Meth 1		735.00	2573.57	2579.80	2576.99	
2580.15	0.002430	4.74	155.05	37.83		0.35			
UpperBoulders-1	3.045				Culvert				
UpperBoulders-1	3.04		100-yr 6-hr		735.00	2572.45	2575.96	2575.60	
2576.96	0.014851	8.01	91.73	56.66		0.82			
UpperBoulders-1	3.04		Meth 1		735.00	2572.45	2575.95	2575.60	
2576.96	0.015370	8.05	91.25	31.28		0.83			
UpperBoulders-1	2.97		100-yr 6-hr		1270.00	2566.24	2570.25	2570.25	
2571.48	0.016225	8.98	150.25	73.13		0.90			
UpperBoulders-1	2.97		Meth 1		1270.00	2566.24	2570.35	2570.08	
2571.57	0.015496	8.84	143.68	44.57		0.87			
UpperBoulders-1	2.88		100-yr 6-hr		1270.00	2558.99	2563.42	2563.42	
2564.16	0.008849	7.64	242.47	176.27		0.69			
UpperBoulders-1	2.88		Meth 1		1270.00	2558.99	2563.64	2563.04	
2564.90	0.013039	9.00	141.13	34.64		0.79			
UpperBoulders-1	2.85		100-yr 6-hr		1270.00	2556.00	2559.72	2559.72	
2560.87	0.014869	9.27	164.81	71.69		0.88			
UpperBoulders-1	2.85		Meth 1		1270.00	2556.00	2559.86	2559.86	
2561.70	0.022337	10.87	116.79	32.21		1.01			

UpperBoulders-1	2.8		100-yr 6-hr		1270.00	2551.33	2555.82	2555.82
2556.75	0.011623	8.49	207.58	127.83		0.79		
UpperBoulders-1	2.8		Meth 1		1270.00	2551.33	2555.74	2555.74
2556.78	0.012999	8.85	180.94	83.00		0.83		
UpperBoulders-1	2.75		100-yr 6-hr		1270.00	2546.00	2549.59	2549.59
2550.20	0.010488	7.23	259.43	191.61		0.73		
UpperBoulders-1	2.75		Meth 1		1270.00	2546.00	2549.86	2549.68
2551.24	0.018018	9.45	134.41	40.59		0.92		
UpperBoulders-1	2.71		100-yr 6-hr		1270.00	2542.00	2545.33	2545.33
2546.22	0.015029	8.07	195.41	124.95		0.86		
UpperBoulders-1	2.71		Meth 1		1270.00	2542.00	2545.33	2545.33
2546.72	0.022211	9.46	134.23	48.94		1.01		
UpperBoulders-1	2.64		100-yr 6-hr		1270.00	2536.00	2537.43	2537.43
2537.94	0.030074	6.30	225.51	222.01		1.05		
UpperBoulders-1	2.64		Meth 1		1270.00	2536.00	2538.01	2538.01
2538.83	0.023469	7.27	174.75	102.83		0.98		
UpperBoulders-1	2.55		100-yr 6-hr		1270.00	2524.00	2527.28	2527.28
2528.30	0.013168	8.31	175.36	104.39		0.92		
UpperBoulders-1	2.55		Meth 1		1270.00	2524.00	2527.54	2527.21
2528.51	0.011229	7.91	160.48	57.43		0.83		
UpperBoulders-1	2.5		100-yr 6-hr		1270.00	2519.16	2523.02	2523.02
2523.74	0.013837	7.99	233.77	160.93		0.92		
UpperBoulders-1	2.5		Meth 1		1270.00	2519.16	2523.60	2523.60
2525.05	0.016494	9.67	131.31	45.33		1.00		
UpperBoulders-1	2.44		100-yr 6-hr		1270.00	2513.17	2517.26	2517.26
2517.83	0.008615	7.62	309.68	243.65		0.76		
UpperBoulders-1	2.44		Meth 1		1270.00	2513.17	2517.79	2517.79
2519.40	0.014073	10.44	131.80	41.30		0.96		
UpperBoulders-1	2.38		100-yr 6-hr		1270.00	2507.57	2511.24	2511.24
2512.15	0.011137	8.22	204.54	129.19		0.86		
UpperBoulders-1	2.38		Meth 1		1270.00	2507.57	2511.27	2511.27
2512.72	0.016483	9.67	131.30	45.89		1.01		
UpperBoulders-1	2.31		100-yr 6-hr		1270.00	2502.00	2503.71	2503.71
2504.37	0.018513	6.56	198.53	158.85		0.99		
UpperBoulders-1	2.31		Meth 1		1270.00	2502.00	2503.93	
2504.44	0.011504	5.68	223.62	139.88		0.79		
UpperBoulders-1	2.29		100-yr 6-hr		1459.00	2498.00	2501.35	2501.35
2502.06	0.010663	7.47	287.71	234.26		0.83		
UpperBoulders-1	2.29		Meth 1		1459.00	2498.00	2501.42	2501.42
2502.72	0.016360	9.15	159.53	61.49		1.00		
UpperBoulders-1	2.24		100-yr 6-hr		1459.00	2492.25	2495.72	2495.72
2496.84	0.015797	8.50	175.26	87.11		0.99		
UpperBoulders-1	2.24		Meth 1		1459.00	2492.25	2496.29	2495.70
2497.01	0.007955	6.84	213.36	74.87		0.71		
UpperBoulders-1	2.17		100-yr 6-hr		1459.00	2485.52	2490.20	2490.20
2491.20	0.009325	9.31	252.65	129.74		0.82		
UpperBoulders-1	2.17		Meth 1		1459.00	2485.52	2490.58	2490.58
2492.75	0.016501	11.82	123.47	28.28		1.00		
UpperBoulders-1	2.08		100-yr 6-hr		1459.00	2478.04	2481.46	2481.46
2482.33	0.016418	7.48	199.07	126.77		0.98		
UpperBoulders-1	2.08		Meth 1		1459.00	2478.04	2481.43	2481.43
2482.33	0.017710	7.64	191.07	106.46		1.00		
UpperBoulders-1	1.98		100-yr 6-hr		1459.00	2469.50	2471.76	2471.76
2472.45	0.016481	6.74	234.64	198.31		0.95		
UpperBoulders-1	1.98		Meth 1		1459.00	2469.50	2471.83	2471.74
2472.51	0.015476	6.65	219.31	135.44		0.92		

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  UpperBoulders-1  1.92          100-yr 6-hr        1459.00    2462.72    2465.89    2465.89
2466.72    0.015593       7.40     210.45     142.65            0.95
  UpperBoulders-1  1.92          Meth 1             1459.00    2462.72    2465.85    2465.85
2466.77    0.017668       7.70     189.59     103.37            1.00

  UpperBoulders-1  1.87          100-yr 6-hr        1459.00    2458.38    2461.67    2461.67
2462.52    0.016277       7.43     203.44     133.48            0.97
  UpperBoulders-1  1.87          Meth 1             1459.00    2458.38    2461.69    2461.64
2462.54    0.016327       7.43     196.40     106.77            0.97

  UpperBoulders-1  1.78          100-yr 6-hr        1459.00    2450.00    2453.26    2453.26
2454.20    0.014491       7.93     206.11     128.00            0.94
  UpperBoulders-1  1.78          Meth 1             1459.00    2450.00    2453.24    2453.24
2454.33    0.017079       8.38     174.16      80.03            1.00

  UpperBoulders-1  1.72          100-yr 6-hr        1459.00    2444.83    2447.46    2447.46
2448.36    0.017580       7.65     191.49     109.91            1.01
  UpperBoulders-1  1.72          Meth 1             1459.00    2444.83    2447.45    2447.45
2448.37    0.017982       7.68     190.04     106.08            1.01

  UpperBoulders-1  1.65          100-yr 6-hr        1459.00    2436.35    2440.00    2440.00
2440.92    0.014474       7.83     202.68     127.00            0.94
  UpperBoulders-1  1.65          Meth 1             1459.00    2436.35    2439.95    2439.95
2441.00    0.017065       8.24     177.08      84.37            1.00

  UpperBoulders-1  1.58          100-yr 6-hr        1459.00    2428.95    2432.20    2431.95
2432.95    0.011501       6.95     214.87     133.61            0.84
  UpperBoulders-1  1.58          Meth 1             1459.00    2428.95    2432.43
2433.05    0.008287       6.29     232.03      97.51            0.72

  UpperBoulders-1  1.55          100-yr 6-hr        1459.00    2425.50    2429.49    2429.49
2430.70    0.010682       9.12     196.97     107.38            0.86
  UpperBoulders-1  1.55          Meth 1             1459.00    2425.50    2429.60    2429.31
2430.99    0.012132       9.47     154.07      43.27            0.88

  UpperBoulders-1  1.48          100-yr 6-hr        1459.00    2420.00    2423.78    2423.78
2424.57    0.010324       8.42     289.05     190.99            0.84
  UpperBoulders-1  1.48          Meth 1             1459.00    2420.00    2424.24    2424.24
2426.06    0.016526      10.82     134.80      37.57            1.01

  UpperBoulders-1  1.41          100-yr 6-hr        1628.00    2414.52    2417.57    2417.57
2418.27    0.018882       7.66     282.82     207.32            1.03
  UpperBoulders-1  1.41          Meth 1             1628.00    2414.52    2418.05    2418.05
2419.17    0.017166       8.49     191.81      87.59            1.01

  UpperBoulders-1  1.36          100-yr 6-hr        1628.00    2408.00    2411.65    2411.65
2412.68    0.010341       8.60     250.34     151.66            0.85
  UpperBoulders-1  1.36          Meth 1             1628.00    2408.00    2411.57    2411.57
2412.72    0.011729       9.00     215.36      95.00            0.90

  UpperBoulders-1  1.3           100-yr 6-hr        1628.00    2403.30    2405.83    2405.83
2406.56    0.015732       7.16     282.18     229.55            0.95
  UpperBoulders-1  1.3           Meth 1             1628.00    2403.30    2405.86    2405.86
2406.77    0.018209       7.68     212.05     117.92            1.01

  UpperBoulders-1  1.23          100-yr 6-hr        1628.00    2394.57    2397.95    2397.95
2398.92    0.016405       8.01     222.18     147.22            0.99
  UpperBoulders-1  1.23          Meth 1             1628.00    2394.57    2397.96    2397.96
2398.99    0.017166       8.12     200.42      98.25            1.00

  UpperBoulders-1  1.18          100-yr 6-hr        1628.00    2390.00    2397.07    2393.72
2397.16    0.000480       2.87     987.91     260.54            0.20
  UpperBoulders-1  1.18          Meth 1             1628.00    2390.00    2397.31    2393.74
2397.50    0.000845       3.69     528.26      93.27            0.26

  UpperBoulders-1  1.17                             Culvert

  UpperBoulders-1  1.16          100-yr 6-hr        1667.00    2388.49    2391.17    2391.17
2392.35    0.015332       8.74     190.64     363.50            0.99
  UpperBoulders-1  1.16          Meth 1             1667.00    2388.49    2391.17    2391.17
2392.35    0.015636       8.74     190.64     146.23            0.99
```

```
  UpperBoulders-1  1.14          100-yr 6-hr       1667.00    2385.50    2387.90    2387.90
2388.43    0.019295       6.78     368.90     386.78           1.01
  UpperBoulders-1  1.14          Meth 1            1667.00    2385.50    2388.36    2388.33
2389.24    0.016647       7.53     221.32     119.46           0.98

  UpperBoulders-1  1.05          100-yr 6-hr       1667.00    2377.62    2379.57    2379.57
2379.71    0.008176       3.97     610.12     436.08           0.64
  UpperBoulders-1  1.05          Meth 1            1667.00    2377.62    2380.44    2380.44
2381.45    0.016817       8.07     206.49     100.03           0.99

  UpperBoulders-1  0.97          100-yr 6-hr       1667.00    2366.00    2369.64    2369.64
2370.36    0.009370       8.29     420.88     321.33           0.81
  UpperBoulders-1  0.97          Meth 1            1667.00    2366.00    2370.10    2370.10
2371.99    0.015893      11.03     151.08      40.38           1.01

  UpperBoulders-1  0.87          100-yr 6-hr       1667.00    2356.00    2359.89    2359.89
2360.66    0.010051       8.53     406.60     304.83           0.83
  UpperBoulders-1  0.87          Meth 1            1667.00    2356.00    2360.40    2360.40
2362.30    0.016101      11.06     150.76      40.11           1.01

  UpperBoulders-1  0.79          100-yr 6-hr       1667.00    2347.40    2351.14    2351.14
2351.93    0.010438       8.30     349.57     215.74           0.84
  UpperBoulders-1  0.79          Meth 1            1667.00    2347.40    2351.47    2351.47
2353.16    0.015531      10.42     159.95      47.50           1.00

  UpperBoulders-1  0.75          100-yr 6-hr       1667.00    2344.00    2348.32    2346.47
2348.44    0.001038       3.10     801.77     336.58           0.28
  UpperBoulders-1  0.75          Meth 1            1667.00    2344.00    2349.21    2346.38
2349.36    0.000884       3.16     526.91     110.66           0.26

  UpperBoulders-1  0.73                                Culvert

  UpperBoulders-1  0.71          100-yr 6-hr       1810.00    2336.00    2339.21    2339.21
2340.55    0.015301       9.31     194.36     124.89           1.00
  UpperBoulders-1  0.71          Meth 1            1810.00    2336.00    2339.21    2339.21
2340.55    0.015980       9.31     194.36      72.53           1.00

  UpperBoulders-1  0.66          100-yr 6-hr       1810.00    2329.70    2332.90    2332.90
2334.00    0.015680       8.44     221.32     111.93           0.99
  UpperBoulders-1  0.66          Meth 1            1810.00    2329.70    2332.88    2332.88
2334.02    0.016780       8.57     211.24      93.81           1.01

  UpperBoulders-1  0.57          100-yr 6-hr       1810.00    2323.44    2325.32    2325.32
2326.07    0.018886       6.95     261.23     183.51           1.01
  UpperBoulders-1  0.57          Meth 1            1810.00    2323.44    2325.44    2325.32
2326.08    0.014588       6.42     281.72     176.56           0.90

  UpperBoulders-1  0.50          100-yr 6-hr       1810.00    2315.50    2318.20    2317.92
2318.61    0.010478       6.22     496.41     459.67           0.79
  UpperBoulders-1  0.50          Meth 1            1810.00    2315.50    2318.51    2318.51
2319.62    0.016361       8.52     218.43      98.44           1.00

  UpperBoulders-1  0.49                                Culvert

  UpperBoulders-1  0.48          100-yr 6-hr       1810.00    2314.00    2316.69    2316.69
2317.19    0.009259       6.28     388.78     236.43           0.75
  UpperBoulders-1  0.48          Meth 1            1810.00    2314.00    2316.69    2316.69
2317.73    0.016080       8.17     221.45     102.44           0.98

  UpperBoulders-1  0.47          100-yr 6-hr       2178.00    2312.00    2314.80    2314.80
2315.81    0.014154       8.12     294.59     192.14           0.94
  UpperBoulders-1  0.47          Meth 1            2178.00    2312.00    2314.74    2314.74
2315.86    0.016206       8.47     257.02     114.07           0.99
```

FAN 6C

HEC-RAS Version 3.1.2 April 2004
U.S. Army Corp of Engineers
Hydrologic Engineering Center
609 Second Street
Davis, California

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

PROJECT DATA
Project Title: North Scottsdale Delineation Study, F6C
Project File : F6C.prj
Run Date and Time: 3/29/2005 3:38:42 PM

Project in English units

Project Description:
Study Name: North Scottsdale Floodplain Delineation Study
Contract No.: FCD 2003 C008

Purpose of Study: Delineation of the inundation limits of the 100-yr, 6-hr storm event for Fan 6C.

Model Name: North Scottsdale Delineation Study, Fan 6C

Model Description: This study determined the flood plain and flood way limits of the 100-yr-6-hr storm event for Fan 6C.
Profile #1, 100-yr 6-hr, models the flood plain.
Profile #2, Method 1, models the flood way.
Culvert information can be found in APPENDIX E.4 of the main report.

Mapping: Scottsdale Mapping: IGA 93-07
FCD Contract No.: FCD-XX-XX
Project Type: Topographic Mapping
Starting Date: 1-14-94
Ending Date: 1-14-97

Flow Profiles: Profile #1, 100-yr, 6-hr
Sections 2.69 to 2.40, Q= 1,261 cfs
Sections 2.31 to 1.87, Q= 1,346 cfs
Sections 1.83 to 1.26, Q= 1,369 cfs
Sections 1.23 to 0.91, Q= 1,349 cfs
Section 0.82, Q= 1,513 cfs
Sections 0.78 to 0.39, Q= 600 cfs
Sections 0.30 to 0.06, Q= 1,584 cfs

Profile #2, Method 1
Sections 2.69 to 2.40, Q= 1,261 cfs
Sections 2.31 to 1.87, Q= 1,346 cfs
Sections 1.83 to 1.26, Q= 1,369 cfs
Sections 1.23 to 0.91, Q= 1,349 cfs
Section 0.82, Q= 1,513 cfs
Sections 0.78 to 0.39, Q= 600 cfs
Sections 0.30 to 0.06, Q= 1,584 cfs

HEC-RAS Version: Version 3.1.2, April 2004

Consultant: DEI Professional Services, LLC
6225 N. 24th Street, Suite 200
Phoenix, AZ 85016
(602) 954-0038 Phone
(602) 944-8605 Fax

PLAN DATA

Plan Title: Plan 05
Plan File : j:\Projects\03062\Calcs\HEC-RAS Final\F6C.p05

Geometry Title: Base Conditions Geometry
Geometry File : j:\Projects\03062\Calcs\HEC-RAS Final\F6C.g01

Flow Title : 100-yr, 6-hr
Flow File : j:\Projects\03062\Calcs\HEC-RAS Final\F6C.f01

Plan Summary Information:

Number of:	Cross Sections =	49	Multiple Openings =	0
	Culverts =	5	Inline Structures =	0
	Bridges =	0	Lateral Structures =	0

Computational Information

Water surface calculation tolerance =	0.01
Critical depth calculation tolerance =	0.01
Maximum number of iterations =	20
Maximum difference tolerance =	0.3
Flow tolerance factor =	0.001

Computation Options

Critical depth computed only where necessary
Conveyance Calculation Method: At breaks in n values only
Friction Slope Method: Average Conveyance
Computational Flow Regime: Subcritical Flow

Encroachment Data

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

River = Fan 6C Reach = Fan6C-1

RS	Profile	Method	Value1	Value2
2.69	Method 1	1	9945.751	0024.12
2.63	Method 1	1	9971.621	0061.41
2.58	Method 1	1	9981.521	0053.68
2.56	Method 1	0		
2.55	Method 1	1	9981.521	0053.68
2.51	Method 1	1	9828.71	0014.41
2.43	Method 1	1	9926.051	0011.42
2.4	Method 1	1	9990.191	0029.97
2.39	Method 1	1	9991.181	0034.21
2.31	Method 1	1	9995.431	0028.62
2.30	Method 1	1	9982.511	0025.44
2.28	Method 1	0		
2.26	Method 1	1	9992.161	0025.44
2.23	Method 1	1	9981.831	0040.07
2.22	Method 1	0		
2.20	Method 1	1	9981.831	0040.07
2.17	Method 1	1	9987.61	0031.84
2.13	Method 1	1	9993.551	0021.06
2.03	Method 1	1	9953.681	0025.69
1.99	Method 1	1	9985.221	0067.98
1.93	Method 1	1	9990.21	0048.13
1.88	Method 1	1	9987.671	0031.23
1.875	Method 1	0		
1.87	Method 1	1	9987.671	0026.71
1.83	Method 1	1	9992.691	0049.58
1.79	Method 1	1	9985.87	10091.1
1.73	Method 1	1	9910.961	0024.93
1.64	Method 1	1	9965.351	0059.75
1.55	Method 1	1	9977.861	0058.54
1.49	Method 1	1	9940	10064
1.44	Method 1	1	9912.181	0031.69

1.39	Method 1	1	9957.3210040.92
1.33	Method 1	1	9908.6510017.31
1.26	Method 1	1	9968.5110039.73
1.23	Method 1	1	9950 10110
1.16	Method 1	1	9942.0610030.06
1.07	Method 1	1	9971.9210039.21
1.02	Method 1	1	9931.8710031.79
0.94	Method 1	1	9985.19 10053
0.91	Method 1	1	9987.0910013.92
0.82	Method 1	1	9984.5310019.25
0.78	Method 1	0	
0.775	Method 1	0	
0.77	Method 1	0	
0.73	Method 1	0	
0.63	Method 1	0	
0.59	Method 1	0	
0.5	Method 1	0	
0.44	Method 1	0	
0.39	Method 1	0	
0.30	Method 1	0	
0.25	Method 1	0	
0.15	Method 1	0	
0.06	Method 1	0	

River = Fan 6C Reach = Fan6C-1

RS	Profile	Method	Value1	Value2
2.69	Method 4	4	1	
2.63	Method 4	4	1	
2.58	Method 4	4	1	
2.56	Method 4	4	1	
2.55	Method 4	4	1	
2.51	Method 4	4	1	
2.43	Method 4	4	1	
2.4	Method 4	4	1	
2.39	Method 4	4	1	
2.31	Method 4	4	1	
2.30	Method 4	4	1	
2.28	Method 4	4	1	
2.26	Method 4	4	1	
2.23	Method 4	4	1	
2.22	Method 4	4	1	
2.20	Method 4	4	1	
2.17	Method 4	4	1	
2.13	Method 4	4	1	
2.03	Method 4	4	1	
1.99	Method 4	4	1	
1.93	Method 4	4	1	
1.88	Method 4	4	1	
1.875	Method 4	4	1	
1.87	Method 4	4	1	
1.83	Method 4	4	1	
1.79	Method 4	4	1	
1.73	Method 4	4	1	
1.64	Method 4	4	1	
1.55	Method 4	4	1	
1.49	Method 4	4	1	
1.44	Method 4	4	1	
1.39	Method 4	4	1	
1.33	Method 4	4	1	
1.26	Method 4	4	1	
1.23	Method 4	4	1	
1.16	Method 4	4	1	
1.07	Method 4	4	1	
1.02	Method 4	4	1	
0.94	Method 4	4	1	
0.91	Method 4	4	1	
0.82	Method 4	4	1	
0.78	Method 4	4	1	
0.775	Method 4	4	1	
0.77	Method 4	4	1	
0.73	Method 4	4	1	

0.63	Method 4	4	1
0.59	Method 4	4	1
0.5	Method 4	4	1
0.44	Method 4	4	1
0.39	Method 4	4	1
0.30	Method 4	4	1
0.25	Method 4	4	1
0.15	Method 4	4	1
0.06	Method 4	4	1

River = Fan 6C Reach = Fan6C-1

RS	Profile	Method	Value1	Value2
2.69	PF 4	4	.8	
2.63	PF 4	4	.8	
2.58	PF 4	4	.8	
2.56	PF 4	4	.8	
2.55	PF 4	4	.8	
2.51	PF 4	4	.8	
2.43	PF 4	4	.8	
2.4	PF 4	4	.8	
2.39	PF 4	4	.8	
2.31	PF 4	4	.8	
2.30	PF 4	4	.8	
2.28	PF 4	4	.8	
2.26	PF 4	4	.8	
2.23	PF 4	4	.8	
2.22	PF 4	4	.8	
2.20	PF 4	4	.8	
2.17	PF 4	4	.8	
2.13	PF 4	4	.8	
2.03	PF 4	4	.8	
1.99	PF 4	4	.8	
1.93	PF 4	4	.8	
1.88	PF 4	4	.8	
1.875	PF 4	4	.8	
1.87	PF 4	4	.8	
1.83	PF 4	4	.8	
1.79	PF 4	4	.8	
1.73	PF 4	4	.8	
1.64	PF 4	4	.8	
1.55	PF 4	4	.8	
1.49	PF 4	4	.8	
1.44	PF 4	4	.8	
1.39	PF 4	4	.8	
1.33	PF 4	4	.8	
1.26	PF 4	4	.8	
1.23	PF 4	4	.8	
1.16	PF 4	4	.8	
1.07	PF 4	4	.8	
1.02	PF 4	4	.8	
0.94	PF 4	4	.8	
0.91	PF 4	4	.8	
0.82	PF 4	4	.8	
0.78	PF 4	4	.8	
0.775	PF 4	4	.8	
0.77	PF 4	4	.8	
0.73	PF 4	4	.8	
0.63	PF 4	4	.8	
0.59	PF 4	4	.8	
0.5	PF 4	4	.8	
0.44	PF 4	4	.8	
0.39	PF 4	4	.8	
0.30	PF 4	4	.8	
0.25	PF 4	4	.8	
0.15	PF 4	4	.8	
0.06	PF 4	4	.8	

FLOW DATA

Flow Title: 100-yr, 6-hr
Flow File : j:\Projects\03062\Calcs\HEC-RAS Final\F6C.f01

Flow Data (cfs)

River	Reach	RS	100-yr 6-hr	Method 1	Method 4
Fan 6C	Fan6C-1	2.69	1261	1261	1261
Fan 6C	Fan6C-1	2.31	1346	1346	1346
Fan 6C	Fan6C-1	1.83	1369	1369	1369
Fan 6C	Fan6C-1	1.23	1349	1349	1349
Fan 6C	Fan6C-1	0.82	1513	1513	1513
Fan 6C	Fan6C-1	0.78	600	600	600
Fan 6C	Fan6C-1	0.30	1584	1584	1584

Boundary Conditions

River	Reach	Profile	Upstream	Downstream
Fan 6C	Fan6C-1	100-yr 6-hr		Critical
Fan 6C	Fan6C-1	Method 1		Critical

Changes in WS and EG

River	Reach	RS	Profile	Type	Value
Fan 6C	Fan6C-1	0.78	Method 1	Known WS	2460.9
Fan 6C	Fan6C-1	0.78	100-yr 6-hr	Known WS	2460.9

GEOMETRY DATA

Geometry Title: Base Conditions Geometry
Geometry File : j:\Projects\03062\Calcs\HEC-RAS Final\F6C.g01

CROSS SECTION

RIVER: Fan 6C
REACH: Fan6C-1 RS: 2.69

INPUT
Description: Cross Section 2.69 is the north boundary for the delineations for Fan 6C.

Topography and Aerial indicate wash and surrounding undeveloped desert. Cross section composed of Cross Section Data collected by the city of Scottsdale Survey Department.
T5NR5E
Section 5
Q100 = 1,261 cfs
Station Elevation Data num= 14

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9895.27	2652.78	9919.62	2649.62	9941.39	2648.38	9945.75	2646.89	9959.48	2645.94
9968.59	2644.7	9997.9	2644.39	10022.14	2644.42	10024.12	2646.81	10045.87	2647.76
10096.69	2647.35	10155.24	2647.84	10206.76	2647.49	10224.6	2646.94		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9895.27	.05	9945.75	.03	10024.12	.05

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9945.75	10024.12	306.62	300.14	301.4	.1	.3

Right Levee Station=10045.87 Elevation= 2647.76

CROSS SECTION OUTPUT Profile #100-yr 6-hr

E.G. Elev (ft)	2647.95	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.98	Wt. n-Val.	0.050	0.035	0.050

W.S. Elev (ft)	2646.97	Reach Len. (ft)	306.62	300.14	301.40
Crit W.S. (ft)	2646.97	Flow Area (sq ft)	0.01	158.39	0.32
E.G. Slope (ft/ft)	0.014047	Area (sq ft)	0.01	158.39	0.32
Q Total (cfs)	1261.00	Flow (cfs)	0.00	1260.78	0.21
Top Width (ft)	82.39	Top Width (ft)	0.23	78.37	3.79
Vel Total (ft/s)	7.95	Avg. Vel. (ft/s)	0.39	7.96	0.67
Max Chl Dpth (ft)	2.58	Hydr. Depth (ft)	0.04	2.02	0.08
Conv. Total (cfs)	10639.5	Conv. (cfs)	0.0	10637.7	1.8
Length Wtd. (ft)	300.15	Wetted Per. (ft)	0.24	79.60	3.79
Min Ch El (ft)	2644.39	Shear (lb/sq ft)	0.03	1.74	0.07
Alpha	1.00	Stream Power (lb/ft s)	0.01	13.89	0.05
Frctn Loss (ft)	4.16	Cum Volume (acre-ft)	18.20	39.75	27.95
C & E Loss (ft)	0.04	Cum SA (acres)	15.55	19.95	25.92

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.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water
surface was used.

CROSS SECTION OUTPUT Profile #Method 1

E.G. Elev (ft)	2647.95	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.00	Wt. n-Val.		0.035	
W.S. Elev (ft)	2646.95	Reach Len. (ft)	306.62	300.14	301.40
Crit W.S. (ft)	2646.95	Flow Area (sq ft)		156.80	
E.G. Slope (ft/ft)	0.014582	Area (sq ft)		156.80	
Q Total (cfs)	1261.00	Flow (cfs)		1261.00	
Top Width (ft)	78.37	Top Width (ft)		78.37	
Vel Total (ft/s)	8.04	Avg. Vel. (ft/s)		8.04	
Max Chl Dpth (ft)	2.56	Hydr. Depth (ft)		2.00	
Conv. Total (cfs)	10442.7	Conv. (cfs)		10442.7	
Length Wtd. (ft)	300.14	Wetted Per. (ft)		79.81	
Min Ch El (ft)	2644.39	Shear (lb/sq ft)		1.79	
Alpha	1.00	Stream Power (lb/ft s)		14.38	
Frctn Loss (ft)	4.39	Cum Volume (acre-ft)	6.13	44.10	16.74
C & E Loss (ft)	0.03	Cum SA (acres)	5.12	19.95	14.02

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

CROSS SECTION

RIVER: Fan 6C
REACH: Fan6C-1 RS: 2.63

INPUT
Description: Topography and Aerial indicate wash and surrounding undeveloped
desert. Cross section composed of Cross Section Data collected by

the city of Scottsdale Survey Department.
T5NR5E Section 5
Q100
= 1,261 cfs

Station Elevation Data num= 21

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9861.2	2644.34	9956.72	2644.62	9958.28	2644.07	9971.62	2641	9977.49	2639.79
9999.72	2639.65	10014.19	2640.12	10040.05	2639.74	10056.16	2639.11	10061.41	2641
10062.21	2641.29	10071.56	2641.45	10091.42	2642.91	10157.58	2640.95	10182.38	2640.63
10215.6	2640.67	10218.28	2640.23	10221.6	2640.78	10277.18	2643.42	10335.37	2645.85
10367.77	2647.65								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9861.2	.05	9971.62	.035	10061.41	.05

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9971.62	10061.41	290.56	289.61	293.24	.3	.5

Right Levee Station=10091.42 Elevation= 2642.9

CROSS SECTION OUTPUT Profile #100-yr 6-hr

E.G. Elev (ft)	2642.55	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.87	Wt. n-Val.	0.050	0.035	0.050
W.S. Elev (ft)	2641.68	Reach Len. (ft)	290.56	289.61	293.24
Crit W.S. (ft)	2641.68	Flow Area (sq ft)	1.01	167.45	3.71
E.G. Slope (ft/ft)	0.013647	Area (sq ft)	1.01	167.45	3.71
Q Total (cfs)	1261.00	Flow (cfs)	1.68	1253.84	5.48
Top Width (ft)	106.08	Top Width (ft)	2.96	89.79	13.32
Vel Total (ft/s)	7.32	Avg. Vel. (ft/s)	1.67	7.49	1.48
Max Chl Dpth (ft)	2.58	Hydr. Depth (ft)	0.34	1.86	0.28
Conv. Total (cfs)	10794.3	Conv. (cfs)	14.4	10733.1	46.9
Length Wtd. (ft)	289.62	Wetted Per. (ft)	3.04	90.27	13.38
Min Ch El (ft)	2639.10	Shear (lb/sq ft)	0.28	1.58	0.24
Alpha	1.04	Stream Power (lb/ft s)	0.47	11.83	0.35
Frctn Loss (ft)	0.92	Cum Volume (acre-ft)	18.20	38.63	27.94
C & E Loss (ft)	0.24	Cum SA (acres)	15.54	19.37	25.86

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 conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
depth, the 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 OUTPUT Profile #Method 1

E.G. Elev (ft)	2642.56	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.90	Wt. n-Val.		0.035	
W.S. Elev (ft)	2641.66	Reach Len. (ft)	290.56	289.61	293.24
Crit W.S. (ft)	2641.66	Flow Area (sq ft)		165.26	
E.G. Slope (ft/ft)	0.014704	Area (sq ft)		165.26	
Q Total (cfs)	1261.00	Flow (cfs)		1261.00	
Top Width (ft)	89.79	Top Width (ft)		89.79	
Vel Total (ft/s)	7.63	Avg. Vel. (ft/s)		7.63	
Max Chl Dpth (ft)	2.56	Hydr. Depth (ft)		1.84	
Conv. Total (cfs)	10399.2	Conv. (cfs)		10399.2	
Length Wtd. (ft)	289.61	Wetted Per. (ft)		91.58	
Min Ch El (ft)	2639.10	Shear (lb/sq ft)		1.66	
Alpha	1.00	Stream Power (lb/ft s)		12.64	
Frctn Loss (ft)	0.93	Cum Volume (acre-ft)	6.13	43.00	16.74

C & E Loss (ft)	0.26	Cum SA (acres)	5.12	19.37	14.02

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 conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
depth, the 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: Fan 6C
REACH: Fan6C-1 RS: 2.58

INPUT
Description: Cross Section 2.58 is located upstream of the intersection of Fan6
6C and Legend Trail Parkway. There are 3-10 X 4 CBC located under
Legend Trail Parkway.

Surveyed X-Section, COS data. Right
bank obstruction to keep WS within x-sec. No breakout
evident.

Topography indicates wash and surrounding undeveloped
desert.Cross section composed of Cross Section Data collected by
the city of Scottsdale Survey Department.

T5NR5E Section
5
Q100 = 1,261 cfs
Aerial shows wash, homes and golf course.
Station Elevation Data num= 15

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9807	2640	9817.03	2639.63	9826.51	2639.15	9876.81	2638.63	9904.75	2637.92
9933.43	2638.1	9979.83	2637.17	9990.48	2637.45	9990.97	2633.26	10009.95	2633.13
10027.74	2633.11	10028.42	2637.57	10037.64	2636.92	10076.35	2639.04	10121.41	2638.76

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9807	.05	9990.48	.035	10028.42	.05

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9990.48	10028.42	125.14	134.02	126.77	.3	.5

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
9807	9990.48	2641.16	F
10028.42	10121.41	2641.16	F

Blocked Obstructions num= 1

Sta L	Sta R	Elev
10121.41	10121.41	2640

CROSS SECTION OUTPUT Profile #100-yr 6-hr

E.G. Elev (ft)	2640.31	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.38	Wt. n-Val.		0.035	
W.S. Elev (ft)	2639.93	Reach Len. (ft)	125.14	134.02	126.77
Crit W.S. (ft)	2636.48	Flow Area (sq ft)		254.41	
E.G. Slope (ft/ft)	0.001374	Area (sq ft)	294.66	254.41	146.80

Q Total (cfs)	1261.00	Flow (cfs)		1261.00	
Top Width (ft)	312.56	Top Width (ft)	181.63	37.94	92.99
Vel Total (ft/s)	4.96	Avg. Vel. (ft/s)		4.96	
Max Chl Dpth (ft)	6.82	Hydr. Depth (ft)		6.71	
Conv. Total (cfs)	34024.4	Conv. (cfs)		34024.4	
Length Wtd. (ft)	134.02	Wetted Per. (ft)		45.50	
Min Ch El (ft)	2633.11	Shear (lb/sq ft)		0.48	
Alpha	1.00	Stream Power (lb/ft s)		2.38	
Frctn Loss (ft)		Cum Volume (acre-ft)	17.21	37.22	27.43
C & E Loss (ft)		Cum SA (acres)	14.92	18.94	25.51

Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid,
energy was used.

CROSS SECTION OUTPUT Profile #Method 1

E.G. Elev (ft)	2640.31	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.38	Wt. n-Val.		0.035	
W.S. Elev (ft)	2639.93	Reach Len. (ft)	125.14	134.02	126.77
Crit W.S. (ft)	2636.45	Flow Area (sq ft)		254.41	
E.G. Slope (ft/ft)	0.001374	Area (sq ft)	23.29	254.41	66.03
Q Total (cfs)	1261.00	Flow (cfs)		1261.00	
Top Width (ft)	72.16	Top Width (ft)	8.96	37.94	25.26
Vel Total (ft/s)	4.96	Avg. Vel. (ft/s)		4.96	
Max Chl Dpth (ft)	6.82	Hydr. Depth (ft)		6.71	
Conv. Total (cfs)	34024.4	Conv. (cfs)		34024.4	
Length Wtd. (ft)	134.02	Wetted Per. (ft)		45.50	
Min Ch El (ft)	2633.11	Shear (lb/sq ft)		0.48	
Alpha	1.00	Stream Power (lb/ft s)		2.38	
Frctn Loss (ft)		Cum Volume (acre-ft)	6.05	41.60	16.51
C & E Loss (ft)		Cum SA (acres)	5.09	18.95	13.94

Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid,
energy was used.

CULVERT

RIVER: Fan 6C
REACH: Fan6C-1 RS: 2.56

INPUT
Description: Box culverts at Legend Trail Parkway crossing.
Distance from Upstream XS = 20
Deck/Roadway Width = 70
Weir Coefficient = 2.6
Upstream Deck/Roadway Coordinates
num= 13

Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord
9795.87	2641.24		9823.71	2641.34		9851.24	2641.42	
9880.05	2641.45		9912.2	2641.5		9945.71	2641.54	
9976.79	2641.54		10008.75	2641.44		10041.93	2641.16	
10062.19	2640.93		10092.05	2640.49		10122.2	2639.99	
10151.74	2639.54							

Upstream Bridge Cross Section Data
Station Elevation Data num= 15

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9807	2640	9817.03	2639.63	9826.51	2639.15	9876.81	2638.63	9904.75	2637.92
9933.43	2638.1	9979.83	2637.17	9990.48	2637.45	9990.97	2633.26	10009.95	2633.13
10027.74	2633.11	10028.42	2637.57	10037.64	2636.92	10076.35	2639.04	10121.41	2638.76

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9807	.05	9990.48	.035	10028.42	.05

Bank Sta: Left Right Coeff Contr. Expan.

```
      9990.4810028.42              .3        .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
    9807 9990.48 2641.16       F
10028.4210121.41 2641.16       F
Blocked Obstructions     num=       1
   Sta L   Sta R    Elev
10121.4110121.41    2640

Downstream  Deck/Roadway Coordinates
    num=      17
     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord
    9742 2641.24         9770.08 2641.34         9797.81 2641.42
 9826.82 2641.45         9859.08  2641.5         9892.66 2641.54
 9923.81 2641.54         9954.81 2641.44          9988.6 2641.16
10009.18 2640.93        10038.66 2640.49        10068.73 2639.99
 10124.6 2639.54         10124.6 2639.09        10141.26 2638.86
 10168.7 2638.39        10181.24 2637.88

Downstream Bridge Cross Section Data
Station Elevation Data    num=      22
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
 9744.02 2640.58 9783.27 2639.44 9810.14 2639.89    9838 2640.42 9838.62 2636.02
 9878.09 2637.17 9893.78 2636.69 9916.51 2636.93 9922.45  2636.5 9931.01 2635.88
 9976.48 2635.71 9981.52    2634 9994.24 2628.0310024.58 2628.0310053.68    2634
10066.02 2635.9310073.09  2636.510107.83  2639.310117.65 2638.6110133.31 2638.65
10155.34 2638.2210164.15 2638.36

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
 9744.02     .05 9981.52    .03510053.68     .05

Bank Sta: Left   Right    Coeff Contr.   Expan.
       9981.5210053.68              .3        .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
 9744.02 9975.91 2639.99       F
10053.6810164.15 2639.99       F
Left Levee      Station= 9878.09      Elevation= 2637.17

Upstream Embankment side slope              =       0 horiz. to 1.0 vertical
Downstream Embankment side slope            =       0 horiz. to 1.0 vertical
Maximum allowable submergence for weir flow =     .95
Elevation at which weir flow begins         =
Energy head used in spillway design         =
Spillway height used in design              =
Weir crest shape                            = Broad Crested

Number of Culverts =  1

Culvert Name     Shape      Rise    Span
Culvert #1           Box       4      10
FHWA Chart # 8 - flared wingwalls
FHWA Scale # 1 - Wingwall flared 30 to 75 deg.
Solution Criteria = Highest U.S. EG
Culvert Upstrm Dist  Length    Top n  Bottom n  Depth Blocked  Entrance Loss Coef   Exit Loss Coef
                  4     115     .015     .015        0                  .4                 1
Number of Barrels =  3
Upstream   Elevation =  2633.13
Centerline Stations
    Sta.    Sta.    Sta.
  9997.2 10008.2 10019.2
Downstream Elevation =  2628.05
Centerline Stations
    Sta.    Sta.    Sta.
 9998.9110009.4110019.91

CROSS SECTION


RIVER: Fan 6C
```

REACH: Fan6C-1 RS: 2.55

INPUT
Description: Cross Section 2.55 is located downstream of the intersection of Legend Trail Parkway and Fan 6C. There are 3-10 X 4 CBC located under Legend Trail Parkway.

Topography and Aerial indicate wash and surrounding undeveloped desert. Cross section composed of Cross Section Data collected by the city of Scottsdale Survey Department.

T5NR5E Section 5
Q100 = 1,261 cfs
Station Elevation Data num= 22

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9744.02	2640.58	9783.27	2639.44	9810.14	2639.89	9838	2640.42	9838.62	2636.02
9878.09	2637.17	9893.78	2636.69	9916.51	2636.93	9922.45	2636.5	9931.01	2635.88
9976.48	2635.71	9981.52	2634	9994.24	2628.03	10024.58	2628.03	10053.68	2634
10066.02	2635.93	10073.09	2636.51	10107.83	2639.31	10117.65	2638.61	10133.31	2638.65
10155.34	2638.22	10164.15	2638.36						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9744.02	.05	9981.52	.035	10053.68	.05

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9981.52	10053.68	223.15	215.96	228.19	.3	.5

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
9744.02	9975.91	2639.99	F
10053.68	10164.15	2639.99	F

Left Levee Station= 9878.09 Elevation= 2637.17

CROSS SECTION OUTPUT Profile #100-yr 6-hr

E.G. Elev (ft)	2632.62	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.29	Wt. n-Val.		0.035	
W.S. Elev (ft)	2631.34	Reach Len. (ft)	223.15	215.96	228.19
Crit W.S. (ft)	2631.34	Flow Area (sq ft)		138.58	
E.G. Slope (ft/ft)	0.013259	Area (sq ft)		138.58	
Q Total (cfs)	1261.00	Flow (cfs)		1261.00	
Top Width (ft)	53.50	Top Width (ft)		53.50	
Vel Total (ft/s)	9.10	Avg. Vel. (ft/s)		9.10	
Max Chl Dpth (ft)	3.31	Hydr. Depth (ft)		2.59	
Conv. Total (cfs)	10951.0	Conv. (cfs)		10951.0	
Length Wtd. (ft)	219.24	Wetted Per. (ft)		54.57	
Min Ch El (ft)	2628.03	Shear (lb/sq ft)		2.10	
Alpha	1.00	Stream Power (lb/ft s)		19.13	
Frctn Loss (ft)	0.06	Cum Volume (acre-ft)	16.79	36.62	27.22
C & E Loss (ft)	0.62	Cum SA (acres)	14.66	18.80	25.37

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 conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
depth, the calculated water surface came back below critical depth. This indicates that there is
not a valid subcritical answer. The program defaulted to critical depth.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid,
energy was used.

CROSS SECTION OUTPUT Profile #Method 1

E.G. Elev (ft)	2632.62	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.29	Wt. n-Val.		0.035	
W.S. Elev (ft)	2631.34	Reach Len. (ft)	223.15	215.96	228.19
Crit W.S. (ft)	2631.34	Flow Area (sq ft)		138.58	
E.G. Slope (ft/ft)	0.013259	Area (sq ft)		138.58	
Q Total (cfs)	1261.00	Flow (cfs)		1261.00	
Top Width (ft)	53.50	Top Width (ft)		53.50	
Vel Total (ft/s)	9.10	Avg. Vel. (ft/s)		9.10	
Max Chl Dpth (ft)	3.31	Hydr. Depth (ft)		2.59	
Conv. Total (cfs)	10951.0	Conv. (cfs)		10951.0	
Length Wtd. (ft)	219.08	Wetted Per. (ft)		54.57	
Min Ch El (ft)	2628.03	Shear (lb/sq ft)		2.10	
Alpha	1.00	Stream Power (lb/ft s)		19.13	
Frctn Loss (ft)	0.13	Cum Volume (acre-ft)	6.02	41.00	16.42
C & E Loss (ft)	0.58	Cum SA (acres)	5.07	18.81	13.90

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.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid,
energy was used.

CROSS SECTION

RIVER: Fan 6C
REACH: Fan6C-1 RS: 2.51

INPUT
Description: Cross Section 2.51 is located within Legend Trail.

Topography
indicates wash and surrounding undeveloped desert. Cross section composed of Cross Section Data collected by the city of Scottsdale Survey Department.
Aerial shows wash, homes and golf course.
T5NR5E Section 5
Q100 = 1,261 cfs
Station Elevation Data num= 26

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9593.43	2637.47	9618.94	2635.41	9622.52	2633.97	9632.54	2633.36	9645.61	2633.83
9697.85	2628.86	9774.15	2628.01	9791.16	2625.47	9911.76	2625.51	9928.94	2629.34
9959.84	2629.07	9986.96	2628.99	9989.32	2624.51	10008.34	2624.42	10014.41	2627.77
10034.66	2629.57	10040.1	2628.86	10046.32	2627.31	10053.62	2630.68	10062.47	2631.18
10064.09	2630.88	10086.04	2631.01	10099.51	2630.66	10101.07	2631.05	10113.03	2631.18
10122.41	2632.16								

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9593.43	.05	9774.15	.015	9928.94	.05	9986.96	.03	10014.41	.05

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9986.96	10014.41	442.24	443.47	445.28	.1	.3

Left Levee Station= 9928.94 Elevation= 2629.34
Right Levee Station=10034.66 Elevation= 2629.57

CROSS SECTION OUTPUT Profile #100-yr 6-hr

E.G. Elev (ft)	2629.40	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.05	Wt. n-Val.	0.016	0.035	0.050
W.S. Elev (ft)	2629.35	Reach Len. (ft)	442.24	443.47	445.28
Crit W.S. (ft)	2629.35	Flow Area (sq ft)	626.52	118.85	14.00
E.G. Slope (ft/ft)	0.000083	Area (sq ft)	626.52	118.85	14.00
Q Total (cfs)	1261.00	Flow (cfs)	1145.29	112.48	3.23
Top Width (ft)	339.43	Top Width (ft)	294.24	27.45	17.75
Vel Total (ft/s)	1.66	Avg. Vel. (ft/s)	1.83	0.95	0.23
Max Chl Dpth (ft)	4.93	Hydr. Depth (ft)	2.13	4.33	0.79
Conv. Total (cfs)	138487.3	Conv. (cfs)	125779.9	12353.1	354.3
Length Wtd. (ft)	442.36	Wetted Per. (ft)	294.87	31.03	17.82
Min Ch El (ft)	2624.42	Shear (lb/sq ft)	0.01	0.02	0.00
Alpha	1.13	Stream Power (lb/ft s)	0.02	0.02	0.00
Frctn Loss (ft)	0.07	Cum Volume (acre-ft)	15.18	35.98	27.18
C & E Loss (ft)	0.01	Cum SA (acres)	13.91	18.60	25.32

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 conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
depth, the 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 OUTPUT Profile #Method 1

E.G. Elev (ft)	2629.47	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.12	Wt. n-Val.	0.015	0.035	
W.S. Elev (ft)	2629.35	Reach Len. (ft)	442.24	443.47	445.28
Crit W.S. (ft)	2629.35	Flow Area (sq ft)	365.95	118.85	
E.G. Slope (ft/ft)	0.000193	Area (sq ft)	365.95	118.85	
Q Total (cfs)	1261.00	Flow (cfs)	1094.99	166.01	
Top Width (ft)	185.71	Top Width (ft)	158.26	27.45	
Vel Total (ft/s)	2.60	Avg. Vel. (ft/s)	2.99	1.40	
Max Chl Dpth (ft)	4.93	Hydr. Depth (ft)	2.31	4.33	
Conv. Total (cfs)	90780.7	Conv. (cfs)	78829.3	11951.3	
Length Wtd. (ft)	442.51	Wetted Per. (ft)	162.55	32.60	
Min Ch El (ft)	2624.42	Shear (lb/sq ft)	0.03	0.04	
Alpha	1.19	Stream Power (lb/ft s)	0.08	0.06	
Frctn Loss (ft)	0.23	Cum Volume (acre-ft)	5.08	40.36	16.42
C & E Loss (ft)	0.09	Cum SA (acres)	4.67	18.61	13.90

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.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water
surface was used.

CROSS SECTION

RIVER: Fan 6C
REACH: Fan6C-1 RS: 2.43

INPUT
Description: Cross Section 2.43 is located within Legend Trail.

Topography
indicates wash and surrounding undeveloped desert. Cross section composed of Cross Section Data collected by the city of Scottsdale Survey Department.
Aerial shows wash adjacent to homes and golf course.
T5NR5E Section 6
Q100 = 1,261 cfs

Station Elevation Data num= 18

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9699.97	2625.32	9761.18	2623.44	9796.45	2619.15	9838.44	2621.28	9866.99	2618.64
9892.72	2617.27	9919.97	2615.92	9926.05	2617.3	9968.27	2620.74	9987.65	2620.5
9989.2	2619.369	9991.98	2617.34	10001	2617.71	10005.8	2617.24	10009.11	2619.47
10025.7	2620.93	10038.77	2622.34	10044.44	2623.08				

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9699.97	.05	9892.72	.015	9968.27	.05	9989.2	.035	10005.8	.05

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9989.2	10009.11	143.02	127.09	132.71	.1	.3

Left Levee Station= 9838.44 Elevation= 2621.28
Blocked Obstructions num= 1

Sta L	Sta R	Elev
10044.44	10044.44	2623.7

CROSS SECTION OUTPUT Profile #100-yr 6-hr

E.G. Elev (ft)	2621.22	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.15	Wt. n-Val.	0.019	0.038	0.050
W.S. Elev (ft)	2621.07	Reach Len. (ft)	143.02	127.09	132.71
Crit W.S. (ft)	2619.34	Flow Area (sq ft)	357.96	65.74	14.50
E.G. Slope (ft/ft)	0.000425	Area (sq ft)	357.96	65.74	14.50
Q Total (cfs)	1261.00	Flow (cfs)	1141.04	112.25	7.70
Top Width (ft)	186.26	Top Width (ft)	148.47	19.91	17.88
Vel Total (ft/s)	2.88	Avg. Vel. (ft/s)	3.19	1.71	0.53
Max Chl Dpth (ft)	5.15	Hydr. Depth (ft)	2.41	3.30	0.81
Conv. Total (cfs)	61196.2	Conv. (cfs)	55374.7	5447.7	373.8
Length Wtd. (ft)	134.49	Wetted Per. (ft)	149.32	21.28	17.95
Min Ch El (ft)	2617.24	Shear (lb/sq ft)	0.06	0.08	0.02
Alpha	1.14	Stream Power (lb/ft s)	0.20	0.14	0.01
Frctn Loss (ft)	0.14	Cum Volume (acre-ft)	10.19	35.04	27.03
C & E Loss (ft)	0.08	Cum SA (acres)	11.66	18.36	25.14

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 conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Note: Manning's n values were composited to a single value in the main channel.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.

CROSS SECTION OUTPUT Profile #Method 1

E.G. Elev (ft)	2622.12	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.99	Wt. n-Val.	0.016	0.038	0.050
W.S. Elev (ft)	2621.13	Reach Len. (ft)	143.02	127.09	132.71
Crit W.S. (ft)	2621.13	Flow Area (sq ft)	100.72	66.93	3.60
E.G. Slope (ft/ft)	0.004137	Area (sq ft)	100.72	66.93	3.60

Q Total (cfs)	1261.00	Flow (cfs)	893.33	361.02	6.65
Top Width (ft)	85.37	Top Width (ft)	63.15	19.91	2.31
Vel Total (ft/s)	7.36	Avg. Vel. (ft/s)	8.87	5.39	1.85
Max Chl Dpth (ft)	3.89	Hydr. Depth (ft)	1.59	3.36	1.56
Conv. Total (cfs)	19606.2	Conv. (cfs)	13889.6	5613.1	103.5
Length Wtd. (ft)	132.75	Wetted Per. (ft)	67.49	21.28	3.77
Min Ch El (ft)	2617.24	Shear (lb/sq ft)	0.39	0.81	0.25
Alpha	1.18	Stream Power (lb/ft s)	3.42	4.38	0.46
Frctn Loss (ft)	0.75	Cum Volume (acre-ft)	2.71	39.41	16.40
C & E Loss (ft)	0.01	Cum SA (acres)	3.54	18.37	13.89

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 energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
depth, the 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: Manning's n values were composited to a single value in the main channel.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water
surface was used.

CROSS SECTION

RIVER: Fan 6C
REACH: Fan6C-1 RS: 2.4

INPUT
Description: Cross Section 2.40 is located within Legend Trail.

Topography
indicates wash and surrounding undeveloped desert. Cross section
composed of Cross Section Data collected by the city of Scottsdale
Survey Department.
Aerial shows wash realigned with
golfcourse
T5NR5E Section 6
Q100 = 1,261 cfs
Station Elevation Data num= 13

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9767.96	2620.47	9776.58	2620.36	9791.85	2619.49	9818.44	2623.07	9847.4	2621.77
9906.67	2620.5	9951.72	2621.47	9983.75	2619.43	9990.19	2618	10001.09	2615.58
10016.76	2615.31	10029.97	2618	10042.44	2620.54				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9767.96	.05	9990.19	.035	10029.97	.05

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9990.19	10029.97	98.25	94.63	95.55	.1	.3

Left Levee Station= 9818.44 Elevation= 2623.07
Blocked Obstructions num= 1

Sta L	Sta R	Elev
10042.44	10042.44	2620.9

CROSS SECTION OUTPUT Profile #100-yr 6-hr

E.G. Elev (ft)	2620.99	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.98	Wt. n-Val.	0.050	0.035	0.050
W.S. Elev (ft)	2620.01	Reach Len. (ft)	98.25	94.63	95.55
Crit W.S. (ft)	2619.43	Flow Area (sq ft)	11.00	151.00	9.93
E.G. Slope (ft/ft)	0.006204	Area (sq ft)	11.00	151.00	9.93
Q Total (cfs)	1261.00	Flow (cfs)	20.28	1217.71	23.02
Top Width (ft)	65.22	Top Width (ft)	15.57	39.78	9.87
Vel Total (ft/s)	7.33	Avg. Vel. (ft/s)	1.84	8.06	2.32

Max Chl Dpth (ft)	4.70	Hydr. Depth (ft)	0.71	3.80	1.01
Conv. Total (cfs)	16009.4	Conv. (cfs)	257.5	15459.7	292.2
Length Wtd. (ft)	94.72	Wetted Per. (ft)	15.74	40.32	10.08
Min Ch El (ft)	2615.31	Shear (lb/sq ft)	0.27	1.45	0.38
Alpha	1.17	Stream Power (lb/ft s)	0.50	11.70	0.88
Frctn Loss (ft)	0.74	Cum Volume (acre-ft)	9.58	34.72	27.00
C & E Loss (ft)	0.07	Cum SA (acres)	11.39	18.27	25.10

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.

CROSS SECTION OUTPUT Profile #Method 1

E.G. Elev (ft)	2621.06	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.13	Wt. n-Val.		0.035	
W.S. Elev (ft)	2619.93	Reach Len. (ft)	98.25	94.63	95.55
Crit W.S. (ft)	2619.38	Flow Area (sq ft)		147.91	
E.G. Slope (ft/ft)	0.008053	Area (sq ft)		147.91	
Q Total (cfs)	1261.00	Flow (cfs)		1261.00	
Top Width (ft)	39.78	Top Width (ft)		39.78	
Vel Total (ft/s)	8.53	Avg. Vel. (ft/s)		8.53	
Max Chl Dpth (ft)	4.62	Hydr. Depth (ft)		3.72	
Conv. Total (cfs)	14051.6	Conv. (cfs)		14051.6	
Length Wtd. (ft)	94.69	Wetted Per. (ft)		44.19	
Min Ch El (ft)	2615.31	Shear (lb/sq ft)		1.68	
Alpha	1.00	Stream Power (lb/ft s)		14.35	
Frctn Loss (ft)	0.86	Cum Volume (acre-ft)	2.55	39.10	16.39
C & E Loss (ft)	0.05	Cum SA (acres)	3.44	18.28	13.88

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.

CROSS SECTION

RIVER: Fan 6C
REACH: Fan6C-1 RS: 2.39

INPUT
Description: Cross Section 2.39 is located within Legend Trail.

Topography
indicates wash and surrounding undeveloped desert. Cross section composed of Cross Section Data collected by the city of Scottsdale Survey Department.
Aerial shows wash realigned with golfcourse
T5NR5E Section 6
Q100 = 1,261 cfs
Station Elevation Data num= 17

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9739.36	2616.42	9739.45	2616.43	9762.67	2614.39	9775.66	2613.63	9821.97	2619.31
9884.3	2617.63	9944.37	2619.63	9960.69	2619.23	9991.18	2617.93	9999.27	2616.001
10006.53	2614.27	10014.64	2613.93	10022.09	2614.17	10027.81	2615.94	10035.61	2618.36
10037.85	2618.56	10037.95	2618.72						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9739.36	.063	9999.27	.035	10027.81	.063

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9999.27	10027.81	388.83	379.26	383.77	.1	.3

Left Levee Station= 9944.37 Elevation= 2619.63

Blocked Obstructions num= 1

Sta L	Sta R	Elev
10037.95	10037.95	2618.7

CROSS SECTION OUTPUT Profile #100-yr 6-hr

E.G. Elev (ft)	2620.18	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.66	Wt. n-Val.	0.063	0.035	0.063
W.S. Elev (ft)	2618.52	Reach Len. (ft)	388.83	379.26	383.77
Crit W.S. (ft)	2618.52	Flow Area (sq ft)	16.55	113.39	10.77
E.G. Slope (ft/ft)	0.010124	Area (sq ft)	16.55	113.39	10.77
Q Total (cfs)	1261.00	Flow (cfs)	32.44	1201.54	27.02
Top Width (ft)	59.89	Top Width (ft)	21.81	28.54	9.54
Vel Total (ft/s)	8.96	Avg. Vel. (ft/s)	1.96	10.60	2.51
Max Chl Dpth (ft)	4.89	Hydr. Depth (ft)	0.76	3.97	1.13
Conv. Total (cfs)	12532.8	Conv. (cfs)	322.4	11941.8	268.6
Length Wtd. (ft)	379.94	Wetted Per. (ft)	22.05	29.02	9.91
Min Ch El (ft)	2613.93	Shear (lb/sq ft)	0.47	2.47	0.69
Alpha	1.34	Stream Power (lb/ft s)	0.93	26.17	1.72
Frctn Loss (ft)	3.52	Cum Volume (acre-ft)	9.55	34.44	26.97
C & E Loss (ft)	0.15	Cum SA (acres)	11.35	18.20	25.08

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 cross section had to be extended vertically during the critical depth calculations.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
depth, the 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 OUTPUT Profile #Method 1

E.G. Elev (ft)	2620.15	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.66	Wt. n-Val.	0.063	0.035	0.063
W.S. Elev (ft)	2618.49	Reach Len. (ft)	388.83	379.26	383.77
Crit W.S. (ft)	2618.49	Flow Area (sq ft)	12.34	112.68	9.96
E.G. Slope (ft/ft)	0.010227	Area (sq ft)	12.34	112.68	9.96
Q Total (cfs)	1261.00	Flow (cfs)	36.64	1195.06	29.30
Top Width (ft)	43.03	Top Width (ft)	8.09	28.54	6.40
Vel Total (ft/s)	9.34	Avg. Vel. (ft/s)	2.97	10.61	2.94
Max Chl Dpth (ft)	4.56	Hydr. Depth (ft)	1.52	3.95	1.56
Conv. Total (cfs)	12469.3	Conv. (cfs)	362.3	11817.3	289.7
Length Wtd. (ft)	379.45	Wetted Per. (ft)	8.88	29.02	7.26
Min Ch El (ft)	2613.93	Shear (lb/sq ft)	0.89	2.48	0.88
Alpha	1.23	Stream Power (lb/ft s)	2.64	26.29	2.58
Frctn Loss (ft)	4.51	Cum Volume (acre-ft)	2.54	38.82	16.38
C & E Loss (ft)	0.02	Cum SA (acres)	3.43	18.21	13.88

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.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water
surface was used.

CROSS SECTION

RIVER: Fan 6C
REACH: Fan6C-1 RS: 2.31

INPUT
Description: Cross Section 2.31 is located within Legend Trail.

Topography
indicates wash and surrounding undeveloped desert. Cross section composed of Cross Section Data collected by the city of Scottsdale Survey Department.
Aerial shows wash realigned with golfcourse
T5NR5E Section 6
Q100 = 1,346 cfs
Station Elevation Data num= 16

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9849.07	2613.67	9849.19	2613.65	9865.78	2613.14	9867.14	2613.49	9875.35	2613.82
9884.21	2615.68	9907.25	2615.2	9940.87	2613.9	9980.8	2610.15	9995.43	2609.52
10003.48	2607.22	10011.69	2607.19	10022.15	2607.03	10028.62	2609.48	10046.15	2610.19
10114.04	2615.41								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9849.07	.05	9995.43	.035	10028.62	.05

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9995.43	10028.62	107.1	102.16	105.46	.3	.5

CROSS SECTION OUTPUT Profile #100-yr 6-hr

E.G. Elev (ft)	2612.55	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.16	Wt. n-Val.	0.050	0.035	0.050
W.S. Elev (ft)	2611.39	Reach Len. (ft)	107.10	102.16	105.46
Crit W.S. (ft)	2611.39	Flow Area (sq ft)	30.79	123.54	36.44
E.G. Slope (ft/ft)	0.008572	Area (sq ft)	30.79	123.54	36.44
Q Total (cfs)	1346.00	Flow (cfs)	90.56	1148.58	106.86
Top Width (ft)	94.03	Top Width (ft)	27.78	33.19	33.07
Vel Total (ft/s)	7.06	Avg. Vel. (ft/s)	2.94	9.30	2.93
Max Chl Dpth (ft)	4.35	Hydr. Depth (ft)	1.11	3.72	1.10
Conv. Total (cfs)	14538.0	Conv. (cfs)	978.1	12405.7	1154.2
Length Wtd. (ft)	102.48	Wetted Per. (ft)	27.85	33.96	33.13
Min Ch El (ft)	2607.03	Shear (lb/sq ft)	0.59	1.95	0.59
Alpha	1.51	Stream Power (lb/ft s)	1.74	18.10	1.73
Frctn Loss (ft)	1.04	Cum Volume (acre-ft)	9.34	33.41	26.77
C & E Loss (ft)	0.12	Cum SA (acres)	11.13	17.93	24.89

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 energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the 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 OUTPUT Profile #Method 1

E.G. Elev (ft)	2613.23	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.87	Wt. n-Val.		0.035	
W.S. Elev (ft)	2611.36	Reach Len. (ft)	107.10	102.16	105.46
Crit W.S. (ft)	2611.36	Flow Area (sq ft)		122.70	
E.G. Slope (ft/ft)	0.013833	Area (sq ft)		122.70	
Q Total (cfs)	1346.00	Flow (cfs)		1346.00	
Top Width (ft)	33.19	Top Width (ft)		33.19	

Vel Total (ft/s)	10.97	Avg. Vel. (ft/s)			10.97	
Max Chl Dpth (ft)	4.33	Hydr. Depth (ft)			3.70	
Conv. Total (cfs)	11444.2	Conv. (cfs)			11444.2	
Length Wtd. (ft)	102.16	Wetted Per. (ft)			37.68	
Min Ch El (ft)	2607.03	Shear (lb/sq ft)			2.81	
Alpha	1.00	Stream Power (lb/ft s)			30.85	
Frctn Loss (ft)	1.39	Cum Volume (acre-ft)		2.48	37.79	16.34
C & E Loss (ft)	0.14	Cum SA (acres)		3.40	17.94	13.85

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.

CROSS SECTION

RIVER: Fan 6C
REACH: Fan6C-1 RS: 2.30

INPUT
Description: Cross Section 2.30 is located upstream of the intersection of Fan 6C and Sandy Vista Drive. There are 3-12 X 5 CBC located under Sandy Vista Drive.

Topography indicates wash and surrounding
undeveloped desert.Cross section composed of Cross Section Data collected by the city of Scottsdale Survey Department.
Aerial
shows wash, homes and golf course.

T5NR5E Section 6
Q100 =
1,346 cfs
Station Elevation Data num= 14

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9866.03	2612.7	9867.33	2613.02	9888.95	2612.76	9967.44	2611.45	9969.32	2610.72
9982.51	2605.01	10000	2603.78	10023.75	2603.77	10023.76	2605	10023.79	2608.49
10029.82	2608.55	10054.98	2610.9	10071.02	2611	10071.12	2610.7		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9866.03	.05	9982.51	.03	10023.76	.05

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9982.51	10023.76	200.7	200.75	200.75	.3	.5

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
9866.03	9980.81	2610.9	F
10023.81	10071.12	2610.9	F

CROSS SECTION OUTPUT Profile #100-yr 6-hr

E.G. Elev (ft)	2608.80	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.55	Wt. n-Val.	0.050	0.035	0.050
W.S. Elev (ft)	2607.25	Reach Len. (ft)	200.70	200.75	200.75
Crit W.S. (ft)	2607.25	Flow Area (sq ft)	3.19	132.55	0.02
E.G. Slope (ft/ft)	0.012280	Area (sq ft)	5.80	132.55	0.02
Q Total (cfs)	1346.00	Flow (cfs)	15.05	1330.94	0.00
Top Width (ft)	46.45	Top Width (ft)	5.18	41.25	0.02
Vel Total (ft/s)	9.91	Avg. Vel. (ft/s)	4.73	10.04	0.15
Max Chl Dpth (ft)	3.48	Hydr. Depth (ft)	1.87	3.21	1.13
Conv. Total (cfs)	12146.4	Conv. (cfs)	135.8	12010.5	0.0
Length Wtd. (ft)	200.75	Wetted Per. (ft)	1.85	42.51	2.25

Min Ch El (ft)	2603.77	Shear (lb/sq ft)	1.32	2.39	0.01
Alpha	1.02	Stream Power (lb/ft s)	6.23	24.00	0.00
Frctn Loss (ft)		Cum Volume (acre-ft)	9.29	33.11	26.72
C & E Loss (ft)		Cum SA (acres)	11.09	17.84	24.85

Warning: During subcritical analysis, the water surface upstream of culvert went to critical depth.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid,
energy was used.

CROSS SECTION OUTPUT Profile #Method 1

E.G. Elev (ft)	2608.85	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.59	Wt. n-Val.		0.035	0.050
W.S. Elev (ft)	2607.26	Reach Len. (ft)	200.70	200.75	200.75
Crit W.S. (ft)	2607.26	Flow Area (sq ft)		132.98	0.02
E.G. Slope (ft/ft)	0.013312	Area (sq ft)		132.98	0.02
Q Total (cfs)	1346.00	Flow (cfs)		1346.00	0.00
Top Width (ft)	41.27	Top Width (ft)		41.25	0.02
Vel Total (ft/s)	10.12	Avg. Vel. (ft/s)		10.12	0.16
Max Chl Dpth (ft)	3.49	Hydr. Depth (ft)		3.22	1.14
Conv. Total (cfs)	11666.1	Conv. (cfs)		11666.1	0.0
Length Wtd. (ft)	200.75	Wetted Per. (ft)		44.77	2.25
Min Ch El (ft)	2603.77	Shear (lb/sq ft)		2.47	0.01
Alpha	1.00	Stream Power (lb/ft s)		24.99	0.00
Frctn Loss (ft)		Cum Volume (acre-ft)	2.48	37.49	16.34
C & E Loss (ft)		Cum SA (acres)	3.40	17.85	13.85

Warning: During subcritical analysis, the water surface upstream of culvert went to critical depth.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid,
energy was used.

CULVERT

RIVER: Fan 6C
REACH: Fan6C-1 RS: 2.28

INPUT
Description: Box culverts at Sandy Vista Drive crossing.
Distance from Upstream XS = 28
Deck/Roadway Width = 104
Weir Coefficient = 2.6
Upstream Deck/Roadway Coordinates
num= 9

Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord
9837.06	2613.23		9878.77	2612.76		9918.69	2612.46	
9956.14	2612.15		9981.82	2612.05		10006.2	2611.7	
10033.98	2611.24		10062.68	2610.78		10092.18	2610.29	

Upstream Bridge Cross Section Data
Station Elevation Data num= 14

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9866.03	2612.7	9867.33	2613.02	9888.95	2612.76	9967.44	2611.45	9969.32	2610.72
9982.51	2605.01	10000	2603.78	10023.75	2603.77	10023.76	2605	10023.79	2608.49
10029.82	2608.55	10054.98	2610.91	10071.02	2611	10071.12	2610.7		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9866.03	.05	9982.51	.035	10023.76	.05

Bank Sta: Left	Right	Coeff Contr.	Expan.
9982.51	10023.76	.3	.5

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
9866.03	9980.81	2610.9	F
10023.81	10071.12	2610.9	F

```
Downstream  Deck/Roadway Coordinates
    num=       6
     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord
 9969.77 2608.25         9982.69 2608.76         10003.5 2609.12
10028.81 2609.35        10044.19 2609.39        10049.82 2609.06

Downstream Bridge Cross Section Data
Station Elevation Data    num=      22
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
 9923.65 2607.93 9947.98  2607.7 9949.44 2607.37 9950.08 2607.42 9950.12 2607.37
 9971.31  2608.1  9972.2 2608.57  9975.1 2608.12 9991.45 2606.32 9992.16    2604
 9992.82 2601.8310007.73 2601.77 10025.1 2601.9410025.44    260410025.83 2606.39
10043.58 2609.4610044.16 2608.9510063.96 2608.3810064.06 2608.4210064.37 2608.33
10066.12 2608.6710090.15 2608.79

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
 9923.65     .05 9992.16    .01510025.44     .05

Bank Sta: Left   Right    Coeff Contr.   Expan.
       9992.1610025.44             .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
 9923.65 9982.21 2608.25       F
10035.7110090.15 2608.25       F

Upstream Embankment side slope              =       0 horiz. to 1.0 vertical
Downstream Embankment side slope            =       0 horiz. to 1.0 vertical
Maximum allowable submergence for weir flow =     .95
Elevation at which weir flow begins         =
Energy head used in spillway design         =
Spillway height used in design              =
Weir crest shape                            = Broad Crested

Number of Culverts =  1

Culvert Name     Shape      Rise    Span
Culvert #1           Box       5      12
FHWA Chart # 8 - flared wingwalls
FHWA Scale # 1 - Wingwall flared 30 to 75 deg.
Solution Criteria = Highest U.S. EG
Culvert Upstrm Dist  Length    Top n  Bottom n  Depth Blocked  Entrance Loss Coef   Exit Loss Coef
                  5     190     .015     .015        0                   .4                 1
Number of Barrels =  3
Upstream   Elevation =  2603.98
Centerline Stations
    Sta.    Sta.    Sta.
 9989.8110002.3110014.81
Downstream Elevation =  2601.32
Centerline Stations
    Sta.    Sta.    Sta.
 9995.9610008.9610021.96

CROSS SECTION


RIVER: Fan 6C
REACH: Fan6C-1            RS: 2.26

INPUT
Description: Cross Section 2.26 is located downstream of the intersection of
             Fan 6C and Sandy Vista Drive.  There are 3-12 X 5 CBC located
             under Sandy Vista Drive.

Topography indicates wash and
             surrounding undeveloped desert.Cross section composed of Cross
             Section Data collected by the city of Scottsdale Survey
             Department.
Aerial shows wash, homes and golf course.

T5NR5E
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Section 6
Q100 = 1,346 cfs
Station Elevation Data num= 22

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9923.65	2607.93	9947.98	2607.7	9949.44	2607.37	9950.08	2607.42	9950.12	2607.37
9971.31	2608.1	9972.2	2608.57	9975.1	2608.12	9991.45	2606.32	9992.16	2604
9992.82	2601.83	10007.73	2601.77	10025.1	2601.94	10025.44	2604	10025.83	2606.39
10043.58	2609.46	10044.16	2608.95	10063.96	2608.38	10064.06	2608.42	10064.37	2608.33
10066.12	2608.67	10090.15	2608.79						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9923.65	.05	9992.16	.01	10025.44	.05

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9992.16	10025.44	157.98	155.06	160	.3	.5

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
9923.65	9982.21	2608.25	F
10035.71	10090.15	2608.25	F

CROSS SECTION OUTPUT Profile #100-yr 6-hr

			Left OB	Channel	Right OB
E.G. Elev (ft)	2607.42	Element			
Vel Head (ft)	1.84	Wt. n-Val.	0.050	0.015	0.050
W.S. Elev (ft)	2605.58	Reach Len. (ft)	157.98	155.06	160.00
Crit W.S. (ft)	2605.58	Flow Area (sq ft)	0.38	123.74	0.20
E.G. Slope (ft/ft)	0.002378	Area (sq ft)	0.38	123.74	0.20
Q Total (cfs)	1346.00	Flow (cfs)	0.21	1345.72	0.07
Top Width (ft)	34.02	Top Width (ft)	0.48	33.28	0.26
Vel Total (ft/s)	10.83	Avg. Vel. (ft/s)	0.55	10.88	0.37
Max Chl Dpth (ft)	3.81	Hydr. Depth (ft)	0.79	3.72	0.79
Conv. Total (cfs)	27601.1	Conv. (cfs)	4.3	27595.3	1.5
Length Wtd. (ft)	155.06	Wetted Per. (ft)	1.65	36.64	1.60
Min Ch El (ft)	2601.77	Shear (lb/sq ft)	0.03	0.50	0.02
Alpha	1.01	Stream Power (lb/ft s)	0.02	5.45	0.01
Frctn Loss (ft)	0.38	Cum Volume (acre-ft)	9.28	32.51	26.72
C & E Loss (ft)	0.01	Cum SA (acres)	11.08	17.67	24.85

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.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid,
energy was used.

CROSS SECTION OUTPUT Profile #Method 1

			Left OB	Channel	Right OB
E.G. Elev (ft)	2607.42	Element			
Vel Head (ft)	1.84	Wt. n-Val.		0.015	
W.S. Elev (ft)	2605.58	Reach Len. (ft)	157.98	155.06	160.00
Crit W.S. (ft)	2605.58	Flow Area (sq ft)		123.81	
E.G. Slope (ft/ft)	0.002652	Area (sq ft)		123.81	
Q Total (cfs)	1346.00	Flow (cfs)		1346.00	
Top Width (ft)	33.28	Top Width (ft)		33.28	
Vel Total (ft/s)	10.87	Avg. Vel. (ft/s)		10.87	
Max Chl Dpth (ft)	3.81	Hydr. Depth (ft)		3.72	
Conv. Total (cfs)	26134.7	Conv. (cfs)		26134.7	
Length Wtd. (ft)	155.06	Wetted Per. (ft)		39.80	
Min Ch El (ft)	2601.77	Shear (lb/sq ft)		0.52	
Alpha	1.00	Stream Power (lb/ft s)		5.60	
Frctn Loss (ft)	0.40	Cum Volume (acre-ft)	2.48	36.90	16.34
C & E Loss (ft)	0.01	Cum SA (acres)	3.40	17.68	13.85

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.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid,
energy was used.

CROSS SECTION

RIVER: Fan 6C
REACH: Fan6C-1 RS: 2.23

INPUT
Description: Cross Section 2.23 is located upstream of the intersection of Fan 6C and Sandy Vista Drive. There are 3-12 X 5 CBC located under Sandy Vista Drive.

Topography indicates wash and surrounding
undeveloped desert.Cross section composed of Cross Section Data collected by the city of Scottsdale Survey Department.
Aerial
shows wash, homes and golf course.

T5NR5E Section 6
Q100 =
1,346 cfs
Station Elevation Data num= 19

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9920.86	2606.34	9947.43	2605.66	9949.08	2605.45	9970.52	2605.69	9971.13	2606.31
9984.57	2604.11	9988.63	2603.31	9988.96	2601	9989.3	2598.64	10021.66	2598.59
10021.85	2601	10022.03	2603.34	10023.13	2604	10026.46	2604.32	10037.66	2606.16
10038.42	2605.57	10059.81	2605.36	10061.39	2605.69	10069.15	2606.11		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9920.86	.05	9988.96	.015	10021.85	.05

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9988.96	10021.85	159.45	152.12	153.56	.3	.5

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
9920.86	9984.98	2605.27	F
10025.98	10069.15	2605.27	F

CROSS SECTION OUTPUT Profile #100-yr 6-hr

E.G. Elev (ft)	2604.23	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.87	Wt. n-Val.	0.050	0.015	0.050
W.S. Elev (ft)	2602.36	Reach Len. (ft)	159.45	152.12	153.56
Crit W.S. (ft)	2602.36	Flow Area (sq ft)	0.13	122.53	0.07
E.G. Slope (ft/ft)	0.002506	Area (sq ft)	0.13	122.53	0.07
Q Total (cfs)	1346.00	Flow (cfs)	0.04	1345.94	0.01
Top Width (ft)	33.19	Top Width (ft)	0.19	32.89	0.10
Vel Total (ft/s)	10.97	Avg. Vel. (ft/s)	0.31	10.98	0.21
Max Chl Dpth (ft)	3.77	Hydr. Depth (ft)	0.68	3.73	0.68
Conv. Total (cfs)	26888.8	Conv. (cfs)	0.8	26887.7	0.3
Length Wtd. (ft)	152.12	Wetted Per. (ft)	1.37	37.16	1.36
Min Ch El (ft)	2598.59	Shear (lb/sq ft)	0.02	0.52	0.01
Alpha	1.00	Stream Power (lb/ft s)	0.00	5.67	0.00
Frctn Loss (ft)		Cum Volume (acre-ft)	9.28	32.08	26.72
C & E Loss (ft)		Cum SA (acres)	11.07	17.56	24.85

Warning: During subcritical analysis, the water surface upstream of culvert went to critical depth.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid,
energy was used.

CROSS SECTION OUTPUT Profile #Method 1

E.G. Elev (ft)	2604.23	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.87	Wt. n-Val.	0.050	0.015	0.050
W.S. Elev (ft)	2602.36	Reach Len. (ft)	159.45	152.12	153.56
Crit W.S. (ft)	2602.36	Flow Area (sq ft)	0.13	122.53	0.07
E.G. Slope (ft/ft)	0.002506	Area (sq ft)	0.13	122.53	0.07
Q Total (cfs)	1346.00	Flow (cfs)	0.04	1345.94	0.01
Top Width (ft)	33.19	Top Width (ft)	0.19	32.89	0.10
Vel Total (ft/s)	10.97	Avg. Vel. (ft/s)	0.31	10.98	0.21
Max Chl Dpth (ft)	3.77	Hydr. Depth (ft)	0.68	3.73	0.68
Conv. Total (cfs)	26888.8	Conv. (cfs)	0.8	26887.7	0.3
Length Wtd. (ft)	152.12	Wetted Per. (ft)	1.37	37.16	1.36
Min Ch El (ft)	2598.59	Shear (lb/sq ft)	0.02	0.52	0.01
Alpha	1.00	Stream Power (lb/ft s)	0.00	5.67	0.00
Frctn Loss (ft)		Cum Volume (acre-ft)	2.48	36.46	16.34
C & E Loss (ft)		Cum SA (acres)	3.40	17.56	13.85

Warning: During subcritical analysis, the water surface upstream of culvert went to critical depth.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid,
energy was used.

CULVERT

RIVER: Fan 6C
REACH: Fan6C-1 RS: 2.22

INPUT
Description: Box culverts at Sandy Vista Drive crossing.
Distance from Upstream XS = 40
Deck/Roadway Width = 85.75
Weir Coefficient = 2.6
Upstream Deck/Roadway Coordinates
num= 7

Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord
9962.53	2605.59		9972.23	2605.24		9975.91	2605.24	
9995.99	2605.56		10013.23	2605.48		10036.7	2605.66	
10045.89	2605.58							

Upstream Bridge Cross Section Data
Station Elevation Data num= 19

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9920.86	2606.34	9947.43	2605.66	9949.08	2605.45	9970.52	2605.69	9971.13	2606.31
9984.57	2604.11	9988.63	2603.31	9988.96	2601	9989.3	2598.6	10021.66	2598.59
10021.85	2601	10022.03	2603.34	10023.13	2604	10026.46	2604.32	10037.66	2606.16
10038.42	2605.57	10059.81	2605.36	10061.39	2605.69	10069.15	2606.11		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9920.86	.05	9988.96	.015	10021.85	.05

Bank Sta: Left	Right	Coeff Contr.	Expan.
9988.96	10021.85	.3	.5

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
9920.86	9984.98	2605.27	F
10025.98	10069.15	2605.27	F

Downstream Deck/Roadway Coordinates
num= 11

Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord

```
 9887.81 2605.24          9912.4 2604.95         9941.31 2604.78
 9970.97 2604.57           10000 2603.98        10029.66 2603.29
 10057.1 2602.44        10081.33 2601.49        10116.89 2599.81
10153.04 2598.07        10178.36 2597.03

Downstream Bridge Cross Section Data
Station Elevation Data    num=      15
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
 9890.11 2602.56 9901.62 2602.28 9909.56 2601.09 9944.26  2601.4 9969.61 2601.49
 9981.69 2601.77 9981.83    2598 9981.87 2597.0610011.47 2596.6610039.86 2596.61
10040.07    259810040.55 2601.2510043.99 2600.2410084.01 2598.5110131.73 2599.13

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
 9890.11     .05 9981.83    .03510040.07     .05

Bank Sta: Left   Right    Coeff Contr.   Expan.
       9981.8310040.07             .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
 9890.11 9981.83 2602.97       F
10040.0710131.73 2602.97       F
Right Levee     Station=10040.55      Elevation= 2601.25

Upstream Embankment side slope              =       0 horiz. to 1.0 vertical
Downstream Embankment side slope            =       0 horiz. to 1.0 vertical
Maximum allowable submergence for weir flow =     .95
Elevation at which weir flow begins         =
Energy head used in spillway design         =
Spillway height used in design              =
Weir crest shape                            = Broad Crested

Number of Culverts =  1

Culvert Name     Shape      Rise    Span
Culvert #1          Box       5      12
FHWA Chart # 8 - flared wingwalls
FHWA Scale # 1 - Wingwall flared 30 to 75 deg.
Solution Criteria = Highest U.S. EG
Culvert Upstrm Dist  Length    Top n  Bottom n  Depth Blocked  Entrance Loss Coef   Exit Loss Coef
                  5     142     .015     .015        0                  .4                 1
Number of Barrels =  3
Upstream   Elevation =  2597.88
Centerline Stations
    Sta.    Sta.    Sta.
 9992.4810005.4810018.48
Downstream Elevation =  2596.74
Centerline Stations
    Sta.    Sta.    Sta.
 9995.7810009.7810026.79

CROSS SECTION


RIVER: Fan 6C
REACH: Fan6C-1            RS: 2.20

INPUT
Description: Cross Section 2.20 is located downstream of the intersection of
             Fan 6C and Sandy Vista Drive.  There are 3-12 X 5 CBC located
             under Sandy Vista Drive.

Topography indicates wash and
             surrounding undeveloped desert.Cross section composed of Cross
             Section Data collected by the city of Scottsdale Survey
             Department.
Aerial shows wash, homes and golf course.

T5NR5E
             Section 6
Q100 = 1,346 cfs
```

```
Station Elevation Data    num=      15
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
 9890.11 2602.56 9901.62 2602.28 9909.56 2601.09 9944.26  2601.4 9969.61 2601.49
 9981.69 2601.77 9981.83    2598 9981.87 2597.0610011.47 2596.6610039.86 2596.61
10040.07    259810040.55 2601.2510043.99 2600.2410084.01 2598.5110131.73 2599.13

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
 9890.11     .05 9981.83    .03510040.07     .05

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9981.8310040.07           183.56  151.04  130.96             .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
 9890.11 9981.83 2602.97       F
10040.0710131.73 2602.97       F
Right Levee     Station=10040.55      Elevation= 2601.25

CROSS SECTION OUTPUT  Profile #100-yr 6-hr

  E.G. Elev (ft)          2600.58    Element                  Left OB    Channel   Right OB
  Vel Head (ft)              1.26    Wt. n-Val.                          0.035
  W.S. Elev (ft)          2599.32    Reach Len. (ft)          183.56    151.04     130.96
  Crit W.S. (ft)          2599.32    Flow Area (sq ft)                  149.39
  E.G. Slope (ft/ft)     0.013448    Area (sq ft)               0.03    149.39       0.13
  Q Total (cfs)           1346.00    Flow (cfs)                        1346.00
  Top Width (ft)            58.48    Top Width (ft)             0.05     58.24       0.19
  Vel Total (ft/s)           9.01    Avg. Vel. (ft/s)                    9.01
  Max Chl Dpth (ft)          2.71    Hydr. Depth (ft)                    2.57
  Conv. Total (cfs)       11606.8    Conv. (cfs)                       11606.8
  Length Wtd. (ft)         152.67    Wetted Per. (ft)                   60.34
  Min Ch El (ft)          2596.61    Shear (lb/sq ft)                    2.08
  Alpha                      1.00    Stream Power (lb/ft s)             18.73
  Frctn Loss (ft)            1.46    Cum Volume (acre-ft)       9.28     31.60      26.72
  C & E Loss (ft)            0.19    Cum SA (acres)            11.07     17.40      24.85


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.
Note:    Multiple critical depths were found at this location.  The critical depth with the lowest,
valid,
         energy was used.

CROSS SECTION OUTPUT  Profile #Method 1

  E.G. Elev (ft)          2600.58    Element                  Left OB    Channel   Right OB
  Vel Head (ft)              1.26    Wt. n-Val.                          0.035
  W.S. Elev (ft)          2599.32    Reach Len. (ft)          183.56    151.04     130.96
  Crit W.S. (ft)          2599.32    Flow Area (sq ft)                  149.39
  E.G. Slope (ft/ft)     0.014237    Area (sq ft)                       149.39
  Q Total (cfs)           1346.00    Flow (cfs)                        1346.00
  Top Width (ft)            58.24    Top Width (ft)                     58.24
  Vel Total (ft/s)           9.01    Avg. Vel. (ft/s)                    9.01
  Max Chl Dpth (ft)          2.71    Hydr. Depth (ft)                    2.57
  Conv. Total (cfs)       11280.7    Conv. (cfs)                       11280.7
  Length Wtd. (ft)         151.04    Wetted Per. (ft)                   62.97
  Min Ch El (ft)          2596.61    Shear (lb/sq ft)                    2.11
  Alpha                      1.00    Stream Power (lb/ft s)             19.00
  Frctn Loss (ft)            1.50    Cum Volume (acre-ft)       2.48     35.99      16.34
  C & E Loss (ft)            0.10    Cum SA (acres)             3.40     17.40      13.85


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.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid,
energy was used.

CROSS SECTION

RIVER: Fan 6C
REACH: Fan6C-1 RS: 2.17

INPUT
Description: Cross Section 2.17 is located within Legend Trail.

Topography
indicates wash and surrounding undeveloped desert. Cross section
composed of Cross Section Data collected by the city of Scottsdale
Survey Department.
Aerial shows wash and adjacent golf
course.
T5NR5E Section 6
Q100 = 1,346 cfs
Station Elevation Data num= 18

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9643.2	2602.36	9679.09	2601.49	9748.44	2597.83	9766.93	2597.33	9775.95	2597.14
9815.51	2597.27	9840.98	2596.58	9870.59	2597.33	9908.04	2597.53	9962.29	2594.72
9970.41	2596.52	9987.6	2596.58	10006.23	2592.41	10014.48	2591.35	10024.1	2592.89
10031.84	2595.93	10082.83	2599.76	10091.02	2599.9				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9643.2	.05	9987.6	.035	10031.84	.05

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9987.6	10031.84	222.23	217.67	215.82	.1	.3

Left Levee Station= 9908.04 Elevation= 2597.53

CROSS SECTION OUTPUT Profile #100-yr 6-hr

E.G. Elev (ft)	2597.75	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.89	Wt. n-Val.	0.050	0.035	0.050
W.S. Elev (ft)	2596.87	Reach Len. (ft)	222.23	217.67	215.82
Crit W.S. (ft)	2596.52	Flow Area (sq ft)	60.10	150.03	5.85
E.G. Slope (ft/ft)	0.007181	Area (sq ft)	60.10	150.03	5.85
Q Total (cfs)	1346.00	Flow (cfs)	140.74	1196.38	8.87
Top Width (ft)	123.49	Top Width (ft)	66.77	44.24	12.48
Vel Total (ft/s)	6.23	Avg. Vel. (ft/s)	2.34	7.97	1.52
Max Chl Dpth (ft)	5.52	Hydr. Depth (ft)	0.90	3.39	0.47
Conv. Total (cfs)	15883.9	Conv. (cfs)	1660.9	14118.3	104.7
Length Wtd. (ft)	217.94	Wetted Per. (ft)	67.02	45.47	12.52
Min Ch El (ft)	2591.35	Shear (lb/sq ft)	0.40	1.48	0.21
Alpha	1.47	Stream Power (lb/ft s)	0.94	11.80	0.32
Frctn Loss (ft)	1.89	Cum Volume (acre-ft)	9.15	31.08	26.71
C & E Loss (ft)	0.09	Cum SA (acres)	10.93	17.22	24.83

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water

surface was used.

CROSS SECTION OUTPUT Profile #Method 1

E.G. Elev (ft)	2598.22	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.06	Wt. n-Val.		0.035	
W.S. Elev (ft)	2597.15	Reach Len. (ft)	222.23	217.67	215.82
Crit W.S. (ft)	2596.52	Flow Area (sq ft)		162.70	
E.G. Slope (ft/ft)	0.007305	Area (sq ft)		162.70	
Q Total (cfs)	1346.00	Flow (cfs)		1346.00	
Top Width (ft)	44.24	Top Width (ft)		44.24	
Vel Total (ft/s)	8.27	Avg. Vel. (ft/s)		8.27	
Max Chl Dpth (ft)	5.80	Hydr. Depth (ft)		3.68	
Conv. Total (cfs)	15748.3	Conv. (cfs)		15748.3	
Length Wtd. (ft)	217.67	Wetted Per. (ft)		47.26	
Min Ch El (ft)	2591.35	Shear (lb/sq ft)		1.57	
Alpha	1.00	Stream Power (lb/ft s)		12.99	
Frctn Loss (ft)	2.15	Cum Volume (acre-ft)	2.48	35.44	16.34
C & E Loss (ft)	0.10	Cum SA (acres)	3.40	17.22	13.85

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 cross section had to be extended vertically during the critical depth calculations.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water
surface was used.

CROSS SECTION

RIVER: Fan 6C
REACH: Fan6C-1 RS: 2.13

INPUT
Description: Cross Section 2.13 is located within Legend Trail. Blocked Obstruction indicates finish floor of existing home.

Topography
indicates wash and surrounding undeveloped desert. Cross section composed of Cross Section Data collected by the city of Scottsdale Survey Department.
Aerial shows wash, golf course and homes.
T5NR5E Section 6
Q100 = 1,346 cfs
Station Elevation Data num= 25

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9594.4	2601.13	9629.16	2598.7	9651.02	2596.57	9694.83	2594.02	9723.55	2593.88
9759.16	2591.53	9766.99	2591.76	9795.01	2596.23	9807.52	2593.55	9822.75	2595.24
9887.35	2593.82	9944.74	2594.16	9971.95	2595.9	9993.55	2592	9994.71	2591.79
9996.57	2588.7	10009	2588.68	10021.06	2592	10024.11	2592.84	10130.24	2594.64
10154.56	2592.57	10156.46	2592.29	10169.79	2592.41	10182.71	2592.16	10184.74	2592.49

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9594.4	.05	9993.55	.035	10021.06	.05

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9993.55	10021.06	511.67	508.61	504.97	.1	.3

Left Levee Station= 9971.95 Elevation= 2595.89
Blocked Obstructions num= 1

Sta L	Sta R	Elev
10024.11	10184.74	2595.5

CROSS SECTION OUTPUT Profile #100-yr 6-hr

E.G. Elev (ft)	2595.77	Element	Left OB	Channel	Right OB

Vel Head (ft)	1.83	Wt. n-Val.	0.050	0.035	0.050
W.S. Elev (ft)	2593.94	Reach Len. (ft)	511.67	508.61	504.97
Crit W.S. (ft)	2593.94	Flow Area (sq ft)	10.43	117.95	4.64
E.G. Slope (ft/ft)	0.010724	Area (sq ft)	10.43	117.95	4.64
Q Total (cfs)	1346.00	Flow (cfs)	31.14	1299.75	15.11
Top Width (ft)	41.31	Top Width (ft)	10.75	27.51	3.05
Vel Total (ft/s)	10.12	Avg. Vel. (ft/s)	2.98	11.02	3.26
Max Chl Dpth (ft)	5.26	Hydr. Depth (ft)	0.97	4.29	1.52
Conv. Total (cfs)	12997.9	Conv. (cfs)	300.8	12551.2	145.9
Length Wtd. (ft)	509.29	Wetted Per. (ft)	10.92	29.72	4.27
Min Ch El (ft)	2588.68	Shear (lb/sq ft)	0.64	2.66	0.73
Alpha	1.15	Stream Power (lb/ft s)	1.91	29.27	2.37
Frctn Loss (ft)	7.32	Cum Volume (acre-ft)	8.97	30.41	26.69
C & E Loss (ft)	0.33	Cum SA (acres)	10.74	17.04	24.79

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.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water
surface was used.

CROSS SECTION OUTPUT Profile #Method 1

E.G. Elev (ft)	2595.96	Element	Left OB	Channel	Right OB
Vel Head (ft)	2.08	Wt. n-Val.		0.035	
W.S. Elev (ft)	2593.88	Reach Len. (ft)	511.67	508.61	504.97
Crit W.S. (ft)	2593.88	Flow Area (sq ft)		116.22	
E.G. Slope (ft/ft)	0.014157	Area (sq ft)		116.22	
Q Total (cfs)	1346.00	Flow (cfs)		1346.00	
Top Width (ft)	27.51	Top Width (ft)		27.51	
Vel Total (ft/s)	11.58	Avg. Vel. (ft/s)		11.58	
Max Chl Dpth (ft)	5.20	Hydr. Depth (ft)		4.22	
Conv. Total (cfs)	11312.5	Conv. (cfs)		11312.5	
Length Wtd. (ft)	508.61	Wetted Per. (ft)		33.48	
Min Ch El (ft)	2588.68	Shear (lb/sq ft)		3.07	
Alpha	1.00	Stream Power (lb/ft s)		35.53	
Frctn Loss (ft)	7.26	Cum Volume (acre-ft)	2.48	34.75	16.34
C & E Loss (ft)	0.29	Cum SA (acres)	3.40	17.04	13.85

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 energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
depth, the 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: Fan 6C

REACH: Fan6C-1 RS: 2.03

INPUT
Description: Cross Section 2.03 is located within Legend Trail. Blocked obstruction indicates finish floor of existing home.

Topography
indicates wash and surrounding undeveloped desert. Cross section composed of Cross Section Data collected by the city of Scottsdale Survey Department.
Aerial shows wash, tee boxes, and homes.
T5NR5E Section 6
Q100 = 1,346 cfs

Station Elevation Data num= 15

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9828.03	2586.94	9838.5	2586.39	9873.19	2580.76	9914.79	2581.42	9932.04	2583.4
9943.64	2582.89	9953.68	2583	9970.39	2581.14	10019.43	2581.53	10025.69	2583.07
10048.87	2582.87	10171.07	2584.36	10211.64	2581.93	10218.98	2580.95	10228.19	2581.06

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9828.03	.05	9953.68	.035	10025.69	.05

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9953.68	10025.69	216.87	220.15	223.42	.1	.3

Blocked Obstructions num= 1

Sta L	Sta R	Elev
10048.87	10228.19	2585.18

CROSS SECTION OUTPUT Profile #100-yr 6-hr

E.G. Elev (ft)	2583.70	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.71	Wt. n-Val.	0.050	0.035	0.050
W.S. Elev (ft)	2582.99	Reach Len. (ft)	216.87	220.15	223.42
Crit W.S. (ft)	2582.99	Flow Area (sq ft)	105.32	100.55	0.77
E.G. Slope (ft/ft)	0.020269	Area (sq ft)	105.32	100.55	0.77
Q Total (cfs)	1346.00	Flow (cfs)	584.85	760.66	0.49
Top Width (ft)	164.78	Top Width (ft)	79.86	71.54	13.39
Vel Total (ft/s)	6.51	Avg. Vel. (ft/s)	5.55	7.56	0.63
Max Chl Dpth (ft)	2.23	Hydr. Depth (ft)	1.32	1.41	0.06
Conv. Total (cfs)	9454.3	Conv. (cfs)	4108.0	5342.9	3.4
Length Wtd. (ft)	219.23	Wetted Per. (ft)	80.13	71.82	13.50
Min Ch El (ft)	2581.14	Shear (lb/sq ft)	1.66	1.77	0.07
Alpha	1.08	Stream Power (lb/ft s)	9.24	13.40	0.05
Frctn Loss (ft)	3.68	Cum Volume (acre-ft)	8.29	29.14	26.65
C & E Loss (ft)	0.00	Cum SA (acres)	10.20	16.46	24.70

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: Divided flow computed for this cross-section.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
depth, the calculated water surface came back below critical depth. This indicates that there is
not a valid subcritical answer. The program defaulted to critical depth.

CROSS SECTION OUTPUT Profile #Method 1

E.G. Elev (ft)	2584.91	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.12	Wt. n-Val.		0.035	
W.S. Elev (ft)	2583.79	Reach Len. (ft)	216.87	220.15	223.42
Crit W.S. (ft)	2583.79	Flow Area (sq ft)		158.64	
E.G. Slope (ft/ft)	0.014400	Area (sq ft)		158.64	
Q Total (cfs)	1346.00	Flow (cfs)		1346.00	
Top Width (ft)	72.01	Top Width (ft)		72.01	

Vel Total (ft/s)	8.48	Avg. Vel. (ft/s)		8.48		
Max Chl Dpth (ft)	2.65	Hydr. Depth (ft)		2.20		
Conv. Total (cfs)	11216.6	Conv. (cfs)		11216.6		
Length Wtd. (ft)	220.15	Wetted Per. (ft)		73.82		
Min Ch El (ft)	2581.14	Shear (lb/sq ft)		1.93		
Alpha	1.00	Stream Power (lb/ft s)		16.39		
Frctn Loss (ft)	3.19	Cum Volume (acre-ft)	2.48	33.14	16.34	
C & E Loss (ft)	0.03	Cum SA (acres)	3.40	16.46	13.85	

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.

CROSS SECTION

RIVER: Fan 6C
REACH: Fan6C-1 RS: 1.99

INPUT
Description: Cross Section 1.99 is located within Legend Trail.

Topography
indicates wash and surrounding undeveloped desert. Cross section composed of Cross Section Data collected by the city of Scottsdale Survey Department.
Aerial shows wash, tee boxes and
homes.
T5NR5E Section 6
Q100 = 1,346 cfs
Station Elevation Data num= 15

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9843.09	2581	9856.74	2580	9895.88	2577.17	9905.81	2577.69	9931.45	2582.14
9943.9	2582.19	9985.22	2578	9994	2577.11	10005.8	2576.93	10030.08	2577.51
10050.92	2577.15	10067.98	2578	10112.55	2580.22	10167.85	2577.93	10267.75	2576.94

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9843.09	.05	9985.22	.035	10067.98	.05

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9985.22	10067.98	309.21	308.64	298.27	.1	.3

Right Levee Station=10112.55 Elevation= 2580.22

CROSS SECTION OUTPUT Profile #100-yr 6-hr

E.G. Elev (ft)	2579.88	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.75	Wt. n-Val.	0.050	0.035	0.050
W.S. Elev (ft)	2579.13	Reach Len. (ft)	309.21	308.64	298.27
Crit W.S. (ft)	2579.13	Flow Area (sq ft)	55.84	149.32	12.87
E.G. Slope (ft/ft)	0.014105	Area (sq ft)	55.84	149.32	12.87
Q Total (cfs)	1346.00	Flow (cfs)	199.89	1115.07	31.05
Top Width (ft)	162.03	Top Width (ft)	56.54	82.76	22.73
Vel Total (ft/s)	6.17	Avg. Vel. (ft/s)	3.58	7.47	2.41
Max Chl Dpth (ft)	2.20	Hydr. Depth (ft)	0.99	1.80	0.57
Conv. Total (cfs)	11333.5	Conv. (cfs)	1683.1	9389.0	261.4
Length Wtd. (ft)	308.10	Wetted Per. (ft)	56.81	82.84	22.76
Min Ch El (ft)	2576.93	Shear (lb/sq ft)	0.87	1.59	0.50
Alpha	1.27	Stream Power (lb/ft s)	3.10	11.85	1.20
Frctn Loss (ft)	3.99	Cum Volume (acre-ft)	7.89	28.51	26.62
C & E Loss (ft)	0.03	Cum SA (acres)	9.86	16.07	24.60

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: Divided flow computed for this cross-section.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
depth, the calculated water surface came back below critical depth. This indicates that there is
not a valid subcritical answer. The program defaulted to critical depth.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water
surface was used.

CROSS SECTION OUTPUT Profile #Method 1

E.G. Elev (ft)	2580.35	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.00	Wt. n-Val.		0.035	
W.S. Elev (ft)	2579.35	Reach Len. (ft)	309.21	308.64	298.27
Crit W.S. (ft)	2579.35	Flow Area (sq ft)		167.62	
E.G. Slope (ft/ft)	0.014590	Area (sq ft)		167.62	
Q Total (cfs)	1346.00	Flow (cfs)		1346.00	
Top Width (ft)	82.76	Top Width (ft)		82.76	
Vel Total (ft/s)	8.03	Avg. Vel. (ft/s)		8.03	
Max Chl Dpth (ft)	2.42	Hydr. Depth (ft)		2.03	
Conv. Total (cfs)	11143.4	Conv. (cfs)		11143.4	
Length Wtd. (ft)	308.64	Wetted Per. (ft)		85.54	
Min Ch El (ft)	2576.93	Shear (lb/sq ft)		1.78	
Alpha	1.00	Stream Power (lb/ft s)		14.33	
Frctn Loss (ft)	4.40	Cum Volume (acre-ft)	2.48	32.32	16.34
C & E Loss (ft)	0.03	Cum SA (acres)	3.40	16.07	13.85

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.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water
surface was used.

CROSS SECTION

RIVER: Fan 6C
REACH: Fan6C-1 RS: 1.93

INPUT
Description: Cross Section 1.93 is located within Legend Trail.

Topography
indicates wash and surrounding undeveloped desert. Cross section composed of Cross Section Data collected by the city of Scottsdale Survey Department.
Aerial shows wash and homes.
T5NR5E Section
6
Q100 = 1,346 cfs
Station Elevation Data num= 19

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9918.73	2575.91	9930.05	2575.2	9940.14	2575.56	9944.67	2575.57	9973.9	2573.14
9990.2	2571.67	9993.89	2569.69	10005.94	2569.88	10029.64	2569.83	10048.13	2571.58
10081.45	2571.61	10086.69	2572.65	10098.42	2572.84	10122.07	2566.63	10144.57	2566.76
10174.59	2572.64	10345.79	2573.46	10346.68	2573.69	10350.26	2573.53		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9918.73	.05	9990.2	.03	10048.13	.05

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9990.2	10048.13	275.13	270.57	276.22	.3	.5

Right Levee Station=10098.42 Elevation= 2574

CROSS SECTION OUTPUT Profile #100-yr 6-hr

			Left OB	Channel	Right OB
E.G. Elev (ft)	2573.66	Element			
Vel Head (ft)	1.01	Wt. n-Val.	0.050	0.035	0.050
W.S. Elev (ft)	2572.65	Reach Len. (ft)	275.13	270.57	276.22
Crit W.S. (ft)	2572.65	Flow Area (sq ft)	5.29	143.82	37.95
E.G. Slope (ft/ft)	0.011912	Area (sq ft)	5.29	143.82	37.95
Q Total (cfs)	1346.00	Flow (cfs)	10.62	1213.77	121.61
Top Width (ft)	107.31	Top Width (ft)	10.83	57.93	38.55
Vel Total (ft/s)	7.20	Avg. Vel. (ft/s)	2.01	8.44	3.20
Max Chl Dpth (ft)	6.02	Hydr. Depth (ft)	0.49	2.48	0.98
Conv. Total (cfs)	12332.4	Conv. (cfs)	97.3	11120.9	1114.2
Length Wtd. (ft)	271.05	Wetted Per. (ft)	10.88	58.51	38.65
Min Ch El (ft)	2569.69	Shear (lb/sq ft)	0.36	1.83	0.73
Alpha	1.26	Stream Power (lb/ft s)	0.73	15.43	2.34
Frctn Loss (ft)	0.77	Cum Volume (acre-ft)	7.67	27.47	26.45
C & E Loss (ft)	0.34	Cum SA (acres)	9.62	15.57	24.39

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 energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
depth, the 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 OUTPUT Profile #Method 1

			Left OB	Channel	Right OB
E.G. Elev (ft)	2574.00	Element			
Vel Head (ft)	1.28	Wt. n-Val.		0.035	
W.S. Elev (ft)	2572.72	Reach Len. (ft)	275.13	270.57	276.22
Crit W.S. (ft)	2572.72	Flow Area (sq ft)		148.19	
E.G. Slope (ft/ft)	0.013925	Area (sq ft)		148.19	
Q Total (cfs)	1346.00	Flow (cfs)		1346.00	
Top Width (ft)	57.93	Top Width (ft)		57.93	
Vel Total (ft/s)	9.08	Avg. Vel. (ft/s)		9.08	
Max Chl Dpth (ft)	3.03	Hydr. Depth (ft)		2.56	
Conv. Total (cfs)	11406.3	Conv. (cfs)		11406.3	
Length Wtd. (ft)	270.59	Wetted Per. (ft)		60.71	
Min Ch El (ft)	2569.69	Shear (lb/sq ft)		2.12	
Alpha	1.00	Stream Power (lb/ft s)		19.28	
Frctn Loss (ft)	0.92	Cum Volume (acre-ft)	2.48	31.20	16.34
C & E Loss (ft)	0.44	Cum SA (acres)	3.40	15.57	13.85

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 energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
depth, the 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: Fan 6C
REACH: Fan6C-1 RS: 1.88

INPUT
Description: Cross Section 1.88 is located upstream of the intersection of Fan 6C and 92nd Place. There are 3-10 X 4 CBC located under 92nd Place. A leeve has been built that does not meet FEMA requirements.

Topography indicates wash and surrounding
undeveloped desert.Cross section composed of Cross Section Data collected by the city of Scottsdale Survey Department.
Aerial
shows wash, homes and golf course.

T5NR5E Section 6
Q100 =
1,346 cfs
Station Elevation Data num= 20

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9750.77	2562.3	9750.85	2562.19	9760.68	2561.27	9780.66	2562.14	9794.79	2564.97
9828.32	2565.37	9880.34	2567.57	9911.26	2567.42	9956.77	2566.4	9974.25	2570.5
9984.93	2570.83	9993.81	2568.19	9994.1	2563.34	10011.27	2563.41	10030.08	2563.64
10031.23	2567.58	10073.27	2569.95	10087.97	2570.37	10089.24	2569.9	10091.2	2569.83

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9750.77	.05	9993.81	.03	10031.23	.05

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9993.81	10031.23	86	86.31	86.52	.3	.5

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
9750.77	9992.99	2570.25	F
10031.23	10091.2	2570.25	F

Left Levee Station= 9984.93 Elevation= 2570.83
Blocked Obstructions num= 1

Sta L	Sta R	Elev
9788.34	9828.32	2571

CROSS SECTION OUTPUT Profile #100-yr 6-hr

E.G. Elev (ft)	2570.77	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.34	Wt. n-Val.	0.050	0.035	0.050
W.S. Elev (ft)	2570.44	Reach Len. (ft)	86.00	86.31	86.52
Crit W.S. (ft)	2566.96	Flow Area (sq ft)	8.48	258.13	75.78
E.G. Slope (ft/ft)	0.001253	Area (sq ft)	8.48	258.13	75.78
Q Total (cfs)	1346.00	Flow (cfs)	9.37	1244.23	92.40
Top Width (ft)	104.94	Top Width (ft)	7.55	37.42	59.97
Vel Total (ft/s)	3.93	Avg. Vel. (ft/s)	1.10	4.82	1.22
Max Chl Dpth (ft)	9.17	Hydr. Depth (ft)	1.12	6.90	1.26
Conv. Total (cfs)	38019.7	Conv. (cfs)	264.7	35145.0	2610.0
Length Wtd. (ft)	86.31	Wetted Per. (ft)	7.88	44.95	60.73
Min Ch El (ft)	2563.34	Shear (lb/sq ft)	0.08	0.45	0.10
Alpha	1.40	Stream Power (lb/ft s)	0.09	2.17	0.12
Frctn Loss (ft)		Cum Volume (acre-ft)	7.63	26.22	26.08

C & E Loss (ft)	Cum SA (acres)	9.57	15.28	24.08

Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid,
energy was used.

CROSS SECTION OUTPUT Profile #Method 1

E.G. Elev (ft)	2570.93	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.40	Wt. n-Val.	0.050	0.035	
W.S. Elev (ft)	2570.53	Reach Len. (ft)	86.00	86.31	86.52
Crit W.S. (ft)	2566.96	Flow Area (sq ft)	8.78	261.78	
E.G. Slope (ft/ft)	0.001497	Area (sq ft)	8.78	261.78	
Q Total (cfs)	1346.00	Flow (cfs)	11.83	1334.17	
Top Width (ft)	43.56	Top Width (ft)	6.14	37.42	
Vel Total (ft/s)	4.97	Avg. Vel. (ft/s)	1.35	5.10	
Max Chl Dpth (ft)	7.19	Hydr. Depth (ft)	1.43	7.00	
Conv. Total (cfs)	34789.6	Conv. (cfs)	305.9	34483.7	
Length Wtd. (ft)	86.31	Wetted Per. (ft)	6.92	47.90	
Min Ch El (ft)	2563.34	Shear (lb/sq ft)	0.12	0.51	
Alpha	1.04	Stream Power (lb/ft s)	0.16	2.60	
Frctn Loss (ft)		Cum Volume (acre-ft)	2.45	29.93	16.34
C & E Loss (ft)		Cum SA (acres)	3.38	15.28	13.85

Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid,
energy was used.

CULVERT

RIVER: Fan 6C
REACH: Fan6C-1 RS: 1.875

INPUT
Description: Box culverts at 92nd Place crossing.
Distance from Upstream XS = 26
Deck/Roadway Width = 24
Weir Coefficient = 2.6
Upstream Deck/Roadway Coordinates
num= 16

Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord
9629.8	2565.89		9656.48	2565.2		9685.19	2563.41	
9714.82	2561.57		9747.01	2560.8		9781.31	2560.81	
9815.89	2561.73		9849.03	2564.42		9876.85	2567.03	
9910.09	2569.14		9953.13	2570.02		9983.15	2570.52	
10010.72	2570.6		10041.76	2570.47		10069.44	2570.32	
10088.88	2570.23							

Upstream Bridge Cross Section Data
Station Elevation Data num= 20

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9750.77	2562.3	9750.85	2562.19	9760.68	2561.27	9780.66	2562.14	9794.79	2564.97
9828.32	2565.37	9880.34	2567.57	9911.26	2567.42	9956.77	2566.4	9974.25	2570.5
9984.93	2570.83	9993.81	2568.19	9994.1	2563.34	10011.27	2563.41	10030.08	2563.64
10031.23	2567.58	10073.27	2569.95	10087.97	2570.37	10089.24	2569.9	10091.2	2569.83

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9750.77	.05	9993.81	.03	10031.23	.05

Bank Sta: Left	Right	Coeff Contr.	Expan.
9993.81	10031.23	.3	.5

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
9750.77	9992.99	2570.25	F
10031.23	10091.2	2570.25	F

Left Levee Station= 9984.93 Elevation= 2570.83
Blocked Obstructions num= 1

```
   Sta L   Sta R    Elev
 9788.34 9828.32    2571

Downstream  Deck/Roadway Coordinates
    num=      13
     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord
 9720.42 2563.41          9746.3 2561.57         9778.09  2560.8
 9808.72 2560.81         9843.19 2561.73         9876.18 2564.42
 9903.94 2567.03         9937.19 2569.14         9980.37 2570.02
 10010.5 2570.52        10038.05  2570.6        10068.97 2570.47
10096.41 2570.32

Downstream Bridge Cross Section Data
Station Elevation Data    num=      19
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
    9745 2562.67 9766.49 2561.37 9792.95 2560.29 9807.73  2560.6 9872.39    2562
 9939.01 2562.66 9961.06 2572.05 9980.26 2571.26 9987.67    2565 9990.58 2562.51
10007.56 2562.5110026.57 2562.5510026.71    256510026.76 2565.7110041.24 2565.46
10048.77 2565.9210059.58 2564.1210078.48 2563.7810078.63 2563.86

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
    9745     .05 9987.67    .03510026.71     .05

Bank Sta: Left   Right    Coeff Contr.   Expan.
       9987.6710026.71             .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
    9745 9983.52 2570.04       F
10035.1210078.63 2570.04       F
Left Levee      Station= 9980.26      Elevation= 2571.26
Right Levee     Station=10048.77      Elevation=  2566.5
Blocked Obstructions     num=       3
   Sta L   Sta R    Elev   Sta L   Sta R    Elev   Sta L   Sta R    Elev
    9745    9745    2571 9807.73 9899.73    257110078.6310078.63    2571

Upstream Embankment side slope              =       0 horiz. to 1.0 vertical
Downstream Embankment side slope            =       0 horiz. to 1.0 vertical
Maximum allowable submergence for weir flow =     .95
Elevation at which weir flow begins         =
Energy head used in spillway design         =
Spillway height used in design              =
Weir crest shape                            = Broad Crested

Number of Culverts =  1

Culvert Name     Shape      Rise    Span
Culvert #1          Box       4      10
FHWA Chart # 8 - flared wingwalls
FHWA Scale # 1 - Wingwall flared 30 to 75 deg.
Solution Criteria = Highest U.S. EG
Culvert Upstrm Dist  Length    Top n  Bottom n  Depth Blocked  Entrance Loss Coef   Exit Loss Coef
                  5      75     .013     .013        0                  .4                 1
Number of Barrels =  3
Upstream   Elevation =  2563.3
Centerline Stations
    Sta.    Sta.    Sta.
 9999.4910010.4910021.49
Downstream Elevation =  2562.59
Centerline Stations
    Sta.    Sta.    Sta.
 9998.3210009.3210020.32

CROSS SECTION


RIVER: Fan 6C
REACH: Fan6C-1            RS: 1.87

INPUT
Description: Cross Section 1.87 is located upstream of the intersection of Fan
```

6C and 92nd Place. There are 3-10 X 4 CBC located under 92nd Place. A leeve has been built that does not meet FEMA requirements.

Topography indicates wash and surrounding
undeveloped desert.Cross section composed of Cross Section Data collected by the city of Scottsdale Survey Department.

Aerial
shows wash, homes and golf course.

T5NR5E Section 6
Q100 =
1,346 cfs

```
Station Elevation Data    num=      19
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
    9745 2562.67 9766.49 2561.37 9792.95 2560.29 9807.73  2560.6 9872.39    2562
 9939.01 2562.66 9961.06 2572.05 9980.26 2571.26 9987.67    2565 9990.58 2562.51
10007.56 2562.5110026.57 2562.5510026.71    256510026.76 2565.7110041.24 2565.46
10048.77 2565.9210059.58 2564.1210078.48 2563.7810078.63 2563.86

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
    9745     .05 9987.67    .03510026.71     .05

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9987.6710026.71              209  208.61  210.57             .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
    9745 9983.52 2570.04       F
10035.1210078.63 2570.04       F
Left Levee      Station= 9980.26      Elevation= 2571.26
Right Levee     Station=10048.77      Elevation=  2566.5
Blocked Obstructions     num=       3
   Sta L   Sta R    Elev   Sta L   Sta R    Elev   Sta L   Sta R    Elev
    9745    9745    2571 9807.73 9899.73    257110078.6310078.63    2571

CROSS SECTION OUTPUT  Profile #100-yr 6-hr
```

			Left OB	Channel	Right OB
E.G. Elev (ft)	2567.59	Element			
Vel Head (ft)	1.55	Wt. n-Val.	0.050	0.035	0.050
W.S. Elev (ft)	2566.04	Reach Len. (ft)	209.00	208.61	210.57
Crit W.S. (ft)	2566.04	Flow Area (sq ft)	0.64	133.50	3.37
E.G. Slope (ft/ft)	0.012051	Area (sq ft)	0.64	133.50	9.18
Q Total (cfs)	1346.00	Flow (cfs)	1.12	1339.21	5.68
Top Width (ft)	62.33	Top Width (ft)	1.23	39.04	22.06
Vel Total (ft/s)	9.79	Avg. Vel. (ft/s)	1.76	10.03	1.69
Max Chl Dpth (ft)	5.75	Hydr. Depth (ft)	0.52	3.42	0.40
Conv. Total (cfs)	12261.3	Conv. (cfs)	10.2	12199.4	51.7
Length Wtd. (ft)	208.69	Wetted Per. (ft)	1.61	42.27	9.07
Min Ch El (ft)	2562.51	Shear (lb/sq ft)	0.30	2.38	0.28
Alpha	1.05	Stream Power (lb/ft s)	0.52	23.83	0.47
Frctn Loss (ft)	2.77	Cum Volume (acre-ft)	7.62	25.83	26.00
C & E Loss (ft)	0.42	Cum SA (acres)	9.56	15.20	24.00

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 velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
depth, the calculated water surface came back below critical depth. This indicates that there is
not a valid subcritical answer. The program defaulted to critical depth.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid,
energy was used.

CROSS SECTION OUTPUT Profile #Method 1

E.G. Elev (ft)	2567.61	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.66	Wt. n-Val.		0.035	
W.S. Elev (ft)	2565.95	Reach Len. (ft)	209.00	208.61	210.57
Crit W.S. (ft)	2565.95	Flow Area (sq ft)		130.29	
E.G. Slope (ft/ft)	0.014004	Area (sq ft)		130.29	
Q Total (cfs)	1346.00	Flow (cfs)		1346.00	
Top Width (ft)	39.04	Top Width (ft)		39.04	
Vel Total (ft/s)	10.33	Avg. Vel. (ft/s)		10.33	
Max Chl Dpth (ft)	3.44	Hydr. Depth (ft)		3.34	
Conv. Total (cfs)	11374.3	Conv. (cfs)		11374.3	
Length Wtd. (ft)	208.61	Wetted Per. (ft)		44.18	
Min Ch El (ft)	2562.51	Shear (lb/sq ft)		2.58	
Alpha	1.00	Stream Power (lb/ft s)		26.63	
Frctn Loss (ft)	2.91	Cum Volume (acre-ft)	2.44	29.54	16.34
C & E Loss (ft)	0.18	Cum SA (acres)	3.37	15.20	13.85

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.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid,
energy was used.

CROSS SECTION

RIVER: Fan 6C
REACH: Fan6C-1 RS: 1.83

INPUT
Description: Cross Section 1.83 is located at the west boundary of Legend Trail. The blocked obstruction indicates the finish floor of an existing home.

Topography and Aerial indicate wash and surrounding undeveloped desert. Cross section composed of Cross Section Data collected by the city of Scottsdale Survey Department.
T5NR5E Section 6
Q100 = 1,369 cfs
Station Elevation Data num= 26

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9770.15	2558.24	9770.15	2558.03	9782.35	2558.07	9807.78	2558.35	9868.65	2559.8
9909.19	2560.2	9915.48	2559.43	9925.2	2558.71	9928.46	2559.73	9952.74	2558.89
9967.32	2559.56	9983.16	2559.97	9984.85	2557.64	9990.81	2557.58	9992.69	2559.52
10003.8	2559.111	0008.99	2558.191	0020.87	2558.131	0032.43	2558.71	0041.13	2558.59
10049.58	2559.51	0066.94	2561.371	0112.67	2563.081	0151.35	2561.21	0181.81	2562.34
10221.89	2561.09								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9770.15	.05	9992.69	.035	10049.58	.05

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9992.69	10049.58	208.69	211.59	214.56	.1	.3

Left Levee Station= 9909.19 Elevation= 2561
Blocked Obstructions num= 1

Sta L	Sta R	Elev
9770.15	9770.15	2562.1

CROSS SECTION OUTPUT Profile #100-yr 6-hr

E.G. Elev (ft)	2561.32	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.72	Wt. n-Val.	0.050	0.035	0.050
W.S. Elev (ft)	2560.60	Reach Len. (ft)	208.69	211.59	214.56
Crit W.S. (ft)	2560.60	Flow Area (sq ft)	113.70	108.85	5.63
E.G. Slope (ft/ft)	0.014712	Area (sq ft)	113.70	108.85	5.63
Q Total (cfs)	1369.00	Flow (cfs)	493.05	862.37	13.57
Top Width (ft)	150.61	Top Width (ft)	83.50	56.89	10.22
Vel Total (ft/s)	6.00	Avg. Vel. (ft/s)	4.34	7.92	2.41
Max Chl Dpth (ft)	3.02	Hydr. Depth (ft)	1.36	1.91	0.55
Conv. Total (cfs)	11286.7	Conv. (cfs)	4065.0	7109.8	111.9
Length Wtd. (ft)	211.70	Wetted Per. (ft)	86.18	57.04	10.28
Min Ch El (ft)	2558.13	Shear (lb/sq ft)	1.21	1.75	0.50
Alpha	1.29	Stream Power (lb/ft s)	5.25	13.89	1.21
Frctn Loss (ft)	3.93	Cum Volume (acre-ft)	7.35	25.25	25.96
C & E Loss (ft)	0.12	Cum SA (acres)	9.35	14.97	23.92

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.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water
surface was used.

CROSS SECTION OUTPUT Profile #Method 1

E.G. Elev (ft)	2562.62	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.30	Wt. n-Val.		0.035	
W.S. Elev (ft)	2561.32	Reach Len. (ft)	208.69	211.59	214.56
Crit W.S. (ft)	2561.32	Flow Area (sq ft)		149.80	
E.G. Slope (ft/ft)	0.013884	Area (sq ft)		149.80	
Q Total (cfs)	1369.00	Flow (cfs)		1369.00	
Top Width (ft)	56.89	Top Width (ft)		56.89	
Vel Total (ft/s)	9.14	Avg. Vel. (ft/s)		9.14	
Max Chl Dpth (ft)	3.19	Hydr. Depth (ft)		2.63	
Conv. Total (cfs)	11618.5	Conv. (cfs)		11618.5	
Length Wtd. (ft)	211.59	Wetted Per. (ft)		60.66	
Min Ch El (ft)	2558.13	Shear (lb/sq ft)		2.14	
Alpha	1.00	Stream Power (lb/ft s)		19.56	
Frctn Loss (ft)	3.36	Cum Volume (acre-ft)	2.44	28.87	16.34
C & E Loss (ft)	0.12	Cum SA (acres)	3.37	14.97	13.85

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.

CROSS SECTION

RIVER: Fan 6C
REACH: Fan6C-1 RS: 1.79

INPUT
Description: Topography and aerial show wash and surrounding undeveloped
desert.

T5NR5E Section 6
Q100 = 1,369 cfs

Station Elevation Data num= 29

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9671.45	2561.04	9725.78	2557.96	9780.67	2555.8	9831.89	2553.81	9837.61	2554.16
9858.94	2555.06	9886.24	2554.6	9898.53	2555.18	9913.79	2554.14	9942.17	2554.93
9964.28	2555.54	9972.27	2555.46	9983.34	2555.51	9985.87	2555	9994.11	2553.34
10007.71	2553.41	10022.76	2554.41	10032.2	2553.96	10091.1	2555	10101.86	2555.19
10104.21	2554.24	10111.48	2554.32	10119.36	2554.83	10147.62	2554.33	10221.34	2552.78
10260.5	2557.84	10284.57	2554.15	10308.41	2554.37	10356.75	2558.36		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9671.45	.058	9985.87	.038	10091.1	.058

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9985.87	10091.1	292.33	286.41	284.13	.1	.3

CROSS SECTION OUTPUT Profile #100-yr 6-hr

E.G. Elev (ft)	2555.36	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.31	Wt. n-Val.	0.058	0.038	0.058
W.S. Elev (ft)	2555.05	Reach Len. (ft)	292.33	286.41	284.13
Crit W.S. (ft)	2554.96	Flow Area (sq ft)	63.94	88.60	177.37
E.G. Slope (ft/ft)	0.024217	Area (sq ft)	63.94	88.60	177.37
Q Total (cfs)	1369.00	Flow (cfs)	160.04	480.07	728.89
Top Width (ft)	423.16	Top Width (ft)	140.72	105.23	177.21
Vel Total (ft/s)	4.15	Avg. Vel. (ft/s)	2.50	5.42	4.11
Max Chl Dpth (ft)	2.27	Hydr. Depth (ft)	0.45	0.84	1.00
Conv. Total (cfs)	8797.1	Conv. (cfs)	1028.4	3084.9	4683.8
Length Wtd. (ft)	286.17	Wetted Per. (ft)	140.83	105.45	177.65
Min Ch El (ft)	2553.34	Shear (lb/sq ft)	0.69	1.27	1.51
Alpha	1.16	Stream Power (lb/ft s)	1.72	6.88	6.20
Frctn Loss (ft)	5.45	Cum Volume (acre-ft)	6.92	24.77	25.51
C & E Loss (ft)	0.01	Cum SA (acres)	8.82	14.58	23.46

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 OUTPUT Profile #Method 1

E.G. Elev (ft)	2556.81	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.88	Wt. n-Val.		0.038	
W.S. Elev (ft)	2555.93	Reach Len. (ft)	292.33	286.41	284.13
Crit W.S. (ft)	2555.93	Flow Area (sq ft)		181.75	
E.G. Slope (ft/ft)	0.018378	Area (sq ft)		181.75	
Q Total (cfs)	1369.00	Flow (cfs)		1369.00	
Top Width (ft)	105.23	Top Width (ft)		105.23	
Vel Total (ft/s)	7.53	Avg. Vel. (ft/s)		7.53	
Max Chl Dpth (ft)	2.59	Hydr. Depth (ft)		1.73	
Conv. Total (cfs)	10098.5	Conv. (cfs)		10098.5	
Length Wtd. (ft)	286.41	Wetted Per. (ft)		107.31	
Min Ch El (ft)	2553.34	Shear (lb/sq ft)		1.94	
Alpha	1.00	Stream Power (lb/ft s)		14.64	
Frctn Loss (ft)	5.30	Cum Volume (acre-ft)	2.44	28.06	16.34
C & E Loss (ft)	0.02	Cum SA (acres)	3.37	14.58	13.85

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.

CROSS SECTION

RIVER: Fan 6C
REACH: Fan6C-1 RS: 1.73

INPUT
Description: Topography and aerial show wash and surrounding undeveloped desert.
T5NR5E Section 6
Q100 = 1,369 cfs
Station Elevation Data num= 21

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9730.63	2553.12	9794.63	2548.49	9849.48	2549.25	9861.8	2549.62	9866.55	2548.29
9877.77	2548.95	9910.96	2548.99	9946.48	2548.7	9997.5	2548.97	10000	2548.03
10009.6	2547.38	10020.19	2547.04	10024.93	2548.82	10067.31	2550.79	10087.98	2550.7
10134.05	2547.88	10135.71	2547.15	10148.72	2547.21	10152.06	2547.81	10205.34	2548.82
10272.21	2552.32								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9730.63	.058	9910.96	.038	10024.93	.058

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9910.96	10024.93	493.35	501.1	502.48	.1	.3

Left Levee Station= 9861.8 Elevation= 2549.62

CROSS SECTION OUTPUT Profile #100-yr 6-hr

			Left OB	Channel	Right OB
E.G. Elev (ft)	2549.89	Element			
Vel Head (ft)	0.27	Wt. n-Val.	0.058	0.038	0.058
W.S. Elev (ft)	2549.62	Reach Len. (ft)	493.35	501.10	502.48
Crit W.S. (ft)	2549.62	Flow Area (sq ft)	88.27	122.37	149.62
E.G. Slope (ft/ft)	0.015375	Area (sq ft)	88.27	122.37	149.62
Q Total (cfs)	1369.00	Flow (cfs)	214.21	620.21	534.57
Top Width (ft)	378.17	Top Width (ft)	131.96	113.97	132.24
Vel Total (ft/s)	3.80	Avg. Vel. (ft/s)	2.43	5.07	3.57
Max Chl Dpth (ft)	2.58	Hydr. Depth (ft)	0.67	1.07	1.13
Conv. Total (cfs)	11040.8	Conv. (cfs)	1727.6	5001.9	4311.2
Length Wtd. (ft)		Wetted Per. (ft)	132.21	114.49	132.55
Min Ch El (ft)	2547.04	Shear (lb/sq ft)	0.64	1.03	1.08
Alpha	1.21	Stream Power (lb/ft s)	1.56	5.20	3.87
Frctn Loss (ft)		Cum Volume (acre-ft)	6.41	24.08	24.45
C & E Loss (ft)		Cum SA (acres)	7.90	13.86	22.45

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: Divided flow computed for this cross-section.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.

CROSS SECTION OUTPUT Profile #Method 1

			Left OB	Channel	Right OB
E.G. Elev (ft)	2551.02	Element			
Vel Head (ft)	0.83	Wt. n-Val.		0.038	
W.S. Elev (ft)	2550.19	Reach Len. (ft)	493.35	501.10	502.48
Crit W.S. (ft)	2550.19	Flow Area (sq ft)		187.39	
E.G. Slope (ft/ft)	0.018640	Area (sq ft)		187.39	
Q Total (cfs)	1369.00	Flow (cfs)		1369.00	
Top Width (ft)	113.97	Top Width (ft)		113.97	
Vel Total (ft/s)	7.31	Avg. Vel. (ft/s)		7.31	
Max Chl Dpth (ft)	3.15	Hydr. Depth (ft)		1.64	
Conv. Total (cfs)	10027.3	Conv. (cfs)		10027.3	
Length Wtd. (ft)	501.10	Wetted Per. (ft)		117.07	
Min Ch El (ft)	2547.04	Shear (lb/sq ft)		1.86	

Alpha	1.00	Stream Power (lb/ft s)		13.61	
Frctn Loss (ft)	7.75	Cum Volume (acre-ft)	2.44	26.85	16.34
C & E Loss (ft)	0.02	Cum SA (acres)	3.37	13.86	13.85

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.

CROSS SECTION

RIVER: Fan 6C
REACH: Fan6C-1 RS: 1.64

INPUT
Description: Topography and aerial show wash and surrounding undeveloped
desert.
T5NR5E Section 6
Q100 = 1,369 cfs
Station Elevation Data num= 16

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9845.93	2542	9860.84	2540	9886.18	2538	9918.79	2538	9926.06	2538.41
9953.47	2538	9965.35	2538.45	9980.06	2538	10000	2537.53	10013.38	2538
10059.75	2539.35	10093.41	2538.71	10135.77	2539.71	10214.1	2538.31	10232.59	2540
10253.82	2542								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9845.93	.058	9965.35	.038	10059.75	.058

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9965.35	10059.75	440.46	440.77	436.17	.1	.3

Right Levee Station=10136.04 Elevation= 2539.71

CROSS SECTION OUTPUT Profile #100-yr 6-hr

			Left OB	Channel	Right OB
E.G. Elev (ft)	2540.00	Element			
Vel Head (ft)	0.52	Wt. n-Val.	0.058	0.038	0.058
W.S. Elev (ft)	2539.48	Reach Len. (ft)	440.46	440.77	436.17
Crit W.S. (ft)	2539.48	Flow Area (sq ft)	121.15	112.81	27.62
E.G. Slope (ft/ft)	0.023467	Area (sq ft)	121.15	112.81	27.62
Q Total (cfs)	1369.00	Flow (cfs)	547.69	760.81	60.51
Top Width (ft)	258.53	Top Width (ft)	97.91	94.40	66.23
Vel Total (ft/s)	5.23	Avg. Vel. (ft/s)	4.52	6.74	2.19
Max Chl Dpth (ft)	1.95	Hydr. Depth (ft)	1.24	1.20	0.42
Conv. Total (cfs)	8936.6	Conv. (cfs)	3575.2	4966.4	395.0
Length Wtd. (ft)		Wetted Per. (ft)	97.99	94.44	66.24
Min Ch El (ft)	2537.53	Shear (lb/sq ft)	1.81	1.75	0.61
Alpha	1.23	Stream Power (lb/ft s)	8.19	11.80	1.34
Frctn Loss (ft)		Cum Volume (acre-ft)	5.22	22.72	23.43
C & E Loss (ft)		Cum SA (acres)	6.60	12.66	21.31

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.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water
surface was used.

CROSS SECTION OUTPUT Profile #Method 1

E.G. Elev (ft)	2541.11	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.77	Wt. n-Val.		0.038	
W.S. Elev (ft)	2540.34	Reach Len. (ft)	440.46	440.77	436.17
Crit W.S. (ft)	2540.17	Flow Area (sq ft)		193.80	
E.G. Slope (ft/ft)	0.013025	Area (sq ft)		193.80	
Q Total (cfs)	1369.00	Flow (cfs)		1369.00	
Top Width (ft)	94.40	Top Width (ft)		94.40	
Vel Total (ft/s)	7.06	Avg. Vel. (ft/s)		7.06	
Max Chl Dpth (ft)	2.81	Hydr. Depth (ft)		2.05	
Conv. Total (cfs)	11995.6	Conv. (cfs)		11995.6	
Length Wtd. (ft)	439.67	Wetted Per. (ft)		97.31	
Min Ch El (ft)	2537.53	Shear (lb/sq ft)		1.62	
Alpha	1.00	Stream Power (lb/ft s)		11.44	
Frctn Loss (ft)	7.68	Cum Volume (acre-ft)	2.44	24.66	16.34
C & E Loss (ft)	0.03	Cum SA (acres)	3.37	12.66	13.85

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: Fan 6C
REACH: Fan6C-1 RS: 1.55

INPUT
Description: Topography and aerial show wash and surrounding undeveloped desert.
T5NR5E Section 6 and Section 7
Q100 = 1,369 cfs
Station Elevation Data num= 17

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9908.19	2536	9934.09	2534	9959.31	2532	9977.86	2531	9996.41	2530
10001.52	2530	10014.69	2530.3	10036.83	2530	10050.5	2530	10101.29	2530.42
10121.66	2531.2	10189.11	2530	10193.84	2528	10194.45	2528	10201.55	2530
10249.76	2532	10309.18	2534						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9908.19	.058	9977.86	.038	10014.69	.058

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9977.86	10014.69	318.03	321.74	335.63	.1	.3

CROSS SECTION OUTPUT Profile #100-yr 6-hr

E.G. Elev (ft)	2531.98	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.27	Wt. n-Val.	0.058	0.038	0.058
W.S. Elev (ft)	2531.71	Reach Len. (ft)	318.03	321.74	335.63
Crit W.S. (ft)		Flow Area (sq ft)	4.63	51.59	296.03
E.G. Slope (ft/ft)	0.013952	Area (sq ft)	4.63	51.59	296.03
Q Total (cfs)	1369.00	Flow (cfs)	6.99	298.17	1063.84
Top Width (ft)	277.92	Top Width (ft)	13.10	36.83	227.99
Vel Total (ft/s)	3.89	Avg. Vel. (ft/s)	1.51	5.78	3.59
Max Chl Dpth (ft)	3.71	Hydr. Depth (ft)	0.35	1.40	1.30
Conv. Total (cfs)	11590.1	Conv. (cfs)	59.2	2524.3	9006.6
Length Wtd. (ft)	327.12	Wetted Per. (ft)	13.12	36.86	228.74
Min Ch El (ft)	2530.00	Shear (lb/sq ft)	0.31	1.22	1.13
Alpha	1.15	Stream Power (lb/ft s)	0.46	7.05	4.05
Frctn Loss (ft)	4.54	Cum Volume (acre-ft)	4.59	21.89	21.80
C & E Loss (ft)	0.06	Cum SA (acres)	6.04	11.99	19.83

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The energy loss was 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 OUTPUT Profile #Method 1

E.G. Elev (ft)	2533.40	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.07	Wt. n-Val.		0.038	0.058
W.S. Elev (ft)	2532.33	Reach Len. (ft)	318.03	321.74	335.63
Crit W.S. (ft)	2532.31	Flow Area (sq ft)		74.46	98.46
E.G. Slope (ft/ft)	0.024611	Area (sq ft)		74.46	98.46
Q Total (cfs)	1369.00	Flow (cfs)		712.87	656.13
Top Width (ft)	80.68	Top Width (ft)		36.83	43.85
Vel Total (ft/s)	7.92	Avg. Vel. (ft/s)		9.57	6.66
Max Chl Dpth (ft)	2.33	Hydr. Depth (ft)		2.02	2.25
Conv. Total (cfs)	8726.5	Conv. (cfs)		4544.1	4182.4
Length Wtd. (ft)	325.06	Wetted Per. (ft)		38.19	46.11
Min Ch El (ft)	2530.00	Shear (lb/sq ft)		3.00	3.28
Alpha	1.10	Stream Power (lb/ft s)		28.68	21.86
Frctn Loss (ft)	5.97	Cum Volume (acre-ft)	2.44	23.30	15.85
C & E Loss (ft)	0.06	Cum SA (acres)	3.37	12.00	13.63

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: Fan 6C
REACH: Fan6C-1 RS: 1.49

INPUT
Description: Topography and aerial show wash and surrounding undeveloped desert.
T5NR5E Section 7
Q100 = 1,369 cfs
Station Elevation Data num= 13

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9669.26	2530	9670.42	2530	9718.7	2528	9782.25	2526	9842.75	2526
9897.43	2526.73	9972.15	2526	9993.86	2524	10000	2523.15	10027.62	2524
10059.02	2526	10089.49	2528	10115.94	2530				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9669.26	.058	9972.15	.038	10059.02	.058

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9972.15	10059.02	276.51	275.98	275.11	.1	.3

Left Levee Station= 9897.43 Elevation= 2526.73

CROSS SECTION OUTPUT Profile #100-yr 6-hr

E.G. Elev (ft)	2527.38	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.85	Wt. n-Val.	0.058	0.038	0.058
W.S. Elev (ft)	2526.53	Reach Len. (ft)	276.51	275.98	275.11
Crit W.S. (ft)	2526.53	Flow Area (sq ft)	14.10	180.58	2.10
E.G. Slope (ft/ft)	0.013806	Area (sq ft)	14.10	180.58	2.10
Q Total (cfs)	1369.00	Flow (cfs)	17.40	1349.01	2.59
Top Width (ft)	148.59	Top Width (ft)	53.73	86.87	8.00
Vel Total (ft/s)	6.96	Avg. Vel. (ft/s)	1.23	7.47	1.23
Max Chl Dpth (ft)	3.38	Hydr. Depth (ft)	0.26	2.08	0.26
Conv. Total (cfs)	11651.1	Conv. (cfs)	148.1	11481.0	22.0
Length Wtd. (ft)	275.98	Wetted Per. (ft)	53.73	87.10	8.01
Min Ch El (ft)	2523.15	Shear (lb/sq ft)	0.23	1.79	0.23
Alpha	1.14	Stream Power (lb/ft s)	0.28	13.35	0.28
Frctn Loss (ft)	4.24	Cum Volume (acre-ft)	4.52	21.04	20.66
C & E Loss (ft)	0.03	Cum SA (acres)	5.80	11.54	18.92

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.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water
surface was used.

CROSS SECTION OUTPUT Profile #Method 1

E.G. Elev (ft)	2527.38	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.87	Wt. n-Val.	0.058	0.038	0.058
W.S. Elev (ft)	2526.51	Reach Len. (ft)	276.51	275.98	275.11
Crit W.S. (ft)	2526.51	Flow Area (sq ft)	11.24	179.01	1.71
E.G. Slope (ft/ft)	0.014224	Area (sq ft)	11.24	179.01	1.71
Q Total (cfs)	1369.00	Flow (cfs)	16.99	1349.52	2.50
Top Width (ft)	124.00	Top Width (ft)	32.15	86.87	4.98
Vel Total (ft/s)	7.13	Avg. Vel. (ft/s)	1.51	7.54	1.46
Max Chl Dpth (ft)	3.36	Hydr. Depth (ft)	0.35	2.06	0.34
Conv. Total (cfs)	11478.5	Conv. (cfs)	142.4	11315.2	21.0
Length Wtd. (ft)	275.98	Wetted Per. (ft)	32.34	87.10	5.17
Min Ch El (ft)	2523.15	Shear (lb/sq ft)	0.31	1.83	0.29
Alpha	1.10	Stream Power (lb/ft s)	0.47	13.76	0.43
Frctn Loss (ft)	4.45	Cum Volume (acre-ft)	2.40	22.36	15.46
C & E Loss (ft)	0.02	Cum SA (acres)	3.25	11.54	13.44

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 energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
depth, the 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: Fan 6C
REACH: Fan6C-1 RS: 1.44

INPUT
Description: Topography and aerial show wash and surrounding undeveloped
desert.
T5NR5E Section 7
Q100 = 1,369 cfs
Station Elevation Data num= 22

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9495.54	2530	9512.63	2528	9528.99	2526	9546.71	2524	9568.03	2522
9573.45	2520	9577.91	2520	9658.47	2522	9721.62	2522	9798.39	2520
9811.86	2520	9838.77	2522	9884.73	2522	9912.18	2521	9939.62	2520
9964.29	2520	9978.85	2520	10000	2518.04	10017.79	2520	10031.69	2521
10045.59	2522	10074.84	2524						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9495.54	.058	9912.18	.038	10031.69	.058

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9912.18	10031.69	262.83	262.24	261.68	.1	.3

Left Levee Station= 9884.73 Elevation= 2522

CROSS SECTION OUTPUT Profile #100-yr 6-hr

E.G. Elev (ft)	2522.24	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.77	Wt. n-Val.	0.058	0.038	0.058
W.S. Elev (ft)	2521.47	Reach Len. (ft)	262.83	262.24	261.68
Crit W.S. (ft)	2521.47	Flow Area (sq ft)	3.04	193.23	1.54
E.G. Slope (ft/ft)	0.017200	Area (sq ft)	3.04	193.23	1.54
Q Total (cfs)	1369.00	Flow (cfs)	3.89	1363.15	1.97
Top Width (ft)	138.96	Top Width (ft)	12.91	119.51	6.54
Vel Total (ft/s)	6.92	Avg. Vel. (ft/s)	1.28	7.05	1.28
Max Chl Dpth (ft)	3.43	Hydr. Depth (ft)	0.24	1.62	0.24
Conv. Total (cfs)	10438.4	Conv. (cfs)	29.6	10393.8	15.0
Length Wtd. (ft)	262.15	Wetted Per. (ft)	12.92	119.76	6.56
Min Ch El (ft)	2518.04	Shear (lb/sq ft)	0.25	1.73	0.25
Alpha	1.03	Stream Power (lb/ft s)	0.32	12.22	0.32
Frctn Loss (ft)	4.31	Cum Volume (acre-ft)	4.47	19.85	20.64
C & E Loss (ft)	0.08	Cum SA (acres)	5.58	10.88	18.88

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 energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
depth, the 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 OUTPUT Profile #Method 1

E.G. Elev (ft)	2522.25	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.80	Wt. n-Val.		0.038	
W.S. Elev (ft)	2521.45	Reach Len. (ft)	262.83	262.24	261.68
Crit W.S. (ft)	2521.45	Flow Area (sq ft)		190.40	
E.G. Slope (ft/ft)	0.018405	Area (sq ft)		190.40	
Q Total (cfs)	1369.00	Flow (cfs)		1369.00	
Top Width (ft)	119.51	Top Width (ft)		119.51	
Vel Total (ft/s)	7.19	Avg. Vel. (ft/s)		7.19	
Max Chl Dpth (ft)	3.41	Hydr. Depth (ft)		1.59	
Conv. Total (cfs)	10091.1	Conv. (cfs)		10091.1	
Length Wtd. (ft)	262.24	Wetted Per. (ft)		120.66	
Min Ch El (ft)	2518.04	Shear (lb/sq ft)		1.81	
Alpha	1.00	Stream Power (lb/ft s)		13.04	
Frctn Loss (ft)	4.73	Cum Volume (acre-ft)	2.37	21.19	15.46
C & E Loss (ft)	0.02	Cum SA (acres)	3.15	10.88	13.43

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

CROSS SECTION

RIVER: Fan 6C
REACH: Fan6C-1 RS: 1.39

INPUT
Description: Topography and aerial show wash and surrounding undeveloped desert.
T5NR5E Section 7
Q100 = 1,369 cfs
Station Elevation Data num= 21

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9582.56	2520	9601.02	2518	9627.49	2516	9646.2	2514	9648.31	2514
9665.8	2516	9707.19	2516	9719.34	2514	9720.95	2514	9742.12	2516
9927.44	2516	9957.32	2515	9987.19	2514	10000	2513.65	10009.26	2514
10040.92	2515.04	10063.05	2514	10088.05	2514	10137.59	2516	10165.82	2518
10182.6	2520								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9582.56	.058	9957.32	.038	10040.92	.058

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9957.32	10040.92	314.47	311.34	309.71	.1	.3

Left Levee Station= 9927.44 Elevation= 2516

CROSS SECTION OUTPUT Profile #100-yr 6-hr

E.G. Elev (ft)	2516.42	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.52	Wt. n-Val.	0.058	0.038	0.058
W.S. Elev (ft)	2515.90	Reach Len. (ft)	314.47	311.34	309.71
Crit W.S. (ft)	2515.75	Flow Area (sq ft)	12.20	131.60	123.08
E.G. Slope (ft/ft)	0.015745	Area (sq ft)	12.20	131.60	123.08
Q Total (cfs)	1369.00	Flow (cfs)	23.08	873.49	472.43
Top Width (ft)	204.88	Top Width (ft)	27.00	83.60	94.28
Vel Total (ft/s)	5.13	Avg. Vel. (ft/s)	1.89	6.64	3.84
Max Chl Dpth (ft)	2.25	Hydr. Depth (ft)	0.45	1.57	1.31
Conv. Total (cfs)	10910.2	Conv. (cfs)	183.9	6961.2	3765.0
Length Wtd. (ft)	311.35	Wetted Per. (ft)	27.01	83.64	94.34
Min Ch El (ft)	2513.65	Shear (lb/sq ft)	0.44	1.55	1.28
Alpha	1.26	Stream Power (lb/ft s)	0.84	10.27	4.92
Frctn Loss (ft)	4.95	Cum Volume (acre-ft)	4.42	18.87	20.27
C & E Loss (ft)	0.00	Cum SA (acres)	5.46	10.27	18.58

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.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.

CROSS SECTION OUTPUT Profile #Method 1

E.G. Elev (ft)	2517.37	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.03	Wt. n-Val.		0.038	
W.S. Elev (ft)	2516.35	Reach Len. (ft)	314.47	311.34	309.71
Crit W.S. (ft)	2516.35	Flow Area (sq ft)		168.48	
E.G. Slope (ft/ft)	0.017695	Area (sq ft)		168.48	
Q Total (cfs)	1369.00	Flow (cfs)		1369.00	
Top Width (ft)	83.60	Top Width (ft)		83.60	
Vel Total (ft/s)	8.13	Avg. Vel. (ft/s)		8.13	
Max Chl Dpth (ft)	2.69	Hydr. Depth (ft)		2.02	
Conv. Total (cfs)	10291.6	Conv. (cfs)		10291.6	
Length Wtd. (ft)	311.34	Wetted Per. (ft)		86.29	
Min Ch El (ft)	2513.65	Shear (lb/sq ft)		2.16	
Alpha	1.00	Stream Power (lb/ft s)		17.53	
Frctn Loss (ft)	5.11	Cum Volume (acre-ft)	2.37	20.11	15.46
C & E Loss (ft)	0.08	Cum SA (acres)	3.15	10.27	13.43

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.

CROSS SECTION

RIVER: Fan 6C
REACH: Fan6C-1 RS: 1.33

INPUT
Description: Topography and aerial show wash and surrounding undeveloped
desert.
T5NR5E Section 7
Q100 = 1,369 cfs
Station Elevation Data num= 15

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9649.91	2516	9661.2	2514	9672.18	2512	9684.5	2510	9715	2510
9743.84	2510	9761.55	2510	9788.42	2511.07	9836.37	2510	9908.65	2509.74
9980.92	2509.47	10000	2508.25	10017.31	2510	10107.6	2512	10130.72	2514

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9649.91	.063	9908.65	.038	10017.31	.063

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9908.65	10017.31	370.36	371.12	368.51	.1	.3

Left Levee Station= 9788.42 Elevation= 2511.07

CROSS SECTION OUTPUT Profile #100-yr 6-hr

E.G. Elev (ft)	2511.47	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.55	Wt. n-Val.	0.063	0.038	0.063
W.S. Elev (ft)	2510.92	Reach Len. (ft)	370.36	371.12	368.51
Crit W.S. (ft)	2510.92	Flow Area (sq ft)	94.79	165.35	19.08
E.G. Slope (ft/ft)	0.016073	Area (sq ft)	94.79	165.35	19.08
Q Total (cfs)	1369.00	Flow (cfs)	251.40	1083.62	33.98
Top Width (ft)	263.65	Top Width (ft)	113.48	108.66	41.51
Vel Total (ft/s)	4.90	Avg. Vel. (ft/s)	2.65	6.55	1.78
Max Chl Dpth (ft)	2.67	Hydr. Depth (ft)	0.84	1.52	0.46
Conv. Total (cfs)	10798.4	Conv. (cfs)	1983.0	8547.4	268.0
Length Wtd. (ft)	370.65	Wetted Per. (ft)	113.49	108.79	41.52
Min Ch El (ft)	2508.25	Shear (lb/sq ft)	0.84	1.53	0.46
Alpha	1.47	Stream Power (lb/ft s)	2.22	9.99	0.82
Frctn Loss (ft)	4.56	Cum Volume (acre-ft)	4.03	17.81	19.76
C & E Loss (ft)	0.08	Cum SA (acres)	4.96	9.58	18.09

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

CROSS SECTION OUTPUT Profile #Method 1

E.G. Elev (ft)	2511.96	Element	Left OB	Channel	Right OB

Vel Head (ft)	0.76	Wt. n-Val.		0.038	
W.S. Elev (ft)	2511.19	Reach Len. (ft)	370.36	371.12	368.51
Crit W.S. (ft)	2511.12	Flow Area (sq ft)		195.09	
E.G. Slope (ft/ft)	0.015263	Area (sq ft)		195.09	
Q Total (cfs)	1369.00	Flow (cfs)		1369.00	
Top Width (ft)	108.66	Top Width (ft)		108.66	
Vel Total (ft/s)	7.02	Avg. Vel. (ft/s)		7.02	
Max Chl Dpth (ft)	2.94	Hydr. Depth (ft)		1.80	
Conv. Total (cfs)	11081.2	Conv. (cfs)		11081.2	
Length Wtd. (ft)	371.10	Wetted Per. (ft)		111.43	
Min Ch El (ft)	2508.25	Shear (lb/sq ft)		1.67	
Alpha	1.00	Stream Power (lb/ft s)		11.71	
Frctn Loss (ft)	5.96	Cum Volume (acre-ft)	2.37	18.81	15.46
C & E Loss (ft)	0.04	Cum SA (acres)	3.15	9.59	13.43

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.

CROSS SECTION

RIVER: Fan 6C
REACH: Fan6C-1 RS: 1.26

INPUT
Description: Cross Section 1.26 is located upstream of the intersection of Fan 6C and Pima Road. There are no culverts under Pima Road. This section is located upstream of concentration point CF6C2 in the HEC-1 model.

Topography and aerial show wash and surrounding undeveloped desert.
T5NR5E Section 7
Q100 = 1,369 cfs
Station Elevation Data num= 13

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9806.62	2510	9829.12	2508	9843.78	2506	9885.64	2504	9911.57	2502
9937.33	2502	9977	2503.16	9995.22	2502	10001.66	2502	10039.73	2502.86
10195.82	2504	10242.54	2506	10270.28	2508				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9806.62	.058	9977	.038	10039.73	.058

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9977	10039.73	137.11	143.64	142.27	.1	.3

CROSS SECTION OUTPUT Profile #100-yr 6-hr

			Left OB	Channel	Right OB
E.G. Elev (ft)	2504.48	Element			
Vel Head (ft)	0.30	Wt. n-Val.	0.058	0.038	0.058
W.S. Elev (ft)	2504.18	Reach Len. (ft)	137.11	143.64	142.27
Crit W.S. (ft)		Flow Area (sq ft)	150.35	109.67	117.07
E.G. Slope (ft/ft)	0.009731	Area (sq ft)	150.35	109.67	117.07
Q Total (cfs)	1369.00	Flow (cfs)	515.38	613.62	240.00
Top Width (ft)	318.05	Top Width (ft)	95.08	62.73	160.24
Vel Total (ft/s)	3.63	Avg. Vel. (ft/s)	3.43	5.60	2.05
Max Chl Dpth (ft)	2.18	Hydr. Depth (ft)	1.58	1.75	0.73
Conv. Total (cfs)	13878.2	Conv. (cfs)	5224.6	6220.6	2433.0
Length Wtd. (ft)	142.15	Wetted Per. (ft)	95.18	62.78	160.25
Min Ch El (ft)	2502.00	Shear (lb/sq ft)	0.96	1.06	0.44
Alpha	1.46	Stream Power (lb/ft s)	3.29	5.94	0.91
Frctn Loss (ft)	1.54	Cum Volume (acre-ft)	2.99	16.64	19.19
C & E Loss (ft)	0.02	Cum SA (acres)	4.07	8.85	17.24

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 OUTPUT Profile #Method 1

E.G. Elev (ft)	2505.96	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.17	Wt. n-Val.	0.058	0.038	
W.S. Elev (ft)	2504.79	Reach Len. (ft)	137.11	143.64	142.27
Crit W.S. (ft)	2504.79	Flow Area (sq ft)	14.87	147.90	
E.G. Slope (ft/ft)	0.016936	Area (sq ft)	14.87	147.90	
Q Total (cfs)	1369.00	Flow (cfs)	63.04	1305.96	
Top Width (ft)	71.22	Top Width (ft)	8.49	62.73	
Vel Total (ft/s)	8.41	Avg. Vel. (ft/s)	4.24	8.83	
Max Chl Dpth (ft)	2.79	Hydr. Depth (ft)	1.75	2.36	
Conv. Total (cfs)	10519.6	Conv. (cfs)	484.4	10035.2	
Length Wtd. (ft)	143.46	Wetted Per. (ft)	10.37	64.70	
Min Ch El (ft)	2502.00	Shear (lb/sq ft)	1.52	2.42	
Alpha	1.06	Stream Power (lb/ft s)	6.43	21.34	
Frctn Loss (ft)	2.43	Cum Volume (acre-ft)	2.30	17.35	15.46
C & E Loss (ft)	0.14	Cum SA (acres)	3.11	8.86	13.43

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

CROSS SECTION

RIVER: Fan 6C
REACH: Fan6C-1 RS: 1.23

INPUT
Description: Cross Section 1.23 is located downstream of the intersection of
Fan 6C and Pima Road.

Topography and aerial show wash and
surrounding undeveloped desert.
T5NR4E Section 12
Q100 = 1,349
cfs
Station Elevation Data num= 13

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9856.03	2506	9880.01	2504	9914.73	2502	9924.53	2502	9968.4	2502
9979.78	2500	10007.68	2500	10093.15	2502	10137.52	2502	10238	2502
10255.4	2504	10276.55	2506	10302.58	2508				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9856.03	.058	9968.4	.038	10093.15	.058

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9968.4	10093.15	372.4	407.77	417.22	.1	.3

CROSS SECTION OUTPUT Profile #100-yr 6-hr

E.G. Elev (ft)	2502.92	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.50	Wt. n-Val.	0.058	0.038	0.058
W.S. Elev (ft)	2502.41	Reach Len. (ft)	372.40	407.77	417.22
Crit W.S. (ft)	2502.41	Flow Area (sq ft)	23.64	204.15	60.54
E.G. Slope (ft/ft)	0.012128	Area (sq ft)	23.64	204.15	60.54
Q Total (cfs)	1349.00	Flow (cfs)	35.50	1219.57	93.93
Top Width (ft)	334.03	Top Width (ft)	60.84	124.75	148.44
Vel Total (ft/s)	4.68	Avg. Vel. (ft/s)	1.50	5.97	1.55
Max Chl Dpth (ft)	2.41	Hydr. Depth (ft)	0.39	1.64	0.41
Conv. Total (cfs)	12249.5	Conv. (cfs)	322.4	11074.2	852.9

Length Wtd. (ft)	407.62	Wetted Per. (ft)	60.85	124.95	148.47
Min Ch El (ft)	2500.00	Shear (lb/sq ft)	0.29	1.24	0.31
Alpha	1.48	Stream Power (lb/ft s)	0.44	7.39	0.48
Frctn Loss (ft)	5.38	Cum Volume (acre-ft)	2.72	16.12	18.90
C & E Loss (ft)	0.02	Cum SA (acres)	3.82	8.55	16.74

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

CROSS SECTION OUTPUT Profile #Method 1

			Left OB	Channel	Right OB
E.G. Elev (ft)	2503.05	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.71	Wt. n-Val.	0.058	0.038	0.058
W.S. Elev (ft)	2502.34	Reach Len. (ft)	372.40	407.77	417.22
Crit W.S. (ft)	2502.34	Flow Area (sq ft)	6.20	194.71	5.68
E.G. Slope (ft/ft)	0.016892	Area (sq ft)	6.20	194.71	5.68
Q Total (cfs)	1349.00	Flow (cfs)	9.89	1330.07	9.04
Top Width (ft)	160.00	Top Width (ft)	18.40	124.75	16.85
Vel Total (ft/s)	6.53	Avg. Vel. (ft/s)	1.59	6.83	1.59
Max Chl Dpth (ft)	2.34	Hydr. Depth (ft)	0.34	1.56	0.34
Conv. Total (cfs)	10379.5	Conv. (cfs)	76.1	10233.9	69.6
Length Wtd. (ft)	407.67	Wetted Per. (ft)	18.74	124.95	17.19
Min Ch El (ft)	2500.00	Shear (lb/sq ft)	0.35	1.64	0.35
Alpha	1.08	Stream Power (lb/ft s)	0.56	11.23	0.55
Frctn Loss (ft)	7.09	Cum Volume (acre-ft)	2.27	16.79	15.45
C & E Loss (ft)	0.03	Cum SA (acres)	3.07	8.55	13.40

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

CROSS SECTION

RIVER: Fan 6C
REACH: Fan6C-1 RS: 1.16

INPUT
Description: Topography and aerial show wash and surrounding undeveloped
desert.
T5NR4E Section 12
Q100 = 1,349 cfs
Station Elevation Data num= 14

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9836.82	2498	9866.34	2496	9875.44	2495	9884.54	2494	9913.3	2493
9942.06	2492	10000	2490.2	10030.06	2492	10044.62	2492	10058.66	2492
10077.96	2493	10097.25	2494	10142.46	2496	10162.38	2498		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9836.82	.058	9942.06	.038	10030.06	.058

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9942.06	10030.06	460.49	467.04	470.81	.1	.3

CROSS SECTION OUTPUT Profile #100-yr 6-hr

E.G. Elev (ft)	2493.75	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.74	Wt. n-Val.	0.058	0.038	0.058
W.S. Elev (ft)	2493.01	Reach Len. (ft)	460.49	467.04	470.81
Crit W.S. (ft)	2493.01	Flow Area (sq ft)	14.74	168.30	38.85
E.G. Slope (ft/ft)	0.014416	Area (sq ft)	14.74	168.30	38.85
Q Total (cfs)	1349.00	Flow (cfs)	28.79	1216.67	103.54
Top Width (ft)	165.26	Top Width (ft)	29.12	88.00	48.14
Vel Total (ft/s)	6.08	Avg. Vel. (ft/s)	1.95	7.23	2.67
Max Chl Dpth (ft)	2.81	Hydr. Depth (ft)	0.51	1.91	0.81
Conv. Total (cfs)	11235.5	Conv. (cfs)	239.8	10133.3	862.4
Length Wtd. (ft)	467.41	Wetted Per. (ft)	29.14	88.08	48.17
Min Ch El (ft)	2490.20	Shear (lb/sq ft)	0.46	1.72	0.73
Alpha	1.29	Stream Power (lb/ft s)	0.89	12.43	1.93
Frctn Loss (ft)	6.75	Cum Volume (acre-ft)	2.55	14.38	18.42
C & E Loss (ft)	0.01	Cum SA (acres)	3.44	7.55	15.79

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.

CROSS SECTION OUTPUT Profile #Method 1

E.G. Elev (ft)	2494.01	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.99	Wt. n-Val.		0.038	
W.S. Elev (ft)	2493.02	Reach Len. (ft)	460.49	467.04	470.81
Crit W.S. (ft)	2493.02	Flow Area (sq ft)		169.26	
E.G. Slope (ft/ft)	0.017928	Area (sq ft)		169.26	
Q Total (cfs)	1349.00	Flow (cfs)		1349.00	
Top Width (ft)	88.00	Top Width (ft)		88.00	
Vel Total (ft/s)	7.97	Avg. Vel. (ft/s)		7.97	
Max Chl Dpth (ft)	2.82	Hydr. Depth (ft)		1.92	
Conv. Total (cfs)	10075.0	Conv. (cfs)		10075.0	
Length Wtd. (ft)	467.04	Wetted Per. (ft)		90.13	
Min Ch El (ft)	2490.20	Shear (lb/sq ft)		2.10	
Alpha	1.00	Stream Power (lb/ft s)		16.75	
Frctn Loss (ft)	8.07	Cum Volume (acre-ft)	2.24	15.08	15.42
C & E Loss (ft)	0.02	Cum SA (acres)	2.99	7.55	13.32

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 energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
depth, the 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: Fan 6C
REACH: Fan6C-1 RS: 1.07

INPUT
Description: Topography and aerial show wash and surrounding undeveloped
desert.
T5NR4E Section 12

Q100 = 1,349 cfs

Station Elevation Data num= 18

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9938.92	2486	9962.4	2484	9971.92	2483	9981.44	2482	10000	2480.27
10022.43	2482	10039.21	2483	10055.98	2484	10063.39	2484	10098.1	2484
10108.81	2484	10136.32	2482	10149.38	2482	10169.94	2484	10185.99	2486
10203.14	2486	10221.82	2486	10254.52	2488				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9938.92	.058	9971.92	.03	10039.21	.058

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9971.92	10039.21	241.74	252.51	257.68	.1	.3

CROSS SECTION OUTPUT Profile #100-yr 6-hr

E.G. Elev (ft)	2484.63	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.81	Wt. n-Val.	0.058	0.038	0.058
W.S. Elev (ft)	2483.81	Reach Len. (ft)	241.74	252.51	257.68
Crit W.S. (ft)	2483.81	Flow Area (sq ft)	3.14	144.27	68.69
E.G. Slope (ft/ft)	0.014463	Area (sq ft)	3.14	144.27	68.69
Q Total (cfs)	1349.00	Flow (cfs)	5.29	1125.49	218.22
Top Width (ft)	145.27	Top Width (ft)	7.73	67.29	70.25
Vel Total (ft/s)	6.24	Avg. Vel. (ft/s)	1.68	7.80	3.18
Max Chl Dpth (ft)	3.54	Hydr. Depth (ft)	0.41	2.14	0.98
Conv. Total (cfs)	11217.1	Conv. (cfs)	44.0	9358.6	1814.5
Length Wtd. (ft)	254.29	Wetted Per. (ft)	7.78	67.52	70.43
Min Ch El (ft)	2480.27	Shear (lb/sq ft)	0.36	1.93	0.88
Alpha	1.35	Stream Power (lb/ft s)	0.61	15.05	2.80
Frctn Loss (ft)	4.27	Cum Volume (acre-ft)	2.46	12.70	17.84
C & E Loss (ft)	0.13	Cum SA (acres)	3.25	6.72	15.15

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

CROSS SECTION OUTPUT Profile #Method 1

E.G. Elev (ft)	2485.15	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.16	Wt. n-Val.		0.038	
W.S. Elev (ft)	2483.99	Reach Len. (ft)	241.74	252.51	257.68
Crit W.S. (ft)	2483.99	Flow Area (sq ft)		155.98	
E.G. Slope (ft/ft)	0.016645	Area (sq ft)		155.98	
Q Total (cfs)	1349.00	Flow (cfs)		1349.00	
Top Width (ft)	67.29	Top Width (ft)		67.29	
Vel Total (ft/s)	8.65	Avg. Vel. (ft/s)		8.65	
Max Chl Dpth (ft)	3.72	Hydr. Depth (ft)		2.32	
Conv. Total (cfs)	10456.2	Conv. (cfs)		10456.2	
Length Wtd. (ft)	252.51	Wetted Per. (ft)		69.49	
Min Ch El (ft)	2480.27	Shear (lb/sq ft)		2.33	
Alpha	1.00	Stream Power (lb/ft s)		20.17	
Frctn Loss (ft)	4.40	Cum Volume (acre-ft)	2.24	13.34	15.42
C & E Loss (ft)	0.08	Cum SA (acres)	2.99	6.72	13.32

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

Warning: During the standard step iterations, when the assumed water surface was set equal to critical
depth, the 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: Fan 6C
REACH: Fan6C-1 RS: 1.02

INPUT
Description: Topography and aerial show wash and surrounding undeveloped
desert.
T5NR4E Section 12
Q100 = 1,349 cfs
Station Elevation Data num= 14

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9917.16	2480	9931.87	2478.5	9936.77	2478	9941.67	2478	10000	2476.33
10019.24	2478	10031.79	2478.45	10061.73	2478	10081.3	2476	10090.47	2476
10106.8	2476	10121.98	2476	10143.89	2478	10179.89	2480		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9917.16	.063	9931.87	.038	10031.79	.063

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9931.87	10031.79	382.1	399.37	372.94	.1	.3

CROSS SECTION OUTPUT Profile #100-yr 6-hr

E.G. Elev (ft)	2478.87	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.39	Wt. n-Val.		0.038	0.063
W.S. Elev (ft)	2478.48	Reach Len. (ft)	382.10	399.37	372.94
Crit W.S. (ft)	2478.13	Flow Area (sq ft)		108.49	171.75
E.G. Slope (ft/ft)	0.019736	Area (sq ft)		108.49	171.75
Q Total (cfs)	1349.00	Flow (cfs)		629.91	719.09
Top Width (ft)	220.41	Top Width (ft)		99.71	120.70
Vel Total (ft/s)	4.81	Avg. Vel. (ft/s)		5.81	4.19
Max Chl Dpth (ft)	2.48	Hydr. Depth (ft)		1.09	1.42
Conv. Total (cfs)	9602.5	Conv. (cfs)		4483.9	5118.6
Length Wtd. (ft)	391.65	Wetted Per. (ft)		99.83	120.91
Min Ch El (ft)	2476.33	Shear (lb/sq ft)		1.34	1.75
Alpha	1.08	Stream Power (lb/ft s)		7.77	7.33
Frctn Loss (ft)	5.93	Cum Volume (acre-ft)	2.45	11.97	17.13
C & E Loss (ft)	0.08	Cum SA (acres)	3.22	6.23	14.59

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 energy loss was 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 OUTPUT Profile #Method 1

E.G. Elev (ft)	2480.07	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.91	Wt. n-Val.		0.038	
W.S. Elev (ft)	2479.16	Reach Len. (ft)	382.10	399.37	372.94
Crit W.S. (ft)	2479.16	Flow Area (sq ft)		176.52	
E.G. Slope (ft/ft)	0.018243	Area (sq ft)		176.52	
Q Total (cfs)	1349.00	Flow (cfs)		1349.00	
Top Width (ft)	99.92	Top Width (ft)		99.92	
Vel Total (ft/s)	7.64	Avg. Vel. (ft/s)		7.64	
Max Chl Dpth (ft)	2.83	Hydr. Depth (ft)		1.77	
Conv. Total (cfs)	9987.6	Conv. (cfs)		9987.6	
Length Wtd. (ft)	398.62	Wetted Per. (ft)		101.42	
Min Ch El (ft)	2476.33	Shear (lb/sq ft)		1.98	
Alpha	1.00	Stream Power (lb/ft s)		15.15	
Frctn Loss (ft)	5.26	Cum Volume (acre-ft)	2.24	12.38	15.42

C & E Loss (ft)	0.01	Cum SA (acres)	2.99	6.23	13.32

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 energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
depth, the 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: Fan 6C
REACH: Fan6C-1 RS: 0.94

INPUT
Description: Topography indicates wash and surrounding undeveloped
desert.
Aerial shows wash, homes and undeveloped desert.
T5NR4E
Section 12
Q100 = 1,349 cfs
Station Elevation Data num= 14

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9956.58	2476	9964.81	2474	9973.77	2472	9985.19	2470	9992.19	2468
10012.54	2468	10030.56	2470	10063.9	2472	10084.75	2472	10129.59	2472
10196.21	2472	10315.69	2472	10359	2474	10366.66	2474		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9956.58	.058	9985.19	.038	10030.56	.058

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9985.19	10030.56	203.82	207.27	203.02	.1	.3

CROSS SECTION OUTPUT Profile #100-yr 6-hr

E.G. Elev (ft)	2472.86	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.21	Wt. n-Val.	0.058	0.038	0.058
W.S. Elev (ft)	2471.65	Reach Len. (ft)	203.82	207.27	203.02
Crit W.S. (ft)	2471.65	Flow Area (sq ft)	7.80	140.70	22.76
E.G. Slope (ft/ft)	0.011990	Area (sq ft)	7.80	140.70	22.76
Q Total (cfs)	1349.00	Flow (cfs)	19.07	1273.77	56.16
Top Width (ft)	82.36	Top Width (ft)	9.44	45.37	27.55
Vel Total (ft/s)	7.88	Avg. Vel. (ft/s)	2.45	9.05	2.47
Max Chl Dpth (ft)	3.65	Hydr. Depth (ft)	0.83	3.10	0.83
Conv. Total (cfs)	12320.0	Conv. (cfs)	174.2	11632.9	512.9
Length Wtd. (ft)	206.84	Wetted Per. (ft)	9.58	45.76	27.60
Min Ch El (ft)	2468.00	Shear (lb/sq ft)	0.61	2.30	0.62
Alpha	1.25	Stream Power (lb/ft s)	1.49	20.84	1.52
Frctn Loss (ft)	2.26	Cum Volume (acre-ft)	2.42	10.83	16.30
C & E Loss (ft)	0.01	Cum SA (acres)	3.18	5.57	13.95

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.

CROSS SECTION OUTPUT Profile #Method 1

E.G. Elev (ft)	2472.93	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.05	Wt. n-Val.		0.038	0.058
W.S. Elev (ft)	2471.88	Reach Len. (ft)	203.82	207.27	203.02
Crit W.S. (ft)		Flow Area (sq ft)		150.87	27.02
E.G. Slope (ft/ft)	0.009994	Area (sq ft)		150.87	27.02
Q Total (cfs)	1349.00	Flow (cfs)		1272.00	77.00
Top Width (ft)	67.81	Top Width (ft)		45.37	22.44
Vel Total (ft/s)	7.58	Avg. Vel. (ft/s)		8.43	2.85
Max Chl Dpth (ft)	3.88	Hydr. Depth (ft)		3.33	1.20
Conv. Total (cfs)	13493.8	Conv. (cfs)		12723.6	770.2
Length Wtd. (ft)	207.15	Wetted Per. (ft)		47.64	23.01
Min Ch El (ft)	2468.00	Shear (lb/sq ft)		1.98	0.73
Alpha	1.17	Stream Power (lb/ft s)		16.66	2.09
Frctn Loss (ft)	2.54	Cum Volume (acre-ft)	2.24	10.88	15.30
C & E Loss (ft)	0.10	Cum SA (acres)	2.99	5.57	13.22

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 energy loss was 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: Fan 6C
REACH: Fan6C-1 RS: 0.91

INPUT
Description: Cross Section 0.90 is located upstream of concentration point CF6C1c in the HEC-1 model.

Topography indicates wash and surrounding undeveloped desert.
Aerial shows wash, homes and undeveloped desert.
T5NR4E Section 12
Q100 = 1,349 cfs
Station Elevation Data num= 16

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9930.18	2470.46	9967.19	2468.39	9987.03	2466.06	9992.27	2463.29	10000	2463.28
10005.67	2463.41	10013.92	2465.11	10047.21	2468.11	10072.23	2468.62	10104.7	2468.7
10204.07	2468.64	10227	2467.37	10262.7	2468.88	10302.85	2470.17	10336.99	2468
10367.11	2469.25								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9930.18	.058	9987.03	.038	10013.92	.058

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9987.03	10013.92	477.13	468.04	465.99	.1	.3

Right Levee Station= 10104.7 Elevation= 2468.7

CROSS SECTION OUTPUT Profile #100-yr 6-hr

E.G. Elev (ft)	2469.43	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.34	Wt. n-Val.	0.058	0.038	0.058
W.S. Elev (ft)	2468.10	Reach Len. (ft)	477.13	468.04	465.99
Crit W.S. (ft)	2468.10	Flow Area (sq ft)	17.63	113.68	49.44
E.G. Slope (ft/ft)	0.010008	Area (sq ft)	17.63	113.68	49.44
Q Total (cfs)	1349.00	Flow (cfs)	45.52	1138.44	165.04
Top Width (ft)	77.34	Top Width (ft)	17.33	26.89	33.13
Vel Total (ft/s)	7.46	Avg. Vel. (ft/s)	2.58	10.01	3.34
Max Chl Dpth (ft)	4.82	Hydr. Depth (ft)	1.02	4.23	1.49
Conv. Total (cfs)	13484.9	Conv. (cfs)	455.0	11380.1	1649.8
Length Wtd. (ft)	467.90	Wetted Per. (ft)	17.45	27.75	33.26
Min Ch El (ft)	2463.28	Shear (lb/sq ft)	0.63	2.56	0.93
Alpha	1.55	Stream Power (lb/ft s)	1.63	25.63	3.10

Frctn Loss (ft)	4.43	Cum Volume (acre-ft)	2.36	10.22	16.13
C & E Loss (ft)	0.07	Cum SA (acres)	3.12	5.40	13.81

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.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water
surface was used.

CROSS SECTION OUTPUT Profile #Method 1

E.G. Elev (ft)	2470.29	Element	Left OB	Channel	Right OB
Vel Head (ft)	2.00	Wt. n-Val.		0.038	
W.S. Elev (ft)	2468.29	Reach Len. (ft)	477.13	468.04	465.99
Crit W.S. (ft)	2468.15	Flow Area (sq ft)		118.83	
E.G. Slope (ft/ft)	0.015351	Area (sq ft)		118.83	
Q Total (cfs)	1349.00	Flow (cfs)		1349.00	
Top Width (ft)	26.83	Top Width (ft)		26.83	
Vel Total (ft/s)	11.35	Avg. Vel. (ft/s)		11.35	
Max Chl Dpth (ft)	5.01	Hydr. Depth (ft)		4.43	
Conv. Total (cfs)	10887.8	Conv. (cfs)		10887.8	
Length Wtd. (ft)	468.04	Wetted Per. (ft)		33.13	
Min Ch El (ft)	2463.28	Shear (lb/sq ft)		3.44	
Alpha	1.00	Stream Power (lb/ft s)		39.02	
Frctn Loss (ft)	7.21	Cum Volume (acre-ft)	2.24	10.23	15.24
C & E Loss (ft)	0.02	Cum SA (acres)	2.99	5.40	13.17

Warning: The cross section had to be extended vertically during the critical depth calculations.
Warning: The energy loss was greater 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: Fan 6C
REACH: Fan6C-1 RS: 0.82

INPUT
Description: Cross Section 0.82 is located upstream of concentration point
CF6C1b in the HEC-1 model.

NEW COS Topo '04 redefines xsec post
development, Boulder Ridge.

Aerial shows wash, Preserve Way
and undeveloped desert.
T5NR4E Section 12
Q100 = 1,513 cfs
Station Elevation Data num= 18

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9942.58	2466.36	9974.4	2462.64	9984.53	2460.16	9992.08	2456.71	10000	2456.24
10009.78	2456.61	10019.25	2458.78	10081.41	2460.95	10126.81	2460.93	10172.93	2460.45
10201.39	2458.78	10227.65	2459.78	10238.55	2460.02	10250.53	2460.31	10303.17	2460.53
10320.06	2458.64	10377.38	2459.86	10412.15	2462.21				

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Manning's n Values          num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
 9942.58    .058 9984.53    .03810019.25    .058

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9984.5310019.25           166.98  168.75  189.71            .3        .5
Right Levee     Station=10081.41      Elevation=  2461.5
```

CROSS SECTION OUTPUT Profile #100-yr 6-hr

			Left OB	Channel	Right OB
E.G. Elev (ft)	2462.31	Element			
Vel Head (ft)	1.11	Wt. n-Val.	0.058	0.038	0.058
W.S. Elev (ft)	2461.20	Reach Len. (ft)	166.98	168.75	189.71
Crit W.S. (ft)	2461.20	Flow Area (sq ft)	2.21	138.21	83.03
E.G. Slope (ft/ft)	0.009028	Area (sq ft)	2.21	138.21	83.03
Q Total (cfs)	1513.00	Flow (cfs)	3.42	1265.22	244.36
Top Width (ft)	101.13	Top Width (ft)	4.25	34.72	62.16
Vel Total (ft/s)	6.77	Avg. Vel. (ft/s)	1.54	9.15	2.94
Max Chl Dpth (ft)	4.96	Hydr. Depth (ft)	0.52	3.98	1.34
Conv. Total (cfs)	15924.0	Conv. (cfs)	36.0	13316.1	2571.9
Length Wtd. (ft)	181.08	Wetted Per. (ft)	4.38	35.74	62.45
Min Ch El (ft)	2456.24	Shear (lb/sq ft)	0.28	2.18	0.75
Alpha	1.56	Stream Power (lb/ft s)	0.44	19.95	2.21
Frctn Loss (ft)	0.02	Cum Volume (acre-ft)	2.25	8.87	15.42
C & E Loss (ft)	0.00	Cum SA (acres)	3.00	5.07	13.30

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 velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
depth, the 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 OUTPUT Profile #Method 1

			Left OB	Channel	Right OB
E.G. Elev (ft)	2463.06	Element			
Vel Head (ft)	1.93	Wt. n-Val.		0.038	
W.S. Elev (ft)	2461.13	Reach Len. (ft)	166.98	168.75	189.71
Crit W.S. (ft)	2461.13	Flow Area (sq ft)		135.69	
E.G. Slope (ft/ft)	0.015453	Area (sq ft)		135.69	
Q Total (cfs)	1513.00	Flow (cfs)		1513.00	
Top Width (ft)	34.72	Top Width (ft)		34.72	
Vel Total (ft/s)	11.15	Avg. Vel. (ft/s)		11.15	
Max Chl Dpth (ft)	4.89	Hydr. Depth (ft)		3.91	
Conv. Total (cfs)	12171.3	Conv. (cfs)		12171.3	
Length Wtd. (ft)	169.84	Wetted Per. (ft)		39.05	
Min Ch El (ft)	2456.24	Shear (lb/sq ft)		3.35	
Alpha	1.00	Stream Power (lb/ft s)		37.38	
Frctn Loss (ft)	0.16	Cum Volume (acre-ft)	2.24	8.87	15.24
C & E Loss (ft)	0.96	Cum SA (acres)	2.99	5.07	13.17

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 velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided 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.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water
surface was used.

CROSS SECTION

RIVER: Fan 6C
REACH: Fan6C-1 RS: 0.78

INPUT
Description: Cross Section 0.78 is located upstream of the intersection of Fan 6C and Westland Road. There are 2-10 X 4 concrete box culverts located under Westland Road. A flow split analysis was performed to determine the amount of flow not staying within the wash boundaries. A water surface elevation of 2460.9 was set according to this split flow.

NEW COS Topo '04 redefines xsec post development, Boulder Ridge.

Aerial shows wash crossing Westland Road.
T5NR4E Section 12
Q100 = 1,513 cfs
Station Elevation Data num= 14

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9820.33	2466.1	9862.44	2464.33	9943.73	2460.55	9956.78	2460.28	9987.34	2454.66
10000	2454.42	10016.39	2454.72	10028.49	2454.91	10038.23	2457.18	10066.51	2456.42
10084.51	2458.82	10171.08	2456.68	10278.12	2454.12	10373.25	2451.25		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9820.33	.058	9956.78	.038	10038.23	.058

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9956.78	10038.23	71.57	71.2	69.94	.3	.5

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
9820.33	9987.34	2459	F
10028.49	10373.25	2459	F

Right Levee Station=10084.51 Elevation= 2462

CROSS SECTION OUTPUT Profile #100-yr 6-hr

E.G. Elev (ft)	2460.92	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.02	Wt. n-Val.	0.058	0.038	0.058
W.S. Elev (ft)	2460.90	Reach Len. (ft)	71.57	71.20	69.94
Crit W.S. (ft)		Flow Area (sq ft)	7.64	410.11	174.98
E.G. Slope (ft/ft)	0.000109	Area (sq ft)	7.64	410.11	174.98
Q Total (cfs)	600.00	Flow (cfs)	1.06	488.86	110.08
Top Width (ft)	148.30	Top Width (ft)	20.57	81.45	46.28
Vel Total (ft/s)	1.01	Avg. Vel. (ft/s)	0.14	1.19	0.63
Max Chl Dpth (ft)	9.65	Hydr. Depth (ft)	0.37	5.04	3.78
Conv. Total (cfs)	57453.9	Conv. (cfs)	101.2	46811.5	10541.3
Length Wtd. (ft)	71.20	Wetted Per. (ft)	20.58	82.23	48.53
Min Ch El (ft)	2454.42	Shear (lb/sq ft)	0.00	0.03	0.02
Alpha	1.20	Stream Power (lb/ft s)	0.00	0.04	0.02
Frctn Loss (ft)		Cum Volume (acre-ft)	2.23	7.81	14.86
C & E Loss (ft)		Cum SA (acres)	2.95	4.84	13.07

Note: The user has entered a known water surface elevation at this cross section.

CROSS SECTION OUTPUT Profile #Method 1

E.G. Elev (ft)	2460.92	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.02	Wt. n-Val.	0.058	0.038	0.058
W.S. Elev (ft)	2460.90	Reach Len. (ft)	71.57	71.20	69.94
Crit W.S. (ft)		Flow Area (sq ft)	7.64	410.11	174.98
E.G. Slope (ft/ft)	0.000109	Area (sq ft)	7.64	410.11	174.98
Q Total (cfs)	600.00	Flow (cfs)	1.06	488.86	110.08
Top Width (ft)	148.30	Top Width (ft)	20.57	81.45	46.28
Vel Total (ft/s)	1.01	Avg. Vel. (ft/s)	0.14	1.19	0.63
Max Chl Dpth (ft)	9.65	Hydr. Depth (ft)	0.37	5.04	3.78
Conv. Total (cfs)	57453.9	Conv. (cfs)	101.2	46811.5	10541.3
Length Wtd. (ft)	71.20	Wetted Per. (ft)	20.58	82.23	48.53
Min Ch El (ft)	2454.42	Shear (lb/sq ft)	0.00	0.03	0.02
Alpha	1.20	Stream Power (lb/ft s)	0.00	0.04	0.02
Frctn Loss (ft)		Cum Volume (acre-ft)	2.23	7.81	14.86
C & E Loss (ft)		Cum SA (acres)	2.95	4.84	13.07

Note: The user has entered a known water surface elevation at this cross section.

CULVERT

RIVER: Fan 6C
REACH: Fan6C-1 RS: 0.775

INPUT
Description: Box culverts at Westland Road crossing.
Distance from Upstream XS = 6
Deck/Roadway Width = 63
Weir Coefficient = 2.6
Upstream Deck/Roadway Coordinates
num= 6

Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord
9846.12	2467.75		9943.81	2463.37		10041.5	2460.93	
10139.1	2458.2		10232.35	2455.86		10375.9	2453.26	

Upstream Bridge Cross Section Data
Station Elevation Data num= 14

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9820.33	2466.1	9862.44	2464.33	9943.73	2460.55	9956.78	2460.28	9987.34	2454.66
10000	2454.42	10016.39	2454.72	10028.49	2454.91	10038.23	2457.18	10066.51	2456.42
10084.51	2458.82	10171.08	2456.68	10278.12	2454.12	10373.25	2451.25		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9820.33	.058	9956.78	.038	10038.23	.058

Bank Sta: Left	Right	Coeff Contr.	Expan.
9956.78	10038.23	.3	.5

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
9820.33	9987.34	2459	F
10028.49	10373.25	2459	F

Right Levee Station=10084.51 Elevation= 2462

Downstream Deck/Roadway Coordinates
num= 8

Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord
9846.12	2466.19		9943.81	2463.86		10041.5	2461.56	
10139.1	2458.74		10232.35	2456.46		10375.9	2453.93	
10546.1	2450.49		10736.05	2447.26				

Downstream Bridge Cross Section Data
Station Elevation Data num= 18

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9833.55	2464	9873.11	2459.34	9980.83	2456.33	10007.1	2455.47	10021.09	2454
10034.48	2453.92	10038.97	2452.49	10047.28	2452.06	10058.25	2452.55	10062.9	2453.04

```
10106.36 2453.2110118.64 2454.8210132.21 2454.7310151.63 2452.5710245.52 2450.09
10335.23 2450.2110423.91 2449.2310485.05 2448.26

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
 9833.55    .05810034.48    .038 10062.9    .058

Bank Sta: Left   Right    Coeff Contr.   Expan.
      10034.48 10062.9             .3       .5
Right Levee     Station=10118.64      Elevation=    2456

Upstream Embankment side slope              =       0 horiz. to 1.0 vertical
Downstream Embankment side slope            =       0 horiz. to 1.0 vertical
Maximum allowable submergence for weir flow =     .95
Elevation at which weir flow begins         =
Energy head used in spillway design         =
Spillway height used in design              =
Weir crest shape                            = Broad Crested

Number of Culverts =  1

Culvert Name     Shape      Rise    Span
CULVERT#1            Box       4      10
FHWA Chart # 8 - flared wingwalls
FHWA Scale # 3 - Wingwall flared 0 deg. (sides extended straight)
Solution Criteria = Highest U.S. EG
Culvert Upstrm Dist  Length    Top n  Bottom n  Depth Blocked  Entrance Loss Coef   Exit Loss Coef
                4.2      63     .015     .015        0                  .4                 1
Number of Barrels =  2
Upstream   Elevation =  2454.7
Centerline Stations
    Sta.    Sta.
  9994.810005.72
Downstream Elevation =  2453.25
Centerline Stations
    Sta.    Sta.
10042.0810052.48

CROSS SECTION


RIVER: Fan 6C
REACH: Fan6C-1            RS: 0.77

INPUT
Description: Cross Section 0.77 is located downstream of the intersection of
             Fan 6C and Westland Road.  There are 2-10 X 4 concrete box
             culverts located under Westland Road.  The flow split analysis
             performed upstream determined the amount of flow staying within
             the wash boundaries.  Please refer to Special Problems Report for
             further explanation.


NEW COS Topo '04 redefines xsec post
             development, Boulder Ridge.

Aerial shows wash crossing Westland
             Road.
T5NR4E Section 12
Q100 = 1,584 cfs
Station Elevation Data    num=      18
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
 9833.55    2464 9873.11 2459.34 9980.83 2456.33 10007.1 2455.4710021.09    2454
10034.48 2453.9210038.97 2452.4910047.28 2452.0610058.25 2452.55 10062.9 2453.04
10106.36 2453.2110118.64 2454.8210132.21 2454.7310151.63 2452.5710245.52 2450.09
10335.23 2450.2110423.91 2449.2310485.05 2448.26

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
 9833.55    .05810034.48    .038 10062.9    .058
```

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
10034.48	10062.9	762.68	193.78	758.4	.3	.5

Right Levee Station=10118.64 Elevation= 2456

CROSS SECTION OUTPUT Profile #100-yr 6-hr

E.G. Elev (ft)	2455.31	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.22	Wt. n-Val.	0.058	0.038	0.058
W.S. Elev (ft)	2455.09	Reach Len. (ft)	762.68	193.78	758.40
Crit W.S. (ft)	2454.34	Flow Area (sq ft)	20.81	73.11	98.66
E.G. Slope (ft/ft)	0.003987	Area (sq ft)	20.81	73.11	98.66
Q Total (cfs)	600.00	Flow (cfs)	30.76	336.77	232.48
Top Width (ft)	107.93	Top Width (ft)	23.77	28.42	55.74
Vel Total (ft/s)	3.12	Avg. Vel. (ft/s)	1.48	4.61	2.36
Max Chl Dpth (ft)	6.83	Hydr. Depth (ft)	0.88	2.57	1.77
Conv. Total (cfs)	9502.4	Conv. (cfs)	487.1	5333.5	3681.9
Length Wtd. (ft)	326.53	Wetted Per. (ft)	23.83	28.69	56.12
Min Ch El (ft)	2452.06	Shear (lb/sq ft)	0.22	0.63	0.44
Alpha	1.46	Stream Power (lb/ft s)	0.32	2.92	1.03
Frctn Loss (ft)	2.30	Cum Volume (acre-ft)	2.21	7.41	14.64
C & E Loss (ft)	0.21	Cum SA (acres)	2.92	4.75	12.99

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.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid,
energy was used.

CROSS SECTION OUTPUT Profile #Method 1

E.G. Elev (ft)	2455.31	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.22	Wt. n-Val.	0.058	0.038	0.058
W.S. Elev (ft)	2455.09	Reach Len. (ft)	762.68	193.78	758.40
Crit W.S. (ft)	2454.34	Flow Area (sq ft)	20.81	73.11	98.66
E.G. Slope (ft/ft)	0.003987	Area (sq ft)	20.81	73.11	98.66
Q Total (cfs)	600.00	Flow (cfs)	30.76	336.77	232.48
Top Width (ft)	107.93	Top Width (ft)	23.77	28.42	55.74
Vel Total (ft/s)	3.12	Avg. Vel. (ft/s)	1.48	4.61	2.36
Max Chl Dpth (ft)	6.83	Hydr. Depth (ft)	0.88	2.57	1.77
Conv. Total (cfs)	9502.4	Conv. (cfs)	487.1	5333.5	3681.9
Length Wtd. (ft)	326.53	Wetted Per. (ft)	23.83	28.69	56.12
Min Ch El (ft)	2452.06	Shear (lb/sq ft)	0.22	0.63	0.44
Alpha	1.46	Stream Power (lb/ft s)	0.32	2.92	1.03
Frctn Loss (ft)	2.30	Cum Volume (acre-ft)	2.21	7.41	14.64
C & E Loss (ft)	0.21	Cum SA (acres)	2.92	4.75	12.99

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.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid,
energy was used.

CROSS SECTION

RIVER: Fan 6C
REACH: Fan6C-1 RS: 0.73

INPUT

Description: Cross Section 0.73 has an adjacent Zone A to represent flow that may be exiting the model and heading west to the adjacent wash. The flow potentially exiting the model and traveling west is defined as the amount of flow overtopping high point at levee in the cross section.

NEW COS Topo '04 redefines xsec post development, Boulder Ridge.

T5NR4E Section 12
Q100 = 1,584 cfs
Station Elevation Data num= 16

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9786.7	2456.59	9831.55	2453.19	9881.68	2453.43	9955.6	2452.23	9984.12	2451.09
9994.31	2449.45	10000	2448.81	10010.1	2449.01	10016.26	2450.72	10025.01	2452.36
10068.69	2452.89	10111.4	2451.17	10176.25	2449.76	10252.5	2449.59	10320.09	2448.06
10440.32	2446.13								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9786.7	.064	9984.12	.041	10016.26	.064

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9984.12	10016.26	400	553.32	400	.1	.3

Right Levee Station=10068.69 Elevation= 2453

CROSS SECTION OUTPUT Profile #100-yr 6-hr

			Left OB	Channel	Right OB
E.G. Elev (ft)	2452.80	Element			
Vel Head (ft)	0.93	Wt. n-Val.	0.064	0.041	0.064
W.S. Elev (ft)	2451.87	Reach Len. (ft)	400.00	553.32	400.00
Crit W.S. (ft)	2451.87	Flow Area (sq ft)	7.52	73.99	3.50
E.G. Slope (ft/ft)	0.015726	Area (sq ft)	7.52	73.99	3.50
Q Total (cfs)	600.00	Flow (cfs)	11.63	581.43	6.94
Top Width (ft)	57.64	Top Width (ft)	19.39	32.14	6.11
Vel Total (ft/s)	7.06	Avg. Vel. (ft/s)	1.55	7.86	1.98
Max Chl Dpth (ft)	5.74	Hydr. Depth (ft)	0.39	2.30	0.57
Conv. Total (cfs)	4784.5	Conv. (cfs)	92.7	4636.4	55.4
Length Wtd. (ft)	550.95	Wetted Per. (ft)	19.41	32.54	6.22
Min Ch El (ft)	2448.81	Shear (lb/sq ft)	0.38	2.23	0.55
Alpha	1.20	Stream Power (lb/ft s)	0.59	17.54	1.10
Frctn Loss (ft)	8.06	Cum Volume (acre-ft)	1.96	7.09	13.75
C & E Loss (ft)	0.05	Cum SA (acres)	2.54	4.62	12.45

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.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water
surface was used.

CROSS SECTION OUTPUT Profile #Method 1

			Left OB	Channel	Right OB
E.G. Elev (ft)	2452.80	Element			
Vel Head (ft)	0.93	Wt. n-Val.	0.064	0.041	0.064
W.S. Elev (ft)	2451.87	Reach Len. (ft)	400.00	553.32	400.00
Crit W.S. (ft)	2451.87	Flow Area (sq ft)	7.52	73.99	3.50
E.G. Slope (ft/ft)	0.015726	Area (sq ft)	7.52	73.99	3.50
Q Total (cfs)	600.00	Flow (cfs)	11.63	581.43	6.94
Top Width (ft)	57.64	Top Width (ft)	19.39	32.14	6.11
Vel Total (ft/s)	7.06	Avg. Vel. (ft/s)	1.55	7.86	1.98
Max Chl Dpth (ft)	5.74	Hydr. Depth (ft)	0.39	2.30	0.57

Conv. Total (cfs)	4784.5	Conv. (cfs)	92.7	4636.4	55.4
Length Wtd. (ft)	550.95	Wetted Per. (ft)	19.41	32.54	6.22
Min Ch El (ft)	2448.81	Shear (lb/sq ft)	0.38	2.23	0.55
Alpha	1.20	Stream Power (lb/ft s)	0.59	17.54	1.10
Frctn Loss (ft)	8.06	Cum Volume (acre-ft)	1.96	7.09	13.75
C & E Loss (ft)	0.05	Cum SA (acres)	2.54	4.62	12.45

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.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water
surface was used.

CROSS SECTION

RIVER: Fan 6C
REACH: Fan6C-1 RS: 0.63

INPUT
Description: Cross Section 0.63 will have adjacent Zone A to represent flow that may be exiting model and heading west to adjacent wash.The flow potentially exiting the model and traveling west is defined as the amount of flow overtopping high point at levee in the cross section.

Topography and aerial show wash and undeveloped desert.
T5NR4E Section 12
Q100 = 1,584 cfs
Station Elevation Data num= 27

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9861.79	2449.89	9941.04	2443.69	9983.98	2444.56	9991.17	2439.58	10000	2439.22
10011.52	2439.42	10013.59	2440.34	10028.77	2442.98	10103.46	2444.01	10266.02	2443.17
10297.58	2441.35	10299.09	2439.91	10303.27	2441.85	10312.73	2442.25	10392.87	2443.2
10442.96	2442.07	10449.39	2440.93	10453.96	2441.85	10512.01	2442.92	10554.94	2442.05
10557.62	2440.06	10567.63	2438.85	10577.72	2439.86	10592.88	2442.01	10636.13	2444.21
10659.05	2447.88	10672.4	2447.27						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9861.79	.064	9983.98	.041	10028.77	.064

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9983.98	10028.77	171.06	188.86	170.79	.1	.3

Right Levee Station=10103.46 Elevation= 2444

CROSS SECTION OUTPUT Profile #100-yr 6-hr

E.G. Elev (ft)	2443.17	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.77	Wt. n-Val.		0.041	
W.S. Elev (ft)	2442.40	Reach Len. (ft)	171.06	188.86	170.79
Crit W.S. (ft)	2442.12	Flow Area (sq ft)		85.12	
E.G. Slope (ft/ft)	0.013634	Area (sq ft)		85.12	
Q Total (cfs)	600.00	Flow (cfs)		600.00	
Top Width (ft)	38.33	Top Width (ft)		38.33	
Vel Total (ft/s)	7.05	Avg. Vel. (ft/s)		7.05	
Max Chl Dpth (ft)	3.55	Hydr. Depth (ft)		2.22	
Conv. Total (cfs)	5138.6	Conv. (cfs)		5138.6	
Length Wtd. (ft)	188.80	Wetted Per. (ft)		39.60	
Min Ch El (ft)	2439.22	Shear (lb/sq ft)		1.83	
Alpha	1.00	Stream Power (lb/ft s)		12.90	

Frctn Loss (ft)	2.51	Cum Volume (acre-ft)	1.92	6.08	13.73
C & E Loss (ft)	0.01	Cum SA (acres)	2.45	4.17	12.42

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water
surface was used.

CROSS SECTION OUTPUT Profile #Method 1

E.G. Elev (ft)	2443.17	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.77	Wt. n-Val.		0.041	
W.S. Elev (ft)	2442.40	Reach Len. (ft)	171.06	188.86	170.79
Crit W.S. (ft)	2442.12	Flow Area (sq ft)		85.12	
E.G. Slope (ft/ft)	0.013634	Area (sq ft)		85.12	
Q Total (cfs)	600.00	Flow (cfs)		600.00	
Top Width (ft)	38.33	Top Width (ft)		38.33	
Vel Total (ft/s)	7.05	Avg. Vel. (ft/s)		7.05	
Max Chl Dpth (ft)	3.55	Hydr. Depth (ft)		2.22	
Conv. Total (cfs)	5138.6	Conv. (cfs)		5138.6	
Length Wtd. (ft)	188.80	Wetted Per. (ft)		39.60	
Min Ch El (ft)	2439.22	Shear (lb/sq ft)		1.83	
Alpha	1.00	Stream Power (lb/ft s)		12.90	
Frctn Loss (ft)	2.51	Cum Volume (acre-ft)	1.92	6.08	13.73
C & E Loss (ft)	0.01	Cum SA (acres)	2.45	4.17	12.42

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water
surface was used.

CROSS SECTION

RIVER: Fan 6C
REACH: Fan6C-1 RS: 0.59

INPUT
Description: Cross Section 0.59 will have adjacent Zone A to represent flow that may be exiting model and heading west to adjacent wash.The flow potentially exiting the model and traveling west is defined as the amount of flow overtopping high point at levee in the cross section.

Topography indicates wash and surrounding undeveloped desert.
Aerial shows wash, dirt roads, and undeveloped desert.
T5NR4E Section 12
Q100 = 1,584 cfs
Station Elevation Data num= 29

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9796.74	2447.81	9858.28	2444.61	9937.3	2440.57	9981.67	2439.41	9983	2439.137
9986.42	2438.436	9994.36	2436.81	10000	2436.61	10007.68	2436.83	10014.21	2438.43
10017	2439.11	10018.42	2439.46	10037.81	2441.13	10126.29	2440.49	10188.91	2439.21
10356.63	2441.01	10379.9	2439.29	10391.02	2437.88	10394.4	2436.79	10397.08	2436.42
10398.62	2436.67	10399.55	2437.36	10419	2438.92	10452.5	2439.14	10464.62	2436.46
10468.99	2435.61	10482.62	2437.88	10524.5	2440.11	10584.71	2441.24		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9796.74	.063	9981.67	.039	10018.42	.063

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9981.67	10018.42	507.35	516.57	505.09	.1	.3

Right Levee Station=10037.81 Elevation= 2441.13

CROSS SECTION OUTPUT Profile #100-yr 6-hr

E.G. Elev (ft)	2440.66	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.82	Wt. n-Val.	0.063	0.039	0.063
W.S. Elev (ft)	2439.83	Reach Len. (ft)	507.35	516.57	505.09
Crit W.S. (ft)	2439.69	Flow Area (sq ft)	3.40	81.53	0.80
E.G. Slope (ft/ft)	0.013000	Area (sq ft)	3.40	81.53	0.80
Q Total (cfs)	600.00	Flow (cfs)	3.24	596.06	0.70
Top Width (ft)	57.19	Top Width (ft)	16.13	36.75	4.31
Vel Total (ft/s)	7.00	Avg. Vel. (ft/s)	0.95	7.31	0.87
Max Chl Dpth (ft)	4.22	Hydr. Depth (ft)	0.21	2.22	0.19
Conv. Total (cfs)	5262.4	Conv. (cfs)	28.4	5227.9	6.1
Length Wtd. (ft)	513.60	Wetted Per. (ft)	16.13	37.34	4.33
Min Ch El (ft)	2436.60	Shear (lb/sq ft)	0.17	1.77	0.15
Alpha	1.08	Stream Power (lb/ft s)	0.16	12.96	0.13
Frctn Loss (ft)	9.67	Cum Volume (acre-ft)	1.92	5.72	13.73
C & E Loss (ft)	0.11	Cum SA (acres)	2.42	4.01	12.41

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.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water
surface was used.

CROSS SECTION OUTPUT Profile #Method 1

E.G. Elev (ft)	2440.66	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.82	Wt. n-Val.	0.063	0.039	0.063
W.S. Elev (ft)	2439.83	Reach Len. (ft)	507.35	516.57	505.09
Crit W.S. (ft)	2439.69	Flow Area (sq ft)	3.40	81.53	0.80
E.G. Slope (ft/ft)	0.013000	Area (sq ft)	3.40	81.53	0.80
Q Total (cfs)	600.00	Flow (cfs)	3.24	596.06	0.70
Top Width (ft)	57.19	Top Width (ft)	16.13	36.75	4.31
Vel Total (ft/s)	7.00	Avg. Vel. (ft/s)	0.95	7.31	0.87
Max Chl Dpth (ft)	4.22	Hydr. Depth (ft)	0.21	2.22	0.19
Conv. Total (cfs)	5262.4	Conv. (cfs)	28.4	5227.9	6.1
Length Wtd. (ft)	513.60	Wetted Per. (ft)	16.13	37.34	4.33
Min Ch El (ft)	2436.60	Shear (lb/sq ft)	0.17	1.77	0.15
Alpha	1.08	Stream Power (lb/ft s)	0.16	12.96	0.13
Frctn Loss (ft)	9.67	Cum Volume (acre-ft)	1.92	5.72	13.73
C & E Loss (ft)	0.11	Cum SA (acres)	2.42	4.01	12.41

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.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water
surface was used.

CROSS SECTION

RIVER: Fan 6C
REACH: Fan6C-1 RS: 0.5

INPUT
Description: Cross Section 0.50 will have adjacent Zone A to represent flow that may be exiting model and heading west to adjacent wash.The flow potentially exiting the model and traveling west is defined as the amount of flow overtopping high point at levee in the cross section.

Topography indicates wash and surrounding undeveloped
desert.
Aerial shows wash, dirt roads, and undeveloped
desert.
T5NR4E Section 12
Q100 = 1,584 cfs
Station Elevation Data num= 25

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9886.37	2429.68	9921.43	2432.01	9927.68	2430.365	9932.56	2429.08	9937.91	2428.92
9949.6	2429.09	9975.8	2430.34	9991.9	2429.27	10000	2428.72	10017.27	2428.2
10021.39	2430.72	10035.38	2430.89	10118.53	2429.98	10143.57	2430.54	10223	2431.11
10248.04	2430.93	10307.68	2430.52	10402.95	2429.99	10419.91	2428.31	10426.9	2425.76
10428.9	2425.67	10434.18	2426.31	10446.77	2427.24	10484.23	2429.18	10539.03	2432.48

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9886.37	.063	9927.68	.039	9975.8	.063

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9927.68	9975.8	304.82	312.36	348.23	.1	.3

Left Levee Station= 9921.43 Elevation= 2432.01
Right Levee Station= 10223 Elevation= 2432

CROSS SECTION OUTPUT Profile #100-yr 6-hr

E.G. Elev (ft)	2430.87	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.45	Wt. n-Val.	0.063	0.039	0.063
W.S. Elev (ft)	2430.42	Reach Len. (ft)	304.82	312.36	348.23
Crit W.S. (ft)	2430.42	Flow Area (sq ft)	0.01	46.10	72.69
E.G. Slope (ft/ft)	0.029667	Area (sq ft)	0.01	46.10	72.69
Q Total (cfs)	600.00	Flow (cfs)	0.00	293.20	306.80
Top Width (ft)	153.58	Top Width (ft)	0.22	48.12	105.24
Vel Total (ft/s)	5.05	Avg. Vel. (ft/s)	0.37	6.36	4.22
Max Chl Dpth (ft)	4.75	Hydr. Depth (ft)	0.03	0.96	0.69
Conv. Total (cfs)	3483.5	Conv. (cfs)	0.0	1702.3	1781.2
Length Wtd. (ft)	322.28	Wetted Per. (ft)	0.22	48.32	105.94
Min Ch El (ft)	2428.92	Shear (lb/sq ft)	0.05	1.77	1.27
Alpha	1.13	Stream Power (lb/ft s)	0.02	11.24	5.36
Frctn Loss (ft)	3.36	Cum Volume (acre-ft)	1.90	4.96	13.31
C & E Loss (ft)	0.11	Cum SA (acres)	2.32	3.50	11.78

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: Divided flow computed for this cross-section.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
depth, the calculated water surface came back below critical depth. This indicates that there is
not a valid subcritical answer. The program defaulted to critical depth.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water
surface was used.

CROSS SECTION OUTPUT Profile #Method 1

E.G. Elev (ft)	2430.87	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.45	Wt. n-Val.	0.063	0.039	0.063
W.S. Elev (ft)	2430.42	Reach Len. (ft)	304.82	312.36	348.23
Crit W.S. (ft)	2430.42	Flow Area (sq ft)	0.01	46.10	72.69
E.G. Slope (ft/ft)	0.029667	Area (sq ft)	0.01	46.10	72.69
Q Total (cfs)	600.00	Flow (cfs)	0.00	293.20	306.80
Top Width (ft)	153.58	Top Width (ft)	0.22	48.12	105.24
Vel Total (ft/s)	5.05	Avg. Vel. (ft/s)	0.37	6.36	4.22
Max Chl Dpth (ft)	4.75	Hydr. Depth (ft)	0.03	0.96	0.69
Conv. Total (cfs)	3483.5	Conv. (cfs)	0.0	1702.3	1781.2

Length Wtd. (ft)	322.28	Wetted Per. (ft)	0.22	48.32	105.94
Min Ch El (ft)	2428.92	Shear (lb/sq ft)	0.05	1.77	1.27
Alpha	1.13	Stream Power (lb/ft s)	0.02	11.24	5.36
Frctn Loss (ft)	3.36	Cum Volume (acre-ft)	1.90	4.96	13.31
C & E Loss (ft)	0.11	Cum SA (acres)	2.32	3.50	11.78

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: Divided flow computed for this cross-section.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
depth, the calculated water surface came back below critical depth. This indicates that there is
not a valid subcritical answer. The program defaulted to critical depth.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water
surface was used.

CROSS SECTION

RIVER: Fan 6C
REACH: Fan6C-1 RS: 0.44

INPUT
Description: Cross Section 0.44 will have adjacent Zone A to represent flow that may be exiting model and heading west to adjacent wash.The flow potentially exiting the model and traveling west is defined as the amount of flow overtopping high point at levee in the cross section.

Topography indicates wash and surrounding undeveloped desert.
Aerial shows wash, dirt roads, homes, and undeveloped desert.
T5NR4E Section 12
Q100 = 1,584 cfs
Station Elevation Data num= 37

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9696.16	2427.42	9812.28	2423.49	9951.03	2424.48	9980.06	2424.63	9994.03	2423.35
10005	2423.09	10010.77	2423.04	10014.59	2424.61	10044.74	2425.37	10066.58	2424.37
10069.54	2423.44	10074.28	2423.21	10079.84	2423.65	10085.03	2424.94	10173.44	2426.24
10195.99	2425.63	10200.37	2424.49	10204	2424.24	10208.01	2424.32	10222.38	2425.4
10224.28	2424.13	10240.72	2424.73	10244.77	2426.08	10277.08	2424.62	10281.31	2423.64
10289.04	2423.72	10293.64	2424.86	10307.91	2424.77	10411.86	2425.45	10509.1	2424.43
10609.8	2422	10617.3	2420	10623.34	2420	10626.84	2422	10658.34	2424.4
10702.03	2424.39	10787.83	2426						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9696.16	.063	9980.06	.039	10014.59	.063

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9980.06	10014.59	266	268.38	264.34	.1	.3

Right Levee Station=10411.86 Elevation= 2426
Blocked Obstructions num= 1

Sta L	Sta R	Elev
10491.58	10553.38	2426

CROSS SECTION OUTPUT Profile #100-yr 6-hr

E.G. Elev (ft)	2425.14	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.09	Wt. n-Val.	0.063	0.039	0.063
W.S. Elev (ft)	2425.05	Reach Len. (ft)	266.00	268.38	264.34
Crit W.S. (ft)	2424.62	Flow Area (sq ft)	198.94	51.17	84.70

E.G. Slope (ft/ft)	0.005263	Area (sq ft)	198.94	51.17	84.70
Q Total (cfs)	600.00	Flow (cfs)	324.23	182.55	93.23
Top Width (ft)	429.64	Top Width (ft)	213.99	34.53	181.12
Vel Total (ft/s)	1.79	Avg. Vel. (ft/s)	1.63	3.57	1.10
Max Chl Dpth (ft)	5.05	Hydr. Depth (ft)	0.93	1.48	0.47
Conv. Total (cfs)	8270.5	Conv. (cfs)	4469.2	2516.3	1285.1
Length Wtd. (ft)	266.81	Wetted Per. (ft)	214.02	34.90	182.18
Min Ch El (ft)	2423.04	Shear (lb/sq ft)	0.31	0.48	0.15
Alpha	1.71	Stream Power (lb/ft s)	0.50	1.72	0.17
Frctn Loss (ft)	3.63	Cum Volume (acre-ft)	1.20	4.61	12.68
C & E Loss (ft)	0.17	Cum SA (acres)	1.57	3.21	10.63

Warning: Divided flow computed for this cross-section.
Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water
surface was used.

CROSS SECTION OUTPUT Profile #Method 1

E.G. Elev (ft)	2425.14	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.09	Wt. n-Val.	0.063	0.039	0.063
W.S. Elev (ft)	2425.05	Reach Len. (ft)	266.00	268.38	264.34
Crit W.S. (ft)	2424.62	Flow Area (sq ft)	198.94	51.17	84.70
E.G. Slope (ft/ft)	0.005263	Area (sq ft)	198.94	51.17	84.70
Q Total (cfs)	600.00	Flow (cfs)	324.23	182.55	93.23
Top Width (ft)	429.64	Top Width (ft)	213.99	34.53	181.12
Vel Total (ft/s)	1.79	Avg. Vel. (ft/s)	1.63	3.57	1.10
Max Chl Dpth (ft)	5.05	Hydr. Depth (ft)	0.93	1.48	0.47
Conv. Total (cfs)	8270.5	Conv. (cfs)	4469.2	2516.3	1285.1
Length Wtd. (ft)	266.81	Wetted Per. (ft)	214.02	34.90	182.18
Min Ch El (ft)	2423.04	Shear (lb/sq ft)	0.31	0.48	0.15
Alpha	1.71	Stream Power (lb/ft s)	0.50	1.72	0.17
Frctn Loss (ft)	3.63	Cum Volume (acre-ft)	1.20	4.61	12.68
C & E Loss (ft)	0.17	Cum SA (acres)	1.57	3.21	10.63

Warning: Divided flow computed for this cross-section.
Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water
surface was used.

CROSS SECTION

RIVER: Fan 6C
REACH: Fan6C-1 RS: 0.39

INPUT
Description: Cross Section 0.39 will have adjacent Zone A to represent flow that may be exiting model and heading west to adjacent wash.The flow potentially exiting the model and traveling west is defined as the amount of flow overtopping high point at levee in the cross section.

Topography indicates wash and surrounding undeveloped desert.

Aerial shows wash, dirt roads, and undeveloped
desert.
T5NR4E Section 12
Q100 = 1,584 cfs
Station Elevation Data num= 25

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9757.14	2429.6	9806.07	2426.53	9902.94	2419.75	9916.3	2420.16	9926.54	2416.96
9934.71	2419.62	9984.89	2419.36	9995.55	2417.87	10000	2417.92	10003.36	2417.94
10005.5	2419.36	10025.31	2418.94	10093.52	2420.61	10213.53	2420.27	10293.66	2420.13
10416.34	2419.41	10525.85	2419.19	10532.84	2419.03	10540.2	2416.49	10543.24	2415.97
10546.2	2416.26	10554.72	2419.46	10555.57	2419.79	10626.93	2419.03	10722.4	2424.65

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9757.14	.063	9984.89	.039	10005.5	.063

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9984.89	10005.5	450.26	453.31	458.5	.1	.3

Right Levee Station=10093.52 Elevation= 2422

CROSS SECTION OUTPUT Profile #100-yr 6-hr

E.G. Elev (ft)	2421.35	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.74	Wt. n-Val.	0.063	0.039	0.063
W.S. Elev (ft)	2419.61	Reach Len. (ft)	450.26	453.31	458.50
Crit W.S. (ft)	2419.61	Flow Area (sq ft)	28.31	26.02	18.47
E.G. Slope (ft/ft)	0.088468	Area (sq ft)	28.31	26.02	18.47
Q Total (cfs)	600.00	Flow (cfs)	192.20	338.63	69.17
Top Width (ft)	133.60	Top Width (ft)	65.65	20.61	47.34
Vel Total (ft/s)	8.24	Avg. Vel. (ft/s)	6.79	13.01	3.75
Max Chl Dpth (ft)	3.64	Hydr. Depth (ft)	0.43	1.26	0.39
Conv. Total (cfs)	2017.2	Conv. (cfs)	646.2	1138.5	232.6
Length Wtd. (ft)	454.25	Wetted Per. (ft)	66.47	21.14	47.35
Min Ch El (ft)	2417.87	Shear (lb/sq ft)	2.35	6.80	2.15
Alpha	1.65	Stream Power (lb/ft s)	15.97	88.46	8.07
Frctn Loss (ft)	5.86	Cum Volume (acre-ft)	0.51	4.37	12.36
C & E Loss (ft)	0.40	Cum SA (acres)	0.72	3.04	9.94

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: 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 OUTPUT Profile #Method 1

E.G. Elev (ft)	2421.35	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.74	Wt. n-Val.	0.063	0.039	0.063
W.S. Elev (ft)	2419.61	Reach Len. (ft)	450.26	453.31	458.50
Crit W.S. (ft)	2419.61	Flow Area (sq ft)	28.31	26.02	18.47
E.G. Slope (ft/ft)	0.088468	Area (sq ft)	28.31	26.02	18.47
Q Total (cfs)	600.00	Flow (cfs)	192.20	338.63	69.17
Top Width (ft)	133.60	Top Width (ft)	65.65	20.61	47.34
Vel Total (ft/s)	8.24	Avg. Vel. (ft/s)	6.79	13.01	3.75
Max Chl Dpth (ft)	3.64	Hydr. Depth (ft)	0.43	1.26	0.39
Conv. Total (cfs)	2017.2	Conv. (cfs)	646.2	1138.5	232.6
Length Wtd. (ft)	454.25	Wetted Per. (ft)	66.47	21.14	47.35

Min Ch El (ft)	2417.87	Shear (lb/sq ft)	2.35	6.80	2.15
Alpha	1.65	Stream Power (lb/ft s)	15.97	88.46	8.07
Frctn Loss (ft)	5.86	Cum Volume (acre-ft)	0.51	4.37	12.36
C & E Loss (ft)	0.40	Cum SA (acres)	0.72	3.04	9.94

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: 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: Fan 6C
REACH: Fan6C-1 RS: 0.30

INPUT
Description: Cross Section will have adjacent Zone A to represent flow that may be exiting model and heading west to adjacent wash.The flow potentially exiting the model and traveling west is defined as the amount of flow overtopping high point at levee in the cross section..

Topography indicates wash and surrounding
undeveloped desert.
Aerial shows wash, dirt roads, and
undeveloped desert.
T5NR4E Section 12
Q100 = 1,584 cfs
Station Elevation Data num= 28

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9898.64	2415.33	9932.59	2413.46	9940.66	2411.36	9971.26	2411.3	9989.71	2410.21
10000	2409.51	10014.99	2409.27	10036.44	2411.69	10079.64	2411.79	10165.31	2411.87
10175.54	2410.38	10179.21	2410.55	10184.94	2410.89	10189.83	2412.11	10233.25	2414.16
10259.44	2413.98	10278.39	2413.45	10377.02	2412.11	10380.27	2411.72	10383.99	2410.14
10400.47	2409.92	10409.89	2410.06	10411.95	2412.27	10460.57	2413.42	10601	2413.33
10622.42	2412.16	10654.02	2413	10800.32	2414.22				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9898.64	.063	9971.26	.039	10036.44	.063

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9971.26	10036.44	259.31	264.76	261.88	.1	.3

CROSS SECTION OUTPUT Profile #100-yr 6-hr

E.G. Elev (ft)	2413.02	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.41	Wt. n-Val.	0.063	0.039	0.063
W.S. Elev (ft)	2412.61	Reach Len. (ft)	259.31	264.76	261.88
Crit W.S. (ft)		Flow Area (sq ft)	42.14	156.55	242.44
E.G. Slope (ft/ft)	0.008470	Area (sq ft)	42.14	156.55	242.44
Q Total (cfs)	1584.00	Flow (cfs)	102.42	982.56	499.02
Top Width (ft)	376.12	Top Width (ft)	35.40	65.18	275.54
Vel Total (ft/s)	3.59	Avg. Vel. (ft/s)	2.43	6.28	2.06
Max Chl Dpth (ft)	3.34	Hydr. Depth (ft)	1.19	2.40	0.88

Conv. Total (cfs)	17211.2	Conv. (cfs)	1112.9	10676.1	5422.2
Length Wtd. (ft)	263.37	Wetted Per. (ft)	35.56	65.38	277.16
Min Ch El (ft)	2409.27	Shear (lb/sq ft)	0.63	1.27	0.46
Alpha	2.03	Stream Power (lb/ft s)	1.52	7.95	0.95
Frctn Loss (ft)	4.74	Cum Volume (acre-ft)	0.14	3.42	10.99
C & E Loss (ft)	0.13	Cum SA (acres)	0.20	2.59	8.24

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 OUTPUT Profile #Method 1

E.G. Elev (ft)	2413.02	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.41	Wt. n-Val.	0.063	0.039	0.063
W.S. Elev (ft)	2412.61	Reach Len. (ft)	259.31	264.76	261.88
Crit W.S. (ft)		Flow Area (sq ft)	42.14	156.55	242.44
E.G. Slope (ft/ft)	0.008470	Area (sq ft)	42.14	156.55	242.44
Q Total (cfs)	1584.00	Flow (cfs)	102.42	982.56	499.02
Top Width (ft)	376.12	Top Width (ft)	35.40	65.18	275.54
Vel Total (ft/s)	3.59	Avg. Vel. (ft/s)	2.43	6.28	2.06
Max Chl Dpth (ft)	3.34	Hydr. Depth (ft)	1.19	2.40	0.88
Conv. Total (cfs)	17211.2	Conv. (cfs)	1112.9	10676.1	5422.2
Length Wtd. (ft)	263.37	Wetted Per. (ft)	35.56	65.38	277.16
Min Ch El (ft)	2409.27	Shear (lb/sq ft)	0.63	1.27	0.46
Alpha	2.03	Stream Power (lb/ft s)	1.52	7.95	0.95
Frctn Loss (ft)	4.74	Cum Volume (acre-ft)	0.14	3.42	10.99
C & E Loss (ft)	0.13	Cum SA (acres)	0.20	2.59	8.24

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: Fan 6C
REACH: Fan6C-1 RS: 0.25

INPUT
Description: Topography indicates wash and surrounding undeveloped desert.
Aerial shows dirt roads, home pads, wash and undeveloped desert.
T5NR4E Section 12
Q100 = 1,584 cfs
Station Elevation Data num= 29

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9919.82	2410.94	9956.83	2409.12	9974.22	2407.1	9974.56	2406.79	9977.12	2404.49
9979.34	2404.47	10000	2404.46	10002.72	2404.32	10005.84	2406.8	10082.9	2407.04
10089.03	2403.59	10096.92	2403.99	10100	2404.04	10106.8	2407.03	10204.53	2406.49
10258.39	2406.42	10275.05	2403.79	10280.57	2403.45	10289.25	2403.24	10293.06	2405.98
10370.71	2406.82	10472.1	2407.91	10543.35	2407.61	10633.08	2405.03	10655.08	2403.96
10664.57	2403.22	10686.87	2406.39	10755.65	2406.19	10804.12	2407.59		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9919.82	.063	9974.56	.039	10005.84	.063

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
9974.5610005.84 513.9 512.52 501.36 .1 .3
Right Levee Station= 10472.1 Elevation= 2408.5

CROSS SECTION OUTPUT Profile #100-yr 6-hr

E.G. Elev (ft)	2408.15	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.73	Wt. n-Val.		0.039	0.063
W.S. Elev (ft)	2406.42	Reach Len. (ft)	513.90	512.52	501.36
Crit W.S. (ft)	2406.42	Flow Area (sq ft)		54.90	121.11
E.G. Slope (ft/ft)	0.061000	Area (sq ft)		54.90	121.11
Q Total (cfs)	1584.00	Flow (cfs)		742.83	841.17
Top Width (ft)	126.59	Top Width (ft)		30.38	96.22
Vel Total (ft/s)	9.00	Avg. Vel. (ft/s)		13.53	6.95
Max Chl Dpth (ft)	3.19	Hydr. Depth (ft)		1.81	1.26
Conv. Total (cfs)	6413.4	Conv. (cfs)		3007.6	3405.8
Length Wtd. (ft)	504.82	Wetted Per. (ft)		31.85	98.57
Min Ch El (ft)	2404.32	Shear (lb/sq ft)		6.57	4.68
Alpha	1.38	Stream Power (lb/ft s)		88.82	32.50
Frctn Loss (ft)	4.16	Cum Volume (acre-ft)	0.02	2.78	9.90
C & E Loss (ft)	0.50	Cum SA (acres)	0.09	2.30	7.12

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: 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 OUTPUT Profile #Method 1

E.G. Elev (ft)	2408.15	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.73	Wt. n-Val.		0.039	0.063
W.S. Elev (ft)	2406.42	Reach Len. (ft)	513.90	512.52	501.36
Crit W.S. (ft)	2406.42	Flow Area (sq ft)		54.90	121.11
E.G. Slope (ft/ft)	0.061000	Area (sq ft)		54.90	121.11
Q Total (cfs)	1584.00	Flow (cfs)		742.83	841.17
Top Width (ft)	126.59	Top Width (ft)		30.38	96.22
Vel Total (ft/s)	9.00	Avg. Vel. (ft/s)		13.53	6.95
Max Chl Dpth (ft)	3.19	Hydr. Depth (ft)		1.81	1.26
Conv. Total (cfs)	6413.4	Conv. (cfs)		3007.6	3405.8
Length Wtd. (ft)	504.82	Wetted Per. (ft)		31.85	98.57
Min Ch El (ft)	2404.32	Shear (lb/sq ft)		6.57	4.68
Alpha	1.38	Stream Power (lb/ft s)		88.82	32.50
Frctn Loss (ft)	4.16	Cum Volume (acre-ft)	0.02	2.78	9.90
C & E Loss (ft)	0.50	Cum SA (acres)	0.09	2.30	7.12

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: 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: Fan 6C
REACH: Fan6C-1 RS: 0.15

INPUT
Description: Topography indicates wash and surrounding undeveloped
desert.
Aerial shows dirt roads, homes, wash and undeveloped
desert.
T5NR4E Section 12
Q100 = 1,584 cfs
Station Elevation Data num= 21

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9963.18	2398	9967.03	2397	9968.96	2396.5	9970.88	2396	9976.38	2396
9979.41	2396	10000	2395.38	10012.54	2396	10022.77	2396.5	10026.6	2396
10054.95	2396	10067.86	2396.26	10106.6	2397.04	10163.58	2396	10207.05	2396
10248.5	2396.32	10275.24	2396	10300.68	2394	10344.79	2394	10547.19	2396
10624.9	2398								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9963.18	.063	9968.96	.039	10067.86	.063

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9968.96	10067.86	486.12	492.37	483.86	.1	.3

Right Levee Station=10106.91 Elevation= 2397.03

CROSS SECTION OUTPUT Profile #100-yr 6-hr

E.G. Elev (ft)	2397.09	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.05	Wt. n-Val.	0.063	0.039	0.063
W.S. Elev (ft)	2397.04	Reach Len. (ft)	486.12	492.37	483.86
Crit W.S. (ft)	2397.04	Flow Area (sq ft)	0.56	107.22	768.60
E.G. Slope (ft/ft)	0.003093	Area (sq ft)	0.56	107.22	768.60
Q Total (cfs)	1584.00	Flow (cfs)	0.30	239.54	1344.16
Top Width (ft)	620.37	Top Width (ft)	2.07	98.90	519.39
Vel Total (ft/s)	1.81	Avg. Vel. (ft/s)	0.53	2.23	1.75
Max Chl Dpth (ft)	3.04	Hydr. Depth (ft)	0.27	1.08	1.48
Conv. Total (cfs)	28481.1	Conv. (cfs)	5.4	4307.0	24168.7
Length Wtd. (ft)	488.09	Wetted Per. (ft)	2.14	99.04	519.51
Min Ch El (ft)	2395.38	Shear (lb/sq ft)	0.05	0.21	0.29
Alpha	1.03	Stream Power (lb/ft s)	0.03	0.47	0.50
Frctn Loss (ft)	3.10	Cum Volume (acre-ft)	0.01	1.83	4.78
C & E Loss (ft)	0.05	Cum SA (acres)	0.08	1.54	3.58

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

CROSS SECTION OUTPUT Profile #Method 1

E.G. Elev (ft)	2397.09	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.05	Wt. n-Val.	0.063	0.039	0.063
W.S. Elev (ft)	2397.04	Reach Len. (ft)	486.12	492.37	483.86
Crit W.S. (ft)	2397.04	Flow Area (sq ft)	0.56	107.22	768.60
E.G. Slope (ft/ft)	0.003093	Area (sq ft)	0.56	107.22	768.60
Q Total (cfs)	1584.00	Flow (cfs)	0.30	239.54	1344.16
Top Width (ft)	620.37	Top Width (ft)	2.07	98.90	519.39
Vel Total (ft/s)	1.81	Avg. Vel. (ft/s)	0.53	2.23	1.75
Max Chl Dpth (ft)	3.04	Hydr. Depth (ft)	0.27	1.08	1.48
Conv. Total (cfs)	28481.1	Conv. (cfs)	5.4	4307.0	24168.7
Length Wtd. (ft)	488.09	Wetted Per. (ft)	2.14	99.04	519.51
Min Ch El (ft)	2395.38	Shear (lb/sq ft)	0.05	0.21	0.29
Alpha	1.03	Stream Power (lb/ft s)	0.03	0.47	0.50
Frctn Loss (ft)	3.10	Cum Volume (acre-ft)	0.01	1.83	4.78
C & E Loss (ft)	0.05	Cum SA (acres)	0.08	1.54	3.58

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

CROSS SECTION

RIVER: Fan 6C
REACH: Fan6C-1 RS: 0.06

INPUT
Description: Cross Section 0.06 is located at the downstream project boundary
for Fan 6C. The calculated floodplain will tie into the existing
Zone AO located downstream of Cross Section 0.06.

Topography
indicates wash and surrounding undeveloped desert.
Aerial shows
dirt roads, home pads, wash and undeveloped desert.
T5NR4E
Section 12
Q100 = 3,002 cfs
Station Elevation Data num= 16

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9855.13	2390	9880.17	2390	9904.06	2390	9906.07	2390	9945.48	2389
9984.88	2388	10000	2386.68	10042.01	2388	10050.2	2388	10060.28	2388
10118.87	2389.02	10161.38	2388	10166.73	2388	10284.08	2390	10321.87	2392
10351.17	2394								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9855.13	.063	9945.48	.039	10118.87	.063

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9945.48	10118.87	0	0	0	.1	.3

CROSS SECTION OUTPUT Profile #100-yr 6-hr

E.G. Elev (ft)	2389.83	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.52	Wt. n-Val.	0.063	0.039	0.063
W.S. Elev (ft)	2389.31	Reach Len. (ft)			

Crit W.S. (ft)	2389.31	Flow Area (sq ft)	1.93	215.83	91.77
E.G. Slope (ft/ft)	0.019695	Area (sq ft)	1.93	215.83	91.77
Q Total (cfs)	1584.00	Flow (cfs)	1.86	1334.87	247.27
Top Width (ft)	310.65	Top Width (ft)	12.34	173.39	124.91
Vel Total (ft/s)	5.12	Avg. Vel. (ft/s)	0.96	6.18	2.69
Max Chl Dpth (ft)	2.63	Hydr. Depth (ft)	0.16	1.24	0.73
Conv. Total (cfs)	11286.9	Conv. (cfs)	13.2	9511.7	1762.0
Length Wtd. (ft)		Wetted Per. (ft)	12.35	173.49	124.94
Min Ch El (ft)	2386.68	Shear (lb/sq ft)	0.19	1.53	0.90
Alpha	1.27	Stream Power (lb/ft s)	0.19	9.46	2.43
Frctn Loss (ft)		Cum Volume (acre-ft)			
C & E Loss (ft)		Cum SA (acres)			

CROSS SECTION OUTPUT Profile #Method 1

E.G. Elev (ft)	2389.83	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.52	Wt. n-Val.	0.063	0.039	0.063
W.S. Elev (ft)	2389.31	Reach Len. (ft)			
Crit W.S. (ft)	2389.31	Flow Area (sq ft)	1.93	215.83	91.77
E.G. Slope (ft/ft)	0.019695	Area (sq ft)	1.93	215.83	91.77
Q Total (cfs)	1584.00	Flow (cfs)	1.86	1334.87	247.27
Top Width (ft)	310.65	Top Width (ft)	12.34	173.39	124.91
Vel Total (ft/s)	5.12	Avg. Vel. (ft/s)	0.96	6.18	2.69
Max Chl Dpth (ft)	2.63	Hydr. Depth (ft)	0.16	1.24	0.73
Conv. Total (cfs)	11286.9	Conv. (cfs)	13.2	9511.7	1762.0
Length Wtd. (ft)		Wetted Per. (ft)	12.35	173.49	124.94
Min Ch El (ft)	2386.68	Shear (lb/sq ft)	0.19	1.53	0.90
Alpha	1.27	Stream Power (lb/ft s)	0.19	9.46	2.43
Frctn Loss (ft)		Cum Volume (acre-ft)			
C & E Loss (ft)		Cum SA (acres)			

SUMMARY OF MANNING'S N VALUES

River:Fan 6C

Reach	River Sta.	n1	n2	n3	n4	n5
Fan6C-1	2.69	.05	.035	.05		
Fan6C-1	2.63	.05	.035	.05		
Fan6C-1	2.58	.05	.035	.05		
Fan6C-1	2.56	Culvert				
Fan6C-1	2.55	.05	.035	.05		
Fan6C-1	2.51	.05	.015	.05	.035	.05
Fan6C-1	2.43	.05	.015	.05	.035	.05
Fan6C-1	2.4	.05	.035	.05		
Fan6C-1	2.39	.063	.035	.063		
Fan6C-1	2.31	.05	.035	.05		
Fan6C-1	2.30	.05	.035	.05		
Fan6C-1	2.28	Culvert				
Fan6C-1	2.26	.05	.015	.05		
Fan6C-1	2.23	.05	.015	.05		
Fan6C-1	2.22	Culvert				
Fan6C-1	2.20	.05	.035	.05		
Fan6C-1	2.17	.05	.035	.05		
Fan6C-1	2.13	.05	.035	.05		
Fan6C-1	2.03	.05	.035	.05		
Fan6C-1	1.99	.05	.035	.05		
Fan6C-1	1.93	.05	.035	.05		
Fan6C-1	1.88	.05	.035	.05		
Fan6C-1	1.875	Culvert				
Fan6C-1	1.87	.05	.035	.05		
Fan6C-1	1.83	.05	.035	.05		
Fan6C-1	1.79	.058	.038	.058		
Fan6C-1	1.73	.058	.038	.058		
Fan6C-1	1.64	.058	.038	.058		
Fan6C-1	1.55	.058	.038	.058		
Fan6C-1	1.49	.058	.038	.058		

Fan6C-1	1.44	.058	.038	.058
Fan6C-1	1.39	.058	.038	.058
Fan6C-1	1.33	.063	.038	.063
Fan6C-1	1.26	.058	.038	.058
Fan6C-1	1.23	.058	.038	.058
Fan6C-1	1.16	.058	.038	.058
Fan6C-1	1.07	.058	.038	.058
Fan6C-1	1.02	.063	.038	.063
Fan6C-1	0.94	.058	.038	.058
Fan6C-1	0.91	.058	.038	.058
Fan6C-1	0.82	.058	.038	.058
Fan6C-1	0.78	.058	.038	.058
Fan6C-1	0.775	Culvert		
Fan6C-1	0.77	.058	.038	.058
Fan6C-1	0.73	.064	.041	.064
Fan6C-1	0.63	.064	.041	.064
Fan6C-1	0.59	.063	.039	.063
Fan6C-1	0.5	.063	.039	.063
Fan6C-1	0.44	.063	.039	.063
Fan6C-1	0.39	.063	.039	.063
Fan6C-1	0.30	.063	.039	.063
Fan6C-1	0.25	.063	.039	.063
Fan6C-1	0.15	.063	.039	.063
Fan6C-1	0.06	.063	.039	.063

SUMMARY OF REACH LENGTHS

River: Fan 6C

Reach	River Sta.	Left	Channel	Right
Fan6C-1	2.69	306.62	300.14	301.4
Fan6C-1	2.63	290.56	289.61	293.24
Fan6C-1	2.58	125.14	134.02	126.77
Fan6C-1	2.56	Culvert		
Fan6C-1	2.55	223.15	215.96	228.19
Fan6C-1	2.51	442.24	443.47	445.28
Fan6C-1	2.43	143.02	127.09	132.71
Fan6C-1	2.4	98.25	94.63	95.55
Fan6C-1	2.39	388.83	379.26	383.77
Fan6C-1	2.31	107.1	102.16	105.46
Fan6C-1	2.30	200.7	200.75	200.75
Fan6C-1	2.28	Culvert		
Fan6C-1	2.26	157.98	155.06	160
Fan6C-1	2.23	159.45	152.12	153.56
Fan6C-1	2.22	Culvert		
Fan6C-1	2.20	183.56	151.04	130.96
Fan6C-1	2.17	222.23	217.67	215.82
Fan6C-1	2.13	511.67	508.61	504.97
Fan6C-1	2.03	216.87	220.15	223.42
Fan6C-1	1.99	309.21	308.64	298.27
Fan6C-1	1.93	275.13	270.57	276.22
Fan6C-1	1.88	86	86.31	86.52
Fan6C-1	1.875	Culvert		
Fan6C-1	1.87	209	208.61	210.57
Fan6C-1	1.83	208.69	211.59	214.56
Fan6C-1	1.79	292.33	286.41	284.13
Fan6C-1	1.73	493.35	501.1	502.48
Fan6C-1	1.64	440.46	440.77	436.17
Fan6C-1	1.55	318.03	321.74	335.63
Fan6C-1	1.49	276.51	275.98	275.11
Fan6C-1	1.44	262.83	262.24	261.68
Fan6C-1	1.39	314.47	311.34	309.71
Fan6C-1	1.33	370.36	371.12	368.51
Fan6C-1	1.26	137.11	143.64	142.27
Fan6C-1	1.23	372.4	407.77	417.22
Fan6C-1	1.16	460.49	467.04	470.81
Fan6C-1	1.07	241.74	252.51	257.68

Fan6C-1	1.02	382.1	399.37	372.94
Fan6C-1	0.94	203.82	207.27	203.02
Fan6C-1	0.91	477.13	468.04	465.99
Fan6C-1	0.82	166.98	168.75	189.71
Fan6C-1	0.78	71.57	71.2	69.94
Fan6C-1	0.775	Culvert		
Fan6C-1	0.77	762.68	193.78	758.4
Fan6C-1	0.73	400	553.32	400
Fan6C-1	0.63	171.06	188.86	170.79
Fan6C-1	0.59	507.35	516.57	505.09
Fan6C-1	0.5	304.82	312.36	348.23
Fan6C-1	0.44	266	268.38	264.34
Fan6C-1	0.39	450.26	453.31	458.5
Fan6C-1	0.30	259.31	264.76	261.88
Fan6C-1	0.25	513.9	512.52	501.36
Fan6C-1	0.15	486.12	492.37	483.86
Fan6C-1	0.06	0	0	0

SUMMARY OF CONTRACTION AND EXPANSION COEFFICIENTS
River: Fan 6C

Reach	River Sta.	Contr.	Expan.
Fan6C-1	2.69	.1	.3
Fan6C-1	2.63	.3	.5
Fan6C-1	2.58	.3	.5
Fan6C-1	2.56	Culvert	
Fan6C-1	2.55	.3	.5
Fan6C-1	2.51	.1	.3
Fan6C-1	2.43	.1	.3
Fan6C-1	2.4	.1	.3
Fan6C-1	2.39	.1	.3
Fan6C-1	2.31	.3	.5
Fan6C-1	2.30	.3	.5
Fan6C-1	2.28	Culvert	
Fan6C-1	2.26	.3	.5
Fan6C-1	2.23	.3	.5
Fan6C-1	2.22	Culvert	
Fan6C-1	2.20	.3	.5
Fan6C-1	2.17	.1	.3
Fan6C-1	2.13	.1	.3
Fan6C-1	2.03	.1	.3
Fan6C-1	1.99	.1	.3
Fan6C-1	1.93	.3	.5
Fan6C-1	1.88	.3	.5
Fan6C-1	1.875	Culvert	
Fan6C-1	1.87	.3	.5
Fan6C-1	1.83	.1	.3
Fan6C-1	1.79	.1	.3
Fan6C-1	1.73	.1	.3
Fan6C-1	1.64	.1	.3
Fan6C-1	1.55	.1	.3
Fan6C-1	1.49	.1	.3
Fan6C-1	1.44	.1	.3
Fan6C-1	1.39	.1	.3
Fan6C-1	1.33	.1	.3
Fan6C-1	1.26	.1	.3
Fan6C-1	1.23	.1	.3
Fan6C-1	1.16	.1	.3
Fan6C-1	1.07	.1	.3
Fan6C-1	1.02	.1	.3
Fan6C-1	0.94	.1	.3
Fan6C-1	0.91	.1	.3
Fan6C-1	0.82	.3	.5
Fan6C-1	0.78	.3	.5
Fan6C-1	0.775	Culvert	
Fan6C-1	0.77	.3	.5

Fan6C-1	0.73	.1	.3
Fan6C-1	0.63	.1	.3
Fan6C-1	0.59	.1	.3
Fan6C-1	0.5	.1	.3
Fan6C-1	0.44	.1	.3
Fan6C-1	0.39	.1	.3
Fan6C-1	0.30	.1	.3
Fan6C-1	0.25	.1	.3
Fan6C-1	0.15	.1	.3
Fan6C-1	0.06	.1	.3

Profile Output Table - Standard Table 1

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Fan6C-1	2.69	100-yr 6-hr	1261.00	2644.39	2646.97	2646.97	2647.95	0.014047	7.96	158.72	82.39	0.99
Fan6C-1	2.69	Method 1	1261.00	2644.39	2646.95	2646.95	2647.95	0.014582	8.04	156.80	78.37	1.00
Fan6C-1	2.63	100-yr 6-hr	1261.00	2639.10	2641.68	2641.68	2642.55	0.013647	7.49	172.17	106.08	0.97
Fan6C-1	2.63	Method 1	1261.00	2639.10	2641.66	2641.66	2642.56	0.014704	7.63	165.26	89.79	0.99
Fan6C-1	2.58	100-yr 6-hr	1261.00	2633.11	2639.93	2636.48	2640.31	0.001374	4.96	254.41	312.56	0.34
Fan6C-1	2.58	Method 1	1261.00	2633.11	2639.93	2636.45	2640.31	0.001374	4.96	254.41	72.16	0.34
Fan6C-1	2.56		Culvert									
Fan6C-1	2.55	100-yr 6-hr	1261.00	2628.03	2631.34	2631.34	2632.62	0.013259	9.10	138.58	53.50	1.00
Fan6C-1	2.55	Method 1	1261.00	2628.03	2631.34	2631.34	2632.62	0.013259	9.10	138.58	53.50	1.00
Fan6C-1	2.51	100-yr 6-hr	1261.00	2624.42	2629.35	2629.35	2629.40	0.000083	0.95	759.37	339.43	0.08
Fan6C-1	2.51	Method 1	1261.00	2624.42	2629.35	2629.35	2629.47	0.000193	1.40	484.80	185.71	0.12
Fan6C-1	2.43	100-yr 6-hr	1261.00	2617.24	2621.07	2619.34	2621.22	0.000425	1.71	438.20	186.26	0.17
Fan6C-1	2.43	Method 1	1261.00	2617.24	2621.13	2621.13	2622.12	0.004137	5.39	171.25	85.37	0.52
Fan6C-1	2.4	100-yr 6-hr	1261.00	2615.31	2620.01	2619.43	2620.99	0.006204	8.06	171.93	65.22	0.73
Fan6C-1	2.4	Method 1	1261.00	2615.31	2619.93	2619.38	2621.06	0.008053	8.53	147.91	39.78	0.78
Fan6C-1	2.39	100-yr 6-hr	1261.00	2613.93	2618.52	2618.52	2620.18	0.010124	10.60	140.72	59.89	0.94
Fan6C-1	2.39	Method 1	1261.00	2613.93	2618.49	2618.49	2620.15	0.010227	10.61	134.97	43.03	0.94
Fan6C-1	2.31	100-yr 6-hr	1346.00	2607.03	2611.39	2611.39	2612.55	0.008572	9.30	190.77	94.03	0.85
Fan6C-1	2.31	Method 1	1346.00	2607.03	2611.36	2611.36	2613.23	0.013833	10.97	122.70	33.19	1.01
Fan6C-1	2.30	100-yr 6-hr	1346.00	2603.77	2607.25	2607.25	2608.80	0.012280	10.04	135.76	46.45	0.99
Fan6C-1	2.30	Method 1	1346.00	2603.77	2607.26	2607.26	2608.85	0.013312	10.12	133.00	41.27	0.99

Fan6C-1	2.28			Culvert				
Fan6C-1	2.26	100-yr 6-hr		1346.00	2601.77	2605.58	2605.58	2607.42
0.002378	10.88	124.33	34.02	0.99				
Fan6C-1	2.26	Method 1		1346.00	2601.77	2605.58	2605.58	2607.42
0.002652	10.87	123.81	33.28	0.99				
Fan6C-1	2.23	100-yr 6-hr		1346.00	2598.59	2602.36	2602.36	2604.23
0.002506	10.98	122.73	33.19	1.00				
Fan6C-1	2.23	Method 1		1346.00	2598.59	2602.36	2602.36	2604.23
0.002506	10.98	122.73	33.19	1.00				
Fan6C-1	2.22			Culvert				
Fan6C-1	2.20	100-yr 6-hr		1346.00	2596.61	2599.32	2599.32	2600.58
0.013448	9.01	149.39	58.48	0.99				
Fan6C-1	2.20	Method 1		1346.00	2596.61	2599.32	2599.32	2600.58
0.014237	9.01	149.39	58.24	0.99				
Fan6C-1	2.17	100-yr 6-hr		1346.00	2591.35	2596.87	2596.52	2597.75
0.007181	7.97	215.99	123.49	0.76				
Fan6C-1	2.17	Method 1		1346.00	2591.35	2597.15	2596.52	2598.22
0.007305	8.27	162.70	44.24	0.76				
Fan6C-1	2.13	100-yr 6-hr		1346.00	2588.68	2593.94	2593.94	2595.77
0.010724	11.02	133.03	41.31	0.94				
Fan6C-1	2.13	Method 1		1346.00	2588.68	2593.88	2593.88	2595.96
0.014157	11.58	116.22	27.51	0.99				
Fan6C-1	2.03	100-yr 6-hr		1346.00	2581.14	2582.99	2582.99	2583.70
0.020269	7.56	206.65	164.78	1.12				
Fan6C-1	2.03	Method 1		1346.00	2581.14	2583.79	2583.79	2584.91
0.014400	8.48	158.64	72.01	1.01				
Fan6C-1	1.99	100-yr 6-hr		1346.00	2576.93	2579.13	2579.13	2579.88
0.014105	7.47	218.02	162.03	0.98				
Fan6C-1	1.99	Method 1		1346.00	2576.93	2579.35	2579.35	2580.35
0.014590	8.03	167.62	82.76	0.99				
Fan6C-1	1.93	100-yr 6-hr		1346.00	2569.69	2572.65	2572.65	2573.66
0.011912	8.44	187.07	107.31	0.94				
Fan6C-1	1.93	Method 1		1346.00	2569.69	2572.72	2572.72	2574.00
0.013925	9.08	148.19	57.93	1.00				
Fan6C-1	1.88	100-yr 6-hr		1346.00	2563.34	2570.44	2566.96	2570.77
0.001253	4.82	342.39	104.94	0.32				
Fan6C-1	1.88	Method 1		1346.00	2563.34	2570.53	2566.96	2570.93
0.001497	5.10	270.57	43.56	0.34				
Fan6C-1	1.875			Culvert				
Fan6C-1	1.87	100-yr 6-hr		1346.00	2562.51	2566.04	2566.04	2567.59
0.012051	10.03	137.50	62.33	0.96				
Fan6C-1	1.87	Method 1		1346.00	2562.51	2565.95	2565.95	2567.61
0.014004	10.33	130.29	39.04	1.00				
Fan6C-1	1.83	100-yr 6-hr		1369.00	2558.13	2560.60	2560.60	2561.32
0.014712	7.92	228.18	150.61	1.01				
Fan6C-1	1.83	Method 1		1369.00	2558.13	2561.32	2561.32	2562.62
0.013884	9.14	149.80	56.89	0.99				
Fan6C-1	1.79	100-yr 6-hr		1369.00	2553.34	2555.05	2554.96	2555.36
0.024217	5.42	329.91	423.16	1.04				
Fan6C-1	1.79	Method 1		1369.00	2553.34	2555.93	2555.93	2556.81
0.018378	7.53	181.75	105.23	1.01				
Fan6C-1	1.73	100-yr 6-hr		1369.00	2547.04	2549.62	2549.62	2549.89
0.015375	5.07	360.26	378.17	0.86				
Fan6C-1	1.73	Method 1		1369.00	2547.04	2550.19	2550.19	2551.02
0.018640	7.31	187.39	113.97	1.00				

Fan6C-1	1.64		100-yr 6-hr		1369.00	2537.53	2539.48	2539.48	2540.00
0.023467	6.74	261.58		258.53	1.09				
Fan6C-1	1.64		Method 1		1369.00	2537.53	2540.34	2540.17	2541.11
0.013025	7.06	193.80		94.40	0.87				
Fan6C-1	1.55		100-yr 6-hr		1369.00	2530.00	2531.71		2531.98
0.013952	5.78	352.24		277.92	0.86				
Fan6C-1	1.55		Method 1		1369.00	2530.00	2532.33	2532.31	2533.40
0.024611	9.57	172.91		80.68	1.19				
Fan6C-1	1.49		100-yr 6-hr		1369.00	2523.15	2526.53	2526.53	2527.38
0.013806	7.47	196.78		148.59	0.91				
Fan6C-1	1.49		Method 1		1369.00	2523.15	2526.51	2526.51	2527.38
0.014224	7.54	191.96		124.00	0.93				
Fan6C-1	1.44		100-yr 6-hr		1369.00	2518.04	2521.47	2521.47	2522.24
0.017200	7.05	197.80		138.96	0.98				
Fan6C-1	1.44		Method 1		1369.00	2518.04	2521.45	2521.45	2522.25
0.018405	7.19	190.40		119.51	1.00				
Fan6C-1	1.39		100-yr 6-hr		1369.00	2513.65	2515.90	2515.75	2516.42
0.015745	6.64	266.88		204.88	0.93				
Fan6C-1	1.39		Method 1		1369.00	2513.65	2516.35	2516.35	2517.37
0.017695	8.13	168.48		83.60	1.01				
Fan6C-1	1.33		100-yr 6-hr		1369.00	2508.25	2510.92	2510.92	2511.47
0.016073	6.55	279.23		263.65	0.94				
Fan6C-1	1.33		Method 1		1369.00	2508.25	2511.19	2511.12	2511.96
0.015263	7.02	195.09		108.66	0.92				
Fan6C-1	1.26		100-yr 6-hr		1369.00	2502.00	2504.18		2504.48
0.009731	5.60	377.10		318.05	0.75				
Fan6C-1	1.26		Method 1		1369.00	2502.00	2504.79	2504.79	2505.96
0.016936	8.83	162.77		71.22	1.01				
Fan6C-1	1.23		100-yr 6-hr		1349.00	2500.00	2502.41	2502.41	2502.92
0.012128	5.97	288.33		334.03	0.82				
Fan6C-1	1.23		Method 1		1349.00	2500.00	2502.34	2502.34	2503.05
0.016892	6.83	206.59		160.00	0.96				
Fan6C-1	1.16		100-yr 6-hr		1349.00	2490.20	2493.01	2493.01	2493.75
0.014416	7.23	221.89		165.26	0.92				
Fan6C-1	1.16		Method 1		1349.00	2490.20	2493.02	2493.02	2494.01
0.017928	7.97	169.26		88.00	1.01				
Fan6C-1	1.07		100-yr 6-hr		1349.00	2480.27	2483.81	2483.81	2484.63
0.014463	7.80	216.10		145.27	0.94				
Fan6C-1	1.07		Method 1		1349.00	2480.27	2483.99	2483.99	2485.15
0.016645	8.65	155.98		67.29	1.00				
Fan6C-1	1.02		100-yr 6-hr		1349.00	2476.33	2478.48	2478.13	2478.87
0.019736	5.81	280.23		220.41	0.98				
Fan6C-1	1.02		Method 1		1349.00	2476.33	2479.16	2479.16	2480.07
0.018243	7.64	176.52		99.92	1.01				
Fan6C-1	0.94		100-yr 6-hr		1349.00	2468.00	2471.65	2471.65	2472.86
0.011990	9.05	171.26		82.36	0.91				
Fan6C-1	0.94		Method 1		1349.00	2468.00	2471.88		2472.93
0.009994	8.43	177.89		67.81	0.81				
Fan6C-1	0.91		100-yr 6-hr		1349.00	2463.28	2468.10	2468.10	2469.43
0.010008	10.01	180.75		77.34	0.86				
Fan6C-1	0.91		Method 1		1349.00	2463.28	2468.29	2468.15	2470.29
0.015351	11.35	118.83		26.83	0.95				
Fan6C-1	0.82		100-yr 6-hr		1513.00	2456.24	2461.20	2461.20	2462.31
0.009028	9.15	223.45		101.13	0.81				
Fan6C-1	0.82		Method 1		1513.00	2456.24	2461.13	2461.13	2463.06
0.015453	11.15	135.69		34.72	0.99				

Fan6C-1	0.78		100-yr 6-hr	600.00	2454.42	2460.90		2460.92
0.000109	1.19	592.74	148.30	0.09				
Fan6C-1	0.78		Method 1	600.00	2454.42	2460.90		2460.92
0.000109	1.19	592.74	148.30	0.09				
Fan6C-1	0.775			Culvert				
Fan6C-1	0.77		100-yr 6-hr	600.00	2452.06	2455.09	2454.34	2455.31
0.003987	4.61	192.58	107.93	0.51				
Fan6C-1	0.77		Method 1	600.00	2452.06	2455.09	2454.34	2455.31
0.003987	4.61	192.58	107.93	0.51				
Fan6C-1	0.73		100-yr 6-hr	600.00	2448.81	2451.87	2451.87	2452.80
0.015726	7.86	85.00	57.64	0.91				
Fan6C-1	0.73		Method 1	600.00	2448.81	2451.87	2451.87	2452.80
0.015726	7.86	85.00	57.64	0.91				
Fan6C-1	0.63		100-yr 6-hr	600.00	2439.22	2442.40	2442.12	2443.17
0.013634	7.05	85.12	38.33	0.83				
Fan6C-1	0.63		Method 1	600.00	2439.22	2442.40	2442.12	2443.17
0.013634	7.05	85.12	38.33	0.83				
Fan6C-1	0.59		100-yr 6-hr	600.00	2436.60	2439.83	2439.69	2440.66
0.013000	7.31	85.73	57.19	0.87				
Fan6C-1	0.59		Method 1	600.00	2436.60	2439.83	2439.69	2440.66
0.013000	7.31	85.73	57.19	0.87				
Fan6C-1	0.5		100-yr 6-hr	600.00	2428.92	2430.42	2430.42	2430.87
0.029667	6.36	118.80	153.58	1.15				
Fan6C-1	0.5		Method 1	600.00	2428.92	2430.42	2430.42	2430.87
0.029667	6.36	118.80	153.58	1.15				
Fan6C-1	0.44		100-yr 6-hr	600.00	2423.04	2425.05	2424.62	2425.14
0.005263	3.57	334.81	429.64	0.52				
Fan6C-1	0.44		Method 1	600.00	2423.04	2425.05	2424.62	2425.14
0.005263	3.57	334.81	429.64	0.52				
Fan6C-1	0.39		100-yr 6-hr	600.00	2417.87	2419.61	2419.61	2421.35
0.088468	13.01	72.80	133.60	2.04				
Fan6C-1	0.39		Method 1	600.00	2417.87	2419.61	2419.61	2421.35
0.088468	13.01	72.80	133.60	2.04				
Fan6C-1	0.30		100-yr 6-hr	1584.00	2409.27	2412.61		2413.02
0.008470	6.28	441.12	376.12	0.71				
Fan6C-1	0.30		Method 1	1584.00	2409.27	2412.61		2413.02
0.008470	6.28	441.12	376.12	0.71				
Fan6C-1	0.25		100-yr 6-hr	1584.00	2404.32	2406.42	2406.42	2408.15
0.061000	13.53	176.01	126.59	1.77				
Fan6C-1	0.25		Method 1	1584.00	2404.32	2406.42	2406.42	2408.15
0.061000	13.53	176.01	126.59	1.77				
Fan6C-1	0.15		100-yr 6-hr	1584.00	2395.38	2397.04	2397.04	2397.09
0.003093	2.23	876.38	620.37	0.38				
Fan6C-1	0.15		Method 1	1584.00	2395.38	2397.04	2397.04	2397.09
0.003093	2.23	876.38	620.37	0.38				
Fan6C-1	0.06		100-yr 6-hr	1584.00	2386.68	2389.31	2389.31	2389.83
0.019695	6.18	309.53	310.65	0.98				
Fan6C-1	0.06		Method 1	1584.00	2386.68	2389.31	2389.31	2389.83
0.019695	6.18	309.53	310.65	0.98				

HEC-RAS Version 3.1.2 April 2004
U.S. Army Corp of Engineers
Hydrologic Engineering Center
609 Second Street
Davis, California

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

PROJECT DATA
Project Title: F6C-Split Flow
Project File : F6Csplit.prj
Run Date and Time: 12/16/2005 11:04:42 AM

Project in English units

Project Description:
Study Name: North Scottsdale Floodplain Delineation Study
Contract No.: FCD
2003 C008

Purpose of Study: Delineation of the inundation limits of the
100-yr, 6-hr storm
event for Fan 6C.

Model Name: North Scottsdale
Delineation Study, Fan 6C

Model Description: This study determined the flood
plain and flood way limits of the
100-yr-6-hr storm event for Fan 6C.
Profile #1, 100-yr 6-hr,
models the flood plain. Profile #2, Method 1,
models the flood way.
Culvert information can be found in APPENDIX E.4 of
the main report.

Mapping: Scottsdale Mapping: IGA 93-07
FCD Contract
No.: FCD-XX-XX
Project Type: Topographic Mapping
Starting Date:
1-14-94
Ending Date: 1-14-97

Flow Profiles: Profile #1, 100-yr,
6-hr
Sections 2.69 to 2.40, Q= 1,261 cfs
Sections 2.31 to 1.87, Q=
1,346 cfs
Sections 1.83 to 1.26, Q= 1,369 cfs

Sections 1.23 to 0.91, Q=
1,349 cfs
Sections 0.82 to 0.78, Q= 1,513 cfs
Sections 0.77 to 0.06, Q=
1,584 cfs

Profile #2, Method 1
Sections 2.69 to 2.40, Q= 1,261
cfs
Sections 2.31 to 1.87, Q= 1,346 cfs
Sections 1.83 to 1.26, Q= 1,369
cfs
Sections 1.23 to 0.91, Q= 1,349 cfs
Sections 0.82 to 0.78, Q= 1,513
cfs
Sections 0.77 to 0.06, Q= 1,584 cfs

Profile #3,
Meth4-1.0ft
Sections 2.69 to 2.40, Q= 1,261 cfs
Sections 2.31 to 1.87,
Q= 1,346 cfs
Sections 1.83 to 1.26, Q= 1,369 cfs
Sections 1.23 to 0.91,
Q= 1,349 cfs
Sections 0.82 to 0.78, Q= 1,513 cfs
Sections 0.77 to 0.06,
Q= 1,584 cfs

Profile #4, Meth4-0.8ft
Sections 2.69 to 2.40, Q=
1,261 cfs
Sections 2.32 to 1.87, Q= 1,346 cfs
Sections 1.83 to 1.26, Q=
1,369 cfs
Sections 1.23 to 0.91, Q= 1,349 cfs
Sections 0.82 to 0.78, Q=
1,513 cfs
Sections 0.77 to 0.06, Q= 1,584 cfs

HEC-RAS Version: Version
3.1.1, May 2003

Consultant: DEI Professional Services, LLC
6225 N. 24th
Street, Suite 200
Phoenix, AZ 85016
(602) 954-0038 Phone
(602)
944-8605 Fax

PLAN DATA

Plan Title: Plan 05
Plan File : j:\projects\03062\Reports\FINAL\CD1\HEC-RAS\F6C-ALL
\F6Csplit.p05

```
          Geometry Title: Levee Fail Conditions Geometry
          Geometry File : j:\projects\03062\Reports\FINAL\CD1\HEC-RAS
\F6C-ALL\F6Csplit.g02

          Flow Title    : 100-yr, 6-hr
          Flow File     : j:\projects\03062\Reports\FINAL\CD1\HEC-RAS
\F6C-ALL\F6Csplit.f01

Plan Summary Information:
Number of:  Cross Sections =   49    Multiple Openings  =    0
            Culverts       =    5    Inline Structures  =    0
            Bridges        =    0    Lateral Structures =    0

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

Computation Options
    Critical depth computed only where necessary
    Conveyance Calculation Method: At breaks in n values only
    Friction Slope Method:         Average Conveyance
    Computational Flow Regime:     Subcritical Flow

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

River = Fan 6C           Reach = Fan6C-1
RS      Profile           Method  Value1  Value2
2.69    Method 1               1 9945.7510024.12
2.63    Method 1               1 9971.6210061.41
2.58    Method 1               1 9981.5210053.68
2.56    Method 1               4       1
2.55    Method 1               1 9981.5210053.68
2.51    Method 1               1  9828.710014.41
2.43    Method 1               1 9926.0510011.42
2.4     Method 1               1 9990.1910029.97
2.39    Method 1               1 9991.1810034.21
2.31    Method 1               1 9995.4310028.62
2.30    Method 1               1 9982.5110025.44
2.28    Method 1               4       1
2.26    Method 1               1 9992.1610025.44
2.23    Method 1               1 9976.2910034.53
2.22    Method 1               4       1
2.20    Method 1               1 9981.8310040.07
2.17    Method 1               1  9987.610031.84
2.13    Method 1               1 9993.5510021.06
2.03    Method 1               1 9953.6810025.69
1.99    Method 1               1 9985.2210067.98
1.93    Method 1               1  9990.210048.13
1.88    Method 1               1    999310032.04
1.875   Method 1               4       1
1.87    Method 1               1 9987.6710026.71
1.83    Method 1               1 9992.6910049.58
1.79    Method 1               1 9985.87 10091.1
1.73    Method 1               1 9910.9610024.93
1.64    Method 1               1 9965.3510059.75
```

1.55	Method 1	1	9977.8	10058.54
1.49	Method 1	1	9940	10064
1.44	Method 1	1	9912.18	10031.69
1.39	Method 1	1	9957.32	10040.92
1.33	Method 1	1	9908.65	10017.31
1.26	Method 1	1	9968.55	10039.73
1.23	Method 1	1	9974.43	10048.44
1.16	Method 1	1	9942.06	10030.06
1.07	Method 1	1	9971.92	10039.21
1.02	Method 1	1	9931.87	10031.79
0.94	Method 1	1	9978	10053
0.91	Method 1	1	9987.03	10013.92
0.82	Method 1	1	9984.53	10019.25
0.78	Method 1	1	9975.66	10067.95
0.775	Method 1	4	1	
0.77	Method 1	1	9975.66	10062.9
0.73	Method 1	1	9984.12	10019
0.63	Method 1	1	10512.01	10592.88
0.59	Method 1	1	10379.91	0482.62
0.5	Method 1	1	10419.91	10446.77
0.44	Method 1	1	10600.71	0626.84
0.39	Method 1	1	10500.09	10554.72
0.30	Method 1	1	9960.82	10092.28
0.25	Method 1	1	9974.56	10134.33
0.15	Method 1	1	9968.96	10302.47
0.06	Method 1	1	9945.48	10118.87

River = Fan 6C Reach = Fan6C-1

RS	Profile	Method	Value1	Value2
2.69	Method 4	4	1	
2.63	Method 4	4	1	
2.58	Method 4	4	1	
2.56	Method 4	4	1	
2.55	Method 4	4	1	
2.51	Method 4	4	1	
2.43	Method 4	4	1	
2.4	Method 4	4	1	
2.39	Method 4	4	1	
2.31	Method 4	4	1	
2.30	Method 4	4	1	
2.28	Method 4	4	1	
2.26	Method 4	4	1	
2.23	Method 4	4	1	
2.22	Method 4	4	1	
2.20	Method 4	4	1	
2.17	Method 4	4	1	
2.13	Method 4	4	1	
2.03	Method 4	4	1	
1.99	Method 4	4	1	
1.93	Method 4	4	1	
1.88	Method 4	4	1	
1.875	Method 4	4	1	
1.87	Method 4	4	1	
1.83	Method 4	4	1	
1.79	Method 4	4	1	
1.73	Method 4	4	1	
1.64	Method 4	4	1	
1.55	Method 4	4	1	
1.49	Method 4	4	1	
1.44	Method 4	4	1	
1.39	Method 4	4	1	

1.33	Method 4	4	1
1.26	Method 4	4	1
1.23	Method 4	4	1
1.16	Method 4	4	1
1.07	Method 4	4	1
1.02	Method 4	4	1
0.94	Method 4	4	1
0.91	Method 4	4	1
0.82	Method 4	4	1
0.78	Method 4	4	1
0.775	Method 4	4	1
0.77	Method 4	4	1
0.73	Method 4	4	1
0.63	Method 4	4	1
0.59	Method 4	4	1
0.5	Method 4	4	1
0.44	Method 4	4	1
0.39	Method 4	4	1
0.30	Method 4	4	1
0.25	Method 4	4	1
0.15	Method 4	4	1
0.06	Method 4	4	1

FLOW DATA

Flow Title: 100-yr, 6-hr
Flow File : j:\projects\03062\Reports\FINAL\CD1\HEC-RAS\F6C-ALL
\F6Csplit.f01

Flow Data (cfs)

River	Reach	RS	100-yr 6-hr	Method 1	Method 4
Fan 6C	Fan6C-2	2.69	1261	1261	1261
Fan 6C	Fan6C-2	2.31	1346	1346	1346
Fan 6C	Fan6C-2	1.83	1369	1369	1369
Fan 6C	Fan6C-2	1.23	1349	1349	1349
Fan 6C	Fan6C-2	0.82	1513	1513	1513
Fan 6C	Fan6C-2	0.78	600	600	600
Fan 6C	Fan6C-2	0.63	984	984	984
Fan 6C	Fan6C-2	0.30	1584	1584	1584

Boundary Conditions

River	Reach	Profile	Upstream	Downstream
Fan 6C	Fan6C-2	100-yr 6-hr		Critical

```
  Fan 6C          Fan6C-2         Method 1
Critical

Changes in WS and EG

  River           Reach           RS      Profile         Type
Value
  Fan 6C          Fan6C-2         0.78    Method 1  Known WS    2460.9
  Fan 6C          Fan6C-2         0.78    100-yr 6-hr  Known WS
2460.9



GEOMETRY DATA

Geometry Title: Levee Fail Conditions Geometry
Geometry File : j:\projects\03062\Reports\FINAL\CD1\HEC-RAS\F6C-ALL
\F6Csplit.g02

CROSS SECTION


RIVER: Fan 6C
REACH: Fan6C-2            RS: 2.69

INPUT
Description: Cross Section 2.69 is the north boundary for the
delineations for
             Fan 6C.

Topography and Aerial indicate wash and surrounding
             undeveloped desert. Cross section composed of Cross Section
Data
             collected by the city of Scottsdale Survey Department.
T5NR5E
             Section 5
Q100 = 1,261 cfs
Station Elevation Data    num=      14
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta
Elev
 9895.27 2652.78 9919.62 2649.62 9941.39 2648.38 9945.75 2646.89 9959.48
2645.94
 9968.59  2644.7  9997.9 2644.3910022.14 2644.4210024.12  2646.810045.87
2647.76
10096.69 2647.3510155.24 2647.8410206.76 2647.49 10224.6 2646.94

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
 9895.27     .05 9945.75    .03510024.12     .05

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.
Expan.
       9945.7510024.12           306.62  300.14   301.4             .1
.3
Right Levee     Station=10045.87      Elevation= 2647.76

CROSS SECTION OUTPUT  Profile #100-yr 6-hr

  E.G. Elev (ft)           2647.95    Element                    Left OB
Channel   Right OB
```

```
  Vel Head (ft)                0.98    Wt. n-Val.                  0.050
0.035      0.050
  W.S. Elev (ft)            2646.97    Reach Len. (ft)           306.62
300.14     301.40
  Crit W.S. (ft)            2646.97    Flow Area (sq ft)           0.01
158.39       0.32
  E.G. Slope (ft/ft)       0.014047    Area (sq ft)                0.01
158.39       0.32
  Q Total (cfs)             1261.00    Flow (cfs)                  0.00
1260.78       0.21
  Top Width (ft)              82.39    Top Width (ft)              0.23
78.37       3.79
  Vel Total (ft/s)             7.95    Avg. Vel. (ft/s)            0.39
7.96       0.67
  Max Chl Dpth (ft)            2.58    Hydr. Depth (ft)            0.04
2.02       0.08
  Conv. Total (cfs)        10639.5     Conv. (cfs)                  0.0
10637.7        1.8
  Length Wtd. (ft)          300.15     Wetted Per. (ft)            0.24
79.60       3.79
  Min Ch El (ft)            2644.39    Shear (lb/sq ft)            0.03
1.74       0.07
  Alpha                        1.00    Stream Power (lb/ft s)      0.01
13.89       0.05
  Frctn Loss (ft)              4.16    Cum Volume (acre-ft)       24.77
40.19      29.29
  C & E Loss (ft)              0.04    Cum SA (acres)             19.89
19.33      25.61


Warning: The energy equation could not be balanced within the specified
number of iterations.  The
         program used critical depth for the water surface and continued
on with the calculations.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the
current and previous cross section.
         This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water
surface was set equal to critical
         depth, the 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 OUTPUT  Profile #Method 1

  E.G. Elev (ft)            2647.95    Element                   Left OB
Channel   Right OB
  Vel Head (ft)                0.98    Wt. n-Val.                  0.050
0.035      0.050
  W.S. Elev (ft)            2646.97    Reach Len. (ft)           306.62
300.14     301.40
  Crit W.S. (ft)            2646.97    Flow Area (sq ft)           0.01
158.39       0.32
  E.G. Slope (ft/ft)       0.014047    Area (sq ft)                0.01
158.39       0.32
  Q Total (cfs)             1261.00    Flow (cfs)                  0.00
1260.78       0.21
```

Top Width (ft)	82.39	78.37	3.79	Top Width (ft)	0.23
Vel Total (ft/s)	7.95	7.96	0.67	Avg. Vel. (ft/s)	0.39
Max Chl Dpth (ft)	2.58	2.02	0.08	Hydr. Depth (ft)	0.04
Conv. Total (cfs)	10639.5	10637.7	1.8	Conv. (cfs)	0.0
Length Wtd. (ft)	300.15	79.60	3.79	Wetted Per. (ft)	0.24
Min Ch El (ft)	2644.39	1.74	0.07	Shear (lb/sq ft)	0.03
Alpha	1.00	13.89	0.05	Stream Power (lb/ft s)	0.01
Frctn Loss (ft)	4.16	40.19	29.29	Cum Volume (acre-ft)	24.77
C & E Loss (ft)	0.04	19.33	25.61	Cum SA (acres)	19.89

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 energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
depth, the 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: Fan 6C
REACH: Fan6C-2 RS: 2.63

INPUT
Description: Topography and Aerial indicate wash and surrounding undeveloped
desert. Cross section composed of Cross Section Data collected by
the city of Scottsdale Survey Department.
T5NR5E Section 5
Q100
= 1,261 cfs
Station Elevation Data num= 21

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9861.2	2644.34	9956.72	2644.62	9958.28	2644.07	9971.62	2641	9977.49	2639.79
9999.72	2639.65	10014.19	2640.12	10040.05	2639.74	10056.16	2639.11	10061.41	2641
10062.21	2641.29	10071.56	2641.45	10091.42	2642.91	10157.58	2640.95	10182.38	2640.63

```
 10215.6 2640.6710218.28 2640.23 10221.6 2640.7810277.18 2643.4210335.37
2645.85
10367.77 2647.65

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
  9861.2     .05 9971.62    .03510061.41     .05

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.
Expan.
       9971.6210061.41           290.56  289.61  293.24             .3
.5
Right Levee     Station=10091.42      Elevation=  2642.9

CROSS SECTION OUTPUT  Profile #100-yr 6-hr

  E.G. Elev (ft)           2642.55    Element                    Left OB
Channel   Right OB
  Vel Head (ft)               0.87    Wt. n-Val.                  0.050
0.035      0.050
  W.S. Elev (ft)           2641.68    Reach Len. (ft)           290.56
289.61     293.24
  Crit W.S. (ft)           2641.68    Flow Area (sq ft)           1.01
167.45       3.71
  E.G. Slope (ft/ft)      0.013647    Area (sq ft)                1.01
167.45       3.71
  Q Total (cfs)            1261.00    Flow (cfs)                  1.68
1253.84       5.48
  Top Width (ft)            106.08    Top Width (ft)              2.96
89.79      13.32
  Vel Total (ft/s)            7.32    Avg. Vel. (ft/s)            1.67
7.49       1.48
  Max Chl Dpth (ft)           2.58    Hydr. Depth (ft)            0.34
1.86       0.28
  Conv. Total (cfs)        10794.3    Conv. (cfs)                14.4
10733.1       46.9
  Length Wtd. (ft)          289.62    Wetted Per. (ft)            3.04
90.27      13.38
  Min Ch El (ft)           2639.10    Shear (lb/sq ft)            0.28
1.58       0.24
  Alpha                       1.04    Stream Power (lb/ft s)      0.47
11.83       0.35
  Frctn Loss (ft)             0.92    Cum Volume (acre-ft)       24.77
39.07      29.27
  C & E Loss (ft)             0.24    Cum SA (acres)             19.88
18.76      25.56


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

depth, the calculated water surface came back below critical depth. This indicates that there is
not a valid subcritical answer. The program defaulted to critical depth.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water
surface was used.

CROSS SECTION OUTPUT Profile #Method 1

E.G. Elev (ft)	2642.55	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.87	Wt. n-Val.	0.050	0.035	0.050
W.S. Elev (ft)	2641.68	Reach Len. (ft)	290.56	289.61	293.24
Crit W.S. (ft)	2641.68	Flow Area (sq ft)	1.01	167.45	3.71
E.G. Slope (ft/ft)	0.013647	Area (sq ft)	1.01	167.45	3.71
Q Total (cfs)	1261.00	Flow (cfs)	1.68	1253.84	5.48
Top Width (ft)	106.08	Top Width (ft)	2.96	89.79	13.32
Vel Total (ft/s)	7.32	Avg. Vel. (ft/s)	1.67	7.49	1.48
Max Chl Dpth (ft)	2.58	Hydr. Depth (ft)	0.34	1.86	0.28
Conv. Total (cfs)	10794.3	Conv. (cfs)	14.4	10733.1	46.9
Length Wtd. (ft)	289.62	Wetted Per. (ft)	3.04	90.27	13.38
Min Ch El (ft)	2639.10	Shear (lb/sq ft)	0.28	1.58	0.24
Alpha	1.04	Stream Power (lb/ft s)	0.47	11.83	0.35
Frctn Loss (ft)	0.92	Cum Volume (acre-ft)	24.77	39.07	29.27
C & E Loss (ft)	0.24	Cum SA (acres)	19.88	18.76	25.56

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

surface was used.

CROSS SECTION

RIVER: Fan 6C
REACH: Fan6C-2 RS: 2.58

INPUT
Description: Cross Section 2.58 is located upstream of the intersection of Fan6
6C and Legend Trail Parkway. There are 3-10 X 4 CBC located under
Legend Trail Parkway.

Topography indicates wash and
surrounding undeveloped desert.Cross section composed of Cross
Section Data collected by the city of Scottsdale Survey
Department.

T5NR5E Section 5
Q100 = 1,261 cfs
Aerial shows
wash, homes and golf course.

```
Station Elevation Data    num=      14
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta
Elev
 9817.03 2639.63 9826.51 2639.15 9876.81 2638.63 9904.75 2637.92 9933.43
2638.1
 9979.83 2637.17 9990.48 2637.45 9990.97 2633.2610009.95 2633.1310027.74
2633.11
10028.42 2637.5710037.64 2636.9210076.35 2639.0410121.41 2638.76

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
 9817.03     .05 9990.48    .03510028.42     .05

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.
Expan.
       9990.4810028.42           125.14  134.02  126.77             .3
.5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
 9817.03 9990.48 2641.16       F
10028.4210121.41 2641.16       F
```

CROSS SECTION OUTPUT Profile #100-yr 6-hr

```
  E.G. Elev (ft)           2640.31    Element                    Left OB
Channel   Right OB
  Vel Head (ft)               0.38    Wt. n-Val.
0.035
  W.S. Elev (ft)           2639.93    Reach Len. (ft)            125.14
134.02     126.77
  Crit W.S. (ft)           2636.45    Flow Area (sq ft)
254.39
  E.G. Slope (ft/ft)      0.001374    Area (sq ft)               293.34
254.39     146.76
  Q Total (cfs)            1261.00    Flow (cfs)
1261.00
```

```
  Top Width (ft)            304.38    Top Width (ft)            173.45
37.94      92.99
  Vel Total (ft/s)            4.96    Avg. Vel. (ft/s)
4.96
  Max Chl Dpth (ft)           6.82    Hydr. Depth (ft)
6.71
  Conv. Total (cfs)        34020.3    Conv. (cfs)
34020.3
  Length Wtd. (ft)          134.02    Wetted Per. (ft)
45.50
  Min Ch El (ft)           2633.11    Shear (lb/sq ft)
0.48
  Alpha                       1.00    Stream Power (lb/ft s)
2.38
  Frctn Loss (ft)                     Cum Volume (acre-ft)       23.79
37.67      28.76
  C & E Loss (ft)                     Cum SA (acres)             19.29
18.33      25.20


Note:    Multiple critical depths were found at this location.  The
critical depth with the lowest, valid,
         energy was used.

CROSS SECTION OUTPUT  Profile #Method 1

  E.G. Elev (ft)           2640.31    Element                   Left OB
Channel   Right OB
  Vel Head (ft)               0.38    Wt. n-Val.
0.035
  W.S. Elev (ft)           2639.93    Reach Len. (ft)           125.14
134.02     126.77
  Crit W.S. (ft)           2636.45    Flow Area (sq ft)
254.39
  E.G. Slope (ft/ft)      0.001374    Area (sq ft)              293.34
254.39     146.76
  Q Total (cfs)            1261.00    Flow (cfs)
1261.00
  Top Width (ft)            304.38    Top Width (ft)            173.45
37.94      92.99
  Vel Total (ft/s)            4.96    Avg. Vel. (ft/s)
4.96
  Max Chl Dpth (ft)           6.82    Hydr. Depth (ft)
6.71
  Conv. Total (cfs)        34020.3    Conv. (cfs)
34020.3
  Length Wtd. (ft)          134.02    Wetted Per. (ft)
45.50
  Min Ch El (ft)           2633.11    Shear (lb/sq ft)
0.48
  Alpha                       1.00    Stream Power (lb/ft s)
2.38
  Frctn Loss (ft)                     Cum Volume (acre-ft)       23.79
37.67      28.76
  C & E Loss (ft)                     Cum SA (acres)             19.29
18.33      25.20


Note:    Multiple critical depths were found at this location.  The
critical depth with the lowest, valid,
         energy was used.
```

CULVERT

RIVER: Fan 6C
REACH: Fan6C-2 RS: 2.56

INPUT
Description: Box culverts at Legend Trail Parkway crossing.
Distance from Upstream XS = 20
Deck/Roadway Width = 70
Weir Coefficient = 2.6
Upstream Deck/Roadway Coordinates
num= 13

Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord
9795.87	2641.24		9823.71	2641.34		9851.24	2641.42	
9880.05	2641.45		9912.2	2641.5		9945.71	2641.54	
9976.79	2641.54		10008.75	2641.44		10041.93	2641.16	
10062.19	2640.93		10092.05	2640.49		10122.2	2639.99	
10151.74	2639.54							

Upstream Bridge Cross Section Data
Station Elevation Data num= 14

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9817.03	2639.63	9826.51	2639.15	9876.81	2638.63	9904.75	2637.92	9933.43	2638.1
9979.83	2637.17	9990.48	2637.45	9990.97	2633.26	10009.95	2633.13	10027.74	2633.11
10028.42	2637.57	10037.64	2636.92	10076.35	2639.04	10121.41	2638.76		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9817.03	.05	9990.48	.035	10028.42	.05

Bank Sta: Left	Right	Coeff Contr.	Expan.
9990.48	10028.42	.3	.5

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
9817.03	9990.48	2641.16	F
10028.42	10121.41	2641.16	F

Downstream Deck/Roadway Coordinates
num= 17

Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord
9742	2641.24		9770.08	2641.34		9797.81	2641.42	
9826.82	2641.45		9859.08	2641.5		9892.66	2641.54	
9923.81	2641.54		9954.81	2641.44		9988.6	2641.16	
10009.18	2640.93		10038.66	2640.49		10068.73	2639.99	
10124.6	2639.54		10124.6	2639.09		10141.26	2638.86	
10168.7	2638.39		10181.24	2637.88				

Downstream Bridge Cross Section Data
Station Elevation Data num= 22

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9744.02	2640.58	9783.27	2639.44	9810.14	2639.89	9838	2640.42	9838.62	2636.02
9878.09	2637.17	9893.78	2636.69	9916.51	2636.93	9922.45	2636.5	9931.01	2635.88
9976.48	2635.71	9981.52	2634	9994.24	2628.03	10024.58	2628.03	10053.68	

```
2634
10066.02 2635.9310073.09  2636.510107.83  2639.310117.65 2638.6110133.31
2638.65
10155.34 2638.2210164.15 2638.36

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
 9744.02     .05 9981.52    .03510053.68     .05

Bank Sta: Left   Right    Coeff Contr.   Expan.
       9981.5210053.68             .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
 9744.02 9975.91 2639.99       F
10053.6810164.15 2639.99       F
Left Levee      Station= 9878.09      Elevation= 2637.17

Upstream Embankment side slope              =       0 horiz. to 1.0
vertical
Downstream Embankment side slope            =       0 horiz. to 1.0
vertical
Maximum allowable submergence for weir flow =     .95
Elevation at which weir flow begins         =
Energy head used in spillway design         =
Spillway height used in design              =
Weir crest shape                            = Broad Crested

Number of Culverts =  1

Culvert Name     Shape      Rise    Span
Culvert #1           Box       4      10
FHWA Chart # 8 - flared wingwalls
FHWA Scale # 1 - Wingwall flared 30 to 75 deg.
Solution Criteria = Highest U.S. EG
Culvert Upstrm Dist  Length    Top n  Bottom n  Depth Blocked  Entrance
Loss Coef   Exit Loss Coef
                  4     115     .015     .015        0
.4                1
Number of Barrels =  3
Upstream   Elevation =  2633.13
Centerline Stations
    Sta.    Sta.    Sta.
  9997.2 10008.2 10019.2
Downstream Elevation =  2628.03
Centerline Stations
    Sta.    Sta.    Sta.
 9998.9110009.4110019.91

CROSS SECTION


RIVER: Fan 6C
REACH: Fan6C-2            RS: 2.55

INPUT
Description: Cross Section 2.55 is located downstream of the
intersection of
             Legend Trail Parkway and Fan 6C. There are 3-10 X 4 CBC
located
             under Legend Trail Parkway.
```

```
Topography and Aerial indicate
             wash and surrounding undeveloped desert. Cross section
composed of
             Cross Section Data collected by the city of Scottsdale
Survey
             Department.
T5NR5E Section 5
Q100 = 1,261 cfs
Station Elevation Data    num=      22
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta
Elev
 9744.02 2640.58 9783.27 2639.44 9810.14 2639.89    9838 2640.42 9838.62
2636.02
 9878.09 2637.17 9893.78 2636.69 9916.51 2636.93 9922.45  2636.5 9931.01
2635.88
 9976.48 2635.71 9981.52    2634 9994.24 2628.0310024.58 2628.0310053.68
2634
10066.02 2635.9310073.09  2636.510107.83  2639.310117.65 2638.6110133.31
2638.65
10155.34 2638.2210164.15 2638.36

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
 9744.02     .05 9981.52    .03510053.68     .05

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.
Expan.
       9981.5210053.68           223.15  215.96  228.19             .3
.5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
 9744.02 9975.91 2639.99       F
10053.6810164.15 2639.99       F
Left Levee      Station= 9878.09      Elevation= 2637.17

CROSS SECTION OUTPUT  Profile #100-yr 6-hr

  E.G. Elev (ft)           2632.62    Element                    Left OB
Channel   Right OB
  Vel Head (ft)               1.29    Wt. n-Val.
0.035
  W.S. Elev (ft)           2631.34    Reach Len. (ft)            223.15
215.96     228.19
  Crit W.S. (ft)           2631.34    Flow Area (sq ft)
138.58
  E.G. Slope (ft/ft)      0.013259    Area (sq ft)
138.58
  Q Total (cfs)            1261.00    Flow (cfs)
1261.00
  Top Width (ft)             53.50    Top Width (ft)
53.50
  Vel Total (ft/s)            9.10    Avg. Vel. (ft/s)
9.10
  Max Chl Dpth (ft)           3.31    Hydr. Depth (ft)
2.59
  Conv. Total (cfs)        10951.0    Conv. (cfs)
10951.0
  Length Wtd. (ft)          219.24    Wetted Per. (ft)
54.57
  Min Ch El (ft)           2628.03    Shear (lb/sq ft)
2.10
```

```
  Alpha                          1.00    Stream Power (lb/ft s)
19.13
  Frctn Loss (ft)                0.06    Cum Volume (acre-ft)        23.37
37.06      28.55
  C & E Loss (ft)                0.62    Cum SA (acres)              19.04
18.19      25.06


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 energy loss was greater than 1.0 ft (0.3 m). between the
current and previous cross section.
         This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water
surface was set equal to critical
         depth, the calculated water surface came back below critical
depth.  This indicates that there is
         not a valid subcritical answer.  The program defaulted to
critical depth.
Note:    Multiple critical depths were found at this location.  The
critical depth with the lowest, valid,
         energy was used.

CROSS SECTION OUTPUT  Profile #Method 1

  E.G. Elev (ft)            2632.62    Element                     Left OB
Channel   Right OB
  Vel Head (ft)                1.29    Wt. n-Val.
0.035
  W.S. Elev (ft)            2631.34    Reach Len. (ft)             223.15
215.96     228.19
  Crit W.S. (ft)            2631.34    Flow Area (sq ft)
138.58
  E.G. Slope (ft/ft)       0.013259    Area (sq ft)
138.58
  Q Total (cfs)             1261.00    Flow (cfs)
1261.00
  Top Width (ft)              53.50    Top Width (ft)
53.50
  Vel Total (ft/s)             9.10    Avg. Vel. (ft/s)
9.10
  Max Chl Dpth (ft)            3.31    Hydr. Depth (ft)
2.59
  Conv. Total (cfs)         10951.0    Conv. (cfs)
10951.0
  Length Wtd. (ft)           219.24    Wetted Per. (ft)
54.57
  Min Ch El (ft)            2628.03    Shear (lb/sq ft)
2.10
  Alpha                        1.00    Stream Power (lb/ft s)
19.13
  Frctn Loss (ft)              0.06    Cum Volume (acre-ft)        23.37
```

37.06 28.55
C & E Loss (ft) 0.62 Cum SA (acres) 19.04
18.19 25.06

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 energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
depth, the calculated water surface came back below critical depth. This indicates that there is
not a valid subcritical answer. The program defaulted to critical depth.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid,
energy was used.

CROSS SECTION

RIVER: Fan 6C
REACH: Fan6C-2 RS: 2.51

INPUT
Description: Cross Section 2.51 is located within Legend Trail.

Topography
indicates wash and surrounding undeveloped desert. Cross section
composed of Cross Section Data collected by the city of Scottsdale
Survey Department.
Aerial shows wash, homes and golf
course.
T5NR5E Section 5
Q100 = 1,261 cfs
Station Elevation Data num= 26

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9593.43	2637.47	9618.94	2635.41	9622.52	2633.97	9632.54	2633.36	9645.61	2633.83
9697.85	2628.86	9774.15	2628.01	9791.16	2625.47	9911.76	2625.51	9928.94	2629.34
9959.84	2629.07	9986.96	2628.99	9989.32	2624.51	10008.34	2624.42	10014.41	2627.77
10034.66	2629.57	10040.1	2628.86	10046.32	2627.31	10053.62	2630.68	10062.47	2631.18
10064.09	2630.88	10086.04	2631.01	10099.51	2630.66	10101.07	2631.05	10113.03	2631.18

10122.41 2632.16

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9593.43	.05	9774.15	.015	9928.94	.05	9986.96	.035	10014.41	.05

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9986.96	10014.41	442.24	443.47	445.28	.1	.3

Left Levee Station= 9928.94 Elevation= 2629.34
Right Levee Station=10034.66 Elevation= 2629.57

CROSS SECTION OUTPUT Profile #100-yr 6-hr

E.G. Elev (ft)	2629.40	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.05	Wt. n-Val.	0.016	0.035	0.050
W.S. Elev (ft)	2629.35	Reach Len. (ft)	442.24	443.47	445.28
Crit W.S. (ft)	2629.35	Flow Area (sq ft)	626.52	118.85	14.00
E.G. Slope (ft/ft)	0.000083	Area (sq ft)	626.52	118.85	14.00
Q Total (cfs)	1261.00	Flow (cfs)	1145.29	112.48	3.23
Top Width (ft)	339.43	Top Width (ft)	294.24	27.45	17.75
Vel Total (ft/s)	1.66	Avg. Vel. (ft/s)	1.83	0.95	0.23
Max Chl Dpth (ft)	4.93	Hydr. Depth (ft)	2.13	4.33	0.79
Conv. Total (cfs)	138487.3	Conv. (cfs)	125779.9	12353.1	354.3
Length Wtd. (ft)	442.36	Wetted Per. (ft)	294.87	31.03	17.82
Min Ch El (ft)	2624.42	Shear (lb/sq ft)	0.01	0.02	0.00
Alpha	1.13	Stream Power (lb/ft s)	0.02	0.02	0.00
Frctn Loss (ft)	0.07	Cum Volume (acre-ft)	21.76	36.42	28.51
C & E Loss (ft)	0.01	Cum SA (acres)	18.29	17.99	25.02

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

surface was set equal to critical
depth, the 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 OUTPUT Profile #Method 1

E.G. Elev (ft)	2629.40	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.05	Wt. n-Val.	0.016	0.035	0.050
W.S. Elev (ft)	2629.35	Reach Len. (ft)	442.24	443.47	445.28
Crit W.S. (ft)	2629.35	Flow Area (sq ft)	626.52	118.85	14.00
E.G. Slope (ft/ft)	0.000083	Area (sq ft)	626.52	118.85	14.00
Q Total (cfs)	1261.00	Flow (cfs)	1145.29	112.48	3.23
Top Width (ft)	339.43	Top Width (ft)	294.24	27.45	17.75
Vel Total (ft/s)	1.66	Avg. Vel. (ft/s)	1.83	0.95	0.23
Max Chl Dpth (ft)	4.93	Hydr. Depth (ft)	2.13	4.33	0.79
Conv. Total (cfs)	138487.3	Conv. (cfs)	125779.9	12353.1	354.3
Length Wtd. (ft)	442.36	Wetted Per. (ft)	294.87	31.03	17.82
Min Ch El (ft)	2624.42	Shear (lb/sq ft)	0.01	0.02	0.00
Alpha	1.13	Stream Power (lb/ft s)	0.02	0.02	0.00
Frctn Loss (ft)	0.07	Cum Volume (acre-ft)	21.76	36.42	28.51
C & E Loss (ft)	0.01	Cum SA (acres)	18.29	17.99	25.02

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 conveyance ratio (upstream conveyance divided by downstream conveyance) is less than
0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
depth, the 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: Fan 6C
REACH: Fan6C-2 RS: 2.43

INPUT
Description: Cross Section 2.43 is located within Legend Trail.

Topography
indicates wash and surrounding undeveloped desert. Cross section
composed of Cross Section Data collected by the city of Scottsdale
Survey Department.
Aerial shows wash adjacent to homes and golf
course.
T5NR5E Section 6
Q100 = 1,261 cfs
Station Elevation Data num= 18

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9699.97	2625.32	9761.18	2623.44	9796.45	2619.15	9838.44	2621.28	9866.99	2618.64
9892.72	2617.27	9919.97	2615.92	9926.05	2617.3	9968.27	2620.74	9987.65	2620.5
9989.22	2619.369	9991.98	2617.34	10001	2617.71	10005.8	2617.24	10009.11	2619.47
10025.7	2620.93	10038.77	2622.34	10044.44	2623.08				

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9699.97	.05	9892.72	.015	9968.27	.05	9989.2	.035	10005.8	.05

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9989.21	10009.11	143.02	127.09	132.71	.1	.3

Left Levee Station= 9838.44 Elevation= 2621.28
Blocked Obstructions num= 1

Sta L	Sta R	Elev
10044.44	10044.44	2623.7

CROSS SECTION OUTPUT Profile #100-yr 6-hr

E.G. Elev (ft)	2621.22	Element	Left OB	Channel	Right OB	
Vel Head (ft)	0.15	Wt. n-Val.	0.019	0.038	0.050	
W.S. Elev (ft)	2621.07	Reach Len. (ft)	143.02	127.09	132.71	
Crit W.S. (ft)	2619.34	Flow Area (sq ft)	357.96	65.74	14.50	
E.G. Slope (ft/ft)	0.000425	Area (sq ft)	357.96	65.74	14.50	
Q Total (cfs)	1261.00	Flow (cfs)	1141.04			

```
112.25        7.70
  Top Width (ft)            186.26    Top Width (ft)            148.47
19.91       17.88
  Vel Total (ft/s)            2.88    Avg. Vel. (ft/s)            3.19
1.71        0.53
  Max Chl Dpth (ft)           5.15    Hydr. Depth (ft)            2.41
3.30        0.81
  Conv. Total (cfs)        61196.2    Conv. (cfs)              55374.7
5447.7       373.8
  Length Wtd. (ft)          134.49    Wetted Per. (ft)          149.32
21.28       17.95
  Min Ch El (ft)           2617.24    Shear (lb/sq ft)            0.06
0.08        0.02
  Alpha                       1.14    Stream Power (lb/ft s)      0.20
0.14        0.01
  Frctn Loss (ft)             0.14    Cum Volume (acre-ft)       16.77
35.48       28.37
  C & E Loss (ft)             0.08    Cum SA (acres)             16.04
17.75       24.83
```

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for
additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than
0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Note: Manning's n values were composited to a single value in the main channel.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water
surface was used.

CROSS SECTION OUTPUT Profile #Method 1

```
  E.G. Elev (ft)           2621.22    Element                   Left OB
Channel    Right OB
  Vel Head (ft)               0.15    Wt. n-Val.                 0.019
0.038       0.050
  W.S. Elev (ft)           2621.07    Reach Len. (ft)           143.02
127.09      132.71
  Crit W.S. (ft)           2619.34    Flow Area (sq ft)         357.96
65.74       14.50
  E.G. Slope (ft/ft)      0.000425    Area (sq ft)              357.96
65.74       14.50
  Q Total (cfs)            1261.00    Flow (cfs)               1141.04
112.25        7.70
  Top Width (ft)            186.26    Top Width (ft)            148.47
19.91       17.88
  Vel Total (ft/s)            2.88    Avg. Vel. (ft/s)            3.19
1.71        0.53
  Max Chl Dpth (ft)           5.15    Hydr. Depth (ft)            2.41
3.30        0.81
  Conv. Total (cfs)        61196.2    Conv. (cfs)              55374.7
5447.7       373.8
  Length Wtd. (ft)          134.49    Wetted Per. (ft)          149.32
21.28       17.95
  Min Ch El (ft)           2617.24    Shear (lb/sq ft)            0.06
0.08        0.02
  Alpha                       1.14    Stream Power (lb/ft s)      0.20
```

```
0.14        0.01
  Frctn Loss (ft)              0.14    Cum Volume (acre-ft)        16.77
35.48       28.37
  C & E Loss (ft)              0.08    Cum SA (acres)              16.04
17.75       24.83


Warning: The velocity head has changed by more than 0.5 ft (0.15 m).
This may indicate the need for
         additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream
conveyance) is less than
         0.7 or greater than 1.4.  This may indicate the need for
additional cross sections.
Note:    Manning's n values were composited to a single value in the
main channel.
Note:    Multiple critical depths were found at this location.  The
critical depth with the lowest, valid, water
         surface was used.

CROSS SECTION


RIVER: Fan 6C
REACH: Fan6C-2             RS: 2.4

INPUT
Description: Cross Section 2.40 is located within Legend Trail.

Topography
             indicates wash and surrounding undeveloped desert. Cross
section
             composed of Cross Section Data collected by the city of
Scottsdale
             Survey Department.
Aerial shows wash realigned with
             golfcourse
T5NR5E Section 6
Q100 = 1,261 cfs
Station Elevation Data    num=      13
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta
Elev
 9767.96 2620.47 9776.58 2620.36 9791.85 2619.49 9818.44 2623.07  9847.4
2621.77
 9906.67  2620.5 9951.72 2621.47 9983.75 2619.43 9990.19    261810001.09
2615.58
10016.76 2615.3110029.97    261810042.44 2620.54

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
 9767.96     .05 9990.19    .03510029.97     .05

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.
Expan.
       9990.1910029.97            98.25   94.63   95.55             .1
.3
Left Levee      Station= 9818.44      Elevation= 2623.07
Blocked Obstructions     num=       1
   Sta L   Sta R    Elev
10042.4410042.44  2620.9
```

CROSS SECTION OUTPUT Profile #100-yr 6-hr

E.G. Elev (ft)	2620.99	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.98	Wt. n-Val.	0.050	0.035	0.050
W.S. Elev (ft)	2620.01	Reach Len. (ft)	98.25	94.63	95.55
Crit W.S. (ft)	2619.43	Flow Area (sq ft)	11.00	151.00	9.93
E.G. Slope (ft/ft)	0.006204	Area (sq ft)	11.00	151.00	9.93
Q Total (cfs)	1261.00	Flow (cfs)	20.28	1217.71	23.02
Top Width (ft)	65.22	Top Width (ft)	15.57	39.78	9.87
Vel Total (ft/s)	7.33	Avg. Vel. (ft/s)	1.84	8.06	2.32
Max Chl Dpth (ft)	4.70	Hydr. Depth (ft)	0.71	3.80	1.01
Conv. Total (cfs)	16009.4	Conv. (cfs)	257.5	15459.7	292.2
Length Wtd. (ft)	94.72	Wetted Per. (ft)	15.74	40.32	10.08
Min Ch El (ft)	2615.31	Shear (lb/sq ft)	0.27	1.45	0.38
Alpha	1.17	Stream Power (lb/ft s)	0.50	11.70	0.88
Frctn Loss (ft)	0.74	Cum Volume (acre-ft)	16.16	35.17	28.33
C & E Loss (ft)	0.07	Cum SA (acres)	15.77	17.66	24.79

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

Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.

CROSS SECTION OUTPUT Profile #Method 1

E.G. Elev (ft)	2620.99	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.98	Wt. n-Val.	0.050	0.035	0.050
W.S. Elev (ft)	2620.01	Reach Len. (ft)	98.25	94.63	95.55
Crit W.S. (ft)	2619.43	Flow Area (sq ft)	11.00	151.00	9.93
E.G. Slope (ft/ft)	0.006204	Area (sq ft)	11.00	151.00	9.93
Q Total (cfs)	1261.00	Flow (cfs)	20.28	1217.71	23.02
Top Width (ft)	65.22	Top Width (ft)	15.57	39.78	9.87
Vel Total (ft/s)	7.33	Avg. Vel. (ft/s)	1.84	8.06	2.32
Max Chl Dpth (ft)	4.70	Hydr. Depth (ft)	0.71	3.80	1.01

```
  Conv. Total (cfs)          16009.4    Conv. (cfs)                  257.5
15459.7       292.2
  Length Wtd. (ft)             94.72    Wetted Per. (ft)             15.74
40.32       10.08
  Min Ch El (ft)            2615.31    Shear (lb/sq ft)              0.27
1.45        0.38
  Alpha                        1.17    Stream Power (lb/ft s)        0.50
11.70        0.88
  Frctn Loss (ft)              0.74    Cum Volume (acre-ft)         16.16
35.17       28.33
  C & E Loss (ft)              0.07    Cum SA (acres)               15.77
17.66       24.79


Warning: The velocity head has changed by more than 0.5 ft (0.15 m).
This may indicate the need for
         additional cross sections.
Note:    Multiple critical depths were found at this location.  The
critical depth with the lowest, valid, water
         surface was used.

CROSS SECTION


RIVER: Fan 6C
REACH: Fan6C-2            RS: 2.39

INPUT
Description: Cross Section 2.39 is located within Legend Trail.

Topography
             indicates wash and surrounding undeveloped desert. Cross
section
             composed of Cross Section Data collected by the city of
Scottsdale
             Survey Department.
Aerial shows wash realigned with
             golfcourse
T5NR5E Section 6
Q100 = 1,261 cfs
Station Elevation Data    num=      17
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta
Elev
 9739.36 2616.42 9739.45 2616.43 9762.67 2614.39 9775.66 2613.63 9821.97
2619.31
  9884.3 2617.63 9944.37 2619.63 9960.69 2619.23 9991.18 2617.93
9999.272616.001
10006.53 2614.2710014.64 2613.9310022.09 2614.1710027.812615.94310035.61
2618.36
10037.85 2618.5610037.95 2618.72

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
 9739.36    .063 9999.27    .03510027.81    .063

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.
Expan.
       9999.2710027.81           388.83  379.26  383.77             .1
.3
Left Levee      Station= 9944.37      Elevation= 2619.63
Blocked Obstructions     num=       1
```

```
   Sta L   Sta R    Elev
10037.9510037.95  2618.7

CROSS SECTION OUTPUT  Profile #100-yr 6-hr

  E.G. Elev (ft)           2620.18    Element                    Left OB
Channel   Right OB
  Vel Head (ft)               1.66    Wt. n-Val.                  0.063
0.035      0.063
  W.S. Elev (ft)           2618.52    Reach Len. (ft)           388.83
379.26     383.77
  Crit W.S. (ft)           2618.52    Flow Area (sq ft)          16.55
113.39      10.77
  E.G. Slope (ft/ft)      0.010124    Area (sq ft)               16.55
113.39      10.77
  Q Total (cfs)            1261.00    Flow (cfs)                 32.44
1201.54      27.02
  Top Width (ft)             59.89    Top Width (ft)             21.81
28.54       9.54
  Vel Total (ft/s)            8.96    Avg. Vel. (ft/s)            1.96
10.60       2.51
  Max Chl Dpth (ft)           4.89    Hydr. Depth (ft)            0.76
3.97       1.13
  Conv. Total (cfs)        12532.8    Conv. (cfs)                322.4
11941.8      268.6
  Length Wtd. (ft)          379.94    Wetted Per. (ft)           22.05
29.02       9.91
  Min Ch El (ft)           2613.93    Shear (lb/sq ft)            0.47
2.47       0.69
  Alpha                       1.34    Stream Power (lb/ft s)      0.93
26.17       1.72
  Frctn Loss (ft)             3.52    Cum Volume (acre-ft)       16.13
34.88      28.31
  C & E Loss (ft)             0.15    Cum SA (acres)             15.73
17.59      24.77


Warning: The energy equation could not be 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.
Note:    Multiple critical depths were found at this location.  The
critical depth with the lowest, valid, water
         surface was used.

CROSS SECTION OUTPUT  Profile #Method 1

  E.G. Elev (ft)           2620.18    Element                    Left OB
Channel   Right OB
  Vel Head (ft)               1.66    Wt. n-Val.                  0.063
```

0.035	0.063		
W.S. Elev (ft)	2618.52	Reach Len. (ft)	388.83
379.26	383.77		
Crit W.S. (ft)	2618.52	Flow Area (sq ft)	16.55
113.39	10.77		
E.G. Slope (ft/ft)	0.010124	Area (sq ft)	16.55
113.39	10.77		
Q Total (cfs)	1261.00	Flow (cfs)	32.44
1201.54	27.02		
Top Width (ft)	59.89	Top Width (ft)	21.81
28.54	9.54		
Vel Total (ft/s)	8.96	Avg. Vel. (ft/s)	1.96
10.60	2.51		
Max Chl Dpth (ft)	4.89	Hydr. Depth (ft)	0.76
3.97	1.13		
Conv. Total (cfs)	12532.8	Conv. (cfs)	322.4
11941.8	268.6		
Length Wtd. (ft)	379.94	Wetted Per. (ft)	22.05
29.02	9.91		
Min Ch El (ft)	2613.93	Shear (lb/sq ft)	0.47
2.47	0.69		
Alpha	1.34	Stream Power (lb/ft s)	0.93
26.17	1.72		
Frctn Loss (ft)	3.52	Cum Volume (acre-ft)	16.13
34.88	28.31		
C & E Loss (ft)	0.15	Cum SA (acres)	15.73
17.59	24.77		

Warning: The energy equation could not be 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.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water
surface was used.

CROSS SECTION

RIVER: Fan 6C
REACH: Fan6C-2 RS: 2.31

INPUT
Description: Cross Section 2.31 is located within Legend Trail.

Topography
indicates wash and surrounding undeveloped desert. Cross section
composed of Cross Section Data collected by the city of

Scottsdale
Survey Department.
Aerial shows wash realigned with
golfcourse
T5NR5E Section 6
Q100 = 1,346 cfs
Station Elevation Data num= 16

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9849.07	2613.67	9849.19	2613.65	9865.78	2613.14	9867.14	2613.49	9875.35	2613.82
9884.21	2615.68	9907.25	2615.2	9940.87	2613.9	9980.8	2610.15	9995.43	2609.52
10003.48	2607.22	10011.69	2607.19	10022.15	2607.03	10028.62	2609.48	10046.15	2610.19
10114.04	2615.41								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9849.07	.05	9995.43	.03	10028.62	.05

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9995.43	10028.62	107.1	102.16	105.46	.3	.5

CROSS SECTION OUTPUT Profile #100-yr 6-hr

E.G. Elev (ft)	2612.55	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.16	Wt. n-Val.	0.050	0.035	0.050
W.S. Elev (ft)	2611.39	Reach Len. (ft)	107.10	102.16	105.46
Crit W.S. (ft)	2611.39	Flow Area (sq ft)	30.79	123.54	36.44
E.G. Slope (ft/ft)	0.008572	Area (sq ft)	30.79	123.54	36.44
Q Total (cfs)	1346.00	Flow (cfs)	90.56	1148.58	106.86
Top Width (ft)	94.03	Top Width (ft)	27.78	33.19	33.07
Vel Total (ft/s)	7.06	Avg. Vel. (ft/s)	2.94	9.30	2.93
Max Chl Dpth (ft)	4.35	Hydr. Depth (ft)	1.11	3.72	1.10
Conv. Total (cfs)	14538.0	Conv. (cfs)	978.1	12405.7	1154.2
Length Wtd. (ft)	102.48	Wetted Per. (ft)	27.85	33.96	33.13
Min Ch El (ft)	2607.03	Shear (lb/sq ft)	0.59	1.95	0.59
Alpha	1.51	Stream Power (lb/ft s)	1.74	18.10	1.73
Frctn Loss (ft)	1.04	Cum Volume (acre-ft)	15.92	33.85	28.10
C & E Loss (ft)	0.12	Cum SA (acres)	15.51	17.32	24.58

Warning: The energy equation could not be 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 OUTPUT Profile #Method 1

E.G. Elev (ft)	2612.55	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.16	Wt. n-Val.	0.050	0.035	0.050
W.S. Elev (ft)	2611.39	Reach Len. (ft)	107.10	102.16	105.46
Crit W.S. (ft)	2611.39	Flow Area (sq ft)	30.79	123.54	36.44
E.G. Slope (ft/ft)	0.008572	Area (sq ft)	30.79	123.54	36.44
Q Total (cfs)	1346.00	Flow (cfs)	90.56	1148.58	106.86
Top Width (ft)	94.03	Top Width (ft)	27.78	33.19	33.07
Vel Total (ft/s)	7.06	Avg. Vel. (ft/s)	2.94	9.30	2.93
Max Chl Dpth (ft)	4.35	Hydr. Depth (ft)	1.11	3.72	1.10
Conv. Total (cfs)	14538.0	Conv. (cfs)	978.1	12405.7	1154.2
Length Wtd. (ft)	102.48	Wetted Per. (ft)	27.85	33.96	33.13
Min Ch El (ft)	2607.03	Shear (lb/sq ft)	0.59	1.95	0.59
Alpha	1.51	Stream Power (lb/ft s)	1.74	18.10	1.73
Frctn Loss (ft)	1.04	Cum Volume (acre-ft)	15.92	33.85	28.10
C & E Loss (ft)	0.12	Cum SA (acres)	15.51	17.32	24.58

Warning: The energy equation could not be 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: Fan 6C
REACH: Fan6C-2 RS: 2.30

INPUT
Description: Cross Section 2.30 is located upstream of the intersection of Fan
6C and Sandy Vista Drive. There are 3-12 X 5 CBC located under
Sandy Vista Drive.

Topography indicates wash and surrounding
undeveloped desert.Cross section composed of Cross Section Data
collected by the city of Scottsdale Survey Department. Aerial
shows wash, homes and golf course.

T5NR5E Section 6
Q100 =
1,346 cfs
Station Elevation Data num= 14

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9866.03	2612.7	9867.33	2613.02	9888.95	2612.76	9967.44	2611.45	9969.32	2610.72
9982.51	2605.01	10000	2603.78	10023.75	2603.77	10023.76	2605	10023.79	2608.49
10029.82	2608.55	10054.98	2610.91	10071.02	2611	10071.12	2610.7		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9866.03	.05	9982.51	.035	10023.76	.05

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9982.51	10023.76	200.7	200.75	200.75	.3	.5

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
9866.03	9980.81	2610.9	F
10023.81	10071.12	2610.9	F

CROSS SECTION OUTPUT Profile #100-yr 6-hr

E.G. Elev (ft)	2608.80	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.55	Wt. n-Val.	0.050	0.035	0.050
W.S. Elev (ft)	2607.25	Reach Len. (ft)	200.70	200.75	200.75
Crit W.S. (ft)	2607.25	Flow Area (sq ft)	3.19	132.55	0.02
E.G. Slope (ft/ft)	0.012280	Area (sq ft)	5.80	132.55	0.02
Q Total (cfs)	1346.00	Flow (cfs)	15.05	1330.94	0.00
Top Width (ft)	46.45	Top Width (ft)	5.18	41.25	0.02

Vel Total (ft/s)	9.91	Avg. Vel. (ft/s)	4.73
10.04	0.15		
Max Chl Dpth (ft)	3.48	Hydr. Depth (ft)	1.87
3.21	1.13		
Conv. Total (cfs)	12146.4	Conv. (cfs)	135.8
12010.5	0.0		
Length Wtd. (ft)	200.75	Wetted Per. (ft)	1.85
42.51	2.25		
Min Ch El (ft)	2603.77	Shear (lb/sq ft)	1.32
2.39	0.01		
Alpha	1.02	Stream Power (lb/ft s)	6.23
24.00	0.00		
Frctn Loss (ft)		Cum Volume (acre-ft)	15.87
33.55	28.06		
C & E Loss (ft)		Cum SA (acres)	15.47
17.23	24.54		

Warning: During subcritical analysis, the water surface upstream of culvert went to critical depth.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid,
energy was used.

CROSS SECTION OUTPUT Profile #Method 1

E.G. Elev (ft)	2608.80	Element	Left OB
Channel	Right OB		
Vel Head (ft)	1.55	Wt. n-Val.	0.050
0.035	0.050		
W.S. Elev (ft)	2607.25	Reach Len. (ft)	200.70
200.75	200.75		
Crit W.S. (ft)	2607.25	Flow Area (sq ft)	3.19
132.55	0.02		
E.G. Slope (ft/ft)	0.012280	Area (sq ft)	5.80
132.55	0.02		
Q Total (cfs)	1346.00	Flow (cfs)	15.05
1330.94	0.00		
Top Width (ft)	46.45	Top Width (ft)	5.18
41.25	0.02		
Vel Total (ft/s)	9.91	Avg. Vel. (ft/s)	4.73
10.04	0.15		
Max Chl Dpth (ft)	3.48	Hydr. Depth (ft)	1.87
3.21	1.13		
Conv. Total (cfs)	12146.4	Conv. (cfs)	135.8
12010.5	0.0		
Length Wtd. (ft)	200.75	Wetted Per. (ft)	1.85
42.51	2.25		
Min Ch El (ft)	2603.77	Shear (lb/sq ft)	1.32
2.39	0.01		
Alpha	1.02	Stream Power (lb/ft s)	6.23
24.00	0.00		
Frctn Loss (ft)		Cum Volume (acre-ft)	15.87
33.55	28.06		
C & E Loss (ft)		Cum SA (acres)	15.47
17.23	24.54		

Warning: During subcritical analysis, the water surface upstream of culvert went to critical depth.
Note: Multiple critical depths were found at this location. The

```
critical depth with the lowest, valid,
         energy was used.

CULVERT


RIVER: Fan 6C
REACH: Fan6C-2            RS: 2.28

INPUT
Description: Box culverts at Sandy Vista Drive crossing.
Distance from Upstream XS =      28
Deck/Roadway Width        =     104
Weir Coefficient          =     2.6
Upstream  Deck/Roadway Coordinates
    num=        9
     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord
 9837.06 2613.23         9878.77 2612.76         9918.69 2612.46
 9956.14 2612.15         9981.82 2612.05         10006.2  2611.7
10033.98 2611.24        10062.68 2610.78        10092.18 2610.29

Upstream Bridge Cross Section Data
Station Elevation Data    num=      14
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta
Elev
 9866.03  2612.7 9867.33 2613.02 9888.95 2612.76 9967.44 2611.45 9969.32
2610.72
 9982.51 2605.01   10000 2603.7810023.75 2603.7710023.76    260510023.79
2608.49
10029.82 2608.5510054.98  2610.910071.02    261110071.12  2610.7

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
 9866.03     .05 9982.51    .03510023.76     .05

Bank Sta: Left   Right    Coeff Contr.   Expan.
       9982.5110023.76             .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
 9866.03 9980.81  2610.9       F
10023.8110071.12  2610.9       F

Downstream  Deck/Roadway Coordinates
    num=        6
     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord
 9969.77 2608.25         9982.69 2608.76         10003.5 2609.12
10028.81 2609.35        10044.19 2609.39        10049.82 2609.06

Downstream Bridge Cross Section Data
Station Elevation Data    num=      22
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta
Elev
 9923.65 2607.93 9947.98  2607.7 9949.44 2607.37 9950.08 2607.42 9950.12
2607.37
 9971.31  2608.1  9972.2 2608.57  9975.1 2608.12 9991.45 2606.32 9992.16
2604
 9992.82 2601.8310007.73 2601.77 10025.1 2601.9410025.44    260410025.83
2606.39
10043.58 2609.4610044.16 2608.9510063.96 2608.3810064.06 2608.4210064.37
2608.33
10066.12 2608.6710090.15 2608.79
```

```
Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
 9923.65     .05 9992.16    .01510025.44     .05

Bank Sta: Left   Right    Coeff Contr.   Expan.
       9992.1610025.44             .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
 9923.65 9982.21 2608.25       F
10035.7110090.15 2608.25       F

Upstream Embankment side slope              =       0 horiz. to 1.0
vertical
Downstream Embankment side slope            =       0 horiz. to 1.0
vertical
Maximum allowable submergence for weir flow =     .95
Elevation at which weir flow begins         =
Energy head used in spillway design         =
Spillway height used in design              =
Weir crest shape                            = Broad Crested

Number of Culverts =  1

Culvert Name     Shape      Rise    Span
Culvert #1           Box       5      12
FHWA Chart # 8 - flared wingwalls
FHWA Scale # 1 - Wingwall flared 30 to 75 deg.
Solution Criteria = Highest U.S. EG
Culvert Upstrm Dist  Length    Top n  Bottom n  Depth Blocked  Entrance
Loss Coef   Exit Loss Coef
                 5     190     .015     .015        0
.4               1
Number of Barrels =  3
Upstream   Elevation =  2603.98
Centerline Stations
    Sta.    Sta.    Sta.
 9989.8110002.3110014.81
Downstream Elevation =  2601.32
Centerline Stations
    Sta.    Sta.    Sta.
 9995.9610008.9610021.96

CROSS SECTION


RIVER: Fan 6C
REACH: Fan6C-2            RS: 2.26

INPUT
Description: Cross Section 2.26 is located downstream of the
intersection of
             Fan 6C and Sandy Vista Drive.  There are 3-12 X 5 CBC
located
             under Sandy Vista Drive.

Topography indicates wash and
             surrounding undeveloped desert.Cross section composed of
Cross
             Section Data collected by the city of Scottsdale Survey
             Department.
```

Aerial shows wash, homes and golf course.

T5NR5E

Section 6

Q100 = 1,346 cfs

Station Elevation Data num= 22

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9923.65	2607.93	9947.98	2607.7	9949.44	2607.37	9950.08	2607.42	9950.12	2607.37
9971.31	2608.1	9972.2	2608.57	9975.1	2608.12	9991.45	2606.32	9992.16	2604
9992.82	2601.83	10007.73	2601.77	10025.1	2601.94	10025.44	2604	10025.83	2606.39
10043.58	2609.46	10044.16	2608.95	10063.96	2608.38	10064.06	2608.42	10064.37	2608.33
10066.12	2608.67	10090.15	2608.79						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9923.65	.05	9992.16	.01	10025.44	.05

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9992.16	10025.44	157.98	155.06	160	.3	.5

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
9923.65	9982.21	2608.25	F
10035.71	10090.15	2608.25	F

CROSS SECTION OUTPUT Profile #100-yr 6-hr

E.G. Elev (ft)	2607.42	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.84	Wt. n-Val.	0.050	0.015	0.050
W.S. Elev (ft)	2605.58	Reach Len. (ft)	157.98	155.06	160.00
Crit W.S. (ft)	2605.58	Flow Area (sq ft)	0.38	123.74	0.20
E.G. Slope (ft/ft)	0.002378	Area (sq ft)	0.38	123.74	0.20
Q Total (cfs)	1346.00	Flow (cfs)	0.21	1345.72	0.07
Top Width (ft)	34.02	Top Width (ft)	0.48	33.28	0.26
Vel Total (ft/s)	10.83	Avg. Vel. (ft/s)	0.55	10.88	0.37
Max Chl Dpth (ft)	3.81	Hydr. Depth (ft)	0.79	3.72	0.79
Conv. Total (cfs)	27601.1	Conv. (cfs)	4.3	27595.3	1.5
Length Wtd. (ft)	155.06	Wetted Per. (ft)	1.65	36.64	1.60
Min Ch El (ft)	2601.77	Shear (lb/sq ft)	0.03	0.50	0.02
Alpha	1.01	Stream Power (lb/ft s)	0.02	5.45	0.01
Frctn Loss (ft)	0.38	Cum Volume (acre-ft)	15.86	32.96	28.06

```
  C & E Loss (ft)              0.01    Cum SA (acres)              15.45
17.06      24.54

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.
Note:    Multiple critical depths were found at this location.  The
critical depth with the lowest, valid,
         energy was used.

CROSS SECTION OUTPUT  Profile #Method 1

  E.G. Elev (ft)            2607.42    Element                     Left OB
Channel   Right OB
  Vel Head (ft)                1.84    Wt. n-Val.                   0.050
0.015      0.050
  W.S. Elev (ft)            2605.58    Reach Len. (ft)             157.98
155.06     160.00
  Crit W.S. (ft)            2605.58    Flow Area (sq ft)             0.38
123.74       0.20
  E.G. Slope (ft/ft)       0.002378    Area (sq ft)                  0.38
123.74       0.20
  Q Total (cfs)             1346.00    Flow (cfs)                    0.21
1345.72       0.07
  Top Width (ft)              34.02    Top Width (ft)                0.48
33.28       0.26
  Vel Total (ft/s)            10.83    Avg. Vel. (ft/s)              0.55
10.88       0.37
  Max Chl Dpth (ft)            3.81    Hydr. Depth (ft)              0.79
3.72       0.79
  Conv. Total (cfs)         27601.1    Conv. (cfs)                    4.3
27595.3        1.5
  Length Wtd. (ft)           155.06    Wetted Per. (ft)              1.65
36.64       1.60
  Min Ch El (ft)            2601.77    Shear (lb/sq ft)              0.03
0.50       0.02
  Alpha                        1.01    Stream Power (lb/ft s)        0.02
5.45       0.01
  Frctn Loss (ft)              0.38    Cum Volume (acre-ft)         15.86
32.96      28.06
  C & E Loss (ft)              0.01    Cum SA (acres)               15.45
17.06      24.54

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.
Note:    Multiple critical depths were found at this location.  The
critical depth with the lowest, valid,
         energy was used.

CROSS SECTION


RIVER: Fan 6C
REACH: Fan6C-2            RS: 2.23

INPUT
Description: Cross Section 2.23 is located upstream of the intersection
of Fan
             6C and Sandy Vista Drive.  There are 3-12 X 5 CBC located
under
             Sandy Vista Drive.

Topography indicates wash and surrounding
             undeveloped desert.Cross section composed of Cross Section
Data
             collected by the city of Scottsdale Survey Department.
Aerial
             shows wash, homes and golf course.

T5NR5E Section 6
Q100 =
             1,346 cfs
Station Elevation Data    num=      19
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta
Elev
 9920.86 2606.34 9947.43 2605.66 9949.08 2605.45 9970.52 2605.69 9971.13
2606.31
 9984.57 2604.11 9988.63 2603.31 9988.96    2601  9989.3 2598.6410021.66
2598.59
10021.85    260110022.03 2603.3410023.13    260410026.46 2604.3210037.66
2606.16
10038.42 2605.5710059.81 2605.3610061.39 2605.6910069.15 2606.11

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
 9920.86     .05 9988.96    .01510021.85     .05

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.
Expan.
       9988.9610021.85           159.45  152.12  153.56             .3
.5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
 9920.86 9984.98 2605.27       F
10025.9810069.15 2605.27       F

CROSS SECTION OUTPUT  Profile #100-yr 6-hr

  E.G. Elev (ft)           2604.23    Element                    Left OB
```

```
Channel   Right OB
  Vel Head (ft)                1.87    Wt. n-Val.                 0.050
0.015       0.050
  W.S. Elev (ft)            2602.36    Reach Len. (ft)           159.45
152.12      153.56
  Crit W.S. (ft)            2602.36    Flow Area (sq ft)           0.13
122.53        0.07
  E.G. Slope (ft/ft)       0.002506    Area (sq ft)                0.13
122.53        0.07
  Q Total (cfs)             1346.00    Flow (cfs)                  0.04
1345.94        0.01
  Top Width (ft)              33.19    Top Width (ft)              0.19
32.89        0.10
  Vel Total (ft/s)            10.97    Avg. Vel. (ft/s)            0.31
10.98        0.21
  Max Chl Dpth (ft)            3.77    Hydr. Depth (ft)            0.68
3.73        0.68
  Conv. Total (cfs)         26888.8    Conv. (cfs)                  0.8
26887.7         0.3
  Length Wtd. (ft)           152.12    Wetted Per. (ft)            1.37
37.16        1.36
  Min Ch El (ft)            2598.59    Shear (lb/sq ft)            0.02
0.52        0.01
  Alpha                        1.00    Stream Power (lb/ft s)      0.00
5.67        0.00
  Frctn Loss (ft)                      Cum Volume (acre-ft)       15.86
32.52       28.06
  C & E Loss (ft)                      Cum SA (acres)             15.45
16.94       24.54
```

Warning: During subcritical analysis, the water surface upstream of culvert went to critical depth.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid,
energy was used.

CROSS SECTION OUTPUT Profile #Method 1

```
  E.G. Elev (ft)            2604.23    Element                   Left OB
Channel   Right OB
  Vel Head (ft)                1.87    Wt. n-Val.                 0.050
0.015       0.050
  W.S. Elev (ft)            2602.36    Reach Len. (ft)           159.45
152.12      153.56
  Crit W.S. (ft)            2602.36    Flow Area (sq ft)           0.13
122.53        0.07
  E.G. Slope (ft/ft)       0.002506    Area (sq ft)                0.13
122.53        0.07
  Q Total (cfs)             1346.00    Flow (cfs)                  0.04
1345.94        0.01
  Top Width (ft)              33.19    Top Width (ft)              0.19
32.89        0.10
  Vel Total (ft/s)            10.97    Avg. Vel. (ft/s)            0.31
10.98        0.21
  Max Chl Dpth (ft)            3.77    Hydr. Depth (ft)            0.68
3.73        0.68
  Conv. Total (cfs)         26888.8    Conv. (cfs)                  0.8
26887.7         0.3
  Length Wtd. (ft)           152.12    Wetted Per. (ft)            1.37
37.16        1.36
```

```
  Min Ch El (ft)            2598.59    Shear (lb/sq ft)            0.02
0.52       0.01
  Alpha                        1.00    Stream Power (lb/ft s)      0.00
5.67       0.00
  Frctn Loss (ft)                      Cum Volume (acre-ft)       15.86
32.52      28.06
  C & E Loss (ft)                      Cum SA (acres)             15.45
16.94      24.54


Warning: During subcritical analysis, the water surface upstream of
culvert went to critical depth.
Note:    Multiple critical depths were found at this location.  The
critical depth with the lowest, valid,
         energy was used.

CULVERT


RIVER: Fan 6C
REACH: Fan6C-2            RS: 2.22

INPUT
Description: Box culverts at Sandy Vista Drive crossing.
Distance from Upstream XS =       40
Deck/Roadway Width        =    85.75
Weir Coefficient          =      2.6
Upstream  Deck/Roadway Coordinates
    num=        7
     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord
 9962.53 2605.59         9972.23 2605.24         9975.91 2605.24
 9995.99 2605.56        10013.23 2605.48         10036.7 2605.66
10045.89 2605.58

Upstream Bridge Cross Section Data
Station Elevation Data    num=       19
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta
Elev
 9920.86 2606.34 9947.43 2605.66 9949.08 2605.45 9970.52 2605.69 9971.13
2606.31
 9984.57 2604.11 9988.63 2603.31 9988.96    2601  9989.3 2598.6410021.66
2598.59
10021.85    260110022.03 2603.3410023.13    260410026.46 2604.3210037.66
2606.16
10038.42 2605.5710059.81 2605.3610061.39 2605.6910069.15 2606.11

Manning's n Values        num=        3
     Sta   n Val     Sta   n Val     Sta   n Val
 9920.86     .05 9988.96    .01510021.85     .05

Bank Sta: Left   Right    Coeff Contr.   Expan.
       9988.9610021.85             .3       .5
Ineffective Flow     num=        2
   Sta L   Sta R    Elev  Permanent
 9920.86 9984.98 2605.27       F
10025.9810069.15 2605.27       F

Downstream  Deck/Roadway Coordinates
    num=       11
     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord
 9887.81 2605.24          9912.4 2604.95         9941.31 2604.78
```

```
 9970.97 2604.57          10000 2603.98        10029.66 2603.29
 10057.1 2602.44        10081.33 2601.49        10116.89 2599.81
10153.04 2598.07        10178.36 2597.03

Downstream Bridge Cross Section Data
Station Elevation Data    num=      15
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta
Elev
 9890.11 2602.56 9901.62 2602.28 9909.56 2601.09 9944.26  2601.4 9969.61
2601.49
 9981.69 2601.77 9981.83    2598 9981.87 2597.0610011.47 2596.6610039.86
2596.61
10040.07    259810040.55 2601.2510043.99 2600.2410084.01 2598.5110131.73
2599.13

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
 9890.11     .05 9981.83    .03510040.07     .05

Bank Sta: Left   Right    Coeff Contr.   Expan.
       9981.8310040.07             .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
 9890.11 9981.83 2602.97       F
10040.0710131.73 2602.97       F
Right Levee     Station=10040.55      Elevation= 2601.25

Upstream Embankment side slope              =       0 horiz. to 1.0
vertical
Downstream Embankment side slope            =       0 horiz. to 1.0
vertical
Maximum allowable submergence for weir flow =     .95
Elevation at which weir flow begins         =
Energy head used in spillway design         =
Spillway height used in design              =
Weir crest shape                            = Broad Crested

Number of Culverts =  1

Culvert Name     Shape      Rise    Span
Culvert #1           Box       5      12
FHWA Chart # 8 - flared wingwalls
FHWA Scale # 1 - Wingwall flared 30 to 75 deg.
Solution Criteria = Highest U.S. EG
Culvert Upstrm Dist  Length    Top n  Bottom n  Depth Blocked  Entrance
Loss Coef   Exit Loss Coef
                  5     142     .015     .015        0
.4                1
Number of Barrels =  3
Upstream   Elevation =  2597.88
Centerline Stations
    Sta.    Sta.    Sta.
 9992.4810005.4810018.48
Downstream Elevation =  2596.74
Centerline Stations
    Sta.    Sta.    Sta.
 9995.7810009.7810026.79

CROSS SECTION
```

RIVER: Fan 6C
REACH: Fan6C-2 RS: 2.20

INPUT
Description: Cross Section 2.20 is located downstream of the intersection of
Fan 6C and Sandy Vista Drive. There are 3-12 X 5 CBC located
under Sandy Vista Drive.

Topography indicates wash and
surrounding undeveloped desert.Cross section composed of Cross
Section Data collected by the city of Scottsdale Survey Department.
Aerial shows wash, homes and golf course.

T5NR5E
Section 6
Q100 = 1,346 cfs
Station Elevation Data num= 15

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9890.11	2602.56	9901.62	2602.28	9909.56	2601.09	9944.26	2601.4	9969.61	2601.49
9981.69	2601.77	9981.83	2598	9981.87	2597.06	10011.47	2596.66	10039.86	2596.61
10040.07	2598	10040.55	2601.25	10043.99	2600.24	10084.01	2598.51	10131.73	2599.13

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9890.11	.05	9981.83	.035	10040.07	.05

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9981.83	10040.07	183.56	151.04	130.96	.3	.5

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
9890.11	9981.83	2602.97	F
10040.07	10131.73	2602.97	F

Right Levee Station=10040.55 Elevation= 2601.25

CROSS SECTION OUTPUT Profile #100-yr 6-hr

E.G. Elev (ft)	2600.58	Element	Left OB	Channel	Right OB	
Vel Head (ft)	1.26	Wt. n-Val.		0.035		
W.S. Elev (ft)	2599.32	Reach Len. (ft)	183.56	151.04	130.96	
Crit W.S. (ft)	2599.32	Flow Area (sq ft)		149.39		
E.G. Slope (ft/ft)	0.013448	Area (sq ft)	0.03	149.39	0.13	
Q Total (cfs)	1346.00	Flow (cfs)		1346.00		
Top Width (ft)	58.48	Top Width (ft)	0.05	58.24	0.19	
Vel Total (ft/s)	9.01	Avg. Vel. (ft/s)				

```
9.01
  Max Chl Dpth (ft)          2.71    Hydr. Depth (ft)
2.57
  Conv. Total (cfs)       11606.8    Conv. (cfs)
11606.8
  Length Wtd. (ft)         152.67    Wetted Per. (ft)
60.34
  Min Ch El (ft)          2596.61    Shear (lb/sq ft)
2.08
  Alpha                      1.00    Stream Power (lb/ft s)
18.73
  Frctn Loss (ft)            1.46    Cum Volume (acre-ft)       15.86
32.05      28.06
  C & E Loss (ft)            0.19    Cum SA (acres)             15.45
16.78      24.54


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.
Note:    Multiple critical depths were found at this location.  The
critical depth with the lowest, valid,
         energy was used.

CROSS SECTION OUTPUT  Profile #Method 1

  E.G. Elev (ft)          2600.58    Element                    Left OB
Channel   Right OB
  Vel Head (ft)              1.26    Wt. n-Val.
0.035
  W.S. Elev (ft)          2599.32    Reach Len. (ft)           183.56
151.04     130.96
  Crit W.S. (ft)          2599.32    Flow Area (sq ft)
149.39
  E.G. Slope (ft/ft)     0.013448    Area (sq ft)                0.03
149.39       0.13
  Q Total (cfs)           1346.00    Flow (cfs)
1346.00
  Top Width (ft)            58.48    Top Width (ft)              0.05
58.24       0.19
  Vel Total (ft/s)           9.01    Avg. Vel. (ft/s)
9.01
  Max Chl Dpth (ft)          2.71    Hydr. Depth (ft)
2.57
  Conv. Total (cfs)       11606.8    Conv. (cfs)
11606.8
  Length Wtd. (ft)         152.67    Wetted Per. (ft)
60.34
  Min Ch El (ft)          2596.61    Shear (lb/sq ft)
2.08
  Alpha                      1.00    Stream Power (lb/ft s)
```

18.73
  Frctn Loss (ft) 1.46 Cum Volume (acre-ft) 15.86
32.05 28.06
  C & E Loss (ft) 0.19 Cum SA (acres) 15.45
16.78 24.54

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.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid,
energy was used.

CROSS SECTION

RIVER: Fan 6C
REACH: Fan6C-2 RS: 2.17

INPUT
Description: Cross Section 2.17 is located within Legend Trail.

Topography
indicates wash and surrounding undeveloped desert. Cross section
composed of Cross Section Data collected by the city of Scottsdale
Survey Department.
Aerial shows wash and adjacent golf
course.
T5NR5E Section 6
Q100 = 1,346 cfs
Station Elevation Data num= 18

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9643.2	2602.36	9679.09	2601.49	9748.44	2597.83	9766.93	2597.33	9775.95	2597.14
9815.51	2597.27	9840.98	2596.58	9870.59	2597.33	9908.04	2597.53	9962.29	2594.72
9970.41	2596.52	9987.6	2596.58	10006.23	2592.41	10014.48	2591.35	10024.1	2592.89
10031.84	2595.93	10082.83	2599.76	10091.02	2599.9				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9643.2	.05	9987.6	.035	10031.84	.05

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9987.6	10031.84	222.23	217.67	215.82		.1

.3
Left Levee Station= 9908.04 Elevation= 2597.53

CROSS SECTION OUTPUT Profile #100-yr 6-hr

E.G. Elev (ft)	2597.75	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.89	Wt. n-Val.	0.050	0.035	0.050
W.S. Elev (ft)	2596.87	Reach Len. (ft)	222.23	217.67	215.82
Crit W.S. (ft)	2596.52	Flow Area (sq ft)	60.10	150.03	5.85
E.G. Slope (ft/ft)	0.007181	Area (sq ft)	60.10	150.03	5.85
Q Total (cfs)	1346.00	Flow (cfs)	140.74	1196.38	8.87
Top Width (ft)	123.49	Top Width (ft)	66.77	44.24	12.48
Vel Total (ft/s)	6.23	Avg. Vel. (ft/s)	2.34	7.97	1.52
Max Chl Dpth (ft)	5.52	Hydr. Depth (ft)	0.90	3.39	0.47
Conv. Total (cfs)	15883.9	Conv. (cfs)	1660.9	14118.3	104.7
Length Wtd. (ft)	217.94	Wetted Per. (ft)	67.02	45.47	12.52
Min Ch El (ft)	2591.35	Shear (lb/sq ft)	0.40	1.48	0.21
Alpha	1.47	Stream Power (lb/ft s)	0.94	11.80	0.32
Frctn Loss (ft)	1.89	Cum Volume (acre-ft)	15.73	31.53	28.05
C & E Loss (ft)	0.09	Cum SA (acres)	15.31	16.60	24.52

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for
additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water
surface was used.

CROSS SECTION OUTPUT Profile #Method 1

E.G. Elev (ft)	2597.75	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.89	Wt. n-Val.	0.050	0.035	0.050
W.S. Elev (ft)	2596.87	Reach Len. (ft)	222.23	217.67	215.82
Crit W.S. (ft)	2596.52	Flow Area (sq ft)	60.10	150.03	5.85
E.G. Slope (ft/ft)	0.007181	Area (sq ft)	60.10	150.03	5.85
Q Total (cfs)	1346.00	Flow (cfs)	140.74	1196.38	8.87

Top Width (ft)	123.49	44.24	12.48	Top Width (ft)	66.77
Vel Total (ft/s)	6.23	7.97	1.52	Avg. Vel. (ft/s)	2.34
Max Chl Dpth (ft)	5.52	3.39	0.47	Hydr. Depth (ft)	0.90
Conv. Total (cfs)	15883.9	14118.3	104.7	Conv. (cfs)	1660.9
Length Wtd. (ft)	217.94	45.47	12.52	Wetted Per. (ft)	67.02
Min Ch El (ft)	2591.35	1.48	0.21	Shear (lb/sq ft)	0.40
Alpha	1.47	11.80	0.32	Stream Power (lb/ft s)	0.94
Frctn Loss (ft)	1.89	31.53	28.05	Cum Volume (acre-ft)	15.73
C & E Loss (ft)	0.09	16.60	24.52	Cum SA (acres)	15.31

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.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water
surface was used.

CROSS SECTION

RIVER: Fan 6C
REACH: Fan6C-2 RS: 2.13

INPUT
Description: Cross Section 2.13 is located within Legend Trail. Blocked
Obstruction indicates finish floor of existing home.

Topography
indicates wash and surrounding undeveloped desert. Cross section
composed of Cross Section Data collected by the city of Scottsdale
Survey Department.
Aerial shows wash, golf course and
homes.
T5NR5E Section 6
Q100 = 1,346 cfs
Station Elevation Data num= 25

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9594.4	2601.13	9629.16	2598.7	9651.02	2596.57	9694.83	2594.02	9723.55	2593.88
9759.16	2591.53	9766.99	2591.76	9795.01	2596.23	9807.52	2593.55	9822.75	2595.24
9887.35	2593.82	9944.74	2594.16	9971.95	2595.9	9993.55	2592	9994.71	2591.79
9996.57	2588.7	10009	2588.68	10021.06	2592	10024.11	2592.84	10130.24	2594.64

```
10154.56 2592.5710156.46 2592.2910169.79 2592.4110182.71 2592.1610184.74
2592.49

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
  9594.4     .05 9993.55    .03510021.06     .05

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.
Expan.
       9993.5510021.06          511.67  508.61  504.97             .1
.3
Left Levee      Station= 9971.95      Elevation= 2595.89
Blocked Obstructions     num=       1
   Sta L   Sta R    Elev
10024.1110184.74  2595.5

CROSS SECTION OUTPUT  Profile #100-yr 6-hr

  E.G. Elev (ft)           2595.77    Element                    Left OB
Channel   Right OB
  Vel Head (ft)               1.83    Wt. n-Val.                  0.050
0.035      0.050
  W.S. Elev (ft)           2593.94    Reach Len. (ft)           511.67
508.61     504.97
  Crit W.S. (ft)           2593.94    Flow Area (sq ft)          10.43
117.95       4.64
  E.G. Slope (ft/ft)      0.010724    Area (sq ft)               10.43
117.95       4.64
  Q Total (cfs)            1346.00    Flow (cfs)                 31.14
1299.75      15.11
  Top Width (ft)             41.31    Top Width (ft)             10.75
27.51       3.05
  Vel Total (ft/s)           10.12    Avg. Vel. (ft/s)            2.98
11.02       3.26
  Max Chl Dpth (ft)           5.26    Hydr. Depth (ft)            0.97
4.29       1.52
  Conv. Total (cfs)        12997.9    Conv. (cfs)                300.8
12551.2      145.9
  Length Wtd. (ft)          509.29    Wetted Per. (ft)           10.92
29.72       4.27
  Min Ch El (ft)           2588.68    Shear (lb/sq ft)            0.64
2.66       0.73
  Alpha                       1.15    Stream Power (lb/ft s)      1.91
29.27       2.37
  Frctn Loss (ft)             7.32    Cum Volume (acre-ft)       15.55
30.86      28.02
  C & E Loss (ft)             0.33    Cum SA (acres)             15.11
16.43      24.48


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.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water
surface was used.

CROSS SECTION OUTPUT Profile #Method 1

E.G. Elev (ft)	2595.77	Element	Left OB	Channel Right OB
Vel Head (ft)	1.83	Wt. n-Val.	0.050	0.035 0.050
W.S. Elev (ft)	2593.94	Reach Len. (ft)	511.67	508.61 504.97
Crit W.S. (ft)	2593.94	Flow Area (sq ft)	10.43	117.95 4.64
E.G. Slope (ft/ft)	0.010724	Area (sq ft)	10.43	117.95 4.64
Q Total (cfs)	1346.00	Flow (cfs)	31.14	1299.75 15.11
Top Width (ft)	41.31	Top Width (ft)	10.75	27.51 3.05
Vel Total (ft/s)	10.12	Avg. Vel. (ft/s)	2.98	11.02 3.26
Max Chl Dpth (ft)	5.26	Hydr. Depth (ft)	0.97	4.29 1.52
Conv. Total (cfs)	12997.9	Conv. (cfs)	300.8	12551.2 145.9
Length Wtd. (ft)	509.29	Wetted Per. (ft)	10.92	29.72 4.27
Min Ch El (ft)	2588.68	Shear (lb/sq ft)	0.64	2.66 0.73
Alpha	1.15	Stream Power (lb/ft s)	1.91	29.27 2.37
Frctn Loss (ft)	7.32	Cum Volume (acre-ft)	15.55	30.86 28.02
C & E Loss (ft)	0.33	Cum SA (acres)	15.11	16.43 24.48

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.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water

surface was used.

CROSS SECTION

RIVER: Fan 6C
REACH: Fan6C-2 RS: 2.03

INPUT
Description: Cross Section 2.03 is located within Legend Trail. Blocked obstruction indicates finish floor of existing home.

Topography
indicates wash and surrounding undeveloped desert. Cross section
composed of Cross Section Data collected by the city of Scottsdale
Survey Department.
Aerial shows wash, tee boxes, and
homes.
T5NR5E Section 6
Q100 = 1,346 cfs
Station Elevation Data num= 15

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9828.03	2586.94	9838.5	2586.39	9873.19	2580.76	9914.79	2581.42	9932.04	2583.4
9943.64	2582.89	9953.68	2583	9970.39	2581.14	10019.43	2581.53	10025.69	2583.07
10048.87	2582.87	10171.07	2584.36	10211.64	2581.93	10218.98	2580.95	10228.19	2581.06

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9828.03	.05	9953.68	.035	10025.69	.05

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Coeff Expan.
9953.68	10025.69	216.87	220.15	223.42	.1	.3

Blocked Obstructions num= 1

Sta L	Sta R	Elev
10048.87	10228.19	2585.18

CROSS SECTION OUTPUT Profile #100-yr 6-hr

E.G. Elev (ft)	2583.70	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.71	Wt. n-Val.	0.050	0.035	0.050
W.S. Elev (ft)	2582.99	Reach Len. (ft)	216.87	220.15	223.42
Crit W.S. (ft)	2582.99	Flow Area (sq ft)	105.32	100.55	0.77
E.G. Slope (ft/ft)	0.020269	Area (sq ft)	105.32	100.55	0.77
Q Total (cfs)	1346.00	Flow (cfs)	584.85	760.66	0.49
Top Width (ft)	164.78	Top Width (ft)	79.86	71.54	13.39
Vel Total (ft/s)	6.51	Avg. Vel. (ft/s)	5.55		

```
7.56        0.63
  Max Chl Dpth (ft)          2.23    Hydr. Depth (ft)          1.32
1.41        0.06
  Conv. Total (cfs)        9454.3    Conv. (cfs)             4108.0
5342.9         3.4
  Length Wtd. (ft)         219.23    Wetted Per. (ft)         80.13
71.82       13.50
  Min Ch El (ft)         2581.14     Shear (lb/sq ft)          1.66
1.77        0.07
  Alpha                      1.08    Stream Power (lb/ft s)    9.24
13.40        0.05
  Frctn Loss (ft)            3.68    Cum Volume (acre-ft)     14.87
29.58       27.99
  C & E Loss (ft)            0.00    Cum SA (acres)           14.58
15.85       24.39


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

CROSS SECTION OUTPUT  Profile #Method 1

  E.G. Elev (ft)         2583.70    Element                  Left OB
Channel   Right OB
  Vel Head (ft)              0.71   Wt. n-Val.                0.050
0.035       0.050
  W.S. Elev (ft)         2582.99    Reach Len. (ft)          216.87
220.15      223.42
  Crit W.S. (ft)         2582.99    Flow Area (sq ft)        105.32
100.55        0.77
  E.G. Slope (ft/ft)    0.020269    Area (sq ft)             105.32
100.55        0.77
  Q Total (cfs)          1346.00    Flow (cfs)               584.85
760.66        0.49
  Top Width (ft)          164.78    Top Width (ft)            79.86
71.54       13.39
  Vel Total (ft/s)           6.51   Avg. Vel. (ft/s)           5.55
7.56        0.63
  Max Chl Dpth (ft)          2.23    Hydr. Depth (ft)          1.32
1.41        0.06
  Conv. Total (cfs)        9454.3    Conv. (cfs)             4108.0
5342.9         3.4
  Length Wtd. (ft)         219.23    Wetted Per. (ft)         80.13
71.82       13.50
  Min Ch El (ft)         2581.14     Shear (lb/sq ft)          1.66
1.77        0.07
  Alpha                      1.08    Stream Power (lb/ft s)    9.24
13.40        0.05
```

```
  Frctn Loss (ft)              3.68    Cum Volume (acre-ft)        14.87
29.58      27.99
  C & E Loss (ft)              0.00    Cum SA (acres)              14.58
15.85      24.39


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

CROSS SECTION


RIVER: Fan 6C
REACH: Fan6C-2            RS: 1.99

INPUT
Description: Cross Section 1.99 is located within Legend Trail.

Topography
             indicates wash and surrounding undeveloped desert. Cross
section
             composed of Cross Section Data collected by the city of
Scottsdale
             Survey Department.
Aerial shows wash, tee boxes and
             homes.
T5NR5E Section 6
Q100 = 1,346 cfs
Station Elevation Data    num=      15
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta
Elev
 9843.09    2581 9856.74    2580 9895.88 2577.17 9905.81 2577.69 9931.45
2582.14
  9943.9 2582.19 9985.22    2578    9994 2577.11 10005.8 2576.9310030.08
2577.51
10050.92 2577.1510067.98    257810112.55 2580.2210167.85 2577.9310267.75
2576.94

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
 9843.09     .05 9985.22    .03510067.98     .05

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.
Expan.
       9985.2210067.98           309.21  308.64  298.27             .1
.3
Right Levee     Station=10112.55      Elevation= 2580.22
```

CROSS SECTION OUTPUT Profile #100-yr 6-hr

E.G. Elev (ft)	2579.88	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.75	Wt. n-Val.	0.050	0.035	0.050
W.S. Elev (ft)	2579.13	Reach Len. (ft)	309.21	308.64	298.27
Crit W.S. (ft)	2579.13	Flow Area (sq ft)	55.84	149.32	12.87
E.G. Slope (ft/ft)	0.014105	Area (sq ft)	55.84	149.32	12.87
Q Total (cfs)	1346.00	Flow (cfs)	199.89	1115.07	31.05
Top Width (ft)	162.03	Top Width (ft)	56.54	82.76	22.73
Vel Total (ft/s)	6.17	Avg. Vel. (ft/s)	3.58	7.47	2.41
Max Chl Dpth (ft)	2.20	Hydr. Depth (ft)	0.99	1.80	0.57
Conv. Total (cfs)	11333.5	Conv. (cfs)	1683.1	9389.0	261.4
Length Wtd. (ft)	308.10	Wetted Per. (ft)	56.81	82.84	22.76
Min Ch El (ft)	2576.93	Shear (lb/sq ft)	0.87	1.59	0.50
Alpha	1.27	Stream Power (lb/ft s)	3.10	11.85	1.20
Frctn Loss (ft)	3.99	Cum Volume (acre-ft)	14.47	28.95	27.95
C & E Loss (ft)	0.03	Cum SA (acres)	14.24	15.46	24.29

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: Divided flow computed for this cross-section.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
depth, the calculated water surface came back below critical depth. This indicates that there is
not a valid subcritical answer. The program defaulted to critical depth.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water
surface was used.

CROSS SECTION OUTPUT Profile #Method 1

E.G. Elev (ft)	2579.88	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.75	Wt. n-Val.	0.050	0.035	0.050
W.S. Elev (ft)	2579.13	Reach Len. (ft)	309.21	308.64	298.27
Crit W.S. (ft)	2579.13	Flow Area (sq ft)	55.84		

149.32 12.87

E.G. Slope (ft/ft)	0.014105	Area (sq ft)	55.84
149.32 12.87			
Q Total (cfs)	1346.00	Flow (cfs)	199.89
1115.07 31.05			
Top Width (ft)	162.03	Top Width (ft)	56.54
82.76 22.73			
Vel Total (ft/s)	6.17	Avg. Vel. (ft/s)	3.58
7.47 2.41			
Max Chl Dpth (ft)	2.20	Hydr. Depth (ft)	0.99
1.80 0.57			
Conv. Total (cfs)	11333.5	Conv. (cfs)	1683.1
9389.0 261.4			
Length Wtd. (ft)	308.10	Wetted Per. (ft)	56.81
82.84 22.76			
Min Ch El (ft)	2576.93	Shear (lb/sq ft)	0.87
1.59 0.50			
Alpha	1.27	Stream Power (lb/ft s)	3.10
11.85 1.20			
Frctn Loss (ft)	3.99	Cum Volume (acre-ft)	14.47
28.95 27.95			
C & E Loss (ft)	0.03	Cum SA (acres)	14.24
15.46 24.29			

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: Divided flow computed for this cross-section.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
depth, the calculated water surface came back below critical depth. This indicates that there is
not a valid subcritical answer. The program defaulted to critical depth.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water
surface was used.

CROSS SECTION

RIVER: Fan 6C
REACH: Fan6C-2 RS: 1.93

INPUT
Description: Cross Section 1.93 is located within Legend Trail.

Topography
indicates wash and surrounding undeveloped desert. Cross section
composed of Cross Section Data collected by the city of Scottsdale
Survey Department.
Aerial shows wash and homes.
T5NR5E Section
6

```
Q100 = 1,346 cfs
Station Elevation Data     num=       19
     Sta     Elev      Sta     Elev      Sta     Elev      Sta     Elev      Sta
Elev
 9918.73 2575.91 9930.05  2575.2 9940.14 2575.56 9944.67 2575.57  9973.9
2573.14
  9990.2 2571.67 9993.89 2569.6910005.94 2569.8810029.64 2569.8310048.13
2571.58
10081.45  2571.610086.69 2572.6510098.42 2572.8410122.07 2566.6310144.57
2566.76
10174.59 2572.6410345.79 2573.4610346.68 2573.6910350.26 2573.53

Manning's n Values         num=       3
     Sta   n Val      Sta   n Val      Sta   n Val
 9918.73     .05  9990.2    .03510048.13     .05

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.
Expan.
        9990.210048.13           275.13  270.57  276.22             .3
.5
Right Levee     Station=10098.42      Elevation=    2574

CROSS SECTION OUTPUT  Profile #100-yr 6-hr

  E.G. Elev (ft)           2573.66    Element                    Left OB
Channel   Right OB
  Vel Head (ft)               1.01    Wt. n-Val.                  0.050
0.035      0.050
  W.S. Elev (ft)           2572.65    Reach Len. (ft)            275.13
270.57     276.22
  Crit W.S. (ft)           2572.65    Flow Area (sq ft)            5.29
143.82      37.95
  E.G. Slope (ft/ft)      0.011912    Area (sq ft)                 5.29
143.82      37.95
  Q Total (cfs)            1346.00    Flow (cfs)                  10.62
1213.77     121.61
  Top Width (ft)            107.31    Top Width (ft)              10.83
57.93      38.55
  Vel Total (ft/s)            7.20    Avg. Vel. (ft/s)             2.01
8.44       3.20
  Max Chl Dpth (ft)           6.02    Hydr. Depth (ft)             0.49
2.48       0.98
  Conv. Total (cfs)        12332.4    Conv. (cfs)                  97.3
11120.9     1114.2
  Length Wtd. (ft)          270.85    Wetted Per. (ft)            10.88
58.51      38.65
  Min Ch El (ft)           2569.69    Shear (lb/sq ft)             0.36
1.83       0.73
  Alpha                       1.26    Stream Power (lb/ft s)       0.73
15.43       2.34
  Frctn Loss (ft)             1.12    Cum Volume (acre-ft)        14.25
27.91      27.78
  C & E Loss (ft)             0.25    Cum SA (acres)              14.00
14.96      24.09


Warning: The energy equation could not be balanced within the specified
number of iterations.  The
         program used critical depth for the water surface and continued
on with the calculations.
Warning: The conveyance ratio (upstream conveyance divided by downstream
```

conveyance) is less than
0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
depth, the calculated water surface came back below critical depth. This indicates that there is
not a valid subcritical answer. The program defaulted to critical depth.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water
surface was used.

CROSS SECTION OUTPUT Profile #Method 1

E.G. Elev (ft)	2573.66	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.01	Wt. n-Val.	0.050	0.035	0.050
W.S. Elev (ft)	2572.65	Reach Len. (ft)	275.13	270.57	276.22
Crit W.S. (ft)	2572.65	Flow Area (sq ft)	5.29	143.82	37.95
E.G. Slope (ft/ft)	0.011912	Area (sq ft)	5.29	143.82	37.95
Q Total (cfs)	1346.00	Flow (cfs)	10.62	1213.77	121.61
Top Width (ft)	107.31	Top Width (ft)	10.83	57.93	38.55
Vel Total (ft/s)	7.20	Avg. Vel. (ft/s)	2.01	8.44	3.20
Max Chl Dpth (ft)	6.02	Hydr. Depth (ft)	0.49	2.48	0.98
Conv. Total (cfs)	12332.4	Conv. (cfs)	97.3	11120.9	1114.2
Length Wtd. (ft)	270.85	Wetted Per. (ft)	10.88	58.51	38.65
Min Ch El (ft)	2569.69	Shear (lb/sq ft)	0.36	1.83	0.73
Alpha	1.26	Stream Power (lb/ft s)	0.73	15.43	2.34
Frctn Loss (ft)	1.12	Cum Volume (acre-ft)	14.25	27.91	27.78
C & E Loss (ft)	0.25	Cum SA (acres)	14.00	14.96	24.09

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

```
Warning: During the standard step iterations, when the assumed water
surface was set equal to critical
         depth, the calculated water surface came back below critical
depth.  This indicates that there is
         not a valid subcritical answer.  The program defaulted to
critical depth.
Note:    Multiple critical depths were found at this location.  The
critical depth with the lowest, valid, water
         surface was used.

CROSS SECTION


RIVER: Fan 6C
REACH: Fan6C-2            RS: 1.88

INPUT
Description: Cross Section 1.88 is located upstream of the intersection
of Fan
             6C and 92nd Place.  There are 3-10 X 4 CBC located under
92nd
             Place.  A leeve has been built that does not meet FEMA
             requirements.

Topography indicates wash and surrounding
             undeveloped desert.Cross section composed of Cross Section
Data
             collected by the city of Scottsdale Survey Department.
Aerial
             shows wash, homes and golf course.

T5NR5E Section 6
Q100 =
             1,346 cfs
Station Elevation Data    num=      20
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta
Elev
 9750.77  2562.3 9750.85 2562.19 9760.68 2561.27 9780.66 2562.14 9794.79
2564.97
 9828.32 2565.37 9880.34 2567.57 9911.26 2567.42 9956.77  2566.4 9974.25
2570.5
 9984.93 2570.83 9993.81 2568.19  9994.1 2563.3410011.27 2563.4110030.08
2563.64
10031.23 2567.5810073.27 2569.9510087.97 2570.3710089.24  2569.9 10091.2
2569.83

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
 9750.77     .05 9993.81    .03510031.23     .05

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.
Expan.
       9993.8110031.23               86   86.31   86.52             .3
.5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
 9750.77 9992.99 2570.25       F
10031.23 10091.2 2570.25       F
Blocked Obstructions     num=       1
   Sta L   Sta R    Elev
 9788.34 9828.32    2571
```

CROSS SECTION OUTPUT Profile #100-yr 6-hr

E.G. Elev (ft)	2570.26	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.52	Wt. n-Val.	0.050	0.035	
W.S. Elev (ft)	2569.74	Reach Len. (ft)	86.00	86.31	86.52
Crit W.S. (ft)	2566.96	Flow Area (sq ft)	1.17	231.94	
E.G. Slope (ft/ft)	0.002089	Area (sq ft)	687.66	231.94	41.21
Q Total (cfs)	1346.00	Flow (cfs)	1.95	1344.05	
Top Width (ft)	261.10	Top Width (ft)	185.44	37.42	38.24
Vel Total (ft/s)	5.77	Avg. Vel. (ft/s)	1.67	5.79	
Max Chl Dpth (ft)	8.47	Hydr. Depth (ft)	1.42	6.20	
Conv. Total (cfs)	29447.3	Conv. (cfs)	42.7	29404.6	
Length Wtd. (ft)	86.31	Wetted Per. (ft)	0.85	44.95	
Min Ch El (ft)	2563.34	Shear (lb/sq ft)	0.18	0.67	
Alpha	1.01	Stream Power (lb/ft s)	0.30	3.90	
Frctn Loss (ft)		Cum Volume (acre-ft)	12.06	26.74	27.53
C & E Loss (ft)		Cum SA (acres)	13.38	14.66	23.84

Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.

CROSS SECTION OUTPUT Profile #Method 1

E.G. Elev (ft)	2570.26	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.52	Wt. n-Val.	0.050	0.035	
W.S. Elev (ft)	2569.74	Reach Len. (ft)	86.00	86.31	86.52
Crit W.S. (ft)	2566.96	Flow Area (sq ft)	1.17	231.94	
E.G. Slope (ft/ft)	0.002089	Area (sq ft)	687.66	231.94	41.21
Q Total (cfs)	1346.00	Flow (cfs)	1.95	1344.05	
Top Width (ft)	261.10	Top Width (ft)	185.44	37.42	38.24
Vel Total (ft/s)	5.77	Avg. Vel. (ft/s)	1.67	5.79	
Max Chl Dpth (ft)	8.47	Hydr. Depth (ft)	1.42	6.20	
Conv. Total (cfs)	29447.3	Conv. (cfs)	42.7	29404.6	

```
  Length Wtd. (ft)            86.31    Wetted Per. (ft)            0.85
44.95
  Min Ch El (ft)            2563.34    Shear (lb/sq ft)            0.18
0.67
  Alpha                        1.01    Stream Power (lb/ft s)      0.30
3.90
  Frctn Loss (ft)                      Cum Volume (acre-ft).      12.06
26.74      27.53
  C & E Loss (ft)                      Cum SA (acres)             13.38
14.66      23.84


Note:    Multiple critical depths were found at this location.  The
critical depth with the lowest, valid,
         energy was used.

CULVERT


RIVER: Fan 6C
REACH: Fan6C-2            RS: 1.875

INPUT
Description: Box culverts at 92nd Place crossing.
Distance from Upstream XS =      26
Deck/Roadway Width        =      24
Weir Coefficient          =     2.6
Upstream  Deck/Roadway Coordinates
    num=      16
     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord
  9629.8 2565.89         9656.48  2565.2         9685.19 2563.41
 9714.82 2561.57         9747.01  2560.8         9781.31 2560.81
 9815.89 2561.73         9849.03 2564.42         9876.85 2567.03
 9910.09 2569.14         9953.13 2570.02         9983.15 2570.52
10010.72  2570.6        10041.76 2570.47        10069.44 2570.32
10088.88 2570.23

Upstream Bridge Cross Section Data
Station Elevation Data    num=      20
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta
Elev
 9750.77  2562.3 9750.85 2562.19 9760.68 2561.27 9780.66 2562.14 9794.79
2564.97
 9828.32 2565.37 9880.34 2567.57 9911.26 2567.42 9956.77  2566.4 9974.25
2570.5
 9984.93 2570.83 9993.81 2568.19  9994.1 2563.3410011.27 2563.4110030.08
2563.64
10031.23 2567.5810073.27 2569.9510087.97 2570.3710089.24  2569.9 10091.2
2569.83

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
 9750.77     .05 9993.81    .03510031.23     .05

Bank Sta: Left   Right    Coeff Contr.   Expan.
       9993.8110031.23             .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
 9750.77 9992.99 2570.25       F
10031.23 10091.2 2570.25       F
Blocked Obstructions     num=       1
```

```
   Sta L   Sta R    Elev
 9788.34 9828.32    2571

Downstream  Deck/Roadway Coordinates
    num=       13
     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord
 9720.42 2563.41          9746.3 2561.57         9778.09  2560.8
 9808.72 2560.81         9843.19 2561.73         9876.18 2564.42
 9903.94 2567.03         9937.19 2569.14         9980.37 2570.02
 10010.5 2570.52        10038.05  2570.6        10068.97 2570.47
10096.41 2570.32

Downstream Bridge Cross Section Data
Station Elevation Data    num=       19
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta
Elev
    9745 2562.67 9766.49 2561.37 9792.95 2560.29 9807.73  2560.6 9872.39
2562
 9939.01 2562.66 9961.06 2572.05 9980.26 2571.26 9987.67    2565 9990.58
2562.51
10007.56 2562.5110026.57 2562.5510026.71    256510026.76 2565.7110041.24
2565.46
10048.77 2565.9210059.58 2564.1210078.48 2563.7810078.63 2563.86

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
    9745     .05 9987.67    .03510026.71     .05

Bank Sta: Left   Right    Coeff Contr.   Expan.
       9987.6710026.71             .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
    9745 9983.52 2570.04       F
10035.1210078.63 2570.04       F
Right Levee     Station=10048.77      Elevation= 2565.92
Blocked Obstructions     num=       3
   Sta L   Sta R    Elev   Sta L   Sta R    Elev   Sta L   Sta R    Elev
    9745    9745    2571 9807.73 9899.73    257110078.6310078.63    2571

Upstream Embankment side slope              =       0 horiz. to 1.0
vertical
Downstream Embankment side slope            =       0 horiz. to 1.0
vertical
Maximum allowable submergence for weir flow =     .95
Elevation at which weir flow begins         =
Energy head used in spillway design         =
Spillway height used in design              =
Weir crest shape                            = Broad Crested

Number of Culverts =  1

Culvert Name     Shape      Rise    Span
Culvert #1           Box       4      10
FHWA Chart # 8 - flared wingwalls
FHWA Scale # 1 - Wingwall flared 30 to 75 deg.
Solution Criteria = Highest U.S. EG
Culvert Upstrm Dist  Length    Top n  Bottom n  Depth Blocked  Entrance
Loss Coef   Exit Loss Coef
                  5      75     .013      .013        0
.4                1
Number of Barrels =  3
```

```
Upstream   Elevation =  2563.3
Centerline Stations
    Sta.    Sta.    Sta.
 9999.4910010.4910021.49
Downstream Elevation =  2562.59
Centerline Stations
    Sta.    Sta.    Sta.
 9998.3210009.3210020.32

CROSS SECTION


RIVER: Fan 6C
REACH: Fan6C-2            RS: 1.87

INPUT
Description: Cross Section 1.87 is located upstream of the intersection
of Fan
             6C and 92nd Place.  There are 3-10 X 4 CBC located under
92nd
             Place.  A leeve has been built that does not meet FEMA
             requirements.

Topography indicates wash and surrounding
             undeveloped desert.Cross section composed of Cross Section
Data
             collected by the city of Scottsdale Survey Department.
Aerial
             shows wash, homes and golf course.

T5NR5E Section 6
Q100 =
             1,346 cfs
Station Elevation Data    num=      19
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta
Elev
    9745 2562.67 9766.49 2561.37 9792.95 2560.29 9807.73  2560.6 9872.39
2562
 9939.01 2562.66 9961.06 2572.05 9980.26 2571.26 9987.67    2565 9990.58
2562.51
10007.56 2562.5110026.57 2562.5510026.71    256510026.76 2565.7110041.24
2565.46
10048.77 2565.9210059.58 2564.1210078.48 2563.7810078.63 2563.86

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
    9745     .05 9987.67    .03510026.71     .05

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.
Expan.
       9987.6710026.71              209  208.61  210.57             .3
.5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
    9745 9983.52 2570.04       F
10035.1210078.63 2570.04       F
Right Levee     Station=10048.77      Elevation= 2565.92
Blocked Obstructions     num=       3
   Sta L   Sta R    Elev   Sta L   Sta R    Elev   Sta L   Sta R    Elev
    9745    9745    2571 9807.73 9899.73    257110078.6310078.63    2571
```

CROSS SECTION OUTPUT Profile #100-yr 6-hr

E.G. Elev (ft)	2567.59	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.55	Wt. n-Val.	0.050	0.035	0.050
W.S. Elev (ft)	2566.04	Reach Len. (ft)	209.00	208.61	210.57
Crit W.S. (ft)	2566.04	Flow Area (sq ft)	0.64	133.57	3.38
E.G. Slope (ft/ft)	0.012030	Area (sq ft)	461.22	133.57	60.03
Q Total (cfs)	1346.00	Flow (cfs)	1.12	1339.17	5.71
Top Width (ft)	202.13	Top Width (ft)	111.17	39.04	51.92
Vel Total (ft/s)	9.78	Avg. Vel. (ft/s)	1.76	10.03	1.69
Max Chl Dpth (ft)	5.75	Hydr. Depth (ft)	0.52	3.42	0.40
Conv. Total (cfs)	12271.9	Conv. (cfs)	10.2	12209.6	52.1
Length Wtd. (ft)	208.69	Wetted Per. (ft)	1.61	42.27	9.07
Min Ch El (ft)	2562.51	Shear (lb/sq ft)	0.30	2.37	0.28
Alpha	1.05	Stream Power (lb/ft s)	0.52	23.79	0.47
Frctn Loss (ft)	2.77	Cum Volume (acre-ft)	10.93	26.38	27.43
C & E Loss (ft)	0.42	Cum SA (acres)	13.09	14.59	23.75

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

CROSS SECTION OUTPUT Profile #Method 1

E.G. Elev (ft)	2567.59	Element	Left OB	Channel	Right OB

Vel Head (ft)	1.55	Wt. n-Val.	0.050
0.035 0.050			
W.S. Elev (ft)	2566.04	Reach Len. (ft)	209.00
208.61 210.57			
Crit W.S. (ft)	2566.04	Flow Area (sq ft)	0.64
133.57 3.38			
E.G. Slope (ft/ft)	0.012030	Area (sq ft)	461.22
133.57 60.03			
Q Total (cfs)	1346.00	Flow (cfs)	1.12
1339.17 5.71			
Top Width (ft)	202.13	Top Width (ft)	111.17
39.04 51.92			
Vel Total (ft/s)	9.78	Avg. Vel. (ft/s)	1.76
10.03 1.69			
Max Chl Dpth (ft)	5.75	Hydr. Depth (ft)	0.52
3.42 0.40			
Conv. Total (cfs)	12271.9	Conv. (cfs)	10.2
12209.6 52.1			
Length Wtd. (ft)	208.69	Wetted Per. (ft)	1.61
42.27 9.07			
Min Ch El (ft)	2562.51	Shear (lb/sq ft)	0.30
2.37 0.28			
Alpha	1.05	Stream Power (lb/ft s)	0.52
23.79 0.47			
Frctn Loss (ft)	2.77	Cum Volume (acre-ft)	10.93
26.38 27.43			
C & E Loss (ft)	0.42	Cum SA (acres)	13.09
14.59 23.75			

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

CROSS SECTION

RIVER: Fan 6C
REACH: Fan6C-2 RS: 1.83

INPUT
Description: Cross Section 1.83 is located at the west boundary of

Legend
Trail. The blocked obstruction indicates the finish floor of an existing home.

Topography and Aerial indicate wash and surrounding undeveloped desert. Cross section composed of Cross Section Data collected by the city of Scottsdale Survey Department.

T5NR5E Section 6
Q100 = 1,369 cfs
Station Elevation Data num= 26

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9770.15	2558.24	9770.15	2558.03	9782.35	2558.07	9807.78	2558.35	9868.65	2559.8
9909.19	2560.2	9915.48	2559.43	9925.2	2558.71	9928.46	2559.73	9952.74	2558.89
9967.32	2559.56	9983.16	2559.97	9984.85	2557.64	9990.81	2557.58	9992.69	2559.52
10003.8	2559.11	10008.99	2558.19	10020.87	2558.13	10032.43	2558.71	10041.13	2558.59
10049.58	2559.5	10066.94	2561.37	10112.67	2563.08	10151.35	2561.21	10181.81	2562.34
10221.89	2561.09								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9770.15	.05	9992.69	.035	10049.58	.05

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9992.69	10049.58	208.69	211.59	214.56	.1	.3

Left Levee Station= 9909.19 Elevation= 2561
Blocked Obstructions num= 1

Sta L	Sta R	Elev
9770.15	9770.15	2562.1

CROSS SECTION OUTPUT Profile #100-yr 6-hr

E.G. Elev (ft)	2561.32	Element	Left OB	Channel	Right OB	
Vel Head (ft)	0.72	Wt. n-Val.	0.050	0.035	0.050	
W.S. Elev (ft)	2560.60	Reach Len. (ft)	208.69	211.59	214.56	
Crit W.S. (ft)	2560.60	Flow Area (sq ft)	113.70	108.85	5.63	
E.G. Slope (ft/ft)	0.014712	Area (sq ft)	113.70	108.85	5.63	
Q Total (cfs)	1369.00	Flow (cfs)	493.05	862.37	13.57	
Top Width (ft)	150.61	Top Width (ft)	83.50	56.89	10.22	
Vel Total (ft/s)	6.00	Avg. Vel. (ft/s)	4.34	7.92	2.41	
Max Chl Dpth (ft)	3.02	Hydr. Depth (ft)	1.36	1.91	0.55	
Conv. Total (cfs)	11286.7	Conv. (cfs)	4065.0			

```
7109.8       111.9
  Length Wtd. (ft)          211.66    Wetted Per. (ft)          86.18
57.04       10.28
  Min Ch El (ft)           2558.13    Shear (lb/sq ft)           1.21
1.75        0.50
  Alpha                       1.29    Stream Power (lb/ft s)     5.25
13.89        1.21
  Frctn Loss (ft)             3.98    Cum Volume (acre-ft)       9.55
25.80       27.27
  C & E Loss (ft)             0.11    Cum SA (acres)            12.62
14.36       23.60


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.
Note:    Multiple critical depths were found at this location.  The
critical depth with the lowest, valid, water
         surface was used.

CROSS SECTION OUTPUT  Profile #Method 1

  E.G. Elev (ft)           2561.32    Element                   Left OB
Channel   Right OB
  Vel Head (ft)               0.72    Wt. n-Val.                 0.050
0.035       0.050
  W.S. Elev (ft)           2560.60    Reach Len. (ft)           208.69
211.59      214.56
  Crit W.S. (ft)           2560.60    Flow Area (sq ft)         113.70
108.85        5.63
  E.G. Slope (ft/ft)      0.014712    Area (sq ft)              113.70
108.85        5.63
  Q Total (cfs)            1369.00    Flow (cfs)                493.05
862.37       13.57
  Top Width (ft)            150.61    Top Width (ft)             83.50
56.89       10.22
  Vel Total (ft/s)            6.00    Avg. Vel. (ft/s)           4.34
7.92        2.41
  Max Chl Dpth (ft)           3.02    Hydr. Depth (ft)           1.36
1.91        0.55
  Conv. Total (cfs)        11286.7    Conv. (cfs)               4065.0
7109.8       111.9
  Length Wtd. (ft)          211.66    Wetted Per. (ft)          86.18
57.04       10.28
  Min Ch El (ft)           2558.13    Shear (lb/sq ft)           1.21
1.75        0.50
  Alpha                       1.29    Stream Power (lb/ft s)     5.25
13.89        1.21
  Frctn Loss (ft)             3.98    Cum Volume (acre-ft)       9.55
25.80       27.27
  C & E Loss (ft)             0.11    Cum SA (acres)            12.62
```

14.36 23.60

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.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water
surface was used.

CROSS SECTION

RIVER: Fan 6C
REACH: Fan6C-2 RS: 1.79

INPUT
Description: Topography and aerial show wash and surrounding undeveloped desert.
T5NR5E Section 6
Q100 = 1,369 cfs
Station Elevation Data num= 29

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9671.45	2561.04	9725.78	2557.96	9780.67	2555.8	9831.89	2553.81	9837.61	2554.16
9858.94	2555.06	9886.24	2554.6	9898.53	2555.18	9913.79	2554.14	9942.17	2554.93
9964.28	2555.54	9972.27	2555.46	9983.34	2555.51	9985.87	2555	9994.11	2553.34
10007.71	2553.41	10022.76	2554.41	10032.2	2553.96	10091.1	2555	10101.86	2555.19
10104.21	2554.24	10111.48	2554.32	10119.36	2554.83	10147.62	2554.33	10221.34	2552.78
10260.5	2557.84	10284.57	2554.15	10308.41	2554.37	10356.75	2558.36		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9671.45	.058	9985.87	.038	10091.1	.058

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9985.87	10091.1	292.33	286.41	284.13	.1	.3

Right Levee Station= 10260.5 Elevation= 2557.84

CROSS SECTION OUTPUT Profile #100-yr 6-hr

E.G. Elev (ft)	2555.42	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.35	Wt. n-Val.	0.058		

```
0.038       0.058
  W.S. Elev (ft)            2555.07    Reach Len. (ft)            292.33
286.41      284.13
  Crit W.S. (ft)            2555.00    Flow Area (sq ft)           67.78
91.43      156.98
  E.G. Slope (ft/ft)       0.024817    Area (sq ft)                67.78
91.43      156.98
  Q Total (cfs)             1369.00    Flow (cfs)                 165.22
512.09      691.69
  Top Width (ft)             390.92    Top Width (ft)             144.57
105.23      141.12
  Vel Total (ft/s)             4.33    Avg. Vel. (ft/s)             2.44
5.60        4.41
  Max Chl Dpth (ft)            2.29    Hydr. Depth (ft)             0.47
0.87        1.11
  Conv. Total (cfs)          8690.2    Conv. (cfs)                1048.8
3250.6      4390.8
  Length Wtd. (ft)           286.21    Wetted Per. (ft)           144.69
105.45      141.47
  Min Ch El (ft)            2553.34    Shear (lb/sq ft)             0.73
1.34        1.72
  Alpha                        1.19    Stream Power (lb/ft s)       1.77
7.52        7.58
  Frctn Loss (ft)              5.51    Cum Volume (acre-ft)         9.12
25.32       26.87
  C & E Loss (ft)              0.02    Cum SA (acres)              12.08
13.96       23.23


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.
Note:    Multiple critical depths were found at this location.  The
critical depth with the lowest, valid, water
         surface was used.

CROSS SECTION OUTPUT  Profile #Method 1

  E.G. Elev (ft)            2555.42    Element                    Left OB
Channel   Right OB
  Vel Head (ft)                0.35    Wt. n-Val.                  0.058
0.038       0.058
  W.S. Elev (ft)            2555.07    Reach Len. (ft)            292.33
286.41      284.13
  Crit W.S. (ft)            2555.00    Flow Area (sq ft)           67.78
91.43      156.98
  E.G. Slope (ft/ft)       0.024817    Area (sq ft)                67.78
91.43      156.98
  Q Total (cfs)             1369.00    Flow (cfs)                 165.22
512.09      691.69
  Top Width (ft)             390.92    Top Width (ft)             144.57
105.23      141.12
  Vel Total (ft/s)             4.33    Avg. Vel. (ft/s)             2.44
5.60        4.41
  Max Chl Dpth (ft)            2.29    Hydr. Depth (ft)             0.47
0.87        1.11
  Conv. Total (cfs)          8690.2    Conv. (cfs)                1048.8
3250.6      4390.8
  Length Wtd. (ft)           286.21    Wetted Per. (ft)           144.69
105.45      141.47
```

```
  Min Ch El (ft)            2553.34    Shear (lb/sq ft)            0.73
1.34       1.72
  Alpha                        1.19    Stream Power (lb/ft s)      1.77
7.52       7.58
  Frctn Loss (ft)              5.51    Cum Volume (acre-ft)        9.12
25.32      26.87
  C & E Loss (ft)              0.02    Cum SA (acres)             12.08
13.96      23.23


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.
Note:    Multiple critical depths were found at this location.  The
critical depth with the lowest, valid, water
         surface was used.

CROSS SECTION


RIVER: Fan 6C
REACH: Fan6C-2            RS: 1.73

INPUT
Description: Topography and aerial show wash and surrounding undeveloped
             desert.
T5NR5E Section 6
Q100 = 1,369 cfs
Station Elevation Data    num=      21
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta
Elev
 9730.63 2553.12 9794.63 2548.49 9849.48 2549.25  9861.8 2549.62 9866.55
2548.29
 9877.77 2548.95 9910.96 2548.99 9946.48  2548.7  9997.5 2548.97   10000
2548.03
 10009.6 2547.3810020.19 2547.0410024.93 2548.8210067.31 2550.7910087.98
2550.7
10134.05 2547.8810135.71 2547.1510148.72 2547.2110152.06 2547.8110205.34
2548.82
10272.21 2552.32

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
 9730.63    .058 9910.96    .03810024.93    .058

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.
Expan.
       9910.9610024.93           493.35   501.1  502.48            .1
.3
Left Levee      Station=  9861.8      Elevation= 2549.62

CROSS SECTION OUTPUT  Profile #100-yr 6-hr

  E.G. Elev (ft)            2549.89    Element                   Left OB
Channel   Right OB
  Vel Head (ft)                0.27    Wt. n-Val.                 0.058
0.038      0.058
  W.S. Elev (ft)            2549.62    Reach Len. (ft)           493.35
501.10     502.48
  Crit W.S. (ft)            2549.62    Flow Area (sq ft)          88.27
```

```
122.37      149.62
  E.G. Slope (ft/ft)       0.015375    Area (sq ft)                88.27
122.37      149.62
  Q Total (cfs)            1369.00     Flow (cfs)                 214.21
620.21      534.57
  Top Width (ft)            378.17     Top Width (ft)             131.96
113.97      132.24
  Vel Total (ft/s)            3.80     Avg. Vel. (ft/s)             2.43
5.07        3.57
  Max Chl Dpth (ft)           2.58     Hydr. Depth (ft)             0.67
1.07        1.13
  Conv. Total (cfs)        11040.8     Conv. (cfs)                1727.6
5001.9      4311.2
  Length Wtd. (ft)                     Wetted Per. (ft)           132.21
114.49      132.55
  Min Ch El (ft)           2547.04     Shear (lb/sq ft)             0.64
1.03        1.08
  Alpha                       1.21     Stream Power (lb/ft s)       1.56
5.20        3.87
  Frctn Loss (ft)                      Cum Volume (acre-ft)         8.59
24.61       25.87
  C & E Loss (ft)                      Cum SA (acres)              11.15
13.24       22.34


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 energy loss was greater than 1.0 ft (0.3 m). between the
current and previous cross section.
         This may indicate the need for additional cross sections.
Note:    Multiple critical depths were found at this location.  The
critical depth with the lowest, valid, water
         surface was used.

CROSS SECTION OUTPUT  Profile #Method 1

  E.G. Elev (ft)           2549.89     Element                    Left OB
Channel   Right OB
  Vel Head (ft)               0.27     Wt. n-Val.                  0.058
0.038       0.058
  W.S. Elev (ft)           2549.62     Reach Len. (ft)            493.35
501.10      502.48
  Crit W.S. (ft)           2549.62     Flow Area (sq ft)           88.27
122.37      149.62
  E.G. Slope (ft/ft)       0.015375    Area (sq ft)                88.27
122.37      149.62
  Q Total (cfs)            1369.00     Flow (cfs)                 214.21
620.21      534.57
  Top Width (ft)            378.17     Top Width (ft)             131.96
113.97      132.24
  Vel Total (ft/s)            3.80     Avg. Vel. (ft/s)             2.43
5.07        3.57
  Max Chl Dpth (ft)           2.58     Hydr. Depth (ft)             0.67
1.07        1.13
  Conv. Total (cfs)        11040.8     Conv. (cfs)                1727.6
5001.9      4311.2
  Length Wtd. (ft)                     Wetted Per. (ft)           132.21
114.49      132.55
```

```
  Min Ch El (ft)            2547.04    Shear (lb/sq ft)            0.64
1.03       1.08
  Alpha                        1.21    Stream Power (lb/ft s)      1.56
5.20       3.87
  Frctn Loss (ft)                      Cum Volume (acre-ft)        8.59
24.61      25.87
  C & E Loss (ft)                      Cum SA (acres)             11.15
13.24      22.34


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 energy loss was greater than 1.0 ft (0.3 m). between the
current and previous cross section.
         This may indicate the need for additional cross sections.
Note:    Multiple critical depths were found at this location.  The
critical depth with the lowest, valid, water
         surface was used.

CROSS SECTION


RIVER: Fan 6C
REACH: Fan6C-2            RS: 1.64

INPUT
Description: Topography and aerial show wash and surrounding undeveloped
             desert.
T5NR5E Section 6
Q100 = 1,369 cfs
Station Elevation Data    num=      16
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta
Elev
 9845.93    2542 9860.84    2540 9886.18    2538 9918.79    2538 9926.06
2538.41
 9953.47    2538 9965.35 2538.45 9980.06    2538   10000 2537.5310013.38
2538
10059.75 2539.3510093.41 2538.7110135.77 2539.71 10214.1  2538.310232.59
2540
10253.82    2542

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
 9845.93    .058 9965.35    .03810059.75    .058

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.
Expan.
       9965.3510059.75           440.46  440.77  436.17             .1
.3
Right Levee     Station=10136.04      Elevation= 2539.71

CROSS SECTION OUTPUT  Profile #100-yr 6-hr

  E.G. Elev (ft)            2540.00    Element                   Left OB
Channel   Right OB
  Vel Head (ft)                0.52    Wt. n-Val.                 0.058
0.038      0.058
  W.S. Elev (ft)            2539.48    Reach Len. (ft)           440.46
```

```
440.77      436.17
  Crit W.S. (ft)            2539.48    Flow Area (sq ft)          121.15
112.81       27.62
  E.G. Slope (ft/ft)       0.023467    Area (sq ft)               121.15
112.81       27.62
  Q Total (cfs)             1369.00    Flow (cfs)                 547.69
760.81       60.51
  Top Width (ft)             258.53    Top Width (ft)              97.91
94.40       66.23
  Vel Total (ft/s)             5.23    Avg. Vel. (ft/s)             4.52
6.74        2.19
  Max Chl Dpth (ft)            1.95    Hydr. Depth (ft)             1.24
1.20        0.42
  Conv. Total (cfs)          8936.6    Conv. (cfs)                3575.2
4966.4       395.0
  Length Wtd. (ft)                     Wetted Per. (ft)            97.99
94.44       66.24
  Min Ch El (ft)            2537.53    Shear (lb/sq ft)             1.81
1.75        0.61
  Alpha                        1.23    Stream Power (lb/ft s)       8.19
11.80        1.34
  Frctn Loss (ft)                      Cum Volume (acre-ft)         7.41
23.26       24.85
  C & E Loss (ft)                      Cum SA (acres)               9.85
12.04       21.19


Warning: The energy equation could not be 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.
Note:    Multiple critical depths were found at this location.  The
critical depth with the lowest, valid, water
         surface was used.

CROSS SECTION OUTPUT  Profile #Method 1

  E.G. Elev (ft)            2540.00    Element                    Left OB
Channel   Right OB
  Vel Head (ft)                0.52    Wt. n-Val.                  0.058
0.038       0.058
  W.S. Elev (ft)            2539.48    Reach Len. (ft)            440.46
440.77      436.17
  Crit W.S. (ft)            2539.48    Flow Area (sq ft)          121.15
112.81       27.62
  E.G. Slope (ft/ft)       0.023467    Area (sq ft)               121.15
112.81       27.62
  Q Total (cfs)             1369.00    Flow (cfs)                 547.69
760.81       60.51
  Top Width (ft)             258.53    Top Width (ft)              97.91
94.40       66.23
  Vel Total (ft/s)             5.23    Avg. Vel. (ft/s)             4.52
6.74        2.19
  Max Chl Dpth (ft)            1.95    Hydr. Depth (ft)             1.24
1.20        0.42
  Conv. Total (cfs)          8936.6    Conv. (cfs)                3575.2
4966.4       395.0
  Length Wtd. (ft)                     Wetted Per. (ft)            97.99
```

```
94.44       66.24
  Min Ch El (ft)            2537.53    Shear (lb/sq ft)            1.81
1.75        0.61
  Alpha                        1.23    Stream Power (lb/ft s)      8.19
11.80        1.34
  Frctn Loss (ft)                      Cum Volume (acre-ft)        7.41
23.26       24.85
  C & E Loss (ft)                      Cum SA (acres)              9.85
12.04       21.19


Warning: The energy equation could not be 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.
Note:    Multiple critical depths were found at this location.  The
critical depth with the lowest, valid, water
         surface was used.

CROSS SECTION


RIVER: Fan 6C
REACH: Fan6C-2            RS: 1.55

INPUT
Description: Topography and aerial show wash and surrounding undeveloped
             desert.
T5NR5E Section 6 and Section 7
Q100 = 1,369 cfs
Station Elevation Data    num=      17
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta
Elev
 9908.19    2536 9934.09    2534 9959.31    2532 9977.86    2531 9996.41
2530
10001.52    253010014.69  2530.310036.83    2530 10050.5    253010101.29
2530.42
10121.66  2531.210189.11    253010193.84    252810194.45    252810201.55
2530
10249.76    253210309.18    2534

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
 9908.19    .058 9977.86    .03810014.69    .058

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.
Expan.
       9977.8610014.69           318.03  321.74  335.63             .1
.3

CROSS SECTION OUTPUT  Profile #100-yr 6-hr

  E.G. Elev (ft)            2531.98    Element                    Left OB
Channel   Right OB
  Vel Head (ft)                0.27    Wt. n-Val.                  0.058
0.038       0.058
  W.S. Elev (ft)            2531.71    Reach Len. (ft)            318.03
321.74     335.63
```

Crit W.S. (ft)		Flow Area (sq ft)	4.63
51.59 296.03			
E.G. Slope (ft/ft)	0.013952	Area (sq ft)	4.63
51.59 296.03			
Q Total (cfs)	1369.00	Flow (cfs)	6.99
298.17 1063.84			
Top Width (ft)	277.92	Top Width (ft)	13.10
36.83 227.99			
Vel Total (ft/s)	3.89	Avg. Vel. (ft/s)	1.51
5.78 3.59			
Max Chl Dpth (ft)	3.71	Hydr. Depth (ft)	0.35
1.40 1.30			
Conv. Total (cfs)	11590.1	Conv. (cfs)	59.2
2524.3 9006.6			
Length Wtd. (ft)	327.12	Wetted Per. (ft)	13.12
36.86 228.74			
Min Ch El (ft)	2530.00	Shear (lb/sq ft)	0.31
1.22 1.13			
Alpha	1.15	Stream Power (lb/ft s)	0.46
7.05 4.05			
Frctn Loss (ft)	4.54	Cum Volume (acre-ft)	6.77
22.43 23.23			
C & E Loss (ft)	0.06	Cum SA (acres)	9.28
11.38 19.72			

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.

CROSS SECTION OUTPUT Profile #Method 1

E.G. Elev (ft)	2531.98	Element	Left OB
Channel Right OB			
Vel Head (ft)	0.27	Wt. n-Val.	0.058
0.038 0.058			
W.S. Elev (ft)	2531.71	Reach Len. (ft)	318.03
321.74 335.63			
Crit W.S. (ft)		Flow Area (sq ft)	4.63
51.59 296.03			
E.G. Slope (ft/ft)	0.013952	Area (sq ft)	4.63
51.59 296.03			
Q Total (cfs)	1369.00	Flow (cfs)	6.99
298.17 1063.84			
Top Width (ft)	277.92	Top Width (ft)	13.10
36.83 227.99			
Vel Total (ft/s)	3.89	Avg. Vel. (ft/s)	1.51
5.78 3.59			
Max Chl Dpth (ft)	3.71	Hydr. Depth (ft)	0.35
1.40 1.30			
Conv. Total (cfs)	11590.1	Conv. (cfs)	59.2
2524.3 9006.6			
Length Wtd. (ft)	327.12	Wetted Per. (ft)	13.12
36.86 228.74			
Min Ch El (ft)	2530.00	Shear (lb/sq ft)	0.31
1.22 1.13			
Alpha	1.15	Stream Power (lb/ft s)	0.46
7.05 4.05			

```
  Frctn Loss (ft)              4.54    Cum Volume (acre-ft)        6.77
22.43      23.23
  C & E Loss (ft)              0.06    Cum SA (acres)              9.28
11.38      19.72


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.

CROSS SECTION


RIVER: Fan 6C
REACH: Fan6C-2            RS: 1.49

INPUT
Description: Topography and aerial show wash and surrounding undeveloped
             desert.
T5NR5E Section 7
Q100 = 1,369 cfs
Station Elevation Data    num=      13
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta
Elev
 9669.26    2530 9670.42    2530  9718.7    2528 9782.25    2526 9842.75
2526
 9897.43 2526.73 9972.15    2526 9993.86    2524   10000 2523.1510027.62
2524
10059.02    252610089.49    252810115.94    2530

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
 9669.26    .058 9972.15    .03810059.02    .058

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.
Expan.
       9972.1510059.02           276.51  275.98  275.11             .1
.3
Left Levee      Station= 9897.43      Elevation= 2526.73

CROSS SECTION OUTPUT  Profile #100-yr 6-hr

  E.G. Elev (ft)           2527.38    Element                    Left OB
Channel   Right OB
  Vel Head (ft)               0.85    Wt. n-Val.                  0.058
0.038      0.058
  W.S. Elev (ft)           2526.53    Reach Len. (ft)           276.51
275.98     275.11
  Crit W.S. (ft)           2526.53    Flow Area (sq ft)          14.10
180.58       2.10
  E.G. Slope (ft/ft)      0.013806    Area (sq ft)               14.10
180.58       2.10
  Q Total (cfs)            1369.00    Flow (cfs)                 17.40
1349.01       2.59
  Top Width (ft)            148.59    Top Width (ft)             53.73
86.87       8.00
  Vel Total (ft/s)            6.96    Avg. Vel. (ft/s)            1.23
7.47       1.23
```

```
  Max Chl Dpth (ft)          3.38    Hydr. Depth (ft)          0.26
2.08       0.26
  Conv. Total (cfs)       11651.1    Conv. (cfs)               148.1
11481.0       22.0
  Length Wtd. (ft)         275.98    Wetted Per. (ft)          53.73
87.10       8.01
  Min Ch El (ft)          2523.15    Shear (lb/sq ft)           0.23
1.79       0.23
  Alpha                      1.14    Stream Power (lb/ft s)     0.28
13.35       0.28
  Frctn Loss (ft)            4.24    Cum Volume (acre-ft)       6.70
21.57      22.08
  C & E Loss (ft)            0.03    Cum SA (acres)             9.04
10.92      18.81


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.
Note:    Multiple critical depths were found at this location.  The
critical depth with the lowest, valid, water
         surface was used.

CROSS SECTION OUTPUT  Profile #Method 1

  E.G. Elev (ft)          2527.38    Element                   Left OB
Channel   Right OB
  Vel Head (ft)              0.85    Wt. n-Val.                 0.058
0.038      0.058
  W.S. Elev (ft)          2526.53    Reach Len. (ft)           276.51
275.98     275.11
  Crit W.S. (ft)          2526.53    Flow Area (sq ft)          14.10
180.58       2.10
  E.G. Slope (ft/ft)     0.013806    Area (sq ft)               14.10
180.58       2.10
  Q Total (cfs)           1369.00    Flow (cfs)                 17.40
1349.01       2.59
  Top Width (ft)           148.59    Top Width (ft)             53.73
86.87       8.00
  Vel Total (ft/s)           6.96    Avg. Vel. (ft/s)            1.23
7.47       1.23
  Max Chl Dpth (ft)          3.38    Hydr. Depth (ft)           0.26
2.08       0.26
  Conv. Total (cfs)       11651.1    Conv. (cfs)               148.1
11481.0       22.0
  Length Wtd. (ft)         275.98    Wetted Per. (ft)          53.73
87.10       8.01
  Min Ch El (ft)          2523.15    Shear (lb/sq ft)           0.23
1.79       0.23
  Alpha                      1.14    Stream Power (lb/ft s)     0.28
13.35       0.28
```

```
  Frctn Loss (ft)              4.24    Cum Volume (acre-ft)        6.70
21.57      22.08
  C & E Loss (ft)              0.03    Cum SA (acres)              9.04
10.92      18.81


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.
Note:    Multiple critical depths were found at this location.  The
critical depth with the lowest, valid, water
         surface was used.

CROSS SECTION


RIVER: Fan 6C
REACH: Fan6C-2            RS: 1.44

INPUT
Description: Topography and aerial show wash and surrounding undeveloped
             desert.
T5NR5E Section 7
Q100 = 1,369 cfs
Station Elevation Data    num=      22
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta
Elev
 9495.54    2530 9512.63    2528 9528.99    2526 9546.71    2524 9568.03
2522
 9573.45    2520 9577.91    2520 9658.47    2522 9721.62    2522 9798.39
2520
 9811.86    2520 9838.77    2522 9884.73    2522 9912.18    2521 9939.62
2520
 9964.29    2520 9978.85    2520   10000 2518.0410017.79    252010031.69
2521
10045.59    252210074.84    2524

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
 9495.54    .058 9912.18    .03810031.69    .058

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.
Expan.
       9912.1810031.69           262.83  262.24  261.68             .1
.3
Left Levee      Station= 9884.73      Elevation=    2522

CROSS SECTION OUTPUT  Profile #100-yr 6-hr

  E.G. Elev (ft)           2522.24    Element                    Left OB
Channel   Right OB
```

```
  Vel Head (ft)                0.77    Wt. n-Val.                  0.058
0.038       0.058
  W.S. Elev (ft)            2521.47    Reach Len. (ft)           262.83
262.24      261.68
  Crit W.S. (ft)            2521.47    Flow Area (sq ft)           3.04
193.23        1.54
  E.G. Slope (ft/ft)       0.017200    Area (sq ft)                3.04
193.23        1.54
  Q Total (cfs)             1369.00    Flow (cfs)                  3.89
1363.15        1.97
  Top Width (ft)             138.96    Top Width (ft)             12.91
119.51        6.54
  Vel Total (ft/s)             6.92    Avg. Vel. (ft/s)            1.28
7.05        1.28
  Max Chl Dpth (ft)            3.43    Hydr. Depth (ft)            0.24
1.62        0.24
  Conv. Total (cfs)        10438.4     Conv. (cfs)                 29.6
10393.8        15.0
  Length Wtd. (ft)           262.15    Wetted Per. (ft)           12.92
119.76        6.56
  Min Ch El (ft)            2518.04    Shear (lb/sq ft)            0.25
1.73        0.25
  Alpha                        1.03    Stream Power (lb/ft s)      0.32
12.22        0.32
  Frctn Loss (ft)              4.31    Cum Volume (acre-ft)        6.65
20.39       22.07
  C & E Loss (ft)              0.08    Cum SA (acres)              8.83
10.27       18.76


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

CROSS SECTION OUTPUT  Profile #Method 1

  E.G. Elev (ft)            2522.24    Element                   Left OB
Channel   Right OB
  Vel Head (ft)                0.77    Wt. n-Val.                  0.058
0.038       0.058
  W.S. Elev (ft)            2521.47    Reach Len. (ft)           262.83
262.24      261.68
  Crit W.S. (ft)            2521.47    Flow Area (sq ft)           3.04
193.23        1.54
  E.G. Slope (ft/ft)       0.017200    Area (sq ft)                3.04
193.23        1.54
  Q Total (cfs)             1369.00    Flow (cfs)                  3.89
1363.15        1.97
```

Top Width (ft)	138.96	Top Width (ft)	12.91
119.51 6.54			
Vel Total (ft/s)	6.92	Avg. Vel. (ft/s)	1.28
7.05 1.28			
Max Chl Dpth (ft)	3.43	Hydr. Depth (ft)	0.24
1.62 0.24			
Conv. Total (cfs)	10438.4	Conv. (cfs)	29.6
10393.8 15.0			
Length Wtd. (ft)	262.15	Wetted Per. (ft)	12.92
119.76 6.56			
Min Ch El (ft)	2518.04	Shear (lb/sq ft)	0.25
1.73 0.25			
Alpha	1.03	Stream Power (lb/ft s)	0.32
12.22 0.32			
Frctn Loss (ft)	4.31	Cum Volume (acre-ft)	6.65
20.39 22.07			
C & E Loss (ft)	0.08	Cum SA (acres)	8.83
10.27 18.76			

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

CROSS SECTION

RIVER: Fan 6C
REACH: Fan6C-2 RS: 1.39

INPUT
Description: Topography and aerial show wash and surrounding undeveloped desert.
T5NR5E Section 7
Q100 = 1,369 cfs
Station Elevation Data num= 21

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9582.56	2520	9601.02	2518	9627.49	2516	9646.2	2514	9648.31	2514
9665.8	2516	9707.19	2516	9719.34	2514	9720.95	2514	9742.12	2516
9927.44	2516	9957.32	2515	9987.19	2514	10000	2513.65	10009.26	2514
10040.92	2515.04	10063.05	2514	10088.05	2514	10137.59	2516	10165.82	2518
10182.6	2520								

```
Manning's n Values          num=        3
     Sta   n Val     Sta   n Val     Sta   n Val
 9582.56    .058 9957.32    .03810040.92    .058

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.
Expan.
       9957.3210040.92           314.47  311.34  309.71            .1
.3
Left Levee      Station= 9927.44      Elevation=    2516

CROSS SECTION OUTPUT  Profile #100-yr 6-hr

  E.G. Elev (ft)           2516.42    Element                    Left OB
Channel   Right OB
  Vel Head (ft)               0.52    Wt. n-Val.                  0.058
0.038      0.058
  W.S. Elev (ft)           2515.90    Reach Len. (ft)           314.47
311.34     309.71
  Crit W.S. (ft)           2515.75    Flow Area (sq ft)          12.20
131.60     123.08
  E.G. Slope (ft/ft)      0.015745    Area (sq ft)               12.20
131.60     123.08
  Q Total (cfs)            1369.00    Flow (cfs)                 23.08
873.49     472.43
  Top Width (ft)            204.88    Top Width (ft)             27.00
83.60      94.28
  Vel Total (ft/s)            5.13    Avg. Vel. (ft/s)            1.89
6.64       3.84
  Max Chl Dpth (ft)           2.25    Hydr. Depth (ft)            0.45
1.57       1.31
  Conv. Total (cfs)        10910.2    Conv. (cfs)                183.9
6961.2     3765.0
  Length Wtd. (ft)          311.35    Wetted Per. (ft)           27.01
83.64      94.34
  Min Ch El (ft)           2513.65    Shear (lb/sq ft)            0.44
1.55       1.28
  Alpha                       1.26    Stream Power (lb/ft s)      0.84
10.27       4.92
  Frctn Loss (ft)             4.95    Cum Volume (acre-ft)        6.60
19.41      21.69
  C & E Loss (ft)             0.00    Cum SA (acres)              8.71
9.66      18.46


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.
Note:    Multiple critical depths were found at this location.  The
critical depth with the lowest, valid, water
         surface was used.

CROSS SECTION OUTPUT  Profile #Method 1

  E.G. Elev (ft)           2516.42    Element                    Left OB
Channel   Right OB
  Vel Head (ft)               0.52    Wt. n-Val.                  0.058
0.038      0.058
  W.S. Elev (ft)           2515.90    Reach Len. (ft)           314.47
311.34     309.71
  Crit W.S. (ft)           2515.75    Flow Area (sq ft)          12.20
131.60     123.08
```

```
  E.G. Slope (ft/ft)       0.015745    Area (sq ft)                12.20
131.60      123.08
  Q Total (cfs)             1369.00    Flow (cfs)                  23.08
873.49      472.43
  Top Width (ft)             204.88    Top Width (ft)              27.00
83.60       94.28
  Vel Total (ft/s)             5.13    Avg. Vel. (ft/s)             1.89
6.64        3.84
  Max Chl Dpth (ft)            2.25    Hydr. Depth (ft)             0.45
1.57        1.31
  Conv. Total (cfs)         10910.2    Conv. (cfs)                 183.9
6961.2      3765.0
  Length Wtd. (ft)           311.35    Wetted Per. (ft)            27.01
83.64       94.34
  Min Ch El (ft)            2513.65    Shear (lb/sq ft)             0.44
1.55        1.28
  Alpha                        1.26    Stream Power (lb/ft s)       0.84
10.27        4.92
  Frctn Loss (ft)              4.95    Cum Volume (acre-ft)         6.60
19.41       21.69
  C & E Loss (ft)              0.00    Cum SA (acres)               8.71
9.66       18.46


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.
Note:    Multiple critical depths were found at this location.  The
critical depth with the lowest, valid, water
         surface was used.

CROSS SECTION


RIVER: Fan 6C
REACH: Fan6C-2             RS: 1.33

INPUT
Description: Topography and aerial show wash and surrounding undeveloped
             desert.
T5NR5E Section 7
Q100 = 1,369 cfs
Station Elevation Data    num=      15
     Sta     Elev     Sta     Elev     Sta     Elev     Sta     Elev     Sta
Elev
 9649.91     2516  9661.2     2514 9672.18     2512  9684.5     2510    9715
2510
 9743.84     2510 9761.55     2510 9788.42 2511.07 9836.37     2510 9908.65
2509.74
 9980.92 2509.47   10000 2508.2510017.31     2510 10107.6     251210130.72
2514

Manning's n Values        num=       3
     Sta    n Val     Sta    n Val     Sta    n Val
 9649.91     .063 9908.65     .03810017.31     .063

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.
Expan.
       9908.6510017.31           370.36  371.12  368.51             .1
.3
Left Levee      Station= 9788.42      Elevation= 2511.07
```

CROSS SECTION OUTPUT Profile #100-yr 6-hr

E.G. Elev (ft)	2511.47	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.55	Wt. n-Val.	0.063	0.038	0.063
W.S. Elev (ft)	2510.92	Reach Len. (ft)	370.36	371.12	368.51
Crit W.S. (ft)	2510.92	Flow Area (sq ft)	94.79	165.35	19.08
E.G. Slope (ft/ft)	0.016073	Area (sq ft)	94.79	165.35	19.08
Q Total (cfs)	1369.00	Flow (cfs)	251.40	1083.62	33.98
Top Width (ft)	263.65	Top Width (ft)	113.48	108.66	41.51
Vel Total (ft/s)	4.90	Avg. Vel. (ft/s)	2.65	6.55	1.78
Max Chl Dpth (ft)	2.67	Hydr. Depth (ft)	0.84	1.52	0.46
Conv. Total (cfs)	10798.4	Conv. (cfs)	1983.0	8547.4	268.0
Length Wtd. (ft)	370.65	Wetted Per. (ft)	113.49	108.79	41.52
Min Ch El (ft)	2508.25	Shear (lb/sq ft)	0.84	1.53	0.46
Alpha	1.47	Stream Power (lb/ft s)	2.22	9.99	0.82
Frctn Loss (ft)	4.79	Cum Volume (acre-ft)	6.22	18.35	21.19
C & E Loss (ft)	0.07	Cum SA (acres)	8.20	8.97	17.98

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 energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
depth, the 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 OUTPUT Profile #Method 1

E.G. Elev (ft)	2511.47	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.55	Wt. n-Val.	0.063	0.038	0.063
W.S. Elev (ft)	2510.92	Reach Len. (ft)	370.36	371.12	368.51
Crit W.S. (ft)	2510.92	Flow Area (sq ft)	94.79		

165.35 19.08			
E.G. Slope (ft/ft)	0.016073	Area (sq ft)	94.79
165.35 19.08			
Q Total (cfs)	1369.00	Flow (cfs)	251.40
1083.62 33.98			
Top Width (ft)	263.65	Top Width (ft)	113.48
108.66 41.51			
Vel Total (ft/s)	4.90	Avg. Vel. (ft/s)	2.65
6.55 1.78			
Max Chl Dpth (ft)	2.67	Hydr. Depth (ft)	0.84
1.52 0.46			
Conv. Total (cfs)	10798.4	Conv. (cfs)	1983.0
8547.4 268.0			
Length Wtd. (ft)	370.65	Wetted Per. (ft)	113.49
108.79 41.52			
Min Ch El (ft)	2508.25	Shear (lb/sq ft)	0.84
1.53 0.46			
Alpha	1.47	Stream Power (lb/ft s)	2.22
9.99 0.82			
Frctn Loss (ft)	4.79	Cum Volume (acre-ft)	6.22
18.35 21.19			
C & E Loss (ft)	0.07	Cum SA (acres)	8.20
8.97 17.98			

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 energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
depth, the 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: Fan 6C
REACH: Fan6C-2 RS: 1.26

INPUT
Description: Cross Section 1.26 is located upstream of the intersection of Fan
6C and Pima Road. There are no culverts under Pima Road. This
section is located upstream of concentration point CF6C2 in the
HEC-1 model.

Topography and aerial show wash and surrounding
undeveloped desert.
T5NR5E Section 7
Q100 = 1,369 cfs

```
Station Elevation Data    num=      13
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta
Elev
 9806.62    2510 9829.12    2508 9843.78    2506 9885.64    2504 9911.57
2502
 9937.33    2502    9977 2503.16 9995.22    250210001.66    250210039.73
2502.86
10195.82    250410242.54    250610270.28    2508

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
 9806.62    .058    9977    .03810039.73    .058

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.
Expan.
          997710039.73           137.11  143.64  142.27             .1
.3

CROSS SECTION OUTPUT  Profile #100-yr 6-hr

  E.G. Elev (ft)           2504.46    Element                    Left OB
Channel   Right OB
  Vel Head (ft)               0.32    Wt. n-Val.                  0.058
0.038      0.058
  W.S. Elev (ft)           2504.14    Reach Len. (ft)            137.11
143.64     142.27
  Crit W.S. (ft)                      Flow Area (sq ft)          146.88
107.37     111.22
  E.G. Slope (ft/ft)      0.010596    Area (sq ft)               146.88
107.37     111.22
  Q Total (cfs)            1369.00    Flow (cfs)                 520.10
618.14     230.75
  Top Width (ft)            316.43    Top Width (ft)              94.31
62.73     159.39
  Vel Total (ft/s)            3.75    Avg. Vel. (ft/s)             3.54
5.76       2.07
  Max Chl Dpth (ft)           2.14    Hydr. Depth (ft)             1.56
1.71       0.70
  Conv. Total (cfs)        13299.2    Conv. (cfs)                5052.5
6005.0     2241.7
  Length Wtd. (ft)          142.01    Wetted Per. (ft)            94.41
62.78     159.39
  Min Ch El (ft)           2502.00    Shear (lb/sq ft)             1.03
1.13       0.46
  Alpha                       1.46    Stream Power (lb/ft s)       3.64
6.51       0.96
  Frctn Loss (ft)             1.40    Cum Volume (acre-ft)         5.19
17.19      20.64
  C & E Loss (ft)             0.02    Cum SA (acres)               7.32
8.24      17.13


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 OUTPUT  Profile #Method 1

  E.G. Elev (ft)           2504.46    Element                    Left OB
Channel   Right OB
  Vel Head (ft)               0.32    Wt. n-Val.                  0.058
```

```
0.038       0.058
  W.S. Elev (ft)            2504.14    Reach Len. (ft)           137.11
143.64      142.27
  Crit W.S. (ft)                       Flow Area (sq ft)         146.88
107.37      111.22
  E.G. Slope (ft/ft)       0.010596    Area (sq ft)              146.88
107.37      111.22
  Q Total (cfs)             1369.00    Flow (cfs)                520.10
618.14      230.75
  Top Width (ft)             316.43    Top Width (ft)             94.31
62.73      159.39
  Vel Total (ft/s)             3.75    Avg. Vel. (ft/s)            3.54
5.76        2.07
  Max Chl Dpth (ft)            2.14    Hydr. Depth (ft)            1.56
1.71        0.70
  Conv. Total (cfs)        13299.2     Conv. (cfs)               5052.5
6005.0      2241.7
  Length Wtd. (ft)           142.01    Wetted Per. (ft)           94.41
62.78      159.39
  Min Ch El (ft)            2502.00    Shear (lb/sq ft)            1.03
1.13        0.46
  Alpha                        1.46    Stream Power (lb/ft s)      3.64
6.51        0.96
  Frctn Loss (ft)              1.40    Cum Volume (acre-ft)        5.19
17.19       20.64
  C & E Loss (ft)              0.02    Cum SA (acres)              7.32
8.24       17.13


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: Fan 6C
REACH: Fan6C-2            RS: 1.23

INPUT
Description: Cross Section 1.23 is located downstream of the
intersection of
             Fan 6C and Pima Road.

Topography and aerial show wash and
             surrounding undeveloped desert.
T5NR4E Section 12
Q100 = 1,349
             cfs
Station Elevation Data    num=      15
     Sta     Elev     Sta     Elev     Sta     Elev     Sta     Elev     Sta
Elev
 9856.03     2506 9880.01     2504 9914.73     2502 9924.53     2502  9968.4
2502
 9974.43 2500.94 9979.78     250010007.68     250010048.442500.95410093.15
2502
10137.52     2502   10238     2502 10255.4     250410276.55     250610302.58
2508

Manning's n Values        num=       3
     Sta    n Val     Sta    n Val     Sta    n Val
```

9856.03 .058 9974.43 .03810048.44 .058

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
9974.4310048.44 372.4 407.77 417.22 .1 .3

CROSS SECTION OUTPUT Profile #100-yr 6-hr

E.G. Elev (ft)	2503.04	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.51	Wt. n-Val.	0.058	0.038	0.058
W.S. Elev (ft)	2502.53	Reach Len. (ft)	372.40	407.77	417.22
Crit W.S. (ft)	2502.53	Flow Area (sq ft)	37.41	165.43	125.45
E.G. Slope (ft/ft)	0.009168	Area (sq ft)	37.41	165.43	125.45
Q Total (cfs)	1349.00	Flow (cfs)	61.00	1058.05	229.96
Top Width (ft)	337.13	Top Width (ft)	68.93	74.01	194.19
Vel Total (ft/s)	4.11	Avg. Vel. (ft/s)	1.63	6.40	1.83
Max Chl Dpth (ft)	2.53	Hydr. Depth (ft)	0.54	2.24	0.65
Conv. Total (cfs)	14088.6	Conv. (cfs)	637.0	11050.0	2401.6
Length Wtd. (ft)	407.76	Wetted Per. (ft)	69.04	74.10	194.23
Min Ch El (ft)	2500.00	Shear (lb/sq ft)	0.31	1.28	0.37
Alpha	1.94	Stream Power (lb/ft s)	0.51	8.17	0.68
Frctn Loss (ft)	4.63	Cum Volume (acre-ft)	4.90	16.74	20.25
C & E Loss (ft)	0.02	Cum SA (acres)	7.06	8.02	16.55

Warning: The energy equation could not be 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 OUTPUT Profile #Method 1

E.G. Elev (ft)	2503.04	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.51	Wt. n-Val.	0.058	0.038	0.058

W.S. Elev (ft)	2502.53	Reach Len. (ft)	372.40
407.77 417.22			
Crit W.S. (ft)	2502.53	Flow Area (sq ft)	37.41
165.43 125.45			
E.G. Slope (ft/ft)	0.009168	Area (sq ft)	37.41
165.43 125.45			
Q Total (cfs)	1349.00	Flow (cfs)	61.00
1058.05 229.96			
Top Width (ft)	337.13	Top Width (ft)	68.93
74.01 194.19			
Vel Total (ft/s)	4.11	Avg. Vel. (ft/s)	1.63
6.40 1.83			
Max Chl Dpth (ft)	2.53	Hydr. Depth (ft)	0.54
2.24 0.65			
Conv. Total (cfs)	14088.6	Conv. (cfs)	637.0
11050.0 2401.6			
Length Wtd. (ft)	407.76	Wetted Per. (ft)	69.04
74.10 194.23			
Min Ch El (ft)	2500.00	Shear (lb/sq ft)	0.31
1.28 0.37			
Alpha	1.94	Stream Power (lb/ft s)	0.51
8.17 0.68			
Frctn Loss (ft)	4.63	Cum Volume (acre-ft)	4.90
16.74 20.25			
C & E Loss (ft)	0.02	Cum SA (acres)	7.06
8.02 16.55			

Warning: The energy equation could not be 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: Fan 6C
REACH: Fan6C-2 RS: 1.16

INPUT
Description: Topography and aerial show wash and surrounding undeveloped desert.
T5NR4E Section 12
Q100 = 1,349 cfs
Station Elevation Data num= 14

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9836.82	2498	9866.34	2496	9875.44	2495	9884.54	2494	9913.3	2493
9942.06	2492	10000	2490.2	10030.06	2492	10044.62	2492	10058.66	2492
10077.96	2493	10097.25	2494	10142.46	2496	10162.38	2498		

```
Manning's n Values          num=        3
     Sta    n Val      Sta    n Val      Sta    n Val
 9836.82     .058 9942.06     .03810030.06     .058

Bank Sta: Left    Right     Lengths: Left Channel    Right      Coeff Contr.
Expan.
       9942.0610030.06            460.49  467.04  470.81              .1
.3

CROSS SECTION OUTPUT  Profile #100-yr 6-hr

  E.G. Elev (ft)            2493.75    Element                    Left OB
Channel   Right OB
  Vel Head (ft)                0.74    Wt. n-Val.                  0.058
0.038       0.058
  W.S. Elev (ft)            2493.01    Reach Len. (ft)            460.49
467.04      470.81
  Crit W.S. (ft)            2493.01    Flow Area (sq ft)           14.74
168.30       38.85
  E.G. Slope (ft/ft)       0.014416    Area (sq ft)                14.74
168.30       38.85
  Q Total (cfs)             1349.00    Flow (cfs)                  28.79
1216.67      103.54
  Top Width (ft)             165.26    Top Width (ft)              29.12
88.00       48.14
  Vel Total (ft/s)             6.08    Avg. Vel. (ft/s)             1.95
7.23        2.67
  Max Chl Dpth (ft)            2.81    Hydr. Depth (ft)             0.51
1.91        0.81
  Conv. Total (cfs)        11235.5     Conv. (cfs)                 239.8
10133.3       862.4
  Length Wtd. (ft)           467.41    Wetted Per. (ft)            29.14
88.08       48.17
  Min Ch El (ft)            2490.20    Shear (lb/sq ft)             0.46
1.72        0.73
  Alpha                        1.29    Stream Power (lb/ft s)       0.89
12.43        1.93
  Frctn Loss (ft)              6.75    Cum Volume (acre-ft)         4.68
15.17       19.46
  C & E Loss (ft)              0.01    Cum SA (acres)               6.64
7.26       15.39


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 energy loss was greater than 1.0 ft (0.3 m). between the
current and previous cross section.
         This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water
surface was set equal to critical
         depth, the 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 OUTPUT  Profile #Method 1

  E.G. Elev (ft)            2493.75    Element                    Left OB
```

Channel Right OB			
Vel Head (ft)	0.74	Wt. n-Val.	0.058
0.038 0.058			
W.S. Elev (ft)	2493.01	Reach Len. (ft)	460.49
467.04 470.81			
Crit W.S. (ft)	2493.01	Flow Area (sq ft)	14.74
168.30 38.85			
E.G. Slope (ft/ft)	0.014416	Area (sq ft)	14.74
168.30 38.85			
Q Total (cfs)	1349.00	Flow (cfs)	28.79
1216.67 103.54			
Top Width (ft)	165.26	Top Width (ft)	29.12
88.00 48.14			
Vel Total (ft/s)	6.08	Avg. Vel. (ft/s)	1.95
7.23 2.67			
Max Chl Dpth (ft)	2.81	Hydr. Depth (ft)	0.51
1.91 0.81			
Conv. Total (cfs)	11235.5	Conv. (cfs)	239.8
10133.3 862.4			
Length Wtd. (ft)	467.41	Wetted Per. (ft)	29.14
88.08 48.17			
Min Ch El (ft)	2490.20	Shear (lb/sq ft)	0.46
1.72 0.73			
Alpha	1.29	Stream Power (lb/ft s)	0.89
12.43 1.93			
Frctn Loss (ft)	6.75	Cum Volume (acre-ft)	4.68
15.17 19.46			
C & E Loss (ft)	0.01	Cum SA (acres)	6.64
7.26 15.39			

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 energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
depth, the 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: Fan 6C
REACH: Fan6C-2 RS: 1.07

INPUT
Description: Topography and aerial show wash and surrounding undeveloped desert.
T5NR4E Section 12
Q100 = 1,349 cfs
Station Elevation Data num= 18

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9938.92	2486	9962.4	2484	9971.92	2483	9981.44	2482	10000	2480.27

```
10022.43    248210039.21    248310055.98    248410063.39    2484 10098.1
2484
10108.81    248410136.32    248210149.38    248210169.94    248410185.99
2486
10203.14    248610221.82    248610254.52    2488

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
 9938.92    .058 9971.92    .03810039.21    .058

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.
Expan.
       9971.9210039.21           241.74  252.51  257.68             .1
.3

CROSS SECTION OUTPUT  Profile #100-yr 6-hr

  E.G. Elev (ft)           2484.63    Element                    Left OB
Channel   Right OB
  Vel Head (ft)               0.81    Wt. n-Val.                  0.058
0.038      0.058
  W.S. Elev (ft)           2483.81    Reach Len. (ft)           241.74
252.51     257.68
  Crit W.S. (ft)           2483.81    Flow Area (sq ft)           3.14
144.27      68.69
  E.G. Slope (ft/ft)      0.014463    Area (sq ft)                3.14
144.27      68.69
  Q Total (cfs)            1349.00    Flow (cfs)                  5.29
1125.49     218.22
  Top Width (ft)            145.27    Top Width (ft)              7.73
67.29      70.25
  Vel Total (ft/s)            6.24    Avg. Vel. (ft/s)            1.68
7.80       3.18
  Max Chl Dpth (ft)           3.54    Hydr. Depth (ft)            0.41
2.14       0.98
  Conv. Total (cfs)        11217.1    Conv. (cfs)                 44.0
9358.6     1814.5
  Length Wtd. (ft)          254.29    Wetted Per. (ft)            7.78
67.52      70.43
  Min Ch El (ft)           2480.27    Shear (lb/sq ft)            0.36
1.93       0.88
  Alpha                       1.35    Stream Power (lb/ft s)      0.61
15.05       2.80
  Frctn Loss (ft)             4.27    Cum Volume (acre-ft)        4.58
13.50      18.88
  C & E Loss (ft)             0.13    Cum SA (acres)              6.45
6.42      14.75


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

not a valid subcritical answer. The program defaulted to critical depth.

CROSS SECTION OUTPUT Profile #Method 1

E.G. Elev (ft)	2484.63	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.81	Wt. n-Val.	0.058	0.038	0.058
W.S. Elev (ft)	2483.81	Reach Len. (ft)	241.74	252.51	257.68
Crit W.S. (ft)	2483.81	Flow Area (sq ft)	3.14	144.27	68.69
E.G. Slope (ft/ft)	0.014463	Area (sq ft)	3.14	144.27	68.69
Q Total (cfs)	1349.00	Flow (cfs)	5.29	1125.49	218.22
Top Width (ft)	145.27	Top Width (ft)	7.73	67.29	70.25
Vel Total (ft/s)	6.24	Avg. Vel. (ft/s)	1.68	7.80	3.18
Max Chl Dpth (ft)	3.54	Hydr. Depth (ft)	0.41	2.14	0.98
Conv. Total (cfs)	11217.1	Conv. (cfs)	44.0	9358.6	1814.5
Length Wtd. (ft)	254.29	Wetted Per. (ft)	7.78	67.52	70.43
Min Ch El (ft)	2480.27	Shear (lb/sq ft)	0.36	1.93	0.88
Alpha	1.35	Stream Power (lb/ft s)	0.61	15.05	2.80
Frctn Loss (ft)	4.27	Cum Volume (acre-ft)	4.58	13.50	18.88
C & E Loss (ft)	0.13	Cum SA (acres)	6.45	6.42	14.75

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

CROSS SECTION

RIVER: Fan 6C
REACH: Fan6C-2 RS: 1.02

INPUT
Description: Topography and aerial show wash and surrounding undeveloped desert.

```
T5NR4E Section 12
Q100 = 1,349 cfs
Station Elevation Data    num=      14
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta
Elev
 9917.16    2480 9931.87  2478.5 9936.77    2478 9941.67    2478   10000
2476.33
10019.24    247810031.79 2478.4510061.73    2478 10081.3    247610090.47
2476
 10106.8    247610121.98    247610143.89    247810179.89    2480

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
 9917.16    .063 9931.87    .03810031.79    .063

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.
Expan.
       9931.8710031.79            382.1  399.37  372.94             .1
.3

CROSS SECTION OUTPUT  Profile #100-yr 6-hr

  E.G. Elev (ft)           2478.87    Element                    Left OB
Channel   Right OB
  Vel Head (ft)               0.39    Wt. n-Val.
0.038      0.063
  W.S. Elev (ft)           2478.48    Reach Len. (ft)            382.10
399.37     372.94
  Crit W.S. (ft)           2478.13    Flow Area (sq ft)
108.49     171.75
  E.G. Slope (ft/ft)      0.019736    Area (sq ft)
108.49     171.75
  Q Total (cfs)            1349.00    Flow (cfs)
629.91     719.09
  Top Width (ft)            220.41    Top Width (ft)
99.71     120.70
  Vel Total (ft/s)            4.81    Avg. Vel. (ft/s)
5.81       4.19
  Max Chl Dpth (ft)           2.48    Hydr. Depth (ft)
1.09       1.42
  Conv. Total (cfs)         9602.5    Conv. (cfs)
4483.9     5118.6
  Length Wtd. (ft)          391.65    Wetted Per. (ft)
99.83     120.91
  Min Ch El (ft)           2476.33    Shear (lb/sq ft)
1.34       1.75
  Alpha                       1.08    Stream Power (lb/ft s)
7.77       7.33
  Frctn Loss (ft)             5.93    Cum Volume (acre-ft)        4.57
12.77      18.17
  C & E Loss (ft)             0.08    Cum SA (acres)              6.43
5.94      14.19


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 energy loss was 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 OUTPUT Profile #Method 1

```
  E.G. Elev (ft)           2478.87    Element                    Left OB
Channel   Right OB
  Vel Head (ft)               0.39    Wt. n-Val.
0.038       0.063
  W.S. Elev (ft)           2478.48    Reach Len. (ft)            382.10
399.37      372.94
  Crit W.S. (ft)           2478.13    Flow Area (sq ft)
108.49      171.75
  E.G. Slope (ft/ft)      0.019736    Area (sq ft)
108.49      171.75
  Q Total (cfs)            1349.00    Flow (cfs)
629.91      719.09
  Top Width (ft)            220.41    Top Width (ft)
99.71      120.70
  Vel Total (ft/s)            4.81    Avg. Vel. (ft/s)
5.81        4.19
  Max Chl Dpth (ft)           2.48    Hydr. Depth (ft)
1.09        1.42
  Conv. Total (cfs)         9602.5    Conv. (cfs)
4483.9      5118.6
  Length Wtd. (ft)          391.65    Wetted Per. (ft)
99.83      120.91
  Min Ch El (ft)           2476.33    Shear (lb/sq ft)
1.34        1.75
  Alpha                       1.08    Stream Power (lb/ft s)
7.77        7.33
  Frctn Loss (ft)             5.93    Cum Volume (acre-ft)         4.57
12.77       18.17
  C & E Loss (ft)             0.08    Cum SA (acres)               6.43
5.94       14.19
```

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 energy loss was 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: Fan 6C
REACH: Fan6C-2 RS: 0.94

INPUT
Description: Topography indicates wash and surrounding undeveloped
desert.
Aerial shows wash, homes and undeveloped desert.
T5NR4E
Section 12
Q100 = 1,349 cfs
Station Elevation Data num= 14

```
     Sta     Elev     Sta     Elev     Sta     Elev     Sta     Elev     Sta
Elev
 9956.58     2476 9964.81     2474 9973.77     2472 9985.19     2470 9992.19
2468
10012.54     246810030.56     2470 10063.9     247210084.75     247210129.59
2472
```

```
10196.21    247210315.69    2472   10359    247410366.66    2474

Manning's n Values         num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
 9956.58    .058 9985.19    .03810030.56    .058

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.
Expan.
       9985.1910030.56           203.82  207.27  203.02             .1
.3

CROSS SECTION OUTPUT  Profile #100-yr 6-hr

  E.G. Elev (ft)           2472.86    Element                    Left OB
Channel   Right OB
  Vel Head (ft)               1.21    Wt. n-Val.                  0.058
0.038      0.058
  W.S. Elev (ft)           2471.65    Reach Len. (ft)           203.82
207.27     203.02
  Crit W.S. (ft)           2471.65    Flow Area (sq ft)           7.80
140.70      22.76
  E.G. Slope (ft/ft)      0.011990    Area (sq ft)                7.80
140.70      22.76
  Q Total (cfs)            1349.00    Flow (cfs)                 19.07
1273.77      56.16
  Top Width (ft)             82.36    Top Width (ft)              9.44
45.37      27.55
  Vel Total (ft/s)            7.88    Avg. Vel. (ft/s)            2.45
9.05       2.47
  Max Chl Dpth (ft)           3.65    Hydr. Depth (ft)            0.83
3.10       0.83
  Conv. Total (cfs)        12320.0    Conv. (cfs)                174.2
11632.9      512.9
  Length Wtd. (ft)          206.84    Wetted Per. (ft)            9.58
45.76      27.60
  Min Ch El (ft)           2468.00    Shear (lb/sq ft)            0.61
2.30       0.62
  Alpha                       1.25    Stream Power (lb/ft s)      1.49
20.84       1.52
  Frctn Loss (ft)             2.26    Cum Volume (acre-ft)        4.54
11.62      17.34
  C & E Loss (ft)             0.01    Cum SA (acres)              6.38
5.28      13.55


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.

CROSS SECTION OUTPUT  Profile #Method 1
```

E.G. Elev (ft)	2472.86	Element	Left OB	Channel Right OB
Vel Head (ft)	1.21	Wt. n-Val.	0.058	0.038 0.058
W.S. Elev (ft)	2471.65	Reach Len. (ft)	203.82	207.27 203.02
Crit W.S. (ft)	2471.65	Flow Area (sq ft)	7.80	140.70 22.76
E.G. Slope (ft/ft)	0.011990	Area (sq ft)	7.80	140.70 22.76
Q Total (cfs)	1349.00	Flow (cfs)	19.07	1273.77 56.16
Top Width (ft)	82.36	Top Width (ft)	9.44	45.37 27.55
Vel Total (ft/s)	7.88	Avg. Vel. (ft/s)	2.45	9.05 2.47
Max Chl Dpth (ft)	3.65	Hydr. Depth (ft)	0.83	3.10 0.83
Conv. Total (cfs)	12320.0	Conv. (cfs)	174.2	11632.9 512.9
Length Wtd. (ft)	206.84	Wetted Per. (ft)	9.58	45.76 27.60
Min Ch El (ft)	2468.00	Shear (lb/sq ft)	0.61	2.30 0.62
Alpha	1.25	Stream Power (lb/ft s)	1.49	20.84 1.52
Frctn Loss (ft)	2.26	Cum Volume (acre-ft)	4.54	11.62 17.34
C & E Loss (ft)	0.01	Cum SA (acres)	6.38	5.28 13.55

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.

CROSS SECTION

RIVER: Fan 6C
REACH: Fan6C-2 RS: 0.91

INPUT
Description: Cross Section 0.90 is located upstream of concentration point
CF6C1c in the HEC-1 model.

Topography indicates wash and
surrounding undeveloped desert.

```
Aerial shows wash, homes and
             undeveloped desert.
T5NR4E Section 12
Q100 = 1,349 cfs
Station Elevation Data    num=      16
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta
Elev
 9930.18 2470.46 9967.19 2468.39 9987.03 2466.06 9992.27 2463.29   10000
2463.28
10005.67 2463.4110013.92 2465.1110047.21 2468.1110072.23 2468.62 10104.7
2468.7
10204.07 2468.64   10227 2467.37 10262.7 2468.8810302.85 2470.1710336.99
2468
10367.11 2469.25

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
 9930.18    .058 9987.03    .03810013.92    .058

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.
Expan.
       9987.0310013.92           477.13  468.04  465.99             .1
.3
Right Levee     Station= 10104.7      Elevation=  2468.7

CROSS SECTION OUTPUT  Profile #100-yr 6-hr

  E.G. Elev (ft)           2469.43    Element                   Left OB
Channel   Right OB
  Vel Head (ft)               1.34    Wt. n-Val.                 0.058
0.038      0.058
  W.S. Elev (ft)           2468.10    Reach Len. (ft)           477.13
468.04     465.99
  Crit W.S. (ft)           2468.10    Flow Area (sq ft)          17.63
113.68      49.44
  E.G. Slope (ft/ft)      0.010008    Area (sq ft)               17.63
113.68      49.44
  Q Total (cfs)            1349.00    Flow (cfs)                 45.52
1138.44     165.04
  Top Width (ft)             77.34    Top Width (ft)             17.33
26.89      33.13
  Vel Total (ft/s)            7.46    Avg. Vel. (ft/s)            2.58
10.01       3.34
  Max Chl Dpth (ft)           4.82    Hydr. Depth (ft)            1.02
4.23       1.49
  Conv. Total (cfs)        13484.9    Conv. (cfs)                455.0
11380.1     1649.8
  Length Wtd. (ft)          467.90    Wetted Per. (ft)           17.45
27.75      33.26
  Min Ch El (ft)           2463.28    Shear (lb/sq ft)            0.63
2.56       0.93
  Alpha                       1.55    Stream Power (lb/ft s)      1.63
25.63       3.10
  Frctn Loss (ft)             4.43    Cum Volume (acre-ft)        4.48
11.02      17.17
  C & E Loss (ft)             0.07    Cum SA (acres)              6.32
5.10      13.41


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 energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
depth, the 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 OUTPUT Profile #Method 1

E.G. Elev (ft)	2469.43	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.34	Wt. n-Val.	0.058	0.038	0.058
W.S. Elev (ft)	2468.10	Reach Len. (ft)	477.13	468.04	465.99
Crit W.S. (ft)	2468.10	Flow Area (sq ft)	17.63	113.68	49.44
E.G. Slope (ft/ft)	0.010008	Area (sq ft)	17.63	113.68	49.44
Q Total (cfs)	1349.00	Flow (cfs)	45.52	1138.44	165.04
Top Width (ft)	77.34	Top Width (ft)	17.33	26.89	33.13
Vel Total (ft/s)	7.46	Avg. Vel. (ft/s)	2.58	10.01	3.34
Max Chl Dpth (ft)	4.82	Hydr. Depth (ft)	1.02	4.23	1.49
Conv. Total (cfs)	13484.9	Conv. (cfs)	455.0	11380.1	1649.8
Length Wtd. (ft)	467.90	Wetted Per. (ft)	17.45	27.75	33.26
Min Ch El (ft)	2463.28	Shear (lb/sq ft)	0.63	2.56	0.93
Alpha	1.55	Stream Power (lb/ft s)	1.63	25.63	3.10
Frctn Loss (ft)	4.43	Cum Volume (acre-ft)	4.48	11.02	17.17
C & E Loss (ft)	0.07	Cum SA (acres)	6.32	5.10	13.41

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 energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
depth, the 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: Fan 6C
REACH: Fan6C-2 RS: 0.82

INPUT
Description: Cross Section 0.82 is located upstream of concentration point
CF6C1b in the HEC-1 model.

NEW COS Topo '04 redefines xsec post
development, Boulder Ridge.

Aerial shows wash, Preserve Way
and undeveloped desert.
T5NR4E Section 12
Q100 = 1,513 cfs
Station Elevation Data num= 18

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9942.58	2466.36	9974.4	2462.64	9984.53	2460.16	9992.08	2456.71	10000	2456.24
10009.78	2456.61	10019.25	2458.78	10081.41	2460.95	10126.81	2460.93	10172.93	2460.45
10201.39	2458.78	10227.65	2459.78	10238.55	2460.02	10250.53	2460.31	10303.17	2460.53
10320.06	2458.64	10377.38	2459.86	10412.15	2462.21				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9942.58	.058	9984.53	.038	10019.25	.058

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9984.53	10019.25	166.98	168.75	189.71	.3	.5

Right Levee Station=10081.41 Elevation= 2461.5

CROSS SECTION OUTPUT Profile #100-yr 6-hr

E.G. Elev (ft)	2462.31	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.11	Wt. n-Val.	0.058	0.038	0.058
W.S. Elev (ft)	2461.20	Reach Len. (ft)	166.98	168.75	189.71
Crit W.S. (ft)	2461.20	Flow Area (sq ft)	2.21	138.21	83.03
E.G. Slope (ft/ft)	0.009028	Area (sq ft)	2.21	138.21	83.03
Q Total (cfs)	1513.00	Flow (cfs)	3.42	1265.22	244.36
Top Width (ft)	101.13	Top Width (ft)	4.25	34.72	62.16
Vel Total (ft/s)	6.77	Avg. Vel. (ft/s)	1.54		

9.15 2.94

Max Chl Dpth (ft)	4.96	Hydr. Depth (ft)	0.52
3.98 1.34			
Conv. Total (cfs)	15924.0	Conv. (cfs)	36.0
13316.1 2571.9			
Length Wtd. (ft)	181.08	Wetted Per. (ft)	4.38
35.74 62.45			
Min Ch El (ft)	2456.24	Shear (lb/sq ft)	0.28
2.18 0.75			
Alpha	1.56	Stream Power (lb/ft s)	0.44
19.95 2.21			
Frctn Loss (ft)	0.02	Cum Volume (acre-ft)	4.37
9.66 16.46			
C & E Loss (ft)	0.00	Cum SA (acres)	6.20
4.77 12.90			

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.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water
surface was used.

CROSS SECTION OUTPUT Profile #Method 1

E.G. Elev (ft)	2462.31	Element	Left OB
Channel Right OB			
Vel Head (ft)	1.11	Wt. n-Val.	0.058
0.038 0.058			
W.S. Elev (ft)	2461.20	Reach Len. (ft)	166.98
168.75 189.71			
Crit W.S. (ft)	2461.20	Flow Area (sq ft)	2.21
138.21 83.03			
E.G. Slope (ft/ft)	0.009028	Area (sq ft)	2.21
138.21 83.03			
Q Total (cfs)	1513.00	Flow (cfs)	3.42
1265.22 244.36			
Top Width (ft)	101.13	Top Width (ft)	4.25
34.72 62.16			
Vel Total (ft/s)	6.77	Avg. Vel. (ft/s)	1.54
9.15 2.94			
Max Chl Dpth (ft)	4.96	Hydr. Depth (ft)	0.52
3.98 1.34			

Conv. Total (cfs)	15924.0	Conv. (cfs)	36.0
13316.1 2571.9			
Length Wtd. (ft)	181.08	Wetted Per. (ft)	4.38
35.74 62.45			
Min Ch El (ft)	2456.24	Shear (lb/sq ft)	0.28
2.18 0.75			
Alpha	1.56	Stream Power (lb/ft s)	0.44
19.95 2.21			
Frctn Loss (ft)	0.02	Cum Volume (acre-ft)	4.37
9.66 16.46			
C & E Loss (ft)	0.00	Cum SA (acres)	6.20
4.77 12.90			

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.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water
surface was used.

CROSS SECTION

RIVER: Fan 6C
REACH: Fan6C-2 RS: 0.78

INPUT
Description: Cross Section 0.78 is located upstream of the intersection of Fan
6C and Westland Road. There are 2-10 X 4 concrete box culverts
located under Westland Road. A flow split analysis was performed
to determine the amount of flow not staying within the wash
boundaries. A water surface elevation of 2460.9 was set according
to this split flow.

NEW COS Topo '04 redefines xsec post
development, Boulder Ridge.

Aerial shows wash crossing Westland
Road.

T5NR4E Section 12
Q100 = 1,513 cfs
Station Elevation Data num= 14

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9820.33	2466.1	9862.44	2464.33	9943.73	2460.55	9956.78	2460.28	9987.34	2454.66
10000	2454.42	10016.39	2454.72	10028.49	2454.91	10038.23	2457.18	10066.51	2456.42
10084.51	2458.82	10171.08	2456.68	10278.12	2454.12	10373.25	2451.25		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9820.33	.058	9956.78	.038	10038.23	.058

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9956.78	10038.23	71.57	71.2	69.94	.3	.5

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
9820.33	9987.34	2459	F
10028.49	10373.25	2459	F

Right Levee Station=10084.51 Elevation= 2462

CROSS SECTION OUTPUT Profile #100-yr 6-hr

E.G. Elev (ft)	2460.92	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.02	Wt. n-Val.	0.058	0.038	0.058
W.S. Elev (ft)	2460.90	Reach Len. (ft)	71.57	71.20	69.94
Crit W.S. (ft)		Flow Area (sq ft)	7.64	410.11	174.98
E.G. Slope (ft/ft)	0.000109	Area (sq ft)	7.64	410.11	174.98
Q Total (cfs)	600.00	Flow (cfs)	1.06	488.86	110.08
Top Width (ft)	148.30	Top Width (ft)	20.57	81.45	46.28
Vel Total (ft/s)	1.01	Avg. Vel. (ft/s)	0.14	1.19	0.63
Max Chl Dpth (ft)	9.65	Hydr. Depth (ft)	0.37	5.04	3.78
Conv. Total (cfs)	57453.9	Conv. (cfs)	101.2	46811.5	10541.3
Length Wtd. (ft)	71.20	Wetted Per. (ft)	20.58	82.23	48.53
Min Ch El (ft)	2454.42	Shear (lb/sq ft)	0.00	0.03	0.02
Alpha	1.20	Stream Power (lb/ft s)	0.00	0.04	0.02
Frctn Loss (ft)		Cum Volume (acre-ft)	4.35	8.60	15.90
C & E Loss (ft)		Cum SA (acres)	6.16	4.55	12.67

Note: The user has entered a known water surface elevation at this cross section.

CROSS SECTION OUTPUT Profile #Method 1

E.G. Elev (ft)	2460.92	Element	Left OB	Channel
Vel Head (ft)	0.02	Wt. n-Val.	0.058	0.038
W.S. Elev (ft)	2460.90	Reach Len. (ft)	71.57	71.20
Crit W.S. (ft)		Flow Area (sq ft)	7.64	410.11
E.G. Slope (ft/ft)	0.000109	Area (sq ft)	7.64	410.11
Q Total (cfs)	600.00	Flow (cfs)	1.06	488.86
Top Width (ft)	148.30	Top Width (ft)	20.57	81.45
Vel Total (ft/s)	1.01	Avg. Vel. (ft/s)	0.14	1.19
Max Chl Dpth (ft)	9.65	Hydr. Depth (ft)	0.37	5.04
Conv. Total (cfs)	57453.9	Conv. (cfs)	101.2	46811.5
Length Wtd. (ft)	71.20	Wetted Per. (ft)	20.58	82.23
Min Ch El (ft)	2454.42	Shear (lb/sq ft)	0.00	0.03
Alpha	1.20	Stream Power (lb/ft s)	0.00	0.04
Frctn Loss (ft)		Cum Volume (acre-ft)	4.35	8.60
C & E Loss (ft)		Cum SA (acres)	6.16	4.55

Note: The user has entered a known water surface elevation at this cross section.

CULVERT

RIVER: Fan 6C
REACH: Fan6C-2 RS: 0.775

INPUT
Description: Box culverts at Westland Road crossing.
Distance from Upstream XS = 6
Deck/Roadway Width = 63
Weir Coefficient = 2.6
Upstream Deck/Roadway Coordinates
num= 6

Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord
9846.12	2467.75		9943.81	2463.37		10041.5	2460.93	
10139.1	2458.2		10232.35	2455.86		10375.9	2453.26	

Upstream Bridge Cross Section Data
Station Elevation Data num= 14

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9820.33	2466.1	9862.44	2464.33	9943.73	2460.55	9956.78	2460.28	9987.34	2454.66

```
   10000 2454.4210016.39 2454.7210028.49  2454.910038.23 2457.1810066.51
2456.42
10084.51 2458.8210171.08 2456.6810278.12 2454.1210373.25 2451.25

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
 9820.33    .058 9956.78    .03810038.23    .058

Bank Sta: Left   Right    Coeff Contr.   Expan.
       9956.7810038.23             .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
 9820.33 9987.34    2459       F
10028.4910373.25    2459       F
Right Levee     Station=10084.51      Elevation=    2462

Downstream  Deck/Roadway Coordinates
    num=       8
     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord
 9846.12 2466.19         9943.81 2463.86         10041.5 2461.56
 10139.1 2458.74        10232.35 2456.46         10375.9 2453.93
 10546.1 2450.49        10736.05 2447.26

Downstream Bridge Cross Section Data
Station Elevation Data    num=      18
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta
Elev
 9833.55    2464 9873.11 2459.34 9980.83 2456.33 10007.1 2455.4710021.09
2454
10034.48 2453.9210038.97 2452.4910047.28 2452.0610058.25 2452.55 10062.9
2453.04
10106.36 2453.2110118.64 2454.8210132.21 2454.7310151.63 2452.5710245.52
2450.09
10335.23 2450.2110423.91 2449.2310485.05 2448.26

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
 9833.55    .05810034.48    .038 10062.9    .058

Bank Sta: Left   Right    Coeff Contr.   Expan.
      10034.48 10062.9             .3       .5
Right Levee     Station=10118.64      Elevation=    2456

Upstream Embankment side slope              =       0 horiz. to 1.0
vertical
Downstream Embankment side slope            =       0 horiz. to 1.0
vertical
Maximum allowable submergence for weir flow =     .95
Elevation at which weir flow begins         =
Energy head used in spillway design         =
Spillway height used in design              =
Weir crest shape                            = Broad Crested

Number of Culverts =  1

Culvert Name     Shape      Rise    Span
CULVERT#1            Box       4      10
FHWA Chart # 8 - flared wingwalls
FHWA Scale # 3 - Wingwall flared 0 deg. (sides extended straight)
Solution Criteria = Highest U.S. EG
Culvert Upstrm Dist  Length    Top n  Bottom n  Depth Blocked  Entrance
```

```
Loss Coef   Exit Loss Coef
                4.2      63      .015      .015        0
.4                1
Number of Barrels =  2
Upstream   Elevation =  2454.7
Centerline Stations
    Sta.    Sta.
  9994.810005.72
Downstream Elevation =  2453.25
Centerline Stations
    Sta.    Sta.
10042.0810052.48

CROSS SECTION


RIVER: Fan 6C
REACH: Fan6C-2            RS: 0.77

INPUT
Description: Cross Section 0.77 is located downstream of the
intersection of
             Fan 6C and Westland Road.  There are 2-10 X 4 concrete box
             culverts located under Westland Road.  The flow split
analysis
             performed upstream determined the amount of flow staying
within
             the wash boundaries.  Please refer to Special Problems
Report for
             further explanation.


NEW COS Topo '04 redefines xsec post
             development, Boulder Ridge.

Aerial shows wash crossing Westland
             Road.
T5NR4E Section 12
Q100 = 1,584 cfs
Station Elevation Data    num=      18
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta
Elev
 9833.55    2464 9873.11 2459.34 9980.83 2456.33 10007.1 2455.4710021.09
2454
10034.48 2453.9210038.97 2452.4910047.28 2452.0610058.25 2452.55 10062.9
2453.04
10106.36 2453.2110118.64 2454.8210132.21 2454.7310151.63 2452.5710245.52
2450.09
10335.23 2450.2110423.91 2449.2310485.05 2448.26

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
 9833.55    .05810034.48    .038 10062.9    .058

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.
Expan.
      10034.48 10062.9           762.68  193.78   758.4             .3
.5
Right Levee     Station=10118.64      Elevation=    2456

CROSS SECTION OUTPUT  Profile #100-yr 6-hr
```

E.G. Elev (ft)	2455.31	Element	Left OB	Channel Right OB
Vel Head (ft)	0.22	Wt. n-Val.	0.058	0.038 0.058
W.S. Elev (ft)	2455.09	Reach Len. (ft)	762.68	193.78 758.40
Crit W.S. (ft)	2454.34	Flow Area (sq ft)	20.82	73.12 98.69
E.G. Slope (ft/ft)	0.003984	Area (sq ft)	20.82	73.12 98.69
Q Total (cfs)	600.00	Flow (cfs)	30.77	336.74 232.49
Top Width (ft)	107.94	Top Width (ft)	23.78	28.42 55.74
Vel Total (ft/s)	3.11	Avg. Vel. (ft/s)	1.48	4.61 2.36
Max Chl Dpth (ft)	6.83	Hydr. Depth (ft)	0.88	2.57 1.77
Conv. Total (cfs)	9506.2	Conv. (cfs)	487.5	5335.2 3683.5
Length Wtd. (ft)	326.54	Wetted Per. (ft)	23.84	28.69 56.12
Min Ch El (ft)	2452.06	Shear (lb/sq ft)	0.22	0.63 0.44
Alpha	1.46	Stream Power (lb/ft s)	0.32	2.92 1.03
Frctn Loss (ft)	2.30	Cum Volume (acre-ft)	4.33	8.21 15.68
C & E Loss (ft)	0.21	Cum SA (acres)	6.12	4.46 12.58

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.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid,
energy was used.

CROSS SECTION OUTPUT Profile #Method 1

E.G. Elev (ft)	2455.31	Element	Left OB	Channel Right OB
Vel Head (ft)	0.22	Wt. n-Val.	0.058	0.038 0.058
W.S. Elev (ft)	2455.09	Reach Len. (ft)	762.68	193.78 758.40
Crit W.S. (ft)	2454.34	Flow Area (sq ft)	20.82	73.12 98.69
E.G. Slope (ft/ft)	0.003984	Area (sq ft)	20.82	73.12 98.69
Q Total (cfs)	600.00	Flow (cfs)	30.77	336.74 232.49

Top Width (ft)	107.94	28.42	55.74	Top Width (ft)	23.78
Vel Total (ft/s)	3.11	4.61	2.36	Avg. Vel. (ft/s)	1.48
Max Chl Dpth (ft)	6.83	2.57	1.77	Hydr. Depth (ft)	0.88
Conv. Total (cfs)	9506.2	5335.2	3683.5	Conv. (cfs)	487.5
Length Wtd. (ft)	326.54	28.69	56.12	Wetted Per. (ft)	23.84
Min Ch El (ft)	2452.06	0.63	0.44	Shear (lb/sq ft)	0.22
Alpha	1.46	2.92	1.03	Stream Power (lb/ft s)	0.32
Frctn Loss (ft)	2.30	8.21	15.68	Cum Volume (acre-ft)	4.33
C & E Loss (ft)	0.21	4.46	12.58	Cum SA (acres)	6.12

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for
additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than
0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid,
energy was used.

CROSS SECTION

RIVER: Fan 6C
REACH: Fan6C-2 RS: 0.73

INPUT
Description: Cross Section 0.73 has an adjacent Zone A to represent flow that
may be exiting the model and heading west to the adjacent wash.
The flow potentially exiting the model and traveling west is
defined as the amount of flow overtopping high point at levee in
the cross section.

NEW COS Topo '04 redefines xsec post
development, Boulder Ridge.

T5NR4E Section 12
Q100 = 1,584 cfs
Station Elevation Data num= 16

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9786.7	2456.59	9831.55	2453.19	9881.68	2453.43	9955.6	2452.23	9984.12	

```
2451.09
 9994.31 2449.45   10000 2448.81 10010.1 2449.0110016.26 2450.7210025.01
2452.36
10068.69 2452.89 10111.4 2451.1710176.25 2449.76 10252.5 2449.5910320.09
2448.06
10440.32 2446.13

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
  9786.7    .064 9984.12    .04110016.26    .064

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.
Expan.
       9984.1210016.26              400  553.32     400             .1
.3
Right Levee     Station=10068.69      Elevation=    2453

CROSS SECTION OUTPUT  Profile #100-yr 6-hr

  E.G. Elev (ft)           2452.80    Element                    Left OB
Channel   Right OB
  Vel Head (ft)               0.93    Wt. n-Val.                  0.064
0.041      0.064
  W.S. Elev (ft)           2451.87    Reach Len. (ft)           400.00
553.32     400.00
  Crit W.S. (ft)           2451.87    Flow Area (sq ft)           7.52
73.99       3.50
  E.G. Slope (ft/ft)      0.015726    Area (sq ft)                7.52
73.99       3.50
  Q Total (cfs)             600.00    Flow (cfs)                 11.63
581.43       6.94
  Top Width (ft)             57.64    Top Width (ft)             19.39
32.14       6.11
  Vel Total (ft/s)            7.06    Avg. Vel. (ft/s)            1.55
7.86       1.98
  Max Chl Dpth (ft)           5.74    Hydr. Depth (ft)            0.39
2.30       0.57
  Conv. Total (cfs)         4784.5    Conv. (cfs)                 92.7
4636.4       55.4
  Length Wtd. (ft)          525.57    Wetted Per. (ft)           19.41
32.54       6.22
  Min Ch El (ft)           2448.81    Shear (lb/sq ft)            0.38
2.23       0.55
  Alpha                       1.20    Stream Power (lb/ft s)      0.59
17.54       1.10
  Frctn Loss (ft)             5.43    Cum Volume (acre-ft)        4.08
7.88      14.79
  C & E Loss (ft)             0.13    Cum SA (acres)              5.74
4.32      12.04


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

This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
depth, the 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 OUTPUT Profile #Method 1

E.G. Elev (ft)	2452.80	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.93	Wt. n-Val.	0.064	0.041	0.064
W.S. Elev (ft)	2451.87	Reach Len. (ft)	400.00	553.32	400.00
Crit W.S. (ft)	2451.87	Flow Area (sq ft)	7.52	73.99	3.50
E.G. Slope (ft/ft)	0.015726	Area (sq ft)	7.52	73.99	3.50
Q Total (cfs)	600.00	Flow (cfs)	11.63	581.43	6.94
Top Width (ft)	57.64	Top Width (ft)	19.39	32.14	6.11
Vel Total (ft/s)	7.06	Avg. Vel. (ft/s)	1.55	7.86	1.98
Max Chl Dpth (ft)	5.74	Hydr. Depth (ft)	0.39	2.30	0.57
Conv. Total (cfs)	4784.5	Conv. (cfs)	92.7	4636.4	55.4
Length Wtd. (ft)	525.57	Wetted Per. (ft)	19.41	32.54	6.22
Min Ch El (ft)	2448.81	Shear (lb/sq ft)	0.38	2.23	0.55
Alpha	1.20	Stream Power (lb/ft s)	0.59	17.54	1.10
Frctn Loss (ft)	5.43	Cum Volume (acre-ft)	4.08	7.88	14.79
C & E Loss (ft)	0.13	Cum SA (acres)	5.74	4.32	12.04

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 conveyance ratio (upstream conveyance divided by downstream conveyance) is less than
0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
depth, the 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: Fan 6C
REACH: Fan6C-2 RS: 0.63

INPUT
Description: Cross Section 0.63 will have adjacent Zone A to represent flow that may be exiting model and heading west to adjacent wash.The flow potentially exiting the model and traveling west is defined as the amount of flow overtopping high point at levee in the cross section.

Topography and aerial show wash and undeveloped desert.
T5NR4E Section 12
Q100 = 1,584 cfs
Station Elevation Data num= 27

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9861.79	2449.89	9941.04	2443.69	9983.98	2444.56	9991.17	2439.58	10000	2439.22
10011.52	2439.42	10013.59	2440.34	10028.77	2442.98	10103.46	2444.01	10266.02	2443.17
10297.58	2441.35	10299.09	2439.91	10303.27	2441.85	10312.73	2442.25	10392.87	2443.2
10442.96	2442.07	10449.39	2440.93	10453.96	2441.85	10512.01	2442.92	10554.94	2442.05
10557.62	2440.06	10567.63	2438.85	10577.72	2439.86	10592.88	2442.01	10636.13	2444.21
10659.05	2447.88	10672.4	2447.27						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9861.79	.064	10554.94	.041	10592.88	.064

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
10554.94	10592.88	171.06	188.86	170.79	.1	.3

Left Levee Station=10103.46 Elevation= 2444

CROSS SECTION OUTPUT Profile #100-yr 6-hr

E.G. Elev (ft)	2443.50	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.50	Wt. n-Val.	0.064	0.041	0.064
W.S. Elev (ft)	2443.01	Reach Len. (ft)	171.06	188.86	170.79
Crit W.S. (ft)	2443.01	Flow Area (sq ft)	164.68	109.05	9.78

```
  E.G. Slope (ft/ft)       0.008292    Area (sq ft)                164.68
109.05        9.78
  Q Total (cfs)              984.00    Flow (cfs)                  255.11
715.90       12.99
  Top Width (ft)             318.86    Top Width (ft)              261.31
37.94       19.61
  Vel Total (ft/s)             3.47    Avg. Vel. (ft/s)              1.55
6.56        1.33
  Max Chl Dpth (ft)            4.16    Hydr. Depth (ft)              0.63
2.87        0.50
  Conv. Total (cfs)        10806.0     Conv. (cfs)                 2801.5
7861.8       142.6
  Length Wtd. (ft)           181.83    Wetted Per. (ft)            262.61
38.87       19.63
  Min Ch El (ft)           2438.85     Shear (lb/sq ft)              0.32
1.45        0.26
  Alpha                        2.66    Stream Power (lb/ft s)        0.50
9.53        0.34
  Frctn Loss (ft)              2.64    Cum Volume (acre-ft)          3.29
6.72       14.73
  C & E Loss (ft)              0.02    Cum SA (acres)                4.45
3.88       11.93


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: Divided flow computed for this cross-section.
Warning: The conveyance ratio (upstream conveyance divided by downstream
conveyance) is less than
         0.7 or greater than 1.4.  This may indicate the need for
additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the
current and previous cross section.
         This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water
surface was set equal to critical
         depth, the calculated water surface came back below critical
depth.  This indicates that there is
         not a valid subcritical answer.  The program defaulted to
critical depth.
Note:    Multiple critical depths were found at this location.  The
critical depth with the lowest, valid, water
         surface was used.

CROSS SECTION OUTPUT  Profile #Method 1

  E.G. Elev (ft)           2443.50     Element                     Left OB
Channel   Right OB
  Vel Head (ft)                0.50    Wt. n-Val.                   0.064
0.041       0.064
  W.S. Elev (ft)           2443.01     Reach Len. (ft)             171.06
188.86      170.79
  Crit W.S. (ft)           2443.01     Flow Area (sq ft)           164.68
109.05        9.78
  E.G. Slope (ft/ft)       0.008292    Area (sq ft)                164.68
109.05        9.78
  Q Total (cfs)              984.00    Flow (cfs)                  255.11
715.90       12.99
  Top Width (ft)             318.86    Top Width (ft)              261.31
```

37.94 19.61			
Vel Total (ft/s)	3.47	Avg. Vel. (ft/s)	1.55
6.56 1.33			
Max Chl Dpth (ft)	4.16	Hydr. Depth (ft)	0.63
2.87 0.50			
Conv. Total (cfs)	10806.0	Conv. (cfs)	2801.5
7861.8 142.6			
Length Wtd. (ft)	181.83	Wetted Per. (ft)	262.61
38.87 19.63			
Min Ch El (ft)	2438.85	Shear (lb/sq ft)	0.32
1.45 0.26			
Alpha	2.66	Stream Power (lb/ft s)	0.50
9.53 0.34			
Frctn Loss (ft)	2.64	Cum Volume (acre-ft)	3.29
6.72 14.73			
C & E Loss (ft)	0.02	Cum SA (acres)	4.45
3.88 11.93			

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: Divided flow computed for this cross-section.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than
0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
depth, the calculated water surface came back below critical depth. This indicates that there is
not a valid subcritical answer. The program defaulted to critical depth.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water
surface was used.

CROSS SECTION

RIVER: Fan 6C
REACH: Fan6C-2 RS: 0.59

INPUT
Description: Cross Section 0.59 will have adjacent Zone A to represent flow
that may be exiting model and heading west to adjacent wash.The
flow potentially exiting the model and traveling west is defined
as the amount of flow overtopping high point at levee in the cross
section.

Topography indicates wash and surrounding undeveloped
desert.
Aerial shows wash, dirt roads, and undeveloped

```
              desert.
T5NR4E Section 12
Q100 = 1,584 cfs
Station Elevation Data    num=      25
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta
Elev
 9796.74 2447.81 9858.28 2444.61  9937.3 2440.57 9981.67 2439.41 9994.36
2436.81
   10000  2436.610007.68 2436.8310018.42 2439.4610037.81 2441.1310126.29
2440.49
10188.91 2439.2110356.63 2441.01 10379.9 2439.2910391.02 2437.88 10394.4
2436.79
10397.08 2436.4210398.62 2436.6710399.55 2437.36   10419 2438.92 10452.5
2439.14
10464.62 2436.4610468.99 2435.6110482.62 2437.88 10524.5 2440.1110584.71
2441.24

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
 9796.74    .063 10379.9    .039   10419    .063

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.
Expan.
       10379.9   10419           507.35  516.57  505.09             .1
.3
Left Levee      Station=10356.63      Elevation=    2442

CROSS SECTION OUTPUT  Profile #100-yr 6-hr

  E.G. Elev (ft)           2440.17    Element                    Left OB
Channel   Right OB
  Vel Head (ft)               0.73    Wt. n-Val.                  0.063
0.039      0.063
  W.S. Elev (ft)           2439.44    Reach Len. (ft)            507.35
516.57     505.09
  Crit W.S. (ft)           2439.08    Flow Area (sq ft)            0.15
56.25     108.14
  E.G. Slope (ft/ft)      0.031848    Area (sq ft)                 0.15
56.25     108.14
  Q Total (cfs)             984.00    Flow (cfs)                   0.12
482.45     501.44
  Top Width (ft)            134.07    Top Width (ft)               2.04
39.10      92.93
  Vel Total (ft/s)            5.98    Avg. Vel. (ft/s)             0.75
8.58       4.64
  Max Chl Dpth (ft)           3.83    Hydr. Depth (ft)             0.08
1.44       1.16
  Conv. Total (cfs)         5513.9    Conv. (cfs)                   0.6
2703.4     2809.8
  Length Wtd. (ft)          512.39    Wetted Per. (ft)             2.04
39.70      93.53
  Min Ch El (ft)           2436.42    Shear (lb/sq ft)             0.15
2.82       2.30
  Alpha                       1.32    Stream Power (lb/ft s)       0.11
24.16      10.66
  Frctn Loss (ft)             9.35    Cum Volume (acre-ft)         2.96
6.36      14.50
  C & E Loss (ft)             0.03    Cum SA (acres)               3.94
3.71      11.71
```

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 energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water
surface was used.

CROSS SECTION OUTPUT Profile #Method 1

E.G. Elev (ft)	2440.17	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.73	Wt. n-Val.	0.063	0.039	0.063
W.S. Elev (ft)	2439.44	Reach Len. (ft)	507.35	516.57	505.09
Crit W.S. (ft)	2439.08	Flow Area (sq ft)	0.15	56.25	108.14
E.G. Slope (ft/ft)	0.031848	Area (sq ft)	0.15	56.25	108.14
Q Total (cfs)	984.00	Flow (cfs)	0.12	482.45	501.44
Top Width (ft)	134.07	Top Width (ft)	2.04	39.10	92.93
Vel Total (ft/s)	5.98	Avg. Vel. (ft/s)	0.75	8.58	4.64
Max Chl Dpth (ft)	3.83	Hydr. Depth (ft)	0.08	1.44	1.16
Conv. Total (cfs)	5513.9	Conv. (cfs)	0.6	2703.4	2809.8
Length Wtd. (ft)	512.39	Wetted Per. (ft)	2.04	39.70	93.53
Min Ch El (ft)	2436.42	Shear (lb/sq ft)	0.15	2.82	2.30
Alpha	1.32	Stream Power (lb/ft s)	0.11	24.16	10.66
Frctn Loss (ft)	9.35	Cum Volume (acre-ft)	2.96	6.36	14.50
C & E Loss (ft)	0.03	Cum SA (acres)	3.94	3.71	11.71

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 energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water
surface was used.

CROSS SECTION

RIVER: Fan 6C
REACH: Fan6C-2 RS: 0.5

```
INPUT
Description: Cross Section 0.50 will have adjacent Zone A to represent
flow
             that may be exiting model and heading west to adjacent
wash.The
             flow potentially exiting the model and traveling west is
defined
             as the amount of flow overtopping high point at levee in
the cross
             section.

Topography indicates wash and surrounding undeveloped
             desert.
Aerial shows wash, dirt roads, and undeveloped
             desert.
T5NR4E Section 12
Q100 = 1,584 cfs
Station Elevation Data    num=      24
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta
Elev
 9886.37 2429.68 9921.43 2432.01 9932.56 2429.08 9937.91 2428.92  9949.6
2429.09
  9975.8 2430.34  9991.9 2429.27   10000 2428.7210017.27  2428.210021.39
2430.72
10035.38 2430.8910118.53 2429.9810143.57 2430.54   10223 2431.1110248.04
2430.93
10307.68 2430.5210402.95 2429.9910419.91 2428.31 10426.9 2425.76 10428.9
2425.67
10434.18 2426.3110446.77 2427.2410484.23 2429.1810539.03 2432.48

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
 9886.37    .06310419.91    .03910446.77    .063

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.
Expan.
      10419.9110446.77           304.82  312.36  348.23             .1
.3
Left Levee      Station=   10223      Elevation=    2432

CROSS SECTION OUTPUT  Profile #100-yr 6-hr

  E.G. Elev (ft)           2430.80    Element                    Left OB
Channel   Right OB
  Vel Head (ft)               0.98    Wt. n-Val.                  0.063
0.039      0.063
  W.S. Elev (ft)           2429.81    Reach Len. (ft)           304.82
312.36     348.23
  Crit W.S. (ft)           2429.81    Flow Area (sq ft)          11.40
86.04      63.38
  E.G. Slope (ft/ft)      0.011816    Area (sq ft)               11.40
86.04      63.38
  Q Total (cfs)             984.00    Flow (cfs)                 24.08
764.47     195.45
  Top Width (ft)             90.01    Top Width (ft)             15.17
26.86      47.97
  Vel Total (ft/s)            6.12    Avg. Vel. (ft/s)            2.11
8.88       3.08
  Max Chl Dpth (ft)           4.14    Hydr. Depth (ft)            0.75
3.20       1.32
```

Conv. Total (cfs)	9052.5	Conv. (cfs)	221.6
7032.8 1798.1			
Length Wtd. (ft)	316.38	Wetted Per. (ft)	15.25
27.38 48.04			
Min Ch El (ft)	2425.67	Shear (lb/sq ft)	0.55
2.32 0.97			
Alpha	1.69	Stream Power (lb/ft s)	1.17
20.59 3.00			
Frctn Loss (ft)	3.56	Cum Volume (acre-ft)	2.90
5.52 13.50			
C & E Loss (ft)	0.05	Cum SA (acres)	3.84
3.32 10.89			

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 energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
depth, the 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 OUTPUT Profile #Method 1

E.G. Elev (ft)	2430.80	Element	Left OB
Channel Right OB			
Vel Head (ft)	0.98	Wt. n-Val.	0.063
0.039 0.063			
W.S. Elev (ft)	2429.81	Reach Len. (ft)	304.82
312.36 348.23			
Crit W.S. (ft)	2429.81	Flow Area (sq ft)	11.40
86.04 63.38			
E.G. Slope (ft/ft)	0.011816	Area (sq ft)	11.40
86.04 63.38			
Q Total (cfs)	984.00	Flow (cfs)	24.08
764.47 195.45			
Top Width (ft)	90.01	Top Width (ft)	15.17
26.86 47.97			
Vel Total (ft/s)	6.12	Avg. Vel. (ft/s)	2.11
8.88 3.08			
Max Chl Dpth (ft)	4.14	Hydr. Depth (ft)	0.75
3.20 1.32			
Conv. Total (cfs)	9052.5	Conv. (cfs)	221.6
7032.8 1798.1			
Length Wtd. (ft)	316.38	Wetted Per. (ft)	15.25
27.38 48.04			
Min Ch El (ft)	2425.67	Shear (lb/sq ft)	0.55
2.32 0.97			
Alpha	1.69	Stream Power (lb/ft s)	1.17
20.59 3.00			
Frctn Loss (ft)	3.56	Cum Volume (acre-ft)	2.90
5.52 13.50			

C & E Loss (ft) 0.05 Cum SA (acres) 3.84
3.32 10.89

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 energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
depth, the 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: Fan 6C
REACH: Fan6C-2 RS: 0.44

INPUT
Description: Cross Section 0.44 will have adjacent Zone A to represent flow
that may be exiting model and heading west to adjacent wash.The
flow potentially exiting the model and traveling west is defined
as the amount of flow overtopping high point at levee in the cross
section.

Topography indicates wash and surrounding undeveloped
desert.
Aerial shows wash, dirt roads, homes, and undeveloped
desert.
T5NR4E Section 12
Q100 = 1,584 cfs
Station Elevation Data num= 37

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9696.16	2427.42	9812.28	2423.49	9951.03	2424.48	9980.06	2424.63	9994.03	2423.35
10005	2423.09	10010.77	2423.04	10014.59	2424.61	10044.74	2425.37	10066.58	2424.37
10069.54	2423.44	10074.28	2423.21	10079.84	2423.65	10085.03	2424.94	10173.44	2426.24
10195.99	2425.63	10200.37	2424.49	10204	2424.24	10208.01	2424.32	10222.38	2425.4
10224.28	2424.13	10240.72	2424.73	10244.77	2426.08	10277.08	2424.62	10281.31	2423.64
10289.04	2423.72	10293.64	2424.86	10307.91	2424.77	10411.86	2425.45	10509.1	2424.43
10609.8	2422	10617.3	2420	10623.34	2420	10626.84	2422	10658.34	2424.4

10702.03 2424.3910787.83 2426

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9696.16	.063	10609.8	.03910626.84		.063

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

10609.810626.84 266 268.38 264.34 .1 .3

Left Levee Station=10553.38 Elevation= 2426

Blocked Obstructions num= 1

Sta L	Sta R	Elev
10491.5810553.38		2426

CROSS SECTION OUTPUT Profile #100-yr 6-hr

E.G. Elev (ft)	2425.15	Element	Left OB	Channel Right OB
Vel Head (ft)	0.82	Wt. n-Val.	0.063	0.039 0.063
W.S. Elev (ft)	2424.33	Reach Len. (ft)	266.00	268.38 264.34
Crit W.S. (ft)	2424.33	Flow Area (sq ft)	93.16	62.81 35.68
E.G. Slope (ft/ft)	0.010717	Area (sq ft)	93.16	62.81 35.68
Q Total (cfs)	984.00	Flow (cfs)	314.11	573.56 96.33
Top Width (ft)	104.07	Top Width (ft)	56.42	17.04 30.61
Vel Total (ft/s)	5.13	Avg. Vel. (ft/s)	3.37	9.13 2.70
Max Chl Dpth (ft)	4.33	Hydr. Depth (ft)	1.65	3.69 1.17
Conv. Total (cfs)	9504.9	Conv. (cfs)	3034.1	5540.3 930.5
Length Wtd. (ft)	267.02	Wetted Per. (ft)	57.41	17.83 30.69
Min Ch El (ft)	2420.00	Shear (lb/sq ft)	1.09	2.36 0.78
Alpha	2.01	Stream Power (lb/ft s)	3.66	21.52 2.10
Frctn Loss (ft)	2.44	Cum Volume (acre-ft)	2.53	4.98 13.11
C & E Loss (ft)	0.14	Cum SA (acres)	3.59	3.16 10.58

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

critical depth.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.

CROSS SECTION OUTPUT Profile #Method 1

E.G. Elev (ft)	2425.15	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.82	Wt. n-Val.	0.063	0.039	0.063
W.S. Elev (ft)	2424.33	Reach Len. (ft)	266.00	268.38	264.34
Crit W.S. (ft)	2424.33	Flow Area (sq ft)	93.16	62.81	35.68
E.G. Slope (ft/ft)	0.010717	Area (sq ft)	93.16	62.81	35.68
Q Total (cfs)	984.00	Flow (cfs)	314.11	573.56	96.33
Top Width (ft)	104.07	Top Width (ft)	56.42	17.04	30.61
Vel Total (ft/s)	5.13	Avg. Vel. (ft/s)	3.37	9.13	2.70
Max Chl Dpth (ft)	4.33	Hydr. Depth (ft)	1.65	3.69	1.17
Conv. Total (cfs)	9504.9	Conv. (cfs)	3034.1	5540.3	930.5
Length Wtd. (ft)	267.02	Wetted Per. (ft)	57.41	17.83	30.69
Min Ch El (ft)	2420.00	Shear (lb/sq ft)	1.09	2.36	0.78
Alpha	2.01	Stream Power (lb/ft s)	3.66	21.52	2.10
Frctn Loss (ft)	2.44	Cum Volume (acre-ft)	2.53	4.98	13.11
C & E Loss (ft)	0.14	Cum SA (acres)	3.59	3.16	10.58

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

CROSS SECTION

RIVER: Fan 6C
REACH: Fan6C-2 RS: 0.39

INPUT
Description: Cross Section 0.39 will have adjacent Zone A to represent flow
that may be exiting model and heading west to adjacent wash.The
flow potentially exiting the model and traveling west is defined
as the amount of flow overtopping high point at levee in the cross
section.

Topography indicates wash and surrounding undeveloped
desert.
Aerial shows wash, dirt roads, and undeveloped
desert.
T5NR4E Section 12
Q100 = 1,584 cfs
Station Elevation Data num= 25

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9757.14	2429.6	9806.07	2426.53	9902.94	2419.75	9916.3	2420.16	9926.54	2416.96
9934.71	2419.62	9984.89	2419.36	9995.55	2417.87	10000	2417.92	10003.36	2417.94
10005.5	2419.36	10025.31	2418.94	10093.52	2420.61	10213.53	2420.27	10293.66	2420.13
10416.34	2419.41	10525.85	2419.19	10532.84	2419.03	10540.2	2416.49	10543.24	2415.97
10546.2	2416.26	10554.72	2419.46	10555.57	2419.79	10626.93	2419.03	10722.4	2424.65

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9757.14	.063	10532.84	.039	10554.72	.063

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
10532.84	10554.72	450.26	453.31	458.5	.1	.3

Left Levee Station=10093.52 Elevation= 2422

CROSS SECTION OUTPUT Profile #100-yr 6-hr

E.G. Elev (ft)	2420.78	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.37	Wt. n-Val.	0.063	0.039	0.063
W.S. Elev (ft)	2420.41	Reach Len. (ft)	450.26	453.31	458.50
Crit W.S. (ft)	2420.41	Flow Area (sq ft)	229.53	66.62	88.21
E.G. Slope (ft/ft)	0.007886	Area (sq ft)	229.53	66.62	88.21
Q Total (cfs)	984.00	Flow (cfs)	350.45	458.64	174.91
Top Width (ft)	486.30	Top Width (ft)	368.76	21.88	95.66
Vel Total (ft/s)	2.56	Avg. Vel. (ft/s)	1.53	6.88	1.98
Max Chl Dpth (ft)	4.44	Hydr. Depth (ft)	0.62		

```
3.04        0.92
  Conv. Total (cfs)         11080.9    Conv. (cfs)                3946.4
5164.8      1969.7
  Length Wtd. (ft)           454.13    Wetted Per. (ft)           368.77
22.95       95.76
  Min Ch El (ft)            2415.97    Shear (lb/sq ft)             0.31
1.43        0.45
  Alpha                        3.60    Stream Power (lb/ft s)       0.47
9.84        0.90
  Frctn Loss (ft)              3.74    Cum Volume (acre-ft)         1.55
4.58       12.73
  C & E Loss (ft)              0.00    Cum SA (acres)               2.29
3.04       10.19


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

CROSS SECTION OUTPUT  Profile #Method 1

  E.G. Elev (ft)            2420.78    Element                    Left OB
Channel   Right OB
  Vel Head (ft)                0.37    Wt. n-Val.                  0.063
0.039       0.063
  W.S. Elev (ft)            2420.41    Reach Len. (ft)            450.26
453.31      458.50
  Crit W.S. (ft)            2420.41    Flow Area (sq ft)          229.53
66.62       88.21
  E.G. Slope (ft/ft)       0.007886    Area (sq ft)               229.53
66.62       88.21
  Q Total (cfs)              984.00    Flow (cfs)                 350.45
458.64      174.91
  Top Width (ft)             486.30    Top Width (ft)             368.76
21.88       95.66
  Vel Total (ft/s)             2.56    Avg. Vel. (ft/s)             1.53
6.88        1.98
  Max Chl Dpth (ft)            4.44    Hydr. Depth (ft)             0.62
3.04        0.92
  Conv. Total (cfs)         11080.9    Conv. (cfs)                3946.4
5164.8      1969.7
  Length Wtd. (ft)           454.13    Wetted Per. (ft)           368.77
22.95       95.76
  Min Ch El (ft)            2415.97    Shear (lb/sq ft)             0.31
```

```
1.43        0.45
  Alpha                          3.60    Stream Power (lb/ft s)      0.47
9.84        0.90
  Frctn Loss (ft)                3.74    Cum Volume (acre-ft)        1.55
4.58       12.73
  C & E Loss (ft)                0.00    Cum SA (acres)              2.29
3.04       10.19


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

CROSS SECTION


RIVER: Fan 6C
REACH: Fan6C-2            RS: 0.30

INPUT
Description: Cross Section will have adjacent Zone A to represent flow
that may
             be exiting model and heading west to adjacent wash.The flow
             potentially exiting the model and traveling west is defined
as the
             amount of flow overtopping high point at levee in the cross
             section..

Topography indicates wash and surrounding
             undeveloped desert.
Aerial shows wash, dirt roads, and
             undeveloped desert.
T5NR4E Section 12
Q100 = 1,584 cfs
Station Elevation Data    num=      28
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta
Elev
 9898.64 2415.33 9932.59 2413.46 9940.66 2411.36 9971.26  2411.3 9989.71
2410.21
   10000  2409.510014.99 2409.2710036.44 2411.6910079.64 2411.7910165.31
2411.87
10175.54 2410.3810179.21 2410.5510184.94 2410.8910189.83 2412.1110233.25
2414.16
10259.44 2413.9810278.39 2413.4510377.02  2412.110380.27 2411.7210383.99
```

2410.14
10400.47 2409.9210409.89 2410.0610411.95 2412.2710460.57 2413.42 10601
2413.33
10622.42 2412.1610654.02 241310800.32 2414.22

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9898.64	.063	9971.26	.03910036.44		.063

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
9971.2610036.44 259.31 264.76 261.88 .1
.3

CROSS SECTION OUTPUT Profile #100-yr 6-hr

E.G. Elev (ft)	2413.02	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.41	Wt. n-Val.	0.063	0.039	0.063
W.S. Elev (ft)	2412.61	Reach Len. (ft)	259.31	264.76	261.88
Crit W.S. (ft)		Flow Area (sq ft)	42.14	156.55	242.44
E.G. Slope (ft/ft)	0.008470	Area (sq ft)	42.14	156.55	242.44
Q Total (cfs)	1584.00	Flow (cfs)	102.42	982.56	499.02
Top Width (ft)	376.12	Top Width (ft)	35.40	65.18	275.54
Vel Total (ft/s)	3.59	Avg. Vel. (ft/s)	2.43	6.28	2.06
Max Chl Dpth (ft)	3.34	Hydr. Depth (ft)	1.19	2.40	0.88
Conv. Total (cfs)	17211.2	Conv. (cfs)	1112.9	10676.1	5422.2
Length Wtd. (ft)	263.37	Wetted Per. (ft)	35.56	65.38	277.16
Min Ch El (ft)	2409.27	Shear (lb/sq ft)	0.63	1.27	0.46
Alpha	2.03	Stream Power (lb/ft s)	1.52	7.95	0.95
Frctn Loss (ft)	4.74	Cum Volume (acre-ft)	0.14	3.42	10.99
C & E Loss (ft)	0.13	Cum SA (acres)	0.20	2.59	8.24

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 OUTPUT Profile #Method 1

E.G. Elev (ft)	2413.02	Element	Left OB	Channel Right OB
Vel Head (ft)	0.41	Wt. n-Val.	0.063	0.039 0.063
W.S. Elev (ft)	2412.61	Reach Len. (ft)	259.31	264.76 261.88
Crit W.S. (ft)		Flow Area (sq ft)	42.14	156.55 242.44
E.G. Slope (ft/ft)	0.008470	Area (sq ft)	42.14	156.55 242.44
Q Total (cfs)	1584.00	Flow (cfs)	102.42	982.56 499.02
Top Width (ft)	376.12	Top Width (ft)	35.40	65.18 275.54
Vel Total (ft/s)	3.59	Avg. Vel. (ft/s)	2.43	6.28 2.06
Max Chl Dpth (ft)	3.34	Hydr. Depth (ft)	1.19	2.40 0.88
Conv. Total (cfs)	17211.2	Conv. (cfs)	1112.9	10676.1 5422.2
Length Wtd. (ft)	263.37	Wetted Per. (ft)	35.56	65.38 277.16
Min Ch El (ft)	2409.27	Shear (lb/sq ft)	0.63	1.27 0.46
Alpha	2.03	Stream Power (lb/ft s)	1.52	7.95 0.95
Frctn Loss (ft)	4.74	Cum Volume (acre-ft)	0.14	3.42 10.99
C & E Loss (ft)	0.13	Cum SA (acres)	0.20	2.59 8.24

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: Fan 6C
REACH: Fan6C-2 RS: 0.25

INPUT
Description: Topography indicates wash and surrounding undeveloped desert.
Aerial shows dirt roads, home pads, wash and undeveloped desert.
T5NR4E Section 12
Q100 = 1,584 cfs
Station Elevation Data num= 29

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev

```
 9919.82 2410.94 9956.83 2409.12 9974.22  2407.1 9974.562406.794 9977.12
2404.49
 9979.34 2404.47   10000 2404.4610002.72 2404.3210005.84  2406.8 10082.9
2407.04
10089.03 2403.5910096.92 2403.99   10100 2404.04 10106.8 2407.0310204.53
2406.49
10258.39 2406.4210275.05 2403.7910280.57 2403.4510289.25 2403.2410293.06
2405.98
10370.71 2406.82 10472.1 2407.9110543.35 2407.6110633.08 2405.0310655.08
2403.96
10664.57 2403.2210686.87 2406.3910755.65 2406.1910804.12 2407.59

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
 9919.82    .063 9974.56    .03910005.84    .063

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.
Expan.
       9974.5610005.84            513.9  512.52  501.36            .1
.3
Right Levee     Station= 10472.1      Elevation=  2408.5

CROSS SECTION OUTPUT  Profile #100-yr 6-hr

  E.G. Elev (ft)           2408.15    Element                    Left OB
Channel   Right OB
  Vel Head (ft)               1.73    Wt. n-Val.
0.039      0.063
  W.S. Elev (ft)           2406.42    Reach Len. (ft)            513.90
512.52     501.36
  Crit W.S. (ft)           2406.42    Flow Area (sq ft)
54.90     121.11
  E.G. Slope (ft/ft)      0.061000    Area (sq ft)
54.90     121.11
  Q Total (cfs)            1584.00    Flow (cfs)
742.83     841.17
  Top Width (ft)            126.59    Top Width (ft)
30.38      96.22
  Vel Total (ft/s)            9.00    Avg. Vel. (ft/s)
13.53       6.95
  Max Chl Dpth (ft)           3.19    Hydr. Depth (ft)
1.81       1.26
  Conv. Total (cfs)         6413.4    Conv. (cfs)
3007.6     3405.8
  Length Wtd. (ft)          504.82    Wetted Per. (ft)
31.85      98.57
  Min Ch El (ft)           2404.32    Shear (lb/sq ft)
6.57       4.68
  Alpha                       1.38    Stream Power (lb/ft s)
88.82      32.50
  Frctn Loss (ft)             4.16    Cum Volume (acre-ft)        0.02
2.78       9.90
  C & E Loss (ft)             0.50    Cum SA (acres)              0.09
2.30       7.12


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: 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 OUTPUT Profile #Method 1

E.G. Elev (ft)	2408.15	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.73	Wt. n-Val.		0.039	0.063
W.S. Elev (ft)	2406.42	Reach Len. (ft)	513.90	512.52	501.36
Crit W.S. (ft)	2406.42	Flow Area (sq ft)		54.90	121.11
E.G. Slope (ft/ft)	0.061000	Area (sq ft)		54.90	121.11
Q Total (cfs)	1584.00	Flow (cfs)		742.83	841.17
Top Width (ft)	126.59	Top Width (ft)		30.38	96.22
Vel Total (ft/s)	9.00	Avg. Vel. (ft/s)		13.53	6.95
Max Chl Dpth (ft)	3.19	Hydr. Depth (ft)		1.81	1.26
Conv. Total (cfs)	6413.4	Conv. (cfs)		3007.6	3405.8
Length Wtd. (ft)	504.82	Wetted Per. (ft)		31.85	98.57
Min Ch El (ft)	2404.32	Shear (lb/sq ft)		6.57	4.68
Alpha	1.38	Stream Power (lb/ft s)		88.82	32.50
Frctn Loss (ft)	4.16	Cum Volume (acre-ft)	0.02	2.78	9.90
C & E Loss (ft)	0.50	Cum SA (acres)	0.09	2.30	7.12

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: 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: Fan 6C
REACH: Fan6C-2              RS: 0.15

INPUT
Description: Topography indicates wash and surrounding undeveloped
             desert.
Aerial shows dirt roads, homes, wash and undeveloped
             desert.
T5NR4E Section 12
Q100 = 1,584 cfs
Station Elevation Data    num=      21
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta
Elev
 9963.18    2398 9967.03    2397 9968.96  2396.5 9970.88    2396 9976.38
2396
 9979.41    2396   10000 2395.3810012.54    239610022.77  2396.5 10026.6
2396
10054.95    239610067.86 2396.26 10106.6 2397.0410163.58    239610207.05
2396
 10248.5 2396.3210275.24    239610300.68    239410344.79    239410547.19
2396
 10624.9    2398

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
 9963.18    .063 9968.96    .03910067.86    .063

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.
Expan.
       9968.9610067.86           486.12  492.37  483.86             .1
.3
Right Levee     Station=10106.91      Elevation= 2397.03

CROSS SECTION OUTPUT  Profile #100-yr 6-hr

  E.G. Elev (ft)           2397.09    Element                    Left OB
Channel   Right OB
  Vel Head (ft)               0.05    Wt. n-Val.                  0.063
0.039      0.063
  W.S. Elev (ft)           2397.04    Reach Len. (ft)            486.12
```

```
492.37     483.86
  Crit W.S. (ft)            2397.04    Flow Area (sq ft)          0.56
107.22     768.60
  E.G. Slope (ft/ft)       0.003093    Area (sq ft)               0.56
107.22     768.60
  Q Total (cfs)             1584.00    Flow (cfs)                 0.30
239.54    1344.16
  Top Width (ft)             620.37    Top Width (ft)             2.07
98.90     519.39
  Vel Total (ft/s)             1.81    Avg. Vel. (ft/s)           0.53
2.23       1.75
  Max Chl Dpth (ft)            3.04    Hydr. Depth (ft)           0.27
1.08       1.48
  Conv. Total (cfs)        28481.1     Conv. (cfs)                 5.4
4307.0    24168.7
  Length Wtd. (ft)           488.09    Wetted Per. (ft)           2.14
99.04     519.51
  Min Ch El (ft)           2395.38     Shear (lb/sq ft)           0.05
0.21       0.29
  Alpha                        1.03    Stream Power (lb/ft s)     0.03
0.47       0.50
  Frctn Loss (ft)              3.10    Cum Volume (acre-ft)       0.01
1.83       4.78
  C & E Loss (ft)              0.05    Cum SA (acres)             0.08
1.54       3.58


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

CROSS SECTION OUTPUT  Profile #Method 1

  E.G. Elev (ft)            2397.09    Element                    Left OB
Channel   Right OB
  Vel Head (ft)                0.05    Wt. n-Val.                  0.063
0.039      0.063
  W.S. Elev (ft)            2397.04    Reach Len. (ft)           486.12
492.37     483.86
  Crit W.S. (ft)            2397.04    Flow Area (sq ft)           0.56
107.22     768.60
  E.G. Slope (ft/ft)       0.003093    Area (sq ft)                0.56
107.22     768.60
  Q Total (cfs)             1584.00    Flow (cfs)                  0.30
239.54    1344.16
  Top Width (ft)             620.37    Top Width (ft)              2.07
```

98.90 519.39

Vel Total (ft/s)	1.81	Avg. Vel. (ft/s)	0.53
2.23 1.75			
Max Chl Dpth (ft)	3.04	Hydr. Depth (ft)	0.27
1.08 1.48			
Conv. Total (cfs)	28481.1	Conv. (cfs)	5.4
4307.0 24168.7			
Length Wtd. (ft)	488.09	Wetted Per. (ft)	2.14
99.04 519.51			
Min Ch El (ft)	2395.38	Shear (lb/sq ft)	0.05
0.21 0.29			
Alpha	1.03	Stream Power (lb/ft s)	0.03
0.47 0.50			
Frctn Loss (ft)	3.10	Cum Volume (acre-ft)	0.01
1.83 4.78			
C & E Loss (ft)	0.05	Cum SA (acres)	0.08
1.54 3.58			

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

CROSS SECTION

RIVER: Fan 6C
REACH: Fan6C-2 RS: 0.06

INPUT
Description: Cross Section 0.06 is located at the downstream project boundary
for Fan 6C. The calculated floodplain will tie into the existing
Zone AO located downstream of Cross Section 0.06.

Topography
indicates wash and surrounding undeveloped desert.
Aerial shows
dirt roads, home pads, wash and undeveloped desert.
T5NR4E
Section 12
Q100 = 3,002 cfs
Station Elevation Data num= 16

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev

```
 9855.13    2390 9880.17    2390 9904.06    2390 9906.07    2390 9945.48
2389
 9984.88    2388   10000 2386.6810042.01    2388 10050.2    238810060.28
2388
10118.87 2389.0210161.38    238810166.73    238810284.08    239010321.87
2392
10351.17    2394

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
 9855.13    .063 9945.48    .03910118.87    .063

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.
Expan.
       9945.4810118.87                0       0       0             .1
.3

CROSS SECTION OUTPUT  Profile #100-yr 6-hr

  E.G. Elev (ft)           2389.83    Element                    Left OB
Channel   Right OB
  Vel Head (ft)               0.52    Wt. n-Val.                  0.063
0.039      0.063
  W.S. Elev (ft)           2389.31    Reach Len. (ft)
  Crit W.S. (ft)           2389.31    Flow Area (sq ft)            1.93
215.83      91.77
  E.G. Slope (ft/ft)      0.019695    Area (sq ft)                 1.93
215.83      91.77
  Q Total (cfs)            1584.00    Flow (cfs)                   1.86
1334.87     247.27
  Top Width (ft)            310.65    Top Width (ft)              12.34
173.39     124.91
  Vel Total (ft/s)            5.12    Avg. Vel. (ft/s)             0.96
6.18       2.69
  Max Chl Dpth (ft)           2.63    Hydr. Depth (ft)             0.16
1.24       0.73
  Conv. Total (cfs)        11286.9    Conv. (cfs)                  13.2
9511.7     1762.0
  Length Wtd. (ft)                    Wetted Per. (ft)            12.35
173.49     124.94
  Min Ch El (ft)           2386.68    Shear (lb/sq ft)             0.19
1.53       0.90
  Alpha                       1.27    Stream Power (lb/ft s)       0.19
9.46       2.43
  Frctn Loss (ft)                     Cum Volume (acre-ft)
  C & E Loss (ft)                     Cum SA (acres)


CROSS SECTION OUTPUT  Profile #Method 1

  E.G. Elev (ft)           2389.83    Element                    Left OB
Channel   Right OB
  Vel Head (ft)               0.52    Wt. n-Val.                  0.063
0.039      0.063
  W.S. Elev (ft)           2389.31    Reach Len. (ft)
  Crit W.S. (ft)           2389.31    Flow Area (sq ft)            1.93
215.83      91.77
  E.G. Slope (ft/ft)      0.019695    Area (sq ft)                 1.93
215.83      91.77
  Q Total (cfs)            1584.00    Flow (cfs)                   1.86
1334.87     247.27
```

Top Width (ft)	310.65	Top Width (ft)	12.34
173.39 124.91			
Vel Total (ft/s)	5.12	Avg. Vel. (ft/s)	0.96
6.18 2.69			
Max Chl Dpth (ft)	2.63	Hydr. Depth (ft)	0.16
1.24 0.73			
Conv. Total (cfs)	11286.9	Conv. (cfs)	13.2
9511.7 1762.0			
Length Wtd. (ft)		Wetted Per. (ft)	12.35
173.49 124.94			
Min Ch El (ft)	2386.68	Shear (lb/sq ft)	0.19
1.53 0.90			
Alpha	1.27	Stream Power (lb/ft s)	0.19
9.46 2.43			
Frctn Loss (ft)		Cum Volume (acre-ft)	
C & E Loss (ft)		Cum SA (acres)	

SUMMARY OF MANNING'S N VALUES

River:Fan 6C

Reach	River Sta.	n1	n2	n3	n4	n5
Fan6C-2	2.69	.05	.035	.05		
Fan6C-2	2.63	.05	.035	.05		
Fan6C-2	2.58	.05	.035	.05		
Fan6C-2	2.56	Culvert				
Fan6C-2	2.55	.05	.035	.05		
Fan6C-2	2.51	.05	.015	.05	.035	.05
Fan6C-2	2.43	.05	.015	.05	.035	.05
Fan6C-2	2.4	.05	.035	.05		
Fan6C-2	2.39	.063	.035	.063		
Fan6C-2	2.31	.05	.035	.05		
Fan6C-2	2.30	.05	.035	.05		
Fan6C-2	2.28	Culvert				
Fan6C-2	2.26	.05	.015	.05		
Fan6C-2	2.23	.05	.015	.05		
Fan6C-2	2.22	Culvert				
Fan6C-2	2.20	.05	.035	.05		
Fan6C-2	2.17	.05	.035	.05		
Fan6C-2	2.13	.05	.035	.05		
Fan6C-2	2.03	.05	.035	.05		
Fan6C-2	1.99	.05	.035	.05		
Fan6C-2	1.93	.05	.035	.05		
Fan6C-2	1.88	.05	.035	.05		
Fan6C-2	1.875	Culvert				
Fan6C-2	1.87	.05	.035	.05		
Fan6C-2	1.83	.05	.035	.05		
Fan6C-2	1.79	.058	.038	.058		
Fan6C-2	1.73	.058	.038	.058		
Fan6C-2	1.64	.058	.038	.058		
Fan6C-2	1.55	.058	.038	.058		
Fan6C-2	1.49	.058	.038	.058		
Fan6C-2	1.44	.058	.038	.058		
Fan6C-2	1.39	.058	.038	.058		

Fan6C-2	1.33	.063	.038	.063
Fan6C-2	1.26	.058	.038	.058
Fan6C-2	1.23	.058	.038	.058
Fan6C-2	1.16	.058	.038	.058
Fan6C-2	1.07	.058	.038	.058
Fan6C-2	1.02	.063	.038	.063
Fan6C-2	0.94	.058	.038	.058
Fan6C-2	0.91	.058	.038	.058
Fan6C-2	0.82	.058	.038	.058
Fan6C-2	0.78	.058	.038	.058
Fan6C-2	0.775	Culvert		
Fan6C-2	0.77	.058	.038	.058
Fan6C-2	0.73	.064	.041	.064
Fan6C-2	0.63	.064	.041	.064
Fan6C-2	0.59	.063	.039	.063
Fan6C-2	0.5	.063	.039	.063
Fan6C-2	0.44	.063	.039	.063
Fan6C-2	0.39	.063	.039	.063
Fan6C-2	0.30	.063	.039	.063
Fan6C-2	0.25	.063	.039	.063
Fan6C-2	0.15	.063	.039	.063
Fan6C-2	0.06	.063	.039	.063

SUMMARY OF REACH LENGTHS

River: Fan 6C

Reach	River Sta.	Left	Channel	Right
Fan6C-2	2.69	306.62	300.14	301.4
Fan6C-2	2.63	290.56	289.61	293.24
Fan6C-2	2.58	125.14	134.02	126.77
Fan6C-2	2.56	Culvert		
Fan6C-2	2.55	223.15	215.96	228.19
Fan6C-2	2.51	442.24	443.47	445.28
Fan6C-2	2.43	143.02	127.09	132.71
Fan6C-2	2.4	98.25	94.63	95.55
Fan6C-2	2.39	388.83	379.26	383.77
Fan6C-2	2.31	107.1	102.16	105.46
Fan6C-2	2.30	200.7	200.75	200.75
Fan6C-2	2.28	Culvert		
Fan6C-2	2.26	157.98	155.06	160
Fan6C-2	2.23	159.45	152.12	153.56
Fan6C-2	2.22	Culvert		
Fan6C-2	2.20	183.56	151.04	130.96
Fan6C-2	2.17	222.23	217.67	215.82
Fan6C-2	2.13	511.67	508.61	504.97
Fan6C-2	2.03	216.87	220.15	223.42
Fan6C-2	1.99	309.21	308.64	298.27
Fan6C-2	1.93	275.13	270.57	276.22
Fan6C-2	1.88	86	86.31	86.52
Fan6C-2	1.875	Culvert		
Fan6C-2	1.87	209	208.61	210.57
Fan6C-2	1.83	208.69	211.59	214.56
Fan6C-2	1.79	292.33	286.41	284.13
Fan6C-2	1.73	493.35	501.1	502.48
Fan6C-2	1.64	440.46	440.77	436.17
Fan6C-2	1.55	318.03	321.74	335.63

Fan6C-2	1.49	276.51	275.98	275.11
Fan6C-2	1.44	262.83	262.24	261.68
Fan6C-2	1.39	314.47	311.34	309.71
Fan6C-2	1.33	370.36	371.12	368.51
Fan6C-2	1.26	137.11	143.64	142.27
Fan6C-2	1.23	372.4	407.77	417.22
Fan6C-2	1.16	460.49	467.04	470.81
Fan6C-2	1.07	241.74	252.51	257.68
Fan6C-2	1.02	382.1	399.37	372.94
Fan6C-2	0.94	203.82	207.27	203.02
Fan6C-2	0.91	477.13	468.04	465.99
Fan6C-2	0.82	166.98	168.75	189.71
Fan6C-2	0.78	71.57	71.2	69.94
Fan6C-2	0.775	Culvert		
Fan6C-2	0.77	762.68	193.78	758.4
Fan6C-2	0.73	400	553.32	400
Fan6C-2	0.63	171.06	188.86	170.79
Fan6C-2	0.59	507.35	516.57	505.09
Fan6C-2	0.5	304.82	312.36	348.23
Fan6C-2	0.44	266	268.38	264.34
Fan6C-2	0.39	450.26	453.31	458.5
Fan6C-2	0.30	259.31	264.76	261.88
Fan6C-2	0.25	513.9	512.52	501.36
Fan6C-2	0.15	486.12	492.37	483.86
Fan6C-2	0.06	0	0	0

SUMMARY OF CONTRACTION AND EXPANSION COEFFICIENTS
River: Fan 6C

Reach	River Sta.	Contr.	Expan.
Fan6C-2	2.69	.1	.3
Fan6C-2	2.63	.3	.5
Fan6C-2	2.58	.3	.5
Fan6C-2	2.56	Culvert	
Fan6C-2	2.55	.3	.5
Fan6C-2	2.51	.1	.3
Fan6C-2	2.43	.1	.3
Fan6C-2	2.4	.1	.3
Fan6C-2	2.39	.1	.3
Fan6C-2	2.31	.3	.5
Fan6C-2	2.30	.3	.5
Fan6C-2	2.28	Culvert	
Fan6C-2	2.26	.3	.5
Fan6C-2	2.23	.3	.5
Fan6C-2	2.22	Culvert	
Fan6C-2	2.20	.3	.5
Fan6C-2	2.17	.1	.3
Fan6C-2	2.13	.1	.3
Fan6C-2	2.03	.1	.3
Fan6C-2	1.99	.1	.3
Fan6C-2	1.93	.3	.5
Fan6C-2	1.88	.3	.5
Fan6C-2	1.875	Culvert	
Fan6C-2	1.87	.3	.5
Fan6C-2	1.83	.1	.3
Fan6C-2	1.79	.1	.3

Fan6C-2	1.73	.1	.3
Fan6C-2	1.64	.1	.3
Fan6C-2	1.55	.1	.3
Fan6C-2	1.49	.1	.3
Fan6C-2	1.44	.1	.3
Fan6C-2	1.39	.1	.3
Fan6C-2	1.33	.1	.3
Fan6C-2	1.26	.1	.3
Fan6C-2	1.23	.1	.3
Fan6C-2	1.16	.1	.3
Fan6C-2	1.07	.1	.3
Fan6C-2	1.02	.1	.3
Fan6C-2	0.94	.1	.3
Fan6C-2	0.91	.1	.3
Fan6C-2	0.82	.3	.5
Fan6C-2	0.78	.3	.5
Fan6C-2	0.775	Culvert	
Fan6C-2	0.77	.3	.5
Fan6C-2	0.73	.1	.3
Fan6C-2	0.63	.1	.3
Fan6C-2	0.59	.1	.3
Fan6C-2	0.5	.1	.3
Fan6C-2	0.44	.1	.3
Fan6C-2	0.39	.1	.3
Fan6C-2	0.30	.1	.3
Fan6C-2	0.25	.1	.3
Fan6C-2	0.15	.1	.3
Fan6C-2	0.06	.1	.3

Profile Output Table - Standard Table 1

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)		(ft)							
(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)						
Fan6C-2	2.69	100-yr 6-hr	1261.00	2644.39	2646.97	2646.97	2647.95	0.014047	7.96	158.72	82.39	0.99
Fan6C-2	2.69	Method 1	1261.00	2644.39	2646.97	2646.97	2647.95	0.014047	7.96	158.72	82.39	0.99
Fan6C-2	2.63	100-yr 6-hr	1261.00	2639.10	2641.68	2641.68	2642.55	0.013647	7.49	172.17	106.08	0.97
Fan6C-2	2.63	Method 1	1261.00	2639.10	2641.68	2641.68	2642.55	0.013647	7.49	172.17	106.08	0.97
Fan6C-2	2.58	100-yr 6-hr	1261.00	2633.11	2639.93	2636.45	2640.31	0.001374	4.96	254.39	304.38	0.34
Fan6C-2	2.58	Method 1	1261.00	2633.11	2639.93	2636.45	2640.31	0.001374	4.96	254.39	304.38	0.34
Fan6C-2	2.56		Culvert									

```
  Fan6C-2        2.55            100-yr 6-hr        1261.00    2628.03
2631.34    2631.34    2632.62     0.013259         9.10     138.58
53.50          1.00
  Fan6C-2        2.55            Method 1           1261.00    2628.03
2631.34    2631.34    2632.62     0.013259         9.10     138.58
53.50          1.00

  Fan6C-2        2.51            100-yr 6-hr        1261.00    2624.42
2629.35    2629.35    2629.40     0.000083         0.95     759.37
339.43         0.08
  Fan6C-2        2.51            Method 1           1261.00    2624.42
2629.35    2629.35    2629.40     0.000083         0.95     759.37
339.43         0.08

  Fan6C-2        2.43            100-yr 6-hr        1261.00    2617.24
2621.07    2619.34    2621.22     0.000425         1.71     438.20
186.26         0.17
  Fan6C-2        2.43            Method 1           1261.00    2617.24
2621.07    2619.34    2621.22     0.000425         1.71     438.20
186.26         0.17

  Fan6C-2        2.4             100-yr 6-hr        1261.00    2615.31
2620.01    2619.43    2620.99     0.006204         8.06     171.93
65.22          0.73
  Fan6C-2        2.4             Method 1           1261.00    2615.31
2620.01    2619.43    2620.99     0.006204         8.06     171.93
65.22          0.73

  Fan6C-2        2.39            100-yr 6-hr        1261.00    2613.93
2618.52    2618.52    2620.18     0.010124        10.60     140.72
59.89          0.94
  Fan6C-2        2.39            Method 1           1261.00    2613.93
2618.52    2618.52    2620.18     0.010124        10.60     140.72
59.89          0.94

  Fan6C-2        2.31            100-yr 6-hr        1346.00    2607.03
2611.39    2611.39    2612.55     0.008572         9.30     190.77
94.03          0.85
  Fan6C-2        2.31            Method 1           1346.00    2607.03
2611.39    2611.39    2612.55     0.008572         9.30     190.77
94.03          0.85

  Fan6C-2        2.30            100-yr 6-hr        1346.00    2603.77
2607.25    2607.25    2608.80     0.012280        10.04     135.76
46.45          0.99
  Fan6C-2        2.30            Method 1           1346.00    2603.77
2607.25    2607.25    2608.80     0.012280        10.04     135.76
46.45          0.99

  Fan6C-2        2.28                               Culvert

  Fan6C-2        2.26            100-yr 6-hr        1346.00    2601.77
2605.58    2605.58    2607.42     0.002378        10.88     124.33
34.02          0.99
  Fan6C-2        2.26            Method 1           1346.00    2601.77
2605.58    2605.58    2607.42     0.002378        10.88     124.33
34.02          0.99

  Fan6C-2        2.23            100-yr 6-hr        1346.00    2598.59
2602.36    2602.36    2604.23     0.002506        10.98     122.73
33.19          1.00
```

```
  Fan6C-2        2.23          Method 1          1346.00    2598.59
2602.36    2602.36    2604.23    0.002506       10.98     122.73
33.19          1.00

  Fan6C-2        2.22                            Culvert

  Fan6C-2        2.20          100-yr 6-hr       1346.00    2596.61
2599.32    2599.32    2600.58    0.013448       9.01      149.39
58.48          0.99
  Fan6C-2        2.20          Method 1          1346.00    2596.61
2599.32    2599.32    2600.58    0.013448       9.01      149.39
58.48          0.99

  Fan6C-2        2.17          100-yr 6-hr       1346.00    2591.35
2596.87    2596.52    2597.75    0.007181       7.97      215.99
123.49         0.76
  Fan6C-2        2.17          Method 1          1346.00    2591.35
2596.87    2596.52    2597.75    0.007181       7.97      215.99
123.49         0.76

  Fan6C-2        2.13          100-yr 6-hr       1346.00    2588.68
2593.94    2593.94    2595.77    0.010724       11.02     133.03
41.31          0.94
  Fan6C-2        2.13          Method 1          1346.00    2588.68
2593.94    2593.94    2595.77    0.010724       11.02     133.03
41.31          0.94

  Fan6C-2        2.03          100-yr 6-hr       1346.00    2581.14
2582.99    2582.99    2583.70    0.020269       7.56      206.65
164.78         1.12
  Fan6C-2        2.03          Method 1          1346.00    2581.14
2582.99    2582.99    2583.70    0.020269       7.56      206.65
164.78         1.12

  Fan6C-2        1.99          100-yr 6-hr       1346.00    2576.93
2579.13    2579.13    2579.88    0.014105       7.47      218.02
162.03         0.98
  Fan6C-2        1.99          Method 1          1346.00    2576.93
2579.13    2579.13    2579.88    0.014105       7.47      218.02
162.03         0.98

  Fan6C-2        1.93          100-yr 6-hr       1346.00    2569.69
2572.65    2572.65    2573.66    0.011912       8.44      187.07
107.31         0.94
  Fan6C-2        1.93          Method 1          1346.00    2569.69
2572.65    2572.65    2573.66    0.011912       8.44      187.07
107.31         0.94

  Fan6C-2        1.88          100-yr 6-hr       1346.00    2563.34
2569.74    2566.96    2570.26    0.002089       5.79      233.10
261.10         0.41
  Fan6C-2        1.88          Method 1          1346.00    2563.34
2569.74    2566.96    2570.26    0.002089       5.79      233.10
261.10         0.41

  Fan6C-2        1.875                           Culvert

  Fan6C-2        1.87          100-yr 6-hr       1346.00    2562.51
2566.04    2566.04    2567.59    0.012030       10.03     137.59
202.13         0.96
  Fan6C-2        1.87          Method 1          1346.00    2562.51
```

```
2566.04    2566.04    2567.59    0.012030      10.03     137.59
202.13          0.96

  Fan6C-2       1.83          100-yr 6-hr       1369.00    2558.13
2560.60    2560.60    2561.32    0.014712       7.92     228.18
150.61          1.01
  Fan6C-2       1.83          Method 1          1369.00    2558.13
2560.60    2560.60    2561.32    0.014712       7.92     228.18
150.61          1.01

  Fan6C-2       1.79          100-yr 6-hr       1369.00    2553.34
2555.07    2555.00    2555.42    0.024817       5.60     316.18
390.92          1.06
  Fan6C-2       1.79          Method 1          1369.00    2553.34
2555.07    2555.00    2555.42    0.024817       5.60     316.18
390.92          1.06

  Fan6C-2       1.73          100-yr 6-hr       1369.00    2547.04
2549.62    2549.62    2549.89    0.015375       5.07     360.26
378.17          0.86
  Fan6C-2       1.73          Method 1          1369.00    2547.04
2549.62    2549.62    2549.89    0.015375       5.07     360.26
378.17          0.86

  Fan6C-2       1.64          100-yr 6-hr       1369.00    2537.53
2539.48    2539.48    2540.00    0.023467       6.74     261.58
258.53          1.09
  Fan6C-2       1.64          Method 1          1369.00    2537.53
2539.48    2539.48    2540.00    0.023467       6.74     261.58
258.53          1.09

  Fan6C-2       1.55          100-yr 6-hr       1369.00    2530.00
2531.71               2531.98    0.013952       5.78     352.24
277.92          0.86
  Fan6C-2       1.55          Method 1          1369.00    2530.00
2531.71               2531.98    0.013952       5.78     352.24
277.92          0.86

  Fan6C-2       1.49          100-yr 6-hr       1369.00    2523.15
2526.53    2526.53    2527.38    0.013806       7.47     196.78
148.59          0.91
  Fan6C-2       1.49          Method 1          1369.00    2523.15
2526.53    2526.53    2527.38    0.013806       7.47     196.78
148.59          0.91

  Fan6C-2       1.44          100-yr 6-hr       1369.00    2518.04
2521.47    2521.47    2522.24    0.017200       7.05     197.80
138.96          0.98
  Fan6C-2       1.44          Method 1          1369.00    2518.04
2521.47    2521.47    2522.24    0.017200       7.05     197.80
138.96          0.98

  Fan6C-2       1.39          100-yr 6-hr       1369.00    2513.65
2515.90    2515.75    2516.42    0.015745       6.64     266.88
204.88          0.93
  Fan6C-2       1.39          Method 1          1369.00    2513.65
2515.90    2515.75    2516.42    0.015745       6.64     266.88
204.88          0.93

  Fan6C-2       1.33          100-yr 6-hr       1369.00    2508.25
2510.92    2510.92    2511.47    0.016073       6.55     279.23
```

```
263.65          0.94
  Fan6C-2       1.33          Method 1          1369.00    2508.25
2510.92    2510.92    2511.47    0.016073       6.55     279.23
263.65          0.94

  Fan6C-2       1.26          100-yr 6-hr       1369.00    2502.00
2504.14               2504.46    0.010596       5.76     365.48
316.43          0.78
  Fan6C-2       1.26          Method 1          1369.00    2502.00
2504.14               2504.46    0.010596       5.76     365.48
316.43          0.78

  Fan6C-2       1.23          100-yr 6-hr       1349.00    2500.00
2502.53    2502.53    2503.04    0.009168       6.40     328.30
337.13          0.75
  Fan6C-2       1.23          Method 1          1349.00    2500.00
2502.53    2502.53    2503.04    0.009168       6.40     328.30
337.13          0.75

  Fan6C-2       1.16          100-yr 6-hr       1349.00    2490.20
2493.01    2493.01    2493.75    0.014416       7.23     221.89
165.26          0.92
  Fan6C-2       1.16          Method 1          1349.00    2490.20
2493.01    2493.01    2493.75    0.014416       7.23     221.89
165.26          0.92

  Fan6C-2       1.07          100-yr 6-hr       1349.00    2480.27
2483.81    2483.81    2484.63    0.014463       7.80     216.10
145.27          0.94
  Fan6C-2       1.07          Method 1          1349.00    2480.27
2483.81    2483.81    2484.63    0.014463       7.80     216.10
145.27          0.94

  Fan6C-2       1.02          100-yr 6-hr       1349.00    2476.33
2478.48    2478.13    2478.87    0.019736       5.81     280.23
220.41          0.98
  Fan6C-2       1.02          Method 1          1349.00    2476.33
2478.48    2478.13    2478.87    0.019736       5.81     280.23
220.41          0.98

  Fan6C-2       0.94          100-yr 6-hr       1349.00    2468.00
2471.65    2471.65    2472.86    0.011990       9.05     171.26
82.36          0.91
  Fan6C-2       0.94          Method 1          1349.00    2468.00
2471.65    2471.65    2472.86    0.011990       9.05     171.26
82.36          0.91

  Fan6C-2       0.91          100-yr 6-hr       1349.00    2463.28
2468.10    2468.10    2469.43    0.010008      10.01     180.75
77.34          0.86
  Fan6C-2       0.91          Method 1          1349.00    2463.28
2468.10    2468.10    2469.43    0.010008      10.01     180.75
77.34          0.86

  Fan6C-2       0.82          100-yr 6-hr       1513.00    2456.24
2461.20    2461.20    2462.31    0.009028       9.15     223.45
101.13          0.81
  Fan6C-2       0.82          Method 1          1513.00    2456.24
2461.20    2461.20    2462.31    0.009028       9.15     223.45
101.13          0.81
```

```
  Fan6C-2        0.78           100-yr 6-hr        600.00    2454.42
2460.90                 2460.92    0.000109       1.19     592.74
148.30           0.09
  Fan6C-2        0.78           Method 1           600.00    2454.42
2460.90                 2460.92    0.000109       1.19     592.74
148.30           0.09

  Fan6C-2        0.775                             Culvert

  Fan6C-2        0.77           100-yr 6-hr        600.00    2452.06
2455.09    2454.34    2455.31    0.003984       4.61     192.63
107.94           0.51
  Fan6C-2        0.77           Method 1           600.00    2452.06
2455.09    2454.34    2455.31    0.003984       4.61     192.63
107.94           0.51

  Fan6C-2        0.73           100-yr 6-hr        600.00    2448.81
2451.87    2451.87    2452.80    0.015726       7.86      85.00
57.64           0.91
  Fan6C-2        0.73           Method 1           600.00    2448.81
2451.87    2451.87    2452.80    0.015726       7.86      85.00
57.64           0.91

  Fan6C-2        0.63           100-yr 6-hr        984.00    2438.85
2443.01    2443.01    2443.50    0.008292       6.56     283.51
318.86           0.68
  Fan6C-2        0.63           Method 1           984.00    2438.85
2443.01    2443.01    2443.50    0.008292       6.56     283.51
318.86           0.68

  Fan6C-2        0.59           100-yr 6-hr        984.00    2436.42
2439.44    2439.08    2440.17    0.031848       8.58     164.54
134.07           1.26
  Fan6C-2        0.59           Method 1           984.00    2436.42
2439.44    2439.08    2440.17    0.031848       8.58     164.54
134.07           1.26

  Fan6C-2        0.5            100-yr 6-hr        984.00    2425.67
2429.81    2429.81    2430.80    0.011816       8.88     160.83
90.01           0.87
  Fan6C-2        0.5            Method 1           984.00    2425.67
2429.81    2429.81    2430.80    0.011816       8.88     160.83
90.01           0.87

  Fan6C-2        0.44           100-yr 6-hr        984.00    2420.00
2424.33    2424.33    2425.15    0.010717       9.13     191.65
104.07           0.84
  Fan6C-2        0.44           Method 1           984.00    2420.00
2424.33    2424.33    2425.15    0.010717       9.13     191.65
104.07           0.84

  Fan6C-2        0.39           100-yr 6-hr        984.00    2415.97
2420.41    2420.41    2420.78    0.007886       6.88     384.35
486.30           0.70
  Fan6C-2        0.39           Method 1           984.00    2415.97
2420.41    2420.41    2420.78    0.007886       6.88     384.35
486.30           0.70

  Fan6C-2        0.30           100-yr 6-hr       1584.00    2409.27
2412.61                 2413.02    0.008470       6.28     441.12
376.12           0.71
```

```
  Fan6C-2        0.30          Method 1          1584.00    2409.27
2412.61                 2413.02    0.008470       6.28      441.12
376.12           0.71

  Fan6C-2        0.25          100-yr 6-hr       1584.00    2404.32
2406.42    2406.42    2408.15    0.061000      13.53      176.01
126.59           1.77
  Fan6C-2        0.25          Method 1          1584.00    2404.32
2406.42    2406.42    2408.15    0.061000      13.53      176.01
126.59           1.77

  Fan6C-2        0.15          100-yr 6-hr       1584.00    2395.38
2397.04    2397.04    2397.09    0.003093       2.23      876.38
620.37           0.38
  Fan6C-2        0.15          Method 1          1584.00    2395.38
2397.04    2397.04    2397.09    0.003093       2.23      876.38
620.37           0.38

  Fan6C-2        0.06          100-yr 6-hr       1584.00    2386.68
2389.31    2389.31    2389.83    0.019695       6.18      309.53
310.65           0.98
  Fan6C-2        0.06          Method 1          1584.00    2386.68
2389.31    2389.31    2389.83    0.019695       6.18      309.53
310.65           0.98
```

FAN 6A

HEC-RAS Version 3.1.2 April 2004
U.S. Army Corp of Engineers
Hydrologic Engineering Center
609 Second Street
Davis, California

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

PROJECT DATA
Project Title: North Scottsdale Delineation Study, F6A
Project File : F6A.prj
Run Date and Time: 2/18/2005 9:50:34 AM

Project in English units

Project Description:
Study Name: North Scottsdale Floodplain Delineation Study
Contract No.: FCD 2003 C008

Purpose of Study: Delineation of the inundation limits of the 100-yr, 6-hr storm event for Fan 6A, Fan 6A North, and Fan 6A South.

Model Name: North Scottsdale Delineation Study, F6A

Model Description: This study determined the flood plain and flood way limits of the 100-yr-6-hr storm event for Fan 6A, Fan 6A North and Fan 6A South.
Profile #1, 100-yr 6-hr, models the flood plain.
Profile #2, Method 1, models the flood way.
Culvert information can be found in APPENDIX E.4 of the main report.

Mapping: Scottsdale Mapping: IGA 93-07
FCD Contract No.: FCD-XX-XX
Project Type: Topographic Mapping
Starting Date: 1-14-94
Ending Date: 1-14-97

Flow Profiles: Profile #1, 100-yr, 6-hr
Reach: Fan 6A North
Sections 5.17 to 4.08, Q= 809 cfs
Section 4.02, Q= 1,227 cfs
Sections 3.96 to 3.24, Q= 1,225 cfs
Sections 3.15 to 2.69, Q= 1,228 cfs
Sections 2.60 to 2.51, Q= 1,527 cfs
Sections 2.44 to 0.99, Q= 1,678 cfs
Reach: Fan 6A South
Section 4.13 to 2.61, Q= 1,154 cfs
Section 2.54 to 2.48, Q= 1,450 cfs
Sections 2.03 to 1.03, Q= 1,493 cfs
Reach: Fan 6A
Sections 0.93 to 0.38, Q=2,698 cfs

Profile #2, Method 1
Reach: Fan 6A North
Sections 5.17 to 4.08, Q= 809 cfs
Section 4.02, Q= 1,227 cfs
Sections 3.96 to 3.24, Q= 1,225 cfs
Sections 3.15 to 2.69, Q= 1,228 cfs
Sections 2.60 to 2.51, Q= 1,527 cfs
Sections 2.44 to 0.99, Q= 1,678 cfs

Reach: Fan 6A South
Section 4.13 to 2.61, Q= 1,154 cfs
Section 2.54 to 2.48, Q= 1,450 cfs
Sections 2.03 to 1.03, Q= 1,493 cfs
Reach: Fan 6A
Sections 0.93 to 0.38, Q=2,698 cfs

HEC-RAS Version: Version 3.1.2 April 2004

Consultant: DEI Professional Services, LLC
6225 N. 24th Street, Suite 200
Phoenix, AZ 85016
(602) 954-0038 Phone
(602) 944-8605 Fax

PLAN DATA

Plan Title: Plan 02
Plan File : j:\Projects\03062\Calcs\HEC-RAS Final\F6A.p02

Geometry Title: Base Conditions Geometry2
Geometry File : j:\Projects\03062\Calcs\HEC-RAS Final\F6A.g02

Flow Title : 100-yr, 6-hr
Flow File : j:\Projects\03062\Calcs\HEC-RAS Final\F6A.f01

Plan Summary Information:

Number of:	Cross Sections =	123	Multiple Openings =	0
	Culverts =	7	Inline Structures =	0
	Bridges =	0	Lateral Structures =	0

Computational Information
Water surface calculation tolerance = 0.003
Critical depth calculation tolerance = 0.003
Maximum number of iterations = 20
Maximum difference tolerance = 0.1
Flow tolerance factor = 0.001

Computation Options
Critical depth computed only where necessary
Conveyance Calculation Method: At breaks in n values only
Friction Slope Method: Average Conveyance
Computational Flow Regime: Subcritical Flow

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

River = Fan 6A Reach = Fan 6A-1

RS	Profile	Method	Value1	Value2
0.93	Method 1	1	9928.651	0051.31
0.87	Method 1	1	9974.071	0033.16
0.81	Method 1	1	9972.921	0059.73
0.78	Method 1	1	9981.151	0038.15
0.69	Method 1	1	9987.931	0024.22
0.63	Method 1	1	9986.231	0049.59
0.58	Method 1	1	9982.261	0036.85
0.52	Method 1	1	9938.821	0042.19
0.42	Method 1	1	9976.61	0036.84
0.38	Method 1	1	9968.961	0045.27

River = Fan 6A Reach = Fan 6AN-1

RS	Profile	Method	Value1	Value2
5.17	Method 1	1	9985.771	0010.16
5.07	Method 1	1	9943.021	0034.75

5.00	Method 1	1	9971.9110057.22
4.95	Method 1	1	9930.2510082.21
4.91	Method 1	1	9938.6510067.23
4.84	Method 1	1	9959.6910118.93
4.77	Method 1	1	9976.9910109.88
4.69	Method 1	1	9988.4510040.85
4.59	Method 1	1	9952.4110029.24
4.50	Method 1	1	9937.7610045.21
4.40	Method 1	1	9981.1310040.38
4.31	Method 1	1	9951.7 10068.4
4.21	Method 1	1	9967.410044.36
4.13	Method 1	1	9955.0610019.13
4.08	Method 1	1	9986.0410095.69
4.02	Method 1	1	9925.5410115.76
3.96	Method 1	1	9973.5210104.41
3.92	Method 1	1	9964.23 10200
3.915	Method 1	4	1
3.91	Method 1	1	9981.92 10200
3.81	Method 1	1	9931.0710018.12
3.72	Method 1	1	9973.2210030.57
3.63	Method 1	1	9986.1710110.58
3.57	Method 1	1	9971.47 10052.2
3.53	Method 1	1	9987.310070.88
3.48	Method 1	1	9987.0710062.73
3.43	Method 1	1	9985.5210163.53
3.39	Method 1	1	9988.8810188.58
3.32	Method 1	1	9983.2510030.95
3.24	Method 1	1	9963.8910024.16
3.15	Method 1	1	9984.0110061.53
3.07	Method 1	1	9903.4510034.75
2.98	Method 1	1	9955.2510037.07
2.95	Method 1	1	9990.8410141.88
2.88	Method 1	1	9944.5110030.36
2.79	Method 1	1	9950.4110011.54
2.69	Method 1	1	9972.5210029.62
2.60	Method 1	1	9959.4410063.18
2.55	Method 1	1	9958.3210048.12
2.51	Method 1	1	9991.8810072.33
2.44	Method 1	1	9959.1410032.15
2.39	Method 1	1	9965.8 10017
2.32	Method 1	1	9963.3910023.79
2.28	Method 1	1	9973.1510009.55
2.20	Method 1	1	9979.9510023.15
2.14	Method 1	1	9920.510042.37
2.06	Method 1	1	9966.1110039.51
2.05	Method 1	4	1
2.04	Method 1	1	9934.46 10029.6
1.97	Method 1	1	9964.3510024.86
1.90	Method 1	1	9977.7710052.14
1.83	Method 1	1	9841.53 10024.6
1.78	Method 1	1	9968.1710039.85
1.72	Method 1	1	9975.1210063.88
1.65	Method 1	1	9945.7310056.78
1.62	Method 1	1	9926.7610010.39
1.56	Method 1	1	9954.0410069.49
1.55	Method 1	4	1
1.54	Method 1	1	9847.7610012.71
1.48	Method 1	1	9925.710049.67
1.42	Method 1	1	9989.11 10149
1.32	Method 1	1	9974.610098.44
1.23	Method 1	1	9953.0310078.44
1.20	Method 1	1	9956.4110027.35
1.19	Method 1	4	1
1.18	Method 1	1	9958.31 10050.8
1.12	Method 1	1	9960.610049.93
1.04	Method 1	1	9917.6210029.31
1.03	Method 1	4	1
1.02	Method 1	1	9897.55 10055.5
0.99	Method 1	1	9908.0710029.91

River = Fan 6A Reach = Fan 6AS-1

RS	Profile	Method	Value1	Value2
4.13	Method 1	1	9981.25	10050.71
4.03	Method 1	1	9897.55	10041.37
3.93	Method 1	1	9956.35	10018.96
3.85	Method 1	1	9988.6	10095.4
3.75	Method 1	1	9986.02	10077.37
3.68	Method 1	1	9975.62	10079.96
3.62	Method 1	1	9992.66	10097.36
3.55	Method 1	1	9912.11	10008.17
3.52	Method 1	1	9975.17	10029.03
3.45	Method 1	1	9987.17	10091.11
3.35	Method 1	1	9911.41	10042.48
3.26	Method 1	1	9898.12	10011.39
3.18	Method 1	1	9969.31	10043.87
3.09	Method 1	1	9983.11	10134.96
3.04	Method 1	1	9926.07	10036.5
2.96	Method 1	1	9976.35	10022.2
2.90	Method 1	1	9901.02	10008.54
2.8	Method 1	1	9976.58	10106.65
2.74	Method 1	1	9969.07	10095.03
2.68	Method 1	1	9940.94	10014.98
2.61	Method 1	1	9977.75	10056.55
2.54	Method 1	1	9970.65	10076.53
2.48	Method 1	1	9979.87	10239.51
2.41	Method 1	1	9978.01	10080.66
2.34	Method 1	1	9974.83	10072.95
2.26	Method 1	1	9966.83	10094.1
2.17	Method 1	1	9913.97	10018.97
2.13	Method 1	1	9976.79	10101.04
2.07	Method 1	1	9985.15	10049.32
2.03	Method 1	1	9910.42	10044.03
1.97	Method 1	1	9972.22	10065
1.87	Method 1	1	9905.71	10014.25
1.85	Method 1	1	9935	10026.03
1.78	Method 1	1	9954.08	10020.4
1.77	Method 1	4	1	
1.76	Method 1	1	9971.01	10018.78
1.70	Method 1	1	9974.06	10050.14
1.64	Method 1	1	9973.78	10021.76
1.58	Method 1	1	9918.85	10026.47
1.49	Method 1	1	9982.55	10108.16
1.40	Method 1	1	9908.04	10030.91
1.31	Method 1	1	9968.33	10097.25
1.24	Method 1	1	9980.59	10021.17
1.21	Method 1	1	9949.11	10011.68
1.17	Method 1	1	9979.73	10061.79
1.16	Method 1	4	1	
1.15	Method 1	1	9975.36	10048.77
1.11	Method 1	1	9983.49	10153.04
1.03	Method 1	1	9957.04	10282.15

River = Fan 6A Reach = Fan 6A-1

RS	Profile	Method	Value1	Value2
0.93	Meth 4-1.0ft	4	1	
0.87	Meth 4-1.0ft	4	1	
0.81	Meth 4-1.0ft	4	1	
0.78	Meth 4-1.0ft	4	1	
0.69	Meth 4-1.0ft	4	1	
0.63	Meth 4-1.0ft	4	1	
0.58	Meth 4-1.0ft	4	1	
0.52	Meth 4-1.0ft	4	1	
0.42	Meth 4-1.0ft	4	1	
0.38	Meth 4-1.0ft	4	1	

River = Fan 6A Reach = Fan 6AN-1

RS	Profile	Method	Value1	Value2
5.17	Meth 4-1.0ft	4	1	
5.07	Meth 4-1.0ft	4	1	
5.00	Meth 4-1.0ft	4	1	
4.95	Meth 4-1.0ft	4	1	
4.91	Meth 4-1.0ft	4	1	

4.84	Meth 4-1.0ft	4	1
4.77	Meth 4-1.0ft	4	1
4.69	Meth 4-1.0ft	4	1
4.59	Meth 4-1.0ft	4	1
4.50	Meth 4-1.0ft	4	1
4.40	Meth 4-1.0ft	4	1
4.31	Meth 4-1.0ft	4	1
4.21	Meth 4-1.0ft	4	1
4.13	Meth 4-1.0ft	4	1
4.08	Meth 4-1.0ft	4	1
4.02	Meth 4-1.0ft	4	1
3.96	Meth 4-1.0ft	4	1
3.92	Meth 4-1.0ft	4	1
3.915	Meth 4-1.0ft	4	1
3.91	Meth 4-1.0ft	4	1
3.81	Meth 4-1.0ft	4	1
3.72	Meth 4-1.0ft	4	1
3.63	Meth 4-1.0ft	4	1
3.57	Meth 4-1.0ft	4	1
3.53	Meth 4-1.0ft	4	1
3.48	Meth 4-1.0ft	4	1
3.43	Meth 4-1.0ft	4	1
3.39	Meth 4-1.0ft	4	1
3.32	Meth 4-1.0ft	4	1
3.24	Meth 4-1.0ft	4	1
3.15	Meth 4-1.0ft	4	1
3.07	Meth 4-1.0ft	4	1
2.98	Meth 4-1.0ft	4	1
2.95	Meth 4-1.0ft	4	1
2.88	Meth 4-1.0ft	4	1
2.79	Meth 4-1.0ft	4	1
2.69	Meth 4-1.0ft	4	1
2.60	Meth 4-1.0ft	4	1
2.55	Meth 4-1.0ft	4	1
2.51	Meth 4-1.0ft	4	1
2.44	Meth 4-1.0ft	4	1
2.39	Meth 4-1.0ft	4	1
2.32	Meth 4-1.0ft	4	1
2.28	Meth 4-1.0ft	4	1
2.20	Meth 4-1.0ft	4	1
2.14	Meth 4-1.0ft	4	1
2.06	Meth 4-1.0ft	4	1
2.05	Meth 4-1.0ft	4	1
2.04	Meth 4-1.0ft	4	1
1.97	Meth 4-1.0ft	4	1
1.90	Meth 4-1.0ft	4	1
1.83	Meth 4-1.0ft	4	1
1.78	Meth 4-1.0ft	4	1
1.72	Meth 4-1.0ft	4	1
1.65	Meth 4-1.0ft	4	1
1.62	Meth 4-1.0ft	4	1
1.56	Meth 4-1.0ft	4	1
1.55	Meth 4-1.0ft	4	1
1.54	Meth 4-1.0ft	4	1
1.48	Meth 4-1.0ft	4	1
1.42	Meth 4-1.0ft	4	1
1.32	Meth 4-1.0ft	4	1
1.23	Meth 4-1.0ft	4	1
1.20	Meth 4-1.0ft	4	1
1.19	Meth 4-1.0ft	4	1
1.18	Meth 4-1.0ft	4	1
1.12	Meth 4-1.0ft	4	1
1.04	Meth 4-1.0ft	4	1
1.03	Meth 4-1.0ft	4	1
1.02	Meth 4-1.0ft	4	1
0.99	Meth 4-1.0ft	4	1

River = Fan 6A Reach = Fan 6AS-1

RS	Profile	Method	Value1	Value2
4.13	Meth 4-1.0ft	4	1	
4.03	Meth 4-1.0ft	4	1	

3.93	Meth 4-1.0ft	4	1
3.85	Meth 4-1.0ft	4	1
3.75	Meth 4-1.0ft	4	1
3.68	Meth 4-1.0ft	4	1
3.62	Meth 4-1.0ft	4	1
3.55	Meth 4-1.0ft	4	1
3.52	Meth 4-1.0ft	4	1
3.45	Meth 4-1.0ft	4	1
3.35	Meth 4-1.0ft	4	1
3.26	Meth 4-1.0ft	4	1
3.18	Meth 4-1.0ft	4	1
3.09	Meth 4-1.0ft	4	1
3.04	Meth 4-1.0ft	4	1
2.96	Meth 4-1.0ft	4	1
2.90	Meth 4-1.0ft	4	1
2.8	Meth 4-1.0ft	4	1
2.74	Meth 4-1.0ft	4	1
2.68	Meth 4-1.0ft	4	1
2.61	Meth 4-1.0ft	4	1
2.54	Meth 4-1.0ft	4	1
2.48	Meth 4-1.0ft	4	1
2.41	Meth 4-1.0ft	4	1
2.34	Meth 4-1.0ft	4	1
2.26	Meth 4-1.0ft	4	1
2.17	Meth 4-1.0ft	4	1
2.13	Meth 4-1.0ft	4	1
2.07	Meth 4-1.0ft	4	1
2.03	Meth 4-1.0ft	4	1
1.97	Meth 4-1.0ft	4	1
1.87	Meth 4-1.0ft	4	1
1.85	Meth 4-1.0ft	4	1
1.78	Meth 4-1.0ft	4	1
1.77	Meth 4-1.0ft	4	1
1.76	Meth 4-1.0ft	4	1
1.70	Meth 4-1.0ft	4	1
1.64	Meth 4-1.0ft	4	1
1.58	Meth 4-1.0ft	4	1
1.49	Meth 4-1.0ft	4	1
1.40	Meth 4-1.0ft	4	1
1.31	Meth 4-1.0ft	4	1
1.24	Meth 4-1.0ft	4	1
1.21	Meth 4-1.0ft	4	1
1.17	Meth 4-1.0ft	4	1
1.16	Meth 4-1.0ft	4	1
1.15	Meth 4-1.0ft	4	1
1.11	Meth 4-1.0ft	4	1
1.03	Meth 4-1.0ft	4	1

River = Fan 6A Reach = Fan 6A-1

RS	Profile	Method	Value1	Value2
0.93	Meth 4-0.8ft	4	.8	
0.87	Meth 4-0.8ft	4	.8	
0.81	Meth 4-0.8ft	4	.8	
0.78	Meth 4-0.8ft	4	.8	
0.69	Meth 4-0.8ft	4	.8	
0.63	Meth 4-0.8ft	4	.8	
0.58	Meth 4-0.8ft	4	.8	
0.52	Meth 4-0.8ft	4	.8	
0.42	Meth 4-0.8ft	4	.8	
0.38	Meth 4-0.8ft	4	.8	

River = Fan 6A Reach = Fan 6AN-1

RS	Profile	Method	Value1	Value2
5.17	Meth 4-0.8ft	4	.8	
5.07	Meth 4-0.8ft	4	.8	
5.00	Meth 4-0.8ft	4	.8	
4.95	Meth 4-0.8ft	4	.8	
4.91	Meth 4-0.8ft	4	.8	
4.84	Meth 4-0.8ft	4	.8	
4.77	Meth 4-0.8ft	4	.8	
4.69	Meth 4-0.8ft	4	.8	

4.59	Meth 4-0.8ft	4	.8
4.50	Meth 4-0.8ft	4	.8
4.40	Meth 4-0.8ft	4	.8
4.31	Meth 4-0.8ft	4	.8
4.21	Meth 4-0.8ft	4	.8
4.13	Meth 4-0.8ft	4	.8
4.08	Meth 4-0.8ft	4	.8
4.02	Meth 4-0.8ft	4	.8
3.96	Meth 4-0.8ft	4	.8
3.92	Meth 4-0.8ft	4	.8
3.915	Meth 4-0.8ft	4	.8
3.91	Meth 4-0.8ft	4	.8
3.81	Meth 4-0.8ft	4	.8
3.72	Meth 4-0.8ft	4	.8
3.63	Meth 4-0.8ft	4	.8
3.57	Meth 4-0.8ft	4	.8
3.53	Meth 4-0.8ft	4	.8
3.48	Meth 4-0.8ft	4	.8
3.43	Meth 4-0.8ft	4	.8
3.39	Meth 4-0.8ft	4	.8
3.32	Meth 4-0.8ft	4	.8
3.24	Meth 4-0.8ft	4	.8
3.15	Meth 4-0.8ft	4	.8
3.07	Meth 4-0.8ft	4	.8
2.98	Meth 4-0.8ft	4	.8
2.95	Meth 4-0.8ft	4	.8
2.88	Meth 4-0.8ft	4	.8
2.79	Meth 4-0.8ft	4	.8
2.69	Meth 4-0.8ft	4	.8
2.60	Meth 4-0.8ft	4	.8
2.55	Meth 4-0.8ft	4	.8
2.51	Meth 4-0.8ft	4	.8
2.44	Meth 4-0.8ft	4	.8
2.39	Meth 4-0.8ft	4	.8
2.32	Meth 4-0.8ft	4	.8
2.28	Meth 4-0.8ft	4	.8
2.20	Meth 4-0.8ft	4	.8
2.14	Meth 4-0.8ft	4	.8
2.06	Meth 4-0.8ft	4	.8
2.05	Meth 4-0.8ft	4	.8
2.04	Meth 4-0.8ft	4	.8
1.97	Meth 4-0.8ft	4	.8
1.90	Meth 4-0.8ft	4	.8
1.83	Meth 4-0.8ft	4	.8
1.78	Meth 4-0.8ft	4	.8
1.72	Meth 4-0.8ft	4	.8
1.65	Meth 4-0.8ft	4	.8
1.62	Meth 4-0.8ft	4	.8
1.56	Meth 4-0.8ft	4	.8
1.55	Meth 4-0.8ft	4	.8
1.54	Meth 4-0.8ft	4	.8
1.48	Meth 4-0.8ft	4	.8
1.42	Meth 4-0.8ft	4	.8
1.32	Meth 4-0.8ft	4	.8
1.23	Meth 4-0.8ft	4	.8
1.20	Meth 4-0.8ft	4	.8
1.19	Meth 4-0.8ft	4	.8
1.18	Meth 4-0.8ft	4	.8
1.12	Meth 4-0.8ft	4	.8
1.04	Meth 4-0.8ft	4	.8
1.03	Meth 4-0.8ft	4	.8
1.02	Meth 4-0.8ft	4	.8
0.99	Meth 4-0.8ft	4	.8

River = Fan 6A Reach = Fan 6AS-1

RS	Profile	Method	Value1	Value2
4.13	Meth 4-0.8ft	4	.8	
4.03	Meth 4-0.8ft	4	.8	
3.93	Meth 4-0.8ft	4	.8	
3.85	Meth 4-0.8ft	4	.8	
3.75	Meth 4-0.8ft	4	.8	

3.68	Meth 4-0.8ft	4	.8
3.62	Meth 4-0.8ft	4	.8
3.55	Meth 4-0.8ft	4	.8
3.52	Meth 4-0.8ft	4	.8
3.45	Meth 4-0.8ft	4	.8
3.35	Meth 4-0.8ft	4	.8
3.26	Meth 4-0.8ft	4	.8
3.18	Meth 4-0.8ft	4	.8
3.09	Meth 4-0.8ft	4	.8
3.04	Meth 4-0.8ft	4	.8
2.96	Meth 4-0.8ft	4	.8
2.90	Meth 4-0.8ft	4	.8
2.8	Meth 4-0.8ft	4	.8
2.74	Meth 4-0.8ft	4	.8
2.68	Meth 4-0.8ft	4	.8
2.61	Meth 4-0.8ft	4	.8
2.54	Meth 4-0.8ft	4	.8
2.48	Meth 4-0.8ft	4	.8
2.41	Meth 4-0.8ft	4	.8
2.34	Meth 4-0.8ft	4	.8
2.26	Meth 4-0.8ft	4	.8
2.17	Meth 4-0.8ft	4	.8
2.13	Meth 4-0.8ft	4	.8
2.07	Meth 4-0.8ft	4	.8
2.03	Meth 4-0.8ft	4	.8
1.97	Meth 4-0.8ft	4	.8
1.87	Meth 4-0.8ft	4	.8
1.85	Meth 4-0.8ft	4	.8
1.78	Meth 4-0.8ft	4	.8
1.77	Meth 4-0.8ft	4	.8
1.76	Meth 4-0.8ft	4	.8
1.70	Meth 4-0.8ft	4	.8
1.64	Meth 4-0.8ft	4	.8
1.58	Meth 4-0.8ft	4	.8
1.49	Meth 4-0.8ft	4	.8
1.40	Meth 4-0.8ft	4	.8
1.31	Meth 4-0.8ft	4	.8
1.24	Meth 4-0.8ft	4	.8
1.21	Meth 4-0.8ft	4	.8
1.17	Meth 4-0.8ft	4	.8
1.16	Meth 4-0.8ft	4	.8
1.15	Meth 4-0.8ft	4	.8
1.11	Meth 4-0.8ft	4	.8
1.03	Meth 4-0.8ft	4	.8

FLOW DATA

Flow Title: 100-yr, 6-hr
Flow File : j:\Projects\03062\Calcs\HEC-RAS Final\F6A.f01

Flow Data (cfs)

River	Reach	RS	100-yr 6-hr	Method 1	Meth 4-1.0ft	Meth 4-0.8ft
Fan 6A	Fan 6AN-1	5.17	809	809	809	809
Fan 6A	Fan 6AN-1	4.02	1227	1227	1227	1227
Fan 6A	Fan 6AN-1	3.96	1225	1225	1225	1225
Fan 6A	Fan 6AN-1	3.15	1228	1228	1228	1228
Fan 6A	Fan 6AN-1	2.60	1527	1527	1527	1527
Fan 6A	Fan 6AN-1	2.44	1678	1678	1678	1678
Fan 6A	Fan 6AS-1	4.13	1154	1154	1154	1154

Fan 6A	Fan 6AS-1	2.54	1450	1450	1450
1450					
Fan 6A	Fan 6AS-1	2.48	1442	1442	1442
1442					
Fan 6A	Fan 6AS-1	2.03	1493	1493	1493
1493					
Fan 6A	Fan 6A-1	0.93	2698	2698	2698
2698					

Boundary Conditions

River	Reach	Profile	Upstream	Downstream
Fan 6A	Fan 6A-1	100-yr 6-hr		Critical
Fan 6A	Fan 6A-1	Method 1		Critical
Fan 6A	Fan 6A-1	Meth 4-1.0ft		Critical
Fan 6A	Fan 6A-1	Meth 4-0.8ft		Critical

GEOMETRY DATA

Geometry Title: Base Conditions Geometry2
Geometry File : j:\Projects\03062\Calcs\HEC-RAS Final\F6A.g02

Reach Connection Table

River	Reach	Upstream Boundary	Downstream Boundary
Fan 6A	Fan 6AN-1		CP
Fan 6A	Fan 6AS-1		CP
Fan 6A	Fan 6A-1	CP	

JUNCTION INFORMATION

Name: CP
Description: CP is the concentration point where Fan 6A North and Fan 6A South join.
Energy computation Method

Length across Junction		Tributary			
River	Reach	River	Reach	Length	Angle
Fan 6A	Fan 6AN-1	to Fan 6A	Fan 6A-1	302.27	
Fan 6A	Fan 6AS-1	to Fan 6A	Fan 6A-1	540.91	

CROSS SECTION

RIVER: Fan 6A
REACH: Fan 6AN-1 RS: 5.17

INPUT
Description: Cross Section 5.17 is located on the north boundary of the study for Fan 6A North.

Topography indicates wash and surrounding undeveloped desert.
Aerial shows wash, undeveloped desert, and Boulder Ridge Drive.
T6NR5E Section 28
Q100 = 877 cfs
Station Elevation Data num= 17

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9866.01	3060	9976.67	3058	9985.77	3057.01	9995.07	3056	10000	3055.66
10005.39	3056	10010.16	3057.02	310014.72	3058	10021.5	3060	10024.16	3060
10100.43	3060	10127.65	3062	10149.43	3062	10158.62	3060	10168.23	3058
10289.07	3058	10289.52	3058						

```
Manning's n Values          num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
 9866.01    .056 9985.77    .03910010.16    .056

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9985.7710010.16            528.8  515.09   491.2            .1        .3
Right Levee     Station=10127.65      Elevation=    3062
```

CROSS SECTION OUTPUT Profile #100-yr 6-hr

E.G. Elev (ft)	3060.16	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.77	Wt. n-Val.	0.056	0.039	0.056
W.S. Elev (ft)	3059.38	Reach Len. (ft)	528.80	515.09	491.20
Crit W.S. (ft)	3059.38	Flow Area (sq ft)	70.11	77.16	11.79
E.G. Slope (ft/ft)	0.009525	Area (sq ft)	70.11	77.16	11.79
Q Total (cfs)	809.00	Flow (cfs)	158.74	615.16	35.11
Top Width (ft)	119.34	Top Width (ft)	85.69	24.39	9.25
Vel Total (ft/s)	5.09	Avg. Vel. (ft/s)	2.26	7.97	2.98
Max Chl Dpth (ft)	3.72	Hydr. Depth (ft)	0.82	3.16	1.27
Conv. Total (cfs)	8289.3	Conv. (cfs)	1626.5	6303.1	359.7
Length Wtd. (ft)	515.96	Wetted Per. (ft)	85.76	24.58	9.56
Min Ch El (ft)	3055.66	Shear (lb/sq ft)	0.49	1.87	0.73
Alpha	1.92	Stream Power (lb/ft s)	1.10	14.88	2.18
Frctn Loss (ft)	6.52	Cum Volume (acre-ft)	40.37	76.42	57.01
C & E Loss (ft)	0.05	Cum SA (acres)	31.08	40.95	43.28

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.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water
surface was used.

CROSS SECTION OUTPUT Profile #Method 1

E.G. Elev (ft)	3061.09	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.61	Wt. n-Val.		0.039	
W.S. Elev (ft)	3059.48	Reach Len. (ft)	528.80	515.09	491.20
Crit W.S. (ft)	3059.48	Flow Area (sq ft)		79.47	
E.G. Slope (ft/ft)	0.019047	Area (sq ft)		79.47	
Q Total (cfs)	809.00	Flow (cfs)		809.00	
Top Width (ft)	24.39	Top Width (ft)		24.39	
Vel Total (ft/s)	10.18	Avg. Vel. (ft/s)		10.18	
Max Chl Dpth (ft)	3.82	Hydr. Depth (ft)		3.26	
Conv. Total (cfs)	5861.9	Conv. (cfs)		5861.9	
Length Wtd. (ft)	515.09	Wetted Per. (ft)		29.50	
Min Ch El (ft)	3055.66	Shear (lb/sq ft)		3.20	
Alpha	1.00	Stream Power (lb/ft s)		32.61	
Frctn Loss (ft)	10.25	Cum Volume (acre-ft)	4.92	87.79	12.97
C & E Loss (ft)	0.28	Cum SA (acres)	2.24	41.11	6.54

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 energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
depth, the 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: Fan 6A
REACH: Fan 6AN-1 RS: 5.07

INPUT
Description: Cross Section 5.07 is located on the east boundary of the Mirabel
subdivision.

Topography indicates wash and surrounding
undeveloped desert.
Aerial shows wash, undeveloped desert, and
Boulder Ridge Drive.
T6NR5E Section 28
Q100 = 877 cfs
Station Elevation Data num= 14

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9803.68	3038	9826.62	3039.75	9863.24	3038	9887.46	3038	9919.88	3039.31
9943.02	3038	9993.09	3036	10012.6	3036	10034.75	3038	10052.02	3040
10070.88	3042	10090.08	3042	10108.96	3042	10248.55	3040		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9803.68	.056	9943.02	.039	10034.75	.056

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9943.02	10034.75	364.7	367.05	366	.1	.3

Left Levee Station= 9826.62 Elevation= 3039.75

CROSS SECTION OUTPUT Profile #100-yr 6-hr

			Left OB	Channel	Right OB
E.G. Elev (ft)	3038.79	Element			
Vel Head (ft)	0.61	Wt. n-Val.	0.056	0.039	0.056
W.S. Elev (ft)	3038.18	Reach Len. (ft)	364.70	367.05	366.00
Crit W.S. (ft)	3038.18	Flow Area (sq ft)	5.40	127.79	0.14
E.G. Slope (ft/ft)	0.017535	Area (sq ft)	5.40	127.79	0.14
Q Total (cfs)	809.00	Flow (cfs)	5.44	803.46	0.10
Top Width (ft)	128.93	Top Width (ft)	35.65	91.73	1.56
Vel Total (ft/s)	6.07	Avg. Vel. (ft/s)	1.01	6.29	0.70
Max Chl Dpth (ft)	2.18	Hydr. Depth (ft)	0.15	1.39	0.09
Conv. Total (cfs)	6109.3	Conv. (cfs)	41.1	6067.5	0.7
Length Wtd. (ft)	366.94	Wetted Per. (ft)	35.66	91.86	1.57
Min Ch El (ft)	3036.00	Shear (lb/sq ft)	0.17	1.52	0.10
Alpha	1.07	Stream Power (lb/ft s)	0.17	9.58	0.07
Frctn Loss (ft)	6.63	Cum Volume (acre-ft)	39.91	75.21	56.94
C & E Loss (ft)	0.01	Cum SA (acres)	30.34	40.26	43.22

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

CROSS SECTION OUTPUT Profile #Method 1

E.G. Elev (ft)	3038.80	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.68	Wt. n-Val.		0.039	
W.S. Elev (ft)	3038.12	Reach Len. (ft)	364.70	367.05	366.00
Crit W.S. (ft)	3038.12	Flow Area (sq ft)		122.01	
E.G. Slope (ft/ft)	0.020813	Area (sq ft)		122.01	
Q Total (cfs)	809.00	Flow (cfs)		809.00	
Top Width (ft)	91.73	Top Width (ft)		91.73	
Vel Total (ft/s)	6.63	Avg. Vel. (ft/s)		6.63	
Max Chl Dpth (ft)	2.12	Hydr. Depth (ft)		1.33	
Conv. Total (cfs)	5607.6	Conv. (cfs)		5607.6	
Length Wtd. (ft)	367.05	Wetted Per. (ft)		92.10	
Min Ch El (ft)	3036.00	Shear (lb/sq ft)		1.72	
Alpha	1.00	Stream Power (lb/ft s)		11.41	
Frctn Loss (ft)	7.50	Cum Volume (acre-ft)	4.92	86.60	12.97
C & E Loss (ft)	0.00	Cum SA (acres)	2.24	40.42	6.54

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.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water
surface was used.

CROSS SECTION

RIVER: Fan 6A
REACH: Fan 6AN-1 RS: 5.00

INPUT
Description: Cross Section 5.00 is located within Mirabel.

Topography and
Aerial show wash and surrounding undeveloped desert.
T6NR5E
Section 28
Q100 = 877 cfs
Station Elevation Data num= 20

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9895.49	3026	9920.44	3024	9939.44	3022	9940.97	3022	9971.91	3023.2
9990.34	3022	10000	3021	10048.12	3022	10057.22	3023	10066.31	3024
10166.67	3024	10202.63	3024	10218.51	3024	10232.1	3022	10259.18	3022
10280.06	3024	10306.9	3026	10321.33	3026	10357.06	3026	10386.55	3028

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9895.49	.056	9971.91	.039	10057.22	.056

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9971.91	10057.22	270.5	261.76	259.2	.1	.3

Right Levee Station=10066.31 Elevation= 3024

CROSS SECTION OUTPUT Profile #100-yr 6-hr

E.G. Elev (ft)	3023.78	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.58	Wt. n-Val.	0.056	0.039	0.056
W.S. Elev (ft)	3023.20	Reach Len. (ft)	270.50	261.76	259.20
Crit W.S. (ft)	3023.20	Flow Area (sq ft)	27.31	115.80	0.18
E.G. Slope (ft/ft)	0.018607	Area (sq ft)	27.31	115.80	0.18
Q Total (cfs)	809.00	Flow (cfs)	71.97	736.89	0.14
Top Width (ft)	131.03	Top Width (ft)	43.89	85.31	1.83
Vel Total (ft/s)	5.65	Avg. Vel. (ft/s)	2.63	6.36	0.78
Max Chl Dpth (ft)	2.20	Hydr. Depth (ft)	0.62	1.36	0.10

Conv. Total (cfs)	5930.7	Conv. (cfs)	527.6	5402.1	1.1
Length Wtd. (ft)	262.15	Wetted Per. (ft)	43.97	85.47	1.84
Min Ch El (ft)	3021.00	Shear (lb/sq ft)	0.72	1.57	0.12
Alpha	1.18	Stream Power (lb/ft s)	1.90	10.02	0.09
Frctn Loss (ft)	5.34	Cum Volume (acre-ft)	39.77	74.18	56.94
C & E Loss (ft)	0.03	Cum SA (acres)	30.01	39.52	43.21

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

CROSS SECTION OUTPUT Profile #Method 1

E.G. Elev (ft)	3023.96	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.71	Wt. n-Val.		0.039	
W.S. Elev (ft)	3023.25	Reach Len. (ft)	270.50	261.76	259.20
Crit W.S. (ft)	3023.25	Flow Area (sq ft)		119.86	
E.G. Slope (ft/ft)	0.020086	Area (sq ft)		119.86	
Q Total (cfs)	809.00	Flow (cfs)		809.00	
Top Width (ft)	85.31	Top Width (ft)		85.31	
Vel Total (ft/s)	6.75	Avg. Vel. (ft/s)		6.75	
Max Chl Dpth (ft)	2.25	Hydr. Depth (ft)		1.40	
Conv. Total (cfs)	5708.2	Conv. (cfs)		5708.2	
Length Wtd. (ft)	261.76	Wetted Per. (ft)		85.76	
Min Ch El (ft)	3021.00	Shear (lb/sq ft)		1.75	
Alpha	1.00	Stream Power (lb/ft s)		11.83	
Frctn Loss (ft)	5.61	Cum Volume (acre-ft)	4.92	85.58	12.97
C & E Loss (ft)	0.07	Cum SA (acres)	2.24	39.67	6.54

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.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water
surface was used.

CROSS SECTION

RIVER: Fan 6A
REACH: Fan 6AN-1 RS: 4.95

INPUT
Description: Cross Section 4.95 is located within Mirabel.

Topography and
Aerial show wash and surrounding undeveloped desert.
T6NR5E
Section 28
Q100 = 877 cfs
Station Elevation Data num= 11

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev

```
 9665.85    3016 9673.82    3016 9729.12    3014 9779.14    3014 9886.88    3014
 9930.25    3013 9973.62    301210066.36    301210082.21    301310098.06    3014
10161.28    3016

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
 9665.85    .056 9930.25    .03910082.21    .056

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9930.2510082.21              205   206.6   207.7             .1       .3
```

CROSS SECTION OUTPUT Profile #100-yr 6-hr

E.G. Elev (ft)	3013.63	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.48	Wt. n-Val.	0.056	0.039	0.056
W.S. Elev (ft)	3013.15	Reach Len. (ft)	205.00	206.60	207.70
Crit W.S. (ft)	3013.15	Flow Area (sq ft)	0.51	145.76	0.19
E.G. Slope (ft/ft)	0.022413	Area (sq ft)	0.51	145.76	0.19
Q Total (cfs)	809.00	Flow (cfs)	0.37	808.49	0.14
Top Width (ft)	161.08	Top Width (ft)	6.68	151.96	2.44
Vel Total (ft/s)	5.52	Avg. Vel. (ft/s)	0.72	5.55	0.72
Max Chl Dpth (ft)	1.15	Hydr. Depth (ft)	0.08	0.96	0.08
Conv. Total (cfs)	5403.8	Conv. (cfs)	2.5	5400.4	0.9
Length Wtd. (ft)	206.60	Wetted Per. (ft)	6.68	152.00	2.45
Min Ch El (ft)	3012.00	Shear (lb/sq ft)	0.11	1.34	0.11
Alpha	1.01	Stream Power (lb/ft s)	0.08	7.44	0.08
Frctn Loss (ft)	4.49	Cum Volume (acre-ft)	39.68	73.39	56.94
C & E Loss (ft)	0.00	Cum SA (acres)	29.85	38.80	43.20

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.

CROSS SECTION OUTPUT Profile #Method 1

E.G. Elev (ft)	3013.63	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.48	Wt. n-Val.		0.039	
W.S. Elev (ft)	3013.15	Reach Len. (ft)	205.00	206.60	207.70
Crit W.S. (ft)	3013.15	Flow Area (sq ft)		145.02	
E.G. Slope (ft/ft)	0.022886	Area (sq ft)		145.02	
Q Total (cfs)	809.00	Flow (cfs)		809.00	
Top Width (ft)	151.96	Top Width (ft)		151.96	
Vel Total (ft/s)	5.58	Avg. Vel. (ft/s)		5.58	
Max Chl Dpth (ft)	1.15	Hydr. Depth (ft)		0.95	
Conv. Total (cfs)	5347.7	Conv. (cfs)		5347.7	
Length Wtd. (ft)	206.60	Wetted Per. (ft)		152.30	
Min Ch El (ft)	3012.00	Shear (lb/sq ft)		1.36	
Alpha	1.00	Stream Power (lb/ft s)		7.59	
Frctn Loss (ft)	4.65	Cum Volume (acre-ft)	4.92	84.79	12.97
C & E Loss (ft)	0.01	Cum SA (acres)	2.24	38.96	6.54

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.

CROSS SECTION

RIVER: Fan 6A
REACH: Fan 6AN-1 RS: 4.91

INPUT
Description: Cross Section 4.91 is located within Mirabel.

Topography and
Aerial show wash and surrounding undeveloped desert.
T6NR5E
Section 28
Q100 = 877 cfs
Station Elevation Data num= 18

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9905.61	3008	9910.47	3008	9932.4	3006	9938.65	3005	9944.89	3004
10001.12	3004	10031.57	3004	10037.93	3004	10067.23	3005	10096.53	3006
10106.24	3006	10117.85	3004	10128.44	3002	10138.66	3000	10148.13	3000
10154.43	3002	10170.4	3004	10191.26	3006				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9905.61	.056	9938.65	.039	10067.23	.056

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9938.65	10067.23	307.9	358.65	358.1	.1	.3

Right Levee Station=10096.53 Elevation= 3006

CROSS SECTION OUTPUT Profile #100-yr 6-hr

E.G. Elev (ft)	3005.74	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.53	Wt. n-Val.	0.056	0.039	0.056
W.S. Elev (ft)	3005.22	Reach Len. (ft)	307.90	358.65	358.10
Crit W.S. (ft)	3005.22	Flow Area (sq ft)	0.15	138.81	0.69
E.G. Slope (ft/ft)	0.021110	Area (sq ft)	0.15	138.81	0.69
Q Total (cfs)	809.00	Flow (cfs)	0.13	808.26	0.61
Top Width (ft)	136.32	Top Width (ft)	1.36	128.58	6.38
Vel Total (ft/s)	5.79	Avg. Vel. (ft/s)	0.87	5.82	0.88
Max Chl Dpth (ft)	5.22	Hydr. Depth (ft)	0.11	1.08	0.11
Conv. Total (cfs)	5568.0	Conv. (cfs)	0.9	5563.0	4.2
Length Wtd. (ft)	358.60	Wetted Per. (ft)	1.38	128.68	6.38
Min Ch El (ft)	3004.00	Shear (lb/sq ft)	0.14	1.42	0.14
Alpha	1.01	Stream Power (lb/ft s)	0.12	8.28	0.13
Frctn Loss (ft)	4.05	Cum Volume (acre-ft)	39.68	72.72	56.94
C & E Loss (ft)	0.02	Cum SA (acres)	29.83	38.14	43.18

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

CROSS SECTION OUTPUT Profile #Method 1

E.G. Elev (ft)	3005.75	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.54	Wt. n-Val.		0.039	
W.S. Elev (ft)	3005.20	Reach Len. (ft)	307.90	358.65	358.10
Crit W.S. (ft)	3005.20	Flow Area (sq ft)		137.08	
E.G. Slope (ft/ft)	0.022143	Area (sq ft)		137.08	
Q Total (cfs)	809.00	Flow (cfs)		809.00	
Top Width (ft)	128.58	Top Width (ft)		128.58	

Vel Total (ft/s)	5.90	Avg. Vel. (ft/s)		5.90	
Max Chl Dpth (ft)	1.20	Hydr. Depth (ft)		1.07	
Conv. Total (cfs)	5436.6	Conv. (cfs)		5436.6	
Length Wtd. (ft)	358.65	Wetted Per. (ft)		129.09	
Min Ch El (ft)	3004.00	Shear (lb/sq ft)		1.47	
Alpha	1.00	Stream Power (lb/ft s)		8.66	
Frctn Loss (ft)	8.11	Cum Volume (acre-ft)	4.92	84.12	12.97
C & E Loss (ft)	0.02	Cum SA (acres)	2.24	38.30	6.54

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.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water
surface was used.

CROSS SECTION

RIVER: Fan 6A
REACH: Fan 6AN-1 RS: 4.84

INPUT
Description: Cross Section 4.84 is located within Mirabel. This section is
located upstream of Lone Mountain Parkway.

Topography
indicates wash and surrounding undeveloped desert.
Aeiral shows
wash, undeveloped desert and dirt road, Lone Mountain
Parkway.
T6NR5E Section 28
Q100 = 877 cfs
Station Elevation Data num= 16

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9893.34	2998	9908.97	2996	9924.89	2994	9959.69	2993	9994.48	2992
10022.29	2992	10034.33	2992	10058.56	2992	10096.93	2992	10097.68	2992
10118.93	2993	10140.17	2994	10176.24	2992	10194.98	2990	10227.15	2990
10255.25	2994								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9893.34	.056	9959.69	.039	10118.93	.056

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9959.69	10118.93	353.5	375.84	371.9	.1	.3

Right Levee Station=10140.17 Elevation= 2994

CROSS SECTION OUTPUT Profile #100-yr 6-hr

E.G. Elev (ft)	2993.57	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.47	Wt. n-Val.	0.056	0.039	0.056
W.S. Elev (ft)	2993.10	Reach Len. (ft)	353.50	375.84	371.90
Crit W.S. (ft)	2993.10	Flow Area (sq ft)	0.17	146.93	0.10
E.G. Slope (ft/ft)	0.023250	Area (sq ft)	0.17	146.93	0.10
Q Total (cfs)	809.00	Flow (cfs)	0.09	808.85	0.06
Top Width (ft)	164.77	Top Width (ft)	3.43	159.24	2.09
Vel Total (ft/s)	5.50	Avg. Vel. (ft/s)	0.54	5.51	0.54
Max Chl Dpth (ft)	3.10	Hydr. Depth (ft)	0.05	0.92	0.05
Conv. Total (cfs)	5305.6	Conv. (cfs)	0.6	5304.6	0.4
Length Wtd. (ft)	375.80	Wetted Per. (ft)	3.43	159.28	2.10
Min Ch El (ft)	2992.00	Shear (lb/sq ft)	0.07	1.34	0.07
Alpha	1.00	Stream Power (lb/ft s)	0.04	7.37	0.04

Frctn Loss (ft)	7.33	Cum Volume (acre-ft)	39.68	71.54	56.93
C & E Loss (ft)	0.01	Cum SA (acres)	29.82	36.95	43.14

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 energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
depth, the 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 OUTPUT Profile #Method 1

E.G. Elev (ft)	2993.57	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.47	Wt. n-Val.		0.039	
W.S. Elev (ft)	2993.10	Reach Len. (ft)	353.50	375.84	371.90
Crit W.S. (ft)	2993.10	Flow Area (sq ft)		147.35	
E.G. Slope (ft/ft)	0.023073	Area (sq ft)		147.35	
Q Total (cfs)	809.00	Flow (cfs)		809.00	
Top Width (ft)	159.24	Top Width (ft)		159.24	
Vel Total (ft/s)	5.49	Avg. Vel. (ft/s)		5.49	
Max Chl Dpth (ft)	1.10	Hydr. Depth (ft)		0.93	
Conv. Total (cfs)	5325.9	Conv. (cfs)		5325.9	
Length Wtd. (ft)	375.84	Wetted Per. (ft)		159.48	
Min Ch El (ft)	2992.00	Shear (lb/sq ft)		1.33	
Alpha	1.00	Stream Power (lb/ft s)		7.31	
Frctn Loss (ft)	8.53	Cum Volume (acre-ft)	4.92	82.95	12.97
C & E Loss (ft)	0.01	Cum SA (acres)	2.24	37.11	6.54

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.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water
surface was used.

CROSS SECTION

RIVER: Fan 6A
REACH: Fan 6AN-1 RS: 4.77

INPUT
Description: Cross Section 4.77 is located within Mirabel.

Topography and
Aerial show wash and surrounding undeveloped desert.
T6NR5E
Section 28
Q100 = 877 cfs
Station Elevation Data num= 14

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9857.04	2982	9866.95	2980	9887.9	2978	9915.31	2978	9942.73	2978
9959.2	2978	9976.99	2978	10000	2977.23	10030.42	2977	10083.85	2976
10090.15	2976	10109.88	2977	10129.61	2978	10165.36	2980		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9857.04	.056	9976.99	.03910109.88		.056

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9976.9910109.88		421.8	431.82	393.1	.1	.3

CROSS SECTION OUTPUT Profile #100-yr 6-hr

E.G. Elev (ft)	2978.35	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.52	Wt. n-Val.		0.039	0.056
W.S. Elev (ft)	2977.84	Reach Len. (ft)	421.80	431.82	393.10
Crit W.S. (ft)	2977.84	Flow Area (sq ft)		136.60	6.88
E.G. Slope (ft/ft)	0.021351	Area (sq ft)		136.60	6.88
Q Total (cfs)	809.00	Flow (cfs)		794.12	14.88
Top Width (ft)	144.43	Top Width (ft)		127.96	16.47
Vel Total (ft/s)	5.64	Avg. Vel. (ft/s)		5.81	2.16
Max Chl Dpth (ft)	1.83	Hydr. Depth (ft)		1.07	0.42
Conv. Total (cfs)	5536.6	Conv. (cfs)		5434.8	101.9
Length Wtd. (ft)	428.84	Wetted Per. (ft)		128.00	16.50
Min Ch El (ft)	2976.00	Shear (lb/sq ft)		1.42	0.56
Alpha	1.05	Stream Power (lb/ft s)		8.27	1.20
Frctn Loss (ft)	10.00	Cum Volume (acre-ft)	39.68	70.32	56.90
C & E Loss (ft)	0.00	Cum SA (acres)	29.80	35.71	43.06

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 energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
depth, the 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 OUTPUT Profile #Method 1

E.G. Elev (ft)	2978.38	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.54	Wt. n-Val.		0.039	
W.S. Elev (ft)	2977.84	Reach Len. (ft)	421.80	431.82	393.10
Crit W.S. (ft)	2977.84	Flow Area (sq ft)		136.66	
E.G. Slope (ft/ft)	0.022321	Area (sq ft)		136.66	
Q Total (cfs)	809.00	Flow (cfs)		809.00	
Top Width (ft)	127.97	Top Width (ft)		127.97	
Vel Total (ft/s)	5.92	Avg. Vel. (ft/s)		5.92	
Max Chl Dpth (ft)	1.84	Hydr. Depth (ft)		1.07	
Conv. Total (cfs)	5415.0	Conv. (cfs)		5415.0	
Length Wtd. (ft)	431.82	Wetted Per. (ft)		128.85	
Min Ch El (ft)	2976.00	Shear (lb/sq ft)		1.48	
Alpha	1.00	Stream Power (lb/ft s)		8.75	
Frctn Loss (ft)	8.93	Cum Volume (acre-ft)	4.92	81.72	12.97
C & E Loss (ft)	0.04	Cum SA (acres)	2.24	35.87	6.54

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.

CROSS SECTION

RIVER: Fan 6A

REACH: Fan 6AN-1 RS: 4.69

INPUT
Description: Cross Section 4.69 is located within Mirabel.

Topography and
Aerial show wash and surrounding undeveloped desert.
T6NR5E
Section 28
Q100 = 877 cfs
Station Elevation Data num= 15

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9803.21	2972	9821.62	2970	9833.87	2968	9847.3	2966	9867.24	2964
9885.37	2962	9905.17	2962	9936.7	2964	9977.55	2964	9988.45	2963
9999.34	2962	10000	2962	10040.85	2963	10081.69	2964	10101.85	2966

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9803.21	.056	9988.45	.039	10040.85	.056

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9988.45	10040.85	476.6	513.18	512.4	.1	.3

CROSS SECTION OUTPUT Profile #100-yr 6-hr

E.G. Elev (ft)	2964.28	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.56	Wt. n-Val.	0.056	0.039	0.056
W.S. Elev (ft)	2963.73	Reach Len. (ft)	476.60	513.18	512.40
Crit W.S. (ft)	2963.73	Flow Area (sq ft)	73.99	64.54	10.74
E.G. Slope (ft/ft)	0.025590	Area (sq ft)	73.99	64.54	10.74
Q Total (cfs)	809.00	Flow (cfs)	334.18	451.63	23.19
Top Width (ft)	152.57	Top Width (ft)	70.55	52.40	29.62
Vel Total (ft/s)	5.42	Avg. Vel. (ft/s)	4.52	7.00	2.16
Max Chl Dpth (ft)	1.73	Hydr. Depth (ft)	1.05	1.23	0.36
Conv. Total (cfs)	5057.2	Conv. (cfs)	2089.0	2823.2	145.0
Length Wtd. (ft)	505.57	Wetted Per. (ft)	70.73	52.46	29.63
Min Ch El (ft)	2962.00	Shear (lb/sq ft)	1.67	1.97	0.58
Alpha	1.22	Stream Power (lb/ft s)	7.55	13.75	1.25
Frctn Loss (ft)	11.04	Cum Volume (acre-ft)	39.32	69.32	56.82
C & E Loss (ft)	0.02	Cum SA (acres)	29.46	34.82	42.85

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: Divided flow computed for this cross-section.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
depth, the calculated water surface came back below critical depth. This indicates that there is
not a valid subcritical answer. The program defaulted to critical depth.

CROSS SECTION OUTPUT Profile #Method 1

E.G. Elev (ft)	2965.42	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.98	Wt. n-Val.		0.039	
W.S. Elev (ft)	2964.44	Reach Len. (ft)	476.60	513.18	512.40
Crit W.S. (ft)	2964.44	Flow Area (sq ft)		101.96	
E.G. Slope (ft/ft)	0.019202	Area (sq ft)		101.96	
Q Total (cfs)	809.00	Flow (cfs)		809.00	
Top Width (ft)	52.40	Top Width (ft)		52.40	
Vel Total (ft/s)	7.93	Avg. Vel. (ft/s)		7.93	
Max Chl Dpth (ft)	2.44	Hydr. Depth (ft)		1.95	
Conv. Total (cfs)	5838.2	Conv. (cfs)		5838.2	
Length Wtd. (ft)	513.18	Wetted Per. (ft)		55.34	
Min Ch El (ft)	2962.00	Shear (lb/sq ft)		2.21	
Alpha	1.00	Stream Power (lb/ft s)		17.53	
Frctn Loss (ft)	10.06	Cum Volume (acre-ft)	4.92	80.54	12.97
C & E Loss (ft)	0.06	Cum SA (acres)	2.24	34.98	6.54

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.

CROSS SECTION

RIVER: Fan 6A
REACH: Fan 6AN-1 RS: 4.59

INPUT
Description: Cross Section 4.59 is located within Mirabel.

Topography and
Aerial show wash and surrounding undeveloped desert.
T6NR5E
Section 28
Q100 = 877 cfs
Station Elevation Data num= 14

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9904.35	2952	9914.2	2950	9924	2948	9933.75	2946	9952.41	2945
9971.07	2944	10000	2943	10017.32	2944	10029.24	2945	10041.16	2946
10064.46	2946.8	10104.61	2946	10179.24	2946	10208.51	2948		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9904.35	.056	9952.41	.039	10029.24	.056

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9952.41	10029.24	482.2	496.87	509.3	.1	.3

CROSS SECTION OUTPUT Profile #100-yr 6-hr

E.G. Elev (ft)	2946.15	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.74	Wt. n-Val.	0.056	0.039	0.056
W.S. Elev (ft)	2945.42	Reach Len. (ft)	482.20	496.87	509.30
Crit W.S. (ft)	2945.42	Flow Area (sq ft)	1.62	116.68	1.04
E.G. Slope (ft/ft)	0.018848	Area (sq ft)	1.62	116.68	1.04
Q Total (cfs)	809.00	Flow (cfs)	2.07	805.61	1.32
Top Width (ft)	89.57	Top Width (ft)	7.78	76.83	4.97
Vel Total (ft/s)	6.78	Avg. Vel. (ft/s)	1.28	6.90	1.28
Max Chl Dpth (ft)	2.42	Hydr. Depth (ft)	0.21	1.52	0.21
Conv. Total (cfs)	5892.8	Conv. (cfs)	15.1	5868.1	9.6
Length Wtd. (ft)	496.25	Wetted Per. (ft)	7.79	76.94	4.99
Min Ch El (ft)	2943.00	Shear (lb/sq ft)	0.24	1.78	0.24
Alpha	1.03	Stream Power (lb/ft s)	0.31	12.32	0.31
Frctn Loss (ft)	9.95	Cum Volume (acre-ft)	38.91	68.26	56.75
C & E Loss (ft)	0.06	Cum SA (acres)	29.03	34.06	42.65

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

CROSS SECTION OUTPUT Profile #Method 1

E.G. Elev (ft)	2946.16	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.76	Wt. n-Val.		0.039	
W.S. Elev (ft)	2945.40	Reach Len. (ft)	482.20	496.87	509.30
Crit W.S. (ft)	2945.40	Flow Area (sq ft)		115.33	
E.G. Slope (ft/ft)	0.020033	Area (sq ft)		115.33	
Q Total (cfs)	809.00	Flow (cfs)		809.00	
Top Width (ft)	76.83	Top Width (ft)		76.83	
Vel Total (ft/s)	7.01	Avg. Vel. (ft/s)		7.01	
Max Chl Dpth (ft)	2.40	Hydr. Depth (ft)		1.50	
Conv. Total (cfs)	5715.8	Conv. (cfs)		5715.8	
Length Wtd. (ft)	496.87	Wetted Per. (ft)		77.74	
Min Ch El (ft)	2943.00	Shear (lb/sq ft)		1.86	
Alpha	1.00	Stream Power (lb/ft s)		13.01	
Frctn Loss (ft)	10.34	Cum Volume (acre-ft)	4.92	79.26	12.97
C & E Loss (ft)	0.04	Cum SA (acres)	2.24	34.22	6.54

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.

CROSS SECTION

RIVER: Fan 6A
REACH: Fan 6AN-1 RS: 4.50

INPUT
Description: Cross Section 4.50 is located within Mirabel.

Topography and
Aerial show wash and surrounding undeveloped desert.
T6NR5E
Section 33
Q100 = 877 cfs
Station Elevation Data num= 21

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9682.58	2942	9692.68	2940	9700.68	2938	9709.51	2936	9730.91	2934
9745.47	2932	9767.96	2930	9783.47	2928	9798.69	2928	9810.63	2930
9894.58	2930	9937.76	2929	9980.93	2928	10000	2926.5	10037.96	2928
10045.21	2929	10052.46	2930	10067.36	2932	10084.17	2934	10101.22	2936
10143.6	2938								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9682.58	.056	9937.76	.039	10045.21	.056

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9937.76	10045.21	498.1	502.66	487.2	.1	.3

CROSS SECTION OUTPUT Profile #100-yr 6-hr

E.G. Elev (ft)	2929.51	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.54	Wt. n-Val.	0.056	0.039	
W.S. Elev (ft)	2928.97	Reach Len. (ft)	498.10	502.66	487.20
Crit W.S. (ft)	2928.97	Flow Area (sq ft)	21.16	121.58	
E.G. Slope (ft/ft)	0.021367	Area (sq ft)	21.16	121.58	
Q Total (cfs)	809.00	Flow (cfs)	67.05	741.95	
Top Width (ft)	134.33	Top Width (ft)	28.50	105.83	
Vel Total (ft/s)	5.67	Avg. Vel. (ft/s)	3.17	6.10	
Max Chl Dpth (ft)	2.47	Hydr. Depth (ft)	0.74	1.15	
Conv. Total (cfs)	5534.4	Conv. (cfs)	458.7	5075.7	
Length Wtd. (ft)	498.78	Wetted Per. (ft)	28.65	105.99	

Min Ch El (ft)	2926.50	Shear (lb/sq ft)	0.99	1.53	
Alpha	1.09	Stream Power (lb/ft s)	3.12	9.34	
Frctn Loss (ft)	10.28	Cum Volume (acre-ft)	38.78	66.90	56.75
C & E Loss (ft)	0.05	Cum SA (acres)	28.83	33.02	42.62

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

CROSS SECTION OUTPUT Profile #Method 1

E.G. Elev (ft)	2929.65	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.62	Wt. n-Val.		0.039	
W.S. Elev (ft)	2929.03	Reach Len. (ft)	498.10	502.66	487.20
Crit W.S. (ft)	2929.03	Flow Area (sq ft)		128.40	
E.G. Slope (ft/ft)	0.021629	Area (sq ft)		128.40	
Q Total (cfs)	809.00	Flow (cfs)		809.00	
Top Width (ft)	107.45	Top Width (ft)		107.45	
Vel Total (ft/s)	6.30	Avg. Vel. (ft/s)		6.30	
Max Chl Dpth (ft)	2.53	Hydr. Depth (ft)		1.19	
Conv. Total (cfs)	5500.8	Conv. (cfs)		5500.8	
Length Wtd. (ft)	502.66	Wetted Per. (ft)		107.68	
Min Ch El (ft)	2926.50	Shear (lb/sq ft)		1.61	
Alpha	1.00	Stream Power (lb/ft s)		10.14	
Frctn Loss (ft)	10.01	Cum Volume (acre-ft)	4.92	77.87	12.97
C & E Loss (ft)	0.03	Cum SA (acres)	2.24	33.17	6.54

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.

CROSS SECTION

RIVER: Fan 6A
REACH: Fan 6AN-1 RS: 4.40

INPUT
Description: Cross Section 4.40 is located within Mirabel.

Topography and
Aerial show wash and surrounding undeveloped desert.
T6NR5E
Section 33
Q100 = 877 cfs
Station Elevation Data num= 22

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9909.89	2924	9921.47	2922	9932.93	2920	9944.63	2918	9956.18	2916
9973.3	2914	9981.13	2913	9988.95	2912	10000	2910.67	10020.09	2912
10040.38	2913.21	0072.72	2912	10092.12	2912	10112.63	2912.98	10200.81	2912
10221.51	2912	10241.63	2914	10254.39	2916	10275.28	2918	10284.78	2920
10294.51	2922	10306.17	2924						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9909.89	.056	9981.13	.039	10040.38	.056

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9981.13	10040.38	492.1	508.37	492.3	.1	.3

CROSS SECTION OUTPUT Profile #100-yr 6-hr

			Left OB	Channel	Right OB
E.G. Elev (ft)	2913.46	Element			
Vel Head (ft)	0.36	Wt. n-Val.	0.056	0.039	0.056
W.S. Elev (ft)	2913.09	Reach Len. (ft)	492.10	508.37	492.30
Crit W.S. (ft)	2913.09	Flow Area (sq ft)	0.03	69.48	131.48
E.G. Slope (ft/ft)	0.019908	Area (sq ft)	0.03	69.48	131.48
Q Total (cfs)	809.00	Flow (cfs)	0.02	422.98	386.00
Top Width (ft)	247.41	Top Width (ft)	0.73	57.44	189.24
Vel Total (ft/s)	4.02	Avg. Vel. (ft/s)	0.48	6.09	2.94
Max Chl Dpth (ft)	2.42	Hydr. Depth (ft)	0.05	1.21	0.69
Conv. Total (cfs)	5733.7	Conv. (cfs)	0.1	2997.8	2735.8
Length Wtd. (ft)	504.52	Wetted Per. (ft)	0.73	57.66	189.35
Min Ch El (ft)	2910.67	Shear (lb/sq ft)	0.06	1.50	0.86
Alpha	1.45	Stream Power (lb/ft s)	0.03	9.12	2.53
Frctn Loss (ft)	10.25	Cum Volume (acre-ft)	38.66	65.79	56.01
C & E Loss (ft)	0.02	Cum SA (acres)	28.67	32.07	41.56

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

CROSS SECTION OUTPUT Profile #Method 1

			Left OB	Channel	Right OB
E.G. Elev (ft)	2914.62	Element			
Vel Head (ft)	0.88	Wt. n-Val.		0.039	
W.S. Elev (ft)	2913.73	Reach Len. (ft)	492.10	508.37	492.30
Crit W.S. (ft)	2913.73	Flow Area (sq ft)		107.21	
E.G. Slope (ft/ft)	0.018385	Area (sq ft)		107.21	
Q Total (cfs)	809.00	Flow (cfs)		809.00	
Top Width (ft)	59.25	Top Width (ft)		59.25	
Vel Total (ft/s)	7.55	Avg. Vel. (ft/s)		7.55	
Max Chl Dpth (ft)	3.06	Hydr. Depth (ft)		1.81	
Conv. Total (cfs)	5966.5	Conv. (cfs)		5966.5	
Length Wtd. (ft)	508.37	Wetted Per. (ft)		60.74	
Min Ch El (ft)	2910.67	Shear (lb/sq ft)		2.03	
Alpha	1.00	Stream Power (lb/ft s)		15.29	
Frctn Loss (ft)	10.14	Cum Volume (acre-ft)	4.92	76.51	12.97
C & E Loss (ft)	0.09	Cum SA (acres)	2.24	32.20	6.54

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 cross section had to be extended vertically during the critical depth calculations.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
depth, the 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: Fan 6A
REACH: Fan 6AN-1 RS: 4.31

INPUT
Description: Cross Section 4.31 is located within Mirabel.

Topography and
Aerial show wash and surrounding undeveloped desert.
T6NR5E
Section 33
Q100 = 877 cfs
Station Elevation Data num= 20

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9817.4	2910	9833.76	2908	9850	2906	9865.59	2904	9882.05	2902
9907.28	2900	9913.02	2900	9933.48	2900	9951.7	2899	9969.92	2898
10015.13	2898	10026.52	2898	10049.24	2898	10068.4	2899	10087.55	2900
10118.23	2902	10143.24	2904	10160.02	2906	10175.97	2908	10192.09	2910

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9817.4	.056	9951.7	.039	10068.4	.056

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9951.7	10068.4	493.9	499.13	493.9	.1	.3

CROSS SECTION OUTPUT Profile #100-yr 6-hr

			Left OB	Channel	Right OB
E.G. Elev (ft)	2899.87	Element			
Vel Head (ft)	0.56	Wt. n-Val.	0.056	0.039	0.056
W.S. Elev (ft)	2899.31	Reach Len. (ft)	493.90	499.13	493.90
Crit W.S. (ft)	2899.31	Flow Area (sq ft)	0.87	134.14	0.92
E.G. Slope (ft/ft)	0.020723	Area (sq ft)	0.87	134.14	0.92
Q Total (cfs)	809.00	Flow (cfs)	0.96	807.03	1.01
Top Width (ft)	128.27	Top Width (ft)	5.64	116.70	5.93
Vel Total (ft/s)	5.95	Avg. Vel. (ft/s)	1.10	6.02	1.10
Max Chl Dpth (ft)	1.31	Hydr. Depth (ft)	0.15	1.15	0.15
Conv. Total (cfs)	5619.8	Conv. (cfs)	6.7	5606.2	7.0
Length Wtd. (ft)	498.03	Wetted Per. (ft)	5.65	116.75	5.94
Min Ch El (ft)	2898.00	Shear (lb/sq ft)	0.20	1.49	0.20
Alpha	1.02	Stream Power (lb/ft s)	0.22	8.94	0.22
Frctn Loss (ft)	11.93	Cum Volume (acre-ft)	38.66	64.61	55.26
C & E Loss (ft)	0.03	Cum SA (acres)	28.63	31.06	40.46

Warning: The energy equation could not be 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 OUTPUT Profile #Method 1

			Left OB	Channel	Right OB
E.G. Elev (ft)	2899.87	Element			
Vel Head (ft)	0.58	Wt. n-Val.		0.039	
W.S. Elev (ft)	2899.30	Reach Len. (ft)	493.90	499.13	493.90
Crit W.S. (ft)	2899.30	Flow Area (sq ft)		132.71	
E.G. Slope (ft/ft)	0.021725	Area (sq ft)		132.71	
Q Total (cfs)	809.00	Flow (cfs)		809.00	
Top Width (ft)	116.70	Top Width (ft)		116.70	
Vel Total (ft/s)	6.10	Avg. Vel. (ft/s)		6.10	
Max Chl Dpth (ft)	1.30	Hydr. Depth (ft)		1.14	
Conv. Total (cfs)	5488.7	Conv. (cfs)		5488.7	
Length Wtd. (ft)	499.13	Wetted Per. (ft)		117.35	

Min Ch El (ft)	2898.00	Shear (lb/sq ft)		1.53	
Alpha	1.00	Stream Power (lb/ft s)		9.35	
Frctn Loss (ft)	10.20	Cum Volume (acre-ft)	4.92	75.11	12.97
C & E Loss (ft)	0.02	Cum SA (acres)	2.24	31.18	6.54

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.

CROSS SECTION

RIVER: Fan 6A
REACH: Fan 6AN-1 RS: 4.21

INPUT
Description: Cross Section 4.21 is located within Mirabel.

Topography and
Aerial show wash and surrounding undeveloped desert.
T6NR5E
Section 33
Q100 = 877 cfs
Station Elevation Data num= 14

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9842.53	2888	9890.78	2886	9932.91	2886	9950.41	2886	9967.4	2885
9984.38	2884	10000	2883.25	10009.42	2884	10044.36	2885.08	10084.25	2884
10118.51	2884	10166.76	2886	10242.19	2888	10341.37	2890		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9842.53	.056	9967.4	.039	10044.36	.056

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9967.4	10044.36	405.5	410.77	408.3	.1	.3

CROSS SECTION OUTPUT Profile #100-yr 6-hr

E.G. Elev (ft)	2885.67	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.46	Wt. n-Val.	0.056	0.039	0.056
W.S. Elev (ft)	2885.21	Reach Len. (ft)	405.50	410.77	408.30
Crit W.S. (ft)	2885.21	Flow Area (sq ft)	0.38	75.17	85.86
E.G. Slope (ft/ft)	0.028029	Area (sq ft)	0.38	75.17	85.86
Q Total (cfs)	809.00	Flow (cfs)	0.37	471.63	337.00
Top Width (ft)	183.88	Top Width (ft)	3.57	76.96	103.35
Vel Total (ft/s)	5.01	Avg. Vel. (ft/s)	0.99	6.27	3.92
Max Chl Dpth (ft)	1.96	Hydr. Depth (ft)	0.11	0.98	0.83
Conv. Total (cfs)	4832.2	Conv. (cfs)	2.2	2817.0	2012.9
Length Wtd. (ft)	409.35	Wetted Per. (ft)	3.58	77.05	103.39
Min Ch El (ft)	2883.25	Shear (lb/sq ft)	0.18	1.71	1.45
Alpha	1.17	Stream Power (lb/ft s)	0.18	10.71	5.70
Frctn Loss (ft)	9.73	Cum Volume (acre-ft)	38.65	63.41	54.77
C & E Loss (ft)	0.04	Cum SA (acres)	28.58	29.95	39.84

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.

CROSS SECTION OUTPUT Profile #Method 1

E.G. Elev (ft)	2886.50	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.74	Wt. n-Val.		0.039	
W.S. Elev (ft)	2885.76	Reach Len. (ft)	405.50	410.77	408.30
Crit W.S. (ft)	2885.76	Flow Area (sq ft)		117.16	
E.G. Slope (ft/ft)	0.019252	Area (sq ft)		117.16	
Q Total (cfs)	809.00	Flow (cfs)		809.00	
Top Width (ft)	76.96	Top Width (ft)		76.96	
Vel Total (ft/s)	6.90	Avg. Vel. (ft/s)		6.90	
Max Chl Dpth (ft)	2.51	Hydr. Depth (ft)		1.52	
Conv. Total (cfs)	5830.6	Conv. (cfs)		5830.6	
Length Wtd. (ft)	410.77	Wetted Per. (ft)		78.49	
Min Ch El (ft)	2883.25	Shear (lb/sq ft)		1.79	
Alpha	1.00	Stream Power (lb/ft s)		12.39	
Frctn Loss (ft)	8.00	Cum Volume (acre-ft)	4.92	73.68	12.97
C & E Loss (ft)	0.01	Cum SA (acres)	2.24	30.07	6.54

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 cross section had to be extended vertically during the critical depth calculations.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
depth, the 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: Fan 6A
REACH: Fan 6AN-1 RS: 4.13

INPUT
Description: Cross Section 4.13 is located within Mirabel.

Topography
indicates wash and surrounding undeveloped desert.
Aerial shows
wash, undeveloped desert, and golf course.
T6NR5E Section
33
Q100 = 877 cfs
Station Elevation Data num= 14

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9841.33	2880	9864.04	2878	9891.02	2876	9927.53	2874	9943.74	2874
9955.06	2874.51	9962.99	2874	10007.25	2874	10019.13	2874.77	10034.09	2874
10086.23	2874	10142.19	2876	10158.72	2878	10178.03	2880		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9841.33	.056	9955.06	.039	10019.13	.056

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9955.06	10019.13	301.3	305.83	298.2	.1	.3

CROSS SECTION OUTPUT Profile #100-yr 6-hr

E.G. Elev (ft)	2875.45	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.32	Wt. n-Val.	0.056	0.039	0.056

W.S. Elev (ft)	2875.13	Reach Len. (ft)	301.30	305.83	298.20
Crit W.S. (ft)	2875.00	Flow Area (sq ft)	39.97	65.92	88.11
E.G. Slope (ft/ft)	0.020429	Area (sq ft)	39.97	65.92	88.11
Q Total (cfs)	809.00	Flow (cfs)	133.71	365.71	309.58
Top Width (ft)	211.03	Top Width (ft)	48.19	64.07	98.77
Vel Total (ft/s)	4.17	Avg. Vel. (ft/s)	3.35	5.55	3.51
Max Chl Dpth (ft)	1.13	Hydr. Depth (ft)	0.83	1.03	0.89
Conv. Total (cfs)	5660.1	Conv. (cfs)	935.5	2558.6	2165.9
Length Wtd. (ft)	300.91	Wetted Per. (ft)	48.23	64.11	98.81
Min Ch El (ft)	2874.00	Shear (lb/sq ft)	1.06	1.31	1.14
Alpha	1.18	Stream Power (lb/ft s)	3.54	7.28	4.00
Frctn Loss (ft)	8.42	Cum Volume (acre-ft)	38.46	62.74	53.96
C & E Loss (ft)	0.01	Cum SA (acres)	28.34	29.28	38.89

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was 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 OUTPUT Profile #Method 1

E.G. Elev (ft)	2876.66	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.86	Wt. n-Val.		0.039	
W.S. Elev (ft)	2875.80	Reach Len. (ft)	301.30	305.83	298.20
Crit W.S. (ft)	2875.80	Flow Area (sq ft)		108.86	
E.G. Slope (ft/ft)	0.019695	Area (sq ft)		108.86	
Q Total (cfs)	809.00	Flow (cfs)		809.00	
Top Width (ft)	64.07	Top Width (ft)		64.07	
Vel Total (ft/s)	7.43	Avg. Vel. (ft/s)		7.43	
Max Chl Dpth (ft)	1.80	Hydr. Depth (ft)		1.70	
Conv. Total (cfs)	5764.6	Conv. (cfs)		5764.6	
Length Wtd. (ft)	305.18	Wetted Per. (ft)		66.44	
Min Ch El (ft)	2874.00	Shear (lb/sq ft)		2.01	
Alpha	1.00	Stream Power (lb/ft s)		14.97	
Frctn Loss (ft)	6.10	Cum Volume (acre-ft)	4.92	72.61	12.97
C & E Loss (ft)	0.07	Cum SA (acres)	2.24	29.40	6.54

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.

CROSS SECTION

RIVER: Fan 6A
REACH: Fan 6AN-1 RS: 4.08

INPUT
Description: Cross Section 4.08 is located within Mirabel. It is located
upstream of concentration point CF6AN6, which is the confluence of
Fan 6A North and sub-basin F6AN-7.

Topography indicates wash
and surrounding undeveloped desert.
Aerial shows wash,
undeveloped desert, and golf course.
T6NR5E Section 33

Q100 =
877 cfs
Station Elevation Data num= 18

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9907.64	2874	9922.91	2872	9938.57	2870	9958.69	2868	9986.04	2866.5
9995.15	2866	10006.46	2866	10010.3	2866	10031.46	2866	10057.52	2866.8
10130.5	2866	10151.2	2864	10154.23	2864	10192.91	2866	10235.36	2868
10335.47	2870	10357.6	2872	10386.19	2874				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9907.64	.056	9986.04	.039	10057.52	.056

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9986.04	10057.52	287.8	283.88	273.9	.1	.3

CROSS SECTION OUTPUT Profile #100-yr 6-hr

			Left OB	Channel	Right OB
E.G. Elev (ft)	2867.03	Element			
Vel Head (ft)	0.40	Wt. n-Val.	0.056	0.039	0.056
W.S. Elev (ft)	2866.63	Reach Len. (ft)	287.80	283.88	273.90
Crit W.S. (ft)	2866.63	Flow Area (sq ft)	0.14	32.44	126.34
E.G. Slope (ft/ft)	0.040601	Area (sq ft)	0.14	32.44	126.34
Q Total (cfs)	809.00	Flow (cfs)	0.12	155.44	653.44
Top Width (ft)	200.67	Top Width (ft)	2.27	65.76	132.63
Vel Total (ft/s)	5.09	Avg. Vel. (ft/s)	0.84	4.79	5.17
Max Chl Dpth (ft)	2.62	Hydr. Depth (ft)	0.06	0.49	0.95
Conv. Total (cfs)	4014.9	Conv. (cfs)	0.6	771.4	3242.9
Length Wtd. (ft)	281.84	Wetted Per. (ft)	2.27	65.79	132.80
Min Ch El (ft)	2866.00	Shear (lb/sq ft)	0.16	1.25	2.41
Alpha	1.00	Stream Power (lb/ft s)	0.13	5.99	12.47
Frctn Loss (ft)	5.96	Cum Volume (acre-ft)	38.32	62.40	53.22
C & E Loss (ft)	0.05	Cum SA (acres)	28.16	28.83	38.10

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

CROSS SECTION OUTPUT Profile #Method 1

			Left OB	Channel	Right OB
E.G. Elev (ft)	2868.19	Element			
Vel Head (ft)	0.62	Wt. n-Val.		0.039	0.056
W.S. Elev (ft)	2867.58	Reach Len. (ft)	287.80	283.88	273.90
Crit W.S. (ft)	2867.58	Flow Area (sq ft)		99.94	37.60
E.G. Slope (ft/ft)	0.020280	Area (sq ft)		99.94	37.60
Q Total (cfs)	809.00	Flow (cfs)		671.19	137.81
Top Width (ft)	109.65	Top Width (ft)		71.48	38.17
Vel Total (ft/s)	5.88	Avg. Vel. (ft/s)		6.72	3.66
Max Chl Dpth (ft)	1.58	Hydr. Depth (ft)		1.40	0.99
Conv. Total (cfs)	5680.9	Conv. (cfs)		4713.2	967.7
Length Wtd. (ft)	283.20	Wetted Per. (ft)		72.58	39.37
Min Ch El (ft)	2866.00	Shear (lb/sq ft)		1.74	1.21
Alpha	1.15	Stream Power (lb/ft s)		11.71	4.43
Frctn Loss (ft)	5.68	Cum Volume (acre-ft)	4.92	71.88	12.84
C & E Loss (ft)	0.03	Cum SA (acres)	2.24	28.93	6.41

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

This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
depth, the 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: Fan 6A
REACH: Fan 6AN-1 RS: 4.02

INPUT
Description: Section 4.02 is located within Mirabel. It is located at the
confluence of Fan 6A North and sub-basin F6AN-7.

Topography
indicates wash and surrounding undeveloped desert.
Aerial shows
wash, undeveloped desert, and golf course.
T6NR5E Section
33
Q100 = 1,321 cfs
Station Elevation Data num= 21

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9676.91	2868	9692.2	2866	9708.84	2864	9724.5	2862	9747.19	2860
9764.22	2858	9769.51	2858	9877.21	2858.72	9925.54	2859.93	9958.78	2858.35
9980.69	2859.68	10000	2858.82	10023.13	2859.54	10058.87	2858	10088.81	2858
10115.76	2860	10220.82	2862	10225.06	2862	10260.75	2862	10284.15	2864
10305.1	2866								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9676.91	.056	9925.54	.039	10115.76	.056

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9925.54	10115.76	313.4	314.37	315.1	.1	.3

CROSS SECTION OUTPUT Profile #100-yr 6-hr

E.G. Elev (ft)	2859.88	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.23	Wt. n-Val.	0.056	0.039	
W.S. Elev (ft)	2859.65	Reach Len. (ft)	313.40	314.37	315.10
Crit W.S. (ft)	2859.40	Flow Area (sq ft)	176.63	149.61	
E.G. Slope (ft/ft)	0.015111	Area (sq ft)	176.63	149.61	
Q Total (cfs)	1227.00	Flow (cfs)	604.55	622.45	
Top Width (ft)	342.71	Top Width (ft)	164.22	178.49	
Vel Total (ft/s)	3.76	Avg. Vel. (ft/s)	3.42	4.16	
Max Chl Dpth (ft)	1.65	Hydr. Depth (ft)	1.08	0.84	
Conv. Total (cfs)	9981.4	Conv. (cfs)	4917.9	5063.5	
Length Wtd. (ft)	314.42	Wetted Per. (ft)	164.33	178.69	
Min Ch El (ft)	2858.00	Shear (lb/sq ft)	1.01	0.79	
Alpha	1.03	Stream Power (lb/ft s)	3.47	3.29	
Frctn Loss (ft)	6.93	Cum Volume (acre-ft)	37.74	61.80	52.83
C & E Loss (ft)	0.02	Cum SA (acres)	27.61	28.03	37.68

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.

CROSS SECTION OUTPUT Profile #Method 1

E.G. Elev (ft)	2860.51	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.52	Wt. n-Val.		0.039	
W.S. Elev (ft)	2859.99	Reach Len. (ft)	313.40	314.37	315.10
Crit W.S. (ft)	2859.96	Flow Area (sq ft)		212.18	

E.G. Slope (ft/ft)	0.019931	Area (sq ft)		212.18	
Q Total (cfs)	1227.00	Flow (cfs)		1227.00	
Top Width (ft)	190.06	Top Width (ft)		190.06	
Vel Total (ft/s)	5.78	Avg. Vel. (ft/s)		5.78	
Max Chl Dpth (ft)	1.99	Hydr. Depth (ft)		1.12	
Conv. Total (cfs)	8691.1	Conv. (cfs)		8691.1	
Length Wtd. (ft)	314.55	Wetted Per. (ft)		190.33	
Min Ch El (ft)	2858.00	Shear (lb/sq ft)		1.39	
Alpha	1.00	Stream Power (lb/ft s)		8.02	
Frctn Loss (ft)	6.36	Cum Volume (acre-ft)	4.92	70.86	12.72
C & E Loss (ft)	0.02	Cum SA (acres)	2.24	28.07	6.29

Warning: The energy loss was 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: Fan 6A
REACH: Fan 6AN-1 RS: 3.96

INPUT
Description: Cross Section 3.96 is located within Mirabel.

Topography
indicates wash and surrounding undeveloped desert.
Aerial shows
wash, undeveloped desert, and golf course.
T6NR5E Section
33
Q100 = 1,320 cfs
Station Elevation Data num= 20

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9904.17	2860	9924.81	2858	9963.84	2856	9969.42	2854	9972.97	2853
9976.52	2852	10000	2851.07	10013.34	2852	10031.46	2852	10067.26	2852
10100	2852	10119.58	2852	10149.79	2852	10235.12	2850.27	10251.92	2852
10280.82	2854	10300.08	2856	10316.23	2858	10337.08	2860	10362.23	2860

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9904.17	.056	9976.52	.038	10013.34	.053

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9976.52	10013.34	213.9	223.11	221.8	.3	.5

CROSS SECTION OUTPUT Profile #100-yr 6-hr

E.G. Elev (ft)	2852.92	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.43	Wt. n-Val.	0.056	0.038	0.053
W.S. Elev (ft)	2852.49	Reach Len. (ft)	213.90	223.11	221.80
Crit W.S. (ft)	2852.49	Flow Area (sq ft)	0.43	35.22	207.34
E.G. Slope (ft/ft)	0.035199	Area (sq ft)	0.43	35.22	207.34
Q Total (cfs)	1225.00	Flow (cfs)	0.82	250.56	973.62
Top Width (ft)	284.25	Top Width (ft)	1.74	36.82	245.68
Vel Total (ft/s)	5.04	Avg. Vel. (ft/s)	1.90	7.12	4.70
Max Chl Dpth (ft)	2.22	Hydr. Depth (ft)	0.25	0.96	0.84
Conv. Total (cfs)	6529.3	Conv. (cfs)	4.3	1335.5	5189.5
Length Wtd. (ft)	222.15	Wetted Per. (ft)	1.81	36.87	245.81
Min Ch El (ft)	2851.07	Shear (lb/sq ft)	0.52	2.10	1.85
Alpha	1.10	Stream Power (lb/ft s)	0.99	14.93	8.70
Frctn Loss (ft)	0.09	Cum Volume (acre-ft)	37.10	61.14	52.08
C & E Loss (ft)	0.21	Cum SA (acres)	27.01	27.25	36.80

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

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
depth, the 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 OUTPUT Profile #Method 1

E.G. Elev (ft)	2854.13	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.73	Wt. n-Val.	0.056	0.038	0.053
W.S. Elev (ft)	2853.40	Reach Len. (ft)	213.90	223.11	221.80
Crit W.S. (ft)	2853.40	Flow Area (sq ft)	2.93	68.64	127.42
E.G. Slope (ft/ft)	0.020517	Area (sq ft)	2.93	68.64	127.42
Q Total (cfs)	1225.00	Flow (cfs)	9.58	581.77	633.65
Top Width (ft)	130.89	Top Width (ft)	3.00	36.82	91.07
Vel Total (ft/s)	6.16	Avg. Vel. (ft/s)	3.27	8.48	4.97
Max Chl Dpth (ft)	2.33	Hydr. Depth (ft)	0.98	1.86	1.40
Conv. Total (cfs)	8552.3	Conv. (cfs)	66.9	4061.6	4423.8
Length Wtd. (ft)	222.29	Wetted Per. (ft)	3.67	36.87	92.47
Min Ch El (ft)	2851.07	Shear (lb/sq ft)	1.02	2.38	1.77
Alpha	1.24	Stream Power (lb/ft s)	3.34	20.21	8.78
Frctn Loss (ft)	0.09	Cum Volume (acre-ft)	4.91	69.85	12.26
C & E Loss (ft)	0.36	Cum SA (acres)	2.23	27.26	5.96

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 conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
depth, the 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: Fan 6A
REACH: Fan 6AN-1 RS: 3.92

INPUT
Description: Cross Section 3.92 is located within Mirabel. It is located upstream of the intersection of Fan 6A North and Standing Stones Road. There are two sets of 2-10 X 4 concrete conspan arches located under the roadway.

Topography indicates wash and surrounding undeveloped desert.
Aerial shows wash, undeveloped desert, Standing Stones Road, and golf course.
T6NR5E Section 33
Q100 = 1,320 cfs
Station Elevation Data num= 12

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9852.58	2854	9879.51	2852	9931.96	2850	9949.16	2848	9964.23	2847
9979.29	2846	10025.02	2846	10045.31	2846	10237.19	2846	10264.31	2848
10285.67	2850	10302.42	2852						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9852.58	.056	9964.23	.038	10025.02	.053

```
Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9964.2310025.02             58.8    57.5    56.9            .3        .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
 9852.58 9964.23 2852.59       F
10189.9510302.42 2852.59       F
```

CROSS SECTION OUTPUT Profile #100-yr 6-hr

E.G. Elev (ft)	2851.41	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.02	Wt. n-Val.		0.038	0.053
W.S. Elev (ft)	2851.39	Reach Len. (ft)	58.80	57.50	56.90
Crit W.S. (ft)	2847.02	Flow Area (sq ft)		320.29	889.44
E.G. Slope (ft/ft)	0.000114	Area (sq ft)	125.26	320.29	1322.57
Q Total (cfs)	1225.00	Flow (cfs)		405.25	819.75
Top Width (ft)	401.90	Top Width (ft)	68.80	60.79	272.32
Vel Total (ft/s)	1.01	Avg. Vel. (ft/s)		1.27	0.92
Max Chl Dpth (ft)	5.39	Hydr. Depth (ft)		5.27	5.39
Conv. Total (cfs)	114595.6	Conv. (cfs)		37910.0	76685.7
Length Wtd. (ft)	57.50	Wetted Per. (ft)		60.82	164.93
Min Ch El (ft)	2846.00	Shear (lb/sq ft)		0.04	0.04
Alpha	1.07	Stream Power (lb/ft s)		0.05	0.04
Frctn Loss (ft)		Cum Volume (acre-ft)	36.79	60.23	48.18
C & E Loss (ft)		Cum SA (acres)	26.84	27.00	35.48

Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid,
energy was used.

CROSS SECTION OUTPUT Profile #Method 1

E.G. Elev (ft)	2851.41	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.02	Wt. n-Val.		0.038	0.053
W.S. Elev (ft)	2851.39	Reach Len. (ft)	58.80	57.50	56.90
Crit W.S. (ft)	2847.00	Flow Area (sq ft)		320.32	889.52
E.G. Slope (ft/ft)	0.000118	Area (sq ft)		320.32	943.72
Q Total (cfs)	1225.00	Flow (cfs)		392.74	832.26
Top Width (ft)	235.77	Top Width (ft)		60.79	174.98
Vel Total (ft/s)	1.01	Avg. Vel. (ft/s)		1.23	0.94
Max Chl Dpth (ft)	5.39	Hydr. Depth (ft)		5.27	5.39
Conv. Total (cfs)	112890.5	Conv. (cfs)		36193.3	76697.2
Length Wtd. (ft)	57.50	Wetted Per. (ft)		65.22	164.93
Min Ch El (ft)	2846.00	Shear (lb/sq ft)		0.04	0.04
Alpha	1.05	Stream Power (lb/ft s)		0.04	0.04
Frctn Loss (ft)		Cum Volume (acre-ft)	4.90	68.85	9.53
C & E Loss (ft)		Cum SA (acres)	2.22	27.01	5.29

Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid,
energy was used.

CULVERT

RIVER: Fan 6A
REACH: Fan 6AN-1 RS: 3.915

INPUT
Description: Conspan arches at Standing Stones Road crossing.
Distance from Upstream XS = 1
Deck/Roadway Width = 56
Weir Coefficient = 2.6
Upstream Deck/Roadway Coordinates
num= 4

Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord
9852.58	2853.51		9999.97	2853.51		10181.57	2852.59	
10400	2852.59							

```
Upstream Bridge Cross Section Data
Station Elevation Data    num=      12
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
 9852.58    2854 9879.51    2852 9931.96    2850 9949.16    2848 9964.23    2847
 9979.29    284610025.02    284610045.31    284610237.19    284610264.31    2848
10285.67    285010302.42    2852

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
 9852.58    .056 9964.23    .03810025.02    .053

Bank Sta: Left   Right    Coeff Contr.   Expan.
       9964.2310025.02             .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
 9852.58 9964.23 2852.59       F
10189.9510302.42 2852.59       F

Downstream  Deck/Roadway Coordinates
    num=       4
     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord
  9813.9 2853.51          9991.8 2853.51        10173.54 2852.59
   10400 2852.59

Downstream Bridge Cross Section Data
Station Elevation Data    num=      13
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
  9813.9    2854 9841.78    2852 9892.63    2850 9951.31    2848  9973.9    2846
 9981.92    2845 9989.94    284410014.14    284410041.75    284410241.31    2844
10262.91    284610282.23    284810300.96    2850

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
  9813.9    .056 9981.92    .03810041.75    .053

Bank Sta: Left   Right    Coeff Contr.   Expan.
       9981.9210041.75             .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
  9813.9 9981.92 2852.59       F
10195.3210300.96 2852.59       F

Upstream Embankment side slope              =       0 horiz. to 1.0 vertical
Downstream Embankment side slope            =       0 horiz. to 1.0 vertical
Maximum allowable submergence for weir flow =     .95
Elevation at which weir flow begins         =
Energy head used in spillway design         =
Spillway height used in design              =
Weir crest shape                            = Broad Crested

Number of Culverts =  1

Culvert Name     Shape      Rise    Span
Culvert #1  Conspan Arch      4      10
FHWA Chart # 60- Span/Rise ratio approximate 2:1
FHWA Scale # 1 - 0 degree wing wall angle
Solution Criteria = Highest U.S. EG
Culvert Upstrm Dist  Length    Top n  Bottom n  Depth Blocked  Entrance Loss Coef   Exit Loss Coef
                 4      50     .015     .015        0                   .4                 1
Number of Barrels =  4
Upstream   Elevation =  2846.05
Centerline Stations
    Sta.    Sta.    Sta.    Sta.
10003.1610014.5510168.9510180.95
Downstream Elevation =  2844.82
Centerline Stations
    Sta.    Sta.    Sta.    Sta.
10007.2310018.6210175.6410186.92

CROSS SECTION
```

RIVER: Fan 6A
REACH: Fan 6AN-1 RS: 3.91

INPUT
Description: Cross Section 3.91 is located within Mirabel. It is located downstream of the intersection of Fan 6A North and Standing Stones Road. There are two sets of 2-10 X 4 concrete conspan arches located under the roadway.

Topography indicates wash and surrounding undeveloped desert.
Aerial shows wash, undeveloped desert, Standing Stones Road, and golf course.
T6NR5E Section 33
Q100 = 1,320 cfs
Station Elevation Data num= 13

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9813.9	2854	9841.78	2852	9892.63	2850	9951.31	2848	9973.9	2846
9981.92	2845	9989.94	2844	10014.14	2844	10041.75	2844	10241.31	2844
10262.91	2846	10282.23	2848	10300.96	2850				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9813.9	.056	9981.92	.038	10041.75	.053

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9981.92	10041.75	497.5	501.85	495.8	.3	.5

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
9813.9	9981.92	2852.59	F
10195.32	10300.96	2852.59	F

CROSS SECTION OUTPUT Profile #100-yr 6-hr

			Left OB	Channel	Right OB
E.G. Elev (ft)	2845.57	Element			
Vel Head (ft)	0.43	Wt. n-Val.		0.038	0.053
W.S. Elev (ft)	2845.14	Reach Len. (ft)	497.50	501.85	495.80
Crit W.S. (ft)	2845.04	Flow Area (sq ft)		64.04	174.68
E.G. Slope (ft/ft)	0.023713	Area (sq ft)	0.08	64.04	233.98
Q Total (cfs)	1225.00	Flow (cfs)		403.25	821.75
Top Width (ft)	272.78	Top Width (ft)	1.10	59.83	211.84
Vel Total (ft/s)	5.13	Avg. Vel. (ft/s)		6.30	4.70
Max Chl Dpth (ft)	1.14	Hydr. Depth (ft)		1.07	1.14
Conv. Total (cfs)	7955.1	Conv. (cfs)		2618.7	5336.4
Length Wtd. (ft)	499.24	Wetted Per. (ft)		59.89	153.57
Min Ch El (ft)	2844.00	Shear (lb/sq ft)		1.58	1.68
Alpha	1.06	Stream Power (lb/ft s)		9.97	7.92
Frctn Loss (ft)	9.33	Cum Volume (acre-ft)	36.71	59.97	47.16
C & E Loss (ft)	0.03	Cum SA (acres)	26.79	26.93	35.16

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.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid,
energy was used.

CROSS SECTION OUTPUT Profile #Method 1

			Left OB	Channel	Right OB
E.G. Elev (ft)	2845.61	Element			
Vel Head (ft)	0.36	Wt. n-Val.		0.038	0.053
W.S. Elev (ft)	2845.25	Reach Len. (ft)	497.50	501.85	495.80
Crit W.S. (ft)	2845.05	Flow Area (sq ft)		70.98	192.49
E.G. Slope (ft/ft)	0.017080	Area (sq ft)		70.98	198.35
Q Total (cfs)	1225.00	Flow (cfs)		405.10	819.90
Top Width (ft)	218.08	Top Width (ft)		59.83	158.25
Vel Total (ft/s)	4.65	Avg. Vel. (ft/s)		5.71	4.26
Max Chl Dpth (ft)	1.25	Hydr. Depth (ft)		1.19	1.25

Conv. Total (cfs)	9373.4	Conv. (cfs)		3099.7	6273.6
Length Wtd. (ft)	499.83	Wetted Per. (ft)		60.15	153.57
Min Ch El (ft)	2844.00	Shear (lb/sq ft)		1.26	1.34
Alpha	1.06	Stream Power (lb/ft s)		7.18	5.69
Frctn Loss (ft)	8.59	Cum Volume (acre-ft)	4.90	68.59	8.79
C & E Loss (ft)	0.17	Cum SA (acres)	2.22	26.93	5.07

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 energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid,
energy was used.

CROSS SECTION

RIVER: Fan 6A
REACH: Fan 6AN-1 RS: 3.81

INPUT
Description: Cross Section 3.81 is located within Mirabel.

Topography
indicates wash and surrounding undeveloped desert.
Aerial shows
wash, undeveloped desert, and golf course.
T6NR5E Section
33
Q100 = 1,320 cfs
Station Elevation Data num= 19

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9694.78	2846	9712.18	2844	9733.16	2842	9744.78	2840	9767.92	2838
9786.28	2836	9798.79	2834	9806.97	2834	9868.8	2835.22	9896.62	2835.15
9931.07	2835.66	9972.58	2834	10000	2832.5	10010.7	2834	10018.12	2835
10025.53	2836	10042.48	2838	10058.51	2840	10070.02	2842		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9694.78	.056	9931.07	.038	10018.12	.053

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9931.07	10018.12	496.2	504.22	504.4	.1	.3

CROSS SECTION OUTPUT Profile #100-yr 6-hr

			Left OB	Channel	Right OB
E.G. Elev (ft)	2836.22	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.52	Wt. n-Val.	0.056	0.038	0.053
W.S. Elev (ft)	2835.70	Reach Len. (ft)	496.20	504.22	504.40
Crit W.S. (ft)	2835.70	Flow Area (sq ft)	114.27	138.07	1.80
E.G. Slope (ft/ft)	0.015114	Area (sq ft)	114.27	138.07	1.80
Q Total (cfs)	1225.00	Flow (cfs)	320.93	901.03	3.04
Top Width (ft)	235.10	Top Width (ft)	142.89	87.05	5.16
Vel Total (ft/s)	4.82	Avg. Vel. (ft/s)	2.81	6.53	1.70
Max Chl Dpth (ft)	3.20	Hydr. Depth (ft)	0.80	1.59	0.35
Conv. Total (cfs)	9964.2	Conv. (cfs)	2610.5	7329.0	24.8
Length Wtd. (ft)	501.50	Wetted Per. (ft)	143.04	87.30	5.20
Min Ch El (ft)	2832.50	Shear (lb/sq ft)	0.75	1.49	0.33
Alpha	1.44	Stream Power (lb/ft s)	2.12	9.74	0.55
Frctn Loss (ft)	8.07	Cum Volume (acre-ft)	36.06	58.81	45.82
C & E Loss (ft)	0.01	Cum SA (acres)	25.97	26.08	33.93

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

Warning: During the standard step iterations, when the assumed water surface was set equal to critical
depth, the 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 OUTPUT Profile #Method 1

E.G. Elev (ft)	2836.86	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.91	Wt. n-Val.		0.038	
W.S. Elev (ft)	2835.95	Reach Len. (ft)	496.20	504.22	504.40
Crit W.S. (ft)	2835.95	Flow Area (sq ft)		160.36	
E.G. Slope (ft/ft)	0.017286	Area (sq ft)		160.36	
Q Total (cfs)	1225.00	Flow (cfs)		1225.00	
Top Width (ft)	87.05	Top Width (ft)		87.05	
Vel Total (ft/s)	7.64	Avg. Vel. (ft/s)		7.64	
Max Chl Dpth (ft)	3.45	Hydr. Depth (ft)		1.84	
Conv. Total (cfs)	9317.3	Conv. (cfs)		9317.3	
Length Wtd. (ft)	504.22	Wetted Per. (ft)		88.54	
Min Ch El (ft)	2832.50	Shear (lb/sq ft)		1.95	
Alpha	1.00	Stream Power (lb/ft s)		14.93	
Frctn Loss (ft)	8.60	Cum Volume (acre-ft)	4.90	67.26	7.66
C & E Loss (ft)	0.03	Cum SA (acres)	2.22	26.08	4.17

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.
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: Fan 6A
REACH: Fan 6AN-1 RS: 3.72

INPUT
Description: Cross Section 3.72 is located within Mirabel.

Topography
indicates wash and surrounding undeveloped desert.
Aerial shows
wash, undeveloped desert, and golf course.
T6NR5E Section
33
Q100 = 1,320 cfs
Station Elevation Data num= 23

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9899.4	2830	9907.74	2828	9915.96	2826	9923.71	2824	9932.59	2822
9955.7	2822	9973.22	2822.36	9996.22	282210005.63		282210030.57		2824
10045.12	2824	10076.6	282410083.72		282410105.18		282410120.25		2824
10149.74	2824	10186.3	282610232.15		282610261.14		282410264.59		2824
10284.79	282610304.84		282810325.07		2830				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9899.4	.056	9973.22	.03810030.57		.053

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9973.2210030.57		448.2	450.02	441.3	.1	.3

Right Levee Station=10186.78 Elevation= 2826

CROSS SECTION OUTPUT Profile #100-yr 6-hr

E.G. Elev (ft)	2824.82	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.64	Wt. n-Val.	0.056	0.038	0.053
W.S. Elev (ft)	2824.18	Reach Len. (ft)	448.20	450.02	441.30
Crit W.S. (ft)	2824.18	Flow Area (sq ft)	95.77	95.73	21.29
E.G. Slope (ft/ft)	0.017184	Area (sq ft)	95.77	95.73	21.29
Q Total (cfs)	1225.00	Flow (cfs)	510.80	689.82	24.38
Top Width (ft)	229.94	Top Width (ft)	50.19	57.35	122.39
Vel Total (ft/s)	5.76	Avg. Vel. (ft/s)	5.33	7.21	1.15
Max Chl Dpth (ft)	2.18	Hydr. Depth (ft)	1.91	1.67	0.17
Conv. Total (cfs)	9344.8	Conv. (cfs)	3896.6	5262.3	186.0
Length Wtd. (ft)	446.95	Wetted Per. (ft)	50.44	57.43	122.40
Min Ch El (ft)	2822.00	Shear (lb/sq ft)	2.04	1.79	0.19
Alpha	1.24	Stream Power (lb/ft s)	10.86	12.89	0.21
Frctn Loss (ft)	3.07	Cum Volume (acre-ft)	34.86	57.46	45.69
C & E Loss (ft)	0.16	Cum SA (acres)	24.87	25.24	33.19

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

CROSS SECTION OUTPUT Profile #Method 1

E.G. Elev (ft)	2826.14	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.20	Wt. n-Val.		0.038	
W.S. Elev (ft)	2824.94	Reach Len. (ft)	448.20	450.02	441.30
Crit W.S. (ft)	2824.94	Flow Area (sq ft)		139.22	
E.G. Slope (ft/ft)	0.016830	Area (sq ft)		139.22	
Q Total (cfs)	1225.00	Flow (cfs)		1225.00	
Top Width (ft)	57.35	Top Width (ft)		57.35	
Vel Total (ft/s)	8.80	Avg. Vel. (ft/s)		8.80	
Max Chl Dpth (ft)	2.93	Hydr. Depth (ft)		2.43	
Conv. Total (cfs)	9442.5	Conv. (cfs)		9442.5	
Length Wtd. (ft)	449.68	Wetted Per. (ft)		60.94	
Min Ch El (ft)	2822.00	Shear (lb/sq ft)		2.40	
Alpha	1.00	Stream Power (lb/ft s)		21.12	
Frctn Loss (ft)	7.36	Cum Volume (acre-ft)	4.90	65.53	7.66
C & E Loss (ft)	0.14	Cum SA (acres)	2.22	25.24	4.17

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.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water
surface was used.

CROSS SECTION

RIVER: Fan 6A
REACH: Fan 6AN-1 RS: 3.63

INPUT
Description: Cross Section 3.63 is located within Mirabel.

Topography
indicates wash and surrounding undeveloped desert.
Aerial shows
wash, undeveloped desert, and golf course.
T6NR5E Section
33
Q100 = 1,320 cfs
Station Elevation Data num= 20

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9941.15	2822	9952.37	2820	9961.15	2818	9970.75	2816	9983.45	2814
9986.17	2813	9988.89	2812	10000	2811.61	10009.46	2812	10074.86	2813
10140.26	2814	10167.74	2814	10368.85	2812	10419.54	2812	10447.17	2812
10450.8	2812	10463.71	2814	10484.01	2816	10507.16	2818	10530.21	2820

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9941.15	.056	9986.17	.038	10074.86	.053

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9986.17	10074.86	321.9	323.92	321.7	.1	.3

Right Levee Station=10140.66 Elevation= 2814

CROSS SECTION OUTPUT Profile #100-yr 6-hr

E.G. Elev (ft)	2814.11	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.10	Wt. n-Val.	0.056	0.038	0.053
W.S. Elev (ft)	2814.01	Reach Len. (ft)	321.90	323.92	321.70
Crit W.S. (ft)	2814.01	Flow Area (sq ft)	1.38	147.96	413.37
E.G. Slope (ft/ft)	0.003672	Area (sq ft)	1.38	147.96	413.37
Q Total (cfs)	1225.00	Flow (cfs)	1.34	492.43	731.23
Top Width (ft)	480.38	Top Width (ft)	2.76	88.69	388.92
Vel Total (ft/s)	2.18	Avg. Vel. (ft/s)	0.97	3.33	1.77
Max Chl Dpth (ft)	2.40	Hydr. Depth (ft)	0.50	1.67	1.06
Conv. Total (cfs)	20214.7	Conv. (cfs)	22.1	8126.0	12066.6
Length Wtd. (ft)	322.77	Wetted Per. (ft)	2.94	88.89	389.09
Min Ch El (ft)	2811.61	Shear (lb/sq ft)	0.11	0.38	0.24
Alpha	1.33	Stream Power (lb/ft s)	0.10	1.27	0.43
Frctn Loss (ft)	2.14	Cum Volume (acre-ft)	34.36	56.20	43.49
C & E Loss (ft)	0.03	Cum SA (acres)	24.60	24.49	30.60

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 conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
depth, the 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 OUTPUT Profile #Method 1

E.G. Elev (ft)	2814.87	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.75	Wt. n-Val.		0.038	0.053
W.S. Elev (ft)	2814.12	Reach Len. (ft)	321.90	323.92	321.70
Crit W.S. (ft)	2814.12	Flow Area (sq ft)		157.64	30.12
E.G. Slope (ft/ft)	0.015943	Area (sq ft)		157.64	30.12
Q Total (cfs)	1225.00	Flow (cfs)		1130.86	94.14
Top Width (ft)	124.41	Top Width (ft)		88.69	35.72

Vel Total (ft/s)	6.52	Avg. Vel. (ft/s)		7.17	3.13
Max Chl Dpth (ft)	2.51	Hydr. Depth (ft)		1.78	0.84
Conv. Total (cfs)	9701.9	Conv. (cfs)		8956.3	745.6
Length Wtd. (ft)	323.83	Wetted Per. (ft)		90.01	36.29
Min Ch El (ft)	2811.61	Shear (lb/sq ft)		1.74	0.83
Alpha	1.13	Stream Power (lb/ft s)		12.51	2.58
Frctn Loss (ft)	5.46	Cum Volume (acre-ft)	4.90	63.99	7.50
C & E Loss (ft)	0.02	Cum SA (acres)	2.22	24.49	3.99

Warning: The energy equation could not be 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: Fan 6A
REACH: Fan 6AN-1 RS: 3.57

INPUT
Description: Cross Section 3.57 is located within Mirabel. It is located upstream of 105th Place. Flow travels over dirt roadway.

Topography indicates wash and surrounding undeveloped desert.
Aerial shows wash, undeveloped desert, golf course, and a dirt road, 105th Place.
T6NR5E Section 33
Q100 = 1,320 cfs
Station Elevation Data num= 16

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9920.86	2816	9926.33	2814	9933.42	2812	9940.79	2810	9948.29	2808
9971.47	2807	9994.65	2806	10037.34	2806	10052.2	2807	10067.06	2808
10081.08	2808	10218.11	2806	10244.11	2806	10275.35	2808	10324.38	2810
10350.92	2812								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9920.86	.056	9971.47	.038	10052.2	.053

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9971.47	10052.2	244.4	244.32	239.6	.1	.3

CROSS SECTION OUTPUT Profile #100-yr 6-hr

			Left OB	Channel	Right OB
E.G. Elev (ft)	2808.04	Element			
Vel Head (ft)	0.40	Wt. n-Val.	0.056	0.038	0.053
W.S. Elev (ft)	2807.64	Reach Len. (ft)	244.40	244.32	239.60
Crit W.S. (ft)	2807.50	Flow Area (sq ft)	4.77	113.49	159.06
E.G. Slope (ft/ft)	0.015331	Area (sq ft)	4.77	113.49	159.06
Q Total (cfs)	1225.00	Flow (cfs)	7.33	689.22	528.45
Top Width (ft)	269.22	Top Width (ft)	14.87	80.73	173.63
Vel Total (ft/s)	4.42	Avg. Vel. (ft/s)	1.54	6.07	3.32
Max Chl Dpth (ft)	1.64	Hydr. Depth (ft)	0.32	1.41	0.92
Conv. Total (cfs)	9893.4	Conv. (cfs)	59.2	5566.3	4267.9
Length Wtd. (ft)	242.07	Wetted Per. (ft)	14.88	80.79	173.71
Min Ch El (ft)	2806.00	Shear (lb/sq ft)	0.31	1.34	0.88
Alpha	1.31	Stream Power (lb/ft s)	0.47	8.17	2.91
Frctn Loss (ft)	4.40	Cum Volume (acre-ft)	34.34	55.22	41.37
C & E Loss (ft)	0.05	Cum SA (acres)	24.53	23.86	28.52

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 OUTPUT Profile #Method 1

E.G. Elev (ft)	2809.13	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.97	Wt. n-Val.		0.038	
W.S. Elev (ft)	2808.15	Reach Len. (ft)	244.40	244.32	239.60
Crit W.S. (ft)	2808.15	Flow Area (sq ft)		154.88	
E.G. Slope (ft/ft)	0.017837	Area (sq ft)		154.88	
Q Total (cfs)	1225.00	Flow (cfs)		1225.00	
Top Width (ft)	80.73	Top Width (ft)		80.73	
Vel Total (ft/s)	7.91	Avg. Vel. (ft/s)		7.91	
Max Chl Dpth (ft)	2.15	Hydr. Depth (ft)		1.92	
Conv. Total (cfs)	9172.3	Conv. (cfs)		9172.3	
Length Wtd. (ft)	243.31	Wetted Per. (ft)		83.09	
Min Ch El (ft)	2806.00	Shear (lb/sq ft)		2.08	
Alpha	1.00	Stream Power (lb/ft s)		16.42	
Frctn Loss (ft)	3.99	Cum Volume (acre-ft)	4.90	62.83	7.39
C & E Loss (ft)	0.00	Cum SA (acres)	2.22	23.86	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 energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
depth, the 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: Fan 6A
REACH: Fan 6AN-1 RS: 3.53

INPUT
Description: Cross Section 3.53 is located within Mirabel. It is located downstream of 105th Place. Flow travels over dirt roadway.

Topography indicates wash and surrounding undeveloped desert.
Aerial shows wash, undeveloped desert, golf course, and a dirt road, 105th Place.
T6NR5E Section 33
Q100 = 1,320 cfs
Station Elevation Data num= 19

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9943.15	2810	9952.72	2808	9961.91	2806	9969.62	2804	9987.3	2802
9991.68	2800	10000	2799.64	10004.58	2800	10011.5	2802	10030.56	2802
10049.94	2800.91	10070.88	2802	10097.02	2802	10212.92	2802	10237.01	2804
10263.78	2806	10281.72	2808	10291.41	2810	10300.06	2812		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9943.15	.056	9987.3	.038	10011.5	.053

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9987.3	10011.5	222.9	222.87	219.4	.1	.3

CROSS SECTION OUTPUT Profile #100-yr 6-hr

E.G. Elev (ft)	2803.60	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.85	Wt. n-Val.	0.056	0.038	0.053
W.S. Elev (ft)	2802.74	Reach Len. (ft)	222.90	222.87	219.40

Crit W.S. (ft)	2801.92	Flow Area (sq ft)	2.44	57.40	175.09
E.G. Slope (ft/ft)	0.021848	Area (sq ft)	2.44	57.40	175.09
Q Total (cfs)	1225.00	Flow (cfs)	4.92	578.26	641.83
Top Width (ft)	241.13	Top Width (ft)	6.57	24.20	210.37
Vel Total (ft/s)	5.21	Avg. Vel. (ft/s)	2.02	10.07	3.67
Max Chl Dpth (ft)	3.10	Hydr. Depth (ft)	0.37	2.37	0.83
Conv. Total (cfs)	8287.7	Conv. (cfs)	33.3	3912.1	4342.2
Length Wtd. (ft)	221.16	Wetted Per. (ft)	6.61	24.94	210.46
Min Ch El (ft)	2799.64	Shear (lb/sq ft)	0.50	3.14	1.13
Alpha	2.02	Stream Power (lb/ft s)	1.02	31.62	4.16
Frctn Loss (ft)	5.22	Cum Volume (acre-ft)	34.32	54.75	40.45
C & E Loss (ft)	0.09	Cum SA (acres)	24.47	23.56	27.46

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 OUTPUT Profile #Method 1

E.G. Elev (ft)	2804.37	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.97	Wt. n-Val.		0.038	0.053
W.S. Elev (ft)	2803.40	Reach Len. (ft)	222.90	222.87	219.40
Crit W.S. (ft)	2803.40	Flow Area (sq ft)		73.38	105.49
E.G. Slope (ft/ft)	0.015161	Area (sq ft)		73.38	105.49
Q Total (cfs)	1225.00	Flow (cfs)		699.41	525.59
Top Width (ft)	83.58	Top Width (ft)		24.20	59.38
Vel Total (ft/s)	6.85	Avg. Vel. (ft/s)		9.53	4.98
Max Chl Dpth (ft)	3.76	Hydr. Depth (ft)		3.03	1.78
Conv. Total (cfs)	9948.9	Conv. (cfs)		5680.3	4268.6
Length Wtd. (ft)	222.13	Wetted Per. (ft)		26.34	60.84
Min Ch El (ft)	2799.64	Shear (lb/sq ft)		2.64	1.64
Alpha	1.33	Stream Power (lb/ft s)		25.13	8.18
Frctn Loss (ft)	3.64	Cum Volume (acre-ft)	4.90	62.19	7.10
C & E Loss (ft)	0.00	Cum SA (acres)	2.22	23.57	3.69

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

CROSS SECTION

RIVER: Fan 6A
REACH: Fan 6AN-1 RS: 3.48

INPUT
Description: Cross Section 3.48 is located within Mirabel.

Topography
indicates wash and surrounding undeveloped desert.
Aerial shows
wash, undeveloped desert, and golf course.
T6NR5E Section
33
Q100 = 1,320 cfs
Station Elevation Data num= 14

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9975.58	2804	9978.94	2802	9982.24	2800	9985.43	2798	9987.07	2797
9988.71	2796	10008.99	2796	10062.73	2797.4	10100.26	2796	10109.01	2796
10209.68	2798	10249.4	2800	10274.12	2802	10292.96	2804		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9975.58	.056	9987.07	.03810062.73		.053

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9987.0710062.73		300	302.63	300.4	.1	.3

CROSS SECTION OUTPUT Profile #100-yr 6-hr

E.G. Elev (ft)	2798.29	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.56	Wt. n-Val.	0.056	0.038	0.053
W.S. Elev (ft)	2797.73	Reach Len. (ft)	300.00	302.63	300.40
Crit W.S. (ft)	2797.73	Flow Area (sq ft)	0.44	92.44	129.08
E.G. Slope (ft/ft)	0.025535	Area (sq ft)	0.44	92.44	129.08
Q Total (cfs)	1225.00	Flow (cfs)	0.85	658.36	565.79
Top Width (ft)	210.20	Top Width (ft)	1.20	75.66	133.35
Vel Total (ft/s)	5.52	Avg. Vel. (ft/s)	1.95	7.12	4.38
Max Chl Dpth (ft)	1.73	Hydr. Depth (ft)	0.36	1.22	0.97
Conv. Total (cfs)	7666.0	Conv. (cfs)	5.3	4120.0	3540.7
Length Wtd. (ft)	301.22	Wetted Per. (ft)	1.40	75.96	133.39
Min Ch El (ft)	2796.00	Shear (lb/sq ft)	0.50	1.94	1.54
Alpha	1.19	Stream Power (lb/ft s)	0.97	13.82	6.76
Frctn Loss (ft)	3.06	Cum Volume (acre-ft)	34.31	54.36	39.69
C & E Loss (ft)	0.13	Cum SA (acres)	24.45	23.31	26.60

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 conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
depth, the 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 OUTPUT Profile #Method 1

E.G. Elev (ft)	2799.53	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.01	Wt. n-Val.		0.038	
W.S. Elev (ft)	2798.51	Reach Len. (ft)	300.00	302.63	300.40
Crit W.S. (ft)	2798.51	Flow Area (sq ft)		151.64	
E.G. Slope (ft/ft)	0.017766	Area (sq ft)		151.64	
Q Total (cfs)	1225.00	Flow (cfs)		1225.00	
Top Width (ft)	75.66	Top Width (ft)		75.66	
Vel Total (ft/s)	8.08	Avg. Vel. (ft/s)		8.08	
Max Chl Dpth (ft)	2.51	Hydr. Depth (ft)		2.00	
Conv. Total (cfs)	9190.5	Conv. (cfs)		9190.5	
Length Wtd. (ft)	302.00	Wetted Per. (ft)		78.58	
Min Ch El (ft)	2796.00	Shear (lb/sq ft)		2.14	
Alpha	1.00	Stream Power (lb/ft s)		17.29	
Frctn Loss (ft)	4.63	Cum Volume (acre-ft)	4.90	61.62	6.84
C & E Loss (ft)	0.13	Cum SA (acres)	2.22	23.31	3.54

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.

CROSS SECTION

RIVER: Fan 6A
REACH: Fan 6AN-1 RS: 3.43

INPUT
Description: Cross Section 3.43 is located within Mirabel.

Topography
indicates wash and surrounding undeveloped desert.
Aerial shows
wash, undeveloped desert, and golf course.
T6NR5E Section
33
Q100 = 1,320 cfs
Station Elevation Data num= 20

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9962.56	2800	9967.08	2798	9971.37	2796	9976.03	2794	9980.67	2792
9985.52	2790	9996.61	2788	10001.87	2788	10010.58	2790	10052.59	2790.86
10103.29	2790.63	10129.63	2790	10150.15	2788.19	10178.53	2789.09	10269.57	2788.25
10299.45	2790	10319.1	2792	10334.37	2794	10347.83	2796	10366.81	2798

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9962.56	.056	9985.52	.038	10010.58	.053

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9985.52	10010.58	189.6	188.9	190.3	.1	.3

Right Levee Station=10052.59 Elevation= 2790.86

CROSS SECTION OUTPUT Profile #100-yr 6-hr

			Left OB	Channel	Right OB
E.G. Elev (ft)	2791.01	Element			
Vel Head (ft)	0.14	Wt. n-Val.	0.056	0.038	0.053
W.S. Elev (ft)	2790.87	Reach Len. (ft)	189.60	188.90	190.30
Crit W.S. (ft)	2790.87	Flow Area (sq ft)	0.91	52.05	394.46
E.G. Slope (ft/ft)	0.005422	Area (sq ft)	0.91	52.05	394.46
Q Total (cfs)	1225.00	Flow (cfs)	0.97	241.40	982.63
Top Width (ft)	324.55	Top Width (ft)	2.10	25.06	297.39
Vel Total (ft/s)	2.74	Avg. Vel. (ft/s)	1.06	4.64	2.49
Max Chl Dpth (ft)	2.87	Hydr. Depth (ft)	0.43	2.08	1.33
Conv. Total (cfs)	16635.7	Conv. (cfs)	13.2	3278.2	13344.4
Length Wtd. (ft)	189.95	Wetted Per. (ft)	2.27	25.47	297.60
Min Ch El (ft)	2788.00	Shear (lb/sq ft)	0.14	0.69	0.45
Alpha	1.23	Stream Power (lb/ft s)	0.14	3.21	1.12
Frctn Loss (ft)	1.95	Cum Volume (acre-ft)	34.31	53.86	37.88
C & E Loss (ft)	0.05	Cum SA (acres)	24.44	22.96	25.11

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 conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
depth, the 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 OUTPUT Profile #Method 1

			Left OB	Channel	Right OB
E.G. Elev (ft)	2791.96	Element			
Vel Head (ft)	0.57	Wt. n-Val.		0.038	0.053
W.S. Elev (ft)	2791.39	Reach Len. (ft)	189.60	188.90	190.30
Crit W.S. (ft)	2791.39	Flow Area (sq ft)		65.18	188.55
E.G. Slope (ft/ft)	0.013343	Area (sq ft)		65.18	188.55
Q Total (cfs)	1225.00	Flow (cfs)		531.64	693.36
Top Width (ft)	178.01	Top Width (ft)		25.06	152.95
Vel Total (ft/s)	4.83	Avg. Vel. (ft/s)		8.16	3.68
Max Chl Dpth (ft)	3.39	Hydr. Depth (ft)		2.60	1.23

Conv. Total (cfs)	10605.0	Conv. (cfs)		4602.5	6002.6
Length Wtd. (ft)	189.69	Wetted Per. (ft)		26.86	155.83
Min Ch El (ft)	2788.00	Shear (lb/sq ft)		2.02	1.01
Alpha	1.57	Stream Power (lb/ft s)		16.49	3.71
Frctn Loss (ft)	2.48	Cum Volume (acre-ft)	4.90	60.86	6.19
C & E Loss (ft)	0.01	Cum SA (acres)	2.22	22.96	3.01

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

CROSS SECTION

RIVER: Fan 6A
REACH: Fan 6AN-1 RS: 3.39

INPUT
Description: Cross Section 3.39 is located within Mirabel.

Topography
indicates wash and surrounding undeveloped desert.
Aerial shows
wash, undeveloped desert, and golf course.
T6NR5E Section
33
Q100 = 1,320 cfs
Station Elevation Data num= 17

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9950.17	2796	9967.04	2794	9976.88	2792	9980.93	2790	9985.08	2788
9988.88	2786	9993.22	2784	10000	2783.87	10009.27	2784	10015.76	2786
10072.12	2786.34	10113.42	2786	10209.43	2784	10236.43	2784	10252.19	2786
10264.39	2788	10277.38	2790						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9950.17	.056	9988.88	.038	10015.76	.053

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9988.88	10015.76	375.1	380.13	378.6	.1	.3

Right Levee Station=10277.38 Elevation= 2790

CROSS SECTION OUTPUT Profile #100-yr 6-hr

E.G. Elev (ft)	2786.64	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.64	Wt. n-Val.		0.038	0.053
W.S. Elev (ft)	2786.00	Reach Len. (ft)	375.10	380.13	378.60
Crit W.S. (ft)	2786.00	Flow Area (sq ft)		43.95	165.67
E.G. Slope (ft/ft)	0.026207	Area (sq ft)		43.95	165.67
Q Total (cfs)	1225.00	Flow (cfs)		379.25	845.75
Top Width (ft)	165.61	Top Width (ft)		26.88	138.73
Vel Total (ft/s)	5.84	Avg. Vel. (ft/s)		8.63	5.11
Max Chl Dpth (ft)	2.13	Hydr. Depth (ft)		1.64	1.19
Conv. Total (cfs)	7567.1	Conv. (cfs)		2342.7	5224.4
Length Wtd. (ft)	379.15	Wetted Per. (ft)		27.62	138.88
Min Ch El (ft)	2783.87	Shear (lb/sq ft)		2.60	1.95
Alpha	1.20	Stream Power (lb/ft s)		22.47	9.96
Frctn Loss (ft)	5.29	Cum Volume (acre-ft)	34.30	53.65	36.66
C & E Loss (ft)	0.00	Cum SA (acres)	24.44	22.85	24.16

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

Warning: Divided flow computed for this cross-section.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
depth, the calculated water surface came back below critical depth. This indicates that there is
not a valid subcritical answer. The program defaulted to critical depth.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water
surface was used.

CROSS SECTION OUTPUT Profile #Method 1

E.G. Elev (ft)	2787.44	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.53	Wt. n-Val.		0.038	0.053
W.S. Elev (ft)	2786.90	Reach Len. (ft)	375.10	380.13	378.60
Crit W.S. (ft)	2786.90	Flow Area (sq ft)		68.27	198.43
E.G. Slope (ft/ft)	0.012822	Area (sq ft)		68.27	198.43
Q Total (cfs)	1225.00	Flow (cfs)		540.81	684.19
Top Width (ft)	199.70	Top Width (ft)		26.88	172.82
Vel Total (ft/s)	4.59	Avg. Vel. (ft/s)		7.92	3.45
Max Chl Dpth (ft)	3.03	Hydr. Depth (ft)		2.54	1.15
Conv. Total (cfs)	10818.1	Conv. (cfs)		4776.0	6042.1
Length Wtd. (ft)	379.70	Wetted Per. (ft)		28.53	175.31
Min Ch El (ft)	2783.87	Shear (lb/sq ft)		1.92	0.91
Alpha	1.63	Stream Power (lb/ft s)		15.18	3.12
Frctn Loss (ft)	5.54	Cum Volume (acre-ft)	4.90	60.57	5.34
C & E Loss (ft)	0.08	Cum SA (acres)	2.22	22.85	2.30

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 velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
depth, the 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: Fan 6A
REACH: Fan 6AN-1 RS: 3.32

INPUT
Description: Cross Section 3.32 is located within Mirabel.

Topography
indicates wash and surrounding undeveloped desert.
Aerial shows
wash, undeveloped desert, and golf course.
T6NR5E Section
33
Q100 = 1,320 cfs
Station Elevation Data num= 15

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9814.55	2784	9826.79	2782	9839.98	2780	9852.75	2778	9911.27	2778
9960.61	2778	9983.25	2776.414	9989.16	2776	10000	2775	10010.18	2776
10019.49	2776	10026.88	2776	10030.95	2776.39	10047.43	2778	10087.6	2780

```
Manning's n Values          num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
 9814.55    .056 9983.25    .03810030.95    .053

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9983.2510030.95              390  394.72   403.4            .1        .3
Right Levee     Station= 10087.6      Elevation=    2780
```

CROSS SECTION OUTPUT Profile #100-yr 6-hr

E.G. Elev (ft)	2779.26	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.64	Wt. n-Val.	0.056	0.038	0.053
W.S. Elev (ft)	2778.61	Reach Len. (ft)	390.00	394.72	403.40
Crit W.S. (ft)	2778.61	Flow Area (sq ft)	99.19	133.13	27.10
E.G. Slope (ft/ft)	0.008642	Area (sq ft)	99.19	133.13	27.10
Q Total (cfs)	1225.00	Flow (cfs)	199.68	957.64	67.68
Top Width (ft)	210.91	Top Width (ft)	134.42	47.70	28.80
Vel Total (ft/s)	4.72	Avg. Vel. (ft/s)	2.01	7.19	2.50
Max Chl Dpth (ft)	3.61	Hydr. Depth (ft)	0.74	2.79	0.94
Conv. Total (cfs)	13177.6	Conv. (cfs)	2148.0	10301.5	728.1
Length Wtd. (ft)	393.52	Wetted Per. (ft)	134.52	47.83	28.89
Min Ch El (ft)	2775.00	Shear (lb/sq ft)	0.40	1.50	0.51
Alpha	1.86	Stream Power (lb/ft s)	0.80	10.80	1.26
Frctn Loss (ft)	4.70	Cum Volume (acre-ft)	33.88	52.88	35.82
C & E Loss (ft)	0.04	Cum SA (acres)	23.86	22.52	23.43

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

CROSS SECTION OUTPUT Profile #Method 1

E.G. Elev (ft)	2779.93	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.36	Wt. n-Val.		0.038	
W.S. Elev (ft)	2778.57	Reach Len. (ft)	390.00	394.72	403.40
Crit W.S. (ft)	2778.57	Flow Area (sq ft)		131.07	
E.G. Slope (ft/ft)	0.016720	Area (sq ft)		131.07	
Q Total (cfs)	1225.00	Flow (cfs)		1225.00	
Top Width (ft)	47.70	Top Width (ft)		47.70	
Vel Total (ft/s)	9.35	Avg. Vel. (ft/s)		9.35	
Max Chl Dpth (ft)	3.57	Hydr. Depth (ft)		2.75	
Conv. Total (cfs)	9473.6	Conv. (cfs)		9473.6	
Length Wtd. (ft)	394.72	Wetted Per. (ft)		52.16	
Min Ch El (ft)	2775.00	Shear (lb/sq ft)		2.62	
Alpha	1.00	Stream Power (lb/ft s)		24.52	
Frctn Loss (ft)	6.67	Cum Volume (acre-ft)	4.90	59.70	4.48
C & E Loss (ft)	0.05	Cum SA (acres)	2.22	22.52	1.55

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

depth, the calculated water surface came back below critical depth. This indicates that there is
not a valid subcritical answer. The program defaulted to critical depth.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water
surface was used.

CROSS SECTION

RIVER: Fan 6A
REACH: Fan 6AN-1 RS: 3.24

INPUT
Description: Cross Section 3.24 is located within Mirabel. It is located upstream of concentration point CF6AN5 in the HEC-1 Model. This section is located upstream of the intersection of Stagecoach Pass and F6A North. There are no culverts under the roadway.

Topography indicates wash and surrounding undeveloped desert.
Aerial shows wash, undeveloped desert, and Stagecoach Pass.
T6NR5E Section 33 and 32
Q100 = 1,320 cfs
Station Elevation Data num= 15

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9736.51	2776	9750.57	2774	9763.13	2772	9781.2	2770	9803.15	2768
9817.03	2768	9884.79	2768.7	9963.89	2768.3	9982.69	2768	10000	2766.97
10020.58	2768	10024.16	2769	10027.73	2770	10061.76	2772	10086.8	2774

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9736.51	.056	9963.89	.038	10024.16	.053

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9963.89	10024.16	512.2	513.61	513	.1	.3

CROSS SECTION OUTPUT Profile #100-yr 6-hr

			Left OB	Channel	Right OB
E.G. Elev (ft)	2769.85	Element			
Vel Head (ft)	0.51	Wt. n-Val.	0.056	0.038	0.053
W.S. Elev (ft)	2769.35	Reach Len. (ft)	512.20	513.61	513.00
Crit W.S. (ft)	2769.35	Flow Area (sq ft)	163.19	96.08	0.21
E.G. Slope (ft/ft)	0.017569	Area (sq ft)	163.19	96.08	0.21
Q Total (cfs)	1225.00	Flow (cfs)	546.63	678.13	0.24
Top Width (ft)	237.03	Top Width (ft)	175.52	60.27	1.24
Vel Total (ft/s)	4.72	Avg. Vel. (ft/s)	3.35	7.06	1.13
Max Chl Dpth (ft)	2.38	Hydr. Depth (ft)	0.93	1.59	0.17
Conv. Total (cfs)	9242.0	Conv. (cfs)	4124.0	5116.2	1.8
Length Wtd. (ft)	513.15	Wetted Per. (ft)	175.59	60.47	1.29
Min Ch El (ft)	2766.97	Shear (lb/sq ft)	1.02	1.74	0.18
Alpha	1.46	Stream Power (lb/ft s)	3.41	12.30	0.21
Frctn Loss (ft)	7.57	Cum Volume (acre-ft)	32.70	51.84	35.69
C & E Loss (ft)	0.01	Cum SA (acres)	22.47	22.03	23.29

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.

CROSS SECTION OUTPUT Profile #Method 1

E.G. Elev (ft)	2771.26	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.18	Wt. n-Val.		0.038	
W.S. Elev (ft)	2770.09	Reach Len. (ft)	512.20	513.61	513.00
Crit W.S. (ft)	2770.09	Flow Area (sq ft)		140.74	
E.G. Slope (ft/ft)	0.017088	Area (sq ft)		140.74	
Q Total (cfs)	1225.00	Flow (cfs)		1225.00	
Top Width (ft)	60.27	Top Width (ft)		60.27	
Vel Total (ft/s)	8.70	Avg. Vel. (ft/s)		8.70	
Max Chl Dpth (ft)	3.12	Hydr. Depth (ft)		2.34	
Conv. Total (cfs)	9371.0	Conv. (cfs)		9371.0	
Length Wtd. (ft)	513.61	Wetted Per. (ft)		63.34	
Min Ch El (ft)	2766.97	Shear (lb/sq ft)		2.37	
Alpha	1.00	Stream Power (lb/ft s)		20.63	
Frctn Loss (ft)	8.70	Cum Volume (acre-ft)	4.90	58.47	4.48
C & E Loss (ft)	0.06	Cum SA (acres)	2.22	22.03	1.55

Warning: The energy equation could not be 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: Fan 6A
REACH: Fan 6AN-1 RS: 3.15

INPUT
Description: Cross Section 3.15 is located downstream of the southern boundary of Mirabel. This section is located downstream of the intersection of Stagecoach Pass and F6A North. There are no culverts under the roadway.

Topography indicates wash and surrounding undeveloped desert.
Aerial shows wash, undeveloped desert, and Stagecoach Pass.
T5NR5E Section 5
Q100 = 1,337 cfs
Station Elevation Data num= 11

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9812.54	2758	9875.19	2756	9892.72	2756	9912	2756.79	9984.01	2756.58
9990.53	2756	10000	2754.34	10053.57	2756	10061.53	2757	10069.48	2758
10085.52	2760								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9812.54	.056	9984.01	.038	10061.53	.053

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9984.01	10061.53	431.2	422.74	407.59	.1	.3

Right Levee Station=10085.52 Elevation= 2760

CROSS SECTION OUTPUT Profile #100-yr 6-hr

E.G. Elev (ft)	2757.84	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.56	Wt. n-Val.	0.056	0.038	0.053
W.S. Elev (ft)	2757.28	Reach Len. (ft)	431.20	422.74	407.59
Crit W.S. (ft)	2757.28	Flow Area (sq ft)	107.83	145.58	0.31
E.G. Slope (ft/ft)	0.012564	Area (sq ft)	107.83	145.58	0.31
Q Total (cfs)	1228.00	Flow (cfs)	258.59	969.15	0.26
Top Width (ft)	228.62	Top Width (ft)	148.88	77.52	2.22
Vel Total (ft/s)	4.84	Avg. Vel. (ft/s)	2.40	6.66	0.84
Max Chl Dpth (ft)	2.94	Hydr. Depth (ft)	0.72	1.88	0.14

Conv. Total (cfs)	10955.5	Conv. (cfs)	2307.0	8646.1	2.3
Length Wtd. (ft)	426.83	Wetted Per. (ft)	148.91	77.78	2.23
Min Ch El (ft)	2754.34	Shear (lb/sq ft)	0.57	1.47	0.11
Alpha	1.54	Stream Power (lb/ft s)	1.36	9.77	0.09
Frctn Loss (ft)	7.76	Cum Volume (acre-ft)	31.11	50.42	35.69
C & E Loss (ft)	0.07	Cum SA (acres)	20.57	21.22	23.27

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 conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
depth, the 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 OUTPUT Profile #Method 1

E.G. Elev (ft)	2758.38	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.98	Wt. n-Val.		0.038	
W.S. Elev (ft)	2757.40	Reach Len. (ft)	431.20	422.74	407.59
Crit W.S. (ft)	2757.40	Flow Area (sq ft)		154.80	
E.G. Slope (ft/ft)	0.016783	Area (sq ft)		154.80	
Q Total (cfs)	1228.00	Flow (cfs)		1228.00	
Top Width (ft)	77.52	Top Width (ft)		77.52	
Vel Total (ft/s)	7.93	Avg. Vel. (ft/s)		7.93	
Max Chl Dpth (ft)	3.06	Hydr. Depth (ft)		2.00	
Conv. Total (cfs)	9479.1	Conv. (cfs)		9479.1	
Length Wtd. (ft)	424.32	Wetted Per. (ft)		78.99	
Min Ch El (ft)	2754.34	Shear (lb/sq ft)		2.05	
Alpha	1.00	Stream Power (lb/ft s)		16.29	
Frctn Loss (ft)	7.51	Cum Volume (acre-ft)	4.90	56.73	4.48
C & E Loss (ft)	0.08	Cum SA (acres)	2.22	21.22	1.55

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

CROSS SECTION

RIVER: Fan 6A
REACH: Fan 6AN-1 RS: 3.07

INPUT
Description: Topography and Aerial indicate wash and surrounding undeveloped desert.
T5NR5E Section 5
Q100 = 1,337 cfs
Station Elevation Data num= 21

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9646.02	2754	9657.78	2752	9669.52	2750	9682.12	2748	9697.54	2746

```
 9720.12    2744 9759.98    2744 9783.26 2744.65 9863.75 2744.43  9886.7    2744
 9895.15    2744 9907.45 2744.83 9983.09 2745.22 9997.58    274410003.37    2744
10034.75    274510066.13    274610082.94    274810100.18    275010118.01    2752
10121.89    2752

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
 9646.02    .056 9983.09    .03810034.75    .053

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9983.0910034.75           423.34  433.47   433.2            .1        .3
Right Levee     Station=10121.89      Elevation=    2752
```

CROSS SECTION OUTPUT Profile #100-yr 6-hr

			Left OB	Channel	Right OB
E.G. Elev (ft)	2745.71	Element			
Vel Head (ft)	0.33	Wt. n-Val.	0.056	0.038	0.053
W.S. Elev (ft)	2745.38	Reach Len. (ft)	423.34	433.47	433.20
Crit W.S. (ft)	2745.32	Flow Area (sq ft)	234.27	46.62	2.23
E.G. Slope (ft/ft)	0.028617	Area (sq ft)	234.27	46.62	2.23
Q Total (cfs)	1228.00	Flow (cfs)	936.81	287.71	3.48
Top Width (ft)	342.01	Top Width (ft)	278.52	51.66	11.84
Vel Total (ft/s)	4.34	Avg. Vel. (ft/s)	4.00	6.17	1.56
Max Chl Dpth (ft)	1.38	Hydr. Depth (ft)	0.84	0.90	0.19
Conv. Total (cfs)	7259.2	Conv. (cfs)	5537.8	1700.8	20.6
Length Wtd. (ft)	427.64	Wetted Per. (ft)	278.62	51.73	11.84
Min Ch El (ft)	2744.00	Shear (lb/sq ft)	1.50	1.61	0.34
Alpha	1.12	Stream Power (lb/ft s)	6.01	9.94	0.53
Frctn Loss (ft)	10.26	Cum Volume (acre-ft)	29.42	49.48	35.68
C & E Loss (ft)	0.01	Cum SA (acres)	18.45	20.59	23.21

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.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water
surface was used.

CROSS SECTION OUTPUT Profile #Method 1

			Left OB	Channel	Right OB
E.G. Elev (ft)	2747.07	Element			
Vel Head (ft)	0.72	Wt. n-Val.	0.056	0.038	
W.S. Elev (ft)	2746.34	Reach Len. (ft)	423.34	433.47	433.20
Crit W.S. (ft)	2746.34	Flow Area (sq ft)	106.23	96.47	
E.G. Slope (ft/ft)	0.018683	Area (sq ft)	106.23	96.47	
Q Total (cfs)	1228.00	Flow (cfs)	459.96	768.04	
Top Width (ft)	131.30	Top Width (ft)	79.64	51.66	
Vel Total (ft/s)	6.06	Avg. Vel. (ft/s)	4.33	7.96	
Max Chl Dpth (ft)	2.34	Hydr. Depth (ft)	1.33	1.87	
Conv. Total (cfs)	8984.2	Conv. (cfs)	3365.1	5619.1	
Length Wtd. (ft)	430.32	Wetted Per. (ft)	81.43	53.07	
Min Ch El (ft)	2744.00	Shear (lb/sq ft)	1.52	2.12	
Alpha	1.27	Stream Power (lb/ft s)	6.59	16.88	
Frctn Loss (ft)	7.75	Cum Volume (acre-ft)	4.37	55.51	4.48
C & E Loss (ft)	0.03	Cum SA (acres)	1.83	20.59	1.55

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

CROSS SECTION

RIVER: Fan 6A
REACH: Fan 6AN-1 RS: 2.98

INPUT
Description: Topography and Aerial indicate wash and surrounding undeveloped desert.
T5NR5E Section 5
Q100 = 1,337 cfs
Station Elevation Data num= 18

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9798.25	2744	9811.57	2742	9825.32	2740	9840.69	2738	9856.66	2736
9882.52	2734	9897.41	2734	9925.54	2734	9944.97	2733.47	9982.67	2734
9986.3	2734	10000	2732.33	10010.73	2734	10045.95	2734.21	10070.82	2734
10118.47	2734	10138.93	2736	10167.93	2738				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9798.25	.056	9982.67	.038	10010.73	.053

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9982.67	10010.73	185.2	177.66	176.5	.1	.3

Right Levee Station=10167.93 Elevation= 2738

CROSS SECTION OUTPUT Profile #100-yr 6-hr

E.G. Elev (ft)	2735.43	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.46	Wt. n-Val.	0.056	0.038	0.053
W.S. Elev (ft)	2734.98	Reach Len. (ft)	185.20	177.66	176.50
Crit W.S. (ft)	2734.98	Flow Area (sq ft)	118.92	47.75	103.88
E.G. Slope (ft/ft)	0.020415	Area (sq ft)	118.92	47.75	103.88
Q Total (cfs)	1228.00	Flow (cfs)	466.99	378.24	382.77
Top Width (ft)	258.53	Top Width (ft)	112.75	28.06	117.71
Vel Total (ft/s)	4.54	Avg. Vel. (ft/s)	3.93	7.92	3.68
Max Chl Dpth (ft)	2.64	Hydr. Depth (ft)	1.05	1.70	0.88
Conv. Total (cfs)	8594.5	Conv. (cfs)	3268.3	2647.2	2678.9
Length Wtd. (ft)	178.63	Wetted Per. (ft)	112.80	28.29	117.76
Min Ch El (ft)	2732.33	Shear (lb/sq ft)	1.34	2.15	1.12
Alpha	1.43	Stream Power (lb/ft s)	5.28	17.04	4.14
Frctn Loss (ft)	2.77	Cum Volume (acre-ft)	27.70	49.01	35.15
C & E Loss (ft)	0.07	Cum SA (acres)	16.55	20.20	22.56

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

CROSS SECTION OUTPUT Profile #Method 1

E.G. Elev (ft)	2736.83	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.99	Wt. n-Val.	0.056	0.038	0.053
W.S. Elev (ft)	2735.84	Reach Len. (ft)	185.20	177.66	176.50
Crit W.S. (ft)	2735.84	Flow Area (sq ft)	55.68	71.97	46.44
E.G. Slope (ft/ft)	0.017373	Area (sq ft)	55.68	71.97	46.44
Q Total (cfs)	1228.00	Flow (cfs)	296.44	691.27	240.29
Top Width (ft)	81.82	Top Width (ft)	27.42	28.06	26.34
Vel Total (ft/s)	7.05	Avg. Vel. (ft/s)	5.32	9.60	5.17
Max Chl Dpth (ft)	3.51	Hydr. Depth (ft)	2.03	2.56	1.76

Conv. Total (cfs)	9316.6	Conv. (cfs)	2249.0	5244.5	1823.0
Length Wtd. (ft)	178.46	Wetted Per. (ft)	29.65	28.29	28.03
Min Ch El (ft)	2732.33	Shear (lb/sq ft)	2.04	2.76	1.80
Alpha	1.29	Stream Power (lb/ft s)	10.85	26.50	9.30
Frctn Loss (ft)	2.64	Cum Volume (acre-ft)	3.59	54.67	4.25
C & E Loss (ft)	0.15	Cum SA (acres)	1.31	20.20	1.42

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 energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
depth, the 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: Fan 6A
REACH: Fan 6AN-1 RS: 2.95

INPUT
Description: Topography and Aerial indicate wash and surrounding undeveloped
desert.
T5NR5E Section 5
Q100 = 1,337 cfs
Station Elevation Data num= 16

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9945.49	2738	9961.28	2736	9969.78	2734	9977.72	2732	9984.41	2730
9990.84	2729	9997.27	2728	10002.38	2728	10141.88	2729.63	10253.45	2728
10294.41	2728	10315	2730	10330.46	2732	10343.45	2734	10357.09	2736
10377.89	2738								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9945.49	.056	9990.84	.038	10141.88	.053

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9990.84	10141.88	390.5	394.47	390	.1	.3

Right Levee Station=10377.89 Elevation= 2738

CROSS SECTION OUTPUT Profile #100-yr 6-hr

E.G. Elev (ft)	2729.95	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.22	Wt. n-Val.	0.056	0.038	0.053
W.S. Elev (ft)	2729.73	Reach Len. (ft)	390.50	394.47	390.00
Crit W.S. (ft)	2729.42	Flow Area (sq ft)	1.70	144.10	188.02
E.G. Slope (ft/ft)	0.012216	Area (sq ft)	1.70	144.10	188.02
Q Total (cfs)	1228.00	Flow (cfs)	2.53	603.35	622.12
Top Width (ft)	326.04	Top Width (ft)	4.68	151.04	170.32
Vel Total (ft/s)	3.68	Avg. Vel. (ft/s)	1.48	4.19	3.31
Max Chl Dpth (ft)	1.73	Hydr. Depth (ft)	0.36	0.95	1.10
Conv. Total (cfs)	11110.3	Conv. (cfs)	22.9	5458.9	5628.6
Length Wtd. (ft)	392.21	Wetted Per. (ft)	4.74	151.13	170.42
Min Ch El (ft)	2728.00	Shear (lb/sq ft)	0.27	0.73	0.84
Alpha	1.05	Stream Power (lb/ft s)	0.41	3.04	2.78
Frctn Loss (ft)	6.38	Cum Volume (acre-ft)	27.44	48.62	34.56
C & E Loss (ft)	0.02	Cum SA (acres)	16.30	19.83	21.98

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.

This may indicate the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water
surface was used.

CROSS SECTION OUTPUT Profile #Method 1

E.G. Elev (ft)	2730.71	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.49	Wt. n-Val.		0.038	
W.S. Elev (ft)	2730.22	Reach Len. (ft)	390.50	394.47	390.00
Crit W.S. (ft)	2730.06	Flow Area (sq ft)		218.85	
E.G. Slope (ft/ft)	0.012770	Area (sq ft)		218.85	
Q Total (cfs)	1228.00	Flow (cfs)		1228.00	
Top Width (ft)	151.04	Top Width (ft)		151.04	
Vel Total (ft/s)	5.61	Avg. Vel. (ft/s)		5.61	
Max Chl Dpth (ft)	2.22	Hydr. Depth (ft)		1.45	
Conv. Total (cfs)	10866.7	Conv. (cfs)		10866.7	
Length Wtd. (ft)	394.24	Wetted Per. (ft)		152.94	
Min Ch El (ft)	2728.00	Shear (lb/sq ft)		1.14	
Alpha	1.00	Stream Power (lb/ft s)		6.40	
Frctn Loss (ft)	5.76	Cum Volume (acre-ft)	3.47	54.08	4.16
C & E Loss (ft)	0.04	Cum SA (acres)	1.25	19.83	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.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water
surface was used.

CROSS SECTION

RIVER: Fan 6A
REACH: Fan 6AN-1 RS: 2.88

INPUT
Description: Topography and Aerial indicate wash and surrounding undeveloped
desert.
T5NR5E Section 5
Q100 = 1,337 cfs
Station Elevation Data num= 17

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9724.87	2726	9740.27	2724	9767.12	2722	9832.03	2722	9921.27	2723.03
9931.47	2722	9947.15	2722	9965.74	2722.93	9985.58	2722	10000	2720.49
10014.12	2722	10030.36	2722.72	10041.11	2722	10044.18	2722	10080.7	2724
10108.69	2726	10127.2	2728						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9724.87	.056	9965.74	.038	10030.36	.053

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9965.74	10030.36	462.7	482.5	490.3	.1	.3

Right Levee Station= 10127.2 Elevation= 2728

CROSS SECTION OUTPUT Profile #100-yr 6-hr

E.G. Elev (ft)	2723.56	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.42	Wt. n-Val.	0.056	0.038	0.053
W.S. Elev (ft)	2723.14	Reach Len. (ft)	462.70	482.50	490.30
Crit W.S. (ft)	2723.14	Flow Area (sq ft)	174.59	79.93	23.64
E.G. Slope (ft/ft)	0.022687	Area (sq ft)	174.59	79.93	23.64
Q Total (cfs)	1228.00	Flow (cfs)	609.24	541.38	77.37
Top Width (ft)	313.08	Top Width (ft)	213.88	64.62	34.58
Vel Total (ft/s)	4.41	Avg. Vel. (ft/s)	3.49	6.77	3.27
Max Chl Dpth (ft)	2.65	Hydr. Depth (ft)	0.82	1.24	0.68
Conv. Total (cfs)	8152.8	Conv. (cfs)	4044.8	3594.3	513.7
Length Wtd. (ft)	478.07	Wetted Per. (ft)	214.00	64.82	34.63
Min Ch El (ft)	2720.49	Shear (lb/sq ft)	1.16	1.75	0.97

Alpha	1.38	Stream Power (lb/ft s)	4.03	11.83	3.16
Frctn Loss (ft)	7.33	Cum Volume (acre-ft)	26.65	47.61	33.61
C & E Loss (ft)	0.02	Cum SA (acres)	15.32	18.85	21.06

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

CROSS SECTION OUTPUT Profile #Method 1

E.G. Elev (ft)	2724.90	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.94	Wt. n-Val.	0.056	0.038	
W.S. Elev (ft)	2723.96	Reach Len. (ft)	462.70	482.50	490.30
Crit W.S. (ft)	2723.96	Flow Area (sq ft)	33.06	133.41	
E.G. Slope (ft/ft)	0.016903	Area (sq ft)	33.06	133.41	
Q Total (cfs)	1228.00	Flow (cfs)	144.35	1083.65	
Top Width (ft)	85.85	Top Width (ft)	21.23	64.62	
Vel Total (ft/s)	7.38	Avg. Vel. (ft/s)	4.37	8.12	
Max Chl Dpth (ft)	3.47	Hydr. Depth (ft)	1.56	2.06	
Conv. Total (cfs)	9445.4	Conv. (cfs)	1110.3	8335.1	
Length Wtd. (ft)	481.34	Wetted Per. (ft)	23.22	66.06	
Min Ch El (ft)	2720.49	Shear (lb/sq ft)	1.50	2.13	
Alpha	1.11	Stream Power (lb/ft s)	6.56	17.31	
Frctn Loss (ft)	8.08	Cum Volume (acre-ft)	3.32	52.48	4.16
C & E Loss (ft)	0.02	Cum SA (acres)	1.15	18.86	1.37

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.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water
surface was used.

CROSS SECTION

RIVER: Fan 6A
REACH: Fan 6AN-1 RS: 2.79

INPUT
Description: Topography and Aerial indicate wash and surrounding undeveloped desert.
T5NR5E Section 5
Q100 = 1,337 cfs
Station Elevation Data num= 17

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9767.13	2724	9781.69	2722	9795.79	2720	9819.51	2718	9846.17	2716
9950.41	2714	9990.91	2712	10006.19	2712	10011.54	2714	10039.68	2714
10068.95	2714	10133.82	2716	10165.64	2718	10178.19	2718	10194.28	2716
10211.72	2714	10251.15	2712						

```
Manning's n Values          num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
 9767.13    .056 9950.41    .03810011.54    .053

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9950.4110011.54            484.6   483.6   469.8            .1        .3
Right Levee     Station=10165.49      Elevation= 2717.99
```

CROSS SECTION OUTPUT Profile #100-yr 6-hr

			Left OB	Channel	Right OB
E.G. Elev (ft)	2715.66	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.64	Wt. n-Val.	0.056	0.038	0.053
W.S. Elev (ft)	2715.02	Reach Len. (ft)	484.60	483.60	469.80
Crit W.S. (ft)	2715.02	Flow Area (sq ft)	27.19	138.85	75.57
E.G. Slope (ft/ft)	0.011056	Area (sq ft)	27.19	138.85	75.57
Q Total (cfs)	1228.00	Flow (cfs)	48.47	982.09	197.44
Top Width (ft)	204.91	Top Width (ft)	53.24	61.13	90.54
Vel Total (ft/s)	5.08	Avg. Vel. (ft/s)	1.78	7.07	2.61
Max Chl Dpth (ft)	3.02	Hydr. Depth (ft)	0.51	2.27	0.83
Conv. Total (cfs)	11679.1	Conv. (cfs)	461.0	9340.4	1877.8
Length Wtd. (ft)	479.29	Wetted Per. (ft)	53.25	61.54	90.56
Min Ch El (ft)	2712.00	Shear (lb/sq ft)	0.35	1.56	0.58
Alpha	1.60	Stream Power (lb/ft s)	0.63	11.01	1.50
Frctn Loss (ft)	6.49	Cum Volume (acre-ft)	25.58	46.40	33.05
C & E Loss (ft)	0.02	Cum SA (acres)	13.90	18.16	20.36

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.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water
surface was used.

CROSS SECTION OUTPUT Profile #Method 1

			Left OB	Channel	Right OB
E.G. Elev (ft)	2716.23	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.16	Wt. n-Val.		0.038	
W.S. Elev (ft)	2715.08	Reach Len. (ft)	484.60	483.60	469.80
Crit W.S. (ft)	2715.08	Flow Area (sq ft)		142.29	
E.G. Slope (ft/ft)	0.016682	Area (sq ft)		142.29	
Q Total (cfs)	1228.00	Flow (cfs)		1228.00	
Top Width (ft)	61.13	Top Width (ft)		61.13	
Vel Total (ft/s)	8.63	Avg. Vel. (ft/s)		8.63	
Max Chl Dpth (ft)	3.08	Hydr. Depth (ft)		2.33	
Conv. Total (cfs)	9507.6	Conv. (cfs)		9507.6	
Length Wtd. (ft)	483.06	Wetted Per. (ft)		63.70	
Min Ch El (ft)	2712.00	Shear (lb/sq ft)		2.33	
Alpha	1.00	Stream Power (lb/ft s)		20.08	
Frctn Loss (ft)	7.83	Cum Volume (acre-ft)	3.14	50.96	4.16
C & E Loss (ft)	0.01	Cum SA (acres)	1.04	18.16	1.37

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.

Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water
surface was used.

CROSS SECTION

RIVER: Fan 6A
REACH: Fan 6AN-1 RS: 2.69

INPUT
Description: Cross Section 2.69 located upstream of concentration point CF6AN3
in the HEC-1 Model.

Topography and Aerial indicate wash and
surrounding undeveloped desert.
T5NR5E Section 5
Q100 = 1,337
cfs
Station Elevation Data num= 16

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9917.1	2712	9936.6	2710	9950.11	2708	9960.71	2706	9972.52	2705
9984.32	2704	10000	2702.19	10007.32	2704	10018.33	2704.75	10047.06	2704.22
10073.13	2704.81	10094.8	2704	10104.87	2704	10177.67	2706	10207.2	2708
10259.5	2710								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9917.1	.056	9972.52	.038	10018.33	.053

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9972.52	10018.33	482.2	484.8	462.4	.1	.3

Right Levee Station= 10259.5 Elevation= 2710

CROSS SECTION OUTPUT Profile #100-yr 6-hr

			Left OB	Channel	Right OB
E.G. Elev (ft)	2706.21	Element			
Vel Head (ft)	0.59	Wt. n-Val.	0.056	0.038	0.053
W.S. Elev (ft)	2705.62	Reach Len. (ft)	482.20	484.80	462.40
Crit W.S. (ft)	2705.62	Flow Area (sq ft)	2.29	85.14	152.27
E.G. Slope (ft/ft)	0.016962	Area (sq ft)	2.29	85.14	152.27
Q Total (cfs)	1228.00	Flow (cfs)	3.63	651.72	572.65
Top Width (ft)	198.79	Top Width (ft)	7.36	45.81	145.62
Vel Total (ft/s)	5.12	Avg. Vel. (ft/s)	1.58	7.65	3.76
Max Chl Dpth (ft)	3.43	Hydr. Depth (ft)	0.31	1.86	1.05
Conv. Total (cfs)	9428.8	Conv. (cfs)	27.9	5004.0	4396.9
Length Wtd. (ft)	479.75	Wetted Per. (ft)	7.38	46.20	145.67
Min Ch El (ft)	2702.19	Shear (lb/sq ft)	0.33	1.95	1.11
Alpha	1.44	Stream Power (lb/ft s)	0.52	14.94	4.16
Frctn Loss (ft)	7.36	Cum Volume (acre-ft)	25.42	45.15	31.83
C & E Loss (ft)	0.02	Cum SA (acres)	13.56	17.56	19.08

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 energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
depth, the 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 OUTPUT Profile #Method 1

			Left OB	Channel	Right OB
E.G. Elev (ft)	2707.69	Element			
Vel Head (ft)	1.25	Wt. n-Val.		0.038	0.053

W.S. Elev (ft)	2706.45	Reach Len. (ft)	482.20	484.80	462.40
Crit W.S. (ft)	2706.45	Flow Area (sq ft)		122.79	20.31
E.G. Slope (ft/ft)	0.015754	Area (sq ft)		122.79	20.31
Q Total (cfs)	1228.00	Flow (cfs)		1132.72	95.28
Top Width (ft)	57.10	Top Width (ft)		45.81	11.29
Vel Total (ft/s)	8.58	Avg. Vel. (ft/s)		9.23	4.69
Max Chl Dpth (ft)	4.25	Hydr. Depth (ft)		2.68	1.80
Conv. Total (cfs)	9783.7	Conv. (cfs)		9024.6	759.1
Length Wtd. (ft)	484.03	Wetted Per. (ft)		47.65	13.20
Min Ch El (ft)	2702.19	Shear (lb/sq ft)		2.53	1.51
Alpha	1.09	Stream Power (lb/ft s)		23.38	7.10
Frctn Loss (ft)	7.14	Cum Volume (acre-ft)	3.14	49.49	4.05
C & E Loss (ft)	0.13	Cum SA (acres)	1.04	17.57	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.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water
surface was used.

CROSS SECTION

RIVER: Fan 6A
REACH: Fan 6AN-1 RS: 2.60

INPUT
Description: Topography and Aerial indicate wash and surrounding undeveloped
desert.
T5NR5E Section 5
Q100 = 1,645 cfs
Station Elevation Data num= 14

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9867.07	2702	9888.04	2700	9922.01	2698	9945.24	2696	9959.44	2695
9973.64	2694	10000	2692.25	10011.55	2694	10063.18	2695	10114.81	2696
10177.21	2696	10194.59	2696	10246.85	2698	10275.91	2700		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9867.07	.056	9959.44	.038	10063.18	.053

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9959.44	10063.18	320.6	271.84	264.1	.1	.3

Right Levee Station=10275.91 Elevation= 2700

CROSS SECTION OUTPUT Profile #100-yr 6-hr

E.G. Elev (ft)	2696.74	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.79	Wt. n-Val.	0.056	0.038	0.053
W.S. Elev (ft)	2695.95	Reach Len. (ft)	320.60	271.84	264.10
Crit W.S. (ft)	2695.95	Flow Area (sq ft)	6.36	202.16	23.12
E.G. Slope (ft/ft)	0.014208	Area (sq ft)	6.36	202.16	23.12
Q Total (cfs)	1527.00	Flow (cfs)	12.19	1467.91	46.90
Top Width (ft)	166.03	Top Width (ft)	13.44	103.74	48.86
Vel Total (ft/s)	6.59	Avg. Vel. (ft/s)	1.92	7.26	2.03
Max Chl Dpth (ft)	3.70	Hydr. Depth (ft)	0.47	1.95	0.47
Conv. Total (cfs)	12810.7	Conv. (cfs)	102.3	12315.0	393.5
Length Wtd. (ft)	269.70	Wetted Per. (ft)	13.47	103.97	48.87
Min Ch El (ft)	2692.25	Shear (lb/sq ft)	0.42	1.72	0.42
Alpha	1.17	Stream Power (lb/ft s)	0.80	12.52	0.85
Frctn Loss (ft)	4.12	Cum Volume (acre-ft)	25.37	43.55	30.90
C & E Loss (ft)	0.09	Cum SA (acres)	13.45	16.73	18.05

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

CROSS SECTION OUTPUT  Profile #Method 1

  E.G. Elev (ft)          2696.84    Element                    Left OB    Channel   Right OB
  Vel Head (ft)              0.83    Wt. n-Val.                             0.038
  W.S. Elev (ft)          2696.02    Reach Len. (ft)            320.60     271.84     264.10
  Crit W.S. (ft)          2695.90    Flow Area (sq ft)                     209.48
  E.G. Slope (ft/ft)     0.014013    Area (sq ft)                          209.48
  Q Total (cfs)           1527.00    Flow (cfs)                           1527.00
  Top Width (ft)           103.74    Top Width (ft)                        103.74
  Vel Total (ft/s)           7.29    Avg. Vel. (ft/s)                        7.29
  Max Chl Dpth (ft)          3.77    Hydr. Depth (ft)                        2.02
  Conv. Total (cfs)       12899.4    Conv. (cfs)                          12899.4
  Length Wtd. (ft)         270.98    Wetted Per. (ft)                      106.01
  Min Ch El (ft)          2692.25    Shear (lb/sq ft)                        1.73
  Alpha                      1.00    Stream Power (lb/ft s)                 12.60
  Frctn Loss (ft)            4.00    Cum Volume (acre-ft)         3.14      47.64       3.94
  C & E Loss (ft)            0.02    Cum SA (acres)               1.04      16.73       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.
Note:    Multiple critical depths were found at this location.  The critical depth with the lowest,
valid, water
         surface was used.

CROSS SECTION


RIVER: Fan 6A
REACH: Fan 6AN-1          RS: 2.55

INPUT
Description: Topography and Aerial indicate wash and surrounding undeveloped
             desert.
T5NR5E Section 5
Q100 = 1,645 cfs
Station Elevation Data     num=      17
     Sta     Elev     Sta     Elev     Sta     Elev     Sta     Elev     Sta     Elev
 9894.13     2704 9905.71     2702 9916.84     2700 9930.37     2698  9939.7     2696
 9947.66     2694 9955.41     2692 9958.32     2691 9961.22     2690   10000 2688.25
10010.13     269010029.42     269010117.85 2689.37 10183.4     269010228.15     2692
10265.45     269410310.29     2696

Manning's n Values         num=       3
     Sta    n Val     Sta    n Val     Sta    n Val
 9894.13     .056 9958.32     .03810010.13     .053

Bank Sta: Left   Right     Lengths: Left Channel   Right      Coeff Contr.    Expan.
       9958.3210010.13               238  236.16   234.7              .1        .3
Right Levee      Station=10310.29      Elevation=    2696

CROSS SECTION OUTPUT  Profile #100-yr 6-hr

  E.G. Elev (ft)          2691.43    Element                    Left OB    Channel   Right OB
```

Vel Head (ft)	0.49	Wt. n-Val.		0.038	0.053
W.S. Elev (ft)	2690.94	Reach Len. (ft)	238.00	236.16	234.70
Crit W.S. (ft)	2690.87	Flow Area (sq ft)		90.25	222.00
E.G. Slope (ft/ft)	0.016474	Area (sq ft)		90.25	222.00
Q Total (cfs)	1527.00	Flow (cfs)		654.24	872.76
Top Width (ft)	246.04	Top Width (ft)		51.65	194.39
Vel Total (ft/s)	4.89	Avg. Vel. (ft/s)		7.25	3.93
Max Chl Dpth (ft)	2.69	Hydr. Depth (ft)		1.75	1.14
Conv. Total (cfs)	11897.0	Conv. (cfs)		5097.2	6799.8
Length Wtd. (ft)	235.70	Wetted Per. (ft)		51.99	194.42
Min Ch El (ft)	2688.25	Shear (lb/sq ft)		1.79	1.17
Alpha	1.31	Stream Power (lb/ft s)		12.94	4.62
Frctn Loss (ft)	3.38	Cum Volume (acre-ft)	25.35	42.64	30.15
C & E Loss (ft)	0.04	Cum SA (acres)	13.40	16.25	17.31

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water
surface was used.

CROSS SECTION OUTPUT Profile #Method 1

E.G. Elev (ft)	2692.82	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.06	Wt. n-Val.		0.038	0.053
W.S. Elev (ft)	2691.75	Reach Len. (ft)	238.00	236.16	234.70
Crit W.S. (ft)	2691.75	Flow Area (sq ft)		132.19	67.86
E.G. Slope (ft/ft)	0.015594	Area (sq ft)		132.19	67.86
Q Total (cfs)	1527.00	Flow (cfs)		1188.36	338.64
Top Width (ft)	89.80	Top Width (ft)		51.81	37.99
Vel Total (ft/s)	7.63	Avg. Vel. (ft/s)		8.99	4.99
Max Chl Dpth (ft)	3.50	Hydr. Depth (ft)		2.55	1.79
Conv. Total (cfs)	12228.0	Conv. (cfs)		9516.2	2711.7
Length Wtd. (ft)	236.00	Wetted Per. (ft)		52.92	39.88
Min Ch El (ft)	2688.25	Shear (lb/sq ft)		2.43	1.66
Alpha	1.17	Stream Power (lb/ft s)		21.86	8.27
Frctn Loss (ft)	3.37	Cum Volume (acre-ft)	3.14	46.57	3.73
C & E Loss (ft)	0.03	Cum SA (acres)	1.04	16.25	1.13

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

CROSS SECTION

RIVER: Fan 6A
REACH: Fan 6AN-1 RS: 2.51

INPUT
Description: Cross Section 2.51 located upstream of concentration point CF6AN2
in the HEC-1 Model.

Topography and Aerial indicate wash and
surrounding undeveloped desert.
T5NR5E Section 5
Q100 = 1,645 cfs
Station Elevation Data num= 12

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9952.29	2694	9953.17	2694	9969.27	2692	9980.5	2690	9987.66	2688
9991.88	2686	9996.28	2684	10010.72	2684	10072.33	2686	10196.09	2688
10228.05	2690	10252.74	2692						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9952.29	.056	9991.88	.038	10072.33	.053

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9991.88	10072.33	330.5	348.46	362.2	.1	.3

Right Levee Station=10252.74 Elevation= 2692

CROSS SECTION OUTPUT Profile #100-yr 6-hr

			Left OB	Channel	Right OB
E.G. Elev (ft)	2688.01	Element			
Vel Head (ft)	0.86	Wt. n-Val.	0.056	0.038	0.053
W.S. Elev (ft)	2687.15	Reach Len. (ft)	330.50	348.46	362.20
Crit W.S. (ft)	2687.15	Flow Area (sq ft)	1.39	187.10	40.65
E.G. Slope (ft/ft)	0.012600	Area (sq ft)	1.39	187.10	40.65
Q Total (cfs)	1527.00	Flow (cfs)	2.66	1436.08	88.26
Top Width (ft)	153.80	Top Width (ft)	2.42	80.45	70.93
Vel Total (ft/s)	6.66	Avg. Vel. (ft/s)	1.92	7.68	2.17
Max Chl Dpth (ft)	3.15	Hydr. Depth (ft)	0.57	2.33	0.57
Conv. Total (cfs)	13603.8	Conv. (cfs)	23.7	12793.8	786.3
Length Wtd. (ft)	346.62	Wetted Per. (ft)	2.68	80.92	70.94
Min Ch El (ft)	2684.00	Shear (lb/sq ft)	0.41	1.82	0.45
Alpha	1.25	Stream Power (lb/ft s)	0.78	13.96	0.98
Frctn Loss (ft)	3.56	Cum Volume (acre-ft)	25.34	41.89	29.44
C & E Loss (ft)	0.09	Cum SA (acres)	13.39	15.89	16.60

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.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water
surface was used.

CROSS SECTION OUTPUT Profile #Method 1

			Left OB	Channel	Right OB
E.G. Elev (ft)	2688.20	Element			
Vel Head (ft)	0.96	Wt. n-Val.		0.038	
W.S. Elev (ft)	2687.24	Reach Len. (ft)	330.50	348.46	362.20
Crit W.S. (ft)	2687.08	Flow Area (sq ft)		194.22	
E.G. Slope (ft/ft)	0.013095	Area (sq ft)		194.22	
Q Total (cfs)	1527.00	Flow (cfs)		1527.00	
Top Width (ft)	80.45	Top Width (ft)		80.45	
Vel Total (ft/s)	7.86	Avg. Vel. (ft/s)		7.86	
Max Chl Dpth (ft)	3.23	Hydr. Depth (ft)		2.41	
Conv. Total (cfs)	13344.1	Conv. (cfs)		13344.1	
Length Wtd. (ft)	348.46	Wetted Per. (ft)		83.39	
Min Ch El (ft)	2684.00	Shear (lb/sq ft)		1.90	
Alpha	1.00	Stream Power (lb/ft s)		14.97	
Frctn Loss (ft)	4.86	Cum Volume (acre-ft)	3.14	45.69	3.55
C & E Loss (ft)	0.02	Cum SA (acres)	1.04	15.89	1.03

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water
surface was used.

CROSS SECTION

RIVER: Fan 6A
REACH: Fan 6AN-1 RS: 2.44

INPUT
Description: Topography and Aerial indicate wash and surrounding undeveloped desert.
T5NR5E Section 5
Q100 = 1,814 cfs
Station Elevation Data num= 15

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9698.8	2684	9724.14	2682	9959.14	2680.5	9975.22	2680	10000	2678.1
10023.34	2680	10032.15	2681	10040.95	2682	10057.73	2684	10072.98	2686
10090.51	2688	10102.59	2690	10118.21	2692	10133.76	2694	10161.74	2696

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9698.8	.056	9959.14	.038	10032.15	.053

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9959.14	10032.15	269.3	275.3	279.5	.1	.3

Right Levee Station=10161.74 Elevation= 2696

CROSS SECTION OUTPUT Profile #100-yr 6-hr

			Left OB	Channel	Right OB
E.G. Elev (ft)	2682.61	Element			
Vel Head (ft)	0.56	Wt. n-Val.	0.056	0.038	0.053
W.S. Elev (ft)	2682.05	Reach Len. (ft)	269.30	275.30	279.50
Crit W.S. (ft)	2682.05	Flow Area (sq ft)	187.68	186.86	4.84
E.G. Slope (ft/ft)	0.008679	Area (sq ft)	187.68	186.86	4.84
Q Total (cfs)	1678.00	Flow (cfs)	398.67	1271.14	8.19
Top Width (ft)	317.83	Top Width (ft)	235.62	73.01	9.21
Vel Total (ft/s)	4.42	Avg. Vel. (ft/s)	2.12	6.80	1.69
Max Chl Dpth (ft)	3.95	Hydr. Depth (ft)	0.80	2.56	0.53
Conv. Total (cfs)	18011.3	Conv. (cfs)	4279.3	13644.2	87.9
Length Wtd. (ft)	274.31	Wetted Per. (ft)	235.62	73.23	9.27
Min Ch El (ft)	2678.10	Shear (lb/sq ft)	0.43	1.38	0.28
Alpha	1.85	Stream Power (lb/ft s)	0.92	9.41	0.48
Frctn Loss (ft)	2.56	Cum Volume (acre-ft)	24.62	40.39	29.26
C & E Loss (ft)	0.04	Cum SA (acres)	12.49	15.28	16.27

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 energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
depth, the 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 OUTPUT Profile #Method 1

			Left OB	Channel	Right OB
E.G. Elev (ft)	2683.30	Element			
Vel Head (ft)	1.20	Wt. n-Val.		0.038	
W.S. Elev (ft)	2682.10	Reach Len. (ft)	269.30	275.30	279.50
Crit W.S. (ft)	2682.02	Flow Area (sq ft)		190.72	
E.G. Slope (ft/ft)	0.014826	Area (sq ft)		190.72	
Q Total (cfs)	1678.00	Flow (cfs)		1678.00	
Top Width (ft)	73.01	Top Width (ft)		73.01	
Vel Total (ft/s)	8.80	Avg. Vel. (ft/s)		8.80	
Max Chl Dpth (ft)	4.00	Hydr. Depth (ft)		2.61	
Conv. Total (cfs)	13781.0	Conv. (cfs)		13781.0	

Length Wtd. (ft)	275.30	Wetted Per. (ft)		75.93	
Min Ch El (ft)	2678.10	Shear (lb/sq ft)		2.32	
Alpha	1.00	Stream Power (lb/ft s)		20.46	
Frctn Loss (ft)	4.27	Cum Volume (acre-ft)	3.14	44.15	3.55
C & E Loss (ft)	0.04	Cum SA (acres)	1.04	15.28	1.03

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.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water
surface was used.

CROSS SECTION

RIVER: Fan 6A
REACH: Fan 6AN-1 RS: 2.39

INPUT
Description: Cross Section 2.39 is located upstream of the the northern
boundary of Legend Trail.

Topography and Aerial indicate wash
and surrounding undeveloped desert.
T5NR5E Section 5
Q100 =
1,814 cfs
Station Elevation Data num= 15

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9821.15	2680	9841.99	2678	9954.7	2676	9965.82	675.048	9978.02	2674
10013.25	2674	10017	2675.01	810020.62	2676	10038.46	2678	10065.21	2680
10080.35	2682	10094.61	2684	10108.97	2686	10131.98	2688	10163.72	2690

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9821.15	.056	9965.8	.038	10017	.053

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9965.8	10017	357.2	360.93	354.3	.1	.3

CROSS SECTION OUTPUT Profile #100-yr 6-hr

			Left OB	Channel	Right OB
E.G. Elev (ft)	2678.44	Element			
Vel Head (ft)	1.00	Wt. n-Val.	0.056	0.038	0.053
W.S. Elev (ft)	2677.43	Reach Len. (ft)	357.20	360.93	354.30
Crit W.S. (ft)	2677.43	Flow Area (sq ft)	79.15	167.51	16.14
E.G. Slope (ft/ft)	0.010041	Area (sq ft)	79.15	167.51	16.14
Q Total (cfs)	1678.00	Flow (cfs)	190.40	1443.13	44.47
Top Width (ft)	159.53	Top Width (ft)	91.92	51.20	16.41
Vel Total (ft/s)	6.38	Avg. Vel. (ft/s)	2.41	8.62	2.75
Max Chl Dpth (ft)	3.43	Hydr. Depth (ft)	0.86	3.27	0.98
Conv. Total (cfs)	16746.0	Conv. (cfs)	1900.2	14402.1	443.8
Length Wtd. (ft)	359.84	Wetted Per. (ft)	91.97	51.38	16.62
Min Ch El (ft)	2674.00	Shear (lb/sq ft)	0.54	2.04	0.61
Alpha	1.59	Stream Power (lb/ft s)	1.30	17.61	1.68
Frctn Loss (ft)	3.35	Cum Volume (acre-ft)	23.80	39.27	29.19
C & E Loss (ft)	0.11	Cum SA (acres)	11.48	14.88	16.18

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

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

CROSS SECTION OUTPUT Profile #Method 1

E.G. Elev (ft)	2678.99	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.62	Wt. n-Val.		0.038	
W.S. Elev (ft)	2677.37	Reach Len. (ft)	357.20	360.93	354.30
Crit W.S. (ft)	2677.37	Flow Area (sq ft)		164.30	
E.G. Slope (ft/ft)	0.016263	Area (sq ft)		164.30	
Q Total (cfs)	1678.00	Flow (cfs)		1678.00	
Top Width (ft)	51.20	Top Width (ft)		51.20	
Vel Total (ft/s)	10.21	Avg. Vel. (ft/s)		10.21	
Max Chl Dpth (ft)	3.37	Hydr. Depth (ft)		3.21	
Conv. Total (cfs)	13158.0	Conv. (cfs)		13158.0	
Length Wtd. (ft)	360.93	Wetted Per. (ft)		56.06	
Min Ch El (ft)	2674.00	Shear (lb/sq ft)		2.98	
Alpha	1.00	Stream Power (lb/ft s)		30.39	
Frctn Loss (ft)	4.60	Cum Volume (acre-ft)	3.14	43.02	3.55
C & E Loss (ft)	0.15	Cum SA (acres)	1.04	14.88	1.03

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 velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
depth, the 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: Fan 6A
REACH: Fan 6AN-1 RS: 2.32

INPUT
Description: A portion of cross section 2.32 is located within Legend Trail.

Topography and Aerial indicate wash and surrounding undeveloped desert.
T5NR5E Section 5
Q100 = 1,814 cfs
Station Elevation Data num= 19

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9815.86	2678	9831.79	2676	9847.27	2674	9878.32	2672	9963.39	2670
9971.5	2668	10000	2667	10011.31	2668	10023.79	2669.98	10069.03	2669.47
10090.42	2670	10168.07	2670	10170.58	2670	10212.19	2671.5	10241.77	2670
10265.47	2670	10291.66	2672	10312.51	2674	10332.2	2676		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9815.86	.056	9963.39	.038	10023.79	.053

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9963.39	10023.79	286.7	210.86	201.7	.1	.3

Right Levee Station=10211.68 Elevation= 2671.48

CROSS SECTION OUTPUT Profile #100-yr 6-hr

E.G. Elev (ft)	2671.53	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.65	Wt. n-Val.	0.056	0.038	0.053

W.S. Elev (ft)	2670.88	Reach Len. (ft)	286.70	210.86	201.70
Crit W.S. (ft)	2670.88	Flow Area (sq ft)	16.36	173.21	157.51
E.G. Slope (ft/ft)	0.008661	Area (sq ft)	16.36	173.21	157.51
Q Total (cfs)	1678.00	Flow (cfs)	23.31	1265.86	388.83
Top Width (ft)	268.82	Top Width (ft)	37.30	60.40	171.12
Vel Total (ft/s)	4.83	Avg. Vel. (ft/s)	1.42	7.31	2.47
Max Chl Dpth (ft)	3.88	Hydr. Depth (ft)	0.44	2.87	0.92
Conv. Total (cfs)	18030.4	Conv. (cfs)	250.4	13601.9	4178.1
Length Wtd. (ft)	210.56	Wetted Per. (ft)	37.31	60.86	171.14
Min Ch El (ft)	2667.00	Shear (lb/sq ft)	0.24	1.54	0.50
Alpha	1.79	Stream Power (lb/ft s)	0.34	11.25	1.23
Frctn Loss (ft)	1.76	Cum Volume (acre-ft)	23.41	37.86	28.48
C & E Loss (ft)	0.04	Cum SA (acres)	10.95	14.42	15.42

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 energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
depth, the 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 OUTPUT Profile #Method 1

E.G. Elev (ft)	2672.41	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.11	Wt. n-Val.		0.038	
W.S. Elev (ft)	2671.29	Reach Len. (ft)	286.70	210.86	201.70
Crit W.S. (ft)	2670.91	Flow Area (sq ft)		198.37	
E.G. Slope (ft/ft)	0.010241	Area (sq ft)		198.37	
Q Total (cfs)	1678.00	Flow (cfs)		1678.00	
Top Width (ft)	60.40	Top Width (ft)		60.40	
Vel Total (ft/s)	8.46	Avg. Vel. (ft/s)		8.46	
Max Chl Dpth (ft)	4.29	Hydr. Depth (ft)		3.28	
Conv. Total (cfs)	16581.2	Conv. (cfs)		16581.2	
Length Wtd. (ft)	210.86	Wetted Per. (ft)		63.47	
Min Ch El (ft)	2667.00	Shear (lb/sq ft)		2.00	
Alpha	1.00	Stream Power (lb/ft s)		16.90	
Frctn Loss (ft)	2.68	Cum Volume (acre-ft)	3.14	41.52	3.55
C & E Loss (ft)	0.09	Cum SA (acres)	1.04	14.42	1.03

Warning: The 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.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water
surface was used.

CROSS SECTION

RIVER: Fan 6A
REACH: Fan 6AN-1 RS: 2.28

INPUT
Description: A portion of cross section 2.28 is located within Legend
Trail.

Topography and Aerial indicate wash and surrounding
undeveloped desert.
T5NR5E Section 5

Q100 = 1,814 cfs

Station Elevation Data num= 12

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9947.41	2670	9957.9	2670	9963.45	2668	9968.92	2666	9973.15	2664.503
9974.57	2664	10000	2663	10007.41	2664	10009.55	2664.5	10015.96	2666
10160.36	2668	10191.25	2670						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9947.41	.056	9973.15	.038	10009.55	.053

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9973.15	10009.55	400.7	433.22	440.4	.1	.3

CROSS SECTION OUTPUT Profile #100-yr 6-hr

			Left OB	Channel	Right OB
E.G. Elev (ft)	2668.72	Element			
Vel Head (ft)	1.03	Wt. n-Val.	0.056	0.038	0.053
W.S. Elev (ft)	2667.70	Reach Len. (ft)	400.70	433.22	440.40
Crit W.S. (ft)	2667.70	Flow Area (sq ft)	14.27	150.05	119.49
E.G. Slope (ft/ft)	0.008048	Area (sq ft)	14.27	150.05	119.49
Q Total (cfs)	1678.00	Flow (cfs)	44.80	1347.65	285.55
Top Width (ft)	174.12	Top Width (ft)	8.87	36.40	128.85
Vel Total (ft/s)	5.91	Avg. Vel. (ft/s)	3.14	8.98	2.39
Max Chl Dpth (ft)	4.70	Hydr. Depth (ft)	1.61	4.12	0.93
Conv. Total (cfs)	18704.2	Conv. (cfs)	499.4	15021.9	3182.9
Length Wtd. (ft)	432.39	Wetted Per. (ft)	9.43	36.63	129.03
Min Ch El (ft)	2663.00	Shear (lb/sq ft)	0.76	2.06	0.47
Alpha	1.89	Stream Power (lb/ft s)	2.39	18.49	1.11
Frctn Loss (ft)	3.99	Cum Volume (acre-ft)	23.31	37.08	27.84
C & E Loss (ft)	0.03	Cum SA (acres)	10.80	14.19	14.73

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 energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
depth, the 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 OUTPUT Profile #Method 1

			Left OB	Channel	Right OB
E.G. Elev (ft)	2669.64	Element			
Vel Head (ft)	2.00	Wt. n-Val.		0.038	
W.S. Elev (ft)	2667.63	Reach Len. (ft)	400.70	433.22	440.40
Crit W.S. (ft)	2667.63	Flow Area (sq ft)		147.74	
E.G. Slope (ft/ft)	0.016217	Area (sq ft)		147.74	
Q Total (cfs)	1678.00	Flow (cfs)		1678.00	
Top Width (ft)	36.40	Top Width (ft)		36.40	
Vel Total (ft/s)	11.36	Avg. Vel. (ft/s)		11.36	
Max Chl Dpth (ft)	4.63	Hydr. Depth (ft)		4.06	
Conv. Total (cfs)	13176.6	Conv. (cfs)		13176.6	
Length Wtd. (ft)	433.22	Wetted Per. (ft)		42.89	
Min Ch El (ft)	2663.00	Shear (lb/sq ft)		3.49	
Alpha	1.00	Stream Power (lb/ft s)		39.61	
Frctn Loss (ft)	7.00	Cum Volume (acre-ft)	3.14	40.68	3.55
C & E Loss (ft)	0.06	Cum SA (acres)	1.04	14.19	1.03

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: Fan 6A
REACH: Fan 6AN-1 RS: 2.20

INPUT
Description: A portion of cross section 2.20 is located within Legend
Trail.

Topography and Aerial indicate wash and surrounding
undeveloped desert.
T5NR5E Section 5
Q100 = 1,814 cfs
Station Elevation Data num= 18

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9743.47	2670	9761.1	2668	9779.53	2666	9802.4	2664	9827.79	2662
9920.81	2660	9975.82	2658	9979.95	2656.885	9983.23	2656	10000	2655.66
10020.05	2656	10023.15	2656.88	10027.02	2658	10033.8	2660	10041.87	2662
10058.54	2664	10074.14	2666	10088.64	2668				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9743.47	.056	9979.95	.038	10023.15	.053

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9979.95	10023.15	301.1	297.74	298.2	.1	.3

CROSS SECTION OUTPUT Profile #100-yr 6-hr

			Left OB	Channel	Right OB
E.G. Elev (ft)	2660.90	Element			
Vel Head (ft)	1.30	Wt. n-Val.	0.056	0.038	0.053
W.S. Elev (ft)	2659.60	Reach Len. (ft)	301.10	297.74	298.20
Crit W.S. (ft)	2659.60	Flow Area (sq ft)	43.92	158.78	12.64
E.G. Slope (ft/ft)	0.010664	Area (sq ft)	43.92	158.78	12.64
Q Total (cfs)	1678.00	Flow (cfs)	113.11	1521.12	43.77
Top Width (ft)	100.51	Top Width (ft)	48.03	43.20	9.28
Vel Total (ft/s)	7.79	Avg. Vel. (ft/s)	2.58	9.58	3.46
Max Chl Dpth (ft)	3.94	Hydr. Depth (ft)	0.91	3.68	1.36
Conv. Total (cfs)	16249.3	Conv. (cfs)	1095.4	14730.1	423.9
Length Wtd. (ft)	297.86	Wetted Per. (ft)	48.20	43.45	9.67
Min Ch El (ft)	2655.66	Shear (lb/sq ft)	0.61	2.43	0.87
Alpha	1.38	Stream Power (lb/ft s)	1.56	23.31	3.01
Frctn Loss (ft)	3.93	Cum Volume (acre-ft)	23.04	35.54	27.17
C & E Loss (ft)	0.13	Cum SA (acres)	10.53	13.79	14.03

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.

CROSS SECTION OUTPUT Profile #Method 1

			Left OB	Channel	Right OB
E.G. Elev (ft)	2661.33	Element			
Vel Head (ft)	1.80	Wt. n-Val.		0.038	
W.S. Elev (ft)	2659.53	Reach Len. (ft)	301.10	297.74	298.20

Crit W.S. (ft)	2659.53	Flow Area (sq ft)		155.81	
E.G. Slope (ft/ft)	0.016102	Area (sq ft)		155.81	
Q Total (cfs)	1678.00	Flow (cfs)		1678.00	
Top Width (ft)	43.20	Top Width (ft)		43.20	
Vel Total (ft/s)	10.77	Avg. Vel. (ft/s)		10.77	
Max Chl Dpth (ft)	3.87	Hydr. Depth (ft)		3.61	
Conv. Total (cfs)	13223.8	Conv. (cfs)		13223.8	
Length Wtd. (ft)	297.74	Wetted Per. (ft)		48.73	
Min Ch El (ft)	2655.66	Shear (lb/sq ft)		3.21	
Alpha	1.00	Stream Power (lb/ft s)		34.61	
Frctn Loss (ft)	4.92	Cum Volume (acre-ft)	3.14	39.18	3.55
C & E Loss (ft)	0.27	Cum SA (acres)	1.04	13.79	1.03

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 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: Fan 6A
REACH: Fan 6AN-1 RS: 2.14

INPUT
Description: Cross Section 2.14 is located within Legend Trail.

Topography
indicates wash and surrounding undeveloped desert.
Aerial shows
wash, surrounding desert and houses and pads.
T5NR5E Section
5
Q100 = 1,814 cfs
Station Elevation Data num= 18

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9837.02	2664	9863.4	2662	9881.93	2660	9895.8	2658	9907.84	2656
9920.5	2654	9973.08	2652	10000	2651	10010.94	2652	10042.37	2654
10061.32	2654.73	10125.72	2654	10133.34	2654	10158.33	2656	10183.18	2658
10202.36	2660	10218.69	2662	10234.41	2664				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9837.02	.056	9920.5	.038	10042.37	.053

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9920.5	10042.37	429.8	442.89	452.9	.3	.5

Right Levee Station=10061.32 Elevation= 2654.73

CROSS SECTION OUTPUT Profile #100-yr 6-hr

E.G. Elev (ft)	2655.24	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.88	Wt. n-Val.	0.056	0.038	0.053
W.S. Elev (ft)	2654.36	Reach Len. (ft)	429.80	442.89	452.90
Crit W.S. (ft)	2654.36	Flow Area (sq ft)	0.40	222.19	1.66
E.G. Slope (ft/ft)	0.016731	Area (sq ft)	0.40	222.19	1.66
Q Total (cfs)	1678.00	Flow (cfs)	0.44	1675.66	1.90
Top Width (ft)	133.40	Top Width (ft)	2.26	121.87	9.27

Vel Total (ft/s)	7.48	Avg. Vel. (ft/s)	1.08	7.54	1.15
Max Chl Dpth (ft)	3.36	Hydr. Depth (ft)	0.18	1.82	0.18
Conv. Total (cfs)	12972.8	Conv. (cfs)	3.4	12954.7	14.7
Length Wtd. (ft)	444.94	Wetted Per. (ft)	2.29	122.04	9.28
Min Ch El (ft)	2651.00	Shear (lb/sq ft)	0.18	1.90	0.19
Alpha	1.01	Stream Power (lb/ft s)	0.20	14.34	0.21
Frctn Loss (ft)	0.29	Cum Volume (acre-ft)	22.89	34.24	27.12
C & E Loss (ft)	0.42	Cum SA (acres)	10.36	13.23	13.97

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 energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
depth, the 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 OUTPUT Profile #Method 1

E.G. Elev (ft)	2655.24	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.89	Wt. n-Val.		0.038	
W.S. Elev (ft)	2654.36	Reach Len. (ft)	429.80	442.89	452.90
Crit W.S. (ft)	2654.36	Flow Area (sq ft)		221.98	
E.G. Slope (ft/ft)	0.016961	Area (sq ft)		221.98	
Q Total (cfs)	1678.00	Flow (cfs)		1678.00	
Top Width (ft)	121.87	Top Width (ft)		121.87	
Vel Total (ft/s)	7.56	Avg. Vel. (ft/s)		7.56	
Max Chl Dpth (ft)	3.36	Hydr. Depth (ft)		1.82	
Conv. Total (cfs)	12884.5	Conv. (cfs)		12884.5	
Length Wtd. (ft)	442.89	Wetted Per. (ft)		122.75	
Min Ch El (ft)	2651.00	Shear (lb/sq ft)		1.91	
Alpha	1.00	Stream Power (lb/ft s)		14.48	
Frctn Loss (ft)	1.18	Cum Volume (acre-ft)	3.14	37.88	3.55
C & E Loss (ft)	0.33	Cum SA (acres)	1.04	13.23	1.03

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 velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
depth, the 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: Fan 6A
REACH: Fan 6AN-1 RS: 2.06

INPUT

Description: Cross Section 2.06 is located within Legend Trail. It is located upstream of the intersection of Fan 6A North and Calvary Drive. There are 4-10 X 4 concrete box culverts located under Calvary Drive.

Topography indicates wash and surrounding undeveloped desert.

Aerial shows wash, surrounding desert, Calvary Drive, and houses and pads.

T5NR5E Section 5

Q100 = 1,814 cfs

Station Elevation Data num= 16

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9898.09	2652	9925.71	2650	9950.83	2648	9966.11	2646	9973.64	2644
10006.35	2644	10016.95	2646	10022.14	2646	10039.51	2646	10074.79	2646
10105.66	2644	10119.68	2644	10141.75	2646	10159.38	2648	10178.63	2650
10196.69	2652								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9898.09	.056	9966.11	.038	10039.51	.053

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9966.11	10039.51	75.5	72.93	72.1	.3	.5

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
9898.09	9966.11	2650.15	F
10039.51	10196.69	2650.15	F

CROSS SECTION OUTPUT Profile #100-yr 6-hr

			Left OB	Channel	Right OB
E.G. Elev (ft)	2650.99	Element			
Vel Head (ft)	0.04	Wt. n-Val.	0.056	0.038	0.053
W.S. Elev (ft)	2650.95	Reach Len. (ft)	75.50	72.93	72.10
Crit W.S. (ft)	2647.39	Flow Area (sq ft)	115.64	446.96	698.49
E.G. Slope (ft/ft)	0.000201	Area (sq ft)	115.64	446.96	698.49
Q Total (cfs)	1678.00	Flow (cfs)	72.55	823.87	781.58
Top Width (ft)	274.64	Top Width (ft)	53.54	73.40	147.71
Vel Total (ft/s)	1.33	Avg. Vel. (ft/s)	0.63	1.84	1.12
Max Chl Dpth (ft)	6.95	Hydr. Depth (ft)	2.16	6.09	4.73
Conv. Total (cfs)	118224.0	Conv. (cfs)	5111.5	58046.2	55066.4
Length Wtd. (ft)	72.93	Wetted Per. (ft)	53.78	73.85	148.13
Min Ch El (ft)	2644.00	Shear (lb/sq ft)	0.03	0.08	0.06
Alpha	1.28	Stream Power (lb/ft s)	0.02	0.14	0.07
Frctn Loss (ft)		Cum Volume (acre-ft)	22.31	30.84	23.48
C & E Loss (ft)		Cum SA (acres)	10.08	12.23	13.15

Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.

CROSS SECTION OUTPUT Profile #Method 1

			Left OB	Channel	Right OB
E.G. Elev (ft)	2651.09	Element			
Vel Head (ft)	0.23	Wt. n-Val.		0.038	
W.S. Elev (ft)	2650.87	Reach Len. (ft)	75.50	72.93	72.10
Crit W.S. (ft)	2647.39	Flow Area (sq ft)		440.78	
E.G. Slope (ft/ft)	0.001033	Area (sq ft)		440.78	
Q Total (cfs)	1678.00	Flow (cfs)		1678.00	
Top Width (ft)	73.40	Top Width (ft)		73.40	
Vel Total (ft/s)	3.81	Avg. Vel. (ft/s)		3.81	
Max Chl Dpth (ft)	6.87	Hydr. Depth (ft)		6.01	
Conv. Total (cfs)	52220.7	Conv. (cfs)		52220.7	
Length Wtd. (ft)	72.93	Wetted Per. (ft)		83.58	
Min Ch El (ft)	2644.00	Shear (lb/sq ft)		0.34	
Alpha	1.00	Stream Power (lb/ft s)		1.29	
Frctn Loss (ft)		Cum Volume (acre-ft)	3.14	34.51	3.55
C & E Loss (ft)		Cum SA (acres)	1.04	12.23	1.03

```
Note:    Multiple critical depths were found at this location.  The critical depth with the lowest,
valid,
         energy was used.

CULVERT


RIVER: Fan 6A
REACH: Fan 6AN-1          RS: 2.05

INPUT
Description: Box culverts at Calvary Drive crossing.
Distance from Upstream XS =       3
Deck/Roadway Width        =      69
Weir Coefficient          =     2.6
Upstream  Deck/Roadway Coordinates
    num=      11
     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord
 9863.26 2650.82         9908.26 2651.23         9933.26 2651.15
 9950.26 2650.85         9960.94 2650.73         9980.26 2650.76
10027.76 2650.15        10043.17 2651.13        10154.38 2650.57
10172.72 2650.48        10222.72 2649.83

Upstream Bridge Cross Section Data
Station Elevation Data    num=      16
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
 9898.09    2652 9925.71    2650 9950.83    2648 9966.11    2646 9973.64    2644
10006.35    264410016.95    264610022.14    264610039.51    264610074.79    2646
10105.66    264410119.68    264410141.75    264610159.38    264810178.63    2650
10196.69    2652

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
 9898.09    .056 9966.11    .03810039.51    .053

Bank Sta: Left   Right    Coeff Contr.   Expan.
       9966.1110039.51             .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
 9898.09 9966.11 2650.15       F
10039.5110196.69 2650.15       F

Downstream  Deck/Roadway Coordinates
    num=      11
     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord
 9844.71 2650.82         9889.71 2651.23         9914.71 2651.15
 9931.71 2650.85         9942.39 2650.73         9961.71 2650.76
10009.21 2650.15        10024.62 2651.13        10135.83 2650.57
10154.17 2650.48        10204.17 2649.83

Downstream Bridge Cross Section Data
Station Elevation Data    num=      16
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
 9866.92    2652 9885.59    2650 9905.96    2648 9925.69    2646 9934.46    2645
 9943.23    2644   10000  2642.410012.25    2644 10029.6  2645.3 10070.4    2644
10133.49    264410156.61    264610185.67    264810209.66    265010223.23    2652
10236.89    2654

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
 9866.92    .056 9934.46    .038 10029.6    .053

Bank Sta: Left   Right    Coeff Contr.   Expan.
       9934.46 10029.6             .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
 9866.92 9934.46 2650.15       F
 10029.610236.89 2650.15       F

Upstream Embankment side slope              =       0 horiz. to 1.0 vertical
```

```
Downstream Embankment side slope              =       0 horiz. to 1.0 vertical
Maximum allowable submergence for weir flow =      .95
Elevation at which weir flow begins           =
Energy head used in spillway design           =
Spillway height used in design                =
Weir crest shape                              = Broad Crested

Number of Culverts =  1

Culvert Name      Shape      Rise    Span
CULVERT#1           Box       4      10
FHWA Chart # 8 - flared wingwalls
FHWA Scale # 1 - Wingwall flared 30 to 75 deg.
Solution Criteria = Highest U.S. EG
Culvert Upstrm Dist  Length    Top n  Bottom n  Depth Blocked  Entrance Loss Coef   Exit Loss Coef
                  4      64     .015     .015        0                  .4                 1
Number of Barrels =  4
Upstream   Elevation =  2644.26
Centerline Stations
    Sta.    Sta.    Sta.    Sta.
 9985.24 9996.1510007.0710017.99
Downstream Elevation =  2643.47
Centerline Stations
    Sta.    Sta.    Sta.    Sta.
  9966.5 9977.41 9988.33 9999.26

CROSS SECTION


RIVER: Fan 6A
REACH: Fan 6AN-1          RS: 2.04

INPUT
Description: Cross Section 2.04 is located within Legend Trail.  It is located
             downstream of the intersection of Fan 6A North and Calvary Drive.
             There are 4-10 X 4 concrete box culverts located under Calvary
             Drive.

Topography indicates wash and surrounding undeveloped
             desert.
Aerial shows wash, surrounding desert, Calvary Drive, and
             houses and pads.
T5NR5E Section 5
Q100 = 1,814 cfs
Station Elevation Data    num=      16
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
 9866.92    2652 9885.59    2650 9905.96    2648 9925.69    2646 9934.46    2645
 9943.23    2644   10000  2642.410012.25    2644 10029.6  2645.3 10070.4    2644
10133.49    264410156.61    264610185.67    264810209.66    265010223.23    2652
10236.89    2654

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
 9866.92    .056 9934.46    .038 10029.6    .053

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9934.46 10029.6              399  397.58   397.2            .3        .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
 9866.92 9934.46 2650.15       F
 10029.610236.89 2650.15       F

CROSS SECTION OUTPUT  Profile #100-yr 6-hr

  E.G. Elev (ft)          2646.78    Element                    Left OB    Channel   Right OB
  Vel Head (ft)              1.06    Wt. n-Val.                            0.038
  W.S. Elev (ft)          2645.72    Reach Len. (ft)            399.00     397.58    397.20
  Crit W.S. (ft)          2645.72    Flow Area (sq ft)                     203.03
  E.G. Slope (ft/ft)     0.016312    Area (sq ft)                 2.26     203.03    169.05
  Q Total (cfs)           1678.00    Flow (cfs)                          1678.00
  Top Width (ft)           225.19    Top Width (ft)               6.30      95.14    123.75
```

Vel Total (ft/s)	8.26	Avg. Vel. (ft/s)		8.26	
Max Chl Dpth (ft)	3.32	Hydr. Depth (ft)		2.13	
Conv. Total (cfs)	13138.2	Conv. (cfs)		13138.2	
Length Wtd. (ft)	397.51	Wetted Per. (ft)		95.37	
Min Ch El (ft)	2642.40	Shear (lb/sq ft)		2.17	
Alpha	1.00	Stream Power (lb/ft s)		17.92	
Frctn Loss (ft)	5.75	Cum Volume (acre-ft)	22.21	30.30	22.77
C & E Loss (ft)	0.22	Cum SA (acres)	10.03	12.09	12.93

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 energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
depth, the calculated water surface came back below critical depth. This indicates that there is
not a valid subcritical answer. The program defaulted to critical depth.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid,
energy was used.

CROSS SECTION OUTPUT Profile #Method 1

E.G. Elev (ft)	2646.78	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.06	Wt. n-Val.		0.038	
W.S. Elev (ft)	2645.72	Reach Len. (ft)	399.00	397.58	397.20
Crit W.S. (ft)	2645.72	Flow Area (sq ft)		203.03	
E.G. Slope (ft/ft)	0.016572	Area (sq ft)		203.03	
Q Total (cfs)	1678.00	Flow (cfs)		1678.00	
Top Width (ft)	95.14	Top Width (ft)		95.14	
Vel Total (ft/s)	8.26	Avg. Vel. (ft/s)		8.26	
Max Chl Dpth (ft)	3.32	Hydr. Depth (ft)		2.13	
Conv. Total (cfs)	13034.8	Conv. (cfs)		13034.8	
Length Wtd. (ft)		Wetted Per. (ft)		96.51	
Min Ch El (ft)	2642.40	Shear (lb/sq ft)		2.18	
Alpha	1.00	Stream Power (lb/ft s)		17.99	
Frctn Loss (ft)		Cum Volume (acre-ft)	3.14	33.98	3.55
C & E Loss (ft)		Cum SA (acres)	1.04	12.09	1.03

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: 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,
energy was used.

CROSS SECTION

RIVER: Fan 6A
REACH: Fan 6AN-1 RS: 1.97

INPUT
Description: Cross Section 1.97 is located within Legend Trail.

Topography
indicates wash and surrounding undeveloped desert.
Aerial shows
wash, surrounding desert and houses and pads.
T5NR5E Section
5
Q100 = 1,814 cfs

Station Elevation Data num= 21

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9886.79	2648	9928.96	2646	9947.88	2644	9953.36	2642	9958.73	2640
9964.35	2638	9969.86	2636	10000	2635.05	10016.54	2636	10024.86	2638
10042.11	2638	10110.93	2636	10115.29	2636	10214.1	2638	10263	2640
10297.74	2642	10356.49	2642	10372.17	2642	10402.22	2644	10441.48	2646
10460.03	2648								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9886.79	.056	9964.35	.038	10024.86	.053

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9964.35	10024.86	362.5	347.95	335.3	.1	.3

CROSS SECTION OUTPUT Profile #100-yr 6-hr

			Left OB	Channel	Right OB
E.G. Elev (ft)	2638.73	Element			
Vel Head (ft)	0.61	Wt. n-Val.	0.056	0.038	0.053
W.S. Elev (ft)	2638.11	Reach Len. (ft)	362.50	347.95	335.30
Crit W.S. (ft)	2638.11	Flow Area (sq ft)	0.02	136.28	198.13
E.G. Slope (ft/ft)	0.012918	Area (sq ft)	0.02	136.28	198.13
Q Total (cfs)	1678.00	Flow (cfs)	0.01	1033.45	644.54
Top Width (ft)	252.87	Top Width (ft)	0.32	60.51	192.03
Vel Total (ft/s)	5.02	Avg. Vel. (ft/s)	0.43	7.58	3.25
Max Chl Dpth (ft)	3.06	Hydr. Depth (ft)	0.06	2.25	1.03
Conv. Total (cfs)	14763.4	Conv. (cfs)	0.1	9092.5	5670.8
Length Wtd. (ft)	344.28	Wetted Per. (ft)	0.34	61.14	192.08
Min Ch El (ft)	2635.05	Shear (lb/sq ft)	0.04	1.80	0.83
Alpha	1.57	Stream Power (lb/ft s)	0.02	13.63	2.71
Frctn Loss (ft)	4.05	Cum Volume (acre-ft)	22.20	28.75	21.09
C & E Loss (ft)	0.01	Cum SA (acres)	10.00	11.38	11.49

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

CROSS SECTION OUTPUT Profile #Method 1

			Left OB	Channel	Right OB
E.G. Elev (ft)	2640.18	Element			
Vel Head (ft)	1.45	Wt. n-Val.		0.038	
W.S. Elev (ft)	2638.73	Reach Len. (ft)	362.50	347.95	335.30
Crit W.S. (ft)	2638.73	Flow Area (sq ft)		173.55	
E.G. Slope (ft/ft)	0.015699	Area (sq ft)		173.55	
Q Total (cfs)	1678.00	Flow (cfs)		1678.00	
Top Width (ft)	60.51	Top Width (ft)		60.51	
Vel Total (ft/s)	9.67	Avg. Vel. (ft/s)		9.67	
Max Chl Dpth (ft)	3.68	Hydr. Depth (ft)		2.87	
Conv. Total (cfs)	13392.3	Conv. (cfs)		13392.3	
Length Wtd. (ft)	347.95	Wetted Per. (ft)		62.60	
Min Ch El (ft)	2635.05	Shear (lb/sq ft)		2.72	
Alpha	1.00	Stream Power (lb/ft s)		26.27	
Frctn Loss (ft)	5.49	Cum Volume (acre-ft)	3.14	32.26	3.55
C & E Loss (ft)	0.06	Cum SA (acres)	1.04	11.38	1.03

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.

CROSS SECTION

RIVER: Fan 6A
REACH: Fan 6AN-1 RS: 1.90

INPUT
Description: Cross Section 1.90 is located within Legend Trail.

Topography
indicates wash and surrounding undeveloped desert.
Aerial shows
wash, surrounding desert and houses and pads.
T5NR5E Section
5
Q100 = 1,814 cfs
Station Elevation Data num= 15

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9937.31	2640	9948.05	2638	9958.89	2636	9970.12	2634	9977.77	2632
9981.64	2630	10000	2629	10017.07	2630	10052.14	2631.41	10187.68	2632
10268.54	2634	10296.01	2636	10318.81	2638	10341.66	2640	10376.91	2642

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9937.31	.056	9977.77	.038	10052.14	.053

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9977.77	10052.14	368.5	390.68	411.1	.1	.3

CROSS SECTION OUTPUT Profile #100-yr 6-hr

			Left OB	Channel	Right OB
E.G. Elev (ft)	2633.30	Element			
Vel Head (ft)	0.69	Wt. n-Val.	0.056	0.038	0.053
W.S. Elev (ft)	2632.61	Reach Len. (ft)	368.50	390.68	411.10
Crit W.S. (ft)	2632.61	Flow Area (sq ft)	0.70	183.18	130.38
E.G. Slope (ft/ft)	0.010738	Area (sq ft)	0.70	183.18	130.38
Q Total (cfs)	1678.00	Flow (cfs)	0.86	1346.81	330.33
Top Width (ft)	236.77	Top Width (ft)	2.32	74.37	160.08
Vel Total (ft/s)	5.34	Avg. Vel. (ft/s)	1.21	7.35	2.53
Max Chl Dpth (ft)	3.61	Hydr. Depth (ft)	0.30	2.46	0.81
Conv. Total (cfs)	16193.2	Conv. (cfs)	8.3	12997.2	3187.8
Length Wtd. (ft)	388.05	Wetted Per. (ft)	2.40	74.94	160.09
Min Ch El (ft)	2629.00	Shear (lb/sq ft)	0.20	1.64	0.55
Alpha	1.57	Stream Power (lb/ft s)	0.24	12.05	1.38
Frctn Loss (ft)	5.74	Cum Volume (acre-ft)	22.20	27.47	19.83
C & E Loss (ft)	0.09	Cum SA (acres)	9.99	10.84	10.13

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
depth, the 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 OUTPUT Profile #Method 1

			Left OB	Channel	Right OB
E.G. Elev (ft)	2633.91	Element			
Vel Head (ft)	1.24	Wt. n-Val.		0.038	
W.S. Elev (ft)	2632.67	Reach Len. (ft)	368.50	390.68	411.10
Crit W.S. (ft)	2632.67	Flow Area (sq ft)		187.86	

E.G. Slope (ft/ft)	0.015854	Area (sq ft)		187.86		
Q Total (cfs)	1678.00	Flow (cfs)		1678.00		
Top Width (ft)	74.37	Top Width (ft)		74.37		
Vel Total (ft/s)	8.93	Avg. Vel. (ft/s)		8.93		
Max Chl Dpth (ft)	3.67	Hydr. Depth (ft)		2.53		
Conv. Total (cfs)	13326.8	Conv. (cfs)		13326.8		
Length Wtd. (ft)	390.68	Wetted Per. (ft)		76.88		
Min Ch El (ft)	2629.00	Shear (lb/sq ft)		2.42		
Alpha	1.00	Stream Power (lb/ft s)		21.60		
Frctn Loss (ft)	4.95	Cum Volume (acre-ft)	3.14	30.81	3.55	
C & E Loss (ft)	0.23	Cum SA (acres)	1.04	10.84	1.03	

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 velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
depth, the 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: Fan 6A
REACH: Fan 6AN-1 RS: 1.83

INPUT
Description: Cross Section 1.83 is located within Legend Trail.

Topography
indicates wash and surrounding undeveloped desert.
Aerial shows
wash, surrounding desert and houses.
T5NR5E Section 5
Q100 =
1,814 cfs
Station Elevation Data num= 28

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9504.68	2646	9521.12	2644	9532.77	2642	9543.86	2640	9554.47	2638
9564.68	2636	9575.38	2634	9589.02	2632	9616.37	2630	9633.99	2628
9657.47	2626	9698.75	2624	9777.16	2623.6	9804.21	2624	9841.53	2624.83
9888.88	2624	9905.96	2624	9946.27	2624	9973.38	2624	9987.29	2624
10014.61	2624	10024.6	2625	10034.58	2626	10043.71	2628	10051.59	2630
10061.81	2632	10089.33	2634	10120.4	2636				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9504.68	.056	9841.53	.038	10024.6	.053

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9841.53	10024.6	242	240.11	250.2	.1	.3

CROSS SECTION OUTPUT Profile #100-yr 6-hr

E.G. Elev (ft)	2625.48	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.39	Wt. n-Val.	0.056	0.038	0.053
W.S. Elev (ft)	2625.09	Reach Len. (ft)	242.00	240.11	250.20
Crit W.S. (ft)	2625.00	Flow Area (sq ft)	173.54	174.96	0.04
E.G. Slope (ft/ft)	0.021693	Area (sq ft)	173.54	174.96	0.04
Q Total (cfs)	1678.00	Flow (cfs)	700.52	977.46	0.02
Top Width (ft)	349.26	Top Width (ft)	165.29	183.07	0.90
Vel Total (ft/s)	4.81	Avg. Vel. (ft/s)	4.04	5.59	0.52

Max Chl Dpth (ft)	1.49	Hydr. Depth (ft)	1.05	0.96	0.05
Conv. Total (cfs)	11392.9	Conv. (cfs)	4756.3	6636.5	0.1
Length Wtd. (ft)	243.14	Wetted Per. (ft)	165.32	183.13	0.91
Min Ch El (ft)	2624.00	Shear (lb/sq ft)	1.42	1.29	0.06
Alpha	1.08	Stream Power (lb/ft s)	5.74	7.23	0.03
Frctn Loss (ft)	4.01	Cum Volume (acre-ft)	21.46	25.87	19.21
C & E Loss (ft)	0.01	Cum SA (acres)	9.28	9.69	9.37

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 OUTPUT Profile #Method 1

			Left OB	Channel	Right OB
E.G. Elev (ft)	2626.27	Element			
Vel Head (ft)	0.48	Wt. n-Val.		0.038	
W.S. Elev (ft)	2625.79	Reach Len. (ft)	242.00	240.11	250.20
Crit W.S. (ft)	2625.51	Flow Area (sq ft)		303.05	
E.G. Slope (ft/ft)	0.010374	Area (sq ft)		303.05	
Q Total (cfs)	1678.00	Flow (cfs)		1678.00	
Top Width (ft)	183.07	Top Width (ft)		183.07	
Vel Total (ft/s)	5.54	Avg. Vel. (ft/s)		5.54	
Max Chl Dpth (ft)	1.79	Hydr. Depth (ft)		1.66	
Conv. Total (cfs)	16475.0	Conv. (cfs)		16475.0	
Length Wtd. (ft)	241.60	Wetted Per. (ft)		184.88	
Min Ch El (ft)	2624.00	Shear (lb/sq ft)		1.06	
Alpha	1.00	Stream Power (lb/ft s)		5.88	
Frctn Loss (ft)	3.16	Cum Volume (acre-ft)	3.14	28.61	3.55
C & E Loss (ft)	0.08	Cum SA (acres)	1.04	9.69	1.03

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The energy loss was 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: Fan 6A
REACH: Fan 6AN-1 RS: 1.78

INPUT
Description: Cross Section 1.78 is located within Legend Trail.

Topography
indicates wash and surrounding undeveloped desert.
Aerial shows
wash, surrounding desert and houses.
T5NR5E Section 5
Q100 =
1,814 cfs
Station Elevation Data num= 15

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9641.18	2628	9657.88	2626	9683.15	2624	9715.78	2622	9760.49	2620.83
9834.59	2620.74	9968.17	2620	9983.67	2618.59	10000	2618.18	10008.15	2619.17
10158.64	2620	10176.91	2622	10201.3	2624	10227.92	2626	10261.61	2628

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9641.18	.056	9968.17	.038	10008.15	.053

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9968.17	10008.15	335.8	332.2	321.4	.1	.3

CROSS SECTION OUTPUT Profile #100-yr 6-hr

			Left OB	Channel	Right OB
E.G. Elev (ft)	2621.46	Element			
Vel Head (ft)	0.47	Wt. n-Val.	0.056	0.038	0.053

W.S. Elev (ft)	2620.99	Reach Len. (ft)	335.80	332.20	321.40
Crit W.S. (ft)	2620.99	Flow Area (sq ft)	98.39	87.66	215.84
E.G. Slope (ft/ft)	0.012977	Area (sq ft)	98.39	87.66	215.84
Q Total (cfs)	1678.00	Flow (cfs)	177.29	657.62	843.09
Top Width (ft)	413.28	Top Width (ft)	213.77	39.98	159.53
Vel Total (ft/s)	4.18	Avg. Vel. (ft/s)	1.80	7.50	3.91
Max Chl Dpth (ft)	2.81	Hydr. Depth (ft)	0.46	2.19	1.35
Conv. Total (cfs)	14729.9	Conv. (cfs)	1556.3	5772.8	7400.8
Length Wtd. (ft)	326.25	Wetted Per. (ft)	213.78	40.11	159.58
Min Ch El (ft)	2618.18	Shear (lb/sq ft)	0.37	1.77	1.10
Alpha	1.72	Stream Power (lb/ft s)	0.67	13.28	4.28
Frctn Loss (ft)	4.99	Cum Volume (acre-ft)	20.71	25.14	18.59
C & E Loss (ft)	0.01	Cum SA (acres)	8.23	9.07	8.91

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.

CROSS SECTION OUTPUT Profile #Method 1

E.G. Elev (ft)	2623.02	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.30	Wt. n-Val.		0.038	0.053
W.S. Elev (ft)	2621.72	Reach Len. (ft)	335.80	332.20	321.40
Crit W.S. (ft)	2621.69	Flow Area (sq ft)		116.96	78.14
E.G. Slope (ft/ft)	0.016955	Area (sq ft)		116.96	78.14
Q Total (cfs)	1678.00	Flow (cfs)		1181.95	496.05
Top Width (ft)	71.68	Top Width (ft)		39.98	31.70
Vel Total (ft/s)	8.60	Avg. Vel. (ft/s)		10.11	6.35
Max Chl Dpth (ft)	3.54	Hydr. Depth (ft)		2.93	2.47
Conv. Total (cfs)	12886.7	Conv. (cfs)		9077.2	3809.6
Length Wtd. (ft)	328.52	Wetted Per. (ft)		41.83	34.08
Min Ch El (ft)	2618.18	Shear (lb/sq ft)		2.96	2.43
Alpha	1.13	Stream Power (lb/ft s)		29.91	15.41
Frctn Loss (ft)	5.70	Cum Volume (acre-ft)	3.14	27.45	3.32
C & E Loss (ft)	0.04	Cum SA (acres)	1.04	9.07	0.94

Warning: The energy loss was 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: Fan 6A
REACH: Fan 6AN-1 RS: 1.72

INPUT
Description: Cross Section 1.72 is located within Legend Trail.

Topography
indicates wash and surrounding undeveloped desert.
Aerial shows
wash, surrounding desert and houses.
T5NR5E Section 5
Q100 =
1,814 cfs
Station Elevation Data num= 19

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9900.05	2624	9909.45	2622	9925.45	2620	9942.7	2618	9967.18	2616
9975.12	2614.5	9977.77	2614	10000	2612.59	10012.68	2614	10031.89	2614
10048.92	2614	10120.12	2614.56	10171.68	2614	10224.02	2614	10263.47	2616

10296.97 261810307.94 262010318.92 262210372.54 2624

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9900.05	.056	9975.12	.03810012.68		.053

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9975.1210012.68		383.8	373.9	370.7	.1	.3

CROSS SECTION OUTPUT Profile #100-yr 6-hr

E.G. Elev (ft)	2615.87	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.55	Wt. n-Val.	0.056	0.038	0.053
W.S. Elev (ft)	2615.32	Reach Len. (ft)	383.80	373.90	370.70
Crit W.S. (ft)	2615.32	Flow Area (sq ft)	1.80	73.69	262.84
E.G. Slope (ft/ft)	0.018274	Area (sq ft)	1.80	73.69	262.84
Q Total (cfs)	1678.00	Flow (cfs)	3.53	608.69	1065.77
Top Width (ft)	279.39	Top Width (ft)	4.36	37.56	237.46
Vel Total (ft/s)	4.96	Avg. Vel. (ft/s)	1.96	8.26	4.05
Max Chl Dpth (ft)	2.73	Hydr. Depth (ft)	0.41	1.96	1.11
Conv. Total (cfs)	12412.9	Conv. (cfs)	26.1	4502.8	7884.0
Length Wtd. (ft)	372.53	Wetted Per. (ft)	4.44	37.73	237.50
Min Ch El (ft)	2612.59	Shear (lb/sq ft)	0.46	2.23	1.26
Alpha	1.43	Stream Power (lb/ft s)	0.91	18.41	5.12
Frctn Loss (ft)	5.24	Cum Volume (acre-ft)	20.32	24.53	16.83
C & E Loss (ft)	0.01	Cum SA (acres)	7.39	8.78	7.45

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.

CROSS SECTION OUTPUT Profile #Method 1

E.G. Elev (ft)	2617.28	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.16	Wt. n-Val.		0.038	0.053
W.S. Elev (ft)	2616.13	Reach Len. (ft)	383.80	373.90	370.70
Crit W.S. (ft)	2616.13	Flow Area (sq ft)		103.77	107.93
E.G. Slope (ft/ft)	0.017753	Area (sq ft)		103.77	107.93
Q Total (cfs)	1678.00	Flow (cfs)		1031.92	646.08
Top Width (ft)	88.76	Top Width (ft)		37.56	51.20
Vel Total (ft/s)	7.93	Avg. Vel. (ft/s)		9.94	5.99
Max Chl Dpth (ft)	3.54	Hydr. Depth (ft)		2.76	2.11
Conv. Total (cfs)	12593.8	Conv. (cfs)		7744.8	4849.0
Length Wtd. (ft)	373.28	Wetted Per. (ft)		39.35	53.21
Min Ch El (ft)	2612.59	Shear (lb/sq ft)		2.92	2.25
Alpha	1.19	Stream Power (lb/ft s)		29.06	13.46
Frctn Loss (ft)	4.19	Cum Volume (acre-ft)	3.14	26.61	2.64
C & E Loss (ft)	0.17	Cum SA (acres)	1.04	8.78	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.

CROSS SECTION

RIVER: Fan 6A
REACH: Fan 6AN-1 RS: 1.65

INPUT
Description: Cross Section 1.65 is located within Legend Trail.

Topography
indicates wash and surrounding undeveloped desert.
Aerial shows
wash, surrounding desert and houses.
T5NR5E Section 5
Q100 =
1,814 cfs

Station Elevation Data num= 17

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9848.28	2616	9861.27	2614	9882.17	2612	9907.77	2610	9945.73	2608
9996.56	2606	10006.84	2606	10056.78	2607.54	10101.33	2606.59	10128.2	2608
10159.76	2610	10187.58	2612	10207.64	2614	10227.98	2616	10243.81	2618
10265.71	2620	10306.82	2622						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9848.28	.056	9945.73	.038	10056.78	.053

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9945.73	10056.78	142.2	147.64	149.8	.1	.3

CROSS SECTION OUTPUT Profile #100-yr 6-hr

			Left OB	Channel	Right OB
E.G. Elev (ft)	2609.15	Element			
Vel Head (ft)	0.50	Wt. n-Val.	0.056	0.038	0.053
W.S. Elev (ft)	2608.65	Reach Len. (ft)	142.20	147.64	149.80
Crit W.S. (ft)		Flow Area (sq ft)	4.01	205.01	110.36
E.G. Slope (ft/ft)	0.011152	Area (sq ft)	4.01	205.01	110.36
Q Total (cfs)	1678.00	Flow (cfs)	5.31	1273.56	399.13
Top Width (ft)	205.07	Top Width (ft)	12.34	111.05	81.68
Vel Total (ft/s)	5.25	Avg. Vel. (ft/s)	1.32	6.21	3.62
Max Chl Dpth (ft)	2.65	Hydr. Depth (ft)	0.33	1.85	1.35
Conv. Total (cfs)	15889.6	Conv. (cfs)	50.3	12059.8	3779.5
Length Wtd. (ft)	147.52	Wetted Per. (ft)	12.36	111.11	81.75
Min Ch El (ft)	2606.00	Shear (lb/sq ft)	0.23	1.28	0.94
Alpha	1.17	Stream Power (lb/ft s)	0.30	7.98	3.40
Frctn Loss (ft)	1.77	Cum Volume (acre-ft)	20.29	23.33	15.24
C & E Loss (ft)	0.01	Cum SA (acres)	7.31	8.14	6.09

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.

CROSS SECTION OUTPUT Profile #Method 1

			Left OB	Channel	Right OB
E.G. Elev (ft)	2609.85	Element			
Vel Head (ft)	0.59	Wt. n-Val.		0.038	
W.S. Elev (ft)	2609.26	Reach Len. (ft)	142.20	147.64	149.80
Crit W.S. (ft)		Flow Area (sq ft)		272.74	
E.G. Slope (ft/ft)	0.007745	Area (sq ft)		272.74	
Q Total (cfs)	1678.00	Flow (cfs)		1678.00	
Top Width (ft)	111.05	Top Width (ft)		111.05	
Vel Total (ft/s)	6.15	Avg. Vel. (ft/s)		6.15	
Max Chl Dpth (ft)	3.26	Hydr. Depth (ft)		2.46	
Conv. Total (cfs)	19067.1	Conv. (cfs)		19067.1	
Length Wtd. (ft)	147.64	Wetted Per. (ft)		114.09	
Min Ch El (ft)	2606.00	Shear (lb/sq ft)		1.16	
Alpha	1.00	Stream Power (lb/ft s)		7.11	
Frctn Loss (ft)	1.63	Cum Volume (acre-ft)	3.14	25.00	2.18

C & E Loss (ft)	0.06	Cum SA (acres)	1.04	8.14	0.41

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.

CROSS SECTION

RIVER: Fan 6A
REACH: Fan 6AN-1 RS: 1.62

INPUT
Description: Cross Section 1.62 is located within Legend Trail.

Topography
indicates wash and surrounding undeveloped desert.
Aerial shows
wash, surrounding desert and houses.
T5NR5E Section 5
Q100 =
1,814 cfs .
Station Elevation Data num= 20

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9727.01	2620	9748.31	2618	9763.49	2616	9777.31	2614	9791.25	2612
9805.9	2610	9824.57	2608	9851.91	2606	9926.76	2605.16	9974.97	2604.61
10001.61	2604	10004.31	2604	10010.39	2606	10015.68	2606	10086	2606
10106.17	2608	10118.33	2610	10130.16	2612	10141.98	2614	10246.55	2616

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9727.01	.056	9926.76	.038	10010.39	.053

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9926.76	10010.39	329.1	332.31	336.2	.3	.5

CROSS SECTION OUTPUT Profile #100-yr 6-hr

E.G. Elev (ft)	2607.37	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.63	Wt. n-Val.	0.056	0.038	0.053
W.S. Elev (ft)	2606.74	Reach Len. (ft)	329.10	332.31	336.20
Crit W.S. (ft)	2606.74	Flow Area (sq ft)	90.94	172.64	59.08
E.G. Slope (ft/ft)	0.012928	Area (sq ft)	90.94	172.64	59.08
Q Total (cfs)	1678.00	Flow (cfs)	286.90	1241.16	149.94
Top Width (ft)	251.77	Top Width (ft)	85.03	83.63	83.12
Vel Total (ft/s)	5.20	Avg. Vel. (ft/s)	3.15	7.19	2.54
Max Chl Dpth (ft)	2.74	Hydr. Depth (ft)	1.07	2.06	0.71
Conv. Total (cfs)	14757.9	Conv. (cfs)	2523.2	10916.0	1318.8
Length Wtd. (ft)	332.21	Wetted Per. (ft)	85.06	83.96	83.15
Min Ch El (ft)	2604.00	Shear (lb/sq ft)	0.86	1.66	0.57
Alpha	1.50	Stream Power (lb/ft s)	2.72	11.93	1.46
Frctn Loss (ft)	0.05	Cum Volume (acre-ft)	20.14	22.69	14.95
C & E Loss (ft)	0.31	Cum SA (acres)	7.16	7.81	5.80

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 conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical

depth, the 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 OUTPUT Profile #Method 1

E.G. Elev (ft)	2608.16	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.17	Wt. n-Val.		0.038	
W.S. Elev (ft)	2606.99	Reach Len. (ft)	329.10	332.31	336.20
Crit W.S. (ft)	2606.99	Flow Area (sq ft)		193.32	
E.G. Slope (ft/ft)	0.016936	Area (sq ft)		193.32	
Q Total (cfs)	1678.00	Flow (cfs)		1678.00	
Top Width (ft)	83.63	Top Width (ft)		83.63	
Vel Total (ft/s)	8.68	Avg. Vel. (ft/s)		8.68	
Max Chl Dpth (ft)	2.99	Hydr. Depth (ft)		2.31	
Conv. Total (cfs)	12894.0	Conv. (cfs)		12894.0	
Length Wtd. (ft)	332.86	Wetted Per. (ft)		86.78	
Min Ch El (ft)	2604.00	Shear (lb/sq ft)		2.36	
Alpha	1.00	Stream Power (lb/ft s)		20.44	
Frctn Loss (ft)	0.40	Cum Volume (acre-ft)	3.14	24.21	2.18
C & E Loss (ft)	0.54	Cum SA (acres)	1.04	7.81	0.41

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 conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
depth, the 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: Fan 6A
REACH: Fan 6AN-1 RS: 1.56

INPUT
Description: Cross Section 1.56 is located within Legend Trail. It is located upstream of the intersection of Fan 6A North and Desert Ridge Drive. There are 4-10 X 4 concrete box culverts located under Desert Ridge Drive.

Topography indicates wash and surrounding undeveloped desert.
Aerial shows wash, surrounding desert, and Desert Ridge Drive.
T5NR5E Section 5
Q100 = 1,814 cfs
Station Elevation Data num= 16

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9638.75	2610	9668.96	2608	9691.92	2606	9709.86	2604	9737.99	2602
9782.56	2600	9978.57	2598	9989.33	2598	10013.44	2598.75	10069.49	2598
10100.99	2598	10135.36	2600	10202.34	2602	10224.83	2604	10249.41	2606
10282.02	2608								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9638.75	.056	9978.57	.038	10013.44	.053

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9978.57	10013.44	73.65	73.65	73.65	.3	.5

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent

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 9638.75 9971.02 2605.03       F
10023.7710282.02 2605.03       F
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CROSS SECTION OUTPUT Profile #100-yr 6-hr

E.G. Elev (ft)	2605.24	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.01	Wt. n-Val.	0.056	0.038	0.053
W.S. Elev (ft)	2605.24	Reach Len. (ft)	73.65	73.65	73.65
Crit W.S. (ft)	2601.57	Flow Area (sq ft)	1480.96	243.29	1170.30
E.G. Slope (ft/ft)	0.000044	Area (sq ft)	1480.96	243.29	1170.30
Q Total (cfs)	1678.00	Flow (cfs)	794.36	231.26	652.38
Top Width (ft)	541.25	Top Width (ft)	279.80	34.87	226.58
Vel Total (ft/s)	0.58	Avg. Vel. (ft/s)	0.54	0.95	0.56
Max Chl Dpth (ft)	7.24	Hydr. Depth (ft)	5.29	6.98	5.16
Conv. Total (cfs)	251992.3	Conv. (cfs)	119292.5	34728.6	97971.2
Length Wtd. (ft)	73.65	Wetted Per. (ft)	279.99	34.88	226.82
Min Ch El (ft)	2598.00	Shear (lb/sq ft)	0.01	0.02	0.01
Alpha	1.14	Stream Power (lb/ft s)	0.01	0.02	0.01
Frctn Loss (ft)		Cum Volume (acre-ft)	14.20	21.10	10.20
C & E Loss (ft)		Cum SA (acres)	5.78	7.36	4.61

Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid,
energy was used.

CROSS SECTION OUTPUT Profile #Method 1

E.G. Elev (ft)	2605.28	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.08	Wt. n-Val.	0.056	0.038	0.053
W.S. Elev (ft)	2605.20	Reach Len. (ft)	73.65	73.65	73.65
Crit W.S. (ft)	2601.57	Flow Area (sq ft)	173.52	241.99	382.48
E.G. Slope (ft/ft)	0.000395	Area (sq ft)	173.52	241.99	382.48
Q Total (cfs)	1678.00	Flow (cfs)	285.72	684.48	707.80
Top Width (ft)	115.45	Top Width (ft)	24.53	34.87	56.05
Vel Total (ft/s)	2.10	Avg. Vel. (ft/s)	1.65	2.83	1.85
Max Chl Dpth (ft)	7.20	Hydr. Depth (ft)	7.07	6.94	6.82
Conv. Total (cfs)	84378.3	Conv. (cfs)	14367.4	34419.2	35591.6
Length Wtd. (ft)	73.65	Wetted Per. (ft)	31.48	34.88	63.25
Min Ch El (ft)	2598.00	Shear (lb/sq ft)	0.14	0.17	0.15
Alpha	1.17	Stream Power (lb/ft s)	0.22	0.48	0.28
Frctn Loss (ft)		Cum Volume (acre-ft)	2.49	22.55	0.70
C & E Loss (ft)		Cum SA (acres)	0.95	7.36	0.20

Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid,
energy was used.

CULVERT

RIVER: Fan 6A
REACH: Fan 6AN-1 RS: 1.55

INPUT
Description: Box culverts at Desert Ridge Drive crossing.
Distance from Upstream XS = 5
Deck/Roadway Width = 66
Weir Coefficient = 2.6
Upstream Deck/Roadway Coordinates
num= 10

Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord
9638.75	2606.37		9711.91	2606.37		9811.91	2605.03	
9855.46	2605.16		9917.17	2605.43		9970.55	2605.43	
10123.57	2607.45		10150.59	2606.83		10244.55	2608.15	
10400	2608.15							

Upstream Bridge Cross Section Data
Station Elevation Data num= 16

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev

```
 9638.75    2610 9668.96    2608 9691.92    2606 9709.86    2604 9737.99    2602
 9782.56    2600 9978.57    2598 9989.33    259810013.44 2598.7510069.49    2598
10100.99    259810135.36    260010202.34    260210224.83    260410249.41    2606
10282.02    2608

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
 9638.75    .056 9978.57    .03810013.44    .053

Bank Sta: Left   Right    Coeff Contr.   Expan.
       9978.5710013.44             .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
 9638.75 9971.02 2605.03       F
10023.7710282.02 2605.03       F

Downstream  Deck/Roadway Coordinates
    num=       9
     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord
 9699.92 2606.37         9799.92 2605.03         9843.47 2605.16
 9905.18 2605.43         9958.56 2605.43        10111.61 2607.45
 10138.6 2606.83        10232.56 2608.15        10334.97 2608.15

Downstream Bridge Cross Section Data
Station Elevation Data    num=      22
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
 9702.99    2608 9723.48    2606 9734.97    2604 9746.31    2602 9756.41    2600
 9767.93    2598 9780.65    2596 9789.85    2594 9801.43    2594  9842.9    2596
    9940 2596.93   10000 2597.4510012.71  2597.510017.83    259810022.61    2598
10055.82    2596 10061.1    259610125.01    259810168.34    260010195.52    2602
10217.38    260410266.27    2606

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
 9702.99    .056    9940    .03810012.71    .053

Bank Sta: Left   Right    Coeff Contr.   Expan.
          994010012.71             .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
 9702.99    9940 2605.03       F
10016.1210266.27 2605.03       F

Upstream Embankment side slope              =       0 horiz. to 1.0 vertical
Downstream Embankment side slope            =       0 horiz. to 1.0 vertical
Maximum allowable submergence for weir flow =     .95
Elevation at which weir flow begins         =
Energy head used in spillway design         =
Spillway height used in design              =
Weir crest shape                            = Broad Crested

Number of Culverts =  1

Culvert Name     Shape      Rise    Span
CULVERT#1          Box       4      10
FHWA Chart # 8 - flared wingwalls
FHWA Scale # 1 - Wingwall flared 30 to 75 deg.
Solution Criteria = Highest U.S. EG
Culvert Upstrm Dist  Length    Top n  Bottom n  Depth Blocked  Entrance Loss Coef   Exit Loss Coef
                  5      65     .015     .015        0                  .4                 1
Number of Barrels =  4
Upstream   Elevation =  2598.07
Centerline Stations
    Sta.    Sta.    Sta.    Sta.
 9981.02 9991.9310002.8510013.77
Downstream Elevation =  2596.34
Centerline Stations
    Sta.    Sta.    Sta.    Sta..
 9954.93 9965.85 9996.5510007.47

CROSS SECTION
```

RIVER: Fan 6A
REACH: Fan 6AN-1 RS: 1.54

INPUT
Description: Cross Section 1.54 is located within Legend Trail. It is located downstream of the intersection of Fan 6A North and Desert Ridge Drive. There are 4-10 X 4 concrete box culverts located under Desert Ridge Drive.

Topography indicates wash and surrounding undeveloped desert.
Aerial shows wash, surrounding desert, and Desert Ridge Drive.
T5NR5E Section 5
Q100 = 1,814 cfs
Station Elevation Data num= 22

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9702.99	2608	9723.48	2606	9734.97	2604	9746.31	2602	9756.41	2600
9767.93	2598	9780.65	2596	9789.85	2594	9801.43	2594	9842.9	2596
9940	2596.93	10000	2597.45	10012.71	2597.51	10017.83	2598	10022.61	2598
10055.82	2596	10061.1	2596	10125.01	2598	10168.34	2600	10195.52	2602
10217.38	2604	10266.27	2606						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9702.99	.056	9940	.038	10012.71	.053

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9940	10012.71	355.2	359.44	367.4	.3	.5

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
9702.99	9940	2605.03	F
10016.12	10266.27	2605.03	F

CROSS SECTION OUTPUT Profile #100-yr 6-hr

E.G. Elev (ft)	2600.98	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.24	Wt. n-Val.		0.038	0.053
W.S. Elev (ft)	2599.74	Reach Len. (ft)	355.20	359.44	367.40
Crit W.S. (ft)	2599.74	Flow Area (sq ft)		181.79	7.07
E.G. Slope (ft/ft)	0.015644	Area (sq ft)	668.22	181.79	337.16
Q Total (cfs)	1678.00	Flow (cfs)		1637.81	40.19
Top Width (ft)	404.80	Top Width (ft)	182.09	72.71	150.00
Vel Total (ft/s)	8.88	Avg. Vel. (ft/s)		9.01	5.68
Max Chl Dpth (ft)	5.74	Hydr. Depth (ft)		2.50	2.07
Conv. Total (cfs)	13416.0	Conv. (cfs)		13094.7	321.3
Length Wtd. (ft)	358.80	Wetted Per. (ft)		72.71	3.43
Min Ch El (ft)	2596.93	Shear (lb/sq ft)		2.44	2.02
Alpha	1.01	Stream Power (lb/ft s)		22.00	11.46
Frctn Loss (ft)	5.52	Cum Volume (acre-ft)	12.38	20.75	8.93
C & E Loss (ft)	0.32	Cum SA (acres)	5.39	7.27	4.29

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.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid,
energy was used.

CROSS SECTION OUTPUT Profile #Method 1

E.G. Elev (ft)	2601.06	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.28	Wt. n-Val.		0.038	
W.S. Elev (ft)	2599.78	Reach Len. (ft)	355.20	359.44	367.40
Crit W.S. (ft)	2599.78	Flow Area (sq ft)		185.00	
E.G. Slope (ft/ft)	0.016141	Area (sq ft)	304.01	185.00	
Q Total (cfs)	1678.00	Flow (cfs)		1678.00	
Top Width (ft)	164.95	Top Width (ft)	92.24	72.71	
Vel Total (ft/s)	9.07	Avg. Vel. (ft/s)		9.07	
Max Chl Dpth (ft)	3.74	Hydr. Depth (ft)		2.54	
Conv. Total (cfs)	13207.5	Conv. (cfs)		13207.5	
Length Wtd. (ft)	359.19	Wetted Per. (ft)		75.00	
Min Ch El (ft)	2596.93	Shear (lb/sq ft)		2.49	
Alpha	1.00	Stream Power (lb/ft s)		22.55	
Frctn Loss (ft)	5.60	Cum Volume (acre-ft)	2.08	22.19	0.38
C & E Loss (ft)	0.16	Cum SA (acres)	0.85	7.27	0.15

Warning: The energy equation could not be 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,
energy was used.

CROSS SECTION

RIVER: Fan 6A
REACH: Fan 6AN-1 RS: 1.48

INPUT
Description: Cross Section 1.48 is located within Legend Trail.

Topography
indicates wash and surrounding undeveloped desert.
Aerial shows
wash, surrounding desert, golf courses and houses.
T5NR5E Section
5
Q100 = 1,814 cfs
Station Elevation Data num= 21

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9732.95	2600	9746.03	2598	9759.21	2596	9772.2	2594	9785.32	2592
9800.08	2590	9888.99	2588.05	9917.43	2590	9925.7	2590	9937.03	2588
9953.41	2590	9969.97	2590	9997.59	2588	10000	2587.25	10036.99	2588
10049.67	2590	10068.38	2592	10083.22	2594	10093.4	2596	10103.5	2598
10116.61	2600								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9732.95	.056	9969.97	.038	10049.67	.053

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9969.97	10049.67	294.7	301.31	270.9	.1	.3

CROSS SECTION OUTPUT Profile #100-yr 6-hr

E.G. Elev (ft)	2590.80	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.60	Wt. n-Val.	0.056	0.038	0.053
W.S. Elev (ft)	2590.20	Reach Len. (ft)	294.70	301.31	270.90
Crit W.S. (ft)	2590.20	Flow Area (sq ft)	175.36	149.40	0.18
E.G. Slope (ft/ft)	0.015278	Area (sq ft)	175.36	149.40	0.18

Q Total (cfs)	1678.00	Flow (cfs)	583.24	1094.64	0.13
Top Width (ft)	252.85	Top Width (ft)	171.33	79.70	1.82
Vel Total (ft/s)	5.16	Avg. Vel. (ft/s)	3.33	7.33	0.73
Max Chl Dpth (ft)	2.94	Hydr. Depth (ft)	1.02	1.87	0.10
Conv. Total (cfs)	13575.5	Conv. (cfs)	4718.5	8855.9	1.0
Length Wtd. (ft)	297.70	Wetted Per. (ft)	171.73	80.05	1.83
Min Ch El (ft)	2587.25	Shear (lb/sq ft)	0.97	1.78	0.09
Alpha	1.46	Stream Power (lb/ft s)	3.24	13.04	0.07
Frctn Loss (ft)	4.76	Cum Volume (acre-ft)	8.95	19.38	7.51
C & E Loss (ft)	0.03	Cum SA (acres)	3.95	6.64	3.65

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

CROSS SECTION OUTPUT Profile #Method 1

E.G. Elev (ft)	2591.53	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.95	Wt. n-Val.	0.056	0.038	
W.S. Elev (ft)	2590.58	Reach Len. (ft)	294.70	301.31	270.90
Crit W.S. (ft)	2590.58	Flow Area (sq ft)	53.57	180.44	
E.G. Slope (ft/ft)	0.015080	Area (sq ft)	53.57	180.44	
Q Total (cfs)	1678.00	Flow (cfs)	195.65	1482.35	
Top Width (ft)	123.97	Top Width (ft)	44.27	79.70	
Vel Total (ft/s)	7.17	Avg. Vel. (ft/s)	3.65	8.22	
Max Chl Dpth (ft)	3.33	Hydr. Depth (ft)	1.21	2.26	
Conv. Total (cfs)	13664.3	Conv. (cfs)	1593.2	12071.1	
Length Wtd. (ft)	300.92	Wetted Per. (ft)	45.15	80.64	
Min Ch El (ft)	2587.25	Shear (lb/sq ft)	1.12	2.11	
Alpha	1.19	Stream Power (lb/ft s)	4.08	17.31	
Frctn Loss (ft)	4.76	Cum Volume (acre-ft)	0.63	20.68	0.38
C & E Loss (ft)	0.07	Cum SA (acres)	0.29	6.64	0.15

Warning: The energy equation could not be 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: Fan 6A
REACH: Fan 6AN-1 RS: 1.42

INPUT
Description: Cross Section 1.42 is located within Legend Trail.

Topography
indicates wash and surrounding undeveloped desert.
Aerial shows
wash, surrounding desert, and golf courses.
T5NR5E Section 5 and
6
Q100 = 1,814 cfs
Station Elevation Data num= 29

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev

9893.5	2602	9905.02	2600	9913.62	2598	9922.19	2596	9929.79	2594
9937.33	2592	9944.91	2590	9952.84	2588	9960.04	2586	9967.12	2584
9981.49	2584	9989.11	2584	9996.18	2582	10012.86	2582	10051.25	2584
10057.08	2584	10081.73	2584	10111.09	2584	10149	2584	10179.04	2584.45
10198.48	2584	10251.61	2584	10271.38	2586	10286.71	2588	10302.32	2590
10315.6	2592	10332.55	2594	10356.9	2596	10382.39	2598		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9893.5	.05	9989.11	.038	10149	.05

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9989.11	10149	523.2	512.96	499.8	.1	.3

CROSS SECTION OUTPUT Profile #100-yr 6-hr

			Left OB	Channel	Right OB
E.G. Elev (ft)	2585.38	Element			
Vel Head (ft)	0.51	Wt. n-Val.	0.050	0.038	0.050
W.S. Elev (ft)	2584.87	Reach Len. (ft)	523.20	512.96	499.80
Crit W.S. (ft)	2584.85	Flow Area (sq ft)	20.44	217.75	81.76
E.G. Slope (ft/ft)	0.016779	Area (sq ft)	20.44	217.75	81.76
Q Total (cfs)	1678.00	Flow (cfs)	68.48	1353.23	256.30
Top Width (ft)	296.16	Top Width (ft)	25.07	159.89	111.20
Vel Total (ft/s)	5.24	Avg. Vel. (ft/s)	3.35	6.21	3.13
Max Chl Dpth (ft)	2.87	Hydr. Depth (ft)	0.82	1.36	0.74
Conv. Total (cfs)	12954.3	Conv. (cfs)	528.7	10447.0	1978.6
Length Wtd. (ft)	510.93	Wetted Per. (ft)	25.19	160.22	111.25
Min Ch El (ft)	2582.00	Shear (lb/sq ft)	0.85	1.42	0.77
Alpha	1.20	Stream Power (lb/ft s)	2.85	8.85	2.41
Frctn Loss (ft)	8.88	Cum Volume (acre-ft)	8.28	18.11	7.25
C & E Loss (ft)	0.02	Cum SA (acres)	3.28	5.81	3.30

Warning: The energy loss was 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 OUTPUT Profile #Method 1

			Left OB	Channel	Right OB
E.G. Elev (ft)	2585.77	Element			
Vel Head (ft)	0.70	Wt. n-Val.		0.038	
W.S. Elev (ft)	2585.07	Reach Len. (ft)	523.20	512.96	499.80
Crit W.S. (ft)	2585.01	Flow Area (sq ft)		249.91	
E.G. Slope (ft/ft)	0.016590	Area (sq ft)		249.91	
Q Total (cfs)	1678.00	Flow (cfs)		1678.00	
Top Width (ft)	159.89	Top Width (ft)		159.89	
Vel Total (ft/s)	6.71	Avg. Vel. (ft/s)		6.71	
Max Chl Dpth (ft)	3.07	Hydr. Depth (ft)		1.56	
Conv. Total (cfs)	13027.9	Conv. (cfs)		13027.9	
Length Wtd. (ft)	512.96	Wetted Per. (ft)		162.36	
Min Ch El (ft)	2582.00	Shear (lb/sq ft)		1.59	
Alpha	1.00	Stream Power (lb/ft s)		10.70	
Frctn Loss (ft)	8.81	Cum Volume (acre-ft)	0.45	19.19	0.38
C & E Loss (ft)	0.02	Cum SA (acres)	0.14	5.81	0.15

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: Fan 6A
REACH: Fan 6AN-1 RS: 1.32

INPUT
Description: Cross Section 1.32 is located within Legend Trail.

Topography
indicates wash and surrounding undeveloped desert.

Aerial shows
wash, surrounding desert, and golf courses.
T5NR5E Section 7 and
6
Q100 = 1,814 cfs

Station Elevation Data num= 20

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9904.37	2584	9915.22	2582	9925.97	2580	9941.11	2578	9967.89	2576
9974.6	2575.5	9994.71	2574	10000	2573	10022.38	2574	10033.31	2574
10061.38	2574	10098.44	2575.63	10151.2	2574	10156.32	2574	10175.12	2576
10213.8	2578	10238.87	2580	10257.41	2582	10270.7	2584	10283.79	2586

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9904.37	.05	9974.6	.03	10098.44	.05

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9974.6	10098.44	488.1	501.61	513.8	.1	.3

CROSS SECTION OUTPUT Profile #100-yr 6-hr

E.G. Elev (ft)	2576.49	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.67	Wt. n-Val.	0.050	0.038	0.050
W.S. Elev (ft)	2575.81	Reach Len. (ft)	488.10	501.61	513.80
Crit W.S. (ft)	2575.81	Flow Area (sq ft)	0.66	193.16	77.44
E.G. Slope (ft/ft)	0.018011	Area (sq ft)	0.66	193.16	77.44
Q Total (cfs)	1678.00	Flow (cfs)	0.76	1361.84	315.40
Top Width (ft)	202.98	Top Width (ft)	4.21	123.84	74.93
Vel Total (ft/s)	6.19	Avg. Vel. (ft/s)	1.16	7.05	4.07
Max Chl Dpth (ft)	2.81	Hydr. Depth (ft)	0.16	1.56	1.03
Conv. Total (cfs)	12503.3	Conv. (cfs)	5.7	10147.4	2350.1
Length Wtd. (ft)	502.71	Wetted Per. (ft)	4.22	124.05	75.05
Min Ch El (ft)	2573.00	Shear (lb/sq ft)	0.18	1.75	1.16
Alpha	1.14	Stream Power (lb/ft s)	0.20	12.34	4.73
Frctn Loss (ft)	1.25	Cum Volume (acre-ft)	8.16	15.69	6.34
C & E Loss (ft)	0.17	Cum SA (acres)	3.11	4.14	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 conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
depth, the 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 OUTPUT Profile #Method 1

E.G. Elev (ft)	2576.93	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.90	Wt. n-Val.		0.038	
W.S. Elev (ft)	2576.03	Reach Len. (ft)	488.10	501.61	513.80
Crit W.S. (ft)	2576.03	Flow Area (sq ft)		220.34	
E.G. Slope (ft/ft)	0.017809	Area (sq ft)		220.34	
Q Total (cfs)	1678.00	Flow (cfs)		1678.00	
Top Width (ft)	123.84	Top Width (ft)		123.84	
Vel Total (ft/s)	7.62	Avg. Vel. (ft/s)		7.62	
Max Chl Dpth (ft)	3.03	Hydr. Depth (ft)		1.78	
Conv. Total (cfs)	12574.0	Conv. (cfs)		12574.0	
Length Wtd. (ft)	501.26	Wetted Per. (ft)		124.99	
Min Ch El (ft)	2573.00	Shear (lb/sq ft)		1.96	
Alpha	1.00	Stream Power (lb/ft·s)		14.93	
Frctn Loss (ft)	1.88	Cum Volume (acre-ft)	0.45	16.42	0.38
C & E Loss (ft)	0.21	Cum SA (acres)	0.14	4.14	0.15

Warning: The energy equation could not be 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: Fan 6A
REACH: Fan 6AN-1 RS: 1.23

INPUT
Description: Cross Section 1.23 is located within Legend Trail.

Topography
indicates wash and surrounding undeveloped desert.
Aerial shows
wash, surrounding desert, and golf courses.
T5NR5E Section 7

Q100 = 1,814 cfs
Station Elevation Data num= 12

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9826.92	2572	9835.94	2570	9864.77	2568	9972.63	2566	10000	2564.12
10042.79	2566	10068.56	2566.39	10091.16	2566	10126.42	2566	10134.52	2568
10140.35	2570	10146.03	2572						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9826.92	.05	9972.63	.038	10068.56	.05

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9972.63	10068.56	141.8	138.07	139.9	.3	.5

CROSS SECTION OUTPUT Profile #100-yr 6-hr

			Left OB	Channel	Right OB
E.G. Elev (ft)	2569.16	Element			
Vel Head (ft)	0.09	Wt. n-Val.	0.050	0.038	0.050
W.S. Elev (ft)	2569.07	Reach Len. (ft)	141.80	138.07	139.90
Crit W.S. (ft)		Flow Area (sq ft)	231.02	355.04	191.38
E.G. Slope (ft/ft)	0.000938	Area (sq ft)	231.02	355.04	191.38
Q Total (cfs)	1678.00	Flow (cfs)	319.53	1016.32	342.15
Top Width (ft)	288.22	Top Width (ft)	123.22	95.93	69.07
Vel Total (ft/s)	2.16	Avg. Vel. (ft/s)	1.38	2.86	1.79
Max Chl Dpth (ft)	4.95	Hydr. Depth (ft)	1.87	3.70	2.77
Conv. Total (cfs)	54801.9	Conv. (cfs)	10435.4	33192.1	11174.4
Length Wtd. (ft)	139.20	Wetted Per. (ft)	123.28	96.04	69.49
Min Ch El (ft)	2564.12	Shear (lb/sq ft)	0.11	0.22	0.16
Alpha	1.28	Stream Power (lb/ft s)	0.15	0.62	0.29
Frctn Loss (ft)	0.04	Cum Volume (acre-ft)	6.86	12.53	4.75
C & E Loss (ft)	0.03	Cum SA (acres)	2.39	2.87	1.38

Warning: The conveyance ratio (upstream 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 OUTPUT Profile #Method 1

E.G. Elev (ft)	2569.54	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.22	Wt. n-Val.	0.050	0.038	0.050
W.S. Elev (ft)	2569.33	Reach Len. (ft)	141.80	138.07	139.90
Crit W.S. (ft)		Flow Area (sq ft)	61.61	379.91	29.85
E.G. Slope (ft/ft)	0.001575	Area (sq ft)	61.61	379.91	29.85
Q Total (cfs)	1678.00	Flow (cfs)	141.96	1474.74	61.30
Top Width (ft)	125.41	Top Width (ft)	19.60	95.93	9.88
Vel Total (ft/s)	3.56	Avg. Vel. (ft/s)	2.30	3.88	2.05
Max Chl Dpth (ft)	5.21	Hydr. Depth (ft)	3.14	3.96	3.02
Conv. Total (cfs)	42278.7	Conv. (cfs)	3576.8	37157.4	1544.5
Length Wtd. (ft)	138.26	Wetted Per. (ft)	22.56	96.04	12.99
Min Ch El (ft)	2564.12	Shear (lb/sq ft)	0.27	0.39	0.23
Alpha	1.09	Stream Power (lb/ft s)	0.62	1.51	0.46
Frctn Loss (ft)	0.15	Cum Volume (acre-ft)	0.10	12.96	0.20
C & E Loss (ft)	0.01	Cum SA (acres)	0.03	2.87	0.09

Warning: The conveyance ratio (upstream 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: Fan 6A
REACH: Fan 6AN-1 RS: 1.20

INPUT
Description: Cross Section 1.20 is located within Legend Trail. It is located upstream of the intersection of Fan 6A North and Roadrunner Drive. There are 4-10 X 4 concrete box culverts located under Roadrunner Drive.

Topography indicates wash and surrounding undeveloped desert.
Aerial shows wash, surrounding desert, and Roadrunner.
T5NR5E Section 7
Q100 = 1,814 cfs
Station Elevation Data num= 14

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9868.38	2570	9900.35	2568	9924.54	2566	9956.41	2564	9977.94	2562
10019.29	2562	10027.35	2564	10083.47	2564	10089.8	2562	10098.39	2562
10165.01	2564	10174.14	2566	10179.47	2568	10184.55	2570		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9868.38	.05	9956.41	.03	10027.35	.05

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9956.41	10027.35	87.43	87.43	87.43	.3	.5

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
9868.38	9956.41	2568.66	F
10027.35	10184.55	2568.66	F

CROSS SECTION OUTPUT Profile #100-yr 6-hr

E.G. Elev (ft)	2569.09	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.02	Wt. n-Val.	0.050	0.038	0.050
W.S. Elev (ft)	2569.06	Reach Len. (ft)	87.43	87.43	87.43
Crit W.S. (ft)	2565.02	Flow Area (sq ft)	188.48	471.51	836.74
E.G. Slope (ft/ft)	0.000122	Area (sq ft)	188.48	471.51	836.74
Q Total (cfs)	1678.00	Flow (cfs)	116.34	718.66	843.00
Top Width (ft)	298.83	Top Width (ft)	73.06	70.94	154.82
Vel Total (ft/s)	1.12	Avg. Vel. (ft/s)	0.62	1.52	1.01
Max Chl Dpth (ft)	7.06	Hydr. Depth (ft)	2.58	6.65	5.40
Conv. Total (cfs)	151704.4	Conv. (cfs)	10518.3	64972.1	76214.0
Length Wtd. (ft)	87.43	Wetted Per. (ft)	73.24	71.28	155.94
Min Ch El (ft)	2562.00	Shear (lb/sq ft)	0.02	0.05	0.04
Alpha	1.22	Stream Power (lb/ft s)	0.01	0.08	0.04

Frctn Loss (ft)	Cum Volume (acre-ft)	6.18	11.22	3.10
C & E Loss (ft)	Cum SA (acres)	2.07	2.61	1.02

Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid,
energy was used.

CROSS SECTION OUTPUT Profile #Method 1

E.G. Elev (ft)	2569.38	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.19	Wt. n-Val.		0.038	
W.S. Elev (ft)	2569.19	Reach Len. (ft)	87.43	87.43	87.43
Crit W.S. (ft)	2565.02	Flow Area (sq ft)		480.67	
E.G. Slope (ft/ft)	0.000750	Area (sq ft)		480.67	
Q Total (cfs)	1678.00	Flow (cfs)		1678.00	
Top Width (ft)	70.94	Top Width (ft)		70.94	
Vel Total (ft/s)	3.49	Avg. Vel. (ft/s)		3.49	
Max Chl Dpth (ft)	7.19	Hydr. Depth (ft)		6.78	
Conv. Total (cfs)	61273.6	Conv. (cfs)		61273.6	
Length Wtd. (ft)	87.43	Wetted Per. (ft)		81.66	
Min Ch El (ft)	2562.00	Shear (lb/sq ft)		0.28	
Alpha	1.00	Stream Power (lb/ft s)		0.96	
Frctn Loss (ft)		Cum Volume (acre-ft)		11.60	0.16
C & E Loss (ft)		Cum SA (acres)		2.61	0.08

Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid,
energy was used.

CULVERT

RIVER: Fan 6A
REACH: Fan 6AN-1 RS: 1.19

INPUT
Description: Box culverts at Roadrunner Drive crossing
Distance from Upstream XS = 1
Deck/Roadway Width = 83
Weir Coefficient = 2.6
Upstream Deck/Roadway Coordinates
num= 4

Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord
9868.38	2569.3		9994.2	2569.3		10034.98	2568.66	
10218.38	2568.66							

Upstream Bridge Cross Section Data
Station Elevation Data num= 14

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9868.38	2570	9900.35	2568	9924.54	2566	9956.41	2564	9977.94	2562
10019.29	2562	10027.35	2564	10083.47	2564	10089.8	2562	10098.39	2562
10165.01	2564	10174.14	2566	10179.47	2568	10184.55	2570		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9868.38	.05	9956.41	.03	10027.35	.05

Bank Sta: Left	Right	Coeff Contr.	Expan.
9956.41	10027.35	.3	.5

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
9868.38	9956.41	2568.66	F
10027.35	10184.55	2568.66	F

Downstream Deck/Roadway Coordinates
num= 4

Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord
9859.59	2569.3		9962.05	2569.3		10002.8	2568.66	
10209.59	2568.66							

```
Downstream Bridge Cross Section Data
Station Elevation Data    num=      19
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
 9859.59    2568 9905.17 2569.77 9939.62    2568 9948.51    2566 9958.31    2564
 9973.24    2562   10000  2560.410010.16    256210034.36    256310047.99    2562
10065.23    2562 10078.2    256210099.93    2560 10102.8    256010113.15    2562
10143.96    256410149.61    2566 10155.4    256810160.12 2569.06

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
 9859.59     .05 9958.31    .03810034.36     .05

Bank Sta: Left   Right    Coeff Contr.   Expan.
       9958.3110034.36             .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
 9859.59 9958.31 2568.66       F
10034.3610160.12 2568.66       F
Left Levee      Station= 9905.17      Elevation= 2569.77

Upstream Embankment side slope              =       0 horiz. to 1.0 vertical
Downstream Embankment side slope            =       0 horiz. to 1.0 vertical
Maximum allowable submergence for weir flow =     .95
Elevation at which weir flow begins         =
Energy head used in spillway design         =
Spillway height used in design              =
Weir crest shape                            = Broad Crested

Number of Culverts =  1

Culvert Name     Shape      Rise    Span
CULVERT#1            Box       4      10
FHWA Chart # 8 - flared wingwalls
FHWA Scale # 1 - Wingwall flared 30 to 75 deg.
Solution Criteria = Highest U.S. EG
Culvert Upstrm Dist  Length    Top n  Bottom n  Depth Blocked  Entrance Loss Coef   Exit Loss Coef
                  4      78     .015     .015        0                    .4                 1
Number of Barrels =  4
Upstream   Elevation =  2562.37
Centerline Stations
    Sta.    Sta.    Sta.    Sta.
  9981.4 9993.3110005.2310017.15
Downstream Elevation =  2561.18
Centerline Stations
    Sta.    Sta.    Sta.    Sta.
 9985.83 9997.7410009.6610021.58

CROSS SECTION


RIVER: Fan 6A
REACH: Fan 6AN-1          RS: 1.18

INPUT
Description: Cross Section 1.18 is located within Legend Trail.  It is located
             downstream of the intersection of Fan 6A North and Roadrunner
             Drive.  There are 4-10 X 4 concrete box culverts located under
             Roadrunner Drive.

Topography indicates wash and surrounding
             undeveloped desert.
Aerial shows wash, surrounding desert, and
             Roadrunner.
T5NR5E Section 7
Q100 = 1,814 cfs
Station Elevation Data    num=      19
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
 9859.59    2568 9905.17 2569.77 9939.62    2568 9948.51    2566 9958.31    2564
 9973.24    2562   10000  2560.410010.16    256210034.36    256310047.99    2562
10065.23    2562 10078.2    256210099.93    2560 10102.8    256010113.15    2562
```

```
10143.96    256410149.61    2566 10155.4    256810160.12 2569.06

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
 9859.59     .05 9958.31    .03810034.36     .05

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9958.3110034.36            307.1  310.29   318.6             .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
 9859.59 9958.31 2568.66       F
10034.3610160.12 2568.66       F
Left Levee      Station= 9905.17      Elevation= 2569.77

CROSS SECTION OUTPUT  Profile #100-yr 6-hr

  E.G. Elev (ft)           2565.68    Element                    Left OB    Channel   Right OB
  Vel Head (ft)               1.23    Wt. n-Val.                            0.038
  W.S. Elev (ft)           2564.45    Reach Len. (ft)            307.10     310.29     318.60
  Crit W.S. (ft)           2564.45    Flow Area (sq ft)                     188.55
  E.G. Slope (ft/ft)      0.015525    Area (sq ft)                 0.49     188.55     268.59
  Q Total (cfs)            1678.00    Flow (cfs)                          1678.00
  Top Width (ft)            189.10    Top Width (ft)               2.19      76.05     110.86
  Vel Total (ft/s)            8.90    Avg. Vel. (ft/s)                       8.90
  Max Chl Dpth (ft)           4.45    Hydr. Depth (ft)                       2.48
  Conv. Total (cfs)        13467.1    Conv. (cfs)                         13467.1
  Length Wtd. (ft)          310.14    Wetted Per. (ft)                      76.38
  Min Ch El (ft)           2560.40    Shear (lb/sq ft)                       2.39
  Alpha                       1.00    Stream Power (lb/ft s)                21.29
  Frctn Loss (ft)             4.83    Cum Volume (acre-ft)         5.99      10.56       1.99
  C & E Loss (ft)             0.16    Cum SA (acres)               2.00       2.46       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 energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross
section.
         This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to
critical
         depth, the calculated water surface came back below critical depth.  This indicates that
there is
         not a valid subcritical answer.  The program defaulted to critical depth.
Note:    Multiple critical depths were found at this location.  The critical depth with the lowest,
valid,
         energy was used.

CROSS SECTION OUTPUT  Profile #Method 1

  E.G. Elev (ft)           2565.68    Element                    Left OB    Channel   Right OB
  Vel Head (ft)               1.23    Wt. n-Val.                            0.038
  W.S. Elev (ft)           2564.45    Reach Len. (ft)            307.10     310.29     318.60
  Crit W.S. (ft)           2564.45    Flow Area (sq ft)                     188.64
  E.G. Slope (ft/ft)      0.015621    Area (sq ft)                          188.64      33.42
  Q Total (cfs)            1678.00    Flow (cfs)                          1678.00
  Top Width (ft)             92.49    Top Width (ft)                        76.05      16.44
  Vel Total (ft/s)            8.90    Avg. Vel. (ft/s)                       8.90
  Max Chl Dpth (ft)           4.05    Hydr. Depth (ft)                       2.48
  Conv. Total (cfs)        13425.8    Conv. (cfs)                         13425.8
  Length Wtd. (ft)          310.29    Wetted Per. (ft)                      76.83
  Min Ch El (ft)           2560.40    Shear (lb/sq ft)                       2.39
  Alpha                       1.00    Stream Power (lb/ft s)                21.30
  Frctn Loss (ft)             5.05    Cum Volume (acre-ft)                  10.93       0.12
  C & E Loss (ft)             0.05    Cum SA (acres)                         2.46       0.06


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

Warning: During the standard step iterations, when the assumed water surface was set equal to critical
depth, the calculated water surface came back below critical depth. This indicates that there is
not a valid subcritical answer. The program defaulted to critical depth.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid,
energy was used.

CROSS SECTION

RIVER: Fan 6A
REACH: Fan 6AN-1 RS: 1.12

INPUT
Description: Cross Section 1.12 is located within Legend Trail.

Topography
and Aerial indicate wash and surrounding undeveloped
desert.
T5NR5E Section 7
Q100 = 1,814 cfs
Station Elevation Data num= 19

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9858.65	2566	9866.76	2564	9872.99	2562	9879.1	2560	9884.19	2558
9889.11	2556	9896.3	2556	9929.12	2558	9937.57	2558	9960.6	2557
9983.63	2556	10000	2554.2	10021.86	2556	10031.81	2556	10046.91	2556
10049.93	2557	10052.94	2558	10058.76	2560	10064.84	2562		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9858.65	.063	9960.6	.038	10049.93	.063

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9960.6	10049.93	473.5	446.04	436.9	.3	.5

CROSS SECTION OUTPUT Profile #100-yr 6-hr

E.G. Elev (ft)	2558.79	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.92	Wt. n-Val.	0.063	0.038	0.063
W.S. Elev (ft)	2557.88	Reach Len. (ft)	473.50	446.04	436.90
Crit W.S. (ft)	2557.88	Flow Area (sq ft)	55.44	188.83	1.15
E.G. Slope (ft/ft)	0.015621	Area (sq ft)	55.44	188.83	1.15
Q Total (cfs)	1678.00	Flow (cfs)	160.07	1516.05	1.89
Top Width (ft)	154.66	Top Width (ft)	62.70	89.33	2.63
Vel Total (ft/s)	6.84	Avg. Vel. (ft/s)	2.89	8.03	1.64
Max Chl Dpth (ft)	3.67	Hydr. Depth (ft)	0.88	2.11	0.44
Conv. Total (cfs)	13425.8	Conv. (cfs)	1280.7	12130.0	15.1
Length Wtd. (ft)	451.35	Wetted Per. (ft)	63.14	89.69	2.77
Min Ch El (ft)	2554.20	Shear (lb/sq ft)	0.86	2.05	0.40
Alpha	1.26	Stream Power (lb/ft s)	2.47	16.48	0.66
Frctn Loss (ft)	0.14	Cum Volume (acre-ft)	5.79	9.22	1.01
C & E Loss (ft)	0.45	Cum SA (acres)	1.77	1.87	0.34

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.

CROSS SECTION OUTPUT Profile #Method 1

E.G. Elev (ft)	2559.09	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.12	Wt. n-Val.		0.038	
W.S. Elev (ft)	2557.97	Reach Len. (ft)	473.50	446.04	436.90
Crit W.S. (ft)	2557.97	Flow Area (sq ft)		197.54	
E.G. Slope (ft/ft)	0.016946	Area (sq ft)		197.54	
Q Total (cfs)	1678.00	Flow (cfs)		1678.00	
Top Width (ft)	89.33	Top Width (ft)		89.33	
Vel Total (ft/s)	8.49	Avg. Vel. (ft/s)		8.49	
Max Chl Dpth (ft)	3.77	Hydr. Depth (ft)		2.21	
Conv. Total (cfs)	12890.3	Conv. (cfs)		12890.3	
Length Wtd. (ft)	446.04	Wetted Per. (ft)		91.63	
Min Ch El (ft)	2554.20	Shear (lb/sq ft)		2.28	
Alpha	1.00	Stream Power (lb/ft s)		19.37	
Frctn Loss (ft)	0.36	Cum Volume (acre-ft)		9.55	
C & E Loss (ft)	0.52	Cum SA (acres)		1.87	

Warning: The energy equation could not be 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: Fan 6A
REACH: Fan 6AN-1 RS: 1.04

INPUT
Description: Cross Section 1.04 is located within Legend Trail. It is located upstream of the intersection of Fan 6A North and Preserve Way. There are 4-10 X 4 concrete box culverts located under Preserve Way. Blocked obstruction indicates finish floor of existing home.

Topography indicates wash and surrounding undeveloped desert.
Aerial shows wash, surrounding desert, houses, house pads, and Preserve Way.
T5NR5E Section 7
Q100 = 1,814 cfs
Station Elevation Data num= 19

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9470.98	2558	9537.48	2556	9591.02	2554	9631.85	2552	9687.93	2550
9689.46	2550	9744.12	2550	9798.42	2550	9865.68	2550	9895.04	2550
9917.62	2550	9951.5	2548	10016.48	2548	10029.31	2550	10053.58	2552
10067.19	2554	10080.96	2556	10094.85	2558	10117.92	2560		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9470.98	.063	9917.62	.038	10029.31	.063

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9917.62	10029.31	100.56	100.56	100.56	.3	.5

Ineffective Flow . num= 2

Sta L	Sta R	Elev	Permanent
9470.98	9917.62	2555.37	F
10029.31	10117.92	2555.37	F

Blocked Obstructions num= 1

Sta L	Sta R	Elev
9470.98	9781.34	2557.54

CROSS SECTION OUTPUT Profile #100-yr 6-hr

E.G. Elev (ft)	2555.52	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.02	Wt. n-Val.	0.063	0.038	0.063
W.S. Elev (ft)	2555.50	Reach Len. (ft)	100.56	100.56	100.56
Crit W.S. (ft)	2550.33	Flow Area (sq ft)	748.88	790.42	150.75
E.G. Slope (ft/ft)	0.000092	Area (sq ft)	748.88	790.42	150.75
Q Total (cfs)	1678.00	Flow (cfs)	513.89	1091.47	72.63
Top Width (ft)	296.14	Top Width (ft)	136.28	111.69	48.17
Vel Total (ft/s)	0.99	Avg. Vel. (ft/s)	0.69	1.38	0.48
Max Chl Dpth (ft)	7.50	Hydr. Depth (ft)	5.50	7.08	3.13
Conv. Total (cfs)	174926.5	Conv. (cfs)	53571.9	113782.7	7571.9
Length Wtd. (ft)	100.56	Wetted Per. (ft)	141.78	111.90	48.51
Min Ch El (ft)	2548.00	Shear (lb/sq ft)	0.03	0.04	0.02
Alpha	1.41	Stream Power (lb/ft s)	0.02	0.06	0.01
Frctn Loss (ft)		Cum Volume (acre-ft)	1.42	4.20	0.24
C & E Loss (ft)		Cum SA (acres)	0.69	0.84	0.09

Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid,
energy was used.

CROSS SECTION OUTPUT Profile #Method 1

E.G. Elev (ft)	2555.53	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.07	Wt. n-Val.		0.038	
W.S. Elev (ft)	2555.46	Reach Len. (ft)	100.56	100.56	100.56
Crit W.S. (ft)	2550.33	Flow Area (sq ft)		786.27	
E.G. Slope (ft/ft)	0.000251	Area (sq ft)		786.27	
Q Total (cfs)	1678.00	Flow (cfs)		1678.00	
Top Width (ft)	111.69	Top Width (ft)		111.69	
Vel Total (ft/s)	2.13	Avg. Vel. (ft/s)		2.13	
Max Chl Dpth (ft)	7.46	Hydr. Depth (ft)		7.04	
Conv. Total (cfs)	106003.8	Conv. (cfs)		106003.8	
Length Wtd. (ft)	100.56	Wetted Per. (ft)		122.82	
Min Ch El (ft)	2548.00	Shear (lb/sq ft)		0.10	
Alpha	1.00	Stream Power (lb/ft s)		0.21	
Frctn Loss (ft)		Cum Volume (acre-ft)		4.52	
C & E Loss (ft)		Cum SA (acres)		0.84	

Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid,
energy was used.

CULVERT

RIVER: Fan 6A
REACH: Fan 6AN-1 RS: 1.03

INPUT
Description: Box culvert at Preserve Way crossing.
Distance from Upstream XS = 8
Deck/Roadway Width = 79
Weir Coefficient = 2.6
Upstream Deck/Roadway Coordinates
num= 12

Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord
9355.84	2562.74		9390.84	2561.53		9497.01	2558.98	
9586.25	2556.84		9616.25	2556.27		9646.25	2556	
9737.25	2555.64		9805.4	2555.37		9935.25	2556.59	
9974.71	2556.96		10012.44	2557.93		10156.56	2560.7	

Upstream Bridge Cross Section Data
Station Elevation Data num= 19

```
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
 9470.98    2558 9537.48    2556 9591.02    2554 9631.85    2552 9687.93    2550
 9689.46    2550 9744.12    2550 9798.42    2550 9865.68    2550 9895.04    2550
 9917.62    2550  9951.5    254810016.48    254810029.31    255010053.58    2552
10067.19    255410080.96    255610094.85    255810117.92    2560

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
 9470.98    .063 9917.62    .03810029.31    .063

Bank Sta: Left   Right    Coeff Contr.   Expan.
       9917.6210029.31             .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
 9470.98 9917.62 2555.37       F
10029.3110117.92 2555.37       F
Blocked Obstructions     num=       1
   Sta L   Sta R    Elev
 9470.98 9781.34 2557.54

Downstream  Deck/Roadway Coordinates
    num=      12
     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord
 9413.83 2562.74         9449.83 2561.53            9556 2558.98
 9645.24 2556.84         9675.24 2556.27         9705.24    2556
 9796.19 2555.64         9864.38 2555.37         9994.24 2556.59
 10033.7 2556.96        10071.43 2557.93        10215.55  2560.7

Downstream Bridge Cross Section Data
Station Elevation Data    num=      17
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
 9462.74    2558 9481.97    2556 9522.01    2556 9540.25    2556 9575.75    2554
 9627.89    2552 9743.15    2550  9788.6    2548 9897.55  2546.9 9948.76    2546
 9999.99    2546 10055.5    254810079.98    255010103.26    255210132.66    2554
 10148.3    255610160.89    2558

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
 9462.74    .063 9897.55    .038 10055.5    .063

Bank Sta: Left   Right    Coeff Contr.   Expan.
       9897.55 10055.5             .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
 9462.74 9897.55 2555.37       F
 10055.510160.89 2555.37       F

Upstream Embankment side slope              =       0 horiz. to 1.0 vertical
Downstream Embankment side slope            =       0 horiz. to 1.0 vertical
Maximum allowable submergence for weir flow =     .95
Elevation at which weir flow begins         =
Energy head used in spillway design         =
Spillway height used in design              =
Weir crest shape                            = Broad Crested

Number of Culverts =  1

Culvert Name     Shape      Rise    Span
CULVERT#1            Box       4      10
FHWA Chart # 8 - flared wingwalls
FHWA Scale # 1 - Wingwall flared 30 to 75 deg.
Solution Criteria = Highest U.S. EG
Culvert Upstrm Dist  Length    Top n  Bottom n  Depth Blocked  Entrance Loss Coef   Exit Loss Coef
                  8      79     .015     .015        0                  .4                 1
Number of Barrels =  4
Upstream   Elevation =  2548.3
Centerline Stations
    Sta.    Sta.    Sta.    Sta.
 9975.91 9986.83 9997.7410008.66
Downstream Elevation =  2547.21
Centerline Stations
```

```
    Sta.    Sta.    Sta.    Sta.
 9978.88 9989.7910000.7110011.63
```

CROSS SECTION

RIVER: Fan 6A
REACH: Fan 6AN-1 RS: 1.02

INPUT
Description: Cross Section 1.02 is located within Legend Trail. It is located upstream of the intersection of Fan 6A North and Preserve Way. There are 4-10 X 4 concrete box culverts located under Preserve Way.

Topography indicates wash and surrounding undeveloped desert.
Aerial shows wash, surrounding desert, houses, house pads, and Preserve Way.
T5NR5E Section 7
Q100 = 1,814 cfs
Station Elevation Data num= 17

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9462.74	2558	9481.97	2556	9522.01	2556	9540.25	2556	9575.75	2554
9627.89	2552	9743.15	2550	9788.6	2548	9897.55	2546.9	9948.76	2546
9999.99	2546	10055.5	2548	10079.98	2550	10103.26	2552	10132.66	2554
10148.3	2556	10160.89	2558						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9462.74	.063	9897.55	.038	10055.5	.063

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9897.55	10055.5	180	166.14	160	.3	.5

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
9462.74	9897.55	2555.37	F
10055.5	10160.89	2555.37	F

CROSS SECTION OUTPUT Profile #100-yr 6-hr

E.G. Elev (ft)	2548.81	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.59	Wt. n-Val.		0.038	
W.S. Elev (ft)	2548.22	Reach Len. (ft)	180.00	166.14	160.00
Crit W.S. (ft)	2548.03	Flow Area (sq ft)		271.94	
E.G. Slope (ft/ft)	0.012072	Area (sq ft)	84.33	271.94	0.29
Q Total (cfs)	1678.00	Flow (cfs)		1678.00	
Top Width (ft)	274.56	Top Width (ft)	113.93	157.95	2.68
Vel Total (ft/s)	6.17	Avg. Vel. (ft/s)		6.17	
Max Chl Dpth (ft)	2.22	Hydr. Depth (ft)		1.72	
Conv. Total (cfs)	15272.3	Conv. (cfs)		15272.3	
Length Wtd. (ft)	166.53	Wetted Per. (ft)		157.99	
Min Ch El (ft)	2546.00	Shear (lb/sq ft)		1.30	
Alpha	1.00	Stream Power (lb/ft s)		8.00	
Frctn Loss (ft)	2.22	Cum Volume (acre-ft)	0.46	2.98	0.07
C & E Loss (ft)	0.04	Cum SA (acres)	0.40	0.53	0.03

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid,
energy was used.

CROSS SECTION OUTPUT Profile #Method 1

E.G. Elev (ft)	2548.88	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.49	Wt. n-Val.		0.038	
W.S. Elev (ft)	2548.39	Reach Len. (ft)	180.00	166.14	160.00
Crit W.S. (ft)	2548.03	Flow Area (sq ft)		298.55	

E.G. Slope (ft/ft)	0.008984	Area (sq ft)	298.55
Q Total (cfs)	1678.00	Flow (cfs)	1678.00
Top Width (ft)	157.95	Top Width (ft)	157.95
Vel Total (ft/s)	5.62	Avg. Vel. (ft/s)	5.62
Max Chl Dpth (ft)	2.39	Hydr. Depth (ft)	1.89
Conv. Total (cfs)	17703.4	Conv. (cfs)	17703.4
Length Wtd. (ft)	166.14	Wetted Per. (ft)	159.87
Min Ch El (ft)	2546.00	Shear (lb/sq ft)	1.05
Alpha	1.00	Stream Power (lb/ft s)	5.89
Frctn Loss (ft)	2.05	Cum Volume (acre-ft)	3.26
C & E Loss (ft)	0.13	Cum SA (acres)	0.53

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid,
energy was used.

CROSS SECTION

RIVER: Fan 6A
REACH: Fan 6AN-1 RS: 0.99

INPUT
Description: Cross Section 0.99 is located within Legend Trail. It is located upstream of concentration point CF6AN1 in the HEC-1 model.

Topography indicates wash and surrounding undeveloped desert.
Aerial shows wash, surrounding desert, and houses.
T5NR5E Section 7
Station Elevation Data num= 18

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9734.36	2550	9773.97	2548	9800.73	2546	9834	2544.59	9888.22	2546
9904.8	2546	9908.07	2545	9911.33	2544	9940.61	2544	9946.91	2544
9949.47	2544	9986.61	2544	10000	2543.33	10015.16	2544	10029.91	2545
10044.65	2546	10058.72	2548	10076.02	2550				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9734.36	.063	9908.07	.038	10029.91	.063

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9908.07	10029.91	0	0	0	.1	.3

CROSS SECTION OUTPUT Profile #100-yr 6-hr

			Left OB	Channel	Right OB
E.G. Elev (ft)	2546.55	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.73	Wt. n-Val.	0.063	0.038	0.063
W.S. Elev (ft)	2545.82	Reach Len. (ft)	302.27	302.27	302.27
Crit W.S. (ft)	2545.82	Flow Area (sq ft)	47.85	222.02	4.93
E.G. Slope (ft/ft)	0.014763	Area (sq ft)	47.85	222.02	4.93
Q Total (cfs)	1678.00	Flow (cfs)	98.40	1571.83	7.77
Top Width (ft)	212.74	Top Width (ft)	78.85	121.84	12.05
Vel Total (ft/s)	6.11	Avg. Vel. (ft/s)	2.06	7.08	1.58
Max Chl Dpth (ft)	2.49	Hydr. Depth (ft)	0.61	1.82	0.41
Conv. Total (cfs)	13810.4	Conv. (cfs)	809.9	12936.6	63.9
Length Wtd. (ft)	302.27	Wetted Per. (ft)	79.01	122.06	12.08
Min Ch El (ft)	2543.33	Shear (lb/sq ft)	0.56	1.68	0.38
Alpha	1.27	Stream Power (lb/ft s)	1.15	11.87	0.59
Frctn Loss (ft)	3.05	Cum Volume (acre-ft)	0.18	2.04	0.06
C & E Loss (ft)	0.01	Cum SA (acres)			

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

CROSS SECTION OUTPUT Profile #Method 1

E.G. Elev (ft)	2546.71	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.91	Wt. n-Val.		0.038	
W.S. Elev (ft)	2545.79	Reach Len. (ft)	302.27	302.27	302.27
Crit W.S. (ft)	2545.79	Flow Area (sq ft)		218.98	
E.G. Slope (ft/ft)	0.017920	Area (sq ft)		218.98	
Q Total (cfs)	1678.00	Flow (cfs)		1678.00	
Top Width (ft)	121.84	Top Width (ft)		121.84	
Vel Total (ft/s)	7.66	Avg. Vel. (ft/s)		7.66	
Max Chl Dpth (ft)	2.46	Hydr. Depth (ft)		1.80	
Conv. Total (cfs)	12535.0	Conv. (cfs)		12535.0	
Length Wtd. (ft)	302.27	Wetted Per. (ft)		123.64	
Min Ch El (ft)	2543.33	Shear (lb/sq ft)		1.98	
Alpha	1.00	Stream Power (lb/ft s)		15.18	
Frctn Loss (ft)	2.18	Cum Volume (acre-ft)		2.28	
C & E Loss (ft)	0.10	Cum SA (acres)			

Warning: The energy equation could not be 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: Fan 6A
REACH: Fan 6AS-1 RS: 4.13

INPUT
Description: Cross Section 4.13 is located on the north boundary of the study
for Fan 6A South.

Topography and Aerial show wash and
surrounding undeveloped desert.
T6NR5E Section 33
Q100 = 1,248
cfs
Station Elevation Data num= 15

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9764.18	2850	9782.71	2848	9799.32	2846	9826.7	2844	9908.95	2842
9946.29	2842	9951.4	2842	9981.25	2841.88	10000	2841.51	10013.01	2841.56
10050.71	2842	10113.35	2844	10146.52	2846	10169.16	2848	10191.45	2850

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9764.18	.064	9981.25	.044	10050.71	.064

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9981.25	10050.71	519.97	512.47	515.45	.1	.3

CROSS SECTION OUTPUT Profile #100-yr 6-hr

E.G. Elev (ft)	2843.68	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.53	Wt. n-Val.	0.064	0.044	0.064
W.S. Elev (ft)	2843.15	Reach Len. (ft)	519.97	512.47	515.45
Crit W.S. (ft)	2843.15	Flow Area (sq ft)	112.15	100.11	20.72
E.G. Slope (ft/ft)	0.026121	Area (sq ft)	112.15	100.11	20.72
Q Total (cfs)	1154.00	Flow (cfs)	403.13	697.13	53.74
Top Width (ft)	225.08	Top Width (ft)	119.60	69.46	36.02
Vel Total (ft/s)	4.95	Avg. Vel. (ft/s)	3.59	6.96	2.59
Max Chl Dpth (ft)	1.65	Hydr. Depth (ft)	0.94	1.44	0.58
Conv. Total (cfs)	7140.2	Conv. (cfs)	2494.3	4313.4	332.5
Length Wtd. (ft)	514.01	Wetted Per. (ft)	119.61	69.47	36.04
Min Ch El (ft)	2841.50	Shear (lb/sq ft)	1.53	2.35	0.94
Alpha	1.39	Stream Power (lb/ft s)	5.50	16.37	2.43
Frctn Loss (ft)	11.45	Cum Volume (acre-ft)	22.71	52.12	39.25
C & E Loss (ft)	0.02	Cum SA (acres)	25.75	29.41	35.85

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.

CROSS SECTION OUTPUT Profile #Method 1

E.G. Elev (ft)	2844.78	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.03	Wt. n-Val.		0.044	
W.S. Elev (ft)	2843.75	Reach Len. (ft)	519.97	512.47	515.45
Crit W.S. (ft)	2843.75	Flow Area (sq ft)		141.57	
E.G. Slope (ft/ft)	0.024125	Area (sq ft)		141.57	
Q Total (cfs)	1154.00	Flow (cfs)		1154.00	
Top Width (ft)	69.46	Top Width (ft)		69.46	
Vel Total (ft/s)	8.15	Avg. Vel. (ft/s)		8.15	
Max Chl Dpth (ft)	2.25	Hydr. Depth (ft)		2.04	
Conv. Total (cfs)	7429.7	Conv. (cfs)		7429.7	
Length Wtd. (ft)	512.47	Wetted Per. (ft)		73.08	
Min Ch El (ft)	2841.50	Shear (lb/sq ft)		2.92	
Alpha	1.00	Stream Power (lb/ft s)		23.78	
Frctn Loss (ft)	8.13	Cum Volume (acre-ft)	5.11	64.15	12.37
C & E Loss (ft)	0.20	Cum SA (acres)	3.49	29.45	7.14

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 conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
depth, the 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: Fan 6A
REACH: Fan 6AS-1 RS: 4.03

INPUT
Description: Topography and Aerial show wash and surrounding undeveloped

desert.
T6NR5E Section 33
Q100 = 1,284 cfs

Station Elevation Data num= 22

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9519.72	2840	9535.35	2838	9552.46	2836	9594.14	2836	9621.24	2838
9640.12	2838	9652.92	2836	9670.4	2834	9818.7	2832	9871.27	2831
9897.55	2830.5	9923.83	2830	9973.54	2829.98	10000	2829.21	10005.89	2830
10041.37	2830.5	10076.84	2831	10110147.79	2832	10179.57	2834	10209.01	2836
10229.49	2838	10247.57	2840						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9519.72	.064	9897.55	.044	10041.37	.064

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9897.55	10041.37	496.93	502.93	495.96	.1	.3

CROSS SECTION OUTPUT Profile #100-yr 6-hr

E.G. Elev (ft)	2831.80	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.47	Wt. n-Val.	0.064	0.044	0.064
W.S. Elev (ft)	2831.34	Reach Len. (ft)	496.93	502.93	495.96
Crit W.S. (ft)	2831.28	Flow Area (sq ft)	18.41	190.54	24.84
E.G. Slope (ft/ft)	0.019234	Area (sq ft)	18.41	190.54	24.84
Q Total (cfs)	1154.00	Flow (cfs)	33.16	1076.09	44.75
Top Width (ft)	247.19	Top Width (ft)	43.99	143.82	59.37
Vel Total (ft/s)	4.94	Avg. Vel. (ft/s)	1.80	5.65	1.80
Max Chl Dpth (ft)	2.14	Hydr. Depth (ft)	0.42	1.32	0.42
Conv. Total (cfs)	8321.0	Conv. (cfs)	239.1	7759.2	322.7
Length Wtd. (ft)	500.67	Wetted Per. (ft)	44.00	143.89	59.38
Min Ch El (ft)	2829.20	Shear (lb/sq ft)	0.50	1.59	0.50
Alpha	1.23	Stream Power (lb/ft s)	0.90	8.98	0.90
Frctn Loss (ft)	9.58	Cum Volume (acre-ft)	21.93	50.41	38.98
C & E Loss (ft)	0.03	Cum SA (acres)	24.77	28.15	35.29

Warning: The energy loss was 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 OUTPUT Profile #Method 1

E.G. Elev (ft)	2832.02	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.37	Wt. n-Val.		0.044	
W.S. Elev (ft)	2831.65	Reach Len. (ft)	496.93	502.93	495.96
Crit W.S. (ft)	2831.26	Flow Area (sq ft)		235.10	
E.G. Slope (ft/ft)	0.011213	Area (sq ft)		235.10	
Q Total (cfs)	1154.00	Flow (cfs)		1154.00	
Top Width (ft)	143.82	Top Width (ft)		143.82	
Vel Total (ft/s)	4.91	Avg. Vel. (ft/s)		4.91	
Max Chl Dpth (ft)	2.45	Hydr. Depth (ft)		1.63	
Conv. Total (cfs)	10897.9	Conv. (cfs)		10897.9	
Length Wtd. (ft)	501.90	Wetted Per. (ft)		146.19	
Min Ch El (ft)	2829.20	Shear (lb/sq ft)		1.13	
Alpha	1.00	Stream Power (lb/ft s)		5.53	
Frctn Loss (ft)	8.22	Cum Volume (acre-ft)	5.11	61.94	12.37
C & E Loss (ft)	0.08	Cum SA (acres)	3.49	28.19	7.14

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 conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was 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: Fan 6A
REACH: Fan 6AS-1 RS: 3.93

INPUT
Description: Topography and Aerial show wash and surrounding undeveloped desert.
T6NR5E Section 33
Q100 = 1,284 cfs
Station Elevation Data num= 16

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9698.8	2826	9718.35	2824	9772.18	2822	9775.65	2822	9797	2822
9927.15	2820	9933.57	2820	9988.22	2820.66	9994.8	2820	10000	2819.75
10011.64	2820	10018.96	2820.31	10055.05	2822	10081.33	2824	10113.74	2826
10147.05	2828								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9698.8	.064	9988.22	.044	10018.96	.064

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9988.22	10018.96	440.11	443.71	445.36	.1	.3

CROSS SECTION OUTPUT Profile #100-yr 6-hr

			Left OB	Channel	Right OB
E.G. Elev (ft)	2822.20	Element			
Vel Head (ft)	0.36	Wt. n-Val.	0.064	0.044	0.064
W.S. Elev (ft)	2821.84	Reach Len. (ft)	440.11	443.71	445.36
Crit W.S. (ft)	2821.63	Flow Area (sq ft)	203.67	55.26	25.02
E.G. Slope (ft/ft)	0.019021	Area (sq ft)	203.67	55.26	25.02
Q Total (cfs)	1154.00	Flow (cfs)	706.78	380.09	67.13
Top Width (ft)	243.85	Top Width (ft)	180.51	30.74	32.60
Vel Total (ft/s)	4.06	Avg. Vel. (ft/s)	3.47	6.88	2.68
Max Chl Dpth (ft)	2.09	Hydr. Depth (ft)	1.13	1.80	0.77
Conv. Total (cfs)	8367.5	Conv. (cfs)	5124.7	2756.0	486.8
Length Wtd. (ft)	442.52	Wetted Per. (ft)	180.53	30.79	32.63
Min Ch El (ft)	2819.75	Shear (lb/sq ft)	1.34	2.13	0.91
Alpha	1.42	Stream Power (lb/ft s)	4.65	14.66	2.44
Frctn Loss (ft)	10.83	Cum Volume (acre-ft)	20.66	49.00	38.70
C & E Loss (ft)	0.04	Cum SA (acres)	23.49	27.14	34.76

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 OUTPUT Profile #Method 1

			Left OB	Channel	Right OB
E.G. Elev (ft)	2823.72	Element			
Vel Head (ft)	1.14	Wt. n-Val.	0.064	0.044	
W.S. Elev (ft)	2822.58	Reach Len. (ft)	440.11	443.71	445.36
Crit W.S. (ft)	2822.58	Flow Area (sq ft)	67.31	78.13	
E.G. Slope (ft/ft)	0.026149	Area (sq ft)	67.31	78.13	
Q Total (cfs)	1154.00	Flow (cfs)	397.07	756.93	
Top Width (ft)	62.61	Top Width (ft)	31.87	30.74	
Vel Total (ft/s)	7.93	Avg. Vel. (ft/s)	5.90	9.69	
Max Chl Dpth (ft)	2.83	Hydr. Depth (ft)	2.11	2.54	
Conv. Total (cfs)	7136.4	Conv. (cfs)	2455.5	4680.9	
Length Wtd. (ft)	443.09	Wetted Per. (ft)	34.18	33.07	
Min Ch El (ft)	2819.75	Shear (lb/sq ft)	3.22	3.86	
Alpha	1.17	Stream Power (lb/ft s)	18.97	37.37	
Frctn Loss (ft)	10.71	Cum Volume (acre-ft)	4.72	60.13	12.37
C & E Loss (ft)	0.13	Cum SA (acres)	3.31	27.19	7.14

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 energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical

depth, the 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: Fan 6A
REACH: Fan 6AS-1 RS: 3.85

INPUT
Description: Topography and Aerial show wash and surrounding undeveloped desert.
T5NR5E Section 4
Q100 = 1,284 cfs
Station Elevation Data num= 13

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9772.24	2814	9791.87	2812	9814.14	2810.53	9988.6	2810.48	9995.42	2810
10010.24	2810	10018.71	2810.14	10095.4	2810.79	10149.63	2810	10212.48	2810
10287.87	2812	10328.52	2814	10355.51	2816				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9772.24	.064	9988.6	.044	10095.4	.064

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9988.6	10095.4	529.59	525.95	517.56	.1	.3

CROSS SECTION OUTPUT Profile #100-yr 6-hr

E.G. Elev (ft)	2811.33	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.25	Wt. n-Val.	0.064	0.044	0.064
W.S. Elev (ft)	2811.09	Reach Len. (ft)	529.59	525.95	517.56
Crit W.S. (ft)	2811.01	Flow Area (sq ft)	103.87	78.20	128.10
E.G. Slope (ft/ft)	0.032678	Area (sq ft)	103.87	78.20	128.10
Q Total (cfs)	1154.00	Flow (cfs)	298.94	387.73	467.33
Top Width (ft)	447.75	Top Width (ft)	182.90	106.80	158.05
Vel Total (ft/s)	3.72	Avg. Vel. (ft/s)	2.88	4.96	3.65
Max Chl Dpth (ft)	1.09	Hydr. Depth (ft)	0.57	0.73	0.81
Conv. Total (cfs)	6383.8	Conv. (cfs)	1653.7	2144.9	2585.2
Length Wtd. (ft)	523.75	Wetted Per. (ft)	182.91	106.82	158.07
Min Ch El (ft)	2810.00	Shear (lb/sq ft)	1.16	1.49	1.65
Alpha	1.14	Stream Power (lb/ft s)	3.33	7.40	6.03
Frctn Loss (ft)	11.09	Cum Volume (acre-ft)	19.11	48.32	37.92
C & E Loss (ft)	0.01	Cum SA (acres)	21.65	26.44	33.79

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was 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 OUTPUT Profile #Method 1

E.G. Elev (ft)	2812.66	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.71	Wt. n-Val.		0.044	
W.S. Elev (ft)	2811.95	Reach Len. (ft)	529.59	525.95	517.56
Crit W.S. (ft)	2811.89	Flow Area (sq ft)		170.08	
E.G. Slope (ft/ft)	0.022425	Area (sq ft)		170.08	
Q Total (cfs)	1154.00	Flow (cfs)		1154.00	
Top Width (ft)	106.80	Top Width (ft)		106.80	
Vel Total (ft/s)	6.78	Avg. Vel. (ft/s)		6.78	
Max Chl Dpth (ft)	1.95	Hydr. Depth (ft)		1.59	
Conv. Total (cfs)	7706.2	Conv. (cfs)		7706.2	
Length Wtd. (ft)	525.95	Wetted Per. (ft)		109.45	
Min Ch El (ft)	2810.00	Shear (lb/sq ft)		2.18	
Alpha	1.00	Stream Power (lb/ft s)		14.76	
Frctn Loss (ft)	11.88	Cum Volume (acre-ft)	4.38	58.87	12.37
C & E Loss (ft)	0.01	Cum SA (acres)	3.15	26.49	7.14

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: Fan 6A
REACH: Fan 6AS-1 RS: 3.75

INPUT
Description: Topography and Aerial show wash and surrounding undeveloped desert.
T5NR5E Section 4
Q100 = 1,284 cfs
Station Elevation Data num= 13

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9913.6	2806	9929.06	2804	9944.83	2802	9962.07	2800	9986.02	2798.5
9994	2798	10005.21	2798	10077.37	2798.5	10293.85	2800	10308.95	2802
10324.08	2804	10347.03	2806	10384.45	2808				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9913.6	.064	9986.02	.044	10077.37	.064

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9986.02	10077.37	335.71	333.58	324.79	.1	.3

CROSS SECTION OUTPUT Profile #100-yr 6-hr

			Left OB	Channel	Right OB
E.G. Elev (ft)	2800.23	Element			
Vel Head (ft)	0.38	Wt. n-Val.	0.064	0.044	0.064
W.S. Elev (ft)	2799.84	Reach Len. (ft)	335.71	333.58	324.79
Crit W.S. (ft)	2799.72	Flow Area (sq ft)	14.37	148.19	129.87
E.G. Slope (ft/ft)	0.014836	Area (sq ft)	14.37	148.19	129.87
Q Total (cfs)	1154.00	Flow (cfs)	31.09	841.48	281.42
Top Width (ft)	306.38	Top Width (ft)	21.42	91.35	193.61
Vel Total (ft/s)	3.95	Avg. Vel. (ft/s)	2.16	5.68	2.17
Max Chl Dpth (ft)	1.84	Hydr. Depth (ft)	0.67	1.62	0.67
Conv. Total (cfs)	9474.3	Conv. (cfs)	255.3	6908.5	2310.5
Length Wtd. (ft)	329.66	Wetted Per. (ft)	21.46	91.37	193.62
Min Ch El (ft)	2798.00	Shear (lb/sq ft)	0.62	1.50	0.62
Alpha	1.59	Stream Power (lb/ft s)	1.34	8.53	1.35
Frctn Loss (ft)	6.75	Cum Volume (acre-ft)	18.39	46.95	36.39
C & E Loss (ft)	0.01	Cum SA (acres)	20.41	25.25	31.70

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was 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 OUTPUT Profile #Method 1

			Left OB	Channel	Right OB
E.G. Elev (ft)	2800.78	Element			
Vel Head (ft)	0.81	Wt. n-Val.		0.044	
W.S. Elev (ft)	2799.97	Reach Len. (ft)	335.71	333.58	324.79
Crit W.S. (ft)	2799.92	Flow Area (sq ft)		159.59	
E.G. Slope (ft/ft)	0.022734	Area (sq ft)		159.59	
Q Total (cfs)	1154.00	Flow (cfs)		1154.00	
Top Width (ft)	91.35	Top Width (ft)		91.35	
Vel Total (ft/s)	7.23	Avg. Vel. (ft/s)		7.23	
Max Chl Dpth (ft)	1.97	Hydr. Depth (ft)		1.75	
Conv. Total (cfs)	7653.6	Conv. (cfs)		7653.6	
Length Wtd. (ft)	332.25	Wetted Per. (ft)		94.30	
Min Ch El (ft)	2798.00	Shear (lb/sq ft)		2.40	
Alpha	1.00	Stream Power (lb/ft s)		17.37	
Frctn Loss (ft)	6.10	Cum Volume (acre-ft)	4.38	56.88	12.37
C & E Loss (ft)	0.08	Cum SA (acres)	3.15	25.29	7.14

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: Fan 6A
REACH: Fan 6AS-1 RS: 3.68

INPUT
Description: Topography and Aerial show wash and surrounding undeveloped desert.
T5NR5E Section 4
Q100 = 1,284 cfs
Station Elevation Data num= 17

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9852.75	2800	9883.62	2798	9908.33	2796	9944.61	2794	9975.62	2792.5
9985.95	2792	10000	2791.49	10006.84	2792	10039.25	2792.52	10053.01	2792
10081.87	2792	10103.39	2791.63	10163.2	2792	10300.67	2794	10324.53	2796
10422.97	2798	10446.09	2800						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9852.75	.064	9975.62	.044	10039.25	.064

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9975.62	10039.25	316.45	314.97	313.92	.1	.3

CROSS SECTION OUTPUT Profile #100-yr 6-hr

			Left OB	Channel	Right OB
E.G. Elev (ft)	2793.46	Element			
Vel Head (ft)	0.34	Wt. n-Val.	0.064	0.044	0.064
W.S. Elev (ft)	2793.12	Reach Len. (ft)	316.45	314.97	313.92
Crit W.S. (ft)	2792.98	Flow Area (sq ft)	3.94	65.42	192.89
E.G. Slope (ft/ft)	0.030099	Area (sq ft)	3.94	65.42	192.89
Q Total (cfs)	1154.00	Flow (cfs)	7.24	390.26	756.49
Top Width (ft)	277.15	Top Width (ft)	12.76	63.63	200.76
Vel Total (ft/s)	4.40	Avg. Vel. (ft/s)	1.84	5.97	3.92
Max Chl Dpth (ft)	1.63	Hydr. Depth (ft)	0.31	1.03	0.96
Conv. Total (cfs)	6651.6	Conv. (cfs)	41.8	2249.5	4360.4
Length Wtd. (ft)	314.14	Wetted Per. (ft)	12.78	63.67	200.78
Min Ch El (ft)	2791.49	Shear (lb/sq ft)	0.58	1.93	1.81
Alpha	1.14	Stream Power (lb/ft s)	1.07	11.52	7.08
Frctn Loss (ft)	7.60	Cum Volume (acre-ft)	18.32	46.13	35.18
C & E Loss (ft)	0.03	Cum SA (acres)	20.28	24.65	30.23

Warning: The energy loss was 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 OUTPUT Profile #Method 1

			Left OB	Channel	Right OB
E.G. Elev (ft)	2794.60	Element			
Vel Head (ft)	0.54	Wt. n-Val.		0.044	0.064
W.S. Elev (ft)	2794.06	Reach Len. (ft)	316.45	314.97	313.92
Crit W.S. (ft)	2793.69	Flow Area (sq ft)		125.40	80.29
E.G. Slope (ft/ft)	0.015125	Area (sq ft)		125.40	80.29
Q Total (cfs)	1154.00	Flow (cfs)		805.19	348.81
Top Width (ft)	104.34	Top Width (ft)		63.63	40.71
Vel Total (ft/s)	5.61	Avg. Vel. (ft/s)		6.42	4.34
Max Chl Dpth (ft)	2.57	Hydr. Depth (ft)		1.97	1.97
Conv. Total (cfs)	9383.2	Conv. (cfs)		6547.1	2836.2
Length Wtd. (ft)	314.39	Wetted Per. (ft)		65.23	42.78
Min Ch El (ft)	2791.49	Shear (lb/sq ft)		1.82	1.77
Alpha	1.10	Stream Power (lb/ft s)		11.66	7.70
Frctn Loss (ft)	7.67	Cum Volume (acre-ft)	4.38	55.78	12.07
C & E Loss (ft)	0.03	Cum SA (acres)	3.15	24.70	6.98

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was 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: Fan 6A
REACH: Fan 6AS-1 RS: 3.62

INPUT
Description: Topography and Aerial show wash and surrounding undeveloped desert.
T5NR5E Section 4
Q100 = 1,284 cfs
Station Elevation Data num= 13

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9811.61	2790	9884.54	2788	9962.36	2786	9992.66	2785.15	10000	2784.28
10010.48	2784.93	10105.78	2784	10118.02	2784	10186.38	2784	10203.85	2784
10220	2786	10241.65	2788	10283.07	2790				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9811.61	.064	9992.66	.044	10010.48	.064

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9992.66	10010.48	384.63	393.32	394.13	.1	.3

CROSS SECTION OUTPUT Profile #100-yr 6-hr

E.G. Elev (ft)	2785.83	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.25	Wt. n-Val.	0.064	0.044	0.064
W.S. Elev (ft)	2785.59	Reach Len. (ft)	384.63	393.32	394.13
Crit W.S. (ft)	2785.22	Flow Area (sq ft)	3.39	16.68	272.57
E.G. Slope (ft/ft)	0.019873	Area (sq ft)	3.39	16.68	272.57
Q Total (cfs)	1154.00	Flow (cfs)	4.02	75.77	1074.21
Top Width (ft)	239.55	Top Width (ft)	15.55	17.82	206.18
Vel Total (ft/s)	3.94	Avg. Vel. (ft/s)	1.19	4.54	3.94
Max Chl Dpth (ft)	1.59	Hydr. Depth (ft)	0.22	0.94	1.32
Conv. Total (cfs)	8186.1	Conv. (cfs)	28.5	537.5	7620.1
Length Wtd. (ft)	393.84	Wetted Per. (ft)	15.56	17.89	206.28
Min Ch El (ft)	2784.28	Shear (lb/sq ft)	0.27	1.16	1.64
Alpha	1.02	Stream Power (lb/ft s)	0.32	5.25	6.46
Frctn Loss (ft)	9.03	Cum Volume (acre-ft)	18.29	45.83	33.51
C & E Loss (ft)	0.02	Cum SA (acres)	20.18	24.36	28.76

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 OUTPUT Profile #Method 1

E.G. Elev (ft)	2786.90	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.80	Wt. n-Val.		0.044	0.064
W.S. Elev (ft)	2786.10	Reach Len. (ft)	384.63	393.32	394.13
Crit W.S. (ft)	2786.10	Flow Area (sq ft)		25.83	138.44
E.G. Slope (ft/ft)	0.045758	Area (sq ft)		25.83	138.44
Q Total (cfs)	1154.00	Flow (cfs)		230.23	923.77
Top Width (ft)	104.70	Top Width (ft)		17.82	86.88
Vel Total (ft/s)	7.02	Avg. Vel. (ft/s)		8.91	6.67
Max Chl Dpth (ft)	2.02	Hydr. Depth (ft)		1.45	1.59
Conv. Total (cfs)	5394.8	Conv. (cfs)		1076.3	4318.5
Length Wtd. (ft)	393.64	Wetted Per. (ft)		18.84	88.90
Min Ch El (ft)	2784.28	Shear (lb/sq ft)		3.92	4.45
Alpha	1.04	Stream Power (lb/ft s)		34.91	29.68
Frctn Loss (ft)	8.93	Cum Volume (acre-ft)	4.38	55.24	11.28

C & E Loss (ft)	0.07	Cum SA (acres)	3.15	24.40	6.52

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: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
depth, the 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: Fan 6A
REACH: Fan 6AS-1 RS: 3.55

INPUT
Description: Topography and Aerial show wash and surrounding undeveloped
desert.
T5NR5E Section 4
Q100 = 1,284 cfs
Station Elevation Data num= 13

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9851.42	2782	9862.63	2780	9874.07	2778	9912.1	2776	9976.9	2774.96
10000	2774.22	10008.17	2775.29	10038.23	2774.57	10057.54	2775.35	10143.26	2776
10168.86	2778	10185.26	2780	10206.51	2782				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9851.42	.064	9912.1	.044	10008.17	.064

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9912.1	10008.17	161.82	164.24	156.08	.1	.3

CROSS SECTION OUTPUT Profile #100-yr 6-hr

E.G. Elev (ft)	2776.79	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.42	Wt. n-Val.	0.064	0.044	0.064
W.S. Elev (ft)	2776.37	Reach Len. (ft)	161.82	164.24	156.08
Crit W.S. (ft)	2776.31	Flow Area (sq ft)	1.27	111.58	130.36
E.G. Slope (ft/ft)	0.026727	Area (sq ft)	1.27	111.58	130.36
Q Total (cfs)	1154.00	Flow (cfs)	1.55	680.20	472.25
Top Width (ft)	242.80	Top Width (ft)	6.95	96.07	139.77
Vel Total (ft/s)	4.74	Avg. Vel. (ft/s)	1.22	6.10	3.62
Max Chl Dpth (ft)	2.15	Hydr. Depth (ft)	0.18	1.16	0.93
Conv. Total (cfs)	7058.8	Conv. (cfs)	9.5	4160.6	2888.6
Length Wtd. (ft)	160.46	Wetted Per. (ft)	6.96	96.16	139.81
Min Ch El (ft)	2774.22	Shear (lb/sq ft)	0.30	1.94	1.56
Alpha	1.21	Stream Power (lb/ft s)	0.37	11.80	5.64
Frctn Loss (ft)	3.59	Cum Volume (acre-ft)	18.27	45.26	31.68
C & E Loss (ft)	0.01	Cum SA (acres)	20.08	23.84	27.20

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.

CROSS SECTION OUTPUT Profile #Method 1

E.G. Elev (ft)	2777.76	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.57	Wt. n-Val.		0.044	
W.S. Elev (ft)	2777.19	Reach Len. (ft)	161.82	164.24	156.08
Crit W.S. (ft)		Flow Area (sq ft)		190.43	
E.G. Slope (ft/ft)	0.013504	Area (sq ft)		190.43	
Q Total (cfs)	1154.00	Flow (cfs)		1154.00	

Top Width (ft)	96.07	Top Width (ft)		96.07	
Vel Total (ft/s)	6.06	Avg. Vel. (ft/s)		6.06	
Max Chl Dpth (ft)	2.97	Hydr. Depth (ft)		1.98	
Conv. Total (cfs)	9930.4	Conv. (cfs)		9930.4	
Length Wtd. (ft)	164.24	Wetted Per. (ft)		99.24	
Min Ch El (ft)	2774.22	Shear (lb/sq ft)		1.62	
Alpha	1.00	Stream Power (lb/ft s)		9.80	
Frctn Loss (ft)	2.86	Cum Volume (acre-ft)	4.38	54.26	10.66
C & E Loss (ft)	0.07	Cum SA (acres)	3.15	23.89	6.13

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The energy loss was 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: Fan 6A
REACH: Fan 6AS-1 RS: 3.52

INPUT
Description: Topography and Aerial show wash and surrounding undeveloped desert.
T5NR5E Section 4
Q100 = 1,284 cfs
Station Elevation Data num= 14

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9864.95	2782	9883.45	2780	9902.32	2778	9921.63	2776	9946.91	2774
9975.17	2772	9989.25	2771.19	10000	2770.69	10029.03	2771.51	10201.39	2772
10229.74	2774	10253.7	2776	10287.79	2778	10315.41	2780		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9864.95	.064	9975.17	.044	10029.03	.064

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9975.17	10029.03	379.36	383.78	376.51	.1	.3

CROSS SECTION OUTPUT Profile #100-yr 6-hr

E.G. Elev (ft)	2773.19	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.38	Wt. n-Val.	0.064	0.044	0.064
W.S. Elev (ft)	2772.80	Reach Len. (ft)	379.36	383.78	376.51
Crit W.S. (ft)	2772.70	Flow Area (sq ft)	4.55	86.44	185.06
E.G. Slope (ft/ft)	0.018995	Area (sq ft)	4.55	86.44	185.06
Q Total (cfs)	1154.00	Flow (cfs)	7.90	551.13	594.97
Top Width (ft)	248.93	Top Width (ft)	11.34	53.86	183.73
Vel Total (ft/s)	4.18	Avg. Vel. (ft/s)	1.74	6.38	3.21
Max Chl Dpth (ft)	2.11	Hydr. Depth (ft)	0.40	1.60	1.01
Conv. Total (cfs)	8373.2	Conv. (cfs)	57.3	3998.8	4317.0
Length Wtd. (ft)	379.14	Wetted Per. (ft)	11.36	53.91	183.76
Min Ch El (ft)	2770.69	Shear (lb/sq ft)	0.47	1.90	1.19
Alpha	1.42	Stream Power (lb/ft s)	0.82	12.12	3.84
Frctn Loss (ft)	8.13	Cum Volume (acre-ft)	18.26	44.88	31.12
C & E Loss (ft)	0.03	Cum SA (acres)	20.04	23.56	26.62

Warning: The energy loss was 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 OUTPUT Profile #Method 1

E.G. Elev (ft)	2774.84	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.22	Wt. n-Val.		0.044	
W.S. Elev (ft)	2773.61	Reach Len. (ft)	379.36	383.78	376.51
Crit W.S. (ft)	2773.61	Flow Area (sq ft)		130.12	
E.G. Slope (ft/ft)	0.023281	Area (sq ft)		130.12	

Q Total (cfs)	1154.00	Flow (cfs)		1154.00	
Top Width (ft)	53.86	Top Width (ft)		53.86	
Vel Total (ft/s)	8.87	Avg. Vel. (ft/s)		8.87	
Max Chl Dpth (ft)	2.92	Hydr. Depth (ft)		2.42	
Conv. Total (cfs)	7563.2	Conv. (cfs)		7563.2	
Length Wtd. (ft)	381.94	Wetted Per. (ft)		57.62	
Min Ch El (ft)	2770.69	Shear (lb/sq ft)		3.28	
Alpha	1.00	Stream Power (lb/ft s)		29.11	
Frctn Loss (ft)	7.77	Cum Volume (acre-ft)	4.38	53.66	10.66
C & E Loss (ft)	0.19	Cum SA (acres)	3.15	23.61	6.13

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
depth, the 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: Fan 6A
REACH: Fan 6AS-1 RS: 3.45

INPUT
Description: Topography and Aerial show wash and surrounding undeveloped
desert.
T5NR5E Section 4
Q100 = 1,284 cfs
Station Elevation Data num= 20

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9809.5	2770	9837.48	2768	9852.21	2766	9987.17	2764	10000	2763.02
10022.44	2764	10053.44	2764	10096.56	2763.35	10140.13	2764	10151.7	2764
10171.59	2764	10179.89	2764	10234.47	2763.21	10256.07	2764	10331.9	2766
10356.43	2768	10377.14	2770	10396.33	2772	10428.95	2774	10447.4	2776

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9809.5	.064	9987.17	.044	10022.44	.064

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9987.17	10022.44	483.02	484.27	482.22	.1	.3

CROSS SECTION OUTPUT Profile #100-yr 6-hr

			Left OB	Channel	Right OB
E.G. Elev (ft)	2765.03	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.27	Wt. n-Val.	0.064	0.044	0.064
W.S. Elev (ft)	2764.75	Reach Len. (ft)	483.02	484.27	482.22
Crit W.S. (ft)	2764.61	Flow Area (sq ft)	19.20	43.89	245.30
E.G. Slope (ft/ft)	0.024369	Area (sq ft)	19.20	43.89	245.30
Q Total (cfs)	1154.00	Flow (cfs)	36.33	267.39	850.28
Top Width (ft)	348.41	Top Width (ft)	50.91	35.27	262.23
Vel Total (ft/s)	3.74	Avg. Vel. (ft/s)	1.89	6.09	3.47
Max Chl Dpth (ft)	1.73	Hydr. Depth (ft)	0.38	1.24	0.94
Conv. Total (cfs)	7392.5	Conv. (cfs)	232.7	1712.9	5446.8
Length Wtd. (ft)	483.01	Wetted Per. (ft)	50.91	35.33	262.27
Min Ch El (ft)	2763.02	Shear (lb/sq ft)	0.57	1.89	1.42
Alpha	1.25	Stream Power (lb/ft s)	1.09	11.51	4.93
Frctn Loss (ft)	9.87	Cum Volume (acre-ft)	18.16	44.31	29.26
C & E Loss (ft)	0.03	Cum SA (acres)	19.77	23.17	24.69

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 OUTPUT Profile #Method 1

E.G. Elev (ft)	2766.28	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.58	Wt. n-Val.		0.044	0.064
W.S. Elev (ft)	2765.70	Reach Len. (ft)	483.02	484.27	482.22
Crit W.S. (ft)	2765.42	Flow Area (sq ft)		77.17	127.30
E.G. Slope (ft/ft)	0.017936	Area (sq ft)		77.17	127.30
Q Total (cfs)	1154.00	Flow (cfs)		569.50	584.50
Top Width (ft)	103.94	Top Width (ft)		35.27	68.67
Vel Total (ft/s)	5.64	Avg. Vel. (ft/s)		7.38	4.59
Max Chl Dpth (ft)	2.68	Hydr. Depth (ft)		2.19	1.85
Conv. Total (cfs)	8616.6	Conv. (cfs)		4252.3	4364.3
Length Wtd. (ft)	483.66	Wetted Per. (ft)		37.03	70.94
Min Ch El (ft)	2763.02	Shear (lb/sq ft)		2.33	2.01
Alpha	1.18	Stream Power (lb/ft s)		17.22	9.23
Frctn Loss (ft)	9.81	Cum Volume (acre-ft)	4.38	52.74	10.11
C & E Loss (ft)	0.01	Cum SA (acres)	3.15	23.21	5.83

Warning: The energy loss was 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: Fan 6A
REACH: Fan 6AS-1 RS: 3.35

INPUT
Description: Topography and Aerial show wash and surrounding undeveloped desert.
T5NR5E Section 4
Q100 = 1,284 cfs
Station Elevation Data num= 20

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9636.66	2762	9658.47	2760	9668.96	2758	9679.76	2756	9691.69	2754
9750.67	2752.88	9835.22	2754	9955.83	2754.89	9990.72	2754	10000	2753.05
10012.92	2754	10021.54	2754.88	10030.97	2754	10039.9	2754	10042.48	2755
10045.05	2756	10050.33	2758	10058.49	2760	10070.02	2762	10079.75	2764

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9636.66	.064	9955.83	.044	10042.48	.064

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9955.83	10042.48	478.16	479.22	445.83	.1	.3

CROSS SECTION OUTPUT Profile #100-yr 6-hr

E.G. Elev (ft)	2755.13	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.17	Wt. n-Val.	0.064	0.044	
W.S. Elev (ft)	2754.96	Reach Len. (ft)	478.16	479.22	445.83
Crit W.S. (ft)	2754.59	Flow Area (sq ft)	282.64	68.85	
E.G. Slope (ft/ft)	0.017368	Area (sq ft)	282.64	68.85	
Q Total (cfs)	1154.00	Flow (cfs)	891.67	262.33	
Top Width (ft)	356.40	Top Width (ft)	269.86	86.54	
Vel Total (ft/s)	3.28	Avg. Vel. (ft/s)	3.15	3.81	
Max Chl Dpth (ft)	2.08	Hydr. Depth (ft)	1.05	0.80	
Conv. Total (cfs)	8756.6	Conv. (cfs)	6766.0	1990.6	
Length Wtd. (ft)	478.59	Wetted Per. (ft)	269.96	86.90	
Min Ch El (ft)	2753.05	Shear (lb/sq ft)	1.14	0.86	
Alpha	1.02	Stream Power (lb/ft s)	3.58	3.27	
Frctn Loss (ft)	6.94	Cum Volume (acre-ft)	16.48	43.68	27.90
C & E Loss (ft)	0.05	Cum SA (acres)	17.99	22.49	23.24

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 OUTPUT Profile #Method 1

E.G. Elev (ft)	2756.47	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.68	Wt. n-Val.	0.064	0.044	
W.S. Elev (ft)	2755.78	Reach Len. (ft)	478.16	479.22	445.83
Crit W.S. (ft)	2755.77	Flow Area (sq ft)	46.98	140.35	
E.G. Slope (ft/ft)	0.023108	Area (sq ft)	46.98	140.35	
Q Total (cfs)	1154.00	Flow (cfs)	169.03	984.97	
Top Width (ft)	131.07	Top Width (ft)	44.42	86.65	
Vel Total (ft/s)	6.16	Avg. Vel. (ft/s)	3.60	7.02	
Max Chl Dpth (ft)	2.73	Hydr. Depth (ft)	1.06	1.62	
Conv. Total (cfs)	7591.5	Conv. (cfs)	1111.9	6479.6	
Length Wtd. (ft)	479.05	Wetted Per. (ft)	45.64	87.80	
Min Ch El (ft)	2753.05	Shear (lb/sq ft)	1.48	2.31	
Alpha	1.16	Stream Power (lb/ft s)	5.34	16.18	
Frctn Loss (ft)	7.17	Cum Volume (acre-ft)	4.12	51.53	9.40
C & E Loss (ft)	0.02	Cum SA (acres)	2.91	22.53	5.45

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.

CROSS SECTION

RIVER: Fan 6A
REACH: Fan 6AS-1 RS: 3.26

INPUT
Description: Topography and Aerial show wash and surrounding undeveloped desert.
T5NR5E Section 4
Q100 = 1,284 cfs
Station Elevation Data num= 20

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9687.13	2752	9701.89	2750	9723.88	2748	9754.94	2746	9759.71	2744
9764.61	2744	9769.86	2746	9943.57	2748	9944.53	2748	9983.06	2746
9993.85	2744	10000	2743.42	10009.52	2744	10011.39	2746	10013.28	2748
10029.91	2750	10052.3	2752	10082	2754	10112.24	2756	10134.82	2758

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9687.13	.064	9983.06	.044	10011.39	.064

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9983.06	10011.39	416.08	413.96	415.27	.1	.3

CROSS SECTION OUTPUT Profile #100-yr 6-hr

E.G. Elev (ft)	2748.14	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.65	Wt. n-Val.	0.064	0.044	0.064
W.S. Elev (ft)	2747.50	Reach Len. (ft)	416.08	413.96	415.27
Crit W.S. (ft)	2747.50	Flow Area (sq ft)	178.48	90.96	1.06
E.G. Slope (ft/ft)	0.012283	Area (sq ft)	178.48	90.96	1.06
Q Total (cfs)	1154.00	Flow (cfs)	429.89	722.36	1.75
Top Width (ft)	226.78	Top Width (ft)	197.04	28.33	1.42
Vel Total (ft/s)	4.27	Avg. Vel. (ft/s)	2.41	7.94	1.65
Max Chl Dpth (ft)	4.08	Hydr. Depth (ft)	0.91	3.21	0.75
Conv. Total (cfs)	10412.6	Conv. (cfs)	3879.0	6517.9	15.8
Length Wtd. (ft)	414.42	Wetted Per. (ft)	197.91	29.43	2.06
Min Ch El (ft)	2743.42	Shear (lb/sq ft)	0.69	2.37	0.39
Alpha	2.29	Stream Power (lb/ft s)	1.67	18.82	0.65
Frctn Loss (ft)	5.21	Cum Volume (acre-ft)	13.95	42.80	27.89
C & E Loss (ft)	0.02	Cum SA (acres)	15.43	21.86	23.23

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: Divided flow computed for this cross-section.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
depth, the calculated water surface came back below critical depth. This indicates that there is
not a valid subcritical answer. The program defaulted to critical depth.

CROSS SECTION OUTPUT Profile #Method 1

E.G. Elev (ft)	2749.28	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.88	Wt. n-Val.	0.064	0.044	
W.S. Elev (ft)	2748.40	Reach Len. (ft)	416.08	413.96	415.27
Crit W.S. (ft)	2748.40	Flow Area (sq ft)	84.28	116.50	
E.G. Slope (ft/ft)	0.010472	Area (sq ft)	84.28	116.50	
Q Total (cfs)	1154.00	Flow (cfs)	197.71	956.29	
Top Width (ft)	113.27	Top Width (ft)	84.94	28.33	
Vel Total (ft/s)	5.75	Avg. Vel. (ft/s)	2.35	8.21	
Max Chl Dpth (ft)	4.98	Hydr. Depth (ft)	0.99	4.11	
Conv. Total (cfs)	11276.7	Conv. (cfs)	1932.0	9344.7	
Length Wtd. (ft)	414.14	Wetted Per. (ft)	85.92	31.83	
Min Ch El (ft)	2743.42	Shear (lb/sq ft)	0.64	2.39	
Alpha	1.72	Stream Power (lb/ft s)	1.50	19.65	
Frctn Loss (ft)	5.20	Cum Volume (acre-ft)	3.40	50.12	9.40
C & E Loss (ft)	0.04	Cum SA (acres)	2.20	21.90	5.45

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: Fan 6A
REACH: Fan 6AS-1 RS: 3.18

INPUT
Description: Topography and Aerial show wash and surrounding undeveloped
desert.
T5NR5E Section 4
Q100 = 1,284 cfs
Station Elevation Data num= 19

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9870.83	2748	9893.76	2746	9912.55	2744	9939.6	2742	9969.31	2740
9982.72	2738	10000	2736.47	10012.74	2738	10043.87	2740	10143.26	2740
10189.04	2740	10222.08	2742	10260.25	2742	10284.55	2740	10308.85	2738
10340.93	2738	10350.96	2740	10406.92	2742	10430.6	2744		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9870.83	.064	9969.31	.044	10043.87	.064

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9969.31	10043.87	499.94	500.15	494.7	.1	.3

Right Levee Station=10222.08 Elevation= 2742

CROSS SECTION OUTPUT Profile #100-yr 6-hr

E.G. Elev (ft)	2741.05	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.58	Wt. n-Val.	0.064	0.044	0.064
W.S. Elev (ft)	2740.47	Reach Len. (ft)	499.94	500.15	494.70
Crit W.S. (ft)	2740.47	Flow Area (sq ft)	1.63	162.48	69.83
E.G. Slope (ft/ft)	0.012881	Area (sq ft)	1.63	162.48	69.83
Q Total (cfs)	1154.00	Flow (cfs)	1.63	1043.27	109.10
Top Width (ft)	234.43	Top Width (ft)	6.96	74.56	152.91
Vel Total (ft/s)	4.93	Avg. Vel. (ft/s)	1.00	6.42	1.56
Max Chl Dpth (ft)	4.00	Hydr. Depth (ft)	0.23	2.18	0.46
Conv. Total (cfs)	10168.0	Conv. (cfs)	14.4	9192.4	961.3
Length Wtd. (ft)	497.38	Wetted Per. (ft)	6.98	74.93	152.92
Min Ch El (ft)	2736.47	Shear (lb/sq ft)	0.19	1.74	0.37
Alpha	1.54	Stream Power (lb/ft s)	0.19	11.20	0.57
Frctn Loss (ft)	6.17	Cum Volume (acre-ft)	13.09	41.60	27.56
C & E Loss (ft)	0.13	Cum SA (acres)	14.46	21.37	22.50

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.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water
surface was used.

CROSS SECTION OUTPUT Profile #Method 1

E.G. Elev (ft)	2741.26	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.76	Wt. n-Val.		0.044	
W.S. Elev (ft)	2740.50	Reach Len. (ft)	499.94	500.15	494.70
Crit W.S. (ft)	2740.25	Flow Area (sq ft)		164.63	
E.G. Slope (ft/ft)	0.015353	Area (sq ft)		164.63	
Q Total (cfs)	1154.00	Flow (cfs)		1154.00	
Top Width (ft)	74.56	Top Width (ft)		74.56	
Vel Total (ft/s)	7.01	Avg. Vel. (ft/s)		7.01	
Max Chl Dpth (ft)	4.03	Hydr. Depth (ft)		2.21	
Conv. Total (cfs)	9313.5	Conv. (cfs)		9313.5	
Length Wtd. (ft)	498.09	Wetted Per. (ft)		75.93	
Min Ch El (ft)	2736.47	Shear (lb/sq ft)		2.08	
Alpha	1.00	Stream Power (lb/ft s)		14.57	
Frctn Loss (ft)	9.84	Cum Volume (acre-ft)	3.00	48.79	9.40
C & E Loss (ft)	0.09	Cum SA (acres)	1.79	21.41	5.45

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.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water
surface was used.

CROSS SECTION

RIVER: Fan 6A
REACH: Fan 6AS-1 RS: 3.09

INPUT
Description: Topography and Aerial show wash and surrounding undeveloped
desert.
T5NR5E Section 4
Q100 = 1,284 cfs

Station Elevation Data num= 17

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9926.44	2736	9942.04	2734	9959.71	2732	9983.1	2730.5	9990.89	2730
10000	2728.2	10010.93	2730	10019.43	2730	10059.3	2729.25	10075.42	2729.61
10185.93	2728	10224.87	2728	10259.28	2730	10290.2	2732	10303.76	2734
10327.7	2736	10357.65	2738						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9926.44	.064	9983.1	.044	10010.93	.064

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9983.1	10010.93	267.05	278.54	275.85	.1	.3

CROSS SECTION OUTPUT Profile #100-yr 6-hr

E.G. Elev (ft)	2730.45	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.15	Wt. n-Val.		0.044	0.064
W.S. Elev (ft)	2730.30	Reach Len. (ft)	267.05	278.54	275.85
Crit W.S. (ft)		Flow Area (sq ft)		24.62	342.34
E.G. Slope (ft/ft)	0.011971	Area (sq ft)		24.62	342.34
Q Total (cfs)	1154.00	Flow (cfs)		90.12	1063.88
Top Width (ft)	277.54	Top Width (ft)		24.63	252.91
Vel Total (ft/s)	3.14	Avg. Vel. (ft/s)		3.66	3.11
Max Chl Dpth (ft)	2.29	Hydr. Depth (ft)		1.00	1.35
Conv. Total (cfs)	10547.4	Conv. (cfs)		823.7	9723.7
Length Wtd. (ft)	276.68	Wetted Per. (ft)		24.96	253.00
Min Ch El (ft)	2728.20	Shear (lb/sq ft)		0.74	1.01
Alpha	1.01	Stream Power (lb/ft s)		2.70	3.14
Frctn Loss (ft)	4.31	Cum Volume (acre-ft)	13.08	40.52	25.22
C & E Loss (ft)	0.04	Cum SA (acres)	14.42	20.80	20.19

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 OUTPUT Profile #Method 1

E.G. Elev (ft)	2731.33	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.45	Wt. n-Val.		0.044	0.064
W.S. Elev (ft)	2730.88	Reach Len. (ft)	267.05	278.54	275.85
Crit W.S. (ft)	2730.65	Flow Area (sq ft)		40.45	181.76
E.G. Slope (ft/ft)	0.026370	Area (sq ft)		40.45	181.76
Q Total (cfs)	1154.00	Flow (cfs)		279.91	874.09
Top Width (ft)	151.86	Top Width (ft)		27.83	124.03
Vel Total (ft/s)	5.19	Avg. Vel. (ft/s)		6.92	4.81
Max Chl Dpth (ft)	2.68	Hydr. Depth (ft)		1.45	1.47
Conv. Total (cfs)	7106.4	Conv. (cfs)		1723.7	5382.7
Length Wtd. (ft)	277.52	Wetted Per. (ft)		28.54	126.18
Min Ch El (ft)	2728.20	Shear (lb/sq ft)		2.33	2.37
Alpha	1.08	Stream Power (lb/ft s)		16.14	11.40
Frctn Loss (ft)	4.82	Cum Volume (acre-ft)	3.00	47.61	8.37
C & E Loss (ft)	0.00	Cum SA (acres)	1.79	20.83	4.75

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was 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: Fan 6A
REACH: Fan 6AS-1 RS: 3.04

INPUT
Description: Topography and Aerial show wash and surrounding undeveloped desert.

T5NR5E Section 4
Q100 = 1,284 cfs

Station Elevation Data num= 14

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9708.55	2732	9725.32	2730	9760.12	2728	9796.27	2726	9926.07	2724.5
9969.34	2724	9973.03	2724	9996.63	2724	10015.51	2724	10036.5	2724.5
10099.47	2726	10115.5	2728	10130.73	2730	10150.62	2732		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9708.55	.064	9926.07	.044	10036.5	.064

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9926.07	10036.5	381.75	391.48	395.45	.1	.3

CROSS SECTION OUTPUT Profile #100-yr 6-hr

			Left OB	Channel	Right OB
E.G. Elev (ft)	2726.11	Element			
Vel Head (ft)	0.53	Wt. n-Val.	0.064	0.044	0.064
W.S. Elev (ft)	2725.58	Reach Len. (ft)	381.75	391.48	395.45
Crit W.S. (ft)	2725.58	Flow Area (sq ft)	50.38	158.31	24.44
E.G. Slope (ft/ft)	0.021079	Area (sq ft)	50.38	158.31	24.44
Q Total (cfs)	1154.00	Flow (cfs)	112.55	986.85	54.59
Top Width (ft)	249.11	Top Width (ft)	93.38	110.43	45.30
Vel Total (ft/s)	4.95	Avg. Vel. (ft/s)	2.23	6.23	2.23
Max Chl Dpth (ft)	1.58	Hydr. Depth (ft)	0.54	1.43	0.54
Conv. Total (cfs)	7948.5	Conv. (cfs)	775.2	6797.2	376.0
Length Wtd. (ft)	389.66	Wetted Per. (ft)	93.39	110.44	45.31
Min Ch El (ft)	2724.00	Shear (lb/sq ft)	0.71	1.89	0.71
Alpha	1.39	Stream Power (lb/ft s)	1.59	11.76	1.59
Frctn Loss (ft)	6.37	Cum Volume (acre-ft)	12.93	39.94	24.05
C & E Loss (ft)	0.01	Cum SA (acres)	14.13	20.37	19.25

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 energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
depth, the 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 OUTPUT Profile #Method 1

			Left OB	Channel	Right OB
E.G. Elev (ft)	2726.50	Element			
Vel Head (ft)	0.48	Wt. n-Val.		0.044	
W.S. Elev (ft)	2726.02	Reach Len. (ft)	381.75	391.48	395.45
Crit W.S. (ft)	2725.64	Flow Area (sq ft)		206.57	
E.G. Slope (ft/ft)	0.012310	Area (sq ft)		206.57	
Q Total (cfs)	1154.00	Flow (cfs)		1154.00	
Top Width (ft)	110.43	Top Width (ft)		110.43	
Vel Total (ft/s)	5.59	Avg. Vel. (ft/s)		5.59	
Max Chl Dpth (ft)	2.02	Hydr. Depth (ft)		1.87	
Conv. Total (cfs)	10401.1	Conv. (cfs)		10401.1	
Length Wtd. (ft)	391.36	Wetted Per. (ft)		113.47	
Min Ch El (ft)	2724.00	Shear (lb/sq ft)		1.40	
Alpha	1.00	Stream Power (lb/ft s)		7.82	
Frctn Loss (ft)	5.82	Cum Volume (acre-ft)	3.00	46.82	7.80
C & E Loss (ft)	0.09	Cum SA (acres)	1.79	20.38	4.36

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: Fan 6A
REACH: Fan 6AS-1 RS: 2.96

INPUT
Description: Topography and Aerial show wash and surrounding undeveloped desert.
T5NR5E Section 4
Q100 = 1,284 cfs
Station Elevation Data num= 17

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9689.95	2724	9713.39	2722	9734.65	2720	9756.08	2718	9767.59	2716.68
9811.73	2718	9852.89	2719.34	9983.12	2718	9984.12	2717.636	9988.61	2716
10000	2715.51	10015.62	2716	10021.2	2717.696	10022.2	2718	10038.11	2720
10053.61	2722	10071.95	2724						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9689.95	.064	9984.12	.044	10021.2	.064

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9984.12	10021.2	354.11	356.49	355.04	.1	.3

CROSS SECTION OUTPUT Profile #100-yr 6-hr

			Left OB	Channel	Right OB
E.G. Elev (ft)	2719.53	Element			
Vel Head (ft)	0.66	Wt. n-Val.	0.064	0.044	0.064
W.S. Elev (ft)	2718.88	Reach Len. (ft)	354.11	356.49	355.04
Crit W.S. (ft)	2718.88	Flow Area (sq ft)	139.54	104.95	4.07
E.G. Slope (ft/ft)	0.013042	Area (sq ft)	139.54	104.95	4.07
Q Total (cfs)	1154.00	Flow (cfs)	345.29	801.86	6.85
Top Width (ft)	222.97	Top Width (ft)	177.93	37.08	7.96
Vel Total (ft/s)	4.64	Avg. Vel. (ft/s)	2.47	7.64	1.68
Max Chl Dpth (ft)	3.38	Hydr. Depth (ft)	0.78	2.83	0.51
Conv. Total (cfs)	10105.1	Conv. (cfs)	3023.6	7021.5	60.0
Length Wtd. (ft)	355.40	Wetted Per. (ft)	178.15	37.64	8.06
Min Ch El (ft)	2715.50	Shear (lb/sq ft)	0.64	2.27	0.41
Alpha	1.97	Stream Power (lb/ft s)	1.58	17.35	0.69
Frctn Loss (ft)	5.04	Cum Volume (acre-ft)	12.10	38.76	23.93
C & E Loss (ft)	0.11	Cum SA (acres)	12.94	19.71	19.01

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: Divided flow computed for this cross-section.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
depth, the calculated water surface came back below critical depth. This indicates that there is
not a valid subcritical answer. The program defaulted to critical depth.

CROSS SECTION OUTPUT Profile #Method 1

			Left OB	Channel	Right OB
E.G. Elev (ft)	2720.59	Element			
Vel Head (ft)	1.42	Wt. n-Val.	0.064	0.044	0.064
W.S. Elev (ft)	2719.17	Reach Len. (ft)	354.11	356.49	355.04
Crit W.S. (ft)	2719.17	Flow Area (sq ft)	9.06	115.98	1.32
E.G. Slope (ft/ft)	0.018313	Area (sq ft)	9.06	115.98	1.32
Q Total (cfs)	1154.00	Flow (cfs)	28.71	1122.34	2.95
Top Width (ft)	45.85	Top Width (ft)	7.77	37.08	1.00
Vel Total (ft/s)	9.13	Avg. Vel. (ft/s)	3.17	9.68	2.23
Max Chl Dpth (ft)	3.67	Hydr. Depth (ft)	1.17	3.13	1.32
Conv. Total (cfs)	8527.5	Conv. (cfs)	212.1	8293.6	21.8
Length Wtd. (ft)	356.12	Wetted Per. (ft)	8.94	37.64	2.22
Min Ch El (ft)	2715.50	Shear (lb/sq ft)	1.16	3.52	0.68
Alpha	1.10	Stream Power (lb/ft s)	3.67	34.09	1.52
Frctn Loss (ft)	4.91	Cum Volume (acre-ft)	2.96	45.37	7.79

C & E Loss (ft)	0.29	Cum SA (acres)	1.76	19.72	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 cross section had to be extended vertically during the critical depth calculations.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
depth, the 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: Fan 6A
REACH: Fan 6AS-1 RS: 2.90

INPUT
Description: Topography and Aerial show wash and surrounding undeveloped
desert.
T5NR5E Section 4
Q100 = 1,284 cfs
Station Elevation Data num= 18

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9659.25	2724	9678.1	2722	9693.56	2720	9709.28	2718	9728.92	2716
9739.52	2714	9791.77	2712	9807.21	2710.73	9865.72	2711.36	9951.64	2711.95
9991.65	2710.94	9999.69	2710.06	10008.54	2712	10012.23	2714	10036.97	2714
10038.13	2714	10061.21	2716	10084.91	2718				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9659.25	.064	9951.64	.044	10008.54	.064

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9951.64	10008.54	497.59	492.08	483.39	.1	.3

CROSS SECTION OUTPUT Profile #100-yr 6-hr

E.G. Elev (ft)	2712.99	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.28	Wt. n-Val.	0.064	0.044	0.064
W.S. Elev (ft)	2712.71	Reach Len. (ft)	497.59	492.08	483.39
Crit W.S. (ft)	2712.38	Flow Area (sq ft)	215.23	83.19	0.46
E.G. Slope (ft/ft)	0.015482	Area (sq ft)	215.23	83.19	0.46
Q Total (cfs)	1154.00	Flow (cfs)	704.48	448.90	0.62
Top Width (ft)	236.60	Top Width (ft)	178.39	56.90	1.31
Vel Total (ft/s)	3.86	Avg. Vel. (ft/s)	3.27	5.40	1.33
Max Chl Dpth (ft)	2.65	Hydr. Depth (ft)	1.21	1.46	0.35
Conv. Total (cfs)	9274.5	Conv. (cfs)	5661.8	3607.8	4.9
Length Wtd. (ft)	492.04	Wetted Per. (ft)	178.46	57.17	1.49
Min Ch El (ft)	2710.06	Shear (lb/sq ft)	1.17	1.41	0.30
Alpha	1.20	Stream Power (lb/ft s)	3.82	7.59	0.40
Frctn Loss (ft)	7.36	Cum Volume (acre-ft)	10.65	37.99	23.91
C & E Loss (ft)	0.01	Cum SA (acres)	11.49	19.32	18.97

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 OUTPUT Profile #Method 1

E.G. Elev (ft)	2714.09	Element	Left OB	Channel	Right OB

Vel Head (ft)	0.47	Wt. n-Val.	0.064	0.044	
W.S. Elev (ft)	2713.62	Reach Len. (ft)	497.59	492.08	483.39
Crit W.S. (ft)		Flow Area (sq ft)	93.49	135.20	
E.G. Slope (ft/ft)	0.010735	Area (sq ft)	93.49	135.20	
Q Total (cfs)	1154.00	Flow (cfs)	329.79	824.21	
Top Width (ft)	107.52	Top Width (ft)	50.62	56.90	
Vel Total (ft/s)	5.05	Avg. Vel. (ft/s)	3.53	6.10	
Max Chl Dpth (ft)	3.56	Hydr. Depth (ft)	1.85	2.38	
Conv. Total (cfs)	11137.9	Conv. (cfs)	3183.0	7954.9	
Length Wtd. (ft)	492.87	Wetted Per. (ft)	52.64	58.79	
Min Ch El (ft)	2710.06	Shear (lb/sq ft)	1.19	1.54	
Alpha	1.18	Stream Power (lb/ft s)	4.20	9.40	
Frctn Loss (ft)	7.86	Cum Volume (acre-ft)	2.54	44.34	7.78
C & E Loss (ft)	0.02	Cum SA (acres)	1.52	19.34	4.35

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was 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: Fan 6A
REACH: Fan 6AS-1 RS: 2.8

INPUT
Description: Topography and Aerial show wash and surrounding undeveloped desert.
T5NR5E Section 4 and 5
Q100 = 1,284 cfs
Station Elevation Data num= 16

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9937.13	2714	9943.9	2712	9952.21	2710	9964.9	2708	9972.87	2706
9976.58	2705	9980.26	2704	10000	2702.51	10017.69	2704	10106.65	2705.13
10173.45	2704	10240.86	2704	10272.82	2706	10309.63	2708	10344.83	2710
10374	2712								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9937.13	.064	9976.58	.04	10106.65	.064

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9976.58	10106.65	339.92	338.89	332.95	.1	.3

CROSS SECTION OUTPUT Profile #100-yr 6-hr

E.G. Elev (ft)	2705.61	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.24	Wt. n-Val.	0.064	0.044	0.064
W.S. Elev (ft)	2705.37	Reach Len. (ft)	339.92	338.89	332.95
Crit W.S. (ft)	2705.11	Flow Area (sq ft)	0.25	153.59	160.65
E.G. Slope (ft/ft)	0.014479	Area (sq ft)	0.25	153.59	160.65
Q Total (cfs)	1154.00	Flow (cfs)	0.22	696.31	457.47
Top Width (ft)	287.49	Top Width (ft)	1.36	130.07	156.05
Vel Total (ft/s)	3.67	Avg. Vel. (ft/s)	0.88	4.53	2.85
Max Chl Dpth (ft)	2.86	Hydr. Depth (ft)	0.18	1.18	1.03
Conv. Total (cfs)	9590.5	Conv. (cfs)	1.8	5786.8	3801.9
Length Wtd. (ft)	335.51	Wetted Per. (ft)	1.41	130.33	156.11
Min Ch El (ft)	2702.51	Shear (lb/sq ft)	0.16	1.07	0.93
Alpha	1.16	Stream Power (lb/ft s)	0.14	4.83	2.65
Frctn Loss (ft)	6.46	Cum Volume (acre-ft)	9.42	36.65	23.01
C & E Loss (ft)	0.01	Cum SA (acres)	10.47	18.27	18.09

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.

CROSS SECTION OUTPUT Profile #Method 1

E.G. Elev (ft)	2706.21	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.68	Wt. n-Val.		0.044	
W.S. Elev (ft)	2705.53	Reach Len. (ft)	339.92	338.89	332.95
Crit W.S. (ft)	2705.53	Flow Area (sq ft)		174.70	
E.G. Slope (ft/ft)	0.026130	Area (sq ft)		174.70	
Q Total (cfs)	1154.00	Flow (cfs)		1154.00	
Top Width (ft)	130.07	Top Width (ft)		130.07	
Vel Total (ft/s)	6.61	Avg. Vel. (ft/s)		6.61	
Max Chl Dpth (ft)	3.02	Hydr. Depth (ft)		1.34	
Conv. Total (cfs)	7138.9	Conv. (cfs)		7138.9	
Length Wtd. (ft)	337.40	Wetted Per. (ft)		131.26	
Min Ch El (ft)	2702.51	Shear (lb/sq ft)		2.17	
Alpha	1.00	Stream Power (lb/ft s)		14.34	
Frctn Loss (ft)	5.51	Cum Volume (acre-ft)	2.01	42.59	7.78
C & E Loss (ft)	0.10	Cum SA (acres)	1.23	18.28	4.35

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.
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: Fan 6A
REACH: Fan 6AS-1 RS: 2.74

INPUT
Description: Topography and Aerial show wash and surrounding undeveloped
desert.
T5NR5E Section 5
Q100 = 1,284 cfs
Station Elevation Data num= 16

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9901.97	2704	9910.82	2702	9919.78	2700	9952.64	2699	9969.07	2698.5
9985.5	2698	10000	2696.76	10010.87	2698	10026.95	2698.21	10042.94	2698
10111.04	2696.37	10148.06	2698	10198.25	2700	10236.46	2702	10274.85	2704
10319.2	2706								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9901.97	.064	9969.07	.044	10026.95	.064

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9969.07	10026.95	292.91	292.24	288.24	.1	.3

CROSS SECTION OUTPUT Profile #100-yr 6-hr

E.G. Elev (ft)	2699.14	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.36	Wt. n-Val.	0.064	0.044	0.064
W.S. Elev (ft)	2698.78	Reach Len. (ft)	292.91	292.24	288.24
Crit W.S. (ft)	2698.56	Flow Area (sq ft)	1.32	55.29	186.61
E.G. Slope (ft/ft)	0.026846	Area (sq ft)	1.32	55.29	186.61
Q Total (cfs)	1154.00	Flow (cfs)	1.37	296.32	856.31
Top Width (ft)	207.98	Top Width (ft)	9.32	57.88	140.78
Vel Total (ft/s)	4.74	Avg. Vel. (ft/s)	1.03	5.36	4.59
Max Chl Dpth (ft)	2.41	Hydr. Depth (ft)	0.14	0.96	1.33

Conv. Total (cfs)	7043.1	Conv. (cfs)	8.3	1808.5	5226.2
Length Wtd. (ft)	290.98	Wetted Per. (ft)	9.33	58.01	140.85
Min Ch El (ft)	2696.76	Shear (lb/sq ft)	0.24	1.60	2.22
Alpha	1.02	Stream Power (lb/ft s)	0.25	8.56	10.19
Frctn Loss (ft)	4.60	Cum Volume (acre-ft)	9.42	35.84	21.69
C & E Loss (ft)	0.04	Cum SA (acres)	10.43	17.54	16.96

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was 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 OUTPUT Profile #Method 1

E.G. Elev (ft)	2700.03	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.34	Wt. n-Val.		0.044	0.064
W.S. Elev (ft)	2699.69	Reach Len. (ft)	292.91	292.24	288.24
Crit W.S. (ft)		Flow Area (sq ft)		107.89	146.01
E.G. Slope (ft/ft)	0.011175	Area (sq ft)		107.89	146.01
Q Total (cfs)	1154.00	Flow (cfs)		574.64	579.36
Top Width (ft)	125.96	Top Width (ft)		57.88	68.08
Vel Total (ft/s)	4.55	Avg. Vel. (ft/s)		5.33	3.97
Max Chl Dpth (ft)	2.94	Hydr. Depth (ft)		1.86	2.14
Conv. Total (cfs)	10916.3	Conv. (cfs)		5435.8	5480.4
Length Wtd. (ft)	291.36	Wetted Per. (ft)		59.20	71.04
Min Ch El (ft)	2696.76	Shear (lb/sq ft)		1.27	1.43
Alpha	1.07	Stream Power (lb/ft s)		6.77	5.69
Frctn Loss (ft)	4.51	Cum Volume (acre-ft)	2.01	41.49	7.23
C & E Loss (ft)	0.05	Cum SA (acres)	1.23	17.55	4.09

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 conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was 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: Fan 6A
REACH: Fan 6AS-1 RS: 2.68

INPUT
Description: Topography and Aerial show wash and surrounding undeveloped desert.
T5NR5E Section 5
Q100 = 1,284 cfs
Station Elevation Data num= 18

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9658.24	2700	9679.19	2698	9697.23	2696	9777.81	2694	9794.42	2692
9810.02	2692	9858.73	2694	9873.82	2694	9942.79	2692	9950.54	2692
9975.07	2693.03	9994.73	2692	10000	2691.62	10005.43	2692	10014.98	2694
10023.48	2696	10037.66	2698	10076.07	2700				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9658.24	.064	9975.07	.044	10014.98	.064

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9975.07	10014.98	375.69	379.11	381.48	.1	.3

CROSS SECTION OUTPUT Profile #100-yr 6-hr

E.G. Elev (ft)	2694.50	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.22	Wt. n-Val.	0.064	0.044	0.064
W.S. Elev (ft)	2694.28	Reach Len. (ft)	375.69	379.11	381.48

Crit W.S. (ft)	2693.69	Flow Area (sq ft)	273.68	73.25	0.16
E.G. Slope (ft/ft)	0.010417	Area (sq ft)	273.68	73.25	0.16
Q Total (cfs)	1154.00	Flow (cfs)	777.10	376.80	0.10
Top Width (ft)	249.52	Top Width (ft)	208.43	39.91	1.18
Vel Total (ft/s)	3.32	Avg. Vel. (ft/s)	2.84	5.14	0.62
Max Chl Dpth (ft)	2.66	Hydr. Depth (ft)	1.31	1.84	0.14
Conv. Total (cfs)	11306.5	Conv. (cfs)	7613.7	3691.7	1.0
Length Wtd. (ft)	377.86	Wetted Per. (ft)	208.65	40.17	1.21
Min Ch El (ft)	2691.62	Shear (lb/sq ft)	0.85	1.19	0.09
Alpha	1.27	Stream Power (lb/ft s)	2.42	6.10	0.05
Frctn Loss (ft)	5.70	Cum Volume (acre-ft)	8.49	35.41	21.07
C & E Loss (ft)	0.05	Cum SA (acres)	9.69	17.21	16.49

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 OUTPUT Profile #Method 1

E.G. Elev (ft)	2695.47	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.87	Wt. n-Val.	0.064	0.044	
W.S. Elev (ft)	2694.60	Reach Len. (ft)	375.69	379.11	381.48
Crit W.S. (ft)	2694.42	Flow Area (sq ft)	75.89	85.93	
E.G. Slope (ft/ft)	0.022868	Area (sq ft)	75.89	85.93	
Q Total (cfs)	1154.00	Flow (cfs)	432.54	721.46	
Top Width (ft)	74.04	Top Width (ft)	34.13	39.91	
Vel Total (ft/s)	7.13	Avg. Vel. (ft/s)	5.70	8.40	
Max Chl Dpth (ft)	2.98	Hydr. Depth (ft)	2.22	2.15	
Conv. Total (cfs)	7631.1	Conv. (cfs)	2860.3	4770.8	
Length Wtd. (ft)	378.47	Wetted Per. (ft)	36.69	40.77	
Min Ch El (ft)	2691.62	Shear (lb/sq ft)	2.95	3.01	
Alpha	1.11	Stream Power (lb/ft s)	16.83	25.27	
Frctn Loss (ft)	6.20	Cum Volume (acre-ft)	1.76	40.84	6.74
C & E Loss (ft)	0.07	Cum SA (acres)	1.11	17.22	3.86

Warning: The energy loss was 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: Fan 6A
REACH: Fan 6AS-1 RS: 2.61

INPUT
Description: Cross Section 2.61 is located upstream of concentration point CF6AS3 from the HEC-1 Model.

Topography and Aerial show wash
and surrounding undeveloped desert.
T5NR5E Section 5
Q100 =
1,284 cfs
Station Elevation Data num= 14

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9898.75	2692	9919.18	2690	9931.14	2688	9941.76	2686	9945.05	2686
9954.78	2688	9977.75	2688	9984.8	2686	10000	2685.131	10008.36	2686
10056.55	2687	10105.93	2688	10195.38	2690	10227.71	2692		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9898.75	.064	9977.75	.044	10056.55	.064

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

9977.7510056.55 376.41 374.58 367.98 .1 .3

CROSS SECTION OUTPUT Profile #100-yr 6-hr

E.G. Elev (ft)	2688.74	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.77	Wt. n-Val.	0.064	0.044	0.064
W.S. Elev (ft)	2687.98	Reach Len. (ft)	376.41	374.58	367.98
Crit W.S. (ft)	2687.98	Flow Area (sq ft)	26.34	134.72	23.46
E.G. Slope (ft/ft)	0.023783	Area (sq ft)	26.34	134.72	23.46
Q Total (cfs)	1154.00	Flow (cfs)	100.99	1000.99	52.03
Top Width (ft)	150.23	Top Width (ft)	23.38	78.71	48.14
Vel Total (ft/s)	6.25	Avg. Vel. (ft/s)	3.83	7.43	2.22
Max Chl Dpth (ft)	2.84	Hydr. Depth (ft)	1.13	1.71	0.49
Conv. Total (cfs)	7482.9	Conv. (cfs)	654.8	6490.7	337.4
Length Wtd. (ft)	373.35	Wetted Per. (ft)	23.77	79.07	48.15
Min Ch El (ft)	2685.13	Shear (lb/sq ft)	1.65	2.53	0.72
Alpha	1.26	Stream Power (lb/ft s)	6.31	18.80	1.60
Frctn Loss (ft)	7.27	Cum Volume (acre-ft)	7.20	34.50	20.96
C & E Loss (ft)	0.18	Cum SA (acres)	8.69	16.69	16.27

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: 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 OUTPUT Profile #Method 1

E.G. Elev (ft)	2689.19	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.63	Wt. n-Val.		0.044	
W.S. Elev (ft)	2688.56	Reach Len. (ft)	376.41	374.58	367.98
Crit W.S. (ft)	2688.16	Flow Area (sq ft)		180.72	
E.G. Slope (ft/ft)	0.012319	Area (sq ft)		180.72	
Q Total (cfs)	1154.00	Flow (cfs)		1154.00	
Top Width (ft)	78.80	Top Width (ft)		78.80	
Vel Total (ft/s)	6.39	Avg. Vel. (ft/s)		6.39	
Max Chl Dpth (ft)	3.43	Hydr. Depth (ft)		2.29	
Conv. Total (cfs)	10397.3	Conv. (cfs)		10397.3	
Length Wtd. (ft)	374.58	Wetted Per. (ft)		81.28	
Min Ch El (ft)	2685.13	Shear (lb/sq ft)		1.71	
Alpha	1.00	Stream Power (lb/ft s)		10.92	
Frctn Loss (ft)	6.54	Cum Volume (acre-ft)	1.43	39.68	6.74
C & E Loss (ft)	0.03	Cum SA (acres)	0.97	16.70	3.86

Warning: The energy loss was greater 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: Fan 6A
REACH: Fan 6AS-1 RS: 2.54

INPUT
Description: Cross Section 2.54 is located at concentration point CF6AS4, from

the HEC-1 Model.

Topography and Aerial show wash and
surrounding undeveloped desert.
T5NR5E Section 5
Q100 = 1,603 cfs
Station Elevation Data num= 24

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9607.79	2690	9634	2688	9661.05	2686	9676.38	2684	9691.98	2682
9766.24	2681	9803.37	2680.5	9840.49	2680	9870.59	2680	9893.96	2680
9929.56	2680	9970.65	2680.41	9986.74	2680	10000	2678.82	10012.35	2680
10028.71	2680	10060.35	2680	10076.53	2680.5	10092.7	2681	10188.69	2680
10359.81	2680	10398.73	2682	10418.03	2684	10437.19	2686		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9607.79	.064	9970.65	.044	10076.53	.064

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9970.65	10076.53	296.25	298.6	295.36	.1	.3

CROSS SECTION OUTPUT Profile #100-yr 6-hr

			Left OB	Channel	Right OB
E.G. Elev (ft)	2681.15	Element			
Vel Head (ft)	0.17	Wt. n-Val.	0.064	0.044	0.064
W.S. Elev (ft)	2680.97	Reach Len. (ft)	296.25	298.60	295.36
Crit W.S. (ft)	2680.74	Flow Area (sq ft)	153.15	110.67	224.45
E.G. Slope (ft/ft)	0.016839	Area (sq ft)	153.15	110.67	224.45
Q Total (cfs)	1450.00	Flow (cfs)	383.23	499.14	567.63
Top Width (ft)	606.79	Top Width (ft)	202.33	105.88	298.59
Vel Total (ft/s)	2.97	Avg. Vel. (ft/s)	2.50	4.51	2.53
Max Chl Dpth (ft)	2.15	Hydr. Depth (ft)	0.76	1.05	0.75
Conv. Total (cfs)	11174.2	Conv. (cfs)	2953.3	3846.5	4374.4
Length Wtd. (ft)	296.46	Wetted Per. (ft)	202.33	106.00	298.63
Min Ch El (ft)	2678.82	Shear (lb/sq ft)	0.80	1.10	0.79
Alpha	1.27	Stream Power (lb/ft s)	1.99	4.95	2.00
Frctn Loss (ft)	5.55	Cum Volume (acre-ft)	6.42	33.45	19.92
C & E Loss (ft)	0.01	Cum SA (acres)	7.72	15.90	14.81

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 OUTPUT Profile #Method 1

			Left OB	Channel	Right OB
E.G. Elev (ft)	2682.63	Element			
Vel Head (ft)	0.91	Wt. n-Val.		0.044	
W.S. Elev (ft)	2681.72	Reach Len. (ft)	296.25	298.60	295.36
Crit W.S. (ft)	2681.72	Flow Area (sq ft)		189.90	
E.G. Slope (ft/ft)	0.024245	Area (sq ft)		189.90	
Q Total (cfs)	1450.00	Flow (cfs)		1450.00	
Top Width (ft)	105.88	Top Width (ft)		105.88	
Vel Total (ft/s)	7.64	Avg. Vel. (ft/s)		7.64	
Max Chl Dpth (ft)	2.90	Hydr. Depth (ft)		1.79	
Conv. Total (cfs)	9312.2	Conv. (cfs)		9312.2	
Length Wtd. (ft)	298.05	Wetted Per. (ft)		108.53	
Min Ch El (ft)	2678.82	Shear (lb/sq ft)		2.65	
Alpha	1.00	Stream Power (lb/ft s)		20.22	
Frctn Loss (ft)	5.56	Cum Volume (acre-ft)	1.43	38.09	6.74
C & E Loss (ft)	0.15	Cum SA (acres)	0.97	15.91	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.

CROSS SECTION

RIVER: Fan 6A
REACH: Fan 6AS-1 RS: 2.48

INPUT
Description: Topography and Aerial show wash and surrounding undeveloped desert.
T5NR5E Section 5
Q100 = 1,600 cfs
Station Elevation Data num= 19

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9826.55	2680	9842.17	2678	9874.89	2676	9906.24	2675	9937.58	2674
9938.51	2674	9979.87	2675.52	9994.72	2674	10004.14	2674	10067.19	2675
10130.23	2676	10165.27	2676	10220.37	2674	10296.03	2674	10311.38	2674
10381.25	2674	10396.36	2676	10410.76	2678	10427.92	2680		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9826.55	.064	9979.87	.044	10067.19	.064

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9979.87	10067.19	375.04	372.8	360.61	.1	.3

CROSS SECTION OUTPUT Profile #100-yr 6-hr

			Left OB	Channel	Right OB
E.G. Elev (ft)	2675.59	Element			
Vel Head (ft)	0.23	Wt. n-Val.	0.064	0.044	0.064
W.S. Elev (ft)	2675.36	Reach Len. (ft)	375.04	372.80	360.61
Crit W.S. (ft)	2675.08	Flow Area (sq ft)	55.15	75.79	254.58
E.G. Slope (ft/ft)	0.020983	Area (sq ft)	55.15	75.79	254.58
Q Total (cfs)	1442.00	Flow (cfs)	144.23	341.29	956.48
Top Width (ft)	397.09	Top Width (ft)	80.37	85.72	230.99
Vel Total (ft/s)	3.74	Avg. Vel. (ft/s)	2.62	4.50	3.76
Max Chl Dpth (ft)	1.36	Hydr. Depth (ft)	0.69	0.88	1.10
Conv. Total (cfs)	9954.7	Conv. (cfs)	995.7	2356.1	6603.0
Length Wtd. (ft)	365.12	Wetted Per. (ft)	80.41	85.80	231.11
Min Ch El (ft)	2674.00	Shear (lb/sq ft)	0.90	1.16	1.44
Alpha	1.06	Stream Power (lb/ft s)	2.35	5.21	5.42
Frctn Loss (ft)	5.62	Cum Volume (acre-ft)	5.72	32.81	18.29
C & E Loss (ft)	0.00	Cum SA (acres)	6.76	15.24	13.01

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 OUTPUT Profile #Method 1

			Left OB	Channel	Right OB
E.G. Elev (ft)	2676.70	Element			
Vel Head (ft)	0.41	Wt. n-Val.		0.044	0.064
W.S. Elev (ft)	2676.29	Reach Len. (ft)	375.04	372.80	360.61
Crit W.S. (ft)	2676.16	Flow Area (sq ft)		157.11	174.80
E.G. Slope (ft/ft)	0.014786	Area (sq ft)		157.11	174.80
Q Total (cfs)	1442.00	Flow (cfs)		948.25	493.75
Top Width (ft)	259.64	Top Width (ft)		87.32	172.32
Vel Total (ft/s)	4.34	Avg. Vel. (ft/s)		6.04	2.82
Max Chl Dpth (ft)	2.29	Hydr. Depth (ft)		1.80	1.01
Conv. Total (cfs)	11858.8	Conv. (cfs)		7798.3	4060.5
Length Wtd. (ft)	369.78	Wetted Per. (ft)		88.18	174.65
Min Ch El (ft)	2674.00	Shear (lb/sq ft)		1.64	0.92
Alpha	1.41	Stream Power (lb/ft s)		9.93	2.61
Frctn Loss (ft)	5.43	Cum Volume (acre-ft)	1.43	36.90	6.15
C & E Loss (ft)	0.03	Cum SA (acres)	0.97	15.25	3.28

Warning: The energy loss was 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: Fan 6A
REACH: Fan 6AS-1 RS: 2.41

INPUT
Description: Topography and Aerial show wash and surrounding undeveloped desert.
T5NR5E Section 5
Q100 = 1,600 cfs
Station Elevation Data num= 14

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9918.89	2676	9936.48	2674	9954.59	2672	9972.78	2670	9978.01	2669
9983.24	2668	10000	2667.3	10014.09	2668	10050.23	2669.13	10092.5	2668
10206.33	2668	10248.14	2670	10278.26	2672	10306.13	2674		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9918.89	.064	9978.01	.044	10050.23	.064

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9978.01	10050.23	362.92	358.26	356.54	.1	.3

CROSS SECTION OUTPUT Profile #100-yr 6-hr

			Left OB	Channel	Right OB
E.G. Elev (ft)	2669.97	Element			
Vel Head (ft)	0.24	Wt. n-Val.	0.064	0.044	0.064
W.S. Elev (ft)	2669.73	Reach Len. (ft)	362.92	358.26	356.54
Crit W.S. (ft)	2669.24	Flow Area (sq ft)	1.38	112.40	276.65
E.G. Slope (ft/ft)	0.011764	Area (sq ft)	1.38	112.40	276.65
Q Total (cfs)	1442.00	Flow (cfs)	1.74	552.21	888.04
Top Width (ft)	268.19	Top Width (ft)	3.80	72.22	192.18
Vel Total (ft/s)	3.69	Avg. Vel. (ft/s)	1.27	4.91	3.21
Max Chl Dpth (ft)	2.43	Hydr. Depth (ft)	0.36	1.56	1.44
Conv. Total (cfs)	13295.0	Conv. (cfs)	16.1	5091.3	8187.6
Length Wtd. (ft)	357.64	Wetted Per. (ft)	3.86	72.37	192.23
Min Ch El (ft)	2667.30	Shear (lb/sq ft)	0.26	1.14	1.06
Alpha	1.14	Stream Power (lb/ft s)	0.33	5.60	3.39
Frctn Loss (ft)	5.91	Cum Volume (acre-ft)	5.47	32.00	16.09
C & E Loss (ft)	0.01	Cum SA (acres)	6.40	14.57	11.26

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was 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 OUTPUT Profile #Method 1

			Left OB	Channel	Right OB
E.G. Elev (ft)	2671.25	Element			
Vel Head (ft)	0.71	Wt. n-Val.		0.044	0.064
W.S. Elev (ft)	2670.54	Reach Len. (ft)	362.92	358.26	356.54
Crit W.S. (ft)	2670.24	Flow Area (sq ft)		171.21	55.29
E.G. Slope (ft/ft)	0.014571	Area (sq ft)		171.21	55.29
Q Total (cfs)	1442.00	Flow (cfs)		1221.93	220.07
Top Width (ft)	102.65	Top Width (ft)		72.22	30.43
Vel Total (ft/s)	6.37	Avg. Vel. (ft/s)		7.14	3.98
Max Chl Dpth (ft)	3.24	Hydr. Depth (ft)		2.37	1.82
Conv. Total (cfs)	11945.8	Conv. (cfs)		10122.7	1823.1
Length Wtd. (ft)	357.75	Wetted Per. (ft)		73.91	32.66
Min Ch El (ft)	2667.30	Shear (lb/sq ft)		2.11	1.54
Alpha	1.12	Stream Power (lb/ft s)		15.04	6.13
Frctn Loss (ft)	5.95	Cum Volume (acre-ft)	1.43	35.49	5.20
C & E Loss (ft)	0.00	Cum SA (acres)	0.97	14.57	2.44

Warning: The energy loss was 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: Fan 6A
REACH: Fan 6AS-1 RS: 2.34

INPUT
Description: Topography and Aerial show wash and surrounding undeveloped desert.
T5NR5E Section 5
Q100 = 1,600 cfs
Station Elevation Data num= 14

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9884.68	2666	9896.49	2664	9909.6	2662	9913.28	2662	9974.83	2663.49
9991.12	2662	10000	2661.85	10007.01	2662	10026.08	2663.5	10050.09	2662
10081.81	2660.75	10102.27	2662	10147.47	2664	10179.98	2666		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9884.68	.064	9974.83	.044	10026.08	.064

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9974.83	10026.08	428.43	431.09	403.64	.1	.3

CROSS SECTION OUTPUT Profile #100-yr 6-hr

			Left OB	Channel	Right OB
E.G. Elev (ft)	2664.04	Element			
Vel Head (ft)	0.38	Wt. n-Val.	0.064	0.044	0.064
W.S. Elev (ft)	2663.66	Reach Len. (ft)	428.43	431.09	403.64
Crit W.S. (ft)	2663.44	Flow Area (sq ft)	71.71	60.00	172.60
E.G. Slope (ft/ft)	0.024942	Area (sq ft)	71.71	60.00	172.60
Q Total (cfs)	1442.00	Flow (cfs)	252.35	354.85	834.80
Top Width (ft)	241.16	Top Width (ft)	76.13	51.25	113.78
Vel Total (ft/s)	4.74	Avg. Vel. (ft/s)	3.52	5.91	4.84
Max Chl Dpth (ft)	2.91	Hydr. Depth (ft)	0.94	1.17	1.52
Conv. Total (cfs)	9130.6	Conv. (cfs)	1597.9	2246.9	5285.9
Length Wtd. (ft)	412.71	Wetted Per. (ft)	76.28	51.38	113.93
Min Ch El (ft)	2661.85	Shear (lb/sq ft)	1.46	1.82	2.36
Alpha	1.08	Stream Power (lb/ft s)	5.15	10.75	11.41
Frctn Loss (ft)	6.48	Cum Volume (acre-ft)	5.17	31.29	14.26
C & E Loss (ft)	0.06	Cum SA (acres)	6.06	14.06	10.01

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was 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 OUTPUT Profile #Method 1

			Left OB	Channel	Right OB
E.G. Elev (ft)	2665.30	Element			
Vel Head (ft)	0.71	Wt. n-Val.		0.044	0.064
W.S. Elev (ft)	2664.59	Reach Len. (ft)	428.43	431.09	403.64
Crit W.S. (ft)	2664.24	Flow Area (sq ft)		107.69	113.87
E.G. Slope (ft/ft)	0.019139	Area (sq ft)		107.69	113.87
Q Total (cfs)	1442.00	Flow (cfs)		812.48	629.52
Top Width (ft)	98.12	Top Width (ft)		51.25	46.87
Vel Total (ft/s)	6.51	Avg. Vel. (ft/s)		7.54	5.53
Max Chl Dpth (ft)	3.49	Hydr. Depth (ft)		2.10	2.43
Conv. Total (cfs)	10423.2	Conv. (cfs)		5872.8	4550.4
Length Wtd. (ft)	419.89	Wetted Per. (ft)		52.48	50.43
Min Ch El (ft)	2661.85	Shear (lb/sq ft)		2.45	2.70
Alpha	1.07	Stream Power (lb/ft s)		18.50	14.92
Frctn Loss (ft)	6.58	Cum Volume (acre-ft)	1.43	34.35	4.51

C & E Loss (ft)	0.06	Cum SA (acres)	0.97	14.06	2.12

Warning: The energy loss was 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: Fan 6A
REACH: Fan 6AS-1 RS: 2.26

INPUT
Description: Topography and Aerial show wash and surrounding undeveloped desert.
T5NR5E Section 8
Q100 = 1,600 cfs
Station Elevation Data num= 21

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9861.57	2662	9912.19	2660	9944.98	2658	9966.83	2657	9988.67	2656
10000	2654.74	10017.2	2656	10030.25	2656.7	10050.04	2656	10069.06	2656
10078.62	2656	10098.99	2656	10117.37	2656.6	310166.52	2656	10224.14	2654
10228.95	2654	10240.66	2656	10283.13	2658	10323.75	2660	10338.25	2662
10356.24	2664								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9861.57	.064	9966.83	.044	10030.25	.064

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9966.83	10030.25	498.01	502.98	520.98	.1	.3

CROSS SECTION OUTPUT Profile #100-yr 6-hr

E.G. Elev (ft)	2657.50	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.18	Wt. n-Val.	0.064	0.044	0.064
W.S. Elev (ft)	2657.32	Reach Len. (ft)	498.01	502.98	520.98
Crit W.S. (ft)		Flow Area (sq ft)	1.11	86.10	346.61
E.G. Slope (ft/ft)	0.010783	Area (sq ft)	1.11	86.10	346.61
Q Total (cfs)	1442.00	Flow (cfs)	0.78	369.57	1071.65
Top Width (ft)	308.78	Top Width (ft)	6.96	63.42	238.41
Vel Total (ft/s)	3.32	Avg. Vel. (ft/s)	0.71	4.29	3.09
Max Chl Dpth (ft)	3.32	Hydr. Depth (ft)	0.16	1.36	1.45
Conv. Total (cfs)	13886.6	Conv. (cfs)	7.5	3559.0	10320.1
Length Wtd. (ft)	509.64	Wetted Per. (ft)	6.96	63.58	238.67
Min Ch El (ft)	2654.74	Shear (lb/sq ft)	0.11	0.91	0.98
Alpha	1.07	Stream Power (lb/ft s)	0.08	3.91	3.02
Frctn Loss (ft)	7.61	Cum Volume (acre-ft)	4.81	30.57	11.85
C & E Loss (ft)	0.07	Cum SA (acres)	5.65	13.49	8.38

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 for additional cross sections.

CROSS SECTION OUTPUT Profile #Method 1

E.G. Elev (ft)	2658.66	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.50	Wt. n-Val.		0.044	0.064
W.S. Elev (ft)	2658.16	Reach Len. (ft)	498.01	502.98	520.98
Crit W.S. (ft)	2657.69	Flow Area (sq ft)		139.19	130.70
E.G. Slope (ft/ft)	0.013065	Area (sq ft)		139.19	130.70
Q Total (cfs)	1442.00	Flow (cfs)		895.09	546.91
Top Width (ft)	127.27	Top Width (ft)		63.42	63.85
Vel Total (ft/s)	5.34	Avg. Vel. (ft/s)		6.43	4.18
Max Chl Dpth (ft)	3.42	Hydr. Depth (ft)		2.19	2.05

Conv. Total (cfs)	12615.4	Conv. (cfs)		7830.8	4784.7
Length Wtd. (ft)	506.39	Wetted Per. (ft)		64.73	66.02
Min Ch El (ft)	2654.74	Shear (lb/sq ft)		1.75	1.61
Alpha	1.13	Stream Power (lb/ft s)		11.28	6.76
Frctn Loss (ft)	8.73	Cum Volume (acre-ft)	1.43	33.13	3.37
C & E Loss (ft)	0.04	Cum SA (acres)	0.97	13.49	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.

CROSS SECTION

RIVER: Fan 6A
REACH: Fan 6AS-1 RS: 2.17

INPUT
Description: Topography and Aerial show wash and surrounding undeveloped desert.
T5NR5E Section 8
Q100 = 1,600 cfs
Station Elevation Data num= 10

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9829.63	2652	9861.91	2650	9913.97	2648	9955.65	2646.61	9986.62	2647.76
10000	2646.13	10018.94	2648	10024.54	2650	10030.43	2652	10052.71	2654

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9829.63	.064	9913.97	.044	10018.94	.064

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9913.97	10018.94	209.36	209.75	204.3	.1	.3

CROSS SECTION OUTPUT Profile #100-yr 6-hr

			Left OB	Channel	Right OB
E.G. Elev (ft)	2649.83	Element			
Vel Head (ft)	0.84	Wt. n-Val.	0.064	0.044	0.064
W.S. Elev (ft)	2648.99	Reach Len. (ft)	209.36	209.75	204.30
Crit W.S. (ft)	2648.99	Flow Area (sq ft)	12.76	189.98	1.37
E.G. Slope (ft/ft)	0.022017	Area (sq ft)	12.76	189.98	1.37
Q Total (cfs)	1442.00	Flow (cfs)	27.50	1411.65	2.84
Top Width (ft)	133.52	Top Width (ft)	25.78	104.97	2.77
Vel Total (ft/s)	7.06	Avg. Vel. (ft/s)	2.16	7.43	2.07
Max Chl Dpth (ft)	2.86	Hydr. Depth (ft)	0.50	1.81	0.50
Conv. Total (cfs)	9718.2	Conv. (cfs)	185.3	9513.7	19.2
Length Wtd. (ft)	209.71	Wetted Per. (ft)	25.79	105.21	2.94
Min Ch El (ft)	2646.13	Shear (lb/sq ft)	0.68	2.48	0.64
Alpha	1.08	Stream Power (lb/ft s)	1.47	18.44	1.33
Frctn Loss (ft)	3.25	Cum Volume (acre-ft)	4.73	28.98	9.77
C & E Loss (ft)	0.10	Cum SA (acres)	5.47	12.52	6.94

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.

CROSS SECTION OUTPUT Profile #Method 1

			Left OB	Channel	Right OB
E.G. Elev (ft)	2649.89	Element			
Vel Head (ft)	0.91	Wt. n-Val.		0.044	0.064
W.S. Elev (ft)	2648.98	Reach Len. (ft)	209.36	209.75	204.30

Crit W.S. (ft)	2648.98	Flow Area (sq ft)		188.70	0.03
E.G. Slope (ft/ft)	0.023789	Area (sq ft)		188.70	0.03
Q Total (cfs)	1442.00	Flow (cfs)		1441.99	0.01
Top Width (ft)	105.00	Top Width (ft)		104.97	0.03
Vel Total (ft/s)	7.64	Avg. Vel. (ft/s)		7.64	0.33
Max Chl Dpth (ft)	2.85	Hydr. Depth (ft)		1.80	0.97
Conv. Total (cfs)	9349.2	Conv. (cfs)		9349.1	0.1
Length Wtd. (ft)	209.75	Wetted Per. (ft)		106.18	1.00
Min Ch El (ft)	2646.13	Shear (lb/sq ft)		2.64	0.04
Alpha	1.00	Stream Power (lb/ft s)		20.17	0.01
Frctn Loss (ft)	2.63	Cum Volume (acre-ft)	1.43	31.23	2.59
C & E Loss (ft)	0.15	Cum SA (acres)	0.97	12.52	1.23

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 conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
depth, the 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: Fan 6A
REACH: Fan 6AS-1 RS: 2.13

INPUT
Description: Topography and Aerial show wash and surrounding undeveloped desert.
T5NR5E Section 8
Q100 = 1,600 cfs
Station Elevation Data num= 15

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9860.26	2650	9910.99	2648	9954.89	2646	9971.2	2646	9974.47	2646
9976.79	2645	9979.1	2644	10000	2642.92	10025.03	2644	10045.82	2644
10076.93	2644	10101.04	2645	10125.15	2646	10148.05	2648	10182.62	2650

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9860.26	.064	9976.79	.044	10101.04	.064

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9976.79	10101.04	325.79	317.77	277.94	.1	.3

CROSS SECTION OUTPUT Profile #100-yr 6-hr

			Left OB	Channel	Right OB
E.G. Elev (ft)	2646.41	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.51	Wt. n-Val.	0.064	0.044	0.064
W.S. Elev (ft)	2645.91	Reach Len. (ft)	325.79	317.77	277.94
Crit W.S. (ft)	2645.53	Flow Area (sq ft)	0.95	248.39	9.89
E.G. Slope (ft/ft)	0.011513	Area (sq ft)	0.95	248.39	9.89
Q Total (cfs)	1442.00	Flow (cfs)	1.32	1426.16	14.52
Top Width (ft)	148.19	Top Width (ft)	2.10	124.25	21.84
Vel Total (ft/s)	5.56	Avg. Vel. (ft/s)	1.39	5.74	1.47
Max Chl Dpth (ft)	2.99	Hydr. Depth (ft)	0.45	2.00	0.45
Conv. Total (cfs)	13439.1	Conv. (cfs)	12.3	13291.4	135.3
Length Wtd. (ft)	316.08	Wetted Per. (ft)	2.29	124.53	21.86
Min Ch El (ft)	2642.92	Shear (lb/sq ft)	0.30	1.43	0.33
Alpha	1.05	Stream Power (lb/ft s)	0.41	8.23	0.48
Frctn Loss (ft)	4.28	Cum Volume (acre-ft)	4.70	27.92	9.74
C & E Loss (ft)	0.03	Cum SA (acres)	5.40	11.97	6.88

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 OUTPUT Profile #Method 1

E.G. Elev (ft)	2646.59	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.40	Wt. n-Val.		0.044	
W.S. Elev (ft)	2646.19	Reach Len. (ft)	325.79	317.77	277.94
Crit W.S. (ft)		Flow Area (sq ft)		283.91	
E.G. Slope (ft/ft)	0.007732	Area (sq ft)		283.91	
Q Total (cfs)	1442.00	Flow (cfs)		1442.00	
Top Width (ft)	124.25	Top Width (ft)		124.25	
Vel Total (ft/s)	5.08	Avg. Vel. (ft/s)		5.08	
Max Chl Dpth (ft)	3.27	Hydr. Depth (ft)		2.28	
Conv. Total (cfs)	16399.6	Conv. (cfs)		16399.6	
Length Wtd. (ft)	317.77	Wetted Per. (ft)		126.91	
Min Ch El (ft)	2642.92	Shear (lb/sq ft)		1.08	
Alpha	1.00	Stream Power (lb/ft s)		5.48	
Frctn Loss (ft)	3.91	Cum Volume (acre-ft)	1.43	30.09	2.59
C & E Loss (ft)	0.09	Cum SA (acres)	0.97	11.97	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 conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was 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: Fan 6A
REACH: Fan 6AS-1 RS: 2.07

INPUT
Description: Cross Section 2.07 is located upstream of concentration point CF6AS2 in the HEC-1 Model.

Topography and Aerial show wash and surrounding undeveloped desert.
T5NR5E Section 8
Q100 = 1,600 cfs
Station Elevation Data num= 16

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9758.29	2646	9795.9	2644	9827.32	2644	9873.94	2644	9907.52	2642
9943.47	2641	9979.41	2640	9985.15	2639.492	10000	2638.181	10049.32	2639.496
10068.22	2640	10081.56	2641	10094.9	2642	10120.89	2644	10146.84	2646
10156.41	2646								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9758.29	.064	9985.15	.044	10049.32	.064

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9985.15	10049.32	192.22	219.26	221.37	.1	.3

CROSS SECTION OUTPUT Profile #100-yr 6-hr

E.G. Elev (ft)	2642.10	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.82	Wt. n-Val.	0.064	0.044	0.064
W.S. Elev (ft)	2641.28	Reach Len. (ft)	192.22	219.26	221.37
Crit W.S. (ft)	2641.24	Flow Area (sq ft)	38.45	156.99	40.02
E.G. Slope (ft/ft)	0.016157	Area (sq ft)	38.45	156.99	40.02
Q Total (cfs)	1442.00	Flow (cfs)	92.88	1222.55	126.57
Top Width (ft)	152.09	Top Width (ft)	51.89	64.17	36.03
Vel Total (ft/s)	6.12	Avg. Vel. (ft/s)	2.42	7.79	3.16
Max Chl Dpth (ft)	3.10	Hydr. Depth (ft)	0.74	2.45	1.11

Conv. Total (cfs)	11344.3	Conv. (cfs)	730.7	9617.9	995.7
Length Wtd. (ft)	218.59	Wetted Per. (ft)	51.93	64.25	36.08
Min Ch El (ft)	2638.18	Shear (lb/sq ft)	0.75	2.46	1.12
Alpha	1.40	Stream Power (lb/ft s)	1.80	19.20	3.54
Frctn Loss (ft)	3.89	Cum Volume (acre-ft)	4.55	26.44	9.58
C & E Loss (ft)	0.07	Cum SA (acres)	5.20	11.28	6.69

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 OUTPUT Profile #Method 1

E.G. Elev (ft)	2642.59	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.26	Wt. n-Val.		0.044	
W.S. Elev (ft)	2641.34	Reach Len. (ft)	192.22	219.26	221.37
Crit W.S. (ft)	2641.34	Flow Area (sq ft)		160.24	
E.G. Slope (ft/ft)	0.022610	Area (sq ft)		160.24	
Q Total (cfs)	1442.00	Flow (cfs)		1442.00	
Top Width (ft)	64.17	Top Width (ft)		64.17	
Vel Total (ft/s)	9.00	Avg. Vel. (ft/s)		9.00	
Max Chl Dpth (ft)	3.15	Hydr. Depth (ft)		2.50	
Conv. Total (cfs)	9590.0	Conv. (cfs)		9590.0	
Length Wtd. (ft)	219.26	Wetted Per. (ft)		67.93	
Min Ch El (ft)	2638.18	Shear (lb/sq ft)		3.33	
Alpha	1.00	Stream Power (lb/ft s)		29.96	
Frctn Loss (ft)	3.56	Cum Volume (acre-ft)	1.43	28.47	2.59
C & E Loss (ft)	0.22	Cum SA (acres)	0.97	11.28	1.23

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.

CROSS SECTION

RIVER: Fan 6A
REACH: Fan 6AS-1 RS: 2.03

INPUT
Description: Topography and Aerial show wash and surrounding undeveloped
desert.
T5NR5E Section 8
Q100 = 1,642 cfs
Station Elevation Data num= 18

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9744.04	2642	9777.12	2640	9842.55	2638	9880.49	2638	9894.5	2638
9910.42	2637	9926.34	2636	9950.62	2636	9965.59	2636.4	9980.68	2636
10000	2634.9	10022.81	2636	10044.03	2637.1	110058.15	2636	10071.83	2636
10084.3	2637	10096.77	2638	10129.54	2640				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9744.04	.064	9910.42	.044	10044.03	.064

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9910.42	10044.03	348.85	320.13	304.39	.1	.3

CROSS SECTION OUTPUT Profile #100-yr 6-hr

E.G. Elev (ft)	2638.14	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.57	Wt. n-Val.	0.064	0.044	0.064
W.S. Elev (ft)	2637.57	Reach Len. (ft)	348.85	320.13	304.39
Crit W.S. (ft)	2637.46	Flow Area (sq ft)	2.60	207.40	51.25
E.G. Slope (ft/ft)	0.019610	Area (sq ft)	2.60	207.40	51.25
Q Total (cfs)	1493.00	Flow (cfs)	3.66	1314.06	175.28
Top Width (ft)	190.11	Top Width (ft)	9.10	133.61	47.40
Vel Total (ft/s)	5.71	Avg. Vel. (ft/s)	1.41	6.34	3.42
Max Chl Dpth (ft)	2.67	Hydr. Depth (ft)	0.29	1.55	1.08
Conv. Total (cfs)	10661.5	Conv. (cfs)	26.2	9383.7	1251.6
Length Wtd. (ft)	317.99	Wetted Per. (ft)	9.12	133.74	47.50
Min Ch El (ft)	2634.90	Shear (lb/sq ft)	0.35	1.90	1.32
Alpha	1.12	Stream Power (lb/ft s)	0.49	12.03	4.52
Frctn Loss (ft)	4.26	Cum Volume (acre-ft)	4.46	25.52	9.35
C & E Loss (ft)	0.01	Cum SA (acres)	5.06	10.78	6.48

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.

CROSS SECTION OUTPUT Profile #Method 1

E.G. Elev (ft)	2638.47	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.52	Wt. n-Val.		0.044	
W.S. Elev (ft)	2637.96	Reach Len. (ft)	348.85	320.13	304.39
Crit W.S. (ft)		Flow Area (sq ft)		258.74	
E.G. Slope (ft/ft)	0.012329	Area (sq ft)		258.74	
Q Total (cfs)	1493.00	Flow (cfs)		1493.00	
Top Width (ft)	133.61	Top Width (ft)		133.61	
Vel Total (ft/s)	5.77	Avg. Vel. (ft/s)		5.77	
Max Chl Dpth (ft)	3.06	Hydr. Depth (ft)		1.94	
Conv. Total (cfs)	13446.4	Conv. (cfs)		13446.4	
Length Wtd. (ft)	319.76	Wetted Per. (ft)		135.54	
Min Ch El (ft)	2634.90	Shear (lb/sq ft)		1.47	
Alpha	1.00	Stream Power (lb/ft s)		8.48	
Frctn Loss (ft)	4.22	Cum Volume (acre-ft)	1.43	27.42	2.59
C & E Loss (ft)	0.06	Cum SA (acres)	0.97	10.78	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: Fan 6A
REACH: Fan 6AS-1 RS: 1.97

INPUT
Description: Cross Section 1.97 is located upstream of the east boundary of Legend Trail.

Topography and Aerial show wash and surrounding undeveloped desert.
T5NR5E Section 8
Q100 = 1,642 cfs
Station Elevation Data num= 18

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9933.9	2640	9947.59	2638	9960.37	2636	9966.29	2634	9972.22	2632
9973	2631.741	9978.25	2630	10000.14	2630	10038.55	2631.74	10044.18	2632
10103.1	2632.92	10155.65	2632	10168.6	2632	10246.3	2634	10279.1	2636
10313.56	2638	10344.5	2640	10385.28	2642				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9933.9	.063	9973	.038	10038.55	.063

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
997	310038.55	506.74	496.23	496.16	.1	.3

CROSS SECTION OUTPUT Profile #100-yr 6-hr

E.G. Elev (ft)	2633.87	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.69	Wt. n-Val.	0.063	0.038	0.063
W.S. Elev (ft)	2633.18	Reach Len. (ft)	506.74	496.23	496.16
Crit W.S. (ft)	2633.18	Flow Area (sq ft)	3.10	170.54	130.37
E.G. Slope (ft/ft)	0.009714	Area (sq ft)	3.10	170.54	130.37
Q Total (cfs)	1493.00	Flow (cfs)	5.59	1239.31	248.10
Top Width (ft)	245.82	Top Width (ft)	4.29	65.55	175.99
Vel Total (ft/s)	4.91	Avg. Vel. (ft/s)	1.81	7.27	1.90
Max Chl Dpth (ft)	3.18	Hydr. Depth (ft)	0.72	2.60	0.74
Conv. Total (cfs)	15147.9	Conv. (cfs)	56.7	12573.9	2517.2
Length Wtd. (ft)	497.64	Wetted Per. (ft)	4.52	65.87	176.02
Min Ch El (ft)	2630.00	Shear (lb/sq ft)	0.42	1.57	0.45
Alpha	1.84	Stream Power (lb/ft s)	0.75	11.41	0.85
Frctn Loss (ft)	5.17	Cum Volume (acre-ft)	4.44	24.14	8.72
C & E Loss (ft)	0.02	Cum SA (acres)	5.01	10.05	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 energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
depth, the 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 OUTPUT Profile #Method 1

E.G. Elev (ft)	2634.19	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.09	Wt. n-Val.	0.063	0.038	0.063
W.S. Elev (ft)	2633.10	Reach Len. (ft)	506.74	496.23	496.16
Crit W.S. (ft)	2633.10	Flow Area (sq ft)	0.96	165.15	26.44
E.G. Slope (ft/ft)	0.014167	Area (sq ft)	0.96	165.15	26.44
Q Total (cfs)	1493.00	Flow (cfs)	1.69	1418.55	72.76
Top Width (ft)	92.78	Top Width (ft)	0.78	65.55	26.45
Vel Total (ft/s)	7.75	Avg. Vel. (ft/s)	1.77	8.59	2.75
Max Chl Dpth (ft)	3.10	Hydr. Depth (ft)	1.23	2.52	1.00
Conv. Total (cfs)	12543.7	Conv. (cfs)	14.2	11918.2	611.3
Length Wtd. (ft)	497.92	Wetted Per. (ft)	1.92	65.87	27.23
Min Ch El (ft)	2630.00	Shear (lb/sq ft)	0.44	2.22	0.86
Alpha	1.17	Stream Power (lb/ft s)	0.78	19.05	2.36
Frctn Loss (ft)	6.14	Cum Volume (acre-ft)	1.42	25.86	2.50
C & E Loss (ft)	0.02	Cum SA (acres)	0.96	10.05	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 energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
depth, the 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: Fan 6A
REACH: Fan 6AS-1 RS: 1.87

INPUT
Description: Cross Section 1.87 is located within Legend Trail.

Topography
indicates wash and surrounding undeveloped desert.
Aerial shows
wash, undeveloped desert, and house pads.
T5NR5E Section 8
Q100
= 1,642 cfs

Station Elevation Data num= 19

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9754	2630	9781.3	2628	9806.89	2626	9835.57	2624	9905.2	2624
9977.55	2624.88	9987.59	2624	9992.32	2622	10000	2621.31	10008.89	2622
10014.25	2624	10039.85	2624	10044.8	2622	10052	2622	10068.9	2624
10084.01	2626	10100.68	2628	10115.32	2630	10130.07	2632		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9754	.063	9987.59	.038	10014.25	.063

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9987.59	10014.25	134.91	142.05	153.34	.1	.3

CROSS SECTION OUTPUT Profile #100-yr 6-hr

			Left OB	Channel	Right OB
E.G. Elev (ft)	2625.86	Element			
Vel Head (ft)	0.61	Wt. n-Val.	0.063	0.038	0.063
W.S. Elev (ft)	2625.24	Reach Len. (ft)	134.91	142.05	153.34
Crit W.S. (ft)	2625.24	Flow Area (sq ft)	163.82	82.17	110.03
E.G. Slope (ft/ft)	0.011151	Area (sq ft)	163.82	82.17	110.03
Q Total (cfs)	1493.00	Flow (cfs)	398.16	704.13	390.71
Top Width (ft)	260.55	Top Width (ft)	169.85	26.66	64.04
Vel Total (ft/s)	4.19	Avg. Vel. (ft/s)	2.43	8.57	3.55
Max Chl Dpth (ft)	3.94	Hydr. Depth (ft)	0.96	3.08	1.72
Conv. Total (cfs)	14138.8	Conv. (cfs)	3770.6	6668.2	3700.0
Length Wtd. (ft)	142.00	Wetted Per. (ft)	169.93	27.49	64.63
Min Ch El (ft)	2621.30	Shear (lb/sq ft)	0.67	2.08	1.19
Alpha	2.25	Stream Power (lb/ft s)	1.63	17.83	4.21
Frctn Loss (ft)	1.27	Cum Volume (acre-ft)	3.47	22.70	7.35
C & E Loss (ft)	0.02	Cum SA (acres)	4.00	9.52	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.

CROSS SECTION OUTPUT Profile #Method 1

			Left OB	Channel	Right OB
E.G. Elev (ft)	2627.16	Element			
Vel Head (ft)	1.02	Wt. n-Val.	0.063	0.038	
W.S. Elev (ft)	2626.15	Reach Len. (ft)	134.91	142.05	153.34
Crit W.S. (ft)	2626.15	Flow Area (sq ft)	139.55	106.27	
E.G. Slope (ft/ft)	0.010824	Area (sq ft)	139.55	106.27	
Q Total (cfs)	1493.00	Flow (cfs)	480.11	1012.89	
Top Width (ft)	108.54	Top Width (ft)	81.88	26.66	
Vel Total (ft/s)	6.07	Avg. Vel. (ft/s)	3.44	9.53	
Max Chl Dpth (ft)	4.85	Hydr. Depth (ft)	1.70	3.99	
Conv. Total (cfs)	14350.2	Conv. (cfs)	4614.7	9735.5	
Length Wtd. (ft)	140.74	Wetted Per. (ft)	84.06	29.63	
Min Ch El (ft)	2621.30	Shear (lb/sq ft)	1.12	2.42	
Alpha	1.77	Stream Power (lb/ft s)	3.86	23.10	
Frctn Loss (ft)	1.47	Cum Volume (acre-ft)	0.61	24.32	2.35
C & E Loss (ft)	0.02	Cum SA (acres)	0.48	9.52	0.99

Warning: The energy equation could not be 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: Fan 6A
REACH: Fan 6AS-1 RS: 1.85

INPUT
Description: Cross Section 1.85 is located within Legend Trail.

Topography
indicates wash and surrounding undeveloped desert.
Aerial shows
wash, undeveloped desert, and house pads.
T5NR5E Section 8
Q100
= 1,642 cfs

Station Elevation Data num= 11

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9753.97	2626	9773.39	2624	9841.03	2622.14	9931.35	2622.4	9976.83	2622
9981.84	2620	10000	2619	10021.15	2620	10026.03	2622	10030.8	2624
10114.68	2626								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9753.97	.065	9981.84	.038	10021.15	.063

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9981.84	10021.15	528.75	388.47	367.39	.3	.5

CROSS SECTION OUTPUT Profile #100-yr 6-hr

E.G. Elev (ft)	2623.99	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.79	Wt. n-Val.	0.065	0.038	0.063
W.S. Elev (ft)	2623.20	Reach Len. (ft)	528.75	388.47	367.39
Crit W.S. (ft)	2623.20	Flow Area (sq ft)	160.85	145.43	12.45
E.G. Slope (ft/ft)	0.007373	Area (sq ft)	160.85	145.43	12.45
Q Total (cfs)	1493.00	Flow (cfs)	293.20	1166.97	32.83
Top Width (ft)	226.39	Top Width (ft)	179.34	39.31	7.74
Vel Total (ft/s)	4.68	Avg. Vel. (ft/s)	1.82	8.02	2.64
Max Chl Dpth (ft)	4.20	Hydr. Depth (ft)	0.90	3.70	1.61
Conv. Total (cfs)	17387.7	Conv. (cfs)	3414.6	13590.7	382.4
Length Wtd. (ft)	401.98	Wetted Per. (ft)	179.74	39.36	8.38
Min Ch El (ft)	2619.00	Shear (lb/sq ft)	0.41	1.70	0.68
Alpha	2.33	Stream Power (lb/ft s)	0.75	13.65	1.80
Frctn Loss (ft)	1.04	Cum Volume (acre-ft)	2.96	22.32	7.13
C & E Loss (ft)	0.26	Cum SA (acres)	3.46	9.42	4.21

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

This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
depth, the 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 OUTPUT Profile #Method 1

			Left OB	Channel	Right OB
E.G. Elev (ft)	2624.37	Element			
Vel Head (ft)	1.21	Wt. n-Val.	0.065	0.038	0.063
W.S. Elev (ft)	2623.15	Reach Len. (ft)	528.75	388.47	367.39
Crit W.S. (ft)	2623.15	Flow Area (sq ft)	51.30	143.59	10.50
E.G. Slope (ft/ft)	0.010075	Area (sq ft)	51.30	143.59	10.50
Q Total (cfs)	1493.00	Flow (cfs)	123.04	1335.46	34.51
Top Width (ft)	91.03	Top Width (ft)	46.84	39.31	4.88
Vel Total (ft/s)	7.27	Avg. Vel. (ft/s)	2.40	9.30	3.29
Max Chl Dpth (ft)	4.15	Hydr. Depth (ft)	1.10	3.65	2.15
Conv. Total (cfs)	14874.5	Conv. (cfs)	1225.8	13304.9	343.8
Length Wtd. (ft)	394.01	Wetted Per. (ft)	48.01	39.36	6.43
Min Ch El (ft)	2619.00	Shear (lb/sq ft)	0.67	2.29	1.03
Alpha	1.48	Stream Power (lb/ft s)	1.61	21.34	3.38
Frctn Loss (ft)	1.22	Cum Volume (acre-ft)	0.31	23.91	2.33
C & E Loss (ft)	0.47	Cum SA (acres)	0.28	9.42	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 conveyance ratio (upstream conveyance divided 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: Fan 6A
REACH: Fan 6AS-1 RS: 1.78

INPUT
Description: Cross Section 1.78 is located within Legend Trail. It is located upstream of the intersection of Fan 6A South and 99th Way. There are 4-10 X 4 concrete box culverts located under 99th Way. Blocked obstruction indicates finish floor of existing home.

Topography indicates wash and surrounding undeveloped desert.
Aerial shows wash, undeveloped desert, and house pads.
T5NR5E Section 8
Q100 = 1,642 cfs
Station Elevation Data num= 16

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9888.77	2624	9919.5	2622	9938.51	2620	9943.68	2618	9948.86	2616
9954.08	2614	9959.42	2612	9984.5	2612	9989.57	2612	10000	2610.5
10013.58	2612	10020.4	2614	10075.92	2616	10178.77	2618	10211	2620
10236.9	2622								

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Manning's n Values          num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
 9888.77    .063 9954.08    .038 10020.4    .063

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9954.08 10020.4            69.36   75.57   77.87             .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
 9888.77 9954.08 2617.67       F
10021.13 10236.9 2617.67       F
Blocked Obstructions     num=       1
   Sta L   Sta R    Elev
10149.88 10236.9  2621.8
```

CROSS SECTION OUTPUT Profile #100-yr 6-hr

E.G. Elev (ft)	2617.47	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.28	Wt. n-Val.		0.038	0.063
W.S. Elev (ft)	2617.19	Reach Len. (ft)	69.36	75.57	77.87
Crit W.S. (ft)	2614.43	Flow Area (sq ft)		350.24	2.32
E.G. Slope (ft/ft)	0.001307	Area (sq ft)	13.29	350.24	158.33
Q Total (cfs)	1493.00	Flow (cfs)		1488.73	4.27
Top Width (ft)	191.49	Top Width (ft)	8.31	66.32	116.86
Vel Total (ft/s)	4.23	Avg. Vel. (ft/s)		4.25	1.84
Max Chl Dpth (ft)	6.69	Hydr. Depth (ft)		5.28	3.18
Conv. Total (cfs)	41304.2	Conv. (cfs)		41185.9	118.2
Length Wtd. (ft)	75.57	Wetted Per. (ft)		67.16	0.73
Min Ch El (ft)	2610.50	Shear (lb/sq ft)		0.43	0.26
Alpha	1.01	Stream Power (lb/ft s)		1.81	0.48
Frctn Loss (ft)		Cum Volume (acre-ft)	1.91	20.11	6.41
C & E Loss (ft)		Cum SA (acres)	2.32	8.95	3.68

Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid,
energy was used.

CROSS SECTION OUTPUT Profile #Method 1

E.G. Elev (ft)	2617.47	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.28	Wt. n-Val.		0.038	
W.S. Elev (ft)	2617.19	Reach Len. (ft)	69.36	75.57	77.87
Crit W.S. (ft)	2614.43	Flow Area (sq ft)		350.03	
E.G. Slope (ft/ft)	0.001486	Area (sq ft)		350.03	
Q Total (cfs)	1493.00	Flow (cfs)		1493.00	
Top Width (ft)	66.32	Top Width (ft)		66.32	
Vel Total (ft/s)	4.27	Avg. Vel. (ft/s)		4.27	
Max Chl Dpth (ft)	6.69	Hydr. Depth (ft)		5.28	
Conv. Total (cfs)	38729.4	Conv. (cfs)		38729.4	
Length Wtd. (ft)	75.57	Wetted Per. (ft)		73.54	
Min Ch El (ft)	2610.50	Shear (lb/sq ft)		0.44	
Alpha	1.00	Stream Power (lb/ft s)		1.88	
Frctn Loss (ft)		Cum Volume (acre-ft)		21.71	2.29
C & E Loss (ft)		Cum SA (acres)		8.95	0.96

Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid,
energy was used.

CULVERT

RIVER: Fan 6A
REACH: Fan 6AS-1 RS: 1.77

INPUT
Description: Box culvets at 99th Way crossing.
Distance from Upstream XS = 10
Deck/Roadway Width = 60
Weir Coefficient = 2.6

```
Upstream  Deck/Roadway Coordinates
    num=       10
     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord
 9858.88 2617.17         9895.88 2617.49         9905.98 2617.56
  9985.7 2618.24        10047.23 2617.93        10095.23 2617.69
10103.47 2617.67        10125.23 2617.81        10155.23 2618.36
10316.59 2622.78

Upstream Bridge Cross Section Data
Station Elevation Data    num=      16
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
 9888.77    2624  9919.5    2622 9938.51    2620 9943.68    2618 9948.86    2616
 9954.08    2614 9959.42    2612  9984.5    2612 9989.57    2612   10000  2610.5
10013.58    2612 10020.4    261410075.92    261610178.77    2618   10211    2620
 10236.9    2622

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
 9888.77    .063 9954.08    .038 10020.4    .063

Bank Sta: Left   Right    Coeff Contr.   Expan.
       9954.08 10020.4             .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
 9888.77 9954.08 2617.67       F
10021.13 10236.9 2617.67       F
Blocked Obstructions     num=       1
   Sta L   Sta R    Elev
10149.88 10236.9  2621.8

Downstream  Deck/Roadway Coordinates
    num=       10
     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord
 9931.34 2617.17         9968.37 2617.49         9978.47 2617.56
10058.19 2618.24        10119.72 2617.93        10167.72 2617.69
10175.96 2617.67        10197.72 2617.81        10227.72 2618.36
10389.08 2622.78

Downstream Bridge Cross Section Data
Station Elevation Data    num=      17
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
 9753.82    2610 9781.67    2612  9805.8    2614 9850.21    2616 9924.78    2618
 9960.63    2616 9965.77    2614 9971.01    2612 9976.37    261010014.07    2610
10018.78    261210029.15    261410074.07    261410104.76    2614 10157.2    2616
10180.46    261810218.72    2618

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
 9753.82    .063 9971.01    .03810018.78    .063

Bank Sta: Left   Right    Coeff Contr.   Expan.
       9971.0110018.78             .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
 9753.82 9969.29 2617.67       F
10023.1910218.72 2617.67       F
Left Levee      Station= 9924.78      Elevation=    2618

Upstream Embankment side slope              =       0 horiz. to 1.0 vertical
Downstream Embankment side slope            =       0 horiz. to 1.0 vertical
Maximum allowable submergence for weir flow =     .95
Elevation at which weir flow begins         =
Energy head used in spillway design         =
Spillway height used in design              =
Weir crest shape                            = Broad Crested

Number of Culverts =  1

Culvert Name     Shape      Rise    Span
CULVERT#1          Box       4      10
FHWA Chart # 8 - flared wingwalls
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FHWA Scale # 1 - Wingwall flared 30 to 75 deg.
Solution Criteria = Highest U.S. EG
Culvert Upstrm Dist  Length    Top n  Bottom n  Depth Blocked  Entrance Loss Coef   Exit Loss Coef
                 10      60     .015     .015        0                  .4                 1
Number of Barrels =  4
Upstream   Elevation =  2611.04
Centerline Stations
    Sta.    Sta.    Sta.    Sta.
 9973.38 9984.29 9995.2110006.13
Downstream Elevation =  2610.44
Centerline Stations
    Sta.    Sta.    Sta.    Sta.
 9979.86 9990.78 10001.710012.62

CROSS SECTION


RIVER: Fan 6A
REACH: Fan 6AS-1          RS: 1.76

INPUT
Description: Cross Section 1.76 is located within Legend Trail.  It is located
             downstream of the intersection of Fan 6A South and 99th Way.
             There are 4-10 X 4 concrete box culverts located under 99th
             Way.

Topography indicates wash and surrounding undeveloped
             desert.
Aerial shows wash, undeveloped desert, and house
             pads.
T5NR5E Section 8
Q100 = 1,642 cfs
Station Elevation Data    num=      17
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
 9753.82    2610 9781.67    2612  9805.8    2614 9850.21    2616 9924.78    2618
 9960.63    2616 9965.77    2614 9971.01    2612 9976.37    261010014.07    2610
10018.78    261210029.15    261410074.07    261410104.76    2614 10157.2    2616
10180.46    261810218.72    2618

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
 9753.82    .063 9971.01    .03810018.78    .063

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9971.0110018.78           290.16  301.99  312.61            .3        .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
 9753.82 9969.29 2617.67       F
10023.1910218.72 2617.67       F
Left Levee      Station= 9924.78      Elevation=    2618

CROSS SECTION OUTPUT  Profile #100-yr 6-hr

  E.G. Elev (ft)           2614.84    Element                  Left OB    Channel   Right OB
  Vel Head (ft)               1.48    Wt. n-Val.                0.063      0.038     0.063
  W.S. Elev (ft)           2613.36    Reach Len. (ft)          290.16     301.99    312.61
  Crit W.S. (ft)           2613.36    Flow Area (sq ft)          1.78     150.57      4.13
  E.G. Slope (ft/ft)      0.013914    Area (sq ft)               2.43     150.57      4.81
  Q Total (cfs)            1493.00    Flow (cfs)                 4.84    1477.28     10.89
  Top Width (ft)             58.41    Top Width (ft)             3.57      47.77      7.07
  Vel Total (ft/s)            9.54    Avg. Vel. (ft/s)           2.72       9.81      2.63
  Max Chl Dpth (ft)           3.36    Hydr. Depth (ft)           1.03       3.15      0.94
  Conv. Total (cfs)        12656.9    Conv. (cfs)                41.0    12523.6      92.3
  Length Wtd. (ft)          303.16    Wetted Per. (ft)           1.84      48.54      4.49
  Min Ch El (ft)           2610.00    Shear (lb/sq ft)           0.84       2.69      0.80
  Alpha                       1.05    Stream Power (lb/ft s)     2.28      26.44      2.11
  Frctn Loss (ft)             4.22    Cum Volume (acre-ft)       1.89      19.68      6.27
  C & E Loss (ft)             0.38    Cum SA (acres)             2.31       8.85      3.57


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.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid,
energy was used.

CROSS SECTION OUTPUT Profile #Method 1

E.G. Elev (ft)	2614.89	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.55	Wt. n-Val.		0.038	
W.S. Elev (ft)	2613.34	Reach Len. (ft)	290.16	301.99	312.61
Crit W.S. (ft)	2613.34	Flow Area (sq ft)		149.66	
E.G. Slope (ft/ft)	0.015583	Area (sq ft)		149.66	
Q Total (cfs)	1493.00	Flow (cfs)		1493.00	
Top Width (ft)	47.77	Top Width (ft)		47.77	
Vel Total (ft/s)	9.98	Avg. Vel. (ft/s)		9.98	
Max Chl Dpth (ft)	3.34	Hydr. Depth (ft)		3.13	
Conv. Total (cfs)	11960.2	Conv. (cfs)		11960.2	
Length Wtd. (ft)	301.99	Wetted Per. (ft)		51.23	
Min Ch El (ft)	2610.00	Shear (lb/sq ft)		2.84	
Alpha	1.00	Stream Power (lb/ft s)		28.35	
Frctn Loss (ft)	3.75	Cum Volume (acre-ft)		21.27	2.29
C & E Loss (ft)	0.35	Cum SA (acres)		8.85	0.96

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,
energy was used.

CROSS SECTION

RIVER: Fan 6A
REACH: Fan 6AS-1 RS: 1.70

INPUT
Description: Cross Section 1.70 is located within Legend Trail.

Topography
indicates wash and surrounding undeveloped desert.
Aerial shows
wash, undeveloped desert, golf course, and house pads.
T5NR5E
Section 8
Q100 = 1,642 cfs
Station Elevation Data num= 19

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9890.59	2614	9924.71	2612	9949.4	2610	9974.06	2608	9985.62	2606
10000	2605.06	10011.65	2606	10050.14	2608	10073.29	2608	10094.34	2606
10109.27	2606	10115.87	2608	10125.18	2610	10136.23	2612	10147.86	2614

10162.61 261610194.23 261810223.35 262010252.71 2622

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9890.59	.063	9974.06	.03810050.14		.063

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9974.06	10050.14	272.23	314.66	332.47	.1	.3

CROSS SECTION OUTPUT Profile #100-yr 6-hr

			Left OB	Channel	Right OB
E.G. Elev (ft)	2609.27	Element			
Vel Head (ft)	0.71	Wt. n-Val.	0.063	0.038	0.063
W.S. Elev (ft)	2608.55	Reach Len. (ft)	272.23	314.66	332.47
Crit W.S. (ft)	2608.44	Flow Area (sq ft)	1.89	156.51	94.65
E.G. Slope (ft/ft)	0.013918	Area (sq ft)	1.89	156.51	94.65
Q Total (cfs)	1493.00	Flow (cfs)	2.23	1164.85	325.92
Top Width (ft)	151.22	Top Width (ft)	6.83	76.08	68.31
Vel Total (ft/s)	5.90	Avg. Vel. (ft/s)	1.18	7.44	3.44
Max Chl Dpth (ft)	3.49	Hydr. Depth (ft)	0.28	2.06	1.39
Conv. Total (cfs)	12655.2	Conv. (cfs)	18.9	9873.7	2762.6
Length Wtd. (ft)	316.48	Wetted Per. (ft)	6.86	76.37	68.76
Min Ch El (ft)	2605.06	Shear (lb/sq ft)	0.24	1.78	1.20
Alpha	1.32	Stream Power (lb/ft s)	0.28	13.25	4.12
Frctn Loss (ft)	4.78	Cum Volume (acre-ft)	1.88	18.62	5.91
C & E Loss (ft)	0.02	Cum SA (acres)	2.27	8.42	3.30

Warning: The energy loss was 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 OUTPUT Profile #Method 1

			Left OB	Channel	Right OB
E.G. Elev (ft)	2610.00	Element			
Vel Head (ft)	0.85	Wt. n-Val.		0.038	
W.S. Elev (ft)	2609.15	Reach Len. (ft)	272.23	314.66	332.47
Crit W.S. (ft)	2608.78	Flow Area (sq ft)		202.11	
E.G. Slope (ft/ft)	0.010145	Area (sq ft)		202.11	
Q Total (cfs)	1493.00	Flow (cfs)		1493.00	
Top Width (ft)	76.08	Top Width (ft)		76.08	
Vel Total (ft/s)	7.39	Avg. Vel. (ft/s)		7.39	
Max Chl Dpth (ft)	4.09	Hydr. Depth (ft)		2.66	
Conv. Total (cfs)	14823.1	Conv. (cfs)		14823.1	
Length Wtd. (ft)	314.66	Wetted Per. (ft)		78.68	
Min Ch El (ft)	2605.06	Shear (lb/sq ft)		1.63	
Alpha	1.00	Stream Power (lb/ft s)		12.02	
Frctn Loss (ft)	4.02	Cum Volume (acre-ft)		20.06	2.29
C & E Loss (ft)	0.07	Cum SA (acres)		8.42	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 energy loss was 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: Fan 6A
REACH: Fan 6AS-1 RS: 1.64

INPUT
Description: Cross Section 1.64 is located within Legend Trail.

Topography
indicates wash and surrounding undeveloped desert.
Aerial shows
wash, undeveloped desert, golf course, and house pads.
T5NR5E

Section 8
Q100 = 1,642 cfs
Station Elevation Data num= 19

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9907.33	2610	9917.53	2608	9927.79	2606	9939.52	2604	9946.06	2603
9952.59	2602	9972.96	2602	9973.78	2602	10000	2600.48	10021.76	2602
10032.11	2602	10049.32	2601.67	10067.52	2602	10073.12	2603	10078.72	2604
10089.56	2606	10100.26	2608	10116.49	2610	10139.6	2612		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9907.33	.063	9973.78	.038	10021.76	.063

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9973.78	10021.76	309.05	303.64	300.67	.1	.3

CROSS SECTION OUTPUT Profile #100-yr 6-hr

E.G. Elev (ft)	2604.47	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.89	Wt. n-Val.	0.063	0.038	0.063
W.S. Elev (ft)	2603.59	Reach Len. (ft)	309.05	303.64	300.67
Crit W.S. (ft)	2603.59	Flow Area (sq ft)	41.78	112.50	85.39
E.G. Slope (ft/ft)	0.016433	Area (sq ft)	41.78	112.50	85.39
Q Total (cfs)	1493.00	Flow (cfs)	151.97	993.93	347.10
Top Width (ft)	134.16	Top Width (ft)	31.54	47.98	54.63
Vel Total (ft/s)	6.23	Avg. Vel. (ft/s)	3.64	8.84	4.06
Max Chl Dpth (ft)	3.10	Hydr. Depth (ft)	1.32	2.34	1.56
Conv. Total (cfs)	11646.8	Conv. (cfs)	1185.5	7753.6	2707.7
Length Wtd. (ft)	303.61	Wetted Per. (ft)	31.67	48.08	54.78
Min Ch El (ft)	2600.48	Shear (lb/sq ft)	1.35	2.40	1.60
Alpha	1.47	Stream Power (lb/ft s)	4.92	21.21	6.50
Frctn Loss (ft)	4.88	Cum Volume (acre-ft)	1.74	17.64	5.22
C & E Loss (ft)	0.02	Cum SA (acres)	2.15	7.97	2.83

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 energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
depth, the 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 OUTPUT Profile #Method 1

E.G. Elev (ft)	2605.91	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.57	Wt. n-Val.		0.038	
W.S. Elev (ft)	2604.34	Reach Len. (ft)	309.05	303.64	300.67
Crit W.S. (ft)	2604.34	Flow Area (sq ft)		148.57	
E.G. Slope (ft/ft)	0.016606	Area (sq ft)		148.57	
Q Total (cfs)	1493.00	Flow (cfs)		1493.00	
Top Width (ft)	47.98	Top Width (ft)		47.98	
Vel Total (ft/s)	10.05	Avg. Vel. (ft/s)		10.05	
Max Chl Dpth (ft)	3.86	Hydr. Depth (ft)		3.10	
Conv. Total (cfs)	11585.9	Conv. (cfs)		11585.9	
Length Wtd. (ft)	303.64	Wetted Per. (ft)		52.75	
Min Ch El (ft)	2600.48	Shear (lb/sq ft)		2.92	
Alpha	1.00	Stream Power (lb/ft s)		29.34	
Frctn Loss (ft)	5.25	Cum Volume (acre-ft)		18.79	2.29
C & E Loss (ft)	0.20	Cum SA (acres)		7.97	0.96

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.

CROSS SECTION

RIVER: Fan 6A
REACH: Fan 6AS-1 RS: 1.58

INPUT
Description: Cross Section 1.58 is located within Legend Trail.

Topography
indicates wash and surrounding undeveloped desert.
Aerial shows
wash, undeveloped desert, and house pads.
T5NR5E Section 8
Q100
= 1,642 cfs

Station Elevation Data num= 22

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9795.94	2606	9815.91	2604	9851.6	2602	9875.27	2600	9889.43	2598
9918.85	2597	9948.27	2596	9967.72	2596	9976.09	2596.34	9992.6	2596
10000	2595.5	10016.06	2596	10026.47	2597	10036.87	2598	10052.62	2600
10067.97	2602	10083.17	2604	10096.88	2606	10112.23	2608	10127.98	2610
10161.79	2612	10197.32	2614						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9795.94	.063	9918.85	.038	10026.47	.063

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9918.85	10026.47	432.47	467.04	459.13	.1	.3

CROSS SECTION OUTPUT Profile #100-yr 6-hr

			Left OB	Channel	Right OB
E.G. Elev (ft)	2598.83	Element			
Vel Head (ft)	0.82	Wt. n-Val.	0.063	0.038	0.063
W.S. Elev (ft)	2598.01	Reach Len. (ft)	432.47	467.04	459.13
Crit W.S. (ft)	2598.01	Flow Area (sq ft)	14.96	197.88	5.29
E.G. Slope (ft/ft)	0.015716	Area (sq ft)	14.96	197.88	5.29
Q Total (cfs)	1493.00	Flow (cfs)	28.14	1454.97	9.89
Top Width (ft)	147.57	Top Width (ft)	29.48	107.62	10.47
Vel Total (ft/s)	6.84	Avg. Vel. (ft/s)	1.88	7.35	1.87
Max Chl Dpth (ft)	2.51	Hydr. Depth (ft)	0.51	1.84	0.51
Conv. Total (cfs)	11909.3	Conv. (cfs)	224.4	11605.9	78.9
Length Wtd. (ft)	463.35	Wetted Per. (ft)	29.50	107.72	10.52
Min Ch El (ft)	2595.50	Shear (lb/sq ft)	0.50	1.80	0.49
Alpha	1.13	Stream Power (lb/ft s)	0.94	13.25	0.92
Frctn Loss (ft)	5.70	Cum Volume (acre-ft)	1.54	16.56	4.91
C & E Loss (ft)	0.17	Cum SA (acres)	1.94	7.43	2.61

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
depth, the 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 OUTPUT Profile #Method 1

E.G. Elev (ft)	2598.89	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.92	Wt. n-Val.		0.038	
W.S. Elev (ft)	2597.98	Reach Len. (ft)	432.47	467.04	459.13
Crit W.S. (ft)	2597.98	Flow Area (sq ft)		194.33	
E.G. Slope (ft/ft)	0.018003	Area (sq ft)		194.33	
Q Total (cfs)	1493.00	Flow (cfs)		1493.00	
Top Width (ft)	107.62	Top Width (ft)		107.62	
Vel Total (ft/s)	7.68	Avg. Vel. (ft/s)		7.68	
Max Chl Dpth (ft)	2.48	Hydr. Depth (ft)		1.81	
Conv. Total (cfs)	11127.3	Conv. (cfs)		11127.3	
Length Wtd. (ft)	464.64	Wetted Per. (ft)		109.67	
Min Ch El (ft)	2595.50	Shear (lb/sq ft)		1.99	
Alpha	1.00	Stream Power (lb/ft s)		15.30	
Frctn Loss (ft)	6.47	Cum Volume (acre-ft)		17.59	2.29
C & E Loss (ft)	0.14	Cum SA (acres)		7.43	0.96

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 energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
depth, the 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: Fan 6A
REACH: Fan 6AS-1 RS: 1.49

INPUT
Description: Cross Section 1.49 is located within Legend Trail.

Topography
indicates wash and surrounding undeveloped desert.
Aerial shows
wash, undeveloped desert, golf course, and house pads.
T5NR5E
Section 8
Q100 = 1,642 cfs
Station Elevation Data num= 19

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9839.54	2600	9867.89	2598	9896.16	2596	9926.42	2594	9955.46	2592
9982.55	2590	9999.77	2588.57	9999.86	2588.57	10020.75	2589.61	10141.07	2588
10157.05	2586	10161.77	2586	10171.71	2588	10180.25	2590	10187.93	2592
10209.81	2594	10233.26	2596	10265.62	2598	10339.96	2600		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9839.54	.063	9982.55	.038	10020.75	.063

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9982.55	10020.75	514.89	510.79	494.14	.1	.3

CROSS SECTION OUTPUT Profile #100-yr 6-hr

E.G. Elev (ft)	2590.75	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.24	Wt. n-Val.	0.063	0.038	0.063
W.S. Elev (ft)	2590.51	Reach Len. (ft)	514.89	510.79	494.14
Crit W.S. (ft)	2589.77	Flow Area (sq ft)	1.75	50.98	331.17
E.G. Slope (ft/ft)	0.009899	Area (sq ft)	1.75	50.98	331.17
Q Total (cfs)	1493.00	Flow (cfs)	1.65	240.06	1251.30
Top Width (ft)	206.54	Top Width (ft)	6.89	38.20	161.45
Vel Total (ft/s)	3.89	Avg. Vel. (ft/s)	0.94	4.71	3.78
Max Chl Dpth (ft)	4.51	Hydr. Depth (ft)	0.25	1.33	2.05
Conv. Total (cfs)	15006.3	Conv. (cfs)	16.6	2412.8	12576.9

Length Wtd. (ft)	504.19	Wetted Per. (ft)	6.91	38.28	162.08
Min Ch El (ft)	2588.57	Shear (lb/sq ft)	0.16	0.82	1.26
Alpha	1.03	Stream Power (lb/ft s)	0.15	3.87	4.77
Frctn Loss (ft)	6.03	Cum Volume (acre-ft)	1.46	15.23	3.14
C & E Loss (ft)	0.03	Cum SA (acres)	1.76	6.65	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.

CROSS SECTION OUTPUT Profile #Method 1

E.G. Elev (ft)	2591.87	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.46	Wt. n-Val.		0.038	0.063
W.S. Elev (ft)	2591.41	Reach Len. (ft)	514.89	510.79	494.14
Crit W.S. (ft)	2590.76	Flow Area (sq ft)		85.37	208.89
E.G. Slope (ft/ft)	0.011096	Area (sq ft)		85.37	208.89
Q Total (cfs)	1493.00	Flow (cfs)		585.84	907.16
Top Width (ft)	125.61	Top Width (ft)		38.20	87.41
Vel Total (ft/s)	5.07	Avg. Vel. (ft/s)		6.86	4.34
Max Chl Dpth (ft)	2.97	Hydr. Depth (ft)		2.23	2.39
Conv. Total (cfs)	14173.8	Conv. (cfs)		5561.7	8612.1
Length Wtd. (ft)	505.73	Wetted Per. (ft)		39.69	90.39
Min Ch El (ft)	2588.57	Shear (lb/sq ft)		1.49	1.60
Alpha	1.16	Stream Power (lb/ft s)		10.22	6.95
Frctn Loss (ft)	6.74	Cum Volume (acre-ft)		16.09	1.18
C & E Loss (ft)	0.03	Cum SA (acres)		6.65	0.50

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.

CROSS SECTION

RIVER: Fan 6A
REACH: Fan 6AS-1 RS: 1.40

INPUT
Description: Cross Section 1.40 is located within Legend Trail.

Topography
indicates wash and surrounding undeveloped desert.
Aerial shows
wash, undeveloped desert, golf course, and houses.
T5NR5E Section
8
Q100 = 1,642 cfs
Station Elevation Data num= 13

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9737.71	2590	9749.53	2588	9763.08	2586	9777.34	2584	9804.32	2582.76
9908.04	2583.89	9985.76	2582	10000	2580.98	10015.19	2582	10030.91	2584
10062.59	2586	10092.17	2588	10118.51	2590				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9737.71	.063	9908.04	.038	10030.91	.064

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9908.04	10030.91	466.52	470.39	472.97	.1	.3

CROSS SECTION OUTPUT Profile #100-yr 6-hr

E.G. Elev (ft)	2584.70	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.53	Wt. n-Val.	0.063	0.038	0.064
W.S. Elev (ft)	2584.16	Reach Len. (ft)	466.52	470.39	472.97
Crit W.S. (ft)	2584.13	Flow Area (sq ft)	108.22	191.69	0.21
E.G. Slope (ft/ft)	0.014714	Area (sq ft)	108.22	191.69	0.21
Q Total (cfs)	1493.00	Flow (cfs)	271.33	1221.56	0.11

Top Width (ft)	257.33	Top Width (ft)	131.87	122.87	2.59
Vel Total (ft/s)	4.97	Avg. Vel. (ft/s)	2.51	6.37	0.53
Max Chl Dpth (ft)	3.18	Hydr. Depth (ft)	0.82	1.56	0.08
Conv. Total (cfs)	12308.3	Conv. (cfs)	2236.8	10070.5	0.9
Length Wtd. (ft)	470.04	Wetted Per. (ft)	131.91	123.09	2.60
Min Ch El (ft)	2580.98	Shear (lb/sq ft)	0.75	1.43	0.07
Alpha	1.39	Stream Power (lb/ft s)	1.89	9.12	0.04
Frctn Loss (ft)	7.70	Cum Volume (acre-ft)	0.81	13.81	1.26
C & E Loss (ft)	0.03	Cum SA (acres)	0.94	5.70	0.77

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 OUTPUT Profile #Method 1

E.G. Elev (ft)	2585.10	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.78	Wt. n-Val.		0.038	
W.S. Elev (ft)	2584.31	Reach Len. (ft)	466.52	470.39	472.97
Crit W.S. (ft)	2584.27	Flow Area (sq ft)		210.11	
E.G. Slope (ft/ft)	0.016318	Area (sq ft)		210.11	
Q Total (cfs)	1493.00	Flow (cfs)		1493.00	
Top Width (ft)	122.87	Top Width (ft)		122.87	
Vel Total (ft/s)	7.11	Avg. Vel. (ft/s)		7.11	
Max Chl Dpth (ft)	3.33	Hydr. Depth (ft)		1.71	
Conv. Total (cfs)	11687.8	Conv. (cfs)		11687.8	
Length Wtd. (ft)	470.39	Wetted Per. (ft)		123.83	
Min Ch El (ft)	2580.98	Shear (lb/sq ft)		1.73	
Alpha	1.00	Stream Power (lb/ft s)		12.28	
Frctn Loss (ft)	8.12	Cum Volume (acre-ft)		14.36	
C & E Loss (ft)	0.00	Cum SA (acres)		5.70	

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: Fan 6A
REACH: Fan 6AS-1 RS: 1.31

INPUT
Description: Cross Section 1.31 is located within Legend Trail.

Topography
indicates wash and surrounding undeveloped desert.
Aerial shows
wash, undeveloped desert, golf course, and houses.
T5NR5E Section
8
Q100 = 1,642 cfs
Station Elevation Data num= 17

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9850.3	2586	9892.9	2584	9925.02	2582	9937.09	2580	9948.62	2578
9968.33	2576	9986.62	2574	10000	2573.56	10006.35	2574	10047.11	2575.12
10063.28	2574	10070.69	2574	10097.25	2576	10138.47	2578	10153.69	2580
10174.09	2582	10195.18	2584						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9850.3	.063	9968.33	.038	10097.25	.063

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9968.33	10097.25	354.79	374.72	381.55	.1	.3

CROSS SECTION OUTPUT Profile #100-yr 6-hr

E.G. Elev (ft)	2576.98	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.81	Wt. n-Val.	0.063	0.038	0.063
W.S. Elev (ft)	2576.16	Reach Len. (ft)	354.79	374.72	381.55
Crit W.S. (ft)	2576.16	Flow Area (sq ft)	0.13	206.34	0.27
E.G. Slope (ft/ft)	0.018331	Area (sq ft)	0.13	206.34	0.27
Q Total (cfs)	1493.00	Flow (cfs)	0.08	1492.76	0.16
Top Width (ft)	133.86	Top Width (ft)	1.60	128.92	3.34
Vel Total (ft/s)	7.22	Avg. Vel. (ft/s)	0.60	7.23	0.60
Max Chl Dpth (ft)	2.60	Hydr. Depth (ft)	0.08	1.60	0.08
Conv. Total (cfs)	11027.4	Conv. (cfs)	0.6	11025.6	1.2
Length Wtd. (ft)	374.61	Wetted Per. (ft)	1.61	129.18	3.34
Min Ch El (ft)	2573.56	Shear (lb/sq ft)	0.09	1.83	0.09
Alpha	1.00	Stream Power (lb/ft s)	0.06	13.22	0.06
Frctn Loss (ft)	5.61	Cum Volume (acre-ft)	0.23	11.66	1.25
C & E Loss (ft)	0.07	Cum SA (acres)	0.22	4.34	0.74

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
depth, the 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 OUTPUT Profile #Method 1

E.G. Elev (ft)	2576.98	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.81	Wt. n-Val.		0.038	
W.S. Elev (ft)	2576.17	Reach Len. (ft)	354.79	374.72	381.55
Crit W.S. (ft)	2576.17	Flow Area (sq ft)		206.69	
E.G. Slope (ft/ft)	0.018296	Area (sq ft)		206.69	
Q Total (cfs)	1493.00	Flow (cfs)		1493.00	
Top Width (ft)	128.92	Top Width (ft)		128.92	
Vel Total (ft/s)	7.22	Avg. Vel. (ft/s)		7.22	
Max Chl Dpth (ft)	2.60	Hydr. Depth (ft)		1.60	
Conv. Total (cfs)	11037.7	Conv. (cfs)		11037.7	
Length Wtd. (ft)	374.72	Wetted Per. (ft)		129.51	
Min Ch El (ft)	2573.56	Shear (lb/sq ft)		1.82	
Alpha	1.00	Stream Power (lb/ft s)		13.17	
Frctn Loss (ft)	6.40	Cum Volume (acre-ft)		12.11	
C & E Loss (ft)	0.09	Cum SA (acres)		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 velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
depth, the 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: Fan 6A
REACH: Fan 6AS-1 RS: 1.24

INPUT

Description: Cross Section 1.24 is located within Legend Trail.

Topography
indicates wash and surrounding undeveloped desert.
Aerial shows
wash, undeveloped desert, and golf course.
T5NR5E Section 7
Q100
= 1,642 cfs

Station Elevation Data num= 13

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9913.84	2574	9949.45	2572	9959.46	2570	9969.92	2568	9980.59	2566
9990.11	2564	10000	2563.75	10009.79	2564	10021.17	2566	10033.77	2568
10043.79	2570	10049.3	2572	10057.65	2574				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9913.84	.063	9980.59	.038	10021.17	.063

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9980.59	10021.17	155.32	147.82	149.37	.1	.3

CROSS SECTION OUTPUT Profile #100-yr 6-hr

E.G. Elev (ft)	2569.48	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.51	Wt. n-Val.	0.063	0.038	0.063
W.S. Elev (ft)	2567.98	Reach Len. (ft)	155.32	147.82	149.37
Crit W.S. (ft)	2567.98	Flow Area (sq ft)	10.42	142.93	12.31
E.G. Slope (ft/ft)	0.012446	Area (sq ft)	10.42	142.93	12.31
Q Total (cfs)	1493.00	Flow (cfs)	26.90	1434.24	31.86
Top Width (ft)	63.58	Top Width (ft)	10.54	40.58	12.45
Vel Total (ft/s)	9.01	Avg. Vel. (ft/s)	2.58	10.03	2.59
Max Chl Dpth (ft)	4.23	Hydr. Depth (ft)	0.99	3.52	0.99
Conv. Total (cfs)	13382.8	Conv. (cfs)	241.1	12856.1	285.6
Length Wtd. (ft)	147.91	Wetted Per. (ft)	10.73	40.97	12.61
Min Ch El (ft)	2563.75	Shear (lb/sq ft)	0.75	2.71	0.76
Alpha	1.19	Stream Power (lb/ft s)	1.95	27.20	1.96
Frctn Loss (ft)	2.05	Cum Volume (acre-ft)	0.18	10.15	1.20
C & E Loss (ft)	0.06	Cum SA (acres)	0.17	3.61	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 energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
depth, the 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 OUTPUT Profile #Method 1

E.G. Elev (ft)	2569.67	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.75	Wt. n-Val.		0.038	
W.S. Elev (ft)	2567.92	Reach Len. (ft)	155.32	147.82	149.37
Crit W.S. (ft)	2567.92	Flow Area (sq ft)		140.77	
E.G. Slope (ft/ft)	0.015992	Area (sq ft)		140.77	
Q Total (cfs)	1493.00	Flow (cfs)		1493.00	
Top Width (ft)	40.58	Top Width (ft)		40.58	
Vel Total (ft/s)	10.61	Avg. Vel. (ft/s)		10.61	
Max Chl Dpth (ft)	4.17	Hydr. Depth (ft)		3.47	
Conv. Total (cfs)	11806.1	Conv. (cfs)		11806.1	
Length Wtd. (ft)	147.82	Wetted Per. (ft)		44.82	
Min Ch El (ft)	2563.75	Shear (lb/sq ft)		3.14	
Alpha	1.00	Stream Power (lb/ft s)		33.26	
Frctn Loss (ft)	2.38	Cum Volume (acre-ft)		10.62	
C & E Loss (ft)	0.13	Cum SA (acres)		3.61	

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
depth, the 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: Fan 6A
REACH: Fan 6AS-1 RS: 1.21

INPUT
Description: Cross Section 1.21 is located within Legend Trail.

Topography
indicates wash and surrounding undeveloped desert.
Aerial shows
wash, undeveloped desert, and golf course.
T5NR5E Section 7
Q100
= 1,642 cfs

Station Elevation Data num= 23

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9876.69	2578	9897.7	2576	9903.89	2574	9910.26	2572	9917.3	2570
9925.8	2568	9935.52	2566	9949.11	2564	9968.53	2562	10000	2560.69
10006.83	2562	10011.68	2564	10016.08	2566	10020.51	2568	10024.99	2570
10029.58	2572	10036.56	2574	10047.02	2576	10056.13	2578	10067.17	2580
10084.39	2582	10096.98	2584	10109.24	2586				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9876.69	.063	9949.11	.038	10011.68	.063

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9949.11	10011.68	234.85	236.57	234.28	.3	.5

CROSS SECTION OUTPUT Profile #100-yr 6-hr

E.G. Elev (ft)	2565.89	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.30	Wt. n-Val.	0.063	0.038	0.063
W.S. Elev (ft)	2564.59	Reach Len. (ft)	234.85	236.57	234.28
Crit W.S. (ft)	2564.59	Flow Area (sq ft)	1.18	162.88	0.38
E.G. Slope (ft/ft)	0.015517	Area (sq ft)	1.18	162.88	0.38
Q Total (cfs)	1493.00	Flow (cfs)	1.53	1491.00	0.47
Top Width (ft)	67.88	Top Width (ft)	4.01	62.57	1.30
Vel Total (ft/s)	9.08	Avg. Vel. (ft/s)	1.29	9.15	1.22
Max Chl Dpth (ft)	3.90	Hydr. Depth (ft)	0.30	2.60	0.30
Conv. Total (cfs)	11985.6	Conv. (cfs)	12.3	11969.6	3.8
Length Wtd. (ft)	236.55	Wetted Per. (ft)	4.05	63.22	1.43
Min Ch El (ft)	2560.69	Shear (lb/sq ft)	0.28	2.50	0.26
Alpha	1.02	Stream Power (lb/ft s)	0.37	22.85	0.32
Frctn Loss (ft)	0.61	Cum Volume (acre-ft)	0.16	9.64	1.18
C & E Loss (ft)	0.55	Cum SA (acres)	0.15	3.44	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.

CROSS SECTION OUTPUT Profile #Method 1

E.G. Elev (ft)	2565.90	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.32	Wt. n-Val.		0.038	
W.S. Elev (ft)	2564.58	Reach Len. (ft)	234.85	236.57	234.28
Crit W.S. (ft)	2564.58	Flow Area (sq ft)		162.01	
E.G. Slope (ft/ft)	0.016225	Area (sq ft)		162.01	
Q Total (cfs)	1493.00	Flow (cfs)		1493.00	
Top Width (ft)	62.57	Top Width (ft)		62.57	
Vel Total (ft/s)	9.22	Avg. Vel. (ft/s)		9.22	
Max Chl Dpth (ft)	3.89	Hydr. Depth (ft)		2.59	
Conv. Total (cfs)	11721.1	Conv. (cfs)		11721.1	
Length Wtd. (ft)	236.57	Wetted Per. (ft)		64.37	
Min Ch El (ft)	2560.69	Shear (lb/sq ft)		2.55	
Alpha	1.00	Stream Power (lb/ft s)		23.49	
Frctn Loss (ft)	0.69	Cum Volume (acre-ft)		10.10	
C & E Loss (ft)	0.55	Cum SA (acres)		3.44	

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 energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
depth, the 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: Fan 6A
REACH: Fan 6AS-1 RS: 1.17

INPUT
Description: Cross Section 1.17 is located within Legend Trail. It is located
upstream of the intersection of Fan 6A South and Preserve Way.
There are 5-10 X 4 box culverts located under Preserve Way.
Blocked obstruction indicates finish floor of existing home.

Topography indicates wash and surrounding undeveloped
desert.
Aerial shows wash, houses and Preserve Way.
T5NR5E
Section 7
Q100 = 1,642 cfs
Station Elevation Data num= 13

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9909.47	2570	9942.44	2568	9953.57	2566	9962.82	2564	9972.21	2562
9979.73	2560	9988.65	2558	10010.66	2558	10061.79	2560	10147.31	2562
10162.02	2564	10183.2	2566	10206.45	2566				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9909.47	.063	9979.73	.038	10061.79	.063

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9979.73	10061.79	85.86	89.25	89.75	.3	.5

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
9909.47	9974.1	2568	F
10061.79	10206.45	2568	F

Blocked Obstructions num= 1

Sta L	Sta R	Elev
10094.33	10206.45	2567.6

CROSS SECTION OUTPUT Profile #100-yr 6-hr

			Left OB	Channel	Right OB
E.G. Elev (ft)	2563.89	Element			
Vel Head (ft)	0.20	Wt. n-Val.	0.063	0.038	
W.S. Elev (ft)	2563.69	Reach Len. (ft)	85.86	89.25	89.75
Crit W.S. (ft)	2560.92	Flow Area (sq ft)	16.56	406.78	
E.G. Slope (ft/ft)	0.001012	Area (sq ft)	26.92	406.78	107.66
Q Total (cfs)	1493.00	Flow (cfs)	24.92	1468.08	
Top Width (ft)	130.05	Top Width (ft)	15.45	82.06	32.54
Vel Total (ft/s)	3.53	Avg. Vel. (ft/s)	1.51	3.61	
Max Chl Dpth (ft)	5.69	Hydr. Depth (ft)	2.94	4.96	
Conv. Total (cfs)	46930.8	Conv. (cfs)	783.4	46147.5	
Length Wtd. (ft)	89.25	Wetted Per. (ft)	5.83	82.32	
Min Ch El (ft)	2558.00	Shear (lb/sq ft)	0.18	0.31	
Alpha	1.03	Stream Power (lb/ft s)	0.27	1.13	
Frctn Loss (ft)		Cum Volume (acre-ft)	0.09	8.09	0.89
C & E Loss (ft)		Cum SA (acres)	0.09	3.04	0.56

Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.

CROSS SECTION OUTPUT Profile #Method 1

			Left OB	Channel	Right OB
E.G. Elev (ft)	2563.89	Element			
Vel Head (ft)	0.21	Wt. n-Val.		0.038	
W.S. Elev (ft)	2563.68	Reach Len. (ft)	85.86	89.25	89.75
Crit W.S. (ft)	2560.92	Flow Area (sq ft)		405.88	
E.G. Slope (ft/ft)	0.001182	Area (sq ft)		405.88	
Q Total (cfs)	1493.00	Flow (cfs)		1493.00	
Top Width (ft)	82.06	Top Width (ft)		82.06	
Vel Total (ft/s)	3.68	Avg. Vel. (ft/s)		3.68	
Max Chl Dpth (ft)	5.68	Hydr. Depth (ft)		4.95	
Conv. Total (cfs)	43427.1	Conv. (cfs)		43427.1	
Length Wtd. (ft)	89.25	Wetted Per. (ft)		89.68	
Min Ch El (ft)	2558.00	Shear (lb/sq ft)		0.33	
Alpha	1.00	Stream Power (lb/ft s)		1.23	
Frctn Loss (ft)		Cum Volume (acre-ft)		8.56	
C & E Loss (ft)		Cum SA (acres)		3.04	

Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.

CULVERT

RIVER: Fan 6A
REACH: Fan 6AS-1 RS: 1.16

INPUT
Description: Box culverts at Preserve Way crossing.
Distance from Upstream XS = 10
Deck/Roadway Width = 66
Weir Coefficient = 2.6
Upstream Deck/Roadway Coordinates
num= 10

Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord
9865.15	2569.1		9931.15	2567.89		9940.15	2567.92	
10047.87	2568.45		10080.37	2568.02		10107.17	2566.81	
10112.87	2566.45		10137.1	2564.84		10172.1	2562.87	

```
 10207.1 2561.66

Upstream Bridge Cross Section Data
Station Elevation Data    num=      13
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
 9909.47    2570 9942.44    2568 9953.57    2566 9962.82    2564 9972.21    2562
 9979.73    2560 9988.65    255810010.66    255810061.79    256010147.31    2562
10162.02    2564 10183.2    256610206.45    2566

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
 9909.47    .063 9979.73    .03810061.79    .063

Bank Sta: Left   Right    Coeff Contr.   Expan.
       9979.7310061.79             .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
 9909.47  9974.1    2568       F
10061.7910206.45    2568       F
Blocked Obstructions     num=       1
   Sta L   Sta R    Elev
10094.3310206.45  2567.6

Downstream  Deck/Roadway Coordinates
    num=      10
     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord
 9827.17  2569.1         9893.17 2567.89         9902.17 2567.92
10009.89 2568.45        10042.39 2568.02        10069.19 2566.81
10074.89 2566.45        10099.12 2564.84        10134.12 2562.87
10169.12 2561.66

Downstream Bridge Cross Section Data
Station Elevation Data    num=       8
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
 9892.87    2566 9916.64    2564 9944.35    2562 9964.26    2560 9975.36    2558
   10000 2556.2510048.77    255810184.44    2558

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
 9892.87    .063 9975.36    .03810048.77    .063

Bank Sta: Left   Right    Coeff Contr.   Expan.
       9975.3610048.77             .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
 9892.87 9975.36 2567.44       F
10055.3610184.44 2567.44       F
Blocked Obstructions     num=       1
   Sta L   Sta R    Elev
10184.4410184.44    2560

Upstream Embankment side slope              =       0 horiz. to 1.0 vertical
Downstream Embankment side slope            =       0 horiz. to 1.0 vertical
Maximum allowable submergence for weir flow =     .95
Elevation at which weir flow begins         =
Energy head used in spillway design         =
Spillway height used in design              =
Weir crest shape                            = Broad Crested

Number of Culverts =  1

Culvert Name      Shape      Rise    Span
CULVERT#1            Box       4      10
FHWA Chart # 8 - flared wingwalls
FHWA Scale # 1 - Wingwall flared 30 to 75 deg.
Solution Criteria = Highest U.S. EG
Culvert Upstrm Dist  Length    Top n  Bottom n  Depth Blocked  Entrance Loss Coef   Exit Loss Coef
               10      67     .015     .015        0                  .4                 1
Number of Barrels =  5
Upstream   Elevation =  2558.75
Centerline Stations
```

```
    Sta.    Sta.    Sta.    Sta.    Sta.
  9989.110000.0110010.9310021.8510032.76
Downstream Elevation =  2557.6
Centerline Stations
    Sta.    Sta.    Sta.    Sta.    Sta.
 9994.4510005.3610016.28 10027.210038.11

CROSS SECTION


RIVER: Fan 6A
REACH: Fan 6AS-1          RS: 1.15

INPUT
Description: Cross Section 1.15 is located within Legend Trail.  It is located
             downstream of the intersection of Fan 6A South and Preserve Way.
             There are 5-10 X 4 box culverts located under Preserve
             Way.

Topography indicates wash and surrounding undeveloped
             desert.
Aerial shows wash,  houses and Preserve Way.
T5NR5E
             Section 7
Q100 = 1,642 cfs
Station Elevation Data     num=       8
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
 9892.87    2566 9916.64    2564 9944.35    2562 9964.26    2560 9975.36    2558
   10000 2556.2510048.77    255810184.44    2558

Manning's n Values         num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
 9892.87    .063 9975.36    .03810048.77    .063

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9975.3610048.77           234.33  225.13  221.72             .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
 9892.87 9975.36 2567.44       F
10055.3610184.44 2567.44       F
Blocked Obstructions     num=       1
   Sta L   Sta R    Elev
10184.4410184.44    2560

CROSS SECTION OUTPUT  Profile #100-yr 6-hr

  E.G. Elev (ft)          2560.56   Element                    Left OB    Channel   Right OB
  Vel Head (ft)              1.14   Wt. n-Val.                            0.038     0.063
  W.S. Elev (ft)          2559.42   Reach Len. (ft)            234.33    225.13    221.72
  Crit W.S. (ft)          2559.42   Flow Area (sq ft)                    168.79      9.39
  E.G. Slope (ft/ft)     0.016094   Area (sq ft)                 5.63    168.79    193.24
  Q Total (cfs)           1493.00   Flow (cfs)                         1457.44     35.56
  Top Width (ft)           216.99   Top Width (ft)               7.91     73.41    135.67
  Vel Total (ft/s)           8.38   Avg. Vel. (ft/s)                      8.63      3.79
  Max Chl Dpth (ft)          3.17   Hydr. Depth (ft)                      2.30      1.42
  Conv. Total (cfs)        11768.7  Conv. (cfs)                        11488.4     280.3
  Length Wtd. (ft)         225.09   Wetted Per. (ft)                     73.50      6.59
  Min Ch El (ft)          2556.25   Shear (lb/sq ft)                      2.31      1.43
  Alpha                      1.04   Stream Power (lb/ft s)               19.92      5.42
  Frctn Loss (ft)            3.43   Cum Volume (acre-ft)         0.06     7.50      0.58
  C & E Loss (ft)            0.29   Cum SA (acres)               0.07     2.89      0.38


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 cross-section end points had to be extended vertically for the computed water surface.
Warning: The velocity head has changed by more than 0.5 ft (0.15 m).  This may indicate the need for
         additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross
section.
         This may indicate the need for additional cross sections.
```

Warning: During the standard step iterations, when the assumed water surface was set equal to critical
depth, the calculated water surface came back below critical depth. This indicates that there is
not a valid subcritical answer. The program defaulted to critical depth.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid,
energy was used.

CROSS SECTION OUTPUT Profile #Method 1

E.G. Elev (ft)	2560.64	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.16	Wt. n-Val.		0.038	
W.S. Elev (ft)	2559.48	Reach Len. (ft)	234.33	225.13	221.72
Crit W.S. (ft)	2559.48	Flow Area (sq ft)		172.55	
E.G. Slope (ft/ft)	0.016538	Area (sq ft)		172.55	
Q Total (cfs)	1493.00	Flow (cfs)		1493.00	
Top Width (ft)	73.41	Top Width (ft)		73.41	
Vel Total (ft/s)	8.65	Avg. Vel. (ft/s)		8.65	
Max Chl Dpth (ft)	3.23	Hydr. Depth (ft)		2.35	
Conv. Total (cfs)	11609.8	Conv. (cfs)		11609.8	
Length Wtd. (ft)	225.13	Wetted Per. (ft)		76.45	
Min Ch El (ft)	2556.25	Shear (lb/sq ft)		2.33	
Alpha	1.00	Stream Power (lb/ft s)		20.16	
Frctn Loss (ft)	3.48	Cum Volume (acre-ft)		7.97	
C & E Loss (ft)	0.30	Cum SA (acres)		2.89	

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 velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
depth, the calculated water surface came back below critical depth. This indicates that there is
not a valid subcritical answer. The program defaulted to critical depth.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid,
energy was used.

CROSS SECTION

RIVER: Fan 6A
REACH: Fan 6AS-1 RS: 1.11

INPUT
Description: A portion of cross section 1.11 is located within Legend
Trail.

Topography indicates wash and surrounding undeveloped
desert.
Aerial shows wash, undeveloped desert, and homes.
T5NR5E
Section 7
Q100 = 1,642 cfs
Station Elevation Data num= 15

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9742.25	2560	9861.98	2558	9971	2556	9983.49	2555	9995.98	2554
10011.07	2554	10050.44	2554	10056.33	2554	10145.12	2554	10153.04	2555
10160.95	2556	10177.9	2558	10290.95	2558	10300.77	2558	10322.3	2560

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9742.25	.063	9983.49	.038	10153.04	.063

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

9983.4910153.04 408.15 397.57 380.71 .1 .3

CROSS SECTION OUTPUT Profile #100-yr 6-hr

E.G. Elev (ft)	2556.08	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.56	Wt. n-Val.	0.063	0.038	0.063
W.S. Elev (ft)	2555.52	Reach Len. (ft)	408.15	397.57	380.71
Crit W.S. (ft)	2555.40	Flow Area (sq ft)	1.67	246.93	1.06
E.G. Slope (ft/ft)	0.014433	Area (sq ft)	1.67	246.93	1.06
Q Total (cfs)	1493.00	Flow (cfs)	1.91	1489.88	1.21
Top Width (ft)	180.09	Top Width (ft)	6.45	169.55	4.09
Vel Total (ft/s)	5.98	Avg. Vel. (ft/s)	1.15	6.03	1.14
Max Chl Dpth (ft)	1.52	Hydr. Depth (ft)	0.26	1.46	0.26
Conv. Total (cfs)	12427.4	Conv. (cfs)	15.9	12401.5	10.0
Length Wtd. (ft)	397.57	Wetted Per. (ft)	6.47	169.65	4.12
Min Ch El (ft)	2554.00	Shear (lb/sq ft)	0.23	1.31	0.23
Alpha	1.02	Stream Power (lb/ft s)	0.27	7.91	0.26
Frctn Loss (ft)	7.05	Cum Volume (acre-ft)	0.04	6.42	0.08
C & E Loss (ft)	0.04	Cum SA (acres)	0.03	2.26	0.03

Warning: The energy loss was 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 OUTPUT Profile #Method 1

E.G. Elev (ft)	2556.09	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.56	Wt. n-Val.		0.038	
W.S. Elev (ft)	2555.52	Reach Len. (ft)	408.15	397.57	380.71
Crit W.S. (ft)	2555.40	Flow Area (sq ft)		247.76	
E.G. Slope (ft/ft)	0.014450	Area (sq ft)		247.76	
Q Total (cfs)	1493.00	Flow (cfs)		1493.00	
Top Width (ft)	169.55	Top Width (ft)		169.55	
Vel Total (ft/s)	6.03	Avg. Vel. (ft/s)		6.03	
Max Chl Dpth (ft)	1.52	Hydr. Depth (ft)		1.46	
Conv. Total (cfs)	12420.0	Conv. (cfs)		12420.0	
Length Wtd. (ft)	397.57	Wetted Per. (ft)		170.70	
Min Ch El (ft)	2554.00	Shear (lb/sq ft)		1.31	
Alpha	1.00	Stream Power (lb/ft s)		7.89	
Frctn Loss (ft)	7.05	Cum Volume (acre-ft)		6.88	
C & E Loss (ft)	0.04	Cum SA (acres)		2.26	

Warning: The energy loss was 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: Fan 6A
REACH: Fan 6AS-1 RS: 1.03

INPUT
Description: A portion of cross section 1.03 is located within Legend Trail. It is located upstream of concentration point CF6AS1.

Topography
indicates wash and surrounding undeveloped desert.
Aerial shows
wash, undeveloped desert, and homes.
T5NR5E Section 7
Cross
Section 900

Q100 = 1,642 cfs
Station Elevation Data num= 24

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9889.21	2560	9897	2558	9902.09	2556	9912.86	2554	9930.16	2552
9949.56	2550	9954.55	2549	9957.04	2548.5	9959.53	2548	9965.7	2548

```
 9984.35 2548.39 9994.47    2548   10000    254710029.96    254810041.21 2548.02
10052.24    2548 10089.4 2547.4210168.17    254810243.48  2546.8 10265.7    2548
10282.15  2548.5 10298.6    2549 10331.5    2550 10355.5    2552

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
 9889.21    .063 9957.04    .03810282.15    .063

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9957.0410282.15                0       0       0             .1       .3

CROSS SECTION OUTPUT  Profile #100-yr 6-hr

  E.G. Elev (ft)          2549.00    Element                  Left OB    Channel   Right OB
  Vel Head (ft)              0.44    Wt. n-Val.                0.063      0.038      0.063
  W.S. Elev (ft)          2548.56    Reach Len. (ft)          540.91     540.91     540.91
  Crit W.S. (ft)          2548.56    Flow Area (sq ft)          0.01     281.64       0.06
  E.G. Slope (ft/ft)     0.022275    Area (sq ft)               0.01     281.64       0.06
  Q Total (cfs)           1493.00    Flow (cfs)                 0.00    1492.98       0.02
  Top Width (ft)           327.41    Top Width (ft)             0.30     325.11       2.00
  Vel Total (ft/s)           5.30    Avg. Vel. (ft/s)           0.34       5.30       0.34
  Max Chl Dpth (ft)          1.76    Hydr. Depth (ft)           0.03       0.87       0.03
  Conv. Total (cfs)       10003.4    Conv. (cfs)                 0.0    10003.3        0.1
  Length Wtd. (ft)         540.91    Wetted Per. (ft)           0.31     325.33       2.00
  Min Ch El (ft)          2546.80    Shear (lb/sq ft)           0.04       1.20       0.04
  Alpha                      1.00    Stream Power (lb/ft s)     0.01       6.38       0.01
  Frctn Loss (ft)            6.00    Cum Volume (acre-ft)       0.03       4.01       0.08
  C & E Loss (ft)            0.04    Cum SA (acres)

Warning: The energy equation could not be 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 OUTPUT  Profile #Method 1

  E.G. Elev (ft)          2549.00    Element                  Left OB    Channel   Right OB
  Vel Head (ft)              0.44    Wt. n-Val.                           0.038
  W.S. Elev (ft)          2548.56    Reach Len. (ft)          540.91     540.91     540.91
  Crit W.S. (ft)          2548.56    Flow Area (sq ft)                   281.72
  E.G. Slope (ft/ft)     0.022266    Area (sq ft)                        281.72
  Q Total (cfs)           1493.00    Flow (cfs)                         1493.00
  Top Width (ft)           325.11    Top Width (ft)                      325.11
  Vel Total (ft/s)           5.30    Avg. Vel. (ft/s)                      5.30
  Max Chl Dpth (ft)          1.76    Hydr. Depth (ft)                      0.87
  Conv. Total (cfs)       10005.5    Conv. (cfs)                        10005.5
  Length Wtd. (ft)         540.91    Wetted Per. (ft)                    325.46
  Min Ch El (ft)          2546.80    Shear (lb/sq ft)                      1.20
  Alpha                      1.00    Stream Power (lb/ft s)                6.38
  Frctn Loss (ft)            3.95    Cum Volume (acre-ft)                  4.47
  C & E Loss (ft)            0.02    Cum SA (acres)

Warning: The energy equation could not be 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: Fan 6A
REACH: Fan 6A-1 RS: 0.93

INPUT
Description: A portion of cross section 0.93 is located within Legend Trail It is located downstream of the confluence between Fan 6A South and Fan 6A North, which is the north boundary of Fan 6A.

Topography and Aerial indicate the wash and surrounding undeveloped desert.
T5NR5E Section 7
Q100 = 3,002 cfs
Station Elevation Data num= 21

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9860.92	2556	9868.58	2554	9873.32	2552	9882.91	2550	9892.28	2548
9902.09	2546	9912.25	2544	9920.24	2542	9928.65	2540	9948.2	2538
9955.76	2538	9993.36	2538	10007.85	2538	10051.31	2540	10073.73	2542
10087.06	2544	10100.57	2546	10118.24	2548	10136.32	2550	10147.94	2552
10161.02	2554								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9860.92	.063	9928.65	.038	10051.31	.063

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9928.65	10051.31	321.7	316.21	321.5	.1	.3

CROSS SECTION OUTPUT Profile #100-yr 6-hr

			Left OB	Channel	Right OB
E.G. Elev (ft)	2542.31	Element			
Vel Head (ft)	0.82	Wt. n-Val.	0.063	0.038	0.063
W.S. Elev (ft)	2541.49	Reach Len. (ft)	321.70	316.21	321.50
Crit W.S. (ft)		Flow Area (sq ft)	4.64	364.59	12.38
E.G. Slope (ft/ft)	0.008210	Area (sq ft)	4.64	364.59	12.38
Q Total (cfs)	2698.00	Flow (cfs)	7.99	2668.36	21.65
Top Width (ft)	145.57	Top Width (ft)	6.25	122.66	16.66
Vel Total (ft/s)	7.07	Avg. Vel. (ft/s)	1.72	7.32	1.75
Max Chl Dpth (ft)	3.49	Hydr. Depth (ft)	0.74	2.97	0.74
Conv. Total (cfs)	29776.1	Conv. (cfs)	88.2	29449.0	238.9
Length Wtd. (ft)	316.60	Wetted Per. (ft)	6.42	122.81	16.73
Min Ch El (ft)	2538.00	Shear (lb/sq ft)	0.37	1.52	0.38
Alpha	1.06	Stream Power (lb/ft s)	0.64	11.14	0.66
Frctn Loss (ft)	2.87	Cum Volume (acre-ft)	3.80	16.72	2.82
C & E Loss (ft)	0.05	Cum SA (acres)	3.48	4.63	2.19

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 OUTPUT Profile #Method 1

			Left OB	Channel	Right OB
E.G. Elev (ft)	2542.67	Element			
Vel Head (ft)	0.59	Wt. n-Val.		0.038	
W.S. Elev (ft)	2542.08	Reach Len. (ft)	321.70	316.21	321.50
Crit W.S. (ft)		Flow Area (sq ft)		437.57	
E.G. Slope (ft/ft)	0.004776	Area (sq ft)		437.57	
Q Total (cfs)	2698.00	Flow (cfs)		2698.00	
Top Width (ft)	122.66	Top Width (ft)		122.66	
Vel Total (ft/s)	6.17	Avg. Vel. (ft/s)		6.17	
Max Chl Dpth (ft)	4.08	Hydr. Depth (ft)		3.57	
Conv. Total (cfs)	39038.2	Conv. (cfs)		39038.2	
Length Wtd. (ft)	316.21	Wetted Per. (ft)		126.97	
Min Ch El (ft)	2538.00	Shear (lb/sq ft)		1.03	
Alpha	1.00	Stream Power (lb/ft s)		6.34	
Frctn Loss (ft)	2.45	Cum Volume (acre-ft)		17.56	
C & E Loss (ft)	0.14	Cum SA (acres)		4.63	

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 conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was 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: Fan 6A
REACH: Fan 6A-1 RS: 0.87

INPUT
Description: Topography and Aerial indicate the wash and surrounding undeveloped desert.
T5NR5E Section 7
Q100 = 3,002 cfs
Station Elevation Data num= 16

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9868.87	2542	9868.93	2542	9880.14	2540	9894.78	2538	9947.3	2536
9972.01	2536	9974.07	2536	9980.28	2534	10000	2533	10017.66	2534
10033.16	2536	10044.86	2538	10056.62	2540	10085.51	2542	10115.82	2544
10160.17	2546								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9868.87	.063	9974.07	.038	10033.16	.063

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9974.07	10033.16	354.8	346.68	338.9	.1	.3

CROSS SECTION OUTPUT Profile #100-yr 6-hr

E.G. Elev (ft)	2539.39	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.32	Wt. n-Val.	0.063	0.038	0.063
W.S. Elev (ft)	2538.07	Reach Len. (ft)	354.80	346.68	338.90
Crit W.S. (ft)	2538.07	Flow Area (sq ft)	111.58	237.44	12.53
E.G. Slope (ft/ft)	0.010041	Area (sq ft)	111.58	237.44	12.53
Q Total (cfs)	2698.00	Flow (cfs)	329.62	2338.39	29.99
Top Width (ft)	151.00	Top Width (ft)	79.80	59.09	12.11
Vel Total (ft/s)	7.46	Avg. Vel. (ft/s)	2.95	9.85	2.39
Max Chl Dpth (ft)	5.07	Hydr. Depth (ft)	1.40	4.02	1.03
Conv. Total (cfs)	26924.8	Conv. (cfs)	3289.4	23336.0	299.3
Length Wtd. (ft)	347.12	Wetted Per. (ft)	79.84	59.59	12.28
Min Ch El (ft)	2533.00	Shear (lb/sq ft)	0.88	2.50	0.64
Alpha	1.53	Stream Power (lb/ft s)	2.59	24.60	1.53
Frctn Loss (ft)	4.13	Cum Volume (acre-ft)	3.37	14.53	2.72
C & E Loss (ft)	0.02	Cum SA (acres)	3.16	3.97	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 energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
depth, the 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 OUTPUT Profile #Method 1

E.G. Elev (ft)	2540.07	Element	Left OB	Channel	Right OB
Vel Head (ft)	2.02	Wt. n-Val.		0.038	
W.S. Elev (ft)	2538.06	Reach Len. (ft)	354.80	346.68	338.90
Crit W.S. (ft)	2538.06	Flow Area (sq ft)		236.70	

E.G. Slope (ft/ft)	0.014763	Area (sq ft)	236.70
Q Total (cfs)	2698.00	Flow (cfs)	2698.00
Top Width (ft)	59.09	Top Width (ft)	59.09
Vel Total (ft/s)	11.40	Avg. Vel. (ft/s)	11.40
Max Chl Dpth (ft)	5.06	Hydr. Depth (ft)	4.01
Conv. Total (cfs)	22205.1	Conv. (cfs)	22205.1
Length Wtd. (ft)	346.68	Wetted Per. (ft)	63.70
Min Ch El (ft)	2533.00	Shear (lb/sq ft)	3.42
Alpha	1.00	Stream Power (lb/ft s)	39.04
Frctn Loss (ft)	5.20	Cum Volume (acre-ft)	15.12
C & E Loss (ft)	0.14	Cum SA (acres)	3.97

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

CROSS SECTION

RIVER: Fan 6A
REACH: Fan 6A-1 RS: 0.81

INPUT
Description: Topography and Aerial indicate the wash and surrounding
undeveloped desert.
T5NR5E Section 7
Q100 = 3,002 cfs
Station Elevation Data num= 21

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9903.22	2540	9908.99	2540	9930.18	2540	9960.98	2538	9966.6	2536
9968.63	2534	9970.72	2532	9972.92	2530	9975.21	2528	10000	2527
10010.22	2528	10043.7	2528	10046.74	2528	10059.73	2530	10074.69	2532
10095.6	2534	10164.68	2536	10194.48	2538	10207.78	2540	10221.91	2540
10237.41	2540								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9903.22	.063	9972.92	.038	10059.73	.063

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9972.92	10059.73	174.4	176.37	178.7	.1	.3

CROSS SECTION OUTPUT Profile #100-yr 6-hr

E.G. Elev (ft)	2532.62	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.52	Wt. n-Val.	0.063	0.038	0.063
W.S. Elev (ft)	2531.10	Reach Len. (ft)	174.40	176.37	178.70
Crit W.S. (ft)	2531.10	Flow Area (sq ft)	0.66	271.03	4.50
E.G. Slope (ft/ft)	0.014314	Area (sq ft)	0.66	271.03	4.50
Q Total (cfs)	2698.00	Flow (cfs)	1.02	2688.53	8.45
Top Width (ft)	96.22	Top Width (ft)	1.21	86.81	8.20
Vel Total (ft/s)	9.77	Avg. Vel. (ft/s)	1.55	9.92	1.88
Max Chl Dpth (ft)	4.10	Hydr. Depth (ft)	0.55	3.12	0.55
Conv. Total (cfs)	22550.5	Conv. (cfs)	8.5	22471.3	70.6
Length Wtd. (ft)	176.39	Wetted Per. (ft)	1.63	87.78	8.27
Min Ch El (ft)	2527.00	Shear (lb/sq ft)	0.36	2.76	0.49
Alpha	1.03	Stream Power (lb/ft s)	0.56	27.37	0.91
Frctn Loss (ft)	2.30	Cum Volume (acre-ft)	2.92	12.51	2.66
C & E Loss (ft)	0.03	Cum SA (acres)	2.83	3.39	2.00

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.

CROSS SECTION OUTPUT Profile #Method 1

E.G. Elev (ft)	2532.64	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.56	Wt. n-Val.		0.038	
W.S. Elev (ft)	2531.08	Reach Len. (ft)	174.40	176.37	178.70
Crit W.S. (ft)	2531.08	Flow Area (sq ft)		269.16	
E.G. Slope (ft/ft)	0.015235	Area (sq ft)		269.16	
Q Total (cfs)	2698.00	Flow (cfs)		2698.00	
Top Width (ft)	86.81	Top Width (ft)		86.81	
Vel Total (ft/s)	10.02	Avg. Vel. (ft/s)		10.02	
Max Chl Dpth (ft)	4.07	Hydr. Depth (ft)		3.10	
Conv. Total (cfs)	21858.7	Conv. (cfs)		21858.7	
Length Wtd. (ft)	176.37	Wetted Per. (ft)		89.93	
Min Ch El (ft)	2527.00	Shear (lb/sq ft)		2.85	
Alpha	1.00	Stream Power (lb/ft s)		28.53	
Frctn Loss (ft)	2.26	Cum Volume (acre-ft)		13.10	
C & E Loss (ft)	0.01	Cum SA (acres)		3.39	

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 energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
depth, the 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: Fan 6A
REACH: Fan 6A-1 RS: 0.78

INPUT
Description: Topography and Aerial indicate the wash and surrounding
undeveloped desert.
T5NR5E Section 7
Q100 = 3,002 cfs
Station Elevation Data num= 16

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9928.59	2538	9946.95	2536	9953.44	2534	9960.04	2532	9967	2530
9974.05	2528	9981.15	2526	9985.67	2524	10000	2523	10025.82	2524
10038.15	2526	10059.83	2528	10093.45	2530	10108.79	2532	10127.48	2534
10141.77	2536								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9928.59	.063	9981.15	.038	10038.15	.063

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9981.15	10038.15	473.7	470.36	481.8	.1	.3

CROSS SECTION OUTPUT Profile #100-yr 6-hr

E.G. Elev (ft)	2529.94	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.82	Wt. n-Val.	0.063	0.038	0.063
W.S. Elev (ft)	2528.11	Reach Len. (ft)	473.70	470.36	481.80
Crit W.S. (ft)	2528.11	Flow Area (sq ft)	7.93	237.67	24.24
E.G. Slope (ft/ft)	0.011963	Area (sq ft)	7.93	237.67	24.24

Q Total (cfs)	2698.00	Flow (cfs)	20.68	2613.81	63.51
Top Width (ft)	88.08	Top Width (ft)	7.50	57.00	23.58
Vel Total (ft/s)	10.00	Avg. Vel. (ft/s)	2.61	11.00	2.62
Max Chl Dpth (ft)	5.11	Hydr. Depth (ft)	1.06	4.17	1.03
Conv. Total (cfs)	24667.6	Conv. (cfs)	189.1	23897.8	580.7
Length Wtd. (ft)	470.92	Wetted Per. (ft)	7.79	57.64	23.68
Min Ch El (ft)	2523.00	Shear (lb/sq ft)	0.76	3.08	0.76
Alpha	1.17	Stream Power (lb/ft s)	1.98	33.87	2.00
Frctn Loss (ft)	5.13	Cum Volume (acre-ft)	2.90	11.48	2.60
C & E Loss (ft)	0.03	Cum SA (acres)	2.82	3.10	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 energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
depth, the 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 OUTPUT Profile #Method 1

E.G. Elev (ft)	2530.16	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.71	Wt. n-Val.		0.038	
W.S. Elev (ft)	2528.46	Reach Len. (ft)	473.70	470.36	481.80
Crit W.S. (ft)	2528.04	Flow Area (sq ft)		257.21	
E.G. Slope (ft/ft)	0.010923	Area (sq ft)		257.21	
Q Total (cfs)	2698.00	Flow (cfs)		2698.00	
Top Width (ft)	57.00	Top Width (ft)		57.00	
Vel Total (ft/s)	10.49	Avg. Vel. (ft/s)		10.49	
Max Chl Dpth (ft)	5.46	Hydr. Depth (ft)		4.51	
Conv. Total (cfs)	25814.6	Conv. (cfs)		25814.6	
Length Wtd. (ft)	470.36	Wetted Per. (ft)		62.55	
Min Ch El (ft)	2523.00	Shear (lb/sq ft)		2.80	
Alpha	1.00	Stream Power (lb/ft s)		29.41	
Frctn Loss (ft)	6.16	Cum Volume (acre-ft)		12.04	
C & E Loss (ft)	0.10	Cum SA (acres)		3.10	

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The energy loss was 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: Fan 6A
REACH: Fan 6A-1 RS: 0.69

INPUT
Description: Topography and Aerial indicate the wash and surrounding
undeveloped desert.
T5NR5E Section 7
Q100 = 3,002 cfs
Station Elevation Data num= 15

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9924.12	2526	9925.57	2526	9937.6	2524	9952.14	2522	9978.73	2520
9984.1	2518	9987.93	2516.507	9989.23	2516	10000	2515	10022.37	2516
10024.22	2516.50	910029.64	2518	10039.73	2520	10060.14	2522	10078.39	2524

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9924.12	.063	9987.93	.038	10024.22	.063

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9987.93	10024.22	278.2	285.46	278.7	.1	.3

CROSS SECTION OUTPUT Profile #100-yr 6-hr

E.G. Elev (ft)	2523.17	Element	Left OB	Channel	Right OB
Vel Head (ft)	2.08	Wt. n-Val.	0.063	0.038	0.063
W.S. Elev (ft)	2521.09	Reach Len. (ft)	278.20	285.46	278.70
Crit W.S. (ft)	2521.09	Flow Area (sq ft)	33.83	200.52	47.96
E.G. Slope (ft/ft)	0.009949	Area (sq ft)	33.83	200.52	47.96
Q Total (cfs)	2698.00	Flow (cfs)	99.01	2433.87	165.12
Top Width (ft)	86.63	Top Width (ft)	23.70	36.29	26.64
Vel Total (ft/s)	9.56	Avg. Vel. (ft/s)	2.93	12.14	3.44
Max Chl Dpth (ft)	6.09	Hydr. Depth (ft)	1.43	5.53	1.80
Conv. Total (cfs)	27049.5	Conv. (cfs)	992.7	24401.4	1655.4
Length Wtd. (ft)	284.93	Wetted Per. (ft)	24.38	36.52	27.09
Min Ch El (ft)	2515.00	Shear (lb/sq ft)	0.86	3.41	1.10
Alpha	1.47	Stream Power (lb/ft s)	2.52	41.39	3.79
Frctn Loss (ft)	3.00	Cum Volume (acre-ft)	2.67	9.12	2.20
C & E Loss (ft)	0.16	Cum SA (acres)	2.65	2.60	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.

CROSS SECTION OUTPUT Profile #Method 1

E.G. Elev (ft)	2523.90	Element	Left OB	Channel	Right OB
Vel Head (ft)	2.75	Wt. n-Val.		0.038	
W.S. Elev (ft)	2521.15	Reach Len. (ft)	278.20	285.46	278.70
Crit W.S. (ft)	2521.15	Flow Area (sq ft)		202.59	
E.G. Slope (ft/ft)	0.015976	Area (sq ft)		202.59	
Q Total (cfs)	2698.00	Flow (cfs)		2698.00	
Top Width (ft)	36.29	Top Width (ft)		36.29	
Vel Total (ft/s)	13.32	Avg. Vel. (ft/s)		13.32	
Max Chl Dpth (ft)	6.15	Hydr. Depth (ft)		5.58	
Conv. Total (cfs)	21345.7	Conv. (cfs)		21345.7	
Length Wtd. (ft)	285.46	Wetted Per. (ft)		45.80	
Min Ch El (ft)	2515.00	Shear (lb/sq ft)		4.41	
Alpha	1.00	Stream Power (lb/ft s)		58.75	
Frctn Loss (ft)	3.89	Cum Volume (acre-ft)		9.56	
C & E Loss (ft)	0.33	Cum SA (acres)		2.60	

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 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: Fan 6A
REACH: Fan 6A-1 RS: 0.63

INPUT
Description: Topography and Aerial indicate the wash and surrounding
undeveloped desert.
T5NR5E Section 7
Q100 = 3,002 cfs
Station Elevation Data num= 16

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9848.18	2528	9908.21	2526	9922.88	2524	9936.02	2522	9944.37	2520
9956.14	2518	9975	2516	9986.23	2514	9989.99	2512	10000	2511
10025.59	2512	10049.59	2514	10091.84	2516	10114.84	2518	10134.81	2520
10154.79	2522								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9848.18	.063	9986.23	.038	10049.59	.063

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9986.23	10049.59	259.6	259.01	255.3	.1	.3

CROSS SECTION OUTPUT Profile #100-yr 6-hr

			Left OB	Channel	Right OB
E.G. Elev (ft)	2517.63	Element			
Vel Head (ft)	1.54	Wt. n-Val.	0.063	0.038	0.063
W.S. Elev (ft)	2516.09	Reach Len. (ft)	259.60	259.01	255.30
Crit W.S. (ft)	2516.09	Flow Area (sq ft)	12.28	249.19	46.10
E.G. Slope (ft/ft)	0.011163	Area (sq ft)	12.28	249.19	46.10
Q Total (cfs)	2698.00	Flow (cfs)	30.63	2547.64	119.72
Top Width (ft)	118.73	Top Width (ft)	12.08	63.36	43.29
Vel Total (ft/s)	8.77	Avg. Vel. (ft/s)	2.49	10.22	2.60
Max Chl Dpth (ft)	5.09	Hydr. Depth (ft)	1.02	3.93	1.07
Conv. Total (cfs)	25535.9	Conv. (cfs)	289.9	24112.8	1133.2
Length Wtd. (ft)	258.62	Wetted Per. (ft)	12.26	64.01	43.34
Min Ch El (ft)	2511.00	Shear (lb/sq ft)	0.70	2.71	0.74
Alpha	1.29	Stream Power (lb/ft s)	1.74	27.74	1.93
Frctn Loss (ft)	2.95	Cum Volume (acre-ft)	2.52	7.64	1.90
C & E Loss (ft)	0.04	Cum SA (acres)	2.53	2.27	1.43

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.

CROSS SECTION OUTPUT Profile #Method 1

			Left OB	Channel	Right OB
E.G. Elev (ft)	2517.94	Element			
Vel Head (ft)	1.66	Wt. n-Val.		0.038	
W.S. Elev (ft)	2516.28	Reach Len. (ft)	259.60	259.01	255.30
Crit W.S. (ft)	2515.97	Flow Area (sq ft)		261.05	
E.G. Slope (ft/ft)	0.011751	Area (sq ft)		261.05	
Q Total (cfs)	2698.00	Flow (cfs)		2698.00	
Top Width (ft)	63.36	Top Width (ft)		63.36	
Vel Total (ft/s)	10.34	Avg. Vel. (ft/s)		10.34	
Max Chl Dpth (ft)	5.28	Hydr. Depth (ft)		4.12	
Conv. Total (cfs)	24889.4	Conv. (cfs)		24889.4	
Length Wtd. (ft)	259.01	Wetted Per. (ft)		68.57	
Min Ch El (ft)	2511.00	Shear (lb/sq ft)		2.79	
Alpha	1.00	Stream Power (lb/ft s)		28.87	
Frctn Loss (ft)	3.43	Cum Volume (acre-ft)		8.04	
C & E Loss (ft)	0.04	Cum SA (acres)		2.27	

Warning: The energy loss was 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: Fan 6A
REACH: Fan 6A-1 RS: 0.58

INPUT
Description: Topography and Aerial indicate the wash and surrounding
undeveloped desert.
T5NR5E Section 7
Q100 = 3,002 cfs
Station Elevation Data num= 20

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9838.05	2522	9846.09	2520	9855.94	2518	9879.57	2516	9898.83	2514
9974.96	2512	9979.69	2510	9982.26	2509.031	9984.99	2508	10000	2507.66
10016.57	2508	10036.85	2509.019	10056.36	2510	10077.03	2512	10096.41	2512
10114.08	2510	10129.27	2510	10147.84	2512	10170.9	2514	10195.81	2516

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9838.05	.063	9982.26	.038	10036.85	.063

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9982.26	10036.85	366.7	356.19	351.9	.1	.3

Right Levee Station=10076.66 Elevation= 2511.96

CROSS SECTION OUTPUT Profile #100-yr 6-hr

			Left OB	Channel	Right OB
E.G. Elev (ft)	2513.41	Element			
Vel Head (ft)	1.41	Wt. n-Val.	0.063	0.038	0.063
W.S. Elev (ft)	2512.00	Reach Len. (ft)	366.70	356.19	351.90
Crit W.S. (ft)	2512.00	Flow Area (sq ft)	11.11	211.96	135.84
E.G. Slope (ft/ft)	0.011690	Area (sq ft)	11.11	211.96	135.84
Q Total (cfs)	2698.00	Flow (cfs)	35.62	2207.86	454.51
Top Width (ft)	153.49	Top Width (ft)	7.30	54.59	91.60
Vel Total (ft/s)	7.52	Avg. Vel. (ft/s)	3.21	10.42	3.35
Max Chl Dpth (ft)	4.34	Hydr. Depth (ft)	1.52	3.88	1.48
Conv. Total (cfs)	24953.7	Conv. (cfs)	329.5	20420.4	4203.8
Length Wtd. (ft)	356.43	Wetted Per. (ft)	7.88	54.81	91.94
Min Ch El (ft)	2507.66	Shear (lb/sq ft)	1.03	2.82	1.08
Alpha	1.61	Stream Power (lb/ft s)	3.30	29.40	3.61
Frctn Loss (ft)	4.05	Cum Volume (acre-ft)	2.46	6.27	1.37
C & E Loss (ft)	0.14	Cum SA (acres)	2.47	1.92	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: Divided flow computed for this cross-section.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
depth, the calculated water surface came back below critical depth. This indicates that there is
not a valid subcritical answer. The program defaulted to critical depth.

CROSS SECTION OUTPUT Profile #Method 1

			Left OB	Channel	Right OB
E.G. Elev (ft)	2514.47	Element			
Vel Head (ft)	2.09	Wt. n-Val.		0.038	
W.S. Elev (ft)	2512.37	Reach Len. (ft)	366.70	356.19	351.90
Crit W.S. (ft)	2512.37	Flow Area (sq ft)		232.30	
E.G. Slope (ft/ft)	0.014998	Area (sq ft)		232.30	
Q Total (cfs)	2698.00	Flow (cfs)		2698.00	

Top Width (ft)	54.59	Top Width (ft)	54.59
Vel Total (ft/s)	11.61	Avg. Vel. (ft/s)	11.61
Max Chl Dpth (ft)	4.71	Hydr. Depth (ft)	4.26
Conv. Total (cfs)	22030.3	Conv. (cfs)	22030.3
Length Wtd. (ft)	356.19	Wetted Per. (ft)	61.51
Min Ch El (ft)	2507.66	Shear (lb/sq ft)	3.54
Alpha	1.00	Stream Power (lb/ft s)	41.07
Frctn Loss (ft)	4.83	Cum Volume (acre-ft)	6.57
C & E Loss (ft)	0.27	Cum SA (acres)	1.92

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 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.

CROSS SECTION

RIVER: Fan 6A
REACH: Fan 6A-1 RS: 0.52

INPUT
Description: Topography and Aerial indicate the wash and surrounding
undeveloped desert.
T5NR5E Section 7
Q100 = 3,002 cfs
Station Elevation Data num= 14

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9773.58	2508	9818.92	2506	9872.09	2505.67	9925.89	2506	9938.82	2506
9942	2504	9969.75	2504	9978.05	2504.29	9983.28	2504	10000	2503
10029.4	2504	10042.19	2506	10057.26	2508	10076.58	2510		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9773.58	.063	9938.82	.038	10042.19	.063

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9938.82	10042.19	478.7	485.78	496.2	.1	.3

CROSS SECTION OUTPUT Profile #100-yr 6-hr

E.G. Elev (ft)	2507.75	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.95	Wt. n-Val.	0.063	0.038	0.063
W.S. Elev (ft)	2506.80	Reach Len. (ft)	478.70	485.78	496.20
Crit W.S. (ft)	2506.80	Flow Area (sq ft)	120.67	294.44	2.40
E.G. Slope (ft/ft)	0.011063	Area (sq ft)	120.67	294.44	2.40
Q Total (cfs)	2698.00	Flow (cfs)	273.69	2421.09	3.22
Top Width (ft)	247.40	Top Width (ft)	138.01	103.37	6.02
Vel Total (ft/s)	6.46	Avg. Vel. (ft/s)	2.27	8.22	1.34
Max Chl Dpth (ft)	3.80	Hydr. Depth (ft)	0.87	2.85	0.40
Conv. Total (cfs)	25651.0	Conv. (cfs)	2602.1	23018.4	30.6
Length Wtd. (ft)	485.10	Wetted Per. (ft)	138.03	104.16	6.07
Min Ch El (ft)	2503.00	Shear (lb/sq ft)	0.60	1.95	0.27
Alpha	1.47	Stream Power (lb/ft s)	1.37	16.05	0.37
Frctn Loss (ft)	4.99	Cum Volume (acre-ft)	1.90	4.20	0.81
C & E Loss (ft)	0.02	Cum SA (acres)	1.86	1.27	0.64

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

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

CROSS SECTION OUTPUT Profile #Method 1

E.G. Elev (ft)	2508.12	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.20	Wt. n-Val.		0.038	
W.S. Elev (ft)	2506.92	Reach Len. (ft)	478.70	485.78	496.20
Crit W.S. (ft)	2506.70	Flow Area (sq ft)		306.48	
E.G. Slope (ft/ft)	0.012303	Area (sq ft)		306.48	
Q Total (cfs)	2698.00	Flow (cfs)		2698.00	
Top Width (ft)	103.37	Top Width (ft)		103.37	
Vel Total (ft/s)	8.80	Avg. Vel. (ft/s)		8.80	
Max Chl Dpth (ft)	3.92	Hydr. Depth (ft)		2.96	
Conv. Total (cfs)	24324.0	Conv. (cfs)		24324.0	
Length Wtd. (ft)	485.78	Wetted Per. (ft)		105.99	
Min Ch El (ft)	2503.00	Shear (lb/sq ft)		2.22	
Alpha	1.00	Stream Power (lb/ft s)		19.55	
Frctn Loss (ft)	6.59	Cum Volume (acre-ft)		4.37	
C & E Loss (ft)	0.08	Cum SA (acres)		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: Fan 6A
REACH: Fan 6A-1 RS: 0.42

INPUT
Description: Topography and Aerial indicate the wash and surrounding
undeveloped desert.
T5NR5E Section 7
Q100 = 3,002 cfs
Station Elevation Data num= 14

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9694.17	2502	9722.11	2500	9801.21	2500	9808.78	2500	9938.82	2498
9976.6	2496.5	9989.19	2496	10000	2494.5	10033.99	2496	10036.84	2496.496
10045.49	2498	10073.44	2500	10108.31	2502	10139.32	2504		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9694.17	.063	9976.6	.038	10036.84	.063

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9976.6	10036.84	238.1	230.97	224.6	.1	.3

CROSS SECTION OUTPUT Profile #100-yr 6-hr

E.G. Elev (ft)	2500.61	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.18	Wt. n-Val.	0.063	0.038	0.063
W.S. Elev (ft)	2499.43	Reach Len. (ft)	238.10	230.97	224.60
Crit W.S. (ft)	2499.43	Flow Area (sq ft)	148.13	236.04	33.01
E.G. Slope (ft/ft)	0.009591	Area (sq ft)	148.13	236.04	33.01
Q Total (cfs)	2698.00	Flow (cfs)	372.42	2241.96	83.62
Top Width (ft)	219.20	Top Width (ft)	130.40	60.24	28.56
Vel Total (ft/s)	6.47	Avg. Vel. (ft/s)	2.51	9.50	2.53
Max Chl Dpth (ft)	4.92	Hydr. Depth (ft)	1.14	3.92	1.16
Conv. Total (cfs)	27549.1	Conv. (cfs)	3802.8	22892.5	853.8
Length Wtd. (ft)	230.63	Wetted Per. (ft)	130.45	60.43	28.74

Min Ch El (ft)	2494.50	Shear (lb/sq ft)	0.68	2.34	0.69
Alpha	1.82	Stream Power (lb/ft s)	1.71	22.21	1.74
Frctn Loss (ft)	2.42	Cum Volume (acre-ft)	0.42	1.24	0.61
C & E Loss (ft)	0.07	Cum SA (acres)	0.39	0.36	0.45

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.

CROSS SECTION OUTPUT Profile #Method 1

E.G. Elev (ft)	2501.45	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.97	Wt. n-Val.		0.038	
W.S. Elev (ft)	2499.48	Reach Len. (ft)	238.10	230.97	224.60
Crit W.S. (ft)	2499.48	Flow Area (sq ft)		239.37	
E.G. Slope (ft/ft)	0.015030	Area (sq ft)		239.37	
Q Total (cfs)	2698.00	Flow (cfs)		2698.00	
Top Width (ft)	60.24	Top Width (ft)		60.24	
Vel Total (ft/s)	11.27	Avg. Vel. (ft/s)		11.27	
Max Chl Dpth (ft)	4.98	Hydr. Depth (ft)		3.97	
Conv. Total (cfs)	22007.2	Conv. (cfs)		22007.2	
Length Wtd. (ft)	230.97	Wetted Per. (ft)		66.39	
Min Ch El (ft)	2494.50	Shear (lb/sq ft)		3.38	
Alpha	1.00	Stream Power (lb/ft s)		38.13	
Frctn Loss (ft)	3.43	Cum Volume (acre-ft)		1.32	
C & E Loss (ft)	0.09	Cum SA (acres)		0.36	

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: Fan 6A
REACH: Fan 6A-1 RS: 0.38

INPUT
Description: Cross Section 0.38 is located at the downstream project boundary
for Fan 6A. The calculated floodplain will tie into the existing
Zone AO located downstream of Cross Section 0.38.

Topography
and Aerial indicate the wash and surrounding undeveloped desert.

T5NR5E Section 7
Q100 = 3,002 cfs
Station Elevation Data num= 13

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev

```
 9864.73    2500 9925.44    2498 9949.57    2496 9968.96    2494 9973.49    2492
   10000    249110017.26    249210045.27    2494 10051.5    249410076.43 2492.67
 10094.3 2493.8410178.55    2494 10197.8    2496

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
 9864.73    .063 9968.96    .03810045.27    .063

Bank Sta: Left   Right    Coeff Contr.   Expan.
       9968.9610045.27             .1       .3

CROSS SECTION OUTPUT  Profile #100-yr 6-hr

  E.G. Elev (ft)           2496.14    Element                  Left OB    Channel   Right OB
  Vel Head (ft)               0.95    Wt. n-Val.                0.063      0.038      0.063
  W.S. Elev (ft)           2495.19    Reach Len. (ft)
  Crit W.S. (ft)           2495.19    Flow Area (sq ft)          6.86     232.71     201.93
  E.G. Slope (ft/ft)      0.011551    Area (sq ft)               6.86     232.71     201.93
  Q Total (cfs)            2698.00    Flow (cfs)                12.24    2047.00     638.76
  Top Width (ft)            232.57    Top Width (ft)            11.53      76.31     144.73
  Vel Total (ft/s)            6.11    Avg. Vel. (ft/s)           1.79       8.80       3.16
  Max Chl Dpth (ft)           4.19    Hydr. Depth (ft)           0.59       3.05       1.40
  Conv. Total (cfs)        25103.6    Conv. (cfs)               113.9    19046.3     5943.3
  Length Wtd. (ft)                    Wetted Per. (ft)          11.59      76.85     144.86
  Min Ch El (ft)           2491.00    Shear (lb/sq ft)           0.43       2.18       1.01
  Alpha                       1.64    Stream Power (lb/ft s)     0.76      19.21       3.18
  Frctn Loss (ft)                     Cum Volume (acre-ft)
  C & E Loss (ft)                     Cum SA (acres)


CROSS SECTION OUTPUT  Profile #Method 1

  E.G. Elev (ft)           2497.22    Element                  Left OB    Channel   Right OB
  Vel Head (ft)               1.67    Wt. n-Val.                           0.038
  W.S. Elev (ft)           2495.55    Reach Len. (ft)
  Crit W.S. (ft)           2495.55    Flow Area (sq ft)                   259.87
  E.G. Slope (ft/ft)      0.014638    Area (sq ft)                        259.87
  Q Total (cfs)            2698.00    Flow (cfs)                         2698.00
  Top Width (ft)             76.31    Top Width (ft)                       76.31
  Vel Total (ft/s)           10.38    Avg. Vel. (ft/s)                     10.38
  Max Chl Dpth (ft)           4.55    Hydr. Depth (ft)                      3.41
  Conv. Total (cfs)        22300.1    Conv. (cfs)                       22300.1
  Length Wtd. (ft)                    Wetted Per. (ft)                     79.94
  Min Ch El (ft)           2491.00    Shear (lb/sq ft)                      2.97
  Alpha                       1.00    Stream Power (lb/ft s)               30.84
  Frctn Loss (ft)                     Cum Volume (acre-ft)
  C & E Loss (ft)                     Cum SA (acres)


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.


SUMMARY OF MANNING'S N VALUES

River:Fan 6A

      Reach          River Sta.       n1        n2        n3

 Fan 6AN-1            5.17            .056      .039      .056
 Fan 6AN-1            5.07            .056      .039      .056
 Fan 6AN-1            5.00            .056      .039      .056
 Fan 6AN-1            4.95            .056      .039      .056
 Fan 6AN-1            4.91            .056      .039      .056
 Fan 6AN-1            4.84            .056      .039      .056
 Fan 6AN-1            4.77            .056      .039      .056
 Fan 6AN-1            4.69            .056      .039      .056
 Fan 6AN-1            4.59            .056      .039      .056
```

Fan 6AN-1	4.50	.056	.039	.056
Fan 6AN-1	4.40	.056	.039	.056
Fan 6AN-1	4.31	.056	.039	.056
Fan 6AN-1	4.21	.056	.039	.056
Fan 6AN-1	4.13	.056	.039	.056
Fan 6AN-1	4.08	.056	.039	.056
Fan 6AN-1	4.02	.056	.039	.056
Fan 6AN-1	3.96	.056	.038	.053
Fan 6AN-1	3.92	.056	.038	.053
Fan 6AN-1	3.915	Culvert		
Fan 6AN-1	3.91	.056	.038	.053
Fan 6AN-1	3.81	.056	.038	.053
Fan 6AN-1	3.72	.056	.038	.053
Fan 6AN-1	3.63	.056	.038	.053
Fan 6AN-1	3.57	.056	.038	.053
Fan 6AN-1	3.53	.056	.038	.053
Fan 6AN-1	3.48	.056	.038	.053
Fan 6AN-1	3.43	.056	.038	.053
Fan 6AN-1	3.39	.056	.038	.053
Fan 6AN-1	3.32	.056	.038	.053
Fan 6AN-1	3.24	.056	.038	.053
Fan 6AN-1	3.15	.056	.038	.053
Fan 6AN-1	3.07	.056	.038	.053
Fan 6AN-1	2.98	.056	.038	.053
Fan 6AN-1	2.95	.056	.038	.053
Fan 6AN-1	2.88	.056	.038	.053
Fan 6AN-1	2.79	.056	.038	.053
Fan 6AN-1	2.69	.056	.038	.053
Fan 6AN-1	2.60	.056	.038	.053
Fan 6AN-1	2.55	.056	.038	.053
Fan 6AN-1	2.51	.056	.038	.053
Fan 6AN-1	2.44	.056	.038	.053
Fan 6AN-1	2.39	.056	.038	.053
Fan 6AN-1	2.32	.056	.038	.053
Fan 6AN-1	2.28	.056	.038	.053
Fan 6AN-1	2.20	.056	.038	.053
Fan 6AN-1	2.14	.056	.038	.053
Fan 6AN-1	2.06	.056	.038	.053
Fan 6AN-1	2.05	Culvert		
Fan 6AN-1	2.04	.056	.038	.053
Fan 6AN-1	1.97	.056	.038	.053
Fan 6AN-1	1.90	.056	.038	.053
Fan 6AN-1	1.83	.056	.038	.053
Fan 6AN-1	1.78	.056	.038	.053
Fan 6AN-1	1.72	.056	.038	.053
Fan 6AN-1	1.65	.056	.038	.053
Fan 6AN-1	1.62	.056	.038	.053
Fan 6AN-1	1.56	.056	.038	.053
Fan 6AN-1	1.55	Culvert		
Fan 6AN-1	1.54	.056	.038	.053
Fan 6AN-1	1.48	.056	.038	.053
Fan 6AN-1	1.42	.05	.038	.05
Fan 6AN-1	1.32	.05	.038	.05
Fan 6AN-1	1.23	.05	.038	.05
Fan 6AN-1	1.20	.05	.038	.05
Fan 6AN-1	1.19	Culvert		
Fan 6AN-1	1.18	.05	.038	.05
Fan 6AN-1	1.12	.063	.038	.063
Fan 6AN-1	1.04	.063	.038	.063
Fan 6AN-1	1.03	Culvert		
Fan 6AN-1	1.02	.063	.038	.063
Fan 6AN-1	0.99	.063	.038	.063
Fan 6AS-1	4.13	.064	.044	.064
Fan 6AS-1	4.03	.064	.044	.064
Fan 6AS-1	3.93	.064	.044	.064
Fan 6AS-1	3.85	.064	.044	.064
Fan 6AS-1	3.75	.064	.044	.064
Fan 6AS-1	3.68	.064	.044	.064
Fan 6AS-1	3.62	.064	.044	.064
Fan 6AS-1	3.55	.064	.044	.064
Fan 6AS-1	3.52	.064	.044	.064

Fan 6AS-1	3.45	.064	.044	.064
Fan 6AS-1	3.35	.064	.044	.064
Fan 6AS-1	3.26	.064	.044	.064
Fan 6AS-1	3.18	.064	.044	.064
Fan 6AS-1	3.09	.064	.044	.064
Fan 6AS-1	3.04	.064	.044	.064
Fan 6AS-1	2.96	.064	.044	.064
Fan 6AS-1	2.90	.064	.044	.064
Fan 6AS-1	2.8	.064	.044	.064
Fan 6AS-1	2.74	.064	.044	.064
Fan 6AS-1	2.68	.064	.044	.064
Fan 6AS-1	2.61	.064	.044	.064
Fan 6AS-1	2.54	.064	.044	.064
Fan 6AS-1	2.48	.064	.044	.064
Fan 6AS-1	2.41	.064	.044	.064
Fan 6AS-1	2.34	.064	.044	.064
Fan 6AS-1	2.26	.064	.044	.064
Fan 6AS-1	2.17	.064	.044	.064
Fan 6AS-1	2.13	.064	.044	.064
Fan 6AS-1	2.07	.064	.044	.064
Fan 6AS-1	2.03	.064	.044	.064
Fan 6AS-1	1.97	.063	.038	.063
Fan 6AS-1	1.87	.063	.038	.063
Fan 6AS-1	1.85	.065	.038	.063
Fan 6AS-1	1.78	.063	.038	.063
Fan 6AS-1	1.77	Culvert		
Fan 6AS-1	1.76	.063	.038	.063
Fan 6AS-1	1.70	.063	.038	.063
Fan 6AS-1	1.64	.063	.038	.063
Fan 6AS-1	1.58	.063	.038	.063
Fan 6AS-1	1.49	.063	.038	.063
Fan 6AS-1	1.40	.063	.038	.064
Fan 6AS-1	1.31	.063	.038	.063
Fan 6AS-1	1.24	.063	.038	.063
Fan 6AS-1	1.21	.063	.038	.063
Fan 6AS-1	1.17	.063	.038	.063
Fan 6AS-1	1.16	Culvert		
Fan 6AS-1	1.15	.063	.038	.063
Fan 6AS-1	1.11	.063	.038	.063
Fan 6AS-1	1.03	.063	.038	.063
Fan 6A-1	0.93	.063	.038	.063
Fan 6A-1	0.87	.063	.038	.063
Fan 6A-1	0.81	.063	.038	.063
Fan 6A-1	0.78	.063	.038	.063
Fan 6A-1	0.69	.063	.038	.063
Fan 6A-1	0.63	.063	.038	.063
Fan 6A-1	0.58	.063	.038	.063
Fan 6A-1	0.52	.063	.038	.063
Fan 6A-1	0.42	.063	.038	.063
Fan 6A-1	0.38	.063	.038	.063

SUMMARY OF REACH LENGTHS

River: Fan 6A

Reach	River Sta.	Left	Channel	Right
Fan 6AN-1	5.17	528.8	515.09	491.2
Fan 6AN-1	5.07	364.7	367.05	366
Fan 6AN-1	5.00	270.5	261.76	259.2
Fan 6AN-1	4.95	205	206.6	207.7
Fan 6AN-1	4.91	307.9	358.65	358.1
Fan 6AN-1	4.84	353.5	375.84	371.9
Fan 6AN-1	4.77	421.8	431.82	393.1
Fan 6AN-1	4.69	476.6	513.18	512.4
Fan 6AN-1	4.59	482.2	496.87	509.3
Fan 6AN-1	4.50	498.1	502.66	487.2
Fan 6AN-1	4.40	492.1	508.37	492.3

Fan 6AN-1	4.31	493.9	499.13	493.9
Fan 6AN-1	4.21	405.5	410.77	408.3
Fan 6AN-1	4.13	301.3	305.83	298.2
Fan 6AN-1	4.08	287.8	283.88	273.9
Fan 6AN-1	4.02	313.4	314.37	315.1
Fan 6AN-1	3.96	213.9	223.11	221.8
Fan 6AN-1	3.92	58.8	57.5	56.9
Fan 6AN-1	3.915	Culvert		
Fan 6AN-1	3.91	497.5	501.85	495.8
Fan 6AN-1	3.81	496.2	504.22	504.4
Fan 6AN-1	3.72	448.2	450.02	441.3
Fan 6AN-1	3.63	321.9	323.92	321.7
Fan 6AN-1	3.57	244.4	244.32	239.6
Fan 6AN-1	3.53	222.9	222.87	219.4
Fan 6AN-1	3.48	300	302.63	300.4
Fan 6AN-1	3.43	189.6	188.9	190.3
Fan 6AN-1	3.39	375.1	380.13	378.6
Fan 6AN-1	3.32	390	394.72	403.4
Fan 6AN-1	3.24	512.2	513.61	513
Fan 6AN-1	3.15	431.2	422.74	407.59
Fan 6AN-1	3.07	423.34	433.47	433.2
Fan 6AN-1	2.98	185.2	177.66	176.5
Fan 6AN-1	2.95	390.5	394.47	390
Fan 6AN-1	2.88	462.7	482.5	490.3
Fan 6AN-1	2.79	484.6	483.6	469.8
Fan 6AN-1	2.69	482.2	484.8	462.4
Fan 6AN-1	2.60	320.6	271.84	264.1
Fan 6AN-1	2.55	238	236.16	234.7
Fan 6AN-1	2.51	330.5	348.46	362.2
Fan 6AN-1	2.44	269.3	275.3	279.5
Fan 6AN-1	2.39	357.2	360.93	354.3
Fan 6AN-1	2.32	286.7	210.86	201.7
Fan 6AN-1	2.28	400.7	433.22	440.4
Fan 6AN-1	2.20	301.1	297.74	298.2
Fan 6AN-1	2.14	429.8	442.89	452.9
Fan 6AN-1	2.06	75.5	72.93	72.1
Fan 6AN-1	2.05	Culvert		
Fan 6AN-1	2.04	399	397.58	397.2
Fan 6AN-1	1.97	362.5	347.95	335.3
Fan 6AN-1	1.90	368.5	390.68	411.1
Fan 6AN-1	1.83	242	240.11	250.2
Fan 6AN-1	1.78	335.8	332.2	321.4
Fan 6AN-1	1.72	383.8	373.9	370.7
Fan 6AN-1	1.65	142.2	147.64	149.8
Fan 6AN-1	1.62	329.1	332.31	336.2
Fan 6AN-1	1.56	73.65	73.65	73.65
Fan 6AN-1	1.55	Culvert		
Fan 6AN-1	1.54	355.2	359.44	367.4
Fan 6AN-1	1.48	294.7	301.31	270.9
Fan 6AN-1	1.42	523.2	512.96	499.8
Fan 6AN-1	1.32	488.1	501.61	513.8
Fan 6AN-1	1.23	141.8	138.07	139.9
Fan 6AN-1	1.20	87.43	87.43	87.43
Fan 6AN-1	1.19	Culvert		
Fan 6AN-1	1.18	307.1	310.29	318.6
Fan 6AN-1	1.12	473.5	446.04	436.9
Fan 6AN-1	1.04	100.56	100.56	100.56
Fan 6AN-1	1.03	Culvert		
Fan 6AN-1	1.02	180	166.14	160
Fan 6AN-1	0.99	0	0	0
Fan 6AS-1	4.13	519.97	512.47	515.45
Fan 6AS-1	4.03	496.93	502.93	495.96
Fan 6AS-1	3.93	440.11	443.71	445.36
Fan 6AS-1	3.85	529.59	525.95	517.56
Fan 6AS-1	3.75	335.71	333.58	324.79
Fan 6AS-1	3.68	316.45	314.97	313.92
Fan 6AS-1	3.62	384.63	393.32	394.13
Fan 6AS-1	3.55	161.82	164.24	156.08
Fan 6AS-1	3.52	379.36	383.78	376.51
Fan 6AS-1	3.45	483.02	484.27	482.22
Fan 6AS-1	3.35	478.16	479.22	445.83

Fan 6AS-1	3.26	416.08	413.96	415.27
Fan 6AS-1	3.18	499.94	500.15	494.7
Fan 6AS-1	3.09	267.05	278.54	275.85
Fan 6AS-1	3.04	381.75	391.48	395.45
Fan 6AS-1	2.96	354.11	356.49	355.04
Fan 6AS-1	2.90	497.59	492.08	483.39
Fan 6AS-1	2.8	339.92	338.89	332.95
Fan 6AS-1	2.74	292.91	292.24	288.24
Fan 6AS-1	2.68	375.69	379.11	381.48
Fan 6AS-1	2.61	376.41	374.58	367.98
Fan 6AS-1	2.54	296.25	298.6	295.36
Fan 6AS-1	2.48	375.04	372.8	360.61
Fan 6AS-1	2.41	362.92	358.26	356.54
Fan 6AS-1	2.34	428.43	431.09	403.64
Fan 6AS-1	2.26	498.01	502.98	520.98
Fan 6AS-1	2.17	209.36	209.75	204.3
Fan 6AS-1	2.13	325.79	317.77	277.94
Fan 6AS-1	2.07	192.22	219.26	221.37
Fan 6AS-1	2.03	348.85	320.13	304.39
Fan 6AS-1	1.97	506.74	496.23	496.16
Fan 6AS-1	1.87	134.91	142.05	153.34
Fan 6AS-1	1.85	528.75	388.47	367.39
Fan 6AS-1	1.78	69.36	75.57	77.87
Fan 6AS-1	1.77	Culvert		
Fan 6AS-1	1.76	290.16	301.99	312.61
Fan 6AS-1	1.70	272.23	314.66	332.47
Fan 6AS-1	1.64	309.05	303.64	300.67
Fan 6AS-1	1.58	432.47	467.04	459.13
Fan 6AS-1	1.49	514.89	510.79	494.14
Fan 6AS-1	1.40	466.52	470.39	472.97
Fan 6AS-1	1.31	354.79	374.72	381.55
Fan 6AS-1	1.24	155.32	147.82	149.37
Fan 6AS-1	1.21	234.85	236.57	234.28
Fan 6AS-1	1.17	85.86	89.25	89.75
Fan 6AS-1	1.16	Culvert		
Fan 6AS-1	1.15	234.33	225.13	221.72
Fan 6AS-1	1.11	408.15	397.57	380.71
Fan 6AS-1	1.03	0	0	0
Fan 6A-1	0.93	321.7	316.21	321.5
Fan 6A-1	0.87	354.8	346.68	338.9
Fan 6A-1	0.81	174.4	176.37	178.7
Fan 6A-1	0.78	473.7	470.36	481.8
Fan 6A-1	0.69	278.2	285.46	278.7
Fan 6A-1	0.63	259.6	259.01	255.3
Fan 6A-1	0.58	366.7	356.19	351.9
Fan 6A-1	0.52	478.7	485.78	496.2
Fan 6A-1	0.42	238.1	230.97	224.6
Fan 6A-1	0.38			

SUMMARY OF CONTRACTION AND EXPANSION COEFFICIENTS
River: Fan 6A

Reach	River Sta.	Contr.	Expan.
Fan 6AN-1	5.17	.1	.3
Fan 6AN-1	5.07	.1	.3
Fan 6AN-1	5.00	.1	.3
Fan 6AN-1	4.95	.1	.3
Fan 6AN-1	4.91	.1	.3
Fan 6AN-1	4.84	.1	.3
Fan 6AN-1	4.77	.1	.3
Fan 6AN-1	4.69	.1	.3
Fan 6AN-1	4.59	.1	.3
Fan 6AN-1	4.50	.1	.3
Fan 6AN-1	4.40	.1	.3
Fan 6AN-1	4.31	.1	.3
Fan 6AN-1	4.21	.1	.3

Fan 6AN-1	4.13	.1	.3
Fan 6AN-1	4.08	.1	.3
Fan 6AN-1	4.02	.1	.3
Fan 6AN-1	3.96	.3	.5
Fan 6AN-1	3.92	.3	.5
Fan 6AN-1	3.915	Culvert	
Fan 6AN-1	3.91	.3	.5
Fan 6AN-1	3.81	.1	.3
Fan 6AN-1	3.72	.1	.3
Fan 6AN-1	3.63	.1	.3
Fan 6AN-1	3.57	.1	.3
Fan 6AN-1	3.53	.1	.3
Fan 6AN-1	3.48	.1	.3
Fan 6AN-1	3.43	.1	.3
Fan 6AN-1	3.39	.1	.3
Fan 6AN-1	3.32	.1	.3
Fan 6AN-1	3.24	.1	.3
Fan 6AN-1	3.15	.1	.3
Fan 6AN-1	3.07	.1	.3
Fan 6AN-1	2.98	.1	.3
Fan 6AN-1	2.95	.1	.3
Fan 6AN-1	2.88	.1	.3
Fan 6AN-1	2.79	.1	.3
Fan 6AN-1	2.69	.1	.3
Fan 6AN-1	2.60	.1	.3
Fan 6AN-1	2.55	.1	.3
Fan 6AN-1	2.51	.1	.3
Fan 6AN-1	2.44	.1	.3
Fan 6AN-1	2.39	.1	.3
Fan 6AN-1	2.32	.1	.3
Fan 6AN-1	2.28	.1	.3
Fan 6AN-1	2.20	.1	.3
Fan 6AN-1	2.14	.3	.5
Fan 6AN-1	2.06	.3	.5
Fan 6AN-1	2.05	Culvert	
Fan 6AN-1	2.04	.3	.5
Fan 6AN-1	1.97	.1	.3
Fan 6AN-1	1.90	.1	.3
Fan 6AN-1	1.83	.1	.3
Fan 6AN-1	1.78	.1	.3
Fan 6AN-1	1.72	.1	.3
Fan 6AN-1	1.65	.1	.3
Fan 6AN-1	1.62	.3	.5
Fan 6AN-1	1.56	.3	.5
Fan 6AN-1	1.55	Culvert	
Fan 6AN-1	1.54	.3	.5
Fan 6AN-1	1.48	.1	.3
Fan 6AN-1	1.42	.1	.3
Fan 6AN-1	1.32	.1	.3
Fan 6AN-1	1.23	.3	.5
Fan 6AN-1	1.20	.3	.5
Fan 6AN-1	1.19	Culvert	
Fan 6AN-1	1.18	.3	.5
Fan 6AN-1	1.12	.3	.5
Fan 6AN-1	1.04	.3	.5
Fan 6AN-1	1.03	Culvert	
Fan 6AN-1	1.02	.3	.5
Fan 6AN-1	0.99	.1	.3
Fan 6AS-1	4.13	.1	.3
Fan 6AS-1	4.03	.1	.3
Fan 6AS-1	3.93	.1	.3
Fan 6AS-1	3.85	.1	.3
Fan 6AS-1	3.75	.1	.3
Fan 6AS-1	3.68	.1	.3
Fan 6AS-1	3.62	.1	.3
Fan 6AS-1	3.55	.1	.3
Fan 6AS-1	3.52	.1	.3
Fan 6AS-1	3.45	.1	.3
Fan 6AS-1	3.35	.1	.3
Fan 6AS-1	3.26	.1	.3
Fan 6AS-1	3.18	.1	.3

Fan 6AS-1	3.09	.1	.3
Fan 6AS-1	3.04	.1	.3
Fan 6AS-1	2.96	.1	.3
Fan 6AS-1	2.90	.1	.3
Fan 6AS-1	2.8	.1	.3
Fan 6AS-1	2.74	.1	.3
Fan 6AS-1	2.68	.1	.3
Fan 6AS-1	2.61	.1	.3
Fan 6AS-1	2.54	.1	.3
Fan 6AS-1	2.48	.1	.3
Fan 6AS-1	2.41	.1	.3
Fan 6AS-1	2.34	.1	.3
Fan 6AS-1	2.26	.1	.3
Fan 6AS-1	2.17	.1	.3
Fan 6AS-1	2.13	.1	.3
Fan 6AS-1	2.07	.1	.3
Fan 6AS-1	2.03	.1	.3
Fan 6AS-1	1.97	.1	.3
Fan 6AS-1	1.87	.1	.3
Fan 6AS-1	1.85	.3	.5
Fan 6AS-1	1.78	.3	.5
Fan 6AS-1	1.77	Culvert	
Fan 6AS-1	1.76	.3	.5
Fan 6AS-1	1.70	.1	.3
Fan 6AS-1	1.64	.1	.3
Fan 6AS-1	1.58	.1	.3
Fan 6AS-1	1.49	.1	.3
Fan 6AS-1	1.40	.1	.3
Fan 6AS-1	1.31	.1	.3
Fan 6AS-1	1.24	.1	.3
Fan 6AS-1	1.21	.3	.5
Fan 6AS-1	1.17	.3	.5
Fan 6AS-1	1.16	Culvert	
Fan 6AS-1	1.15	.3	.5
Fan 6AS-1	1.11	.1	.3
Fan 6AS-1	1.03	.1	.3
Fan 6A-1	0.93	.1	.3
Fan 6A-1	0.87	.1	.3
Fan 6A-1	0.81	.1	.3
Fan 6A-1	0.78	.1	.3
Fan 6A-1	0.69	.1	.3
Fan 6A-1	0.63	.1	.3
Fan 6A-1	0.58	.1	.3
Fan 6A-1	0.52	.1	.3
Fan 6A-1	0.42	.1	.3
Fan 6A-1	0.38	.1	.3

Profile Output Table - Standard Table 1

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev
E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl			
(ft/ft)	(ft/s)	(sq ft)	(ft)	(cfs)	(ft)	(ft)	(ft)	(ft)
Fan 6AN-1	5.17	100-yr 6-hr		809.00	3055.66	3059.38	3059.38	3060.16
0.009525	7.97	159.05	119.34	0.79				
Fan 6AN-1	5.17	Method 1		809.00	3055.66	3059.48	3059.48	3061.09
0.019047	10.18	79.47	24.39	0.99				
Fan 6AN-1	5.07	100-yr 6-hr		809.00	3036.00	3038.18	3038.18	3038.79
0.017535	6.29	133.33	128.93	0.94				
Fan 6AN-1	5.07	Method 1		809.00	3036.00	3038.12	3038.12	3038.80
0.020813	6.63	122.01	91.73	1.01				
Fan 6AN-1	5.00	100-yr 6-hr		809.00	3021.00	3023.20	3023.20	3023.78
0.018607	6.36	143.29	131.03	0.96				
Fan 6AN-1	5.00	Method 1		809.00	3021.00	3023.25	3023.25	3023.96
0.020086	6.75	119.86	85.31	1.00				

Fan 6AN-1	4.95	100-yr 6-hr		809.00	3012.00	3013.15	3013.15	3013.63
0.022413	5.55	146.46	161.08	1.00				
Fan 6AN-1	4.95	Method 1		809.00	3012.00	3013.15	3013.15	3013.63
0.022886	5.58	145.02	151.96	1.01				
Fan 6AN-1	4.91	100-yr 6-hr		809.00	3004.00	3005.22	3005.22	3005.74
0.021110	5.82	139.65	136.32	0.99				
Fan 6AN-1	4.91	Method 1		809.00	3004.00	3005.20	3005.20	3005.75
0.022143	5.90	137.08	128.58	1.01				
Fan 6AN-1	4.84	100-yr 6-hr		809.00	2992.00	2993.10	2993.10	2993.57
0.023250	5.51	147.20	164.77	1.01				
Fan 6AN-1	4.84	Method 1		809.00	2992.00	2993.10	2993.10	2993.57
0.023073	5.49	147.35	159.24	1.01				
Fan 6AN-1	4.77	100-yr 6-hr		809.00	2976.00	2977.84	2977.84	2978.35
0.021351	5.81	143.47	144.43	0.99				
Fan 6AN-1	4.77	Method 1		809.00	2976.00	2977.84	2977.84	2978.38
0.022321	5.92	136.66	127.97	1.01				
Fan 6AN-1	4.69	100-yr 6-hr		809.00	2962.00	2963.73	2963.73	2964.28
0.025590	7.00	149.27	152.57	1.11				
Fan 6AN-1	4.69	Method 1		809.00	2962.00	2964.44	2964.44	2965.42
0.019202	7.93	101.96	52.40	1.00				
Fan 6AN-1	4.59	100-yr 6-hr		809.00	2943.00	2945.42	2945.42	2946.15
0.018848	6.90	119.34	89.57	0.99				
Fan 6AN-1	4.59	Method 1		809.00	2943.00	2945.40	2945.40	2946.16
0.020033	7.01	115.33	76.83	1.01				
Fan 6AN-1	4.50	100-yr 6-hr		809.00	2926.50	2928.97	2928.97	2929.51
0.021367	6.10	142.73	134.33	1.00				
Fan 6AN-1	4.50	Method 1		809.00	2926.50	2929.03	2929.03	2929.65
0.021629	6.30	128.40	107.45	1.02				
Fan 6AN-1	4.40	100-yr 6-hr		809.00	2910.67	2913.09	2913.09	2913.46
0.019908	6.09	201.00	247.41	0.98				
Fan 6AN-1	4.40	Method 1		809.00	2910.67	2913.73	2913.73	2914.62
0.018385	7.55	107.21	59.25	0.99				
Fan 6AN-1	4.31	100-yr 6-hr		809.00	2898.00	2899.31	2899.31	2899.87
0.020723	6.02	135.93	128.27	0.99				
Fan 6AN-1	4.31	Method 1		809.00	2898.00	2899.30	2899.30	2899.87
0.021725	6.10	132.71	116.70	1.01				
Fan 6AN-1	4.21	100-yr 6-hr		809.00	2883.25	2885.21	2885.21	2885.67
0.028029	6.27	161.40	183.88	1.12				
Fan 6AN-1	4.21	Method 1		809.00	2883.25	2885.76	2885.76	2886.50
0.019252	6.90	117.16	76.96	0.99				
Fan 6AN-1	4.13	100-yr 6-hr		809.00	2874.00	2875.13	2875.00	2875.45
0.020429	5.55	194.00	211.03	0.96				
Fan 6AN-1	4.13	Method 1		809.00	2874.00	2875.80	2875.80	2876.66
0.019695	7.43	108.86	64.07	1.00				
Fan 6AN-1	4.08	100-yr 6-hr		809.00	2866.00	2866.63	2866.63	2867.03
0.040601	4.79	158.92	200.67	1.20				
Fan 6AN-1	4.08	Method 1		809.00	2866.00	2867.58	2867.58	2868.19
0.020280	6.72	137.55	109.65	1.00				
Fan 6AN-1	4.02	100-yr 6-hr		1227.00	2858.00	2859.65	2859.40	2859.88
0.015111	4.16	326.24	342.71	0.80				
Fan 6AN-1	4.02	Method 1		1227.00	2858.00	2859.99	2859.96	2860.51
0.019931	5.78	212.18	190.06	0.96				
Fan 6AN-1	3.96	100-yr 6-hr		1225.00	2851.07	2852.49	2852.49	2852.92
0.035199	7.12	242.98	284.25	1.28				
Fan 6AN-1	3.96	Method 1		1225.00	2851.07	2853.40	2853.40	2854.13
0.020517	8.48	198.99	130.89	1.09				

Fan 6AN-1	3.92		100-yr 6-hr	1225.00	2846.00	2851.39	2847.02	2851.41
0.000114	1.27	1209.74	401.90	0.10				
Fan 6AN-1	3.92		Method 1	1225.00	2846.00	2851.39	2847.00	2851.41
0.000118	1.23	1209.85	235.77	0.09				
Fan 6AN-1	3.915			Culvert				
Fan 6AN-1	3.91		100-yr 6-hr	1225.00	2844.00	2845.14	2845.04	2845.57
0.023713	6.30	238.72	272.78	1.07				
Fan 6AN-1	3.91		Method 1	1225.00	2844.00	2845.25	2845.05	2845.61
0.017080	5.71	263.47	218.08	0.92				
Fan 6AN-1	3.81		100-yr 6-hr	1225.00	2832.50	2835.70	2835.70	2836.22
0.015114	6.53	254.13	235.10	0.91				
Fan 6AN-1	3.81		Method 1	1225.00	2832.50	2835.95	2835.95	2836.86
0.017286	7.64	160.36	87.05	0.99				
Fan 6AN-1	3.72		100-yr 6-hr	1225.00	2822.00	2824.18	2824.18	2824.82
0.017184	7.21	212.79	229.94	0.98				
Fan 6AN-1	3.72		Method 1	1225.00	2822.00	2824.94	2824.94	2826.14
0.016830	8.80	139.22	57.35	1.00				
Fan 6AN-1	3.63		100-yr 6-hr	1225.00	2811.61	2814.01	2814.01	2814.11
0.003672	3.33	562.71	480.38	0.45				
Fan 6AN-1	3.63		Method 1	1225.00	2811.61	2814.12	2814.12	2814.87
0.015943	7.17	187.75	124.41	0.95				
Fan 6AN-1	3.57		100-yr 6-hr	1225.00	2806.00	2807.64	2807.50	2808.04
0.015331	6.07	277.32	269.22	0.90				
Fan 6AN-1	3.57		Method 1	1225.00	2806.00	2808.15	2808.15	2809.13
0.017837	7.91	154.88	80.73	1.01				
Fan 6AN-1	3.53		100-yr 6-hr	1225.00	2799.64	2802.74	2801.92	2803.60
0.021848	10.07	234.92	241.13	1.15				
Fan 6AN-1	3.53		Method 1	1225.00	2799.64	2803.40	2803.40	2804.37
0.015161	9.53	178.87	83.58	0.96				
Fan 6AN-1	3.48		100-yr 6-hr	1225.00	2796.00	2797.73	2797.73	2798.29
0.025535	7.12	221.96	210.20	1.14				
Fan 6AN-1	3.48		Method 1	1225.00	2796.00	2798.51	2798.51	2799.53
0.017766	8.08	151.64	75.66	1.01				
Fan 6AN-1	3.43		100-yr 6-hr	1225.00	2788.00	2790.87	2790.87	2791.01
0.005422	4.64	447.42	324.55	0.57				
Fan 6AN-1	3.43		Method 1	1225.00	2788.00	2791.39	2791.39	2791.96
0.013343	8.16	253.73	178.01	0.89				
Fan 6AN-1	3.39		100-yr 6-hr	1225.00	2783.87	2786.00	2786.00	2786.64
0.026207	8.63	209.62	165.61	1.19				
Fan 6AN-1	3.39		Method 1	1225.00	2783.87	2786.90	2786.90	2787.44
0.012822	7.92	266.69	199.70	0.88				
Fan 6AN-1	3.32		100-yr 6-hr	1225.00	2775.00	2778.61	2778.61	2779.26
0.008642	7.19	259.42	210.91	0.76				
Fan 6AN-1	3.32		Method 1	1225.00	2775.00	2778.57	2778.57	2779.93
0.016720	9.35	131.07	47.70	0.99				
Fan 6AN-1	3.24		100-yr 6-hr	1225.00	2766.97	2769.35	2769.35	2769.85
0.017569	7.06	259.49	237.03	0.99				
Fan 6AN-1	3.24		Method 1	1225.00	2766.97	2770.09	2770.09	2771.26
0.017088	8.70	140.74	60.27	1.00				
Fan 6AN-1	3.15		100-yr 6-hr	1228.00	2754.34	2757.28	2757.28	2757.84
0.012564	6.66	253.72	228.62	0.86				
Fan 6AN-1	3.15		Method 1	1228.00	2754.34	2757.40	2757.40	2758.38
0.016783	7.93	154.80	77.52	0.99				
Fan 6AN-1	3.07		100-yr 6-hr	1228.00	2744.00	2745.38	2745.32	2745.71
0.028617	6.17	283.12	342.01	1.14				
Fan 6AN-1	3.07		Method 1	1228.00	2744.00	2746.34	2746.34	2747.07
0.018683	7.96	202.70	131.30	1.03				

Fan 6AN-1	2.98		100-yr 6-hr		1228.00	2732.33	2734.98	2734.98	2735.43
0.020415	7.92	270.55	258.53		1.07				
Fan 6AN-1	2.98		Method 1		1228.00	2732.33	2735.84	2735.84	2736.83
0.017373	9.60	174.09	81.82		1.06				
Fan 6AN-1	2.95		100-yr 6-hr		1228.00	2728.00	2729.73	2729.42	2729.95
0.012216	4.19	333.83	326.04		0.76				
Fan 6AN-1	2.95		Method 1		1228.00	2728.00	2730.22	2730.06	2730.71
0.012770	5.61	218.85	151.04		0.82				
Fan 6AN-1	2.88		100-yr 6-hr		1228.00	2720.49	2723.14	2723.14	2723.56
0.022687	6.77	278.16	313.08		1.07				
Fan 6AN-1	2.88		Method 1		1228.00	2720.49	2723.96	2723.96	2724.90
0.016903	8.12	166.47	85.85		1.00				
Fan 6AN-1	2.79		100-yr 6-hr		1228.00	2712.00	2715.02	2715.02	2715.66
0.011056	7.07	241.61	204.91		0.83				
Fan 6AN-1	2.79		Method 1		1228.00	2712.00	2715.08	2715.08	2716.23
0.016682	8.63	142.29	61.13		1.00				
Fan 6AN-1	2.69		100-yr 6-hr		1228.00	2702.19	2705.62	2705.62	2706.21
0.016962	7.65	239.70	198.79		0.99				
Fan 6AN-1	2.69		Method 1		1228.00	2702.19	2706.45	2706.45	2707.69
0.015754	9.23	143.10	57.10		0.99				
Fan 6AN-1	2.60		100-yr 6-hr		1527.00	2692.25	2695.95	2695.95	2696.74
0.014208	7.26	231.64	166.03		0.92				
Fan 6AN-1	2.60		Method 1		1527.00	2692.25	2696.02	2695.90	2696.84
0.014013	7.29	209.48	103.74		0.90				
Fan 6AN-1	2.55		100-yr 6-hr		1527.00	2688.25	2690.94	2690.87	2691.43
0.016474	7.25	312.25	246.04		0.97				
Fan 6AN-1	2.55		Method 1		1527.00	2688.25	2691.75	2691.75	2692.82
0.015594	8.99	200.05	89.80		0.99				
Fan 6AN-1	2.51		100-yr 6-hr		1527.00	2684.00	2687.15	2687.15	2688.01
0.012600	7.68	229.14	153.80		0.89				
Fan 6AN-1	2.51		Method 1		1527.00	2684.00	2687.24	2687.08	2688.20
0.013095	7.86	194.22	80.45		0.89				
Fan 6AN-1	2.44		100-yr 6-hr		1678.00	2678.10	2682.05	2682.05	2682.61
0.008679	6.80	379.37	317.83		0.75				
Fan 6AN-1	2.44		Method 1		1678.00	2678.10	2682.10	2682.02	2683.30
0.014826	8.80	190.72	73.01		0.96				
Fan 6AN-1	2.39		100-yr 6-hr		1678.00	2674.00	2677.43	2677.43	2678.44
0.010041	8.62	262.80	159.53		0.84				
Fan 6AN-1	2.39		Method 1		1678.00	2674.00	2677.37	2677.37	2678.99
0.016263	10.21	164.30	51.20		1.00				
Fan 6AN-1	2.32		100-yr 6-hr		1678.00	2667.00	2670.88	2670.88	2671.53
0.008661	7.31	347.07	268.82		0.76				
Fan 6AN-1	2.32		Method 1		1678.00	2667.00	2671.29	2670.91	2672.41
0.010241	8.46	198.37	60.40		0.82				
Fan 6AN-1	2.28		100-yr 6-hr		1678.00	2663.00	2667.70	2667.70	2668.72
0.008048	8.98	283.82	174.12		0.78				
Fan 6AN-1	2.28		Method 1		1678.00	2663.00	2667.63	2667.63	2669.64
0.016217	11.36	147.74	36.40		0.99				
Fan 6AN-1	2.20		100-yr 6-hr		1678.00	2655.66	2659.60	2659.60	2660.90
0.010664	9.58	215.34	100.51		0.88				
Fan 6AN-1	2.20		Method 1		1678.00	2655.66	2659.53	2659.53	2661.33
0.016102	10.77	155.81	43.20		1.00				
Fan 6AN-1	2.14		100-yr 6-hr		1678.00	2651.00	2654.36	2654.36	2655.24
0.016731	7.54	224.25	133.40		0.98				
Fan 6AN-1	2.14		Method 1		1678.00	2651.00	2654.36	2654.36	2655.24
0.016961	7.56	221.98	121.87		0.99				

Fan 6AN-1	2.06		100-yr 6-hr		1678.00	2644.00	2650.95	2647.39	2650.99
0.000201	1.84	1261.09	274.64		0.13				
Fan 6AN-1	2.06		Method 1		1678.00	2644.00	2650.87	2647.39	2651.09
0.001033	3.81	440.78	73.40		0.27				
Fan 6AN-1	2.05				Culvert				
Fan 6AN-1	2.04		100-yr 6-hr		1678.00	2642.40	2645.72	2645.72	2646.78
0.016312	8.26	203.03	225.19		1.00				
Fan 6AN-1	2.04		Method 1		1678.00	2642.40	2645.72	2645.72	2646.78
0.016572	8.26	203.03	95.14		1.00				
Fan 6AN-1	1.97		100-yr 6-hr		1678.00	2635.05	2638.11	2638.11	2638.73
0.012918	7.58	334.43	252.87		0.89				
Fan 6AN-1	1.97		Method 1		1678.00	2635.05	2638.73	2638.73	2640.18
0.015699	9.67	173.55	60.51		1.01				
Fan 6AN-1	1.90		100-yr 6-hr		1678.00	2629.00	2632.61	2632.61	2633.30
0.010738	7.35	314.26	236.77		0.83				
Fan 6AN-1	1.90		Method 1		1678.00	2629.00	2632.67	2632.67	2633.91
0.015854	8.93	187.86	74.37		0.99				
Fan 6AN-1	1.83		100-yr 6-hr		1678.00	2624.00	2625.09	2625.00	2625.48
0.021693	5.59	348.54	349.26		1.01				
Fan 6AN-1	1.83		Method 1		1678.00	2624.00	2625.79	2625.51	2626.27
0.010374	5.54	303.05	183.07		0.76				
Fan 6AN-1	1.78		100-yr 6-hr		1678.00	2618.18	2620.99	2620.99	2621.46
0.012977	7.50	401.89	413.28		0.89				
Fan 6AN-1	1.78		Method 1		1678.00	2618.18	2621.72	2621.69	2623.02
0.016955	10.11	195.10	71.68		1.04				
Fan 6AN-1	1.72		100-yr 6-hr		1678.00	2612.59	2615.32	2615.32	2615.87
0.018274	8.26	338.33	279.39		1.04				
Fan 6AN-1	1.72		Method 1		1678.00	2612.59	2616.13	2616.13	2617.28
0.017753	9.94	211.70	88.76		1.05				
Fan 6AN-1	1.65		100-yr 6-hr		1678.00	2606.00	2608.65		2609.15
0.011152	6.21	319.39	205.07		0.81				
Fan 6AN-1	1.65		Method 1		1678.00	2606.00	2609.26		2609.85
0.007745	6.15	272.74	111.05		0.69				
Fan 6AN-1	1.62		100-yr 6-hr		1678.00	2604.00	2606.74	2606.74	2607.37
0.012928	7.19	322.66	251.77		0.88				
Fan 6AN-1	1.62		Method 1		1678.00	2604.00	2606.99	2606.99	2608.16
0.016936	8.68	193.32	83.63		1.01				
Fan 6AN-1	1.56		100-yr 6-hr		1678.00	2598.00	2605.24	2601.57	2605.24
0.000044	0.95	2894.55	541.25		0.06				
Fan 6AN-1	1.56		Method 1		1678.00	2598.00	2605.20	2601.57	2605.28
0.000395	2.83	797.99	115.45		0.19				
Fan 6AN-1	1.55				Culvert				
Fan 6AN-1	1.54		100-yr 6-hr		1678.00	2596.93	2599.74	2599.74	2600.98
0.015644	9.01	188.86	404.80		1.00				
Fan 6AN-1	1.54		Method 1		1678.00	2596.93	2599.78	2599.78	2601.06
0.016141	9.07	185.00	164.95		1.00				
Fan 6AN-1	1.48		100-yr 6-hr		1678.00	2587.25	2590.20	2590.20	2590.80
0.015278	7.33	324.94	252.85		0.94				
Fan 6AN-1	1.48		Method 1		1678.00	2587.25	2590.58	2590.58	2591.53
0.015080	8.22	234.01	123.97		0.96				
Fan 6AN-1	1.42		100-yr 6-hr		1678.00	2582.00	2584.87	2584.85	2585.38
0.016779	6.21	319.95	296.16		0.94				
Fan 6AN-1	1.42		Method 1		1678.00	2582.00	2585.07	2585.01	2585.77
0.016590	6.71	249.91	159.89		0.95				
Fan 6AN-1	1.32		100-yr 6-hr		1678.00	2573.00	2575.81	2575.81	2576.49
0.018011	7.05	271.27	202.98		0.99				

Fan 6AN-1	1.32	Method 1		1678.00	2573.00	2576.03	2576.03	2576.93
0.017809	7.62	220.34	123.84	1.01				
Fan 6AN-1	1.23	100-yr 6-hr		1678.00	2564.12	2569.07		2569.16
0.000938	2.86	777.43	288.22	0.26				
Fan 6AN-1	1.23	Method 1		1678.00	2564.12	2569.33		2569.54
0.001575	3.88	471.36	125.41	0.34				
Fan 6AN-1	1.20	100-yr 6-hr		1678.00	2562.00	2569.06	2565.02	2569.09
0.000122	1.52	1496.73	298.83	0.10				
Fan 6AN-1	1.20	Method 1		1678.00	2562.00	2569.19	2565.02	2569.38
0.000750	3.49	480.67	70.94	0.24				
Fan 6AN-1	1.19			Culvert				
Fan 6AN-1	1.18	100-yr 6-hr		1678.00	2560.40	2564.45	2564.45	2565.68
0.015525	8.90	188.55	189.10	1.00				
Fan 6AN-1	1.18	Method 1		1678.00	2560.40	2564.45	2564.45	2565.68
0.015621	8.90	188.64	92.49	1.00				
Fan 6AN-1	1.12	100-yr 6-hr		1678.00	2554.20	2557.88	2557.88	2558.79
0.015621	8.03	245.42	154.66	0.97				
Fan 6AN-1	1.12	Method 1		1678.00	2554.20	2557.97	2557.97	2559.09
0.016946	8.49	197.54	89.33	1.01				
Fan 6AN-1	1.04	100-yr 6-hr		1678.00	2548.00	2555.50	2550.33	2555.52
0.000092	1.38	1690.05	296.14	0.09				
Fan 6AN-1	1.04	Method 1		1678.00	2548.00	2555.46	2550.33	2555.53
0.000251	2.13	786.27	111.69	0.14				
Fan 6AN-1	1.03			Culvert				
Fan 6AN-1	1.02	100-yr 6-hr		1678.00	2546.00	2548.22	2548.03	2548.81
0.012072	6.17	271.94	274.56	0.83				
Fan 6AN-1	1.02	Method 1		1678.00	2546.00	2548.39	2548.03	2548.88
0.008984	5.62	298.55	157.95	0.72				
Fan 6AN-1	0.99	100-yr 6-hr		1678.00	2543.33	2545.82	2545.82	2546.55
0.014763	7.08	274.79	212.74	0.92				
Fan 6AN-1	0.99	Method 1		1678.00	2543.33	2545.79	2545.79	2546.71
0.017920	7.66	218.98	121.84	1.01				
Fan 6AS-1	4.13	100-yr 6-hr		1154.00	2841.50	2843.15	2843.15	2843.68
0.026121	6.96	232.97	225.08	1.02				
Fan 6AS-1	4.13	Method 1		1154.00	2841.50	2843.75	2843.75	2844.78
0.024125	8.15	141.57	69.46	1.01				
Fan 6AS-1	4.03	100-yr 6-hr		1154.00	2829.20	2831.34	2831.28	2831.80
0.019234	5.65	233.79	247.19	0.86				
Fan 6AS-1	4.03	Method 1		1154.00	2829.20	2831.65	2831.26	2832.02
0.011213	4.91	235.10	143.82	0.68				
Fan 6AS-1	3.93	100-yr 6-hr		1154.00	2819.75	2821.84	2821.63	2822.20
0.019021	6.88	283.96	243.85	0.90				
Fan 6AS-1	3.93	Method 1		1154.00	2819.75	2822.58	2822.58	2823.72
0.026149	9.69	145.44	62.61	1.07				
Fan 6AS-1	3.85	100-yr 6-hr		1154.00	2810.00	2811.09	2811.01	2811.33
0.032678	4.96	310.16	447.75	1.02				
Fan 6AS-1	3.85	Method 1		1154.00	2810.00	2811.95	2811.89	2812.66
0.022425	6.78	170.08	106.80	0.95				
Fan 6AS-1	3.75	100-yr 6-hr		1154.00	2798.00	2799.84	2799.72	2800.23
0.014836	5.68	292.43	306.38	0.79				
Fan 6AS-1	3.75	Method 1		1154.00	2798.00	2799.97	2799.92	2800.78
0.022734	7.23	159.59	91.35	0.96				
Fan 6AS-1	3.68	100-yr 6-hr		1154.00	2791.49	2793.12	2792.98	2793.46
0.030099	5.97	262.25	277.15	1.04				
Fan 6AS-1	3.68	Method 1		1154.00	2791.49	2794.06	2793.69	2794.60
0.015125	6.42	205.69	104.34	0.81				

Fan 6AS-1	3.62		100-yr 6-hr		1154.00	2784.28	2785.59	2785.22	2785.83
0.019873	4.54	292.64	239.55		0.83				
Fan 6AS-1	3.62		Method 1		1154.00	2784.28	2786.10	2786.10	2786.90
0.045758	8.91	164.27	104.70		1.30				
Fan 6AS-1	3.55		100-yr 6-hr		1154.00	2774.22	2776.37	2776.31	2776.79
0.026727	6.10	243.21	242.80		1.00				
Fan 6AS-1	3.55		Method 1		1154.00	2774.22	2777.19		2777.76
0.013504	6.06	190.43	96.07		0.76				
Fan 6AS-1	3.52		100-yr 6-hr		1154.00	2770.69	2772.80	2772.70	2773.19
0.018995	6.38	276.05	248.93		0.89				
Fan 6AS-1	3.52		Method 1		1154.00	2770.69	2773.61	2773.61	2774.84
0.023281	8.87	130.12	53.86		1.01				
Fan 6AS-1	3.45		100-yr 6-hr		1154.00	2763.02	2764.75	2764.61	2765.03
0.024369	6.09	308.39	348.41		0.96				
Fan 6AS-1	3.45		Method 1		1154.00	2763.02	2765.70	2765.42	2766.28
0.017936	7.38	204.47	103.94		0.88				
Fan 6AS-1	3.35		100-yr 6-hr		1154.00	2753.05	2754.96	2754.59	2755.13
0.017368	3.81	351.48	356.40		0.75				
Fan 6AS-1	3.35		Method 1		1154.00	2753.05	2755.78	2755.77	2756.47
0.023108	7.02	187.33	131.07		0.97				
Fan 6AS-1	3.26		100-yr 6-hr		1154.00	2743.42	2747.50	2747.50	2748.14
0.012283	7.94	270.50	226.78		0.78				
Fan 6AS-1	3.26		Method 1		1154.00	2743.42	2748.40	2748.40	2749.28
0.010472	8.21	200.78	113.27		0.71				
Fan 6AS-1	3.18		100-yr 6-hr		1154.00	2736.47	2740.47	2740.47	2741.05
0.012881	6.42	233.94	234.43		0.77				
Fan 6AS-1	3.18		Method 1		1154.00	2736.47	2740.50	2740.25	2741.26
0.015353	7.01	164.63	74.56		0.83				
Fan 6AS-1	3.09		100-yr 6-hr		1154.00	2728.20	2730.30		2730.45
0.011971	3.66	366.96	277.54		0.65				
Fan 6AS-1	3.09		Method 1		1154.00	2728.20	2730.88	2730.65	2731.33
0.026370	6.92	222.22	151.86		1.01				
Fan 6AS-1	3.04		100-yr 6-hr		1154.00	2724.00	2725.58	2725.58	2726.11
0.021079	6.23	233.14	249.11		0.92				
Fan 6AS-1	3.04		Method 1		1154.00	2724.00	2726.02	2725.64	2726.50
0.012310	5.59	206.57	110.43		0.72				
Fan 6AS-1	2.96		100-yr 6-hr		1154.00	2715.50	2718.88	2718.88	2719.53
0.013042	7.64	248.57	222.97		0.80				
Fan 6AS-1	2.96		Method 1		1154.00	2715.50	2719.17	2719.17	2720.59
0.018313	9.68	126.36	45.85		0.96				
Fan 6AS-1	2.90		100-yr 6-hr		1154.00	2710.06	2712.71	2712.38	2712.99
0.015482	5.40	298.89	236.60		0.79				
Fan 6AS-1	2.90		Method 1		1154.00	2710.06	2713.62		2714.09
0.010735	6.10	228.69	107.52		0.70				
Fan 6AS-1	2.8		100-yr 6-hr		1154.00	2702.51	2705.37	2705.11	2705.61
0.014479	4.53	314.49	287.49		0.74				
Fan 6AS-1	2.8		Method 1		1154.00	2702.51	2705.53	2705.53	2706.21
0.026130	6.61	174.70	130.07		1.00				
Fan 6AS-1	2.74		100-yr 6-hr		1154.00	2696.76	2698.78	2698.56	2699.14
0.026846	5.36	243.22	207.98		0.97				
Fan 6AS-1	2.74		Method 1		1154.00	2696.76	2699.69		2700.03
0.011175	5.33	253.90	125.96		0.69				
Fan 6AS-1	2.68		100-yr 6-hr		1154.00	2691.62	2694.28	2693.69	2694.50
0.010417	5.14	347.08	249.52		0.67				
Fan 6AS-1	2.68		Method 1		1154.00	2691.62	2694.60	2694.42	2695.47
0.022868	8.40	161.82	74.04		1.01				

Fan 6AS-1	2.61		100-yr 6-hr	1154.00	2685.13	2687.98	2687.98	2688.74
0.023783	7.43	184.53	150.23	1.00				
Fan 6AS-1	2.61		Method 1	1154.00	2685.13	2688.56	2688.16	2689.19
0.012319	6.39	180.72	78.80	0.74				
Fan 6AS-1	2.54		100-yr 6-hr	1450.00	2678.82	2680.97	2680.74	2681.15
0.016839	4.51	488.27	606.79	0.78				
Fan 6AS-1	2.54		Method 1	1450.00	2678.82	2681.72	2681.72	2682.63
0.024245	7.64	189.90	105.88	1.00				
Fan 6AS-1	2.48		100-yr 6-hr	1442.00	2674.00	2675.36	2675.08	2675.59
0.020983	4.50	385.51	397.09	0.84				
Fan 6AS-1	2.48		Method 1	1442.00	2674.00	2676.29	2676.16	2676.70
0.014786	6.04	331.91	259.64	0.79				
Fan 6AS-1	2.41		100-yr 6-hr	1442.00	2667.30	2669.73	2669.24	2669.97
0.011764	4.91	390.44	268.19	0.69				
Fan 6AS-1	2.41		Method 1	1442.00	2667.30	2670.54	2670.24	2671.25
0.014571	7.14	226.50	102.65	0.82				
Fan 6AS-1	2.34		100-yr 6-hr	1442.00	2661.85	2663.66	2663.44	2664.04
0.024942	5.91	304.31	241.16	0.96				
Fan 6AS-1	2.34		Method 1	1442.00	2661.85	2664.59	2664.24	2665.30
0.019139	7.54	221.57	98.12	0.92				
Fan 6AS-1	2.26		100-yr 6-hr	1442.00	2654.74	2657.32		2657.50
0.010783	4.29	433.81	308.78	0.65				
Fan 6AS-1	2.26		Method 1	1442.00	2654.74	2658.16	2657.69	2658.66
0.013065	6.43	269.89	127.27	0.76				
Fan 6AS-1	2.17		100-yr 6-hr	1442.00	2646.13	2648.99	2648.99	2649.83
0.022017	7.43	204.11	133.52	0.97				
Fan 6AS-1	2.17		Method 1	1442.00	2646.13	2648.98	2648.98	2649.89
0.023789	7.64	188.72	105.00	1.00				
Fan 6AS-1	2.13		100-yr 6-hr	1442.00	2642.92	2645.91	2645.53	2646.41
0.011513	5.74	259.23	148.19	0.72				
Fan 6AS-1	2.13		Method 1	1442.00	2642.92	2646.19		2646.59
0.007732	5.08	283.91	124.25	0.59				
Fan 6AS-1	2.07		100-yr 6-hr	1442.00	2638.18	2641.28	2641.24	2642.10
0.016157	7.79	235.46	152.09	0.88				
Fan 6AS-1	2.07		Method 1	1442.00	2638.18	2641.34	2641.34	2642.59
0.022610	9.00	160.24	64.17	1.00				
Fan 6AS-1	2.03		100-yr 6-hr	1493.00	2634.90	2637.57	2637.46	2638.14
0.019610	6.34	261.25	190.11	0.90				
Fan 6AS-1	2.03		Method 1	1493.00	2634.90	2637.96		2638.47
0.012329	5.77	258.74	133.61	0.73				
Fan 6AS-1	1.97		100-yr 6-hr	1493.00	2630.00	2633.18	2633.18	2633.87
0.009714	7.27	304.01	245.82	0.79				
Fan 6AS-1	1.97		Method 1	1493.00	2630.00	2633.10	2633.10	2634.19
0.014167	8.59	192.54	92.78	0.95				
Fan 6AS-1	1.87		100-yr 6-hr	1493.00	2621.30	2625.24	2625.24	2625.86
0.011151	8.57	356.02	260.55	0.86				
Fan 6AS-1	1.87		Method 1	1493.00	2621.30	2626.15	2626.15	2627.16
0.010824	9.53	245.82	108.54	0.84				
Fan 6AS-1	1.85		100-yr 6-hr	1493.00	2619.00	2623.20	2623.20	2623.99
0.007373	8.02	318.72	226.39	0.74				
Fan 6AS-1	1.85		Method 1	1493.00	2619.00	2623.15	2623.15	2624.37
0.010075	9.30	205.39	91.03	0.86				
Fan 6AS-1	1.78		100-yr 6-hr	1493.00	2610.50	2617.19	2614.43	2617.47
0.001307	4.25	352.56	191.49	0.33				
Fan 6AS-1	1.78		Method 1	1493.00	2610.50	2617.19	2614.43	2617.47
0.001486	4.27	350.03	66.32	0.33				
Fan 6AS-1	1.77			Culvert				

Fan 6AS-1	1.76		100-yr 6-hr		1493.00	2610.00	2613.36	2613.36	2614.84
0.013914	9.81	156.49		58.41	0.97				
Fan 6AS-1	1.76		Method 1		1493.00	2610.00	2613.34	2613.34	2614.89
0.015583	9.98	149.66		47.77	0.99				
Fan 6AS-1	1.70		100-yr 6-hr		1493.00	2605.06	2608.55	2608.44	2609.27
0.013918	7.44	253.05		151.22	0.91				
Fan 6AS-1	1.70		Method 1		1493.00	2605.06	2609.15	2608.78	2610.00
0.010145	7.39	202.11		76.08	0.80				
Fan 6AS-1	1.64		100-yr 6-hr		1493.00	2600.48	2603.59	2603.59	2604.47
0.016433	8.84	239.67		134.16	1.02				
Fan 6AS-1	1.64		Method 1		1493.00	2600.48	2604.34	2604.34	2605.91
0.016606	10.05	148.57		47.98	1.01				
Fan 6AS-1	1.58		100-yr 6-hr		1493.00	2595.50	2598.01	2598.01	2598.83
0.015716	7.35	218.13		147.57	0.96				
Fan 6AS-1	1.58		Method 1		1493.00	2595.50	2597.98	2597.98	2598.89
0.018003	7.68	194.33		107.62	1.01				
Fan 6AS-1	1.49		100-yr 6-hr		1493.00	2588.57	2590.51	2589.77	2590.75
0.009899	4.71	383.90		206.54	0.72				
Fan 6AS-1	1.49		Method 1		1493.00	2588.57	2591.41	2590.76	2591.87
0.011096	6.86	294.26		125.61	0.81				
Fan 6AS-1	1.40		100-yr 6-hr		1493.00	2580.98	2584.16	2584.13	2584.70
0.014714	6.37	300.12		257.33	0.90				
Fan 6AS-1	1.40		Method 1		1493.00	2580.98	2584.31	2584.27	2585.10
0.016318	7.11	210.11		122.87	0.96				
Fan 6AS-1	1.31		100-yr 6-hr		1493.00	2573.56	2576.16	2576.16	2576.98
0.018331	7.23	206.75		133.86	1.01				
Fan 6AS-1	1.31		Method 1		1493.00	2573.56	2576.17	2576.17	2576.98
0.018296	7.22	206.69		128.92	1.01				
Fan 6AS-1	1.24		100-yr 6-hr		1493.00	2563.75	2567.98	2567.98	2569.48
0.012446	10.03	165.66		63.58	0.94				
Fan 6AS-1	1.24		Method 1		1493.00	2563.75	2567.92	2567.92	2569.67
0.015992	10.61	140.77		40.58	1.00				
Fan 6AS-1	1.21		100-yr 6-hr		1493.00	2560.69	2564.59	2564.59	2565.89
0.015517	9.15	164.44		67.88	1.00				
Fan 6AS-1	1.21		Method 1		1493.00	2560.69	2564.58	2564.58	2565.90
0.016225	9.22	162.01		62.57	1.01				
Fan 6AS-1	1.17		100-yr 6-hr		1493.00	2558.00	2563.69	2560.92	2563.89
0.001012	3.61	423.34		130.05	0.29				
Fan 6AS-1	1.17		Method 1		1493.00	2558.00	2563.68	2560.92	2563.89
0.001182	3.68	405.88		82.06	0.29				
Fan 6AS-1	1.16				Culvert				
Fan 6AS-1	1.15		100-yr 6-hr		1493.00	2556.25	2559.42	2559.42	2560.56
0.016094	8.63	178.18		216.99	1.00				
Fan 6AS-1	1.15		Method 1		1493.00	2556.25	2559.48	2559.48	2560.64
0.016538	8.65	172.55		73.41	0.99				
Fan 6AS-1	1.11		100-yr 6-hr		1493.00	2554.00	2555.52	2555.40	2556.08
0.014433	6.03	249.66		180.09	0.88				
Fan 6AS-1	1.11		Method 1		1493.00	2554.00	2555.52	2555.40	2556.09
0.014450	6.03	247.76		169.55	0.88				
Fan 6AS-1	1.03		100-yr 6-hr		1493.00	2546.80	2548.56	2548.56	2549.00
0.022275	5.30	281.71		327.41	1.00				
Fan 6AS-1	1.03		Method 1		1493.00	2546.80	2548.56	2548.56	2549.00
0.022266	5.30	281.72		325.11	1.00				
Fan 6A-1	0.93		100-yr 6-hr		2698.00	2538.00	2541.49		2542.31
0.008210	7.32	381.61		145.57	0.75				

Fan 6A-1	0.93	Method 1		2698.00	2538.00	2542.08		2542.67
0.004776	6.17	437.57	122.66	0.58				
Fan 6A-1	0.87	100-yr 6-hr		2698.00	2533.00	2538.07	2538.07	2539.39
0.010041	9.85	361.54	151.00	0.87				
Fan 6A-1	0.87	Method 1		2698.00	2533.00	2538.06	2538.06	2540.07
0.014763	11.40	236.70	59.09	1.00				
Fan 6A-1	0.81	100-yr 6-hr		2698.00	2527.00	2531.10	2531.10	2532.62
0.014314	9.92	276.19	96.22	0.99				
Fan 6A-1	0.81	Method 1		2698.00	2527.00	2531.08	2531.08	2532.64
0.015235	10.02	269.16	86.81	1.00				
Fan 6A-1	0.78	100-yr 6-hr		2698.00	2523.00	2528.11	2528.11	2529.94
0.011963	11.00	269.83	88.08	0.95				
Fan 6A-1	0.78	Method 1		2698.00	2523.00	2528.46	2528.04	2530.16
0.010923	10.49	257.21	57.00	0.87				
Fan 6A-1	0.69	100-yr 6-hr		2698.00	2515.00	2521.09	2521.09	2523.17
0.009949	12.14	282.31	86.63	0.91				
Fan 6A-1	0.69	Method 1		2698.00	2515.00	2521.15	2521.15	2523.90
0.015976	13.32	202.59	36.29	0.99				
Fan 6A-1	0.63	100-yr 6-hr		2698.00	2511.00	2516.09	2516.09	2517.63
0.011163	10.22	307.57	118.73	0.91				
Fan 6A-1	0.63	Method 1		2698.00	2511.00	2516.28	2515.97	2517.94
0.011751	10.34	261.05	63.36	0.90				
Fan 6A-1	0.58	100-yr 6-hr		2698.00	2507.66	2512.00	2512.00	2513.41
0.011690	10.42	358.91	153.49	0.93				
Fan 6A-1	0.58	Method 1		2698.00	2507.66	2512.37	2512.37	2514.47
0.014998	11.61	232.30	54.59	0.99				
Fan 6A-1	0.52	100-yr 6-hr		2698.00	2503.00	2506.80	2506.80	2507.75
0.011063	8.22	417.51	247.40	0.86				
Fan 6A-1	0.52	Method 1		2698.00	2503.00	2506.92	2506.70	2508.12
0.012303	8.80	306.48	103.37	0.90				
Fan 6A-1	0.42	100-yr 6-hr		2698.00	2494.50	2499.43	2499.43	2500.61
0.009591	9.50	417.18	219.20	0.85				
Fan 6A-1	0.42	Method 1		2698.00	2494.50	2499.48	2499.48	2501.45
0.015030	11.27	239.37	60.24	1.00				
Fan 6A-1	0.38	100-yr 6-hr		2698.00	2491.00	2495.19	2495.19	2496.14
0.011551	8.80	441.50	232.57	0.89				
Fan 6A-1	0.38	Method 1		2698.00	2491.00	2495.55	2495.55	2497.22
0.014638	10.38	259.87	76.31	0.99				

UPPER FAN 5

HEC-RAS Version 3.1.2 April 2004
U.S. Army Corp of Engineers
Hydrologic Engineering Center
609 Second Street
Davis, California

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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: North Scottsdale Delineation Study, UF5
Project File : UF5.prj
Run Date and Time: 2/10/2005 3:34:46 PM

Project in English units

Project Description:
Study Name: North Scottsdale Floodplain Delineation Study
Contract No.: FCD 2003 C008

Purpose of Study: Delineation of the inundation limits of the 100-yr, 6-hr storm event for Upper Fan 5.

Model Name: North Scottsdale Delineation Study, UF5

Model Description: This study determined the flood plain and flood way limits of the 100-yr-6-hr storm event for Upper Fan 5.
Profile #1, 100-yr 6-hr,models the flood plain.
Profile #2, Method 1, models the flood way.
Culvert information can be found in APPENDIX E.4 in the main report.

Mapping: Scottsdale Mapping: IGA 93-07
FCD Contract No.: FCD-XX-XX
Project Type: Topographic Mapping
Starting Date: 1-14-94
Ending Date: 1-14-97

Flow Profiles: Profile #1, 100-yr, 6-hr
Sections 4.95 to 4.76, Q= 404 cfs
Sections 4.67 to 3.42, Q= 979 cfs
Sections 3.33 to 1.33, Q= 1,242 cfs
Sections 1.24 to 0.86, Q= 2,019 cfs

Profile #2, Method 1
Sections 4.95 to 4.76, Q= 404 cfs
Sections 4.67 to 3.42, Q= 979 cfs
Sections 3.33 to 1.33, Q= 1,242 cfs
Sections 1.24 to 0.86, Q= 2,019 cfs

HEC-RAS Version: Version 3.1.2, April 2004

Consultant: DEI Professional Services, LLC
6225 N. 24th Street, Suite 200
Phoenix, AZ 85016
(602) 954-0038 Phone
(602) 944-8605 Fax

PLAN DATA

Plan Title: Plan 02
Plan File : j:\Projects\03062\Calcs\HEC-RAS Final\UF5.p02

Geometry Title: Base Conditions Geometry2
Geometry File : j:\Projects\03062\Calcs\HEC-RAS Final\UF5.g02

Flow Title : 100-yr, 6hr
Flow File : j:\Projects\03062\Calcs\HEC-RAS Final\UF5.f01

Plan Summary Information:

Number of:	Cross Sections =	64	Multiple Openings =	0
	Culverts =	2	Inline Structures =	0
	Bridges =	0	Lateral Structures =	0

Computational Information

Water surface calculation tolerance =	0.003
Critical depth calculation tolerance =	0.003
Maximum number of iterations =	20
Maximum difference tolerance =	0.1
Flow tolerance factor =	0.001

Computation Options

Critical depth computed only where necessary
Conveyance Calculation Method: At breaks in n values only
Friction Slope Method: Average Conveyance
Computational Flow Regime: Subcritical Flow

Encroachment Data

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

River = Upper Fan 5 Reach = UpperFan5-1

RS	Profile	Method	Value1	Value2
4.95	Method1	1	9981.671	0012.91
4.88	Method1	1	9984.831	0013.46
4.80	Method1	1	9951.391	0018.86
4.76	Method1	1	9995.15	10023.9
4.67	Method1	1	9953.121	0043.02
4.62	Method1	1	9972.571	0021.02
4.52	Method1	1	9953.311	0035.17
4.42	Method1	1	9977.13	10033.8
4.33	Method1	1	9965.99	10024.5
4.25	Method1	1	9970.71	0087.26
4.16	Method1	1	9980.551	0070.02
4.11	Method1	1	9957.591	0067.97
4.04	Method1	1	9945.781	0114.92
3.96	Method1	1	9942.211	0014.11
3.92	Method1	1	9985.51	0119.95
3.87	Method1	1	9981.141	0032.14
3.78	Method1	1	9993.641	0099.36
3.71	Method1	1	9976.451	0066.05
3.67	Method1	1	9963.21	0028.43
3.58	Method1	1	9925.731	0033.56
3.52	Method1	1	9971.061	0019.32
3.49	Method1	1	9933.421	0036.53
3.42	Method1	1	9986.071	0051.11
3.33	Method1	1	9945.91	0045.09
3.23	Method1	1	9988.141	0056.25
3.14	Method1	1	9961.371	0075.19
3.10	Method1	1	9964.071	0021.53
3.03	Method1	1	9968.84	10018.4
3.00	Method1	1	9974.56	10057.9
2.99	Method1	1	9950.251	0088.41
2.98	Method1	4	1	
2.91	Method1	1	9986.461	0014.53
2.86	Method1	1	9949.371	0014.96
2.78	Method1	1	9967.011	0115.32
2.74	Method1	1	9975.961	0086.07

2.66	Method1	1	9888.32	10015.2
2.60	Method1	1	9984.81	10206.08
2.56	Method1	1	9977.94	10085.46
2.50	Method1	1	9907.72	10034.16
2.44	Method1	1	9971.53	10044.23
2.38	Method1	1	9981.27	10060.1
2.32	Method1	1	9924.11	10028.98
2.27	Method1	1	9950.27	10020.97
2.22	Method1	1	9985.18	10054.15
2.14	Method1	1	9962.07	10022.39
2.04	Method1	1	9973.08	10015.6
2.00	Method1	1	9972.69	10054.72
1.92	Method1	1	9947.51	10034.16
1.85	Method1	1	9899.46	10021.62
1.76	Method1	1	9974.73	10056.13
1.67	Method1	1	9965.35	10025.1
1.61	Method1	1	9989.12	10024.72
1.56	Method1	1	9958.71	10044.83
1.52	Method1	1	9970.93	10049.97
1.45	Method1	1	9952.96	10040.44
1.38	Method1	1	9944.42	10028.93
1.33	Method1	1	9961.75	10038.21
1.24	Method1	1	9963.18	10055.94
1.18	Method1	1	9944.06	10040.81
1.09	Method1	1	9929.49	10017.82
1.04	Method1	1	9939.28	10117.23
1.01	Method1	1	9949.53	10051.01
1.00	Method1	4	1	
0.99	Method1	1	9949.53	10051.01
0.93	Method1	1	9938.47	10097.35
0.86	Method1	1	9918.57	10016.97

River = Upper Fan 5 Reach = UpperFan5-1

RS	Profile	Method	Value1	Value2
4.95	Meth4-1.0ft	4	1	
4.88	Meth4-1.0ft	4	1	
4.80	Meth4-1.0ft	4	1	
4.76	Meth4-1.0ft	4	1	
4.67	Meth4-1.0ft	4	1	
4.62	Meth4-1.0ft	4	1	
4.52	Meth4-1.0ft	4	1	
4.42	Meth4-1.0ft	4	1	
4.33	Meth4-1.0ft	4	1	
4.25	Meth4-1.0ft	4	1	
4.16	Meth4-1.0ft	4	1	
4.11	Meth4-1.0ft	4	1	
4.04	Meth4-1.0ft	4	1	
3.96	Meth4-1.0ft	4	1	
3.92	Meth4-1.0ft	4	1	
3.87	Meth4-1.0ft	4	1	
3.78	Meth4-1.0ft	4	1	
3.71	Meth4-1.0ft	4	1	
3.67	Meth4-1.0ft	4	1	
3.58	Meth4-1.0ft	4	1	
3.52	Meth4-1.0ft	4	1	
3.49	Meth4-1.0ft	4	1	
3.42	Meth4-1.0ft	4	1	
3.33	Meth4-1.0ft	4	1	
3.23	Meth4-1.0ft	4	1	
3.14	Meth4-1.0ft	4	1	
3.10	Meth4-1.0ft	4	1	
3.03	Meth4-1.0ft	4	1	
3.00	Meth4-1.0ft	4	1	
2.99	Meth4-1.0ft	4	1	
2.98	Meth4-1.0ft	4	1	
2.91	Meth4-1.0ft	4	1	
2.86	Meth4-1.0ft	4	1	
2.78	Meth4-1.0ft	4	1	
2.74	Meth4-1.0ft	4	1	
2.66	Meth4-1.0ft	4	1	
2.60	Meth4-1.0ft	4	1	

2.56	Meth4-1.0ft	4	1
2.50	Meth4-1.0ft	4	1
2.44	Meth4-1.0ft	4	1
2.38	Meth4-1.0ft	4	1
2.32	Meth4-1.0ft	4	1
2.27	Meth4-1.0ft	4	1
2.22	Meth4-1.0ft	4	1
2.14	Meth4-1.0ft	4	1
2.04	Meth4-1.0ft	4	1
2.00	Meth4-1.0ft	4	1
1.92	Meth4-1.0ft	4	1
1.85	Meth4-1.0ft	4	1
1.76	Meth4-1.0ft	4	1
1.67	Meth4-1.0ft	4	1
1.61	Meth4-1.0ft	4	1
1.56	Meth4-1.0ft	4	1
1.52	Meth4-1.0ft	4	1
1.45	Meth4-1.0ft	4	1
1.38	Meth4-1.0ft	4	1
1.33	Meth4-1.0ft	4	1
1.24	Meth4-1.0ft	4	1
1.18	Meth4-1.0ft	4	1
1.09	Meth4-1.0ft	4	1
1.04	Meth4-1.0ft	4	1
1.01	Meth4-1.0ft	4	1
1.00	Meth4-1.0ft	4	1
0.99	Meth4-1.0ft	4	1
0.93	Meth4-1.0ft	4	1
0.86	Meth4-1.0ft	4	1

River = Upper Fan 5 Reach = UpperFan5-1

RS	Profile	Method	Value1	Value2
4.95	Meth4-0.8ft	4	.8	
4.88	Meth4-0.8ft	4	.8	
4.80	Meth4-0.8ft	4	.8	
4.76	Meth4-0.8ft	4	.8	
4.67	Meth4-0.8ft	4	.8	
4.62	Meth4-0.8ft	4	.8	
4.52	Meth4-0.8ft	4	.8	
4.42	Meth4-0.8ft	4	.8	
4.33	Meth4-0.8ft	4	.8	
4.25	Meth4-0.8ft	4	.8	
4.16	Meth4-0.8ft	4	.8	
4.11	Meth4-0.8ft	4	.8	
4.04	Meth4-0.8ft	4	.8	
3.96	Meth4-0.8ft	4	.8	
3.92	Meth4-0.8ft	4	.8	
3.87	Meth4-0.8ft	4	.8	
3.78	Meth4-0.8ft	4	.8	
3.71	Meth4-0.8ft	4	.8	
3.67	Meth4-0.8ft	4	.8	
3.58	Meth4-0.8ft	4	.8	
3.52	Meth4-0.8ft	4	.8	
3.49	Meth4-0.8ft	4	.8	
3.42	Meth4-0.8ft	4	.8	
3.33	Meth4-0.8ft	4	.8	
3.23	Meth4-0.8ft	4	.8	
3.14	Meth4-0.8ft	4	.8	
3.10	Meth4-0.8ft	4	.8	
3.03	Meth4-0.8ft	4	.8	
3.00	Meth4-0.8ft	4	.8	
2.99	Meth4-0.8ft	4	.8	
2.98	Meth4-0.8ft	4	.8	
2.91	Meth4-0.8ft	4	.8	
2.86	Meth4-0.8ft	4	.8	
2.78	Meth4-0.8ft	4	.8	
2.74	Meth4-0.8ft	4	.8	
2.66	Meth4-0.8ft	4	.8	
2.60	Meth4-0.8ft	4	.8	
2.56	Meth4-0.8ft	4	.8	
2.50	Meth4-0.8ft	4	.8	

2.44	Meth4-0.8ft	4	.8
2.38	Meth4-0.8ft	4	.8
2.32	Meth4-0.8ft	4	.8
2.27	Meth4-0.8ft	4	.8
2.22	Meth4-0.8ft	4	.8
2.14	Meth4-0.8ft	4	.8
2.04	Meth4-0.8ft	4	.8
2.00	Meth4-0.8ft	4	.8
1.92	Meth4-0.8ft	4	.8
1.85	Meth4-0.8ft	4	.8
1.76	Meth4-0.8ft	4	.8
1.67	Meth4-0.8ft	4	.8
1.61	Meth4-0.8ft	4	.8
1.56	Meth4-0.8ft	4	.8
1.52	Meth4-0.8ft	4	.8
1.45	Meth4-0.8ft	4	.8
1.38	Meth4-0.8ft	4	.8
1.33	Meth4-0.8ft	4	.8
1.24	Meth4-0.8ft	4	.8
1.18	Meth4-0.8ft	4	.8
1.09	Meth4-0.8ft	4	.8
1.04	Meth4-0.8ft	4	.8
1.01	Meth4-0.8ft	4	.8
1.00	Meth4-0.8ft	4	.8
0.99	Meth4-0.8ft	4	.8
0.93	Meth4-0.8ft	4	.8
0.86	Meth4-0.8ft	4	.8

FLOW DATA

Flow Title: 100-yr, 6hr
Flow File : j:\Projects\03062\Calcs\HEC-RAS Final\UF5.f01

Flow Data (cfs)

River	Reach	RS	100-yr 6-hr	Method1	Meth4-1.0ft	Meth4-0.8ft
Upper Fan 5	UpperFan5-1	4.95	404	404	404	404
Upper Fan 5	UpperFan5-1	4.67	979	979	979	979
Upper Fan 5	UpperFan5-1	3.33	1242	1242	1242	1242
Upper Fan 5	UpperFan5-1	1.24	2019	2019	2019	2019

Boundary Conditions

River	Reach	Profile	Upstream	Downstream
Upper Fan 5	UpperFan5-1	100-yr 6-hr		Normal S = 0.018
Upper Fan 5	UpperFan5-1	Method1		Normal S = 0.018
Upper Fan 5	UpperFan5-1	Meth4-1.0ft		Normal S = 0.018
Upper Fan 5	UpperFan5-1	Meth4-0.8ft		Normal S = 0.018

GEOMETRY DATA

Geometry Title: Base Conditions Geometry2
Geometry File : j:\Projects\03062\Calcs\HEC-RAS Final\UF5.g02

CROSS SECTION

RIVER: Upper Fan 5
REACH: UpperFan5-1 RS: 4.95

INPUT
Description: Section 4.95 is the upstream boundary of Upper Fan 5.

Topography and Aerial indicates wash and surrounding undeveloped desert.
T5NR5E Section 4
Q100 = 404 cfs
Station Elevation Data num= 10

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9888.93	2776	9910.42	2774	9926.69	2772	9945.7	2770	9981.67	2768.5
9993.66	2768	10003.95	2768	10012.91	2768.5	10039.79	2770	10083.82	2772

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9888.93	.068	9981.67	.043	10012.91	.068

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9981.67	10012.91	378	368.99	362	.1	.3

CROSS SECTION OUTPUT Profile #100-yr 6-hr

			Left OB	Channel	Right OB
E.G. Elev (ft)	2770.33	Element			
Vel Head (ft)	0.55	Wt. n-Val.	0.068	0.043	0.068
W.S. Elev (ft)	2769.78	Reach Len. (ft)	378.00	368.99	362.00
Crit W.S. (ft)	2769.77	Flow Area (sq ft)	19.68	50.40	14.70
E.G. Slope (ft/ft)	0.018725	Area (sq ft)	19.68	50.40	14.70
Q Total (cfs)	404.00	Flow (cfs)	43.69	327.68	32.63
Top Width (ft)	84.91	Top Width (ft)	30.72	31.24	22.96
Vel Total (ft/s)	4.77	Avg. Vel. (ft/s)	2.22	6.50	2.22
Max Chl Dpth (ft)	1.78	Hydr. Depth (ft)	0.64	1.61	0.64
Conv. Total (cfs)	2952.3	Conv. (cfs)	319.3	2394.6	238.5
Length Wtd. (ft)	369.67	Wetted Per. (ft)	30.75	31.26	22.99
Min Ch El (ft)	2768.00	Shear (lb/sq ft)	0.75	1.88	0.75
Alpha	1.55	Stream Power (lb/ft s)	1.66	12.25	1.66
Frctn Loss (ft)	6.57	Cum Volume (acre-ft)	10.88	73.65	24.01
C & E Loss (ft)	0.00	Cum SA (acres)	13.99	40.15	27.03

Warning: The energy loss was 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 OUTPUT Profile #Method1

			Left OB	Channel	Right OB
E.G. Elev (ft)	2770.85	Element			
Vel Head (ft)	0.60	Wt. n-Val.		0.043	
W.S. Elev (ft)	2770.25	Reach Len. (ft)	378.00	368.99	362.00
Crit W.S. (ft)	2769.89	Flow Area (sq ft)		65.15	
E.G. Slope (ft/ft)	0.013939	Area (sq ft)		65.15	
Q Total (cfs)	404.00	Flow (cfs)		404.00	
Top Width (ft)	31.24	Top Width (ft)		31.24	
Vel Total (ft/s)	6.20	Avg. Vel. (ft/s)		6.20	
Max Chl Dpth (ft)	2.25	Hydr. Depth (ft)		2.09	
Conv. Total (cfs)	3421.9	Conv. (cfs)		3421.9	
Length Wtd. (ft)	368.99	Wetted Per. (ft)		34.77	
Min Ch El (ft)	2768.00	Shear (lb/sq ft)		1.63	
Alpha	1.00	Stream Power (lb/ft s)		10.11	
Frctn Loss (ft)	6.72	Cum Volume (acre-ft)	0.41	82.08	2.30
C & E Loss (ft)	0.03	Cum SA (acres)	0.10	40.34	2.36

Warning: The energy loss was 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: Upper Fan 5
REACH: UpperFan5-1 RS: 4.88

INPUT
Description: Topography and Aerial indicates wash and surrounding undeveloped desert.
T5NR5E Section 4
Q100 = 404 cfs
Station Elevation Data num= 12

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9824.54	2770	9842.74	2768	9870.15	2766	9909.38	2764	9965.97	2762.5
9984.83	2762	10000	2760.69	10013.46	2762	10016.94	2762.5	10027.37	2764
10040.22	2766	10059.65	2768						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9824.54	.068	9984.83	.043	10013.46	.068

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9984.83	10013.46	441	442.75	443	.1	.3

CROSS SECTION OUTPUT Profile #100-yr 6-hr

E.G. Elev (ft)	2763.75	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.60	Wt. n-Val.	0.068	0.043	0.068
W.S. Elev (ft)	2763.16	Reach Len. (ft)	441.00	442.75	443.00
Crit W.S. (ft)	2763.16	Flow Area (sq ft)	25.24	51.87	4.66
E.G. Slope (ft/ft)	0.016882	Area (sq ft)	25.24	51.87	4.66
Q Total (cfs)	404.00	Flow (cfs)	49.73	345.16	9.11
Top Width (ft)	80.31	Top Width (ft)	43.64	28.63	8.05
Vel Total (ft/s)	4.94	Avg. Vel. (ft/s)	1.97	6.65	1.96
Max Chl Dpth (ft)	2.47	Hydr. Depth (ft)	0.58	1.81	0.58
Conv. Total (cfs)	3109.3	Conv. (cfs)	382.7	2656.5	70.1
Length Wtd. (ft)	442.64	Wetted Per. (ft)	43.65	28.75	8.13
Min Ch El (ft)	2760.69	Shear (lb/sq ft)	0.61	1.90	0.60
Alpha	1.57	Stream Power (lb/ft s)	1.20	12.65	1.18
Frctn Loss (ft)	8.09	Cum Volume (acre-ft)	10.68	73.22	23.93
C & E Loss (ft)	0.05	Cum SA (acres)	13.67	39.90	26.90

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 energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
depth, the 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 OUTPUT Profile #Method1

E.G. Elev (ft)	2764.10	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.92	Wt. n-Val.		0.043	
W.S. Elev (ft)	2763.18	Reach Len. (ft)	441.00	442.75	443.00
Crit W.S. (ft)	2763.18	Flow Area (sq ft)		52.42	
E.G. Slope (ft/ft)	0.024805	Area (sq ft)		52.42	
Q Total (cfs)	404.00	Flow (cfs)		404.00	
Top Width (ft)	28.63	Top Width (ft)		28.63	
Vel Total (ft/s)	7.71	Avg. Vel. (ft/s)		7.71	
Max Chl Dpth (ft)	2.49	Hydr. Depth (ft)		1.83	
Conv. Total (cfs)	2565.1	Conv. (cfs)		2565.1	
Length Wtd. (ft)	442.75	Wetted Per. (ft)		31.10	
Min Ch El (ft)	2760.69	Shear (lb/sq ft)		2.61	
Alpha	1.00	Stream Power (lb/ft s)		20.12	
Frctn Loss (ft)	5.43	Cum Volume (acre-ft)	0.41	81.58	2.30

C & E Loss (ft)	0.21	Cum SA (acres)	0.10	40.09	2.36

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 conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
depth, the 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: Upper Fan 5
REACH: UpperFan5-1 RS: 4.80

INPUT
Description: Topography and Aerial indicates wash and surrounding undeveloped desert.
T5NR5E Section 4
Q100 = 404 cfs
Station Elevation Data num= 11

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9836.49	2760	9862.03	2758	9889.81	2756	9951.39	2754.5	9971.92	2754
10000	2752.5	310011.23	2754	10018.86	2754.5	10041.76	2756	10082.13	2758
10104.16	2760								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9836.49	.068	9951.39	.043	10018.86	.068

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9951.39	10018.86	197	203.73	203	.1	.3

CROSS SECTION OUTPUT Profile #100-yr 6-hr

			Left OB	Channel	Right OB
E.G. Elev (ft)	2755.24	Element			
Vel Head (ft)	0.43	Wt. n-Val.	0.068	0.043	0.068
W.S. Elev (ft)	2754.81	Reach Len. (ft)	197.00	203.73	203.00
Crit W.S. (ft)	2754.72	Flow Area (sq ft)	1.92	76.21	0.71
E.G. Slope (ft/ft)	0.019837	Area (sq ft)	1.92	76.21	0.71
Q Total (cfs)	404.00	Flow (cfs)	1.69	401.69	0.63
Top Width (ft)	84.69	Top Width (ft)	12.55	67.47	4.67
Vel Total (ft/s)	5.12	Avg. Vel. (ft/s)	0.88	5.27	0.88
Max Chl Dpth (ft)	2.28	Hydr. Depth (ft)	0.15	1.13	0.15
Conv. Total (cfs)	2868.4	Conv. (cfs)	12.0	2852.0	4.4
Length Wtd. (ft)	203.47	Wetted Per. (ft)	12.55	67.63	4.68
Min Ch El (ft)	2752.53	Shear (lb/sq ft)	0.19	1.40	0.19
Alpha	1.05	Stream Power (lb/ft s)	0.17	7.36	0.17
Frctn Loss (ft)	3.04	Cum Volume (acre-ft)	10.54	72.56	23.90
C & E Loss (ft)	0.03	Cum SA (acres)	13.38	39.41	26.84

Warning: The energy loss was 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 OUTPUT Profile #Method1

			Left OB	Channel	Right OB
E.G. Elev (ft)	2755.45	Element			
Vel Head (ft)	0.23	Wt. n-Val.		0.043	
W.S. Elev (ft)	2755.22	Reach Len. (ft)	197.00	203.73	203.00
Crit W.S. (ft)	2754.71	Flow Area (sq ft)		104.13	

E.G. Slope (ft/ft)	0.007291	Area (sq ft)		104.13	
Q Total (cfs)	404.00	Flow (cfs)		404.00	
Top Width (ft)	67.47	Top Width (ft)		67.47	
Vel Total (ft/s)	3.88	Avg. Vel. (ft/s)		3.88	
Max Chl Dpth (ft)	2.69	Hydr. Depth (ft)		1.54	
Conv. Total (cfs)	4731.4	Conv. (cfs)		4731.4	
Length Wtd. (ft)	203.73	Wetted Per. (ft)		69.07	
Min Ch El (ft)	2752.53	Shear (lb/sq ft)		0.69	
Alpha	1.00	Stream Power (lb/ft s)		2.66	
Frctn Loss (ft)	2.51	Cum Volume (acre-ft)	0.41	80.79	2.30
C & E Loss (ft)	0.07	Cum SA (acres)	0.10	39.60	2.36

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 conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was 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: Upper Fan 5
REACH: UpperFan5-1 RS: 4.76

INPUT
Description: Cross Section 4.76 is located upstream of the confluence between Upper Fan 5 and the Raw Hide Wash breakout.

Topography and
Aerial indicates wash and surrounding undeveloped desert.
T5NR5E
Section 4
Q100 = 404 cfs
Station Elevation Data num= 13

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9913.84	2758	9930.53	2756	9947.26	2754	9983.13	2752	9995.15	2750.32
9997.44	2750	10005.12	2750	10023.92	2750.34	110115.42	2752	10181.61	2754
10219.63	2756	10246.02	2758	10272.21	2760				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9913.84	.068	9995.15	.043	10023.9	.068

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9995.15	10023.9	493.45	493.56	485.78	.1	.3

CROSS SECTION OUTPUT Profile #100-yr 6-hr

			Left OB	Channel	Right OB
E.G. Elev (ft)	2752.16	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.31	Wt. n-Val.	0.068	0.043	0.068
W.S. Elev (ft)	2751.85	Reach Len. (ft)	493.45	493.56	485.78
Crit W.S. (ft)	2751.64	Flow Area (sq ft)	8.34	49.54	62.57
E.G. Slope (ft/ft)	0.011658	Area (sq ft)	8.34	49.54	62.57
Q Total (cfs)	404.00	Flow (cfs)	16.34	265.48	122.18
Top Width (ft)	122.76	Top Width (ft)	10.93	28.75	83.09
Vel Total (ft/s)	3.35	Avg. Vel. (ft/s)	1.96	5.36	1.95
Max Chl Dpth (ft)	1.85	Hydr. Depth (ft)	0.76	1.72	0.75
Conv. Total (cfs)	3741.7	Conv. (cfs)	151.3	2458.8	1131.6
Length Wtd. (ft)	492.76	Wetted Per. (ft)	11.03	28.78	83.10
Min Ch El (ft)	2750.00	Shear (lb/sq ft)	0.55	1.25	0.55
Alpha	1.79	Stream Power (lb/ft s)	1.08	6.71	1.07
Frctn Loss (ft)	7.65	Cum Volume (acre-ft)	10.52	72.27	23.75
C & E Loss (ft)	0.03	Cum SA (acres)	13.33	39.18	26.63

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

Warning: The energy loss was 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 OUTPUT Profile #Method1

E.G. Elev (ft)	2752.87	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.91	Wt. n-Val.		0.043	
W.S. Elev (ft)	2751.96	Reach Len. (ft)	493.45	493.56	485.78
Crit W.S. (ft)	2751.96	Flow Area (sq ft)		52.75	
E.G. Slope (ft/ft)	0.025256	Area (sq ft)		52.75	
Q Total (cfs)	404.00	Flow (cfs)		404.00	
Top Width (ft)	28.75	Top Width (ft)		28.75	
Vel Total (ft/s)	7.66	Avg. Vel. (ft/s)		7.66	
Max Chl Dpth (ft)	1.96	Hydr. Depth (ft)		1.83	
Conv. Total (cfs)	2542.1	Conv. (cfs)		2542.1	
Length Wtd. (ft)	493.56	Wetted Per. (ft)		32.03	
Min Ch El (ft)	2750.00	Shear (lb/sq ft)		2.60	
Alpha	1.00	Stream Power (lb/ft s)		19.89	
Frctn Loss (ft)	4.82	Cum Volume (acre-ft)	0.41	80.42	2.30
C & E Loss (ft)	0.16	Cum SA (acres)	0.10	39.37	2.36

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 conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
depth, the 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: Upper Fan 5
REACH: UpperFan5-1 RS: 4.67

INPUT
Description: Cross Section 4.67 is located downstream of the confluence between
Upper Fan 5 and the Raw Hide Wash breakout.

Topography and
Aerial indicates wash and surrounding undeveloped desert.
T5NR5E
Section 4
Q100 = 979 cfs
Station Elevation Data num= 13

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9673.22	2750	9711.76	2748	9744.19	2746	9924.53	2744	9953.12	2743
9981.7	2742	10000	2741.37	10011.3	2742	10043.02	2743	10074.75	2744
10103.65	2746	10132.06	2748	10156.86	2750				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9673.22	.068	9953.12	.043	10043.02	.068

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9953.12	10043.02	291.04	283.64	284.75	.1	.3

CROSS SECTION OUTPUT Profile #100-yr 6-hr

E.G. Elev (ft)	2744.48	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.61	Wt. n-Val.	0.068	0.043	0.068
W.S. Elev (ft)	2743.87	Reach Len. (ft)	291.04	283.64	284.75
Crit W.S. (ft)	2743.80	Flow Area (sq ft)	10.82	147.29	12.01
E.G. Slope (ft/ft)	0.017707	Area (sq ft)	10.82	147.29	12.01
Q Total (cfs)	979.00	Flow (cfs)	18.06	940.89	20.05
Top Width (ft)	142.39	Top Width (ft)	24.88	89.90	27.61
Vel Total (ft/s)	5.75	Avg. Vel. (ft/s)	1.67	6.39	1.67
Max Chl Dpth (ft)	2.50	Hydr. Depth (ft)	0.44	1.64	0.44
Conv. Total (cfs)	7357.2	Conv. (cfs)	135.7	7070.8	150.7
Length Wtd. (ft)	285.66	Wetted Per. (ft)	24.89	89.96	27.62
Min Ch El (ft)	2741.37	Shear (lb/sq ft)	0.48	1.81	0.48
Alpha	1.19	Stream Power (lb/ft s)	0.80	11.56	0.80
Frctn Loss (ft)	4.50	Cum Volume (acre-ft)	10.41	71.16	23.34
C & E Loss (ft)	0.09	Cum SA (acres)	13.12	38.51	26.02

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 OUTPUT Profile #Method1

E.G. Elev (ft)	2744.82	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.38	Wt. n-Val.		0.043	
W.S. Elev (ft)	2744.45	Reach Len. (ft)	291.04	283.64	284.75
Crit W.S. (ft)	2743.77	Flow Area (sq ft)		199.16	
E.G. Slope (ft/ft)	0.007316	Area (sq ft)		199.16	
Q Total (cfs)	979.00	Flow (cfs)		979.00	
Top Width (ft)	89.90	Top Width (ft)		89.90	
Vel Total (ft/s)	4.92	Avg. Vel. (ft/s)		4.92	
Max Chl Dpth (ft)	3.08	Hydr. Depth (ft)		2.22	
Conv. Total (cfs)	11446.0	Conv. (cfs)		11446.0	
Length Wtd. (ft)	283.64	Wetted Per. (ft)		92.86	
Min Ch El (ft)	2741.37	Shear (lb/sq ft)		0.98	
Alpha	1.00	Stream Power (lb/ft s)		4.82	
Frctn Loss (ft)	3.33	Cum Volume (acre-ft)	0.41	78.99	2.30
C & E Loss (ft)	0.08	Cum SA (acres)	0.10	38.70	2.36

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 conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was 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: Upper Fan 5
REACH: UpperFan5-1 RS: 4.62

INPUT
Description: Topography and Aerial indicates wash and surrounding undeveloped desert.
T5NR5E Section 4
Q100 = 979 cfs
Station Elevation Data num= 19

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9705.12	2746	9722.02	2744	9756.7	2742	9776.39	2740	9876.15	2738
9930.87	2738	9972.57	2739.28	9988.23	2738	10000	2736.57	10013.38	2738
10021.02	2739.01	10028.56	2740	10056.05	2742	10071.13	2744	10086.21	2746
10111.78	2748	10148.07	2750	10165.51	2752	10184.4	2754		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9705.12	.068	9972.57	.043	10021.02	.068

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

9972.5710021.02 489 504.39 508 .1 .3

CROSS SECTION OUTPUT Profile #100-yr 6-hr

E.G. Elev (ft)	2739.89	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.30	Wt. n-Val.	0.068	0.043	0.068
W.S. Elev (ft)	2739.58	Reach Len. (ft)	489.00	504.39	508.00
Crit W.S. (ft)	2739.32	Flow Area (sq ft)	188.40	80.78	1.25
E.G. Slope (ft/ft)	0.014117	Area (sq ft)	188.40	80.78	1.25
Q Total (cfs)	979.00	Flow (cfs)	513.01	464.59	1.40
Top Width (ft)	228.18	Top Width (ft)	175.37	48.45	4.36
Vel Total (ft/s)	3.62	Avg. Vel. (ft/s)	2.72	5.75	1.12
Max Chl Dpth (ft)	3.01	Hydr. Depth (ft)	1.07	1.67	0.29
Conv. Total (cfs)	8239.8	Conv. (cfs)	4317.8	3910.2	11.8
Length Wtd. (ft)	498.59	Wetted Per. (ft)	175.40	48.73	4.40
Min Ch El (ft)	2736.57	Shear (lb/sq ft)	0.95	1.46	0.25
Alpha	1.49	Stream Power (lb/ft s)	2.58	8.40	0.28
Frctn Loss (ft)	8.11	Cum Volume (acre-ft)	9.75	70.41	23.29
C & E Loss (ft)	0.02	Cum SA (acres)	12.46	38.06	25.91

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 OUTPUT Profile #Method1

E.G. Elev (ft)	2741.41	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.17	Wt. n-Val.		0.043	
W.S. Elev (ft)	2740.24	Reach Len. (ft)	489.00	504.39	508.00
Crit W.S. (ft)	2740.24	Flow Area (sq ft)		112.83	
E.G. Slope (ft/ft)	0.021832	Area (sq ft)		112.83	
Q Total (cfs)	979.00	Flow (cfs)		979.00	
Top Width (ft)	48.45	Top Width (ft)		48.45	
Vel Total (ft/s)	8.68	Avg. Vel. (ft/s)		8.68	
Max Chl Dpth (ft)	3.67	Hydr. Depth (ft)		2.33	
Conv. Total (cfs)	6625.8	Conv. (cfs)		6625.8	
Length Wtd. (ft)	504.39	Wetted Per. (ft)		50.93	
Min Ch El (ft)	2736.57	Shear (lb/sq ft)		3.02	
Alpha	1.00	Stream Power (lb/ft s)		26.20	
Frctn Loss (ft)	8.57	Cum Volume (acre-ft)	0.41	77.98	2.30
C & E Loss (ft)	0.17	Cum SA (acres)	0.10	38.25	2.36

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 cross section had to be extended vertically during the critical depth calculations.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
depth, the 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: Upper Fan 5
REACH: UpperFan5-1 RS: 4.52

INPUT
Description: Topography and Aerial indicates wash and surrounding undeveloped desert.
T5NR5E Section 4

Q100 = 979 cfs

Station Elevation Data num= 18

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9712.77	2742	9747.14	2740	9773.84	2738	9813.08	2736	9866.49	2734
9881.51	2732	9891.5	2730	9915.72	2730	9953.31	2730.61	9974.52	2730
10000	2728.61	10009.32	2730	10035.17	2730.51	10112.72	2732	10152.18	2734
10190.35	2736	10208.66	2738	10227.92	2740				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9712.77	.068	9953.31	.043	10035.17	.068

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9953.31	10035.17	499	501.68	487	.1	.3

CROSS SECTION OUTPUT Profile #100-yr 6-hr

			Left OB	Channel	Right OB
E.G. Elev (ft)	2731.77	Element			
Vel Head (ft)	0.46	Wt. n-Val.	0.068	0.043	0.068
W.S. Elev (ft)	2731.31	Reach Len. (ft)	499.00	501.68	487.00
Crit W.S. (ft)	2731.21	Flow Area (sq ft)	73.59	118.43	16.84
E.G. Slope (ft/ft)	0.018925	Area (sq ft)	73.59	118.43	16.84
Q Total (cfs)	979.00	Flow (cfs)	232.13	719.23	27.64
Top Width (ft)	191.93	Top Width (ft)	68.34	81.86	41.73
Vel Total (ft/s)	4.69	Avg. Vel. (ft/s)	3.15	6.07	1.64
Max Chl Dpth (ft)	2.71	Hydr. Depth (ft)	1.08	1.45	0.40
Conv. Total (cfs)	7116.5	Conv. (cfs)	1687.3	5228.2	200.9
Length Wtd. (ft)	497.71	Wetted Per. (ft)	68.47	82.02	41.74
Min Ch El (ft)	2728.60	Shear (lb/sq ft)	1.27	1.71	0.48
Alpha	1.34	Stream Power (lb/ft s)	4.01	10.36	0.78
Frctn Loss (ft)	7.70	Cum Volume (acre-ft)	8.28	69.26	23.19
C & E Loss (ft)	0.05	Cum SA (acres)	11.09	37.30	25.64

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 OUTPUT Profile #Method1

			Left OB	Channel	Right OB
E.G. Elev (ft)	2732.39	Element			
Vel Head (ft)	0.59	Wt. n-Val.		0.043	
W.S. Elev (ft)	2731.81	Reach Len. (ft)	499.00	501.68	487.00
Crit W.S. (ft)	2731.52	Flow Area (sq ft)		159.30	
E.G. Slope (ft/ft)	0.013586	Area (sq ft)		159.30	
Q Total (cfs)	979.00	Flow (cfs)		979.00	
Top Width (ft)	81.86	Top Width (ft)		81.86	
Vel Total (ft/s)	6.15	Avg. Vel. (ft/s)		6.15	
Max Chl Dpth (ft)	3.21	Hydr. Depth (ft)		1.95	
Conv. Total (cfs)	8399.3	Conv. (cfs)		8399.3	
Length Wtd. (ft)	501.68	Wetted Per. (ft)		84.52	
Min Ch El (ft)	2728.60	Shear (lb/sq ft)		1.60	
Alpha	1.00	Stream Power (lb/ft s)		9.82	
Frctn Loss (ft)	7.12	Cum Volume (acre-ft)	0.41	76.40	2.30
C & E Loss (ft)	0.02	Cum SA (acres)	0.10	37.49	2.36

Warning: The cross section had to be extended vertically during the critical depth calculations.
Warning: The energy loss was greater 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: Upper Fan 5
REACH: UpperFan5-1 RS: 4.42

INPUT
Description: Topography and Aerial indicates wash and surrounding undeveloped desert.
T5NR5E Section 4
Q100 = 979 cfs
Station Elevation Data num= 22

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9849.13	2736	9863.17	2734	9879.02	2732	9902.05	2730	9922.77	2728
9943.32	2726	9966.29	2724	9977.13	2723	9987.98	2722	10000	2720.68
10009.66	2722	10033.8	2722.99	10101.01	2722	10131.34	2722	10165.49	2724
10194.47	2726	10229.64	2728	10282.69	2728	10364.15	2726	10372.91	2726
10395.29	2728	10425.96	2730						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9849.13	.068	9977.13	.043	10033.8	.068

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9977.13	10033.8	506	512.22	503	.1	.3

CROSS SECTION OUTPUT Profile #100-yr 6-hr

			Left OB	Channel	Right OB
E.G. Elev (ft)	2724.02	Element			
Vel Head (ft)	0.31	Wt. n-Val.	0.068	0.043	0.068
W.S. Elev (ft)	2723.72	Reach Len. (ft)	506.00	512.22	503.00
Crit W.S. (ft)		Flow Area (sq ft)	2.78	94.16	159.20
E.G. Slope (ft/ft)	0.012871	Area (sq ft)	2.78	94.16	159.20
Q Total (cfs)	979.00	Flow (cfs)	3.46	516.45	459.09
Top Width (ft)	191.26	Top Width (ft)	7.76	56.67	126.83
Vel Total (ft/s)	3.82	Avg. Vel. (ft/s)	1.25	5.48	2.88
Max Chl Dpth (ft)	3.04	Hydr. Depth (ft)	0.36	1.66	1.26
Conv. Total (cfs)	8629.2	Conv. (cfs)	30.5	4552.1	4046.6
Length Wtd. (ft)	509.46	Wetted Per. (ft)	7.79	56.90	126.89
Min Ch El (ft)	2720.68	Shear (lb/sq ft)	0.29	1.33	1.01
Alpha	1.35	Stream Power (lb/ft s)	0.36	7.29	2.91
Frctn Loss (ft)	8.01	Cum Volume (acre-ft)	7.84	68.04	22.20
C & E Loss (ft)	0.04	Cum SA (acres)	10.65	36.51	24.70

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 OUTPUT Profile #Method1

			Left OB	Channel	Right OB
E.G. Elev (ft)	2725.25	Element			
Vel Head (ft)	0.82	Wt. n-Val.		0.043	
W.S. Elev (ft)	2724.44	Reach Len. (ft)	506.00	512.22	503.00
Crit W.S. (ft)	2724.15	Flow Area (sq ft)		135.11	
E.G. Slope (ft/ft)	0.014826	Area (sq ft)		135.11	
Q Total (cfs)	979.00	Flow (cfs)		979.00	
Top Width (ft)	56.67	Top Width (ft)		56.67	
Vel Total (ft/s)	7.25	Avg. Vel. (ft/s)		7.25	
Max Chl Dpth (ft)	3.76	Hydr. Depth (ft)		2.38	
Conv. Total (cfs)	8040.4	Conv. (cfs)		8040.4	
Length Wtd. (ft)	512.22	Wetted Per. (ft)		59.78	
Min Ch El (ft)	2720.68	Shear (lb/sq ft)		2.09	
Alpha	1.00	Stream Power (lb/ft s)		15.16	
Frctn Loss (ft)	8.73	Cum Volume (acre-ft)	0.41	74.71	2.30
C & E Loss (ft)	0.01	Cum SA (acres)	0.10	36.70	2.36

Warning: The cross section had to be extended vertically during the critical depth calculations.
Warning: The energy loss was greater 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: Upper Fan 5
REACH: UpperFan5-1 RS: 4.33

INPUT
Description: Topography and Aerial indicates wash and surrounding undeveloped desert.
T5NR5E Section 4
Q100 = 979 cfs
Station Elevation Data num= 15

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9708.26	2724	9731.19	2722	9758.26	2720	9801.33	2718	9855.31	2716
9937.13	2714	9951.76	2714	9965.99	2714.33	9977.91	2714	10000	2712.3
10021.62	2714	10024.5	2715	10027.37	2716	10038.84	2718	10069.59	2720

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9708.26	.068	9965.99	.043	10024.5	.068

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9965.99	10024.5	398	416.65	427	.1	.3

CROSS SECTION OUTPUT Profile #100-yr 6-hr

E.G. Elev (ft)	2715.97	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.69	Wt. n-Val.	0.068	0.043	0.068
W.S. Elev (ft)	2715.28	Reach Len. (ft)	398.00	416.65	427.00
Crit W.S. (ft)	2715.28	Flow Area (sq ft)	68.21	108.71	0.11
E.G. Slope (ft/ft)	0.019647	Area (sq ft)	68.21	108.71	0.11
Q Total (cfs)	979.00	Flow (cfs)	185.84	793.07	0.09
Top Width (ft)	140.59	Top Width (ft)	81.28	58.51	0.81
Vel Total (ft/s)	5.53	Avg. Vel. (ft/s)	2.72	7.30	0.80
Max Chl Dpth (ft)	2.98	Hydr. Depth (ft)	0.84	1.86	0.14
Conv. Total (cfs)	6984.4	Conv. (cfs)	1325.9	5657.9	0.6
Length Wtd. (ft)	418.30	Wetted Per. (ft)	81.30	58.82	0.86
Min Ch El (ft)	2712.30	Shear (lb/sq ft)	1.03	2.27	0.16
Alpha	1.46	Stream Power (lb/ft s)	2.80	16.54	0.13
Frctn Loss (ft)	5.93	Cum Volume (acre-ft)	7.43	66.84	21.28
C & E Loss (ft)	0.16	Cum SA (acres)	10.14	35.83	23.96

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.

CROSS SECTION OUTPUT Profile #Method1

E.G. Elev (ft)	2716.51	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.96	Wt. n-Val.		0.043	
W.S. Elev (ft)	2715.55	Reach Len. (ft)	398.00	416.65	427.00
Crit W.S. (ft)	2715.50	Flow Area (sq ft)		124.54	
E.G. Slope (ft/ft)	0.019801	Area (sq ft)		124.54	
Q Total (cfs)	979.00	Flow (cfs)		979.00	
Top Width (ft)	58.51	Top Width (ft)		58.51	
Vel Total (ft/s)	7.86	Avg. Vel. (ft/s)		7.86	
Max Chl Dpth (ft)	3.25	Hydr. Depth (ft)		2.13	
Conv. Total (cfs)	6957.2	Conv. (cfs)		6957.2	
Length Wtd. (ft)	417.63	Wetted Per. (ft)		60.59	
Min Ch El (ft)	2712.30	Shear (lb/sq ft)		2.54	
Alpha	1.00	Stream Power (lb/ft s)		19.97	
Frctn Loss (ft)	7.40	Cum Volume (acre-ft)	0.41	73.18	2.30

C & E Loss (ft)	0.07	Cum SA (acres)	0.10	36.02	2.36

Warning: The cross section had to be extended vertically during the critical depth calculations.
Warning: The energy loss was greater 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: Upper Fan 5
REACH: UpperFan5-1 RS: 4.25

INPUT
Description: Topography and Aerial indicates wash and surrounding undeveloped
desert.
T5NR5E Section 4
Q100 = 979 cfs
Station Elevation Data num= 28

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9865.24	2710	9957.13	2708	9970.7	2707	9984.27	2706	10000	2705.49
10011.69	2706	10017.82	2706.86	10023.94	2707.72	10050.77	2707.34	10137.05	2706.75
10151.37	2706	10173.66	2704	10185.5	2704	10205.37	2706	10306.39	2708
10307.11	2708	10342.04	2706	10363.95	2704	10391.61	2704	10416.41	2706
10425.64	2706	10438.44	2704	10473.53	2704	10497.99	2706	10517.42	2708
10524.38	2708	10560.84	2708	10584.07	2710				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9865.24	.068	9970.7	.043	10017.82	.068

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9970.7	10017.82	460.02	445.54	405.78	.1	.3

Right Levee Station=10306.39 Elevation= 2708

CROSS SECTION OUTPUT Profile #100-yr 6-hr

E.G. Elev (ft)	2707.71	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.17	Wt. n-Val.	0.068	0.043	0.068
W.S. Elev (ft)	2707.54	Reach Len. (ft)	460.02	445.54	405.78
Crit W.S. (ft)	2706.75	Flow Area (sq ft)	1.99	70.18	271.59
E.G. Slope (ft/ft)	0.010722	Area (sq ft)	1.99	70.18	271.59
Q Total (cfs)	979.00	Flow (cfs)	1.88	327.00	650.12
Top Width (ft)	305.94	Top Width (ft)	7.34	47.12	251.47
Vel Total (ft/s)	2.85	Avg. Vel. (ft/s)	0.94	4.66	2.39
Max Chl Dpth (ft)	3.54	Hydr. Depth (ft)	0.27	1.49	1.08
Conv. Total (cfs)	9454.6	Conv. (cfs)	18.1	3158.0	6278.5
Length Wtd. (ft)	428.89	Wetted Per. (ft)	7.36	47.24	251.75
Min Ch El (ft)	2705.49	Shear (lb/sq ft)	0.18	0.99	0.72
Alpha	1.36	Stream Power (lb/ft s)	0.17	4.63	1.73
Frctn Loss (ft)	5.59	Cum Volume (acre-ft)	7.10	65.99	19.95
C & E Loss (ft)	0.03	Cum SA (acres)	9.73	35.32	22.73

Warning: Divided flow computed for this cross-section.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water
surface was used.

CROSS SECTION OUTPUT Profile #Method1

E.G. Elev (ft)	2709.04	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.71	Wt. n-Val.		0.043	0.068
W.S. Elev (ft)	2708.33	Reach Len. (ft)	460.02	445.54	405.78

Crit W.S. (ft)	2708.33	Flow Area (sq ft)		107.32	68.44
E.G. Slope (ft/ft)	0.015938	Area (sq ft)		107.32	68.44
Q Total (cfs)	979.00	Flow (cfs)		794.31	184.69
Top Width (ft)	116.56	Top Width (ft)		47.12	69.44
Vel Total (ft/s)	5.57	Avg. Vel. (ft/s)		7.40	2.70
Max Chl Dpth (ft)	2.84	Hydr. Depth (ft)		2.28	0.99
Conv. Total (cfs)	7754.6	Conv. (cfs)		6291.7	1462.9
Length Wtd. (ft)	441.79	Wetted Per. (ft)		48.57	70.74
Min Ch El (ft)	2705.49	Shear (lb/sq ft)		2.20	0.96
Alpha	1.48	Stream Power (lb/ft s)		16.27	2.60
Frctn Loss (ft)	6.15	Cum Volume (acre-ft)	0.41	72.07	1.96
C & E Loss (ft)	0.06	Cum SA (acres)	0.10	35.51	2.02

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 cross section had to be extended vertically during the critical depth calculations.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
depth, the 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: Upper Fan 5
REACH: UpperFan5-1 RS: 4.16

INPUT
Description: Topography and Aerial indicates wash and surrounding undeveloped desert.
T5NR5E Section 4
Q100 = 979 cfs
Station Elevation Data num= 23

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9925.76	2710	9940.32	2708	9954.7	2706	9968.93	2704	9977.74	2702
9980.55	2701	9983.36	2700	10000	2698.6	10013.51	2700	10070.02	2701
10126.52	2702	10215.58	2702	10272.52	2702	10276.54	2702	10283.22	2700
10297.46	2700	10337.79	2702	10397.67	2704	10442.21	2704	10487.59	2702
10511.8	2700	10522.8	2700	10549.54	2702				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9925.76	.068	9980.55	.043	10070.02	.068

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9980.55	10070.02	264.09	262.84	252.02	.1	.3

Right Levee Station=10397.67 Elevation= 2704

CROSS SECTION OUTPUT Profile #100-yr 6-hr

			Left OB	Channel	Right OB
E.G. Elev (ft)	2702.09	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.46	Wt. n-Val.	0.068	0.043	0.068
W.S. Elev (ft)	2701.64	Reach Len. (ft)	264.09	262.84	252.02
Crit W.S. (ft)	2701.44	Flow Area (sq ft)	0.57	137.97	66.33
E.G. Slope (ft/ft)	0.016177	Area (sq ft)	0.57	137.97	66.33
Q Total (cfs)	979.00	Flow (cfs)	0.71	807.49	170.80
Top Width (ft)	180.03	Top Width (ft)	1.79	89.47	88.76
Vel Total (ft/s)	4.78	Avg. Vel. (ft/s)	1.25	5.85	2.58
Max Chl Dpth (ft)	3.04	Hydr. Depth (ft)	0.32	1.54	0.75
Conv. Total (cfs)	7697.3	Conv. (cfs)	5.6	6348.8	1342.9
Length Wtd. (ft)	260.57	Wetted Per. (ft)	1.90	89.78	89.05
Min Ch El (ft)	2698.60	Shear (lb/sq ft)	0.30	1.55	0.75
Alpha	1.29	Stream Power (lb/ft s)	0.38	9.08	1.94
Frctn Loss (ft)	4.46	Cum Volume (acre-ft)	7.09	64.92	18.38
C & E Loss (ft)	0.03	Cum SA (acres)	9.68	34.63	21.14

Warning: Divided flow computed for this cross-section.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water
surface was used.

CROSS SECTION OUTPUT Profile #Method1

E.G. Elev (ft)	2702.51	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.52	Wt. n-Val.		0.043	
W.S. Elev (ft)	2701.99	Reach Len. (ft)	264.09	262.84	252.02
Crit W.S. (ft)	2701.63	Flow Area (sq ft)		169.71	
E.G. Slope (ft/ft)	0.012278	Area (sq ft)		169.71	
Q Total (cfs)	979.00	Flow (cfs)		979.00	
Top Width (ft)	89.47	Top Width (ft)		89.47	
Vel Total (ft/s)	5.77	Avg. Vel. (ft/s)		5.77	
Max Chl Dpth (ft)	3.39	Hydr. Depth (ft)		1.90	
Conv. Total (cfs)	8835.4	Conv. (cfs)		8835.4	
Length Wtd. (ft)	262.84	Wetted Per. (ft)		91.77	
Min Ch El (ft)	2698.60	Shear (lb/sq ft)		1.42	
Alpha	1.00	Stream Power (lb/ft s)		8.18	
Frctn Loss (ft)	4.47	Cum Volume (acre-ft)	0.41	70.66	1.64
C & E Loss (ft)	0.02	Cum SA (acres)	0.10	34.82	1.70

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water
surface was used.

CROSS SECTION

RIVER: Upper Fan 5
REACH: UpperFan5-1 RS: 4.11

INPUT
Description: Topography and Aerial indicates wash and surrounding undeveloped desert.
T5NR5E Section 4
Q100 = 979 cfs
Station Elevation Data num= 15

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9839.48	2700	9882.88	2698	9896.01	2698	9930.79	2698	9957.59	2697
9984.39	2696	10000	2694.75	10032.52	2696	10067.97	2697	10103.42	2698
10111.06	2698	10136.66	2696	10155.31	2696	10332.37	2698	10392.65	2700

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9839.48	.068	9957.59	.043	10067.97	.068

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9957.59	10067.97	408.63	416.74	449.86	.1	.3

CROSS SECTION OUTPUT Profile #100-yr 6-hr

E.G. Elev (ft)	2697.61	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.36	Wt. n-Val.	0.068	0.043	0.068
W.S. Elev (ft)	2697.25	Reach Len. (ft)	408.63	416.74	449.86
Crit W.S. (ft)	2697.13	Flow Area (sq ft)	0.86	137.25	104.04
E.G. Slope (ft/ft)	0.018106	Area (sq ft)	0.86	137.25	104.04
Q Total (cfs)	979.00	Flow (cfs)	0.63	737.53	240.84
Top Width (ft)	271.73	Top Width (ft)	6.78	110.38	154.58
Vel Total (ft/s)	4.04	Avg. Vel. (ft/s)	0.74	5.37	2.31

Max Chl Dpth (ft)	2.50	Hydr. Depth (ft)	0.13	1.24	0.67
Conv. Total (cfs)	7275.6	Conv. (cfs)	4.7	5481.1	1789.8
Length Wtd. (ft)	420.60	Wetted Per. (ft)	6.78	110.49	154.64
Min Ch El (ft)	2694.75	Shear (lb/sq ft)	0.14	1.40	0.76
Alpha	1.41	Stream Power (lb/ft s)	0.11	7.55	1.76
Frctn Loss (ft)	8.35	Cum Volume (acre-ft)	7.09	64.09	17.88
C & E Loss (ft)	0.02	Cum SA (acres)	9.66	34.02	20.44

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 OUTPUT Profile #Method1

E.G. Elev (ft)	2698.03	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.68	Wt. n-Val.		0.043	
W.S. Elev (ft)	2697.35	Reach Len. (ft)	408.63	416.74	449.86
Crit W.S. (ft)	2697.35	Flow Area (sq ft)		147.95	
E.G. Slope (ft/ft)	0.025052	Area (sq ft)		147.95	
Q Total (cfs)	979.00	Flow (cfs)		979.00	
Top Width (ft)	110.38	Top Width (ft)		110.38	
Vel Total (ft/s)	6.62	Avg. Vel. (ft/s)		6.62	
Max Chl Dpth (ft)	2.60	Hydr. Depth (ft)		1.34	
Conv. Total (cfs)	6185.4	Conv. (cfs)		6185.4	
Length Wtd. (ft)	416.74	Wetted Per. (ft)		111.19	
Min Ch El (ft)	2694.75	Shear (lb/sq ft)		2.08	
Alpha	1.00	Stream Power (lb/ft s)		13.77	
Frctn Loss (ft)	7.34	Cum Volume (acre-ft)	0.41	69.70	1.64
C & E Loss (ft)	0.09	Cum SA (acres)	0.10	34.21	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 energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
depth, the 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: Upper Fan 5
REACH: UpperFan5-1 RS: 4.04

INPUT
Description: Topography and Aerial indicates wash and surrounding undeveloped desert.
T5NR5E Section 4 and Section 9
Q100 = 979 cfs
Station Elevation Data num= 21

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9806.35	2696	9813.71	2696	9825.59	2694	9837.08	2692	9848.51	2690
9868.65	2688	9889.15	2688	9945.78	2688.97	9989.67	2688	10000	2686.73
10012.45	2688	10030.54	2690	10036.21	2690	10065.99	2688	10085.23	2686
10104.65	2686	10114.92	2688	10129.22	2690	10175.83	2692	10197.38	2694
10221.76	2696								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9806.35	.068	9945.78	.043	10114.92	.068

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9945.78	10114.92	422.34	421	400.13	.1	.3

CROSS SECTION OUTPUT Profile #100-yr 6-hr

E.G. Elev (ft)	2689.24	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.51	Wt. n-Val.	0.068	0.043	0.068
W.S. Elev (ft)	2688.73	Reach Len. (ft)	422.34	421.00	400.13
Crit W.S. (ft)	2688.73	Flow Area (sq ft)	33.15	153.51	1.90
E.G. Slope (ft/ft)	0.021876	Area (sq ft)	33.15	153.51	1.90
Q Total (cfs)	979.00	Flow (cfs)	64.81	911.07	3.12
Top Width (ft)	197.79	Top Width (ft)	70.42	122.16	5.21
Vel Total (ft/s)	5.19	Avg. Vel. (ft/s)	1.96	5.94	1.64
Max Chl Dpth (ft)	2.73	Hydr. Depth (ft)	0.47	1.26	0.36
Conv. Total (cfs)	6619.1	Conv. (cfs)	438.2	6159.8	21.1
Length Wtd. (ft)	415.48	Wetted Per. (ft)	70.46	122.67	5.26
Min Ch El (ft)	2686.00	Shear (lb/sq ft)	0.64	1.71	0.49
Alpha	1.23	Stream Power (lb/ft s)	1.26	10.14	0.81
Frctn Loss (ft)	7.92	Cum Volume (acre-ft)	6.93	62.70	17.34
C & E Loss (ft)	0.05	Cum SA (acres)	9.29	32.91	19.61

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

CROSS SECTION OUTPUT Profile #Method1

E.G. Elev (ft)	2689.45	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.38	Wt. n-Val.		0.043	
W.S. Elev (ft)	2689.07	Reach Len. (ft)	422.34	421.00	400.13
Crit W.S. (ft)	2688.73	Flow Area (sq ft)		198.93	
E.G. Slope (ft/ft)	0.013051	Area (sq ft)		198.93	
Q Total (cfs)	979.00	Flow (cfs)		979.00	
Top Width (ft)	141.21	Top Width (ft)		141.21	
Vel Total (ft/s)	4.92	Avg. Vel. (ft/s)		4.92	
Max Chl Dpth (ft)	3.07	Hydr. Depth (ft)		1.41	
Conv. Total (cfs)	8569.6	Conv. (cfs)		8569.6	
Length Wtd. (ft)	421.00	Wetted Per. (ft)		142.93	
Min Ch El (ft)	2686.00	Shear (lb/sq ft)		1.13	
Alpha	1.00	Stream Power (lb/ft s)		5.58	
Frctn Loss (ft)	7.20	Cum Volume (acre-ft)	0.41	68.04	1.64
C & E Loss (ft)	0.05	Cum SA (acres)	0.10	33.01	1.70

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.

CROSS SECTION

RIVER: Upper Fan 5
REACH: UpperFan5-1 RS: 3.96

INPUT
Description: Topography and Aerial indicates wash and surrounding undeveloped desert.
T5NR5E Section 4 and Section 9
Q100 = 979 cfs
Station Elevation Data num= 20

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9753.03	2686	9791.61	2684	9902.5	2682	9928.97	2681	9942.21	2680.5
9955.44	2680	10000	2678.52	10009.56	2680	10014.11	2680.51	10018.65	2681

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10027.73    268210064.73    268210081.62    268010092.98    267810121.49    2678
10130.79    268010147.51    2682 10170.6    268410190.56    2686 10226.1    2686

Manning's n Values          num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
 9753.03    .068 9942.21    .04310014.11    .068

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9942.2110014.11           166.62  167.89  133.41            .1        .3
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CROSS SECTION OUTPUT Profile #100-yr 6-hr

E.G. Elev (ft)	2681.09	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.35	Wt. n-Val.	0.068	0.043	0.068
W.S. Elev (ft)	2680.75	Reach Len. (ft)	166.62	167.89	133.41
Crit W.S. (ft)		Flow Area (sq ft)	0.79	89.14	119.22
E.G. Slope (ft/ft)	0.016763	Area (sq ft)	0.79	89.14	119.22
Q Total (cfs)	979.00	Flow (cfs)	0.55	459.52	518.92
Top Width (ft)	142.28	Top Width (ft)	6.48	71.90	63.90
Vel Total (ft/s)	4.68	Avg. Vel. (ft/s)	0.70	5.15	4.35
Max Chl Dpth (ft)	2.74	Hydr. Depth (ft)	0.12	1.24	1.87
Conv. Total (cfs)	7561.5	Conv. (cfs)	4.3	3549.2	4008.0
Length Wtd. (ft)	158.73	Wetted Per. (ft)	6.48	72.08	64.39
Min Ch El (ft)	2678.52	Shear (lb/sq ft)	0.13	1.29	1.94
Alpha	1.03	Stream Power (lb/ft s)	0.09	6.67	8.43
Frctn Loss (ft)	2.89	Cum Volume (acre-ft)	6.76	61.53	16.78
C & E Loss (ft)	0.02	Cum SA (acres)	8.92	31.97	19.30

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 OUTPUT Profile #Method1

E.G. Elev (ft)	2682.19	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.91	Wt. n-Val.		0.043	
W.S. Elev (ft)	2681.29	Reach Len. (ft)	166.62	167.89	133.41
Crit W.S. (ft)	2681.29	Flow Area (sq ft)		128.09	
E.G. Slope (ft/ft)	0.023387	Area (sq ft)		128.09	
Q Total (cfs)	979.00	Flow (cfs)		979.00	
Top Width (ft)	71.90	Top Width (ft)		71.90	
Vel Total (ft/s)	7.64	Avg. Vel. (ft/s)		7.64	
Max Chl Dpth (ft)	2.77	Hydr. Depth (ft)		1.78	
Conv. Total (cfs)	6401.7	Conv. (cfs)		6401.7	
Length Wtd. (ft)	167.89	Wetted Per. (ft)		73.65	
Min Ch El (ft)	2678.52	Shear (lb/sq ft)		2.54	
Alpha	1.00	Stream Power (lb/ft s)		19.41	
Frctn Loss (ft)	3.43	Cum Volume (acre-ft)	0.41	66.46	1.64
C & E Loss (ft)	0.11	Cum SA (acres)	0.10	31.98	1.70

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.

CROSS SECTION

RIVER: Upper Fan 5
REACH: UpperFan5-1 RS: 3.92

INPUT
Description: Topography and Aerial indicates wash and surrounding undeveloped desert.
T5NR5E Section 8 and Section 9
Q100 = 979 cfs

Station Elevation Data num= 18

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9758.73	2680	9818.79	2678	9913.83	2678	9938.53	2678.53	9980.19	2678
9985.5	2677	9990.81	2676	10000	2675	10016.54	2676	10054.52	2678
10066.55	2678	10074.57	2676	10115.53	2676	10119.95	2677	10124.36	2678
10133	2680	10144.61	2682	10168.81	2684				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9758.73	.068	9985.5	.043	10119.95	.068

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9985.5	10119.95	264.72	274.65	296.91	.1	.3

CROSS SECTION OUTPUT Profile #100-yr 6-hr

E.G. Elev (ft)	2678.18	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.58	Wt. n-Val.	0.068	0.043	0.068
W.S. Elev (ft)	2677.60	Reach Len. (ft)	264.72	274.65	296.91
Crit W.S. (ft)	2677.51	Flow Area (sq ft)	0.96	159.89	0.80
E.G. Slope (ft/ft)	0.019850	Area (sq ft)	0.96	159.89	0.80
Q Total (cfs)	979.00	Flow (cfs)	1.31	976.60	1.08
Top Width (ft)	119.10	Top Width (ft)	3.19	113.26	2.65
Vel Total (ft/s)	6.06	Avg. Vel. (ft/s)	1.37	6.11	1.36
Max Chl Dpth (ft)	2.60	Hydr. Depth (ft)	0.30	1.41	0.30
Conv. Total (cfs)	6948.7	Conv. (cfs)	9.3	6931.7	7.7
Length Wtd. (ft)	274.94	Wetted Per. (ft)	3.25	113.78	2.72
Min Ch El (ft)	2675.00	Shear (lb/sq ft)	0.37	1.74	0.36
Alpha	1.01	Stream Power (lb/ft s)	0.50	10.64	0.49
Frctn Loss (ft)	4.60	Cum Volume (acre-ft)	6.76	61.05	16.60
C & E Loss (ft)	0.03	Cum SA (acres)	8.90	31.62	19.19

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 OUTPUT Profile #Method1

E.G. Elev (ft)	2678.20	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.54	Wt. n-Val.		0.043	
W.S. Elev (ft)	2677.66	Reach Len. (ft)	264.72	274.65	296.91
Crit W.S. (ft)	2677.50	Flow Area (sq ft)		166.40	
E.G. Slope (ft/ft)	0.018006	Area (sq ft)		166.40	
Q Total (cfs)	979.00	Flow (cfs)		979.00	
Top Width (ft)	114.57	Top Width (ft)		114.57	
Vel Total (ft/s)	5.88	Avg. Vel. (ft/s)		5.88	
Max Chl Dpth (ft)	2.66	Hydr. Depth (ft)		1.45	
Conv. Total (cfs)	7295.8	Conv. (cfs)		7295.8	
Length Wtd. (ft)	274.65	Wetted Per. (ft)		116.42	
Min Ch El (ft)	2675.00	Shear (lb/sq ft)		1.61	
Alpha	1.00	Stream Power (lb/ft s)		9.45	
Frctn Loss (ft)	4.47	Cum Volume (acre-ft)	0.41	65.89	1.64
C & E Loss (ft)	0.04	Cum SA (acres)	0.10	31.62	1.70

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: Upper Fan 5

REACH: UpperFan5-1 RS: 3.87

INPUT
Description: Topography and Aerial indicates wash and surrounding undeveloped desert.
T5NR5E Section 8 and Section 9
Q100 = 979 cfs
Station Elevation Data num= 12

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9729	2678	9760.54	2676	9788.52	2674	9830.42	2674	9909.18	2674
9976.49	2672.13	9981.14	2672	9986.5	2670	10000	2669.62	10017.86	2670
10032.14	2672	10210.57	2674						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9729	.068	9981.14	.043	10032.14	.068

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9981.14	10032.14	517.71	497.13	424.8	.1	.3

CROSS SECTION OUTPUT Profile #100-yr 6-hr

			Left OB	Channel	Right OB
E.G. Elev (ft)	2673.55	Element			
Vel Head (ft)	0.83	Wt. n-Val.	0.068	0.043	0.068
W.S. Elev (ft)	2672.72	Reach Len. (ft)	517.71	497.13	424.80
Crit W.S. (ft)	2672.72	Flow Area (sq ft)	9.41	125.23	23.37
E.G. Slope (ft/ft)	0.014294	Area (sq ft)	9.41	125.23	23.37
Q Total (cfs)	979.00	Flow (cfs)	12.48	935.51	31.01
Top Width (ft)	141.61	Top Width (ft)	26.03	51.00	64.58
Vel Total (ft/s)	6.20	Avg. Vel. (ft/s)	1.33	7.47	1.33
Max Chl Dpth (ft)	3.10	Hydr. Depth (ft)	0.36	2.46	0.36
Conv. Total (cfs)	8188.6	Conv. (cfs)	104.4	7824.8	259.4
Length Wtd. (ft)	495.78	Wetted Per. (ft)	26.04	51.51	64.59
Min Ch El (ft)	2669.62	Shear (lb/sq ft)	0.32	2.17	0.32
Alpha	1.39	Stream Power (lb/ft s)	0.43	16.21	0.43
Frctn Loss (ft)	8.85	Cum Volume (acre-ft)	6.73	60.15	16.52
C & E Loss (ft)	0.05	Cum SA (acres)	8.81	31.10	18.97

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

CROSS SECTION OUTPUT Profile #Method1

			Left OB	Channel	Right OB
E.G. Elev (ft)	2673.69	Element			
Vel Head (ft)	0.89	Wt. n-Val.		0.043	
W.S. Elev (ft)	2672.80	Reach Len. (ft)	517.71	497.13	424.80
Crit W.S. (ft)	2672.52	Flow Area (sq ft)		128.99	
E.G. Slope (ft/ft)	0.014772	Area (sq ft)		128.99	
Q Total (cfs)	979.00	Flow (cfs)		979.00	
Top Width (ft)	51.00	Top Width (ft)		51.00	
Vel Total (ft/s)	7.59	Avg. Vel. (ft/s)		7.59	
Max Chl Dpth (ft)	3.18	Hydr. Depth (ft)		2.53	
Conv. Total (cfs)	8054.9	Conv. (cfs)		8054.9	
Length Wtd. (ft)	497.13	Wetted Per. (ft)		53.10	
Min Ch El (ft)	2669.62	Shear (lb/sq ft)		2.24	
Alpha	1.00	Stream Power (lb/ft s)		17.00	
Frctn Loss (ft)	9.36	Cum Volume (acre-ft)	0.41	64.96	1.64
C & E Loss (ft)	0.06	Cum SA (acres)	0.10	31.10	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.

CROSS SECTION

RIVER: Upper Fan 5
REACH: UpperFan5-1 RS: 3.78

INPUT
Description: Topography and Aerial indicates wash and surrounding undeveloped desert.
T5NR5E Section 8
Q100 = 979 cfs
Station Elevation Data num= 14

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9942.09	2670	9969.7	2668	9984.03	2666	9989.95	2664	9993.64	2663
9997.33	2662	10062.5	2662	10099.36	2663	10136.22	2664	10212.21	2666
10267.66	2666	10293.42	2666	10336.36	2668	10382.76	2670		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9942.09	.068	9993.64	.043	10099.36	.068

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9993.64	10099.36	379.77	379.46	373.37	.1	.3

CROSS SECTION OUTPUT Profile #100-yr 6-hr

			Left OB	Channel	Right OB
E.G. Elev (ft)	2664.25	Element			
Vel Head (ft)	0.66	Wt. n-Val.	0.068	0.043	0.068
W.S. Elev (ft)	2663.59	Reach Len. (ft)	379.77	379.46	373.37
Crit W.S. (ft)	2663.59	Flow Area (sq ft)	0.65	148.01	6.45
E.G. Slope (ft/ft)	0.022940	Area (sq ft)	0.65	148.01	6.45
Q Total (cfs)	979.00	Flow (cfs)	0.93	968.59	9.48
Top Width (ft)	129.72	Top Width (ft)	2.18	105.72	21.81
Vel Total (ft/s)	6.31	Avg. Vel. (ft/s)	1.44	6.54	1.47
Max Chl Dpth (ft)	1.59	Hydr. Depth (ft)	0.30	1.40	0.30
Conv. Total (cfs)	6463.7	Conv. (cfs)	6.1	6395.0	62.6
Length Wtd. (ft)	379.24	Wetted Per. (ft)	2.26	105.87	21.82
Min Ch El (ft)	2662.00	Shear (lb/sq ft)	0.41	2.00	0.42
Alpha	1.06	Stream Power (lb/ft s)	0.59	13.10	0.62
Frctn Loss (ft)	7.22	Cum Volume (acre-ft)	6.67	58.59	16.37
C & E Loss (ft)	0.03	Cum SA (acres)	8.65	30.20	18.54

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.

CROSS SECTION OUTPUT Profile #Method1

			Left OB	Channel	Right OB
E.G. Elev (ft)	2664.27	Element			
Vel Head (ft)	0.70	Wt. n-Val.		0.043	
W.S. Elev (ft)	2663.57	Reach Len. (ft)	379.77	379.46	373.37
Crit W.S. (ft)	2663.57	Flow Area (sq ft)		146.10	
E.G. Slope (ft/ft)	0.024827	Area (sq ft)		146.10	
Q Total (cfs)	979.00	Flow (cfs)		979.00	
Top Width (ft)	105.72	Top Width (ft)		105.72	
Vel Total (ft/s)	6.70	Avg. Vel. (ft/s)		6.70	
Max Chl Dpth (ft)	1.57	Hydr. Depth (ft)		1.38	
Conv. Total (cfs)	6213.2	Conv. (cfs)		6213.2	
Length Wtd. (ft)	379.46	Wetted Per. (ft)		107.01	
Min Ch El (ft)	2662.00	Shear (lb/sq ft)		2.12	
Alpha	1.00	Stream Power (lb/ft s)		14.18	

Frctn Loss (ft)	4.73	Cum Volume (acre-ft)	0.41	63.39	1.64
C & E Loss (ft)	0.10	Cum SA (acres)	0.10	30.20	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 conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
depth, the 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: Upper Fan 5
REACH: UpperFan5-1 RS: 3.71

INPUT
Description: Topography and Aerial indicates wash and surrounding undeveloped desert.
T5NR5E Section 8
Q100 = 979 cfs
Station Elevation Data num= 12

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9882.25	2660	9939.58	2658.66	9967.68	2658	9972	2656	9976.45	2655
9980.9	2654	10002.81	2654	10028.25	2654.4	10042.25	2654.62	10066.05	2655
10129.28	2656	10154.53	2658						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9882.25	.068	9976.45	.043	10066.05	.068

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9976.45	10066.05	172.35	170.14	170.24	.1	.3

CROSS SECTION OUTPUT Profile #100-yr 6-hr

E.G. Elev (ft)	2656.59	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.55	Wt. n-Val.	0.068	0.043	0.068
W.S. Elev (ft)	2656.04	Reach Len. (ft)	172.35	170.14	170.24
Crit W.S. (ft)	2655.94	Flow Area (sq ft)	2.39	148.81	33.99
E.G. Slope (ft/ft)	0.016049	Area (sq ft)	2.39	148.81	33.99
Q Total (cfs)	979.00	Flow (cfs)	4.25	912.86	61.88
Top Width (ft)	157.83	Top Width (ft)	4.53	89.60	63.70
Vel Total (ft/s)	5.29	Avg. Vel. (ft/s)	1.78	6.13	1.82
Max Chl Dpth (ft)	2.04	Hydr. Depth (ft)	0.53	1.66	0.53
Conv. Total (cfs)	7727.8	Conv. (cfs)	33.6	7205.8	488.5
Length Wtd. (ft)	170.19	Wetted Per. (ft)	4.65	89.72	63.71
Min Ch El (ft)	2654.00	Shear (lb/sq ft)	0.52	1.66	0.53
Alpha	1.26	Stream Power (lb/ft s)	0.92	10.19	0.97
Frctn Loss (ft)	2.76	Cum Volume (acre-ft)	6.66	57.30	16.20
C & E Loss (ft)	0.07	Cum SA (acres)	8.62	29.35	18.18

Warning: The energy loss was 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 OUTPUT Profile #Method1

E.G. Elev (ft)	2656.97	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.38	Wt. n-Val.		0.043	
W.S. Elev (ft)	2656.59	Reach Len. (ft)	172.35	170.14	170.24
Crit W.S. (ft)		Flow Area (sq ft)		197.99	
E.G. Slope (ft/ft)	0.007465	Area (sq ft)		197.99	

Q Total (cfs)	979.00	Flow (cfs)		979.00	
Top Width (ft)	89.60	Top Width (ft)		89.60	
Vel Total (ft/s)	4.94	Avg. Vel. (ft/s)		4.94	
Max Chl Dpth (ft)	2.59	Hydr. Depth (ft)		2.21	
Conv. Total (cfs)	11331.4	Conv. (cfs)		11331.4	
Length Wtd. (ft)	170.14	Wetted Per. (ft)		92.89	
Min Ch El (ft)	2654.00	Shear (lb/sq ft)		0.99	
Alpha	1.00	Stream Power (lb/ft s)		4.91	
Frctn Loss (ft)	2.07	Cum Volume (acre-ft)	0.41	61.89	1.64
C & E Loss (ft)	0.06	Cum SA (acres)	0.10	29.35	1.70

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 conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was 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: Upper Fan 5
REACH: UpperFan5-1 RS: 3.67

INPUT
Description: Topography and Aerial indicates wash and surrounding undeveloped desert.
T5NR5E Section 8
Q100 = 979 cfs
Station Elevation Data num= 13

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9933.43	2654	9963.2	2652.5	9973.12	2652	10000	2651.7	10019.57	2652
10028.43	2652.5	10040.49	2653.32	10131.77	2652	10182.47	2652	10194.26	2654
10207.63	2656	10230.56	2658	10253.4	2660				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9933.43	.068	9963.2	.043	10028.43	.068

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9963.2	10028.43	417.22	488.4	488.24	.1	.3

CROSS SECTION OUTPUT Profile #100-yr 6-hr

E.G. Elev (ft)	2653.76	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.33	Wt. n-Val.	0.068	0.043	0.068
W.S. Elev (ft)	2653.43	Reach Len. (ft)	417.22	488.40	488.24
Crit W.S. (ft)	2653.24	Flow Area (sq ft)	8.64	95.50	155.26
E.G. Slope (ft/ft)	0.016348	Area (sq ft)	8.64	95.50	155.26
Q Total (cfs)	979.00	Flow (cfs)	14.52	543.90	420.58
Top Width (ft)	246.24	Top Width (ft)	18.52	65.23	162.49
Vel Total (ft/s)	3.77	Avg. Vel. (ft/s)	1.68	5.70	2.71
Max Chl Dpth (ft)	1.73	Hydr. Depth (ft)	0.47	1.46	0.96
Conv. Total (cfs)	7656.8	Conv. (cfs)	113.6	4253.9	3289.4
Length Wtd. (ft)	487.76	Wetted Per. (ft)	18.55	65.26	162.64
Min Ch El (ft)	2651.70	Shear (lb/sq ft)	0.48	1.49	0.97
Alpha	1.49	Stream Power (lb/ft s)	0.80	8.51	2.64
Frctn Loss (ft)	8.34	Cum Volume (acre-ft)	6.63	56.82	15.83
C & E Loss (ft)	0.02	Cum SA (acres)	8.57	29.05	17.74

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 OUTPUT Profile #Method1

E.G. Elev (ft)	2654.84	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.96	Wt. n-Val.		0.043	

W.S. Elev (ft)	2653.88	Reach Len. (ft)	417.22	488.40	488.24
Crit W.S. (ft)	2653.88	Flow Area (sq ft)		124.30	
E.G. Slope (ft/ft)	0.023223	Area (sq ft)		124.30	
Q Total (cfs)	979.00	Flow (cfs)		979.00	
Top Width (ft)	65.23	Top Width (ft)		65.23	
Vel Total (ft/s)	7.88	Avg. Vel. (ft/s)		7.88	
Max Chl Dpth (ft)	2.17	Hydr. Depth (ft)		1.91	
Conv. Total (cfs)	6424.2	Conv. (cfs)		6424.2	
Length Wtd. (ft)	488.40	Wetted Per. (ft)		67.95	
Min Ch El (ft)	2651.70	Shear (lb/sq ft)		2.65	
Alpha	1.00	Stream Power (lb/ft s)		20.89	
Frctn Loss (ft)	7.53	Cum Volume (acre-ft)	0.41	61.26	1.64
C & E Loss (ft)	0.16	Cum SA (acres)	0.10	29.05	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.

CROSS SECTION

RIVER: Upper Fan 5
REACH: UpperFan5-1 RS: 3.58

INPUT
Description: Topography and Aerial indicates wash and surrounding undeveloped desert.
T5NR5E Section 8
Q100 = 979 cfs
Station Elevation Data num= 14

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9795.31	2650	9823.62	2648	9858.62	2646	9903.36	2645	9925.73	2644.5
9948.1	2644	10000	2642	10027.19	2644	10033.56	2644.5	10039.93	2645
10052.67	2646	10079.63	2648	10118.58	2650	10191	2652		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9795.31	.068	9925.73	.043	10033.56	.068

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9925.73	10033.56	301.73	297.05	296.49	.1	.3

CROSS SECTION OUTPUT Profile #100-yr 6-hr

E.G. Elev (ft)	2645.40	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.57	Wt. n-Val.	0.068	0.043	0.068
W.S. Elev (ft)	2644.83	Reach Len. (ft)	301.73	297.05	296.49
Crit W.S. (ft)	2644.70	Flow Area (sq ft)	2.44	161.41	0.69
E.G. Slope (ft/ft)	0.017919	Area (sq ft)	2.44	161.41	0.69
Q Total (cfs)	979.00	Flow (cfs)	2.14	976.25	0.61
Top Width (ft)	126.80	Top Width (ft)	14.77	107.83	4.21
Vel Total (ft/s)	5.95	Avg. Vel. (ft/s)	0.88	6.05	0.88
Max Chl Dpth (ft)	2.83	Hydr. Depth (ft)	0.17	1.50	0.17
Conv. Total (cfs)	7313.4	Conv. (cfs)	16.0	7292.9	4.6
Length Wtd. (ft)	297.60	Wetted Per. (ft)	14.77	107.97	4.22
Min Ch El (ft)	2642.00	Shear (lb/sq ft)	0.18	1.67	0.18
Alpha	1.03	Stream Power (lb/ft s)	0.16	10.12	0.16
Frctn Loss (ft)	5.08	Cum Volume (acre-ft)	6.58	55.38	14.95
C & E Loss (ft)	0.01	Cum SA (acres)	8.41	28.08	16.80

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 OUTPUT Profile #Method1

E.G. Elev (ft)	2645.50	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.42	Wt. n-Val.		0.043	
W.S. Elev (ft)	2645.08	Reach Len. (ft)	301.73	297.05	296.49
Crit W.S. (ft)		Flow Area (sq ft)		188.05	
E.G. Slope (ft/ft)	0.010984	Area (sq ft)		188.05	
Q Total (cfs)	979.00	Flow (cfs)		979.00	
Top Width (ft)	107.83	Top Width (ft)		107.83	
Vel Total (ft/s)	5.21	Avg. Vel. (ft/s)		5.21	
Max Chl Dpth (ft)	3.08	Hydr. Depth (ft)		1.74	
Conv. Total (cfs)	9341.0	Conv. (cfs)		9341.0	
Length Wtd. (ft)	297.05	Wetted Per. (ft)		109.12	
Min Ch El (ft)	2642.00	Shear (lb/sq ft)		1.18	
Alpha	1.00	Stream Power (lb/ft s)		6.15	
Frctn Loss (ft)	4.39	Cum Volume (acre-ft)	0.41	59.51	1.64
C & E Loss (ft)	0.07	Cum SA (acres)	0.10	28.08	1.70

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: Upper Fan 5
REACH: UpperFan5-1 RS: 3.52

INPUT
Description: Topography and Aerial indicates wash and surrounding undeveloped desert.
T5NR5E Section 8
Q100 = 979 cfs
Station Elevation Data num= 23

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9714.32	2650	9735.42	2648	9747.96	2646	9764.02	2644	9789.92	2642
9814.99	2640	9836.63	2638	9844.42	2638	9882.38	2639.87	9927.43	2638.45
9959.71	2640	9967.23	2640	9971.06	2639	9974.89	2638	10000	2636.75
10016.67	2638	10019.32	2639.02	10021.88	2640	10037.66	2642	10110.58	2642
10156.55	2642	10187.43	2644	10228.33	2646				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9714.32	.068	9971.06	.043	10019.32	.068

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9971.06	10019.32	200.4	204.58	204.33	.1	.3

CROSS SECTION OUTPUT Profile #100-yr 6-hr

E.G. Elev (ft)	2640.31	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.65	Wt. n-Val.	0.068	0.043	0.068
W.S. Elev (ft)	2639.66	Reach Len. (ft)	200.40	204.58	204.33
Crit W.S. (ft)	2639.66	Flow Area (sq ft)	95.65	103.17	0.54
E.G. Slope (ft/ft)	0.016252	Area (sq ft)	95.65	103.17	0.54
Q Total (cfs)	979.00	Flow (cfs)	228.22	750.10	0.68
Top Width (ft)	175.88	Top Width (ft)	125.93	48.26	1.68
Vel Total (ft/s)	4.91	Avg. Vel. (ft/s)	2.39	7.27	1.25
Max Chl Dpth (ft)	2.91	Hydr. Depth (ft)	0.76	2.14	0.32
Conv. Total (cfs)	7679.4	Conv. (cfs)	1790.2	5883.9	5.3
Length Wtd. (ft)	204.05	Wetted Per. (ft)	126.19	48.66	1.80
Min Ch El (ft)	2636.75	Shear (lb/sq ft)	0.77	2.15	0.31

Alpha	1.73	Stream Power (lb/ft s)	1.84	15.64	0.38
Frctn Loss (ft)	2.93	Cum Volume (acre-ft)	6.24	54.48	14.95
C & E Loss (ft)	0.06	Cum SA (acres)	7.92	27.55	16.78

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: Divided flow computed for this cross-section.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
depth, the calculated water surface came back below critical depth. This indicates that there is
not a valid subcritical answer. The program defaulted to critical depth.

CROSS SECTION OUTPUT Profile #Method1

E.G. Elev (ft)	2641.03	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.15	Wt. n-Val.		0.043	
W.S. Elev (ft)	2639.88	Reach Len. (ft)	200.40	204.58	204.33
Crit W.S. (ft)	2639.88	Flow Area (sq ft)		113.74	
E.G. Slope (ft/ft)	0.020964	Area (sq ft)		113.74	
Q Total (cfs)	979.00	Flow (cfs)		979.00	
Top Width (ft)	48.26	Top Width (ft)		48.26	
Vel Total (ft/s)	8.61	Avg. Vel. (ft/s)		8.61	
Max Chl Dpth (ft)	3.13	Hydr. Depth (ft)		2.36	
Conv. Total (cfs)	6761.6	Conv. (cfs)		6761.6	
Length Wtd. (ft)	204.58	Wetted Per. (ft)		50.40	
Min Ch El (ft)	2636.75	Shear (lb/sq ft)		2.95	
Alpha	1.00	Stream Power (lb/ft s)		25.42	
Frctn Loss (ft)	3.31	Cum Volume (acre-ft)	0.41	58.48	1.64
C & E Loss (ft)	0.20	Cum SA (acres)	0.10	27.55	1.70

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 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: Upper Fan 5
REACH: UpperFan5-1 RS: 3.49

INPUT
Description: Topography and Aerial indicates wash and surrounding undeveloped desert.
T5NR5E Section 8
Q100 = 979 cfs
Station Elevation Data num= 14

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9837.19	2640	9849.14	2638	9862.84	2638	9863.52	2638	9893.1	2636
9933.42	2635.15	9956.65	2634	9999.77	2633.3	10006.92	2634	10036.53	2635.87
10191.84	2636	10241.28	2638	10287.83	2640	10300.43	2640		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9837.19	.068	9933.42	.04310036.53		.068

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9933.4210036.53		365.59	335.09	324.72	.1	.3

CROSS SECTION OUTPUT Profile #100-yr 6-hr

			Left OB	Channel	Right OB
E.G. Elev (ft)	2636.38	Element			
Vel Head (ft)	0.47	Wt. n-Val.	0.068	0.043	0.068
W.S. Elev (ft)	2635.91	Reach Len. (ft)	365.59	335.09	324.72
Crit W.S. (ft)	2635.63	Flow Area (sq ft)	13.81	173.81	1.10
E.G. Slope (ft/ft)	0.012778	Area (sq ft)	13.81	173.81	1.10
Q Total (cfs)	979.00	Flow (cfs)	17.95	960.84	0.21
Top Width (ft)	190.69	Top Width (ft)	36.20	103.11	51.38
Vel Total (ft/s)	5.19	Avg. Vel. (ft/s)	1.30	5.53	0.19
Max Chl Dpth (ft)	2.61	Hydr. Depth (ft)	0.38	1.69	0.02
Conv. Total (cfs)	8660.6	Conv. (cfs)	158.8	8500.0	1.9
Length Wtd. (ft)	335.36	Wetted Per. (ft)	36.21	103.24	51.38
Min Ch El (ft)	2633.30	Shear (lb/sq ft)	0.30	1.34	0.02
Alpha	1.12	Stream Power (lb/ft s)	0.40	7.42	0.00
Frctn Loss (ft)	5.20	Cum Volume (acre-ft)	5.99	53.83	14.94
C & E Loss (ft)	0.04	Cum SA (acres)	7.55	27.19	16.66

Warning: The energy loss was 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 OUTPUT Profile #Method1

			Left OB	Channel	Right OB
E.G. Elev (ft)	2636.42	Element			
Vel Head (ft)	0.48	Wt. n-Val.		0.043	
W.S. Elev (ft)	2635.93	Reach Len. (ft)	365.59	335.09	324.72
Crit W.S. (ft)	2635.61	Flow Area (sq ft)		175.95	
E.G. Slope (ft/ft)	0.012875	Area (sq ft)		175.95	
Q Total (cfs)	979.00	Flow (cfs)		979.00	
Top Width (ft)	103.11	Top Width (ft)		103.11	
Vel Total (ft/s)	5.56	Avg. Vel. (ft/s)		5.56	
Max Chl Dpth (ft)	2.63	Hydr. Depth (ft)		1.71	
Conv. Total (cfs)	8628.0	Conv. (cfs)		8628.0	
Length Wtd. (ft)	335.09	Wetted Per. (ft)		104.09	
Min Ch El (ft)	2633.30	Shear (lb/sq ft)		1.36	
Alpha	1.00	Stream Power (lb/ft s)		7.56	
Frctn Loss (ft)	5.24	Cum Volume (acre-ft)	0.41	57.80	1.64
C & E Loss (ft)	0.04	Cum SA (acres)	0.10	27.19	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.

CROSS SECTION

RIVER: Upper Fan 5
REACH: UpperFan5-1 RS: 3.42

INPUT
Description: Cross Section 3.42 is located upstream of concentration point
CUF54 in the HEC-1 Model.

Topography and Aerial indicates wash
and surrounding undeveloped desert.
T5NR5E Section 8
Q100 = 979
cfs
Station Elevation Data num= 19

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev

9933.21	2648 9940.06	2646 9946.85	2644 9953.76	2642 9960.52	2640
9967.36	2638 9974.12	2636 9980.71	2634 9983.44	2632 9986.07	2630
9988.95	2628 10000	262710020.98	262810051.11	263010161.63	2632
10191.98	263410212.42	263610227.32	263810242.23	2640	

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9933.21	.068	9986.07	.04310051.11		.068

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9986.07	10051.11	515.58	514.27	529.05	.1	.3

CROSS SECTION OUTPUT Profile #100-yr 6-hr

E.G. Elev (ft)	2631.14	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.88	Wt. n-Val.	0.068	0.043	0.068
W.S. Elev (ft)	2630.26	Reach Len. (ft)	515.58	514.27	529.05
Crit W.S. (ft)	2630.19	Flow Area (sq ft)	0.04	129.74	1.81
E.G. Slope (ft/ft)	0.019229	Area (sq ft)	0.04	129.74	1.81
Q Total (cfs)	979.00	Flow (cfs)	0.03	977.58	1.39
Top Width (ft)	79.53	Top Width (ft)	0.34	65.04	14.15
Vel Total (ft/s)	7.44	Avg. Vel. (ft/s)	0.66	7.53	0.77
Max Chl Dpth (ft)	3.26	Hydr. Depth (ft)	0.13	1.99	0.13
Conv. Total (cfs)	7060.0	Conv. (cfs)	0.2	7049.7	10.1
Length Wtd. (ft)	514.31	Wetted Per. (ft)	0.42	65.80	14.15
Min Ch El (ft)	2627.00	Shear (lb/sq ft)	0.12	2.37	0.15
Alpha	1.02	Stream Power (lb/ft s)	0.08	17.83	0.12
Frctn Loss (ft)	8.91	Cum Volume (acre-ft)	5.93	52.66	14.93
C & E Loss (ft)	0.04	Cum SA (acres)	7.40	26.55	16.41

Warning: The energy loss was 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 OUTPUT Profile #Method1

E.G. Elev (ft)	2631.14	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.88	Wt. n-Val.		0.043	
W.S. Elev (ft)	2630.26	Reach Len. (ft)	515.58	514.27	529.05
Crit W.S. (ft)	2630.17	Flow Area (sq ft)		130.01	
E.G. Slope (ft/ft)	0.019354	Area (sq ft)		130.01	
Q Total (cfs)	979.00	Flow (cfs)		979.00	
Top Width (ft)	65.04	Top Width (ft)		65.04	
Vel Total (ft/s)	7.53	Avg. Vel. (ft/s)		7.53	
Max Chl Dpth (ft)	3.26	Hydr. Depth (ft)		2.00	
Conv. Total (cfs)	7037.1	Conv. (cfs)		7037.1	
Length Wtd. (ft)	514.27	Wetted Per. (ft)		66.32	
Min Ch El (ft)	2627.00	Shear (lb/sq ft)		2.37	
Alpha	1.00	Stream Power (lb/ft s)		17.84	
Frctn Loss (ft)	8.84	Cum Volume (acre-ft)	0.41	56.62	1.64
C & E Loss (ft)	0.03	Cum SA (acres)	0.10	26.55	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.

CROSS SECTION

RIVER: Upper Fan 5
REACH: UpperFan5-1 RS: 3.33

INPUT
Description: Cross Section 3.33 is located downstream of concentration point CUF54 in the HEC-1 Model. Section 3.33 is located east of Legend Trail.

Topography and Aerial indicates wash and surrounding undeveloped desert.

T5NR5E Section 8
Q100 = 1,242 cfs

Station Elevation Data num= 21

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9768.02	2630	9778.95	2628	9790.19	2626	9813.3	2624	9862.12	2622
9945.9	2620.5	9973.82	2620	10000	2618.2	10016.55	2620	10021.6	2620.44
10023.78	2620	10040.33	2620	10045.09	2621	10049.84	2622	10059.58	2624
10069.6	2626	10079.27	2628	10088.85	2630	10109.99	2632	10133.9	2634
10165.22	2636								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9768.02	.071	9945.9	.0381	10045.09	.071

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9945.91	10045.09	484	492.31	489.8	.1	.3

CROSS SECTION OUTPUT Profile #100-yr 6-hr

			Left OB	Channel	Right OB
E.G. Elev (ft)	2622.19	Element			
Vel Head (ft)	0.75	Wt. n-Val.	0.071	0.038	0.071
W.S. Elev (ft)	2621.44	Reach Len. (ft)	484.00	492.31	489.80
Crit W.S. (ft)	2621.44	Flow Area (sq ft)	24.51	170.02	0.45
E.G. Slope (ft/ft)	0.016017	Area (sq ft)	24.51	170.02	0.45
Q Total (cfs)	1242.00	Flow (cfs)	39.14	1202.43	0.43
Top Width (ft)	153.59	Top Width (ft)	52.32	99.19	2.07
Vel Total (ft/s)	6.37	Avg. Vel. (ft/s)	1.60	7.07	0.95
Max Chl Dpth (ft)	3.24	Hydr. Depth (ft)	0.47	1.71	0.22
Conv. Total (cfs)	9813.7	Conv. (cfs)	309.3	9501.0	3.4
Length Wtd. (ft)	491.76	Wetted Per. (ft)	52.33	99.52	2.12
Min Ch El (ft)	2618.20	Shear (lb/sq ft)	0.47	1.71	0.21
Alpha	1.20	Stream Power (lb/ft s)	0.75	12.08	0.20
Frctn Loss (ft)	8.69	Cum Volume (acre-ft)	5.79	50.89	14.92
C & E Loss (ft)	0.04	Cum SA (acres)	7.09	25.58	16.31

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.

CROSS SECTION OUTPUT Profile #Method1

			Left OB	Channel	Right OB
E.G. Elev (ft)	2622.27	Element			
Vel Head (ft)	0.78	Wt. n-Val.		0.038	
W.S. Elev (ft)	2621.49	Reach Len. (ft)	484.00	492.31	489.80
Crit W.S. (ft)	2621.43	Flow Area (sq ft)		175.30	
E.G. Slope (ft/ft)	0.015739	Area (sq ft)		175.30	
Q Total (cfs)	1242.00	Flow (cfs)		1242.00	
Top Width (ft)	99.19	Top Width (ft)		99.19	
Vel Total (ft/s)	7.09	Avg. Vel. (ft/s)		7.09	
Max Chl Dpth (ft)	3.29	Hydr. Depth (ft)		1.77	
Conv. Total (cfs)	9899.8	Conv. (cfs)		9899.8	
Length Wtd. (ft)	492.31	Wetted Per. (ft)		101.00	
Min Ch El (ft)	2618.20	Shear (lb/sq ft)		1.71	
Alpha	1.00	Stream Power (lb/ft s)		12.08	
Frctn Loss (ft)	8.13	Cum Volume (acre-ft)	0.41	54.82	1.64
C & E Loss (ft)	0.03	Cum SA (acres)	0.10	25.58	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.
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: Upper Fan 5
REACH: UpperFan5-1 RS: 3.23

INPUT
Description: A portion of section 3.23 is located within Legend Trail.

Topography and Aerial indicates wash and surrounding undeveloped desert.
T5NR5E Section 8
Q100 = 1,242 cfs

Station Elevation Data num= 18

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9940.92	2620	9957.19	2618	9970.2	2616	9982.21	2614	9988.14	2612
9993.83	261010004.42		261010056.25		261210102.53		261210155.44		2610
10161.27	261010175.35		261210193.26		261410208.95		261610224.81		2618
10240.85	262010255.72		262210281.05		2624				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9940.92	.071	9988.14	.03810056.25		.071

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9988.14	10056.25	488	479.92	474.05	.1	.3

CROSS SECTION OUTPUT Profile #100-yr 6-hr

			Left OB	Channel	Right OB
E.G. Elev (ft)	2613.09	Element			
Vel Head (ft)	0.63	Wt. n-Val.	0.071	0.038	0.071
W.S. Elev (ft)	2612.46	Reach Len. (ft)	488.00	479.92	474.05
Crit W.S. (ft)	2612.46	Flow Area (sq ft)	0.31	109.96	134.26
E.G. Slope (ft/ft)	0.019606	Area (sq ft)	0.31	109.96	134.26
Q Total (cfs)	1242.00	Flow (cfs)	0.33	825.52	416.15
Top Width (ft)	192.68	Top Width (ft)	1.36	68.11	123.21
Vel Total (ft/s)	5.08	Avg. Vel. (ft/s)	1.06	7.51	3.10
Max Chl Dpth (ft)	2.46	Hydr. Depth (ft)	0.23	1.61	1.09
Conv. Total (cfs)	8870.0	Conv. (cfs)	2.4	5895.6	2972.0
Length Wtd. (ft)	478.95	Wetted Per. (ft)	1.44	68.49	123.41
Min Ch El (ft)	2610.00	Shear (lb/sq ft)	0.27	1.97	1.33
Alpha	1.58	Stream Power (lb/ft s)	0.28	14.75	4.13
Frctn Loss (ft)	6.67	Cum Volume (acre-ft)	5.65	49.31	14.16
C & E Loss (ft)	0.03	Cum SA (acres)	6.79	24.63	15.61

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
depth, the 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 OUTPUT Profile #Method1

			Left OB	Channel	Right OB
E.G. Elev (ft)	2614.11	Element			
Vel Head (ft)	1.10	Wt. n-Val.		0.038	
W.S. Elev (ft)	2613.01	Reach Len. (ft)	488.00	479.92	474.05
Crit W.S. (ft)	2613.01	Flow Area (sq ft)		147.48	
E.G. Slope (ft/ft)	0.017341	Area (sq ft)		147.48	
Q Total (cfs)	1242.00	Flow (cfs)		1242.00	
Top Width (ft)	68.11	Top Width (ft)		68.11	
Vel Total (ft/s)	8.42	Avg. Vel. (ft/s)		8.42	
Max Chl Dpth (ft)	3.01	Hydr. Depth (ft)		2.17	

Conv. Total (cfs)	9431.5	Conv. (cfs)		9431.5	
Length Wtd. (ft)	479.92	Wetted Per. (ft)		70.51	
Min Ch El (ft)	2610.00	Shear (lb/sq ft)		2.26	
Alpha	1.00	Stream Power (lb/ft s)		19.07	
Frctn Loss (ft)	5.75	Cum Volume (acre-ft)	0.41	53.00	1.64
C & E Loss (ft)	0.18	Cum SA (acres)	0.10	24.63	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 energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
depth, the 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: Upper Fan 5
REACH: UpperFan5-1 RS: 3.14

INPUT
Description: Section 3.14 is located within Legend Trail.

Topography
indicates wash and surrounding undeveloped desert.
Aerial shows
wash, house pad and undeveloped desert.
T5NR5E Section 8
Q100 =
1,242 cfs
Station Elevation Data num= 23

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9862.83	2620	9876.66	2618	9890.32	2616	9901.1	2614	9909.78	2612
9918.44	2610	9927	2608	9935.82	2606	9961.37	2605	9986.92	2604
10000	2602.1	10019.5	2604	10039.39	2604	10067.85	2604	10075.19	2605
10082.53	2606	10096.84	2608	10109.64	2610	10122.66	2612	10135.78	2614
10149.53	2616	10164.39	2618	10180.59	2620				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9862.83	.071	9961.37	.038	10075.19	.071

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9961.37	10075.19	231.71	238.01	229.88	.1	.3

CROSS SECTION OUTPUT Profile #100-yr 6-hr

E.G. Elev (ft)	2606.24	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.54	Wt. n-Val.	0.071	0.038	0.071
W.S. Elev (ft)	2605.70	Reach Len. (ft)	231.71	238.01	229.88
Crit W.S. (ft)		Flow Area (sq ft)	6.19	207.55	1.78
E.G. Slope (ft/ft)	0.010409	Area (sq ft)	6.19	207.55	1.78
Q Total (cfs)	1242.00	Flow (cfs)	6.54	1233.60	1.87
Top Width (ft)	136.71	Top Width (ft)	17.78	113.82	5.11
Vel Total (ft/s)	5.76	Avg. Vel. (ft/s)	1.06	5.94	1.05
Max Chl Dpth (ft)	3.60	Hydr. Depth (ft)	0.35	1.82	0.35
Conv. Total (cfs)	12173.3	Conv. (cfs)	64.1	12090.9	18.3
Length Wtd. (ft)	237.90	Wetted Per. (ft)	17.80	114.14	5.16
Min Ch El (ft)	2602.10	Shear (lb/sq ft)	0.23	1.18	0.22
Alpha	1.06	Stream Power (lb/ft s)	0.24	7.02	0.24
Frctn Loss (ft)	2.87	Cum Volume (acre-ft)	5.61	47.56	13.42
C & E Loss (ft)	0.05	Cum SA (acres)	6.68	23.63	14.91

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 energy loss was 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 OUTPUT Profile #Method1

E.G. Elev (ft)	2606.30	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.49	Wt. n-Val.		0.038	
W.S. Elev (ft)	2605.81	Reach Len. (ft)	231.71	238.01	229.88
Crit W.S. (ft)		Flow Area (sq ft)		220.55	
E.G. Slope (ft/ft)	0.008780	Area (sq ft)		220.55	
Q Total (cfs)	1242.00	Flow (cfs)		1242.00	
Top Width (ft)	113.82	Top Width (ft)		113.82	
Vel Total (ft/s)	5.63	Avg. Vel. (ft/s)		5.63	
Max Chl Dpth (ft)	3.71	Hydr. Depth (ft)		1.94	
Conv. Total (cfs)	13254.6	Conv. (cfs)		13254.6	
Length Wtd. (ft)	238.01	Wetted Per. (ft)		115.76	
Min Ch El (ft)	2602.10	Shear (lb/sq ft)		1.04	
Alpha	1.00	Stream Power (lb/ft s)		5.88	
Frctn Loss (ft)	2.82	Cum Volume (acre-ft)	0.41	50.97	1.64
C & E Loss (ft)	0.07	Cum SA (acres)	0.10	23.63	1.70

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: Upper Fan 5
REACH: UpperFan5-1 RS: 3.10

INPUT
Description: Section 3.10 is located within Legend Trail.

Topography and
Aerial indicates wash and surrounding undeveloped desert.
T5NR5E
Section 8
Q100 = 1,242 cfs
Station Elevation Data num= 28

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9866.62	2622	9889.13	2620	9893.98	2618	9898.02	2616	9902.59	2614
9909.07	2612	9915.96	2610	9922.35	2608	9928.86	2606	9935.14	2604
9944.51	2602	9964.07	2601	9983.63	2600	10000	2598.5	10017.92	2600
10021.53	2601	10025.13	2602	10029.48	2604	10033.89	2606	10038.22	2608
10042.98	2610	10047.85	2612	10052.82	2614	10057.77	2616	10066.73	2618
10080.73	2620	10092.25	2622	10102.49	2624				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9866.62	.071	9964.07	.038	10021.53	.071

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9964.07	10021.53	291.91	322.99	315.57	.1	.3

CROSS SECTION OUTPUT Profile #100-yr 6-hr

E.G. Elev (ft)	2603.32	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.09	Wt. n-Val.	0.071	0.038	0.071
W.S. Elev (ft)	2602.23	Reach Len. (ft)	291.91	322.99	315.57
Crit W.S. (ft)	2602.23	Flow Area (sq ft)	14.49	142.51	2.70
E.G. Slope (ft/ft)	0.014110	Area (sq ft)	14.49	142.51	2.70
Q Total (cfs)	1242.00	Flow (cfs)	28.39	1208.68	4.93
Top Width (ft)	82.23	Top Width (ft)	20.66	57.46	4.11
Vel Total (ft/s)	7.78	Avg. Vel. (ft/s)	1.96	8.48	1.82

Max Chl Dpth (ft)	3.73	Hydr. Depth (ft)	0.70	2.48	0.66
Conv. Total (cfs)	10455.9	Conv. (cfs)	239.0	10175.4	41.5
Length Wtd. (ft)	322.37	Wetted Per. (ft)	20.71	57.75	4.30
Min Ch El (ft)	2598.50	Shear (lb/sq ft)	0.62	2.17	0.55
Alpha	1.16	Stream Power (lb/ft s)	1.21	18.44	1.01
Frctn Loss (ft)	2.76	Cum Volume (acre-ft)	5.56	46.60	13.41
C & E Loss (ft)	0.12	Cum SA (acres)	6.58	23.16	14.89

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 energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
depth, the 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 OUTPUT Profile #Method1

E.G. Elev (ft)	2603.41	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.23	Wt. n-Val.		0.038	
W.S. Elev (ft)	2602.18	Reach Len. (ft)	291.91	322.99	315.57
Crit W.S. (ft)	2602.18	Flow Area (sq ft)		139.62	
E.G. Slope (ft/ft)	0.016829	Area (sq ft)		139.62	
Q Total (cfs)	1242.00	Flow (cfs)		1242.00	
Top Width (ft)	57.46	Top Width (ft)		57.46	
Vel Total (ft/s)	8.90	Avg. Vel. (ft/s)		8.90	
Max Chl Dpth (ft)	3.68	Hydr. Depth (ft)		2.43	
Conv. Total (cfs)	9573.9	Conv. (cfs)		9573.9	
Length Wtd. (ft)	322.99	Wetted Per. (ft)		60.12	
Min Ch El (ft)	2598.50	Shear (lb/sq ft)		2.44	
Alpha	1.00	Stream Power (lb/ft s)		21.71	
Frctn Loss (ft)	3.40	Cum Volume (acre-ft)	0.41	49.99	1.64
C & E Loss (ft)	0.12	Cum SA (acres)	0.10	23.16	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 conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
depth, the 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: Upper Fan 5
REACH: UpperFan5-1 RS: 3.03

INPUT
Description: Section 3.03 is located within Legend Trail.

Topography
indicates wash and surrounding undeveloped desert.
Aerial shows
wash, desert, and 99th Place.
T5NR5E Section 8
Q100 = 1,242 cfs
Station Elevation Data num= 21

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev

9880.41	2610	9895.24	2608	9908.64	2606	9918.81	2604	9932.39	2602		
9948.04	2600	9960.75	2598	9968.84	2596	9975.24	2594	10000	2593		
10009.61	2594	10018.4	2596	10107.57	2598	10135.07	2600	10150.84	2602		
10160	2604	10169.63	2606	10179.49	2608	10189.6	2610	10200.95	2612		
10219.47	2614										

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9880.41	.071	9968.84	.038	10018.4	.071

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9968.84	10018.4	172.73	178.18	181.85	.3	.5

CROSS SECTION OUTPUT Profile #100-yr 6-hr

			Left OB	Channel	Right OB
E.G. Elev (ft)	2598.14	Element			
Vel Head (ft)	0.68	Wt. n-Val.	0.071	0.038	0.071
W.S. Elev (ft)	2597.46	Reach Len. (ft)	172.73	178.18	181.85
Crit W.S. (ft)		Flow Area (sq ft)	4.31	173.50	47.55
E.G. Slope (ft/ft)	0.005739	Area (sq ft)	4.31	173.50	47.55
Q Total (cfs)	1242.00	Flow (cfs)	5.44	1175.44	61.12
Top Width (ft)	120.58	Top Width (ft)	5.91	49.56	65.11
Vel Total (ft/s)	5.51	Avg. Vel. (ft/s)	1.26	6.78	1.29
Max Chl Dpth (ft)	4.46	Hydr. Depth (ft)	0.73	3.50	0.73
Conv. Total (cfs)	16394.5	Conv. (cfs)	71.8	15515.9	806.8
Length Wtd. (ft)	178.24	Wetted Per. (ft)	6.09	50.16	65.13
Min Ch El (ft)	2593.00	Shear (lb/sq ft)	0.25	1.24	0.26
Alpha	1.43	Stream Power (lb/ft s)	0.32	8.40	0.34
Frctn Loss (ft)	0.12	Cum Volume (acre-ft)	5.49	45.43	13.23
C & E Loss (ft)	0.30	Cum SA (acres)	6.49	22.76	14.64

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream 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 OUTPUT Profile #Method1

			Left OB	Channel	Right OB
E.G. Elev (ft)	2598.23	Element			
Vel Head (ft)	0.82	Wt. n-Val.		0.038	
W.S. Elev (ft)	2597.41	Reach Len. (ft)	172.73	178.18	181.85
Crit W.S. (ft)		Flow Area (sq ft)		171.16	
E.G. Slope (ft/ft)	0.007212	Area (sq ft)		171.16	
Q Total (cfs)	1242.00	Flow (cfs)		1242.00	
Top Width (ft)	49.56	Top Width (ft)		49.56	
Vel Total (ft/s)	7.26	Avg. Vel. (ft/s)		7.26	
Max Chl Dpth (ft)	4.41	Hydr. Depth (ft)		3.45	
Conv. Total (cfs)	14625.0	Conv. (cfs)		14625.0	
Length Wtd. (ft)	178.18	Wetted Per. (ft)		52.99	
Min Ch El (ft)	2593.00	Shear (lb/sq ft)		1.45	
Alpha	1.00	Stream Power (lb/ft s)		10.55	
Frctn Loss (ft)	0.14	Cum Volume (acre-ft)	0.41	48.83	1.64
C & E Loss (ft)	0.37	Cum SA (acres)	0.10	22.76	1.70

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 conveyance ratio (upstream 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: Upper Fan 5
REACH: UpperFan5-1 RS: 3.00

INPUT
Description: Cross Section 3.00 is located on the upstream of the intersection of Upper Fan 5 and Seven Palms Drive located within in Legend Trail. There are 3-10 X 4 ft concrete box culverts located under

Seven Palms Drive. Blocked obstruction indicates the finish floor of an existing home.

Topography indicates wash and surrounding undeveloped desert.
Aerial shows wash, 99th Place, Seven Palms Drive, box culverts and undeveloped desert.
T5NR5E Section 8
Q100 = 1,242 cfs

Station Elevation Data num= 12

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9851.77	2600	9868.88	2598	9941.45	2596	9967.93	2594	9974.56	2592
9997.43	2590	10012.53	2590	10057.9	2592	10212.28	2594	10235.9	2596
10249.81	2598	10263.56	2600						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9851.77	.071	9974.56	.038	10057.9	.071

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9974.56	10057.9	87.71	92.18	86.31	.3	.5

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
9851.77	9973.3	2598.43	F
10057.9	10263.56	2598.43	F

Blocked Obstructions num= 1

Sta L	Sta R	Elev
10175.89	10263.56	2600.1

CROSS SECTION OUTPUT Profile #100-yr 6-hr

			Left OB	Channel	Right OB
E.G. Elev (ft)	2597.72	Element			
Vel Head (ft)	0.07	Wt. n-Val.	0.071	0.038	
W.S. Elev (ft)	2597.65	Reach Len. (ft)	87.71	92.18	86.31
Crit W.S. (ft)	2592.72	Flow Area (sq ft)	6.87	568.86	
E.G. Slope (ft/ft)	0.000239	Area (sq ft)	149.88	568.86	575.82
Q Total (cfs)	1242.00	Flow (cfs)	6.69	1235.31	
Top Width (ft)	294.11	Top Width (ft)	92.78	83.34	117.99
Vel Total (ft/s)	2.16	Avg. Vel. (ft/s)	0.97	2.17	
Max Chl Dpth (ft)	7.64	Hydr. Depth (ft)	5.45	6.83	
Conv. Total (cfs)	80390.7	Conv. (cfs)	432.8	79957.8	
Length Wtd. (ft)	92.18	Wetted Per. (ft)	1.32	83.47	
Min Ch El (ft)	2590.00	Shear (lb/sq ft)	0.08	0.10	
Alpha	1.01	Stream Power (lb/ft s)	0.08	0.22	
Frctn Loss (ft)		Cum Volume (acre-ft)	5.19	43.91	11.93
C & E Loss (ft)		Cum SA (acres)	6.29	22.49	14.25

Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.

CROSS SECTION OUTPUT Profile #Method1

			Left OB	Channel	Right OB
E.G. Elev (ft)	2597.72	Element			
Vel Head (ft)	0.07	Wt. n-Val.		0.038	
W.S. Elev (ft)	2597.64	Reach Len. (ft)	87.71	92.18	86.31
Crit W.S. (ft)	2592.72	Flow Area (sq ft)		568.76	
E.G. Slope (ft/ft)	0.000286	Area (sq ft)		568.76	
Q Total (cfs)	1242.00	Flow (cfs)		1242.00	
Top Width (ft)	83.34	Top Width (ft)		83.34	
Vel Total (ft/s)	2.18	Avg. Vel. (ft/s)		2.18	
Max Chl Dpth (ft)	7.64	Hydr. Depth (ft)		6.82	
Conv. Total (cfs)	73453.6	Conv. (cfs)		73453.6	
Length Wtd. (ft)	92.18	Wetted Per. (ft)		94.76	
Min Ch El (ft)	2590.00	Shear (lb/sq ft)		0.11	
Alpha	1.00	Stream Power (lb/ft s)		0.23	
Frctn Loss (ft)		Cum Volume (acre-ft)	0.41	47.32	1.64
C & E Loss (ft)		Cum SA (acres)	0.10	22.49	1.70

```
Note:    Multiple critical depths were found at this location.  The critical depth with the lowest,
valid,
         energy was used.

CULVERT


RIVER: Upper Fan 5
REACH: UpperFan5-1        RS: 2.99

INPUT
Description: Box Culverts at Seven Palms Drive Crossing
Distance from Upstream XS =       7
Deck/Roadway Width        =      68
Weir Coefficient          =     2.6
Upstream  Deck/Roadway Coordinates
    num=      10
     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord
 9853.39  2601.9         9911.78  2601.9         9955.28 2600.55
 9985.28 2599.78        10015.28 2599.32        10089.16 2598.58
10119.16 2598.43        10149.16 2598.58         10196.4 2599.05
10355.58 2600.64

Upstream Bridge Cross Section Data
Station Elevation Data    num=      12
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
 9851.77    2600 9868.88    2598 9941.45    2596 9967.93    2594 9974.56    2592
 9997.43    259010012.53    2590 10057.9    259210212.28    2594 10235.9    2596
10249.81    259810263.56    2600

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
 9851.77    .071 9974.56    .038 10057.9    .071

Bank Sta: Left   Right    Coeff Contr.   Expan.
       9974.56 10057.9             .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
 9851.77  9973.3 2598.43       F
 10057.910263.56 2598.43       F
Blocked Obstructions     num=       1
   Sta L   Sta R    Elev
10175.8910263.56 2600.1

Downstream  Deck/Roadway Coordinates
    num=      10
     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord
 9743.43  2601.9         9881.28  2601.9         9924.78 2600.55
 9954.78 2599.78         9984.78 2599.32        10058.66 2598.58
10088.66 2598.43        10118.66 2598.58         10165.9 2599.05
10325.08 2600.64

Downstream Bridge Cross Section Data
Station Elevation Data    num=      18
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
 9746.43    2604 9764.08    2602 9798.33    2600 9834.12    2598 9887.99    2596
 9928.23    2594 9937.55    2593 9946.86    2592 9950.25    2591 9953.64    2590
  9971.3    2590 9987.11    259010020.65    259010088.41 2590.6510217.27    2592
10271.04    259410291.05    259610305.96    2598

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
 9746.43    .071 9950.25    .03810088.41    .071

Bank Sta: Left   Right    Coeff Contr.   Expan.
       9950.2510088.41             .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
 9746.43  9935.6 2598.43       F
10088.4110305.96 2598.43       F
```

```
Upstream Embankment side slope                =       0 horiz. to 1.0 vertical
Downstream Embankment side slope              =       0 horiz. to 1.0 vertical
Maximum allowable submergence for weir flow =     .95
Elevation at which weir flow begins           =
Energy head used in spillway design           =
Spillway height used in design                =
Weir crest shape                              = Broad Crested

Number of Culverts =  1

Culvert Name      Shape      Rise    Span
CULVERT#1            Box       4      10
FHWA Chart # 8 - flared wingwalls
FHWA Scale # 1 - Wingwall flared 30 to 75 deg.
Solution Criteria = Highest U.S. EG
Culvert Upstrm Dist  Length    Top n  Bottom n  Depth Blocked  Entrance Loss Coef   Exit Loss Coef
                 7      68     .015     .015         0                  .4                 1
Number of Barrels =  3
Upstream   Elevation =  2590.6
Centerline Stations
    Sta.    Sta.    Sta.
  9985.3  9996.3 10007.3
Downstream Elevation =  2589.25
Centerline Stations
    Sta.    Sta.    Sta.
  9957.6  9968.6  9979.6

CROSS SECTION


RIVER: Upper Fan 5
REACH: UpperFan5-1        RS: 2.98

INPUT
Description: Cross Section 2.98 is located on the downstream of the
             intersection of Upper Fan 5 and Seven Palms Drive located in
             Legend Trail.  There are 3-4 x 10 concrete box culverts located
             under Seven Palms Drive.This section is located at the southern
             boundary of Legend Trail.

Topography indicates wash and
             surrounding undeveloped desert.
Aerial shows wash, house pads,
             Seven Palms Drive, box culverts and undeveloped desert.
T5NR5E
             Section 8
Q100 = 1,242 cfs
Station Elevation Data    num=      18
     Sta     Elev     Sta     Elev     Sta     Elev     Sta     Elev     Sta     Elev
 9746.43     2604 9764.08     2602 9798.33     2600 9834.12     2598 9887.99     2596
 9928.23     2594 9937.55     2593 9946.86     2592 9950.25     2591 9953.64     2590
  9971.3     2590 9987.11     259010020.65     259010088.41 2590.6510217.27     2592
10271.04     259410291.05     259610305.96     2598

Manning's n Values        num=       3
     Sta    n Val     Sta    n Val     Sta    n Val
 9746.43     .071 9950.25    .03810088.41     .071

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9950.2510088.41           420.16  396.36  403.18            .3        .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
 9746.43  9935.6 2598.43       F
10088.4110305.96 2598.43       F

CROSS SECTION OUTPUT  Profile #100-yr 6-hr

  E.G. Elev (ft)          2592.21    Element                  Left OB    Channel   Right OB
  Vel Head (ft)              0.67    Wt. n-Val.                0.071     0.038
  W.S. Elev (ft)          2591.54    Reach Len. (ft)          420.16     396.36     403.18
```

Crit W.S. (ft)	2591.54	Flow Area (sq ft)	0.50	189.40	
E.G. Slope (ft/ft)	0.018477	Area (sq ft)	0.50	189.40	38.02
Q Total (cfs)	1242.00	Flow (cfs)	0.58	1241.42	
Top Width (ft)	225.19	Top Width (ft)	1.84	138.16	85.19
Vel Total (ft/s)	6.54	Avg. Vel. (ft/s)	1.16	6.55	
Max Chl Dpth (ft)	1.54	Hydr. Depth (ft)	0.27	1.37	
Conv. Total (cfs)	9136.9	Conv. (cfs)	4.3	9132.7	
Length Wtd. (ft)	397.72	Wetted Per. (ft)	1.92	138.31	
Min Ch El (ft)	2590.00	Shear (lb/sq ft)	0.30	1.58	
Alpha	1.00	Stream Power (lb/ft s)	0.35	10.35	
Frctn Loss (ft)	4.81	Cum Volume (acre-ft)	5.04	43.11	11.32
C & E Loss (ft)	0.08	Cum SA (acres)	6.20	22.26	14.05

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 conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
depth, the calculated water surface came back below critical depth. This indicates that there is
not a valid subcritical answer. The program defaulted to critical depth.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid,
energy was used.

CROSS SECTION OUTPUT Profile #Method1

E.G. Elev (ft)	2592.39	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.36	Wt. n-Val.		0.038	
W.S. Elev (ft)	2592.03	Reach Len. (ft)	420.16	396.36	403.18
Crit W.S. (ft)	2591.55	Flow Area (sq ft)		256.52	
E.G. Slope (ft/ft)	0.006884	Area (sq ft)		256.52	
Q Total (cfs)	1242.00	Flow (cfs)		1242.00	
Top Width (ft)	138.16	Top Width (ft)		138.16	
Vel Total (ft/s)	4.84	Avg. Vel. (ft/s)		4.84	
Max Chl Dpth (ft)	2.03	Hydr. Depth (ft)		1.86	
Conv. Total (cfs)	14968.8	Conv. (cfs)		14968.8	
Length Wtd. (ft)	396.36	Wetted Per. (ft)		140.71	
Min Ch El (ft)	2590.00	Shear (lb/sq ft)		0.78	
Alpha	1.00	Stream Power (lb/ft s)		3.79	
Frctn Loss (ft)	4.17	Cum Volume (acre-ft)	0.41	46.45	1.64
C & E Loss (ft)	0.47	Cum SA (acres)	0.10	22.26	1.70

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 conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid,
energy was used.

CROSS SECTION

RIVER: Upper Fan 5
REACH: UpperFan5-1 RS: 2.91

INPUT
Description: Topography and Aerial indicates wash and surrounding undeveloped desert.
T5NR5E Section 8
Q100 = 1,242 cfs

Station Elevation Data num= 12

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9899.89	2590	9920.49	2588	9959.17	2586	9979.32	2584	9986.46	2582
10000	2581.7	10014.53	2582	10024.45	2584	10156.41	2586	10178.43	2588
10195.32	2590	10259.2	2592						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9899.89	.071	9986.46	.038	10014.53	.071

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9986.46	10014.53	285.97	270.06	263.55	.1	.3

CROSS SECTION OUTPUT Profile #100-yr 6-hr

			Left OB	Channel	Right OB
E.G. Elev (ft)	2586.59	Element			
Vel Head (ft)	0.93	Wt. n-Val.	0.071	0.038	0.071
W.S. Elev (ft)	2585.66	Reach Len. (ft)	285.97	270.06	263.55
Crit W.S. (ft)	2585.66	Flow Area (sq ft)	32.81	106.87	116.96
E.G. Slope (ft/ft)	0.008537	Area (sq ft)	32.81	106.87	116.96
Q Total (cfs)	1242.00	Flow (cfs)	77.72	941.29	222.99
Top Width (ft)	171.17	Top Width (ft)	23.84	28.07	119.26
Vel Total (ft/s)	4.84	Avg. Vel. (ft/s)	2.37	8.81	1.91
Max Chl Dpth (ft)	3.96	Hydr. Depth (ft)	1.38	3.81	0.98
Conv. Total (cfs)	13442.3	Conv. (cfs)	841.2	10187.8	2413.4
Length Wtd. (ft)	269.90	Wetted Per. (ft)	24.19	28.08	119.48
Min Ch El (ft)	2581.70	Shear (lb/sq ft)	0.72	2.03	0.52
Alpha	2.55	Stream Power (lb/ft s)	1.71	17.87	0.99
Frctn Loss (ft)	2.99	Cum Volume (acre-ft)	4.88	41.76	10.60
C & E Loss (ft)	0.01	Cum SA (acres)	6.08	21.50	13.11

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 energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
depth, the 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 OUTPUT Profile #Method1

			Left OB	Channel	Right OB
E.G. Elev (ft)	2587.75	Element			
Vel Head (ft)	1.94	Wt. n-Val.		0.038	
W.S. Elev (ft)	2585.80	Reach Len. (ft)	285.97	270.06	263.55
Crit W.S. (ft)	2585.80	Flow Area (sq ft)		110.98	
E.G. Slope (ft/ft)	0.018041	Area (sq ft)		110.98	
Q Total (cfs)	1242.00	Flow (cfs)		1242.00	
Top Width (ft)	28.07	Top Width (ft)		28.07	
Vel Total (ft/s)	11.19	Avg. Vel. (ft/s)		11.19	
Max Chl Dpth (ft)	4.10	Hydr. Depth (ft)		3.95	
Conv. Total (cfs)	9246.7	Conv. (cfs)		9246.7	
Length Wtd. (ft)	270.06	Wetted Per. (ft)		35.68	
Min Ch El (ft)	2581.70	Shear (lb/sq ft)		3.50	
Alpha	1.00	Stream Power (lb/ft s)		39.20	
Frctn Loss (ft)	4.72	Cum Volume (acre-ft)	0.41	44.78	1.64
C & E Loss (ft)	0.25	Cum SA (acres)	0.10	21.50	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 cross section had to be extended vertically during the critical depth calculations.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.

Warning: During the standard step iterations, when the assumed water surface was set equal to critical
depth, the 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: Upper Fan 5
REACH: UpperFan5-1 RS: 2.86

INPUT
Description: Topography and Aerial indicates wash and surrounding undeveloped
desert.
T5NR5E Section 8
Q100 = 1,242 cfs
Station Elevation Data num= 25

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9847.02	2592	9869.51	2590	9879.57	2588	9902.61	2586	9919.49	2584
9928.38	2582	9949.37	2580	9984.9	2578	10000	2577.71	10008.72	2578
10014.96	2580	10085.86	2580.84	10142.9	2580.78	10197.69	2581.22	10241.04	2580
10249.04	2578	10251.13	2578	10258.29	2580	10270.19	2580	10273.55	2580
10294.28	2582	10312.91	2584	10330.23	2586	10354.18	2588	10377.92	2590

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9847.02	.071	9949.37	.03	10014.96	.071

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9949.37	10014.96	426.38	426.67	419.58	.1	.3

Right Levee Station=10197.69 Elevation= 2581.22

CROSS SECTION OUTPUT Profile #100-yr 6-hr

			Left OB	Channel	Right OB
E.G. Elev (ft)	2581.82	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.00	Wt. n-Val.	0.071	0.038	0.071
W.S. Elev (ft)	2580.82	Reach Len. (ft)	426.38	426.67	419.58
Crit W.S. (ft)	2580.82	Flow Area (sq ft)	3.52	146.69	29.10
E.G. Slope (ft/ft)	0.015001	Area (sq ft)	3.52	146.69	29.10
Q Total (cfs)	1242.00	Flow (cfs)	4.96	1196.91	40.14
Top Width (ft)	184.99	Top Width (ft)	8.59	65.59	110.81
Vel Total (ft/s)	6.93	Avg. Vel. (ft/s)	1.41	8.16	1.38
Max Chl Dpth (ft)	3.12	Hydr. Depth (ft)	0.41	2.24	0.26
Conv. Total (cfs)	10140.5	Conv. (cfs)	40.5	9772.3	327.7
Length Wtd. (ft)	424.67	Wetted Per. (ft)	8.63	65.97	110.81
Min Ch El (ft)	2577.70	Shear (lb/sq ft)	0.38	2.08	0.25
Alpha	1.34	Stream Power (lb/ft s)	0.54	16.99	0.34
Frctn Loss (ft)	2.85	Cum Volume (acre-ft)	4.76	40.98	10.16
C & E Loss (ft)	0.25	Cum SA (acres)	5.97	21.21	12.41

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: 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 OUTPUT Profile #Method1

E.G. Elev (ft)	2581.93	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.12	Wt. n-Val.		0.038	
W.S. Elev (ft)	2580.81	Reach Len. (ft)	426.38	426.67	419.58
Crit W.S. (ft)	2580.81	Flow Area (sq ft)		145.95	
E.G. Slope (ft/ft)	0.016965	Area (sq ft)		145.95	
Q Total (cfs)	1242.00	Flow (cfs)		1242.00	
Top Width (ft)	65.59	Top Width (ft)		65.59	
Vel Total (ft/s)	8.51	Avg. Vel. (ft/s)		8.51	
Max Chl Dpth (ft)	3.11	Hydr. Depth (ft)		2.23	
Conv. Total (cfs)	9535.7	Conv. (cfs)		9535.7	
Length Wtd. (ft)	426.30	Wetted Per. (ft)		67.58	
Min Ch El (ft)	2577.70	Shear (lb/sq ft)		2.29	
Alpha	1.00	Stream Power (lb/ft s)		19.46	
Frctn Loss (ft)	5.48	Cum Volume (acre-ft)	0.41	43.98	1.64
C & E Loss (ft)	0.08	Cum SA (acres)	0.10	21.21	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 energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
depth, the 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: Upper Fan 5
REACH: UpperFan5-1 RS: 2.78

INPUT
Description: Topography and Aerial indicates wash and surrounding undeveloped
desert.
T5NR5E Section 8
Q100 = 1,242 cfs
Station Elevation Data num= 20

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9897.31	2580	9920.59	2578	9944.37	2576	9967.01	2574	9976.44	2572
10000	2570.93	10007.11	2572	10017.03	2574	10207.57	2574.63	10315.29	2574
10374.33	2572	10415.3	2572	10438.74	2574	10444.97	2570	10448.82	2570
10459.98	2572	10493.62	2574	10522.16	2576	10547.45	2578	10575.95	2580

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9897.31	.071	9967.01	.038	10017.03	.071

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9967.01	10017.03	214.98	213.52	211.37	.1	.3

Right Levee Station=10207.57 Elevation= 2574.63

CROSS SECTION OUTPUT Profile #100-yr 6-hr

E.G. Elev (ft)	2574.80	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.16	Wt. n-Val.	0.071	0.038	0.071
W.S. Elev (ft)	2574.64	Reach Len. (ft)	214.98	213.52	211.37
Crit W.S. (ft)	2574.64	Flow Area (sq ft)	2.30	128.96	501.60
E.G. Slope (ft/ft)	0.003797	Area (sq ft)	2.30	128.96	501.60
Q Total (cfs)	1242.00	Flow (cfs)	1.38	580.26	660.36

Top Width (ft)	542.91	Top Width (ft)	7.21	50.02	485.68
Vel Total (ft/s)	1.96	Avg. Vel. (ft/s)	0.60	4.50	1.32
Max Chl Dpth (ft)	4.64	Hydr. Depth (ft)	0.32	2.58	1.03
Conv. Total (cfs)	20156.5	Conv. (cfs)	22.4	9417.1	10717.0
Length Wtd. (ft)	212.49	Wetted Per. (ft)	7.24	50.53	486.29
Min Ch El (ft)	2570.93	Shear (lb/sq ft)	0.08	0.60	0.24
Alpha	2.70	Stream Power (lb/ft s)	0.05	2.72	0.32
Frctn Loss (ft)	1.70	Cum Volume (acre-ft)	4.73	39.63	7.60
C & E Loss (ft)	0.02	Cum SA (acres)	5.89	20.65	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 conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
depth, the 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 OUTPUT Profile #Method1

E.G. Elev (ft)	2575.77	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.84	Wt. n-Val.		0.038	0.071
W.S. Elev (ft)	2574.92	Reach Len. (ft)	214.98	213.52	211.37
Crit W.S. (ft)	2574.92	Flow Area (sq ft)		143.19	74.59
E.G. Slope (ft/ft)	0.010079	Area (sq ft)		143.19	74.59
Q Total (cfs)	1242.00	Flow (cfs)		1112.12	129.88
Top Width (ft)	148.31	Top Width (ft)		50.02	98.29
Vel Total (ft/s)	5.70	Avg. Vel. (ft/s)		7.77	1.74
Max Chl Dpth (ft)	3.99	Hydr. Depth (ft)		2.86	0.76
Conv. Total (cfs)	12371.0	Conv. (cfs)		11077.3	1293.6
Length Wtd. (ft)	213.41	Wetted Per. (ft)		51.46	98.89
Min Ch El (ft)	2570.93	Shear (lb/sq ft)		1.75	0.47
Alpha	1.67	Stream Power (lb/ft s)		13.60	0.83
Frctn Loss (ft)	2.74	Cum Volume (acre-ft)	0.41	42.56	1.28
C & E Loss (ft)	0.03	Cum SA (acres)	0.10	20.65	1.23

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 energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
depth, the 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: Upper Fan 5
REACH: UpperFan5-1 RS: 2.74

INPUT
Description: Topography and Aerial indicates wash and surrounding undeveloped desert.
T5NR5E Section 8
Q100 = 1,242 cfs
Station Elevation Data num= 20

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9690.95	2580	9716.24	2578	9763.41	2576	9794.88	2574	9836.6	2572
9954.05	2571.66	9975.96	2570.42	9983.27	2570	10000	2568.25	10053.71	2570
10086.07	2570.47	10456.47	2570	10474.85	2568	10495.82	2568	10524.21	2570
10547.4	2572	10620.07	2574	10647.29	2576	10663.42	2578	10675.88	2580

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9690.95	.071	9975.96	.03	810086.07	.071

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9975.96	10086.07	388.16	388.31	382.56	.1	.3

CROSS SECTION OUTPUT Profile #100-yr 6-hr

			Left OB	Channel	Right OB
E.G. Elev (ft)	2570.93	Element			
Vel Head (ft)	0.40	Wt. n-Val.	0.071	0.038	0.071
W.S. Elev (ft)	2570.53	Reach Len. (ft)	388.16	388.31	382.56
Crit W.S. (ft)	2569.97	Flow Area (sq ft)	0.11	110.89	235.64
E.G. Slope (ft/ft)	0.026825	Area (sq ft)	0.11	110.89	235.64
Q Total (cfs)	1242.00	Flow (cfs)	0.05	712.89	529.05
Top Width (ft)	556.35	Top Width (ft)	1.95	110.11	444.29
Vel Total (ft/s)	3.58	Avg. Vel. (ft/s)	0.50	6.43	2.25
Max Chl Dpth (ft)	2.53	Hydr. Depth (ft)	0.06	1.01	0.53
Conv. Total (cfs)	7583.3	Conv. (cfs)	0.3	4352.7	3230.2
Length Wtd. (ft)	386.72	Wetted Per. (ft)	1.95	110.25	444.49
Min Ch El (ft)	2568.25	Shear (lb/sq ft)	0.09	1.68	0.89
Alpha	2.02	Stream Power (lb/ft s)	0.05	10.83	1.99
Frctn Loss (ft)	6.35	Cum Volume (acre-ft)	4.72	39.04	5.82
C & E Loss (ft)	0.01	Cum SA (acres)	5.87	20.25	7.28

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was 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 OUTPUT Profile #Method1

			Left OB	Channel	Right OB
E.G. Elev (ft)	2571.90	Element			
Vel Head (ft)	0.75	Wt. n-Val.		0.038	
W.S. Elev (ft)	2571.15	Reach Len. (ft)	388.16	388.31	382.56
Crit W.S. (ft)	2571.10	Flow Area (sq ft)		178.52	
E.G. Slope (ft/ft)	0.016929	Area (sq ft)		178.52	
Q Total (cfs)	1242.00	Flow (cfs)		1242.00	
Top Width (ft)	110.11	Top Width (ft)		110.11	
Vel Total (ft/s)	6.96	Avg. Vel. (ft/s)		6.96	
Max Chl Dpth (ft)	2.89	Hydr. Depth (ft)		1.62	
Conv. Total (cfs)	9545.6	Conv. (cfs)		9545.6	
Length Wtd. (ft)	388.31	Wetted Per. (ft)		111.64	
Min Ch El (ft)	2568.25	Shear (lb/sq ft)		1.69	
Alpha	1.00	Stream Power (lb/ft s)		11.76	
Frctn Loss (ft)	6.99	Cum Volume (acre-ft)	0.41	41.77	1.10
C & E Loss (ft)	0.01	Cum SA (acres)	0.10	20.25	0.99

Warning: The energy loss was 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: Upper Fan 5
REACH: UpperFan5-1 RS: 2.66

INPUT
Description: Topography and Aerial indicates wash and surrounding undeveloped desert.
T5NR5E Section 8
Q100 = 1,242 cfs
Station Elevation Data num= 22

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9685	2574	9708.14	2572	9720.65	2570	9741.83	2568	9758.57	2566
9777.87	2564	9790.39	2562	9793.76	2562	9815.33	2564	9888.32	2564

```
  9974.8    256210007.31    2562 10015.2    256410144.37 2564.7710275.72    2564
10288.87    256210303.99    256210322.39    256410340.49    256610371.82    2566
10374.28    256610479.11    2568

Manning's n Values          num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
    9685    .071 9888.32    .038 10015.2    .071

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9888.32 10015.2           349.42   352.9  357.99             .1       .3

CROSS SECTION OUTPUT  Profile #100-yr 6-hr

  E.G. Elev (ft)           2564.57    Element                  Left OB    Channel   Right OB
  Vel Head (ft)               0.36    Wt. n-Val.                0.071      0.038      0.071
  W.S. Elev (ft)           2564.21    Reach Len. (ft)          349.42     352.90     357.99
  Crit W.S. (ft)           2563.84    Flow Area (sq ft)         64.37     186.18      79.39
  E.G. Slope (ft/ft)      0.011081    Area (sq ft)              64.37     186.18      79.39
  Q Total (cfs)            1242.00    Flow (cfs)                97.59     988.21     156.20
  Top Width (ft)            359.40    Top Width (ft)           112.49     126.88     120.03
  Vel Total (ft/s)             3.76   Avg. Vel. (ft/s)          1.52       5.31       1.97
  Max Chl Dpth (ft)            2.21   Hydr. Depth (ft)          0.57       1.47       0.66
  Conv. Total (cfs)        11798.8    Conv. (cfs)               927.1     9387.9     1483.8
  Length Wtd. (ft)          354.59    Wetted Per. (ft)         112.75     127.15     120.30
  Min Ch El (ft)           2562.00    Shear (lb/sq ft)          0.39       1.01       0.46
  Alpha                       1.63    Stream Power (lb/ft s)    0.60       5.38       0.90
  Frctn Loss (ft)              6.85   Cum Volume (acre-ft)      4.43      37.72       4.43
  C & E Loss (ft)              0.02   Cum SA (acres)            5.36      19.20       4.80


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.

CROSS SECTION OUTPUT  Profile #Method1

  E.G. Elev (ft)           2564.90    Element                  Left OB    Channel   Right OB
  Vel Head (ft)               0.73    Wt. n-Val.                           0.038
  W.S. Elev (ft)           2564.17    Reach Len. (ft)          349.42     352.90     357.99
  Crit W.S. (ft)           2564.17    Flow Area (sq ft)                   181.38
  E.G. Slope (ft/ft)      0.019165    Area (sq ft)                        181.38
  Q Total (cfs)            1242.00    Flow (cfs)                         1242.00
  Top Width (ft)            126.88    Top Width (ft)                      126.88
  Vel Total (ft/s)             6.85   Avg. Vel. (ft/s)                      6.85
  Max Chl Dpth (ft)            2.17   Hydr. Depth (ft)                      1.43
  Conv. Total (cfs)         8971.6    Conv. (cfs)                        8971.6
  Length Wtd. (ft)          353.52    Wetted Per. (ft)                    127.50
  Min Ch El (ft)           2562.00    Shear (lb/sq ft)                      1.70
  Alpha                       1.00    Stream Power (lb/ft s)               11.66
  Frctn Loss (ft)              5.65   Cum Volume (acre-ft)      0.41      40.17       1.10
  C & E Loss (ft)              0.05   Cum SA (acres)            0.10      19.20       0.99


Warning: The energy equation could not be 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: Upper Fan 5
```

REACH: UpperFan5-1 RS: 2.60

INPUT
Description: Topography and Aerial indicates wash and surrounding undeveloped desert.
T5NR5E Section 8
Q100 = 1,242 cfs
Station Elevation Data num= 17

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9883.85	2566	9898.53	2564	9911	2562	9935.29	2560	9980.93	2558
9984.81	2557	9988.69	2556	10000	2555.47	10011.04	2556	10057.15	2557
10103.26	2558	10221.64	2556	10329.95	2556	10359	2558	10388.69	2560
10415.24	2562	10452.19	2564						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9883.85	.071	9984.81	.038	10057.15	.071

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9984.81	10057.15	171.03	176.31	174.39	.1	.3

CROSS SECTION OUTPUT Profile #100-yr 6-hr

E.G. Elev (ft)	2557.70	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.51	Wt. n-Val.	0.071	0.038	0.071
W.S. Elev (ft)	2557.19	Reach Len. (ft)	171.03	176.31	174.39
Crit W.S. (ft)	2557.19	Flow Area (sq ft)	0.07	66.94	181.70
E.G. Slope (ft/ft)	0.041814	Area (sq ft)	0.07	66.94	181.70
Q Total (cfs)	1242.00	Flow (cfs)	0.06	507.48	734.46
Top Width (ft)	277.74	Top Width (ft)	0.73	72.34	204.67
Vel Total (ft/s)	4.99	Avg. Vel. (ft/s)	0.87	7.58	4.04
Max Chl Dpth (ft)	1.72	Hydr. Depth (ft)	0.09	0.93	0.89
Conv. Total (cfs)	6073.8	Conv. (cfs)	0.3	2481.8	3591.8
Length Wtd. (ft)	175.01	Wetted Per. (ft)	0.76	72.50	204.72
Min Ch El (ft)	2555.47	Shear (lb/sq ft)	0.24	2.41	2.32
Alpha	1.33	Stream Power (lb/ft s)	0.21	18.27	9.37
Frctn Loss (ft)	4.13	Cum Volume (acre-ft)	4.18	36.69	3.36
C & E Loss (ft)	0.10	Cum SA (acres)	4.90	18.39	3.47

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: Divided flow computed for this cross-section.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
depth, the 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 OUTPUT Profile #Method1

E.G. Elev (ft)	2558.72	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.57	Wt. n-Val.		0.038	0.071
W.S. Elev (ft)	2558.15	Reach Len. (ft)	171.03	176.31	174.39
Crit W.S. (ft)	2558.15	Flow Area (sq ft)		136.52	134.83
E.G. Slope (ft/ft)	0.013540	Area (sq ft)		136.52	134.83
Q Total (cfs)	1242.00	Flow (cfs)		937.34	304.66
Top Width (ft)	221.27	Top Width (ft)		72.34	148.93
Vel Total (ft/s)	4.58	Avg. Vel. (ft/s)		6.87	2.26
Max Chl Dpth (ft)	2.68	Hydr. Depth (ft)		1.89	0.91
Conv. Total (cfs)	10673.8	Conv. (cfs)		8055.5	2618.3
Length Wtd. (ft)	176.07	Wetted Per. (ft)		73.65	150.84
Min Ch El (ft)	2555.47	Shear (lb/sq ft)		1.57	0.76
Alpha	1.76	Stream Power (lb/ft s)		10.76	1.71
Frctn Loss (ft)	2.79	Cum Volume (acre-ft)	0.41	38.88	0.55
C & E Loss (ft)	0.02	Cum SA (acres)	0.10	18.39	0.38

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
depth, the calculated water surface came back below critical depth. This indicates that there is
not a valid subcritical answer. The program defaulted to critical depth.
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: Upper Fan 5
REACH: UpperFan5-1 RS: 2.56

INPUT
Description: Topography and Aerial indicates wash and surrounding undeveloped desert.
T5NR5E Section 8
Q100 = 1,242 cfs
Station Elevation Data num= 24

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9893.37	2566	9909.77	2564	9917.62	2562	9931.13	2560	9948.05	2558
9955.06	2556	9970.8	2554	9975.56	2553	9977.94	2552.5	9980.31	2552
10009.59	2552	10023.07	2552	10034.64	2552	10085.46	2552.78	10095.59	2552
10145.89	2550	10228.77	2552	10318.15	2554	10336.55	2556	10360.31	2558
10383.29	2560	10396.08	2562	10405.8	2564	10415.29	2566		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9893.37	.071	9977.94	.038	10085.46	.071

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9977.94	10085.46	319.18	322.13	319.66	.1	.3

CROSS SECTION OUTPUT Profile #100-yr 6-hr

E.G. Elev (ft)	2553.10	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.19	Wt. n-Val.	0.071	0.038	0.071
W.S. Elev (ft)	2552.91	Reach Len. (ft)	319.18	322.13	319.66
Crit W.S. (ft)	2552.44	Flow Area (sq ft)	0.40	77.45	278.17
E.G. Slope (ft/ft)	0.015117	Area (sq ft)	0.40	77.45	278.17
Q Total (cfs)	1242.00	Flow (cfs)	0.35	299.09	942.56
Top Width (ft)	293.46	Top Width (ft)	1.95	107.52	183.98
Vel Total (ft/s)	3.49	Avg. Vel. (ft/s)	0.88	3.86	3.39
Max Chl Dpth (ft)	2.91	Hydr. Depth (ft)	0.21	0.72	1.51
Conv. Total (cfs)	10101.6	Conv. (cfs)	2.9	2432.6	7666.2
Length Wtd. (ft)	320.85	Wetted Per. (ft)	2.00	107.58	184.09
Min Ch El (ft)	2552.00	Shear (lb/sq ft)	0.19	0.68	1.43
Alpha	1.01	Stream Power (lb/ft s)	0.17	2.62	4.83
Frctn Loss (ft)	5.04	Cum Volume (acre-ft)	4.17	36.40	2.44
C & E Loss (ft)	0.02	Cum SA (acres)	4.90	18.03	2.69

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 OUTPUT Profile #Method1

E.G. Elev (ft)	2554.60	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.81	Wt. n-Val.		0.038	
W.S. Elev (ft)	2553.79	Reach Len. (ft)	319.18	322.13	319.66
Crit W.S. (ft)	2553.79	Flow Area (sq ft)		172.05	

E.G. Slope (ft/ft)	0.018743	Area (sq ft)		172.05	
Q Total (cfs)	1242.00	Flow (cfs)		1242.00	
Top Width (ft)	107.52	Top Width (ft)		107.52	
Vel Total (ft/s)	7.22	Avg. Vel. (ft/s)		7.22	
Max Chl Dpth (ft)	1.79	Hydr. Depth (ft)		1.60	
Conv. Total (cfs)	9072.0	Conv. (cfs)		9072.0	
Length Wtd. (ft)	322.13	Wetted Per. (ft)		109.88	
Min Ch El (ft)	2552.00	Shear (lb/sq ft)		1.83	
Alpha	1.00	Stream Power (lb/ft s)		13.23	
Frctn Loss (ft)	4.85	Cum Volume (acre-ft)	0.41	38.26	0.28
C & E Loss (ft)	0.08	Cum SA (acres)	0.10	18.03	0.08

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 energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
depth, the 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: Upper Fan 5
REACH: UpperFan5-1 RS: 2.50

INPUT
Description: Topography and Aerial indicates wash and surrounding undeveloped desert.
T5NR5E Section 8
Q100 = 1,242 cfs
Station Elevation Data num= 22

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9699.49	2558	9718.74	2556	9736.91	2554	9758.35	2552	9773.17	2550
9809.54	2548	9857.36	2546	9878.28	2546	9907.72	2546.72	9931.81	2546
9947.75	2546	9970.07	2547.04	9991.65	2546	10017.65	2546	10034.16	2547
10050.66	2548	10066.19	2550	10075.63	2552	10085.3	2554	10094.59	2556
10102.42	2558	10110.07	2560						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9699.49	.071	9907.72	.038	10034.16	.071

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9907.72	10034.16	300.68	326.66	331.82	.1	.3

CROSS SECTION OUTPUT Profile #100-yr 6-hr

			Left OB	Channel	Right OB
E.G. Elev (ft)	2548.03	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.44	Wt. n-Val.	0.071	0.038	0.071
W.S. Elev (ft)	2547.59	Reach Len. (ft)	300.68	326.66	331.82
Crit W.S. (ft)	2547.44	Flow Area (sq ft)	99.79	161.42	2.88
E.G. Slope (ft/ft)	0.016345	Area (sq ft)	99.79	161.42	2.88
Q Total (cfs)	1242.00	Flow (cfs)	289.38	949.20	3.42
Top Width (ft)	224.60	Top Width (ft)	88.40	126.44	9.75
Vel Total (ft/s)	4.70	Avg. Vel. (ft/s)	2.90	5.88	1.19
Max Chl Dpth (ft)	1.59	Hydr. Depth (ft)	1.13	1.28	0.30
Conv. Total (cfs)	9714.8	Conv. (cfs)	2263.5	7424.6	26.7
Length Wtd. (ft)	322.37	Wetted Per. (ft)	88.44	126.53	9.77
Min Ch El (ft)	2546.00	Shear (lb/sq ft)	1.15	1.30	0.30
Alpha	1.28	Stream Power (lb/ft s)	3.34	7.65	0.36
Frctn Loss (ft)	4.53	Cum Volume (acre-ft)	3.81	35.51	1.41
C & E Loss (ft)	0.03	Cum SA (acres)	4.57	17.16	1.98

Warning: The energy loss was 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 OUTPUT Profile #Method1

E.G. Elev (ft)	2548.51	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.56	Wt. n-Val.		0.038	
W.S. Elev (ft)	2547.96	Reach Len. (ft)	300.68	326.66	331.82
Crit W.S. (ft)	2547.75	Flow Area (sq ft)		207.69	
E.G. Slope (ft/ft)	0.012359	Area (sq ft)		207.69	
Q Total (cfs)	1242.00	Flow (cfs)		1242.00	
Top Width (ft)	126.44	Top Width (ft)		126.44	
Vel Total (ft/s)	5.98	Avg. Vel. (ft/s)		5.98	
Max Chl Dpth (ft)	1.96	Hydr. Depth (ft)		1.64	
Conv. Total (cfs)	11172.1	Conv. (cfs)		11172.1	
Length Wtd. (ft)	326.66	Wetted Per. (ft)		128.72	
Min Ch El (ft)	2546.00	Shear (lb/sq ft)		1.24	
Alpha	1.00	Stream Power (lb/ft s)		7.44	
Frctn Loss (ft)	4.72	Cum Volume (acre-ft)	0.41	36.85	0.28
C & E Loss (ft)	0.05	Cum SA (acres)	0.10	17.16	0.08

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: Upper Fan 5
REACH: UpperFan5-1 RS: 2.44

INPUT
Description: Topography and Aerial indicates wash and surrounding undeveloped desert.
T5NR5E Section 7
Q100 = 1,242 cfs
Station Elevation Data num= 16

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9713.53	2552	9730.52	2550	9747.34	2548	9771.45	2546	9817.12	2544
9892.09	2542	9971.53	2542	9972.25	2542	9985.06	2540	10000	2539.5
10008.17	2540	10044.23	2542	10078.29	2544	10092.12	2546	10106.8	2548
10120.27	2550								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9713.53	.071	9971.53	.038	10044.23	.071

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9971.53	10044.23	333.37	317.86	302.13	.1	.3

CROSS SECTION OUTPUT Profile #100-yr 6-hr

E.G. Elev (ft)	2543.47	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.72	Wt. n-Val.	0.071	0.038	0.071
W.S. Elev (ft)	2542.75	Reach Len. (ft)	333.37	317.86	302.13
Crit W.S. (ft)	2542.75	Flow Area (sq ft)	70.33	155.54	4.81
E.G. Slope (ft/ft)	0.012216	Area (sq ft)	70.33	155.54	4.81
Q Total (cfs)	1242.00	Flow (cfs)	122.51	1113.70	5.79
Top Width (ft)	193.13	Top Width (ft)	107.63	72.70	12.81
Vel Total (ft/s)	5.38	Avg. Vel. (ft/s)	1.74	7.16	1.20
Max Chl Dpth (ft)	3.25	Hydr. Depth (ft)	0.65	2.14	0.38
Conv. Total (cfs)	11237.2	Conv. (cfs)	1108.4	10076.4	52.4
Length Wtd. (ft)	318.58	Wetted Per. (ft)	107.64	72.93	12.83
Min Ch El (ft)	2539.50	Shear (lb/sq ft)	0.50	1.63	0.29
Alpha	1.60	Stream Power (lb/ft s)	0.87	11.65	0.34
Frctn Loss (ft)	4.50	Cum Volume (acre-ft)	3.22	34.33	1.38
C & E Loss (ft)	0.03	Cum SA (acres)	3.89	16.41	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 energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
depth, the 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 OUTPUT Profile #Method1

E.G. Elev (ft)	2543.74	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.05	Wt. n-Val.		0.038	
W.S. Elev (ft)	2542.69	Reach Len. (ft)	333.37	317.86	302.13
Crit W.S. (ft)	2542.69	Flow Area (sq ft)		151.13	
E.G. Slope (ft/ft)	0.017142	Area (sq ft)		151.13	
Q Total (cfs)	1242.00	Flow (cfs)		1242.00	
Top Width (ft)	72.70	Top Width (ft)		72.70	
Vel Total (ft/s)	8.22	Avg. Vel. (ft/s)		8.22	
Max Chl Dpth (ft)	3.19	Hydr. Depth (ft)		2.08	
Conv. Total (cfs)	9486.1	Conv. (cfs)		9486.1	
Length Wtd. (ft)	317.86	Wetted Per. (ft)		74.32	
Min Ch El (ft)	2539.50	Shear (lb/sq ft)		2.18	
Alpha	1.00	Stream Power (lb/ft s)		17.89	
Frctn Loss (ft)	5.39	Cum Volume (acre-ft)	0.41	35.51	0.28
C & E Loss (ft)	0.02	Cum SA (acres)	0.10	16.41	0.08

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 energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
depth, the 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: Upper Fan 5
REACH: UpperFan5-1 RS: 2.38

INPUT
Description: Topography and Aerial indicates wash and surrounding undeveloped
desert.
T5NR5E Section 7
Q100 = 1,242 cfs
Station Elevation Data num= 18

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9906.61	2548	9922.98	2546	9932.55	2544	9941.52	2542	9956.22	2540
9967.61	2538	9981.27	2536	9994.68	2534	10003.37	2534	10028.24	2534
10032.95	2534	10060.1	2536	10088.36	2538	10104.94	2540	10137.78	2542
10157.03	2544	10174.7	2546	10187.47	2548				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9906.61	.071	9981.27	.038	10060.1	.071

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9981.27	10060.1	286.09	291.42	297.84	.1	.3

CROSS SECTION OUTPUT Profile #100-yr 6-hr

E.G. Elev (ft)	2537.47	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.97	Wt. n-Val.	0.071	0.038	0.071
W.S. Elev (ft)	2536.50	Reach Len. (ft)	286.09	291.42	297.84
Crit W.S. (ft)	2536.50	Flow Area (sq ft)	0.85	156.38	1.75
E.G. Slope (ft/ft)	0.016538	Area (sq ft)	0.85	156.38	1.75

Q Total (cfs)	1242.00	Flow (cfs)	0.90	1239.24	1.87
Top Width (ft)	89.27	Top Width (ft)	3.40	78.83	7.04
Vel Total (ft/s)	7.81	Avg. Vel. (ft/s)	1.06	7.92	1.06
Max Chl Dpth (ft)	2.50	Hydr. Depth (ft)	0.25	1.98	0.25
Conv. Total (cfs)	9657.8	Conv. (cfs)	7.0	9636.3	14.5
Length Wtd. (ft)	291.41	Wetted Per. (ft)	3.44	79.05	7.06
Min Ch El (ft)	2534.00	Shear (lb/sq ft)	0.25	2.04	0.26
Alpha	1.03	Stream Power (lb/ft s)	0.27	16.19	0.27
Frctn Loss (ft)	4.97	Cum Volume (acre-ft)	2.95	33.19	1.36
C & E Loss (ft)	0.05	Cum SA (acres)	3.47	15.86	1.83

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.

CROSS SECTION OUTPUT Profile #Method1

E.G. Elev (ft)	2537.48	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.98	Wt. n-Val.		0.038	
W.S. Elev (ft)	2536.50	Reach Len. (ft)	286.09	291.42	297.84
Crit W.S. (ft)	2536.48	Flow Area (sq ft)		156.73	
E.G. Slope (ft/ft)	0.016770	Area (sq ft)		156.73	
Q Total (cfs)	1242.00	Flow (cfs)		1242.00	
Top Width (ft)	78.83	Top Width (ft)		78.83	
Vel Total (ft/s)	7.92	Avg. Vel. (ft/s)		7.92	
Max Chl Dpth (ft)	2.50	Hydr. Depth (ft)		1.99	
Conv. Total (cfs)	9590.7	Conv. (cfs)		9590.7	
Length Wtd. (ft)	291.42	Wetted Per. (ft)		80.06	
Min Ch El (ft)	2534.00	Shear (lb/sq ft)		2.05	
Alpha	1.00	Stream Power (lb/ft s)		16.24	
Frctn Loss (ft)	5.14	Cum Volume (acre-ft)	0.41	34.38	0.28
C & E Loss (ft)	0.04	Cum SA (acres)	0.10	15.86	0.08

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: Upper Fan 5
REACH: UpperFan5-1 RS: 2.32

INPUT
Description: Topography and Aerial indicates wash and surrounding undeveloped desert.
T5NR5E Section 7
Q100 = 1,242 cfs
Station Elevation Data num= 16

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9859.3	2536	9876.09	2534	9894.44	2532	9924.11	2530.97	9941.74	2529.6
9942.7	2530	9975.48	2530	9980	2530	10000	2529	10026.39	2530
10028.98	2531	10031.58	2532	10037.7	2534	10046.23	2536	10054.87	2538
10062.36	2538								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9859.3	.071	9924.11	.038	10028.98	.071

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9924.11	10028.98	279.28	279.14	282.34	.1	.3

CROSS SECTION OUTPUT Profile #100-yr 6-hr

E.G. Elev (ft)	2532.28	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.80	Wt. n-Val.	0.071	0.038	0.071
W.S. Elev (ft)	2531.48	Reach Len. (ft)	279.28	279.14	282.34
Crit W.S. (ft)	2531.48	Flow Area (sq ft)	3.70	171.94	0.30
E.G. Slope (ft/ft)	0.017607	Area (sq ft)	3.70	171.94	0.30
Q Total (cfs)	1242.00	Flow (cfs)	4.11	1237.59	0.30
Top Width (ft)	120.71	Top Width (ft)	14.60	104.87	1.24
Vel Total (ft/s)	7.06	Avg. Vel. (ft/s)	1.11	7.20	1.02
Max Chl Dpth (ft)	2.48	Hydr. Depth (ft)	0.25	1.64	0.24
Conv. Total (cfs)	9360.1	Conv. (cfs)	31.0	9326.8	2.3
Length Wtd. (ft)	279.14	Wetted Per. (ft)	14.61	105.23	1.33
Min Ch El (ft)	2529.00	Shear (lb/sq ft)	0.28	1.80	0.24
Alpha	1.04	Stream Power (lb/ft s)	0.31	12.93	0.25
Frctn Loss (ft)	4.56	Cum Volume (acre-ft)	2.93	32.09	1.35
C & E Loss (ft)	0.02	Cum SA (acres)	3.41	15.25	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 energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
depth, the 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 OUTPUT Profile #Method1

E.G. Elev (ft)	2532.29	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.83	Wt. n-Val.		0.038	
W.S. Elev (ft)	2531.46	Reach Len. (ft)	279.28	279.14	282.34
Crit W.S. (ft)	2531.46	Flow Area (sq ft)		170.10	
E.G. Slope (ft/ft)	0.018603	Area (sq ft)		170.10	
Q Total (cfs)	1242.00	Flow (cfs)		1242.00	
Top Width (ft)	104.87	Top Width (ft)		104.87	
Vel Total (ft/s)	7.30	Avg. Vel. (ft/s)		7.30	
Max Chl Dpth (ft)	2.46	Hydr. Depth (ft)		1.62	
Conv. Total (cfs)	9106.1	Conv. (cfs)		9106.1	
Length Wtd. (ft)	279.14	Wetted Per. (ft)		106.18	
Min Ch El (ft)	2529.00	Shear (lb/sq ft)		1.86	
Alpha	1.00	Stream Power (lb/ft s)		13.58	
Frctn Loss (ft)	4.42	Cum Volume (acre-ft)	0.41	33.29	0.28
C & E Loss (ft)	0.01	Cum SA (acres)	0.10	15.25	0.08

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 energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
depth, the 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: Upper Fan 5
REACH: UpperFan5-1 RS: 2.27

INPUT
Description: Topography and Aerial indicates wash and surrounding undeveloped desert.
T5NR5E Section 7

Q100 = 1,242 cfs

Station Elevation Data num= 17

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9907.32	2536	9917.73	2534	9926.05	2532	9934.83	2530	9942.5	2528
9950.27	2526	9958.33	2524	10000	2523.61	10016.09	2524	10020.97	2526
10029.01	2528	10035.26	2530	10042.93	2532	10049.84	2534	10056.37	2536
10067.07	2538	10084.55	2540						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9907.32	.071	9950.27	.038	10020.97	.071

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9950.27	10020.97	289.4	285.58	277.15	.1	.3

CROSS SECTION OUTPUT Profile #100-yr 6-hr

			Left OB	Channel	Right OB
E.G. Elev (ft)	2527.21	Element			
Vel Head (ft)	1.01	Wt. n-Val.	0.071	0.038	0.071
W.S. Elev (ft)	2526.20	Reach Len. (ft)	289.40	285.58	277.15
Crit W.S. (ft)	2526.14	Flow Area (sq ft)	0.08	154.08	0.08
E.G. Slope (ft/ft)	0.015222	Area (sq ft)	0.08	154.08	0.08
Q Total (cfs)	1242.00	Flow (cfs)	0.04	1241.92	0.04
Top Width (ft)	72.27	Top Width (ft)	0.77	70.70	0.80
Vel Total (ft/s)	8.05	Avg. Vel. (ft/s)	0.54	8.06	0.54
Max Chl Dpth (ft)	2.60	Hydr. Depth (ft)	0.10	2.18	0.10
Conv. Total (cfs)	10066.8	Conv. (cfs)	0.3	10066.1	0.4
Length Wtd. (ft)	285.56	Wetted Per. (ft)	0.80	71.35	0.82
Min Ch El (ft)	2523.60	Shear (lb/sq ft)	0.09	2.05	0.09
Alpha	1.00	Stream Power (lb/ft s)	0.05	16.54	0.05
Frctn Loss (ft)	4.31	Cum Volume (acre-ft)	2.92	31.05	1.35
C & E Loss (ft)	0.00	Cum SA (acres)	3.36	14.68	1.79

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.

CROSS SECTION OUTPUT Profile #Method1

			Left OB	Channel	Right OB
E.G. Elev (ft)	2527.22	Element			
Vel Head (ft)	0.94	Wt. n-Val.		0.038	
W.S. Elev (ft)	2526.28	Reach Len. (ft)	289.40	285.58	277.15
Crit W.S. (ft)	2526.13	Flow Area (sq ft)		159.82	
E.G. Slope (ft/ft)	0.013615	Area (sq ft)		159.82	
Q Total (cfs)	1242.00	Flow (cfs)		1242.00	
Top Width (ft)	70.70	Top Width (ft)		70.70	
Vel Total (ft/s)	7.77	Avg. Vel. (ft/s)		7.77	
Max Chl Dpth (ft)	2.68	Hydr. Depth (ft)		2.26	
Conv. Total (cfs)	10644.1	Conv. (cfs)		10644.1	
Length Wtd. (ft)	285.58	Wetted Per. (ft)		71.91	
Min Ch El (ft)	2523.60	Shear (lb/sq ft)		1.89	
Alpha	1.00	Stream Power (lb/ft s)		14.68	
Frctn Loss (ft)	4.27	Cum Volume (acre-ft)	0.41	32.23	0.28
C & E Loss (ft)	0.01	Cum SA (acres)	0.10	14.68	0.08

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: Upper Fan 5
REACH: UpperFan5-1 RS: 2.22

INPUT
Description: Topography and Aerial indicates wash and surrounding undeveloped desert.
T5NR5E Section 7

Q100 = 1,242 cfs

Station Elevation Data num= 22

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9856.6	2532	9864.96	2530	9874.3	2528	9884.09	2526	9899.03	2524
9917.28	2522	9922.46	2522	9960.17	2524	9963.96	2524	9977.83	2522
9985.18	2521	9992.53	2520	10000	2518.6	10038.87	2520	10054.15	2521
10069.43	2522	10094.41	2524	10101.69	2526	10108.36	2528	10117.96	2530
10131.45	2532	10141.88	2534						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9856.6	.071	9985.18	.038	10054.15	.071

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9985.18	10054.15	384.71	414.67	415.59	.1	.3

Left Levee Station= 9960.17 Elevation= 2524

CROSS SECTION OUTPUT Profile #100-yr 6-hr

E.G. Elev (ft)	2522.90	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.00	Wt. n-Val.	0.071	0.038	0.071
W.S. Elev (ft)	2521.90	Reach Len. (ft)	384.71	414.67	415.59
Crit W.S. (ft)	2521.90	Flow Area (sq ft)	2.97	152.09	6.17
E.G. Slope (ft/ft)	0.014936	Area (sq ft)	2.97	152.09	6.17
Q Total (cfs)	1242.00	Flow (cfs)	4.43	1228.32	9.25
Top Width (ft)	89.31	Top Width (ft)	6.61	68.97	13.74
Vel Total (ft/s)	7.70	Avg. Vel. (ft/s)	1.49	8.08	1.50
Max Chl Dpth (ft)	3.30	Hydr. Depth (ft)	0.45	2.21	0.45
Conv. Total (cfs)	10162.7	Conv. (cfs)	36.2	10050.8	75.7
Length Wtd. (ft)	414.59	Wetted Per. (ft)	6.67	69.23	13.76
Min Ch El (ft)	2518.60	Shear (lb/sq ft)	0.42	2.05	0.42
Alpha	1.09	Stream Power (lb/ft s)	0.62	16.54	0.63
Frctn Loss (ft)	6.30	Cum Volume (acre-ft)	2.91	30.04	1.33
C & E Loss (ft)	0.01	Cum SA (acres)	3.33	14.23	1.74

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

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

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

Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.

CROSS SECTION OUTPUT Profile #Method1

E.G. Elev (ft)	2522.93	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.06	Wt. n-Val.		0.038	
W.S. Elev (ft)	2521.87	Reach Len. (ft)	384.71	414.67	415.59
Crit W.S. (ft)	2521.87	Flow Area (sq ft)		150.10	
E.G. Slope (ft/ft)	0.016491	Area (sq ft)		150.10	
Q Total (cfs)	1242.00	Flow (cfs)		1242.00	
Top Width (ft)	68.97	Top Width (ft)		68.97	
Vel Total (ft/s)	8.27	Avg. Vel. (ft/s)		8.27	
Max Chl Dpth (ft)	3.27	Hydr. Depth (ft)		2.18	
Conv. Total (cfs)	9671.5	Conv. (cfs)		9671.5	
Length Wtd. (ft)		Wetted Per. (ft)		70.97	
Min Ch El (ft)	2518.60	Shear (lb/sq ft)		2.18	
Alpha	1.00	Stream Power (lb/ft s)		18.02	
Frctn Loss (ft)		Cum Volume (acre-ft)	0.41	31.22	0.28
C & E Loss (ft)		Cum SA (acres)	0.10	14.23	0.08

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 energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water
surface was used.

CROSS SECTION

RIVER: Upper Fan 5
REACH: UpperFan5-1 RS: 2.14

INPUT
Description: Topography and Aerial indicates wash and surrounding undeveloped
desert.
T5NR5E Section 7
Q100 = 1,242 cfs
Station Elevation Data num= 15

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9841.29	2524	9879.33	2522	9902.4	2520	9931.11	2518	9947.06	2516
9962.07	2514	9983.28	2512	10000	2511.25	10011.1	2512	10022.39	2514
10034.51	2516	10084.15	2518	10098.89	2520	10111.88	2522	10123.91	2524

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9841.29	.071	9962.07	.038	10022.39	.071

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9962.07	10022.39	525.26	519.63	492.93	.1	.3

CROSS SECTION OUTPUT Profile #100-yr 6-hr

			Left OB	Channel	Right OB
E.G. Elev (ft)	2515.89	Element			
Vel Head (ft)	1.15	Wt. n-Val.	0.071	0.038	0.071
W.S. Elev (ft)	2514.74	Reach Len. (ft)	525.26	519.63	492.93
Crit W.S. (ft)	2514.74	Flow Area (sq ft)	2.07	143.40	1.67
E.G. Slope (ft/ft)	0.015444	Area (sq ft)	2.07	143.40	1.67
Q Total (cfs)	1242.00	Flow (cfs)	2.77	1237.00	2.23
Top Width (ft)	70.40	Top Width (ft)	5.58	60.32	4.50
Vel Total (ft/s)	8.44	Avg. Vel. (ft/s)	1.34	8.63	1.33
Max Chl Dpth (ft)	3.49	Hydr. Depth (ft)	0.37	2.38	0.37
Conv. Total (cfs)	9994.0	Conv. (cfs)	22.3	9953.7	17.9
Length Wtd. (ft)	519.61	Wetted Per. (ft)	5.63	60.63	4.56
Min Ch El (ft)	2511.25	Shear (lb/sq ft)	0.36	2.28	0.35
Alpha	1.04	Stream Power (lb/ft s)	0.47	19.67	0.47
Frctn Loss (ft)	7.47	Cum Volume (acre-ft)	2.89	28.64	1.29
C & E Loss (ft)	0.02	Cum SA (acres)	3.28	13.61	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 energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
depth, the 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 OUTPUT Profile #Method1

			Left OB	Channel	Right OB
E.G. Elev (ft)	2515.91	Element			
Vel Head (ft)	1.19	Wt. n-Val.		0.038	
W.S. Elev (ft)	2514.72	Reach Len. (ft)	525.26	519.63	492.93
Crit W.S. (ft)	2514.72	Flow Area (sq ft)		141.70	
E.G. Slope (ft/ft)	0.016710	Area (sq ft)		141.70	
Q Total (cfs)	1242.00	Flow (cfs)		1242.00	
Top Width (ft)	60.32	Top Width (ft)		60.32	
Vel Total (ft/s)	8.76	Avg. Vel. (ft/s)		8.76	

Max Chl Dpth (ft)	3.47	Hydr. Depth (ft)		2.35	
Conv. Total (cfs)	9608.1	Conv. (cfs)		9608.1	
Length Wtd. (ft)	519.63	Wetted Per. (ft)		62.06	
Min Ch El (ft)	2511.25	Shear (lb/sq ft)		2.38	
Alpha	1.00	Stream Power (lb/ft s)		20.88	
Frctn Loss (ft)	8.60	Cum Volume (acre-ft)	0.41	29.83	0.28
C & E Loss (ft)	0.03	Cum SA (acres)	0.10	13.61	0.08

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 energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
depth, the 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: Upper Fan 5
REACH: UpperFan5-1 RS: 2.04

INPUT
Description: Topography and Aerial indicates wash and surrounding undeveloped desert.
T5NR5E Section 7
Q100 = 1,242 cfs
Station Elevation Data num= 13

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9930.52	2510	9939.51	2508	9950.98	2506	9973.08	2504	9988	2502
9990.44	2502	10010.6	2502.06	10015.6	2504	10020.39	2506	10040.6	2508
10065.8	2510	10085.18	2512	10103.86	2514				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9930.52	.071	9973.08	.038	10015.6	.071

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9973.08	10015.6	226.85	229.52	233.38	.1	.3

CROSS SECTION OUTPUT Profile #100-yr 6-hr

E.G. Elev (ft)	2506.86	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.34	Wt. n-Val.	0.071	0.038	0.071
W.S. Elev (ft)	2505.51	Reach Len. (ft)	226.85	229.52	233.38
Crit W.S. (ft)	2505.51	Flow Area (sq ft)	12.67	128.76	2.75
E.G. Slope (ft/ft)	0.013419	Area (sq ft)	12.67	128.76	2.75
Q Total (cfs)	1242.00	Flow (cfs)	25.45	1211.31	5.24
Top Width (ft)	62.88	Top Width (ft)	16.73	42.52	3.63
Vel Total (ft/s)	8.61	Avg. Vel. (ft/s)	2.01	9.41	1.91
Max Chl Dpth (ft)	3.51	Hydr. Depth (ft)	0.76	3.03	0.76
Conv. Total (cfs)	10721.8	Conv. (cfs)	219.7	10456.8	45.3
Length Wtd. (ft)	229.43	Wetted Per. (ft)	16.80	43.02	3.93
Min Ch El (ft)	2502.00	Shear (lb/sq ft)	0.63	2.51	0.59
Alpha	1.16	Stream Power (lb/ft s)	1.27	23.59	1.12
Frctn Loss (ft)	3.41	Cum Volume (acre-ft)	2.80	27.01	1.26
C & E Loss (ft)	0.14	Cum SA (acres)	3.15	13.00	1.61

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

depth, the 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 OUTPUT Profile #Method1

E.G. Elev (ft)	2506.96	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.50	Wt. n-Val.		0.038	
W.S. Elev (ft)	2505.46	Reach Len. (ft)	226.85	229.52	233.38
Crit W.S. (ft)	2505.46	Flow Area (sq ft)		126.33	
E.G. Slope (ft/ft)	0.016405	Area (sq ft)		126.33	
Q Total (cfs)	1242.00	Flow (cfs)		1242.00	
Top Width (ft)	42.52	Top Width (ft)		42.52	
Vel Total (ft/s)	9.83	Avg. Vel. (ft/s)		9.83	
Max Chl Dpth (ft)	3.46	Hydr. Depth (ft)		2.97	
Conv. Total (cfs)	9696.9	Conv. (cfs)		9696.9	
Length Wtd. (ft)	229.52	Wetted Per. (ft)		45.93	
Min Ch El (ft)	2502.00	Shear (lb/sq ft)		2.82	
Alpha	1.00	Stream Power (lb/ft s)		27.69	
Frctn Loss (ft)	3.90	Cum Volume (acre-ft)	0.41	28.23	0.28
C & E Loss (ft)	0.16	Cum SA (acres)	0.10	13.00	0.08

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 energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
depth, the 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: Upper Fan 5
REACH: UpperFan5-1 RS: 2.00

INPUT
Description: Topography and Aerial indicates wash and surrounding undeveloped desert.
T5NR5E Section 18
Q100 = 1,242 cfs
Station Elevation Data num= 15

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9836.48	2504	9931.85	2502	9942.63	2500	9955.25	2498	9959.76	2498
9972.69	2498.85	9983.38	2498	10000	2496.52	10044.45	2498	10054.72	2499
10064.98	2500	10078.95	2502	10090.53	2504	10102.23	2506	10159.15	2508

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9836.48	.071	9972.69	.038	10054.72	.071

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9972.69	10054.72	444.34	410.81	395.86	.1	.3

CROSS SECTION OUTPUT Profile #100-yr 6-hr

E.G. Elev (ft)	2500.30	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.86	Wt. n-Val.	0.071	0.038	0.071
W.S. Elev (ft)	2499.44	Reach Len. (ft)	444.34	410.81	395.86
Crit W.S. (ft)	2499.44	Flow Area (sq ft)	26.13	153.53	0.99
E.G. Slope (ft/ft)	0.016558	Area (sq ft)	26.13	153.53	0.99
Q Total (cfs)	1242.00	Flow (cfs)	69.42	1171.62	0.96
Top Width (ft)	113.05	Top Width (ft)	26.52	82.03	4.50
Vel Total (ft/s)	6.88	Avg. Vel. (ft/s)	2.66	7.63	0.98
Max Chl Dpth (ft)	2.92	Hydr. Depth (ft)	0.99	1.87	0.22

Conv. Total (cfs)	9652.0	Conv. (cfs)	539.5	9105.0	7.5
Length Wtd. (ft)	411.68	Wetted Per. (ft)	26.66	82.20	4.52
Min Ch El (ft)	2496.52	Shear (lb/sq ft)	1.01	1.93	0.23
Alpha	1.17	Stream Power (lb/ft s)	2.69	14.73	0.22
Frctn Loss (ft)	6.68	Cum Volume (acre-ft)	2.70	26.27	1.25
C & E Loss (ft)	0.00	Cum SA (acres)	3.03	12.67	1.59

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.

CROSS SECTION OUTPUT Profile #Method1

E.G. Elev (ft)	2500.45	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.97	Wt. n-Val.		0.038	
W.S. Elev (ft)	2499.48	Reach Len. (ft)	444.34	410.81	395.86
Crit W.S. (ft)	2499.48	Flow Area (sq ft)		157.00	
E.G. Slope (ft/ft)	0.017586	Area (sq ft)		157.00	
Q Total (cfs)	1242.00	Flow (cfs)		1242.00	
Top Width (ft)	82.03	Top Width (ft)		82.03	
Vel Total (ft/s)	7.91	Avg. Vel. (ft/s)		7.91	
Max Chl Dpth (ft)	2.96	Hydr. Depth (ft)		1.91	
Conv. Total (cfs)	9365.8	Conv. (cfs)		9365.8	
Length Wtd. (ft)	410.81	Wetted Per. (ft)		83.31	
Min Ch El (ft)	2496.52	Shear (lb/sq ft)		2.07	
Alpha	1.00	Stream Power (lb/ft s)		16.37	
Frctn Loss (ft)	7.26	Cum Volume (acre-ft)	0.41	27.48	0.28
C & E Loss (ft)	0.01	Cum SA (acres)	0.10	12.67	0.08

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 energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
depth, the 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: Upper Fan 5
REACH: UpperFan5-1 RS: 1.92

INPUT
Description: Topography and Aerial indicates wash and surrounding undeveloped desert.
T5NR5E Section 18
Q100 = 1,242 cfs
Station Elevation Data num= 20

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9904.95	2504	9914.62	2502	9936.9	2500	9939.27	2498	9941.67	2496
9943.84	2494	9945.06	2493	9946.28	2492	9947.5	2491	9948.71	2490
10000	2489.3	10009.54	2490	10034.16	2491	10058.78	2492	10078.1	2492.55
10093.25	2492	10138.74	2492	10182.66	2494	10196.54	2496	10222.15	2498

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9904.95	.071	9947.5	.038	10034.16	.071

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
9947.510034.16 335.54 375.85 383.94 .1 .3
Right Levee Station= 10078.1 Elevation= 2492.55

CROSS SECTION OUTPUT Profile #100-yr 6-hr

E.G. Elev (ft)	2492.66	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.87	Wt. n-Val.	0.071	0.038	0.071
W.S. Elev (ft)	2491.79	Reach Len. (ft)	335.54	375.85	383.94
Crit W.S. (ft)	2491.79	Flow Area (sq ft)	0.38	163.73	7.74
E.G. Slope (ft/ft)	0.015915	Area (sq ft)	0.38	163.73	7.74
Q Total (cfs)	1242.00	Flow (cfs)	0.46	1230.53	11.01
Top Width (ft)	107.14	Top Width (ft)	0.97	86.66	19.52
Vel Total (ft/s)	7.23	Avg. Vel. (ft/s)	1.20	7.52	1.42
Max Chl Dpth (ft)	2.49	Hydr. Depth (ft)	0.40	1.89	0.40
Conv. Total (cfs)	9845.0	Conv. (cfs)	3.6	9754.1	87.3
Length Wtd. (ft)	375.87	Wetted Per. (ft)	1.25	87.07	19.53
Min Ch El (ft)	2489.30	Shear (lb/sq ft)	0.30	1.87	0.39
Alpha	1.07	Stream Power (lb/ft s)	0.37	14.04	0.56
Frctn Loss (ft)	5.47	Cum Volume (acre-ft)	2.56	24.77	1.22
C & E Loss (ft)	0.08	Cum SA (acres)	2.89	11.87	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 energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
depth, the 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 OUTPUT Profile #Method1

E.G. Elev (ft)	2492.69	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.93	Wt. n-Val.		0.038	
W.S. Elev (ft)	2491.76	Reach Len. (ft)	335.54	375.85	383.94
Crit W.S. (ft)	2491.76	Flow Area (sq ft)		160.43	
E.G. Slope (ft/ft)	0.017754	Area (sq ft)		160.43	
Q Total (cfs)	1242.00	Flow (cfs)		1242.00	
Top Width (ft)	86.66	Top Width (ft)		86.66	
Vel Total (ft/s)	7.74	Avg. Vel. (ft/s)		7.74	
Max Chl Dpth (ft)	2.45	Hydr. Depth (ft)		1.85	
Conv. Total (cfs)	9321.2	Conv. (cfs)		9321.2	
Length Wtd. (ft)	375.85	Wetted Per. (ft)		88.58	
Min Ch El (ft)	2489.30	Shear (lb/sq ft)		2.01	
Alpha	1.00	Stream Power (lb/ft s)		15.54	
Frctn Loss (ft)	5.66	Cum Volume (acre-ft)	0.41	25.99	0.28
C & E Loss (ft)	0.10	Cum SA (acres)	0.10	11.87	0.08

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 energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
depth, the 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: Upper Fan 5
REACH: UpperFan5-1 RS: 1.85

INPUT
Description: Topography and Aerial indicates wash and surrounding undeveloped desert.
T5NR5E Section 18
Q100 = 1,242 cfs
Station Elevation Data num= 17

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9837.26	2494	9851.41	2492	9866.95	2490	9878.48	2488	9890.61	2486
9896.51	2485	9899.46	2484.5	9902.41	2484	10000	2482.48	10020.15	2484
10021.62	2484.5	10023.09	2485	10026.02	2486	10031.67	2488	10038.91	2490
10046.44	2492	10055.88	2494						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9837.26	.071	9899.46	.038	10021.62	.071

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9899.46	10021.62	449.33	472.05	493.11	.1	.3

CROSS SECTION OUTPUT Profile #100-yr 6-hr

E.G. Elev (ft)	2485.51	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.61	Wt. n-Val.	0.071	0.038	0.071
W.S. Elev (ft)	2484.90	Reach Len. (ft)	449.33	472.05	493.11
Crit W.S. (ft)	2484.75	Flow Area (sq ft)	0.48	198.79	0.24
E.G. Slope (ft/ft)	0.013354	Area (sq ft)	0.48	198.79	0.24
Q Total (cfs)	1242.00	Flow (cfs)	0.40	1241.41	0.19
Top Width (ft)	125.73	Top Width (ft)	2.38	122.16	1.19
Vel Total (ft/s)	6.23	Avg. Vel. (ft/s)	0.82	6.24	0.80
Max Chl Dpth (ft)	2.42	Hydr. Depth (ft)	0.20	1.63	0.20
Conv. Total (cfs)	10747.9	Conv. (cfs)	3.4	10742.8	1.7
Length Wtd. (ft)	472.05	Wetted Per. (ft)	2.42	122.35	1.25
Min Ch El (ft)	2482.48	Shear (lb/sq ft)	0.17	1.35	0.16
Alpha	1.01	Stream Power (lb/ft s)	0.14	8.46	0.13
Frctn Loss (ft)	7.01	Cum Volume (acre-ft)	2.56	23.21	1.18
C & E Loss (ft)	0.03	Cum SA (acres)	2.88	10.97	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 OUTPUT Profile #Method1

E.G. Elev (ft)	2485.52	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.59	Wt. n-Val.		0.038	
W.S. Elev (ft)	2484.93	Reach Len. (ft)	449.33	472.05	493.11
Crit W.S. (ft)	2484.74	Flow Area (sq ft)		201.41	
E.G. Slope (ft/ft)	0.012913	Area (sq ft)		201.41	
Q Total (cfs)	1242.00	Flow (cfs)		1242.00	
Top Width (ft)	122.16	Top Width (ft)		122.16	
Vel Total (ft/s)	6.17	Avg. Vel. (ft/s)		6.17	
Max Chl Dpth (ft)	2.45	Hydr. Depth (ft)		1.65	
Conv. Total (cfs)	10929.6	Conv. (cfs)		10929.6	
Length Wtd. (ft)	472.05	Wetted Per. (ft)		123.20	
Min Ch El (ft)	2482.48	Shear (lb/sq ft)		1.32	
Alpha	1.00	Stream Power (lb/ft s)		8.13	
Frctn Loss (ft)	7.01	Cum Volume (acre-ft)	0.41	24.43	0.28
C & E Loss (ft)	0.04	Cum SA (acres)	0.10	10.97	0.08

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: Upper Fan 5
REACH: UpperFan5-1 RS: 1.76

INPUT
Description: Topography and Aerial indicates wash and surrounding undeveloped desert.
T5NR5E Section 18
Q100 = 1,242 cfs
Station Elevation Data num= 14

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9936.02	2486	9959.46	2484	9963.53	2482	9966.32	2480	9969.35	2478
9974.73	2477	9980.11	2476	10000	2474.71	0046.23	2476	10056.13	2477
10066.06	2478	10083.88	2480	10107.4	2482	10126.79	2484		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9936.02	.071	9974.73	.038	10056.13	.071

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9974.73	10056.13	455.75	470.45	487.88	.1	.3

CROSS SECTION OUTPUT Profile #100-yr 6-hr

E.G. Elev (ft)	2478.46	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.95	Wt. n-Val.	0.071	0.038	0.071
W.S. Elev (ft)	2477.51	Reach Len. (ft)	455.75	470.45	487.88
Crit W.S. (ft)	2477.51	Flow Area (sq ft)	0.70	158.19	1.29
E.G. Slope (ft/ft)	0.016620	Area (sq ft)	0.70	158.19	1.29
Q Total (cfs)	1242.00	Flow (cfs)	0.75	1239.86	1.39
Top Width (ft)	89.20	Top Width (ft)	2.74	81.40	5.06
Vel Total (ft/s)	7.75	Avg. Vel. (ft/s)	1.07	7.84	1.08
Max Chl Dpth (ft)	2.81	Hydr. Depth (ft)	0.25	1.94	0.25
Conv. Total (cfs)	9634.0	Conv. (cfs)	5.8	9617.5	10.8
Length Wtd. (ft)	470.48	Wetted Per. (ft)	2.79	81.60	5.08
Min Ch El (ft)	2474.70	Shear (lb/sq ft)	0.26	2.01	0.26
Alpha	1.02	Stream Power (lb/ft s)	0.28	15.76	0.28
Frctn Loss (ft)	7.52	Cum Volume (acre-ft)	2.55	21.27	1.17
C & E Loss (ft)	0.02	Cum SA (acres)	2.85	9.87	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 energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
depth, the 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 OUTPUT Profile #Method1

E.G. Elev (ft)	2478.47	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.97	Wt. n-Val.		0.038	
W.S. Elev (ft)	2477.50	Reach Len. (ft)	455.75	470.45	487.88
Crit W.S. (ft)	2477.50	Flow Area (sq ft)		157.30	
E.G. Slope (ft/ft)	0.017273	Area (sq ft)		157.30	
Q Total (cfs)	1242.00	Flow (cfs)		1242.00	
Top Width (ft)	81.40	Top Width (ft)		81.40	
Vel Total (ft/s)	7.90	Avg. Vel. (ft/s)		7.90	
Max Chl Dpth (ft)	2.80	Hydr. Depth (ft)		1.93	
Conv. Total (cfs)	9450.2	Conv. (cfs)		9450.2	
Length Wtd. (ft)	470.45	Wetted Per. (ft)		82.60	
Min Ch El (ft)	2474.70	Shear (lb/sq ft)		2.05	
Alpha	1.00	Stream Power (lb/ft s)		16.21	
Frctn Loss (ft)	6.64	Cum Volume (acre-ft)	0.41	22.48	0.28
C & E Loss (ft)	0.00	Cum SA (acres)	0.10	9.87	0.08

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 energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
depth, the 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: Upper Fan 5
REACH: UpperFan5-1 RS: 1.67

INPUT
Description: Topography and Aerial indicates wash and surrounding undeveloped desert.
T5NR5E Section 18
Q100 = 1,242 cfs
Station Elevation Data num= 13

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9905.28	2478	9932.28	2476	9944.98	2474	9953.78	2472	9958.9	2470
9965.35	2468	9983.2	2466	10014.81	2466	10025.1	2468	10045.12	2470
10085.51	2472	10099.99	2474	10116.42	2476				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9905.28	.071	9965.35	.038	10025.1	.071

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9965.35	10025.1	356.17	331.2	318.47	.1	.3

CROSS SECTION OUTPUT Profile #100-yr 6-hr

			Left OB	Channel	Right OB
E.G. Elev (ft)	2470.02	Element			
Vel Head (ft)	1.15	Wt. n-Val.	0.071	0.038	0.071
W.S. Elev (ft)	2468.86	Reach Len. (ft)	356.17	331.20	318.47
Crit W.S. (ft)	2468.86	Flow Area (sq ft)	1.20	142.88	3.72
E.G. Slope (ft/ft)	0.015378	Area (sq ft)	1.20	142.88	3.72
Q Total (cfs)	1242.00	Flow (cfs)	1.72	1234.78	5.49
Top Width (ft)	71.16	Top Width (ft)	2.78	59.75	8.63
Vel Total (ft/s)	8.40	Avg. Vel. (ft/s)	1.44	8.64	1.48
Max Chl Dpth (ft)	2.86	Hydr. Depth (ft)	0.43	2.39	0.43
Conv. Total (cfs)	10015.6	Conv. (cfs)	13.9	9957.4	44.3
Length Wtd. (ft)	331.11	Wetted Per. (ft)	2.91	60.05	8.67
Min Ch El (ft)	2466.00	Shear (lb/sq ft)	0.40	2.28	0.41
Alpha	1.05	Stream Power (lb/ft s)	0.57	19.74	0.61
Frctn Loss (ft)	4.64	Cum Volume (acre-ft)	2.54	19.65	1.14
C & E Loss (ft)	0.03	Cum SA (acres)	2.82	9.11	1.28

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.

CROSS SECTION OUTPUT Profile #Method1

			Left OB	Channel	Right OB
E.G. Elev (ft)	2470.07	Element			
Vel Head (ft)	0.96	Wt. n-Val.		0.038	

W.S. Elev (ft)	2469.11	Reach Len. (ft)	356.17	331.20	318.47
Crit W.S. (ft)	2468.84	Flow Area (sq ft)		157.66	
E.G. Slope (ft/ft)	0.011762	Area (sq ft)		157.66	
Q Total (cfs)	1242.00	Flow (cfs)		1242.00	
Top Width (ft)	59.75	Top Width (ft)		59.75	
Vel Total (ft/s)	7.88	Avg. Vel. (ft/s)		7.88	
Max Chl Dpth (ft)	3.11	Hydr. Depth (ft)		2.64	
Conv. Total (cfs)	11451.8	Conv. (cfs)		11451.8	
Length Wtd. (ft)	331.20	Wetted Per. (ft)		62.27	
Min Ch El (ft)	2466.00	Shear (lb/sq ft)		1.86	
Alpha	1.00	Stream Power (lb/ft s)		14.65	
Frctn Loss (ft)	4.57	Cum Volume (acre-ft)	0.41	20.78	0.28
C & E Loss (ft)	0.07	Cum SA (acres)	0.10	9.11	0.08

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 energy loss was 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: Upper Fan 5
REACH: UpperFan5-1 RS: 1.61

INPUT
Description: Topography and Aerial indicates wash and surrounding undeveloped desert.
T5NR5E Section 18
Q100 = 1,242 cfs
Station Elevation Data num= 15

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9948.78	2472	9955.22	2470	9962.81	2468	9975.82	2466	9984.05	2464
9989.12	2462	9992.86	2460	10000	2459.5	10010.06	2460	10024.72	2462
10042.36	2464	10060.69	2466	10092.01	2468	10121.39	2470	10184.14	2472

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9948.78	.071	9989.12	.038	10024.72	.071

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9989.12	10024.72	235.43	235.59	232.81	.1	.3

CROSS SECTION OUTPUT Profile #100-yr 6-hr

E.G. Elev (ft)	2465.28	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.48	Wt. n-Val.	0.071	0.038	0.071
W.S. Elev (ft)	2463.80	Reach Len. (ft)	235.43	235.59	232.81
Crit W.S. (ft)	2463.80	Flow Area (sq ft)	4.12	121.32	14.35
E.G. Slope (ft/ft)	0.012825	Area (sq ft)	4.12	121.32	14.35
Q Total (cfs)	1242.00	Flow (cfs)	8.70	1201.68	31.62
Top Width (ft)	56.08	Top Width (ft)	4.57	35.60	15.91
Vel Total (ft/s)	8.88	Avg. Vel. (ft/s)	2.11	9.91	2.20
Max Chl Dpth (ft)	4.30	Hydr. Depth (ft)	0.90	3.41	0.90
Conv. Total (cfs)	10967.0	Conv. (cfs)	76.8	10611.0	279.2
Length Wtd. (ft)	235.55	Wetted Per. (ft)	4.92	36.27	16.01
Min Ch El (ft)	2459.50	Shear (lb/sq ft)	0.67	2.68	0.72
Alpha	1.20	Stream Power (lb/ft s)	1.42	26.53	1.58
Frctn Loss (ft)	3.49	Cum Volume (acre-ft)	2.52	18.64	1.08
C & E Loss (ft)	0.16	Cum SA (acres)	2.79	8.75	1.19

Warning: The energy equation could not be 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 OUTPUT Profile #Method1

E.G. Elev (ft)	2465.43	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.69	Wt. n-Val.		0.038	
W.S. Elev (ft)	2463.74	Reach Len. (ft)	235.43	235.59	232.81
Crit W.S. (ft)	2463.74	Flow Area (sq ft)		119.20	
E.G. Slope (ft/ft)	0.016423	Area (sq ft)		119.20	
Q Total (cfs)	1242.00	Flow (cfs)		1242.00	
Top Width (ft)	35.60	Top Width (ft)		35.60	
Vel Total (ft/s)	10.42	Avg. Vel. (ft/s)		10.42	
Max Chl Dpth (ft)	4.24	Hydr. Depth (ft)		3.35	
Conv. Total (cfs)	9691.6	Conv. (cfs)		9691.6	
Length Wtd. (ft)	235.59	Wetted Per. (ft)		39.76	
Min Ch El (ft)	2459.50	Shear (lb/sq ft)		3.07	
Alpha	1.00	Stream Power (lb/ft s)		32.03	
Frctn Loss (ft)	3.99	Cum Volume (acre-ft)	0.41	19.73	0.28
C & E Loss (ft)	0.22	Cum SA (acres)	0.10	8.75	0.08

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 energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
depth, the 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: Upper Fan 5
REACH: UpperFan5-1 RS: 1.56

INPUT
Description: Topography and Aerial indicates wash and surrounding undeveloped desert.
T5NR5E Section 18
Q100 = 1,242 cfs
Station Elevation Data num= 15

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9916.75	2468	9928.67	2466	9937.96	2464	9946.97	2462	9952.99	2460
9958.71	2458	9977.15	2456	10000	2455.25	10017.51	2456	10044.83	2458
10066.86	2460	10095.49	2462	10111.18	2464	10127.19	2466	10154.74	2468

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9916.75	.071	9958.71	.038	10044.83	.071

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9958.71	10044.83	216.72	211.05	207.69	.1	.3

CROSS SECTION OUTPUT Profile #100-yr 6-hr

E.G. Elev (ft)	2459.15	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.93	Wt. n-Val.	0.071	0.038	0.071
W.S. Elev (ft)	2458.21	Reach Len. (ft)	216.72	211.05	207.69
Crit W.S. (ft)	2458.21	Flow Area (sq ft)	0.07	160.05	0.25
E.G. Slope (ft/ft)	0.017285	Area (sq ft)	0.07	160.05	0.25
Q Total (cfs)	1242.00	Flow (cfs)	0.04	1241.81	0.16
Top Width (ft)	89.09	Top Width (ft)	0.61	86.12	2.36

Vel Total (ft/s)	7.74	Avg. Vel. (ft/s)	0.60	7.76	0.62
Max Chl Dpth (ft)	2.96	Hydr. Depth (ft)	0.11	1.86	0.11
Conv. Total (cfs)	9446.7	Conv. (cfs)	0.3	9445.3	1.2
Length Wtd. (ft)	211.13	Wetted Per. (ft)	0.65	86.33	2.37
Min Ch El (ft)	2455.25	Shear (lb/sq ft)	0.11	2.00	0.12
Alpha	1.00	Stream Power (lb/ft s)	0.07	15.52	0.07
Frctn Loss (ft)	3.39	Cum Volume (acre-ft)	2.51	17.88	1.04
C & E Loss (ft)	0.03	Cum SA (acres)	2.78	8.42	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 energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
depth, the 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 OUTPUT Profile #Method1

E.G. Elev (ft)	2459.15	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.94	Wt. n-Val.		0.038	
W.S. Elev (ft)	2458.21	Reach Len. (ft)	216.72	211.05	207.69
Crit W.S. (ft)	2458.21	Flow Area (sq ft)		159.82	
E.G. Slope (ft/ft)	0.017488	Area (sq ft)		159.82	
Q Total (cfs)	1242.00	Flow (cfs)		1242.00	
Top Width (ft)	86.12	Top Width (ft)		86.12	
Vel Total (ft/s)	7.77	Avg. Vel. (ft/s)		7.77	
Max Chl Dpth (ft)	2.96	Hydr. Depth (ft)		1.86	
Conv. Total (cfs)	9391.9	Conv. (cfs)		9391.9	
Length Wtd. (ft)	211.05	Wetted Per. (ft)		86.75	
Min Ch El (ft)	2455.25	Shear (lb/sq ft)		2.01	
Alpha	1.00	Stream Power (lb/ft s)		15.63	
Frctn Loss (ft)	3.65	Cum Volume (acre-ft)	0.41	18.98	0.28
C & E Loss (ft)	0.00	Cum SA (acres)	0.10	8.42	0.08

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 energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
depth, the 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: Upper Fan 5
REACH: UpperFan5-1 RS: 1.52

INPUT
Description: Topography and Aerial indicates wash and surrounding undeveloped
desert.
T5NR5E Section 18
Q100 = 1,242 cfs
Station Elevation Data num= 13

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9882.3	2460	9899.18	2458	9909.33	2456	9923.87	2454	9970.93	2452.5
9986.61	2452	10000	2451.3	10042.88	2452	10049.97	2452.5	10071.22	2454
10115.15	2456	10140.76	2458	10153.54	2460				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9882.3	.071	9970.93	.038	10049.97	.071

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9970.9	310049.97	392.87	396.43	360.54	.1	.3

CROSS SECTION OUTPUT Profile #100-yr 6-hr

			Left OB	Channel	Right OB
E.G. Elev (ft)	2454.62	Element			
Vel Head (ft)	0.83	Wt. n-Val.	0.071	0.038	0.071
W.S. Elev (ft)	2453.79	Reach Len. (ft)	392.87	396.43	360.54
Crit W.S. (ft)	2453.79	Flow Area (sq ft)	26.23	155.74	11.85
E.G. Slope (ft/ft)	0.014936	Area (sq ft)	26.23	155.74	11.85
Q Total (cfs)	1242.00	Flow (cfs)	50.16	1169.22	22.62
Top Width (ft)	137.93	Top Width (ft)	40.57	79.04	18.32
Vel Total (ft/s)	6.41	Avg. Vel. (ft/s)	1.91	7.51	1.91
Max Chl Dpth (ft)	2.49	Hydr. Depth (ft)	0.65	1.97	0.65
Conv. Total (cfs)	10162.6	Conv. (cfs)	410.4	9567.1	185.1
Length Wtd. (ft)	396.02	Wetted Per. (ft)	40.59	79.09	18.37
Min Ch El (ft)	2451.30	Shear (lb/sq ft)	0.60	1.84	0.60
Alpha	1.30	Stream Power (lb/ft s)	1.15	13.79	1.15
Frctn Loss (ft)	6.24	Cum Volume (acre-ft)	2.45	17.12	1.01
C & E Loss (ft)	0.01	Cum SA (acres)	2.68	8.02	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.

CROSS SECTION OUTPUT Profile #Method1

			Left OB	Channel	Right OB
E.G. Elev (ft)	2454.78	Element			
Vel Head (ft)	0.97	Wt. n-Val.		0.038	
W.S. Elev (ft)	2453.81	Reach Len. (ft)	392.87	396.43	360.54
Crit W.S. (ft)	2453.79	Flow Area (sq ft)		157.14	
E.G. Slope (ft/ft)	0.017082	Area (sq ft)		157.14	
Q Total (cfs)	1242.00	Flow (cfs)		1242.00	
Top Width (ft)	79.04	Top Width (ft)		79.04	
Vel Total (ft/s)	7.90	Avg. Vel. (ft/s)		7.90	
Max Chl Dpth (ft)	2.51	Hydr. Depth (ft)		1.99	
Conv. Total (cfs)	9502.9	Conv. (cfs)		9502.9	
Length Wtd. (ft)	396.43	Wetted Per. (ft)		81.71	
Min Ch El (ft)	2451.30	Shear (lb/sq ft)		2.05	
Alpha	1.00	Stream Power (lb/ft s)		16.21	
Frctn Loss (ft)	6.36	Cum Volume (acre-ft)	0.41	18.21	0.28
C & E Loss (ft)	0.04	Cum SA (acres)	0.10	8.02	0.08

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: Upper Fan 5
REACH: UpperFan5-1 RS: 1.45

INPUT
Description: Topography and Aerial indicates wash and surrounding undeveloped desert.
T5NR5E Section 18
Q100 = 1,242 cfs
Station Elevation Data num= 13

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9890.05	2454	9904.35	2452	9918.87	2450	9937.46	2448	9952.96	2447
9968.45	2446	10000	2444.7	10036.02	2446	10040.44	2447	10044.86	2448
10060.93	2450	10092.65	2452	10127.56	2454				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9890.05	.071	9952.96	.038	10040.44	.071

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9952.9	10040.44	327.58	350.52	342.19	.1	.3

CROSS SECTION OUTPUT Profile #100-yr 6-hr

			Left OB	Channel	Right OB
E.G. Elev (ft)	2448.37	Element			
Vel Head (ft)	0.90	Wt. n-Val.	0.071	0.038	0.071
W.S. Elev (ft)	2447.47	Reach Len. (ft)	327.58	350.52	342.19
Crit W.S. (ft)	2447.46	Flow Area (sq ft)	1.72	162.67	0.49
E.G. Slope (ft/ft)	0.016662	Area (sq ft)	1.72	162.67	0.49
Q Total (cfs)	1242.00	Flow (cfs)	1.77	1239.73	0.50
Top Width (ft)	96.87	Top Width (ft)	7.30	87.48	2.08
Vel Total (ft/s)	7.53	Avg. Vel. (ft/s)	1.03	7.62	1.01
Max Chl Dpth (ft)	2.77	Hydr. Depth (ft)	0.24	1.86	0.24
Conv. Total (cfs)	9621.7	Conv. (cfs)	13.7	9604.2	3.9
Length Wtd. (ft)	350.40	Wetted Per. (ft)	7.32	87.67	2.14
Min Ch El (ft)	2444.70	Shear (lb/sq ft)	0.24	1.93	0.24
Alpha	1.02	Stream Power (lb/ft s)	0.25	14.71	0.24
Frctn Loss (ft)	5.75	Cum Volume (acre-ft)	2.32	15.67	0.96
C & E Loss (ft)	0.00	Cum SA (acres)	2.46	7.26	1.00

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.

CROSS SECTION OUTPUT Profile #Method1

			Left OB	Channel	Right OB
E.G. Elev (ft)	2448.38	Element			
Vel Head (ft)	0.84	Wt. n-Val.		0.038	
W.S. Elev (ft)	2447.54	Reach Len. (ft)	327.58	350.52	342.19
Crit W.S. (ft)	2447.45	Flow Area (sq ft)		168.58	
E.G. Slope (ft/ft)	0.015090	Area (sq ft)		168.58	
Q Total (cfs)	1242.00	Flow (cfs)		1242.00	
Top Width (ft)	87.48	Top Width (ft)		87.48	
Vel Total (ft/s)	7.37	Avg. Vel. (ft/s)		7.37	
Max Chl Dpth (ft)	2.84	Hydr. Depth (ft)		1.93	
Conv. Total (cfs)	10110.7	Conv. (cfs)		10110.7	
Length Wtd. (ft)	350.52	Wetted Per. (ft)		88.75	
Min Ch El (ft)	2444.70	Shear (lb/sq ft)		1.79	
Alpha	1.00	Stream Power (lb/ft s)		13.18	
Frctn Loss (ft)	5.72	Cum Volume (acre-ft)	0.41	16.73	0.28
C & E Loss (ft)	0.01	Cum SA (acres)	0.10	7.26	0.08

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: Upper Fan 5
REACH: UpperFan5-1 RS: 1.38

INPUT
Description: Topography and Aerial indicates wash and surrounding undeveloped desert.
T5NR5E Section 18
Q100 = 1,242 cfs
Station Elevation Data num= 16

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9844.2	2452	9852	2450	9862.97	2448	9879.1	2446	9897.06	2444
9917.89	2442	9944.42	2441	9970.96	2440	10000	2438.71	10020.96	2440
10028.93	2441	10036.96	2442	10045.98	2444	10051.66	2446	10059.72	2448
10071.33	2450								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9844.2	.071	9944.42	.038	10028.93	.071

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9944.4	210028.93	243.89	261.63	288.98	.1	.3

CROSS SECTION OUTPUT Profile #100-yr 6-hr

E.G. Elev (ft)	2442.62	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.90	Wt. n-Val.	0.071	0.038	0.071
W.S. Elev (ft)	2441.73	Reach Len. (ft)	243.89	261.63	288.98
Crit W.S. (ft)	2441.73	Flow Area (sq ft)	7.00	161.14	2.12
E.G. Slope (ft/ft)	0.016147	Area (sq ft)	7.00	161.14	2.12
Q Total (cfs)	1242.00	Flow (cfs)	9.47	1229.68	2.85
Top Width (ft)	109.61	Top Width (ft)	19.27	84.51	5.83
Vel Total (ft/s)	7.30	Avg. Vel. (ft/s)	1.35	7.63	1.35
Max Chl Dpth (ft)	3.03	Hydr. Depth (ft)	0.36	1.91	0.36
Conv. Total (cfs)	9774.2	Conv. (cfs)	74.5	9677.2	22.5
Length Wtd. (ft)	261.59	Wetted Per. (ft)	19.28	84.66	5.88
Min Ch El (ft)	2438.70	Shear (lb/sq ft)	0.37	1.92	0.36
Alpha	1.08	Stream Power (lb/ft s)	0.49	14.64	0.49
Frctn Loss (ft)	4.31	Cum Volume (acre-ft)	2.29	14.37	0.95
C & E Loss (ft)	0.01	Cum SA (acres)	2.36	6.57	0.97

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

CROSS SECTION OUTPUT Profile #Method1

E.G. Elev (ft)	2442.65	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.95	Wt. n-Val.		0.038	
W.S. Elev (ft)	2441.70	Reach Len. (ft)	243.89	261.63	288.98
Crit W.S. (ft)	2441.70	Flow Area (sq ft)		158.70	
E.G. Slope (ft/ft)	0.017711	Area (sq ft)		158.70	
Q Total (cfs)	1242.00	Flow (cfs)		1242.00	
Top Width (ft)	84.51	Top Width (ft)		84.51	
Vel Total (ft/s)	7.83	Avg. Vel. (ft/s)		7.83	
Max Chl Dpth (ft)	3.00	Hydr. Depth (ft)		1.88	
Conv. Total (cfs)	9332.5	Conv. (cfs)		9332.5	
Length Wtd. (ft)	261.63	Wetted Per. (ft)		86.06	
Min Ch El (ft)	2438.70	Shear (lb/sq ft)		2.04	
Alpha	1.00	Stream Power (lb/ft s)		15.96	
Frctn Loss (ft)	4.59	Cum Volume (acre-ft)	0.41	15.41	0.28
C & E Loss (ft)	0.01	Cum SA (acres)	0.10	6.57	0.08

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 energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
depth, the 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: Upper Fan 5
REACH: UpperFan5-1 RS: 1.33

INPUT
Description: Cross Section 1.33 is located upstream of the confluence between

Upper Fan 5 and sub-basin UF5-3. This section is upstream of concentration point CUF52 in the HEC-1 Model.

Topography and
Aerial indicates wash and surrounding undeveloped desert.
T5NR5E
Section 18
Q100 = 1,242 cfs
Station Elevation Data num= 11

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9912.43	2444	9917.83	2442	9926.18	2440	9941.76	2438	9961.75	2436
9995.25	2434	10000	2432.73	10016.25	2434	10038.21	2436	10050.01	2438
10070.05	2440								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9912.43	.071	9961.75	.038	10038.21	.071

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9961.75	10038.21	494.51	469.81	449.75	.1	.3

CROSS SECTION OUTPUT Profile #100-yr 6-hr

			Left OB	Channel	Right OB
E.G. Elev (ft)	2437.57	Element			
Vel Head (ft)	1.00	Wt. n-Val.	0.071	0.038	0.071
W.S. Elev (ft)	2436.56	Reach Len. (ft)	494.51	469.81	449.75
Crit W.S. (ft)	2436.56	Flow Area (sq ft)	1.59	153.88	0.94
E.G. Slope (ft/ft)	0.016796	Area (sq ft)	1.59	153.88	0.94
Q Total (cfs)	1242.00	Flow (cfs)	1.84	1239.08	1.08
Top Width (ft)	85.42	Top Width (ft)	5.63	76.46	3.32
Vel Total (ft/s)	7.94	Avg. Vel. (ft/s)	1.16	8.05	1.15
Max Chl Dpth (ft)	3.83	Hydr. Depth (ft)	0.28	2.01	0.28
Conv. Total (cfs)	9583.5	Conv. (cfs)	14.2	9560.9	8.3
Length Wtd. (ft)	471.11	Wetted Per. (ft)	5.66	76.83	3.37
Min Ch El (ft)	2432.73	Shear (lb/sq ft)	0.29	2.10	0.29
Alpha	1.03	Stream Power (lb/ft s)	0.34	16.91	0.34
Frctn Loss (ft)	7.58	Cum Volume (acre-ft)	2.26	13.42	0.94
C & E Loss (ft)	0.00	Cum SA (acres)	2.29	6.08	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 conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
depth, the 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 OUTPUT Profile #Method1

			Left OB	Channel	Right OB
E.G. Elev (ft)	2437.58	Element			
Vel Head (ft)	1.02	Wt. n-Val.		0.038	
W.S. Elev (ft)	2436.56	Reach Len. (ft)	494.51	469.81	449.75
Crit W.S. (ft)	2436.55	Flow Area (sq ft)		153.47	
E.G. Slope (ft/ft)	0.017357	Area (sq ft)		153.47	
Q Total (cfs)	1242.00	Flow (cfs)		1242.00	
Top Width (ft)	76.46	Top Width (ft)		76.46	
Vel Total (ft/s)	8.09	Avg. Vel. (ft/s)		8.09	
Max Chl Dpth (ft)	3.83	Hydr. Depth (ft)		2.01	
Conv. Total (cfs)	9427.3	Conv. (cfs)		9427.3	
Length Wtd. (ft)	469.81	Wetted Per. (ft)		77.94	
Min Ch El (ft)	2432.73	Shear (lb/sq ft)		2.13	
Alpha	1.00	Stream Power (lb/ft s)		17.27	
Frctn Loss (ft)	7.94	Cum Volume (acre-ft)	0.41	14.47	0.28
C & E Loss (ft)	0.02	Cum SA (acres)	0.10	6.08	0.08

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was 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: Upper Fan 5
REACH: UpperFan5-1 RS: 1.24

INPUT
Description: Cross Section 1.24 is located downstream of the confluence between Upper Fan 5 and sub-basin UF5-3.

Topography and Aerial
indicates wash and surrounding undeveloped desert.
T5NR5E Section
18
Q100 = 2,019 cfs
Station Elevation Data num= 12

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9886.64	2430	9888.3	2430	9924.16	2428	9942.16	2426	9944.34	2426
9963.18	2427.45	9979.81	2426	10000	2424.75	10034.06	2426	10055.94	2427.43
10064.7	2428	10097.16	2430						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9886.64	.071	9963.18	.038	10055.94	.071

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9963.18	10055.94	308.91	323.02	331.64	.1	.3

CROSS SECTION OUTPUT Profile #100-yr 6-hr

			Left OB	Channel	Right OB
E.G. Elev (ft)	2429.29	Element			
Vel Head (ft)	1.05	Wt. n-Val.	0.071	0.038	0.071
W.S. Elev (ft)	2428.25	Reach Len. (ft)	308.91	323.02	331.64
Crit W.S. (ft)	2428.25	Flow Area (sq ft)	56.57	214.65	5.16
E.G. Slope (ft/ft)	0.015663	Area (sq ft)	56.57	214.65	5.16
Q Total (cfs)	2019.00	Flow (cfs)	176.19	1835.44	7.37
Top Width (ft)	148.98	Top Width (ft)	43.45	92.76	12.77
Vel Total (ft/s)	7.31	Avg. Vel. (ft/s)	3.11	8.55	1.43
Max Chl Dpth (ft)	3.50	Hydr. Depth (ft)	1.30	2.31	0.40
Conv. Total (cfs)	16132.5	Conv. (cfs)	1407.8	14665.8	58.9
Length Wtd. (ft)	322.20	Wetted Per. (ft)	43.62	92.93	12.80
Min Ch El (ft)	2424.75	Shear (lb/sq ft)	1.27	2.26	0.39
Alpha	1.26	Stream Power (lb/ft s)	3.95	19.31	0.56
Frctn Loss (ft)	4.81	Cum Volume (acre-ft)	1.93	11.43	0.91
C & E Loss (ft)	0.00	Cum SA (acres)	2.01	5.17	0.86

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

CROSS SECTION OUTPUT Profile #Method1

			Left OB	Channel	Right OB
E.G. Elev (ft)	2429.61	Element			
Vel Head (ft)	1.25	Wt. n-Val.		0.038	
W.S. Elev (ft)	2428.36	Reach Len. (ft)	308.91	323.02	331.64
Crit W.S. (ft)	2428.36	Flow Area (sq ft)		224.93	

E.G. Slope (ft/ft)	0.016644	Area (sq ft)		224.93	
Q Total (cfs)	2019.00	Flow (cfs)		2019.00	
Top Width (ft)	92.76	Top Width (ft)		92.76	
Vel Total (ft/s)	8.98	Avg. Vel. (ft/s)		8.98	
Max Chl Dpth (ft)	3.61	Hydr. Depth (ft)		2.42	
Conv. Total (cfs)	15649.8	Conv. (cfs)		15649.8	
Length Wtd. (ft)	323.02	Wetted Per. (ft)		94.77	
Min Ch El (ft)	2424.75	Shear (lb/sq ft)		2.47	
Alpha	1.00	Stream Power (lb/ft s)		22.14	
Frctn Loss (ft)	4.61	Cum Volume (acre-ft)	0.41	12.43	0.28
C & E Loss (ft)	0.07	Cum SA (acres)	0.10	5.17	0.08

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 energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
depth, the 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: Upper Fan 5
REACH: UpperFan5-1 RS: 1.18

INPUT
Description: Topography and Aerial indicates wash and surrounding undeveloped desert.
T5NR5E Section 18
Q100 = 2,019 cfs
Station Elevation Data num= 18

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9776.39	2434	9800.43	2432	9819.63	2430	9843.21	2428	9867.76	2426
9887.19	2424	9921.46	2422	9937.64	2422	9944.06	2422	9969.84	2420
10007.55	242	10040.81	242	10060.36	242	10101.16	242	10109.61	2428
10112.87	243	10116.36	243	10120.04	2434				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9776.39	.071	9944.06	.03	10040.81	.071

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9944.06	10040.81	451.89	453.43	460.63	.1	.3

CROSS SECTION OUTPUT Profile #100-yr 6-hr

E.G. Elev (ft)	2424.06	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.05	Wt. n-Val.	0.071	0.038	0.071
W.S. Elev (ft)	2423.01	Reach Len. (ft)	451.89	453.43	460.63
Crit W.S. (ft)	2423.01	Flow Area (sq ft)	31.61	232.30	5.00
E.G. Slope (ft/ft)	0.014266	Area (sq ft)	31.61	232.30	5.00
Q Total (cfs)	2019.00	Flow (cfs)	67.60	1943.50	7.90
Top Width (ft)	146.56	Top Width (ft)	39.93	96.75	9.88
Vel Total (ft/s)	7.51	Avg. Vel. (ft/s)	2.14	8.37	1.58
Max Chl Dpth (ft)	3.01	Hydr. Depth (ft)	0.79	2.40	0.51
Conv. Total (cfs)	16904.0	Conv. (cfs)	566.0	16271.9	66.2
Length Wtd. (ft)	453.70	Wetted Per. (ft)	39.96	96.89	9.94
Min Ch El (ft)	2420.00	Shear (lb/sq ft)	0.70	2.14	0.45
Alpha	1.20	Stream Power (lb/ft s)	1.51	17.86	0.71
Frctn Loss (ft)	6.00	Cum Volume (acre-ft)	1.62	9.78	0.87
C & E Loss (ft)	0.05	Cum SA (acres)	1.72	4.47	0.77

Warning: The energy equation could not be 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 OUTPUT Profile #Method1

E.G. Elev (ft)	2424.21	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.01	Wt. n-Val.		0.038	
W.S. Elev (ft)	2423.20	Reach Len. (ft)	451.89	453.43	460.63
Crit W.S. (ft)	2422.98	Flow Area (sq ft)		250.39	
E.G. Slope (ft/ft)	0.012387	Area (sq ft)		250.39	
Q Total (cfs)	2019.00	Flow (cfs)		2019.00	
Top Width (ft)	96.75	Top Width (ft)		96.75	
Vel Total (ft/s)	8.06	Avg. Vel. (ft/s)		8.06	
Max Chl Dpth (ft)	3.20	Hydr. Depth (ft)		2.59	
Conv. Total (cfs)	18140.7	Conv. (cfs)		18140.7	
Length Wtd. (ft)	453.43	Wetted Per. (ft)		99.28	
Min Ch El (ft)	2420.00	Shear (lb/sq ft)		1.95	
Alpha	1.00	Stream Power (lb/ft s)		15.73	
Frctn Loss (ft)	6.58	Cum Volume (acre-ft)	0.41	10.67	0.28
C & E Loss (ft)	0.03	Cum SA (acres)	0.10	4.47	0.08

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: Upper Fan 5
REACH: UpperFan5-1 RS: 1.09

INPUT
Description: Topography and Aerial indicates wash and surrounding undeveloped desert.
T5NR5E Section 18
Q100 = 2,019 cfs
Station Elevation Data num= 17

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9789.49	2420	9800.07	2418	9829.67	2416	9846.81	2416	9870.99	2418
9885.63	2418	9906.38	2416	9917.94	2415	9929.49	2414	9932.4	2414
9983.34	2414	10000	2412.95	10017.82	2414	10043.08	2415	10068.34	2416
10098.91	2418	10120.1	2420						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9789.49	.071	9929.49	.03	8100	17.82 .071

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
9929.49 10017.82 298.87 271.94 267.8 .1 .3
Left Levee Station= 9870.99 Elevation= 2418

CROSS SECTION OUTPUT Profile #100-yr 6-hr

E.G. Elev (ft)	2417.18	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.88	Wt. n-Val.	0.071	0.038	0.071
W.S. Elev (ft)	2416.30	Reach Len. (ft)	298.87	271.94	267.80
Crit W.S. (ft)	2416.21	Flow Area (sq ft)	30.50	221.25	66.35
E.G. Slope (ft/ft)	0.012275	Area (sq ft)	30.50	221.25	66.35
Q Total (cfs)	2019.00	Flow (cfs)	78.02	1766.95	174.03
Top Width (ft)	169.65	Top Width (ft)	26.22	88.33	55.10
Vel Total (ft/s)	6.35	Avg. Vel. (ft/s)	2.56	7.99	2.62
Max Chl Dpth (ft)	3.35	Hydr. Depth (ft)	1.16	2.50	1.20

Conv. Total (cfs)	18223.5	Conv. (cfs)	704.2	15948.5	1570.8
Length Wtd. (ft)	272.28	Wetted Per. (ft)	26.32	88.39	55.15
Min Ch El (ft)	2412.95	Shear (lb/sq ft)	0.89	1.92	0.92
Alpha	1.41	Stream Power (lb/ft s)	2.27	15.32	2.42
Frctn Loss (ft)	4.04	Cum Volume (acre-ft)	1.30	7.42	0.49
C & E Loss (ft)	0.02	Cum SA (acres)	1.38	3.50	0.43

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.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water
surface was used.

CROSS SECTION OUTPUT Profile #Method1

E.G. Elev (ft)	2417.59	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.30	Wt. n-Val.		0.038	
W.S. Elev (ft)	2416.30	Reach Len. (ft)	298.87	271.94	267.80
Crit W.S. (ft)	2416.30	Flow Area (sq ft)		220.84	
E.G. Slope (ft/ft)	0.017252	Area (sq ft)		220.84	
Q Total (cfs)	2019.00	Flow (cfs)		2019.00	
Top Width (ft)	88.33	Top Width (ft)		88.33	
Vel Total (ft/s)	9.14	Avg. Vel. (ft/s)		9.14	
Max Chl Dpth (ft)	3.35	Hydr. Depth (ft)		2.50	
Conv. Total (cfs)	15371.6	Conv. (cfs)		15371.6	
Length Wtd. (ft)	271.94	Wetted Per. (ft)		92.98	
Min Ch El (ft)	2412.95	Shear (lb/sq ft)		2.56	
Alpha	1.00	Stream Power (lb/ft s)		23.39	
Frctn Loss (ft)	2.54	Cum Volume (acre-ft)	0.41	8.22	0.28
C & E Loss (ft)	0.27	Cum SA (acres)	0.10	3.50	0.08

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.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water
surface was used.

CROSS SECTION

RIVER: Upper Fan 5
REACH: UpperFan5-1 RS: 1.04

INPUT
Description: Topography and Aerial indicates wash and surrounding undeveloped
desert.
T5NR5E Section 18
Q100 = 2,019 cfs
Station Elevation Data num= 16

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9824.2	2420	9861.58	2418	9907.06	2416	9920.24	2414	9939.28	2412
9964.5	2410	9970.96	2410	9980.32	2410.81	9993.8	2410	10020.08	2410
10117.23	2412	10142.15	2414	10162.46	2416	10187.53	2418	10231.99	2420
10245.75	2422								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9824.2	.071	9939.28	.03810117.23		.071

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9939.2810117.23		196.8	191.59	167.03	.3	.5

CROSS SECTION OUTPUT Profile #100-yr 6-hr

E.G. Elev (ft)	2413.12	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.80	Wt. n-Val.	0.071	0.038	0.071
W.S. Elev (ft)	2412.32	Reach Len. (ft)	196.80	191.59	167.03
Crit W.S. (ft)	2412.32	Flow Area (sq ft)	0.49	281.45	0.64
E.G. Slope (ft/ft)	0.018267	Area (sq ft)	0.49	281.45	0.64
Q Total (cfs)	2019.00	Flow (cfs)	0.41	2018.05	0.54
Top Width (ft)	185.01	Top Width (ft)	3.06	177.95	4.00
Vel Total (ft/s)	7.14	Avg. Vel. (ft/s)	0.83	7.17	0.83
Max Chl Dpth (ft)	2.32	Hydr. Depth (ft)	0.16	1.58	0.16
Conv. Total (cfs)	14938.3	Conv. (cfs)	3.0	14931.3	4.0
Length Wtd. (ft)	191.41	Wetted Per. (ft)	3.08	178.11	4.02
Min Ch El (ft)	2410.00	Shear (lb/sq ft)	0.18	1.80	0.18
Alpha	1.01	Stream Power (lb/ft s)	0.15	12.92	0.15
Frctn Loss (ft)	0.99	Cum Volume (acre-ft)	1.19	5.85	0.28
C & E Loss (ft)	0.22	Cum SA (acres)	1.28	2.67	0.25

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 conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
depth, the 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 OUTPUT Profile #Method1

E.G. Elev (ft)	2413.38	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.40	Wt. n-Val.		0.038	
W.S. Elev (ft)	2412.98	Reach Len. (ft)	196.80	191.59	167.03
Crit W.S. (ft)		Flow Area (sq ft)		397.80	
E.G. Slope (ft/ft)	0.005855	Area (sq ft)		397.80	
Q Total (cfs)	2019.00	Flow (cfs)		2019.00	
Top Width (ft)	177.95	Top Width (ft)		177.95	
Vel Total (ft/s)	5.08	Avg. Vel. (ft/s)		5.08	
Max Chl Dpth (ft)	2.98	Hydr. Depth (ft)		2.24	
Conv. Total (cfs)	26385.9	Conv. (cfs)		26385.9	
Length Wtd. (ft)	190.86	Wetted Per. (ft)		180.06	
Min Ch El (ft)	2410.00	Shear (lb/sq ft)		0.81	
Alpha	1.00	Stream Power (lb/ft s)		4.10	
Frctn Loss (ft)	0.57	Cum Volume (acre-ft)	0.41	6.28	0.28
C & E Loss (ft)	0.01	Cum SA (acres)	0.10	2.67	0.08

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

CROSS SECTION

RIVER: Upper Fan 5
REACH: UpperFan5-1 RS: 1.01

INPUT
Description: Cross Section 1.01 is located upstream of the intersection of Upper Fan 5 and Pima Road. There are 2- 8 X 4 ft concrete box culverts are located under Pima Road.

Topography and Aerial
indicates wash, Pima Road, and surrounding undeveloped desert.
T5NR5E Section 18
Q100 = 2,019 cfs

Station Elevation Data num= 13

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9815.96	2414	9838.06	2412	9873.83	2410	9977.37	2408	9981.61	2406
10013.08	2406	10025.88	2408	10054.69	2410	10072.19	2412	10102.97	2414
10133.12	2416	10296.54	2418	10330.36	2420				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9815.96	.071	9977.37	.03	10025.88	.071

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9977.37	10025.88	109.45	106.04	105.8	.3	.5

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
9815.96	9966.85	2410	F
10027.84	10330.36	2410	F

CROSS SECTION OUTPUT Profile #100-yr 6-hr

			Left OB	Channel	Right OB
E.G. Elev (ft)	2411.86	Element			
Vel Head (ft)	0.36	Wt. n-Val.	0.071	0.038	0.071
W.S. Elev (ft)	2411.49	Reach Len. (ft)	109.45	106.04	105.80
Crit W.S. (ft)	2410.21	Flow Area (sq ft)	277.92	249.37	81.53
E.G. Slope (ft/ft)	0.002413	Area (sq ft)	277.92	249.37	81.53
Q Total (cfs)	2019.00	Flow (cfs)	473.49	1415.11	130.40
Top Width (ft)	220.60	Top Width (ft)	130.22	48.51	41.87
Vel Total (ft/s)	3.32	Avg. Vel. (ft/s)	1.70	5.67	1.60
Max Chl Dpth (ft)	5.49	Hydr. Depth (ft)	2.13	5.14	1.95
Conv. Total (cfs)	41099.9	Conv. (cfs)	9638.5	28806.8	2654.5
Length Wtd. (ft)	106.04	Wetted Per. (ft)	130.28	49.11	42.02
Min Ch El (ft)	2406.00	Shear (lb/sq ft)	0.32	0.76	0.29
Alpha	2.13	Stream Power (lb/ft s)	0.55	4.34	0.47
Frctn Loss (ft)		Cum Volume (acre-ft)	0.56	4.68	0.13
C & E Loss (ft)		Cum SA (acres)	0.97	2.18	0.16

CROSS SECTION OUTPUT Profile #Method1

			Left OB	Channel	Right OB
E.G. Elev (ft)	2412.80	Element			
Vel Head (ft)	0.38	Wt. n-Val.	0.071	0.038	0.071
W.S. Elev (ft)	2412.42	Reach Len. (ft)	109.45	106.04	105.80
Crit W.S. (ft)	2410.09	Flow Area (sq ft)	115.51	294.29	89.10
E.G. Slope (ft/ft)	0.001789	Area (sq ft)	115.51	294.29	89.10
Q Total (cfs)	2019.00	Flow (cfs)	241.99	1605.80	171.21
Top Width (ft)	101.48	Top Width (ft)	27.84	48.51	25.13
Vel Total (ft/s)	4.05	Avg. Vel. (ft/s)	2.10	5.46	1.92
Max Chl Dpth (ft)	6.42	Hydr. Depth (ft)	4.15	6.07	3.55
Conv. Total (cfs)	47734.0	Conv. (cfs)	5721.3	37965.0	4047.7
Length Wtd. (ft)	106.04	Wetted Per. (ft)	31.73	49.11	27.86
Min Ch El (ft)	2406.00	Shear (lb/sq ft)	0.41	0.67	0.36
Alpha	1.50	Stream Power (lb/ft s)	0.85	3.65	0.69
Frctn Loss (ft)		Cum Volume (acre-ft)	0.15	4.76	0.11
C & E Loss (ft)		Cum SA (acres)	0.03	2.18	0.03

Warning: The cross section had to be extended vertically during the critical depth calculations.

CULVERT

RIVER: Upper Fan 5
REACH: UpperFan5-1 RS: 1.00

INPUT
Description: Box Culverts at Pima Road Crossing

```
Distance from Upstream XS =       22
Deck/Roadway Width        =       68
Weir Coefficient          =      2.6
Upstream  Deck/Roadway Coordinates
    num=        6
     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord
 9815.96    2410        10036.08    2410        10159.31    2412
10239.06    2414        10320.72    2416        10330.36 2416.22

Upstream Bridge Cross Section Data
Station Elevation Data    num=      13
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
 9815.96    2414 9838.06    2412 9873.83    2410 9977.37    2408 9981.61    2406
10013.08    240610025.88    240810054.69    241010072.19    241210102.97    2414
10133.12    241610296.54    241810330.36    2420

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
 9815.96    .071 9977.37    .03810025.88    .071

Bank Sta: Left   Right    Coeff Contr.   Expan.
       9977.3710025.88             .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
 9815.96 9966.85    2410       F
10027.8410330.36    2410       F

Downstream  Deck/Roadway Coordinates
    num=        5
     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord
 9580.35    2412         9606.93    2412         9713.36    2410
10062.61    2410        10125.78 2411.01

Downstream Bridge Cross Section Data
Station Elevation Data    num=      21
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
 9580.35    2414 9610.45    2412 9663.18    2410 9687.47    2410 9712.84    2410
 9742.51    2408 9762.21    2408 9801.31    2410 9836.93    2412 9884.14    2410
 9926.95    2410 9932.53    2410 9949.53    2408 9975.41    2406   10000  2404.9
 10025.6    240610051.01    240810083.13    241010101.36    241210116.78    2414
10125.78    2416

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
 9580.35    .071 9949.53    .03810051.01    .071

Bank Sta: Left   Right    Coeff Contr.   Expan.
       9949.5310051.01             .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
 9580.35 9949.53    2410       F
10051.0110125.78    2410       F

Upstream Embankment side slope              =       0 horiz. to 1.0 vertical
Downstream Embankment side slope            =       0 horiz. to 1.0 vertical
Maximum allowable submergence for weir flow =     .95
Elevation at which weir flow begins         =
Energy head used in spillway design         =
Spillway height used in design              =
Weir crest shape                            = Broad Crested

Number of Culverts =  1

Culvert Name     Shape      Rise    Span
CULVERT#1            Box       4       8
FHWA Chart # 8 - flared wingwalls
FHWA Scale # 1 - Wingwall flared 30 to 75 deg.
Solution Criteria = Highest U.S. EG
Culvert Upstrm Dist  Length    Top n  Bottom n  Depth Blocked  Entrance Loss Coef   Exit Loss Coef
               22      68     .015     .015        0                    .4                 1
Number of Barrels =  2
```

Upstream Elevation = 2403.77
Centerline Stations
Sta. Sta.
9992.8510001.84
Downstream Elevation = 2403.67
Centerline Stations
Sta. Sta.
9996.0110005.01

CROSS SECTION

RIVER: Upper Fan 5
REACH: UpperFan5-1 RS: 0.99

INPUT
Description: Cross Section 0.99 is located downstream of the intersection of Upper Fan 5 and Pima Road. There are 2-8 X 4 ft concrete box culverts are located under Pima Road.

Topography and Aerial
indicate wash, Pima Road, and surrounding undeveloped desert.
T5NR4E Section 13
Q100 = 2,019 cfs
Station Elevation Data num= 21

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9580.35	2414	9610.45	2412	9663.18	2410	9687.47	2410	9712.84	2410
9742.51	2408	9762.21	2408	9801.31	2410	9836.93	2412	9884.14	2410
9926.95	2410	9932.53	2410	9949.53	2408	9975.41	2406	10000	2404.9
10025.6	2406	10051.01	2408	10083.13	2410	10101.36	2412	10116.78	2414
10125.78	2416								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9580.35	.071	9949.53	.038	10051.01	.071

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9949.53	10051.01	316.15	315.24	322.82	.3	.5

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
9580.35	9949.53	2410	F
10051.01	10125.78	2410	F

CROSS SECTION OUTPUT Profile #100-yr 6-hr

E.G. Elev (ft)	2409.70	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.14	Wt. n-Val.		0.038	
W.S. Elev (ft)	2408.56	Reach Len. (ft)	316.15	315.24	322.82
Crit W.S. (ft)	2408.56	Flow Area (sq ft)		235.81	
E.G. Slope (ft/ft)	0.015618	Area (sq ft)	17.63	235.81	2.49
Q Total (cfs)	2019.00	Flow (cfs)		2019.00	
Top Width (ft)	154.02	Top Width (ft)	43.59	101.48	8.95
Vel Total (ft/s)	8.56	Avg. Vel. (ft/s)		8.56	
Max Chl Dpth (ft)	3.66	Hydr. Depth (ft)		2.32	
Conv. Total (cfs)	16155.6	Conv. (cfs)		16155.6	
Length Wtd. (ft)	315.24	Wetted Per. (ft)		101.68	
Min Ch El (ft)	2404.90	Shear (lb/sq ft)		2.26	
Alpha	1.00	Stream Power (lb/ft s)		19.36	
Frctn Loss (ft)	4.50	Cum Volume (acre-ft)	0.19	4.09	0.02
C & E Loss (ft)	0.22	Cum SA (acres)	0.76	1.99	0.10

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: Divided flow computed for this cross-section.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical

depth, the calculated water surface came back below critical depth. This indicates that there is
not a valid subcritical answer. The program defaulted to critical depth.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid,
energy was used.

CROSS SECTION OUTPUT Profile #Method1

E.G. Elev (ft)	2409.70	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.14	Wt. n-Val.		0.038	
W.S. Elev (ft)	2408.56	Reach Len. (ft)	316.15	315.24	322.82
Crit W.S. (ft)	2408.56	Flow Area (sq ft)		235.81	
E.G. Slope (ft/ft)	0.015847	Area (sq ft)		235.81	
Q Total (cfs)	2019.00	Flow (cfs)		2019.00	
Top Width (ft)	101.48	Top Width (ft)		101.48	
Vel Total (ft/s)	8.56	Avg. Vel. (ft/s)		8.56	
Max Chl Dpth (ft)	3.66	Hydr. Depth (ft)		2.32	
Conv. Total (cfs)	16038.7	Conv. (cfs)		16038.7	
Length Wtd. (ft)	315.24	Wetted Per. (ft)		102.80	
Min Ch El (ft)	2404.90	Shear (lb/sq ft)		2.27	
Alpha	1.00	Stream Power (lb/ft s)		19.43	
Frctn Loss (ft)	4.47	Cum Volume (acre-ft)		4.12	
C & E Loss (ft)	0.22	Cum SA (acres)		1.99	

Warning: The energy equation could not be 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,
energy was used.

CROSS SECTION

RIVER: Upper Fan 5
REACH: UpperFan5-1 RS: 0.93

INPUT
Description: Topography and Aerial indicates wash and surrounding undeveloped desert.
T5NR4E Section 13
Q100 = 2,019 cfs
Station Elevation Data num= 18

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9655.04	2412	9679.37	2410	9724.66	2408	9781.15	2406	9796.63	2404
9862.67	2402	9885.34	2402	9925.27	2402.42	9938.47	2402	9976.27	2400
10000	2398.75	10031.76	2400	10097.35	2402	10132.36	2404	10154.48	2406
10190.09	2408	10229.78	2410	10274.1	2412				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9655.04	.071	9938.47	.038	10097.35	.071

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9938.47	10097.35	358.79	355.79	352.94	.1	.3

CROSS SECTION OUTPUT Profile #100-yr 6-hr

E.G. Elev (ft)	2403.01	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.71	Wt. n-Val.	0.071	0.038	0.071
W.S. Elev (ft)	2402.30	Reach Len. (ft)	358.79	355.79	352.94
Crit W.S. (ft)	2402.16	Flow Area (sq ft)	13.85	296.41	0.78

E.G. Slope (ft/ft)	0.013073	Area (sq ft)	13.85	296.41	0.78
Q Total (cfs)	2019.00	Flow (cfs)	11.28	2007.20	0.52
Top Width (ft)	234.33	Top Width (ft)	70.23	158.88	5.22
Vel Total (ft/s)	6.49	Avg. Vel. (ft/s)	0.81	6.77	0.67
Max Chl Dpth (ft)	3.55	Hydr. Depth (ft)	0.20	1.87	0.15
Conv. Total (cfs)	17658.4	Conv. (cfs)	98.7	17555.1	4.6
Length Wtd. (ft)	355.80	Wetted Per. (ft)	70.24	159.02	5.23
Min Ch El (ft)	2398.75	Shear (lb/sq ft)	0.16	1.52	0.12
Alpha	1.08	Stream Power (lb/ft s)	0.13	10.30	0.08
Frctn Loss (ft)	5.06	Cum Volume (acre-ft)	0.08	2.16	0.01
C & E Loss (ft)	0.04	Cum SA (acres)	0.34	1.05	0.05

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 OUTPUT Profile #Method1

			Left OB	Channel	Right OB
E.G. Elev (ft)	2403.02	Element			
Vel Head (ft)	0.70	Wt. n-Val.		0.038	
W.S. Elev (ft)	2402.32	Reach Len. (ft)	358.79	355.79	352.94
Crit W.S. (ft)	2402.13	Flow Area (sq ft)		299.94	
E.G. Slope (ft/ft)	0.012784	Area (sq ft)		299.94	
Q Total (cfs)	2019.00	Flow (cfs)		2019.00	
Top Width (ft)	158.88	Top Width (ft)		158.88	
Vel Total (ft/s)	6.73	Avg. Vel. (ft/s)		6.73	
Max Chl Dpth (ft)	3.57	Hydr. Depth (ft)		1.89	
Conv. Total (cfs)	17857.0	Conv. (cfs)		17857.0	
Length Wtd. (ft)	355.79	Wetted Per. (ft)		159.66	
Min Ch El (ft)	2398.75	Shear (lb/sq ft)		1.50	
Alpha	1.00	Stream Power (lb/ft s)		10.09	
Frctn Loss (ft)	5.05	Cum Volume (acre-ft)		2.18	
C & E Loss (ft)	0.05	Cum SA (acres)		1.05	

Warning: The energy loss was 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: Upper Fan 5
REACH: UpperFan5-1 RS: 0.86

INPUT
Description: Cross Section 0.86 is located at the downstream project boundary
for Upper Fan 5. The calculated floodplain will tie into the existing Zone AO located downstream of Cross Section 0.86.

Topography and Aerial indicates wash and surrounding
undeveloped desert.
T5NR4E Section 13
Q100 = 2,019 cfs
Station Elevation Data num= 11

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9848.65	2402	9868.08	2400	9884.52	2398	9918.57	2396	9969.75	2394
10000	2392.47	10003.69	2394	10016.97	2396	10033.6	2398	10039.64	2400
10049.6	2402								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9848.65	.071	9918.57	.038	10016.97	.071

Bank Sta: Left	Right	Coeff Contr.	Expan.
9918.57	10016.97	.1	.3

CROSS SECTION OUTPUT Profile #100-yr 6-hr

E.G. Elev (ft)	2397.91	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.15	Wt. n-Val.	0.071	0.038	0.071
W.S. Elev (ft)	2396.76	Reach Len. (ft)			
Crit W.S. (ft)	2396.76	Flow Area (sq ft)	4.92	233.09	2.40
E.G. Slope (ft/ft)	0.015497	Area (sq ft)	4.92	233.09	2.40
Q Total (cfs)	2019.00	Flow (cfs)	6.71	2009.02	3.27
Top Width (ft)	117.66	Top Width (ft)	12.94	98.40	6.32
Vel Total (ft/s)	8.40	Avg. Vel. (ft/s)	1.37	8.62	1.36
Max Chl Dpth (ft)	4.29	Hydr. Depth (ft)	0.38	2.37	0.38
Conv. Total (cfs)	16218.5	Conv. (cfs)	53.9	16138.3	26.2
Length Wtd. (ft)		Wetted Per. (ft)	12.96	98.93	6.36
Min Ch El (ft)	2392.47	Shear (lb/sq ft)	0.37	2.28	0.37
Alpha	1.05	Stream Power (lb/ft s)	0.50	19.65	0.50
Frctn Loss (ft)		Cum Volume (acre-ft)			
C & E Loss (ft)		Cum SA (acres)			

Warning: Slope too steep for slope area to converge during supercritical flow calculations (normal depth is
below critical depth). Water surface set to critical depth.

CROSS SECTION OUTPUT Profile #Method1

E.G. Elev (ft)	2397.93	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.16	Wt. n-Val.		0.038	
W.S. Elev (ft)	2396.76	Reach Len. (ft)			
Crit W.S. (ft)	2396.76	Flow Area (sq ft)		233.52	
E.G. Slope (ft/ft)	0.015876	Area (sq ft)		233.52	
Q Total (cfs)	2019.00	Flow (cfs)		2019.00	
Top Width (ft)	98.40	Top Width (ft)		98.40	
Vel Total (ft/s)	8.65	Avg. Vel. (ft/s)		8.65	
Max Chl Dpth (ft)	4.29	Hydr. Depth (ft)		2.37	
Conv. Total (cfs)	16023.6	Conv. (cfs)		16023.6	
Length Wtd. (ft)		Wetted Per. (ft)		100.46	
Min Ch El (ft)	2392.47	Shear (lb/sq ft)		2.30	
Alpha	1.00	Stream Power (lb/ft s)		19.92	
Frctn Loss (ft)		Cum Volume (acre-ft)			
C & E Loss (ft)		Cum SA (acres)			

Warning: The cross section had to be extended vertically during the critical depth calculations.
Warning: Slope too steep for slope area to converge during supercritical flow calculations (normal depth is
below critical depth). Water surface set to critical depth.
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.

SUMMARY OF MANNING'S N VALUES

River:Upper Fan 5

Reach	River Sta.	n1	n2	n3
UpperFan5-1	4.95	.068	.043	.068
UpperFan5-1	4.88	.068	.043	.068
UpperFan5-1	4.80	.068	.043	.068
UpperFan5-1	4.76	.068	.043	.068
UpperFan5-1	4.67	.068	.043	.068
UpperFan5-1	4.62	.068	.043	.068
UpperFan5-1	4.52	.068	.043	.068
UpperFan5-1	4.42	.068	.043	.068
UpperFan5-1	4.33	.068	.043	.068
UpperFan5-1	4.25	.068	.043	.068
UpperFan5-1	4.16	.068	.043	.068
UpperFan5-1	4.11	.068	.043	.068
UpperFan5-1	4.04	.068	.043	.068

UpperFan5-1	3.96	.068	.043	.068
UpperFan5-1	3.92	.068	.043	.068
UpperFan5-1	3.87	.068	.043	.068
UpperFan5-1	3.78	.068	.043	.068
UpperFan5-1	3.71	.068	.043	.068
UpperFan5-1	3.67	.068	.043	.068
UpperFan5-1	3.58	.068	.043	.068
UpperFan5-1	3.52	.068	.043	.068
UpperFan5-1	3.49	.068	.043	.068
UpperFan5-1	3.42	.068	.043	.068
UpperFan5-1	3.33	.071	.038	.071
UpperFan5-1	3.23	.071	.038	.071
UpperFan5-1	3.14	.071	.038	.071
UpperFan5-1	3.10	.071	.038	.071
UpperFan5-1	3.03	.071	.038	.071
UpperFan5-1	3.00	.071	.038	.071
UpperFan5-1	2.99	Culvert		
UpperFan5-1	2.98	.071	.038	.071
UpperFan5-1	2.91	.071	.038	.071
UpperFan5-1	2.86	.071	.038	.071
UpperFan5-1	2.78	.071	.038	.071
UpperFan5-1	2.74	.071	.038	.071
UpperFan5-1	2.66	.071	.038	.071
UpperFan5-1	2.60	.071	.038	.071
UpperFan5-1	2.56	.071	.038	.071
UpperFan5-1	2.50	.071	.038	.071
UpperFan5-1	2.44	.071	.038	.071
UpperFan5-1	2.38	.071	.038	.071
UpperFan5-1	2.32	.071	.038	.071
UpperFan5-1	2.27	.071	.038	.071
UpperFan5-1	2.22	.071	.038	.071
UpperFan5-1	2.14	.071	.038	.071
UpperFan5-1	2.04	.071	.038	.071
UpperFan5-1	2.00	.071	.038	.071
UpperFan5-1	1.92	.071	.038	.071
UpperFan5-1	1.85	.071	.038	.071
UpperFan5-1	1.76	.071	.038	.071
UpperFan5-1	1.67	.071	.038	.071
UpperFan5-1	1.61	.071	.038	.071
UpperFan5-1	1.56	.071	.038	.071
UpperFan5-1	1.52	.071	.038	.071
UpperFan5-1	1.45	.071	.038	.071
UpperFan5-1	1.38	.071	.038	.071
UpperFan5-1	1.33	.071	.038	.071
UpperFan5-1	1.24	.071	.038	.071
UpperFan5-1	1.18	.071	.038	.071
UpperFan5-1	1.09	.071	.038	.071
UpperFan5-1	1.04	.071	.038	.071
UpperFan5-1	1.01	.071	.038	.071
UpperFan5-1	1.00	Culvert		
UpperFan5-1	0.99	.071	.038	.071
UpperFan5-1	0.93	.071	.038	.071
UpperFan5-1	0.86	.071	.038	.071

SUMMARY OF REACH LENGTHS

River: Upper Fan 5

Reach	River Sta.	Left	Channel	Right
UpperFan5-1	4.95	378	368.99	362
UpperFan5-1	4.88	441	442.75	443
UpperFan5-1	4.80	197	203.73	203
UpperFan5-1	4.76	493.45	493.56	485.78
UpperFan5-1	4.67	291.04	283.64	284.75
UpperFan5-1	4.62	489	504.39	508
UpperFan5-1	4.52	499	501.68	487
UpperFan5-1	4.42	506	512.22	503

UpperFan5-1	4.33	398	416.65	427
UpperFan5-1	4.25	460.02	445.54	405.78
UpperFan5-1	4.16	264.09	262.84	252.02
UpperFan5-1	4.11	408.63	416.74	449.86
UpperFan5-1	4.04	422.34	421	400.13
UpperFan5-1	3.96	166.62	167.89	133.41
UpperFan5-1	3.92	264.72	274.65	296.91
UpperFan5-1	3.87	517.71	497.13	424.8
UpperFan5-1	3.78	379.77	379.46	373.37
UpperFan5-1	3.71	172.35	170.14	170.24
UpperFan5-1	3.67	417.22	488.4	488.24
UpperFan5-1	3.58	301.73	297.05	296.49
UpperFan5-1	3.52	200.4	204.58	204.33
UpperFan5-1	3.49	365.59	335.09	324.72
UpperFan5-1	3.42	515.58	514.27	529.05
UpperFan5-1	3.33	484	492.31	489.8
UpperFan5-1	3.23	488	479.92	474.05
UpperFan5-1	3.14	231.71	238.01	229.88
UpperFan5-1	3.10	291.91	322.99	315.57
UpperFan5-1	3.03	172.73	178.18	181.85
UpperFan5-1	3.00	87.71	92.18	86.31
UpperFan5-1	2.99	Culvert		
UpperFan5-1	2.98	420.16	396.36	403.18
UpperFan5-1	2.91	285.97	270.06	263.55
UpperFan5-1	2.86	426.38	426.67	419.58
UpperFan5-1	2.78	214.98	213.52	211.37
UpperFan5-1	2.74	388.16	388.31	382.56
UpperFan5-1	2.66	349.42	352.9	357.99
UpperFan5-1	2.60	171.03	176.31	174.39
UpperFan5-1	2.56	319.18	322.13	319.66
UpperFan5-1	2.50	300.68	326.66	331.82
UpperFan5-1	2.44	333.37	317.86	302.13
UpperFan5-1	2.38	286.09	291.42	297.84
UpperFan5-1	2.32	279.28	279.14	282.34
UpperFan5-1	2.27	289.4	285.58	277.15
UpperFan5-1	2.22	384.71	414.67	415.59
UpperFan5-1	2.14	525.26	519.63	492.93
UpperFan5-1	2.04	226.85	229.52	233.38
UpperFan5-1	2.00	444.34	410.81	395.86
UpperFan5-1	1.92	335.54	375.85	383.94
UpperFan5-1	1.85	449.33	472.05	493.11
UpperFan5-1	1.76	455.75	470.45	487.88
UpperFan5-1	1.67	356.17	331.2	318.47
UpperFan5-1	1.61	235.43	235.59	232.81
UpperFan5-1	1.56	216.72	211.05	207.69
UpperFan5-1	1.52	392.87	396.43	360.54
UpperFan5-1	1.45	327.58	350.52	342.19
UpperFan5-1	1.38	243.89	261.63	288.98
UpperFan5-1	1.33	494.51	469.81	449.75
UpperFan5-1	1.24	308.91	323.02	331.64
UpperFan5-1	1.18	451.89	453.43	460.63
UpperFan5-1	1.09	298.87	271.94	267.8
UpperFan5-1	1.04	196.8	191.59	167.03
UpperFan5-1	1.01	109.45	106.04	105.8
UpperFan5-1	1.00	Culvert		
UpperFan5-1	0.99	316.15	315.24	322.82
UpperFan5-1	0.93	358.79	355.79	352.94
UpperFan5-1	0.86			

SUMMARY OF CONTRACTION AND EXPANSION COEFFICIENTS
River: Upper Fan 5

Reach	River Sta.	Contr.	Expan.
UpperFan5-1	4.95	.1	.3
UpperFan5-1	4.88	.1	.3
UpperFan5-1	4.80	.1	.3

UpperFan5-1	4.76	.1	.3
UpperFan5-1	4.67	.1	.3
UpperFan5-1	4.62	.1	.3
UpperFan5-1	4.52	.1	.3
UpperFan5-1	4.42	.1	.3
UpperFan5-1	4.33	.1	.3
UpperFan5-1	4.25	.1	.3
UpperFan5-1	4.16	.1	.3
UpperFan5-1	4.11	.1	.3
UpperFan5-1	4.04	.1	.3
UpperFan5-1	3.96	.1	.3
UpperFan5-1	3.92	.1	.3
UpperFan5-1	3.87	.1	.3
UpperFan5-1	3.78	.1	.3
UpperFan5-1	3.71	.1	.3
UpperFan5-1	3.67	.1	.3
UpperFan5-1	3.58	.1	.3
UpperFan5-1	3.52	.1	.3
UpperFan5-1	3.49	.1	.3
UpperFan5-1	3.42	.1	.3
UpperFan5-1	3.33	.1	.3
UpperFan5-1	3.23	.1	.3
UpperFan5-1	3.14	.1	.3
UpperFan5-1	3.10	.1	.3
UpperFan5-1	3.03	.3	.5
UpperFan5-1	3.00	.3	.5
UpperFan5-1	2.99	Culvert	
UpperFan5-1	2.98	.3	.5
UpperFan5-1	2.91	.1	.3
UpperFan5-1	2.86	.1	.3
UpperFan5-1	2.78	.1	.3
UpperFan5-1	2.74	.1	.3
UpperFan5-1	2.66	.1	.3
UpperFan5-1	2.60	.1	.3
UpperFan5-1	2.56	.1	.3
UpperFan5-1	2.50	.1	.3
UpperFan5-1	2.44	.1	.3
UpperFan5-1	2.38	.1	.3
UpperFan5-1	2.32	.1	.3
UpperFan5-1	2.27	.1	.3
UpperFan5-1	2.22	.1	.3
UpperFan5-1	2.14	.1	.3
UpperFan5-1	2.04	.1	.3
UpperFan5-1	2.00	.1	.3
UpperFan5-1	1.92	.1	.3
UpperFan5-1	1.85	.1	.3
UpperFan5-1	1.76	.1	.3
UpperFan5-1	1.67	.1	.3
UpperFan5-1	1.61	.1	.3
UpperFan5-1	1.56	.1	.3
UpperFan5-1	1.52	.1	.3
UpperFan5-1	1.45	.1	.3
UpperFan5-1	1.38	.1	.3
UpperFan5-1	1.33	.1	.3
UpperFan5-1	1.24	.1	.3
UpperFan5-1	1.18	.1	.3
UpperFan5-1	1.09	.1	.3
UpperFan5-1	1.04	.3	.5
UpperFan5-1	1.01	.3	.5
UpperFan5-1	1.00	Culvert	
UpperFan5-1	0.99	.3	.5
UpperFan5-1	0.93	.1	.3
UpperFan5-1	0.86	.1	.3

Profile Output Table - Standard Table 1

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	

UpperFan5-1	4.95		100-yr 6-hr		404.00	2768.00	2769.78	2769.77	2770.33
0.018725	6.50	84.78	84.91		0.90				
UpperFan5-1	4.95		Method1		404.00	2768.00	2770.25	2769.89	2770.85
0.013939	6.20	65.15	31.24		0.76				
UpperFan5-1	4.88		100-yr 6-hr		404.00	2760.69	2763.16	2763.16	2763.75
0.016882	6.65	81.76	80.31		0.87				
UpperFan5-1	4.88		Method1		404.00	2760.69	2763.18	2763.18	2764.10
0.024805	7.71	52.42	28.63		1.00				
UpperFan5-1	4.80		100-yr 6-hr		404.00	2752.53	2754.81	2754.72	2755.24
0.019837	5.27	78.84	84.69		0.87				
UpperFan5-1	4.80		Method1		404.00	2752.53	2755.22	2754.71	2755.45
0.007291	3.88	104.13	67.47		0.55				
UpperFan5-1	4.76		100-yr 6-hr		404.00	2750.00	2751.85	2751.64	2752.16
0.011658	5.36	120.45	122.76		0.72				
UpperFan5-1	4.76		Method1		404.00	2750.00	2751.96	2751.96	2752.87
0.025256	7.66	52.75	28.75		1.00				
UpperFan5-1	4.67		100-yr 6-hr		979.00	2741.37	2743.87	2743.80	2744.48
0.017707	6.39	170.13	142.39		0.88				
UpperFan5-1	4.67		Method1		979.00	2741.37	2744.45	2743.77	2744.82
0.007316	4.92	199.16	89.90		0.58				
UpperFan5-1	4.62		100-yr 6-hr		979.00	2736.57	2739.58	2739.32	2739.89
0.014117	5.75	270.43	228.18		0.78				
UpperFan5-1	4.62		Method1		979.00	2736.57	2740.24	2740.24	2741.41
0.021832	8.68	112.83	48.45		1.00				
UpperFan5-1	4.52		100-yr 6-hr		979.00	2728.60	2731.31	2731.21	2731.77
0.018925	6.07	208.86	191.93		0.89				
UpperFan5-1	4.52		Method1		979.00	2728.60	2731.81	2731.52	2732.39
0.013586	6.15	159.30	81.86		0.78				
UpperFan5-1	4.42		100-yr 6-hr		979.00	2720.68	2723.72		2724.02
0.012871	5.48	256.13	191.26		0.75				
UpperFan5-1	4.42		Method1		979.00	2720.68	2724.44	2724.15	2725.25
0.014826	7.25	135.11	56.67		0.83				
UpperFan5-1	4.33		100-yr 6-hr		979.00	2712.30	2715.28	2715.28	2715.97
0.019647	7.30	177.03	140.59		0.94				
UpperFan5-1	4.33		Method1		979.00	2712.30	2715.55	2715.50	2716.51
0.019801	7.86	124.54	58.51		0.95				
UpperFan5-1	4.25		100-yr 6-hr		979.00	2705.49	2707.54	2706.75	2707.71
0.010722	4.66	343.76	305.94		0.67				
UpperFan5-1	4.25		Method1		979.00	2705.49	2708.33	2708.33	2709.04
0.015938	7.40	175.76	116.56		0.86				
UpperFan5-1	4.16		100-yr 6-hr		979.00	2698.60	2701.64	2701.44	2702.09
0.016177	5.85	204.87	180.03		0.83				
UpperFan5-1	4.16		Method1		979.00	2698.60	2701.99	2701.63	2702.51
0.012278	5.77	169.71	89.47		0.74				
UpperFan5-1	4.11		100-yr 6-hr		979.00	2694.75	2697.25	2697.13	2697.61
0.018106	5.37	242.15	271.73		0.85				
UpperFan5-1	4.11		Method1		979.00	2694.75	2697.35	2697.35	2698.03
0.025052	6.62	147.95	110.38		1.01				
UpperFan5-1	4.04		100-yr 6-hr		979.00	2686.00	2688.73	2688.73	2689.24
0.021876	5.94	188.56	197.79		0.93				
UpperFan5-1	4.04		Method1		979.00	2686.00	2689.07	2688.73	2689.45
0.013051	4.92	198.93	141.21		0.73				
UpperFan5-1	3.96		100-yr 6-hr		979.00	2678.52	2680.75		2681.09
0.016763	5.15	209.16	142.28		0.82				
UpperFan5-1	3.96		Method1		979.00	2678.52	2681.29	2681.29	2682.19
0.023387	7.64	128.09	71.90		1.01				

UpperFan5-1	3.92		100-yr 6-hr		979.00	2675.00	2677.60	2677.51	2678.18
0.019850	6.11	161.65		119.10	0.91				
UpperFan5-1	3.92		Method1		979.00	2675.00	2677.66	2677.50	2678.20
0.018006	5.88	166.40		114.57	0.86				
UpperFan5-1	3.87		100-yr 6-hr		979.00	2669.62	2672.72	2672.72	2673.55
0.014294	7.47	158.02		141.61	0.84				
UpperFan5-1	3.87		Method1		979.00	2669.62	2672.80	2672.52	2673.69
0.014772	7.59	128.99		51.00	0.84				
UpperFan5-1	3.78		100-yr 6-hr		979.00	2662.00	2663.59	2663.59	2664.25
0.022940	6.54	155.11		129.72	0.97				
UpperFan5-1	3.78		Method1		979.00	2662.00	2663.57	2663.57	2664.27
0.024827	6.70	146.10		105.72	1.00				
UpperFan5-1	3.71		100-yr 6-hr		979.00	2654.00	2656.04	2655.94	2656.59
0.016049	6.13	185.19		157.83	0.84				
UpperFan5-1	3.71		Method1		979.00	2654.00	2656.59		2656.97
0.007465	4.94	197.99		89.60	0.59				
UpperFan5-1	3.67		100-yr 6-hr		979.00	2651.70	2653.43	2653.24	2653.76
0.016348	5.70	259.41		246.24	0.83				
UpperFan5-1	3.67		Method1		979.00	2651.70	2653.88	2653.88	2654.84
0.023223	7.88	124.30		65.23	1.01				
UpperFan5-1	3.58		100-yr 6-hr		979.00	2642.00	2644.83	2644.70	2645.40
0.017919	6.05	164.54		126.80	0.87				
UpperFan5-1	3.58		Method1		979.00	2642.00	2645.08		2645.50
0.010984	5.21	188.05		107.83	0.69				
UpperFan5-1	3.52		100-yr 6-hr		979.00	2636.75	2639.66	2639.66	2640.31
0.016252	7.27	199.36		175.88	0.88				
UpperFan5-1	3.52		Method1		979.00	2636.75	2639.88	2639.88	2641.03
0.020964	8.61	113.74		48.26	0.99				
UpperFan5-1	3.49		100-yr 6-hr		979.00	2633.30	2635.91	2635.63	2636.38
0.012778	5.53	188.73		190.69	0.75				
UpperFan5-1	3.49		Method1		979.00	2633.30	2635.93	2635.61	2636.42
0.012875	5.56	175.95		103.11	0.75				
UpperFan5-1	3.42		100-yr 6-hr		979.00	2627.00	2630.26	2630.19	2631.14
0.019229	7.53	131.60		79.53	0.94				
UpperFan5-1	3.42		Method1		979.00	2627.00	2630.26	2630.17	2631.14
0.019354	7.53	130.01		65.04	0.94				
UpperFan5-1	3.33		100-yr 6-hr		1242.00	2618.20	2621.44	2621.44	2622.19
0.016017	7.07	194.98		153.59	0.95				
UpperFan5-1	3.33		Method1		1242.00	2618.20	2621.49	2621.43	2622.27
0.015739	7.09	175.30		99.19	0.94				
UpperFan5-1	3.23		100-yr 6-hr		1242.00	2610.00	2612.46	2612.46	2613.09
0.019606	7.51	244.53		192.68	1.04				
UpperFan5-1	3.23		Method1		1242.00	2610.00	2613.01	2613.01	2614.11
0.017341	8.42	147.48		68.11	1.01				
UpperFan5-1	3.14		100-yr 6-hr		1242.00	2602.10	2605.70		2606.24
0.010409	5.94	215.52		136.71	0.78				
UpperFan5-1	3.14		Method1		1242.00	2602.10	2605.81		2606.30
0.008780	5.63	220.55		113.82	0.71				
UpperFan5-1	3.10		100-yr 6-hr		1242.00	2598.50	2602.23	2602.23	2603.32
0.014110	8.48	159.70		82.23	0.95				
UpperFan5-1	3.10		Method1		1242.00	2598.50	2602.18	2602.18	2603.41
0.016829	8.90	139.62		57.46	1.01				
UpperFan5-1	3.03		100-yr 6-hr		1242.00	2593.00	2597.46		2598.14
0.005739	6.78	225.36		120.58	0.64				
UpperFan5-1	3.03		Method1		1242.00	2593.00	2597.41		2598.23
0.007212	7.26	171.16		49.56	0.69				

UpperFan5-1	3.00		100-yr 6-hr		1242.00	2590.00	2597.65	2592.72	2597.72
0.000239	2.17	575.73	294.11		0.15				
UpperFan5-1	3.00		Method1		1242.00	2590.00	2597.64	2592.72	2597.72
0.000286	2.18	568.76	83.34		0.15				
UpperFan5-1	2.99				Culvert				
UpperFan5-1	2.98		100-yr 6-hr		1242.00	2590.00	2591.54	2591.54	2592.21
0.018477	6.55	189.89	225.19		0.99				
UpperFan5-1	2.98		Method1		1242.00	2590.00	2592.03	2591.55	2592.39
0.006884	4.84	256.52	138.16		0.63				
UpperFan5-1	2.91		100-yr 6-hr		1242.00	2581.70	2585.66	2585.66	2586.59
0.008537	8.81	256.64	171.17		0.80				
UpperFan5-1	2.91		Method1		1242.00	2581.70	2585.80	2585.80	2587.75
0.018041	11.19	110.98	28.07		0.99				
UpperFan5-1	2.86		100-yr 6-hr		1242.00	2577.70	2580.82	2580.82	2581.82
0.015001	8.16	179.31	184.99		0.96				
UpperFan5-1	2.86		Method1		1242.00	2577.70	2580.81	2580.81	2581.93
0.016965	8.51	145.95	65.59		1.01				
UpperFan5-1	2.78		100-yr 6-hr		1242.00	2570.93	2574.64	2574.64	2574.80
0.003797	4.50	632.86	542.91		0.49				
UpperFan5-1	2.78		Method1		1242.00	2570.93	2574.92	2574.92	2575.77
0.010079	7.77	217.78	148.31		0.81				
UpperFan5-1	2.74		100-yr 6-hr		1242.00	2568.25	2570.53	2569.97	2570.93
0.026825	6.43	346.63	556.35		1.13				
UpperFan5-1	2.74		Method1		1242.00	2568.25	2571.15	2571.10	2571.90
0.016929	6.96	178.52	110.11		0.96				
UpperFan5-1	2.66		100-yr 6-hr		1242.00	2562.00	2564.21	2563.84	2564.57
0.011081	5.31	329.95	359.40		0.77				
UpperFan5-1	2.66		Method1		1242.00	2562.00	2564.17	2564.17	2564.90
0.019165	6.85	181.38	126.88		1.01				
UpperFan5-1	2.60		100-yr 6-hr		1242.00	2555.47	2557.19	2557.19	2557.70
0.041814	7.58	248.71	277.74		1.39				
UpperFan5-1	2.60		Method1		1242.00	2555.47	2558.15	2558.15	2558.72
0.013540	6.87	271.35	221.27		0.88				
UpperFan5-1	2.56		100-yr 6-hr		1242.00	2552.00	2552.91	2552.44	2553.10
0.015117	3.86	356.02	293.46		0.80				
UpperFan5-1	2.56		Method1		1242.00	2552.00	2553.79	2553.79	2554.60
0.018743	7.22	172.05	107.52		1.01				
UpperFan5-1	2.50		100-yr 6-hr		1242.00	2546.00	2547.59	2547.44	2548.03
0.016345	5.88	264.09	224.60		0.92				
UpperFan5-1	2.50		Method1		1242.00	2546.00	2547.96	2547.75	2548.51
0.012359	5.98	207.69	126.44		0.82				
UpperFan5-1	2.44		100-yr 6-hr		1242.00	2539.50	2542.75	2542.75	2543.47
0.012216	7.16	230.68	193.13		0.86				
UpperFan5-1	2.44		Method1		1242.00	2539.50	2542.69	2542.69	2543.74
0.017142	8.22	151.13	72.70		1.00				
UpperFan5-1	2.38		100-yr 6-hr		1242.00	2534.00	2536.50	2536.50	2537.47
0.016538	7.92	158.98	89.27		0.99				
UpperFan5-1	2.38		Method1		1242.00	2534.00	2536.50	2536.48	2537.48
0.016770	7.92	156.73	78.83		0.99				
UpperFan5-1	2.32		100-yr 6-hr		1242.00	2529.00	2531.48	2531.48	2532.28
0.017607	7.20	175.93	120.71		0.99				
UpperFan5-1	2.32		Method1		1242.00	2529.00	2531.46	2531.46	2532.29
0.018603	7.30	170.10	104.87		1.01				
UpperFan5-1	2.27		100-yr 6-hr		1242.00	2523.60	2526.20	2526.14	2527.21
0.015222	8.06	154.23	72.27		0.96				
UpperFan5-1	2.27		Method1		1242.00	2523.60	2526.28	2526.13	2527.22
0.013615	7.77	159.82	70.70		0.91				

UpperFan5-1	2.22		100-yr 6-hr		1242.00	2518.60	2521.90	2521.90	2522.90
0.014936	8.08	161.23		89.31	0.96				
UpperFan5-1	2.22		Method1		1242.00	2518.60	2521.87	2521.87	2522.93
0.016491	8.27	150.10		68.97	0.99				
UpperFan5-1	2.14		100-yr 6-hr		1242.00	2511.25	2514.74	2514.74	2515.89
0.015444	8.63	147.14		70.40	0.99				
UpperFan5-1	2.14		Method1		1242.00	2511.25	2514.72	2514.72	2515.91
0.016710	8.76	141.70		60.32	1.01				
UpperFan5-1	2.04		100-yr 6-hr		1242.00	2502.00	2505.51	2505.51	2506.86
0.013419	9.41	144.17		62.88	0.95				
UpperFan5-1	2.04		Method1		1242.00	2502.00	2505.46	2505.46	*2506.96
0.016405	9.83	126.33		42.52	1.01				
UpperFan5-1	2.00		100-yr 6-hr		1242.00	2496.52	2499.44	2499.44	2500.30
0.016558	7.63	180.64		113.05	0.98				
UpperFan5-1	2.00		Method1		1242.00	2496.52	2499.48	2499.48	2500.45
0.017586	7.91	157.00		82.03	1.01				
UpperFan5-1	1.92		100-yr 6-hr		1242.00	2489.30	2491.79	2491.79	2492.66
0.015915	7.52	171.85		107.14	0.96				
UpperFan5-1	1.92		Method1		1242.00	2489.30	2491.76	2491.76	2492.69
0.017754	7.74	160.43		86.66	1.00				
UpperFan5-1	1.85		100-yr 6-hr		1242.00	2482.48	2484.90	2484.75	2485.51
0.013354	6.24	199.51		125.73	0.86				
UpperFan5-1	1.85		Method1		1242.00	2482.48	2484.93	2484.74	2485.52
0.012913	6.17	201.41		122.16	0.85				
UpperFan5-1	1.76		100-yr 6-hr		1242.00	2474.70	2477.51	2477.51	2478.46
0.016620	7.84	160.18		89.20	0.99				
UpperFan5-1	1.76		Method1		1242.00	2474.70	2477.50	2477.50	2478.47
0.017273	7.90	157.30		81.40	1.00				
UpperFan5-1	1.67		100-yr 6-hr		1242.00	2466.00	2468.86	2468.86	2470.02
0.015378	8.64	147.80		71.16	0.98				
UpperFan5-1	1.67		Method1		1242.00	2466.00	2469.11	2468.84	2470.07
0.011762	7.88	157.66		59.75	0.85				
UpperFan5-1	1.61		100-yr 6-hr		1242.00	2459.50	2463.80	2463.80	2465.28
0.012825	9.91	139.80		56.08	0.95				
UpperFan5-1	1.61		Method1		1242.00	2459.50	2463.74	2463.74	2465.43
0.016423	10.42	119.20		35.60	1.00				
UpperFan5-1	1.56		100-yr 6-hr		1242.00	2455.25	2458.21	2458.21	2459.15
0.017285	7.76	160.37		89.09	1.00				
UpperFan5-1	1.56		Method1		1242.00	2455.25	2458.21	2458.21	2459.15
0.017488	7.77	159.82		86.12	1.01				
UpperFan5-1	1.52		100-yr 6-hr		1242.00	2451.30	2453.79	2453.79	2454.62
0.014936	7.51	193.82		137.93	0.94				
UpperFan5-1	1.52		Method1		1242.00	2451.30	2453.81	2453.79	2454.78
0.017082	7.90	157.14		79.04	0.99				
UpperFan5-1	1.45		100-yr 6-hr		1242.00	2444.70	2447.47	2447.46	2448.37
0.016662	7.62	164.88		96.87	0.98				
UpperFan5-1	1.45		Method1		1242.00	2444.70	2447.54	2447.45	2448.38
0.015090	7.37	168.58		87.48	0.94				
UpperFan5-1	1.38		100-yr 6-hr		1242.00	2438.70	2441.73	2441.73	2442.62
0.016147	7.63	170.25		109.61	0.97				
UpperFan5-1	1.38		Method1		1242.00	2438.70	2441.70	2441.70	2442.65
0.017711	7.83	158.70		84.51	1.01				
UpperFan5-1	1.33		100-yr 6-hr		1242.00	2432.73	2436.56	2436.56	2437.57
0.016796	8.05	156.40		85.42	1.00				
UpperFan5-1	1.33		Method1		1242.00	2432.73	2436.56	2436.55	2437.58
0.017357	8.09	153.47		76.46	1.01				

UpperFan5-1	1.24		100-yr 6-hr		2019.00	2424.75	2428.25	2428.25	2429.29
0.015663	8.55	276.37		148.98	0.99				
UpperFan5-1	1.24		Method1		2019.00	2424.75	2428.36	2428.36	2429.61
0.016644	8.98	224.93		92.76	1.02				
UpperFan5-1	1.18		100-yr 6-hr		2019.00	2420.00	2423.01	2423.01	2424.06
0.014266	8.37	268.91		146.56	0.95				
UpperFan5-1	1.18		Method1		2019.00	2420.00	2423.20	2422.98	2424.21
0.012387	8.06	250.39		96.75	0.88				
UpperFan5-1	1.09		100-yr 6-hr		2019.00	2412.95	2416.30	2416.21	2417.18
0.012275	7.99	318.10		169.65	0.89				
UpperFan5-1	1.09		Method1		2019.00	2412.95	2416.30	2416.30	2417.59
0.017252	9.14	220.84		88.33	1.02				
UpperFan5-1	1.04		100-yr 6-hr		2019.00	2410.00	2412.32	2412.32	2413.12
0.018267	7.17	282.59		185.01	1.00				
UpperFan5-1	1.04		Method1		2019.00	2410.00	2412.98		2413.38
0.005855	5.08	397.80		177.95	0.60				
UpperFan5-1	1.01		100-yr 6-hr		2019.00	2406.00	2411.49	2410.21	2411.86
0.002413	5.67	608.83		220.60	0.44				
UpperFan5-1	1.01		Method1		2019.00	2406.00	2412.42	2410.09	2412.80
0.001789	5.46	498.91		101.48	0.39				
UpperFan5-1	1.00				Culvert				
UpperFan5-1	0.99		100-yr 6-hr		2019.00	2404.90	2408.56	2408.56	2409.70
0.015618	8.56	235.81		154.02	0.99				
UpperFan5-1	0.99		Method1		2019.00	2404.90	2408.56	2408.56	2409.70
0.015847	8.56	235.81		101.48	0.99				
UpperFan5-1	0.93		100-yr 6-hr		2019.00	2398.75	2402.30	2402.16	2403.01
0.013073	6.77	311.04		234.33	0.87				
UpperFan5-1	0.93		Method1		2019.00	2398.75	2402.32	2402.13	2403.02
0.012784	6.73	299.94		158.88	0.86				
UpperFan5-1	0.86		100-yr 6-hr		2019.00	2392.47	2396.76	2396.76	2397.91
0.015497	8.62	240.41		117.66	0.99				
UpperFan5-1	0.86		Method1		2019.00	2392.47	2396.76	2396.76	2397.93
0.015876	8.65	233.52		98.40	0.99				