SOUTH ORANGE COUNTY TRANSPORTATION INFRASTRUCTURE IMPROVEMENT PROJECT LOCATION HYDRAULICS STUDIES VOLUME 4 (APPENDICES Z TO CC)

FINAL

Prepared for:

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APPENDIX Z
HYDRAULIC MODEL INPUT & RESULTS
FEC-M ALTERNATIVE AT SAN MATEO CREEK
(MODEL "F2X")

Appendix Z. **Hydraulic Model Input & Results**
FEC-M Alternative at San Mateo Creek

- Model Report
- Project geometry, plan view
- Cross-sections comparing 100-yr existing and project geometries and water surface elevations
- Geometry and water surface elevation profile

Cross-sections associated with the proposed bridge structure include:

398 (1307)

321 (1053)

HEC-RAS Version 3.1.1 May 2003
U.S. Army Corp of Engineers
Hydrologic Engineering Center
609 Second Street, Suite D
Davis, California 95616-4687
(916) 756-1104

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X     X  XXXXXX    XXXX        XXXX       XX      XXXX
X     X  X        X    X       X   X     X  X    X
X     X  X        X            X   X     X    X   X
XXXXXXX  XXXX     X       XXX  XXXX      XXXXXX    XXXX
X     X  X        X            X  X      X    X        X
X     X  X        X    X       X   X     X    X        X
X     X  XXXXXX    XXXX        X    X    X    X   XXXXX
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PROJECT DATA
Project Title: Project Model - Model F2-X4
Project File : PMF2_X4.prj
Run Date and Time: 8/28/2003 9:00:31 PM

Project in English units

Project Description:
FEC-M Alternative - San Mateo Creek Crossing

PLAN DATA

Plan Title: Existing Flow/Existing Geometry
Plan File : c:\projects\2PDA0104\hydr\LHS\Modeling\Model F\HecRas F\PMF2_X4.p01

Geometry Title: Existing Conditions
Geometry File : c:\projects\2PDA0104\hydr\LHS\Modeling\Model F\HecRas F\PMF2_X4.g01

Flow Title : Existing Conditions
Flow File : c:\projects\2PDA0104\hydr\LHS\Modeling\Model F\HecRas F\PMF2_X4.f01

Plan Summary Information:

Number of:	Cross Sections	= 65	Mulitple Openings	=	0
	Culverts	= 0	Inline Structures	=	0
	Bridges	= 2	Lateral Structures	=	0

Computational Information

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

Computation Options
Critical depth computed only where necessary

Conveyance Calculation Method: At breaks in n values only
Friction Slope Method: Average Conveyance
Computational Flow Regime: Mixed Flow

FLOW DATA

Flow Title: Existing Conditions
Flow File : c:\projects\2PDA0104\hydr\LHS\Modeling\Model F\HecRas F\PMF2_X4.f01

Flow Data (cfs)

River	Reach	RS	Q2	Q5	Q10	Q25	Q50	Q100	Q100HC
San Mateo Creek	Lower	17108.89	406	3317	6999	18122	31354	47312	118891

Boundary Conditions

River	Reach	Profile	Upstream	Downstream
San Mateo Creek	Lower	Q2	Normal S = 0.006	Normal S = 0.02
San Mateo Creek	Lower	Q5	Normal S = 0.006	Normal S = 0.02
San Mateo Creek	Lower	Q10	Normal S = 0.006	Normal S = 0.02
San Mateo Creek	Lower	Q25	Normal S = 0.006	Normal S = 0.02
San Mateo Creek	Lower	Q50	Normal S = 0.006	Normal S = 0.02
San Mateo Creek	Lower	Q100	Normal S = 0.006	Normal S = 0.02
San Mateo Creek	Lower	Q100HC	Normal S = 0.006	Normal S = 0.02

GEOMETRY DATA

Geometry Title: Existing Conditions
Geometry File : c:\projects\2PDA0104\hydr\LHS\Modeling\Model F\HecRas F\PMF2_X4.g01

CROSS SECTION

RIVER: San Mateo Creek
REACH: Lower RS: 17108.89

INPUT
Description:
Station Elevation Data num= 46

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	120.75	.81	121.04	1.78	120.67	4.05	120.84	13.67	119.46
14.81	119.29	20.35	118.29	33.94	112.82	36.33	111.61	53.11	108.38
60.66	106.83	64.52	105.74	76.4	101.3	80.08	99.85	85.2	99.46
94.94	97.68	123.07	96.44	130.94	96.19	180.28	94.67	237.64	92.32
262.46	91.83	287.07	91.35	296	91.17	314.51	90.89	336.36	90.54
396.81	91.24	451.1	91.74	478.44	92	500.45	92.2	559.42	92.73
615.14	93.98	665.2	95.1	697.16	95.7	805.4	97.75	927.5	98.02
990	98.16	1068.09	98.36	1093.95	98.45	1161.3	99.85	1251.51	103.52
1276.7	105.53	1306.04	108.99	1323.44	112.19	1343.95	115.78	1366.42	122.23
1366.98	122.41								

Manning's n Values num= 6

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	13.67	.05	287.07	.035	451.1	.05	615.14	.02
697.16	.05								

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
262.46	478.44	209.32	199.68	212.7	.1	.3

CROSS SECTION OUTPUT Profile #Q50

			Left OB	Channel	Right OB
E.G. Elev (ft)	100.07	Element			
Vel Head (ft)	1.13	Wt. n-Val.	0.050	0.037	0.038
W.S. Elev (ft)	98.95	Reach Len. (ft)	209.32	199.68	212.70
Crit W.S. (ft)	97.85	Flow Area (sq ft)	734.90	1661.35	1675.47
E.G. Slope (ft/ft)	0.004296	Area (sq ft)	734.90	1661.35	1675.47
Q Total (cfs)	31354.00	Flow (cfs)	3730.50	16859.08	10764.41
Top Width (ft)	1029.82	Top Width (ft)	174.45	215.98	639.39
Vel Total (ft/s)	7.70	Avg. Vel. (ft/s)	5.08	10.15	6.42
Max Chl Dpth (ft)	8.41	Hydr. Depth (ft)	4.21	7.69	2.62
Conv. Total (cfs)	478389.1	Conv. (cfs)	56918.8	257230.4	164239.9
Length Wtd. (ft)	204.85	Wetted Per. (ft)	174.67	216.00	639.45
Min Ch El (ft)	90.54	Shear (lb/sq ft)	1.13	2.06	0.70
Alpha	1.22	Stream Power (lb/ft s)	5.73	20.93	4.51
Frctn Loss (ft)	1.40	Cum Volume (acre-ft)	658.35	1475.91	127.65
C & E Loss (ft)	0.11	Cum SA (acres)	229.72	215.98	38.35

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 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 #Q100

			Left OB	Channel	Right OB
E.G. Elev (ft)	101.81	Element			
Vel Head (ft)	1.26	Wt. n-Val.	0.050	0.037	0.039
W.S. Elev (ft)	100.55	Reach Len. (ft)	209.32	199.68	212.70
Crit W.S. (ft)	99.32	Flow Area (sq ft)	1023.59	2007.64	2756.70
E.G. Slope (ft/ft)	0.003984	Area (sq ft)	1023.59	2007.64	2756.70
Q Total (cfs)	47312.00	Flow (cfs)	6015.26	22223.22	19073.52
Top Width (ft)	1100.20	Top Width (ft)	184.16	215.98	700.06
Vel Total (ft/s)	8.17	Avg. Vel. (ft/s)	5.88	11.07	6.92
Max Chl Dpth (ft)	10.01	Hydr. Depth (ft)	5.56	9.30	3.94
Conv. Total (cfs)	749615.9	Conv. (cfs)	95306.4	352106.8	302202.7
Length Wtd. (ft)	205.67	Wetted Per. (ft)	184.57	216.00	700.14
Min Ch El (ft)	90.54	Shear (lb/sq ft)	1.38	2.31	0.98
Alpha	1.22	Stream Power (lb/ft s)	8.10	25.59	6.77
Frctn Loss (ft)	1.26	Cum Volume (acre-ft)	1232.40	1850.74	197.03
C & E Loss (ft)	0.11	Cum SA (acres)	328.47	216.16	42.91

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 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 #Q100HC

			Left OB	Channel	Right OB
E.G. Elev (ft)	107.06	Element			
Vel Head (ft)	2.16	Wt. n-Val.	0.050	0.038	0.041
W.S. Elev (ft)	104.90	Reach Len. (ft)	209.32	199.68	212.70
Crit W.S. (ft)	102.99	Flow Area (sq ft)	1848.89	2946.41	6020.31
E.G. Slope (ft/ft)	0.004319	Area (sq ft)	1848.89	2946.41	6020.31
Q Total (cfs)	118891.00	Flow (cfs)	16073.29	43756.22	59061.49
Top Width (ft)	1201.98	Top Width (ft)	195.68	215.98	790.32
Vel Total (ft/s)	10.99	Avg. Vel. (ft/s)	8.69	14.85	9.81
Max Chl Dpth (ft)	14.36	Hydr. Depth (ft)	9.45	13.64	7.62
Conv. Total (cfs)	1808992.0	Conv. (cfs)	244563.8	665774.8	898652.9
Length Wtd. (ft)	207.36	Wetted Per. (ft)	196.89	216.00	790.52
Min Ch El (ft)	90.54	Shear (lb/sq ft)	2.53	3.68	2.05
Alpha	1.15	Stream Power (lb/ft s)	22.01	54.63	20.15
Frctn Loss (ft)	1.04	Cum Volume (acre-ft)	4704.08	3130.86	498.32
C & E Loss (ft)	0.02	Cum SA (acres)	607.19	216.18	60.56

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

CROSS SECTION

RIVER: San Mateo Creek
REACH: Lower RS: 16909.21

INPUT
Description:
Station Elevation Data num= 55

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	128.27	15.8	125.94	45.09	120.69	49.9	117.6	54.91	117.56
60.95	114.45	74.12	114.82	82.19	115.04	99.57	111.74	104.05	111.28
120.9	105.64	124.97	105.79	128.5	105.6	156.37	97.99	161.01	97.09
165.78	97.01	259.66	95.8	260.54	95.81	264.29	95.82	267.37	95.76
280.36	95.25	347.94	92.57	364.69	91.85	367.53	91.73	370.62	91.54
378.08	91.08	404.48	90.32	452.34	89.19	474.39	88.74	482.51	88.57
508.49	89.06	553.83	89.9	603.88	90.41	688.67	91.27	720.78	91.84
745.93	92.31	978.43	97.79	992.93	98.14	1006.63	98.39	1010.32	98.4
1020.37	98.42	1037.73	98.47	1056.47	98.51	1119.87	98.68	1188.69	100.01
1264.05	101.26	1295.7	102.31	1381.31	105.51	1417.66	109.47	1423.04	110.44
1434.43	113.59	1442.99	115.48	1452.2	118.19	1459.29	120.37	1482.47	126.98

Manning's n Values num= 6

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	74.12	.05	370.62	.035	474.39	.05	978.43	.02
1037.73	.05								

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
404.48	603.88	217.14	203.08	206.1	.1	.3

CROSS SECTION OUTPUT Profile #Q50

			Left OB	Channel	Right OB
E.G. Elev (ft)	98.56	Element			
Vel Head (ft)	2.20	Wt. n-Val.	0.040	0.043	0.050
W.S. Elev (ft)	96.37	Reach Len. (ft)	217.14	203.08	206.10
Crit W.S. (ft)	96.37	Flow Area (sq ft)	478.67	1361.69	1080.30

E.G. Slope (ft/ft)	0.012640	Area (sq ft)	478.67	1361.69	1080.30
Q Total (cfs)	31354.00	Flow (cfs)	4277.99	18854.23	8221.78
Top Width (ft)	702.41	Top Width (ft)	188.82	199.40	314.18
Vel Total (ft/s)	10.74	Avg. Vel. (ft/s)	8.94	13.85	7.61
Max Chl Dpth (ft)	7.80	Hydr. Depth (ft)	2.54	6.83	3.44
Conv. Total (cfs)	278877.8	Conv. (cfs)	38050.6	167698.7	73128.5
Length Wtd. (ft)	204.74	Wetted Per. (ft)	188.94	199.43	314.24
Min Ch El (ft)	88.57	Shear (lb/sq ft)	2.00	5.39	2.71
Alpha	1.23	Stream Power (lb/ft s)	17.87	74.60	20.65
Frctn Loss (ft)	1.42	Cum Volume (acre-ft)	655.43	1468.99	120.92
C & E Loss (ft)	0.26	Cum SA (acres)	228.85	215.03	36.02

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.

CROSS SECTION OUTPUT Profile #Q100

E.G. Elev (ft)	100.44	Element	Left OB	Channel	Right OB
Vel Head (ft)	2.36	Wt. n-Val.	0.042	0.043	0.050
W.S. Elev (ft)	98.08	Reach Len. (ft)	217.14	203.08	206.10
Crit W.S. (ft)	98.08	Flow Area (sq ft)	879.42	1703.62	1681.41
E.G. Slope (ft/ft)	0.010714	Area (sq ft)	879.42	1703.62	1681.41
Q Total (cfs)	47312.00	Flow (cfs)	8049.99	25209.93	14052.08
Top Width (ft)	834.49	Top Width (ft)	248.45	199.40	386.65
Vel Total (ft/s)	11.09	Avg. Vel. (ft/s)	9.15	14.80	8.36
Max Chl Dpth (ft)	9.51	Hydr. Depth (ft)	3.54	8.54	4.35
Conv. Total (cfs)	457086.5	Conv. (cfs)	77771.8	243556.0	135758.7
Length Wtd. (ft)	205.14	Wetted Per. (ft)	248.67	199.43	386.73
Min Ch El (ft)	88.57	Shear (lb/sq ft)	2.37	5.71	2.91
Alpha	1.23	Stream Power (lb/ft s)	21.65	84.55	24.30
Frctn Loss (ft)	1.47	Cum Volume (acre-ft)	1227.82	1842.23	186.19
C & E Loss (ft)	0.16	Cum SA (acres)	327.43	215.21	40.25

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 velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water 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 #Q100HC

E.G. Elev (ft)	105.99	Element	Left OB	Channel	Right OB
Vel Head (ft)	2.37	Wt. n-Val.	0.045	0.043	0.047
W.S. Elev (ft)	103.62	Reach Len. (ft)	217.14	203.08	206.10
Crit W.S. (ft)		Flow Area (sq ft)	2312.05	2808.32	5087.19
E.G. Slope (ft/ft)	0.005936	Area (sq ft)	2312.05	2808.32	5087.19
Q Total (cfs)	118891.00	Flow (cfs)	24905.59	43151.67	50833.74
Top Width (ft)	1195.06	Top Width (ft)	268.74	199.40	726.92
Vel Total (ft/s)	11.65	Avg. Vel. (ft/s)	10.77	15.37	9.99
Max Chl Dpth (ft)	15.05	Hydr. Depth (ft)	8.60	14.08	7.00
Conv. Total (cfs)	1543114.0	Conv. (cfs)	323255.5	560075.6	659783.0
Length Wtd. (ft)	206.03	Wetted Per. (ft)	269.70	199.43	727.07
Min Ch El (ft)	88.57	Shear (lb/sq ft)	3.18	5.22	2.59
Alpha	1.13	Stream Power (lb/ft s)	34.22	80.18	25.91
Frctn Loss (ft)	1.14	Cum Volume (acre-ft)	4694.08	3117.67	471.20
C & E Loss (ft)	0.04	Cum SA (acres)	606.07	215.23	56.86

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: San Mateo Creek
REACH: Lower RS: 16706.13

INPUT
Description: Updated Manning's N Distribution
Station Elevation Data num= 67

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	119.46	.74	119.19	12.87	122.22	35.59	121.32	44.35	120.03
79.73	113.67	85.54	109.9	87.26	109.89	94.61	106.07	104.53	106.36
120.48	106.83	123.01	106.35	125.76	105.96	134.54	104.98	134.66	104.96
136.65	104.68	182.14	99.73	188.3	99.49	203.1	98.83	241.84	97.17
278.97	94.53	285.87	93.89	289.69	93.35	294.06	92.73	294.15	92.68
294.66	92.43	298.65	90.52	305.48	87.25	308.4	85.64	309.72	85.24
314.43	84.65	318.21	84.71	333.12	85.47	356.07	86.29	356.99	86.26
373.31	85.83	395.71	85.24	441.59	84.03	444.45	83.98	449.64	84.03
547.17	85.18	553.94	85.27	581.73	86.67	638.41	89.62	669.45	90.87
784.96	92.7	786.01	92.71	789.56	92.71	880.25	94.36	1096.03	98.28
1104.6	98.39	1119.92	98.6	1128.3	98.72	1148.02	99.39	1179.65	101.72
1201.75	103.35	1222.95	103.37	1297.84	105.36	1355.02	107.33	1363.25	107.79
1380.87	108.65	1413.42	110.59	1428.19	111.98	1438.13	113.88	1456.27	119.5
1471.55	123.36	1493.23	127.77						

Manning's n Values num= 6

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	104.53	.05	298.65	.035	373.31	.05	1119.92	.02
1179.65	.05								

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
305.48	581.73	213.02	200.49	184.93	.1	.3

CROSS SECTION OUTPUT Profile #Q50

E.G. Elev (ft)	96.20	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.32	Wt. n-Val.	0.038	0.046	0.050
W.S. Elev (ft)	94.88	Reach Len. (ft)	213.02	200.49	184.93
Crit W.S. (ft)	92.39	Flow Area (sq ft)	74.11	2707.79	1021.01

E.G. Slope (ft/ft)	0.004365	Area (sq ft)	74.11	2707.79	1021.01
Q Total (cfs)	31354.00	Flow (cfs)	431.72	26640.19	4282.09
Top Width (ft)	634.51	Top Width (ft)	31.37	276.25	326.89
Vel Total (ft/s)	8.24	Avg. Vel. (ft/s)	5.83	9.84	4.19
Max Chl Dpth (ft)	10.90	Hydr. Depth (ft)	2.36	9.80	3.12
Conv. Total (cfs)	474596.6	Conv. (cfs)	6534.8	403244.9	64816.8
Length Wtd. (ft)	198.79	Wetted Per. (ft)	32.74	276.87	327.03
Min Ch El (ft)	83.98	Shear (lb/sq ft)	0.62	2.66	0.85
Alpha	1.25	Stream Power (lb/ft s)	3.59	26.22	3.57
Frctn Loss (ft)	0.93	Cum Volume (acre-ft)	654.05	1459.50	115.95
C & E Loss (ft)	0.00	Cum SA (acres)	228.30	213.92	34.51

CROSS SECTION OUTPUT Profile #Q100

E.G. Elev (ft)	98.39	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.84	Wt. n-Val.	0.040	0.046	0.050
W.S. Elev (ft)	96.56	Reach Len. (ft)	213.02	200.49	184.93
Crit W.S. (ft)	94.62	Flow Area (sq ft)	146.64	3171.81	1647.74
E.G. Slope (ft/ft)	0.005142	Area (sq ft)	146.64	3171.81	1647.74
Q Total (cfs)	47312.00	Flow (cfs)	890.32	37680.18	8741.50
Top Width (ft)	750.59	Top Width (ft)	54.99	276.25	419.35
Vel Total (ft/s)	9.53	Avg. Vel. (ft/s)	6.07	11.88	5.31
Max Chl Dpth (ft)	12.58	Hydr. Depth (ft)	2.67	11.48	3.93
Conv. Total (cfs)	659783.9	Conv. (cfs)	12415.8	525464.5	121903.6
Length Wtd. (ft)	198.03	Wetted Per. (ft)	56.42	276.87	419.50
Min Ch El (ft)	83.98	Shear (lb/sq ft)	0.83	3.68	1.26
Alpha	1.30	Stream Power (lb/ft s)	5.07	43.69	6.69
Frctn Loss (ft)	1.06	Cum Volume (acre-ft)	1225.27	1830.87	178.32
C & E Loss (ft)	0.03	Cum SA (acres)	326.67	214.10	38.35

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

CROSS SECTION OUTPUT Profile #Q100HC

E.G. Elev (ft)	104.82	Element	Left OB	Channel	Right OB
Vel Head (ft)	2.73	Wt. n-Val.	0.046	0.045	0.049
W.S. Elev (ft)	102.10	Reach Len. (ft)	213.02	200.49	184.93
Crit W.S. (ft)		Flow Area (sq ft)	739.71	4702.38	4641.16
E.G. Slope (ft/ft)	0.005141	Area (sq ft)	739.71	4702.38	4641.16
Q Total (cfs)	118891.00	Flow (cfs)	5298.08	72784.69	40808.23
Top Width (ft)	1024.34	Top Width (ft)	145.08	276.25	603.01
Vel Total (ft/s)	11.79	Avg. Vel. (ft/s)	7.16	15.48	8.79
Max Chl Dpth (ft)	18.12	Hydr. Depth (ft)	5.10	17.02	7.70
Conv. Total (cfs)	1658184.0	Conv. (cfs)	73892.8	1015135.0	569156.4
Length Wtd. (ft)	195.96	Wetted Per. (ft)	146.71	276.87	603.29
Min Ch El (ft)	83.98	Shear (lb/sq ft)	1.62	5.45	2.47
Alpha	1.26	Stream Power (lb/ft s)	11.59	84.37	21.71
Frctn Loss (ft)	0.99	Cum Volume (acre-ft)	4686.48	3100.16	448.18
C & E Loss (ft)	0.08	Cum SA (acres)	605.04	214.12	53.71

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

CROSS SECTION

RIVER: San Mateo Creek
REACH: Lower RS: 16505.64

INPUT
Description:
Station Elevation Data num= 77

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	126.05	1.37	125.54	27.32	125.58	32.56	124.47	47.84	124.04
52.45	121.86	101.03	112.23	107.32	112.47	116.54	115.88	125.08	115.62
134.89	112.2	149.97	115.61	178.34	114.4	179.93	114.17	193.76	111.79
194.09	113.24	195.06	113.95	197.6	113.81	205.11	113.44	215.48	112.84
234.81	111.52	243.48	110.93	252.97	109.06	261.15	106.09	280.99	101.05
289.72	98.62	298.84	97.6	348.04	94.87	362.25	94.03	368.98	93.43
370.83	93.26	376.84	91.85	379.04	91.89	379.19	91.89	383.5	90.52
386.37	88.58	387.58	87.58	390.78	85.27	393.04	84.68	395.94	84.58
406.89	85.17	429.58	85.69	452.84	85.14	456.19	85.06	476.82	84.57
508.12	84.72	571.38	85.04	669.78	85.12	697.85	86.32	705.27	86.39
719.01	87.62	732.71	88.8	741.95	89.84	756.7	91	759.88	91.2
767.73	91.75	775.18	91.78	777.34	91.81	800.99	91.21	903.4	91.42
984.69	91.8	1176.72	96.13	1202.67	96.91	1266.47	98.82	1295.94	101.4
1341.75	103.58	1363.77	104.63	1374.75	105.12	1395.49	106.07	1401.08	106.05
1408.84	106.43	1420.89	107.02	1461.65	109.91	1468.94	110.12	1593.75	115.6
1653.58	117.97	1677.19	119.45						

Manning's n Values num= 6

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	234.81	.05	368.98	.035	452.84	.05	1341.75	.02
1408.84	.05								

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
387.58	719.01	199.4	206.45	210.25	.1	.3

CROSS SECTION OUTPUT Profile #Q50

			Left OB	Channel	Right OB
E.G. Elev (ft)	95.27	Element			
Vel Head (ft)	1.31	Wt. n-Val.	0.035	0.046	0.050
W.S. Elev (ft)	93.95	Reach Len. (ft)	199.40	206.45	210.25
Crit W.S. (ft)		Flow Area (sq ft)	47.58	2902.86	844.86
E.G. Slope (ft/ft)	0.004999	Area (sq ft)	47.58	2902.86	844.86
Q Total (cfs)	31354.00	Flow (cfs)	242.74	27984.55	3126.71
Top Width (ft)	717.15	Top Width (ft)	24.48	331.43	361.24
Vel Total (ft/s)	8.26	Avg. Vel. (ft/s)	5.10	9.64	3.70
Max Chl Dpth (ft)	9.38	Hydr. Depth (ft)	1.94	8.76	2.34
Conv. Total (cfs)	443444.8	Conv. (cfs)	3433.1	395790.1	44221.6
Length Wtd. (ft)	206.71	Wetted Per. (ft)	25.85	332.37	361.45
Min Ch El (ft)	84.57	Shear (lb/sq ft)	0.57	2.73	0.73
Alpha	1.24	Stream Power (lb/ft s)	2.93	26.28	2.70
Frctn Loss (ft)	1.14	Cum Volume (acre-ft)	653.76	1446.59	111.99
C & E Loss (ft)	0.00	Cum SA (acres)	228.16	212.52	33.05

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 #Q100

			Left OB	Channel	Right OB
E.G. Elev (ft)	97.30	Element			
Vel Head (ft)	1.74	Wt. n-Val.	0.037	0.046	0.050

W.S. Elev (ft)	95.56	Reach Len. (ft)	199.40	206.45	210.25
Crit W.S. (ft)		Flow Area (sq ft)	108.46	3436.09	1483.44
E.G. Slope (ft/ft)	0.005579	Area (sq ft)	108.46	3436.09	1483.44
Q Total (cfs)	47312.00	Flow (cfs)	658.26	39168.26	7485.48
Top Width (ft)	816.06	Top Width (ft)	52.04	331.43	432.59
Vel Total (ft/s)	9.41	Avg. Vel. (ft/s)	6.07	11.40	5.05
Max Chl Dpth (ft)	10.99	Hydr. Depth (ft)	2.08	10.37	3.43
Conv. Total (cfs)	633419.4	Conv. (cfs)	8812.9	524389.9	100216.6
Length Wtd. (ft)	206.87	Wetted Per. (ft)	53.45	332.37	432.82
Min Ch El (ft)	84.57	Shear (lb/sq ft)	0.71	3.60	1.19
Alpha	1.27	Stream Power (lb/ft s)	4.29	41.05	6.02
Frctn Loss (ft)	1.29	Cum Volume (acre-ft)	1224.64	1815.66	171.67
C & E Loss (ft)	0.01	Cum SA (acres)	326.41	212.70	36.54

Warning: The energy loss was greater than 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 #Q100HC

E.G. Elev (ft)	103.75	Element	Left OB	Channel	Right OB
Vel Head (ft)	2.47	Wt. n-Val.	0.043	0.046	0.050
W.S. Elev (ft)	101.28	Reach Len. (ft)	199.40	206.45	210.25
Crit W.S. (ft)		Flow Area (sq ft)	619.87	5330.32	4468.10
E.G. Slope (ft/ft)	0.004994	Area (sq ft)	619.87	5330.32	4468.10
Q Total (cfs)	118891.00	Flow (cfs)	5039.52	77077.95	36773.54
Top Width (ft)	1014.47	Top Width (ft)	107.49	331.43	575.55
Vel Total (ft/s)	11.41	Avg. Vel. (ft/s)	8.13	14.46	8.23
Max Chl Dpth (ft)	16.71	Hydr. Depth (ft)	5.77	16.08	7.76
Conv. Total (cfs)	1682404.0	Conv. (cfs)	71313.2	1090715.0	520375.4
Length Wtd. (ft)	207.18	Wetted Per. (ft)	109.37	332.37	575.93
Min Ch El (ft)	84.57	Shear (lb/sq ft)	1.77	5.00	2.42
Alpha	1.22	Stream Power (lb/ft s)	14.37	72.30	19.91
Frctn Loss (ft)	1.48	Cum Volume (acre-ft)	4683.15	3077.07	428.85
C & E Loss (ft)	0.19	Cum SA (acres)	604.43	212.72	51.21

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

CROSS SECTION

RIVER: San Mateo Creek
REACH: Lower RS: 16299.19

INPUT
Description:
Station Elevation Data num= 56

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	107.69	14.56	107.33	24.8	106.81	35.8	106.73	54.63	107.1
97.11	104.72	104.21	104.33	113.06	103.81	114.46	103.65	135.06	100.95
140.46	99.93	151.97	96.7	154.75	95.42	161.68	91.9	166.47	91.38
169.28	91.08	179.69	88.6	189.53	88.36	197.37	86.84	199.55	86.04
208.09	85.5	208.95	85.45	219.51	84.99	223.92	84.8	291.32	84.9

292.25	84.9	320.46	85.22	325.71	85.28	326.87	85.29	487.99	85.64
530.99	85.72	570.95	86.84	598.43	87.62	630.44	89.51	733.82	90.23
891.53	92.46	991.05	95.5	1009.17	96.06	1043.73	96.94	1081.09	97.81
1203.26	100.69	1260.4	102.31	1271.03	102.61	1287.28	103.08	1298.69	103.74
1305.61	104.68	1317.89	108.46	1320.57	109.28	1324.84	110.4	1343.79	115.41
1346.55	116.65	1361.13	118.6	1364.78	119.14	1373.38	119.65	1379.73	120.03
1387.25	120.43								

Manning's n Values num= 6

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	97.11	.05	166.47	.035	291.32	.05	1317.89	.02
1373.38	.05								

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
197.37	570.95	219.05	193.6	180.85	.1	.3

CROSS SECTION OUTPUT Profile #Q50

			Left OB	Channel	Right OB
E.G. Elev (ft)	94.12	Element			
Vel Head (ft)	1.34	Wt. n-Val.	0.035	0.045	0.050
W.S. Elev (ft)	92.78	Reach Len. (ft)	219.05	193.60	180.85
Crit W.S. (ft)		Flow Area (sq ft)	124.23	2747.27	817.36
E.G. Slope (ft/ft)	0.006088	Area (sq ft)	124.23	2747.27	817.36
Q Total (cfs)	31354.00	Flow (cfs)	959.26	26933.89	3460.86
Top Width (ft)	742.17	Top Width (ft)	37.43	373.58	331.16
Vel Total (ft/s)	8.50	Avg. Vel. (ft/s)	7.72	9.80	4.23
Max Chl Dpth (ft)	7.98	Hydr. Depth (ft)	3.32	7.35	2.47
Conv. Total (cfs)	401836.1	Conv. (cfs)	12293.9	345187.5	44354.7
Length Wtd. (ft)	192.58	Wetted Per. (ft)	38.12	373.77	331.25
Min Ch El (ft)	84.80	Shear (lb/sq ft)	1.24	2.79	0.94
Alpha	1.20	Stream Power (lb/ft s)	9.56	27.39	3.97
Frctn Loss (ft)	1.61	Cum Volume (acre-ft)	653.36	1433.20	107.98
C & E Loss (ft)	0.07	Cum SA (acres)	228.02	210.85	31.38

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 #Q100

			Left OB	Channel	Right OB
E.G. Elev (ft)	96.00	Element			
Vel Head (ft)	1.86	Wt. n-Val.	0.036	0.045	0.050
W.S. Elev (ft)	94.14	Reach Len. (ft)	219.05	193.60	180.85
Crit W.S. (ft)		Flow Area (sq ft)	176.94	3255.17	1297.86
E.G. Slope (ft/ft)	0.006981	Area (sq ft)	176.94	3255.17	1297.86
Q Total (cfs)	47312.00	Flow (cfs)	1742.89	38205.63	7363.49
Top Width (ft)	789.36	Top Width (ft)	40.11	373.58	375.67
Vel Total (ft/s)	10.00	Avg. Vel. (ft/s)	9.85	11.74	5.67
Max Chl Dpth (ft)	9.34	Hydr. Depth (ft)	4.41	8.71	3.45
Conv. Total (cfs)	566237.6	Conv. (cfs)	20859.1	457251.1	88127.4
Length Wtd. (ft)	192.13	Wetted Per. (ft)	41.13	373.77	375.78
Min Ch El (ft)	84.80	Shear (lb/sq ft)	1.88	3.80	1.51
Alpha	1.20	Stream Power (lb/ft s)	18.47	44.55	8.54
Frctn Loss (ft)	1.69	Cum Volume (acre-ft)	1223.99	1799.81	164.96
C & E Loss (ft)	0.05	Cum SA (acres)	326.20	211.03	34.59

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 #Q100HC

			Left OB	Channel	Right OB
E.G. Elev (ft)	102.09	Element			
Vel Head (ft)	4.35	Wt. n-Val.	0.036	0.045	0.050
W.S. Elev (ft)	97.74	Reach Len. (ft)	219.05	193.60	180.85
Crit W.S. (ft)	97.74	Flow Area (sq ft)	335.08	4597.80	2869.37
E.G. Slope (ft/ft)	0.010982	Area (sq ft)	335.08	4597.80	2869.37
Q Total (cfs)	118891.00	Flow (cfs)	5520.13	84996.82	28374.05
Top Width (ft)	929.67	Top Width (ft)	49.09	373.58	507.00
Vel Total (ft/s)	15.24	Avg. Vel. (ft/s)	16.47	18.49	9.89
Max Chl Dpth (ft)	12.94	Hydr. Depth (ft)	6.83	12.31	5.66
Conv. Total (cfs)	1134488.0	Conv. (cfs)	52674.5	811061.4	270752.4
Length Wtd. (ft)	191.29	Wetted Per. (ft)	50.85	373.77	507.16
Min Ch El (ft)	84.80	Shear (lb/sq ft)	4.52	8.43	3.88
Alpha	1.21	Stream Power (lb/ft s)	74.44	155.91	38.36
Frctn Loss (ft)	2.04	Cum Volume (acre-ft)	4680.97	3053.55	411.14
C & E Loss (ft)	0.20	Cum SA (acres)	604.07	211.05	48.60

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 energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water 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: San Mateo Creek
REACH: Lower RS: 16105.61

INPUT
Description:
Station Elevation Data num= 57

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	108.95	22.96	103.79	23.91	103.32	25.91	102.75	27.73	102.03
56.88	102.5	57.63	102.33	74.85	102.03	75.07	101.92	82.62	100.38
82.83	100.3	83.13	101.07	83.64	101.46	91.47	101.33	93.4	101.3
102.48	101.13	114.12	100.45	138.5	99.54	157.57	98.29	166.14	98.34
189.61	94.26	195.98	92.55	232.82	89.59	242.41	88.39	246	88.14
250.29	88.17	276.94	86.02	278.97	85.87	343.02	84.71	345.68	84.67
372.51	84.59	423.9	84.43	448.61	84.46	476.5	84.48	493.68	84.49
512.2	84.52	600.56	84.68	644.89	85.93	740.98	87.69	850.33	87.85
973.35	89.62	1086.6	91.69	1118.02	92.45	1127.42	92.65	1197.77	93.96
1252.48	94.79	1274.34	96.5	1375.35	99.54	1377.18	99.61	1391.33	101.05
1439.07	105.7	1440.92	105.88	1489.04	112.49	1504.66	114.2	1516.2	115.67
1549.94	119.93	1552.11	120.25						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.05	372.51	.035	512.2	.05

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
278.97	644.89	33.01	38.98	40.87	.1	.3

CROSS SECTION OUTPUT Profile #Q50

			Left OB	Channel	Right OB
E.G. Elev (ft)	92.45	Element			
Vel Head (ft)	2.00	Wt. n-Val.	0.050	0.042	0.050
W.S. Elev (ft)	90.45	Reach Len. (ft)	33.01	38.98	40.87
Crit W.S. (ft)	90.45	Flow Area (sq ft)	135.04	2081.21	873.93
E.G. Slope (ft/ft)	0.012101	Area (sq ft)	135.04	2081.21	873.93
Q Total (cfs)	31354.00	Flow (cfs)	783.61	25540.37	5030.02
Top Width (ft)	796.87	Top Width (ft)	56.90	365.92	374.06
Vel Total (ft/s)	10.15	Avg. Vel. (ft/s)	5.80	12.27	5.76
Max Chl Dpth (ft)	6.02	Hydr. Depth (ft)	2.37	5.69	2.34
Conv. Total (cfs)	285028.7	Conv. (cfs)	7123.5	232178.9	45726.3
Length Wtd. (ft)	39.07	Wetted Per. (ft)	57.11	365.95	374.09
Min Ch El (ft)	84.43	Shear (lb/sq ft)	1.79	4.30	1.76
Alpha	1.25	Stream Power (lb/ft s)	10.37	52.72	10.16
Frctn Loss (ft)	0.47	Cum Volume (acre-ft)	652.71	1422.47	104.47
C & E Loss (ft)	0.01	Cum SA (acres)	227.79	209.21	29.91

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: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water 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 #Q100

			Left OB	Channel	Right OB
E.G. Elev (ft)	94.26	Element			
Vel Head (ft)	2.41	Wt. n-Val.	0.050	0.043	0.050
W.S. Elev (ft)	91.85	Reach Len. (ft)	33.01	38.98	40.87
Crit W.S. (ft)	91.85	Flow Area (sq ft)	226.86	2593.34	1450.86
E.G. Slope (ft/ft)	0.011426	Area (sq ft)	226.86	2593.34	1450.86
Q Total (cfs)	47312.00	Flow (cfs)	1512.99	35717.78	10081.23
Top Width (ft)	888.68	Top Width (ft)	74.32	365.92	448.45
Vel Total (ft/s)	11.08	Avg. Vel. (ft/s)	6.67	13.77	6.95
Max Chl Dpth (ft)	7.42	Hydr. Depth (ft)	3.05	7.09	3.24
Conv. Total (cfs)	442605.8	Conv. (cfs)	14154.1	334141.4	94310.3
Length Wtd. (ft)	39.12	Wetted Per. (ft)	74.58	365.95	448.50
Min Ch El (ft)	84.43	Shear (lb/sq ft)	2.17	5.06	2.31
Alpha	1.26	Stream Power (lb/ft s)	14.47	69.63	16.03
Frctn Loss (ft)	0.43	Cum Volume (acre-ft)	1222.97	1786.81	159.25
C & E Loss (ft)	0.01	Cum SA (acres)	325.91	209.39	32.88

Warning: The energy equation could not be balanced within the specified number of iterations. The program selected the water surface that had the least amount of error between computed and assumed values.

Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water 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 #Q100HC

E.G. Elev (ft)	99.85	Element	Left OB	Channel	Right OB
Vel Head (ft)	4.02	Wt. n-Val.	0.050	0.043	0.050
W.S. Elev (ft)	95.83	Reach Len. (ft)	33.01	38.98	40.87
Crit W.S. (ft)	96.14	Flow Area (sq ft)	576.47	4048.76	3620.37
E.G. Slope (ft/ft)	0.011610	Area (sq ft)	576.47	4048.76	3620.37
Q Total (cfs)	118891.00	Flow (cfs)	5972.62	75366.92	37551.46
Top Width (ft)	1085.20	Top Width (ft)	98.39	365.92	620.89
Vel Total (ft/s)	14.42	Avg. Vel. (ft/s)	10.36	18.61	10.37
Max Chl Dpth (ft)	11.40	Hydr. Depth (ft)	5.86	11.06	5.83
Conv. Total (cfs)	1103409.0	Conv. (cfs)	55431.0	699468.5	348509.2
Length Wtd. (ft)	39.19	Wetted Per. (ft)	99.05	365.95	621.01
Min Ch El (ft)	84.43	Shear (lb/sq ft)	4.22	8.02	4.23
Alpha	1.25	Stream Power (lb/ft s)	43.71	149.27	43.83
Frctn Loss (ft)	2.15	Cum Volume (acre-ft)	4678.68	3034.33	397.67
C & E Loss (ft)	0.09	Cum SA (acres)	603.70	209.41	46.26

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.
Note: Program found supercritical flow starting at this cross section.

CROSS SECTION

RIVER: San Mateo Creek
REACH: Lower RS: 16066.6*

INPUT
Description:
Station Elevation Data num= 115

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	110.25	26.62	105.38	27.72	104.97	30.04	104.45	30.77	104.23
32.15	103.76	65.94	101.79	66.81	101.59	74.99	100.92	75.18	100.89
75.58	100.85	75.95	100.8	86.44	100.71	86.77	100.7	87.02	100.6
95.73	99.18	95.77	99.17	96.02	99.1	96.37	99.71	96.96	100
106.03	99.66	108.27	99.58	111.91	99.44	114	99.37	118.8	99.18
122.27	98.95	132.29	98.31	154.13	97.24	160.55	96.94	169.04	96.37
182.66	95.76	192.59	95.8	219.8	92.55	227.18	91.18	268.94	88.88
269.89	88.82	272.96	88.54	281.01	87.82	284.62	87.63	285.17	87.61
290.14	87.61	310.04	86.43	316.06	86.04	317.34	85.97	317.62	85.95
319.03	85.64	321.03	85.35	323.39	85.02	324.69	85.23	329.41	85.66
329.82	85.66	332.33	85.41	338.71	85.3	344.66	85.19	371.58	84.7
398.55	84.2	401.67	84.15	433.15	83.9	440.13	83.85	459.01	83.4
473.53	83.34	491.31	83.23	492.37	83.22	493.46	83.22	516.56	83.26
531.77	83.29	542.63	83.31	558.69	83.33	566.05	83.35	576.01	83.41
645.29	83.82	658.61	83.9	670.42	84.25	700.06	85.07	789.97	86.97
840.12	87.32	865.86	87.41	888.14	87.54	892.3	87.58	919.43	88.16
978.94	89.48	998.26	89.91	1004.86	90.05	1007.42	90.11	1018.67	90.4
1079.58	92.34	1093.28	92.77	1096.66	92.88	1113.39	93.28	1135.7	93.93
1142.79	94.12	1151.59	94.35	1217.42	95.87	1249.1	96.51	1268.61	96.91
1270.07	97.01	1289.07	98.36	1292.58	98.47	1346.8	99.96	1353.23	100.13
1356.04	100.22	1358.35	100.29	1383.59	101.06	1385.3	101.12	1398.54	102.34
1443.22	106.27	1444.95	106.42	1448.91	106.91	1489.98	112.13	1504.59	113.64
1506.03	113.81	1515.39	114.92	1532.36	116.91	1546.97	118.63	1549	118.91

Manning's n Values num= 9

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.05	317.34	.047	323.39	.038	433.15	.038	566.05	.05
700.06	.047	998.26	.035	1358.35	.038	1549	.05		

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
329.82	700.06	33.01	38.98	40.87	.1	.3

CROSS SECTION OUTPUT Profile #Q50

			Left OB	Channel	Right OB
E.G. Elev (ft)	91.83	Element			
Vel Head (ft)	2.72	Wt. n-Val.	0.046	0.042	0.047
W.S. Elev (ft)	89.11	Reach Len. (ft)	33.01	38.98	40.87
Crit W.S. (ft)	89.62	Flow Area (sq ft)	131.87	1932.22	519.13
E.G. Slope (ft/ft)	0.016804	Area (sq ft)	131.87	1932.22	519.13
Q Total (cfs)	31354.00	Flow (cfs)	960.35	27040.83	3352.82
Top Width (ft)	697.73	Top Width (ft)	65.12	370.24	262.37
Vel Total (ft/s)	12.14	Avg. Vel. (ft/s)	7.28	13.99	6.46
Max Chl Dpth (ft)	5.89	Hydr. Depth (ft)	2.02	5.22	1.98
Conv. Total (cfs)	241872.7	Conv. (cfs)	7408.4	208599.8	25864.5
Length Wtd. (ft)	38.99	Wetted Per. (ft)	65.35	370.29	262.41
Min Ch El (ft)	83.22	Shear (lb/sq ft)	2.12	5.47	2.08
Alpha	1.19	Stream Power (lb/ft s)	15.42	76.61	13.40
Frctn Loss (ft)	0.55	Cum Volume (acre-ft)	652.61	1420.67	103.82
C & E Loss (ft)	0.07	Cum SA (acres)	227.74	208.88	29.61

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Note: Program found supercritical flow starting at this cross section.

CROSS SECTION OUTPUT Profile #Q100

			Left OB	Channel	Right OB
E.G. Elev (ft)	93.68	Element			
Vel Head (ft)	3.17	Wt. n-Val.	0.047	0.042	0.047
W.S. Elev (ft)	90.50	Reach Len. (ft)	33.01	38.98	40.87
Crit W.S. (ft)	91.09	Flow Area (sq ft)	239.91	2446.78	926.82
E.G. Slope (ft/ft)	0.015027	Area (sq ft)	239.91	2446.78	926.82
Q Total (cfs)	47312.00	Flow (cfs)	1918.48	37829.27	7564.25
Top Width (ft)	782.46	Top Width (ft)	90.36	370.24	321.86
Vel Total (ft/s)	13.09	Avg. Vel. (ft/s)	8.00	15.46	8.16
Max Chl Dpth (ft)	7.28	Hydr. Depth (ft)	2.66	6.61	2.88
Conv. Total (cfs)	385954.7	Conv. (cfs)	15650.3	308597.9	61706.5
Length Wtd. (ft)	39.02	Wetted Per. (ft)	90.62	370.29	321.92
Min Ch El (ft)	83.22	Shear (lb/sq ft)	2.48	6.20	2.70
Alpha	1.19	Stream Power (lb/ft s)	19.86	95.84	22.04
Frctn Loss (ft)	0.51	Cum Volume (acre-ft)	1222.80	1784.55	158.14
C & E Loss (ft)	0.08	Cum SA (acres)	325.85	209.06	32.51

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Note: Program found supercritical flow starting at this cross section.

CROSS SECTION OUTPUT Profile #Q100HC

			Left OB	Channel	Right OB
E.G. Elev (ft)	99.39	Element			
Vel Head (ft)	4.23	Wt. n-Val.	0.048	0.042	0.046
W.S. Elev (ft)	95.16	Reach Len. (ft)	33.01	38.98	40.87
Crit W.S. (ft)	95.42	Flow Area (sq ft)	766.01	4169.33	2782.65

E.G. Slope (ft/ft)	0.010693	Area (sq ft)	766.01	4169.33	2782.65
Q Total (cfs)	118891.00	Flow (cfs)	8101.57	77419.17	33370.27
Top Width (ft)	988.52	Top Width (ft)	131.84	370.24	486.44
Vel Total (ft/s)	15.40	Avg. Vel. (ft/s)	10.58	18.57	11.99
Max Chl Dpth (ft)	11.94	Hydr. Depth (ft)	5.81	11.26	5.72
Conv. Total (cfs)	1149715.0	Conv. (cfs)	78344.8	748668.6	322701.3
Length Wtd. (ft)	39.04	Wetted Per. (ft)	132.40	370.29	486.56
Min Ch El (ft)	83.22	Shear (lb/sq ft)	3.86	7.52	3.82
Alpha	1.15	Stream Power (lb/ft s)	40.85	139.58	45.79
Frctn Loss (ft)	0.44	Cum Volume (acre-ft)	4678.17	3030.65	394.66
C & E Loss (ft)	0.02	Cum SA (acres)	603.61	209.08	45.74

CROSS SECTION

RIVER: San Mateo Creek
REACH: Lower RS: 16027.6*

INPUT
Description:
Station Elevation Data num= 115

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	111.55	30.27	106.97	31.52	106.63	34.16	106.15	34.99	105.96
36.56	105.49	74.99	101.07	75.98	100.85	85.29	99.64	85.51	99.58
85.96	99.5	86.38	99.41	98.31	99.38	98.69	99.36	98.98	99.29
108.88	97.97	108.93	97.96	109.21	97.9	109.6	98.35	110.27	98.55
120.6	98	123.14	97.87	127.29	97.64	129.66	97.53	135.11	97.23
139.07	96.94	150.46	96.17	175.3	94.73	182.6	94.33	192.26	93.68
207.75	93.23	219.05	93.27	249.99	90.83	258.39	89.81	305.88	88.1
306.96	88.05	310.45	87.83	319.6	87.25	323.71	87.1	324.34	87.07
329.99	87.05	352.63	86.08	359.47	85.72	360.93	85.65	361.24	85.64
362.84	85.12	365.13	84.68	367.81	84.18	369.3	84.61	374.72	85.55
375.19	85.56	378.07	85.09	385.39	84.96	392.22	84.83	423.12	84.26
454.07	83.7	457.66	83.64	493.79	83.22	501.8	83.12	523.47	82.27
540.14	82.21	560.55	82.03	561.76	82.02	563.01	82.01	584.5	82.07
598.66	82.11	608.76	82.14	623.71	82.18	630.55	82.2	639.81	82.3
704.27	82.98	716.67	83.13	727.65	83.46	755.23	84.2	838.97	86.26
885.67	86.87	909.64	87.01	930.39	87.23	934.27	87.31	959.54	88.06
1014.96	89.78	1032.95	90.33	1039.1	90.52	1041.48	90.6	1051.97	90.95
1108.69	93.65	1121.45	94.25	1124.6	94.39	1140.18	94.87	1160.96	95.58
1167.57	95.8	1175.76	96.04	1237.07	97.78	1266.58	98.55	1284.75	99.02
1286.1	99.11	1303.8	100.22	1307.07	100.32	1357.57	101.56	1363.55	101.7
1366.17	101.78	1368.33	101.84	1391.83	102.57	1393.43	102.63	1405.76	103.62
1447.37	106.84	1448.98	106.97	1452.67	107.35	1490.92	111.78	1504.53	113.09
1505.86	113.23	1514.59	114.17	1530.38	115.87	1543.99	117.33	1545.88	117.56

Manning's n Values num= 9

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.05	360.93	.044	367.81	.041	493.79	.041	623.71	.05
755.23	.044	1032.95	.035	1368.33	.041	1545.88	.05		

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
375.19	755.23	33.01	38.98	40.87	.1	.3

CROSS SECTION OUTPUT Profile #Q50

E.G. Elev (ft)	91.09	Element	Left OB	Channel	Right OB
Vel Head (ft)	2.95	Wt. n-Val.	0.046	0.044	0.044

W.S. Elev (ft)	88.14	Reach Len. (ft)	33.01	38.98	40.87
Crit W.S. (ft)	88.81	Flow Area (sq ft)	117.45	1924.70	381.97
E.G. Slope (ft/ft)	0.020293	Area (sq ft)	117.45	1924.70	381.97
Q Total (cfs)	31354.00	Flow (cfs)	848.05	27740.58	2765.37
Top Width (ft)	657.30	Top Width (ft)	70.40	380.04	206.86
Vel Total (ft/s)	12.93	Avg. Vel. (ft/s)	7.22	14.41	7.24
Max Chl Dpth (ft)	6.13	Hydr. Depth (ft)	1.67	5.06	1.85
Conv. Total (cfs)	220099.4	Conv. (cfs)	5953.2	194733.8	19412.4
Length Wtd. (ft)	38.99	Wetted Per. (ft)	70.77	380.13	206.91
Min Ch El (ft)	82.01	Shear (lb/sq ft)	2.10	6.41	2.34
Alpha	1.13	Stream Power (lb/ft s)	15.18	92.45	16.93
Frctn Loss (ft)	0.72	Cum Volume (acre-ft)	652.52	1418.95	103.39
C & E Loss (ft)	0.02	Cum SA (acres)	227.69	208.54	29.39

CROSS SECTION OUTPUT Profile #Q100

E.G. Elev (ft)	93.00	Element	Left OB	Channel	Right OB
Vel Head (ft)	3.48	Wt. n-Val.	0.047	0.044	0.044
W.S. Elev (ft)	89.52	Reach Len. (ft)	33.01	38.98	40.87
Crit W.S. (ft)	90.34	Flow Area (sq ft)	240.93	2448.74	697.85
E.G. Slope (ft/ft)	0.018235	Area (sq ft)	240.93	2448.74	697.85
Q Total (cfs)	47312.00	Flow (cfs)	1908.01	39117.57	6286.42
Top Width (ft)	740.02	Top Width (ft)	108.69	380.04	251.29
Vel Total (ft/s)	13.97	Avg. Vel. (ft/s)	7.92	15.97	9.01
Max Chl Dpth (ft)	7.51	Hydr. Depth (ft)	2.22	6.44	2.78
Conv. Total (cfs)	350360.7	Conv. (cfs)	14129.4	289678.2	46553.0
Length Wtd. (ft)	38.98	Wetted Per. (ft)	109.09	380.13	251.36
Min Ch El (ft)	82.01	Shear (lb/sq ft)	2.51	7.33	3.16
Alpha	1.15	Stream Power (lb/ft s)	19.91	117.15	28.47
Frctn Loss (ft)	0.64	Cum Volume (acre-ft)	1222.61	1782.36	157.37
C & E Loss (ft)	0.03	Cum SA (acres)	325.77	208.73	32.25

CROSS SECTION OUTPUT Profile #Q100HC

E.G. Elev (ft)	98.86	Element	Left OB	Channel	Right OB
Vel Head (ft)	4.86	Wt. n-Val.	0.048	0.044	0.044
W.S. Elev (ft)	94.00	Reach Len. (ft)	33.01	38.98	40.87
Crit W.S. (ft)	94.70	Flow Area (sq ft)	872.66	4153.06	2094.50
E.G. Slope (ft/ft)	0.013532	Area (sq ft)	872.66	4153.06	2094.50
Q Total (cfs)	118891.00	Flow (cfs)	9035.13	80943.55	28912.32
Top Width (ft)	928.73	Top Width (ft)	187.73	380.04	360.96
Vel Total (ft/s)	16.70	Avg. Vel. (ft/s)	10.35	19.49	13.80
Max Chl Dpth (ft)	11.99	Hydr. Depth (ft)	4.65	10.93	5.80
Conv. Total (cfs)	1022035.0	Conv. (cfs)	77669.6	695823.1	248541.8
Length Wtd. (ft)	38.90	Wetted Per. (ft)	188.31	380.13	361.12
Min Ch El (ft)	82.01	Shear (lb/sq ft)	3.92	9.23	4.90
Alpha	1.12	Stream Power (lb/ft s)	40.54	179.89	67.64
Frctn Loss (ft)	0.47	Cum Volume (acre-ft)	4677.55	3026.93	392.38
C & E Loss (ft)	0.06	Cum SA (acres)	603.49	208.75	45.34

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

CROSS SECTION

RIVER: San Mateo Creek
REACH: Lower RS: 15988.6*

INPUT
Description:
Station Elevation Data num= 115

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	112.86	33.93	108.56	35.33	108.28	38.29	107.86	39.22	107.7
40.98	107.22	84.05	100.36	85.16	100.11	95.59	98.35	95.84	98.27
96.34	98.16	96.81	98.02	110.18	98.05	110.6	98.03	110.93	97.97
122.03	96.76	122.08	96.75	122.39	96.7	122.84	96.98	123.59	97.09
135.16	96.33	138.01	96.15	142.66	95.84	145.31	95.69	151.43	95.28
155.86	94.93	168.63	94.03	196.47	92.22	204.66	91.73	215.47	91
232.84	90.7	245.5	90.73	280.18	89.12	289.59	88.44	342.82	87.32
344.03	87.28	347.95	87.12	358.2	86.68	362.8	86.56	363.51	86.54
369.84	86.5	395.21	85.73	402.88	85.4	404.52	85.34	404.87	85.33
406.66	84.59	409.22	84.01	412.22	83.33	413.91	83.98	420.03	85.44
420.56	85.45	423.81	84.77	432.07	84.62	439.79	84.48	474.66	83.83
509.6	83.19	513.65	83.12	554.44	82.53	563.47	82.4	587.93	81.15
606.75	81.07	629.79	80.82	631.16	80.81	632.57	80.79	652.45	80.87
665.54	80.92	674.89	80.96	688.72	81.02	695.05	81.05	703.62	81.19
763.26	82.14	774.72	82.35	784.89	82.67	810.39	83.34	887.96	85.54
931.23	86.41	953.43	86.6	972.65	86.93	976.24	87.05	999.65	87.95
1050.99	90.08	1067.65	90.76	1073.34	90.99	1075.55	91.08	1085.26	91.51
1137.8	94.96	1149.63	95.72	1152.54	95.9	1166.97	96.45	1186.22	97.24
1192.34	97.47	1199.93	97.74	1256.72	99.69	1284.05	100.59	1300.88	101.14
1302.14	101.22	1318.53	102.08	1321.56	102.17	1368.34	103.16	1373.88	103.27
1376.3	103.34	1378.3	103.4	1400.07	104.09	1401.55	104.14	1412.97	104.91
1451.51	107.41	1453.01	107.51	1456.43	107.8	1491.85	111.42	1504.46	112.53
1505.7	112.65	1513.78	113.43	1528.41	114.82	1541.02	116.03	1542.77	116.22

Manning's n Values num= 9

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.05	404.52	.041	412.22	.044	554.44	.044	674.89	.05
810.39	.041	1067.65	.035	1378.3	.044	1542.77	.05		

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
420.56	810.39	33.01	38.98	40.87	.1	.3

CROSS SECTION OUTPUT Profile #Q50

E.G. Elev (ft)	90.27	Element	Left OB	Channel	Right OB
Vel Head (ft)	2.94	Wt. n-Val.	0.045	0.046	0.041
W.S. Elev (ft)	87.33	Reach Len. (ft)	33.01	38.98	40.87
Crit W.S. (ft)	87.99	Flow Area (sq ft)	108.07	1965.15	313.49
E.G. Slope (ft/ft)	0.021824	Area (sq ft)	108.07	1965.15	313.49
Q Total (cfs)	31354.00	Flow (cfs)	751.33	28108.63	2494.04
Top Width (ft)	640.87	Top Width (ft)	78.01	389.83	173.02
Vel Total (ft/s)	13.14	Avg. Vel. (ft/s)	6.95	14.30	7.96
Max Chl Dpth (ft)	6.54	Hydr. Depth (ft)	1.39	5.04	1.81
Conv. Total (cfs)	212237.5	Conv. (cfs)	5085.8	190269.3	16882.3
Length Wtd. (ft)	38.99	Wetted Per. (ft)	78.63	389.98	173.07
Min Ch El (ft)	80.79	Shear (lb/sq ft)	1.87	6.87	2.47
Alpha	1.10	Stream Power (lb/ft s)	13.02	98.20	19.63
Frctn Loss (ft)	0.82	Cum Volume (acre-ft)	652.43	1417.21	103.07
C & E Loss (ft)	0.00	Cum SA (acres)	227.63	208.20	29.22

CROSS SECTION OUTPUT Profile #Q100

E.G. Elev (ft)	92.23	Element	Left OB	Channel	Right OB
Vel Head (ft)	3.61	Wt. n-Val.	0.047	0.046	0.041
W.S. Elev (ft)	88.62	Reach Len. (ft)	33.01	38.98	40.87
Crit W.S. (ft)	89.43	Flow Area (sq ft)	247.75	2468.08	557.94
E.G. Slope (ft/ft)	0.020725	Area (sq ft)	247.75	2468.08	557.94
Q Total (cfs)	47312.00	Flow (cfs)	1893.72	39750.88	5667.41
Top Width (ft)	728.54	Top Width (ft)	133.40	389.83	205.31
Vel Total (ft/s)	14.45	Avg. Vel. (ft/s)	7.64	16.11	10.16
Max Chl Dpth (ft)	7.83	Hydr. Depth (ft)	1.86	6.33	2.72
Conv. Total (cfs)	328644.2	Conv. (cfs)	13154.4	276122.2	39367.6
Length Wtd. (ft)	38.95	Wetted Per. (ft)	134.04	389.98	205.39
Min Ch El (ft)	80.79	Shear (lb/sq ft)	2.39	8.19	3.51
Alpha	1.11	Stream Power (lb/ft s)	18.28	131.88	35.70
Frctn Loss (ft)	0.76	Cum Volume (acre-ft)	1222.43	1780.16	156.79
C & E Loss (ft)	0.01	Cum SA (acres)	325.68	208.38	32.03

CROSS SECTION OUTPUT Profile #Q100HC

E.G. Elev (ft)	98.21	Element	Left OB	Channel	Right OB
Vel Head (ft)	5.51	Wt. n-Val.	0.048	0.046	0.041
W.S. Elev (ft)	92.70	Reach Len. (ft)	33.01	38.98	40.87
Crit W.S. (ft)	93.86	Flow Area (sq ft)	994.14	4058.79	1590.17
E.G. Slope (ft/ft)	0.017492	Area (sq ft)	994.14	4058.79	1590.17
Q Total (cfs)	118891.00	Flow (cfs)	10984.73	83040.51	24865.76
Top Width (ft)	914.19	Top Width (ft)	231.42	389.83	292.94
Vel Total (ft/s)	17.90	Avg. Vel. (ft/s)	11.05	20.46	15.64
Max Chl Dpth (ft)	11.91	Hydr. Depth (ft)	4.30	10.41	5.43
Conv. Total (cfs)	898942.3	Conv. (cfs)	83056.3	627874.5	188011.6
Length Wtd. (ft)	38.72	Wetted Per. (ft)	232.16	389.98	293.11
Min Ch El (ft)	80.79	Shear (lb/sq ft)	4.68	11.37	5.92
Alpha	1.11	Stream Power (lb/ft s)	51.67	232.53	92.64
Frctn Loss (ft)	0.60	Cum Volume (acre-ft)	4676.84	3023.26	390.65
C & E Loss (ft)	0.06	Cum SA (acres)	603.33	208.40	45.03

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

CROSS SECTION

RIVER: San Mateo Creek
REACH: Lower RS: 15949.6*

INPUT
Description:
Station Elevation Data num= 115

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	114.16	37.58	110.15	39.14	109.93	42.41	109.56	43.44	109.43
45.39	108.95	93.11	99.64	94.33	99.37	105.89	97.07	106.16	96.95
106.72	96.81	107.24	96.63	122.06	96.73	122.52	96.7	122.88	96.65
135.18	95.55	135.24	95.54	135.58	95.5	136.07	95.62	136.91	95.64
149.73	94.67	152.89	94.43	158.03	94.04	160.97	93.86	167.75	93.33
172.66	92.92	186.8	91.89	217.64	89.72	226.71	89.13	238.69	88.31
257.92	88.17	271.95	88.19	310.37	87.4	320.8	87.07	379.76	86.54
381.1	86.51	385.44	86.4	396.8	86.11	401.9	86.02	402.67	86
409.7	85.94	437.8	85.38	446.29	85.07	448.1	85.03	448.49	85.02

450.48	84.07	453.32	83.34	456.64	82.49	458.52	83.36	465.34	85.32
465.93	85.35	469.55	84.45	478.76	84.29	487.35	84.12	526.2	83.4
565.13	82.68	569.64	82.6	615.08	81.84	625.15	81.67	652.4	80.02
673.36	79.93	699.03	79.62	700.55	79.6	702.12	79.58	720.4	79.68
732.43	79.74	741.03	79.79	753.73	79.87	759.55	79.9	767.43	80.08
822.24	81.31	832.78	81.58	842.12	81.89	865.56	82.47	936.96	84.83
976.78	85.96	997.21	86.2	1014.9	86.62	1018.21	86.78	1039.75	87.85
1087.01	90.38	1102.34	91.18	1107.59	91.46	1109.62	91.57	1118.56	92.06
1166.92	96.27	1177.8	97.2	1180.48	97.42	1193.77	98.04	1211.48	98.9
1217.11	99.14	1224.1	99.44	1276.37	101.6	1301.53	102.62	1317.02	103.25
1318.17	103.32	1333.26	103.95	1336.05	104.03	1379.1	104.76	1384.2	104.84
1386.44	104.9	1388.28	104.96	1408.32	105.61	1409.68	105.65	1420.19	106.2
1455.66	107.98	1457.04	108.05	1460.18	108.24	1492.79	111.06	1504.4	111.98
1505.53	112.07	1512.97	112.68	1526.44	113.78	1538.04	114.73	1539.65	114.87

Manning's n Values num= 9

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.05	448.1	.038	456.64	.047	565.13	.047	720.4	.05
865.56	.038	1102.34	.035	1388.28	.047	1539.65	.05		

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
465.93	865.56	33.01	38.98	40.87	.1	.3

CROSS SECTION OUTPUT Profile #Q50

			Left OB	Channel	Right OB
E.G. Elev (ft)	89.37	Element			
Vel Head (ft)	2.58	Wt. n-Val.	0.044	0.048	0.038
W.S. Elev (ft)	86.79	Reach Len. (ft)	33.01	38.98	40.87
Crit W.S. (ft)	87.21	Flow Area (sq ft)	120.89	2102.36	300.81
E.G. Slope (ft/ft)	0.019366	Area (sq ft)	120.89	2102.36	300.81
Q Total (cfs)	31354.00	Flow (cfs)	736.37	28047.05	2570.59
Top Width (ft)	666.07	Top Width (ft)	113.65	399.63	152.79
Vel Total (ft/s)	12.42	Avg. Vel. (ft/s)	6.09	13.34	8.55
Max Chl Dpth (ft)	7.21	Hydr. Depth (ft)	1.06	5.26	1.97
Conv. Total (cfs)	225306.2	Conv. (cfs)	5291.4	201542.8	18471.9
Length Wtd. (ft)	38.96	Wetted Per. (ft)	114.55	399.85	152.86
Min Ch El (ft)	79.58	Shear (lb/sq ft)	1.28	6.36	2.38
Alpha	1.08	Stream Power (lb/ft s)	7.77	84.81	20.33
Frctn Loss (ft)	0.80	Cum Volume (acre-ft)	652.34	1415.39	102.78
C & E Loss (ft)	0.11	Cum SA (acres)	227.56	207.84	29.06

CROSS SECTION OUTPUT Profile #Q100

			Left OB	Channel	Right OB
E.G. Elev (ft)	91.38	Element			
Vel Head (ft)	3.52	Wt. n-Val.	0.046	0.048	0.038
W.S. Elev (ft)	87.86	Reach Len. (ft)	33.01	38.98	40.87
Crit W.S. (ft)	88.72	Flow Area (sq ft)	283.63	2530.73	476.15
E.G. Slope (ft/ft)	0.021543	Area (sq ft)	283.63	2530.73	476.15
Q Total (cfs)	47312.00	Flow (cfs)	2020.10	39954.43	5337.48
Top Width (ft)	751.86	Top Width (ft)	177.88	399.63	174.36
Vel Total (ft/s)	14.38	Avg. Vel. (ft/s)	7.12	15.79	11.21
Max Chl Dpth (ft)	8.28	Hydr. Depth (ft)	1.59	6.33	2.73
Conv. Total (cfs)	322341.0	Conv. (cfs)	13763.1	272213.2	36364.7
Length Wtd. (ft)	38.84	Wetted Per. (ft)	178.79	399.85	174.45
Min Ch El (ft)	79.58	Shear (lb/sq ft)	2.13	8.51	3.67
Alpha	1.10	Stream Power (lb/ft s)	15.20	134.39	41.15
Frctn Loss (ft)	0.82	Cum Volume (acre-ft)	1222.23	1777.93	156.30
C & E Loss (ft)	0.03	Cum SA (acres)	325.56	208.03	31.85

CROSS SECTION OUTPUT Profile #Q100HC

			Left OB	Channel	Right OB
E.G. Elev (ft)	97.42	Element			
Vel Head (ft)	5.94	Wt. n-Val.	0.048	0.048	0.038
W.S. Elev (ft)	91.47	Reach Len. (ft)	33.01	38.98	40.87
Crit W.S. (ft)	92.96	Flow Area (sq ft)	1164.17	3975.58	1228.89
E.G. Slope (ft/ft)	0.021502	Area (sq ft)	1164.17	3975.58	1228.89
Q Total (cfs)	118891.00	Flow (cfs)	13972.26	83828.65	21090.09
Top Width (ft)	915.15	Top Width (ft)	273.22	399.63	242.30
Vel Total (ft/s)	18.67	Avg. Vel. (ft/s)	12.00	21.09	17.16
Max Chl Dpth (ft)	11.89	Hydr. Depth (ft)	4.26	9.95	5.07
Conv. Total (cfs)	810785.6	Conv. (cfs)	95284.8	571675.4	143825.3
Length Wtd. (ft)	38.43	Wetted Per. (ft)	274.25	399.85	242.48
Min Ch El (ft)	79.58	Shear (lb/sq ft)	5.70	13.35	6.80
Alpha	1.10	Stream Power (lb/ft s)	68.39	281.43	116.76
Frctn Loss (ft)	0.75	Cum Volume (acre-ft)	4676.02	3019.66	389.33
C & E Loss (ft)	0.04	Cum SA (acres)	603.14	208.05	44.78

CROSS SECTION

RIVER: San Mateo Creek
REACH: Lower RS: 15910.69

INPUT
Description:
Station Elevation Data num= 63

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	115.46	47.67	111.16	116.19	95.78	116.49	95.64	117.1	95.46
117.67	95.24	133.93	95.4	148.33	94.34	173.4	92.24	176.63	92.02
189.45	90.91	238.81	87.21	261.91	85.62	416.7	85.76	422.93	85.69
440.99	85.48	480.38	85.03	489.7	84.75	491.69	84.72	492.12	84.71
494.3	83.55	501.06	81.64	503.13	82.74	510.65	85.21	511.3	85.24
515.29	84.13	525.44	83.95	534.91	83.77	577.74	82.97	686.82	80.95
716.86	78.9	739.97	78.79	768.27	78.41	769.95	78.39	771.68	78.37
799.32	78.56	824.05	78.75	881.22	80.47	899.35	81.1	920.73	81.61
1022.33	85.51	1041	85.8	1057.16	86.32	1079.86	87.74	1123.03	90.68
1137.04	91.61	1141.83	91.93	1151.85	92.62	1196.03	97.58	1205.97	98.67
1208.42	98.93	1236.74	100.56	1319	104.66	1334.21	105.42	1350.54	105.88
1389.87	106.36	1394.53	106.41	1396.57	106.46	1398.25	106.52	1463.94	108.69
1505.37	111.49	1524.47	112.73	1536.54	113.53				

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.05	491.69	.035	768.27	.05	1137.04	.035	1398.25	.05

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
511.3	920.73	44.06	38.94	33.57	.1	.3

CROSS SECTION OUTPUT Profile #Q50

			Left OB	Channel	Right OB
E.G. Elev (ft)	88.71	Element			
Vel Head (ft)	2.64	Wt. n-Val.	0.040	0.041	0.050
W.S. Elev (ft)	86.07	Reach Len. (ft)	44.06	38.94	33.57
Crit W.S. (ft)	86.59	Flow Area (sq ft)	168.73	2158.31	263.46
E.G. Slope (ft/ft)	0.014833	Area (sq ft)	168.73	2158.31	263.46

Q Total (cfs)	31354.00	Flow (cfs)	765.71	29050.37	1537.91
Top Width (ft)	793.87	Top Width (ft)	255.88	409.43	128.56
Vel Total (ft/s)	12.10	Avg. Vel. (ft/s)	4.54	13.46	5.84
Max Chl Dpth (ft)	7.70	Hydr. Depth (ft)	0.66	5.27	2.05
Conv. Total (cfs)	257440.3	Conv. (cfs)	6287.1	238525.8	12627.4
Length Wtd. (ft)	38.80	Wetted Per. (ft)	257.13	409.73	128.64
Min Ch El (ft)	78.37	Shear (lb/sq ft)	0.61	4.88	1.90
Alpha	1.16	Stream Power (lb/ft s)	2.76	65.66	11.07
Frctn Loss (ft)	0.66	Cum Volume (acre-ft)	652.23	1413.48	102.51
C & E Loss (ft)	0.01	Cum SA (acres)	227.42	207.48	28.93

CROSS SECTION OUTPUT Profile #Q100

E.G. Elev (ft)	90.67	Element	Left OB	Channel	Right OB
Vel Head (ft)	3.50	Wt. n-Val.	0.045	0.041	0.050
W.S. Elev (ft)	87.17	Reach Len. (ft)	44.06	38.94	33.57
Crit W.S. (ft)	87.96	Flow Area (sq ft)	460.46	2610.91	419.08
E.G. Slope (ft/ft)	0.015832	Area (sq ft)	460.46	2610.91	419.08
Q Total (cfs)	47312.00	Flow (cfs)	2843.15	41362.50	3106.35
Top Width (ft)	831.42	Top Width (ft)	271.94	409.43	150.05
Vel Total (ft/s)	13.55	Avg. Vel. (ft/s)	6.17	15.84	7.41
Max Chl Dpth (ft)	8.80	Hydr. Depth (ft)	1.69	6.38	2.79
Conv. Total (cfs)	376011.5	Conv. (cfs)	22595.9	328727.9	24687.7
Length Wtd. (ft)	38.88	Wetted Per. (ft)	273.22	409.73	150.16
Min Ch El (ft)	78.37	Shear (lb/sq ft)	1.67	6.30	2.76
Alpha	1.23	Stream Power (lb/ft s)	10.29	99.78	20.45
Frctn Loss (ft)	0.71	Cum Volume (acre-ft)	1221.95	1775.63	155.88
C & E Loss (ft)	0.01	Cum SA (acres)	325.39	207.67	31.70

CROSS SECTION OUTPUT Profile #Q100HC

E.G. Elev (ft)	96.58	Element	Left OB	Channel	Right OB
Vel Head (ft)	5.28	Wt. n-Val.	0.048	0.040	0.050
W.S. Elev (ft)	91.30	Reach Len. (ft)	44.06	38.94	33.57
Crit W.S. (ft)	92.33	Flow Area (sq ft)	1696.87	4301.19	1166.60
E.G. Slope (ft/ft)	0.013329	Area (sq ft)	1696.87	4301.19	1166.60
Q Total (cfs)	118891.00	Flow (cfs)	18414.08	87997.03	12479.89
Top Width (ft)	947.44	Top Width (ft)	326.36	409.43	211.65
Vel Total (ft/s)	16.59	Avg. Vel. (ft/s)	10.85	20.46	10.70
Max Chl Dpth (ft)	12.93	Hydr. Depth (ft)	5.20	10.51	5.51
Conv. Total (cfs)	1029791.0	Conv. (cfs)	159496.2	762198.6	108096.3
Length Wtd. (ft)	39.07	Wetted Per. (ft)	327.80	409.73	211.90
Min Ch El (ft)	78.37	Shear (lb/sq ft)	4.31	8.74	4.58
Alpha	1.23	Stream Power (lb/ft s)	46.74	178.72	49.01
Frctn Loss (ft)	0.64	Cum Volume (acre-ft)	4674.94	3015.96	388.20
C & E Loss (ft)	0.20	Cum SA (acres)	602.91	207.69	44.57

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

CROSS SECTION

RIVER: San Mateo Creek
REACH: Lower RS: 15871.7*

INPUT
Description:
Station Elevation Data num= 115

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	114.46	47.13	110.2	114.87	96.4	115.16	96.28	115.77	96.12
116.33	95.93	132.41	95.83	146.64	94.74	171.43	92.64	173.33	92.5
174.62	92.34	176.75	92.05	184.81	91.43	186.62	91.31	187.29	91.26
192.54	90.97	218.92	89.25	236.09	87.93	244.65	87.32	255.72	86.45
258.93	86.19	279.53	85.72	284.53	85.61	296.86	85.48	328.74	85.3
400.54	85.31	411.96	85.26	418.12	85.17	435.97	84.9	437.88	84.87
444.57	84.91	448.14	84.81	458.05	84.6	474.92	84.34	484.13	84.05
486.1	84.02	486.52	84.01	488.68	83.03	495.36	81.4	497.86	82.29
506.93	84.25	507.72	84.27	512.53	83.3	514.13	83.26	515.55	83.22
518.37	83.15	520.89	83.09	522.26	83.08	524.78	83.05	524.85	83.05
528.01	83	536.21	82.9	567.47	82.5	586.58	82.26	587.9	82.24
598.24	82.14	599.25	82.12	641.07	81.69	719.54	80.69	722.56	80.54
748.96	79.26	755.79	78.93	771.8	78.85	783.68	78.79	797.63	78.64
797.89	78.63	803.63	78.57	812.08	78.47	817.84	78.4	819.87	78.38
821.95	78.36	845.8	78.57	867.13	78.79	916.44	80.34	932.08	80.91
950.52	81.38	958.09	81.69	975.01	82.5	1007.47	84.14	1011.93	84.37
1023.16	84.81	1041.69	85.73	1045.25	85.91	1061.05	86.37	1062.65	86.42
1077.72	87.06	1079.29	87.16	1088.35	87.75	1098.88	88.46	1139.13	91.4
1152.19	92.33	1156.66	92.65	1162.26	93.06	1166	93.33	1195.79	96.6
1207.19	97.88	1216.46	98.89	1218.74	99.14	1244.01	100.73	1245.15	100.8
1302.23	103.68	1321.84	104.66	1336.02	105.37	1351.25	105.83	1376.53	106.24
1387.92	106.47	1392.26	106.55	1394.16	106.61	1395.73	106.68	1437.2	108.28
1456.97	109.01	1467.16	109.7	1495.6	111.56	1513.41	112.68	1524.66	113.4

Manning's n Values num= 13

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.05	486.1	.038	495.36	.047	567.47	.035	598.24	.038
797.63	.05	845.8	.047	932.08	.038	950.52	.035	1041.69	.035
1152.19	.035	1395.73	.047	1524.66	.047				

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
507.72	950.52	44.06	38.94	33.57	.1	.3

CROSS SECTION OUTPUT Profile #Q50

			Left OB	Channel	Right OB
E.G. Elev (ft)	88.10	Element			
Vel Head (ft)	2.29	Wt. n-Val.	0.045	0.042	0.035
W.S. Elev (ft)	85.81	Reach Len. (ft)	44.06	38.94	33.57
Crit W.S. (ft)	86.07	Flow Area (sq ft)	204.50	2299.85	206.77
E.G. Slope (ft/ft)	0.013111	Area (sq ft)	204.50	2299.85	206.77
Q Total (cfs)	31354.00	Flow (cfs)	885.94	28735.11	1732.96
Top Width (ft)	767.70	Top Width (ft)	232.15	442.80	92.76
Vel Total (ft/s)	11.56	Avg. Vel. (ft/s)	4.33	12.49	8.38
Max Chl Dpth (ft)	7.45	Hydr. Depth (ft)	0.88	5.19	2.23
Conv. Total (cfs)	273830.5	Conv. (cfs)	7737.3	250958.4	15134.8
Length Wtd. (ft)	38.85	Wetted Per. (ft)	232.93	443.00	92.86
Min Ch El (ft)	78.36	Shear (lb/sq ft)	0.72	4.25	1.82
Alpha	1.10	Stream Power (lb/ft s)	3.11	53.09	15.27
Frctn Loss (ft)	0.49	Cum Volume (acre-ft)	652.05	1411.49	102.33
C & E Loss (ft)	0.19	Cum SA (acres)	227.17	207.10	28.85

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.

CROSS SECTION OUTPUT Profile #Q100

			Left OB	Channel	Right OB
E.G. Elev (ft)	89.90	Element			
Vel Head (ft)	2.74	Wt. n-Val.	0.048	0.042	0.035
W.S. Elev (ft)	87.16	Reach Len. (ft)	44.06	38.94	33.57
Crit W.S. (ft)	87.44	Flow Area (sq ft)	543.58	2898.42	358.55
E.G. Slope (ft/ft)	0.012172	Area (sq ft)	543.58	2898.42	358.55
Q Total (cfs)	47312.00	Flow (cfs)	3184.61	40375.61	3751.77
Top Width (ft)	832.66	Top Width (ft)	261.06	442.80	128.80
Vel Total (ft/s)	12.45	Avg. Vel. (ft/s)	5.86	13.93	10.46
Max Chl Dpth (ft)	8.80	Hydr. Depth (ft)	2.08	6.55	2.78
Conv. Total (cfs)	428827.4	Conv. (cfs)	28864.8	365957.2	34005.4
Length Wtd. (ft)	38.92	Wetted Per. (ft)	261.89	443.00	128.93
Min Ch El (ft)	78.36	Shear (lb/sq ft)	1.58	4.97	2.11
Alpha	1.14	Stream Power (lb/ft s)	9.24	69.26	22.11
Frctn Loss (ft)	0.54	Cum Volume (acre-ft)	1221.44	1773.16	155.58
C & E Loss (ft)	0.23	Cum SA (acres)	325.12	207.29	31.59

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

CROSS SECTION OUTPUT Profile #Q100HC

			Left OB	Channel	Right OB
E.G. Elev (ft)	96.00	Element			
Vel Head (ft)	5.54	Wt. n-Val.	0.049	0.042	0.035
W.S. Elev (ft)	90.45	Reach Len. (ft)	44.06	38.94	33.57
Crit W.S. (ft)	91.66	Flow Area (sq ft)	1476.84	4356.20	861.62
E.G. Slope (ft/ft)	0.015257	Area (sq ft)	1476.84	4356.20	861.62
Q Total (cfs)	118891.00	Flow (cfs)	15992.67	88544.08	14354.25
Top Width (ft)	925.73	Top Width (ft)	307.27	442.80	175.66
Vel Total (ft/s)	17.76	Avg. Vel. (ft/s)	10.83	20.33	16.66
Max Chl Dpth (ft)	12.09	Hydr. Depth (ft)	4.81	9.84	4.90
Conv. Total (cfs)	962530.9	Conv. (cfs)	129475.3	716844.9	116210.8
Length Wtd. (ft)	39.05	Wetted Per. (ft)	308.22	443.00	175.91
Min Ch El (ft)	78.36	Shear (lb/sq ft)	4.56	9.37	4.67
Alpha	1.13	Stream Power (lb/ft s)	49.42	190.38	77.72
Frctn Loss (ft)	0.56	Cum Volume (acre-ft)	4673.33	3012.09	387.42
C & E Loss (ft)	0.03	Cum SA (acres)	602.59	207.31	44.42

CROSS SECTION

RIVER: San Mateo Creek
REACH: Lower RS: 15832.8*

INPUT
Description:
Station Elevation Data num= 115

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	113.46	46.59	109.23	113.55	97.03	113.84	96.92	114.44	96.79
114.99	96.62	130.88	96.27	144.96	95.15	169.45	93.03	171.34	92.89
172.61	92.66	174.72	92.26	182.69	91.73	184.47	91.64	185.14	91.61
190.32	91.43	216.4	89.98	233.38	88.66	241.83	88.03	252.78	87.05
255.95	86.75	276.32	85.8	281.26	85.57	293.44	85.31	324.96	84.91
395.94	84.87	407.22	84.75	413.31	84.64	430.96	84.31	432.84	84.28
439.45	84.43	442.99	84.29	452.78	83.97	469.45	83.65	478.56	83.36

480.5	83.32	480.92	83.31	483.05	82.51	489.66	81.16	492.59	81.84
503.22	83.3	504.14	83.3	509.78	82.46	511.64	82.41	513.32	82.36
516.61	82.26	519.57	82.18	521.18	82.17	524.13	82.14	524.21	82.14
527.91	82.11	537.51	82.03	574.13	81.71	596.51	81.52	598.06	81.51
610.17	81.46	611.35	81.45	660.35	81.22	752.26	80.42	755.8	80.31
786.72	79.23	794.73	78.95	813.48	78.86	827.4	78.79	843.73	78.64
844.04	78.63	850.77	78.57	860.66	78.46	867.41	78.39	869.78	78.37
872.23	78.34	892.27	78.59	910.2	78.82	951.66	80.21	964.81	80.71
980.31	81.14	987.33	81.47	1003.02	82.38	1033.13	84.33	1037.26	84.6
1047.68	85.02	1064.86	86.11	1068.16	86.31	1082.82	86.98	1084.31	87.04
1098.28	87.79	1099.74	87.9	1108.14	88.46	1117.91	89.19	1155.23	92.12
1167.35	93.05	1171.49	93.37	1176.69	93.79	1180.15	94.04	1207.78	96.99
1218.35	98.18	1226.95	99.12	1229.07	99.35	1252.5	100.98	1253.55	101.04
1306.49	103.76	1324.68	104.66	1337.83	105.32	1351.95	105.79	1375.41	106.27
1385.96	106.58	1389.99	106.7	1391.75	106.76	1393.21	106.83	1431.67	108.58
1450.01	109.33	1459.46	109.97	1485.83	111.62	1502.34	112.63	1512.78	113.27

Manning's n Values num= 13

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.05	480.5	.04	489.66	.045	537.51	.035	596.51	.04
813.48	.05	860.66	.045	951.66	.04	980.31	.035	1064.86	.035
1167.35	.035	1393.21	.045	1512.78	.045				

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
504.14	980.31	44.06	38.94	33.57	.1 .3

CROSS SECTION OUTPUT Profile #Q50

			Left OB	Channel	Right OB
E.G. Elev (ft)	87.58	Element			
Vel Head (ft)	2.28	Wt. n-Val.	0.045	0.042	0.035
W.S. Elev (ft)	85.31	Reach Len. (ft)	44.06	38.94	33.57
Crit W.S. (ft)	85.54	Flow Area (sq ft)	198.78	2349.93	149.14
E.G. Slope (ft/ft)	0.014153	Area (sq ft)	198.78	2349.93	149.14
Q Total (cfs)	31354.00	Flow (cfs)	953.81	29176.13	1224.07
Top Width (ft)	758.40	Top Width (ft)	210.36	476.17	71.87
Vel Total (ft/s)	11.62	Avg. Vel. (ft/s)	4.80	12.42	8.21
Max Chl Dpth (ft)	6.97	Hydr. Depth (ft)	0.94	4.94	2.08
Conv. Total (cfs)	263549.8	Conv. (cfs)	8017.3	245243.4	10289.1
Length Wtd. (ft)	38.95	Wetted Per. (ft)	210.84	476.31	72.00
Min Ch El (ft)	78.34	Shear (lb/sq ft)	0.83	4.36	1.83
Alpha	1.09	Stream Power (lb/ft s)	4.00	54.12	15.02
Frctn Loss (ft)	0.49	Cum Volume (acre-ft)	651.84	1409.41	102.20
C & E Loss (ft)	0.08	Cum SA (acres)	226.95	206.69	28.78

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.

CROSS SECTION OUTPUT Profile #Q100

			Left OB	Channel	Right OB
E.G. Elev (ft)	89.41	Element			
Vel Head (ft)	2.78	Wt. n-Val.	0.048	0.042	0.035
W.S. Elev (ft)	86.63	Reach Len. (ft)	44.06	38.94	33.57
Crit W.S. (ft)	86.95	Flow Area (sq ft)	505.08	2981.93	258.80
E.G. Slope (ft/ft)	0.013120	Area (sq ft)	505.08	2981.93	258.80
Q Total (cfs)	47312.00	Flow (cfs)	3105.59	41594.74	2611.67
Top Width (ft)	816.76	Top Width (ft)	245.68	476.17	94.91
Vel Total (ft/s)	12.63	Avg. Vel. (ft/s)	6.15	13.95	10.09

Max Chl Dpth (ft)	8.29	Hydr. Depth (ft)	2.06	6.26	2.73
Conv. Total (cfs)	413046.9	Conv. (cfs)	27112.7	363133.6	22800.6
Length Wtd. (ft)	39.05	Wetted Per. (ft)	246.19	476.31	95.08
Min Ch El (ft)	78.34	Shear (lb/sq ft)	1.68	5.13	2.23
Alpha	1.12	Stream Power (lb/ft s)	10.33	71.53	22.50
Frctn Loss (ft)	0.49	Cum Volume (acre-ft)	1220.91	1770.54	155.34
C & E Loss (ft)	0.00	Cum SA (acres)	324.87	206.87	31.51

CROSS SECTION OUTPUT Profile #Q100HC

E.G. Elev (ft)	95.38	Element	Left OB	Channel	Right OB
Vel Head (ft)	5.03	Wt. n-Val.	0.049	0.042	0.035
W.S. Elev (ft)	90.34	Reach Len. (ft)	44.06	38.94	33.57
Crit W.S. (ft)	91.15	Flow Area (sq ft)	1503.02	4748.94	728.90
E.G. Slope (ft/ft)	0.013510	Area (sq ft)	1503.02	4748.94	728.90
Q Total (cfs)	118891.00	Flow (cfs)	16024.10	91458.34	11408.55
Top Width (ft)	922.75	Top Width (ft)	294.28	476.17	152.30
Vel Total (ft/s)	17.03	Avg. Vel. (ft/s)	10.66	19.26	15.65
Max Chl Dpth (ft)	12.00	Hydr. Depth (ft)	5.11	9.97	4.79
Conv. Total (cfs)	1022877.0	Conv. (cfs)	137863.2	786860.8	98153.4
Length Wtd. (ft)	39.18	Wetted Per. (ft)	294.94	476.31	152.58
Min Ch El (ft)	78.34	Shear (lb/sq ft)	4.30	8.41	4.03
Alpha	1.12	Stream Power (lb/ft s)	45.82	161.95	63.06
Frctn Loss (ft)	0.48	Cum Volume (acre-ft)	4671.82	3008.02	386.81
C & E Loss (ft)	0.43	Cum SA (acres)	602.29	206.89	44.29

Warning: The energy equation could not be balanced within the specified number of iterations. The program selected the water surface that had the least amount of error between computed and assumed values.
Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.

CROSS SECTION

RIVER: San Mateo Creek
REACH: Lower RS: 15793.8*

INPUT
Description:
Station Elevation Data num= 115

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	112.46	46.04	108.27	112.22	97.65	112.51	97.57	113.1	97.45
113.65	97.31	129.36	96.7	143.27	95.55	167.48	93.43	169.34	93.28
170.6	92.99	172.68	92.47	180.56	92.04	182.32	91.98	182.98	91.97
188.11	91.9	213.88	90.72	230.66	89.38	239.02	88.74	249.84	87.65
252.97	87.32	273.1	85.88	277.98	85.54	290.03	85.14	321.18	84.52
391.33	84.43	402.48	84.25	408.5	84.12	425.94	83.73	427.81	83.68
434.34	83.96	437.83	83.76	447.51	83.34	463.99	82.96	472.99	82.66
474.91	82.62	475.33	82.6	477.43	81.99	483.96	80.92	487.31	81.39
499.5	82.34	500.55	82.33	507.02	81.63	509.16	81.56	511.08	81.49
514.85	81.37	518.24	81.27	520.09	81.26	523.47	81.24	523.56	81.24
527.8	81.21	538.81	81.15	580.79	80.92	606.45	80.79	608.22	80.79
622.1	80.79	623.46	80.78	679.62	80.75	784.98	80.16	789.04	80.07
824.48	79.2	833.66	78.98	855.16	78.87	871.11	78.79	889.84	78.64
890.19	78.63	897.9	78.56	909.25	78.46	916.97	78.38	919.7	78.36
922.5	78.33	938.75	78.6	953.28	78.86	986.88	80.09	997.54	80.52

1010.1	80.91	1016.57	81.24	1031.04	82.26	1058.78	84.52	1062.6	84.83
1072.2	85.24	1088.04	86.48	1091.08	86.71	1104.59	87.58	1105.96	87.65
1118.84	88.53	1120.18	88.64	1127.93	89.18	1136.93	89.91	1171.34	92.84
1182.5	93.78	1186.32	94.1	1191.11	94.51	1194.31	94.75	1219.77	97.39
1229.52	98.47	1237.44	99.34	1239.39	99.55	1260.99	101.22	1261.96	101.28
1310.76	103.83	1327.52	104.67	1339.64	105.27	1352.66	105.74	1374.28	106.31
1384.01	106.69	1387.72	106.84	1389.35	106.92	1390.68	106.99	1426.14	108.87
1443.04	109.65	1451.75	110.23	1476.06	111.69	1491.28	112.57	1500.9	113.14

Manning's n Values num= 13

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.05	474.91	.043	483.96	.043	538.81	.035	606.45	.043
824.48	.05	889.84	.043	986.88	.043	1010.1	.035	1088.04	.035
1182.5	.035	1390.68	.043	1500.9	.043				

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
499.5	1010.1	44.06	38.94	33.57	.1	.3

CROSS SECTION OUTPUT Profile #Q50

			Left OB	Channel	Right OB
E.G. Elev (ft)	87.03	Element			
Vel Head (ft)	1.73	Wt. n-Val.	0.046	0.043	0.035
W.S. Elev (ft)	85.30	Reach Len. (ft)	44.06	38.94	33.57
Crit W.S. (ft)	84.99	Flow Area (sq ft)	299.43	2663.35	136.43
E.G. Slope (ft/ft)	0.010653	Area (sq ft)	299.43	2663.35	136.43
Q Total (cfs)	31354.00	Flow (cfs)	1428.64	28924.58	1000.78
Top Width (ft)	787.61	Top Width (ft)	214.19	510.60	62.82
Vel Total (ft/s)	10.12	Avg. Vel. (ft/s)	4.77	10.86	7.34
Max Chl Dpth (ft)	6.97	Hydr. Depth (ft)	1.40	5.22	2.17
Conv. Total (cfs)	303785.6	Conv. (cfs)	13841.9	280247.3	9696.5
Length Wtd. (ft)	39.05	Wetted Per. (ft)	214.48	510.71	62.98
Min Ch El (ft)	78.33	Shear (lb/sq ft)	0.93	3.47	1.44
Alpha	1.09	Stream Power (lb/ft s)	4.43	37.67	10.57
Frctn Loss (ft)	0.35	Cum Volume (acre-ft)	651.59	1407.17	102.09
C & E Loss (ft)	0.11	Cum SA (acres)	226.73	206.25	28.73

Note: Hydraulic jump has occurred between this cross section and the previous upstream section.

CROSS SECTION OUTPUT Profile #Q100

			Left OB	Channel	Right OB
E.G. Elev (ft)	88.83	Element			
Vel Head (ft)	2.22	Wt. n-Val.	0.048	0.043	0.035
W.S. Elev (ft)	86.61	Reach Len. (ft)	44.06	38.94	33.57
Crit W.S. (ft)	86.37	Flow Area (sq ft)	598.31	3335.50	230.20
E.G. Slope (ft/ft)	0.010435	Area (sq ft)	598.31	3335.50	230.20
Q Total (cfs)	47312.00	Flow (cfs)	3712.19	41549.99	2049.83
Top Width (ft)	826.94	Top Width (ft)	236.65	510.60	79.70
Vel Total (ft/s)	11.36	Avg. Vel. (ft/s)	6.20	12.46	8.90
Max Chl Dpth (ft)	8.28	Hydr. Depth (ft)	2.53	6.53	2.89
Conv. Total (cfs)	463160.1	Conv. (cfs)	36340.4	406753.0	20066.7
Length Wtd. (ft)	39.16	Wetted Per. (ft)	236.98	510.71	79.91
Min Ch El (ft)	78.33	Shear (lb/sq ft)	1.64	4.25	1.88
Alpha	1.11	Stream Power (lb/ft s)	10.20	53.00	16.71
Frctn Loss (ft)	0.35	Cum Volume (acre-ft)	1220.35	1767.71	155.15
C & E Loss (ft)	0.12	Cum SA (acres)	324.62	206.43	31.44

Note: Hydraulic jump has occurred between this cross section and the previous upstream section.

CROSS SECTION OUTPUT Profile #Q100HC

E.G. Elev (ft)	94.78	Element	Left OB	Channel	Right OB
Vel Head (ft)	3.42	Wt. n-Val.	0.049	0.043	0.035
W.S. Elev (ft)	91.36	Reach Len. (ft)	44.06	38.94	33.57
Crit W.S. (ft)	90.55	Flow Area (sq ft)	1857.43	5759.80	770.26
E.G. Slope (ft/ft)	0.008160	Area (sq ft)	1857.43	5759.80	770.26
Q Total (cfs)	118891.00	Flow (cfs)	17512.76	91194.23	10184.01
Top Width (ft)	954.09	Top Width (ft)	299.62	510.60	143.87
Vel Total (ft/s)	14.17	Avg. Vel. (ft/s)	9.43	15.83	13.22
Max Chl Dpth (ft)	13.03	Hydr. Depth (ft)	6.20	11.28	5.35
Conv. Total (cfs)	1316144.0	Conv. (cfs)	193869.2	1009536.0	112738.7
Length Wtd. (ft)	39.28	Wetted Per. (ft)	300.14	510.71	144.26
Min Ch El (ft)	78.33	Shear (lb/sq ft)	3.15	5.75	2.72
Alpha	1.10	Stream Power (lb/ft s)	29.72	90.97	35.96
Frctn Loss (ft)	0.29	Cum Volume (acre-ft)	4670.13	3003.32	386.23
C & E Loss (ft)	0.13	Cum SA (acres)	601.99	206.45	44.18

Note: Hydraulic jump has occurred between this cross section and the previous upstream section.

CROSS SECTION

RIVER: San Mateo Creek
REACH: Lower RS: 15754.9*

INPUT
Description:
Station Elevation Data num= 115

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	111.45	45.5	107.3	110.9	98.27	111.19	98.21	111.77	98.11
112.32	98.01	127.84	97.13	141.58	95.96	165.51	93.83	167.35	93.68
168.59	93.31	170.65	92.68	178.43	92.34	180.17	92.32	180.83	92.32
185.89	92.36	211.36	91.46	227.94	90.1	236.2	89.44	246.9	88.25
249.99	87.88	269.88	85.97	274.71	85.5	286.61	84.96	317.4	84.13
386.72	83.99	397.74	83.75	403.69	83.59	420.92	83.14	422.77	83.09
429.22	83.49	432.67	83.24	442.24	82.71	458.52	82.27	467.42	81.97
469.32	81.92	469.73	81.9	471.81	81.47	478.26	80.68	482.04	80.94
495.78	81.38	496.97	81.36	504.26	80.79	506.68	80.72	508.84	80.63
513.09	80.48	516.92	80.36	519	80.35	522.81	80.34	522.92	80.34
527.7	80.32	540.12	80.28	587.44	80.14	616.38	80.05	618.38	80.06
634.04	80.11	635.56	80.11	698.89	80.28	817.71	79.9	822.28	79.84
862.24	79.18	872.6	79	896.83	78.88	914.83	78.79	935.94	78.64
936.34	78.63	945.03	78.56	957.83	78.45	966.54	78.37	969.61	78.34
972.77	78.32	985.22	78.62	996.36	78.89	1022.1	79.96	1030.27	80.32
1039.9	80.68	1045.81	81.01	1059.05	82.14	1084.44	84.7	1087.93	85.07
1096.72	85.45	1111.21	86.85	1114	87.12	1126.36	88.18	1127.61	88.27
1139.4	89.26	1140.63	89.38	1147.71	89.89	1155.95	90.63	1187.44	93.56
1197.66	94.5	1201.15	94.82	1205.53	95.23	1208.46	95.46	1231.76	97.78
1240.68	98.77	1247.93	99.57	1249.72	99.76	1269.48	101.46	1270.37	101.51
1315.02	103.9	1330.36	104.67	1341.46	105.22	1353.37	105.69	1373.15	106.34
1382.05	106.81	1385.45	106.98	1386.94	107.07	1388.16	107.15	1420.6	109.16
1436.07	109.96	1444.04	110.5	1466.29	111.75	1480.22	112.52	1489.02	113.01

Manning's n Values num= 13

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.05	469.32	.045	478.26	.04	540.12	.035	616.38	.045

862.24	.05	896.83	.04	1022.1	.045	1039.9	.035	1111.21	.035
1197.66	.035	1388.16	.04	1489.02	.04				

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
495.78	1039.9	44.06	38.94	33.57	.1	.3

CROSS SECTION OUTPUT Profile #Q50

			Left OB	Channel	Right OB
E.G. Elev (ft)	86.57	Element			
Vel Head (ft)	1.38	Wt. n-Val.	0.046	0.042	0.035
W.S. Elev (ft)	85.19	Reach Len. (ft)	44.06	38.94	33.57
Crit W.S. (ft)		Flow Area (sq ft)	381.62	2962.90	119.63
E.G. Slope (ft/ft)	0.007755	Area (sq ft)	381.62	2962.90	119.63
Q Total (cfs)	31354.00	Flow (cfs)	1781.09	28783.04	789.88
Top Width (ft)	809.09	Top Width (ft)	214.20	544.12	50.77
Vel Total (ft/s)	9.05	Avg. Vel. (ft/s)	4.67	9.71	6.60
Max Chl Dpth (ft)	6.87	Hydr. Depth (ft)	1.78	5.45	2.36
Conv. Total (cfs)	356039.6	Conv. (cfs)	20225.1	326845.1	8969.4
Length Wtd. (ft)	39.09	Wetted Per. (ft)	214.39	544.21	50.98
Min Ch El (ft)	78.32	Shear (lb/sq ft)	0.86	2.64	1.14
Alpha	1.09	Stream Power (lb/ft s)	4.02	25.61	7.50
Frctn Loss (ft)	0.26	Cum Volume (acre-ft)	651.25	1404.65	101.99
C & E Loss (ft)	0.09	Cum SA (acres)	226.52	205.78	28.69

CROSS SECTION OUTPUT Profile #Q100

			Left OB	Channel	Right OB
E.G. Elev (ft)	88.35	Element			
Vel Head (ft)	1.81	Wt. n-Val.	0.047	0.042	0.035
W.S. Elev (ft)	86.55	Reach Len. (ft)	44.06	38.94	33.57
Crit W.S. (ft)		Flow Area (sq ft)	686.11	3701.11	202.14
E.G. Slope (ft/ft)	0.007772	Area (sq ft)	686.11	3701.11	202.14
Q Total (cfs)	47312.00	Flow (cfs)	4105.78	41648.55	1557.67
Top Width (ft)	844.16	Top Width (ft)	231.89	544.12	68.15
Vel Total (ft/s)	10.31	Avg. Vel. (ft/s)	5.98	11.25	7.71
Max Chl Dpth (ft)	8.23	Hydr. Depth (ft)	2.96	6.80	2.97
Conv. Total (cfs)	536671.8	Conv. (cfs)	46572.9	472429.9	17669.0
Length Wtd. (ft)	39.20	Wetted Per. (ft)	232.13	544.21	68.42
Min Ch El (ft)	78.32	Shear (lb/sq ft)	1.43	3.30	1.43
Alpha	1.10	Stream Power (lb/ft s)	8.58	37.13	11.05
Frctn Loss (ft)	0.27	Cum Volume (acre-ft)	1219.70	1764.57	154.99
C & E Loss (ft)	0.11	Cum SA (acres)	324.39	205.96	31.38

CROSS SECTION OUTPUT Profile #Q100HC

			Left OB	Channel	Right OB
E.G. Elev (ft)	94.37	Element			
Vel Head (ft)	3.00	Wt. n-Val.	0.048	0.042	0.035
W.S. Elev (ft)	91.36	Reach Len. (ft)	44.06	38.94	33.57
Crit W.S. (ft)		Flow Area (sq ft)	1921.49	6323.50	664.81
E.G. Slope (ft/ft)	0.006597	Area (sq ft)	1921.49	6323.50	664.81
Q Total (cfs)	118891.00	Flow (cfs)	17459.56	93441.54	7989.91
Top Width (ft)	951.32	Top Width (ft)	283.26	544.12	123.95
Vel Total (ft/s)	13.34	Avg. Vel. (ft/s)	9.09	14.78	12.02
Max Chl Dpth (ft)	13.04	Hydr. Depth (ft)	6.78	11.62	5.36
Conv. Total (cfs)	1463759.0	Conv. (cfs)	214958.1	1150431.0	98370.0
Length Wtd. (ft)	39.32	Wetted Per. (ft)	283.73	544.21	124.42
Min Ch El (ft)	78.32	Shear (lb/sq ft)	2.79	4.79	2.20
Alpha	1.09	Stream Power (lb/ft s)	25.34	70.72	26.45

Frctn Loss (ft)	0.24	Cum Volume (acre-ft)	4668.21	2997.92	385.68
C & E Loss (ft)	0.12	Cum SA (acres)	601.69	205.98	44.08

CROSS SECTION

RIVER: San Mateo Creek
REACH: Lower RS: 15716.0*

INPUT
Description:
Station Elevation Data num= 115

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	110.45	44.96	106.34	109.58	98.89	109.86	98.85	110.44	98.78
110.98	98.7	126.31	97.57	139.89	96.36	163.54	94.23	165.35	94.07
166.58	93.63	168.61	92.9	176.31	92.65	178.03	92.65	178.67	92.67
183.68	92.82	208.84	92.19	225.23	90.83	233.39	90.15	243.95	88.86
247.01	88.45	266.67	86.05	271.43	85.47	283.2	84.79	313.61	83.75
382.11	83.55	393	83.25	398.87	83.07	415.91	82.56	417.73	82.5
424.11	83.01	427.52	82.71	436.97	82.09	453.06	81.58	461.85	81.27
463.72	81.21	464.13	81.2	466.18	80.95	472.56	80.44	476.77	80.49
492.07	80.43	493.39	80.39	501.51	79.96	504.19	79.87	506.6	79.76
511.34	79.59	515.59	79.44	517.91	79.44	522.15	79.43	522.27	79.43
527.59	79.42	541.42	79.41	594.1	79.35	626.32	79.32	628.54	79.33
645.97	79.44	647.67	79.44	718.17	79.81	850.43	79.63	855.52	79.6
900.01	79.15	911.53	79.03	938.51	78.89	958.54	78.79	982.05	78.65
982.49	78.63	992.17	78.56	1006.41	78.45	1016.11	78.36	1019.53	78.33
1023.05	78.3	1031.7	78.63	1039.43	78.93	1057.32	79.83	1063	80.13
1069.69	80.44	1075.06	80.79	1087.07	82.02	1110.1	84.89	1113.27	85.3
1121.24	85.66	1134.39	87.22	1136.91	87.52	1148.13	88.78	1149.27	88.89
1159.96	90	1161.07	90.12	1167.5	90.61	1174.98	91.36	1203.54	94.28
1212.81	95.22	1215.98	95.54	1219.96	95.95	1222.61	96.17	1243.75	98.18
1251.84	99.07	1258.42	99.79	1260.04	99.97	1277.97	101.71	1278.78	101.75
1319.29	103.98	1333.2	104.67	1343.27	105.17	1354.07	105.65	1372.02	106.37
1380.1	106.92	1383.18	107.13	1384.53	107.22	1385.64	107.3	1415.07	109.46
1429.1	110.28	1436.34	110.77	1456.52	111.82	1469.15	112.47	1477.14	112.88

Manning's n Values num= 13

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.05	463.72	.048	472.56	.037	541.42	.035	626.32	.048
855.52	.05	938.51	.037	1031.7	.048	1069.69	.035	1134.39	.035
1212.81	.035	1385.64	.037	1477.14	.037				

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
476.77	1069.69	44.06	38.94	33.57	.1	.3

CROSS SECTION OUTPUT Profile #Q50

E.G. Elev (ft)	86.22	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.08	Wt. n-Val.	0.048	0.042	0.035
W.S. Elev (ft)	85.14	Reach Len. (ft)	44.06	38.94	33.57
Crit W.S. (ft)		Flow Area (sq ft)	404.68	3405.20	108.24
E.G. Slope (ft/ft)	0.005746	Area (sq ft)	404.68	3405.20	108.24
Q Total (cfs)	31354.00	Flow (cfs)	1585.70	29119.91	648.39
Top Width (ft)	834.91	Top Width (ft)	199.64	592.92	42.35
Vel Total (ft/s)	8.00	Avg. Vel. (ft/s)	3.92	8.55	5.99
Max Chl Dpth (ft)	6.84	Hydr. Depth (ft)	2.03	5.74	2.56
Conv. Total (cfs)	413642.5	Conv. (cfs)	20919.6	384168.9	8554.0

Length Wtd. (ft)	39.12	Wetted Per. (ft)	199.79	593.00	42.62
Min Ch El (ft)	78.30	Shear (lb/sq ft)	0.73	2.06	0.91
Alpha	1.08	Stream Power (lb/ft s)	2.85	17.61	5.46
Frctn Loss (ft)	0.20	Cum Volume (acre-ft)	650.85	1401.81	101.90
C & E Loss (ft)	0.07	Cum SA (acres)	226.31	205.27	28.65

CROSS SECTION OUTPUT Profile #Q100

E.G. Elev (ft)	87.98	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.46	Wt. n-Val.	0.049	0.042	0.035
W.S. Elev (ft)	86.53	Reach Len. (ft)	44.06	38.94	33.57
Crit W.S. (ft)		Flow Area (sq ft)	692.71	4226.38	179.99
E.G. Slope (ft/ft)	0.005964	Area (sq ft)	692.71	4226.38	179.99
Q Total (cfs)	47312.00	Flow (cfs)	3635.17	42438.12	1238.71
Top Width (ft)	865.77	Top Width (ft)	214.00	592.92	58.85
Vel Total (ft/s)	9.28	Avg. Vel. (ft/s)	5.25	10.04	6.88
Max Chl Dpth (ft)	8.23	Hydr. Depth (ft)	3.24	7.13	3.06
Conv. Total (cfs)	612637.4	Conv. (cfs)	47071.4	549526.1	16039.9
Length Wtd. (ft)	39.22	Wetted Per. (ft)	214.22	593.00	59.19
Min Ch El (ft)	78.30	Shear (lb/sq ft)	1.20	2.65	1.13
Alpha	1.09	Stream Power (lb/ft s)	6.32	26.65	7.79
Frctn Loss (ft)	0.21	Cum Volume (acre-ft)	1219.00	1761.02	154.84
C & E Loss (ft)	0.08	Cum SA (acres)	324.16	205.45	31.33

CROSS SECTION OUTPUT Profile #Q100HC

E.G. Elev (ft)	94.01	Element	Left OB	Channel	Right OB
Vel Head (ft)	2.61	Wt. n-Val.	0.049	0.042	0.035
W.S. Elev (ft)	91.40	Reach Len. (ft)	44.06	38.94	33.57
Crit W.S. (ft)		Flow Area (sq ft)	1836.19	7118.59	575.41
E.G. Slope (ft/ft)	0.005532	Area (sq ft)	1836.19	7118.59	575.41
Q Total (cfs)	118891.00	Flow (cfs)	15306.89	97159.62	6424.49
Top Width (ft)	957.09	Top Width (ft)	258.45	592.92	105.72
Vel Total (ft/s)	12.48	Avg. Vel. (ft/s)	8.34	13.65	11.17
Max Chl Dpth (ft)	13.10	Hydr. Depth (ft)	7.10	12.01	5.44
Conv. Total (cfs)	1598421.0	Conv. (cfs)	205792.3	1306255.0	86373.5
Length Wtd. (ft)	39.36	Wetted Per. (ft)	258.95	593.00	106.31
Min Ch El (ft)	78.30	Shear (lb/sq ft)	2.45	4.15	1.87
Alpha	1.08	Stream Power (lb/ft s)	20.42	56.59	20.87
Frctn Loss (ft)	0.21	Cum Volume (acre-ft)	4666.31	2991.91	385.20
C & E Loss (ft)	0.10	Cum SA (acres)	601.42	205.47	43.99

CROSS SECTION

RIVER: San Mateo Creek
REACH: Lower RS: 15677.08

INPUT
Description:
Station Elevation Data num= 57

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	109.45	163.36	94.46	166.58	93.11	174.18	92.95	175.88	92.99
181.46	93.28	206.32	92.93	230.57	90.86	241.01	89.46	263.45	86.13
268.16	85.43	279.78	84.62	309.83	83.36	377.5	83.11	412.69	81.91
418.99	82.54	422.36	82.19	431.7	81.46	466.86	80.2	501.71	79.02

504.36	78.9	509.58	78.7	514.27	78.53	516.82	78.53	521.63	78.53
527.49	78.53	600.76	78.56	636.25	78.58	657.9	78.76	659.77	78.77
737.44	79.34	888.76	79.37	937.77	79.12	980.19	78.9	1028.15	78.65
1028.64	78.63	1039.3	78.56	1054.99	78.44	1073.32	78.29	1099.48	80.21
1104.3	80.56	1115.08	81.9	1135.76	85.08	1138.6	85.53	1145.76	85.87
1157.56	87.59	1169.9	89.38	1181.52	90.86	1187.29	91.32	1234.38	96.67
1255.74	98.57	1286.46	101.95	1323.55	104.05	1370.89	106.4	1409.54	109.75
1428.63	111.04	1465.26	112.75						

Manning's n Values num= 6

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.05	527.49	.035	600.76	.05	937.77	.035	1054.99	.05
1157.56	.035								

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
466.86	1099.48	229.4	221.5	185.6	.1	.3

CROSS SECTION OUTPUT Profile #Q50

			Left OB	Channel	Right OB
E.G. Elev (ft)	85.95	Element			
Vel Head (ft)	0.85	Wt. n-Val.	0.050	0.044	0.050
W.S. Elev (ft)	85.10	Reach Len. (ft)	229.40	221.50	185.60
Crit W.S. (ft)		Flow Area (sq ft)	460.44	3860.98	97.75
E.G. Slope (ft/ft)	0.004512	Area (sq ft)	460.44	3860.98	97.75
Q Total (cfs)	31354.00	Flow (cfs)	1634.61	29344.81	374.58
Top Width (ft)	863.00	Top Width (ft)	193.97	632.62	36.41
Vel Total (ft/s)	7.10	Avg. Vel. (ft/s)	3.55	7.60	3.83
Max Chl Dpth (ft)	6.81	Hydr. Depth (ft)	2.37	6.10	2.68
Conv. Total (cfs)	466789.7	Conv. (cfs)	24335.6	436877.4	5576.7
Length Wtd. (ft)	221.83	Wetted Per. (ft)	194.13	632.73	36.75
Min Ch El (ft)	78.29	Shear (lb/sq ft)	0.67	1.72	0.75
Alpha	1.09	Stream Power (lb/ft s)	2.37	13.06	2.87
Frctn Loss (ft)	1.22	Cum Volume (acre-ft)	650.41	1398.56	101.82
C & E Loss (ft)	0.02	Cum SA (acres)	226.11	204.72	28.62

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 #Q100

			Left OB	Channel	Right OB
E.G. Elev (ft)	87.69	Element			
Vel Head (ft)	1.19	Wt. n-Val.	0.050	0.044	0.050
W.S. Elev (ft)	86.50	Reach Len. (ft)	229.40	221.50	185.60
Crit W.S. (ft)		Flow Area (sq ft)	741.79	4746.97	159.05
E.G. Slope (ft/ft)	0.004883	Area (sq ft)	741.79	4746.97	159.05
Q Total (cfs)	47312.00	Flow (cfs)	3616.98	42990.34	704.67
Top Width (ft)	889.13	Top Width (ft)	205.91	632.62	50.61
Vel Total (ft/s)	8.38	Avg. Vel. (ft/s)	4.88	9.06	4.43
Max Chl Dpth (ft)	8.21	Hydr. Depth (ft)	3.60	7.50	3.14
Conv. Total (cfs)	677090.8	Conv. (cfs)	51763.3	615242.8	10084.7
Length Wtd. (ft)	221.92	Wetted Per. (ft)	206.16	632.73	51.03
Min Ch El (ft)	78.29	Shear (lb/sq ft)	1.10	2.29	0.95
Alpha	1.09	Stream Power (lb/ft s)	5.35	20.71	4.21
Frctn Loss (ft)	1.42	Cum Volume (acre-ft)	1218.28	1757.01	154.71
C & E Loss (ft)	0.05	Cum SA (acres)	323.95	204.91	31.29

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

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

CROSS SECTION OUTPUT Profile #Q100HC

			Left OB	Channel	Right OB
E.G. Elev (ft)	93.71	Element			
Vel Head (ft)	2.29	Wt. n-Val.	0.050	0.044	0.049
W.S. Elev (ft)	91.42	Reach Len. (ft)	229.40	221.50	185.60
Crit W.S. (ft)		Flow Area (sq ft)	1838.59	7859.77	494.07
E.G. Slope (ft/ft)	0.004979	Area (sq ft)	1838.59	7859.77	494.07
Q Total (cfs)	118891.00	Flow (cfs)	14840.14	100272.50	3778.37
Top Width (ft)	964.18	Top Width (ft)	242.86	632.62	88.70
Vel Total (ft/s)	11.66	Avg. Vel. (ft/s)	8.07	12.76	7.65
Max Chl Dpth (ft)	13.13	Hydr. Depth (ft)	7.57	12.42	5.57
Conv. Total (cfs)	1684996.0	Conv. (cfs)	210323.5	1421123.0	53549.3
Length Wtd. (ft)	221.74	Wetted Per. (ft)	243.45	632.73	89.45
Min Ch El (ft)	78.29	Shear (lb/sq ft)	2.35	3.86	1.72
Alpha	1.08	Stream Power (lb/ft s)	18.95	49.26	13.13
Frctn Loss (ft)	1.57	Cum Volume (acre-ft)	4664.46	2985.22	384.79
C & E Loss (ft)	0.15	Cum SA (acres)	601.16	204.93	43.91

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

CROSS SECTION

RIVER: San Mateo Creek
REACH: Lower RS: 15455.59

INPUT
Description:
Station Elevation Data num= 59

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	103.47	148.03	89.5	151.79	87.95	155.29	89.39	162.5	89.98
163.5	89.86	164.28	88.85	165.22	88.54	174.14	89.25	177.38	88.84
190.1	88.38	227.99	87.78	257.22	88.02	310.79	86.75	344.65	86.45
344.8	86.43	344.99	86.41	353.69	85.2	364.24	80.91	369.99	79.11
372.44	78.61	375.87	78.39	393.22	78.38	394.28	78.43	414.05	81.65
421.98	82.99	435.46	83.47	448.43	82.56	468.78	82.25	527.06	80.29
587.08	79.88	603.56	79.81	619.51	79.46	620.85	79.43	693.92	77.81
700.31	77.82	750.85	77.87	759.57	77.95	777.49	78.11	799.72	78.29
996.6	78.49	1078.38	78.57	1111.65	78.42	1139.72	77.64	1151.85	77.87
1158.21	77.93	1191.98	78.25	1195.12	78.5	1212.5	79.92	1223.08	80.71
1232.14	82.47	1251.76	85.3	1265.05	88.28	1265.95	88.51	1293.69	95.43
1299.46	96.69	1330.26	101.19	1339.88	102.24	1346.75	102.68		

Manning's n Values num= 6

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.05	619.51	.035	700.31	.05	996.6	.035	1158.21	.05
1265.95	.035								

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

620.85 1212.5 159.78 172.75 206.99 .1 .3

CROSS SECTION OUTPUT Profile #Q50

			Left OB	Channel	Right OB
E.G. Elev (ft)	84.71	Element			
Vel Head (ft)	1.09	Wt. n-Val.	0.050	0.043	0.050
W.S. Elev (ft)	83.62	Reach Len. (ft)	159.78	172.75	206.99
Crit W.S. (ft)		Flow Area (sq ft)	754.93	3125.85	57.96
E.G. Slope (ft/ft)	0.006883	Area (sq ft)	754.93	3125.85	57.96
Q Total (cfs)	31354.00	Flow (cfs)	3761.87	27359.46	232.67
Top Width (ft)	882.54	Top Width (ft)	263.28	591.65	27.62
Vel Total (ft/s)	7.96	Avg. Vel. (ft/s)	4.98	8.75	4.01
Max Chl Dpth (ft)	5.98	Hydr. Depth (ft)	2.87	5.28	2.10
Conv. Total (cfs)	377914.9	Conv. (cfs)	45342.4	329768.1	2804.4
Length Wtd. (ft)	171.98	Wetted Per. (ft)	264.59	591.75	27.90
Min Ch El (ft)	77.64	Shear (lb/sq ft)	1.23	2.27	0.89
Alpha	1.10	Stream Power (lb/ft s)	6.11	19.87	3.58
Frctn Loss (ft)	1.47	Cum Volume (acre-ft)	647.21	1380.80	101.49
C & E Loss (ft)	0.03	Cum SA (acres)	224.91	201.61	28.48

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 #Q100

			Left OB	Channel	Right OB
E.G. Elev (ft)	86.22	Element			
Vel Head (ft)	1.70	Wt. n-Val.	0.050	0.043	0.050
W.S. Elev (ft)	84.52	Reach Len. (ft)	159.78	172.75	206.99
Crit W.S. (ft)		Flow Area (sq ft)	991.85	3656.07	85.49
E.G. Slope (ft/ft)	0.008810	Area (sq ft)	991.85	3656.07	85.49
Q Total (cfs)	47312.00	Flow (cfs)	6663.10	40209.44	439.46
Top Width (ft)	890.96	Top Width (ft)	265.48	591.65	33.83
Vel Total (ft/s)	10.00	Avg. Vel. (ft/s)	6.72	11.00	5.14
Max Chl Dpth (ft)	6.88	Hydr. Depth (ft)	3.74	6.18	2.53
Conv. Total (cfs)	504053.8	Conv. (cfs)	70987.5	428384.4	4681.9
Length Wtd. (ft)	171.77	Wetted Per. (ft)	266.97	591.75	34.18
Min Ch El (ft)	77.64	Shear (lb/sq ft)	2.04	3.40	1.38
Alpha	1.10	Stream Power (lb/ft s)	13.73	37.37	7.07
Frctn Loss (ft)	1.48	Cum Volume (acre-ft)	1213.71	1735.65	154.19
C & E Loss (ft)	0.07	Cum SA (acres)	322.71	201.79	31.11

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 #Q100HC

			Left OB	Channel	Right OB
E.G. Elev (ft)	91.99	Element			
Vel Head (ft)	3.78	Wt. n-Val.	0.050	0.043	0.050
W.S. Elev (ft)	88.20	Reach Len. (ft)	159.78	172.75	206.99
Crit W.S. (ft)	87.75	Flow Area (sq ft)	2110.79	5837.69	246.94
E.G. Slope (ft/ft)	0.010869	Area (sq ft)	2110.79	5837.69	246.94
Q Total (cfs)	118891.00	Flow (cfs)	19227.73	97527.29	2135.99
Top Width (ft)	1064.74	Top Width (ft)	420.88	591.65	52.21
Vel Total (ft/s)	14.51	Avg. Vel. (ft/s)	9.11	16.71	8.65
Max Chl Dpth (ft)	10.56	Hydr. Depth (ft)	5.02	9.87	4.73
Conv. Total (cfs)	1140396.0	Conv. (cfs)	184431.3	935476.3	20488.3
Length Wtd. (ft)	172.03	Wetted Per. (ft)	422.71	591.75	52.94

Min Ch El (ft)	77.64	Shear (lb/sq ft)	3.39	6.69	3.17
Alpha	1.16	Stream Power (lb/ft s)	30.86	111.83	27.38
Frctn Loss (ft)	1.15	Cum Volume (acre-ft)	4654.06	2950.39	383.21
C & E Loss (ft)	0.61	Cum SA (acres)	599.42	201.81	43.61

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: San Mateo Creek
REACH: Lower RS: 15282.84

INPUT
Description:
Station Elevation Data num= 46

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	99.77	79.19	91.79	163.92	83.84	165.72	83.12	173.95	86.37
176.04	86.53	176.09	86.54	179.99	86.12	183.03	82.6	185.78	81.8
190.97	81.5	263.66	80.17	317.75	79.37	326.51	79.33	360.01	79.15
445.67	79.87	467.64	79.2	531.25	78.92	618.07	78.97	629.39	79.25
645.34	78.82	674.47	78.63	683.23	78.57	754.21	78.05	822.24	77.56
842.94	77.41	859.25	77.29	894.35	76.95	946.46	76.79	1046.88	76.48
1055.15	76.42	1109.14	77.46	1171.17	78.65	1180.15	78.79	1185.6	78.84
1189.7	78.88	1290.61	79.29	1381.99	83.75	1394.14	84.34	1398.84	84.96
1419.07	90.82	1419.69	90.98	1433.7	94.54	1448.51	97.68	1472.52	101.46
1478.85	102.36								

Manning's n Values num= 6

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.05	754.21	.035	842.94	.05	946.46	.035	1109.14	.05
1419.69	.035								

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
683.23	1171.17	247.92	206.82	172.28	.1	.3

CROSS SECTION OUTPUT Profile #Q50

E.G. Elev (ft)	83.20	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.39	Wt. n-Val.	0.050	0.040	0.050
W.S. Elev (ft)	81.82	Reach Len. (ft)	247.92	206.82	172.28
Crit W.S. (ft)		Flow Area (sq ft)	1155.75	2167.59	397.09
E.G. Slope (ft/ft)	0.010936	Area (sq ft)	1155.75	2167.59	397.09
Q Total (cfs)	31354.00	Flow (cfs)	6300.02	22891.91	2162.07
Top Width (ft)	1156.62	Top Width (ft)	497.50	487.94	171.18
Vel Total (ft/s)	8.43	Avg. Vel. (ft/s)	5.45	10.56	5.44
Max Chl Dpth (ft)	5.40	Hydr. Depth (ft)	2.32	4.44	2.32
Conv. Total (cfs)	299817.2	Conv. (cfs)	60242.8	218899.9	20674.4
Length Wtd. (ft)	214.05	Wetted Per. (ft)	497.56	487.97	171.24
Min Ch El (ft)	76.42	Shear (lb/sq ft)	1.59	3.03	1.58
Alpha	1.26	Stream Power (lb/ft s)	8.65	32.03	8.62
Frctn Loss (ft)	1.36	Cum Volume (acre-ft)	643.71	1370.30	100.41

C & E Loss (ft)	0.23	Cum SA (acres)	223.51	199.47	28.01

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.

CROSS SECTION OUTPUT Profile #Q100

E.G. Elev (ft)	84.66	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.47	Wt. n-Val.	0.050	0.040	0.050
W.S. Elev (ft)	83.20	Reach Len. (ft)	247.92	206.82	172.28
Crit W.S. (ft)		Flow Area (sq ft)	1845.46	2841.26	652.95
E.G. Slope (ft/ft)	0.008466	Area (sq ft)	1845.46	2841.26	652.95
Q Total (cfs)	47312.00	Flow (cfs)	12033.02	31344.05	3934.92
Top Width (ft)	1188.50	Top Width (ft)	501.10	487.94	199.47
Vel Total (ft/s)	8.86	Avg. Vel. (ft/s)	6.52	11.03	6.03
Max Chl Dpth (ft)	6.78	Hydr. Depth (ft)	3.68	5.82	3.27
Conv. Total (cfs)	514214.4	Conv. (cfs)	130781.9	340665.5	42767.0
Length Wtd. (ft)	216.26	Wetted Per. (ft)	501.56	487.97	199.56
Min Ch El (ft)	76.42	Shear (lb/sq ft)	1.94	3.08	1.73
Alpha	1.20	Stream Power (lb/ft s)	12.68	33.95	10.42
Frctn Loss (ft)	1.01	Cum Volume (acre-ft)	1208.51	1722.76	152.43
C & E Loss (ft)	0.25	Cum SA (acres)	321.30	199.65	30.56

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

CROSS SECTION OUTPUT Profile #Q100HC

E.G. Elev (ft)	90.22	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.75	Wt. n-Val.	0.050	0.041	0.050
W.S. Elev (ft)	88.47	Reach Len. (ft)	247.92	206.82	172.28
Crit W.S. (ft)		Flow Area (sq ft)	4662.87	5415.09	1854.86
E.G. Slope (ft/ft)	0.004544	Area (sq ft)	4662.87	5415.09	1854.86
Q Total (cfs)	118891.00	Flow (cfs)	37861.74	66521.78	14507.48
Top Width (ft)	1296.39	Top Width (ft)	568.66	487.94	239.79
Vel Total (ft/s)	9.96	Avg. Vel. (ft/s)	8.12	12.28	7.82
Max Chl Dpth (ft)	12.05	Hydr. Depth (ft)	8.20	11.10	7.74
Conv. Total (cfs)	1763652.0	Conv. (cfs)	561648.4	986797.1	215206.7
Length Wtd. (ft)	218.26	Wetted Per. (ft)	571.44	487.97	240.45
Min Ch El (ft)	76.42	Shear (lb/sq ft)	2.31	3.15	2.19
Alpha	1.14	Stream Power (lb/ft s)	18.80	38.68	17.12
Frctn Loss (ft)	0.62	Cum Volume (acre-ft)	4641.63	2928.08	378.21
C & E Loss (ft)	0.26	Cum SA (acres)	597.60	199.67	42.92

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream 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: San Mateo Creek
REACH: Lower RS: 15076.02

INPUT
Description: Updated Manning's N Distribution
Station Elevation Data num= 57

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	90.8	1.69	90.63	13.58	87.59	13.79	87.42	14.49	87.6
15.22	88.14	15.91	88.28	41.76	78.13	41.94	78.1	42.19	78.01
42.28	77.99	55.3	77.02	115.81	78.15	126.67	78.13	155.44	78.25
199.32	77.85	223.18	78.41	278.75	78.69	331.77	78.96	347.59	79.04
353.33	78.98	471.93	78.78	517.94	78.76	530.82	78.75	650.81	78.12
742.79	77.53	766.68	76.98	791.33	76.73	803.9	76.67	828.76	76.53
832.3	76.51	870.05	76.38	877.4	76.34	921.58	76.01	922.42	76
1000.08	75.56	1086.41	74.9	1110.54	74.89	1130.87	74.89	1241.57	74.4
1242.24	74.4	1242.61	74.4	1247.69	74.45	1352.49	76.06	1368.28	76.29
1386.22	76.94	1444.46	79.49	1478.6	82.25	1493.34	83.8	1537.29	85.57
1574.24	86.1	1583.51	88.28	1588.7	88.99	1599.75	90.43	1620.49	93.87
1624.37	94.75	1657.52	102.33						

Manning's n Values num= 4

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.05	828.76	.035	1110.54	.05	1624.37	.035

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
766.68	1386.22	240.22	232.69	186.85	.1 .3

CROSS SECTION OUTPUT Profile #Q50

E.G. Elev (ft)	81.62	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.63	Wt. n-Val.	0.050	0.042	0.050
W.S. Elev (ft)	80.99	Reach Len. (ft)	240.22	232.69	186.85
Crit W.S. (ft)		Flow Area (sq ft)	1929.85	3371.40	175.16
E.G. Slope (ft/ft)	0.004144	Area (sq ft)	1929.85	3371.40	175.16
Q Total (cfs)	31354.00	Flow (cfs)	7040.28	23733.40	580.32
Top Width (ft)	1428.47	Top Width (ft)	732.19	619.54	76.73
Vel Total (ft/s)	5.73	Avg. Vel. (ft/s)	3.65	7.04	3.31
Max Chl Dpth (ft)	6.59	Hydr. Depth (ft)	2.64	5.44	2.28
Conv. Total (cfs)	487081.0	Conv. (cfs)	109369.9	368695.9	9015.2
Length Wtd. (ft)	232.08	Wetted Per. (ft)	732.82	619.57	76.85
Min Ch El (ft)	74.40	Shear (lb/sq ft)	0.68	1.41	0.59
Alpha	1.24	Stream Power (lb/ft s)	2.49	9.91	1.95
Frctn Loss (ft)	0.64	Cum Volume (acre-ft)	634.92	1357.15	99.28
C & E Loss (ft)	0.03	Cum SA (acres)	220.01	196.84	27.52

Warning: The conveyance ratio (upstream 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 #Q100

E.G. Elev (ft)	83.41	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.63	Wt. n-Val.	0.050	0.042	0.050
W.S. Elev (ft)	82.77	Reach Len. (ft)	240.22	232.69	186.85

Crit W.S. (ft)		Flow Area (sq ft)	3243.60	4479.58	331.81
E.G. Slope (ft/ft)	0.002935	Area (sq ft)	3243.60	4479.58	331.81
Q Total (cfs)	47312.00	Flow (cfs)	14015.37	32088.46	1208.16
Top Width (ft)	1453.65	Top Width (ft)	736.75	619.54	97.36
Vel Total (ft/s)	5.87	Avg. Vel. (ft/s)	4.32	7.16	3.64
Max Chl Dpth (ft)	8.37	Hydr. Depth (ft)	4.40	7.23	3.41
Conv. Total (cfs)	873330.1	Conv. (cfs)	258709.1	592319.5	22301.4
Length Wtd. (ft)	232.01	Wetted Per. (ft)	737.71	619.57	97.56
Min Ch El (ft)	74.40	Shear (lb/sq ft)	0.81	1.32	0.62
Alpha	1.18	Stream Power (lb/ft s)	3.48	9.49	2.27
Frctn Loss (ft)	0.60	Cum Volume (acre-ft)	1194.03	1705.39	150.49
C & E Loss (ft)	0.02	Cum SA (acres)	317.78	197.02	29.97

CROSS SECTION OUTPUT Profile #Q100HC

E.G. Elev (ft)	89.34	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.89	Wt. n-Val.	0.050	0.042	0.050
W.S. Elev (ft)	88.46	Reach Len. (ft)	240.22	232.69	186.85
Crit W.S. (ft)		Flow Area (sq ft)	7475.61	8001.29	1210.35
E.G. Slope (ft/ft)	0.001939	Area (sq ft)	7475.61	8001.29	1210.35
Q Total (cfs)	118891.00	Flow (cfs)	44950.54	68665.98	5274.47
Top Width (ft)	1574.63	Top Width (ft)	756.50	619.54	198.59
Vel Total (ft/s)	7.12	Avg. Vel. (ft/s)	6.01	8.58	4.36
Max Chl Dpth (ft)	14.06	Hydr. Depth (ft)	9.88	12.91	6.09
Conv. Total (cfs)	2700213.0	Conv. (cfs)	1020902.0	1559519.0	119792.1
Length Wtd. (ft)	232.42	Wetted Per. (ft)	758.89	619.57	199.15
Min Ch El (ft)	74.40	Shear (lb/sq ft)	1.19	1.56	0.74
Alpha	1.12	Stream Power (lb/ft s)	7.17	13.41	3.21
Frctn Loss (ft)	0.38	Cum Volume (acre-ft)	4607.09	2896.23	372.15
C & E Loss (ft)	0.02	Cum SA (acres)	593.83	197.04	42.05

CROSS SECTION

RIVER: San Mateo Creek
REACH: Lower RS: 14843.33

INPUT
Description:
Station Elevation Data num= 102

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	85.71	12.02	85.54	84.69	84.01	115.69	84.58	122.25	84.06
135.89	84.25	140.72	84.13	148.96	84.22	163.53	83.46	170.14	83.69
180.94	84.32	188.18	84.35	203.22	85.3	214.01	86.68	227.06	88.59
233.92	89.04	244.06	88.98	255.48	88.64	274.96	85.55	279.95	85.37
285.41	85.38	345.12	85.24	358.94	84.14	368.61	84.17	379.99	84.1
394.43	82.83	407.08	81.79	411.48	81.5	413.55	81.42	415.79	81.2
436.02	78.75	456.72	75.67	467.78	74.19	482.26	73	498.77	71.6
498.88	71.59	498.98	71.59	499.26	71.58	543.54	71.16	545.95	71.12
557.88	69.94	573.39	70.17	600.68	71.01	611.99	72.36	618.47	72.86
626.92	74.37	632.61	75.49	646.15	77.94	672.57	79.06	673.13	79.12
673.38	79.12	673.91	79.12	717.83	80.5	721.69	81.14	731.52	82.22
735.62	83.38	745.68	85.33	752.97	85.22	766.99	85.79	769.73	85.33
774.17	84.21	782.63	81.2	786.14	79.37	788.83	78.86	797.92	78.63
799.44	78.58	830.86	77.57	854.94	75.75	869.77	74.3	871.02	74.05
876.56	72.94	884.68	72.79	927.26	71.32	936.34	71.44	973.58	71.92
1063.37	72.93	1070.28	73	1101.46	73.44	1161.36	72.65	1197.58	72.17

1201.91	72.11	1249.77	73.25	1258.24	73.29	1269.35	73.28	1331.21	73.32
1508.61	74.05	1540.15	75.26	1556.07	75.63	1588.29	76.78	1601.93	78.41
1619.6	78.68	1628.2	79.54	1638.14	80.8	1664.12	82.56	1667.77	82.9
1678.11	83.03	1734.35	86.27	1741.16	86.8	1747.77	87.5	1791.04	94.49
1792.03	94.77	1814.62	100.63						

Manning's n Values num= 4

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.05	871.02	.035	1161.36	.05	1814.62	.035

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
871.02	1508.61	230.23	202.58	217.82	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
0	766.99	85.79	F

CROSS SECTION OUTPUT Profile #Q50

		Element	Left OB	Channel	Right OB
E.G. Elev (ft)	80.95	Wt. n-Val.	0.050	0.041	0.050
Vel Head (ft)	0.55	Reach Len. (ft)	230.23	202.58	217.82
W.S. Elev (ft)	80.41	Flow Area (sq ft)	273.61	4763.43	481.41
Crit W.S. (ft)	77.16	Area (sq ft)	1984.02	4763.43	481.41
E.G. Slope (ft/ft)	0.001950	Flow (cfs)	768.68	29046.89	1538.43
Q Total (cfs)	31354.00	Top Width (ft)	379.48	637.59	126.44
Top Width (ft)	1143.51	Avg. Vel. (ft/s)	2.81	6.10	3.20
Vel Total (ft/s)	5.68	Hydr. Depth (ft)	3.15	7.47	3.81
Max Chl Dpth (ft)	10.47	Conv. (cfs)	17406.7	657768.5	34837.9
Conv. Total (cfs)	710013.1	Wetted Per. (ft)	87.36	637.76	126.69
Length Wtd. (ft)	204.07	Shear (lb/sq ft)	0.38	0.91	0.46
Min Ch El (ft)	71.32	Stream Power (lb/ft s)	1.07	5.54	1.48
Alpha	1.09	Cum Volume (acre-ft)	624.13	1335.42	97.87
Frctn Loss (ft)	0.53	Cum SA (acres)	216.95	193.48	27.09
C & E Loss (ft)	0.03				

Warning: Divided flow computed for this cross-section.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.

CROSS SECTION OUTPUT Profile #Q100

		Element	Left OB	Channel	Right OB
E.G. Elev (ft)	82.79	Wt. n-Val.	0.050	0.041	0.050
Vel Head (ft)	0.80	Reach Len. (ft)	230.23	202.58	217.82
W.S. Elev (ft)	81.99	Flow Area (sq ft)	413.68	5771.77	696.11
Crit W.S. (ft)	78.41	Area (sq ft)	2611.24	5771.77	696.11
E.G. Slope (ft/ft)	0.002262	Flow (cfs)	1599.53	42943.09	2769.38
Q Total (cfs)	47312.00	Top Width (ft)	415.40	637.59	147.10
Top Width (ft)	1200.09	Avg. Vel. (ft/s)	3.87	7.44	3.98
Vel Total (ft/s)	6.88	Hydr. Depth (ft)	4.57	9.05	4.73
Max Chl Dpth (ft)	12.05	Conv. (cfs)	33631.4	902914.4	58228.5
Conv. Total (cfs)	994774.3	Wetted Per. (ft)	91.43	637.76	147.41
Length Wtd. (ft)	204.48	Shear (lb/sq ft)	0.64	1.28	0.67
Min Ch El (ft)	71.32	Stream Power (lb/ft s)	2.47	9.51	2.65
Alpha	1.09	Cum Volume (acre-ft)	1177.88	1678.00	148.28
Frctn Loss (ft)	0.65	Cum SA (acres)	314.60	193.67	29.45
C & E Loss (ft)	0.06				

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

CROSS SECTION OUTPUT Profile #Q100HC

			Left OB	Channel	Right OB
E.G. Elev (ft)	88.94	Element			
Vel Head (ft)	0.81	Wt. n-Val.	0.050	0.042	0.050
W.S. Elev (ft)	88.13	Reach Len. (ft)	230.23	202.58	217.82
Crit W.S. (ft)	82.71	Flow Area (sq ft)	6590.00	9687.73	1936.41
E.G. Slope (ft/ft)	0.001396	Area (sq ft)	6590.00	9687.73	1936.41
Q Total (cfs)	118891.00	Flow (cfs)	30825.33	79501.77	8563.90
Top Width (ft)	1716.93	Top Width (ft)	836.27	637.59	243.07
Vel Total (ft/s)	6.53	Avg. Vel. (ft/s)	4.68	8.21	4.42
Max Chl Dpth (ft)	18.19	Hydr. Depth (ft)	7.88	15.19	7.97
Conv. Total (cfs)	3181924.0	Conv. (cfs)	824989.7	2127736.0	229198.7
Length Wtd. (ft)	208.03	Wetted Per. (ft)	842.49	637.76	243.62
Min Ch El (ft)	71.32	Shear (lb/sq ft)	0.68	1.32	0.69
Alpha	1.22	Stream Power (lb/ft s)	3.19	10.86	3.06
Frctn Loss (ft)	0.64	Cum Volume (acre-ft)	4568.31	2848.98	365.40
C & E Loss (ft)	0.39	Cum SA (acres)	589.44	193.69	41.10

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

CROSS SECTION

RIVER: San Mateo Creek
REACH: Lower RS: 14640.75

INPUT
Description:
Station Elevation Data num= 87

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	78.41	17.94	78.88	40.67	79.7	90.61	81.17	138.03	82.4
146.04	83.25	160	84.44	162.45	85.4	176.19	91.96	195.58	96.33
210.45	98.33	211.77	98.47	213.87	98.58	215.99	98.71	222.02	99.07
223.99	98.74	231.75	97.7	237.74	94.84	256.35	85.77	262.42	84.67
276.58	83.42	324.2	82.2	382.56	81.2	386.06	81.07	428.68	79.58
470.85	78.72	482.36	78.44	490.35	78.43	559.67	79.16	605.61	79.57
611.79	79.04	628.24	78.14	644.17	77.61	654.59	77.36	685	76.25
710.13	74.66	712.25	74.49	714.16	74	798.82	70.79	805.49	70.45
820.16	70.6	827.56	70.69	895.57	71.62	903.17	72.18	931.44	76.2
940.83	77.72	945.2	79.46	953.88	82.79	959.1	84.66	960.81	85.18
962.3	85.3	976.01	85.63	982.58	84.9	990.45	83.3	1009.76	78.74
1014.64	78.62	1028	78.56	1038.03	78.46	1050.69	78.32	1056.04	78.28

1061.36	77.78	1092.37	74.85	1112.5	74.06	1126.06	72.97	1130.35	72.62
1134.8	72.25	1135.37	72.2	1141.04	71.87	1189.06	72.15	1241.8	72.44
1266.91	72.58	1309.02	72.55	1408.2	72.46	1573.59	72.7	1619.99	73.21
1648.69	73.64	1672.47	74.07	1694.78	75.87	1711.39	77.4	1718.87	79.1
1728.33	83.61	1730.68	84.61	1735.89	88.04	1748.19	95.79	1757.16	99.5
1759.66	100.4	1768.94	102.99						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.05	1061.36	.035	1309.02	.05

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
1112.5	1672.47	142.45	166.43	154.49	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
0	976.01	85.63	F

CROSS SECTION OUTPUT Profile #Q50

			Left OB	Channel	Right OB
E.G. Elev (ft)	80.39	Element			
Vel Head (ft)	0.86	Wt. n-Val.	0.036	0.043	0.050
W.S. Elev (ft)	79.53	Reach Len. (ft)	142.45	166.43	154.49
Crit W.S. (ft)	77.21	Flow Area (sq ft)	258.69	3860.19	159.40
E.G. Slope (ft/ft)	0.003703	Area (sq ft)	2311.20	3860.19	159.40
Q Total (cfs)	31354.00	Flow (cfs)	1403.27	29306.63	644.10
Top Width (ft)	1257.80	Top Width (ft)	650.53	559.97	47.29
Vel Total (ft/s)	7.33	Avg. Vel. (ft/s)	5.42	7.59	4.04
Max Chl Dpth (ft)	9.08	Hydr. Depth (ft)	2.44	6.89	3.37
Conv. Total (cfs)	515271.9	Conv. (cfs)	23061.4	481625.4	10585.1
Length Wtd. (ft)	161.89	Wetted Per. (ft)	106.34	560.07	47.72
Min Ch El (ft)	71.87	Shear (lb/sq ft)	0.56	1.59	0.77
Alpha	1.03	Stream Power (lb/ft s)	3.05	12.10	3.12
Frctn Loss (ft)	0.42	Cum Volume (acre-ft)	612.78	1315.37	96.27
C & E Loss (ft)	0.13	Cum SA (acres)	214.22	190.70	26.65

Warning: Divided flow computed for this cross-section.
Warning: The cross-section end points had to be extended vertically for the computed water surface.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.

CROSS SECTION OUTPUT Profile #Q100

			Left OB	Channel	Right OB
E.G. Elev (ft)	82.09	Element			
Vel Head (ft)	1.36	Wt. n-Val.	0.037	0.043	0.050
W.S. Elev (ft)	80.72	Reach Len. (ft)	142.45	166.43	154.49
Crit W.S. (ft)	78.66	Flow Area (sq ft)	388.84	4531.20	217.58
E.G. Slope (ft/ft)	0.004774	Area (sq ft)	3147.04	4531.20	217.58
Q Total (cfs)	47312.00	Flow (cfs)	2715.41	43413.81	1182.78
Top Width (ft)	1348.94	Top Width (ft)	739.16	559.97	49.81
Vel Total (ft/s)	9.21	Avg. Vel. (ft/s)	6.98	9.58	5.44
Max Chl Dpth (ft)	10.27	Hydr. Depth (ft)	3.50	8.09	4.37
Conv. Total (cfs)	684778.7	Conv. (cfs)	39301.9	628357.6	17119.2
Length Wtd. (ft)	160.62	Wetted Per. (ft)	111.55	560.07	50.51
Min Ch El (ft)	71.87	Shear (lb/sq ft)	1.04	2.41	1.28
Alpha	1.03	Stream Power (lb/ft s)	7.25	23.10	6.98
Frctn Loss (ft)	0.44	Cum Volume (acre-ft)	1162.67	1654.05	146.00
C & E Loss (ft)	0.26	Cum SA (acres)	311.55	190.88	28.95

Warning: Divided flow computed for this cross-section.
Warning: The cross-section end points had to be extended vertically for the computed water surface.
Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.

CROSS SECTION OUTPUT Profile #Q100HC

			Left OB	Channel	Right OB
E.G. Elev (ft)	87.91	Element			
Vel Head (ft)	4.70	Wt. n-Val.	0.039	0.043	0.050
W.S. Elev (ft)	83.21	Reach Len. (ft)	142.45	166.43	154.49
Crit W.S. (ft)	83.21	Flow Area (sq ft)	677.62	5920.53	347.61
E.G. Slope (ft/ft)	0.011677	Area (sq ft)	5244.30	5920.53	347.61
Q Total (cfs)	118891.00	Flow (cfs)	9261.45	105871.30	3758.25
Top Width (ft)	1552.34	Top Width (ft)	937.36	559.97	55.01
Vel Total (ft/s)	17.12	Avg. Vel. (ft/s)	13.67	17.88	10.81
Max Chl Dpth (ft)	12.76	Hydr. Depth (ft)	5.57	10.57	6.32
Conv. Total (cfs)	1100214.0	Conv. (cfs)	85705.2	979730.0	34778.8
Length Wtd. (ft)	159.01	Wetted Per. (ft)	122.35	560.07	56.27
Min Ch El (ft)	71.87	Shear (lb/sq ft)	4.04	7.71	4.50
Alpha	1.03	Stream Power (lb/ft s)	55.18	137.81	48.69
Frctn Loss (ft)	0.75	Cum Volume (acre-ft)	4537.03	2812.69	359.69
C & E Loss (ft)	1.08	Cum SA (acres)	584.75	190.90	40.36

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: Divided flow computed for this cross-section.
Warning: The cross-section end points had to be extended vertically for the computed water surface.
Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.

CROSS SECTION

RIVER: San Mateo Creek
REACH: Lower RS: 14474.32

INPUT
Description:
Station Elevation Data num= 78

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	108.23	7.05	108.12	14.85	108.01	19.46	107.52	32.2	105.34
43.5	100.08	55.52	94.24	60.33	91.88	64.41	91.25	94	87.21
95.64	87.03	136.25	82.08	140.72	81.63	152.05	79.6	153.84	79.51
176.78	78.22	213.92	77.71	306.58	77.97	334.86	78.81	385.42	78.75

494.34	78.64	516.51	78.62	568.95	78.46	639.11	78.26	667.2	78.23
695.34	77.02	722.47	75.87	749.21	74.93	795.77	75.99	822.43	76.68
843.49	77.7	868.21	78.93	873.36	79.24	881.73	79.29	890.57	78.45
893.93	75.8	898.72	72.54	904.92	71.28	911.85	70.69	944.2	70.48
976.68	70.98	1001.51	71.13	1014.62	71.21	1035.38	71.3	1051.2	71.82
1084.53	76.22	1100.85	77.95	1106.06	78.15	1121.94	79.13	1122.26	79.15
1122.38	79.16	1152.01	79.26	1161.52	79.17	1192.95	76.51	1212.88	74.82
1217.7	74.42	1239.31	73.21	1263.85	71.95	1265.85	71.96	1288.45	71.95
1306.74	71.94	1446.22	71.84	1486.6	71.82	1517.38	71.8	1554.33	71.86
1588.08	71.93	1700.47	73.17	1711.72	73.34	1761.27	75.3	1766.78	75.48
1768.31	75.68	1786.6	79.01	1794.15	84.11	1811.94	93.98	1817.4	96.95
1819.42	97.87	1826.77	100.04	1835.31	102.7				

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.02	385.42	.035	568.95	.05	1192.95	.035	1486.6	.05

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
1239.31	1700.47	199.28 178.47	167.43	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
0	1122.38	79.16	F

CROSS SECTION OUTPUT Profile #Q50

			Left OB	Channel	Right OB
E.G. Elev (ft)	79.84	Element			
Vel Head (ft)	0.43	Wt. n-Val.	0.045	0.040	0.050
W.S. Elev (ft)	79.41	Reach Len. (ft)	199.28	178.47	167.43
Crit W.S. (ft)	77.19	Flow Area (sq ft)	2927.88	3379.51	387.04
E.G. Slope (ft/ft)	0.001921	Area (sq ft)	2927.88	3379.51	387.04
Q Total (cfs)	31354.00	Flow (cfs)	9462.34	20530.01	1361.65
Top Width (ft)	1631.51	Top Width (ft)	1083.63	461.16	86.72
Vel Total (ft/s)	4.68	Avg. Vel. (ft/s)	3.23	6.07	3.52
Max Chl Dpth (ft)	8.93	Hydr. Depth (ft)	2.70	7.33	4.46
Conv. Total (cfs)	715358.9	Conv. (cfs)	215888.5	468403.6	31066.9
Length Wtd. (ft)	182.96	Wetted Per. (ft)	1086.61	461.20	87.19
Min Ch El (ft)	71.80	Shear (lb/sq ft)	0.32	0.88	0.53
Alpha	1.27	Stream Power (lb/ft s)	1.04	5.34	1.87
Frctn Loss (ft)	0.36	Cum Volume (acre-ft)	604.22	1301.54	95.30
C & E Loss (ft)	0.01	Cum SA (acres)	211.39	188.75	26.41

Warning: Multiple water surfaces were found that could balance the energy equation. The program selected the water surface whose main channel velocity head was the closest to the previously computed cross section.

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

CROSS SECTION OUTPUT Profile #Q100

			Left OB	Channel	Right OB
E.G. Elev (ft)	81.39	Element			
Vel Head (ft)	0.49	Wt. n-Val.	0.042	0.040	0.050
W.S. Elev (ft)	80.90	Reach Len. (ft)	199.28	178.47	167.43
Crit W.S. (ft)	78.64	Flow Area (sq ft)	4557.50	4068.86	518.32
E.G. Slope (ft/ft)	0.001744	Area (sq ft)	4557.50	4068.86	518.32
Q Total (cfs)	47312.00	Flow (cfs)	18610.07	26632.79	2069.13
Top Width (ft)	1644.61	Top Width (ft)	1094.52	461.16	88.93
Vel Total (ft/s)	5.17	Avg. Vel. (ft/s)	4.08	6.55	3.99
Max Chl Dpth (ft)	10.42	Hydr. Depth (ft)	4.16	8.82	5.83

Conv. Total (cfs)	1132786.0	Conv. (cfs)	445578.8	637665.9	49541.0
Length Wtd. (ft)	185.00	Wetted Per. (ft)	1097.63	461.20	89.87
Min Ch El (ft)	71.80	Shear (lb/sq ft)	0.45	0.96	0.63
Alpha	1.17	Stream Power (lb/ft s)	1.85	6.29	2.51
Frctn Loss (ft)	0.34	Cum Volume (acre-ft)	1150.07	1637.62	144.69
C & E Loss (ft)	0.01	Cum SA (acres)	308.55	188.93	28.71

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

CROSS SECTION OUTPUT Profile #Q100HC

E.G. Elev (ft)	85.27	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.11	Wt. n-Val.	0.039	0.041	0.050
W.S. Elev (ft)	84.16	Reach Len. (ft)	199.28	178.47	167.43
Crit W.S. (ft)	81.29	Flow Area (sq ft)	8164.25	5571.72	816.00
E.G. Slope (ft/ft)	0.002510	Area (sq ft)	8164.25	5571.72	816.00
Q Total (cfs)	118891.00	Flow (cfs)	59941.39	53879.23	5070.38
Top Width (ft)	1675.06	Top Width (ft)	1120.13	461.16	93.77
Vel Total (ft/s)	8.17	Avg. Vel. (ft/s)	7.34	9.67	6.21
Max Chl Dpth (ft)	13.68	Hydr. Depth (ft)	7.29	12.08	8.70
Conv. Total (cfs)	2373210.0	Conv. (cfs)	1196503.0	1075495.0	101210.9
Length Wtd. (ft)	187.88	Wetted Per. (ft)	1123.44	461.20	95.70
Min Ch El (ft)	71.80	Shear (lb/sq ft)	1.14	1.89	1.34
Alpha	1.07	Stream Power (lb/ft s)	8.36	18.30	8.30
Frctn Loss (ft)	0.49	Cum Volume (acre-ft)	4515.11	2790.74	357.63
C & E Loss (ft)	0.01	Cum SA (acres)	581.39	188.95	40.10

CROSS SECTION

RIVER: San Mateo Creek
REACH: Lower RS: 14295.85

INPUT
Description: Updated Manning's N Distribution
Station Elevation Data num= 83

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	114.43	9.24	113.91	14.57	113.39	23.2	111.82	25.07	111.38
39.73	104.24	46.74	99.88	54.3	97.23	60.26	95.57	70.78	92.65
96.37	88.99	118.4	87.41	132.59	85.93	152.52	85.29	171.21	85.2
182.49	84.43	192.33	83.73	199.7	83.4	260.19	79.39	288.49	78.81
327.06	78.42	334.41	78.38	360.28	78.49	521.98	79.07	548.04	79.04
767.17	78.75	779.9	78.72	879.98	78.5	882.5	78.5	886.03	78.49
890.19	78.4	1028.06	76.75	1031.78	76.64	1034.63	76.55	1039.64	76.43
1123.57	74.47	1153.45	74.06	1220.01	76.92	1230.33	76.95	1240.38	78.18
1254.54	78.73	1263.32	79.1	1275.86	78.62	1288.88	78.59	1307.3	78.72
1309.61	78.43	1323.37	76.46	1335.24	75.44	1353.82	73.39	1354.64	73.29
1379.68	73.45	1401.56	73.4	1440.37	72.72	1453.85	72.82	1469.98	72.75
1517.64	72.3	1618.82	71.34	1655.06	71	1738.96	70.82	1783.15	70.72
1793.46	70.81	1811.86	70.96	1833.82	71.13	1897.96	71.64	1906.52	71.68
1907.25	71.75	1980.28	71.46	1986.91	71.94	2015.83	72.5	2018.94	73.36
2022.54	75.23	2029.21	78.48	2038.38	84.77	2043.31	87.7	2063.23	103.36
2063.55	103.64	2063.7	103.71	2082.33	109.85	2083.02	110.14	2085.68	110.87
2096.86	114.2	2104.03	117.4	2107.83	117.84				

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.02	548.04	.035	779.9	.05	1517.64	.035	1833.82	.05

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
1469.98	2015.83	93.39	88.97	84.07	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
0	1307.3	78.72	F

CROSS SECTION OUTPUT Profile #Q50

E.G. Elev (ft)	79.46	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.57	Wt. n-Val.	0.050	0.040	0.050
W.S. Elev (ft)	78.89	Reach Len. (ft)	93.39	88.97	84.07
Crit W.S. (ft)	75.97	Flow Area (sq ft)	1808.53	4051.26	48.77
E.G. Slope (ft/ft)	0.002072	Area (sq ft)	1808.53	4051.26	48.77
Q Total (cfs)	31354.00	Flow (cfs)	4852.98	26358.88	142.14
Top Width (ft)	1545.21	Top Width (ft)	985.38	545.85	13.98
Vel Total (ft/s)	5.31	Avg. Vel. (ft/s)	2.68	6.51	2.91
Max Chl Dpth (ft)	8.17	Hydr. Depth (ft)	1.84	7.42	3.49
Conv. Total (cfs)	688741.1	Conv. (cfs)	106603.5	579015.4	3122.3
Length Wtd. (ft)	89.45	Wetted Per. (ft)	985.91	545.89	15.43
Min Ch El (ft)	70.72	Shear (lb/sq ft)	0.24	0.96	0.41
Alpha	1.30	Stream Power (lb/ft s)	0.64	6.25	1.19
Frctn Loss (ft)	0.24	Cum Volume (acre-ft)	593.38	1286.32	94.46
C & E Loss (ft)	0.04	Cum SA (acres)	206.66	186.68	26.22

Warning: Divided flow computed for this cross-section.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.

CROSS SECTION OUTPUT Profile #Q100

E.G. Elev (ft)	81.03	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.63	Wt. n-Val.	0.044	0.040	0.050
W.S. Elev (ft)	80.41	Reach Len. (ft)	93.39	88.97	84.07
Crit W.S. (ft)	77.28	Flow Area (sq ft)	3627.51	4879.51	71.66
E.G. Slope (ft/ft)	0.001948	Area (sq ft)	3627.51	4879.51	71.66
Q Total (cfs)	47312.00	Flow (cfs)	12316.48	34760.39	235.13
Top Width (ft)	1787.18	Top Width (ft)	1225.14	545.85	16.19
Vel Total (ft/s)	5.52	Avg. Vel. (ft/s)	3.40	7.12	3.28
Max Chl Dpth (ft)	9.69	Hydr. Depth (ft)	2.96	8.94	4.43
Conv. Total (cfs)	1072063.0	Conv. (cfs)	279084.4	787650.4	5327.8
Length Wtd. (ft)	89.91	Wetted Per. (ft)	1225.71	545.89	18.11
Min Ch El (ft)	70.72	Shear (lb/sq ft)	0.36	1.09	0.48
Alpha	1.33	Stream Power (lb/ft s)	1.22	7.74	1.58
Frctn Loss (ft)	0.23	Cum Volume (acre-ft)	1131.35	1619.29	143.56
C & E Loss (ft)	0.04	Cum SA (acres)	303.25	186.87	28.51

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

CROSS SECTION OUTPUT Profile #Q100HC

E.G. Elev (ft)	84.76	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.24	Wt. n-Val.	0.039	0.040	0.050
W.S. Elev (ft)	83.52	Reach Len. (ft)	93.39	88.97	84.07

Crit W.S. (ft)	81.46	Flow Area (sq ft)	7517.64	6580.08	129.18
E.G. Slope (ft/ft)	0.002743	Area (sq ft)	7517.64	6580.08	129.18
Q Total (cfs)	118891.00	Flow (cfs)	50553.18	67713.65	624.17
Top Width (ft)	1839.61	Top Width (ft)	1273.02	545.85	20.73
Vel Total (ft/s)	8.36	Avg. Vel. (ft/s)	6.72	10.29	4.83
Max Chl Dpth (ft)	12.80	Hydr. Depth (ft)	5.91	12.05	6.23
Conv. Total (cfs)	2269929.0	Conv. (cfs)	965187.9	1292824.0	11916.9
Length Wtd. (ft)	90.78	Wetted Per. (ft)	1273.70	545.89	23.62
Min Ch El (ft)	70.72	Shear (lb/sq ft)	1.01	2.06	0.94
Alpha	1.14	Stream Power (lb/ft s)	6.80	21.24	4.53
Frctn Loss (ft)	0.29	Cum Volume (acre-ft)	4479.24	2765.84	355.81
C & E Loss (ft)	0.03	Cum SA (acres)	575.91	186.89	39.88

CROSS SECTION

RIVER: San Mateo Creek
REACH: Lower RS: 14206.87

INPUT
Description: Updated Manning's N Distribution
Station Elevation Data num= 73

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	97.26	10.99	96.35	24.79	95.13	47.53	92.21	49.01	92.13
49.31	92.11	116.41	88.21	125.61	87.46	158.8	84.42	192.35	83.87
241.23	80.8	258.87	80.03	263.37	79.91	264.72	79.93	300.98	79.3
310.07	79.32	382.89	78.58	404.15	78.46	480.32	78.78	595.77	79.2
677.87	79.09	800.58	78.94	830.93	78.83	859.8	78.73	920.82	78.54
993.7	78.44	1057.97	77.67	1249.46	76.59	1255.01	76.46	1260.41	76.39
1265.26	76.29	1330.37	75.31	1336.95	75.49	1354.86	75.65	1357.26	75.91
1374.71	77.27	1394.77	78.32	1405.67	78.83	1437.21	78.7	1452.51	78.72
1478.81	76.15	1489.92	73.88	1514.82	73.71	1521.78	73.57	1545.64	73.1
1575.12	73.03	1661.87	72.2	1744.96	71.41	1865.23	70.26	1878.99	70.13
1904.13	70.42	1953.89	72.32	1968	72.12	1981.53	71.92	2008	71.67
2047.55	71.3	2058.03	72.18	2079.75	71.88	2087.59	70.84	2096.76	71.68
2104.16	72.17	2116.03	73.23	2116.47	73.29	2117.01	73.65	2121.09	78.53
2129.6	88.28	2132.86	90.96	2142.46	97.96	2147.9	101.53	2154.06	104.41
2160.17	107.51	2166.98	111.04	2186.67	115.76				

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.02	677.87	.035	830.93	.05	1661.87	.035	1968	.05

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
1575.12	2116.03	100.64	98.26	92.36	.1 .3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
0	1405.67	78.83	F

CROSS SECTION OUTPUT Profile #Q50

E.G. Elev (ft)	79.18	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.98	Wt. n-Val.	0.050	0.039	0.050
W.S. Elev (ft)	78.19	Reach Len. (ft)	100.64	98.26	92.36
Crit W.S. (ft)	76.16	Flow Area (sq ft)	464.71	3579.83	13.34
E.G. Slope (ft/ft)	0.003756	Area (sq ft)	969.78	3579.83	13.34
Q Total (cfs)	31354.00	Flow (cfs)	2116.28	29200.42	37.30
Top Width (ft)	1040.70	Top Width (ft)	495.02	540.91	4.78

Vel Total (ft/s)	7.73	Avg. Vel. (ft/s)	4.55	8.16	2.80
Max Chl Dpth (ft)	8.06	Hydr. Depth (ft)	3.97	6.62	2.79
Conv. Total (cfs)	511620.8	Conv. (cfs)	34532.5	476479.7	608.6
Length Wtd. (ft)	98.38	Wetted Per. (ft)	117.53	541.18	7.01
Min Ch El (ft)	70.13	Shear (lb/sq ft)	0.93	1.55	0.45
Alpha	1.06	Stream Power (lb/ft s)	4.22	12.65	1.25
Frctn Loss (ft)	0.42	Cum Volume (acre-ft)	590.40	1278.52	94.40
C & E Loss (ft)	0.01	Cum SA (acres)	205.07	185.57	26.20

Warning: Divided flow computed for this cross-section.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.

CROSS SECTION OUTPUT Profile #Q100

E.G. Elev (ft)	80.76	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.05	Wt. n-Val.	0.045	0.040	0.050
W.S. Elev (ft)	79.72	Reach Len. (ft)	100.64	98.26	92.36
Crit W.S. (ft)	77.54	Flow Area (sq ft)	2423.45	4406.30	21.64
E.G. Slope (ft/ft)	0.003413	Area (sq ft)	2423.45	4406.30	21.64
Q Total (cfs)	47312.00	Flow (cfs)	8075.01	39169.72	67.27
Top Width (ft)	1845.26	Top Width (ft)	1298.25	540.91	6.10
Vel Total (ft/s)	6.91	Avg. Vel. (ft/s)	3.33	8.89	3.11
Max Chl Dpth (ft)	9.59	Hydr. Depth (ft)	1.87	8.15	3.55
Conv. Total (cfs)	809809.6	Conv. (cfs)	138214.8	670443.4	1151.4
Length Wtd. (ft)	98.59	Wetted Per. (ft)	1298.75	541.18	9.03
Min Ch El (ft)	70.13	Shear (lb/sq ft)	0.40	1.74	0.51
Alpha	1.41	Stream Power (lb/ft s)	1.32	15.42	1.59
Frctn Loss (ft)	0.39	Cum Volume (acre-ft)	1124.86	1609.80	143.47
C & E Loss (ft)	0.01	Cum SA (acres)	300.54	185.76	28.49

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

CROSS SECTION OUTPUT Profile #Q100HC

E.G. Elev (ft)	84.44	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.56	Wt. n-Val.	0.037	0.040	0.050
W.S. Elev (ft)	82.87	Reach Len. (ft)	100.64	98.26	92.36
Crit W.S. (ft)	81.78	Flow Area (sq ft)	6651.48	6113.00	45.22
E.G. Slope (ft/ft)	0.003777	Area (sq ft)	6651.48	6113.00	45.22
Q Total (cfs)	118891.00	Flow (cfs)	47983.38	70720.11	187.51
Top Width (ft)	1916.68	Top Width (ft)	1366.91	540.91	8.85
Vel Total (ft/s)	9.28	Avg. Vel. (ft/s)	7.21	11.57	4.15
Max Chl Dpth (ft)	12.74	Hydr. Depth (ft)	4.87	11.30	5.11
Conv. Total (cfs)	1934612.0	Conv. (cfs)	780792.4	1150768.0	3051.3
Length Wtd. (ft)	99.19	Wetted Per. (ft)	1367.50	541.18	13.22
Min Ch El (ft)	70.13	Shear (lb/sq ft)	1.15	2.66	0.81
Alpha	1.17	Stream Power (lb/ft s)	8.27	30.81	3.34
Frctn Loss (ft)	0.38	Cum Volume (acre-ft)	4464.05	2752.88	355.65
C & E Loss (ft)	0.04	Cum SA (acres)	573.08	185.78	39.85

CROSS SECTION

RIVER: San Mateo Creek

REACH: Lower RS: 14108.61

INPUT
Description: Updated Manning's N Distribution
Station Elevation Data num= 65

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	94.25	6.24	93.65	10.28	93.31	11.98	93.09	85.53	89.28
127.3	86.83	186.6	81.95	189.42	81.69	192.16	81.64	196.74	81.35
251.96	79.52	266.27	79.14	300.67	79.54	321.81	79.17	355.6	79.25
404.74	78.75	440.89	78.54	572.84	79.1	636.92	79.33	746.5	79.2
839.37	78.88	879.42	78.74	927.02	78.59	1044.69	78.41	1059.49	78.25
1109.86	77.81	1356.83	75.43	1395.3	75.27	1418.29	75.26	1467.57	78.22
1477.69	78.67	1502.54	77.91	1516.45	76.46	1572.62	73.24	1583	73.02
1604.35	72.6	1767.6	72.19	1769.49	72.18	1844.35	71.46	1932.03	70.62
1962.32	70.97	1980.79	71.18	2041.72	71.86	2083.83	72.33	2087.39	72.34
2088.14	72.34	2093.25	72.24	2171.96	70.83	2177.82	70.82	2190.76	71.52
2196.59	71.69	2198.69	72.45	2201.28	73.39	2211.12	76.42	2217.93	79.73
2220.7	81.53	2225.41	85.44	2241.36	100.33	2246.92	105.53	2251.34	108.23
2254.53	110.31	2255.46	111.08	2261.26	112.84	2262.75	113.48	2268.58	115.16

Manning's n Values num= 4

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.02	839.37	.05	1769.49	.035	2041.72	.05

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
1604.35	2198.69	93.54	99.45	106.38	.1

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
0	1477.69	78.67	F

CROSS SECTION OUTPUT Profile #Q50

E.G. Elev (ft)	78.75	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.05	Wt. n-Val.	0.050	0.041	0.050
W.S. Elev (ft)	77.70	Reach Len. (ft)	93.54	99.45	106.38
Crit W.S. (ft)	76.08	Flow Area (sq ft)	319.14	3551.90	41.55
E.G. Slope (ft/ft)	0.004915	Area (sq ft)	781.91	3551.90	41.55
Q Total (cfs)	31354.00	Flow (cfs)	1441.89	29748.42	163.69
Top Width (ft)	1046.63	Top Width (ft)	437.23	594.34	15.06
Vel Total (ft/s)	8.01	Avg. Vel. (ft/s)	4.52	8.38	3.94
Max Chl Dpth (ft)	7.08	Hydr. Depth (ft)	3.20	5.98	2.76
Conv. Total (cfs)	447218.7	Conv. (cfs)	20566.5	424317.4	2334.8
Length Wtd. (ft)	99.22	Wetted Per. (ft)	99.94	594.53	15.98
Min Ch El (ft)	70.62	Shear (lb/sq ft)	0.98	1.83	0.80
Alpha	1.05	Stream Power (lb/ft s)	4.43	15.35	3.14
Frctn Loss (ft)	0.59	Cum Volume (acre-ft)	588.38	1270.48	94.34
C & E Loss (ft)	0.02	Cum SA (acres)	203.99	184.29	26.18

Warning: Divided flow computed for this cross-section.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.

CROSS SECTION OUTPUT Profile #Q100

E.G. Elev (ft)	80.36	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.19	Wt. n-Val.	0.049	0.041	0.050
W.S. Elev (ft)	79.17	Reach Len. (ft)	93.54	99.45	106.38
Crit W.S. (ft)	77.42	Flow Area (sq ft)	1759.44	4427.23	65.96

E.G. Slope (ft/ft)	0.004557	Area (sq ft)	1759.44	4427.23	65.96
Q Total (cfs)	47312.00	Flow (cfs)	5844.25	41167.99	299.75
Top Width (ft)	1695.70	Top Width (ft)	1083.27	594.34	18.09
Vel Total (ft/s)	7.57	Avg. Vel. (ft/s)	3.32	9.30	4.54
Max Chl Dpth (ft)	8.55	Hydr. Depth (ft)	1.62	7.45	3.65
Conv. Total (cfs)	700853.8	Conv. (cfs)	86573.6	609839.9	4440.4
Length Wtd. (ft)	98.91	Wetted Per. (ft)	1083.58	594.53	19.34
Min Ch El (ft)	70.62	Shear (lb/sq ft)	0.46	2.12	0.97
Alpha	1.34	Stream Power (lb/ft s)	1.53	19.70	4.41
Frctn Loss (ft)	0.63	Cum Volume (acre-ft)	1120.03	1599.84	143.38
C & E Loss (ft)	0.07	Cum SA (acres)	297.79	184.48	28.46

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

CROSS SECTION OUTPUT Profile #Q100HC

E.G. Elev (ft)	84.02	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.44	Wt. n-Val.	0.036	0.041	0.050
W.S. Elev (ft)	82.58	Reach Len. (ft)	93.54	99.45	106.38
Crit W.S. (ft)	81.50	Flow Area (sq ft)	6468.56	6451.62	137.22
E.G. Slope (ft/ft)	0.003870	Area (sq ft)	6468.56	6451.62	137.22
Q Total (cfs)	118891.00	Flow (cfs)	47430.09	70683.18	777.74
Top Width (ft)	2042.98	Top Width (ft)	1425.37	594.34	23.27
Vel Total (ft/s)	9.11	Avg. Vel. (ft/s)	7.33	10.96	5.67
Max Chl Dpth (ft)	11.96	Hydr. Depth (ft)	4.54	10.86	5.90
Conv. Total (cfs)	1911100.0	Conv. (cfs)	762409.5	1136189.0	12501.7
Length Wtd. (ft)	97.37	Wetted Per. (ft)	1425.77	594.53	25.57
Min Ch El (ft)	70.62	Shear (lb/sq ft)	1.10	2.62	1.30
Alpha	1.12	Stream Power (lb/ft s)	8.04	28.73	7.35
Frctn Loss (ft)	0.49	Cum Volume (acre-ft)	4448.89	2738.71	355.45
C & E Loss (ft)	0.07	Cum SA (acres)	569.86	184.50	39.81

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

CROSS SECTION

RIVER: San Mateo Creek
REACH: Lower RS: 14009.16

INPUT
Description:
Station Elevation Data num= 66

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	93.29	7.72	92.32	62.52	90.8	132.12	86.6	149.89	85.68
158.74	85.16	173.07	83.98	232.69	79.87	255.75	79.13	265.77	78.81
297.43	78.03	335.32	78.89	357.02	79.14	362.56	79.04	422.01	79.18
446.54	78.93	498.12	78.63	690.12	79.44	698.83	79.48	713.17	79.46
875.56	78.9	923.79	78.73	954.2	78.64	1030.24	78.52	1117.03	77.56
1426.08	74.84	1472.13	74.39	1479.08	74.36	1483.21	74.36	1491.98	74.89

1555.9	77.71	1577.05	78.68	1579.07	78.75	1648.33	74.68	1673.87	72.27
1688.14	72.2	1705.24	72.13	1868.98	71.68	1893.1	71.62	1959.36	71.43
1971.74	71.4	2001.53	71.12	2024.5	71.39	2080.05	71.47	2168.6	71.6
2177.07	71.61	2241.75	71.72	2266.51	71.73	2272.94	72.17	2279.11	72.89
2287.03	72.97	2291.6	73.07	2294.64	74.83	2295.96	75.73	2312.73	97.79
2315.5	101.44	2315.72	101.72	2316.74	102.67	2322.85	108.42	2324.94	109.94
2337.52	115.66	2342.69	117.62	2346.03	117.54	2360.58	118.46	2363.08	118.74
2366.38	118.7								

Manning's n Values num= 4

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.02	875.56	.05	1893.1	.035	2177.07	.05

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
1673.87	2272.94	100.03	103.03	102.07	.1	.3

CROSS SECTION OUTPUT Profile #Q50

E.G. Elev (ft)	78.13	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.27	Wt. n-Val.	0.050	0.041	0.050
W.S. Elev (ft)	76.86	Reach Len. (ft)	100.03	103.03	102.07
Crit W.S. (ft)		Flow Area (sq ft)	554.08	3113.37	86.86
E.G. Slope (ft/ft)	0.007390	Area (sq ft)	554.08	3113.37	86.86
Q Total (cfs)	31354.00	Flow (cfs)	1787.79	29060.38	505.83
Top Width (ft)	1025.97	Top Width (ft)	403.02	599.07	23.88
Vel Total (ft/s)	8.35	Avg. Vel. (ft/s)	3.23	9.33	5.82
Max Chl Dpth (ft)	5.74	Hydr. Depth (ft)	1.37	5.20	3.64
Conv. Total (cfs)	364728.4	Conv. (cfs)	20796.6	338047.7	5884.1
Length Wtd. (ft)	102.78	Wetted Per. (ft)	403.26	599.09	25.24
Min Ch El (ft)	71.12	Shear (lb/sq ft)	0.63	2.40	1.59
Alpha	1.17	Stream Power (lb/ft s)	2.05	22.38	9.25
Frctn Loss (ft)	0.81	Cum Volume (acre-ft)	586.95	1262.87	94.18
C & E Loss (ft)	0.03	Cum SA (acres)	203.09	182.93	26.13

Warning: Divided flow computed for this cross-section.

CROSS SECTION OUTPUT Profile #Q100

E.G. Elev (ft)	79.66	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.94	Wt. n-Val.	0.050	0.041	0.050
W.S. Elev (ft)	77.72	Reach Len. (ft)	100.03	103.03	102.07
Crit W.S. (ft)	77.45	Flow Area (sq ft)	954.10	3625.23	107.54
E.G. Slope (ft/ft)	0.009499	Area (sq ft)	954.10	3625.23	107.54
Q Total (cfs)	47312.00	Flow (cfs)	4130.22	42385.48	796.30
Top Width (ft)	1153.97	Top Width (ft)	530.37	599.07	24.53
Vel Total (ft/s)	10.09	Avg. Vel. (ft/s)	4.33	11.69	7.40
Max Chl Dpth (ft)	6.60	Hydr. Depth (ft)	1.80	6.05	4.38
Conv. Total (cfs)	485426.3	Conv. (cfs)	42376.5	434879.7	8170.1
Length Wtd. (ft)	102.60	Wetted Per. (ft)	530.66	599.09	26.31
Min Ch El (ft)	71.12	Shear (lb/sq ft)	1.07	3.59	2.42
Alpha	1.23	Stream Power (lb/ft s)	4.62	41.96	17.95
Frctn Loss (ft)	0.83	Cum Volume (acre-ft)	1117.11	1590.65	143.16
C & E Loss (ft)	0.20	Cum SA (acres)	296.06	183.11	28.41

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 OUTPUT Profile #Q100HC

E.G. Elev (ft)	83.46	Element	Left OB	Channel	Right OB
Vel Head (ft)	2.19	Wt. n-Val.	0.038	0.041	0.050
W.S. Elev (ft)	81.27	Reach Len. (ft)	100.03	103.03	102.07
Crit W.S. (ft)	81.27	Flow Area (sq ft)	5045.72	5752.52	199.44
E.G. Slope (ft/ft)	0.006923	Area (sq ft)	5045.72	5752.52	199.44
Q Total (cfs)	118891.00	Flow (cfs)	39373.19	77803.49	1714.32
Top Width (ft)	2087.75	Top Width (ft)	1461.45	599.07	27.23
Vel Total (ft/s)	10.81	Avg. Vel. (ft/s)	7.80	13.53	8.60
Max Chl Dpth (ft)	10.15	Hydr. Depth (ft)	3.45	9.60	7.32
Conv. Total (cfs)	1428935.0	Conv. (cfs)	473221.0	935109.5	20604.1
Length Wtd. (ft)	102.06	Wetted Per. (ft)	1461.90	599.09	30.77
Min Ch El (ft)	71.12	Shear (lb/sq ft)	1.49	4.15	2.80
Alpha	1.21	Stream Power (lb/ft s)	11.64	56.13	24.08
Frctn Loss (ft)	0.76	Cum Volume (acre-ft)	4436.53	2724.78	355.04
C & E Loss (ft)	0.01	Cum SA (acres)	566.76	183.13	39.75

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: San Mateo Creek
REACH: Lower RS: 13906.13

INPUT
Description:
Station Elevation Data num= 76

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	92.54	5.96	92.16	14.1	91.4	14.65	91.37	15.11	91.34
15.49	91.31	23.03	91.22	82.25	89.97	107.38	88.4	162.65	85
180.35	84.65	209.77	82.61	267.6	79.07	281.9	78.01	312.97	75.46
325.14	75.19	352.53	74.24	379.51	75.7	384.55	75.3	393.62	75.99
402	76.8	430.21	78.73	441.39	78.8	459.71	79.08	463.86	79.09
472.95	79.11	475.87	79.08	541.11	78.7	612.9	79.01	714.38	79.21
747.77	79.17	825.98	79.17	927.71	78.82	951.83	78.74	970.64	78.68
1008.39	78.62	1123.02	77.31	1160.28	76.88	1220.67	76.32	1416.22	74.52
1594.78	72.94	1626.09	74.6	1652.51	74.95	1670.3	74.33	1697.19	73.46
1712.24	72.03	1757.27	71.8	1845.23	71.43	1994.38	71	2001.9	70.98
2060.05	70.77	2065.38	70.82	2156.22	71.71	2187.44	71.73	2216.87	71.76
2281.67	71.79	2294.86	71.52	2308.13	71.24	2318.98	71.96	2335.46	71.67
2350.65	70.56	2359.01	70.89	2369.1	72.27	2371.4	72.66	2378.54	78.57
2378.75	78.74	2379.61	79.32	2387.68	84.68	2398.09	88.77	2398.61	88.95
2399.29	89.07	2401.06	89.44	2401.09	89.45	2423.44	96.8	2432.18	99.53
2441.34	101.86								

Manning's n Values num= 7

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.02	463.86	.02	927.71	.05	1123.02	.035	1220.67	.05
2001.9	.035	2294.86	.05						

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
1712.24	2369.1	92.63	93.13	94.58	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
0	1123.02	77.31	F

CROSS SECTION OUTPUT Profile #Q50

			Left OB	Channel	Right OB
E.G. Elev (ft)	77.30	Element			
Vel Head (ft)	1.18	Wt. n-Val.	0.050	0.042	0.050
W.S. Elev (ft)	76.12	Reach Len. (ft)	92.63	93.13	94.58
Crit W.S. (ft)	75.57	Flow Area (sq ft)	811.10	3085.48	15.63
E.G. Slope (ft/ft)	0.008405	Area (sq ft)	900.31	3085.48	15.63
Q Total (cfs)	31354.00	Flow (cfs)	3180.37	28105.71	67.92
Top Width (ft)	1223.00	Top Width (ft)	559.66	656.86	6.48
Vel Total (ft/s)	8.01	Avg. Vel. (ft/s)	3.92	9.11	4.35
Max Chl Dpth (ft)	5.56	Hydr. Depth (ft)	1.73	4.70	2.41
Conv. Total (cfs)	341989.8	Conv. (cfs)	34689.5	306559.6	740.8
Length Wtd. (ft)	93.05	Wetted Per. (ft)	469.81	657.04	7.76
Min Ch El (ft)	70.56	Shear (lb/sq ft)	0.91	2.46	1.06
Alpha	1.18	Stream Power (lb/ft s)	3.55	22.45	4.59
Frctn Loss (ft)	0.86	Cum Volume (acre-ft)	585.28	1255.54	94.06
C & E Loss (ft)	0.01	Cum SA (acres)	201.98	181.45	26.10

Warning: Divided flow computed for this cross-section.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.

CROSS SECTION OUTPUT Profile #Q100

			Left OB	Channel	Right OB
E.G. Elev (ft)	78.62	Element			
Vel Head (ft)	1.27	Wt. n-Val.	0.043	0.042	0.050
W.S. Elev (ft)	77.35	Reach Len. (ft)	92.63	93.13	94.58
Crit W.S. (ft)	76.75	Flow Area (sq ft)	1686.72	3894.25	24.52
E.G. Slope (ft/ft)	0.007043	Area (sq ft)	1686.72	3894.25	24.52
Q Total (cfs)	47312.00	Flow (cfs)	9281.68	37916.75	113.57
Top Width (ft)	1377.60	Top Width (ft)	712.77	656.86	7.97
Vel Total (ft/s)	8.44	Avg. Vel. (ft/s)	5.50	9.74	4.63
Max Chl Dpth (ft)	6.79	Hydr. Depth (ft)	2.37	5.93	3.08
Conv. Total (cfs)	563741.2	Conv. (cfs)	110594.9	451793.1	1353.2
Length Wtd. (ft)	93.01	Wetted Per. (ft)	713.17	657.04	9.69
Min Ch El (ft)	70.56	Shear (lb/sq ft)	1.04	2.61	1.11
Alpha	1.15	Stream Power (lb/ft s)	5.72	25.38	5.16
Frctn Loss (ft)	0.83	Cum Volume (acre-ft)	1114.08	1581.76	143.01
C & E Loss (ft)	0.05	Cum SA (acres)	294.63	181.63	28.37

Warning: Multiple water surfaces were found that could balance the energy equation. The program selected the water surface whose main channel velocity head was the closest to the previously computed cross section.
Warning: 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.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water

surface was used.

CROSS SECTION OUTPUT Profile #Q100HC

E.G. Elev (ft)	82.49	Element	Left OB	Channel	Right OB
Vel Head (ft)	2.93	Wt. n-Val.	0.041	0.042	0.050
W.S. Elev (ft)	79.56	Reach Len. (ft)	92.63	93.13	94.58
Crit W.S. (ft)	80.13	Flow Area (sq ft)	3839.15	5347.19	45.19
E.G. Slope (ft/ft)	0.011347	Area (sq ft)	3839.15	5347.19	45.19
Q Total (cfs)	118891.00	Flow (cfs)	36946.97	81621.43	322.60
Top Width (ft)	2120.40	Top Width (ft)	1452.67	656.86	10.87
Vel Total (ft/s)	12.88	Avg. Vel. (ft/s)	9.62	15.26	7.14
Max Chl Dpth (ft)	9.00	Hydr. Depth (ft)	2.64	8.14	4.16
Conv. Total (cfs)	1116108.0	Conv. (cfs)	346845.6	766234.1	3028.4
Length Wtd. (ft)	92.93	Wetted Per. (ft)	1453.21	657.04	13.35
Min Ch El (ft)	70.56	Shear (lb/sq ft)	1.87	5.77	2.40
Alpha	1.14	Stream Power (lb/ft s)	18.01	88.00	17.12
Frctn Loss (ft)	0.89	Cum Volume (acre-ft)	4426.33	2711.65	354.75
C & E Loss (ft)	0.07	Cum SA (acres)	563.41	181.65	39.71

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Note: Program found supercritical flow starting at this cross section.

CROSS SECTION

RIVER: San Mateo Creek
REACH: Lower RS: 13813.01

INPUT
Description:
Station Elevation Data num= 79

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	90.43	46.07	88.91	114.69	85.85	118.94	85.75	122.66	85.6
159.5	84.03	195.94	79.72	201.81	79.01	209.78	78.25	245.97	76.05
266.61	73.93	285.45	73.75	326.82	71.64	333.67	71.75	375.69	72.47
445.49	72.53	550.13	72.09	620.9	71	656.67	71.04	711.19	71.03
718.16	70.94	731.07	71.06	739.91	71.67	743.89	72.44	745.13	72.67
750.49	74.78	765.8	77.26	766.52	77.35	768.87	76.86	784.64	74.93
816.22	76.55	817.91	76.62	831.36	78.54	857.99	78.51	971.85	78.7
977.08	78.7	998.84	78.73	1016.4	78.19	1037.65	78.21	1052.24	78.04
1223.56	76.05	1338.8	74.98	1478.15	73.72	1505.61	73.47	1578.36	72.98
1686.09	72.24	1720.96	72.19	1830.79	72.17	1836.11	72.17	1868.32	72.11
1999.95	70.82	2002.4	70.81	2003.94	70.75	2104.48	70.37	2128.22	70.29
2146.2	70.26	2155.3	70.3	2189.66	70.59	2312.43	71.63	2325.19	71.74
2342.82	72.01	2389.64	70.97	2410.55	70.56	2411.18	70.55	2411.33	70.56
2411.6	70.54	2430.18	70.28	2436.8	70.19	2462.58	71.71	2462.84	71.79
2463.83	72.47	2464.05	72.19	2469.44	75.54	2482.82	87.24	2485.38	89.34
2487.8	91.33	2498.73	97.95	2500.37	98.5	2505.34	99.05		

Manning's n Values num= 8

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	977.08	.05	1052.24	.035	1478.15	.02	1578.36	.05
2104.48	.035	2430.18	.05	2505.34	.07				

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
1868.32	2464.05	96.66 91.12	77.43	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
0	1223.56	76.05	F

CROSS SECTION OUTPUT Profile #Q50

E.G. Elev (ft)	76.43	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.26	Wt. n-Val.	0.041	0.040	0.050
W.S. Elev (ft)	75.16	Reach Len. (ft)	96.66	91.12	77.43
Crit W.S. (ft)	74.96	Flow Area (sq ft)	1118.12	2479.13	7.11
E.G. Slope (ft/ft)	0.010288	Area (sq ft)	2659.47	2479.13	7.11
Q Total (cfs)	31354.00	Flow (cfs)	7412.01	23916.95	25.05
Top Width (ft)	1654.50	Top Width (ft)	1053.99	595.73	4.78
Vel Total (ft/s)	8.70	Avg. Vel. (ft/s)	6.63	9.65	3.52
Max Chl Dpth (ft)	4.97	Hydr. Depth (ft)	2.04	4.16	1.49
Conv. Total (cfs)	309124.4	Conv. (cfs)	73076.2	235801.3	246.9
Length Wtd. (ft)	92.99	Wetted Per. (ft)	549.29	596.17	5.63
Min Ch El (ft)	70.19	Shear (lb/sq ft)	1.31	2.67	0.81
Alpha	1.08	Stream Power (lb/ft s)	8.67	25.77	2.86
Frctn Loss (ft)	0.39	Cum Volume (acre-ft)	581.49	1249.59	94.04
C & E Loss (ft)	0.28	Cum SA (acres)	200.27	180.11	26.09

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

CROSS SECTION OUTPUT Profile #Q100

E.G. Elev (ft)	77.74	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.80	Wt. n-Val.	0.039	0.040	0.050
W.S. Elev (ft)	75.94	Reach Len. (ft)	96.66	91.12	77.43
Crit W.S. (ft)	75.94	Flow Area (sq ft)	1578.11	2942.67	11.28
E.G. Slope (ft/ft)	0.011753	Area (sq ft)	3525.36	2942.67	11.28
Q Total (cfs)	47312.00	Flow (cfs)	13260.18	34001.63	50.19
Top Width (ft)	1773.27	Top Width (ft)	1171.69	595.73	5.85
Vel Total (ft/s)	10.44	Avg. Vel. (ft/s)	8.40	11.55	4.45
Max Chl Dpth (ft)	5.75	Hydr. Depth (ft)	2.49	4.94	1.93
Conv. Total (cfs)	436417.6	Conv. (cfs)	122315.1	313639.5	463.0
Length Wtd. (ft)	93.10	Wetted Per. (ft)	633.09	596.17	6.96
Min Ch El (ft)	70.19	Shear (lb/sq ft)	1.83	3.62	1.19
Alpha	1.06	Stream Power (lb/ft s)	15.37	41.85	5.29
Frctn Loss (ft)	0.70	Cum Volume (acre-ft)	1108.54	1574.45	142.97
C & E Loss (ft)	0.31	Cum SA (acres)	292.63	180.29	28.35

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: 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 #Q100HC

			Left OB	Channel	Right OB
E.G. Elev (ft)	80.78	Element			
Vel Head (ft)	4.53	Wt. n-Val.	0.037	0.040	0.050
W.S. Elev (ft)	76.25	Reach Len. (ft)	96.66	91.12	77.43
Crit W.S. (ft)	77.62	Flow Area (sq ft)	3888.02	3123.65	13.11
E.G. Slope (ft/ft)	0.027417	Area (sq ft)	3888.02	3123.65	13.11
Q Total (cfs)	118891.00	Flow (cfs)	61440.16	57356.49	94.35
Top Width (ft)	1816.67	Top Width (ft)	1214.74	595.73	6.20
Vel Total (ft/s)	16.92	Avg. Vel. (ft/s)	15.80	18.36	7.19
Max Chl Dpth (ft)	6.06	Hydr. Depth (ft)	3.20	5.24	2.12
Conv. Total (cfs)	718028.3	Conv. (cfs)	371060.7	346397.8	569.8
Length Wtd. (ft)	94.18	Wetted Per. (ft)	1215.69	596.17	7.42
Min Ch El (ft)	70.19	Shear (lb/sq ft)	5.47	8.97	3.03
Alpha	1.02	Stream Power (lb/ft s)	86.50	164.67	21.77
Frctn Loss (ft)	1.56	Cum Volume (acre-ft)	4418.11	2702.59	354.69
C & E Loss (ft)	0.16	Cum SA (acres)	560.58	180.31	39.69

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: San Mateo Creek
REACH: Lower RS: 13721.89

INPUT
Description:
Station Elevation Data num= 90

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	90.28	24.23	89.47	70.68	88.17	86.02	86.92	114.97	85.99
139.93	84.78	145.11	84.27	148.3	83.92	183.76	78.12	202.89	74.51
214.49	72.52	228.47	70.92	252.92	70.57	297.87	71.4	337.91	72.06
384.48	72.82	391.81	72.76	409.01	72.93	569.03	72.42	633.84	72.16
649.31	71.94	656.83	71.92	704.02	71.52	707.56	71.5	714.34	73.04
722.66	74.99	724.91	75.44	727.08	76.17	734.66	78.44	736.91	78.12
748.66	75.71	759.32	72.77	762.57	72.39	788.31	71.03	791.65	70.85
793.61	70.71	794.7	70.74	814.87	70.89	868.87	71.37	872.51	71.28
877.29	71.39	911.66	72.31	913.77	72.68	930.02	73.56	931.36	73.5
940.33	73.62	944.5	73.81	973.65	75.4	986.82	75.23	1023.97	74.38
1052.35	74.83	1192.68	74.83	1201.55	75	1234.43	75.25	1247.95	75.21
1644.56	72.51	1670.3	72.34	1764.51	72.2	1773.04	72.2	1888.95	72.18
1895.47	72.01	1915.14	71.61	1959.71	70.65	1974.64	71.04	1979.44	70.33
2093.85	70.04	2132.78	69.97	2227.8	69.82	2230.8	69.82	2258.7	69.96
2358.2	70.45	2379.47	70.65	2385.16	70.71	2394.71	70.87	2405.93	71.07

2433.02	71.17	2449.26	71.56	2457.25	71.74	2466.83	71.66	2494.92	71.44
2512.08	71.93	2514.62	72.56	2523.68	79.04	2538.85	92.04	2545.46	98.14
2554.03	105.93	2559.41	110.87	2564.42	112.19	2564.78	112.23	2569.62	111.96

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	1644.56	.02	1773.04	.05	2132.78	.035	2466.83	.05

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
1915.14	2449.26	104.34	105.73	83.35	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
0	1234.45	75.25	F

CROSS SECTION OUTPUT Profile #Q50

E.G. Elev (ft)	75.76	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.33	Wt. n-Val.	0.034	0.040	0.045
W.S. Elev (ft)	75.43	Reach Len. (ft)	104.34	105.73	83.35
Crit W.S. (ft)	74.55	Flow Area (sq ft)	4048.87	2717.37	252.78
E.G. Slope (ft/ft)	0.002263	Area (sq ft)	4048.87	2717.37	252.78
Q Total (cfs)	31354.00	Flow (cfs)	16129.40	14289.87	934.73
Top Width (ft)	2295.75	Top Width (ft)	1692.26	534.12	69.37
Vel Total (ft/s)	4.47	Avg. Vel. (ft/s)	3.98	5.26	3.70
Max Chl Dpth (ft)	5.61	Hydr. Depth (ft)	2.39	5.09	3.64
Conv. Total (cfs)	659134.1	Conv. (cfs)	339077.6	300406.3	19650.2
Length Wtd. (ft)	104.88	Wetted Per. (ft)	1693.66	534.20	70.37
Min Ch El (ft)	69.82	Shear (lb/sq ft)	0.34	0.72	0.51
Alpha	1.06	Stream Power (lb/ft s)	1.35	3.78	1.88
Frctn Loss (ft)	0.44	Cum Volume (acre-ft)	574.05	1244.16	93.81
C & E Loss (ft)	0.12	Cum SA (acres)	197.22	178.92	26.02

Warning: Multiple water surfaces were found that could balance the energy equation. The program selected the water surface whose main channel velocity head was the closest to the previously computed cross section.
Warning: 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.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.

CROSS SECTION OUTPUT Profile #Q100

E.G. Elev (ft)	76.16	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.76	Wt. n-Val.	0.034	0.040	0.045
W.S. Elev (ft)	75.40	Reach Len. (ft)	104.34	105.73	83.35
Crit W.S. (ft)	75.25	Flow Area (sq ft)	4009.72	2705.01	251.18
E.G. Slope (ft/ft)	0.005271	Area (sq ft)	4009.72	2705.01	251.18
Q Total (cfs)	47312.00	Flow (cfs)	24254.31	21645.58	1412.11
Top Width (ft)	2295.39	Top Width (ft)	1691.94	534.12	69.34
Vel Total (ft/s)	6.79	Avg. Vel. (ft/s)	6.05	8.00	5.62
Max Chl Dpth (ft)	5.58	Hydr. Depth (ft)	2.37	5.06	3.62
Conv. Total (cfs)	651654.4	Conv. (cfs)	334068.1	298136.5	19449.8
Length Wtd. (ft)	104.68	Wetted Per. (ft)	1693.33	534.20	70.33
Min Ch El (ft)	69.82	Shear (lb/sq ft)	0.78	1.67	1.18
Alpha	1.06	Stream Power (lb/ft s)	4.71	13.33	6.61

Frctn Loss (ft)	0.48	Cum Volume (acre-ft)	1100.18	1568.54	142.74
C & E Loss (ft)	0.03	Cum SA (acres)	289.45	179.11	28.29

Warning: Divided flow computed for this cross-section.

CROSS SECTION OUTPUT Profile #Q100HC

E.G. Elev (ft)	79.13	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.56	Wt. n-Val.	0.034	0.040	0.045
W.S. Elev (ft)	77.57	Reach Len. (ft)	104.34	105.73	83.35
Crit W.S. (ft)	76.84	Flow Area (sq ft)	7706.59	3862.39	404.70
E.G. Slope (ft/ft)	0.006138	Area (sq ft)	7706.59	3862.39	404.70
Q Total (cfs)	118891.00	Flow (cfs)	73373.73	42253.71	3263.56
Top Width (ft)	2327.12	Top Width (ft)	1720.63	534.12	72.36
Vel Total (ft/s)	9.93	Avg. Vel. (ft/s)	9.52	10.94	8.06
Max Chl Dpth (ft)	7.75	Hydr. Depth (ft)	4.48	7.23	5.59
Conv. Total (cfs)	1517469.0	Conv. (cfs)	936507.9	539306.6	41654.6
Length Wtd. (ft)	104.55	Wetted Per. (ft)	1722.78	534.20	74.06
Min Ch El (ft)	69.82	Shear (lb/sq ft)	1.71	2.77	2.09
Alpha	1.02	Stream Power (lb/ft s)	16.32	30.31	16.89
Frctn Loss (ft)	0.61	Cum Volume (acre-ft)	4405.25	2695.29	354.32
C & E Loss (ft)	0.03	Cum SA (acres)	557.32	179.13	39.62

Warning: Divided flow computed for this cross-section.
Note: Hydraulic jump has occurred between this cross section and the previous upstream section.

CROSS SECTION

RIVER: San Mateo Creek
REACH: Lower RS: 13616.16

INPUT
Description:
Station Elevation Data num= 95

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	95.01	15.77	94.44	34.73	94.26	63.86	92.57	92.64	90.27
100.55	89.27	153.81	82.69	179.27	78.86	190.9	75.98	195.5	75.49
211.74	72.15	233.92	70.7	273.77	70.47	322.28	71.21	358.12	71.82
379.11	71.93	408.3	71.7	512.29	72.71	644.61	72.29	691.05	72.28
701.3	72.3	718.18	71.43	735.63	71.52	739.28	71.58	744.9	71.94
754.05	76.6	758.51	78.58	759.54	78.86	761.42	78.81	773.81	78.48
780.8	76.21	785.34	74.89	796.4	71.76	799.94	71.43	809.31	71.73
836.65	71.9	892.27	72.77	930.42	71.77	951.08	71.17	960.83	72.14
962.75	72.77	965.32	73.68	974.83	77.41	983.99	78.89	985.37	79.01
987.44	78.45	1007.92	72.09	1018.18	71.38	1024.04	70.97	1031.04	71.25
1064.23	72.32	1093.85	72.87	1325.6	74.67	1415.22	74.44	1710.54	72.44
1802.82	72.3	1856.63	72.22	1867.61	72.21	1911.84	72.2	1932.71	71.68
1938.19	71.56	2035.15	69.85	2233.34	69.59	2308.39	69.49	2349.11	69.38
2379.02	69.33	2402.86	69.42	2406.17	69.43	2410.53	69.46	2484.49	69.46
2507.8	69.32	2508.7	69.32	2511.82	69.3	2555.84	68.35	2573.55	67.23
2583.14	66.29	2586.46	65.96	2590.24	65.67	2601.22	66.68	2611.07	67.65
2616.44	68.56	2619.87	69.14	2626.5	69.81	2632.67	71.05	2636.99	71.41
2642.67	75.18	2647.19	77.16	2651.48	79.87	2657.93	82.83	2670.46	89.09
2672.78	90.02	2675.05	90.48	2682.44	91.86	2688.41	92.83	2690.77	92.84

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	1802.82	.02	1856.63	.05	2233.34	.035	2583.14	.05

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
2035.15	2626.5	106.9	107.52	109.59	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
0	1325.6	74.67	F

CROSS SECTION OUTPUT Profile #Q50

E.G. Elev (ft)	75.20	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.49	Wt. n-Val.	0.041	0.040	0.050
W.S. Elev (ft)	73.71	Reach Len. (ft)	106.90	107.52	109.59
Crit W.S. (ft)	73.67	Flow Area (sq ft)	742.05	2638.84	34.90
E.G. Slope (ft/ft)	0.010246	Area (sq ft)	2208.95	2638.84	34.90
Q Total (cfs)	31354.00	Flow (cfs)	3948.36	27219.53	186.11
Top Width (ft)	2036.02	Top Width (ft)	1430.71	591.35	13.95
Vel Total (ft/s)	9.18	Avg. Vel. (ft/s)	5.32	10.31	5.33
Max Chl Dpth (ft)	8.04	Hydr. Depth (ft)	1.45	4.46	2.50
Conv. Total (cfs)	309759.3	Conv. (cfs)	39007.5	268913.1	1838.7
Length Wtd. (ft)	107.47	Wetted Per. (ft)	511.75	591.72	14.78
Min Ch El (ft)	65.67	Shear (lb/sq ft)	0.93	2.85	1.51
Alpha	1.14	Stream Power (lb/ft s)	4.94	29.42	8.05
Frctn Loss (ft)	1.06	Cum Volume (acre-ft)	566.55	1237.66	93.53
C & E Loss (ft)	0.00	Cum SA (acres)	193.48	177.56	25.94

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 #Q100

E.G. Elev (ft)	75.66	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.66	Wt. n-Val.	0.036	0.040	0.050
W.S. Elev (ft)	75.00	Reach Len. (ft)	106.90	107.52	109.59
Crit W.S. (ft)	74.67	Flow Area (sq ft)	4312.30	3403.18	54.19
E.G. Slope (ft/ft)	0.003964	Area (sq ft)	4312.30	3403.18	54.19
Q Total (cfs)	47312.00	Flow (cfs)	21312.71	25780.73	218.56
Top Width (ft)	2380.59	Top Width (ft)	1773.35	591.35	15.90
Vel Total (ft/s)	6.09	Avg. Vel. (ft/s)	4.94	7.58	4.03
Max Chl Dpth (ft)	9.33	Hydr. Depth (ft)	2.43	5.75	3.41
Conv. Total (cfs)	751497.1	Conv. (cfs)	338528.1	409497.4	3471.6
Length Wtd. (ft)	107.27	Wetted Per. (ft)	1776.07	591.72	17.12
Min Ch El (ft)	65.67	Shear (lb/sq ft)	0.60	1.42	0.78
Alpha	1.14	Stream Power (lb/ft s)	2.97	10.78	3.16
Frctn Loss (ft)	0.35	Cum Volume (acre-ft)	1090.21	1561.13	142.45
C & E Loss (ft)	0.03	Cum SA (acres)	285.30	177.74	28.21

Warning: Divided flow computed for this cross-section.

CROSS SECTION OUTPUT Profile #Q100HC

E.G. Elev (ft)	78.48	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.45	Wt. n-Val.	0.036	0.040	0.050

W.S. Elev (ft)	77.03	Reach Len. (ft)	106.90	107.52	109.59
Crit W.S. (ft)	76.22	Flow Area (sq ft)	7953.78	4605.66	90.96
E.G. Slope (ft/ft)	0.005628	Area (sq ft)	7953.78	4605.66	90.96
Q Total (cfs)	118891.00	Flow (cfs)	67625.66	50743.91	521.44
Top Width (ft)	2418.88	Top Width (ft)	1807.13	591.35	20.40
Vel Total (ft/s)	9.40	Avg. Vel. (ft/s)	8.50	11.02	5.73
Max Chl Dpth (ft)	11.36	Hydr. Depth (ft)	4.40	7.79	4.46
Conv. Total (cfs)	1584739.0	Conv. (cfs)	901405.5	676383.0	6950.4
Length Wtd. (ft)	107.20	Wetted Per. (ft)	1811.53	591.72	22.06
Min Ch El (ft)	65.67	Shear (lb/sq ft)	1.54	2.73	1.45
Alpha	1.05	Stream Power (lb/ft s)	13.12	30.13	8.30
Frctn Loss (ft)	0.57	Cum Volume (acre-ft)	4386.49	2685.01	353.85
C & E Loss (ft)	0.02	Cum SA (acres)	553.09	177.76	39.53

Warning: Divided flow computed for this cross-section.

CROSS SECTION

RIVER: San Mateo Creek
REACH: Lower RS: 13508.64

INPUT
Description:
Station Elevation Data num= 94

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	95.93	6.15	95.74	39.53	94.35	48.72	93.72	57.1	93.23
61.06	92.91	102.02	87.74	144.07	82.09	151.59	80.64	183.13	72.99
191.78	72.16	219.64	71.5	309.54	71.01	345.07	71.21	367.65	71.29
390.58	71.28	406.84	71.27	434.82	71.44	551.03	72.59	620.01	72.37
644.98	72.37	682.43	72.43	702.81	71.38	733.3	70.57	747.67	72.03
751.7	72.27	758.23	74.87	764.6	78.09	768.46	78.01	771.97	78.54
784.2	75	787.54	74.12	793.22	72.44	797.34	72.18	807.98	71.31
818.25	71.47	880.41	73.38	887.53	73.6	888.24	73.61	889.6	73.63
892.76	73.54	965.48	72.45	965.75	72.53	965.99	72.51	968.67	72.49
995.54	72.67	1003.56	72.1	1013.47	72.22	1042.52	72.17	1074.98	72.23
1109.24	72.28	1361.45	74.15	1526.67	73.69	1601.26	73.18	1695.99	72.55
1840.1	72.33	1855.93	72.31	1895.86	71.9	1902.27	71.84	1949.95	71.15
2050.43	69.31	2211.81	69.03	2286.18	68.84	2378.95	68.61	2470.11	67.92
2476.62	67.9	2495.28	67.89	2521.95	67.89	2565.39	67.57	2592	67.38
2595.65	67.28	2633.78	66.25	2635.65	66.21	2648.62	65.95	2690.12	65.11
2695.5	64.82	2698.98	64.98	2703.66	65.79	2704.06	65.89	2707.19	67.92
2709.83	68.61	2714.56	69.27	2721.53	77.11	2725.47	80.07	2727.32	81.44
2743.62	92.08	2745.38	93.66	2753.46	95.9	2753.91	96.02	2756.1	95.99
2762.06	96.4	2768.15	96.75	2772.69	97.26	2788.03	98.13		

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	1840.1	.02	1895.86	.05	2286.18	.035	2648.62	.05

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
2050.43	2714.56	89.44 101.07	116.92	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
0	1344.3	74.03	F

CROSS SECTION OUTPUT Profile #Q50

E.G. Elev (ft)	74.13	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.51	Wt. n-Val.	0.047	0.040	0.050
W.S. Elev (ft)	72.62	Reach Len. (ft)	89.44	101.07	116.92
Crit W.S. (ft)	72.31	Flow Area (sq ft)	350.48	2968.94	4.99
E.G. Slope (ft/ft)	0.009586	Area (sq ft)	949.71	2968.94	4.99
Q Total (cfs)	31354.00	Flow (cfs)	1491.22	29847.18	15.60
Top Width (ft)	1853.94	Top Width (ft)	1186.83	664.13	2.98
Vel Total (ft/s)	9.43	Avg. Vel. (ft/s)	4.25	10.05	3.13
Max Chl Dpth (ft)	7.80	Hydr. Depth (ft)	0.96	4.47	1.68
Conv. Total (cfs)	320231.8	Conv. (cfs)	15230.5	304842.0	159.3
Length Wtd. (ft)	100.61	Wetted Per. (ft)	365.10	664.99	4.48
Min Ch El (ft)	64.82	Shear (lb/sq ft)	0.57	2.67	0.67
Alpha	1.09	Stream Power (lb/ft s)	2.44	26.86	2.08
Frctn Loss (ft)	1.04	Cum Volume (acre-ft)	562.68	1230.74	93.48
C & E Loss (ft)	0.00	Cum SA (acres)	190.27	176.01	25.92

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 #Q100

E.G. Elev (ft)	75.27	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.56	Wt. n-Val.	0.036	0.040	0.050
W.S. Elev (ft)	74.71	Reach Len. (ft)	89.44	101.07	116.92
Crit W.S. (ft)	73.67	Flow Area (sq ft)	4284.52	4358.11	13.17
E.G. Slope (ft/ft)	0.002792	Area (sq ft)	4284.52	4358.11	13.17
Q Total (cfs)	47312.00	Flow (cfs)	17172.31	30109.01	30.68
Top Width (ft)	2515.91	Top Width (ft)	1846.94	664.13	4.84
Vel Total (ft/s)	5.47	Avg. Vel. (ft/s)	4.01	6.91	2.33
Max Chl Dpth (ft)	9.89	Hydr. Depth (ft)	2.32	6.56	2.72
Conv. Total (cfs)	895463.0	Conv. (cfs)	325016.2	569866.1	580.7
Length Wtd. (ft)	98.58	Wetted Per. (ft)	1848.27	664.99	7.28
Min Ch El (ft)	64.82	Shear (lb/sq ft)	0.40	1.14	0.32
Alpha	1.21	Stream Power (lb/ft s)	1.62	7.89	0.73
Frctn Loss (ft)	0.48	Cum Volume (acre-ft)	1079.66	1551.55	142.36
C & E Loss (ft)	0.14	Cum SA (acres)	280.86	176.19	28.18

Warning: Multiple water surfaces were found that could balance the energy equation. The program selected the water surface whose main channel velocity head was the closest to the previously computed cross section.
Warning: 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.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.

CROSS SECTION OUTPUT Profile #Q100HC

E.G. Elev (ft)	77.89	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.38	Wt. n-Val.	0.036	0.040	0.050
W.S. Elev (ft)	76.51	Reach Len. (ft)	89.44	101.07	116.92
Crit W.S. (ft)	75.73	Flow Area (sq ft)	7615.08	5550.08	23.28

E.G. Slope (ft/ft)	0.005050	Area (sq ft)	7615.08	5550.08	23.28
Q Total (cfs)	118891.00	Flow (cfs)	58527.84	60274.91	88.25
Top Width (ft)	2534.84	Top Width (ft)	1864.28	664.13	6.43
Vel Total (ft/s)	9.01	Avg. Vel. (ft/s)	7.69	10.86	3.79
Max Chl Dpth (ft)	11.69	Hydr. Depth (ft)	4.08	8.36	3.62
Conv. Total (cfs)	1672979.0	Conv. (cfs)	823576.4	848160.4	1241.8
Length Wtd. (ft)	95.98	Wetted Per. (ft)	1866.49	664.99	9.68
Min Ch El (ft)	64.82	Shear (lb/sq ft)	1.29	2.63	0.76
Alpha	1.09	Stream Power (lb/ft s)	9.89	28.58	2.87
Frctn Loss (ft)	0.60	Cum Volume (acre-ft)	4367.39	2672.48	353.70
C & E Loss (ft)	0.06	Cum SA (acres)	548.59	176.21	39.50

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.

CROSS SECTION

RIVER: San Mateo Creek
REACH: Lower RS: 13407.57

INPUT
Description:
Station Elevation Data num= 102

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	93.74	32.24	92.16	48.91	91.54	96.09	91.22	132.82	88.08
135.54	87.82	143	86.85	199.43	80.26	217.47	77.85	235.12	77.02
266.7	74.58	307.28	73.54	354.35	71.71	426.96	71.72	442.42	71.73
541.67	71.67	661.47	72.39	675.58	71.63	720.26	71.82	776.8	71.61
792.98	71.38	821.25	70.68	833.25	71.91	836.38	72.21	841.38	74.43
847.53	77.21	850.49	78.05	854.1	78.73	857.18	78.53	858.14	78.17
862.77	76.45	874.36	72.62	878.13	71.98	898.24	72.21	914.78	71.96
944.91	72.55	968.16	72.78	1002.2	71.62	1010.49	71.55	1016.34	71.44
1030.06	71.98	1031.16	72.26	1038.7	76.22	1042.51	77.97	1044.65	78.33
1053.74	78.17	1057.48	77.42	1062.96	74.1	1063.58	74.06	1068.61	71.92
1073.4	71.83	1080.35	71.72	1093.47	71.7	1207.79	71.94	1316.02	72.13
1500.94	73.6	1596.95	73.38	1721.05	73.11	1791.98	72.64	1859.49	72.53
1982.05	71.27	2012.08	70.96	2018.47	70.89	2123.39	69.35	2151.1	69.03
2167.88	68.62	2176.54	68.64	2183.51	68.72	2402.48	68.13	2462.91	67.97
2598.65	66.92	2654.31	66.62	2660.1	66.58	2664.53	66.6	2669.76	66.57
2774.87	65.92	2805.76	65.72	2810.59	65.69	2822.92	65.19	2834.38	64.73
2847.11	64.24	2852.95	64.63	2857.46	64.93	2861.13	65.32	2863.19	66.92
2865.03	67.51	2867.43	69	2868.52	69.86	2876.62	75	2892.51	84.04
2893.72	84.35	2895.52	84.79	2903.25	85.49	2909.12	86.18	2920.53	86.33
2925.33	86.71	2930.06	87.59	2978.88	90.84	2991.07	91.7	2993.13	92.04
2995.16	92.28	3003.11	93.01						

Manning's n Values num= 6

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	1982.05	.02	2012.08	.05	2402.48	.035	2822.92	.035
2852.95	.05								

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
2151.1	2867.43	95.24	92.14	91.38	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
0	1488.61	73.57	F

CROSS SECTION OUTPUT Profile #Q50

E.G. Elev (ft)	73.08	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.52	Wt. n-Val.	0.048	0.041	0.050
W.S. Elev (ft)	71.56	Reach Len. (ft)	95.24	92.14	91.38
Crit W.S. (ft)	71.32	Flow Area (sq ft)	238.15	3019.76	4.60
E.G. Slope (ft/ft)	0.011245	Area (sq ft)	258.58	3019.76	4.60
Q Total (cfs)	31354.00	Flow (cfs)	1012.92	30326.52	14.56
Top Width (ft)	976.76	Top Width (ft)	256.66	716.33	3.77
Vel Total (ft/s)	9.61	Avg. Vel. (ft/s)	4.25	10.04	3.17
Max Chl Dpth (ft)	7.32	Hydr. Depth (ft)	1.21	4.22	1.22
Conv. Total (cfs)	295680.0	Conv. (cfs)	9552.2	285990.5	137.3
Length Wtd. (ft)	92.22	Wetted Per. (ft)	197.22	717.48	4.56
Min Ch El (ft)	64.24	Shear (lb/sq ft)	0.85	2.95	0.71
Alpha	1.06	Stream Power (lb/ft s)	3.61	29.67	2.24
Frctn Loss (ft)	0.61	Cum Volume (acre-ft)	561.44	1223.79	93.47
C & E Loss (ft)	0.20	Cum SA (acres)	188.79	174.41	25.91

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.
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 #Q100

E.G. Elev (ft)	74.66	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.92	Wt. n-Val.	0.044	0.041	0.050
W.S. Elev (ft)	72.74	Reach Len. (ft)	95.24	92.14	91.38
Crit W.S. (ft)	72.52	Flow Area (sq ft)	549.03	3867.77	10.16
E.G. Slope (ft/ft)	0.010427	Area (sq ft)	1368.37	3867.77	10.16
Q Total (cfs)	47312.00	Flow (cfs)	3157.82	44113.75	40.43
Top Width (ft)	2086.25	Top Width (ft)	1364.28	716.33	5.63
Vel Total (ft/s)	10.69	Avg. Vel. (ft/s)	5.75	11.41	3.98
Max Chl Dpth (ft)	8.50	Hydr. Depth (ft)	1.47	5.40	1.80
Conv. Total (cfs)	463335.1	Conv. (cfs)	30925.2	432014.0	395.9
Length Wtd. (ft)	92.31	Wetted Per. (ft)	374.72	717.48	6.77
Min Ch El (ft)	64.24	Shear (lb/sq ft)	0.95	3.51	0.98
Alpha	1.08	Stream Power (lb/ft s)	5.49	40.02	3.89
Frctn Loss (ft)	0.61	Cum Volume (acre-ft)	1073.86	1542.01	142.33
C & E Loss (ft)	0.22	Cum SA (acres)	277.56	174.59	28.17

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.
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 #Q100HC

E.G. Elev (ft)	77.23	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.95	Wt. n-Val.	0.036	0.041	0.050
W.S. Elev (ft)	75.28	Reach Len. (ft)	95.24	92.14	91.38
Crit W.S. (ft)	75.26	Flow Area (sq ft)	5750.52	5684.93	29.53
E.G. Slope (ft/ft)	0.007898	Area (sq ft)	5750.52	5684.93	29.53
Q Total (cfs)	118891.00	Flow (cfs)	45794.11	72951.04	145.85
Top Width (ft)	2572.32	Top Width (ft)	1846.31	716.33	9.68
Vel Total (ft/s)	10.37	Avg. Vel. (ft/s)	7.96	12.83	4.94
Max Chl Dpth (ft)	11.04	Hydr. Depth (ft)	3.11	7.94	3.05
Conv. Total (cfs)	1337793.0	Conv. (cfs)	515287.4	820864.3	1641.1
Length Wtd. (ft)	93.31	Wetted Per. (ft)	1849.25	717.48	11.55
Min Ch El (ft)	64.24	Shear (lb/sq ft)	1.53	3.91	1.26
Alpha	1.17	Stream Power (lb/ft s)	12.21	50.13	6.23
Frctn Loss (ft)	0.52	Cum Volume (acre-ft)	4353.67	2659.44	353.63
C & E Loss (ft)	0.19	Cum SA (acres)	544.78	174.61	39.47

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.
Note: Manning's n values were composited to a single value in the main channel.

CROSS SECTION

RIVER: San Mateo Creek
REACH: Lower RS: 13315.43

INPUT
Description:
Station Elevation Data num= 94

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	92.37	48.24	90.74	104.79	86.53	134.15	85.14	150.09	84.65
168.88	82.74	205.62	78.17	255.87	76.49	292.04	74.79	340.93	73.77
386.48	71.99	419.8	71.99	603.33	72	638.41	72.21	691.28	69.13
750.71	69.17	791.18	69.15	827.43	70.12	836.9	70.4	846.96	71.82
850.53	72.27	863.22	78.21	864.14	78.71	872.17	78.93	872.59	78.94
872.72	78.9	891.98	72.54	901.98	69.38	912.59	68.66	921	67.6
981.83	70.09	984.79	70.26	985.32	70.26	985.84	70.28	987.07	70.39
1056.81	71.86	1066.85	71.97	1110.41	71.71	1110.78	71.71	1169.07	71.38
1284.66	71.63	1471.9	71.96	1587.84	72.9	1786.7	72.46	1825.86	72.59
1894.49	71.61	2055.73	71.3	2055.96	71.3	2070.39	71.29	2072.43	71.34
2075.04	71.43	2086.88	71.49	2095.85	71.55	2107.2	71.35	2136.89	68.9
2182.4	67.51	2226.09	66.5	2303.2	66.75	2361.98	67.47	2484.16	67.2
2491.8	67.15	2570.4	66.58	2734.58	65.37	2759.22	65.24	2784.58	65.34
2887.37	65.73	2932.42	65.9	2934.69	65.89	2935.37	65.86	2936.1	65.86
2937.24	65.83	2940.25	65.8	2946.58	65.76	2978.7	65.35	2982.37	65.1
2984.8	65.77	2985.75	66.06	2985.88	66.6	2986.32	67.22	2990.16	69.62
2991.47	70.68	2993.36	72.26	2998.53	73.99	2999.61	74.31	3002.35	75.03
3036.03	79.84	3049.82	81.54	3061.08	82.33	3067.73	83.11	3078.3	85.15
3094.99	94.72	3103.97	99.78	3110.4	102.53	3114.75	104.55		

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	2055.73	.02	2086.88	.05	2491.8	.035	2990.16	.05

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
2182.4	2986.32	395.33	410.1 440.35	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
0	1559.49	73.08	F

CROSS SECTION OUTPUT Profile #Q50

E.G. Elev (ft)	72.28	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.87	Wt. n-Val.	0.050	0.038	0.036
W.S. Elev (ft)	71.41	Reach Len. (ft)	395.33	410.10	440.35
Crit W.S. (ft)	69.96	Flow Area (sq ft)	188.97	4066.61	13.44
E.G. Slope (ft/ft)	0.004322	Area (sq ft)	783.91	4066.61	13.44
Q Total (cfs)	31354.00	Flow (cfs)	636.81	30654.64	62.55
Top Width (ft)	1313.45	Top Width (ft)	503.51	803.92	6.02
Vel Total (ft/s)	7.34	Avg. Vel. (ft/s)	3.37	7.54	4.65
Max Chl Dpth (ft)	6.31	Hydr. Depth (ft)	1.23	5.06	2.23
Conv. Total (cfs)	476934.7	Conv. (cfs)	9686.6	466296.5	951.5
Length Wtd. (ft)	409.93	Wetted Per. (ft)	153.74	804.84	7.35
Min Ch El (ft)	65.10	Shear (lb/sq ft)	0.33	1.36	0.49
Alpha	1.03	Stream Power (lb/ft s)	1.12	10.28	2.30
Frctn Loss (ft)	2.16	Cum Volume (acre-ft)	560.30	1216.29	93.45
C & E Loss (ft)	0.01	Cum SA (acres)	187.96	172.80	25.90

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 #Q100

E.G. Elev (ft)	73.83	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.19	Wt. n-Val.	0.043	0.039	0.036
W.S. Elev (ft)	72.64	Reach Len. (ft)	395.33	410.10	440.35
Crit W.S. (ft)	71.07	Flow Area (sq ft)	579.14	5055.76	21.88
E.G. Slope (ft/ft)	0.004605	Area (sq ft)	2210.10	5055.76	21.88
Q Total (cfs)	47312.00	Flow (cfs)	2066.87	45124.01	121.12
Top Width (ft)	2434.03	Top Width (ft)	1621.94	803.92	8.17
Vel Total (ft/s)	8.36	Avg. Vel. (ft/s)	3.57	8.93	5.53
Max Chl Dpth (ft)	7.54	Hydr. Depth (ft)	1.22	6.29	2.68
Conv. Total (cfs)	697170.8	Conv. (cfs)	30456.6	664929.4	1784.8
Length Wtd. (ft)	409.68	Wetted Per. (ft)	476.68	804.84	9.87
Min Ch El (ft)	65.10	Shear (lb/sq ft)	0.35	1.81	0.64
Alpha	1.10	Stream Power (lb/ft s)	1.25	16.12	3.53
Frctn Loss (ft)	2.40	Cum Volume (acre-ft)	1069.95	1532.57	142.30
C & E Loss (ft)	0.03	Cum SA (acres)	274.30	172.98	28.15

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 #Q100HC

E.G. Elev (ft)	76.52	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.31	Wt. n-Val.	0.036	0.039	0.039
W.S. Elev (ft)	75.21	Reach Len. (ft)	395.33	410.10	440.35
Crit W.S. (ft)	74.33	Flow Area (sq ft)	6874.31	7124.85	53.33

E.G. Slope (ft/ft)	0.004087	Area (sq ft)	6874.31	7124.85	53.33
Q Total (cfs)	118891.00	Flow (cfs)	43958.27	74627.65	305.08
Top Width (ft)	2693.51	Top Width (ft)	1872.28	803.92	17.31
Vel Total (ft/s)	8.46	Avg. Vel. (ft/s)	6.39	10.47	5.72
Max Chl Dpth (ft)	10.11	Hydr. Depth (ft)	3.67	8.86	3.08
Conv. Total (cfs)	1859640.0	Conv. (cfs)	687575.7	1167293.0	4771.9
Length Wtd. (ft)	405.54	Wetted Per. (ft)	1874.45	804.84	19.38
Min Ch El (ft)	65.10	Shear (lb/sq ft)	0.94	2.26	0.70
Alpha	1.17	Stream Power (lb/ft s)	5.98	23.66	4.02
Frctn Loss (ft)	1.78	Cum Volume (acre-ft)	4339.86	2645.90	353.54
C & E Loss (ft)	0.02	Cum SA (acres)	540.71	173.00	39.45

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: San Mateo Creek
REACH: Lower RS: 12905.33

INPUT
Description:
Station Elevation Data num= 110

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	93.53	8.94	92.81	12.86	92.58	21.37	92.42	75	88.52
119.37	85.3	151.36	82.61	159.86	82.35	181.68	80.01	207.47	78.46
280.15	75.79	315.78	74.33	410.87	72.29	417.03	72.21	435.69	72.41
608.09	72.57	637.12	72.56	651.24	69.94	659.02	69.32	662.84	68.46
663.99	68.45	683.25	66.39	721.77	66.53	742.22	66.68	763.86	66.92
782.63	67.15	836.9	69.71	847.94	70.06	849.5	70.22	853.01	70.49
872.91	72.29	883.79	74.72	885.7	75.28	887.66	75.3	893.09	75.49
898.77	74.5	905.28	73.17	907.69	72.26	911.2	69.82	915.49	67.44
923.04	65.18	955.74	64.57	979.48	63.54	1012.57	63.44	1030.68	63.99
1044.9	64.94	1053.6	64.86	1056.58	66.16	1060.81	67.68	1064.12	69.1
1066.55	70.49	1080.18	72.59	1090.29	72.57	1115.14	72.39	1273.23	71.38
1303.49	71.21	1356.83	71.31	1654.83	71.73	1677.09	71.89	1708.19	71.8
1796.13	72.07	1876.91	71.75	2054.9	68.24	2073.05	67.89	2075.92	67.97
2108.71	68.74	2126.96	69.16	2168.26	71.06	2174.61	71.41	2188.21	72.17
2193.39	72.25	2200.37	71.13	2231.23	66.53	2249.65	65.34	2258.16	64.43
2273.46	64.7	2331.83	65.73	2333.6	65.73	2336.35	65.71	2337.46	65.72
2339.36	65.72	2356.36	65.72	2471.15	65.74	2716.21	65.8	2782.85	65.21
2915.49	65.84	2927.34	65.85	3009.56	65.93	3011.51	65.9	3038.99	65.39
3056.6	65.4	3099.89	65.82	3126.83	65.67	3127.2	65.67	3144.61	63.94
3169.67	62.49	3179.14	62.49	3215.34	62.47	3228.33	62.47	3242.92	63.84
3253.1	64.6	3255.64	65.06	3259.54	66.88	3266.26	72.71	3274.58	80.86
3276.1	82.12	3279.28	84.73	3283.12	85.74	3293.27	87.83	3294.87	88.3

Manning's n Values num= 7

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	2108.71	.02	2174.61	.05	2273.46	.035	2339.36	.05
2471.15	.035	3294.87	.05						

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
2231.23	3259.54	1161.81	1209.87 1227.39	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent

0 1677.09 71.89 F

CROSS SECTION OUTPUT Profile #Q50

E.G. Elev (ft)	70.11	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.98	Wt. n-Val.	0.038	0.037	0.035
W.S. Elev (ft)	69.12	Reach Len. (ft)	1161.81	1209.87	1227.39
Crit W.S. (ft)	68.42	Flow Area (sq ft)	93.39	3895.81	2.90
E.G. Slope (ft/ft)	0.006555	Area (sq ft)	1105.74	3895.81	2.90
Q Total (cfs)	31354.00	Flow (cfs)	251.24	31093.83	8.93
Top Width (ft)	1479.86	Top Width (ft)	448.96	1028.31	2.59
Vel Total (ft/s)	7.85	Avg. Vel. (ft/s)	2.69	7.98	3.08
Max Chl Dpth (ft)	6.65	Hydr. Depth (ft)	0.70	3.79	1.12
Conv. Total (cfs)	387263.9	Conv. (cfs)	3103.2	384050.4	110.3
Length Wtd. (ft)	1201.21	Wetted Per. (ft)	132.90	1029.09	3.42
Min Ch El (ft)	62.47	Shear (lb/sq ft)	0.29	1.55	0.35
Alpha	1.03	Stream Power (lb/ft s)	0.77	12.36	1.07
Frctn Loss (ft)	6.45	Cum Volume (acre-ft)	551.72	1178.81	93.37
C & E Loss (ft)	0.04	Cum SA (acres)	183.63	164.17	25.86

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 #Q100

E.G. Elev (ft)	71.40	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.48	Wt. n-Val.	0.035	0.037	0.035
W.S. Elev (ft)	69.92	Reach Len. (ft)	1161.81	1209.87	1227.39
Crit W.S. (ft)	69.44	Flow Area (sq ft)	224.92	4715.53	5.33
E.G. Slope (ft/ft)	0.007729	Area (sq ft)	1500.36	4715.53	5.33
Q Total (cfs)	47312.00	Flow (cfs)	936.43	46353.76	21.81
Top Width (ft)	1574.95	Top Width (ft)	543.13	1028.31	3.50
Vel Total (ft/s)	9.57	Avg. Vel. (ft/s)	4.16	9.83	4.09
Max Chl Dpth (ft)	7.45	Hydr. Depth (ft)	1.14	4.59	1.52
Conv. Total (cfs)	538171.9	Conv. (cfs)	10651.9	527272.0	248.1
Length Wtd. (ft)	1199.80	Wetted Per. (ft)	196.87	1029.09	4.64
Min Ch El (ft)	62.47	Shear (lb/sq ft)	0.55	2.21	0.55
Alpha	1.04	Stream Power (lb/ft s)	2.30	21.73	2.27
Frctn Loss (ft)	5.85	Cum Volume (acre-ft)	1053.11	1486.57	142.16
C & E Loss (ft)	0.16	Cum SA (acres)	264.47	164.36	28.09

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 #Q100HC

E.G. Elev (ft)	74.72	Element	Left OB	Channel	Right OB

Vel Head (ft)	1.53	Wt. n-Val.	0.034	0.037	0.035
W.S. Elev (ft)	73.19	Reach Len. (ft)	1161.81	1209.87	1227.39
Crit W.S. (ft)	71.97	Flow Area (sq ft)	5116.02	8079.37	22.95
E.G. Slope (ft/ft)	0.004707	Area (sq ft)	5116.02	8079.37	22.95
Q Total (cfs)	118891.00	Flow (cfs)	30248.97	88522.42	119.60
Top Width (ft)	2869.70	Top Width (ft)	1834.18	1028.31	7.21
Vel Total (ft/s)	8.99	Avg. Vel. (ft/s)	5.91	10.96	5.21
Max Chl Dpth (ft)	10.72	Hydr. Depth (ft)	2.79	7.86	3.18
Conv. Total (cfs)	1732970.0	Conv. (cfs)	440912.8	1290314.0	1743.3
Length Wtd. (ft)	1192.08	Wetted Per. (ft)	1838.80	1029.09	9.59
Min Ch El (ft)	62.47	Shear (lb/sq ft)	0.82	2.31	0.70
Alpha	1.22	Stream Power (lb/ft s)	4.83	25.28	3.67
Frctn Loss (ft)	4.16	Cum Volume (acre-ft)	4285.45	2574.32	353.16
C & E Loss (ft)	0.04	Cum SA (acres)	523.90	164.38	39.32

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: San Mateo Creek
REACH: Lower RS: 11695.46

INPUT
Description:
Station Elevation Data num= 133

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	95.11	2.21	94.93	11.41	94.03	52.62	92.7	58.81	91.73
65.23	91.41	72.89	90.05	86.67	86.23	88.14	86.09	97.43	84.97
121.79	83.73	160.94	82.22	328.18	73.68	350.27	72.95	408.73	72.21
415.23	72.17	436.65	72.47	525.46	73.46	562.85	72.83	599.83	72.15
614.25	72.57	622.39	72.84	629.02	73.05	638.53	72.27	640.65	71.88
647.32	70.35	660.58	66.72	682.58	66.02	699.46	64.71	709.54	64.54
727.57	64.5	806.68	63.44	845.64	63.6	849.21	63.83	859.29	65.14
862.56	65.28	865.03	65.87	872.11	69.92	875.55	71.91	876.48	72.06
887.24	73.47	895.63	73.53	905.91	72.8	907.95	72.42	920.58	66.82
921.58	66.36	924.05	66.02	931.15	64.9	937.02	64.55	998.42	64.3
1047.95	63.93	1065.11	64.38	1070.37	65.21	1071.26	65.35	1082.68	70.47
1085.37	71.75	1089.35	72.42	1090.51	72.55	1093.23	72.55	1133.54	72.47
1157.77	72.53	1232.93	70.28	1443.76	68.69	1454.46	68.64	1467.99	68.67
1695.89	69.45	1851.89	68.23	1915.31	67.36	2042.89	66.27	2091.23	65.66
2094.91	65.66	2129.83	65.66	2169.05	65.67	2173.4	65.82	2180.47	65.12
2190.07	64.96	2237.15	64.21	2255.6	64.35	2266.67	63.85	2274.22	63.53
2374.13	59.22	2374.24	59.22	2393.35	59.26	2444.07	59.27	2478.98	59.28
2566.64	59.3	2723.39	58.77	2760.87	58.64	2852.67	60.52	2864.18	60.43
2885	60.09	2902.24	60.48	2920.42	60.72	2925.76	61.47	2937.98	63.54
2946.64	64.77	2950.35	65.79	2957.34	65.48	2958.05	65.58	2961.9	63.54
2966.39	60.93	2967.8	60.23	2968.57	59.85	2973.41	58.75	2976.47	58.74
3168.63	59.02	3188.71	58.95	3203.49	58.98	3217.96	58.98	3229.93	58.98
3280.64	57.81	3282.03	57.71	3300.8	56.41	3331.69	54.08	3348.55	53.64
3360.83	53.78	3380.37	53.82	3388.07	53.92	3395.96	54.52	3421.59	56.41
3421.69	56.43	3435.66	58.75	3436.13	58.82	3445.06	60.33	3457.28	64.57
3460.12	65.78	3467.61	70.09	3468.42	70.58	3468.89	71.01	3469.2	71.21
3481.04	81.02	3487.44	84.61	3491.52	86.82				

Manning's n Values num= 9

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	2094.91	.02	2129.83	.05	2374.24	.035	2444.07	.05
2478.98	.035	2723.39	.05	2967.8	.035	3421.69	.05		

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
2967.8	3445.06	914.27	997.45 1009.86	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
0	1692.41	69.38	F

CROSS SECTION OUTPUT Profile #Q50

E.G. Elev (ft)	63.62	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.86	Wt. n-Val.	0.040	0.035	0.050
W.S. Elev (ft)	62.76	Reach Len. (ft)	914.27	997.45	1009.86
Crit W.S. (ft)	61.82	Flow Area (sq ft)	2021.10	2436.17	8.48
E.G. Slope (ft/ft)	0.004478	Area (sq ft)	2021.10	2436.17	8.48
Q Total (cfs)	31354.00	Flow (cfs)	11057.26	20278.28	18.46
Top Width (ft)	1129.98	Top Width (ft)	645.73	477.26	6.99
Vel Total (ft/s)	7.02	Avg. Vel. (ft/s)	5.47	8.32	2.18
Max Chl Dpth (ft)	9.12	Hydr. Depth (ft)	3.13	5.10	1.21
Conv. Total (cfs)	468541.5	Conv. (cfs)	165235.2	303030.3	275.9
Length Wtd. (ft)	979.83	Wetted Per. (ft)	646.66	478.05	7.40
Min Ch El (ft)	53.64	Shear (lb/sq ft)	0.87	1.42	0.32
Alpha	1.12	Stream Power (lb/ft s)	4.78	11.86	0.70
Frctn Loss (ft)	1.98	Cum Volume (acre-ft)	510.02	1090.88	93.21
C & E Loss (ft)	0.08	Cum SA (acres)	169.04	143.27	25.72

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

CROSS SECTION OUTPUT Profile #Q100

E.G. Elev (ft)	65.38	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.93	Wt. n-Val.	0.040	0.035	0.050
W.S. Elev (ft)	64.46	Reach Len. (ft)	914.27	997.45	1009.86
Crit W.S. (ft)	62.78	Flow Area (sq ft)	3169.42	3247.90	24.54
E.G. Slope (ft/ft)	0.003357	Area (sq ft)	3273.75	3247.90	24.54
Q Total (cfs)	47312.00	Flow (cfs)	18923.91	28322.16	65.93
Top Width (ft)	1448.38	Top Width (ft)	959.23	477.26	11.89
Vel Total (ft/s)	7.34	Avg. Vel. (ft/s)	5.97	8.72	2.69
Max Chl Dpth (ft)	10.82	Hydr. Depth (ft)	4.34	6.81	2.06
Conv. Total (cfs)	816624.8	Conv. (cfs)	326634.6	488852.3	1137.9
Length Wtd. (ft)	975.48	Wetted Per. (ft)	731.92	478.05	12.59
Min Ch El (ft)	53.64	Shear (lb/sq ft)	0.91	1.42	0.41
Alpha	1.11	Stream Power (lb/ft s)	5.42	12.42	1.10
Frctn Loss (ft)	2.14	Cum Volume (acre-ft)	989.44	1375.98	141.74
C & E Loss (ft)	0.02	Cum SA (acres)	244.44	143.45	27.88

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

CROSS SECTION OUTPUT Profile #Q100HC

			Left OB	Channel	Right OB
E.G. Elev (ft)	70.52	Element			
Vel Head (ft)	1.39	Wt. n-Val.	0.041	0.035	0.050
W.S. Elev (ft)	69.13	Reach Len. (ft)	914.27	997.45	1009.86
Crit W.S. (ft)	66.31	Flow Area (sq ft)	7719.35	5479.24	102.65
E.G. Slope (ft/ft)	0.002686	Area (sq ft)	9495.39	5479.24	102.65
Q Total (cfs)	118891.00	Flow (cfs)	57966.72	60492.48	431.80
Top Width (ft)	2330.43	Top Width (ft)	1832.29	477.26	20.89
Vel Total (ft/s)	8.94	Avg. Vel. (ft/s)	7.51	11.04	4.21
Max Chl Dpth (ft)	15.49	Hydr. Depth (ft)	6.27	11.48	4.92
Conv. Total (cfs)	2294114.0	Conv. (cfs)	1118523.0	1167259.0	8332.0
Length Wtd. (ft)	965.06	Wetted Per. (ft)	1233.27	478.05	22.74
Min Ch El (ft)	53.64	Shear (lb/sq ft)	1.05	1.92	0.76
Alpha	1.12	Stream Power (lb/ft s)	7.88	21.22	3.18
Frctn Loss (ft)	2.60	Cum Volume (acre-ft)	4090.60	2386.03	351.39
C & E Loss (ft)	0.04	Cum SA (acres)	475.00	143.47	38.93

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: San Mateo Creek
REACH: Lower RS: 10698.02

INPUT
Description:
Station Elevation Data num= 104

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	80.34	57.37	78.39	74.11	77.74	92.5	77.1	179.77	73.06
238.97	71.37	356.97	67.67	411.4	65.69	418.05	65.62	449.09	65.29
482.68	64.53	625.32	64.17	655.12	64.66	698.48	64.11	705.86	64.12
898.81	64.73	930.71	64.93	1098.97	65.16	1508.72	66.48	1674.25	65.58
1923.44	62.81	1927.88	62.76	2006.27	61.84	2163.88	60.05	2189.39	59.76
2232.57	59.75	2262.84	59.75	2370.22	59.31	2439.73	59.57	2452.6	58.9
2458.58	59.47	2468.44	59.57	2500.08	63.48	2501.18	63.58	2501.59	63.67
2502.18	63.75	2539.41	65.26	2539.8	65.28	2571.06	65.42	2608.71	65.43
2617.45	65.43	2620.22	65.63	2634.3	66.75	2640.32	66.11	2644.74	65.55
2646.51	65.33	2652.01	62.56	2658.27	59.11	2663.4	58.4	2704.38	57.28
2706.45	57.26	2713.43	57.34	2713.51	57.34	2751.57	56.15	2761.55	57.49
2820.29	56.76	2821.16	56.77	2821.36	56.76	2821.46	56.76	2822.06	56.73
2950.91	53.64	2988.21	52.69	2995.95	52.5	2997.88	52.45	3053.94	47.32
3082.65	46.23	3091.94	45.84	3115.03	45.13	3125.6	45.19	3131.48	45.22
3152.86	45.6	3185	48.25	3187.42	48.39	3191.44	48.63	3194.29	48.78
3194.5	48.79	3215.72	51.07	3229.66	52.46	3233.87	52.65	3243.96	52.44
3258.72	52.05	3266.03	52.52	3268.63	53.47	3273.17	55.75	3275.4	56.89
3283.07	60.66	3287.07	63.28	3289.07	64.63	3293.8	70.74	3295.07	72.23
3300.16	76.93	3301.52	77.95	3317.99	86.45	3328.07	92.21	3332.97	94.94

3350.99	102.48	3355.08	104.54	3357.74	104.9	3364.48	105.61	3373.08	105.69
3384.12	108.62	3401.84	110.76	3413.24	111.48	3434.72	114.28		

Manning's n Values num= 8

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	1923.44	.02	2163.88	.035	2232.57	.05	2644.74	.035
2713.43	.05	2988.21	.035	3194.29	.05				

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
2820.29	3275.4	601.47	599.46	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
0	1508.72	66.48	F

CROSS SECTION OUTPUT Profile #Q50

			Left OB	Channel	Right OB
E.G. Elev (ft)	61.56	Element			
Vel Head (ft)	0.60	Wt. n-Val.	0.045	0.038	0.050
W.S. Elev (ft)	60.97	Reach Len. (ft)	601.47	594.45	599.46
Crit W.S. (ft)	56.13	Flow Area (sq ft)	1072.08	4545.91	16.88
E.G. Slope (ft/ft)	0.001141	Area (sq ft)	1072.08	4545.91	16.88
Q Total (cfs)	31354.00	Flow (cfs)	2231.90	29096.54	25.56
Top Width (ft)	1025.13	Top Width (ft)	561.88	455.11	8.14
Vel Total (ft/s)	5.56	Avg. Vel. (ft/s)	2.08	6.40	1.51
Max Chl Dpth (ft)	15.84	Hydr. Depth (ft)	1.91	9.99	2.07
Conv. Total (cfs)	928147.4	Conv. (cfs)	66069.0	861321.7	756.7
Length Wtd. (ft)	595.44	Wetted Per. (ft)	562.67	456.77	9.10
Min Ch El (ft)	45.13	Shear (lb/sq ft)	0.14	0.71	0.13
Alpha	1.24	Stream Power (lb/ft s)	0.28	4.54	0.20
Frctn Loss (ft)	1.20	Cum Volume (acre-ft)	477.56	1010.94	92.91
C & E Loss (ft)	0.03	Cum SA (acres)	156.36	132.59	25.55

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

CROSS SECTION OUTPUT Profile #Q100

			Left OB	Channel	Right OB
E.G. Elev (ft)	63.23	Element			
Vel Head (ft)	0.87	Wt. n-Val.	0.042	0.039	0.050
W.S. Elev (ft)	62.36	Reach Len. (ft)	601.47	594.45	599.46
Crit W.S. (ft)	58.15	Flow Area (sq ft)	1946.96	5178.27	29.65
E.G. Slope (ft/ft)	0.001546	Area (sq ft)	1946.96	5178.27	29.65
Q Total (cfs)	47312.00	Flow (cfs)	6089.67	41157.69	64.64
Top Width (ft)	1161.89	Top Width (ft)	696.52	455.11	10.26
Vel Total (ft/s)	6.61	Avg. Vel. (ft/s)	3.13	7.95	2.18
Max Chl Dpth (ft)	17.23	Hydr. Depth (ft)	2.80	11.38	2.89
Conv. Total (cfs)	1203161.0	Conv. (cfs)	154862.5	1046655.0	1643.9
Length Wtd. (ft)	596.14	Wetted Per. (ft)	697.76	456.77	11.64
Min Ch El (ft)	45.13	Shear (lb/sq ft)	0.27	1.09	0.25
Alpha	1.29	Stream Power (lb/ft s)	0.84	8.70	0.54
Frctn Loss (ft)	1.37	Cum Volume (acre-ft)	934.66	1279.51	141.11
C & E Loss (ft)	0.01	Cum SA (acres)	227.06	132.78	27.62

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

CROSS SECTION OUTPUT Profile #Q100HC

E.G. Elev (ft)	67.88	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.83	Wt. n-Val.	0.036	0.039	0.050
W.S. Elev (ft)	66.04	Reach Len. (ft)	601.47	594.45	599.46
Crit W.S. (ft)	63.99	Flow Area (sq ft)	5289.68	6856.76	76.99
E.G. Slope (ft/ft)	0.002706	Area (sq ft)	6366.57	6856.76	76.99
Q Total (cfs)	118891.00	Flow (cfs)	34728.34	83843.43	319.23
Top Width (ft)	2657.19	Top Width (ft)	2187.32	455.11	14.76
Vel Total (ft/s)	9.73	Avg. Vel. (ft/s)	6.57	12.23	4.15
Max Chl Dpth (ft)	20.91	Hydr. Depth (ft)	4.35	15.07	5.21
Conv. Total (cfs)	2285550.0	Conv. (cfs)	667614.6	1611799.0	6136.8
Length Wtd. (ft)	597.38	Wetted Per. (ft)	1217.99	456.77	17.53
Min Ch El (ft)	45.13	Shear (lb/sq ft)	0.73	2.54	0.74
Alpha	1.25	Stream Power (lb/ft s)	4.82	31.01	3.08
Frctn Loss (ft)	1.95	Cum Volume (acre-ft)	3924.14	2244.79	349.31
C & E Loss (ft)	0.03	Cum SA (acres)	432.82	132.80	38.51

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: San Mateo Creek
REACH: Lower RS: 10103.57

INPUT
Description:
Station Elevation Data num= 82

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	67.34	130.33	65.81	195.26	65.09	221.36	64.83	248.87	64.13
336.13	62.4	510.97	58.61	523.87	59.15	555.28	59.35	902.03	63.9
947.08	64.18	1035.49	64.29	1427.38	62.94	1509.66	61.96	1635.36	61.06
1812.24	59.81	1855.93	59.55	1914.45	59.19	2093.27	58.16	2121.07	58.27
2263.61	58.85	2275.77	58.53	2319.92	57.15	2324.87	56.99	2334.86	57.08
2346.69	57.59	2380.02	58.42	2386.2	58.51	2393.6	58.6	2417.19	58.65
2452.49	58.56	2457.43	58.54	2471.42	58.41	2488.91	57.27	2527.02	56.51
2534.65	56.49	2538.38	56.56	2575.98	54.47	2587.15	53.99	2592.03	53.76
2597.8	53.19	2618.19	52.63	2620.91	52.55	2632.34	52.33	2654.67	51.29
2668.03	51.68	2694.8	52.62	2754.59	52.54	2808.44	52.52	2838.38	52.2
2848.01	52.42	2875.4	52.48	2919	51.9	2960	51.14	2966.18	51.23
3000.02	51.69	3010.18	51.92	3012.58	51.92	3018.26	51.9	3026.7	52.62
3027.81	52.58	3029.55	53.28	3031.73	54.53	3033.14	56.4	3035.24	58.56
3038.06	61.59	3040.77	64.63	3052.2	70.04	3054.13	71	3058.65	72.16
3062.92	73.23	3081.15	78.33	3115.32	80.62	3140.42	82.29	3142.37	82.42

3143.83	82.52	3145.71	82.6	3200.24	85.72	3277.48	89.45	3281.55	89.6
3297.95	90.61	3314.17	91.66						

Manning's n Values num= 8

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	1855.93	.02	2121.07	.05	2319.92	.02	2386.2	.05
2452.49	.02	2618.19	.05	3115.32	.035				

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
2597.8	3029.55	615.7	627.48	572.22	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
0	1035.49	64.29	F

CROSS SECTION OUTPUT Profile #Q50

E.G. Elev (ft)	60.33	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.91	Wt. n-Val.	0.022	0.047	0.050
W.S. Elev (ft)	59.41	Reach Len. (ft)	615.70	627.48	572.22
Crit W.S. (ft)	57.71	Flow Area (sq ft)	975.02	3126.02	21.97
E.G. Slope (ft/ft)	0.004510	Area (sq ft)	1002.03	3126.02	21.97
Q Total (cfs)	31354.00	Flow (cfs)	6545.19	24729.50	79.31
Top Width (ft)	1243.95	Top Width (ft)	805.71	431.75	6.48
Vel Total (ft/s)	7.60	Avg. Vel. (ft/s)	6.71	7.91	3.61
Max Chl Dpth (ft)	8.27	Hydr. Depth (ft)	1.35	7.24	3.39
Conv. Total (cfs)	466888.7	Conv. (cfs)	97463.7	368244.1	1180.9
Length Wtd. (ft)	623.78	Wetted Per. (ft)	719.78	432.00	9.03
Min Ch El (ft)	51.14	Shear (lb/sq ft)	0.38	2.04	0.68
Alpha	1.02	Stream Power (lb/ft s)	2.56	16.12	2.47
Frctn Loss (ft)	3.41	Cum Volume (acre-ft)	463.24	958.59	92.65
C & E Loss (ft)	0.06	Cum SA (acres)	146.92	126.54	25.44

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

CROSS SECTION OUTPUT Profile #Q100

E.G. Elev (ft)	61.85	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.98	Wt. n-Val.	0.024	0.047	0.050
W.S. Elev (ft)	60.87	Reach Len. (ft)	615.70	627.48	572.22
Crit W.S. (ft)	59.66	Flow Area (sq ft)	2185.82	3755.07	32.40
E.G. Slope (ft/ft)	0.003742	Area (sq ft)	2468.18	3755.07	32.40
Q Total (cfs)	47312.00	Flow (cfs)	16563.08	30628.03	120.89
Top Width (ft)	1639.50	Top Width (ft)	1199.91	431.75	7.84
Vel Total (ft/s)	7.92	Avg. Vel. (ft/s)	7.58	8.16	3.73
Max Chl Dpth (ft)	9.73	Hydr. Depth (ft)	2.34	8.70	4.13
Conv. Total (cfs)	773452.4	Conv. (cfs)	270771.8	500704.4	1976.2
Length Wtd. (ft)	622.29	Wetted Per. (ft)	935.74	432.00	11.02
Min Ch El (ft)	51.14	Shear (lb/sq ft)	0.55	2.03	0.69
Alpha	1.01	Stream Power (lb/ft s)	4.13	16.56	2.56
Frctn Loss (ft)	3.11	Cum Volume (acre-ft)	904.17	1218.55	140.68
C & E Loss (ft)	0.08	Cum SA (acres)	213.97	126.72	27.49

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

CROSS SECTION OUTPUT Profile #Q100HC

E.G. Elev (ft)	65.89	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.73	Wt. n-Val.	0.026	0.047	0.050
W.S. Elev (ft)	64.16	Reach Len. (ft)	615.70	627.48	572.22
Crit W.S. (ft)	62.82	Flow Area (sq ft)	6043.06	5176.55	63.13
E.G. Slope (ft/ft)	0.004027	Area (sq ft)	7868.53	5176.55	63.13
Q Total (cfs)	118891.00	Flow (cfs)	64201.38	54385.36	304.27
Top Width (ft)	2664.38	Top Width (ft)	2221.82	431.75	10.80
Vel Total (ft/s)	10.54	Avg. Vel. (ft/s)	10.62	10.51	4.82
Max Chl Dpth (ft)	13.02	Hydr. Depth (ft)	3.96	11.99	5.84
Conv. Total (cfs)	1873482.0	Conv. (cfs)	1011684.0	857003.5	4794.7
Length Wtd. (ft)	619.88	Wetted Per. (ft)	1525.43	432.00	15.45
Min Ch El (ft)	51.14	Shear (lb/sq ft)	1.00	3.01	1.03
Alpha	1.00	Stream Power (lb/ft s)	10.58	31.65	4.95
Frctn Loss (ft)	2.97	Cum Volume (acre-ft)	3825.86	2162.69	348.34
C & E Loss (ft)	0.01	Cum SA (acres)	402.38	126.74	38.34

Warning: Multiple water surfaces were found that could balance the energy equation. The program selected the water surface whose main channel velocity head was the closest to the previously computed cross section.
Warning: 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: San Mateo Creek
REACH: Lower RS: 9476.099

INPUT
Description:
Station Elevation Data num= 62

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	68.47	61.01	65.67	61.94	65.64	62.56	65.62	191.76	65.28
280.56	64.56	503.79	60.62	569.49	59.38	581.88	59.13	596.07	59.13
609.58	59.19	1350.6	59.4	1492.58	59.09	1811.19	58.99	1915.94	58.67
2001.84	57.84	2179.62	57.61	2206.51	57.32	2301.51	55.49	2371.26	54.15
2453.33	52.57	2458	52.51	2469.05	52.45	2472.74	52.46	2483.67	52.57
2512.72	52.75	2715.36	53.39	2737.41	52.13	2759.94	50.84	2763.9	50.85
2793.27	48.06	2806.09	46.73	2811.55	46.28	2814.12	46.16	2816.12	46.07
2900.54	45.96	2946.77	45.95	2996.02	45.94	3020.52	45.94	3029.82	46.99
3036.84	48.06	3056.8	50.29	3069.71	50.99	3080.21	52.98	3081.9	53.29
3085.7	55.29	3104.93	65.39	3108.17	66.23	3123.12	71.35	3127.23	71.79
3140.84	73.68	3157.57	74.58	3173.3	75.2	3191.88	75.93	3263.73	79.05
3286.95	79.33	3327.83	80.76	3341.46	80.89	3355.65	81.15	3377.36	83.57

3433.65 86.54 3487.14 86.18

Manning's n Values num= 4

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	2301.51	.02	2371.26	.05	3173.3	.035

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
2793.27	3036.84	632.1 587.55	573.86	.1	.3

CROSS SECTION OUTPUT Profile #Q50

			Left OB	Channel	Right OB
E.G. Elev (ft)	56.87	Element			
Vel Head (ft)	1.48	Wt. n-Val.	0.049	0.050	0.050
W.S. Elev (ft)	55.38	Reach Len. (ft)	632.10	587.55	573.86
Crit W.S. (ft)		Flow Area (sq ft)	1179.29	2254.27	228.85
E.G. Slope (ft/ft)	0.006748	Area (sq ft)	1179.29	2254.27	228.85
Q Total (cfs)	31354.00	Flow (cfs)	5568.70	24243.48	1541.82
Top Width (ft)	778.87	Top Width (ft)	486.26	243.57	49.04
Vel Total (ft/s)	8.56	Avg. Vel. (ft/s)	4.72	10.75	6.74
Max Chl Dpth (ft)	9.44	Hydr. Depth (ft)	2.43	9.26	4.67
Conv. Total (cfs)	381686.2	Conv. (cfs)	67790.3	295126.7	18769.3
Length Wtd. (ft)	590.87	Wetted Per. (ft)	486.49	243.80	49.92
Min Ch El (ft)	45.94	Shear (lb/sq ft)	1.02	3.90	1.93
Alpha	1.30	Stream Power (lb/ft s)	4.82	41.89	13.01
Frctn Loss (ft)	3.02	Cum Volume (acre-ft)	447.83	919.84	91.00
C & E Loss (ft)	0.15	Cum SA (acres)	137.79	121.68	25.08

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 OUTPUT Profile #Q100

			Left OB	Channel	Right OB
E.G. Elev (ft)	58.66	Element			
Vel Head (ft)	1.77	Wt. n-Val.	0.046	0.050	0.050
W.S. Elev (ft)	56.89	Reach Len. (ft)	632.10	587.55	573.86
Crit W.S. (ft)		Flow Area (sq ft)	1972.91	2622.13	305.08
E.G. Slope (ft/ft)	0.006997	Area (sq ft)	1972.91	2622.13	305.08
Q Total (cfs)	47312.00	Flow (cfs)	13121.17	31759.91	2430.92
Top Width (ft)	860.16	Top Width (ft)	564.68	243.57	51.92
Vel Total (ft/s)	9.66	Avg. Vel. (ft/s)	6.65	12.11	7.97
Max Chl Dpth (ft)	10.95	Hydr. Depth (ft)	3.49	10.77	5.88
Conv. Total (cfs)	565608.1	Conv. (cfs)	156861.7	379685.1	29061.3
Length Wtd. (ft)	593.66	Wetted Per. (ft)	564.93	243.80	53.16
Min Ch El (ft)	45.94	Shear (lb/sq ft)	1.53	4.70	2.51
Alpha	1.22	Stream Power (lb/ft s)	10.15	56.90	19.97
Frctn Loss (ft)	3.25	Cum Volume (acre-ft)	872.79	1172.62	138.47
C & E Loss (ft)	0.14	Cum SA (acres)	201.50	121.86	27.10

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.

CROSS SECTION OUTPUT Profile #Q100HC

			Left OB	Channel	Right OB
E.G. Elev (ft)	62.91	Element			
Vel Head (ft)	1.82	Wt. n-Val.	0.041	0.050	0.050
W.S. Elev (ft)	61.09	Reach Len. (ft)	632.10	587.55	573.86
Crit W.S. (ft)	60.79	Flow Area (sq ft)	8007.85	3644.24	539.70

E.G. Slope (ft/ft)	0.005805	Area (sq ft)	8007.85	3644.24	539.70
Q Total (cfs)	118891.00	Flow (cfs)	63661.64	50068.77	5160.58
Top Width (ft)	2619.64	Top Width (ft)	2316.16	243.57	59.90
Vel Total (ft/s)	9.75	Avg. Vel. (ft/s)	7.95	13.74	9.56
Max Chl Dpth (ft)	15.15	Hydr. Depth (ft)	3.46	14.96	9.01
Conv. Total (cfs)	1560484.0	Conv. (cfs)	835580.1	657169.2	67734.4
Length Wtd. (ft)	602.51	Wetted Per. (ft)	2316.44	243.80	62.19
Min Ch El (ft)	45.94	Shear (lb/sq ft)	1.25	5.42	3.14
Alpha	1.23	Stream Power (lb/ft s)	9.96	74.42	30.07
Frctn Loss (ft)	3.40	Cum Volume (acre-ft)	3713.66	2099.16	344.38
C & E Loss (ft)	0.04	Cum SA (acres)	370.31	121.88	37.87

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

CROSS SECTION

RIVER: San Mateo Creek
REACH: Lower RS: 8888.551

INPUT
Description:
Station Elevation Data num= 64

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	80.35	.13	80.36	13.56	79.85	91.05	76.49	277.46	69.9
359.03	66.43	407.56	65.16	534.91	62.09	578.82	60.58	608.84	60.26
728.64	58.62	1086.65	56.94	1387.14	56.2	1640.07	55.84	1920.87	54.3
1950.03	53.95	1964.74	53.78	1996.69	53.68	2016.78	53.47	2121.09	52.31
2122.38	52.3	2169.63	52.39	2257.06	52.5	2287.36	52.52	2319.48	50.53
2333.25	48.89	2357.53	46.81	2410.42	45.84	2442.82	45.86	2463.2	45.86
2490.3	45.87	2581.97	45.73	2582.94	45.73	2682.65	45.56	2736.89	46
2740.31	46.02	2852.96	46.94	2879.31	47.47	2985.08	50.07	2992.5	50.31
3017.87	51.83	3031.05	52.58	3036.67	52.1	3038.71	51.96	3061.21	50.41
3076.83	50.19	3168.61	52.51	3177.53	52.88	3186.39	54.03	3208.61	57.19
3218.04	59.25	3233.68	64.84	3235.03	65.19	3272.77	74.95	3277.04	76.17
3283.12	78.11	3290.21	79.03	3293.84	79.59	3297.84	80.31	3318.47	82.17
3328.94	83.11	3385.03	85.12	3419.86	85.85	3421.11	85.92		

Manning's n Values num= 6

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	1950.03	.02	2121.09	.05	2463.2	.035	2736.89	.05
3318.47	.035								

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
2357.53	2852.96	583.69	598.13 621.47	.1	.3

CROSS SECTION OUTPUT Profile #Q50

E.G. Elev (ft)	53.70	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.99	Wt. n-Val.	0.049	0.040	0.050
W.S. Elev (ft)	52.71	Reach Len. (ft)	583.69	598.13	621.47
Crit W.S. (ft)		Flow Area (sq ft)	251.59	3330.38	829.51
E.G. Slope (ft/ft)	0.004004	Area (sq ft)	251.59	3330.38	829.51
Q Total (cfs)	31354.00	Flow (cfs)	481.08	27933.55	2939.37
Top Width (ft)	1088.32	Top Width (ft)	272.42	495.43	320.47
Vel Total (ft/s)	7.11	Avg. Vel. (ft/s)	1.91	8.39	3.54
Max Chl Dpth (ft)	7.15	Hydr. Depth (ft)	0.92	6.72	2.59

Conv. Total (cfs)	495491.6	Conv. (cfs)	7602.6	441437.8	46451.3
Length Wtd. (ft)	597.98	Wetted Per. (ft)	272.67	495.44	320.70
Min Ch El (ft)	45.56	Shear (lb/sq ft)	0.23	1.68	0.65
Alpha	1.27	Stream Power (lb/ft s)	0.44	14.09	2.29
Frctn Loss (ft)	3.78	Cum Volume (acre-ft)	437.45	882.18	84.03
C & E Loss (ft)	0.05	Cum SA (acres)	132.29	116.69	22.65

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 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 #Q100

E.G. Elev (ft)	55.27	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.29	Wt. n-Val.	0.043	0.040	0.050
W.S. Elev (ft)	53.98	Reach Len. (ft)	583.69	598.13	621.47
Crit W.S. (ft)	52.20	Flow Area (sq ft)	677.14	3960.67	1246.76
E.G. Slope (ft/ft)	0.004393	Area (sq ft)	677.14	3960.67	1246.76
Q Total (cfs)	47312.00	Flow (cfs)	2419.20	38975.77	5917.02
Top Width (ft)	1238.68	Top Width (ft)	410.19	495.43	333.06
Vel Total (ft/s)	8.04	Avg. Vel. (ft/s)	3.57	9.84	4.75
Max Chl Dpth (ft)	8.42	Hydr. Depth (ft)	1.65	7.99	3.74
Conv. Total (cfs)	713823.5	Conv. (cfs)	36499.9	588050.0	89273.6
Length Wtd. (ft)	598.24	Wetted Per. (ft)	410.45	495.44	333.36
Min Ch El (ft)	45.56	Shear (lb/sq ft)	0.45	2.19	1.03
Alpha	1.29	Stream Power (lb/ft s)	1.62	21.58	4.87
Frctn Loss (ft)	3.90	Cum Volume (acre-ft)	853.56	1128.23	128.24
C & E Loss (ft)	0.07	Cum SA (acres)	194.42	116.88	24.57

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

CROSS SECTION OUTPUT Profile #Q100HC

E.G. Elev (ft)	59.47	Element	Left OB	Channel	Right OB
Vel Head (ft)	2.22	Wt. n-Val.	0.035	0.040	0.050
W.S. Elev (ft)	57.25	Reach Len. (ft)	583.69	598.13	621.47
Crit W.S. (ft)		Flow Area (sq ft)	3237.26	5579.45	2372.65
E.G. Slope (ft/ft)	0.005499	Area (sq ft)	3237.26	5579.45	2372.65
Q Total (cfs)	118891.00	Flow (cfs)	23433.82	76954.90	18502.29
Top Width (ft)	2188.24	Top Width (ft)	1336.88	495.43	355.92
Vel Total (ft/s)	10.63	Avg. Vel. (ft/s)	7.24	13.79	7.80
Max Chl Dpth (ft)	11.69	Hydr. Depth (ft)	2.42	11.26	6.67
Conv. Total (cfs)	1603260.0	Conv. (cfs)	316007.9	1037746.0	249505.6
Length Wtd. (ft)	598.17	Wetted Per. (ft)	1337.15	495.44	356.45
Min Ch El (ft)	45.56	Shear (lb/sq ft)	0.83	3.87	2.29
Alpha	1.27	Stream Power (lb/ft s)	6.02	53.32	17.82
Frctn Loss (ft)	3.04	Cum Volume (acre-ft)	3632.07	2036.95	325.20
C & E Loss (ft)	0.01	Cum SA (acres)	343.80	116.90	35.13

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: San Mateo Creek
REACH: Lower RS: 8290.415

INPUT
Description:
Station Elevation Data num= 82

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	79.85	16.23	79.94	50.96	78.61	58.27	78.26	267.42	69.91
432.85	63.96	524.53	61.37	650.86	59.02	770.15	57.4	819.9	56.94
1162.11	54.1	1449.92	54.41	1662.02	54.01	1800.97	55.21	1858.71	55.33
1870.69	54.31	1883.34	53.23	1893.09	53	1896.58	52.37	1906	48.35
1909.55	47.31	1919.76	45.35	1922.53	45.03	1936.15	45.19	1964.88	45.32
2050.56	45.81	2087.83	46.02	2105.8	45.77	2142.88	45.61	2152.49	45.66
2190.09	45.04	2194.46	45.12	2227.79	45.74	2228.65	45.74	2230.72	45.77
2302.39	45.81	2500.84	45.93	2569.75	44.11	2626.16	42.43	2626.24	42.43
2658.69	42.32	2671.47	42.29	2672.93	42.32	2740.82	44	2770.06	44.76
2792.68	45.35	2809.63	45.63	2811.18	45.65	2816.82	45.75	2853.21	45.97
2905.56	46.07	2998.53	47.05	3063.33	47.23	3101.47	47.19	3172.75	50.53
3189.52	50.97	3218.09	51.57	3218.82	51.65	3219.13	51.72	3220.85	52.11
3225.81	52.88	3235.37	56.7	3238.75	58.13	3249.65	60.74	3261.17	64.7
3261.77	64.78	3266.83	65.64	3270.86	66.88	3288.17	72.13	3295.58	72.19
3300.09	73.2	3311.97	73.85	3319.71	74.16	3332.25	75.37	3345.66	76.26
3377.92	78.4	3402.5	79.29	3452.98	80.5	3473.27	81.31	3480.09	81.5
3487.84	81.88	3597.48	86.98						

Manning's n Values num= 8

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	1870.69	.02	2050.56	.05	2194.46	.035	2302.39	.05
2626.16	.035	2770.06	.05	3345.66	.035				

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
2087.83	2905.56	624.1	622.8 620.76	.1	.3

CROSS SECTION OUTPUT Profile #Q50

			Left OB	Channel	Right OB
E.G. Elev (ft)	49.87	Element			
Vel Head (ft)	1.53	Wt. n-Val.	0.022	0.042	0.050
W.S. Elev (ft)	48.34	Reach Len. (ft)	624.10	622.80	620.76
Crit W.S. (ft)	48.34	Flow Area (sq ft)	491.04	2684.43	299.50
E.G. Slope (ft/ft)	0.011428	Area (sq ft)	491.04	2684.43	299.50
Q Total (cfs)	31354.00	Flow (cfs)	6790.93	23395.67	1167.39
Top Width (ft)	1219.87	Top Width (ft)	181.78	817.73	220.36
Vel Total (ft/s)	9.02	Avg. Vel. (ft/s)	13.83	8.72	3.90
Max Chl Dpth (ft)	6.05	Hydr. Depth (ft)	2.70	3.28	1.36
Conv. Total (cfs)	293293.4	Conv. (cfs)	63524.2	218849.2	10920.1
Length Wtd. (ft)	622.72	Wetted Per. (ft)	182.14	817.84	220.39
Min Ch El (ft)	42.29	Shear (lb/sq ft)	1.92	2.34	0.97
Alpha	1.21	Stream Power (lb/ft s)	26.60	20.41	3.78
Frctn Loss (ft)	3.32	Cum Volume (acre-ft)	432.47	840.88	75.97
C & E Loss (ft)	0.32	Cum SA (acres)	129.24	107.68	18.79

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

CROSS SECTION OUTPUT Profile #Q100

			Left OB	Channel	Right OB
E.G. Elev (ft)	51.30	Element			
Vel Head (ft)	2.00	Wt. n-Val.	0.022	0.042	0.050
W.S. Elev (ft)	49.30	Reach Len. (ft)	624.10	622.80	620.76
Crit W.S. (ft)	49.30	Flow Area (sq ft)	668.24	3476.55	522.97
E.G. Slope (ft/ft)	0.010679	Area (sq ft)	668.24	3476.55	522.97
Q Total (cfs)	47312.00	Flow (cfs)	10788.46	33832.25	2691.29
Top Width (ft)	1242.83	Top Width (ft)	184.07	817.73	241.03
Vel Total (ft/s)	10.14	Avg. Vel. (ft/s)	16.14	9.73	5.15
Max Chl Dpth (ft)	7.01	Hydr. Depth (ft)	3.63	4.25	2.17
Conv. Total (cfs)	457842.5	Conv. (cfs)	104400.9	327397.7	26043.8
Length Wtd. (ft)	622.70	Wetted Per. (ft)	184.62	817.84	241.09
Min Ch El (ft)	42.29	Shear (lb/sq ft)	2.41	2.83	1.45
Alpha	1.25	Stream Power (lb/ft s)	38.96	27.58	7.44
Frctn Loss (ft)	2.92	Cum Volume (acre-ft)	844.55	1077.16	115.62
C & E Loss (ft)	0.43	Cum SA (acres)	190.44	107.86	20.47

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water 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 #Q100HC

			Left OB	Channel	Right OB
E.G. Elev (ft)	56.42	Element			
Vel Head (ft)	2.20	Wt. n-Val.	0.023	0.043	0.050
W.S. Elev (ft)	54.23	Reach Len. (ft)	624.10	622.80	620.76
Crit W.S. (ft)	54.23	Flow Area (sq ft)	1644.26	7501.72	1982.46
E.G. Slope (ft/ft)	0.004707	Area (sq ft)	1644.26	7501.72	1982.46
Q Total (cfs)	118891.00	Flow (cfs)	27695.56	77675.51	13519.93
Top Width (ft)	1630.43	Top Width (ft)	489.08	817.73	323.62
Vel Total (ft/s)	10.68	Avg. Vel. (ft/s)	16.84	10.35	6.82
Max Chl Dpth (ft)	11.94	Hydr. Depth (ft)	3.36	9.17	6.13
Conv. Total (cfs)	1732858.0	Conv. (cfs)	403667.8	1132135.0	197055.5
Length Wtd. (ft)	622.66	Wetted Per. (ft)	490.36	817.84	324.09
Min Ch El (ft)	42.29	Shear (lb/sq ft)	0.99	2.70	1.80
Alpha	1.24	Stream Power (lb/ft s)	16.60	27.91	12.26

Frctn Loss (ft)	2.39	Cum Volume (acre-ft)	3599.36	1947.14	294.13
C & E Loss (ft)	0.27	Cum SA (acres)	331.57	107.88	30.29

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

CROSS SECTION

RIVER: San Mateo Creek
REACH: Lower RS: 7667.615

INPUT
Description:
Station Elevation Data num= 102

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	73.94	29.83	73.49	70.61	72.31	76.47	72.08	177.17	68.44
257.15	64.74	375.32	61.78	508.97	59.22	625.85	55.8	727.73	54.12
829	52.98	931.72	52.51	1078.07	51.83	1324.06	51.93	1416.77	51.91
1777.42	52.44	1830.59	53.41	1874.61	52.29	1919.49	52.33	1985.09	51.85
2021.56	50.31	2042.49	49.5	2051.59	49.2	2077.77	48.32	2101.43	48.1
2118.34	46.93	2122.34	46.71	2127.32	46.43	2127.71	46.37	2129.16	45.91
2150.56	39.04	2153.31	38.71	2167.01	38.37	2189.83	37.72	2208.97	37.41
2232.38	37.85	2285.17	38.63	2299.2	38.82	2337.92	39.33	2434.8	39.66
2626.47	39.42	2642.31	39.41	2652.92	39.39	2723.67	39.31	2749.1	39.28
2760.55	39.28	2773.19	39.57	2789.59	39.96	2794.72	40.32	2809.9	44.41
2812.64	44.92	2815.64	45.74	2817.86	46.01	2818.48	45.97	2841.34	39.28
2841.81	39.07	2842.23	38.98	2872.15	38.81	2907.81	38.44	2935.48	38.12
2951.52	38.44	2974.57	37.97	2988.73	38.57	3005.42	38.94	3033.83	38.79
3059.77	39.07	3083.4	40.38	3099.38	39.38	3122.38	39.82	3124.41	39.74
3125.32	39.76	3127.3	39.8	3131.3	39.8	3170.36	39.21	3180.14	38.83
3204.98	39.18	3225.45	39.12	3226.2	39.21	3228.44	39.42	3265.11	44.66
3270.22	45.7	3281.89	47.55	3284.32	48.63	3295.56	51.82	3299.55	52.71
3306.94	56.42	3307.44	56.54	3307.56	56.57	3308.65	56.97	3328.65	63.22
3335.81	64.6	3342.12	65.89	3347.61	66.81	3360.37	69.05	3380.5	72.57
3388.42	73.07	3403.38	73.92	3412.24	74.76	3454.54	77.16	3487.97	77.95
3529.46	79.67	3537.23	80.04						

Manning's n Values num= 7

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	2051.59	.02	2122.34	.035	2299.2	.05	2652.92	.035
2723.67	.05	3360.37	.02						

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
2150.56	3005.42	556.83	550.63	551.5	.1	.3

CROSS SECTION OUTPUT Profile #Q50

E.G. Elev (ft)	44.91	Element	Left OB	Channel	Right OB

Vel Head (ft)	0.47	Wt. n-Val.	0.035	0.044	0.050
W.S. Elev (ft)	44.44	Reach Len. (ft)	556.83	550.63	551.50
Crit W.S. (ft)	42.16	Flow Area (sq ft)	45.34	4457.98	1229.87
E.G. Slope (ft/ft)	0.003073	Area (sq ft)	45.34	4457.98	1229.87
Q Total (cfs)	31354.00	Flow (cfs)	200.12	25423.30	5730.58
Top Width (ft)	1116.09	Top Width (ft)	16.81	841.17	258.12
Vel Total (ft/s)	5.47	Avg. Vel. (ft/s)	4.41	5.70	4.66
Max Chl Dpth (ft)	7.03	Hydr. Depth (ft)	2.70	5.30	4.76
Conv. Total (cfs)	565576.8	Conv. (cfs)	3609.9	458596.3	103370.6
Length Wtd. (ft)	550.76	Wetted Per. (ft)	17.65	842.61	258.58
Min Ch El (ft)	37.41	Shear (lb/sq ft)	0.49	1.02	0.91
Alpha	1.02	Stream Power (lb/ft s)	2.18	5.79	4.25
Frctn Loss (ft)	1.20	Cum Volume (acre-ft)	428.63	789.82	65.08
C & E Loss (ft)	0.03	Cum SA (acres)	127.82	95.82	15.38

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 #Q100

E.G. Elev (ft)	46.84	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.58	Wt. n-Val.	0.035	0.044	0.050
W.S. Elev (ft)	46.26	Reach Len. (ft)	556.83	550.63	551.50
Crit W.S. (ft)	43.10	Flow Area (sq ft)	81.27	6009.21	1710.96
E.G. Slope (ft/ft)	0.002622	Area (sq ft)	81.27	6009.21	1710.96
Q Total (cfs)	47312.00	Flow (cfs)	402.39	37970.49	8939.12
Top Width (ft)	1145.73	Top Width (ft)	22.51	854.86	268.35
Vel Total (ft/s)	6.06	Avg. Vel. (ft/s)	4.95	6.32	5.22
Max Chl Dpth (ft)	8.85	Hydr. Depth (ft)	3.61	7.03	6.38
Conv. Total (cfs)	923892.2	Conv. (cfs)	7857.7	741474.4	174560.0
Length Wtd. (ft)	550.77	Wetted Per. (ft)	23.64	856.69	268.98
Min Ch El (ft)	37.41	Shear (lb/sq ft)	0.56	1.15	1.04
Alpha	1.02	Stream Power (lb/ft s)	2.79	7.26	5.44
Frctn Loss (ft)	1.08	Cum Volume (acre-ft)	839.18	1009.35	99.70
C & E Loss (ft)	0.03	Cum SA (acres)	188.96	95.90	16.84

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 #Q100HC

E.G. Elev (ft)	51.94	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.31	Wt. n-Val.	0.029	0.045	0.050
W.S. Elev (ft)	50.63	Reach Len. (ft)	556.83	550.63	551.50
Crit W.S. (ft)	46.40	Flow Area (sq ft)	404.73	9740.10	2925.54
E.G. Slope (ft/ft)	0.003180	Area (sq ft)	404.73	9740.10	2925.54
Q Total (cfs)	118891.00	Flow (cfs)	3142.33	92709.52	23039.15
Top Width (ft)	1277.32	Top Width (ft)	136.52	854.86	285.94
Vel Total (ft/s)	9.10	Avg. Vel. (ft/s)	7.76	9.52	7.88
Max Chl Dpth (ft)	13.22	Hydr. Depth (ft)	2.96	11.39	10.23
Conv. Total (cfs)	2108409.0	Conv. (cfs)	55725.9	1644108.0	408575.6
Length Wtd. (ft)	550.87	Wetted Per. (ft)	137.77	856.69	287.17
Min Ch El (ft)	37.41	Shear (lb/sq ft)	0.58	2.26	2.02
Alpha	1.02	Stream Power (lb/ft s)	4.53	21.48	15.93
Frctn Loss (ft)	1.63	Cum Volume (acre-ft)	3584.69	1823.88	259.16
C & E Loss (ft)	0.01	Cum SA (acres)	327.09	95.92	25.94

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: San Mateo Creek
REACH: Lower RS: 7116.984

INPUT
Description:
Station Elevation Data num= 67

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	72.96	117.54	71.06	288.52	63.65	337.8	62.28	450	59.02
535.24	56.66	661.84	52.95	791.61	52.24	962.44	51.42	1250.11	49.88
1607.77	48.32	1833.42	47.4	2081.58	48.29	2321.68	48.59	2414.49	49.01
2443.12	48.75	2452.3	48.51	2452.36	48.51	2463.84	48.22	2494.04	45.94
2494.69	45.89	2495.34	45.7	2512.82	40.39	2514.09	40.26	2527.76	38.82
2531.78	38.39	2561.5	37.77	2621.18	35.85	2654.9	34.51	2728	33.82
2788.9	34.67	2810.72	34.58	2828.79	34.5	2835.31	34.61	2852.52	35.21
2867.31	35.64	2898.33	36.53	2957.86	37.77	2959.46	37.8	3015.31	38.57
3019.63	38.63	3085.13	39.31	3195.17	39.47	3453.83	37.66	3485.15	38.02
3525.61	36.97	3530.18	36.84	3544.46	37.01	3552.2	37.52	3573.96	38.12
3581.72	39.88	3586.91	43.03	3590.77	44.9	3597.22	46.35	3607.98	47.7
3621.87	48.65	3625.51	48.9	3649.4	51.09	3662.71	53.03	3670.82	55.79
3679.78	59.08	3692.34	60.59	3722.18	64.8	3745.5	65.93	3759.57	66.65
3763.49	66.71	3772.78	67.07						

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	2452.3	.05	2527.76	.035	2867.31	.05	3621.87	.02

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
2531.78	3573.96	569.88	563.21	532.8	.1	.3

CROSS SECTION OUTPUT Profile #Q50

			Left OB	Channel	Right OB
E.G. Elev (ft)	43.68	Element			
Vel Head (ft)	0.38	Wt. n-Val.	0.045	0.041	0.050
W.S. Elev (ft)	43.30	Reach Len. (ft)	569.88	563.21	532.80
Crit W.S. (ft)		Flow Area (sq ft)	87.88	6232.56	42.97
E.G. Slope (ft/ft)	0.001633	Area (sq ft)	87.88	6232.56	42.97
Q Total (cfs)	31354.00	Flow (cfs)	253.35	30994.87	105.78
Top Width (ft)	1084.21	Top Width (ft)	28.53	1042.18	13.50
Vel Total (ft/s)	4.93	Avg. Vel. (ft/s)	2.88	4.97	2.46
Max Chl Dpth (ft)	9.48	Hydr. Depth (ft)	3.08	5.98	3.18
Conv. Total (cfs)	775974.5	Conv. (cfs)	6270.2	767086.5	2617.8
Length Wtd. (ft)	562.63	Wetted Per. (ft)	29.06	1042.36	14.64
Min Ch El (ft)	33.82	Shear (lb/sq ft)	0.31	0.61	0.30
Alpha	1.01	Stream Power (lb/ft s)	0.89	3.03	0.74
Frctn Loss (ft)	0.55	Cum Volume (acre-ft)	427.78	722.25	57.02
C & E Loss (ft)	0.04	Cum SA (acres)	127.53	83.91	13.66

Warning: The conveyance ratio (upstream 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 #Q100

E.G. Elev (ft)	45.73	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.49	Wt. n-Val.	0.045	0.042	0.050
W.S. Elev (ft)	45.24	Reach Len. (ft)	569.88	563.21	532.80
Crit W.S. (ft)		Flow Area (sq ft)	149.71	8262.93	73.33
E.G. Slope (ft/ft)	0.001529	Area (sq ft)	149.71	8262.93	73.33
Q Total (cfs)	47312.00	Flow (cfs)	508.82	46599.79	203.39
Top Width (ft)	1095.46	Top Width (ft)	34.94	1042.18	18.34
Vel Total (ft/s)	5.58	Avg. Vel. (ft/s)	3.40	5.64	2.77
Max Chl Dpth (ft)	11.42	Hydr. Depth (ft)	4.28	7.93	4.00
Conv. Total (cfs)	1209852.0	Conv. (cfs)	13011.4	1191639.0	5200.9
Length Wtd. (ft)	562.55	Wetted Per. (ft)	35.77	1042.36	19.89
Min Ch El (ft)	33.82	Shear (lb/sq ft)	0.40	0.76	0.35
Alpha	1.01	Stream Power (lb/ft s)	1.36	4.27	0.98
Frctn Loss (ft)	0.60	Cum Volume (acre-ft)	837.70	919.15	88.41
C & E Loss (ft)	0.03	Cum SA (acres)	188.60	83.91	15.03

CROSS SECTION OUTPUT Profile #Q100HC

E.G. Elev (ft)	50.30	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.37	Wt. n-Val.	0.041	0.042	0.050
W.S. Elev (ft)	48.93	Reach Len. (ft)	569.88	563.21	532.80
Crit W.S. (ft)		Flow Area (sq ft)	1037.48	12102.98	187.84
E.G. Slope (ft/ft)	0.002761	Area (sq ft)	1037.48	12102.98	187.84
Q Total (cfs)	118891.00	Flow (cfs)	2902.74	115279.40	708.84
Top Width (ft)	2130.95	Top Width (ft)	1036.90	1042.18	51.87
Vel Total (ft/s)	8.92	Avg. Vel. (ft/s)	2.80	9.52	3.77
Max Chl Dpth (ft)	15.11	Hydr. Depth (ft)	1.00	11.61	3.62
Conv. Total (cfs)	2262563.0	Conv. (cfs)	55240.8	2193832.0	13489.6
Length Wtd. (ft)	562.84	Wetted Per. (ft)	1037.93	1042.36	53.66
Min Ch El (ft)	33.82	Shear (lb/sq ft)	0.17	2.00	0.60
Alpha	1.11	Stream Power (lb/ft s)	0.48	19.06	2.28
Frctn Loss (ft)	1.29	Cum Volume (acre-ft)	3575.47	1685.83	239.45
C & E Loss (ft)	0.07	Cum SA (acres)	319.59	83.93	23.80

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: San Mateo Creek
REACH: Lower RS: 6553.777

INPUT
Description:
Station Elevation Data num= 67

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	74.74	2.14	74.75	71.35	71.83	245.13	68.96	477.05	58.84
674.44	52.54	788.4	50.77	924.42	48.76	950.91	48.27	1364.63	47.14
1459.47	47.19	1536.34	46.96	1986.82	45.12	2284.68	45.81	2580.32	45.84
2705.18	45.5	2780.9	45.57	2898.39	45.74	2933.39	45.79	2954.52	46.14
2965.63	46.2	2983.47	46.27	3044.72	46.59	3083.22	46.8	3088.15	46.11
3088.84	46.06	3095.34	45.61	3097.99	44.61	3109.84	39.3	3123.82	38.62
3174.27	35.12	3228.69	34.06	3262.1	33.43	3265.35	33.36	3285.04	32.93

3375.66	32.93	3397.73	32.94	3421.43	32.94	3525.69	32.87	3562.15	32.84
3618.36	32.62	3702.27	32.28	3702.89	32.28	3754.12	32.22	3790.01	32.21
3843.61	33.65	3893.13	35.16	3936.47	36.23	3958.66	37.28	3976.05	38.1
3981.88	39.71	3984.69	40.21	3988.93	41.96	3996.9	46.49	4015.5	47.51
4037.36	48.71	4046.22	49.32	4054.55	49.56	4064.65	49.89	4126.52	51.65
4134.54	51.66	4206.32	52.02	4251.39	52.86	4267.36	54.31	4312.4	56.73
4372.53	59.52	4412.63	61.01						

Manning's n Values num= 7

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	3044.72	.02	3088.84	.035	3265.35	.05	3397.73	.035
3618.36	.05	4015.5	.02						

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
3174.27	3893.13	469.22	407.1 351.14	.1	.3

CROSS SECTION OUTPUT Profile #Q50

			Left OB	Channel	Right OB
E.G. Elev (ft)	43.09	Element			
Vel Head (ft)	0.25	Wt. n-Val.	0.035	0.042	0.050
W.S. Elev (ft)	42.84	Reach Len. (ft)	469.22	407.10	351.14
Crit W.S. (ft)		Flow Area (sq ft)	369.55	7046.30	573.59
E.G. Slope (ft/ft)	0.000646	Area (sq ft)	369.55	7046.30	573.59
Q Total (cfs)	31354.00	Flow (cfs)	1173.12	28776.27	1404.61
Top Width (ft)	888.55	Top Width (ft)	72.33	718.86	97.35
Vel Total (ft/s)	3.92	Avg. Vel. (ft/s)	3.17	4.08	2.45
Max Chl Dpth (ft)	10.63	Hydr. Depth (ft)	5.11	9.80	5.89
Conv. Total (cfs)	1233684.0	Conv. (cfs)	46158.6	1132258.0	55267.0
Length Wtd. (ft)	411.05	Wetted Per. (ft)	73.23	718.93	98.25
Min Ch El (ft)	32.21	Shear (lb/sq ft)	0.20	0.40	0.24
Alpha	1.04	Stream Power (lb/ft s)	0.65	1.61	0.58
Frctn Loss (ft)	0.34	Cum Volume (acre-ft)	424.78	636.41	53.25
C & E Loss (ft)	0.03	Cum SA (acres)	126.87	72.53	12.98

CROSS SECTION OUTPUT Profile #Q100

			Left OB	Channel	Right OB
E.G. Elev (ft)	45.10	Element			
Vel Head (ft)	0.38	Wt. n-Val.	0.035	0.042	0.050
W.S. Elev (ft)	44.71	Reach Len. (ft)	469.22	407.10	351.14
Crit W.S. (ft)		Flow Area (sq ft)	508.81	8391.49	758.84
E.G. Slope (ft/ft)	0.000796	Area (sq ft)	508.81	8391.49	758.84
Q Total (cfs)	47312.00	Flow (cfs)	2130.21	42758.04	2423.74
Top Width (ft)	896.06	Top Width (ft)	76.55	718.86	100.64
Vel Total (ft/s)	4.90	Avg. Vel. (ft/s)	4.19	5.10	3.19
Max Chl Dpth (ft)	12.50	Hydr. Depth (ft)	6.65	11.67	7.54
Conv. Total (cfs)	1677198.0	Conv. (cfs)	75515.5	1515762.0	85921.1
Length Wtd. (ft)	412.76	Wetted Per. (ft)	77.85	718.93	102.04
Min Ch El (ft)	32.21	Shear (lb/sq ft)	0.32	0.58	0.37
Alpha	1.03	Stream Power (lb/ft s)	1.36	2.95	1.18
Frctn Loss (ft)	0.41	Cum Volume (acre-ft)	833.39	811.48	83.32
C & E Loss (ft)	0.03	Cum SA (acres)	187.87	72.53	14.30

CROSS SECTION OUTPUT Profile #Q100HC

			Left OB	Channel	Right OB
E.G. Elev (ft)	48.95	Element			
Vel Head (ft)	1.15	Wt. n-Val.	0.035	0.042	0.050
W.S. Elev (ft)	47.80	Reach Len. (ft)	469.22	407.10	351.14

Crit W.S. (ft)		Flow Area (sq ft)	4004.49	10607.92	1091.57
E.G. Slope (ft/ft)	0.001922	Area (sq ft)	4004.49	10607.92	1091.57
Q Total (cfs)	118891.00	Flow (cfs)	14563.62	98278.61	6048.77
Top Width (ft)	2896.41	Top Width (ft)	2049.96	718.86	127.59
Vel Total (ft/s)	7.57	Avg. Vel. (ft/s)	3.64	9.26	5.54
Max Chl Dpth (ft)	15.59	Hydr. Depth (ft)	1.95	14.76	8.56
Conv. Total (cfs)	2711778.0	Conv. (cfs)	332180.6	2241631.0	137966.0
Length Wtd. (ft)	418.34	Wetted Per. (ft)	2051.50	718.93	129.49
Min Ch El (ft)	32.21	Shear (lb/sq ft)	0.23	1.77	1.01
Alpha	1.29	Stream Power (lb/ft s)	0.85	16.40	5.61
Frctn Loss (ft)	1.10	Cum Volume (acre-ft)	3542.49	1539.01	231.63
C & E Loss (ft)	0.10	Cum SA (acres)	299.39	72.55	22.71

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

CROSS SECTION

RIVER: San Mateo Creek
REACH: Lower RS: 6146.684

INPUT
Description: Updated Manning's N Distribution
Station Elevation Data num= 103

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	67.37	73.94	66.21	281.44	57.36	460.67	51.79	738.33	47.62
855.23	45.95	861.94	45.96	868.72	46.34	870.48	46.57	874.41	47.48
877.58	47.8	1199.64	43.91	1346.56	44.45	1370.86	44.24	1861.14	42.72
2188.85	43.37	2366.94	44.17	2690.87	44.97	2791.78	45.17	3014.8	44
3126.98	43.15	3162.65	43.05	3198.36	44.59	3219.78	45.27	3234.4	45.58
3264.38	46.22	3293.7	46.07	3311.26	45.57	3325.14	44.79	3336.98	45.06
3352.36	44.4	3373.25	41.02	3374.86	40.77	3376.23	40.49	3378.86	40.35
3381.42	40.08	3382.13	40	3389.66	39.28	3392.69	39.13	3459.2	37.82
3511.56	38.17	3523.07	37.98	3543.15	37.83	3556.05	37.64	3582.52	38.33
3598.62	37.92	3619.82	37.63	3647.76	34.53	3675.46	34.13	3697.23	33.81
3737.97	33.37	3763.67	32.92	3774.27	32.73	3822.48	32.67	3935.19	32.53
3971.58	32.48	4054.03	32.69	4068.32	32.4	4093.99	31.89	4104.15	31.6
4116.51	32.69	4120.1	33.01	4123.97	33.1	4129.79	35.14	4132.13	35.87
4138.29	39.7	4144.43	43.03	4146.87	45.14	4148.3	45.76	4151.89	46.4
4166.22	45.73	4180.9	45.16	4194.78	45.7	4208.68	46.3	4216.59	46.99
4260.17	46.68	4294.45	46.79	4329.78	48.38	4379.38	48.63	4549.26	47.05
4587.08	47.84	4621.53	48.99	4653.62	51.46	4687.91	52.76	4704.58	52.97
4713.51	53.08	4745.95	53.64	4767.84	55.71	4780.44	57.46	4785.49	58.45
4789.67	59.19	4799.79	63.62	4801.91	64.59	4806.18	65.99	4822.81	71.26
4842.1	78.88	4843.16	79.37	4853.9	85.67	4862.42	89.5	4873.75	93.65
4887.25	97.07	4894.23	98.15	4900.61	98.79				

Manning's n Values num= 7

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	3234.4	.02	3381.42	.035	3675.46	.05	3822.48	.035
4116.51	.02	4704.58	.05						

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

3647.76 4129.79 280.12 247.83 242.98 .1 .3

CROSS SECTION OUTPUT Profile #Q50

E.G. Elev (ft)	42.72	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.50	Wt. n-Val.	0.035	0.038	0.020
W.S. Elev (ft)	42.22	Reach Len. (ft)	280.12	247.83	242.98
Crit W.S. (ft)		Flow Area (sq ft)	1155.31	4518.21	48.90
E.G. Slope (ft/ft)	0.001130	Area (sq ft)	1155.31	4518.21	48.90
Q Total (cfs)	31354.00	Flow (cfs)	4317.84	26767.55	268.61
Top Width (ft)	777.11	Top Width (ft)	281.93	482.03	13.15
Vel Total (ft/s)	5.48	Avg. Vel. (ft/s)	3.74	5.92	5.49
Max Chl Dpth (ft)	10.62	Hydr. Depth (ft)	4.10	9.37	3.72
Conv. Total (cfs)	932649.6	Conv. (cfs)	128437.5	796222.1	7989.9
Length Wtd. (ft)	254.24	Wetted Per. (ft)	282.34	482.47	14.99
Min Ch El (ft)	31.60	Shear (lb/sq ft)	0.29	0.66	0.23
Alpha	1.07	Stream Power (lb/ft s)	1.08	3.91	1.26
Frctn Loss (ft)	0.54	Cum Volume (acre-ft)	416.57	582.37	50.74
C & E Loss (ft)	0.12	Cum SA (acres)	124.96	66.92	12.54

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

CROSS SECTION OUTPUT Profile #Q100

E.G. Elev (ft)	44.66	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.66	Wt. n-Val.	0.035	0.038	0.020
W.S. Elev (ft)	44.00	Reach Len. (ft)	280.12	247.83	242.98
Crit W.S. (ft)		Flow Area (sq ft)	2386.55	5378.20	74.96
E.G. Slope (ft/ft)	0.001256	Area (sq ft)	2386.55	5378.20	74.96
Q Total (cfs)	47312.00	Flow (cfs)	9128.19	37676.34	507.47
Top Width (ft)	1878.89	Top Width (ft)	1381.10	482.03	15.77
Vel Total (ft/s)	6.03	Avg. Vel. (ft/s)	3.82	7.01	6.77
Max Chl Dpth (ft)	12.40	Hydr. Depth (ft)	1.73	11.16	4.75
Conv. Total (cfs)	1335189.0	Conv. (cfs)	257606.1	1063262.0	14321.2
Length Wtd. (ft)	256.08	Wetted Per. (ft)	1381.68	482.47	18.18
Min Ch El (ft)	31.60	Shear (lb/sq ft)	0.14	0.87	0.32
Alpha	1.16	Stream Power (lb/ft s)	0.52	6.12	2.19
Frctn Loss (ft)	0.62	Cum Volume (acre-ft)	817.80	747.14	79.96
C & E Loss (ft)	0.17	Cum SA (acres)	180.02	66.92	13.83

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.

CROSS SECTION OUTPUT Profile #Q100HC

E.G. Elev (ft)	47.75	Element	Left OB	Channel	Right OB
Vel Head (ft)	2.12	Wt. n-Val.	0.035	0.038	0.020
W.S. Elev (ft)	45.62	Reach Len. (ft)	280.12	247.83	242.98
Crit W.S. (ft)	45.62	Flow Area (sq ft)	5795.90	6158.48	107.67
E.G. Slope (ft/ft)	0.003830	Area (sq ft)	5795.90	6158.48	107.67
Q Total (cfs)	118891.00	Flow (cfs)	35123.38	82415.43	1352.19

Top Width (ft)	3041.16	Top Width (ft)	2517.07	482.03	42.06
Vel Total (ft/s)	9.86	Avg. Vel. (ft/s)	6.06	13.38	12.56
Max Chl Dpth (ft)	14.02	Hydr. Depth (ft)	2.30	12.78	2.56
Conv. Total (cfs)	1920985.0	Conv. (cfs)	567507.1	1331630.0	21848.0
Length Wtd. (ft)	263.19	Wetted Per. (ft)	2517.77	482.47	45.01
Min Ch El (ft)	31.60	Shear (lb/sq ft)	0.55	3.05	0.57
Alpha	1.41	Stream Power (lb/ft s)	3.34	40.85	7.18
Frctn Loss (ft)	0.90	Cum Volume (acre-ft)	3489.70	1460.66	226.79
C & E Loss (ft)	0.26	Cum SA (acres)	274.80	66.94	22.02

Warning: The energy equation could not be balanced within the specified number of iterations. The program selected the water surface that had the least amount of error between computed and assumed values.
Warning: Divided flow computed for this cross-section.
Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water 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: San Mateo Creek
REACH: Lower RS: 5898.852

INPUT
Description:
Station Elevation Data num= 74

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	54.42	396.05	39.79	449.33	39.53	867.45	38.96	942.47	39.42
989.29	39.63	1658.74	42.41	1811.89	43.06	1875.95	43.27	1936.43	43.22
2199.24	42.45	2223.83	42.43	2260.33	42.11	2350.7	41.33	2368.57	40.51
2411.02	39.43	2416.88	39.28	2440.34	38.62	2459.04	37.97	2483.51	36.28
2552.4	35.84	2599.38	35.77	2601.8	35.77	2623.6	36.48	2693.25	38.42
2708.23	39.35	2721.65	39.19	2770.51	39.18	2797.98	37.64	2825.42	35.79
2833.18	35.27	2850.05	34	2860.92	33.08	2878.16	32.82	2881.96	32.76
2902.98	32.59	2999.9	33.11	3010.01	33.14	3053.25	33.3	3054.55	33.36
3060.75	33.64	3081.03	33.05	3111.07	32.4	3111.88	32.64	3115.25	33.33
3115.74	34	3117.54	35.18	3121.34	38.21	3123.17	38.79	3124.81	39.53
3149.5	42.03	3167.05	44.51	3193.07	45.12	3215.98	46.56	3231.87	46.9
3239.81	46.81	3275.55	46.42	3380.58	45.16	3414.31	45.06	3455.06	45.29
3491.3	46.01	3541.73	46.23	3605.7	48.37	3616.53	48.72	3618.08	48.77
3623.65	49.17	3648.73	51.18	3665.08	52.51	3683.68	57.4	3689.53	58.85
3701.64	60.59	3718.68	62.87	3744.57	66.56	3767.22	69.82		

Manning's n Values num= 7

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	2260.33	.02	2411.02	.035	2599.38	.05	2825.42	.035
3239.81	.02	3616.53	.05						

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
2850.05	3115.74	604.78	585.72	573.19	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
0	1875.95	43.27	F

CROSS SECTION OUTPUT Profile #Q50

E.G. Elev (ft)	42.05	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.75	Wt. n-Val.	0.039	0.035	0.035
W.S. Elev (ft)	40.30	Reach Len. (ft)	604.78	585.72	573.19
Crit W.S. (ft)	39.98	Flow Area (sq ft)	1345.62	1945.02	32.15
E.G. Slope (ft/ft)	0.005477	Area (sq ft)	2001.59	1945.02	32.15
Q Total (cfs)	31354.00	Flow (cfs)	8197.46	23010.14	146.40
Top Width (ft)	1525.47	Top Width (ft)	1243.06	265.69	16.72
Vel Total (ft/s)	9.44	Avg. Vel. (ft/s)	6.09	11.83	4.55
Max Chl Dpth (ft)	7.90	Hydr. Depth (ft)	2.84	7.32	1.92
Conv. Total (cfs)	423676.0	Conv. (cfs)	110769.5	310928.2	1978.3
Length Wtd. (ft)	592.99	Wetted Per. (ft)	473.74	266.20	18.42
Min Ch El (ft)	32.40	Shear (lb/sq ft)	0.97	2.50	0.60
Alpha	1.26	Stream Power (lb/ft s)	5.92	29.55	2.72
Frctn Loss (ft)	5.00	Cum Volume (acre-ft)	406.42	563.98	50.51
C & E Loss (ft)	0.08	Cum SA (acres)	120.06	64.79	12.45

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

CROSS SECTION OUTPUT Profile #Q100

E.G. Elev (ft)	43.87	Element	Left OB	Channel	Right OB
Vel Head (ft)	2.38	Wt. n-Val.	0.039	0.035	0.035
W.S. Elev (ft)	41.49	Reach Len. (ft)	604.78	585.72	573.19
Crit W.S. (ft)	41.33	Flow Area (sq ft)	1928.57	2260.67	58.98
E.G. Slope (ft/ft)	0.006348	Area (sq ft)	3687.94	2260.67	58.98
Q Total (cfs)	47312.00	Flow (cfs)	15170.41	31829.96	311.63
Top Width (ft)	1900.25	Top Width (ft)	1606.10	265.69	28.45
Vel Total (ft/s)	11.14	Avg. Vel. (ft/s)	7.87	14.08	5.28
Max Chl Dpth (ft)	9.09	Hydr. Depth (ft)	3.72	8.51	2.07
Conv. Total (cfs)	593811.5	Conv. (cfs)	190403.3	399496.9	3911.2
Length Wtd. (ft)	593.86	Wetted Per. (ft)	518.56	266.20	30.21
Min Ch El (ft)	32.40	Shear (lb/sq ft)	1.47	3.37	0.77
Alpha	1.24	Stream Power (lb/ft s)	11.59	47.39	4.09
Frctn Loss (ft)	5.36	Cum Volume (acre-ft)	798.27	725.41	79.58
C & E Loss (ft)	0.14	Cum SA (acres)	170.41	64.79	13.71

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

CROSS SECTION OUTPUT Profile #Q100HC

E.G. Elev (ft)	46.27	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.25	Wt. n-Val.	0.036	0.035	0.035

W.S. Elev (ft)	45.02	Reach Len. (ft)	604.78	585.72	573.19
Crit W.S. (ft)	44.23	Flow Area (sq ft)	11732.72	3196.70	212.59
E.G. Slope (ft/ft)	0.003089	Area (sq ft)	11732.72	3196.70	212.59
Q Total (cfs)	118891.00	Flow (cfs)	78329.11	39555.86	1006.03
Top Width (ft)	2934.04	Top Width (ft)	2595.47	265.69	72.88
Vel Total (ft/s)	7.85	Avg. Vel. (ft/s)	6.68	12.37	4.73
Max Chl Dpth (ft)	12.62	Hydr. Depth (ft)	4.52	12.03	2.92
Conv. Total (cfs)	2139087.0	Conv. (cfs)	1409297.0	711688.8	18100.5
Length Wtd. (ft)	599.39	Wetted Per. (ft)	2595.93	266.20	74.85
Min Ch El (ft)	32.40	Shear (lb/sq ft)	0.87	2.32	0.55
Alpha	1.31	Stream Power (lb/ft s)	5.82	28.66	2.59
Frctn Loss (ft)	0.69	Cum Volume (acre-ft)	3433.34	1434.05	225.90
C & E Loss (ft)	0.28	Cum SA (acres)	258.36	64.81	21.70

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: San Mateo Creek
REACH: Lower RS: 5313.135

INPUT
Description:
Station Elevation Data num= 65

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	54.8	235.9	35.44	377.06	35.34	407.89	35.07	474.34	32.93
484.38	32.81	517.48	34.18	558.19	36.22	572.64	36.28	1081.71	38.43
1730.88	40.34	1838.88	41.44	1922.89	40.19	1944.98	39.87	1946.14	39.81
1947.51	39.76	2071.35	36.04	2166.08	33.77	2192.86	32.86	2207.76	32.8
2378.28	32.12	2384.91	32.11	2528.49	32.05	2733.34	32.68	2768.74	32.82
2797.22	32.8	2907.86	31.84	2955.55	31.32	2982.22	31.03	2991.16	31.06
3069.24	31.32	3080.18	31.24	3122.41	30.9	3130.16	30.85	3133.53	31.01
3136.32	31.35	3145.48	32.39	3153.92	37.51	3154.56	37.9	3155.56	38.35
3158.71	39.74	3159.79	39.91	3163.25	40.32	3164.99	40.37	3171.31	40.51
3173.89	40.79	3228.93	41.25	3234.23	41.29	3236.17	41.32	3319.53	45.76
3324.98	45.83	3355.5	45.72	3365.71	45.15	3382.83	43.86	3391.49	43.98
3431.96	45.92	3448.73	46.4	3454.08	46.98	3475.98	49.36	3509.76	52.7
3520.54	57.38	3526.3	59.6	3542.39	64.53	3548.64	66.63	3560.91	71.06

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	1922.89	.02	2207.76	.05	2955.55	.035	3454.08	.05

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
2797.22	3145.48	603.98	623.48	637.26	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
0	1838.88	41.44	F

CROSS SECTION OUTPUT Profile #Q50

E.G. Elev (ft)	36.97	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.50	Wt. n-Val.	0.047	0.039	0.035
W.S. Elev (ft)	35.48	Reach Len. (ft)	603.98	623.48	637.26

Crit W.S. (ft)	35.48	Flow Area (sq ft)	1993.49	1352.70	7.86
E.G. Slope (ft/ft)	0.014652	Area (sq ft)	2221.26	1352.70	7.86
Q Total (cfs)	31354.00	Flow (cfs)	15857.75	15447.64	48.61
Top Width (ft)	1363.73	Top Width (ft)	1010.38	348.26	5.09
Vel Total (ft/s)	9.35	Avg. Vel. (ft/s)	7.95	11.42	6.18
Max Chl Dpth (ft)	4.63	Hydr. Depth (ft)	2.84	3.88	1.54
Conv. Total (cfs)	259030.5	Conv. (cfs)	131008.5	127620.4	401.6
Length Wtd. (ft)	617.10	Wetted Per. (ft)	702.47	348.35	5.95
Min Ch El (ft)	30.85	Shear (lb/sq ft)	2.60	3.55	1.21
Alpha	1.10	Stream Power (lb/ft s)	20.65	40.56	7.47
Frctn Loss (ft)	2.43	Cum Volume (acre-ft)	377.11	541.81	50.25
C & E Loss (ft)	0.34	Cum SA (acres)	104.42	60.66	12.31

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: 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 #Q100

E.G. Elev (ft)	38.37	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.91	Wt. n-Val.	0.045	0.039	0.035
W.S. Elev (ft)	36.46	Reach Len. (ft)	603.98	623.48	637.26
Crit W.S. (ft)	36.46	Flow Area (sq ft)	2704.56	1695.59	13.67
E.G. Slope (ft/ft)	0.013845	Area (sq ft)	3257.56	1695.59	13.67
Q Total (cfs)	47312.00	Flow (cfs)	25532.78	21680.38	98.84
Top Width (ft)	1487.41	Top Width (ft)	1132.44	348.26	6.71
Vel Total (ft/s)	10.72	Avg. Vel. (ft/s)	9.44	12.79	7.23
Max Chl Dpth (ft)	5.61	Hydr. Depth (ft)	3.66	4.87	2.04
Conv. Total (cfs)	402090.7	Conv. (cfs)	216995.6	184255.1	840.0
Length Wtd. (ft)	616.14	Wetted Per. (ft)	740.00	348.35	7.85
Min Ch El (ft)	30.85	Shear (lb/sq ft)	3.16	4.21	1.50
Alpha	1.07	Stream Power (lb/ft s)	29.82	53.79	10.88
Frctn Loss (ft)	2.39	Cum Volume (acre-ft)	750.05	698.81	79.10
C & E Loss (ft)	0.43	Cum SA (acres)	151.40	60.66	13.47

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 velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is

not a valid 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 #Q100HC

			Left OB	Channel	Right OB
E.G. Elev (ft)	45.29	Element			
Vel Head (ft)	0.30	Wt. n-Val.	0.037	0.040	0.035
W.S. Elev (ft)	44.99	Reach Len. (ft)	603.98	623.48	637.26
Crit W.S. (ft)	39.78	Flow Area (sq ft)	22176.52	4664.74	585.36
E.G. Slope (ft/ft)	0.000597	Area (sq ft)	22176.52	4664.74	585.36
Q Total (cfs)	118891.00	Flow (cfs)	93740.15	23810.96	1339.89
Top Width (ft)	3230.17	Top Width (ft)	2677.67	348.26	204.24
Vel Total (ft/s)	4.33	Avg. Vel. (ft/s)	4.23	5.10	2.29
Max Chl Dpth (ft)	14.14	Hydr. Depth (ft)	8.28	13.39	2.87
Conv. Total (cfs)	4866078.0	Conv. (cfs)	3836681.0	974556.4	54840.2
Length Wtd. (ft)	609.69	Wetted Per. (ft)	2678.30	348.35	206.39
Min Ch El (ft)	30.85	Shear (lb/sq ft)	0.31	0.50	0.11
Alpha	1.03	Stream Power (lb/ft s)	1.30	2.55	0.24
Frctn Loss (ft)	0.18	Cum Volume (acre-ft)	3197.95	1381.19	220.65
C & E Loss (ft)	0.05	Cum SA (acres)	221.75	60.68	19.88

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

CROSS SECTION

RIVER: San Mateo Creek
REACH: Lower RS: 4689.719

INPUT
Description:
Station Elevation Data num= 56

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	50.59	5.54	50.1	16.15	49.6	23.42	49.07	197.5	32.89
240.38	32.9	387.06	32.88	467.24	32.94	633.12	33.02	1195.92	36.5
1491.91	38.33	1533.6	38.56	1611.23	38.32	1676.8	38.37	1720.88	37.97
1733.94	38.62	1755.25	38.9	1772.27	37.68	1778.83	37.11	1801.66	34.35
1820.46	33.84	1852.87	32.96	1912.02	32.49	1913.47	32.47	2024.61	31.11
2128.28	30.42	2223.82	30.53	2359.57	28.7	2386.54	28.48	2534.69	27.3
2585.14	27.2	2636.08	26.73	2782.14	25.37	2815.27	26.01	2872.84	23.84
3012.04	23.21	3020.96	23.24	3075.22	24.09	3158.31	25.38	3191	26.39
3194.81	26.51	3211.9	27.08	3239.93	28	3259.34	29.49	3272.86	31.14
3283.9	32.16	3287.07	32.58	3293.44	33.43	3304.17	36.6	3315.74	39.95
3337.62	42.38	3377.29	44.79	3406.49	47.33	3412.31	47.71	3416.72	48.32
3416.91	48.34								

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	1195.92	.02	1913.47	.05	3075.22	.035	3211.9	.05

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
2585.14	3211.9	557.08	599.98	624.49	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
0	1533.6	38.56	F

CROSS SECTION OUTPUT Profile #Q50

E.G. Elev (ft)	33.03	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.37	Wt. n-Val.	0.050	0.046	0.050
W.S. Elev (ft)	32.66	Reach Len. (ft)	557.08	599.98	624.49
Crit W.S. (ft)	29.36	Flow Area (sq ft)	2006.74	4779.47	263.30
E.G. Slope (ft/ft)	0.001795	Area (sq ft)	2006.74	4779.47	263.30
Q Total (cfs)	31354.00	Flow (cfs)	5233.15	25361.97	758.88
Top Width (ft)	1397.05	Top Width (ft)	694.52	626.76	75.77
Vel Total (ft/s)	4.45	Avg. Vel. (ft/s)	2.61	5.31	2.88
Max Chl Dpth (ft)	9.45	Hydr. Depth (ft)	2.89	7.63	3.48
Conv. Total (cfs)	740084.8	Conv. (cfs)	123524.0	598648.1	17912.7
Length Wtd. (ft)	596.51	Wetted Per. (ft)	694.55	626.86	76.02
Min Ch El (ft)	23.21	Shear (lb/sq ft)	0.32	0.85	0.39
Alpha	1.22	Stream Power (lb/ft s)	0.84	4.53	1.12
Frctn Loss (ft)	2.31	Cum Volume (acre-ft)	347.79	497.93	48.27
C & E Loss (ft)	0.07	Cum SA (acres)	92.60	53.69	11.72

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

CROSS SECTION OUTPUT Profile #Q100

E.G. Elev (ft)	34.72	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.46	Wt. n-Val.	0.049	0.046	0.050
W.S. Elev (ft)	34.25	Reach Len. (ft)	557.08	599.98	624.49
Crit W.S. (ft)	30.51	Flow Area (sq ft)	3198.90	5778.33	392.18
E.G. Slope (ft/ft)	0.001796	Area (sq ft)	3909.29	5778.33	392.18
Q Total (cfs)	47312.00	Flow (cfs)	11103.83	34836.64	1371.53
Top Width (ft)	2140.83	Top Width (ft)	1429.74	626.76	84.33
Vel Total (ft/s)	5.05	Avg. Vel. (ft/s)	3.47	6.03	3.50
Max Chl Dpth (ft)	11.04	Hydr. Depth (ft)	4.10	9.22	4.65
Conv. Total (cfs)	1116445.0	Conv. (cfs)	262022.5	822057.6	32364.7
Length Wtd. (ft)	594.54	Wetted Per. (ft)	779.98	626.86	84.75
Min Ch El (ft)	23.21	Shear (lb/sq ft)	0.46	1.03	0.52
Alpha	1.17	Stream Power (lb/ft s)	1.60	6.23	1.81
Frctn Loss (ft)	1.49	Cum Volume (acre-ft)	700.37	645.32	76.14
C & E Loss (ft)	0.02	Cum SA (acres)	133.64	53.69	12.81

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

CROSS SECTION OUTPUT Profile #Q100HC

E.G. Elev (ft)	45.06	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.13	Wt. n-Val.	0.036	0.046	0.050
W.S. Elev (ft)	44.93	Reach Len. (ft)	557.08	599.98	624.49
Crit W.S. (ft)	34.28	Flow Area (sq ft)	27616.68	12470.49	1580.99
E.G. Slope (ft/ft)	0.000171	Area (sq ft)	27616.68	12470.49	1580.99
Q Total (cfs)	118891.00	Flow (cfs)	77268.97	38884.52	2737.51
Top Width (ft)	3310.96	Top Width (ft)	2517.19	626.76	167.01
Vel Total (ft/s)	2.85	Avg. Vel. (ft/s)	2.80	3.12	1.73
Max Chl Dpth (ft)	21.72	Hydr. Depth (ft)	10.97	19.90	9.47
Conv. Total (cfs)	9078858.0	Conv. (cfs)	5900480.0	2969334.0	209044.4
Length Wtd. (ft)	575.19	Wetted Per. (ft)	2518.07	626.86	168.46
Min Ch El (ft)	23.21	Shear (lb/sq ft)	0.12	0.21	0.10
Alpha	1.02	Stream Power (lb/ft s)	0.33	0.66	0.17
Frctn Loss (ft)	0.10	Cum Volume (acre-ft)	2852.74	1258.56	204.80
C & E Loss (ft)	0.01	Cum SA (acres)	185.74	53.71	17.16

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

CROSS SECTION

RIVER: San Mateo Creek
REACH: Lower RS: 4089.740

INPUT
Description:
Station Elevation Data num= 60

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	43.73	120.02	32.57	131.17	32.57	253.76	31.11	357.24	32.72
427	32.77	899.22	32.98	954.04	33.32	993.06	33.55	1222.54	34.9
1471.85	35.92	1705.94	34.44	1743.07	34.06	1777.93	33.7	1813.15	33.33
1910.27	31.81	2036.45	28.67	2135.46	27.2	2288.12	25.54	2333	26.35
2484.7	26.4	2540.37	26.42	2640.58	25.78	2741.76	25.56	2849.16	25.52
3080.64	26.31	3081.74	26.32	3095.12	26.39	3102.66	26.27	3106.67	26.2
3116.51	26.34	3145.31	27.09	3172.38	27.65	3180.44	27.82	3183.26	27.7
3186.33	27.58	3202.22	26.94	3203.62	27.23	3205.09	28.53	3208.91	30.7
3212.53	35.02	3212.79	35.32	3219.19	37.95	3219.44	38.02	3219.93	38.04
3226.98	38.68	3236.81	38.22	3248.61	39.25	3257.08	39.88	3269.27	41.94
3289.72	45.01	3346.69	49.12	3362.24	50.24	3384.82	51.78	3392.9	52.57
3399.42	53.43	3407.75	54.71	3416.41	56.08	3477.19	65.71	3486.14	68.15

Manning's n Values num= 7

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	1743.07	.02	1777.93	.05	3102.66	.035	3172.38	.05
3346.69	.07	3416.41	.05						

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
2135.46	3145.31	589.66	603.63	611.39	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
0	1471.85	35.92	F

CROSS SECTION OUTPUT Profile #Q50

E.G. Elev (ft)	30.66	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.03	Wt. n-Val.	0.050	0.049	0.041

W.S. Elev (ft)	29.63	Reach Len. (ft)	589.66	603.63	611.39
Crit W.S. (ft)	29.15	Flow Area (sq ft)	186.02	3590.33	132.55
E.G. Slope (ft/ft)	0.013813	Area (sq ft)	186.02	3590.33	132.55
Q Total (cfs)	31354.00	Flow (cfs)	794.66	29636.75	922.59
Top Width (ft)	1209.06	Top Width (ft)	137.49	1009.85	61.71
Vel Total (ft/s)	8.02	Avg. Vel. (ft/s)	4.27	8.25	6.96
Max Chl Dpth (ft)	4.11	Hydr. Depth (ft)	1.35	3.56	2.15
Conv. Total (cfs)	266778.5	Conv. (cfs)	6761.5	252167.1	7849.9
Length Wtd. (ft)	603.11	Wetted Per. (ft)	137.52	1009.88	62.55
Min Ch El (ft)	25.52	Shear (lb/sq ft)	1.17	3.07	1.83
Alpha	1.03	Stream Power (lb/ft s)	4.98	25.31	12.72
Frctn Loss (ft)	0.59	Cum Volume (acre-ft)	333.77	440.28	45.43
C & E Loss (ft)	0.27	Cum SA (acres)	87.28	42.41	10.73

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

CROSS SECTION OUTPUT Profile #Q100

E.G. Elev (ft)	33.21	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.62	Wt. n-Val.	0.050	0.049	0.042
W.S. Elev (ft)	32.59	Reach Len. (ft)	589.66	603.63	611.39
Crit W.S. (ft)	30.07	Flow Area (sq ft)	777.37	6583.75	321.56
E.G. Slope (ft/ft)	0.003751	Area (sq ft)	940.36	6583.75	321.56
Q Total (cfs)	47312.00	Flow (cfs)	2827.13	42485.87	1999.00
Top Width (ft)	1579.40	Top Width (ft)	504.37	1009.85	65.19
Vel Total (ft/s)	6.16	Avg. Vel. (ft/s)	3.64	6.45	6.22
Max Chl Dpth (ft)	7.07	Hydr. Depth (ft)	2.83	6.52	4.93
Conv. Total (cfs)	772547.1	Conv. (cfs)	46163.6	693742.3	32641.2
Length Wtd. (ft)	602.78	Wetted Per. (ft)	275.20	1009.88	67.19
Min Ch El (ft)	25.52	Shear (lb/sq ft)	0.66	1.53	1.12
Alpha	1.05	Stream Power (lb/ft s)	2.41	9.85	6.97
Frctn Loss (ft)	0.50	Cum Volume (acre-ft)	669.36	560.19	71.02
C & E Loss (ft)	0.13	Cum SA (acres)	121.27	42.41	11.74

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

CROSS SECTION OUTPUT Profile #Q100HC

E.G. Elev (ft)	44.96	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.11	Wt. n-Val.	0.037	0.049	0.042
W.S. Elev (ft)	44.85	Reach Len. (ft)	589.66	603.63	611.39
Crit W.S. (ft)	33.22	Flow Area (sq ft)	24398.97	18961.18	1504.85
E.G. Slope (ft/ft)	0.000164	Area (sq ft)	24398.97	18961.18	1504.85
Q Total (cfs)	118891.00	Flow (cfs)	63622.76	51891.21	3377.02
Top Width (ft)	3288.65	Top Width (ft)	2135.46	1009.85	143.33
Vel Total (ft/s)	2.65	Avg. Vel. (ft/s)	2.61	2.74	2.24
Max Chl Dpth (ft)	19.33	Hydr. Depth (ft)	11.43	18.78	10.50
Conv. Total (cfs)	9278319.0	Conv. (cfs)	4965155.0	4049619.0	263544.8

Length Wtd. (ft)	596.17	Wetted Per. (ft)	2137.20	1009.88	147.64
Min Ch El (ft)	25.52	Shear (lb/sq ft)	0.12	0.19	0.10
Alpha	1.00	Stream Power (lb/ft s)	0.31	0.53	0.23
Frctn Loss (ft)	0.06	Cum Volume (acre-ft)	2520.14	1042.10	182.68
C & E Loss (ft)	0.01	Cum SA (acres)	155.99	42.43	14.94

Warning: The cross-section end points had to be extended vertically for the computed water surface.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.

CROSS SECTION

RIVER: San Mateo Creek
REACH: Lower RS: 3486.110

INPUT
Description:
Station Elevation Data num= 71

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	46.29	164.35	29.36	170.65	29.14	191.87	28.38	194.63	28.28
197.81	27.46	214.3	26.61	218.17	25.64	221.29	25.46	236.53	24.81
427.84	25.58	485.93	26.09	545.78	26.08	561.55	26.23	566.9	26.28
642.16	27.68	660.34	27.89	777.29	31.38	781.75	31.52	782.34	31.54
782.75	31.57	783.12	31.57	914.19	32.95	938	32.41	961.74	32.7
1060.96	32.15	1484.48	33.24	1802.93	34.08	1912.47	34.47	2024.12	33.2
2043.89	32.97	2057.85	32.81	2104.9	32.26	2122.22	31.43	2159.87	29.34
2170.7	28.93	2182.95	28.24	2195.59	27.58	2201.42	26.91	2330.08	23.53
2435.73	20.75	2455.24	20.59	2503.12	19.86	2521.29	19.73	2523.59	19.71
2690.84	17.56	2853.72	14.86	2859.84	14.93	2870.57	15.13	3028.74	16.36
3069.91	16.52	3112.95	16.69	3124.02	16.88	3135.84	17.01	3137.38	17.04
3165.78	17.62	3171.12	17.92	3179.97	18.42	3213.55	20.32	3218.35	20.85
3244.42	23.69	3284.83	28.14	3300.66	29.84	3305.02	30.69	3314.02	32.6
3324.12	38.65	3348.28	55.29	3359.46	64.31	3363.44	66.09	3370.03	68.46
3373.53	69.23								

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	2024.12	.02	2057.85	.05	3069.91	.035	3171.12	.07

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
2435.73	3218.35	577.29	602.58	615.08	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
0	1912.47	34.47	F

CROSS SECTION OUTPUT Profile #Q50

E.G. Elev (ft)	29.80	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.13	Wt. n-Val.	0.050	0.048	0.070
W.S. Elev (ft)	29.67	Reach Len. (ft)	577.29	602.58	615.08
Crit W.S. (ft)	21.04	Flow Area (sq ft)	1424.44	9642.66	355.53
E.G. Slope (ft/ft)	0.000323	Area (sq ft)	3252.21	9642.66	355.53
Q Total (cfs)	31354.00	Flow (cfs)	2240.14	28750.82	363.04
Top Width (ft)	1703.78	Top Width (ft)	840.43	782.62	80.72
Vel Total (ft/s)	2.74	Avg. Vel. (ft/s)	1.57	2.98	1.02

Max Chl Dpth (ft)	14.81	Hydr. Depth (ft)	5.05	12.32	4.40
Conv. Total (cfs)	1744404.0	Conv. (cfs)	124632.0	1599575.0	20197.9
Length Wtd. (ft)	600.29	Wetted Per. (ft)	281.97	782.78	81.20
Min Ch El (ft)	14.86	Shear (lb/sq ft)	0.10	0.25	0.09
Alpha	1.11	Stream Power (lb/ft s)	0.16	0.74	0.09
Frctn Loss (ft)	0.26	Cum Volume (acre-ft)	310.50	348.60	42.00
C & E Loss (ft)	0.01	Cum SA (acres)	80.66	29.99	9.73

Warning: Divided flow computed for this cross-section.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.

CROSS SECTION OUTPUT Profile #Q100

E.G. Elev (ft)	32.58	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.18	Wt. n-Val.	0.050	0.048	0.070
W.S. Elev (ft)	32.40	Reach Len. (ft)	577.29	602.58	615.08
Crit W.S. (ft)	22.23	Flow Area (sq ft)	2261.41	11775.90	595.90
E.G. Slope (ft/ft)	0.000356	Area (sq ft)	5810.03	11775.90	595.90
Q Total (cfs)	47312.00	Flow (cfs)	4461.01	42041.90	809.09
Top Width (ft)	2086.04	Top Width (ft)	1208.71	782.62	94.71
Vel Total (ft/s)	3.23	Avg. Vel. (ft/s)	1.97	3.57	1.36
Max Chl Dpth (ft)	17.54	Hydr. Depth (ft)	6.60	15.05	6.29
Conv. Total (cfs)	2507757.0	Conv. (cfs)	236454.6	2228417.0	42885.4
Length Wtd. (ft)	597.66	Wetted Per. (ft)	342.66	782.78	95.46
Min Ch El (ft)	14.86	Shear (lb/sq ft)	0.15	0.33	0.14
Alpha	1.12	Stream Power (lb/ft s)	0.29	1.19	0.19
Frctn Loss (ft)	0.23	Cum Volume (acre-ft)	623.67	432.98	64.58
C & E Loss (ft)	0.00	Cum SA (acres)	109.67	29.99	10.61

Warning: Divided flow computed for this cross-section.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.

CROSS SECTION OUTPUT Profile #Q100HC

E.G. Elev (ft)	44.89	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.07	Wt. n-Val.	0.037	0.048	0.070
W.S. Elev (ft)	44.82	Reach Len. (ft)	577.29	602.58	615.08
Crit W.S. (ft)	26.36	Flow Area (sq ft)	34167.78	21496.62	1904.52
E.G. Slope (ft/ft)	0.000069	Area (sq ft)	34167.78	21496.62	1904.52
Q Total (cfs)	118891.00	Flow (cfs)	66428.77	50330.09	2132.14
Top Width (ft)	3318.77	Top Width (ft)	2421.42	782.62	114.72
Vel Total (ft/s)	2.07	Avg. Vel. (ft/s)	1.94	2.34	1.12
Max Chl Dpth (ft)	29.96	Hydr. Depth (ft)	14.11	27.47	16.60
Conv. Total (cfs)	14309790.0	Conv. (cfs)	7995403.0	6057758.0	256625.0
Length Wtd. (ft)	587.25	Wetted Per. (ft)	2422.85	782.78	119.09
Min Ch El (ft)	14.86	Shear (lb/sq ft)	0.06	0.12	0.07
Alpha	1.04	Stream Power (lb/ft s)	0.12	0.28	0.08
Frctn Loss (ft)	0.04	Cum Volume (acre-ft)	2123.73	761.78	158.76
C & E Loss (ft)	0.00	Cum SA (acres)	125.14	30.01	13.13

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

CROSS SECTION

RIVER: San Mateo Creek
REACH: Lower RS: 2883.526

INPUT
Description:
Station Elevation Data num= 64

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	43.87	138.59	25.27	144.34	25.32	155.04	25.36	280.43	25.37
674.52	26.23	703.51	26.26	745.97	27.28	773.14	27.93	1090.82	30.95
1473.75	31.96	1666.35	32.14	1987.05	30.26	1995.18	30.17	2049.39	29.29
2070	28.97	2129.96	27.88	2184.8	26.9	2187.91	27.91	2192.7	27.96
2197.21	29.24	2202.11	28.51	2203.97	28.52	2205.47	27.61	2207.06	27.26
2208.89	26.15	2213.35	25.91	2220.99	25.72	2397.39	21.6	2470.49	19.84
2556.9	17.85	2588.28	17.51	2637.19	15.79	2730.4	14.12	2756.38	14.59
2761.02	14.65	2778.21	14.83	2858.77	15.67	2870.81	16.19	2891.7	17.09
2895.51	17.12	2905.94	17.23	2934.43	19.59	2957.04	19.85	2959.64	19.84
2961.43	20.49	2966.51	21.04	2966.67	21.06	2995.29	26.1	3002.44	25.94
3011.47	26.86	3014.13	27.24	3015.87	27.92	3022.73	34.3	3027.64	39.08
3036	48.34	3044.12	55.97	3056.9	67.69	3058.44	68.95	3066.94	75.22
3074.67	80.81	3080.16	85.53	3086.85	91.92	3086.9	91.96		

Manning's n Values num= 4

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	2129.96	.05	2778.21	.035	2870.81	.05

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
2470.49	2957.04	193.46	203.76	211.14	.1	.3

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
0	280.43	40	T
280.43	1666.35	32	F

CROSS SECTION OUTPUT Profile #Q50

E.G. Elev (ft)	29.53	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.26	Wt. n-Val.	0.050	0.046	0.050
W.S. Elev (ft)	29.27	Reach Len. (ft)	193.46	203.76	211.14
Crit W.S. (ft)	21.72	Flow Area (sq ft)	1839.84	6172.74	307.11
E.G. Slope (ft/ft)	0.000597	Area (sq ft)	4154.53	6172.74	307.11
Q Total (cfs)	31354.00	Flow (cfs)	3949.63	26753.70	650.67
Top Width (ft)	1771.85	Top Width (ft)	1225.02	486.55	60.28
Vel Total (ft/s)	3.77	Avg. Vel. (ft/s)	2.15	4.33	2.12
Max Chl Dpth (ft)	15.15	Hydr. Depth (ft)	4.38	12.69	5.09
Conv. Total (cfs)	1283502.0	Conv. (cfs)	161681.2	1095185.0	26635.8
Length Wtd. (ft)	202.59	Wetted Per. (ft)	420.87	486.76	61.60
Min Ch El (ft)	14.12	Shear (lb/sq ft)	0.16	0.47	0.19
Alpha	1.18	Stream Power (lb/ft s)	0.35	2.05	0.39
Frctn Loss (ft)	0.16	Cum Volume (acre-ft)	261.42	239.21	37.33
C & E Loss (ft)	0.02	Cum SA (acres)	66.97	21.22	8.74

Warning: Divided flow computed for this cross-section.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.

CROSS SECTION OUTPUT Profile #Q100

E.G. Elev (ft)	32.35	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.20	Wt. n-Val.	0.042	0.046	0.050
W.S. Elev (ft)	32.15	Reach Len. (ft)	193.46	203.76	211.14
Crit W.S. (ft)	23.34	Flow Area (sq ft)	7678.80	7574.85	485.29
E.G. Slope (ft/ft)	0.000415	Area (sq ft)	8818.42	7574.85	485.29
Q Total (cfs)	47312.00	Flow (cfs)	14907.64	31291.22	1113.13
Top Width (ft)	2933.10	Top Width (ft)	2383.17	486.55	63.38
Vel Total (ft/s)	3.01	Avg. Vel. (ft/s)	1.94	4.13	2.29
Max Chl Dpth (ft)	18.03	Hydr. Depth (ft)	3.51	15.57	7.66
Conv. Total (cfs)	2321823.0	Conv. (cfs)	731588.3	1535608.0	54626.7
Length Wtd. (ft)	200.31	Wetted Per. (ft)	2191.20	486.76	65.83
Min Ch El (ft)	14.12	Shear (lb/sq ft)	0.09	0.40	0.19
Alpha	1.39	Stream Power (lb/ft s)	0.18	1.67	0.44
Frctn Loss (ft)	0.10	Cum Volume (acre-ft)	526.73	299.13	56.95
C & E Loss (ft)	0.00	Cum SA (acres)	85.87	21.22	9.50

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

CROSS SECTION OUTPUT Profile #Q100HC

E.G. Elev (ft)	44.84	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.09	Wt. n-Val.	0.038	0.046	0.050
W.S. Elev (ft)	44.75	Reach Len. (ft)	193.46	203.76	211.14
Crit W.S. (ft)	28.52	Flow Area (sq ft)	35273.78	13705.43	1364.61
E.G. Slope (ft/ft)	0.000080	Area (sq ft)	39435.21	13705.43	1364.61
Q Total (cfs)	118891.00	Flow (cfs)	79918.41	36639.53	2333.05
Top Width (ft)	3032.76	Top Width (ft)	2470.49	486.55	75.72
Vel Total (ft/s)	2.36	Avg. Vel. (ft/s)	2.27	2.67	1.71
Max Chl Dpth (ft)	30.63	Hydr. Depth (ft)	16.11	28.17	18.02
Conv. Total (cfs)	13310840.0	Conv. (cfs)	8947536.0	4102102.0	261204.9
Length Wtd. (ft)	196.76	Wetted Per. (ft)	2191.20	486.76	83.48
Min Ch El (ft)	14.12	Shear (lb/sq ft)	0.08	0.14	0.08
Alpha	1.02	Stream Power (lb/ft s)	0.18	0.37	0.14
Frctn Loss (ft)	0.02	Cum Volume (acre-ft)	1636.01	518.30	135.68
C & E Loss (ft)	0.00	Cum SA (acres)	92.73	21.24	11.78

Warning: The cross-section end points had to be extended vertically for the computed water surface.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.

CROSS SECTION

RIVER: San Mateo Creek
REACH: Lower RS: 2679.762

INPUT
Description:
Station Elevation Data num= 65

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	45.67	152.32	25.49	152.41	25.46	152.57	25.37	152.72	25.31
152.79	25.3	152.89	25.27	153.02	25.22	153.12	25.22	153.24	25.16
153.33	25.11	153.43	25.08	153.53	25.05	153.63	25.03	153.67	25.03
154.23	25.06	155.91	25.03	157.89	25.03	685	26.22	729.8	26.27
1169.08	30.4	1188.39	30.44	1207.6	30.5	1402.35	30.69	1687.97	30.94
1883.46	29.77	2002.09	28.51	2131.34	26.39	2171.25	26.45	2174.8	26.43

2255.35	26.14	2261.8	26.09	2291.45	25.82	2306.04	24.96	2320.77	23.7		
2334.58	21.2	2348.29	19.69	2368.87	20.19	2402.21	21.36	2439.75	20.12		
2446.69	19.89	2497.77	19.68	2543.21	19.57	2661.08	14.9	2684.03	14.19		
2696.76	14.24	2707.56	14.28	2708.82	14.29	2746.46	14.85	2766.76	16.57		
2783.75	17.87	2807.02	19.65	2809.85	19.63	2824.64	19.51	2846.41	20.28		
2856.24	21.35	2856.84	21.42	2861.82	23.3	2864.07	23.87	2868.1	30.22		
2872.97	37.3	2876.16	41.47	2889.55	57.34	2890.45	58.31	2899.74	68.73		

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	2174.8	.07	2261.8	.05	2696.76	.035	2783.75	.05

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
2402.21	2856.24	387.64	396.16	397.97	.1	.3

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
0	400	40	T
400	1687.97	30.94	F

CROSS SECTION OUTPUT Profile #Q50

			Left OB	Channel	Right OB
E.G. Elev (ft)	29.35	Element			
Vel Head (ft)	0.42	Wt. n-Val.	0.049	0.045	0.050
W.S. Elev (ft)	28.93	Reach Len. (ft)	387.64	396.16	397.97
Crit W.S. (ft)	23.13	Flow Area (sq ft)	1411.03	5018.75	57.42
E.G. Slope (ft/ft)	0.001091	Area (sq ft)	3717.53	5018.75	57.42
Q Total (cfs)	31354.00	Flow (cfs)	3745.90	27465.35	142.74
Top Width (ft)	1791.52	Top Width (ft)	1326.45	454.03	11.04
Vel Total (ft/s)	4.83	Avg. Vel. (ft/s)	2.65	5.47	2.49
Max Chl Dpth (ft)	14.74	Hydr. Depth (ft)	3.21	11.05	5.20
Conv. Total (cfs)	949381.9	Conv. (cfs)	113423.9	831635.8	4322.2
Length Wtd. (ft)	394.80	Wetted Per. (ft)	440.28	454.43	14.24
Min Ch El (ft)	14.19	Shear (lb/sq ft)	0.22	0.75	0.27
Alpha	1.16	Stream Power (lb/ft s)	0.58	4.12	0.68
Frctn Loss (ft)	0.55	Cum Volume (acre-ft)	243.94	213.03	36.44
C & E Loss (ft)	0.01	Cum SA (acres)	61.30	19.02	8.56

Warning: Divided flow computed for this cross-section.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.

CROSS SECTION OUTPUT Profile #Q100

			Left OB	Channel	Right OB
E.G. Elev (ft)	32.25	Element			
Vel Head (ft)	0.23	Wt. n-Val.	0.040	0.045	0.050
W.S. Elev (ft)	32.01	Reach Len. (ft)	387.64	396.16	397.97
Crit W.S. (ft)	24.68	Flow Area (sq ft)	7593.92	6417.18	94.53
E.G. Slope (ft/ft)	0.000563	Area (sq ft)	9417.28	6417.18	94.53
Q Total (cfs)	47312.00	Flow (cfs)	17685.65	29424.62	201.74
Top Width (ft)	2766.24	Top Width (ft)	2299.12	454.03	13.09
Vel Total (ft/s)	3.35	Avg. Vel. (ft/s)	2.33	4.59	2.13
Max Chl Dpth (ft)	17.82	Hydr. Depth (ft)	3.79	14.13	7.22
Conv. Total (cfs)	1994571.0	Conv. (cfs)	745588.4	1240478.0	8504.8
Length Wtd. (ft)	392.61	Wetted Per. (ft)	2002.67	454.43	17.94
Min Ch El (ft)	14.19	Shear (lb/sq ft)	0.13	0.50	0.19
Alpha	1.34	Stream Power (lb/ft s)	0.31	2.27	0.39
Frctn Loss (ft)	0.23	Cum Volume (acre-ft)	486.24	266.41	55.54
C & E Loss (ft)	0.00	Cum SA (acres)	75.48	19.02	9.31

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

CROSS SECTION OUTPUT Profile #Q100HC

E.G. Elev (ft)	44.82	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.11	Wt. n-Val.	0.037	0.046	0.050
W.S. Elev (ft)	44.71	Reach Len. (ft)	387.64	396.16	397.97
Crit W.S. (ft)	30.57	Flow Area (sq ft)	33025.33	12184.12	318.85
E.G. Slope (ft/ft)	0.000095	Area (sq ft)	39228.81	12184.12	318.85
Q Total (cfs)	118891.00	Flow (cfs)	83756.12	34722.52	412.36
Top Width (ft)	2871.68	Top Width (ft)	2394.99	454.03	22.66
Vel Total (ft/s)	2.61	Avg. Vel. (ft/s)	2.54	2.85	1.29
Max Chl Dpth (ft)	30.52	Hydr. Depth (ft)	16.49	26.84	14.07
Conv. Total (cfs)	12183380.0	Conv. (cfs)	8582922.0	3558196.0	42256.9
Length Wtd. (ft)	390.10	Wetted Per. (ft)	2002.67	454.43	33.86
Min Ch El (ft)	14.19	Shear (lb/sq ft)	0.10	0.16	0.06
Alpha	1.01	Stream Power (lb/ft s)	0.25	0.45	0.07
Frctn Loss (ft)	0.04	Cum Volume (acre-ft)	1461.33	457.74	131.60
C & E Loss (ft)	0.00	Cum SA (acres)	81.92	19.04	11.55

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

CROSS SECTION

RIVER: San Mateo Creek
REACH: Lower RS: 2283.606

INPUT
Description:
Station Elevation Data num= 86

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	50.74	42.78	45.14	46.09	43.64	52.72	39.85	58.82	37.31
61.61	36.95	65.89	35.72	71.12	33.52	75.43	33.36	80.7	30.98
84.08	29.01	88.42	27.45	92.78	26.21	97.15	25.21	98.62	25.11
122.61	26.69	198.23	25.43	293.95	25.53	627.39	26.31	659.77	26.35
868.5	26.56	1089.31	28.67	1293.99	29.12	1313	29.19	1603.67	29.45
1749.84	29.39	1784.45	29.15	1932.01	27.38	2047.8	26.16	2065.96	26.39
2097.45	26.35	2101.37	26.02	2108.61	25.28	2124.15	21.46	2130.46	21.08
2136.12	21.06	2142.2	21.81	2157.02	25.66	2167.33	26.38	2167.53	26.39
2175.98	27.04	2189.51	26.68	2204.26	25.94	2286.03	26.1	2286.09	26.1
2287.27	26.1	2361.89	20.7	2375.17	19.79	2463.42	18.67	2533.64	19.71
2553.3	19.74	2601.28	19.8	2630.31	19.88	2668.83	19.99	2683.93	19.35
2699.63	18.69	2701.74	18.64	2742.9	17.75	2749.25	17.45	2750.91	17.37
2754.51	17.37	2764.19	17.89	2775.18	18.47	2801.95	19.93	2812.08	21.62
2823.26	23.74	2831.99	26.57	2838.6	31.04	2844.01	34.82	2847.37	36.09
2849.48	36.44	2857.12	35.86	2868.74	37.27	2873.98	37.97	2878.95	39.58
2884.38	42.66	2886.96	44.69	2888.97	46.04	2890.89	47.23	2911.85	58.02
2919.17	62.34	2940.49	73.07	2952.28	78.22	2954.21	79.14	2954.89	79.33
2968.95	82.03								

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	2167.33	.07	2286.09	.05	2553.3	.035	2701.74	.05

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
2375.17	2801.95	218.79	208.19 198.85	.1	.3

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
0	470	40	T
470	2175.98	27.04	F

CROSS SECTION OUTPUT Profile #Q50

			Left OB	Channel	Right OB
E.G. Elev (ft)	28.80	Element			
Vel Head (ft)	0.50	Wt. n-Val.	0.041	0.044	0.050
W.S. Elev (ft)	28.29	Reach Len. (ft)	218.79	208.19	198.85
Crit W.S. (ft)	24.62	Flow Area (sq ft)	2300.38	3879.31	168.56
E.G. Slope (ft/ft)	0.001818	Area (sq ft)	3270.02	3879.31	168.56
Q Total (cfs)	31354.00	Flow (cfs)	6396.19	24335.75	622.06
Top Width (ft)	1942.76	Top Width (ft)	1483.39	426.78	32.59
Vel Total (ft/s)	4.94	Avg. Vel. (ft/s)	2.78	6.27	3.69
Max Chl Dpth (ft)	10.92	Hydr. Depth (ft)	2.09	9.09	5.17
Conv. Total (cfs)	735452.8	Conv. (cfs)	150031.8	570829.6	14591.4
Length Wtd. (ft)	210.29	Wetted Per. (ft)	1100.85	426.91	33.91
Min Ch El (ft)	17.37	Shear (lb/sq ft)	0.24	1.03	0.56
Alpha	1.33	Stream Power (lb/ft s)	0.66	6.47	2.08
Frctn Loss (ft)	0.21	Cum Volume (acre-ft)	212.85	172.57	35.41
C & E Loss (ft)	0.05	Cum SA (acres)	48.80	15.01	8.36

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

CROSS SECTION OUTPUT Profile #Q100

			Left OB	Channel	Right OB
E.G. Elev (ft)	32.01	Element			
Vel Head (ft)	0.22	Wt. n-Val.	0.038	0.044	0.050
W.S. Elev (ft)	31.79	Reach Len. (ft)	218.79	208.19	198.85
Crit W.S. (ft)	26.41	Flow Area (sq ft)	8284.30	5370.60	291.45
E.G. Slope (ft/ft)	0.000624	Area (sq ft)	10608.53	5370.60	291.45
Q Total (cfs)	47312.00	Flow (cfs)	21925.18	24575.46	811.36
Top Width (ft)	2760.76	Top Width (ft)	2296.26	426.78	37.72
Vel Total (ft/s)	3.39	Avg. Vel. (ft/s)	2.65	4.58	2.78
Max Chl Dpth (ft)	14.42	Hydr. Depth (ft)	4.35	12.58	7.73
Conv. Total (cfs)	1894679.0	Conv. (cfs)	878026.2	984160.8	32492.2
Length Wtd. (ft)	213.02	Wetted Per. (ft)	1906.57	426.91	40.11
Min Ch El (ft)	17.37	Shear (lb/sq ft)	0.17	0.49	0.28
Alpha	1.24	Stream Power (lb/ft s)	0.45	2.24	0.79
Frctn Loss (ft)	0.09	Cum Volume (acre-ft)	397.13	212.81	53.78
C & E Loss (ft)	0.02	Cum SA (acres)	55.03	15.01	9.08

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

CROSS SECTION OUTPUT Profile #Q100HC

E.G. Elev (ft)	44.78	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.11	Wt. n-Val.	0.037	0.044	0.050
W.S. Elev (ft)	44.67	Reach Len. (ft)	218.79	208.19	198.85
Crit W.S. (ft)	30.90	Flow Area (sq ft)	32829.28	10868.96	1122.91
E.G. Slope (ft/ft)	0.000095	Area (sq ft)	40449.63	10868.96	1122.91
Q Total (cfs)	118891.00	Flow (cfs)	85904.34	31240.07	1746.58
Top Width (ft)	2843.13	Top Width (ft)	2331.36	426.78	84.99
Vel Total (ft/s)	2.65	Avg. Vel. (ft/s)	2.62	2.87	1.56
Max Chl Dpth (ft)	27.30	Hydr. Depth (ft)	17.23	25.47	13.21
Conv. Total (cfs)	12173750.0	Conv. (cfs)	8796108.0	3198803.0	178840.1
Length Wtd. (ft)	215.63	Wetted Per. (ft)	1906.57	426.91	90.51
Min Ch El (ft)	17.37	Shear (lb/sq ft)	0.10	0.15	0.07
Alpha	1.02	Stream Power (lb/ft s)	0.27	0.44	0.11
Frctn Loss (ft)	0.02	Cum Volume (acre-ft)	1106.80	352.92	125.01
C & E Loss (ft)	0.00	Cum SA (acres)	60.89	15.03	11.05

CROSS SECTION

RIVER: San Mateo Creek
REACH: Lower RS: 2075.420

INPUT
Description:
Station Elevation Data num= 87

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	56.14	14.77	54.31	19	52.24	27.57	46.86	35.56	43.25
39.25	42.77	44.96	41.01	52.02	37.81	57.89	37.63	65.16	34.08
69.88	31.11	75.99	28.75	82.17	26.85	88.44	25.31	90.58	25.16
126.36	27.69	254.47	25.75	460.21	26.05	596.07	26.4	637.79	26.45
957.52	26.78	1023.17	26.78	1089.97	26.83	1353.33	27.4	1459.51	27.35
1581.22	27.4	1936.42	26.32	1943.98	26.24	1949.29	26.07	1956.6	25.84
2078.61	22.19	2098.24	21.45	2109.81	20.82	2118.13	20.67	2130.12	20.28
2141.05	19.69	2151.46	20.58	2183.71	21.18	2203.83	22.33	2208.77	22.61
2216.07	23.3	2222.31	24.59	2247.77	25.87	2255.23	26.38	2281.94	25.74
2320.81	25.31	2324.59	25.1	2414.84	20.13	2419.95	19.76	2435.57	18.62
2445.33	18.15	2495.95	15.99	2535.91	14.32	2558.42	13.37	2601.04	13.16
2662.71	13.1	2663.22	13.1	2686.86	14.05	2687.18	14.06	2714.03	16
2741.84	18	2763.44	19.28	2774.96	19.63	2789.04	20.05	2827.31	21.15
2832.73	21.64	2838.78	22.73	2852.04	24.01	2853.37	24.68	2855.4	25.2
2863.67	27.8	2871.29	31.67	2889.08	41.1	2904.28	43.42	2905.7	43.98
2910.35	44.37	2918.94	46.39	2921.14	47.14	2934.71	54.07	2935.48	54.48
2936.41	55.21	2955.33	68.92	2957.51	70.01	2964.63	74.6	2978.74	78.46
2987.73	78.95	3018.94	79.77						

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	2203.83	.07	2324.59	.05	2535.91	.035	2686.86	.05

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
2495.95	2714.03	167.27 168.07	167.81	.1	.3

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
0	596.07	40	T
596.07	2255.23	26.38	F

CROSS SECTION OUTPUT Profile #Q50

E.G. Elev (ft)	28.54	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.34	Wt. n-Val.	0.043	0.038	0.050
W.S. Elev (ft)	28.20	Reach Len. (ft)	167.27	168.07	167.81
Crit W.S. (ft)	22.29	Flow Area (sq ft)	4872.58	3121.80	1190.49
E.G. Slope (ft/ft)	0.000634	Area (sq ft)	5889.61	3121.80	1190.49
Q Total (cfs)	31354.00	Flow (cfs)	9695.94	18136.41	3521.65
Top Width (ft)	2786.68	Top Width (ft)	2418.17	218.08	150.43
Vel Total (ft/s)	3.41	Avg. Vel. (ft/s)	1.99	5.81	2.96
Max Chl Dpth (ft)	15.10	Hydr. Depth (ft)	2.56	14.31	7.91
Conv. Total (cfs)	1245209.0	Conv. (cfs)	385069.5	720278.8	139860.6
Length Wtd. (ft)	167.75	Wetted Per. (ft)	1900.56	218.22	151.46
Min Ch El (ft)	13.10	Shear (lb/sq ft)	0.10	0.57	0.31
Alpha	1.86	Stream Power (lb/ft s)	0.20	3.29	0.92
Frctn Loss (ft)	0.06	Cum Volume (acre-ft)	189.85	155.84	32.31
C & E Loss (ft)	0.06	Cum SA (acres)	39.00	13.47	7.95

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

CROSS SECTION OUTPUT Profile #Q100

E.G. Elev (ft)	31.91	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.16	Wt. n-Val.	0.039	0.038	0.050
W.S. Elev (ft)	31.74	Reach Len. (ft)	167.27	168.07	167.81
Crit W.S. (ft)	24.38	Flow Area (sq ft)	11605.38	3894.63	1735.94
E.G. Slope (ft/ft)	0.000282	Area (sq ft)	14476.38	3894.63	1735.94
Q Total (cfs)	47312.00	Flow (cfs)	25631.16	17423.57	4257.27
Top Width (ft)	2802.56	Top Width (ft)	2427.08	218.08	157.40
Vel Total (ft/s)	2.74	Avg. Vel. (ft/s)	2.21	4.47	2.45
Max Chl Dpth (ft)	18.64	Hydr. Depth (ft)	6.11	17.86	11.03
Conv. Total (cfs)	2818202.0	Conv. (cfs)	1526754.0	1037858.0	253590.0
Length Wtd. (ft)	167.61	Wetted Per. (ft)	1900.56	218.22	159.29
Min Ch El (ft)	13.10	Shear (lb/sq ft)	0.11	0.31	0.19
Alpha	1.40	Stream Power (lb/ft s)	0.24	1.40	0.47
Frctn Loss (ft)	0.03	Cum Volume (acre-ft)	334.14	190.66	49.15
C & E Loss (ft)	0.02	Cum SA (acres)	43.17	13.47	8.64

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

CROSS SECTION OUTPUT Profile #Q100HC

E.G. Elev (ft)	44.76	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.11	Wt. n-Val.	0.038	0.038	0.050
W.S. Elev (ft)	44.66	Reach Len. (ft)	167.27	168.07	167.81
Crit W.S. (ft)	29.75	Flow Area (sq ft)	36139.99	6710.87	3954.13
E.G. Slope (ft/ft)	0.000077	Area (sq ft)	46028.52	6710.87	3954.13
Q Total (cfs)	118891.00	Flow (cfs)	89045.82	22376.31	7468.87
Top Width (ft)	2879.13	Top Width (ft)	2463.50	218.08	197.54
Vel Total (ft/s)	2.54	Avg. Vel. (ft/s)	2.46	3.33	1.89
Max Chl Dpth (ft)	31.56	Hydr. Depth (ft)	19.02	30.77	20.02
Conv. Total (cfs)	13582480.0	Conv. (cfs)	10172870.0	2556340.0	853266.6
Length Wtd. (ft)	167.48	Wetted Per. (ft)	1900.56	218.22	202.09
Min Ch El (ft)	13.10	Shear (lb/sq ft)	0.09	0.15	0.09
Alpha	1.06	Stream Power (lb/ft s)	0.22	0.49	0.18

Frctn Loss (ft)	0.01	Cum Volume (acre-ft)	889.62	310.91	113.42
C & E Loss (ft)	0.00	Cum SA (acres)	48.85	13.49	10.41

CROSS SECTION

RIVER: San Mateo Creek
REACH: Lower RS: 1907.350

INPUT
Description:
Station Elevation Data num= 66

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	44.14	8.14	40.06	15.75	35.14	25.65	31.24	35.72	28.07
45.97	25.5	49.47	25.25	108.86	29.55	333.9	26.31	503.43	26.59
568.57	26.47	620	26.24	715.16	25.82	922.32	25.68	1102.29	25.73
1684.23	23.31	1876.22	23.1	1960.34	20.75	2123.72	19.23	2153.15	18.62
2187.86	17.51	2202.67	17.03	2221.09	17.59	2232.69	18.93	2232.87	18.94
2233.62	19.26	2239.75	21.26	2249.93	25.47	2259.31	26.83	2291.49	25.66
2309.73	25.25	2319.57	24.93	2333.71	23.84	2344.88	22.98	2381.9	19.92
2423.76	16.33	2453.52	14.85	2474.37	13.94	2508.74	13.18	2555.4	12.14
2619.59	10.65	2632.17	10.36	2668.37	12.74	2677.94	13.33	2685.8	13.81
2707.32	10.96	2709.78	10.6	2710.95	10.66	2736.96	13.36	2742.11	14.13
2743.31	14.78	2762.87	17.25	2773.99	19.15	2782.14	20.53	2790.38	20.96
2812.63	23.5	2833.42	26.13	2840.74	28.23	2858.94	33.06	2864.5	36.86
2881.91	46.17	2889.82	50.73	2902.76	58.27	2910.76	63.13	2911.45	63.3
2917.14	65.31								

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	2187.86	.07	2333.71	.05	2508.74	.035	2742.11	.05

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
2453.52	2743.31	205 206.77	220.21	.1	.3

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
0	922.32	40	T
922.32	2259.31	26.83	F

CROSS SECTION OUTPUT Profile #Q50

E.G. Elev (ft)	28.42	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.12	Wt. n-Val.	0.039	0.038	0.050
W.S. Elev (ft)	28.29	Reach Len. (ft)	205.00	206.77	220.21
Crit W.S. (ft)	19.46	Flow Area (sq ft)	8084.87	4622.57	698.69
E.G. Slope (ft/ft)	0.000210	Area (sq ft)	9579.04	4622.57	698.69
Q Total (cfs)	31354.00	Flow (cfs)	13758.48	16487.58	1107.95
Top Width (ft)	2701.16	Top Width (ft)	2313.71	289.79	97.66
Vel Total (ft/s)	2.34	Avg. Vel. (ft/s)	1.70	3.57	1.59
Max Chl Dpth (ft)	17.93	Hydr. Depth (ft)	5.28	15.95	7.15
Conv. Total (cfs)	2166082.0	Conv. (cfs)	950500.6	1139040.0	76542.3
Length Wtd. (ft)	206.15	Wetted Per. (ft)	1533.10	290.54	98.72
Min Ch El (ft)	10.36	Shear (lb/sq ft)	0.07	0.21	0.09
Alpha	1.47	Stream Power (lb/ft s)	0.12	0.74	0.15
Frctn Loss (ft)	0.04	Cum Volume (acre-ft)	160.15	140.90	28.67
C & E Loss (ft)	0.01	Cum SA (acres)	29.92	12.49	7.47

Warning: Divided flow computed for this cross-section.
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 #Q100

E.G. Elev (ft)	31.86	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.11	Wt. n-Val.	0.039	0.038	0.050
W.S. Elev (ft)	31.75	Reach Len. (ft)	205.00	206.77	220.21
Crit W.S. (ft)	21.59	Flow Area (sq ft)	13380.18	5624.74	1058.97
E.G. Slope (ft/ft)	0.000145	Area (sq ft)	17895.85	5624.74	1058.97
Q Total (cfs)	47312.00	Flow (cfs)	26576.02	19041.78	1694.21
Top Width (ft)	2829.65	Top Width (ft)	2429.16	289.79	110.69
Vel Total (ft/s)	2.36	Avg. Vel. (ft/s)	1.99	3.39	1.60
Max Chl Dpth (ft)	21.39	Hydr. Depth (ft)	8.74	19.41	9.57
Conv. Total (cfs)	3924956.0	Conv. (cfs)	2204720.0	1579687.0	140549.8
Length Wtd. (ft)	206.03	Wetted Per. (ft)	1533.10	290.54	112.20
Min Ch El (ft)	10.36	Shear (lb/sq ft)	0.08	0.18	0.09
Alpha	1.24	Stream Power (lb/ft s)	0.16	0.59	0.14
Frctn Loss (ft)	0.03	Cum Volume (acre-ft)	271.98	172.30	43.77
C & E Loss (ft)	0.00	Cum SA (acres)	33.84	12.49	8.12

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 #Q100HC

E.G. Elev (ft)	44.75	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.11	Wt. n-Val.	0.038	0.038	0.050
W.S. Elev (ft)	44.64	Reach Len. (ft)	205.00	206.77	220.21
Crit W.S. (ft)	27.41	Flow Area (sq ft)	33112.17	9359.15	2656.15
E.G. Slope (ft/ft)	0.000069	Area (sq ft)	49370.07	9359.15	2656.15
Q Total (cfs)	118891.00	Flow (cfs)	83556.33	30679.10	4655.57
Top Width (ft)	2879.04	Top Width (ft)	2453.52	289.79	135.73
Vel Total (ft/s)	2.63	Avg. Vel. (ft/s)	2.52	3.28	1.75
Max Chl Dpth (ft)	34.28	Hydr. Depth (ft)	21.62	32.30	19.57
Conv. Total (cfs)	14303230.0	Conv. (cfs)	10052280.0	3690861.0	560090.7
Length Wtd. (ft)	205.96	Wetted Per. (ft)	1533.10	290.54	140.53
Min Ch El (ft)	10.36	Shear (lb/sq ft)	0.09	0.14	0.08
Alpha	1.06	Stream Power (lb/ft s)	0.24	0.46	0.14
Frctn Loss (ft)	0.02	Cum Volume (acre-ft)	706.46	279.90	100.69
C & E Loss (ft)	0.00	Cum SA (acres)	39.41	12.51	9.77

Warning: The cross-section end points had to be extended vertically for the computed water surface.
Note: Manning's n values were composited to a single value in the main channel.

CROSS SECTION

RIVER: San Mateo Creek
REACH: Lower RS: 1700.584

INPUT
Description: Updated Manning's N Distribution
Station Elevation Data num= 88

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	51.57	5.89	48.65	17.96	40.9	33.64	34.78	49.57	29.8
65.75	25.78	71.26	25.38	164.51	32.07	424.44	28.26	435.81	28.64
456.68	28.36	480.09	27.56	521.88	26.72	628.46	26.53	695.8	26.23
832.49	25.62	924.21	24.72	975.25	24.61	1001.28	24.66	1097.17	23.95
1904.23	20.27	1954.8	20.01	2008.9	19.38	2032.35	19.16	2250.8	17.41
2263.36	17.56	2267.25	17.61	2270.07	17.66	2281.28	17.89	2295.91	18.31
2307.04	18.63	2315.53	19.61	2326.96	22.62	2336.55	25.3	2353.74	26.81
2356.82	27.13	2363.23	26.93	2383.7	26.36	2405.78	21.32	2412.11	20.56
2413.65	20.66	2416.62	20.86	2429.98	24.04	2430.84	24.04	2440.61	23.56
2440.74	23.54	2440.82	23.53	2462.16	19.51	2473.05	16.02	2478.88	13.19
2496.22	13.42	2530.96	13.57	2549.15	13.63	2633.31	13.54	2641.5	13.54
2646.06	13.41	2655.02	13.17	2674.52	12.63	2678.56	12.5	2708	11.55
2725.66	10.98	2731.49	10.79	2737.91	10.54	2744.96	10.91	2757.58	12.14
2759.22	12.74	2761.01	13.31	2765.65	15.01	2773.4	18.28	2775.26	19.73
2783.33	22.93	2784.63	23.27	2792.92	25.03	2795.85	25.7	2796.54	25.7
2798.66	25.83	2835.35	27.58	2844.32	29.5	2864.09	33.52	2877.06	40.47
2894.05	49.55	2894.66	49.8	2908.66	57.76	2909.94	58.43	2916.25	60.82
2928.34	65.53	2934.9	66.29	2943.48	67.12				

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	2295.91	.07	2413.65	.05	2678.56	.035	2708	.05

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
2473.05	2765.65	191.48	175.29	163.76	.1	.3

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
0	1340	40	T
1340	2356.82	27.13	F

CROSS SECTION OUTPUT Profile #*Q50*

			Left OB	Channel	Right OB
E.G. Elev (ft)	28.36	Element			
Vel Head (ft)	0.09	Wt. n-Val.	0.036	0.048	0.050
W.S. Elev (ft)	28.27	Reach Len. (ft)	191.48	175.29	163.76
Crit W.S. (ft)	20.03	Flow Area (sq ft)	8488.51	4488.31	278.58
E.G. Slope (ft/ft)	0.000199	Area (sq ft)	11381.46	4488.31	278.58
Q Total (cfs)	31354.00	Flow (cfs)	18922.71	12151.53	279.76
Top Width (ft)	2436.55	Top Width (ft)	2071.01	292.60	72.94
Vel Total (ft/s)	2.37	Avg. Vel. (ft/s)	2.23	2.71	1.00
Max Chl Dpth (ft)	17.73	Hydr. Depth (ft)	7.49	15.34	3.82
Conv. Total (cfs)	2222728.0	Conv. (cfs)	1341457.0	861438.9	19832.5
Length Wtd. (ft)	181.03	Wetted Per. (ft)	1135.92	293.87	75.13
Min Ch El (ft)	10.54	Shear (lb/sq ft)	0.09	0.19	0.05
Alpha	1.05	Stream Power (lb/ft s)	0.21	0.51	0.05
Frctn Loss (ft)	0.08	Cum Volume (acre-ft)	110.83	119.28	26.20
C & E Loss (ft)	0.07	Cum SA (acres)	19.60	11.11	7.04

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

CROSS SECTION OUTPUT Profile #Q100

E.G. Elev (ft)	31.82	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.10	Wt. n-Val.	0.037	0.048	0.050
W.S. Elev (ft)	31.72	Reach Len. (ft)	191.48	175.29	163.76
Crit W.S. (ft)	22.33	Flow Area (sq ft)	12394.01	5496.87	558.35
E.G. Slope (ft/ft)	0.000160	Area (sq ft)	19142.14	5496.87	558.35
Q Total (cfs)	47312.00	Flow (cfs)	31379.76	15235.54	696.71
Top Width (ft)	2783.07	Top Width (ft)	2400.88	292.60	89.59
Vel Total (ft/s)	2.56	Avg. Vel. (ft/s)	2.53	2.77	1.25
Max Chl Dpth (ft)	21.18	Hydr. Depth (ft)	10.94	18.79	6.23
Conv. Total (cfs)	3745446.0	Conv. (cfs)	2484173.0	1206119.0	55154.6
Length Wtd. (ft)	185.28	Wetted Per. (ft)	1135.92	293.87	92.14
Min Ch El (ft)	10.54	Shear (lb/sq ft)	0.11	0.19	0.06
Alpha	1.03	Stream Power (lb/ft s)	0.28	0.52	0.08
Frctn Loss (ft)	0.04	Cum Volume (acre-ft)	184.83	145.90	39.68
C & E Loss (ft)	0.01	Cum SA (acres)	22.48	11.11	7.61

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

CROSS SECTION OUTPUT Profile #Q100HC

E.G. Elev (ft)	44.73	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.15	Wt. n-Val.	0.037	0.048	0.050
W.S. Elev (ft)	44.58	Reach Len. (ft)	191.48	175.29	163.76
Crit W.S. (ft)	27.13	Flow Area (sq ft)	26959.48	9258.27	1929.93
E.G. Slope (ft/ft)	0.000096	Area (sq ft)	50597.13	9258.27	1929.93
Q Total (cfs)	118891.00	Flow (cfs)	87333.27	28071.68	3486.05
Top Width (ft)	2872.51	Top Width (ft)	2460.81	292.60	119.09
Vel Total (ft/s)	3.12	Avg. Vel. (ft/s)	3.24	3.03	1.81
Max Chl Dpth (ft)	34.04	Hydr. Depth (ft)	23.79	31.64	16.21
Conv. Total (cfs)	12154720.0	Conv. (cfs)	8928439.0	2869883.0	356393.4
Length Wtd. (ft)	186.37	Wetted Per. (ft)	1135.92	293.87	124.59
Min Ch El (ft)	10.54	Shear (lb/sq ft)	0.14	0.19	0.09
Alpha	1.03	Stream Power (lb/ft s)	0.46	0.57	0.17
Frctn Loss (ft)	0.03	Cum Volume (acre-ft)	471.23	235.72	89.10
C & E Loss (ft)	0.02	Cum SA (acres)	27.85	11.13	9.12

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

CROSS SECTION

RIVER: San Mateo Creek
REACH: Lower RS: 1525.293

INPUT
Description:
Station Elevation Data num= 78

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	51.07	5.07	47.72	26.85	39	49.08	31.89	71.8	26.11
79.57	25.54	194.28	33.97	213.43	35.33	257	34.67	319.43	36.65
432.1	35.1	465.96	33.93	560.72	30.37	651.59	27.46	661.61	27.13

719.9	25.24	898.8	23.32	1140.23	22.67	1274.91	22.87	1794.68	18.94		
1828.89	18.72	1940.3	18.45	2055.67	18.11	2245.94	18.88	2286.04	19.11		
2300.32	19.03	2342.84	18.78	2371.7	19.47	2373.54	19.69	2375.71	19.36		
2382.38	18.32	2388.08	16.96	2399.37	17.01	2416.19	17.48	2436.79	19.12		
2441.57	20.55	2456.96	26.12	2474.44	28.13	2475.92	28.33	2485.12	27.98		
2488.94	27.69	2495.78	26.09	2510.48	19.33	2510.88	19.12	2511.05	19.12		
2530.93	19.8	2536.26	19.82	2557.09	19.91	2567.51	20.6	2576.45	20.27		
2613.85	15.31	2628.35	13.34	2636.67	12.85	2652.73	12.23	2717.45	9.03		
2725	8.84	2752.8	8.14	2792.83	9.26	2799.13	9.44	2803.06	9.59		
2805.02	9.98	2822.59	11.82	2827.86	13.22	2833.37	15.07	2837.72	18.7		
2846.22	23.39	2849.21	25.06	2861.99	28.36	2867.24	29.72	2868.81	30.21		
2886.11	39.95	2886.67	40.17	2899.72	44.58	2902.16	45.24	2920	52.33		
2934.84	58.15	2940.66	60.74	2949.13	63.81						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.035	2300.32	.07	2536.26	.05

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
2613.85	2833.37	330.77	218.57 153.37	.1	.3

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
0	1940.3	40	T
1940.3	2475.92	28.33	F

CROSS SECTION OUTPUT Profile #Q50

E.G. Elev (ft)	28.22	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.75	Wt. n-Val.	0.054	0.050	0.050
W.S. Elev (ft)	27.47	Reach Len. (ft)	330.77	218.57	153.37
Crit W.S. (ft)	19.22	Flow Area (sq ft)	936.96	3720.86	121.53
E.G. Slope (ft/ft)	0.001402	Area (sq ft)	12596.91	3720.86	121.53
Q Total (cfs)	31354.00	Flow (cfs)	3752.40	27245.40	356.20
Top Width (ft)	2225.26	Top Width (ft)	1980.58	219.52	25.16
Vel Total (ft/s)	6.56	Avg. Vel. (ft/s)	4.00	7.32	2.93
Max Chl Dpth (ft)	19.33	Hydr. Depth (ft)	7.56	16.95	4.83
Conv. Total (cfs)	837417.1	Conv. (cfs)	100220.8	727682.7	9513.6
Length Wtd. (ft)	226.22	Wetted Per. (ft)	126.02	220.41	28.43
Min Ch El (ft)	8.14	Shear (lb/sq ft)	0.65	1.48	0.37
Alpha	1.13	Stream Power (lb/ft s)	2.61	10.82	1.10
Frctn Loss (ft)	0.30	Cum Volume (acre-ft)	58.12	102.76	25.45
C & E Loss (ft)	0.03	Cum SA (acres)	10.70	10.08	6.85

Warning: Divided flow computed for this cross-section.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.

CROSS SECTION OUTPUT Profile #Q100

E.G. Elev (ft)	31.77	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.21	Wt. n-Val.	0.043	0.050	0.050
W.S. Elev (ft)	31.56	Reach Len. (ft)	330.77	218.57	153.37
Crit W.S. (ft)	22.27	Flow Area (sq ft)	8248.75	4620.02	254.59
E.G. Slope (ft/ft)	0.000332	Area (sq ft)	21191.26	4620.02	254.59
Q Total (cfs)	47312.00	Flow (cfs)	27844.21	19008.43	459.36
Top Width (ft)	2453.41	Top Width (ft)	2196.05	219.52	37.84
Vel Total (ft/s)	3.61	Avg. Vel. (ft/s)	3.38	4.11	1.80
Max Chl Dpth (ft)	23.42	Hydr. Depth (ft)	12.25	21.05	6.73

Conv. Total (cfs)	2597975.0	Conv. (cfs)	1528969.0	1043782.0	25224.2
Length Wtd. (ft)	252.86	Wetted Per. (ft)	677.33	220.41	41.82
Min Ch El (ft)	8.14	Shear (lb/sq ft)	0.25	0.43	0.13
Alpha	1.04	Stream Power (lb/ft s)	0.85	1.79	0.23
Frctn Loss (ft)	0.15	Cum Volume (acre-ft)	96.18	125.55	38.15
C & E Loss (ft)	0.08	Cum SA (acres)	12.37	10.08	7.37

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

CROSS SECTION OUTPUT Profile #Q100HC

E.G. Elev (ft)	44.68	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.35	Wt. n-Val.	0.043	0.050	0.050
W.S. Elev (ft)	44.33	Reach Len. (ft)	330.77	218.57	153.37
Crit W.S. (ft)	28.33	Flow Area (sq ft)	16846.80	7422.25	893.33
E.G. Slope (ft/ft)	0.000261	Area (sq ft)	52999.53	7422.25	893.33
Q Total (cfs)	118891.00	Flow (cfs)	79449.29	37154.19	2287.52
Top Width (ft)	2885.43	Top Width (ft)	2600.31	219.52	65.60
Vel Total (ft/s)	4.72	Avg. Vel. (ft/s)	4.72	5.01	2.56
Max Chl Dpth (ft)	36.19	Hydr. Depth (ft)	25.01	33.81	13.62
Conv. Total (cfs)	7360446.0	Conv. (cfs)	4918642.0	2300186.0	141618.3
Length Wtd. (ft)	257.53	Wetted Per. (ft)	677.33	220.41	72.51
Min Ch El (ft)	8.14	Shear (lb/sq ft)	0.41	0.55	0.20
Alpha	1.02	Stream Power (lb/ft s)	1.91	2.75	0.51
Frctn Loss (ft)	0.14	Cum Volume (acre-ft)	243.53	202.15	83.79
C & E Loss (ft)	0.16	Cum SA (acres)	16.72	10.10	8.78

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream 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: San Mateo Creek
REACH: Lower RS: 1306.721

INPUT
Description:
Station Elevation Data num= 90

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	50.27	7.39	50.71	13.86	51.26	25.56	52.19	28.23	52.38
32.56	52.69	37.15	52.7	55.11	52.64	66.57	52.55	84.24	52.96
85.62	52.94	86.9	52.9	88.44	52.94	120.44	52.73	125.16	52.69
134.36	52.8	135.53	52.82	152.02	52.1	171.05	53.23	178.87	53.3
242.82	52.98	248.31	52.92	271.23	53.28	275.12	53.21	277.91	53.21
336.46	53.28	338.36	53.3	339.29	53.35	341.53	53.35	365.78	53.08
389.33	52.59	396.79	52.51	407.25	52.6	411.86	52.3	415.45	51.1
422.62	46.99	434.58	39.78	439.64	37.68	457.1	30.09	483.3	20.4
483.48	20.34	483.5	20.33	483.6	20.3	507.69	14.45	528.46	13.2

530.21	13.11	558.45	11.61	561.4	11.47	611.24	10.54	621.64	10.3
641.47	9.84	679.09	10.12	699.71	10.62	718.91	11.08	735.19	11.03
748.6	11.41	756.57	11.69	768.08	12.29	787.67	14.67	795.7	17.97
802.54	20.15	816.15	25.4	817.26	25.75	818.08	26.14	818.77	26.26
840.21	32.25	847.14	32.63	849.85	33.19	854.99	36.28	867.48	44.01
874.58	47.69	878.1	49.51	890.65	55.08	895.99	58.26	897.3	58.74
899.18	59.58	908.75	63.85	911.62	64.34	919.2	64.45	925.85	64.35
927.15	64.29	934.51	64.5	940.09	64.07	944.42	64.19	958.07	65
1000	65.57	1005.44	65.51	1007.75	65.54	1014.93	65.6	1033.54	66.55

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.02	134.36	.05	899.18	.02

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
507.69	787.67	221.39	253.51	221.56	.3	.5

CROSS SECTION OUTPUT Profile #Q50

E.G. Elev (ft)	27.89	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.65	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	27.24	Reach Len. (ft)	20.00	20.00	20.00
Crit W.S. (ft)	18.67	Flow Area (sq ft)	302.93	4454.46	209.73
E.G. Slope (ft/ft)	0.001244	Area (sq ft)	302.93	4454.46	209.73
Q Total (cfs)	31354.00	Flow (cfs)	1135.13	29518.18	700.69
Top Width (ft)	357.47	Top Width (ft)	42.88	279.98	34.60
Vel Total (ft/s)	6.31	Avg. Vel. (ft/s)	3.75	6.63	3.34
Max Chl Dpth (ft)	17.40	Hydr. Depth (ft)	7.06	15.91	6.06
Conv. Total (cfs)	888880.3	Conv. (cfs)	32180.7	836835.1	19864.5
Length Wtd. (ft)	20.00	Wetted Per. (ft)	44.82	280.26	36.86
Min Ch El (ft)	9.84	Shear (lb/sq ft)	0.52	1.23	0.44
Alpha	1.06	Stream Power (lb/ft s)	1.97	8.18	1.48
Frctn Loss (ft)	0.03	Cum Volume (acre-ft)	9.15	82.25	24.86
C & E Loss (ft)	0.07	Cum SA (acres)	3.01	8.82	6.75

CROSS SECTION OUTPUT Profile #Q100

E.G. Elev (ft)	31.54	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.97	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	30.58	Reach Len. (ft)	20.00	20.00	20.00
Crit W.S. (ft)	20.96	Flow Area (sq ft)	461.03	5388.73	345.13
E.G. Slope (ft/ft)	0.001447	Area (sq ft)	461.03	5388.73	345.13
Q Total (cfs)	47312.00	Flow (cfs)	2169.76	43713.95	1428.29
Top Width (ft)	378.24	Top Width (ft)	51.71	279.98	46.55
Vel Total (ft/s)	7.64	Avg. Vel. (ft/s)	4.71	8.11	4.14
Max Chl Dpth (ft)	20.74	Hydr. Depth (ft)	8.92	19.25	7.41
Conv. Total (cfs)	1243972.0	Conv. (cfs)	57049.3	1149369.0	37554.0
Length Wtd. (ft)	20.00	Wetted Per. (ft)	54.26	280.26	49.26
Min Ch El (ft)	9.84	Shear (lb/sq ft)	0.77	1.74	0.63
Alpha	1.07	Stream Power (lb/ft s)	3.61	14.09	2.62
Frctn Loss (ft)	0.04	Cum Volume (acre-ft)	13.97	100.44	37.10
C & E Loss (ft)	0.11	Cum SA (acres)	3.84	8.82	7.22

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.

CROSS SECTION OUTPUT Profile #Q100HC

E.G. Elev (ft)	44.39	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.95	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	42.43	Reach Len. (ft)	20.00	20.00	20.00
Crit W.S. (ft)	28.70	Flow Area (sq ft)	1234.50	8708.72	1128.37
E.G. Slope (ft/ft)	0.001601	Area (sq ft)	1234.50	8708.72	1128.37
Q Total (cfs)	118891.00	Flow (cfs)	8898.80	102342.80	7649.40
Top Width (ft)	434.76	Top Width (ft)	77.51	279.98	77.26
Vel Total (ft/s)	10.74	Avg. Vel. (ft/s)	7.21	11.75	6.78
Max Chl Dpth (ft)	32.59	Hydr. Depth (ft)	15.93	31.10	14.60
Conv. Total (cfs)	2971650.0	Conv. (cfs)	222423.0	2558032.0	191194.8
Length Wtd. (ft)	20.00	Wetted Per. (ft)	82.70	280.26	82.88
Min Ch El (ft)	9.84	Shear (lb/sq ft)	1.49	3.11	1.36
Alpha	1.09	Stream Power (lb/ft s)	10.75	36.49	9.22
Frctn Loss (ft)	0.05	Cum Volume (acre-ft)	37.62	161.68	80.23
C & E Loss (ft)	0.23	Cum SA (acres)	6.56	8.84	8.52

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

BRIDGE

RIVER: San Mateo Creek
REACH: Lower RS: 1300

INPUT
Description: I-5 Bridge
Distance from Upstream XS = 20
Deck/Roadway Width = 162
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
0	50.03	0	401.9	58.07	0	401.9	58.07	52.49
907.9	68.19	62.61	907.9	68.19	0	1200	74.03	0

Upstream Bridge Cross Section Data
Station Elevation Data num= 90

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	50.27	7.39	50.71	13.86	51.26	25.56	52.19	28.23	52.38
32.56	52.69	37.15	52.7	55.11	52.64	66.57	52.55	84.24	52.96
85.62	52.94	86.9	52.9	88.44	52.94	120.44	52.73	125.16	52.69
134.36	52.8	135.53	52.82	152.02	52.1	171.05	53.23	178.87	53.3
242.82	52.98	248.31	52.92	271.23	53.28	275.12	53.21	277.91	53.21
336.46	53.28	338.36	53.3	339.29	53.35	341.53	53.35	365.78	53.08
389.33	52.59	396.79	52.51	407.25	52.6	411.86	52.3	415.45	51.1
422.62	46.99	434.58	39.78	439.64	37.68	457.1	30.09	483.3	20.4
483.48	20.34	483.5	20.33	483.6	20.3	507.69	14.45	528.46	13.2
530.21	13.11	558.45	11.61	561.4	11.47	611.24	10.54	621.64	10.3
641.47	9.84	679.09	10.12	699.71	10.62	718.91	11.08	735.19	11.03
748.6	11.41	756.57	11.69	768.08	12.29	787.67	14.67	795.7	17.97
802.54	20.15	816.15	25.4	817.26	25.75	818.08	26.14	818.77	26.26
840.21	32.25	847.14	32.63	849.85	33.19	854.99	36.28	867.48	44.01
874.58	47.69	878.1	49.51	890.65	55.08	895.99	58.26	897.3	58.74
899.18	59.58	908.75	63.85	911.62	64.34	919.2	64.45	925.85	64.35

927.15	64.29	934.51	64.5	940.09	64.07	944.42	64.19	958.07	65
1000	65.57	1005.44	65.51	1007.75	65.54	1014.93	65.6	1033.54	66.55

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.02	134.36	.05	899.18	.02

Bank Sta: Left Right Coeff Contr. Expan.

Left	Right	Coeff Contr.	Expan.
507.69	787.67	.3	.5

Downstream Deck/Roadway Coordinates

num= 6

Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord
0	53.47	0	230	58.07	0	230	58.07	52.49
736	68.19	62.61	736	68.19	0	1200	77.47	0

Downstream Bridge Cross Section Data

Station Elevation Data num= 79

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	48.99	.6	48.97	35.35	49.91	61.75	53.81	61.78	53.81
61.81	53.82	83.28	54.31	91.24	54.54	98.22	54.53	109	54.19
114.66	54.06	138.42	54.21	143.5	54.25	175.83	54.37	183.22	54.15
200.82	54.33	209.98	53.9	220.67	54.17	226.57	53.67	229.54	53.24
232.27	52.57	234.56	51.54	237.5	50.31	251.74	41.4	271.79	32
286.55	24.61	302.37	15.01	306.27	14.37	311.05	13.38	315.99	12.63
320.82	12.88	343.05	13.99	347.74	14.27	351.53	14.31	381.31	14.6
391.04	14.4	429.91	13.32	443.95	12.85	481.63	11.63	504.45	12.84
504.82	12.85	541.43	13.82	570.22	15	602	16.29	602.23	16.31
603.01	16.42	630.2	20.63	634.39	22.22	653.73	27.04	654.8	27.32
656.2	27.75	679.92	35.43	682.86	35.51	690.33	39.43	697.91	43.37
713.85	53.87	721.88	58.53	724.16	59.87	729.07	61.76	733.98	63.4
744.31	63.95	750.69	64.23	752.82	64.22	753.93	64.41	765.94	66.02
768.65	66.34	774.72	66.48	780.96	66.85	792.91	66.81	804.58	66.96
814.86	66.99	828.41	67.2	846.92	66.85	867.3	66.49	896.4	66.97
900.58	67.04	914.56	67.11	934.65	66.8	943.58	67.55		

Manning's n Values num= 2

Sta	n Val	Sta	n Val
0	.05	896.4	.02

Bank Sta: Left Right Coeff Contr. Expan.

Left	Right	Coeff Contr.	Expan.
302.37	570.22	.3	.5

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 = 60
Energy head used in spillway design =
Spillway height used in design =
Weir crest shape = Broad Crested

Number of Piers = 4

Pier Data

Pier Station Upstream= 501.9 Downstream= 330

Upstream num= 2

Width	Elev	Width	Elev
12.25	0	12.25	168

Downstream num= 2

```
    Width   Elev    Width   Elev
   12.25       0   12.25     168

Pier Data
Pier Station     Upstream=   603.9    Downstream=     432
Upstream     num=        2
    Width   Elev    Width   Elev
   12.25       0   12.25     168
Downstream     num=        2
    Width   Elev    Width   Elev
   12.25       0   12.25     168

Pier Data
Pier Station     Upstream=   705.9    Downstream=     534
Upstream     num=        2
    Width   Elev    Width   Elev
   12.25       0   12.25     168
Downstream     num=        2
    Width   Elev    Width   Elev
   12.25       0   12.25     168

Pier Data
Pier Station     Upstream=   807.9    Downstream=     636
Upstream     num=        2
    Width   Elev    Width   Elev
   12.25       0   12.25     168
Downstream     num=        2
    Width   Elev    Width   Elev
   12.25       0   12.25     168

Number of Bridge Coefficient Sets =  1

Low Flow Methods and Data
       Energy
Selected Low Flow Methods = Energy

High Flow Method
       Energy Only

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

BRIDGE OUTPUT  Profile #Q50

  E.G. US. (ft)              27.89   Element                Inside BR US  Inside BR DS
  W.S. US. (ft)              27.24   E.G. Elev (ft)            27.79         27.14
  Q Total (cfs)           31354.00   W.S. Elev (ft)            26.92         25.87
  Q Bridge (cfs)          31354.00   Crit W.S. (ft)            19.19         21.40
  Q Weir (cfs)                       Max Chl Dpth (ft)         17.08         14.24
  Weir Sta Lft (ft)                  Vel Total (ft/s)           7.35          8.96
  Weir Sta Rgt (ft)                  Flow Area (sq ft)       4263.57       3497.40
  Weir Submerg                       Froude # Chl               0.34          0.46
  Weir Max Depth (ft)                Specif Force (cu ft)   39462.12      29399.54
  Min El Weir Flow (ft)      60.00   Hydr Depth (ft)           13.91         11.07
  Min El Prs (ft)            62.57   W.P. Total (ft)          405.84        401.78
```

Delta EG (ft)	1.13	Conv. Total (cfs)	639477.3	449429.0
Delta WS (ft)	1.51	Top Width (ft)	306.46	316.02
BR Open Area (sq ft)	15758.87	Frctn Loss (ft)	0.54	0.26
BR Open Vel (ft/s)	8.96	C & E Loss (ft)	0.12	0.12
Coef of Q		Shear Total (lb/sq ft)	1.58	2.64
Br Sel Method	Energy only	Power Total (lb/ft s)	11.59	23.71

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.

BRIDGE OUTPUT Profile #Q100

		Element	Inside BR US	Inside BR DS
E.G. US. (ft)	31.54	E.G. Elev (ft)	31.40	30.61
W.S. US. (ft)	30.58	W.S. Elev (ft)	30.08	28.84
Q Total (cfs)	47312.00	Crit W.S. (ft)	21.65	23.60
Q Bridge (cfs)	47312.00	Max Chl Dpth (ft)	20.24	17.21
Q Weir (cfs)		Vel Total (ft/s)	8.99	10.61
Weir Sta Lft (ft)		Flow Area (sq ft)	5261.96	4460.93
Weir Sta Rgt (ft)		Froude # Chl	0.38	0.49
Weir Submerg		Specif Force (cu ft)	60681.73	48086.00
Weir Max Depth (ft)		Hydr Depth (ft)	16.13	13.42
Min El Weir Flow (ft)	60.00	W.P. Total (ft)	451.91	443.09
Min El Prs (ft)	62.57	Conv. Total (cfs)	855784.9	637446.3
Delta EG (ft)	1.39	Top Width (ft)	326.29	332.48
Delta WS (ft)	1.85	Frctn Loss (ft)	0.65	0.28
BR Open Area (sq ft)	15758.87	C & E Loss (ft)	0.13	0.17
BR Open Vel (ft/s)	10.61	Shear Total (lb/sq ft)	2.22	3.46
Coef of Q		Power Total (lb/ft s)	19.98	36.72
Br Sel Method	Energy only			

BRIDGE OUTPUT Profile #Q100HC

		Element	Inside BR US	Inside BR DS
E.G. US. (ft)	44.39	E.G. Elev (ft)	44.10	43.21
W.S. US. (ft)	42.43	W.S. Elev (ft)	41.37	40.18
Q Total (cfs)	118891.00	Crit W.S. (ft)	30.10	31.49
Q Bridge (cfs)	118891.00	Max Chl Dpth (ft)	31.53	28.55
Q Weir (cfs)		Vel Total (ft/s)	12.77	13.89
Weir Sta Lft (ft)		Flow Area (sq ft)	9313.31	8562.38
Weir Sta Rgt (ft)		Froude # Chl	0.44	0.49
Weir Submerg		Specif Force (cu ft)	177451.60	157110.60
Weir Max Depth (ft)		Hydr Depth (ft)	24.36	22.04
Min El Weir Flow (ft)	60.00	W.P. Total (ft)	603.37	594.53
Min El Prs (ft)	62.57	Conv. Total (cfs)	1818831.0	1553500.0
Delta EG (ft)	1.72	Top Width (ft)	382.28	388.44
Delta WS (ft)	2.23	Frctn Loss (ft)	0.81	0.26
BR Open Area (sq ft)	15758.87	C & E Loss (ft)	0.09	0.28
BR Open Vel (ft/s)	13.89	Shear Total (lb/sq ft)	4.12	5.27
Coef of Q		Power Total (lb/ft s)	52.56	73.12
Br Sel Method	Energy only			

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream 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: San Mateo Creek
REACH: Lower RS: 1053.212

INPUT
Description:
Station Elevation Data num= 79

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	48.99	.6	48.97	35.35	49.91	61.75	53.81	61.78	53.81
61.81	53.82	83.28	54.31	91.24	54.54	98.22	54.53	109	54.19
114.66	54.06	138.42	54.21	143.5	54.25	175.83	54.37	183.22	54.15
200.82	54.33	209.98	53.9	220.67	54.17	226.57	53.67	229.54	53.24
232.27	52.57	234.56	51.54	237.5	50.31	251.74	41.4	271.79	32
286.55	24.61	302.37	15.01	306.27	14.37	311.05	13.38	315.99	12.63
320.82	12.88	343.05	13.99	347.74	14.27	351.53	14.31	381.31	14.6
391.04	14.4	429.91	13.32	443.95	12.85	481.63	11.63	504.45	12.84
504.82	12.85	541.43	13.82	570.22	15	602	16.29	602.23	16.31
603.01	16.42	630.2	20.63	634.39	22.22	653.73	27.04	654.8	27.32
656.2	27.75	679.92	35.43	682.86	35.51	690.33	39.43	697.91	43.37
713.85	53.87	721.88	58.53	724.16	59.87	729.07	61.76	733.98	63.4
744.31	63.95	750.69	64.23	752.82	64.22	753.93	64.41	765.94	66.02
768.65	66.34	774.72	66.48	780.96	66.85	792.91	66.81	804.58	66.96
814.86	66.99	828.41	67.2	846.92	66.85	867.3	66.49	896.4	66.97
900.58	67.04	914.56	67.11	934.65	66.8	943.58	67.55		

Manning's n Values num= 2

Sta	n Val	Sta	n Val
0	.05	896.4	.02

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
302.37	570.22	331.16	386.26	449.77	.3	.5

CROSS SECTION OUTPUT Profile #Q50

			Left OB	Channel	Right OB
E.G. Elev (ft)	26.76	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.03	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	25.73	Reach Len. (ft)	331.16	386.26	449.77
Crit W.S. (ft)		Flow Area (sq ft)	94.92	3281.25	568.71
E.G. Slope (ft/ft)	0.002841	Area (sq ft)	94.92	3281.25	568.71
Q Total (cfs)	31354.00	Flow (cfs)	410.93	27594.18	3348.89
Top Width (ft)	364.17	Top Width (ft)	18.06	267.85	78.26
Vel Total (ft/s)	7.95	Avg. Vel. (ft/s)	4.33	8.41	5.89
Max Chl Dpth (ft)	14.10	Hydr. Depth (ft)	5.26	12.25	7.27
Conv. Total (cfs)	588266.5	Conv. (cfs)	7709.9	517724.4	62832.2
Length Wtd. (ft)	395.56	Wetted Per. (ft)	21.01	268.22	79.34
Min Ch El (ft)	11.63	Shear (lb/sq ft)	0.80	2.17	1.27
Alpha	1.05	Stream Power (lb/ft s)	3.47	18.25	7.49
Frctn Loss (ft)	1.56	Cum Volume (acre-ft)	8.41	62.58	22.61
C & E Loss (ft)	0.18	Cum SA (acres)	2.88	7.39	6.45

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 conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 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 #Q100

			Left OB	Channel	Right OB
E.G. Elev (ft)	30.16	Element			
Vel Head (ft)	1.43	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	28.73	Reach Len. (ft)	331.16	386.26	449.77
Crit W.S. (ft)		Flow Area (sq ft)	158.06	4084.45	820.50
E.G. Slope (ft/ft)	0.002980	Area (sq ft)	158.06	4084.45	820.50
Q Total (cfs)	47312.00	Flow (cfs)	818.58	40706.38	5787.04
Top Width (ft)	380.90	Top Width (ft)	24.05	267.85	89.01
Vel Total (ft/s)	9.34	Avg. Vel. (ft/s)	5.18	9.97	7.05
Max Chl Dpth (ft)	17.10	Hydr. Depth (ft)	6.57	15.25	9.22
Conv. Total (cfs)	866758.4	Conv. (cfs)	14996.5	745742.9	106019.0
Length Wtd. (ft)	396.48	Wetted Per. (ft)	27.71	268.22	90.50
Min Ch El (ft)	11.63	Shear (lb/sq ft)	1.06	2.83	1.69
Alpha	1.05	Stream Power (lb/ft s)	5.50	28.23	11.89
Frctn Loss (ft)	1.55	Cum Volume (acre-ft)	12.75	76.38	33.85
C & E Loss (ft)	0.19	Cum SA (acres)	3.66	7.39	6.87

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 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 #Q100HC

			Left OB	Channel	Right OB
E.G. Elev (ft)	42.66	Element			
Vel Head (ft)	2.46	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	40.20	Reach Len. (ft)	331.16	386.26	449.77
Crit W.S. (ft)		Flow Area (sq ft)	569.86	7156.84	2044.36
E.G. Slope (ft/ft)	0.002514	Area (sq ft)	569.86	7156.84	2044.36
Q Total (cfs)	118891.00	Flow (cfs)	4068.83	95226.02	19596.16
Top Width (ft)	437.51	Top Width (ft)	48.07	267.85	121.59
Vel Total (ft/s)	12.17	Avg. Vel. (ft/s)	7.14	13.31	9.59
Max Chl Dpth (ft)	28.57	Hydr. Depth (ft)	11.85	26.72	16.81
Conv. Total (cfs)	2371166.0	Conv. (cfs)	81148.8	1899190.0	390826.4
Length Wtd. (ft)	397.23	Wetted Per. (ft)	54.33	268.22	125.30
Min Ch El (ft)	11.63	Shear (lb/sq ft)	1.65	4.19	2.56
Alpha	1.07	Stream Power (lb/ft s)	11.75	55.72	24.55
Frctn Loss (ft)	1.05	Cum Volume (acre-ft)	33.57	121.30	71.70
C & E Loss (ft)	0.01	Cum SA (acres)	6.24	7.41	7.98

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

RIVER: San Mateo Creek
REACH: Lower RS: 977.176

INPUT
Description: Manual Modification of Manning's N Values
Station Elevation Data num= 57

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	32.89	.37	32.89	19.41	33.13	84.16	34.51	88.96	34.54
90.58	34.51	97.36	34.36	99.09	34.31	102.02	34.03	119.08	32.09
123.45	30.02	131.06	28.22	136.27	26.19	152.7	22.08	158.91	19.86

170.94	15.17	173.08	14.25	178.58	13.28	178.89	13.22	180.93	12.68
219.95	13.45	229.16	13.55	232.38	13.74	237.43	13.79	262.37	13.5
270.48	13.33	306.25	12.6	358.06	11.49	362.22	11.6	363.09	11.64
379.14	12.37	428.4	14.61	447.41	17.86	466.86	18.2	486.76	19.28
491.92	19.62	502.84	24.68	505.09	25.48	507.65	26.42	510.83	27.44
521.28	30.25	532.71	31.62	536.89	32.69	546.1	37.23	548.97	38.63
552.13	39.52	561.19	40.26	590.09	42.36	595.7	43.23	609.69	45.52
624.82	45.97	630.04	46.06	641.6	48.42	647.07	48.5	667.36	50.14
686.06	50.58	686.84	50.61						

Manning's n Values num= 1

Sta	n Val
0	.05

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
178.58	379.14	50.27	50.41	43.68	.3	.5

CROSS SECTION OUTPUT Profile #Q50

E.G. Elev (ft)	25.02	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.64	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	23.38	Reach Len. (ft)	7.00	7.00	7.00
Crit W.S. (ft)	20.77	Flow Area (sq ft)	160.31	2123.08	854.83
E.G. Slope (ft/ft)	0.005827	Area (sq ft)	160.31	2123.08	854.83
Q Total (cfs)	31354.00	Flow (cfs)	1047.87	23209.12	7097.01
Top Width (ft)	352.53	Top Width (ft)	31.07	200.56	120.89
Vel Total (ft/s)	9.99	Avg. Vel. (ft/s)	6.54	10.93	8.30
Max Chl Dpth (ft)	11.89	Hydr. Depth (ft)	5.16	10.59	7.07
Conv. Total (cfs)	410754.9	Conv. (cfs)	13727.7	304052.4	92974.8
Length Wtd. (ft)	7.00	Wetted Per. (ft)	32.77	200.69	122.09
Min Ch El (ft)	11.49	Shear (lb/sq ft)	1.78	3.85	2.55
Alpha	1.06	Stream Power (lb/ft s)	11.63	42.07	21.14
Frctn Loss (ft)		Cum Volume (acre-ft)	7.44	38.62	15.26
C & E Loss (ft)		Cum SA (acres)	2.69	5.31	5.43

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

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

CROSS SECTION OUTPUT Profile #Q100

E.G. Elev (ft)	28.42	Element	Left OB	Channel	Right OB
Vel Head (ft)	2.07	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	26.35	Reach Len. (ft)	7.00	7.00	7.00
Crit W.S. (ft)	22.86	Flow Area (sq ft)	270.13	2718.38	1224.04
E.G. Slope (ft/ft)	0.005335	Area (sq ft)	270.13	2718.38	1224.04
Q Total (cfs)	47312.00	Flow (cfs)	1942.72	33527.79	11841.49
Top Width (ft)	371.59	Top Width (ft)	42.71	200.56	128.31
Vel Total (ft/s)	11.23	Avg. Vel. (ft/s)	7.19	12.33	9.67
Max Chl Dpth (ft)	14.86	Hydr. Depth (ft)	6.32	13.55	9.54
Conv. Total (cfs)	647771.1	Conv. (cfs)	26598.7	459044.9	162127.5
Length Wtd. (ft)	7.00	Wetted Per. (ft)	44.79	200.69	130.09
Min Ch El (ft)	11.49	Shear (lb/sq ft)	2.01	4.51	3.13
Alpha	1.06	Stream Power (lb/ft s)	14.44	55.64	30.31
Frctn Loss (ft)		Cum Volume (acre-ft)	11.12	46.22	23.30
C & E Loss (ft)		Cum SA (acres)	3.41	5.31	5.74

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream 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 #Q100HC

			Left OB	Channel	Right OB
E.G. Elev (ft)	41.60	Element			
Vel Head (ft)	2.45	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	39.16	Reach Len. (ft)	7.00	7.00	7.00
Crit W.S. (ft)	30.02	Flow Area (sq ft)	1639.76	5287.46	3182.74
E.G. Slope (ft/ft)	0.002792	Area (sq ft)	1639.76	5287.46	3182.74
Q Total (cfs)	118891.00	Flow (cfs)	10906.50	73512.42	34472.07
Top Width (ft)	550.84	Top Width (ft)	178.58	200.56	171.70
Vel Total (ft/s)	11.76	Avg. Vel. (ft/s)	6.65	13.90	10.83
Max Chl Dpth (ft)	27.67	Hydr. Depth (ft)	9.18	26.36	18.54
Conv. Total (cfs)	2250120.0	Conv. (cfs)	206415.4	1391289.0	652415.4
Length Wtd. (ft)	7.00	Wetted Per. (ft)	188.09	200.69	175.69
Min Ch El (ft)	11.49	Shear (lb/sq ft)	1.52	4.59	3.16
Alpha	1.14	Stream Power (lb/ft s)	10.11	63.84	34.20
Frctn Loss (ft)	0.05	Cum Volume (acre-ft)	25.17	66.12	44.72
C & E Loss (ft)	2.31	Cum SA (acres)	5.38	5.33	6.47

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

BRIDGE

RIVER: San Mateo Creek
REACH: Lower RS: 970

INPUT
Description: Old PCH Bridge
Distance from Upstream XS = 7
Deck/Roadway Width = 32.81
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
0	30.81	0	100	32.81	0	100	32.81	27.23
536.35	39.37	33.79	536.35	39.37	0	600	40.64	0

Upstream Bridge Cross Section Data
Station Elevation Data num= 57

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	32.89	.37	32.89	19.41	33.13	84.16	34.51	88.96	34.54
90.58	34.51	97.36	34.36	99.09	34.31	102.02	34.03	119.08	32.09
123.45	30.02	131.06	28.22	136.27	26.19	152.7	22.08	158.91	19.86
170.94	15.17	173.08	14.25	178.58	13.28	178.89	13.22	180.93	12.68
219.95	13.45	229.16	13.55	232.38	13.74	237.43	13.79	262.37	13.5
270.48	13.33	306.25	12.6	358.06	11.49	362.22	11.6	363.09	11.64

379.14	12.37	428.4	14.61	447.41	17.86	466.86	18.2	486.76	19.28
491.92	19.62	502.84	24.68	505.09	25.48	507.65	26.42	510.83	27.44
521.28	30.25	532.71	31.62	536.89	32.69	546.1	37.23	548.97	38.63
552.13	39.52	561.19	40.26	590.09	42.36	595.7	43.23	609.69	45.52
624.82	45.97	630.04	46.06	641.6	48.42	647.07	48.5	667.36	50.14
686.06	50.58	686.84	50.61						

Manning's n Values num= 1

Sta	n Val
0	.05

Bank Sta: Left	Right	Coeff Contr.	Expan.
178.58	379.14	.3	.5

Downstream Deck/Roadway Coordinates
num= 6

Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord
0	30.81	0	100	32.81	0	100	32.81	27.23
536.35	39.37	33.79	536.35	39.37	0	600	40.64	0

Downstream Bridge Cross Section Data
Station Elevation Data num= 56

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	29.25	4.51	29.43	20.29	29.64	22.58	29.67	54.24	31.33
70	31.77	72.17	31.8	76.46	32.44	79.54	33	88.17	33.38
96.39	31.6	101.24	31.3	126.59	20.07	136.33	15.74	144.27	14.64
152.53	14.4	157.07	14.26	170.89	12.52	184.84	12.47	196.68	12.42
215.24	12.34	238.1	12.55	241.16	12.55	282.15	11.76	321.28	10.98
324.1	10.92	344.58	11.46	391.53	12.69	404.33	13.19	405.31	13.23
416.29	13.73	427.47	15.65	449.87	19.11	456.43	20.52	465.42	24.49
475.77	26.6	489.07	28.61	504.05	31.95	513.05	35.57	514.14	36.01
520.05	37.56	525.37	38.44	530.68	39.04	539.86	38.93	555.66	40.79
589.31	43.25	598.2	43.9	605.71	44.17	615.17	44.71	626.9	45.92
634.09	46.07	651.03	49.07	659.84	49.21	681.48	50.21	685.93	50.48
693.31	50.92								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.05	513.05	.02	589.31	.05

Bank Sta: Left	Right	Coeff Contr.	Expan.
152.53	344.58	.3	.5

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 = 110
Energy head used in spillway design =
Spillway height used in design =
Weir crest shape = Broad Crested

Number of Piers = 4

Pier Data
Pier Station Upstream= 162.34 Downstream= 162.34
Upstream num= 2

Width	Elev	Width	Elev
12.25	0	12.25	229

Downstream num= 2

```
    Width   Elev    Width   Elev
   12.25       0   12.25     229

Pier Data
Pier Station     Upstream=  264.34    Downstream=  264.34
Upstream     num=       2
    Width   Elev    Width   Elev
   12.25       0   12.25     229
Downstream     num=       2
    Width   Elev    Width   Elev
   12.25       0   12.25     229

Pier Data
Pier Station     Upstream=  366.34    Downstream=  366.34
Upstream     num=       2
    Width   Elev    Width   Elev
   12.25       0   12.25     229
Downstream     num=       2
    Width   Elev    Width   Elev
   12.25       0   12.25     229

Pier Data
Pier Station     Upstream=  468.34    Downstream=  468.34
Upstream     num=       2
    Width   Elev    Width   Elev
   12.25       0   12.25     229
Downstream     num=       2
    Width   Elev    Width   Elev
   12.25       0   12.25     229

Number of Bridge Coefficient Sets =  1

Low Flow Methods and Data
      Energy
Selected Low Flow Methods = Energy

High Flow Method
      Energy Only

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

BRIDGE OUTPUT  Profile #Q50

  E.G. US. (ft)              25.02    Element              Inside BR US  Inside BR DS
  W.S. US. (ft)              23.38    E.G. Elev (ft)          24.70         23.91
  Q Total (cfs)           31354.00    W.S. Elev (ft)          21.13         20.33
  Q Bridge (cfs)          31354.00    Crit W.S. (ft)          21.13         20.33
  Q Weir (cfs)                        Max Chl Dpth (ft)        9.64          9.41
  Weir Sta Lft (ft)                   Vel Total (ft/s)        15.03         14.92
  Weir Sta Rgt (ft)                   Flow Area (sq ft)     2086.45       2101.34
  Weir Submerg                        Froude # Chl             0.96          0.98
  Weir Max Depth (ft)                 Specif Force (cu ft) 22869.63      22916.56
  Min El Weir Flow (ft)      110.00   Hydr Depth (ft)          7.17          7.18
  Min El Prs (ft)             33.79   W.P. Total (ft)        337.05        341.09
```

Delta EG (ft)	1.19	Conv. Total (cfs)	216139.5	213566.8
Delta WS (ft)	5.36	Top Width (ft)	290.84	292.80
BR Open Area (sq ft)	5156.27	Frctn Loss (ft)		
BR Open Vel (ft/s)	15.03	C & E Loss (ft)		
Coef of Q		Shear Total (lb/sq ft)	8.13	8.29
Br Sel Method	Momentum	Power Total (lb/ft s)	122.21	123.69

Warning: Pier drag coefficient of 2.0 assumed for Class B flow.
Note: The momentum method has computed a class B profile.
Note: The energy method has computed a class B profile.

BRIDGE OUTPUT Profile #Q100

E.G. US. (ft)	28.42	Element	Inside BR US	Inside BR DS
W.S. US. (ft)	26.35	E.G. Elev (ft)	28.04	27.23
Q Total (cfs)	47312.00	W.S. Elev (ft)	23.44	22.67
Q Bridge (cfs)	47312.00	Crit W.S. (ft)	23.44	22.67
Q Weir (cfs)		Max Chl Dpth (ft)	11.95	11.75
Weir Sta Lft (ft)		Vel Total (ft/s)	17.07	16.90
Weir Sta Rgt (ft)		Flow Area (sq ft)	2771.79	2799.36
Weir Submerg		Froude # Chl	0.96	0.98
Weir Max Depth (ft)		Specif Force (cu ft)	38978.62	39010.66
Min El Weir Flow (ft)	110.00	Hydr Depth (ft)	9.12	9.21
Min El Prs (ft)	33.79	W.P. Total (ft)	369.41	367.11
Delta EG (ft)	1.17	Conv. Total (cfs)	329814.4	326626.2
Delta WS (ft)	5.85	Top Width (ft)	303.91	303.82
BR Open Area (sq ft)	5156.27	Frctn Loss (ft)		
BR Open Vel (ft/s)	17.07	C & E Loss (ft)		
Coef of Q		Shear Total (lb/sq ft)	9.64	9.99
Br Sel Method	Momentum	Power Total (lb/ft s)	164.53	168.81

Warning: Pier drag coefficient of 2.0 assumed for Class B flow.
Warning: The momentum, Class B, supercritical, water surface downstream of the bridge had a higher energy than the upstream cross section. This is not physically possible. The downstream water surface has been computed by taking the momentum result inside of the bridge and performing an energy balance.
Note: The momentum method has computed a class B profile.
Note: The energy method has computed a class B profile.

BRIDGE OUTPUT Profile #Q100HC

E.G. US. (ft)	41.60	Element	Inside BR US	Inside BR DS
W.S. US. (ft)	39.16	E.G. Elev (ft)	40.18	39.25
Q Total (cfs)	118891.00	W.S. Elev (ft)	29.27	29.11
Q Bridge (cfs)	118891.00	Crit W.S. (ft)	29.27	29.11
Q Weir (cfs)		Max Chl Dpth (ft)	17.78	18.19
Weir Sta Lft (ft)		Vel Total (ft/s)	25.96	25.07
Weir Sta Rgt (ft)		Flow Area (sq ft)	4580.12	4742.03
Weir Submerg		Froude # Chl	1.27	1.19
Weir Max Depth (ft)		Specif Force (cu ft)	132678.80	132297.40
Min El Weir Flow (ft)	110.00	Hydr Depth (ft)	18.68	20.67
Min El Prs (ft)	33.79	W.P. Total (ft)	538.95	545.22
Delta EG (ft)	3.36	Conv. Total (cfs)	616876.9	628128.6
Delta WS (ft)	13.25	Top Width (ft)	245.17	229.45
BR Open Area (sq ft)	5156.27	Frctn Loss (ft)		
BR Open Vel (ft/s)	25.96	C & E Loss (ft)		
Coef of Q		Shear Total (lb/sq ft)	19.71	19.45

Br Sel Method	Energy only	Power Total (lb/ft s)	511.56	487.72

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

CROSS SECTION

RIVER: San Mateo Creek
REACH: Lower RS: 926.767

INPUT
Description:
Station Elevation Data num= 56

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	29.25	4.51	29.43	20.29	29.64	22.58	29.67	54.24	31.33
70	31.77	72.17	31.8	76.46	32.44	79.54	33	88.17	33.38
96.39	31.6	101.24	31.3	126.59	20.07	136.33	15.74	144.27	14.64
152.53	14.4	157.07	14.26	170.89	12.52	184.84	12.47	196.68	12.42
215.24	12.34	238.1	12.55	241.16	12.55	282.15	11.76	321.28	10.98
324.1	10.92	344.58	11.46	391.53	12.69	404.33	13.19	405.31	13.23
416.29	13.73	427.47	15.65	449.87	19.11	456.43	20.52	465.42	24.49
475.77	26.6	489.07	28.61	504.05	31.95	513.05	35.57	514.14	36.01
520.05	37.56	525.37	38.44	530.68	39.04	539.86	38.93	555.66	40.79
589.31	43.25	598.2	43.9	605.71	44.17	615.17	44.71	626.9	45.92
634.09	46.07	651.03	49.07	659.84	49.21	681.48	50.21	685.93	50.48
693.31	50.92								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.05	513.05	.02	589.31	.05

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
152.53	344.58	197.34	259.8	349.98	.3	.5

CROSS SECTION OUTPUT Profile #Q50

			Left OB	Channel	Right OB
E.G. Elev (ft)	23.83	Element			
Vel Head (ft)	5.81	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	18.02	Reach Len. (ft)	197.34	259.80	349.98
Crit W.S. (ft)	19.66	Flow Area (sq ft)	57.24	1133.24	454.18
E.G. Slope (ft/ft)	0.043396	Area (sq ft)	57.24	1133.24	454.18
Q Total (cfs)	31354.00	Flow (cfs)	672.53	22898.46	7783.01
Top Width (ft)	311.62	Top Width (ft)	21.33	192.05	98.24
Vel Total (ft/s)	19.06	Avg. Vel. (ft/s)	11.75	20.21	17.14
Max Chl Dpth (ft)	7.10	Hydr. Depth (ft)	2.68	5.90	4.62
Conv. Total (cfs)	150511.2	Conv. (cfs)	3228.4	109921.4	37361.5
Length Wtd. (ft)	276.50	Wetted Per. (ft)	21.89	192.19	98.62
Min Ch El (ft)	10.92	Shear (lb/sq ft)	7.08	15.98	12.48
Alpha	1.03	Stream Power (lb/ft s)	83.22	322.79	213.81
Frctn Loss (ft)		Cum Volume (acre-ft)	7.33	36.95	14.59
C & E Loss (ft)		Cum SA (acres)	2.67	5.11	5.31

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

Note: The energy method has computed a class B profile.

CROSS SECTION OUTPUT Profile #Q100

E.G. Elev (ft)	26.52	Element	Left OB	Channel	Right OB
Vel Head (ft)	6.02	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	20.50	Reach Len. (ft)	197.34	259.80	349.98
Crit W.S. (ft)	21.83	Flow Area (sq ft)	117.05	1609.48	715.93
E.G. Slope (ft/ft)	0.028675	Area (sq ft)	117.05	1609.48	715.93
Q Total (cfs)	47312.00	Flow (cfs)	1528.56	33401.74	12381.70
Top Width (ft)	330.72	Top Width (ft)	26.91	192.05	111.76
Vel Total (ft/s)	19.37	Avg. Vel. (ft/s)	13.06	20.75	17.29
Max Chl Dpth (ft)	9.58	Hydr. Depth (ft)	4.35	8.38	6.41
Conv. Total (cfs)	279398.1	Conv. (cfs)	9026.8	197251.9	73119.3
Length Wtd. (ft)	279.06	Wetted Per. (ft)	28.00	192.19	112.37
Min Ch El (ft)	10.92	Shear (lb/sq ft)	7.48	14.99	11.40
Alpha	1.03	Stream Power (lb/ft s)	97.72	311.13	197.24
Frctn Loss (ft)		Cum Volume (acre-ft)	10.95	44.06	22.33
C & E Loss (ft)		Cum SA (acres)	3.38	5.11	5.62

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Note: The energy method has computed a class B profile.

CROSS SECTION OUTPUT Profile #Q100HC

E.G. Elev (ft)	38.24	Element	Left OB	Channel	Right OB
Vel Head (ft)	12.34	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	25.90	Reach Len. (ft)	197.34	259.80	349.98
Crit W.S. (ft)	29.44	Flow Area (sq ft)	295.40	2647.13	1355.70
E.G. Slope (ft/ft)	0.030792	Area (sq ft)	295.40	2647.13	1355.70
Q Total (cfs)	118891.00	Flow (cfs)	5714.99	79320.63	33855.39
Top Width (ft)	358.93	Top Width (ft)	39.11	192.05	127.77
Vel Total (ft/s)	27.66	Avg. Vel. (ft/s)	19.35	29.96	24.97
Max Chl Dpth (ft)	14.98	Hydr. Depth (ft)	7.55	13.78	10.61
Conv. Total (cfs)	677534.1	Conv. (cfs)	32568.5	452031.1	192934.6
Length Wtd. (ft)	284.44	Wetted Per. (ft)	41.34	192.19	129.37
Min Ch El (ft)	10.92	Shear (lb/sq ft)	13.74	26.48	20.14
Alpha	1.04	Stream Power (lb/ft s)	265.75	793.40	503.06
Frctn Loss (ft)	0.35	Cum Volume (acre-ft)	24.55	61.25	42.12
C & E Loss (ft)	0.66	Cum SA (acres)	5.35	5.11	6.26

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 energy loss was 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: The energy method has computed a class B profile.

CROSS SECTION

RIVER: San Mateo Creek
REACH: Lower RS: 666.956

INPUT
Description: Updated Manning's N Distribution
Station Elevation Data num= 49

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	33.02	1.35	33.04	8.65	33.12	30.8	31.1	42.56	29.97
50	29.25	62.16	27.01	63.65	26.67	64.93	26.17	74.65	23.12
84.37	19.74	86.38	19.52	89.01	19.85	133.79	22.24	134.15	22.27
159.53	21.92	165.53	21.66	180.4	20.09	228.59	13.27	231.95	12.14
235.4	11.04	236.33	10.72	241.52	9.02	247.9	6.93	253.65	6.12
254.2	6.04	271.29	6.36	297.87	5.87	351.04	6.33	385.58	6.79
398.35	6.96	412.59	7.47	413.83	7.53	447.08	9.01	477.96	10.39
512.64	12.73	551.71	13.35	614.27	14.49	638.54	14.72	680.93	17.25
686.32	17.57	714.97	18.74	737.8	19.67	746.93	20.04	752.92	20.65
773.29	23.85	806.8	28.99	839.21	34.23	851.16	36.59		

Manning's n Values num= 4

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.02	42.56	.05	680.93	.02	714.97	.05

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
241.52	447.08	187.2	184.7	178.1	.1	.3

CROSS SECTION OUTPUT Profile #Q50

			Left OB	Channel	Right OB
E.G. Elev (ft)	18.71	Element			
Vel Head (ft)	2.40	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	16.31	Reach Len. (ft)	187.20	184.70	178.10
Crit W.S. (ft)	15.78	Flow Area (sq ft)	99.45	1966.31	708.26
E.G. Slope (ft/ft)	0.009909	Area (sq ft)	99.45	1966.31	708.26
Q Total (cfs)	31354.00	Flow (cfs)	587.00	26174.21	4592.79
Top Width (ft)	458.02	Top Width (ft)	34.40	205.56	218.07
Vel Total (ft/s)	11.30	Avg. Vel. (ft/s)	5.90	13.31	6.48
Max Chl Dpth (ft)	10.44	Hydr. Depth (ft)	2.89	9.57	3.25
Conv. Total (cfs)	314968.7	Conv. (cfs)	5896.7	262934.8	46137.2
Length Wtd. (ft)	183.62	Wetted Per. (ft)	35.29	206.01	218.24
Min Ch El (ft)	5.87	Shear (lb/sq ft)	1.74	5.90	2.01
Alpha	1.21	Stream Power (lb/ft s)	10.29	78.60	13.02
Frctn Loss (ft)	1.32	Cum Volume (acre-ft)	6.98	27.71	9.92
C & E Loss (ft)	0.35	Cum SA (acres)	2.54	3.92	4.04

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

CROSS SECTION OUTPUT Profile #Q100

			Left OB	Channel	Right OB
E.G. Elev (ft)	21.23	Element			
Vel Head (ft)	3.37	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	17.86	Reach Len. (ft)	187.20	184.70	178.10
Crit W.S. (ft)	17.86	Flow Area (sq ft)	161.20	2284.68	1066.42
E.G. Slope (ft/ft)	0.011808	Area (sq ft)	161.20	2284.68	1066.42
Q Total (cfs)	47312.00	Flow (cfs)	1195.07	36690.77	9426.15
Top Width (ft)	497.16	Top Width (ft)	45.34	205.56	246.26
Vel Total (ft/s)	13.47	Avg. Vel. (ft/s)	7.41	16.06	8.84
Max Chl Dpth (ft)	11.99	Hydr. Depth (ft)	3.56	11.11	4.33
Conv. Total (cfs)	435395.8	Conv. (cfs)	10997.9	337652.4	86745.6
Length Wtd. (ft)	183.24	Wetted Per. (ft)	46.34	206.01	246.48
Min Ch El (ft)	5.87	Shear (lb/sq ft)	2.56	8.18	3.19
Alpha	1.20	Stream Power (lb/ft s)	19.01	131.29	28.19

Frctn Loss (ft)	1.60	Cum Volume (acre-ft)	10.32	32.44	15.17
C & E Loss (ft)	0.49	Cum SA (acres)	3.21	3.92	4.18

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 velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water 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 #Q100HC

E.G. Elev (ft)	29.26	Element	Left OB	Channel	Right OB
Vel Head (ft)	7.12	Wt. n-Val.	0.050	0.050	0.047
W.S. Elev (ft)	22.14	Reach Len. (ft)	187.20	184.70	178.10
Crit W.S. (ft)	23.92	Flow Area (sq ft)	496.75	3164.86	2309.56
E.G. Slope (ft/ft)	0.017027	Area (sq ft)	496.75	3164.86	2309.56
Q Total (cfs)	118891.00	Flow (cfs)	4710.49	75844.47	38336.04
Top Width (ft)	673.14	Top Width (ft)	152.27	205.56	315.32
Vel Total (ft/s)	19.91	Avg. Vel. (ft/s)	9.48	23.96	16.60
Max Chl Dpth (ft)	16.27	Hydr. Depth (ft)	3.26	15.40	7.32
Conv. Total (cfs)	911123.0	Conv. (cfs)	36098.9	581235.3	293788.8
Length Wtd. (ft)	182.71	Wetted Per. (ft)	154.02	206.01	315.72
Min Ch El (ft)	5.87	Shear (lb/sq ft)	3.43	16.33	7.78
Alpha	1.16	Stream Power (lb/ft s)	32.51	391.35	129.07
Frctn Loss (ft)	6.37	Cum Volume (acre-ft)	22.75	43.92	27.40
C & E Loss (ft)	2.61	Cum SA (acres)	4.91	3.92	4.48

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: San Mateo Creek
REACH: Lower RS: 482.270

INPUT
Description: Updated Manning's N Distribution
Station Elevation Data num= 48

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	36.42	9.65	33.24	15.01	32.16	32.78	30.31	49.46	28.57
55.27	27.77	81.73	26.6	87.4	26.19	88.06	26.15	107.47	23.41
115.16	22.33	116.57	22	162.37	18.02	163.67	17.92	251.33	16.33
252.08	16.33	253.16	16.25	322.39	13.16	334.08	12.38	352.55	11.37
370.58	9.79	381.86	8.14	386.95	7.4	400.88	7.22	428.26	6.67
431.06	6.61	491.01	5.27	527.34	5.05	565.92	6.28	566.05	6.28
631.1	8.1	707.57	12.27	723.73	13.01	786.61	13.09	807.94	13.12
893.68	13.28	909.24	13.8	961.41	13.84	977.55	13.86	994.19	14.92
1006.45	15.7	1042.54	19.54	1046.98	20.08	1063.09	24.32	1079.91	30.34
1088.51	33.07	1092.19	34.36	1092.51	34.49				

Manning's n Values num= 6

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.05	32.78	.02	87.4	.05	786.61	.035	961.41	.02
994.19	.05								

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
381.86	631.1	215.55	198.2	189.25	.1	.3

CROSS SECTION OUTPUT Profile #Q50

E.G. Elev (ft)	17.04	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.23	Wt. n-Val.	0.050	0.050	0.043
W.S. Elev (ft)	15.80	Reach Len. (ft)	215.55	198.20	189.25
Crit W.S. (ft)		Flow Area (sq ft)	357.56	2357.97	1134.36
E.G. Slope (ft/ft)	0.005472	Area (sq ft)	357.56	2357.97	1134.36
Q Total (cfs)	31354.00	Flow (cfs)	1636.88	23179.54	6537.58
Top Width (ft)	744.24	Top Width (ft)	118.69	249.24	376.32
Vel Total (ft/s)	8.14	Avg. Vel. (ft/s)	4.58	9.83	5.76
Max Chl Dpth (ft)	10.75	Hydr. Depth (ft)	3.01	9.46	3.01
Conv. Total (cfs)	423862.9	Conv. (cfs)	22128.4	313355.4	88379.1
Length Wtd. (ft)	198.27	Wetted Per. (ft)	118.99	249.36	376.52
Min Ch El (ft)	5.05	Shear (lb/sq ft)	1.03	3.23	1.03
Alpha	1.20	Stream Power (lb/ft s)	4.70	31.75	5.93
Frctn Loss (ft)	1.57	Cum Volume (acre-ft)	5.99	18.54	6.15
C & E Loss (ft)	0.05	Cum SA (acres)	2.21	2.96	2.82

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 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 #Q100

E.G. Elev (ft)	18.81	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.75	Wt. n-Val.	0.050	0.050	0.041
W.S. Elev (ft)	17.06	Reach Len. (ft)	215.55	198.20	189.25
Crit W.S. (ft)	16.09	Flow Area (sq ft)	533.58	2671.86	1615.74
E.G. Slope (ft/ft)	0.006696	Area (sq ft)	533.58	2671.86	1615.74
Q Total (cfs)	47312.00	Flow (cfs)	2768.25	31578.98	12964.77
Top Width (ft)	808.30	Top Width (ft)	170.91	249.24	388.15
Vel Total (ft/s)	9.81	Avg. Vel. (ft/s)	5.19	11.82	8.02
Max Chl Dpth (ft)	12.01	Hydr. Depth (ft)	3.12	10.72	4.16
Conv. Total (cfs)	578186.8	Conv. (cfs)	33830.0	385917.9	158438.8
Length Wtd. (ft)	197.78	Wetted Per. (ft)	171.23	249.36	388.42
Min Ch El (ft)	5.05	Shear (lb/sq ft)	1.30	4.48	1.74
Alpha	1.17	Stream Power (lb/ft s)	6.76	52.94	13.95
Frctn Loss (ft)	1.77	Cum Volume (acre-ft)	8.83	21.94	9.69
C & E Loss (ft)	0.04	Cum SA (acres)	2.75	2.96	2.88

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

CROSS SECTION OUTPUT Profile #Q100HC

E.G. Elev (ft)	25.58	Element	Left OB	Channel	Right OB
Vel Head (ft)	7.24	Wt. n-Val.	0.050	0.050	0.040
W.S. Elev (ft)	18.34	Reach Len. (ft)	215.55	198.20	189.25
Crit W.S. (ft)	20.40	Flow Area (sq ft)	792.77	2989.88	2118.66
E.G. Slope (ft/ft)	0.024002	Area (sq ft)	792.77	2989.88	2118.66
Q Total (cfs)	118891.00	Flow (cfs)	8489.37	72114.29	38287.34
Top Width (ft)	872.54	Top Width (ft)	223.15	249.24	400.15
Vel Total (ft/s)	20.15	Avg. Vel. (ft/s)	10.71	24.12	18.07
Max Chl Dpth (ft)	13.29	Hydr. Depth (ft)	3.55	12.00	5.29
Conv. Total (cfs)	767401.7	Conv. (cfs)	54796.0	465473.6	247132.0
Length Wtd. (ft)	197.57	Wetted Per. (ft)	223.50	249.36	400.48
Min Ch El (ft)	5.05	Shear (lb/sq ft)	5.32	17.97	7.93
Alpha	1.15	Stream Power (lb/ft s)	56.92	433.35	143.26
Frctn Loss (ft)	3.67	Cum Volume (acre-ft)	19.98	30.87	18.34
C & E Loss (ft)	0.01	Cum SA (acres)	4.11	2.96	3.01

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

CROSS SECTION

RIVER: San Mateo Creek
REACH: Lower RS: 284.051

INPUT
Description: Updated Manning's N Distribution
Station Elevation Data num= 49

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	29.29	14.99	25.99	15.5	26.02	18.96	25.77	25.76	25.36
90.16	21.53	153.47	17.75	180.86	16.81	196.92	16.19	210.26	15.71
254.28	15.45	262.8	15.33	273.55	15.03	375.82	12.63	386.67	12.49
398.3	11.44	540.33	7.72	557.56	7.12	573.23	6.8	587.64	6.79
607.67	6.73	618.25	6.7	740	6.37	740.69	6.38	742.97	6.44
743.19	6.45	813.41	7.82	818	8.11	820.46	8.22	827.66	8.04
874.75	9.08	880.64	9.17	905.24	10.67	932.78	12.86	946.65	12.46
982.37	12.36	997.9	11.46	1031.24	13.14	1043.3	13.06	1125.93	12.49
1170.38	12.94	1172.1	12.95	1197.86	13.09	1219.04	13.2	1227.3	12.98
1232.68	13.82	1245.69	18.25	1269.03	25.93	1288.02	30.34		

Manning's n Values num= 6

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.05	25.76	.02	90.16	.05	1043.3	.035	1172.1	.02
1197.86	.05								

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
540.33	813.41	216.3	198.7 198.95	.1	.3

CROSS SECTION OUTPUT Profile #Q50

E.G. Elev (ft)	15.41	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.77	Wt. n-Val.	0.050	0.050	0.048
W.S. Elev (ft)	13.64	Reach Len. (ft)	216.30	198.70	198.95
Crit W.S. (ft)	13.64	Flow Area (sq ft)	628.79	1865.41	768.32
E.G. Slope (ft/ft)	0.012520	Area (sq ft)	628.79	1865.41	768.32
Q Total (cfs)	31354.00	Flow (cfs)	4378.45	22330.02	4645.53
Top Width (ft)	898.56	Top Width (ft)	207.39	273.08	418.09

Vel Total (ft/s)	9.61	Avg. Vel. (ft/s)	6.96	11.97	6.05
Max Chl Dpth (ft)	7.27	Hydr. Depth (ft)	3.03	6.83	1.84
Conv. Total (cfs)	280218.5	Conv. (cfs)	39131.3	199569.0	41518.2
Length Wtd. (ft)	201.72	Wetted Per. (ft)	207.50	273.11	418.38
Min Ch El (ft)	6.37	Shear (lb/sq ft)	2.37	5.34	1.44
Alpha	1.24	Stream Power (lb/ft s)	16.49	63.91	8.68
Frctn Loss (ft)	3.15	Cum Volume (acre-ft)	3.55	8.93	2.02
C & E Loss (ft)	0.03	Cum SA (acres)	1.40	1.77	1.10

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 #Q100

E.G. Elev (ft)	17.00	Element	Left OB	Channel	Right OB
Vel Head (ft)	2.12	Wt. n-Val.	0.050	0.050	0.045
W.S. Elev (ft)	14.89	Reach Len. (ft)	216.30	198.70	198.95
Crit W.S. (ft)	14.89	Flow Area (sq ft)	921.92	2207.40	1294.96
E.G. Slope (ft/ft)	0.012526	Area (sq ft)	921.92	2207.40	1294.96
Q Total (cfs)	47312.00	Flow (cfs)	7114.26	29569.30	10628.44
Top Width (ft)	956.24	Top Width (ft)	260.75	273.08	422.41
Vel Total (ft/s)	10.69	Avg. Vel. (ft/s)	7.72	13.40	8.21
Max Chl Dpth (ft)	8.52	Hydr. Depth (ft)	3.54	8.08	3.07
Conv. Total (cfs)	422734.0	Conv. (cfs)	63566.1	264202.5	94965.4
Length Wtd. (ft)	202.08	Wetted Per. (ft)	260.88	273.11	422.89
Min Ch El (ft)	6.37	Shear (lb/sq ft)	2.76	6.32	2.39
Alpha	1.19	Stream Power (lb/ft s)	21.33	84.67	19.65
Frctn Loss (ft)	3.09	Cum Volume (acre-ft)	5.23	10.84	3.37
C & E Loss (ft)	0.00	Cum SA (acres)	1.68	1.77	1.12

Warning: The energy equation could not be balanced within the specified number of iterations. The program selected the water surface that had the least amount of error between computed and assumed values.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water 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 #Q100HC

E.G. Elev (ft)	22.11	Element	Left OB	Channel	Right OB
Vel Head (ft)	3.57	Wt. n-Val.	0.050	0.050	0.043
W.S. Elev (ft)	18.54	Reach Len. (ft)	216.30	198.70	198.95
Crit W.S. (ft)	18.54	Flow Area (sq ft)	2196.61	3205.00	2857.68
E.G. Slope (ft/ft)	0.012851	Area (sq ft)	2196.61	3205.00	2857.68
Q Total (cfs)	118891.00	Flow (cfs)	23022.61	55759.76	40108.63
Top Width (ft)	1106.37	Top Width (ft)	400.12	273.08	433.17
Vel Total (ft/s)	14.39	Avg. Vel. (ft/s)	10.48	17.40	14.04
Max Chl Dpth (ft)	12.17	Hydr. Depth (ft)	5.49	11.74	6.60
Conv. Total (cfs)	1048760.0	Conv. (cfs)	203086.8	491867.4	353805.9

Length Wtd. (ft)	203.06	Wetted Per. (ft)	400.31	273.11	434.25
Min Ch El (ft)	6.37	Shear (lb/sq ft)	4.40	9.42	5.28
Alpha	1.11	Stream Power (lb/ft s)	46.14	163.80	74.10
Frctn Loss (ft)	2.85	Cum Volume (acre-ft)	12.59	16.78	7.53
C & E Loss (ft)	0.08	Cum SA (acres)	2.56	1.77	1.20

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water 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: San Mateo Creek
REACH: Lower RS: 85.341

INPUT
Description: Updated Manning's N Distribution
Station Elevation Data num= 41

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	29.1	7.21	26.82	11.67	26.16	31.09	24.98	46	24.19
64.71	23.2	107.34	21.1	119.79	20.49	201.37	15.73	256.42	13.63
328.02	12.88	354.26	12.74	357.36	12.66	373.28	12.5	678.15	7.34
761.15	7.26	870.99	6.93	976.8	6.61	1046.13	6.4	1046.94	6.4
1047.19	6.39	1047.33	6.39	1047.81	6.38	1049.08	6.38	1143.89	5.54
1192.74	5.15	1277.42	5.45	1351.66	6.37	1351.75	6.37	1351.78	6.37
1373.79	7.14	1410.76	8.43	1426.05	8.97	1426.1	8.97	1426.95	9.08
1466.22	14.03	1468.42	14.73	1474.52	16.25	1506.75	24.56	1523.54	27.51
1533.44	29.48								

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.05	46	.02	107.34	.05	1410.76	.02	1426.1	.05

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
870.99	1373.79	68.18	85.34	37.96	.1	.3

CROSS SECTION OUTPUT Profile #Q50

E.G. Elev (ft)	12.01	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.87	Wt. n-Val.	0.050	0.050	0.041
W.S. Elev (ft)	10.14	Reach Len. (ft)			
Crit W.S. (ft)	10.31	Flow Area (sq ft)	802.29	2049.75	114.63
E.G. Slope (ft/ft)	0.023847	Area (sq ft)	802.29	2049.75	114.63
Q Total (cfs)	31354.00	Flow (cfs)	6300.88	24004.91	1048.20
Top Width (ft)	922.74	Top Width (ft)	358.36	502.80	61.58
Vel Total (ft/s)	10.57	Avg. Vel. (ft/s)	7.85	11.71	9.14
Max Chl Dpth (ft)	4.99	Hydr. Depth (ft)	2.24	4.08	1.86
Conv. Total (cfs)	203037.3	Conv. (cfs)	40802.3	155447.2	6787.8
Length Wtd. (ft)		Wetted Per. (ft)	358.38	502.83	61.69
Min Ch El (ft)	5.15	Shear (lb/sq ft)	3.33	6.07	2.77
Alpha	1.08	Stream Power (lb/ft s)	26.17	71.07	25.30
Frctn Loss (ft)	3.40	Cum Volume (acre-ft)			
C & E Loss (ft)	0.01	Cum SA (acres)			

Warning: The energy loss was greater than 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 #Q100

		Element	Left OB	Channel	Right OB
E.G. Elev (ft)	13.57	Wt. n-Val.	0.050	0.050	0.039
Vel Head (ft)	2.45	Reach Len. (ft)			
W.S. Elev (ft)	11.12	Flow Area (sq ft)	1182.88	2543.73	178.96
Crit W.S. (ft)	11.43	Area (sq ft)	1182.88	2543.73	178.96
E.G. Slope (ft/ft)	0.023747	Flow (cfs)	10864.97	34329.59	2117.44
Q Total (cfs)	47312.00	Top Width (ft)	416.40	502.80	69.37
Top Width (ft)	988.58	Avg. Vel. (ft/s)	9.19	13.50	11.83
Vel Total (ft/s)	12.11	Hydr. Depth (ft)	2.84	5.06	2.58
Max Chl Dpth (ft)	5.97	Conv. (cfs)	70506.0	222774.8	13740.7
Conv. Total (cfs)	307021.5	Wetted Per. (ft)	416.44	502.83	69.54
Length Wtd. (ft)		Shear (lb/sq ft)	4.21	7.50	3.82
Min Ch El (ft)	5.15	Stream Power (lb/ft s)	38.68	101.22	45.14
Alpha	1.08	Cum Volume (acre-ft)			
Frctn Loss (ft)	3.40	Cum SA (acres)			
C & E Loss (ft)	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 #Q100HC

		Element	Left OB	Channel	Right OB
E.G. Elev (ft)	18.64	Wt. n-Val.	0.050	0.050	0.038
Vel Head (ft)	4.32	Reach Len. (ft)			
W.S. Elev (ft)	14.32	Flow Area (sq ft)	2872.65	4150.85	441.03
Crit W.S. (ft)	15.14	Area (sq ft)	2872.65	4150.85	441.03
E.G. Slope (ft/ft)	0.022658	Flow (cfs)	35234.23	75844.04	7812.73
Q Total (cfs)	118891.00	Top Width (ft)	632.66	502.80	93.34
Top Width (ft)	1228.81	Avg. Vel. (ft/s)	12.27	18.27	17.71
Vel Total (ft/s)	15.93	Hydr. Depth (ft)	4.54	8.26	4.72
Max Chl Dpth (ft)	9.17	Conv. (cfs)	234073.6	503859.1	51902.8
Conv. Total (cfs)	789835.5	Wetted Per. (ft)	632.73	502.83	93.74
Length Wtd. (ft)		Shear (lb/sq ft)	6.42	11.68	6.66
Min Ch El (ft)	5.15	Stream Power (lb/ft s)	78.77	213.36	117.90
Alpha	1.10	Cum Volume (acre-ft)			
Frctn Loss (ft)	3.40	Cum SA (acres)			
C & E Loss (ft)	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.

SUMMARY OF MANNING'S N VALUES

River:San Mateo Creek

Reach	River Sta.	n1	n2	n3	n4	n5	n6	n7	n8	n9	n10	n11	n12	n13

Lower	17108.89	.035	.05	.035	.05	.02	.05						
Lower	16909.21	.035	.05	.035	.05	.02	.05						
Lower	16706.13	.035	.05	.035	.05	.02	.05						
Lower	16505.64	.035	.05	.035	.05	.02	.05						
Lower	16299.19	.035	.05	.035	.05	.02	.05						
Lower	16105.61	.05	.035	.05									
Lower	16066.6*	.05	.047	.038	.038	.05	.047	.035	.038	.05			
Lower	16027.6*	.05	.044	.041	.041	.05	.044	.035	.041	.05			
Lower	15988.6*	.05	.041	.044	.044	.05	.041	.035	.044	.05			
Lower	15949.6*	.05	.038	.047	.047	.05	.038	.035	.047	.05			
Lower	15910.69	.05	.035	.05	.035	.05							
Lower	15871.7*	.05	.038	.047	.035	.038	.05	.047	.038	.035	.035	.035	.047
.047													
Lower	15832.8*	.05	.04	.045	.035	.04	.05	.045	.04	.035	.035	.035	.045
.045													
Lower	15793.8*	.05	.043	.043	.035	.043	.05	.043	.043	.035	.035	.035	.043
.043													
Lower	15754.9*	.05	.045	.04	.035	.045	.05	.04	.045	.035	.035	.035	.04
.04													
Lower	15716.0*	.05	.048	.037	.035	.048	.05	.037	.048	.035	.035	.035	.037
.037													
Lower	15677.08	.05	.035	.05	.035	.05	.035						
Lower	15455.59	.05	.035	.05	.035	.05	.035						
Lower	15282.84	.05	.035	.05	.035	.05	.035						
Lower	15076.02	.05	.035	.05	.035								
Lower	14843.33	.05	.035	.05	.035								
Lower	14640.75	.05	.035	.05									
Lower	14474.32	.02	.035	.05	.035	.05							
Lower	14295.85	.02	.035	.05	.035	.05							
Lower	14206.87	.02	.035	.05	.035	.05							
Lower	14108.61	.02	.05	.035	.05								
Lower	14009.16	.02	.05	.035	.05								
Lower	13906.13	.02	.02	.05	.035	.05	.035	.05					
Lower	13813.01	.035	.05	.035	.02	.05	.035	.05	.07				
Lower	13721.89	.035	.02	.05	.035	.05							
Lower	13616.16	.035	.02	.05	.035	.05							
Lower	13508.64	.035	.02	.05	.035	.05							
Lower	13407.57	.035	.02	.05	.035	.035	.05						
Lower	13315.43	.035	.02	.05	.035	.05							
Lower	12905.33	.035	.02	.05	.035	.05	.035	.05					
Lower	11695.46	.035	.02	.05	.035	.05	.035	.05	.035	.05			
Lower	10698.02	.035	.02	.035	.05	.035	.05	.035	.05				
Lower	10103.57	.035	.02	.05	.02	.05	.02	.05	.035				
Lower	9476.099	.035	.02	.05	.035								
Lower	8888.551	.035	.02	.05	.035	.05	.035						
Lower	8290.415	.035	.02	.05	.035	.05	.035	.05	.035				
Lower	7667.615	.035	.02	.035	.05	.035	.05	.02					
Lower	7116.984	.035	.05	.035	.05	.02							
Lower	6553.777	.035	.02	.035	.05	.035	.05	.02					
Lower	6146.684	.035	.02	.035	.05	.035	.02	.05					
Lower	5898.852	.035	.02	.035	.05	.035	.02	.05					
Lower	5313.135	.035	.02	.05	.035	.05							
Lower	4689.719	.035	.02	.05	.035	.05							
Lower	4089.740	.035	.02	.05	.035	.05	.07	.05					
Lower	3486.110	.035	.02	.05	.035	.07							
Lower	2883.526	.035	.05	.035	.05								
Lower	2679.762	.035	.07	.05	.035	.05							
Lower	2283.606	.035	.07	.05	.035	.05							
Lower	2075.420	.035	.07	.05	.035	.05							

Lower	1907.350	.035	.07	.05	.035	.05	
Lower	1700.584	.035	.07	.05	.035	.05	
Lower	1525.293	.035	.07	.05			
Lower	1306.721	.02	.05	.02			
Lower	1300	Bridge					
Lower	1053.212	.05	.02				
Lower	977.176	.05					
Lower	970	Bridge					
Lower	926.767	.05	.02	.05			
Lower	666.956	.02	.05	.02	.05		
Lower	482.270	.05	.02	.05	.035	.02	.05
Lower	284.051	.05	.02	.05	.035	.02	.05
Lower	85.341	.05	.02	.05	.02	.05	

SUMMARY OF REACH LENGTHS

River: San Mateo Creek

Reach	River Sta.	Left	Channel	Right
Lower	17108.89	209.32	199.68	212.7
Lower	16909.21	217.14	203.08	206.1
Lower	16706.13	213.02	200.49	184.93
Lower	16505.64	199.4	206.45	210.25
Lower	16299.19	219.05	193.6	180.85
Lower	16105.61	33.01	38.98	40.87
Lower	16066.6*	33.01	38.98	40.87
Lower	16027.6*	33.01	38.98	40.87
Lower	15988.6*	33.01	38.98	40.87
Lower	15949.6*	33.01	38.98	40.87
Lower	15910.69	44.06	38.94	33.57
Lower	15871.7*	44.06	38.94	33.57
Lower	15832.8*	44.06	38.94	33.57
Lower	15793.8*	44.06	38.94	33.57
Lower	15754.9*	44.06	38.94	33.57
Lower	15716.0*	44.06	38.94	33.57
Lower	15677.08	229.4	221.5	185.6
Lower	15455.59	159.78	172.75	206.99
Lower	15282.84	247.92	206.82	172.28
Lower	15076.02	240.22	232.69	186.85
Lower	14843.33	230.23	202.58	217.82
Lower	14640.75	142.45	166.43	154.49
Lower	14474.32	199.28	178.47	167.43
Lower	14295.85	93.39	88.97	84.07
Lower	14206.87	100.64	98.26	92.36
Lower	14108.61	93.54	99.45	106.38
Lower	14009.16	100.03	103.03	102.07
Lower	13906.13	92.63	93.13	94.58
Lower	13813.01	96.66	91.12	77.43
Lower	13721.89	104.34	105.73	83.35
Lower	13616.16	106.9	107.52	109.59
Lower	13508.64	89.44	101.07	116.92
Lower	13407.57	95.24	92.14	91.38
Lower	13315.43	395.33	410.1	440.35
Lower	12905.33	1161.81	1209.87	1227.39
Lower	11695.46	914.27	997.45	1009.86

Lower	10698.02	601.47	594.45	599.46
Lower	10103.57	615.7	627.48	572.22
Lower	9476.099	632.1	587.55	573.86
Lower	8888.551	583.69	598.13	621.47
Lower	8290.415	624.1	622.8	620.76
Lower	7667.615	556.83	550.63	551.5
Lower	7116.984	569.88	563.21	532.8
Lower	6553.777	469.22	407.1	351.14
Lower	6146.684	280.12	247.83	242.98
Lower	5898.852	604.78	585.72	573.19
Lower	5313.135	603.98	623.48	637.26
Lower	4689.719	557.08	599.98	624.49
Lower	4089.740	589.66	603.63	611.39
Lower	3486.110	577.29	602.58	615.08
Lower	2883.526	193.46	203.76	211.14
Lower	2679.762	387.64	396.16	397.97
Lower	2283.606	218.79	208.19	198.85
Lower	2075.420	167.27	168.07	167.81
Lower	1907.350	205	206.77	220.21
Lower	1700.584	191.48	175.29	163.76
Lower	1525.293	330.77	218.57	153.37
Lower	1306.721	221.39	253.51	221.56
Lower	1300	Bridge		
Lower	1053.212	331.16	386.26	449.77
Lower	977.176	50.27	50.41	43.68
Lower	970	Bridge		
Lower	926.767	197.34	259.8	349.98
Lower	666.956	187.2	184.7	178.1
Lower	482.270	215.55	198.2	189.25
Lower	284.051	216.3	198.7	198.95
Lower	85.341	68.18	85.34	37.96

SUMMARY OF CONTRACTION AND EXPANSION COEFFICIENTS
River: San Mateo Creek

Reach	River Sta.	Contr.	Expan.
Lower	17108.89	.1	.3
Lower	16909.21	.1	.3
Lower	16706.13	.1	.3
Lower	16505.64	.1	.3
Lower	16299.19	.1	.3
Lower	16105.61	.1	.3
Lower	16066.6*	.1	.3
Lower	16027.6*	.1	.3
Lower	15988.6*	.1	.3
Lower	15949.6*	.1	.3
Lower	15910.69	.1	.3
Lower	15871.7*	.1	.3
Lower	15832.8*	.1	.3
Lower	15793.8*	.1	.3
Lower	15754.9*	.1	.3
Lower	15716.0*	.1	.3
Lower	15677.08	.1	.3
Lower	15455.59	.1	.3

Lower	15282.84		.1	.3
Lower	15076.02		.1	.3
Lower	14843.33		.1	.3
Lower	14640.75		.1	.3
Lower	14474.32		.1	.3
Lower	14295.85		.1	.3
Lower	14206.87		.1	.3
Lower	14108.61		.1	.3
Lower	14009.16		.1	.3
Lower	13906.13		.1	.3
Lower	13813.01		.1	.3
Lower	13721.89		.1	.3
Lower	13616.16		.1	.3
Lower	13508.64		.1	.3
Lower	13407.57		.1	.3
Lower	13315.43		.1	.3
Lower	12905.33		.1	.3
Lower	11695.46		.1	.3
Lower	10698.02		.1	.3
Lower	10103.57		.1	.3
Lower	9476.099		.1	.3
Lower	8888.551		.1	.3
Lower	8290.415		.1	.3
Lower	7667.615		.1	.3
Lower	7116.984		.1	.3
Lower	6553.777		.1	.3
Lower	6146.684		.1	.3
Lower	5898.852		.1	.3
Lower	5313.135		.1	.3
Lower	4689.719		.1	.3
Lower	4089.740		.1	.3
Lower	3486.110		.1	.3
Lower	2883.526		.1	.3
Lower	2679.762		.1	.3
Lower	2283.606		.1	.3
Lower	2075.420		.1	.3
Lower	1907.350		.1	.3
Lower	1700.584		.1	.3
Lower	1525.293		.1	.3
Lower	1306.721		.3	.5
Lower	1300	Bridge		
Lower	1053.212		.3	.5
Lower	977.176		.3	.5
Lower	970	Bridge		
Lower	926.767		.3	.5
Lower	666.956		.1	.3
Lower	482.270		.1	.3
Lower	284.051		.1	.3
Lower	85.341		.1	.3

Profile Output Table - Standard Table 1

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
Lower	17108.89	Q50	31354.00	90.54	98.95	97.85	100.07	0.004296	10.15	4071.72	1029.82	0.64
Lower	17108.89	Q100	47312.00	90.54	100.55	99.32	101.81	0.003984	11.07	5787.93	1100.20	0.64
Lower	17108.89	Q100HC	118891.00	90.54	104.90	102.99	107.06	0.004319	14.85	10815.60	1201.98	0.71

Lower	16909.21	Q50	31354.00	88.57	96.37	96.37	98.56	0.012640	13.85	2920.65	702.41	0.93
Lower	16909.21	Q100	47312.00	88.57	98.08	98.08	100.44	0.010714	14.80	4264.44	834.49	0.89
Lower	16909.21	Q100HC	118891.00	88.57	103.62		105.99	0.005936	15.37	10207.56	1195.06	0.72
Lower	16706.13	Q50	31354.00	83.98	94.88	92.39	96.20	0.004365	9.84	3802.91	634.51	0.55
Lower	16706.13	Q100	47312.00	83.98	96.56	94.62	98.39	0.005142	11.88	4966.18	750.59	0.62
Lower	16706.13	Q100HC	118891.00	83.98	102.10		104.82	0.005141	15.48	10083.24	1024.34	0.66
Lower	16505.64	Q50	31354.00	84.57	93.95		95.27	0.004999	9.64	3795.30	717.15	0.57
Lower	16505.64	Q100	47312.00	84.57	95.56		97.30	0.005579	11.40	5028.00	816.06	0.62
Lower	16505.64	Q100HC	118891.00	84.57	101.28		103.75	0.004994	14.46	10418.29	1014.47	0.64
Lower	16299.19	Q50	31354.00	84.80	92.78		94.12	0.006088	9.80	3688.86	742.17	0.64
Lower	16299.19	Q100	47312.00	84.80	94.14		96.00	0.006981	11.74	4729.97	789.36	0.70
Lower	16299.19	Q100HC	118891.00	84.80	97.74	97.74	102.09	0.010982	18.49	7802.25	929.67	0.93
Lower	16105.61	Q50	31354.00	84.43	90.45	90.45	92.45	0.012101	12.27	3090.18	796.87	0.91
Lower	16105.61	Q100	47312.00	84.43	91.85	91.85	94.26	0.011426	13.77	4271.07	888.68	0.91
Lower	16105.61	Q100HC	118891.00	84.43	95.83	96.14	99.85	0.011610	18.61	8245.59	1085.20	0.99
Lower	16066.6*	Q50	31354.00	83.22	89.11	89.62	91.83	0.016804	13.99	2583.21	697.73	1.08
Lower	16066.6*	Q100	47312.00	83.22	90.50	91.09	93.68	0.015027	15.46	3613.51	782.46	1.06
Lower	16066.6*	Q100HC	118891.00	83.22	95.16	95.42	99.39	0.010693	18.57	7717.99	988.52	0.98
Lower	16027.6*	Q50	31354.00	82.01	88.14	88.81	91.09	0.020293	14.41	2424.12	657.30	1.13
Lower	16027.6*	Q100	47312.00	82.01	89.52	90.34	93.00	0.018235	15.97	3387.51	740.02	1.11
Lower	16027.6*	Q100HC	118891.00	82.01	94.00	94.70	98.86	0.013532	19.49	7120.22	928.73	1.04
Lower	15988.6*	Q50	31354.00	80.79	87.33	87.99	90.27	0.021824	14.30	2386.71	640.87	1.12
Lower	15988.6*	Q100	47312.00	80.79	88.62	89.43	92.23	0.020725	16.11	3273.77	728.54	1.13
Lower	15988.6*	Q100HC	118891.00	80.79	92.70	93.86	98.21	0.017492	20.46	6643.09	914.19	1.12
Lower	15949.6*	Q50	31354.00	79.58	86.79	87.21	89.37	0.019366	13.34	2524.06	666.07	1.03
Lower	15949.6*	Q100	47312.00	79.58	87.86	88.72	91.38	0.021543	15.79	3290.51	751.86	1.11
Lower	15949.6*	Q100HC	118891.00	79.58	91.47	92.96	97.42	0.021502	21.09	6368.64	915.15	1.18
Lower	15910.69	Q50	31354.00	78.37	86.07	86.59	88.71	0.014833	13.46	2590.51	793.87	1.03
Lower	15910.69	Q100	47312.00	78.37	87.17	87.96	90.67	0.015832	15.84	3490.45	831.42	1.11
Lower	15910.69	Q100HC	118891.00	78.37	91.30	92.33	96.58	0.013329	20.46	7164.66	947.44	1.11
Lower	15871.7*	Q50	31354.00	78.36	85.81	86.07	88.10	0.013111	12.49	2711.13	767.70	0.97
Lower	15871.7*	Q100	47312.00	78.36	87.16	87.44	89.90	0.012172	13.93	3800.55	832.66	0.96
Lower	15871.7*	Q100HC	118891.00	78.36	90.45	91.66	96.00	0.015257	20.33	6694.66	925.73	1.14
Lower	15832.8*	Q50	31354.00	78.34	85.31	85.54	87.58	0.014153	12.42	2697.85	758.40	0.98
Lower	15832.8*	Q100	47312.00	78.34	86.63	86.95	89.41	0.013120	13.95	3745.81	816.76	0.98
Lower	15832.8*	Q100HC	118891.00	78.34	90.34	91.15	95.38	0.013510	19.26	6980.87	922.75	1.07
Lower	15793.8*	Q50	31354.00	78.33	85.30	84.99	87.03	0.010653	10.86	3099.21	787.61	0.84
Lower	15793.8*	Q100	47312.00	78.33	86.61	86.37	88.83	0.010435	12.46	4164.01	826.94	0.86
Lower	15793.8*	Q100HC	118891.00	78.33	91.36	90.55	94.78	0.008160	15.83	8387.49	954.09	0.83
Lower	15754.9*	Q50	31354.00	78.32	85.19		86.57	0.007755	9.71	3464.16	809.09	0.73
Lower	15754.9*	Q100	47312.00	78.32	86.55		88.35	0.007772	11.25	4589.36	844.16	0.76
Lower	15754.9*	Q100HC	118891.00	78.32	91.36		94.37	0.006597	14.78	8909.80	951.32	0.76
Lower	15716.0*	Q50	31354.00	78.30	85.14		86.22	0.005746	8.55	3918.12	834.91	0.63
Lower	15716.0*	Q100	47312.00	78.30	86.53		87.98	0.005964	10.04	5099.08	865.77	0.66

Lower	15716.0*	Q100HC	118891.00	78.30	91.40		94.01	0.005532	13.65	9530.19	957.09	0.69
Lower	15677.08	Q50	31354.00	78.29	85.10		85.95	0.004512	7.60	4419.17	863.00	0.54
Lower	15677.08	Q100	47312.00	78.29	86.50		87.69	0.004883	9.06	5647.81	889.13	0.58
Lower	15677.08	Q100HC	118891.00	78.29	91.42		93.71	0.004979	12.76	10192.43	964.18	0.64
Lower	15455.59	Q50	31354.00	77.64	83.62		84.71	0.006883	8.75	3938.73	882.54	0.67
Lower	15455.59	Q100	47312.00	77.64	84.52		86.22	0.008810	11.00	4733.41	890.96	0.78
Lower	15455.59	Q100HC	118891.00	77.64	88.20	87.75	91.99	0.010869	16.71	8195.41	1064.74	0.94
Lower	15282.84	Q50	31354.00	76.42	81.82		83.20	0.010936	10.56	3720.43	1156.62	0.88
Lower	15282.84	Q100	47312.00	76.42	83.20		84.66	0.008466	11.03	5339.68	1188.50	0.81
Lower	15282.84	Q100HC	118891.00	76.42	88.47		90.22	0.004544	12.28	11932.81	1296.39	0.65
Lower	15076.02	Q50	31354.00	74.40	80.99		81.62	0.004144	7.04	5476.40	1428.47	0.53
Lower	15076.02	Q100	47312.00	74.40	82.77		83.41	0.002935	7.16	8054.98	1453.65	0.47
Lower	15076.02	Q100HC	118891.00	74.40	88.46		89.34	0.001939	8.58	16687.25	1574.63	0.42
Lower	14843.33	Q50	31354.00	71.32	80.41	77.16	80.95	0.001950	6.10	5518.45	1143.51	0.39
Lower	14843.33	Q100	47312.00	71.32	81.99	78.41	82.79	0.002262	7.44	6881.56	1200.09	0.44
Lower	14843.33	Q100HC	118891.00	71.32	88.13	82.71	88.94	0.001396	8.21	18214.14	1716.93	0.37
Lower	14640.75	Q50	31354.00	71.87	79.53	77.21	80.39	0.003703	7.59	4278.29	1257.80	0.51
Lower	14640.75	Q100	47312.00	71.87	80.72	78.66	82.09	0.004774	9.58	5137.62	1348.94	0.59
Lower	14640.75	Q100HC	118891.00	71.87	83.21	83.21	87.91	0.011677	17.88	6945.77	1552.34	0.97
Lower	14474.32	Q50	31354.00	71.80	79.41	77.19	79.84	0.001921	6.07	6694.43	1631.51	0.40
Lower	14474.32	Q100	47312.00	71.80	80.90	78.64	81.39	0.001744	6.55	9144.68	1644.61	0.39
Lower	14474.32	Q100HC	118891.00	71.80	84.16	81.29	85.27	0.002510	9.67	14551.96	1675.06	0.49
Lower	14295.85	Q50	31354.00	70.72	78.89	75.97	79.46	0.002072	6.51	5908.57	1545.21	0.42
Lower	14295.85	Q100	47312.00	70.72	80.41	77.28	81.03	0.001948	7.12	8578.67	1787.18	0.42
Lower	14295.85	Q100HC	118891.00	70.72	83.52	81.46	84.76	0.002743	10.29	14226.89	1839.61	0.52
Lower	14206.87	Q50	31354.00	70.13	78.19	76.16	79.18	0.003756	8.16	4057.88	1040.70	0.56
Lower	14206.87	Q100	47312.00	70.13	79.72	77.54	80.76	0.003413	8.89	6851.39	1845.26	0.55
Lower	14206.87	Q100HC	118891.00	70.13	82.87	81.78	84.44	0.003777	11.57	12809.69	1916.68	0.61
Lower	14108.61	Q50	31354.00	70.62	77.70	76.08	78.75	0.004915	8.38	3912.58	1046.63	0.60
Lower	14108.61	Q100	47312.00	70.62	79.17	77.42	80.36	0.004557	9.30	6252.63	1695.70	0.60
Lower	14108.61	Q100HC	118891.00	70.62	82.58	81.50	84.02	0.003870	10.96	13057.40	2042.98	0.59
Lower	14009.16	Q50	31354.00	71.12	76.86		78.13	0.007390	9.33	3754.30	1025.97	0.72
Lower	14009.16	Q100	47312.00	71.12	77.72	77.45	79.66	0.009499	11.69	4686.87	1153.97	0.84
Lower	14009.16	Q100HC	118891.00	71.12	81.27	81.27	83.46	0.006923	13.53	10997.67	2087.75	0.77
Lower	13906.13	Q50	31354.00	70.56	76.12	75.57	77.30	0.008405	9.11	3912.21	1223.00	0.74
Lower	13906.13	Q100	47312.00	70.56	77.35	76.75	78.62	0.007043	9.74	5605.49	1377.60	0.70
Lower	13906.13	Q100HC	118891.00	70.56	79.56	80.13	82.49	0.011347	15.26	9231.53	2120.40	0.94
Lower	13813.01	Q50	31354.00	70.19	75.16	74.96	76.43	0.010288	9.65	3604.36	1654.50	0.83
Lower	13813.01	Q100	47312.00	70.19	75.94	75.94	77.74	0.011753	11.55	4532.06	1773.27	0.92
Lower	13813.01	Q100HC	118891.00	70.19	76.25	77.62	80.78	0.027417	18.36	7024.78	1816.67	1.41
Lower	13721.89	Q50	31354.00	69.82	75.43	74.55	75.76	0.002263	5.26	7019.02	2295.75	0.41
Lower	13721.89	Q100	47312.00	69.82	75.40	75.25	76.16	0.005271	8.00	6965.90	2295.39	0.63
Lower	13721.89	Q100HC	118891.00	69.82	77.57	76.84	79.13	0.006138	10.94	11973.69	2327.12	0.72
Lower	13616.16	Q50	31354.00	65.67	73.71	73.67	75.20	0.010246	10.31	3415.78	2036.02	0.86

Lower	13616.16	Q100	47312.00	65.67	75.00	74.67	75.66	0.003964	7.58	7769.67	2380.59	0.56
Lower	13616.16	Q100HC	118891.00	65.67	77.03	76.22	78.48	0.005628	11.02	12650.41	2418.88	0.70
Lower	13508.64	Q50	31354.00	64.82	72.62	72.31	74.13	0.009586	10.05	3324.41	1853.94	0.84
Lower	13508.64	Q100	47312.00	64.82	74.71	73.67	75.27	0.002792	6.91	8655.79	2515.91	0.48
Lower	13508.64	Q100HC	118891.00	64.82	76.51	75.73	77.89	0.005050	10.86	13188.44	2534.84	0.66
Lower	13407.57	Q50	31354.00	64.24	71.56	71.32	73.08	0.011245	10.04	3262.51	976.76	0.86
Lower	13407.57	Q100	47312.00	64.24	72.74	72.52	74.66	0.010427	11.41	4426.96	2086.25	0.86
Lower	13407.57	Q100HC	118891.00	64.24	75.28	75.26	77.23	0.007898	12.83	11464.97	2572.32	0.80
Lower	13315.43	Q50	31354.00	65.10	71.41	69.96	72.28	0.004322	7.54	4269.03	1313.45	0.59
Lower	13315.43	Q100	47312.00	65.10	72.64	71.07	73.83	0.004605	8.93	5656.79	2434.03	0.63
Lower	13315.43	Q100HC	118891.00	65.10	75.21	74.33	76.52	0.004087	10.47	14052.49	2693.51	0.62
Lower	12905.33	Q50	31354.00	62.47	69.12	68.42	70.11	0.006555	7.98	3992.10	1479.86	0.72
Lower	12905.33	Q100	47312.00	62.47	69.92	69.44	71.40	0.007729	9.83	4945.78	1574.95	0.81
Lower	12905.33	Q100HC	118891.00	62.47	73.19	71.97	74.72	0.004707	10.96	13218.33	2869.70	0.69
Lower	11695.46	Q50	31354.00	53.64	62.76	61.82	63.62	0.004478	8.32	4465.75	1129.98	0.65
Lower	11695.46	Q100	47312.00	53.64	64.46	62.78	65.38	0.003357	8.72	6441.86	1448.38	0.59
Lower	11695.46	Q100HC	118891.00	53.64	69.13	66.31	70.52	0.002686	11.04	13301.25	2330.43	0.57
Lower	10698.02	Q50	31354.00	45.13	60.97	56.13	61.56	0.001141	6.40	5634.87	1025.13	0.36
Lower	10698.02	Q100	47312.00	45.13	62.36	58.15	63.23	0.001546	7.95	7154.88	1161.89	0.42
Lower	10698.02	Q100HC	118891.00	45.13	66.04	63.99	67.88	0.002706	12.23	12223.44	2657.19	0.56
Lower	10103.57	Q50	31354.00	51.14	59.41	57.71	60.33	0.004510	7.91	4123.01	1243.95	0.52
Lower	10103.57	Q100	47312.00	51.14	60.87	59.66	61.85	0.003742	8.16	5973.29	1639.50	0.49
Lower	10103.57	Q100HC	118891.00	51.14	64.16	62.82	65.89	0.004027	10.51	11282.74	2664.38	0.53
Lower	9476.099	Q50	31354.00	45.94	55.38		56.87	0.006748	10.75	3662.40	778.87	0.62
Lower	9476.099	Q100	47312.00	45.94	56.89		58.66	0.006997	12.11	4900.13	860.16	0.65
Lower	9476.099	Q100HC	118891.00	45.94	61.09	60.79	62.91	0.005805	13.74	12191.78	2619.64	0.63
Lower	8888.551	Q50	31354.00	45.56	52.71		53.70	0.004004	8.39	4411.48	1088.32	0.57
Lower	8888.551	Q100	47312.00	45.56	53.98	52.20	55.27	0.004393	9.84	5884.58	1238.68	0.61
Lower	8888.551	Q100HC	118891.00	45.56	57.25		59.47	0.005499	13.79	11189.36	2188.24	0.72
Lower	8290.415	Q50	31354.00	42.29	48.34	48.34	49.87	0.011428	8.72	3474.97	1219.87	0.85
Lower	8290.415	Q100	47312.00	42.29	49.30	49.30	51.30	0.010679	9.73	4667.75	1242.83	0.83
Lower	8290.415	Q100HC	118891.00	42.29	54.23	54.23	56.42	0.004707	10.35	11128.43	1630.43	0.60
Lower	7667.615	Q50	31354.00	37.41	44.44	42.16	44.91	0.003073	5.70	5733.19	1116.09	0.44
Lower	7667.615	Q100	47312.00	37.41	46.26	43.10	46.84	0.002622	6.32	7801.43	1145.73	0.42
Lower	7667.615	Q100HC	118891.00	37.41	50.63	46.40	51.94	0.003180	9.52	13070.38	1277.32	0.50
Lower	7116.984	Q50	31354.00	33.82	43.30		43.68	0.001633	4.97	6363.41	1084.21	0.36
Lower	7116.984	Q100	47312.00	33.82	45.24		45.73	0.001529	5.64	8485.97	1095.46	0.35
Lower	7116.984	Q100HC	118891.00	33.82	48.93		50.30	0.002761	9.52	13328.30	2130.95	0.49
Lower	6553.777	Q50	31354.00	32.21	42.84		43.09	0.000646	4.08	7989.44	888.55	0.23
Lower	6553.777	Q100	47312.00	32.21	44.71		45.10	0.000796	5.10	9659.14	896.06	0.26
Lower	6553.777	Q100HC	118891.00	32.21	47.80		48.95	0.001922	9.26	15703.98	2896.41	0.43
Lower	6146.684	Q50	31354.00	31.60	42.22		42.72	0.001130	5.92	5722.42	777.11	0.34
Lower	6146.684	Q100	47312.00	31.60	44.00		44.66	0.001256	7.01	7839.71	1878.89	0.37
Lower	6146.684	Q100HC	118891.00	31.60	45.62	45.62	47.75	0.003830	13.38	12062.05	3041.16	0.66

Lower	5898.852	Q50	31354.00	32.40	40.30	39.98	42.05	0.005477	11.83	3322.79	1525.47	0.77
Lower	5898.852	Q100	47312.00	32.40	41.49	41.33	43.87	0.006348	14.08	4248.22	1900.25	0.85
Lower	5898.852	Q100HC	118891.00	32.40	45.02	44.23	46.27	0.003089	12.37	15142.01	2934.04	0.63
Lower	5313.135	Q50	31354.00	30.85	35.48	35.48	36.97	0.014652	11.42	3354.05	1363.73	1.02
Lower	5313.135	Q100	47312.00	30.85	36.46	36.46	38.37	0.013845	12.79	4413.82	1487.41	1.02
Lower	5313.135	Q100HC	118891.00	30.85	44.99	39.78	45.29	0.000597	5.10	27426.62	3230.17	0.25
Lower	4689.719	Q50	31354.00	23.21	32.66	29.36	33.03	0.001795	5.31	7049.51	1397.05	0.34
Lower	4689.719	Q100	47312.00	23.21	34.25	30.51	34.72	0.001796	6.03	9369.41	2140.83	0.35
Lower	4689.719	Q100HC	118891.00	23.21	44.93	34.28	45.06	0.000171	3.12	41668.16	3310.96	0.12
Lower	4089.740	Q50	31354.00	25.52	29.63	29.15	30.66	0.013813	8.25	3908.90	1209.06	0.77
Lower	4089.740	Q100	47312.00	25.52	32.59	30.07	33.21	0.003751	6.45	7682.68	1579.40	0.45
Lower	4089.740	Q100HC	118891.00	25.52	44.85	33.22	44.96	0.000164	2.74	44865.00	3288.65	0.11
Lower	3486.110	Q50	31354.00	14.86	29.67	21.04	29.80	0.000323	2.98	11422.63	1703.78	0.15
Lower	3486.110	Q100	47312.00	14.86	32.40	22.23	32.58	0.000356	3.57	14633.21	2086.04	0.16
Lower	3486.110	Q100HC	118891.00	14.86	44.82	26.36	44.89	0.000069	2.34	57568.92	3318.77	0.08
Lower	2883.526	Q50	31354.00	14.12	29.27	21.72	29.53	0.000597	4.33	8319.69	1771.85	0.21
Lower	2883.526	Q100	47312.00	14.12	32.15	23.34	32.35	0.000415	4.13	15738.94	2933.10	0.18
Lower	2883.526	Q100HC	118891.00	14.12	44.75	28.52	44.84	0.000080	2.67	50343.82	3032.76	0.09
Lower	2679.762	Q50	31354.00	14.19	28.93	23.13	29.35	0.001091	5.47	6487.19	1791.52	0.29
Lower	2679.762	Q100	47312.00	14.19	32.01	24.68	32.25	0.000563	4.59	14105.63	2766.24	0.21
Lower	2679.762	Q100HC	118891.00	14.19	44.71	30.57	44.82	0.000095	2.85	45528.30	2871.68	0.10
Lower	2283.606	Q50	31354.00	17.37	28.29	24.62	28.80	0.001818	6.27	6348.24	1942.76	0.37
Lower	2283.606	Q100	47312.00	17.37	31.79	26.41	32.01	0.000624	4.58	13946.35	2760.76	0.23
Lower	2283.606	Q100HC	118891.00	17.37	44.67	30.90	44.78	0.000095	2.87	44821.15	2843.13	0.10
Lower	2075.420	Q50	31354.00	13.10	28.20	22.29	28.54	0.000634	5.81	9184.87	2786.68	0.27
Lower	2075.420	Q100	47312.00	13.10	31.74	24.38	31.91	0.000282	4.47	17235.94	2802.56	0.19
Lower	2075.420	Q100HC	118891.00	13.10	44.66	29.75	44.76	0.000077	3.33	46804.98	2879.13	0.11
Lower	1907.350	Q50	31354.00	10.36	28.29	19.46	28.42	0.000210	3.57	13406.13	2701.16	0.16
Lower	1907.350	Q100	47312.00	10.36	31.75	21.59	31.86	0.000145	3.39	20063.88	2829.65	0.14
Lower	1907.350	Q100HC	118891.00	10.36	44.64	27.41	44.75	0.000069	3.28	45127.48	2879.04	0.10
Lower	1700.584	Q50	31354.00	10.54	28.27	20.03	28.36	0.000199	2.71	13255.39	2436.55	0.12
Lower	1700.584	Q100	47312.00	10.54	31.72	22.33	31.82	0.000160	2.77	18449.23	2783.07	0.11
Lower	1700.584	Q100HC	118891.00	10.54	44.58	27.13	44.73	0.000096	3.03	38147.68	2872.51	0.09
Lower	1525.293	Q50	31354.00	8.14	27.47	19.22	28.22	0.001402	7.32	4779.35	2225.26	0.31
Lower	1525.293	Q100	47312.00	8.14	31.56	22.27	31.77	0.000332	4.11	13123.36	2453.41	0.16
Lower	1525.293	Q100HC	118891.00	8.14	44.33	28.33	44.68	0.000261	5.01	25162.38	2885.43	0.15
Lower	1306.721	Q50	31354.00	9.84	27.24	18.67	27.89	0.001244	6.63	4967.11	357.47	0.29
Lower	1306.721	Q100	47312.00	9.84	30.58	20.96	31.54	0.001447	8.11	6194.89	378.24	0.33
Lower	1306.721	Q100HC	118891.00	9.84	42.43	28.70	44.39	0.001601	11.75	11071.59	434.76	0.37
Lower	1300		Bridge									
Lower	1053.212	Q50	31354.00	11.63	25.73		26.76	0.002841	8.41	3944.88	364.17	0.42
Lower	1053.212	Q100	47312.00	11.63	28.73		30.16	0.002980	9.97	5063.01	380.90	0.45
Lower	1053.212	Q100HC	118891.00	11.63	40.20		42.66	0.002514	13.31	9771.06	437.51	0.45
Lower	977.176	Q50	31354.00	11.49	23.38	20.77	25.02	0.005827	10.93	3138.21	352.53	0.59

Lower	977.176	Q100	47312.00	11.49	26.35	22.86	28.42	0.005335	12.33	4212.55	371.59	0.59
Lower	977.176	Q100HC	118891.00	11.49	39.16	30.02	41.60	0.002792	13.90	10109.96	550.84	0.48
Lower	970		Bridge									
Lower	926.767	Q50	31354.00	10.92	18.02	19.66	23.83	0.043396	20.21	1644.66	311.62	1.47
Lower	926.767	Q100	47312.00	10.92	20.50	21.83	26.52	0.028675	20.75	2442.46	330.72	1.26
Lower	926.767	Q100HC	118891.00	10.92	25.90	29.44	38.24	0.030792	29.96	4298.23	358.93	1.42
Lower	666.956	Q50	31354.00	5.87	16.31	15.78	18.71	0.009909	13.31	2774.02	458.02	0.76
Lower	666.956	Q100	47312.00	5.87	17.86	17.86	21.23	0.011808	16.06	3512.30	497.16	0.85
Lower	666.956	Q100HC	118891.00	5.87	22.14	23.92	29.26	0.017027	23.96	5971.17	673.14	1.08
Lower	482.270	Q50	31354.00	5.05	15.80		17.04	0.005472	9.83	3849.90	744.24	0.56
Lower	482.270	Q100	47312.00	5.05	17.06	16.09	18.81	0.006696	11.82	4821.18	808.30	0.64
Lower	482.270	Q100HC	118891.00	5.05	18.34	20.40	25.58	0.024002	24.12	5901.31	872.54	1.23
Lower	284.051	Q50	31354.00	6.37	13.64	13.64	15.41	0.012520	11.97	3262.52	898.56	0.81
Lower	284.051	Q100	47312.00	6.37	14.89	14.89	17.00	0.012526	13.40	4424.28	956.24	0.83
Lower	284.051	Q100HC	118891.00	6.37	18.54	18.54	22.11	0.012851	17.40	8259.28	1106.37	0.89
Lower	85.341	Q50	31354.00	5.15	10.14	10.31	12.01	0.023847	11.71	2966.68	922.74	1.02
Lower	85.341	Q100	47312.00	5.15	11.12	11.43	13.57	0.023747	13.50	3905.57	988.58	1.06
Lower	85.341	Q100HC	118891.00	5.15	14.32	15.14	18.64	0.022658	18.27	7464.54	1228.81	1.12

HEC-RAS Version 3.1.1 May 2003
U.S. Army Corp of Engineers
Hydrologic Engineering Center
609 Second Street, Suite D
Davis, California 95616-4687
(916) 756-1104

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X     X  XXXXXX    XXXX        XXXX       XX      XXXX
X     X  X        X    X      X   X     X  X    X
X     X  X        X           X   X     X    X   X
XXXXXXX  XXXX     X       XXX  XXXX     XXXXXX    XXXX
X     X  X        X            X  X     X    X        X
X     X  X        X    X       X   X     X    X        X
X     X  XXXXXX    XXXX        X    X   X    X   XXXXX
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PROJECT DATA
Project Title: Project Model - Model F2-X4
Project File : PMF2_X4.prj
Run Date and Time: 8/28/2003 9:34:09 PM

Project in English units

Project Description:
FEC-M Alternative - San Mateo Creek Crossing

PLAN DATA

Plan Title: Existing Flow/Proposed-Ultimate Geometry
Plan File : c:\projects\2PDA0104\hydr\LHS\Modeling\Model F\HecRas F\PMF2_X4.p03

Geometry Title: Proposed Conditions - Ultimate
Geometry File : c:\projects\2PDA0104\hydr\LHS\Modeling\Model F\HecRas F\PMF2_X4.g03

Flow Title : Existing Conditions
Flow File : c:\projects\2PDA0104\hydr\LHS\Modeling\Model F\HecRas F\PMF2_X4.f01

Plan Summary Information:

Number of:	Cross Sections	= 65	Mulitple Openings	=	0
	Culverts	= 0	Inline Structures	=	0
	Bridges	= 2	Lateral Structures	=	0

Computational Information

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

Computation Options
Critical depth computed only where necessary

Conveyance Calculation Method: At breaks in n values only
Friction Slope Method: Average Conveyance
Computational Flow Regime: Mixed Flow

FLOW DATA

Flow Title: Existing Conditions
Flow File : c:\projects\2PDA0104\hydr\LHS\Modeling\Model F\HecRas F\PMF2_X4.f01

Flow Data (cfs)

River	Reach	RS	Q2	Q5	Q10	Q25	Q50	Q100	Q100HC
San Mateo Creek	Lower	17108.89	406	3317	6999	18122	31354	47312	118891

Boundary Conditions

River	Reach	Profile	Upstream	Downstream
San Mateo Creek	Lower	Q2	Normal S = 0.006	Normal S = 0.02
San Mateo Creek	Lower	Q5	Normal S = 0.006	Normal S = 0.02
San Mateo Creek	Lower	Q10	Normal S = 0.006	Normal S = 0.02
San Mateo Creek	Lower	Q25	Normal S = 0.006	Normal S = 0.02
San Mateo Creek	Lower	Q50	Normal S = 0.006	Normal S = 0.02
San Mateo Creek	Lower	Q100	Normal S = 0.006	Normal S = 0.02
San Mateo Creek	Lower	Q100HC	Normal S = 0.006	Normal S = 0.02

GEOMETRY DATA

Geometry Title: Proposed Conditions - Ultimate
Geometry File : c:\projects\2PDA0104\hydr\LHS\Modeling\Model F\HecRas F\PMF2_X4.g03

CROSS SECTION

RIVER: San Mateo Creek
REACH: Lower RS: 17108.89

INPUT
Description:
Station Elevation Data num= 46

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	120.75	.81	121.04	1.78	120.67	4.05	120.84	13.67	119.46
14.81	119.29	20.35	118.29	33.94	112.82	36.33	111.61	53.11	108.38
60.66	106.83	64.52	105.74	76.4	101.3	80.08	99.85	85.2	99.46
94.94	97.68	123.07	96.44	130.94	96.19	180.28	94.67	237.64	92.32
262.46	91.83	287.07	91.35	296	91.17	314.51	90.89	336.36	90.54
396.81	91.24	451.1	91.74	478.44	92	500.45	92.2	559.42	92.73
615.14	93.98	665.2	95.1	697.16	95.7	805.4	97.75	927.5	98.02
990	98.16	1068.09	98.36	1093.95	98.45	1161.3	99.85	1251.51	103.52
1276.7	105.53	1306.04	108.99	1323.44	112.19	1343.95	115.78	1366.42	122.23
1366.98	122.41								

Manning's n Values num= 6

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	13.67	.05	287.07	.035	451.1	.05	615.14	.02
697.16	.05								

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
262.46	478.44	209.32	199.68	212.7	.1	.3

CROSS SECTION OUTPUT Profile #Q50

			Left OB	Channel	Right OB
E.G. Elev (ft)	100.07	Element			
Vel Head (ft)	1.13	Wt. n-Val.	0.050	0.037	0.038
W.S. Elev (ft)	98.95	Reach Len. (ft)	209.32	199.68	212.70
Crit W.S. (ft)	97.85	Flow Area (sq ft)	734.90	1661.35	1675.47
E.G. Slope (ft/ft)	0.004296	Area (sq ft)	734.90	1661.35	1675.47
Q Total (cfs)	31354.00	Flow (cfs)	3730.50	16859.08	10764.41
Top Width (ft)	1029.82	Top Width (ft)	174.45	215.98	639.39
Vel Total (ft/s)	7.70	Avg. Vel. (ft/s)	5.08	10.15	6.42
Max Chl Dpth (ft)	8.41	Hydr. Depth (ft)	4.21	7.69	2.62
Conv. Total (cfs)	478389.1	Conv. (cfs)	56918.8	257230.4	164239.9
Length Wtd. (ft)	204.85	Wetted Per. (ft)	174.67	216.00	639.45
Min Ch El (ft)	90.54	Shear (lb/sq ft)	1.13	2.06	0.70
Alpha	1.22	Stream Power (lb/ft s)	5.73	20.93	4.51
Frctn Loss (ft)	1.40	Cum Volume (acre-ft)	666.01	1476.59	127.12
C & E Loss (ft)	0.11	Cum SA (acres)	230.34	215.82	38.24

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.

CROSS SECTION OUTPUT Profile #Q100

			Left OB	Channel	Right OB
E.G. Elev (ft)	101.81	Element			
Vel Head (ft)	1.26	Wt. n-Val.	0.050	0.037	0.039
W.S. Elev (ft)	100.55	Reach Len. (ft)	209.32	199.68	212.70
Crit W.S. (ft)	99.32	Flow Area (sq ft)	1023.59	2007.64	2756.70
E.G. Slope (ft/ft)	0.003984	Area (sq ft)	1023.59	2007.64	2756.70
Q Total (cfs)	47312.00	Flow (cfs)	6015.26	22223.22	19073.52
Top Width (ft)	1100.20	Top Width (ft)	184.16	215.98	700.06
Vel Total (ft/s)	8.17	Avg. Vel. (ft/s)	5.88	11.07	6.92
Max Chl Dpth (ft)	10.01	Hydr. Depth (ft)	5.56	9.30	3.94
Conv. Total (cfs)	749615.9	Conv. (cfs)	95306.4	352106.8	302202.7
Length Wtd. (ft)	205.67	Wetted Per. (ft)	184.57	216.00	700.14
Min Ch El (ft)	90.54	Shear (lb/sq ft)	1.38	2.31	0.98
Alpha	1.22	Stream Power (lb/ft s)	8.10	25.59	6.77
Frctn Loss (ft)	1.26	Cum Volume (acre-ft)	1241.53	1850.44	196.03
C & E Loss (ft)	0.11	Cum SA (acres)	329.40	216.01	42.78

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 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 #Q100HC

E.G. Elev (ft)	107.06	Element	Left OB	Channel	Right OB
Vel Head (ft)	2.16	Wt. n-Val.	0.050	0.038	0.041
W.S. Elev (ft)	104.90	Reach Len. (ft)	209.32	199.68	212.70
Crit W.S. (ft)	102.99	Flow Area (sq ft)	1848.89	2946.41	6020.31
E.G. Slope (ft/ft)	0.004319	Area (sq ft)	1848.89	2946.41	6020.31
Q Total (cfs)	118891.00	Flow (cfs)	16073.29	43756.22	59061.49
Top Width (ft)	1201.98	Top Width (ft)	195.68	215.98	790.32
Vel Total (ft/s)	10.99	Avg. Vel. (ft/s)	8.69	14.85	9.81
Max Chl Dpth (ft)	14.36	Hydr. Depth (ft)	9.45	13.64	7.62
Conv. Total (cfs)	1808992.0	Conv. (cfs)	244563.8	665774.8	898652.9
Length Wtd. (ft)	207.36	Wetted Per. (ft)	196.89	216.00	790.52
Min Ch El (ft)	90.54	Shear (lb/sq ft)	2.53	3.68	2.05
Alpha	1.15	Stream Power (lb/ft s)	22.01	54.63	20.15
Frctn Loss (ft)	1.04	Cum Volume (acre-ft)	4731.18	3131.65	496.66
C & E Loss (ft)	0.02	Cum SA (acres)	607.28	216.03	60.89

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

CROSS SECTION

RIVER: San Mateo Creek
REACH: Lower RS: 16909.21

INPUT
Description:
Station Elevation Data num= 55

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	128.27	15.8	125.94	45.09	120.69	49.9	117.6	54.91	117.56
60.95	114.45	74.12	114.82	82.19	115.04	99.57	111.74	104.05	111.28
120.9	105.64	124.97	105.79	128.5	105.6	156.37	97.99	161.01	97.09
165.78	97.01	259.66	95.8	260.54	95.81	264.29	95.82	267.37	95.76
280.36	95.25	347.94	92.57	364.69	91.85	367.53	91.73	370.62	91.54
378.08	91.08	404.48	90.32	452.34	89.19	474.39	88.74	482.51	88.57
508.49	89.06	553.83	89.9	603.88	90.41	688.67	91.27	720.78	91.84
745.93	92.31	978.43	97.79	992.93	98.14	1006.63	98.39	1010.32	98.4
1020.37	98.42	1037.73	98.47	1056.47	98.51	1119.87	98.68	1188.69	100.01
1264.05	101.26	1295.7	102.31	1381.31	105.51	1417.66	109.47	1423.04	110.44
1434.43	113.59	1442.99	115.48	1452.2	118.19	1459.29	120.37	1482.47	126.98

Manning's n Values num= 6

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	74.12	.05	370.62	.035	474.39	.05	978.43	.02
1037.73	.05								

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
404.48	603.88	217.14	203.08	206.1	.1	.3

CROSS SECTION OUTPUT Profile #Q50

E.G. Elev (ft)	98.56	Element	Left OB	Channel	Right OB
Vel Head (ft)	2.20	Wt. n-Val.	0.040	0.043	0.050
W.S. Elev (ft)	96.37	Reach Len. (ft)	217.14	203.08	206.10
Crit W.S. (ft)	96.37	Flow Area (sq ft)	478.67	1361.69	1080.30

E.G. Slope (ft/ft)	0.012640	Area (sq ft)	478.67	1361.69	1080.30
Q Total (cfs)	31354.00	Flow (cfs)	4277.99	18854.23	8221.78
Top Width (ft)	702.41	Top Width (ft)	188.82	199.40	314.18
Vel Total (ft/s)	10.74	Avg. Vel. (ft/s)	8.94	13.85	7.61
Max Chl Dpth (ft)	7.80	Hydr. Depth (ft)	2.54	6.83	3.44
Conv. Total (cfs)	278877.8	Conv. (cfs)	38050.6	167698.7	73128.5
Length Wtd. (ft)	204.74	Wetted Per. (ft)	188.94	199.43	314.24
Min Ch El (ft)	88.57	Shear (lb/sq ft)	2.00	5.39	2.71
Alpha	1.23	Stream Power (lb/ft s)	17.87	74.60	20.65
Frctn Loss (ft)	1.42	Cum Volume (acre-ft)	663.10	1469.66	120.40
C & E Loss (ft)	0.26	Cum SA (acres)	229.46	214.87	35.91

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 velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water 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 #Q100

E.G. Elev (ft)	100.44	Element	Left OB	Channel	Right OB
Vel Head (ft)	2.36	Wt. n-Val.	0.042	0.043	0.050
W.S. Elev (ft)	98.08	Reach Len. (ft)	217.14	203.08	206.10
Crit W.S. (ft)	98.08	Flow Area (sq ft)	879.42	1703.62	1681.41
E.G. Slope (ft/ft)	0.010714	Area (sq ft)	879.42	1703.62	1681.41
Q Total (cfs)	47312.00	Flow (cfs)	8049.99	25209.93	14052.08
Top Width (ft)	834.49	Top Width (ft)	248.45	199.40	386.65
Vel Total (ft/s)	11.09	Avg. Vel. (ft/s)	9.15	14.80	8.36
Max Chl Dpth (ft)	9.51	Hydr. Depth (ft)	3.54	8.54	4.35
Conv. Total (cfs)	457086.5	Conv. (cfs)	77771.8	243556.0	135758.7
Length Wtd. (ft)	205.14	Wetted Per. (ft)	248.67	199.43	386.73
Min Ch El (ft)	88.57	Shear (lb/sq ft)	2.37	5.71	2.91
Alpha	1.23	Stream Power (lb/ft s)	21.65	84.55	24.30
Frctn Loss (ft)	1.47	Cum Volume (acre-ft)	1236.96	1841.93	185.19
C & E Loss (ft)	0.16	Cum SA (acres)	328.36	215.06	40.13

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 velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water 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 #Q100HC

E.G. Elev (ft)	105.99	Element	Left OB	Channel	Right OB
Vel Head (ft)	2.37	Wt. n-Val.	0.045	0.043	0.047
W.S. Elev (ft)	103.62	Reach Len. (ft)	217.14	203.08	206.10
Crit W.S. (ft)		Flow Area (sq ft)	2312.05	2808.32	5087.19
E.G. Slope (ft/ft)	0.005936	Area (sq ft)	2312.05	2808.32	5087.19
Q Total (cfs)	118891.00	Flow (cfs)	24905.59	43151.67	50833.74
Top Width (ft)	1195.06	Top Width (ft)	268.74	199.40	726.92
Vel Total (ft/s)	11.65	Avg. Vel. (ft/s)	10.77	15.37	9.99
Max Chl Dpth (ft)	15.05	Hydr. Depth (ft)	8.60	14.08	7.00
Conv. Total (cfs)	1543114.0	Conv. (cfs)	323255.5	560075.6	659783.0
Length Wtd. (ft)	206.03	Wetted Per. (ft)	269.70	199.43	727.07
Min Ch El (ft)	88.57	Shear (lb/sq ft)	3.18	5.22	2.59
Alpha	1.13	Stream Power (lb/ft s)	34.22	80.18	25.91
Frctn Loss (ft)	1.14	Cum Volume (acre-ft)	4721.19	3118.46	469.54
C & E Loss (ft)	0.04	Cum SA (acres)	606.16	215.08	57.19

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

CROSS SECTION

RIVER: San Mateo Creek
REACH: Lower RS: 16706.13

INPUT
Description: Updated Manning's N Distribution
Station Elevation Data num= 67

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	119.46	.74	119.19	12.87	122.22	35.59	121.32	44.35	120.03
79.73	113.67	85.54	109.9	87.26	109.89	94.61	106.07	104.53	106.36
120.48	106.83	123.01	106.35	125.76	105.96	134.54	104.98	134.66	104.96
136.65	104.68	182.14	99.73	188.3	99.49	203.1	98.83	241.84	97.17
278.97	94.53	285.87	93.89	289.69	93.35	294.06	92.73	294.15	92.68
294.66	92.43	298.65	90.52	305.48	87.25	308.4	85.64	309.72	85.24
314.43	84.65	318.21	84.71	333.12	85.47	356.07	86.29	356.99	86.26
373.31	85.83	395.71	85.24	441.59	84.03	444.45	83.98	449.64	84.03
547.17	85.18	553.94	85.27	581.73	86.67	638.41	89.62	669.45	90.87
784.96	92.7	786.01	92.71	789.56	92.71	880.25	94.36	1096.03	98.28
1104.6	98.39	1119.92	98.6	1128.3	98.72	1148.02	99.39	1179.65	101.72
1201.75	103.35	1222.95	103.37	1297.84	105.36	1355.02	107.33	1363.25	107.79
1380.87	108.65	1413.42	110.59	1428.19	111.98	1438.13	113.88	1456.27	119.5
1471.55	123.36	1493.23	127.77						

Manning's n Values num= 6

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	104.53	.05	298.65	.035	373.31	.05	1119.92	.02
1179.65	.05								

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
305.48	581.73	213.02	200.49	184.93	.1	.3

CROSS SECTION OUTPUT Profile #Q50

E.G. Elev (ft)	96.20	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.32	Wt. n-Val.	0.038	0.046	0.050
W.S. Elev (ft)	94.88	Reach Len. (ft)	213.02	200.49	184.93
Crit W.S. (ft)	92.39	Flow Area (sq ft)	74.11	2707.79	1021.01

E.G. Slope (ft/ft)	0.004365	Area (sq ft)	74.11	2707.79	1021.01
Q Total (cfs)	31354.00	Flow (cfs)	431.72	26640.19	4282.09
Top Width (ft)	634.51	Top Width (ft)	31.37	276.25	326.89
Vel Total (ft/s)	8.24	Avg. Vel. (ft/s)	5.83	9.84	4.19
Max Chl Dpth (ft)	10.90	Hydr. Depth (ft)	2.36	9.80	3.12
Conv. Total (cfs)	474596.6	Conv. (cfs)	6534.8	403244.9	64816.8
Length Wtd. (ft)	198.79	Wetted Per. (ft)	32.74	276.87	327.03
Min Ch El (ft)	83.98	Shear (lb/sq ft)	0.62	2.66	0.85
Alpha	1.25	Stream Power (lb/ft s)	3.59	26.22	3.57
Frctn Loss (ft)	0.93	Cum Volume (acre-ft)	661.72	1460.17	115.42
C & E Loss (ft)	0.00	Cum SA (acres)	228.92	213.76	34.39

CROSS SECTION OUTPUT Profile #Q100

E.G. Elev (ft)	98.39	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.84	Wt. n-Val.	0.040	0.046	0.050
W.S. Elev (ft)	96.56	Reach Len. (ft)	213.02	200.49	184.93
Crit W.S. (ft)	94.62	Flow Area (sq ft)	146.64	3171.81	1647.74
E.G. Slope (ft/ft)	0.005142	Area (sq ft)	146.64	3171.81	1647.74
Q Total (cfs)	47312.00	Flow (cfs)	890.32	37680.18	8741.50
Top Width (ft)	750.59	Top Width (ft)	54.99	276.25	419.35
Vel Total (ft/s)	9.53	Avg. Vel. (ft/s)	6.07	11.88	5.31
Max Chl Dpth (ft)	12.58	Hydr. Depth (ft)	2.67	11.48	3.93
Conv. Total (cfs)	659783.9	Conv. (cfs)	12415.8	525464.5	121903.6
Length Wtd. (ft)	198.03	Wetted Per. (ft)	56.42	276.87	419.50
Min Ch El (ft)	83.98	Shear (lb/sq ft)	0.83	3.68	1.26
Alpha	1.30	Stream Power (lb/ft s)	5.07	43.69	6.69
Frctn Loss (ft)	1.06	Cum Volume (acre-ft)	1234.40	1830.57	177.31
C & E Loss (ft)	0.03	Cum SA (acres)	327.61	213.95	38.22

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 #Q100HC

E.G. Elev (ft)	104.82	Element	Left OB	Channel	Right OB
Vel Head (ft)	2.73	Wt. n-Val.	0.046	0.045	0.049
W.S. Elev (ft)	102.10	Reach Len. (ft)	213.02	200.49	184.93
Crit W.S. (ft)		Flow Area (sq ft)	739.71	4702.38	4641.16
E.G. Slope (ft/ft)	0.005141	Area (sq ft)	739.71	4702.38	4641.16
Q Total (cfs)	118891.00	Flow (cfs)	5298.08	72784.69	40808.23
Top Width (ft)	1024.34	Top Width (ft)	145.08	276.25	603.01
Vel Total (ft/s)	11.79	Avg. Vel. (ft/s)	7.16	15.48	8.79
Max Chl Dpth (ft)	18.12	Hydr. Depth (ft)	5.10	17.02	7.70
Conv. Total (cfs)	1658184.0	Conv. (cfs)	73892.8	1015135.0	569156.4
Length Wtd. (ft)	195.96	Wetted Per. (ft)	146.71	276.87	603.29
Min Ch El (ft)	83.98	Shear (lb/sq ft)	1.62	5.45	2.47
Alpha	1.26	Stream Power (lb/ft s)	11.59	84.37	21.71
Frctn Loss (ft)	0.99	Cum Volume (acre-ft)	4713.58	3100.96	446.52
C & E Loss (ft)	0.08	Cum SA (acres)	605.13	213.97	54.04

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

CROSS SECTION

RIVER: San Mateo Creek
REACH: Lower RS: 16505.64

INPUT
Description:
Station Elevation Data num= 77

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	126.05	1.37	125.54	27.32	125.58	32.56	124.47	47.84	124.04
52.45	121.86	101.03	112.23	107.32	112.47	116.54	115.88	125.08	115.62
134.89	112.2	149.97	115.61	178.34	114.4	179.93	114.17	193.76	111.79
194.09	113.24	195.06	113.95	197.6	113.81	205.11	113.44	215.48	112.84
234.81	111.52	243.48	110.93	252.97	109.06	261.15	106.09	280.99	101.05
289.72	98.62	298.84	97.6	348.04	94.87	362.25	94.03	368.98	93.43
370.83	93.26	376.84	91.85	379.04	91.89	379.19	91.89	383.5	90.52
386.37	88.58	387.58	87.58	390.78	85.27	393.04	84.68	395.94	84.58
406.89	85.17	429.58	85.69	452.84	85.14	456.19	85.06	476.82	84.57
508.12	84.72	571.38	85.04	669.78	85.12	697.85	86.32	705.27	86.39
719.01	87.62	732.71	88.8	741.95	89.84	756.7	91	759.88	91.2
767.73	91.75	775.18	91.78	777.34	91.81	800.99	91.21	903.4	91.42
984.69	91.8	1176.72	96.13	1202.67	96.91	1266.47	98.82	1295.94	101.4
1341.75	103.58	1363.77	104.63	1374.75	105.12	1395.49	106.07	1401.08	106.05
1408.84	106.43	1420.89	107.02	1461.65	109.91	1468.94	110.12	1593.75	115.6
1653.58	117.97	1677.19	119.45						

Manning's n Values num= 6

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	234.81	.05	368.98	.035	452.84	.05	1341.75	.02
1408.84	.05								

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
387.58	719.01	199.4	206.45	210.25	.1	.3

CROSS SECTION OUTPUT Profile #Q50

			Left OB	Channel	Right OB
E.G. Elev (ft)	95.27	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.31	Wt. n-Val.	0.035	0.046	0.050
W.S. Elev (ft)	93.95	Reach Len. (ft)	199.40	206.45	210.25
Crit W.S. (ft)		Flow Area (sq ft)	47.58	2902.86	844.86
E.G. Slope (ft/ft)	0.004999	Area (sq ft)	47.58	2902.86	844.86
Q Total (cfs)	31354.00	Flow (cfs)	242.74	27984.55	3126.71
Top Width (ft)	717.15	Top Width (ft)	24.48	331.43	361.24
Vel Total (ft/s)	8.26	Avg. Vel. (ft/s)	5.10	9.64	3.70
Max Chl Dpth (ft)	9.38	Hydr. Depth (ft)	1.94	8.76	2.34
Conv. Total (cfs)	443444.8	Conv. (cfs)	3433.1	395790.1	44221.6
Length Wtd. (ft)	206.71	Wetted Per. (ft)	25.85	332.37	361.45
Min Ch El (ft)	84.57	Shear (lb/sq ft)	0.57	2.73	0.73
Alpha	1.24	Stream Power (lb/ft s)	2.93	26.28	2.70
Frctn Loss (ft)	1.14	Cum Volume (acre-ft)	661.42	1447.26	111.46
C & E Loss (ft)	0.00	Cum SA (acres)	228.78	212.36	32.93

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 #Q100

			Left OB	Channel	Right OB
E.G. Elev (ft)	97.30	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.74	Wt. n-Val.	0.037	0.046	0.050

W.S. Elev (ft)	95.56	Reach Len. (ft)	199.40	206.45	210.25
Crit W.S. (ft)		Flow Area (sq ft)	108.46	3436.09	1483.44
E.G. Slope (ft/ft)	0.005579	Area (sq ft)	108.46	3436.09	1483.44
Q Total (cfs)	47312.00	Flow (cfs)	658.26	39168.26	7485.48
Top Width (ft)	816.06	Top Width (ft)	52.04	331.43	432.59
Vel Total (ft/s)	9.41	Avg. Vel. (ft/s)	6.07	11.40	5.05
Max Chl Dpth (ft)	10.99	Hydr. Depth (ft)	2.08	10.37	3.43
Conv. Total (cfs)	633419.4	Conv. (cfs)	8812.9	524389.9	100216.6
Length Wtd. (ft)	206.87	Wetted Per. (ft)	53.45	332.37	432.82
Min Ch El (ft)	84.57	Shear (lb/sq ft)	0.71	3.60	1.19
Alpha	1.27	Stream Power (lb/ft s)	4.29	41.05	6.02
Frctn Loss (ft)	1.29	Cum Volume (acre-ft)	1233.78	1815.36	170.67
C & E Loss (ft)	0.01	Cum SA (acres)	327.35	212.55	36.42

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.

CROSS SECTION OUTPUT Profile #Q100HC

E.G. Elev (ft)	103.75	Element	Left OB	Channel	Right OB
Vel Head (ft)	2.47	Wt. n-Val.	0.043	0.046	0.050
W.S. Elev (ft)	101.28	Reach Len. (ft)	199.40	206.45	210.25
Crit W.S. (ft)		Flow Area (sq ft)	619.87	5330.32	4468.10
E.G. Slope (ft/ft)	0.004994	Area (sq ft)	619.87	5330.32	4468.10
Q Total (cfs)	118891.00	Flow (cfs)	5039.52	77077.95	36773.54
Top Width (ft)	1014.47	Top Width (ft)	107.49	331.43	575.55
Vel Total (ft/s)	11.41	Avg. Vel. (ft/s)	8.13	14.46	8.23
Max Chl Dpth (ft)	16.71	Hydr. Depth (ft)	5.77	16.08	7.76
Conv. Total (cfs)	1682404.0	Conv. (cfs)	71313.2	1090715.0	520375.4
Length Wtd. (ft)	207.18	Wetted Per. (ft)	109.37	332.37	575.93
Min Ch El (ft)	84.57	Shear (lb/sq ft)	1.77	5.00	2.42
Alpha	1.22	Stream Power (lb/ft s)	14.37	72.30	19.91
Frctn Loss (ft)	1.48	Cum Volume (acre-ft)	4710.26	3077.87	427.19
C & E Loss (ft)	0.19	Cum SA (acres)	604.51	212.57	51.54

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

CROSS SECTION

RIVER: San Mateo Creek
REACH: Lower RS: 16299.19

INPUT
Description:
Station Elevation Data num= 56

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	107.69	14.56	107.33	24.8	106.81	35.8	106.73	54.63	107.1
97.11	104.72	104.21	104.33	113.06	103.81	114.46	103.65	135.06	100.95
140.46	99.93	151.97	96.7	154.75	95.42	161.68	91.9	166.47	91.38
169.28	91.08	179.69	88.6	189.53	88.36	197.37	86.84	199.55	86.04
208.09	85.5	208.95	85.45	219.51	84.99	223.92	84.8	291.32	84.9

292.25	84.9	320.46	85.22	325.71	85.28	326.87	85.29	487.99	85.64
530.99	85.72	570.95	86.84	598.43	87.62	630.44	89.51	733.82	90.23
891.53	92.46	991.05	95.5	1009.17	96.06	1043.73	96.94	1081.09	97.81
1203.26	100.69	1260.4	102.31	1271.03	102.61	1287.28	103.08	1298.69	103.74
1305.61	104.68	1317.89	108.46	1320.57	109.28	1324.84	110.4	1343.79	115.41
1346.55	116.65	1361.13	118.6	1364.78	119.14	1373.38	119.65	1379.73	120.03
1387.25	120.43								

Manning's n Values num= 6

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	97.11	.05	166.47	.035	291.32	.05	1317.89	.02
1373.38	.05								

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
197.37	570.95	219.05	193.6	180.85	.1	.3

CROSS SECTION OUTPUT Profile #Q50

			Left OB	Channel	Right OB
E.G. Elev (ft)	94.12	Element			
Vel Head (ft)	1.34	Wt. n-Val.	0.035	0.045	0.050
W.S. Elev (ft)	92.78	Reach Len. (ft)	219.05	193.60	180.85
Crit W.S. (ft)		Flow Area (sq ft)	124.23	2747.27	817.36
E.G. Slope (ft/ft)	0.006088	Area (sq ft)	124.23	2747.27	817.36
Q Total (cfs)	31354.00	Flow (cfs)	959.26	26933.89	3460.86
Top Width (ft)	742.17	Top Width (ft)	37.43	373.58	331.16
Vel Total (ft/s)	8.50	Avg. Vel. (ft/s)	7.72	9.80	4.23
Max Chl Dpth (ft)	7.98	Hydr. Depth (ft)	3.32	7.35	2.47
Conv. Total (cfs)	401836.1	Conv. (cfs)	12293.9	345187.5	44354.7
Length Wtd. (ft)	192.58	Wetted Per. (ft)	38.12	373.77	331.25
Min Ch El (ft)	84.80	Shear (lb/sq ft)	1.24	2.79	0.94
Alpha	1.20	Stream Power (lb/ft s)	9.56	27.39	3.97
Frctn Loss (ft)	1.61	Cum Volume (acre-ft)	661.03	1433.87	107.45
C & E Loss (ft)	0.07	Cum SA (acres)	228.64	210.69	31.26

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

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

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

CROSS SECTION OUTPUT Profile #Q100

			Left OB	Channel	Right OB
E.G. Elev (ft)	96.00	Element			
Vel Head (ft)	1.86	Wt. n-Val.	0.036	0.045	0.050
W.S. Elev (ft)	94.14	Reach Len. (ft)	219.05	193.60	180.85
Crit W.S. (ft)		Flow Area (sq ft)	176.94	3255.17	1297.86
E.G. Slope (ft/ft)	0.006981	Area (sq ft)	176.94	3255.17	1297.86
Q Total (cfs)	47312.00	Flow (cfs)	1742.89	38205.63	7363.49
Top Width (ft)	789.36	Top Width (ft)	40.11	373.58	375.67
Vel Total (ft/s)	10.00	Avg. Vel. (ft/s)	9.85	11.74	5.67
Max Chl Dpth (ft)	9.34	Hydr. Depth (ft)	4.41	8.71	3.45
Conv. Total (cfs)	566237.6	Conv. (cfs)	20859.1	457251.1	88127.4
Length Wtd. (ft)	192.13	Wetted Per. (ft)	41.13	373.77	375.78
Min Ch El (ft)	84.80	Shear (lb/sq ft)	1.88	3.80	1.51
Alpha	1.20	Stream Power (lb/ft s)	18.47	44.55	8.54
Frctn Loss (ft)	1.69	Cum Volume (acre-ft)	1233.13	1799.50	163.96
C & E Loss (ft)	0.05	Cum SA (acres)	327.13	210.88	34.47

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 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 #Q100HC

E.G. Elev (ft)	102.09	Element	Left OB	Channel	Right OB
Vel Head (ft)	4.35	Wt. n-Val.	0.036	0.045	0.050
W.S. Elev (ft)	97.74	Reach Len. (ft)	219.05	193.60	180.85
Crit W.S. (ft)	97.74	Flow Area (sq ft)	335.08	4597.80	2869.37
E.G. Slope (ft/ft)	0.010982	Area (sq ft)	335.08	4597.80	2869.37
Q Total (cfs)	118891.00	Flow (cfs)	5520.13	84996.82	28374.05
Top Width (ft)	929.67	Top Width (ft)	49.09	373.58	507.00
Vel Total (ft/s)	15.24	Avg. Vel. (ft/s)	16.47	18.49	9.89
Max Chl Dpth (ft)	12.94	Hydr. Depth (ft)	6.83	12.31	5.66
Conv. Total (cfs)	1134488.0	Conv. (cfs)	52674.5	811061.4	270752.4
Length Wtd. (ft)	191.29	Wetted Per. (ft)	50.85	373.77	507.16
Min Ch El (ft)	84.80	Shear (lb/sq ft)	4.52	8.43	3.88
Alpha	1.21	Stream Power (lb/ft s)	74.44	155.91	38.36
Frctn Loss (ft)	2.04	Cum Volume (acre-ft)	4708.07	3054.34	409.48
C & E Loss (ft)	0.20	Cum SA (acres)	604.15	210.90	48.92

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: San Mateo Creek
REACH: Lower RS: 16105.61

INPUT
Description:
Station Elevation Data num= 57

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	108.95	22.96	103.79	23.91	103.32	25.91	102.75	27.73	102.03
56.88	102.5	57.63	102.33	74.85	102.03	75.07	101.92	82.62	100.38
82.83	100.3	83.13	101.07	83.64	101.46	91.47	101.33	93.4	101.3
102.48	101.13	114.12	100.45	138.5	99.54	157.57	98.29	166.14	98.34
189.61	94.26	195.98	92.55	232.82	89.59	242.41	88.39	246	88.14
250.29	88.17	276.94	86.02	278.97	85.87	343.02	84.71	345.68	84.67
372.51	84.59	423.9	84.43	448.61	84.46	476.5	84.48	493.68	84.49
512.2	84.52	600.56	84.68	644.89	85.93	740.98	87.69	850.33	87.85
973.35	89.62	1086.6	91.69	1118.02	92.45	1127.42	92.65	1197.77	93.96
1252.48	94.79	1274.34	96.5	1375.35	99.54	1377.18	99.61	1391.33	101.05
1439.07	105.7	1440.92	105.88	1489.04	112.49	1504.66	114.2	1516.2	115.67
1549.94	119.93	1552.11	120.25						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.05	372.51	.035	512.2	.05

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
278.97	644.89	33.01	38.98	40.87	.1	.3

CROSS SECTION OUTPUT Profile #Q50

			Left OB	Channel	Right OB
E.G. Elev (ft)	92.45	Element			
Vel Head (ft)	2.00	Wt. n-Val.	0.050	0.042	0.050
W.S. Elev (ft)	90.45	Reach Len. (ft)	33.01	38.98	40.87
Crit W.S. (ft)	90.45	Flow Area (sq ft)	135.04	2081.21	873.93
E.G. Slope (ft/ft)	0.012101	Area (sq ft)	135.04	2081.21	873.93
Q Total (cfs)	31354.00	Flow (cfs)	783.61	25540.37	5030.02
Top Width (ft)	796.87	Top Width (ft)	56.90	365.92	374.06
Vel Total (ft/s)	10.15	Avg. Vel. (ft/s)	5.80	12.27	5.76
Max Chl Dpth (ft)	6.02	Hydr. Depth (ft)	2.37	5.69	2.34
Conv. Total (cfs)	285028.7	Conv. (cfs)	7123.5	232178.9	45726.3
Length Wtd. (ft)	39.07	Wetted Per. (ft)	57.11	365.95	374.09
Min Ch El (ft)	84.43	Shear (lb/sq ft)	1.79	4.30	1.76
Alpha	1.25	Stream Power (lb/ft s)	10.37	52.72	10.16
Frctn Loss (ft)	0.47	Cum Volume (acre-ft)	660.38	1423.14	103.94
C & E Loss (ft)	0.01	Cum SA (acres)	228.40	209.05	29.80

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: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water 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 #Q100

			Left OB	Channel	Right OB
E.G. Elev (ft)	94.26	Element			
Vel Head (ft)	2.41	Wt. n-Val.	0.050	0.043	0.050
W.S. Elev (ft)	91.85	Reach Len. (ft)	33.01	38.98	40.87
Crit W.S. (ft)	91.85	Flow Area (sq ft)	226.86	2593.34	1450.86
E.G. Slope (ft/ft)	0.011426	Area (sq ft)	226.86	2593.34	1450.86
Q Total (cfs)	47312.00	Flow (cfs)	1512.99	35717.78	10081.23
Top Width (ft)	888.68	Top Width (ft)	74.32	365.92	448.45
Vel Total (ft/s)	11.08	Avg. Vel. (ft/s)	6.67	13.77	6.95
Max Chl Dpth (ft)	7.42	Hydr. Depth (ft)	3.05	7.09	3.24
Conv. Total (cfs)	442605.8	Conv. (cfs)	14154.1	334141.4	94310.3
Length Wtd. (ft)	39.12	Wetted Per. (ft)	74.58	365.95	448.50
Min Ch El (ft)	84.43	Shear (lb/sq ft)	2.17	5.06	2.31
Alpha	1.26	Stream Power (lb/ft s)	14.47	69.63	16.03
Frctn Loss (ft)	0.43	Cum Volume (acre-ft)	1232.11	1786.51	158.25
C & E Loss (ft)	0.01	Cum SA (acres)	326.85	209.23	32.76

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: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water 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 #Q100HC

			Left OB	Channel	Right OB
E.G. Elev (ft)	99.85	Element			
Vel Head (ft)	4.02	Wt. n-Val.	0.050	0.043	0.050
W.S. Elev (ft)	95.83	Reach Len. (ft)	33.01	38.98	40.87
Crit W.S. (ft)	96.14	Flow Area (sq ft)	576.47	4048.76	3620.37
E.G. Slope (ft/ft)	0.011610	Area (sq ft)	576.47	4048.76	3620.37
Q Total (cfs)	118891.00	Flow (cfs)	5972.62	75366.92	37551.46
Top Width (ft)	1085.20	Top Width (ft)	98.39	365.92	620.89
Vel Total (ft/s)	14.42	Avg. Vel. (ft/s)	10.36	18.61	10.37
Max Chl Dpth (ft)	11.40	Hydr. Depth (ft)	5.86	11.06	5.83
Conv. Total (cfs)	1103409.0	Conv. (cfs)	55431.0	699468.5	348509.2
Length Wtd. (ft)	39.19	Wetted Per. (ft)	99.05	365.95	621.01
Min Ch El (ft)	84.43	Shear (lb/sq ft)	4.22	8.02	4.23
Alpha	1.25	Stream Power (lb/ft s)	43.71	149.27	43.83
Frctn Loss (ft)	2.15	Cum Volume (acre-ft)	4705.78	3035.13	396.01
C & E Loss (ft)	0.09	Cum SA (acres)	603.78	209.25	46.58

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: Program found supercritical flow starting at this cross section.

CROSS SECTION

RIVER: San Mateo Creek
REACH: Lower RS: 16066.6*

INPUT
Description:
Station Elevation Data num= 115

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	110.25	26.62	105.38	27.72	104.97	30.04	104.45	30.77	104.23
32.15	103.76	65.94	101.79	66.81	101.59	74.99	100.92	75.18	100.89
75.58	100.85	75.95	100.8	86.44	100.71	86.77	100.7	87.02	100.6
95.73	99.18	95.77	99.17	96.02	99.1	96.37	99.71	96.96	100
106.03	99.66	108.27	99.58	111.91	99.44	114	99.37	118.8	99.18
122.27	98.95	132.29	98.31	154.13	97.24	160.55	96.94	169.04	96.37
182.66	95.76	192.59	95.8	219.8	92.55	227.18	91.18	268.94	88.88
269.89	88.82	272.96	88.54	281.01	87.82	284.62	87.63	285.17	87.61
290.14	87.61	310.04	86.43	316.06	86.04	317.34	85.97	317.62	85.95
319.03	85.64	321.03	85.35	323.39	85.02	324.69	85.23	329.41	85.66
329.82	85.66	332.33	85.41	338.71	85.3	344.66	85.19	371.58	84.7
398.55	84.2	401.67	84.15	433.15	83.9	440.13	83.85	459.01	83.4
473.53	83.34	491.31	83.23	492.37	83.22	493.46	83.22	516.56	83.26
531.77	83.29	542.63	83.31	558.69	83.33	566.05	83.35	576.01	83.41
645.29	83.82	658.61	83.9	670.42	84.25	700.06	85.07	789.97	86.97
840.12	87.32	865.86	87.41	888.14	87.54	892.3	87.58	919.43	88.16
978.94	89.48	998.26	89.91	1004.86	90.05	1007.42	90.11	1018.67	90.4
1079.58	92.34	1093.28	92.77	1096.66	92.88	1113.39	93.28	1135.7	93.93
1142.79	94.12	1151.59	94.35	1217.42	95.87	1249.1	96.51	1268.61	96.91
1270.07	97.01	1289.07	98.36	1292.58	98.47	1346.8	99.96	1353.23	100.13
1356.04	100.22	1358.35	100.29	1383.59	101.06	1385.3	101.12	1398.54	102.34
1443.22	106.27	1444.95	106.42	1448.91	106.91	1489.98	112.13	1504.59	113.64
1506.03	113.81	1515.39	114.92	1532.36	116.91	1546.97	118.63	1549	118.91

Manning's n Values num= 9

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.05	317.34	.047	323.39	.038	433.15	.038	566.05	.05
700.06	.047	998.26	.035	1358.35	.038	1549	.05		

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
329.82	700.06	33.01	38.98	40.87	.1	.3

CROSS SECTION OUTPUT Profile #Q50

			Left OB	Channel	Right OB
E.G. Elev (ft)	91.83	Element			
Vel Head (ft)	2.72	Wt. n-Val.	0.046	0.042	0.047
W.S. Elev (ft)	89.11	Reach Len. (ft)	33.01	38.98	40.87
Crit W.S. (ft)	89.62	Flow Area (sq ft)	131.87	1932.22	519.13
E.G. Slope (ft/ft)	0.016804	Area (sq ft)	131.87	1932.22	519.13
Q Total (cfs)	31354.00	Flow (cfs)	960.35	27040.83	3352.82
Top Width (ft)	697.73	Top Width (ft)	65.12	370.24	262.37
Vel Total (ft/s)	12.14	Avg. Vel. (ft/s)	7.28	13.99	6.46
Max Chl Dpth (ft)	5.89	Hydr. Depth (ft)	2.02	5.22	1.98
Conv. Total (cfs)	241872.7	Conv. (cfs)	7408.4	208599.8	25864.5
Length Wtd. (ft)	38.99	Wetted Per. (ft)	65.35	370.29	262.41
Min Ch El (ft)	83.22	Shear (lb/sq ft)	2.12	5.47	2.08
Alpha	1.19	Stream Power (lb/ft s)	15.42	76.61	13.40
Frctn Loss (ft)	0.55	Cum Volume (acre-ft)	660.27	1421.34	103.29
C & E Loss (ft)	0.07	Cum SA (acres)	228.35	208.72	29.50

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Note: Program found supercritical flow starting at this cross section.

CROSS SECTION OUTPUT Profile #Q100

			Left OB	Channel	Right OB
E.G. Elev (ft)	93.68	Element			
Vel Head (ft)	3.17	Wt. n-Val.	0.047	0.042	0.047
W.S. Elev (ft)	90.50	Reach Len. (ft)	33.01	38.98	40.87
Crit W.S. (ft)	91.09	Flow Area (sq ft)	239.91	2446.78	926.82
E.G. Slope (ft/ft)	0.015027	Area (sq ft)	239.91	2446.78	926.82
Q Total (cfs)	47312.00	Flow (cfs)	1918.48	37829.27	7564.25
Top Width (ft)	782.46	Top Width (ft)	90.36	370.24	321.86
Vel Total (ft/s)	13.09	Avg. Vel. (ft/s)	8.00	15.46	8.16
Max Chl Dpth (ft)	7.28	Hydr. Depth (ft)	2.66	6.61	2.88
Conv. Total (cfs)	385954.7	Conv. (cfs)	15650.3	308597.9	61706.5
Length Wtd. (ft)	39.02	Wetted Per. (ft)	90.62	370.29	321.92
Min Ch El (ft)	83.22	Shear (lb/sq ft)	2.48	6.20	2.70
Alpha	1.19	Stream Power (lb/ft s)	19.86	95.84	22.04
Frctn Loss (ft)	0.51	Cum Volume (acre-ft)	1231.93	1784.25	157.13
C & E Loss (ft)	0.08	Cum SA (acres)	326.78	208.91	32.39

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Note: Program found supercritical flow starting at this cross section.

CROSS SECTION OUTPUT Profile #Q100HC

			Left OB	Channel	Right OB
E.G. Elev (ft)	99.39	Element			
Vel Head (ft)	4.23	Wt. n-Val.	0.048	0.042	0.046
W.S. Elev (ft)	95.16	Reach Len. (ft)	33.01	38.98	40.87
Crit W.S. (ft)	95.42	Flow Area (sq ft)	766.01	4169.33	2782.65

E.G. Slope (ft/ft)	0.010693	Area (sq ft)	766.01	4169.33	2782.65
Q Total (cfs)	118891.00	Flow (cfs)	8101.57	77419.17	33370.27
Top Width (ft)	988.52	Top Width (ft)	131.84	370.24	486.44
Vel Total (ft/s)	15.40	Avg. Vel. (ft/s)	10.58	18.57	11.99
Max Chl Dpth (ft)	11.94	Hydr. Depth (ft)	5.81	11.26	5.72
Conv. Total (cfs)	1149715.0	Conv. (cfs)	78344.8	748668.6	322701.3
Length Wtd. (ft)	39.04	Wetted Per. (ft)	132.40	370.29	486.56
Min Ch El (ft)	83.22	Shear (lb/sq ft)	3.86	7.52	3.82
Alpha	1.15	Stream Power (lb/ft s)	40.85	139.58	45.79
Frctn Loss (ft)	0.44	Cum Volume (acre-ft)	4705.27	3031.45	393.00
C & E Loss (ft)	0.02	Cum SA (acres)	603.70	208.93	46.06

CROSS SECTION

RIVER: San Mateo Creek
REACH: Lower RS: 16027.6*

INPUT
Description:
Station Elevation Data num= 115

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	111.55	30.27	106.97	31.52	106.63	34.16	106.15	34.99	105.96
36.56	105.49	74.99	101.07	75.98	100.85	85.29	99.64	85.51	99.58
85.96	99.5	86.38	99.41	98.31	99.38	98.69	99.36	98.98	99.29
108.88	97.97	108.93	97.96	109.21	97.9	109.6	98.35	110.27	98.55
120.6	98	123.14	97.87	127.29	97.64	129.66	97.53	135.11	97.23
139.07	96.94	150.46	96.17	175.3	94.73	182.6	94.33	192.26	93.68
207.75	93.23	219.05	93.27	249.99	90.83	258.39	89.81	305.88	88.1
306.96	88.05	310.45	87.83	319.6	87.25	323.71	87.1	324.34	87.07
329.99	87.05	352.63	86.08	359.47	85.72	360.93	85.65	361.24	85.64
362.84	85.12	365.13	84.68	367.81	84.18	369.3	84.61	374.72	85.55
375.19	85.56	378.07	85.09	385.39	84.96	392.22	84.83	423.12	84.26
454.07	83.7	457.66	83.64	493.79	83.22	501.8	83.12	523.47	82.27
540.14	82.21	560.55	82.03	561.76	82.02	563.01	82.01	584.5	82.07
598.66	82.11	608.76	82.14	623.71	82.18	630.55	82.2	639.81	82.3
704.27	82.98	716.67	83.13	727.65	83.46	755.23	84.2	838.97	86.26
885.67	86.87	909.64	87.01	930.39	87.23	934.27	87.31	959.54	88.06
1014.96	89.78	1032.95	90.33	1039.1	90.52	1041.48	90.6	1051.97	90.95
1108.69	93.65	1121.45	94.25	1124.6	94.39	1140.18	94.87	1160.96	95.58
1167.57	95.8	1175.76	96.04	1237.07	97.78	1266.58	98.55	1284.75	99.02
1286.1	99.11	1303.8	100.22	1307.07	100.32	1357.57	101.56	1363.55	101.7
1366.17	101.78	1368.33	101.84	1391.83	102.57	1393.43	102.63	1405.76	103.62
1447.37	106.84	1448.98	106.97	1452.67	107.35	1490.92	111.78	1504.53	113.09
1505.86	113.23	1514.59	114.17	1530.38	115.87	1543.99	117.33	1545.88	117.56

Manning's n Values num= 9

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.05	360.93	.044	367.81	.041	493.79	.041	623.71	.05
755.23	.044	1032.95	.035	1368.33	.041	1545.88	.05		

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
375.19	755.23	33.01 38.98	40.87	.1	.3

CROSS SECTION OUTPUT Profile #Q50

E.G. Elev (ft)	91.09	Element	Left OB	Channel	Right OB
Vel Head (ft)	2.95	Wt. n-Val.	0.046	0.044	0.044

W.S. Elev (ft)	88.14	Reach Len. (ft)	33.01	38.98	40.87
Crit W.S. (ft)	88.81	Flow Area (sq ft)	117.45	1924.70	381.97
E.G. Slope (ft/ft)	0.020293	Area (sq ft)	117.45	1924.70	381.97
Q Total (cfs)	31354.00	Flow (cfs)	848.05	27740.58	2765.37
Top Width (ft)	657.30	Top Width (ft)	70.40	380.04	206.86
Vel Total (ft/s)	12.93	Avg. Vel. (ft/s)	7.22	14.41	7.24
Max Chl Dpth (ft)	6.13	Hydr. Depth (ft)	1.67	5.06	1.85
Conv. Total (cfs)	220099.4	Conv. (cfs)	5953.2	194733.8	19412.4
Length Wtd. (ft)	38.99	Wetted Per. (ft)	70.77	380.13	206.91
Min Ch El (ft)	82.01	Shear (lb/sq ft)	2.10	6.41	2.34
Alpha	1.13	Stream Power (lb/ft s)	15.18	92.45	16.93
Frctn Loss (ft)	0.72	Cum Volume (acre-ft)	660.18	1419.62	102.87
C & E Loss (ft)	0.02	Cum SA (acres)	228.30	208.39	29.28

CROSS SECTION OUTPUT Profile #Q100

E.G. Elev (ft)	93.00	Element	Left OB	Channel	Right OB
Vel Head (ft)	3.48	Wt. n-Val.	0.047	0.044	0.044
W.S. Elev (ft)	89.52	Reach Len. (ft)	33.01	38.98	40.87
Crit W.S. (ft)	90.34	Flow Area (sq ft)	240.93	2448.74	697.85
E.G. Slope (ft/ft)	0.018235	Area (sq ft)	240.93	2448.74	697.85
Q Total (cfs)	47312.00	Flow (cfs)	1908.01	39117.57	6286.42
Top Width (ft)	740.02	Top Width (ft)	108.69	380.04	251.29
Vel Total (ft/s)	13.97	Avg. Vel. (ft/s)	7.92	15.97	9.01
Max Chl Dpth (ft)	7.51	Hydr. Depth (ft)	2.22	6.44	2.78
Conv. Total (cfs)	350360.7	Conv. (cfs)	14129.4	289678.2	46553.0
Length Wtd. (ft)	38.98	Wetted Per. (ft)	109.09	380.13	251.36
Min Ch El (ft)	82.01	Shear (lb/sq ft)	2.51	7.33	3.16
Alpha	1.15	Stream Power (lb/ft s)	19.91	117.15	28.47
Frctn Loss (ft)	0.64	Cum Volume (acre-ft)	1231.75	1782.06	156.37
C & E Loss (ft)	0.03	Cum SA (acres)	326.71	208.57	32.12

CROSS SECTION OUTPUT Profile #Q100HC

E.G. Elev (ft)	98.86	Element	Left OB	Channel	Right OB
Vel Head (ft)	4.86	Wt. n-Val.	0.048	0.044	0.044
W.S. Elev (ft)	94.00	Reach Len. (ft)	33.01	38.98	40.87
Crit W.S. (ft)	94.70	Flow Area (sq ft)	872.66	4153.06	2094.50
E.G. Slope (ft/ft)	0.013532	Area (sq ft)	872.66	4153.06	2094.50
Q Total (cfs)	118891.00	Flow (cfs)	9035.13	80943.55	28912.32
Top Width (ft)	928.73	Top Width (ft)	187.73	380.04	360.96
Vel Total (ft/s)	16.70	Avg. Vel. (ft/s)	10.35	19.49	13.80
Max Chl Dpth (ft)	11.99	Hydr. Depth (ft)	4.65	10.93	5.80
Conv. Total (cfs)	1022035.0	Conv. (cfs)	77669.6	695823.1	248541.8
Length Wtd. (ft)	38.90	Wetted Per. (ft)	188.31	380.13	361.12
Min Ch El (ft)	82.01	Shear (lb/sq ft)	3.92	9.23	4.90
Alpha	1.12	Stream Power (lb/ft s)	40.54	179.89	67.64
Frctn Loss (ft)	0.47	Cum Volume (acre-ft)	4704.65	3027.73	390.72
C & E Loss (ft)	0.06	Cum SA (acres)	603.58	208.59	45.67

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

CROSS SECTION

RIVER: San Mateo Creek
REACH: Lower RS: 15988.6*

INPUT
Description:
Station Elevation Data num= 115

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	112.86	33.93	108.56	35.33	108.28	38.29	107.86	39.22	107.7
40.98	107.22	84.05	100.36	85.16	100.11	95.59	98.35	95.84	98.27
96.34	98.16	96.81	98.02	110.18	98.05	110.6	98.03	110.93	97.97
122.03	96.76	122.08	96.75	122.39	96.7	122.84	96.98	123.59	97.09
135.16	96.33	138.01	96.15	142.66	95.84	145.31	95.69	151.43	95.28
155.86	94.93	168.63	94.03	196.47	92.22	204.66	91.73	215.47	91
232.84	90.7	245.5	90.73	280.18	89.12	289.59	88.44	342.82	87.32
344.03	87.28	347.95	87.12	358.2	86.68	362.8	86.56	363.51	86.54
369.84	86.5	395.21	85.73	402.88	85.4	404.52	85.34	404.87	85.33
406.66	84.59	409.22	84.01	412.22	83.33	413.91	83.98	420.03	85.44
420.56	85.45	423.81	84.77	432.07	84.62	439.79	84.48	474.66	83.83
509.6	83.19	513.65	83.12	554.44	82.53	563.47	82.4	587.93	81.15
606.75	81.07	629.79	80.82	631.16	80.81	632.57	80.79	652.45	80.87
665.54	80.92	674.89	80.96	688.72	81.02	695.05	81.05	703.62	81.19
763.26	82.14	774.72	82.35	784.89	82.67	810.39	83.34	887.96	85.54
931.23	86.41	953.43	86.6	972.65	86.93	976.24	87.05	999.65	87.95
1050.99	90.08	1067.65	90,76	1073.34	90.99	1075.55	91.08	1085.26	91.51
1137.8	94.96	1149.63	95.72	1152.54	95.9	1166.97	96.45	1186.22	97.24
1192.34	97.47	1199.93	97.74	1256.72	99.69	1284.05	100.59	1300.88	101.14
1302.14	101.22	1318.53	102.08	1321.56	102.17	1368.34	103.16	1373.88	103.27
1376.3	103.34	1378.3	103.4	1400.07	104.09	1401.55	104.14	1412.97	104.91
1451.51	107.41	1453.01	107.51	1456.43	107.8	1491.85	111.42	1504.46	112.53
1505.7	112.65	1513.78	113.43	1528.41	114.82	1541.02	116.03	1542.77	116.22

Manning's n Values num= 9

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.05	404.52	.041	412.22	.044	554.44	.044	674.89	.05
810.39	.041	1067.65	.035	1378.3	.044	1542.77	.05		

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
420.56	810.39	33.01	38.98	40.87	.1	.3

CROSS SECTION OUTPUT Profile #Q50

			Left OB	Channel	Right OB
E.G. Elev (ft)	90.27	Element			
Vel Head (ft)	2.94	Wt. n-Val.	0.045	0.046	0.041
W.S. Elev (ft)	87.33	Reach Len. (ft)	33.01	38.98	40.87
Crit W.S. (ft)	87.99	Flow Area (sq ft)	108.07	1965.15	313.49
E.G. Slope (ft/ft)	0.021824	Area (sq ft)	108.07	1965.15	313.49
Q Total (cfs)	31354.00	Flow (cfs)	751.33	28108.63	2494.04
Top Width (ft)	640.87	Top Width (ft)	78.01	389.83	173.02
Vel Total (ft/s)	13.14	Avg. Vel. (ft/s)	6.95	14.30	7.96
Max Chl Dpth (ft)	6.54	Hydr. Depth (ft)	1.39	5.04	1.81
Conv. Total (cfs)	212237.5	Conv. (cfs)	5085.8	190269.3	16882.3
Length Wtd. (ft)	38.99	Wetted Per. (ft)	78.63	389.98	173.07
Min Ch El (ft)	80.79	Shear (lb/sq ft)	1.87	6.87	2.47
Alpha	1.10	Stream Power (lb/ft s)	13.02	98.20	19.63
Frctn Loss (ft)	0.82	Cum Volume (acre-ft)	660.09	1417.88	102.54
C & E Loss (ft)	0.00	Cum SA (acres)	228.25	208.04	29.10

CROSS SECTION OUTPUT Profile #Q100

E.G. Elev (ft)	92.23	Element	Left OB	Channel	Right OB
Vel Head (ft)	3.61	Wt. n-Val.	0.047	0.046	0.041
W.S. Elev (ft)	88.62	Reach Len. (ft)	33.01	38.98	40.87
Crit W.S. (ft)	89.43	Flow Area (sq ft)	247.75	2468.08	557.94
E.G. Slope (ft/ft)	0.020725	Area (sq ft)	247.75	2468.08	557.94
Q Total (cfs)	47312.00	Flow (cfs)	1893.72	39750.88	5667.41
Top Width (ft)	728.54	Top Width (ft)	133.40	389.83	205.31
Vel Total (ft/s)	14.45	Avg. Vel. (ft/s)	7.64	16.11	10.16
Max Chl Dpth (ft)	7.83	Hydr. Depth (ft)	1.86	6.33	2.72
Conv. Total (cfs)	328644.2	Conv. (cfs)	13154.4	276122.2	39367.6
Length Wtd. (ft)	38.95	Wetted Per. (ft)	134.04	389.98	205.39
Min Ch El (ft)	80.79	Shear (lb/sq ft)	2.39	8.19	3.51
Alpha	1.11	Stream Power (lb/ft s)	18.28	131.88	35.70
Frctn Loss (ft)	0.76	Cum Volume (acre-ft)	1231.57	1779.86	155.78
C & E Loss (ft)	0.01	Cum SA (acres)	326.62	208.23	31.91

CROSS SECTION OUTPUT Profile #Q100HC

E.G. Elev (ft)	98.21	Element	Left OB	Channel	Right OB
Vel Head (ft)	5.51	Wt. n-Val.	0.048	0.046	0.041
W.S. Elev (ft)	92.70	Reach Len. (ft)	33.01	38.98	40.87
Crit W.S. (ft)	93.86	Flow Area (sq ft)	994.14	4058.79	1590.17
E.G. Slope (ft/ft)	0.017492	Area (sq ft)	994.14	4058.79	1590.17
Q Total (cfs)	118891.00	Flow (cfs)	10984.73	83040.51	24865.76
Top Width (ft)	914.19	Top Width (ft)	231.42	389.83	292.94
Vel Total (ft/s)	17.90	Avg. Vel. (ft/s)	11.05	20.46	15.64
Max Chl Dpth (ft)	11.91	Hydr. Depth (ft)	4.30	10.41	5.43
Conv. Total (cfs)	898942.3	Conv. (cfs)	83056.3	627874.5	188011.6
Length Wtd. (ft)	38.72	Wetted Per. (ft)	232.16	389.98	293.11
Min Ch El (ft)	80.79	Shear (lb/sq ft)	4.68	11.37	5.92
Alpha	1.11	Stream Power (lb/ft s)	51.67	232.53	92.64
Frctn Loss (ft)	0.60	Cum Volume (acre-ft)	4703.94	3024.05	388.99
C & E Loss (ft)	0.06	Cum SA (acres)	603.42	208.25	45.36

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

CROSS SECTION

RIVER: San Mateo Creek
REACH: Lower RS: 15949.6*

INPUT
Description:
Station Elevation Data num= 115

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	114.16	37.58	110.15	39.14	109.93	42.41	109.56	43.44	109.43
45.39	108.95	93.11	99.64	94.33	99.37	105.89	97.07	106.16	96.95
106.72	96.81	107.24	96.63	122.06	96.73	122.52	96.7	122.88	96.65
135.18	95.55	135.24	95.54	135.58	95.5	136.07	95.62	136.91	95.64
149.73	94.67	152.89	94.43	158.03	94.04	160.97	93.86	167.75	93.33
172.66	92.92	186.8	91.89	217.64	89.72	226.71	89.13	238.69	88.31
257.92	88.17	271.95	88.19	310.37	87.4	320.8	87.07	379.76	86.54
381.1	86.51	385.44	86.4	396.8	86.11	401.9	86.02	402.67	86
409.7	85.94	437.8	85.38	446.29	85.07	448.1	85.03	448.49	85.02

450.48	84.07	453.32	83.34	456.64	82.49	458.52	83.36	465.34	85.32
465.93	85.35	469.55	84.45	478.76	84.29	487.35	84.12	526.2	83.4
565.13	82.68	569.64	82.6	615.08	81.84	625.15	81.67	652.4	80.02
673.36	79.93	699.03	79.62	700.55	79.6	702.12	79.58	720.4	79.68
732.43	79.74	741.03	79.79	753.73	79.87	759.55	79.9	767.43	80.08
822.24	81.31	832.78	81.58	842.12	81.89	865.56	82.47	936.96	84.83
976.78	85.96	997.21	86.2	1014.9	86.62	1018.21	86.78	1039.75	87.85
1087.01	90.38	1102.34	91.18	1107.59	91.46	1109.62	91.57	1118.56	92.06
1166.92	96.27	1177.8	97.2	1180.48	97.42	1193.77	98.04	1211.48	98.9
1217.11	99.14	1224.1	99.44	1276.37	101.6	1301.53	102.62	1317.02	103.25
1318.17	103.32	1333.26	103.95	1336.05	104.03	1379.1	104.76	1384.2	104.84
1386.44	104.9	1388.28	104.96	1408.32	105.61	1409.68	105.65	1420.19	106.2
1455.66	107.98	1457.04	108.05	1460.18	108.24	1492.79	111.06	1504.4	111.98
1505.53	112.07	1512.97	112.68	1526.44	113.78	1538.04	114.73	1539.65	114.87

Manning's n Values num= 9

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.05	448.1	.038	456.64	.047	565.13	.047	720.4	.05
865.56	.038	1102.34	.035	1388.28	.047	1539.65	.05		

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
465.93	865.56	33.01	38.98	40.87	.1 .3

CROSS SECTION OUTPUT Profile #Q50

E.G. Elev (ft)	89.37	Element	Left OB	Channel	Right OB
Vel Head (ft)	2.58	Wt. n-Val.	0.044	0.048	0.038
W.S. Elev (ft)	86.79	Reach Len. (ft)	33.01	38.98	40.87
Crit W.S. (ft)	87.21	Flow Area (sq ft)	120.89	2102.36	300.81
E.G. Slope (ft/ft)	0.019366	Area (sq ft)	120.89	2102.36	300.81
Q Total (cfs)	31354.00	Flow (cfs)	736.37	28047.05	2570.59
Top Width (ft)	666.07	Top Width (ft)	113.65	399.63	152.79
Vel Total (ft/s)	12.42	Avg. Vel. (ft/s)	6.09	13.34	8.55
Max Chl Dpth (ft)	7.21	Hydr. Depth (ft)	1.06	5.26	1.97
Conv. Total (cfs)	225306.2	Conv. (cfs)	5291.4	201542.8	18471.9
Length Wtd. (ft)	38.96	Wetted Per. (ft)	114.55	399.85	152.86
Min Ch El (ft)	79.58	Shear (lb/sq ft)	1.28	6.36	2.38
Alpha	1.08	Stream Power (lb/ft s)	7.77	84.81	20.33
Frctn Loss (ft)	0.80	Cum Volume (acre-ft)	660.01	1416.06	102.25
C & E Loss (ft)	0.11	Cum SA (acres)	228.17	207.69	28.95

CROSS SECTION OUTPUT Profile #Q100

E.G. Elev (ft)	91.38	Element	Left OB	Channel	Right OB
Vel Head (ft)	3.52	Wt. n-Val.	0.046	0.048	0.038
W.S. Elev (ft)	87.86	Reach Len. (ft)	33.01	38.98	40.87
Crit W.S. (ft)	88.72	Flow Area (sq ft)	283.63	2530.73	476.15
E.G. Slope (ft/ft)	0.021543	Area (sq ft)	283.63	2530.73	476.15
Q Total (cfs)	47312.00	Flow (cfs)	2020.10	39954.43	5337.48
Top Width (ft)	751.86	Top Width (ft)	177.88	399.63	174.36
Vel Total (ft/s)	14.38	Avg. Vel. (ft/s)	7.12	15.79	11.21
Max Chl Dpth (ft)	8.28	Hydr. Depth (ft)	1.59	6.33	2.73
Conv. Total (cfs)	322341.0	Conv. (cfs)	13763.1	272213.2	36364.7
Length Wtd. (ft)	38.84	Wetted Per. (ft)	178.79	399.85	174.45
Min Ch El (ft)	79.58	Shear (lb/sq ft)	2.13	8.51	3.67
Alpha	1.10	Stream Power (lb/ft s)	15.20	134.39	41.15
Frctn Loss (ft)	0.82	Cum Volume (acre-ft)	1231.37	1777.62	155.30
C & E Loss (ft)	0.03	Cum SA (acres)	326.50	207.87	31.73

CROSS SECTION OUTPUT Profile #Q100HC

E.G. Elev (ft)	97.42	Element	Left OB	Channel	Right OB
Vel Head (ft)	5.94	Wt. n-Val.	0.048	0.048	0.038
W.S. Elev (ft)	91.47	Reach Len. (ft)	33.01	38.98	40.87
Crit W.S. (ft)	92.96	Flow Area (sq ft)	1164.17	3975.58	1228.89
E.G. Slope (ft/ft)	0.021502	Area (sq ft)	1164.17	3975.58	1228.89
Q Total (cfs)	118891.00	Flow (cfs)	13972.26	83828.65	21090.09
Top Width (ft)	915.15	Top Width (ft)	273.22	399.63	242.30
Vel Total (ft/s)	18.67	Avg. Vel. (ft/s)	12.00	21.09	17.16
Max Chl Dpth (ft)	11.89	Hydr. Depth (ft)	4.26	9.95	5.07
Conv. Total (cfs)	810785.6	Conv. (cfs)	95284.8	571675.4	143825.3
Length Wtd. (ft)	38.43	Wetted Per. (ft)	274.25	399.85	242.48
Min Ch El (ft)	79.58	Shear (lb/sq ft)	5.70	13.35	6.80
Alpha	1.10	Stream Power (lb/ft s)	68.39	281.43	116.76
Frctn Loss (ft)	0.75	Cum Volume (acre-ft)	4703.12	3020.46	387.67
C & E Loss (ft)	0.04	Cum SA (acres)	603.23	207.89	45.11

CROSS SECTION

RIVER: San Mateo Creek
REACH: Lower RS: 15910.69

INPUT
Description:
Station Elevation Data num= 63

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	115.46	47.67	111.16	116.19	95.78	116.49	95.64	117.1	95.46
117.67	95.24	133.93	95.4	148.33	94.34	173.4	92.24	176.63	92.02
189.45	90.91	238.81	87.21	261.91	85.62	416.7	85.76	422.93	85.69
440.99	85.48	480.38	85.03	489.7	84.75	491.69	84.72	492.12	84.71
494.3	83.55	501.06	81.64	503.13	82.74	510.65	85.21	511.3	85.24
515.29	84.13	525.44	83.95	534.91	83.77	577.74	82.97	686.82	80.95
716.86	78.9	739.97	78.79	768.27	78.41	769.95	78.39	771.68	78.37
799.32	78.56	824.05	78.75	881.22	80.47	899.35	81.1	920.73	81.61
1022.33	85.51	1041	85.8	1057.16	86.32	1079.86	87.74	1123.03	90.68
1137.04	91.61	1141.83	91.93	1151.85	92.62	1196.03	97.58	1205.97	98.67
1208.42	98.93	1236.74	100.56	1319	104.66	1334.21	105.42	1350.54	105.88
1389.87	106.36	1394.53	106.41	1396.57	106.46	1398.25	106.52	1463.94	108.69
1505.37	111.49	1524.47	112.73	1536.54	113.53				

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.05	491.69	.035	768.27	.05	1137.04	.035	1398.25	.05

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
511.3	920.73	44.06	38.94	33.57	.1	.3

CROSS SECTION OUTPUT Profile #Q50

E.G. Elev (ft)	88.71	Element	Left OB	Channel	Right OB
Vel Head (ft)	2.64	Wt. n-Val.	0.040	0.041	0.050
W.S. Elev (ft)	86.07	Reach Len. (ft)	44.06	38.94	33.57
Crit W.S. (ft)	86.59	Flow Area (sq ft)	168.73	2158.31	263.46
E.G. Slope (ft/ft)	0.014833	Area (sq ft)	168.73	2158.31	263.46

Q Total (cfs)	31354.00	Flow (cfs)	765.71	29050.37	1537.91
Top Width (ft)	793.87	Top Width (ft)	255.88	409.43	128.56
Vel Total (ft/s)	12.10	Avg. Vel. (ft/s)	4.54	13.46	5.84
Max Chl Dpth (ft)	7.70	Hydr. Depth (ft)	0.66	5.27	2.05
Conv. Total (cfs)	257440.3	Conv. (cfs)	6287.1	238525.8	12627.4
Length Wtd. (ft)	38.80	Wetted Per. (ft)	257.13	409.73	128.64
Min Ch El (ft)	78.37	Shear (lb/sq ft)	0.61	4.88	1.90
Alpha	1.16	Stream Power (lb/ft s)	2.76	65.66	11.07
Frctn Loss (ft)	0.66	Cum Volume (acre-ft)	659.90	1414.15	101.99
C & E Loss (ft)	0.01	Cum SA (acres)	228.03	207.33	28.82

CROSS SECTION OUTPUT Profile #Q100

E.G. Elev (ft)	90.67	Element	Left OB	Channel	Right OB
Vel Head (ft)	3.50	Wt. n-Val.	0.045	0.041	0.050
W.S. Elev (ft)	87.17	Reach Len. (ft)	44.06	38.94	33.57
Crit W.S. (ft)	87.96	Flow Area (sq ft)	460.46	2610.91	419.08
E.G. Slope (ft/ft)	0.015832	Area (sq ft)	460.46	2610.91	419.08
Q Total (cfs)	47312.00	Flow (cfs)	2843.15	41362.50	3106.35
Top Width (ft)	831.42	Top Width (ft)	271.94	409.43	150.05
Vel Total (ft/s)	13.55	Avg. Vel. (ft/s)	6.17	15.84	7.41
Max Chl Dpth (ft)	8.80	Hydr. Depth (ft)	1.69	6.38	2.79
Conv. Total (cfs)	376011.5	Conv. (cfs)	22595.9	328727.9	24687.7
Length Wtd. (ft)	38.88	Wetted Per. (ft)	273.22	409.73	150.16
Min Ch El (ft)	78.37	Shear (lb/sq ft)	1.67	6.30	2.76
Alpha	1.23	Stream Power (lb/ft s)	10.29	99.78	20.45
Frctn Loss (ft)	0.71	Cum Volume (acre-ft)	1231.08	1775.32	154.88
C & E Loss (ft)	0.01	Cum SA (acres)	326.33	207.51	31.58

CROSS SECTION OUTPUT Profile #Q100HC

E.G. Elev (ft)	96.58	Element	Left OB	Channel	Right OB
Vel Head (ft)	5.28	Wt. n-Val.	0.048	0.040	0.050
W.S. Elev (ft)	91.30	Reach Len. (ft)	44.06	38.94	33.57
Crit W.S. (ft)	92.33	Flow Area (sq ft)	1696.87	4301.19	1166.60
E.G. Slope (ft/ft)	0.013329	Area (sq ft)	1696.87	4301.19	1166.60
Q Total (cfs)	118891.00	Flow (cfs)	18414.08	87997.03	12479.89
Top Width (ft)	947.44	Top Width (ft)	326.36	409.43	211.65
Vel Total (ft/s)	16.59	Avg. Vel. (ft/s)	10.85	20.46	10.70
Max Chl Dpth (ft)	12.93	Hydr. Depth (ft)	5.20	10.51	5.51
Conv. Total (cfs)	1029791.0	Conv. (cfs)	159496.2	762198.6	108096.3
Length Wtd. (ft)	39.07	Wetted Per. (ft)	327.80	409.73	211.90
Min Ch El (ft)	78.37	Shear (lb/sq ft)	4.31	8.74	4.58
Alpha	1.23	Stream Power (lb/ft s)	46.74	178.72	49.01
Frctn Loss (ft)	0.64	Cum Volume (acre-ft)	4702.04	3016.75	386.54
C & E Loss (ft)	0.20	Cum SA (acres)	603.00	207.53	44.90

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

CROSS SECTION

RIVER: San Mateo Creek
REACH: Lower RS: 15871.7*

INPUT
Description:
Station Elevation Data num= 115

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	114.46	47.13	110.2	114.87	96.4	115.16	96.28	115.77	96.12
116.33	95.93	132.41	95.83	146.64	94.74	171.43	92.64	173.33	92.5
174.62	92.34	176.75	92.05	184.81	91.43	186.62	91.31	187.29	91.26
192.54	90.97	218.92	89.25	236.09	87.93	244.65	87.32	255.72	86.45
258.93	86.19	279.53	85.72	284.53	85.61	296.86	85.48	328.74	85.3
400.54	85.31	411.96	85.26	418.12	85.17	435.97	84.9	437.88	84.87
444.57	84.91	448.14	84.81	458.05	84.6	474.92	84.34	484.13	84.05
486.1	84.02	486.52	84.01	488.68	83.03	495.36	81.4	497.86	82.29
506.93	84.25	507.72	84.27	512.53	83.3	514.13	83.26	515.55	83.22
518.37	83.15	520.89	83.09	522.26	83.08	524.78	83.05	524.85	83.05
528.01	83	536.21	82.9	567.47	82.5	586.58	82.26	587.9	82.24
598.24	82.14	599.25	82.12	641.07	81.69	719.54	80.69	722.56	80.54
748.96	79.26	755.79	78.93	771.8	78.85	783.68	78.79	797.63	78.64
797.89	78.63	803.63	78.57	812.08	78.47	817.84	78.4	819.87	78.38
821.95	78.36	845.8	78.57	867.13	78.79	916.44	80.34	932.08	80.91
950.52	81.38	958.09	81.69	975.01	82.5	1007.47	84.14	1011.93	84.37
1023.16	84.81	1041.69	85.73	1045.25	85.91	1061.05	86.37	1062.65	86.42
1077.72	87.06	1079.29	87.16	1088.35	87.75	1098.88	88.46	1139.13	91.4
1152.19	92.33	1156.66	92.65	1162.26	93.06	1166	93.33	1195.79	96.6
1207.19	97.88	1216.46	98.89	1218.74	99.14	1244.01	100.73	1245.15	100.8
1302.23	103.68	1321.84	104.66	1336.02	105.37	1351.25	105.83	1376.53	106.24
1387.92	106.47	1392.26	106.55	1394.16	106.61	1395.73	106.68	1437.2	108.28
1456.97	109.01	1467.16	109.7	1495.6	111.56	1513.41	112.68	1524.66	113.4

Manning's n Values num= 13

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.05	486.1	.038	495.36	.047	567.47	.035	598.24	.038
797.63	.05	845.8	.047	932.08	.038	950.52	.035	1041.69	.035
1152.19	.035	1395.73	.047	1524.66	.047				

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
507.72	950.52	44.06	38.94	33.57	.1	.3

CROSS SECTION OUTPUT Profile #Q50

E.G. Elev (ft)	88.10	Element	Left OB	Channel	Right OB
Vel Head (ft)	2.29	Wt. n-Val.	0.045	0.042	0.035
W.S. Elev (ft)	85.81	Reach Len. (ft)	44.06	38.94	33.57
Crit W.S. (ft)	86.07	Flow Area (sq ft)	204.50	2299.85	206.77
E.G. Slope (ft/ft)	0.013111	Area (sq ft)	204.50	2299.85	206.77
Q Total (cfs)	31354.00	Flow (cfs)	885.94	28735.11	1732.96
Top Width (ft)	767.70	Top Width (ft)	232.15	442.80	92.76
Vel Total (ft/s)	11.56	Avg. Vel. (ft/s)	4.33	12.49	8.38
Max Chl Dpth (ft)	7.45	Hydr. Depth (ft)	0.88	5.19	2.23
Conv. Total (cfs)	273830.5	Conv. (cfs)	7737.3	250958.4	15134.8
Length Wtd. (ft)	38.85	Wetted Per. (ft)	232.93	443.00	92.86
Min Ch El (ft)	78.36	Shear (lb/sq ft)	0.72	4.25	1.82
Alpha	1.10	Stream Power (lb/ft s)	3.11	53.09	15.27
Frctn Loss (ft)	0.49	Cum Volume (acre-ft)	659.71	1412.16	101.81
C & E Loss (ft)	0.19	Cum SA (acres)	227.79	206.94	28.73

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.

CROSS SECTION OUTPUT Profile #Q100

E.G. Elev (ft)	89.90	Element	Left OB	Channel	Right OB
Vel Head (ft)	2.74	Wt. n-Val.	0.048	0.042	0.035
W.S. Elev (ft)	87.16	Reach Len. (ft)	44.06	38.94	33.57
Crit W.S. (ft)	87.44	Flow Area (sq ft)	543.58	2898.42	358.55
E.G. Slope (ft/ft)	0.012172	Area (sq ft)	543.58	2898.42	358.55
Q Total (cfs)	47312.00	Flow (cfs)	3184.61	40375.61	3751.77
Top Width (ft)	832.66	Top Width (ft)	261.06	442.80	128.80
Vel Total (ft/s)	12.45	Avg. Vel. (ft/s)	5.86	13.93	10.46
Max Chl Dpth (ft)	8.80	Hydr. Depth (ft)	2.08	6.55	2.78
Conv. Total (cfs)	428827.4	Conv. (cfs)	28864.8	365957.2	34005.4
Length Wtd. (ft)	38.92	Wetted Per. (ft)	261.89	443.00	128.93
Min Ch El (ft)	78.36	Shear (lb/sq ft)	1.58	4.97	2.11
Alpha	1.14	Stream Power (lb/ft s)	9.24	69.26	22.11
Frctn Loss (ft)	0.54	Cum Volume (acre-ft)	1230.58	1772.86	154.58
C & E Loss (ft)	0.23	Cum SA (acres)	326.06	207.13	31.47

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

CROSS SECTION OUTPUT Profile #Q100HC

E.G. Elev (ft)	96.00	Element	Left OB	Channel	Right OB
Vel Head (ft)	5.54	Wt. n-Val.	0.049	0.042	0.035
W.S. Elev (ft)	90.45	Reach Len. (ft)	44.06	38.94	33.57
Crit W.S. (ft)	91.66	Flow Area (sq ft)	1476.84	4356.20	861.62
E.G. Slope (ft/ft)	0.015257	Area (sq ft)	1476.84	4356.20	861.62
Q Total (cfs)	118891.00	Flow (cfs)	15992.67	88544.08	14354.25
Top Width (ft)	925.73	Top Width (ft)	307.27	442.80	175.66
Vel Total (ft/s)	17.76	Avg. Vel. (ft/s)	10.83	20.33	16.66
Max Chl Dpth (ft)	12.09	Hydr. Depth (ft)	4.81	9.84	4.90
Conv. Total (cfs)	962530.9	Conv. (cfs)	129475.3	716844.9	116210.8
Length Wtd. (ft)	39.05	Wetted Per. (ft)	308.22	443.00	175.91
Min Ch El (ft)	78.36	Shear (lb/sq ft)	4.56	9.37	4.67
Alpha	1.13	Stream Power (lb/ft s)	49.42	190.38	77.72
Frctn Loss (ft)	0.56	Cum Volume (acre-ft)	4700.43	3012.88	385.76
C & E Loss (ft)	0.03	Cum SA (acres)	602.68	207.15	44.75

CROSS SECTION

RIVER: San Mateo Creek
REACH: Lower RS: 15832.8*

INPUT
Description:
Station Elevation Data num= 115

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	113.46	46.59	109.23	113.55	97.03	113.84	96.92	114.44	96.79
114.99	96.62	130.88	96.27	144.96	95.15	169.45	93.03	171.34	92.89
172.61	92.66	174.72	92.26	182.69	91.73	184.47	91.64	185.14	91.61
190.32	91.43	216.4	89.98	233.38	88.66	241.83	88.03	252.78	87.05
255.95	86.75	276.32	85.8	281.26	85.57	293.44	85.31	324.96	84.91
395.94	84.87	407.22	84.75	413.31	84.64	430.96	84.31	432.84	84.28
439.45	84.43	442.99	84.29	452.78	83.97	469.45	83.65	478.56	83.36

480.5	83.32	480.92	83.31	483.05	82.51	489.66	81.16	492.59	81.84
503.22	83.3	504.14	83.3	509.78	82.46	511.64	82.41	513.32	82.36
516.61	82.26	519.57	82.18	521.18	82.17	524.13	82.14	524.21	82.14
527.91	82.11	537.51	82.03	574.13	81.71	596.51	81.52	598.06	81.51
610.17	81.46	611.35	81.45	660.35	81.22	752.26	80.42	755.8	80.31
786.72	79.23	794.73	78.95	813.48	78.86	827.4	78.79	843.73	78.64
844.04	78.63	850.77	78.57	860.66	78.46	867.41	78.39	869.78	78.37
872.23	78.34	892.27	78.59	910.2	78.82	951.66	80.21	964.81	80.71
980.31	81.14	987.33	81.47	1003.02	82.38	1033.13	84.33	1037.26	84.6
1047.68	85.02	1064.86	86.11	1068.16	86.31	1082.82	86.98	1084.31	87.04
1098.28	87.79	1099.74	87.9	1108.14	88.46	1117.91	89.19	1155.23	92.12
1167.35	93.05	1171.49	93.37	1176.69	93.79	1180.15	94.04	1207.78	96.99
1218.35	98.18	1226.95	99.12	1229.07	99.35	1252.5	100.98	1253.55	101.04
1306.49	103.76	1324.68	104.66	1337.83	105.32	1351.95	105.79	1375.41	106.27
1385.96	106.58	1389.99	106.7	1391.75	106.76	1393.21	106.83	1431.67	108.58
1450.01	109.33	1459.46	109.97	1485.83	111.62	1502.34	112.63	1512.78	113.27

Manning's n Values num= 13

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.05	480.5	.04	489.66	.045	537.51	.035	596.51	.04
813.48	.05	860.66	.045	951.66	.04	980.31	.035	1064.86	.035
1167.35	.035	1393.21	.045	1512.78	.045				

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
504.14	980.31	44.06	38.94	33.57	.1	.3

CROSS SECTION OUTPUT Profile #Q50

			Left OB	Channel	Right OB
E.G. Elev (ft)	87.58	Element	0.045	0.042	0.035
Vel Head (ft)	2.28	Wt. n-Val.	44.06	38.94	33.57
W.S. Elev (ft)	85.31	Reach Len. (ft)	198.78	2349.93	149.14
Crit W.S. (ft)	85.54	Flow Area (sq ft)	198.78	2349.93	149.14
E.G. Slope (ft/ft)	0.014153	Area (sq ft)	953.81	29176.13	1224.07
Q Total (cfs)	31354.00	Flow (cfs)	210.36	476.17	71.87
Top Width (ft)	758.40	Top Width (ft)	4.80	12.42	8.21
Vel Total (ft/s)	11.62	Avg. Vel. (ft/s)	0.94	4.94	2.08
Max Chl Dpth (ft)	6.97	Hydr. Depth (ft)	8017.3	245243.4	10289.1
Conv. Total (cfs)	263549.8	Conv. (cfs)	210.84	476.31	72.00
Length Wtd. (ft)	38.95	Wetted Per. (ft)	0.83	4.36	1.83
Min Ch El (ft)	78.34	Shear (lb/sq ft)	4.00	54.12	15.02
Alpha	1.09	Stream Power (lb/ft s)	659.51	1410.08	101.67
Frctn Loss (ft)	0.49	Cum Volume (acre-ft)	227.56	206.53	28.67
C & E Loss (ft)	0.08	Cum SA (acres)			

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.

CROSS SECTION OUTPUT Profile #Q100

			Left OB	Channel	Right OB
E.G. Elev (ft)	89.41	Element	0.048	0.042	0.035
Vel Head (ft)	2.78	Wt. n-Val.	44.06	38.94	33.57
W.S. Elev (ft)	86.63	Reach Len. (ft)	505.08	2981.93	258.80
Crit W.S. (ft)	86.95	Flow Area (sq ft)	505.08	2981.93	258.80
E.G. Slope (ft/ft)	0.013120	Area (sq ft)	3105.59	41594.74	2611.67
Q Total (cfs)	47312.00	Flow (cfs)	245.68	476.17	94.91
Top Width (ft)	816.76	Top Width (ft)	6.15	13.95	10.09
Vel Total (ft/s)	12.63	Avg. Vel. (ft/s)			

Max Chl Dpth (ft)	8.29	Hydr. Depth (ft)	2.06	6.26	2.73
Conv. Total (cfs)	413046.9	Conv. (cfs)	27112.7	363133.6	22800.6
Length Wtd. (ft)	39.05	Wetted Per. (ft)	246.19	476.31	95.08
Min Ch El (ft)	78.34	Shear (lb/sq ft)	1.68	5.13	2.23
Alpha	1.12	Stream Power (lb/ft s)	10.33	71.53	22.50
Frctn Loss (ft)	0.49	Cum Volume (acre-ft)	1230.05	1770.23	154.34
C & E Loss (ft)	0.00	Cum SA (acres)	325.80	206.72	31.39

CROSS SECTION OUTPUT Profile #Q100HC

E.G. Elev (ft)	95.38	Element	Left OB	Channel	Right OB
Vel Head (ft)	5.03	Wt. n-Val.	0.049	0.042	0.035
W.S. Elev (ft)	90.34	Reach Len. (ft)	44.06	38.94	33.57
Crit W.S. (ft)	91.15	Flow Area (sq ft)	1503.02	4748.94	728.90
E.G. Slope (ft/ft)	0.013510	Area (sq ft)	1503.02	4748.94	728.90
Q Total (cfs)	118891.00	Flow (cfs)	16024.10	91458.34	11408.55
Top Width (ft)	922.75	Top Width (ft)	294.28	476.17	152.30
Vel Total (ft/s)	17.03	Avg. Vel. (ft/s)	10.66	19.26	15.65
Max Chl Dpth (ft)	12.00	Hydr. Depth (ft)	5.11	9.97	4.79
Conv. Total (cfs)	1022877.0	Conv. (cfs)	137863.2	786860.8	98153.4
Length Wtd. (ft)	39.18	Wetted Per. (ft)	294.94	476.31	152.58
Min Ch El (ft)	78.34	Shear (lb/sq ft)	4.30	8.41	4.03
Alpha	1.12	Stream Power (lb/ft s)	45.82	161.95	63.06
Frctn Loss (ft)	0.48	Cum Volume (acre-ft)	4698.93	3008.81	385.15
C & E Loss (ft)	0.43	Cum SA (acres)	602.37	206.74	44.62

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.

CROSS SECTION

RIVER: San Mateo Creek
REACH: Lower RS: 15793.8*

INPUT
Description:
Station Elevation Data num= 115

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	112.46	46.04	108.27	112.22	97.65	112.51	97.57	113.1	97.45
113.65	97.31	129.36	96.7	143.27	95.55	167.48	93.43	169.34	93.28
170.6	92.99	172.68	92.47	180.56	92.04	182.32	91.98	182.98	91.97
188.11	91.9	213.88	90.72	230.66	89.38	239.02	88.74	249.84	87.65
252.97	87.32	273.1	85.88	277.98	85.54	290.03	85.14	321.18	84.52
391.33	84.43	402.48	84.25	408.5	84.12	425.94	83.73	427.81	83.68
434.34	83.96	437.83	83.76	447.51	83.34	463.99	82.96	472.99	82.66
474.91	82.62	475.33	82.6	477.43	81.99	483.96	80.92	487.31	81.39
499.5	82.34	500.55	82.33	507.02	81.63	509.16	81.56	511.08	81.49
514.85	81.37	518.24	81.27	520.09	81.26	523.47	81.24	523.56	81.24
527.8	81.21	538.81	81.15	580.79	80.92	606.45	80.79	608.22	80.79
622.1	80.79	623.46	80.78	679.62	80.75	784.98	80.16	789.04	80.07
824.48	79.2	833.66	78.98	855.16	78.87	871.11	78.79	889.84	78.64
890.19	78.63	897.9	78.56	909.25	78.46	916.97	78.38	919.7	78.36
922.5	78.33	938.75	78.6	953.28	78.86	986.88	80.09	997.54	80.52

1010.1	80.91	1016.57	81.24	1031.04	82.26	1058.78	84.52	1062.6	84.83
1072.2	85.24	1088.04	86.48	1091.08	86.71	1104.59	87.58	1105.96	87.65
1118.84	88.53	1120.18	88.64	1127.93	89.18	1136.93	89.91	1171.34	92.84
1182.5	93.78	1186.32	94.1	1191.11	94.51	1194.31	94.75	1219.77	97.39
1229.52	98.47	1237.44	99.34	1239.39	99.55	1260.99	101.22	1261.96	101.28
1310.76	103.83	1327.52	104.67	1339.64	105.27	1352.66	105.74	1374.28	106.31
1384.01	106.69	1387.72	106.84	1389.35	106.92	1390.68	106.99	1426.14	108.87
1443.04	109.65	1451.75	110.23	1476.06	111.69	1491.28	112.57	1500.9	113.14

Manning's n Values num= 13

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.05	474.91	.043	483.96	.043	538.81	.035	606.45	.043
824.48	.05	889.84	.043	986.88	.043	1010.1	.035	1088.04	.035
1182.5	.035	1390.68	.043	1500.9	.043				

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
499.5	1010.1	44.06	38.94	33.57	.1	.3

CROSS SECTION OUTPUT Profile #Q50

			Left OB	Channel	Right OB
E.G. Elev (ft)	87.03	Element			
Vel Head (ft)	1.73	Wt. n-Val.	0.046	0.043	0.035
W.S. Elev (ft)	85.30	Reach Len. (ft)	44.06	38.94	33.57
Crit W.S. (ft)	84.99	Flow Area (sq ft)	299.43	2663.35	136.43
E.G. Slope (ft/ft)	0.010653	Area (sq ft)	299.43	2663.35	136.43
Q Total (cfs)	31354.00	Flow (cfs)	1428.64	28924.58	1000.78
Top Width (ft)	787.61	Top Width (ft)	214.19	510.60	62.82
Vel Total (ft/s)	10.12	Avg. Vel. (ft/s)	4.77	10.86	7.34
Max Chl Dpth (ft)	6.97	Hydr. Depth (ft)	1.40	5.22	2.17
Conv. Total (cfs)	303785.6	Conv. (cfs)	13841.9	280247.3	9696.5
Length Wtd. (ft)	39.05	Wetted Per. (ft)	214.48	510.71	62.98
Min Ch El (ft)	78.33	Shear (lb/sq ft)	0.93	3.47	1.44
Alpha	1.09	Stream Power (lb/ft s)	4.43	37.67	10.57
Frctn Loss (ft)	0.35	Cum Volume (acre-ft)	659.25	1407.84	101.56
C & E Loss (ft)	0.11	Cum SA (acres)	227.35	206.09	28.61

Note: Hydraulic jump has occurred between this cross section and the previous upstream section.

CROSS SECTION OUTPUT Profile #Q100

			Left OB	Channel	Right OB
E.G. Elev (ft)	88.83	Element			
Vel Head (ft)	2.22	Wt. n-Val.	0.048	0.043	0.035
W.S. Elev (ft)	86.61	Reach Len. (ft)	44.06	38.94	33.57
Crit W.S. (ft)	86.37	Flow Area (sq ft)	598.31	3335.50	230.20
E.G. Slope (ft/ft)	0.010435	Area (sq ft)	598.31	3335.50	230.20
Q Total (cfs)	47312.00	Flow (cfs)	3712.19	41549.99	2049.83
Top Width (ft)	826.94	Top Width (ft)	236.65	510.60	79.70
Vel Total (ft/s)	11.36	Avg. Vel. (ft/s)	6.20	12.46	8.90
Max Chl Dpth (ft)	8.28	Hydr. Depth (ft)	2.53	6.53	2.89
Conv. Total (cfs)	463160.1	Conv. (cfs)	36340.4	406753.0	20066.7
Length Wtd. (ft)	39.16	Wetted Per. (ft)	236.98	510.71	79.91
Min Ch El (ft)	78.33	Shear (lb/sq ft)	1.64	4.25	1.88
Alpha	1.11	Stream Power (lb/ft s)	10.20	53.00	16.71
Frctn Loss (ft)	0.35	Cum Volume (acre-ft)	1229.49	1767.41	154.15
C & E Loss (ft)	0.12	Cum SA (acres)	325.56	206.28	31.32

Note: Hydraulic jump has occurred between this cross section and the previous upstream section.

CROSS SECTION OUTPUT Profile #Q100HC

E.G. Elev (ft)	94.78	Element	Left OB	Channel	Right OB
Vel Head (ft)	3.42	Wt. n-Val.	0.049	0.043	0.035
W.S. Elev (ft)	91.36	Reach Len. (ft)	44.06	38.94	33.57
Crit W.S. (ft)	90.55	Flow Area (sq ft)	1857.43	5759.80	770.26
E.G. Slope (ft/ft)	0.008160	Area (sq ft)	1857.43	5759.80	770.26
Q Total (cfs)	118891.00	Flow (cfs)	17512.76	91194.23	10184.01
Top Width (ft)	954.09	Top Width (ft)	299.62	510.60	143.87
Vel Total (ft/s)	14.17	Avg. Vel. (ft/s)	9.43	15.83	13.22
Max Chl Dpth (ft)	13.03	Hydr. Depth (ft)	6.20	11.28	5.35
Conv. Total (cfs)	1316144.0	Conv. (cfs)	193869.2	1009536.0	112738.7
Length Wtd. (ft)	39.28	Wetted Per. (ft)	300.14	510.71	144.26
Min Ch El (ft)	78.33	Shear (lb/sq ft)	3.15	5.75	2.72
Alpha	1.10	Stream Power (lb/ft s)	29.72	90.97	35.96
Frctn Loss (ft)	0.29	Cum Volume (acre-ft)	4697.23	3004.12	384.57
C & E Loss (ft)	0.13	Cum SA (acres)	602.07	206.30	44.51

Note: Hydraulic jump has occurred between this cross section and the previous upstream section.

CROSS SECTION

RIVER: San Mateo Creek
REACH: Lower RS: 15754.9*

INPUT
Description:
Station Elevation Data num= 115

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	111.45	45.5	107.3	110.9	98.27	111.19	98.21	111.77	98.11
112.32	98.01	127.84	97.13	141.58	95.96	165.51	93.83	167.35	93.68
168.59	93.31	170.65	92.68	178.43	92.34	180.17	92.32	180.83	92.32
185.89	92.36	211.36	91.46	227.94	90.1	236.2	89.44	246.9	88.25
249.99	87.88	269.88	85.97	274.71	85.5	286.61	84.96	317.4	84.13
386.72	83.99	397.74	83.75	403.69	83.59	420.92	83.14	422.77	83.09
429.22	83.49	432.67	83.24	442.24	82.71	458.52	82.27	467.42	81.97
469.32	81.92	469.73	81.9	471.81	81.47	478.26	80.68	482.04	80.94
495.78	81.38	496.97	81.36	504.26	80.79	506.68	80.72	508.84	80.63
513.09	80.48	516.92	80.36	519	80.35	522.81	80.34	522.92	80.34
527.7	80.32	540.12	80.28	587.44	80.14	616.38	80.05	618.38	80.06
634.04	80.11	635.56	80.11	698.89	80.28	817.71	79.9	822.28	79.84
862.24	79.18	872.6	79	896.83	78.88	914.83	78.79	935.94	78.64
936.34	78.63	945.03	78.56	957.83	78.45	966.54	78.37	969.61	78.34
972.77	78.32	985.22	78.62	996.36	78.89	1022.1	79.96	1030.27	80.32
1039.9	80.68	1045.81	81.01	1059.05	82.14	1084.44	84.7	1087.93	85.07
1096.72	85.45	1111.21	86.85	1114	87.12	1126.36	88.18	1127.61	88.27
1139.4	89.26	1140.63	89.38	1147.71	89.89	1155.95	90.63	1187.44	93.56
1197.66	94.5	1201.15	94.82	1205.53	95.23	1208.46	95.46	1231.76	97.78
1240.68	98.77	1247.93	99.57	1249.72	99.76	1269.48	101.46	1270.37	101.51
1315.02	103.9	1330.36	104.67	1341.46	105.22	1353.37	105.69	1373.15	106.34
1382.05	106.81	1385.45	106.98	1386.94	107.07	1388.16	107.15	1420.6	109.16
1436.07	109.96	1444.04	110.5	1466.29	111.75	1480.22	112.52	1489.02	113.01

Manning's n Values num= 13

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.05	469.32	.045	478.26	.04	540.12	.035	616.38	.045

862.24	.05	896.83	.04	1022.1	.045	1039.9	.035	1111.21	.035
1197.66	.035	1388.16	.04	1489.02	.04				

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
495.78	1039.9	44.06	38.94	33.57	.1 .3

CROSS SECTION OUTPUT Profile #Q50

			Left OB	Channel	Right OB
E.G. Elev (ft)	86.57	Element			
Vel Head (ft)	1.38	Wt. n-Val.	0.046	0.042	0.035
W.S. Elev (ft)	85.19	Reach Len. (ft)	44.06	38.94	33.57
Crit W.S. (ft)		Flow Area (sq ft)	381.62	2962.90	119.63
E.G. Slope (ft/ft)	0.007755	Area (sq ft)	381.62	2962.90	119.63
Q Total (cfs)	31354.00	Flow (cfs)	1781.09	28783.04	789.88
Top Width (ft)	809.09	Top Width (ft)	214.20	544.12	50.77
Vel Total (ft/s)	9.05	Avg. Vel. (ft/s)	4.67	9.71	6.60
Max Chl Dpth (ft)	6.87	Hydr. Depth (ft)	1.78	5.45	2.36
Conv. Total (cfs)	356039.6	Conv. (cfs)	20225.1	326845.1	8969.4
Length Wtd. (ft)	39.09	Wetted Per. (ft)	214.39	544.21	50.98
Min Ch El (ft)	78.32	Shear (lb/sq ft)	0.86	2.64	1.14
Alpha	1.09	Stream Power (lb/ft s)	4.02	25.61	7.50
Frctn Loss (ft)	0.26	Cum Volume (acre-ft)	658.91	1405.32	101.46
C & E Loss (ft)	0.09	Cum SA (acres)	227.13	205.62	28.57

CROSS SECTION OUTPUT Profile #Q100

			Left OB	Channel	Right OB
E.G. Elev (ft)	88.35	Element			
Vel Head (ft)	1.81	Wt. n-Val.	0.047	0.042	0.035
W.S. Elev (ft)	86.55	Reach Len. (ft)	44.06	38.94	33.57
Crit W.S. (ft)		Flow Area (sq ft)	686.11	3701.11	202.14
E.G. Slope (ft/ft)	0.007772	Area (sq ft)	686.11	3701.11	202.14
Q Total (cfs)	47312.00	Flow (cfs)	4105.78	41648.55	1557.67
Top Width (ft)	844.16	Top Width (ft)	231.89	544.12	68.15
Vel Total (ft/s)	10.31	Avg. Vel. (ft/s)	5.98	11.25	7.71
Max Chl Dpth (ft)	8.23	Hydr. Depth (ft)	2.96	6.80	2.97
Conv. Total (cfs)	536671.8	Conv. (cfs)	46572.9	472429.9	17669.0
Length Wtd. (ft)	39.20	Wetted Per. (ft)	232.13	544.21	68.42
Min Ch El (ft)	78.32	Shear (lb/sq ft)	1.43	3.30	1.43
Alpha	1.10	Stream Power (lb/ft s)	8.58	37.13	11.05
Frctn Loss (ft)	0.27	Cum Volume (acre-ft)	1228.84	1764.26	153.98
C & E Loss (ft)	0.11	Cum SA (acres)	325.32	205.81	31.26

CROSS SECTION OUTPUT Profile #Q100HC

			Left OB	Channel	Right OB
E.G. Elev (ft)	94.37	Element			
Vel Head (ft)	3.00	Wt. n-Val.	0.048	0.042	0.035
W.S. Elev (ft)	91.36	Reach Len. (ft)	44.06	38.94	33.57
Crit W.S. (ft)		Flow Area (sq ft)	1921.49	6323.50	664.81
E.G. Slope (ft/ft)	0.006597	Area (sq ft)	1921.49	6323.50	664.81
Q Total (cfs)	118891.00	Flow (cfs)	17459.56	93441.54	7989.91
Top Width (ft)	951.32	Top Width (ft)	283.26	544.12	123.95
Vel Total (ft/s)	13.34	Avg. Vel. (ft/s)	9.09	14.78	12.02
Max Chl Dpth (ft)	13.04	Hydr. Depth (ft)	6.78	11.62	5.36
Conv. Total (cfs)	1463759.0	Conv. (cfs)	214958.1	1150431.0	98370.0
Length Wtd. (ft)	39.32	Wetted Per. (ft)	283.73	544.21	124.42
Min Ch El (ft)	78.32	Shear (lb/sq ft)	2.79	4.79	2.20
Alpha	1.09	Stream Power (lb/ft s)	25.34	70.72	26.45

Frctn Loss (ft)	0.24	Cum Volume (acre-ft)	4695.32	2998.72	384.02
C & E Loss (ft)	0.12	Cum SA (acres)	601.78	205.83	44.40

CROSS SECTION

RIVER: San Mateo Creek
REACH: Lower RS: 15716.0*

INPUT
Description:
Station Elevation Data num= 115

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	110.45	44.96	106.34	109.58	98.89	109.86	98.85	110.44	98.78
110.98	98.7	126.31	97.57	139.89	96.36	163.54	94.23	165.35	94.07
166.58	93.63	168.61	92.9	176.31	92.65	178.03	92.65	178.67	92.67
183.68	92.82	208.84	92.19	225.23	90.83	233.39	90.15	243.95	88.86
247.01	88.45	266.67	86.05	271.43	85.47	283.2	84.79	313.61	83.75
382.11	83.55	393	83.25	398.87	83.07	415.91	82.56	417.73	82.5
424.11	83.01	427.52	82.71	436.97	82.09	453.06	81.58	461.85	81.27
463.72	81.21	464.13	81.2	466.18	80.95	472.56	80.44	476.77	80.49
492.07	80.43	493.39	80.39	501.51	79.96	504.19	79.87	506.6	79.76
511.34	79.59	515.59	79.44	517.91	79.44	522.15	79.43	522.27	79.43
527.59	79.42	541.42	79.41	594.1	79.35	626.32	79.32	628.54	79.33
645.97	79.44	647.67	79.44	718.17	79.81	850.43	79.63	855.52	79.6
900.01	79.15	911.53	79.03	938.51	78.89	958.54	78.79	982.05	78.65
982.49	78.63	992.17	78.56	1006.41	78.45	1016.11	78.36	1019.53	78.33
1023.05	78.3	1031.7	78.63	1039.43	78.93	1057.32	79.83	1063	80.13
1069.69	80.44	1075.06	80.79	1087.07	82.02	1110.1	84.89	1113.27	85.3
1121.24	85.66	1134.39	87.22	1136.91	87.52	1148.13	88.78	1149.27	88.89
1159.96	90	1161.07	90.12	1167.5	90.61	1174.98	91.36	1203.54	94.28
1212.81	95.22	1215.98	95.54	1219.96	95.95	1222.61	96.17	1243.75	98.18
1251.84	99.07	1258.42	99.79	1260.04	99.97	1277.97	101.71	1278.78	101.75
1319.29	103.98	1333.2	104.67	1343.27	105.17	1354.07	105.65	1372.02	106.37
1380.1	106.92	1383.18	107.13	1384.53	107.22	1385.64	107.3	1415.07	109.46
1429.1	110.28	1436.34	110.77	1456.52	111.82	1469.15	112.47	1477.14	112.88

Manning's n Values num= 13

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.05	463.72	.048	472.56	.037	541.42	.035	626.32	.048
855.52	.05	938.51	.037	1031.7	.048	1069.69	.035	1134.39	.035
1212.81	.035	1385.64	.037	1477.14	.037				

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
476.77	1069.69	44.06	38.94	33.57	.1	.3

CROSS SECTION OUTPUT Profile #Q50

E.G. Elev (ft)	86.22	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.08	Wt. n-Val.	0.048	0.042	0.035
W.S. Elev (ft)	85.14	Reach Len. (ft)	44.06	38.94	33.57
Crit W.S. (ft)		Flow Area (sq ft)	404.68	3405.20	108.24
E.G. Slope (ft/ft)	0.005746	Area (sq ft)	404.68	3405.20	108.24
Q Total (cfs)	31354.00	Flow (cfs)	1585.70	29119.91	648.39
Top Width (ft)	834.91	Top Width (ft)	199.64	592.92	42.35
Vel Total (ft/s)	8.00	Avg. Vel. (ft/s)	3.92	8.55	5.99
Max Chl Dpth (ft)	6.84	Hydr. Depth (ft)	2.03	5.74	2.56
Conv. Total (cfs)	413642.5	Conv. (cfs)	20919.6	384168.9	8554.0

Length Wtd. (ft)	39.12	Wetted Per. (ft)	199.79	593.00	42.62
Min Ch El (ft)	78.30	Shear (lb/sq ft)	0.73	2.06	0.91
Alpha	1.08	Stream Power (lb/ft s)	2.85	17.61	5.46
Frctn Loss (ft)	0.20	Cum Volume (acre-ft)	658.51	1402.48	101.37
C & E Loss (ft)	0.07	Cum SA (acres)	226.92	205.11	28.53

CROSS SECTION OUTPUT Profile #Q100

E.G. Elev (ft)	87.98	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.46	Wt. n-Val.	0.049	0.042	0.035
W.S. Elev (ft)	86.53	Reach Len. (ft)	44.06	38.94	33.57
Crit W.S. (ft)		Flow Area (sq ft)	692.71	4226.38	179.99
E.G. Slope (ft/ft)	0.005964	Area (sq ft)	692.71	4226.38	179.99
Q Total (cfs)	47312.00	Flow (cfs)	3635.17	42438.12	1238.71
Top Width (ft)	865.77	Top Width (ft)	214.00	592.92	58.85
Vel Total (ft/s)	9.28	Avg. Vel. (ft/s)	5.25	10.04	6.88
Max Chl Dpth (ft)	8.23	Hydr. Depth (ft)	3.24	7.13	3.06
Conv. Total (cfs)	612637.4	Conv. (cfs)	47071.4	549526.1	16039.9
Length Wtd. (ft)	39.22	Wetted Per. (ft)	214.22	593.00	59.19
Min Ch El (ft)	78.30	Shear (lb/sq ft)	1.20	2.65	1.13
Alpha	1.09	Stream Power (lb/ft s)	6.32	26.65	7.79
Frctn Loss (ft)	0.21	Cum Volume (acre-ft)	1228.14	1760.72	153.84
C & E Loss (ft)	0.08	Cum SA (acres)	325.10	205.30	31.21

CROSS SECTION OUTPUT Profile #Q100HC

E.G. Elev (ft)	94.01	Element	Left OB	Channel	Right OB
Vel Head (ft)	2.61	Wt. n-Val.	0.049	0.042	0.035
W.S. Elev (ft)	91.40	Reach Len. (ft)	44.06	38.94	33.57
Crit W.S. (ft)		Flow Area (sq ft)	1836.19	7118.59	575.41
E.G. Slope (ft/ft)	0.005532	Area (sq ft)	1836.19	7118.59	575.41
Q Total (cfs)	118891.00	Flow (cfs)	15306.89	97159.62	6424.49
Top Width (ft)	957.09	Top Width (ft)	258.45	592.92	105.72
Vel Total (ft/s)	12.48	Avg. Vel. (ft/s)	8.34	13.65	11.17
Max Chl Dpth (ft)	13.10	Hydr. Depth (ft)	7.10	12.01	5.44
Conv. Total (cfs)	1598421.0	Conv. (cfs)	205792.3	1306255.0	86373.5
Length Wtd. (ft)	39.36	Wetted Per. (ft)	258.95	593.00	106.31
Min Ch El (ft)	78.30	Shear (lb/sq ft)	2.45	4.15	1.87
Alpha	1.08	Stream Power (lb/ft s)	20.42	56.59	20.87
Frctn Loss (ft)	0.21	Cum Volume (acre-ft)	4693.42	2992.71	383.54
C & E Loss (ft)	0.10	Cum SA (acres)	601.50	205.32	44.31

CROSS SECTION

RIVER: San Mateo Creek
REACH: Lower RS: 15677.08

INPUT
Description:
Station Elevation Data num= 57

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	109.45	163.36	94.46	166.58	93.11	174.18	92.95	175.88	92.99
181.46	93.28	206.32	92.93	230.57	90.86	241.01	89.46	263.45	86.13
268.16	85.43	279.78	84.62	309.83	83.36	377.5	83.11	412.69	81.91
418.99	82.54	422.36	82.19	431.7	81.46	466.86	80.2	501.71	79.02

504.36	78.9	509.58	78.7	514.27	78.53	516.82	78.53	521.63	78.53
527.49	78.53	600.76	78.56	636.25	78.58	657.9	78.76	659.77	78.77
737.44	79.34	888.76	79.37	937.77	79.12	980.19	78.9	1028.15	78.65
1028.64	78.63	1039.3	78.56	1054.99	78.44	1073.32	78.29	1099.48	80.21
1104.3	80.56	1115.08	81.9	1135.76	85.08	1138.6	85.53	1145.76	85.87
1157.56	87.59	1169.9	89.38	1181.52	90.86	1187.29	91.32	1234.38	96.67
1255.74	98.57	1286.46	101.95	1323.55	104.05	1370.89	106.4	1409.54	109.75
1428.63	111.04	1465.26	112.75						

Manning's n Values num= 6

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.05	527.49	.035	600.76	.05	937.77	.035	1054.99	.05
1157.56	.035								

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
466.86	1099.48	229.4	221.5	185.6	.1 .3

CROSS SECTION OUTPUT Profile #Q50

			Left OB	Channel	Right OB
E.G. Elev (ft)	85.95	Element			
Vel Head (ft)	0.85	Wt. n-Val.	0.050	0.044	0.050
W.S. Elev (ft)	85.10	Reach Len. (ft)	229.40	221.50	185.60
Crit W.S. (ft)		Flow Area (sq ft)	460.44	3860.98	97.75
E.G. Slope (ft/ft)	0.004512	Area (sq ft)	460.44	3860.98	97.75
Q Total (cfs)	31354.00	Flow (cfs)	1634.61	29344.81	374.58
Top Width (ft)	863.00	Top Width (ft)	193.97	632.62	36.41
Vel Total (ft/s)	7.10	Avg. Vel. (ft/s)	3.55	7.60	3.83
Max Chl Dpth (ft)	6.81	Hydr. Depth (ft)	2.37	6.10	2.68
Conv. Total (cfs)	466789.7	Conv. (cfs)	24335.6	436877.4	5576.7
Length Wtd. (ft)	221.83	Wetted Per. (ft)	194.13	632.73	36.75
Min Ch El (ft)	78.29	Shear (lb/sq ft)	0.67	1.72	0.75
Alpha	1.09	Stream Power (lb/ft s)	2.37	13.06	2.87
Frctn Loss (ft)	1.22	Cum Volume (acre-ft)	658.07	1399.23	101.29
C & E Loss (ft)	0.02	Cum SA (acres)	226.72	204.57	28.50

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 #Q100

			Left OB	Channel	Right OB
E.G. Elev (ft)	87.69	Element			
Vel Head (ft)	1.19	Wt. n-Val.	0.050	0.044	0.050
W.S. Elev (ft)	86.50	Reach Len. (ft)	229.40	221.50	185.60
Crit W.S. (ft)		Flow Area (sq ft)	741.79	4746.97	159.05
E.G. Slope (ft/ft)	0.004883	Area (sq ft)	741.79	4746.97	159.05
Q Total (cfs)	47312.00	Flow (cfs)	3616.98	42990.34	704.67
Top Width (ft)	889.13	Top Width (ft)	205.91	632.62	50.61
Vel Total (ft/s)	8.38	Avg. Vel. (ft/s)	4.88	9.06	4.43
Max Chl Dpth (ft)	8.21	Hydr. Depth (ft)	3.60	7.50	3.14
Conv. Total (cfs)	677090.8	Conv. (cfs)	51763.3	615242.8	10084.7
Length Wtd. (ft)	221.92	Wetted Per. (ft)	206.16	632.73	51.03
Min Ch El (ft)	78.29	Shear (lb/sq ft)	1.10	2.29	0.95
Alpha	1.09	Stream Power (lb/ft s)	5.35	20.71	4.21
Frctn Loss (ft)	1.42	Cum Volume (acre-ft)	1227.42	1756.71	153.71
C & E Loss (ft)	0.05	Cum SA (acres)	324.88	204.75	31.17

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

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

CROSS SECTION OUTPUT Profile #Q100HC

			Left OB	Channel	Right OB
E.G. Elev (ft)	93.71	Element			
Vel Head (ft)	2.29	Wt. n-Val.	0.050	0.044	0.049
W.S. Elev (ft)	91.42	Reach Len. (ft)	229.40	221.50	185.60
Crit W.S. (ft)		Flow Area (sq ft)	1838.59	7859.77	494.07
E.G. Slope (ft/ft)	0.004979	Area (sq ft)	1838.59	7859.77	494.07
Q Total (cfs)	118891.00	Flow (cfs)	14840.14	100272.50	3778.37
Top Width (ft)	964.18	Top Width (ft)	242.86	632.62	88.70
Vel Total (ft/s)	11.66	Avg. Vel. (ft/s)	8.07	12.76	7.65
Max Chl Dpth (ft)	13.13	Hydr. Depth (ft)	7.57	12.42	5.57
Conv. Total (cfs)	1684996.0	Conv. (cfs)	210323.5	1421123.0	53549.3
Length Wtd. (ft)	221.74	Wetted Per. (ft)	243.45	632.73	89.45
Min Ch El (ft)	78.29	Shear (lb/sq ft)	2.35	3.86	1.72
Alpha	1.08	Stream Power (lb/ft s)	18.95	49.26	13.13
Frctn Loss (ft)	1.57	Cum Volume (acre-ft)	4691.56	2986.01	383.13
C & E Loss (ft)	0.15	Cum SA (acres)	601.25	204.77	44.24

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.

CROSS SECTION

RIVER: San Mateo Creek
REACH: Lower RS: 15455.59

INPUT
Description:
Station Elevation Data num= 59

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	103.47	148.03	89.5	151.79	87.95	155.29	89.39	162.5	89.98
163.5	89.86	164.28	88.85	165.22	88.54	174.14	89.25	177.38	88.84
190.1	88.38	227.99	87.78	257.22	88.02	310.79	86.75	344.65	86.45
344.8	86.43	344.99	86.41	353.69	85.2	364.24	80.91	369.99	79.11
372.44	78.61	375.87	78.39	393.22	78.38	394.28	78.43	414.05	81.65
421.98	82.99	435.46	83.47	448.43	82.56	468.78	82.25	527.06	80.29
587.08	79.88	603.56	79.81	619.51	79.46	620.85	79.43	693.92	77.81
700.31	77.82	750.85	77.87	759.57	77.95	777.49	78.11	799.72	78.29
996.6	78.49	1078.38	78.57	1111.65	78.42	1139.72	77.64	1151.85	77.87
1158.21	77.93	1191.98	78.25	1195.12	78.5	1212.5	79.92	1223.08	80.71
1232.14	82.47	1251.76	85.3	1265.05	88.28	1265.95	88.51	1293.69	95.43
1299.46	96.69	1330.26	101.19	1339.88	102.24	1346.75	102.68		

Manning's n Values num= 6

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.05	619.51	.035	700.31	.05	996.6	.035	1158.21	.05
1265.95	.035								

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

620.85 1212.5 159.78 172.75 206.99 .1 .3

CROSS SECTION OUTPUT Profile #Q50

			Left OB	Channel	Right OB
E.G. Elev (ft)	84.71	Element			
Vel Head (ft)	1.09	Wt. n-Val.	0.050	0.043	0.050
W.S. Elev (ft)	83.62	Reach Len. (ft)	159.78	172.75	206.99
Crit W.S. (ft)		Flow Area (sq ft)	754.93	3125.85	57.96
E.G. Slope (ft/ft)	0.006883	Area (sq ft)	754.93	3125.85	57.96
Q Total (cfs)	31354.00	Flow (cfs)	3761.87	27359.46	232.67
Top Width (ft)	882.54	Top Width (ft)	263.28	591.65	27.62
Vel Total (ft/s)	7.96	Avg. Vel. (ft/s)	4.98	8.75	4.01
Max Chl Dpth (ft)	5.98	Hydr. Depth (ft)	2.87	5.28	2.10
Conv. Total (cfs)	377914.9	Conv. (cfs)	45342.4	329768.1	2804.4
Length Wtd. (ft)	171.98	Wetted Per. (ft)	264.59	591.75	27.90
Min Ch El (ft)	77.64	Shear (lb/sq ft)	1.23	2.27	0.89
Alpha	1.10	Stream Power (lb/ft s)	6.11	19.87	3.58
Frctn Loss (ft)	1.47	Cum Volume (acre-ft)	654.87	1381.47	100.96
C & E Loss (ft)	0.03	Cum SA (acres)	225.52	201.45	28.37

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 #Q100

			Left OB	Channel	Right OB
E.G. Elev (ft)	86.22	Element			
Vel Head (ft)	1.70	Wt. n-Val.	0.050	0.043	0.050
W.S. Elev (ft)	84.52	Reach Len. (ft)	159.78	172.75	206.99
Crit W.S. (ft)		Flow Area (sq ft)	991.85	3656.07	85.49
E.G. Slope (ft/ft)	0.008810	Area (sq ft)	991.85	3656.07	85.49
Q Total (cfs)	47312.00	Flow (cfs)	6663.10	40209.44	439.46
Top Width (ft)	890.96	Top Width (ft)	265.48	591.65	33.83
Vel Total (ft/s)	10.00	Avg. Vel. (ft/s)	6.72	11.00	5.14
Max Chl Dpth (ft)	6.88	Hydr. Depth (ft)	3.74	6.18	2.53
Conv. Total (cfs)	504053.8	Conv. (cfs)	70987.5	428384.4	4681.9
Length Wtd. (ft)	171.77	Wetted Per. (ft)	266.97	591.75	34.18
Min Ch El (ft)	77.64	Shear (lb/sq ft)	2.04	3.40	1.38
Alpha	1.10	Stream Power (lb/ft s)	13.73	37.37	7.07
Frctn Loss (ft)	1.48	Cum Volume (acre-ft)	1222.85	1735.35	153.19
C & E Loss (ft)	0.07	Cum SA (acres)	323.64	201.64	30.99

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 OUTPUT Profile #Q100HC

			Left OB	Channel	Right OB
E.G. Elev (ft)	91.99	Element			
Vel Head (ft)	3.78	Wt. n-Val.	0.050	0.043	0.050
W.S. Elev (ft)	88.20	Reach Len. (ft)	159.78	172.75	206.99
Crit W.S. (ft)	87.75	Flow Area (sq ft)	2110.79	5837.69	246.94
E.G. Slope (ft/ft)	0.010869	Area (sq ft)	2110.79	5837.69	246.94
Q Total (cfs)	118891.00	Flow (cfs)	19227.73	97527.29	2135.99
Top Width (ft)	1064.74	Top Width (ft)	420.88	591.65	52.21
Vel Total (ft/s)	14.51	Avg. Vel. (ft/s)	9.11	16.71	8.65
Max Chl Dpth (ft)	10.56	Hydr. Depth (ft)	5.02	9.87	4.73
Conv. Total (cfs)	1140396.0	Conv. (cfs)	184431.3	935476.3	20488.3
Length Wtd. (ft)	172.03	Wetted Per. (ft)	422.71	591.75	52.94

Min Ch El (ft)	77.64	Shear (lb/sq ft)	3.39	6.69	3.17
Alpha	1.16	Stream Power (lb/ft s)	30.86	111.83	27.38
Frctn Loss (ft)	1.15	Cum Volume (acre-ft)	4681.16	2951.19	381.55
C & E Loss (ft)	0.61	Cum SA (acres)	599.50	201.66	43.94

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: San Mateo Creek
REACH: Lower RS: 15282.84

INPUT
Description:
Station Elevation Data num= 46

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	99.77	79.19	91.79	163.92	83.84	165.72	83.12	173.95	86.37
176.04	86.53	176.09	86.54	179.99	86.12	183.03	82.6	185.78	81.8
190.97	81.5	263.66	80.17	317.75	79.37	326.51	79.33	360.01	79.15
445.67	79.87	467.64	79.2	531.25	78.92	618.07	78.97	629.39	79.25
645.34	78.82	674.47	78.63	683.23	78.57	754.21	78.05	822.24	77.56
842.94	77.41	859.25	77.29	894.35	76.95	946.46	76.79	1046.88	76.48
1055.15	76.42	1109.14	77.46	1171.17	78.65	1180.15	78.79	1185.6	78.84
1189.7	78.88	1290.61	79.29	1381.99	83.75	1394.14	84.34	1398.84	84.96
1419.07	90.82	1419.69	90.98	1433.7	94.54	1448.51	97.68	1472.52	101.46
1478.85	102.36								

Manning's n Values num= 6

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.05	754.21	.035	842.94	.05	946.46	.035	1109.14	.05
1419.69	.035								

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
683.23	1171.17	247.92	206.82	172.28	.1	.3

CROSS SECTION OUTPUT Profile #Q50

E.G. Elev (ft)	83.20	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.39	Wt. n-Val.	0.050	0.040	0.050
W.S. Elev (ft)	81.82	Reach Len. (ft)	247.92	206.82	172.28
Crit W.S. (ft)		Flow Area (sq ft)	1155.75	2167.59	397.09
E.G. Slope (ft/ft)	0.010936	Area (sq ft)	1155.75	2167.59	397.09
Q Total (cfs)	31354.00	Flow (cfs)	6300.02	22891.91	2162.07
Top Width (ft)	1156.62	Top Width (ft)	497.50	487.94	171.18
Vel Total (ft/s)	8.43	Avg. Vel. (ft/s)	5.45	10.56	5.44
Max Chl Dpth (ft)	5.40	Hydr. Depth (ft)	2.32	4.44	2.32
Conv. Total (cfs)	299817.2	Conv. (cfs)	60242.8	218899.9	20674.4
Length Wtd. (ft)	214.05	Wetted Per. (ft)	497.56	487.97	171.24
Min Ch El (ft)	76.42	Shear (lb/sq ft)	1.59	3.03	1.58
Alpha	1.26	Stream Power (lb/ft s)	8.65	32.03	8.62
Frctn Loss (ft)	1.36	Cum Volume (acre-ft)	651.37	1370.97	99.88

C & E Loss (ft)	0.23	Cum SA (acres)	224.12	199.31	27.90

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

CROSS SECTION OUTPUT Profile #Q100

E.G. Elev (ft)	84.66	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.47	Wt. n-Val.	0.050	0.040	0.050
W.S. Elev (ft)	83.20	Reach Len. (ft)	247.92	206.82	172.28
Crit W.S. (ft)		Flow Area (sq ft)	1845.46	2841.26	652.95
E.G. Slope (ft/ft)	0.008466	Area (sq ft)	1845.46	2841.26	652.95
Q Total (cfs)	47312.00	Flow (cfs)	12033.02	31344.05	3934.92
Top Width (ft)	1188.50	Top Width (ft)	501.10	487.94	199.47
Vel Total (ft/s)	8.86	Avg. Vel. (ft/s)	6.52	11.03	6.03
Max Chl Dpth (ft)	6.78	Hydr. Depth (ft)	3.68	5.82	3.27
Conv. Total (cfs)	514214.4	Conv. (cfs)	130781.9	340665.5	42767.0
Length Wtd. (ft)	216.26	Wetted Per. (ft)	501.56	487.97	199.56
Min Ch El (ft)	76.42	Shear (lb/sq ft)	1.94	3.08	1.73
Alpha	1.20	Stream Power (lb/ft s)	12.68	33.95	10.42
Frctn Loss (ft)	1.01	Cum Volume (acre-ft)	1217.65	1722.46	151.43
C & E Loss (ft)	0.25	Cum SA (acres)	322.24	199.50	30.44

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 #Q100HC

E.G. Elev (ft)	90.22	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.75	Wt. n-Val.	0.050	0.041	0.050
W.S. Elev (ft)	88.47	Reach Len. (ft)	247.92	206.82	172.28
Crit W.S. (ft)		Flow Area (sq ft)	4662.87	5415.09	1854.86
E.G. Slope (ft/ft)	0.004544	Area (sq ft)	4662.87	5415.09	1854.86
Q Total (cfs)	118891.00	Flow (cfs)	37861.74	66521.78	14507.48
Top Width (ft)	1296.39	Top Width (ft)	568.66	487.94	239.79
Vel Total (ft/s)	9.96	Avg. Vel. (ft/s)	8.12	12.28	7.82
Max Chl Dpth (ft)	12.05	Hydr. Depth (ft)	8.20	11.10	7.74
Conv. Total (cfs)	1763652.0	Conv. (cfs)	561648.4	986797.1	215206.7
Length Wtd. (ft)	218.26	Wetted Per. (ft)	571.44	487.97	240.45
Min Ch El (ft)	76.42	Shear (lb/sq ft)	2.31	3.15	2.19
Alpha	1.14	Stream Power (lb/ft s)	18.80	38.68	17.12
Frctn Loss (ft)	0.62	Cum Volume (acre-ft)	4668.73	2928.88	376.55
C & E Loss (ft)	0.26	Cum SA (acres)	597.69	199.52	43.25

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.

CROSS SECTION

RIVER: San Mateo Creek
REACH: Lower RS: 15076.02

INPUT
Description: Updated Manning's N Distribution
Station Elevation Data num= 57

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	90.8	1.69	90.63	13.58	87.59	13.79	87.42	14.49	87.6
15.22	88.14	15.91	88.28	41.76	78.13	41.94	78.1	42.19	78.01
42.28	77.99	55.3	77.02	115.81	78.15	126.67	78.13	155.44	78.25
199.32	77.85	223.18	78.41	278.75	78.69	331.77	78.96	347.59	79.04
353.33	78.98	471.93	78.78	517.94	78.76	530.82	78.75	650.81	78.12
742.79	77.53	766.68	76.98	791.33	76.73	803.9	76.67	828.76	76.53
832.3	76.51	870.05	76.38	877.4	76.34	921.58	76.01	922.42	76
1000.08	75.56	1086.41	74.9	1110.54	74.89	1130.87	74.89	1241.57	74.4
1242.24	74.4	1242.61	74.4	1247.69	74.45	1352.49	76.06	1368.28	76.29
1386.22	76.94	1444.46	79.49	1478.6	82.25	1493.34	83.8	1537.29	85.57
1574.24	86.1	1583.51	88.28	1588.7	88.99	1599.75	90.43	1620.49	93.87
1624.37	94.75	1657.52	102.33						

Manning's n Values num= 4

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.05	828.76	.035	1110.54	.05	1624.37	.035

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
766.68	1386.22	240.22	232.69	186.85	.1	.3

CROSS SECTION OUTPUT Profile #Q50

			Left OB	Channel	Right OB
E.G. Elev (ft)	81.62	Element			
Vel Head (ft)	0.63	Wt. n-Val.	0.050	0.042	0.050
W.S. Elev (ft)	80.99	Reach Len. (ft)	240.22	232.69	186.85
Crit W.S. (ft)		Flow Area (sq ft)	1929.85	3371.40	175.16
E.G. Slope (ft/ft)	0.004144	Area (sq ft)	1929.85	3371.40	175.16
Q Total (cfs)	31354.00	Flow (cfs)	7040.28	23733.40	580.32
Top Width (ft)	1428.47	Top Width (ft)	732.19	619.54	76.73
Vel Total (ft/s)	5.73	Avg. Vel. (ft/s)	3.65	7.04	3.31
Max Chl Dpth (ft)	6.59	Hydr. Depth (ft)	2.64	5.44	2.28
Conv. Total (cfs)	487081.0	Conv. (cfs)	109369.9	368695.9	9015.2
Length Wtd. (ft)	232.08	Wetted Per. (ft)	732.82	619.57	76.85
Min Ch El (ft)	74.40	Shear (lb/sq ft)	0.68	1.41	0.59
Alpha	1.24	Stream Power (lb/ft s)	2.49	9.91	1.95
Frctn Loss (ft)	0.64	Cum Volume (acre-ft)	642.59	1357.82	98.75
C & E Loss (ft)	0.03	Cum SA (acres)	220.62	196.68	27.41

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.

CROSS SECTION OUTPUT Profile #Q100

			Left OB	Channel	Right OB
E.G. Elev (ft)	83.41	Element			
Vel Head (ft)	0.63	Wt. n-Val.	0.050	0.042	0.050
W.S. Elev (ft)	82.77	Reach Len. (ft)	240.22	232.69	186.85

Crit W.S. (ft)		Flow Area (sq ft)	3243.60	4479.58	331.81
E.G. Slope (ft/ft)	0.002935	Area (sq ft)	3243.60	4479.58	331.81
Q Total (cfs)	47312.00	Flow (cfs)	14015.37	32088.46	1208.16
Top Width (ft)	1453.65	Top Width (ft)	736.75	619.54	97.36
Vel Total (ft/s)	5.87	Avg. Vel. (ft/s)	4.32	7.16	3.64
Max Chl Dpth (ft)	8.37	Hydr. Depth (ft)	4.40	7.23	3.41
Conv. Total (cfs)	873330.1	Conv. (cfs)	258709.1	592319.5	22301.4
Length Wtd. (ft)	232.01	Wetted Per. (ft)	737.71	619.57	97.56
Min Ch El (ft)	74.40	Shear (lb/sq ft)	0.81	1.32	0.62
Alpha	1.18	Stream Power (lb/ft s)	3.48	9.49	2.27
Frctn Loss (ft)	0.60	Cum Volume (acre-ft)	1203.16	1705.08	149.48
C & E Loss (ft)	0.02	Cum SA (acres)	318.71	196.87	29.85

CROSS SECTION OUTPUT Profile #Q100HC

E.G. Elev (ft)	89.34	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.89	Wt. n-Val.	0.050	0.042	0.050
W.S. Elev (ft)	88.46	Reach Len. (ft)	240.22	232.69	186.85
Crit W.S. (ft)		Flow Area (sq ft)	7475.61	8001.29	1210.35
E.G. Slope (ft/ft)	0.001939	Area (sq ft)	7475.61	8001.29	1210.35
Q Total (cfs)	118891.00	Flow (cfs)	44950.54	68665.98	5274.47
Top Width (ft)	1574.63	Top Width (ft)	756.50	619.54	198.59
Vel Total (ft/s)	7.12	Avg. Vel. (ft/s)	6.01	8.58	4.36
Max Chl Dpth (ft)	14.06	Hydr. Depth (ft)	9.88	12.91	6.09
Conv. Total (cfs)	2700213.0	Conv. (cfs)	1020902.0	1559519.0	119792.1
Length Wtd. (ft)	232.42	Wetted Per. (ft)	758.89	619.57	199.15
Min Ch El (ft)	74.40	Shear (lb/sq ft)	1.19	1.56	0.74
Alpha	1.12	Stream Power (lb/ft s)	7.17	13.41	3.21
Frctn Loss (ft)	0.38	Cum Volume (acre-ft)	4634.19	2897.02	370.49
C & E Loss (ft)	0.02	Cum SA (acres)	593.92	196.89	42.38

CROSS SECTION

RIVER: San Mateo Creek
REACH: Lower RS: 14843.33

INPUT
Description:
Station Elevation Data num= 102

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	85.71	12.02	85.54	84.69	84.01	115.69	84.58	122.25	84.06
135.89	84.25	140.72	84.13	148.96	84.22	163.53	83.46	170.14	83.69
180.94	84.32	188.18	84.35	203.22	85.3	214.01	86.68	227.06	88.59
233.92	89.04	244.06	88.98	255.48	88.64	274.96	85.55	279.95	85.37
285.41	85.38	345.12	85.24	358.94	84.14	368.61	84.17	379.99	84.1
394.43	82.83	407.08	81.79	411.48	81.5	413.55	81.42	415.79	81.2
436.02	78.75	456.72	75.67	467.78	74.19	482.26	73	498.77	71.6
498.88	71.59	498.98	71.59	499.26	71.58	543.54	71.16	545.95	71.12
557.88	69.94	573.39	70.17	600.68	71.01	611.99	72.36	618.47	72.86
626.92	74.37	632.61	75.49	646.15	77.94	672.57	79.06	673.13	79.12
673.38	79.12	673.91	79.12	717.83	80.5	721.69	81.14	731.52	82.22
735.62	83.38	745.68	85.33	752.97	85.22	766.99	85.79	769.73	85.33
774.17	84.21	782.63	81.2	786.14	79.37	788.83	78.86	797.92	78.63
799.44	78.58	830.86	77.57	854.94	75.75	869.77	74.3	871.02	74.05
876.56	72.94	884.68	72.79	927.26	71.32	936.34	71.44	973.58	71.92
1063.37	72.93	1070.28	73	1101.46	73.44	1161.36	72.65	1197.58	72.17

1201.91	72.11	1249.77	73.25	1258.24	73.29	1269.35	73.28	1331.21	73.32
1508.61	74.05	1540.15	75.26	1556.07	75.63	1588.29	76.78	1601.93	78.41
1619.6	78.68	1628.2	79.54	1638.14	80.8	1664.12	82.56	1667.77	82.9
1678.11	83.03	1734.35	86.27	1741.16	86.8	1747.77	87.5	1791.04	94.49
1792.03	94.77	1814.62	100.63						

Manning's n Values num= 4

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.05	871.02	.035	1161.36	.05	1814.62	.035

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
871.02	1508.61	230.23	202.58	217.82	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
0	766.99	85.79	F

CROSS SECTION OUTPUT Profile #Q50

			Left OB	Channel	Right OB
E.G. Elev (ft)	80.95	Element			
Vel Head (ft)	0.55	Wt. n-Val.	0.050	0.041	0.050
W.S. Elev (ft)	80.41	Reach Len. (ft)	230.23	202.58	217.82
Crit W.S. (ft)	77.16	Flow Area (sq ft)	273.61	4763.43	481.41
E.G. Slope (ft/ft)	0.001950	Area (sq ft)	1984.02	4763.43	481.41
Q Total (cfs)	31354.00	Flow (cfs)	768.68	29046.89	1538.43
Top Width (ft)	1143.51	Top Width (ft)	379.48	637.59	126.44
Vel Total (ft/s)	5.68	Avg. Vel. (ft/s)	2.81	6.10	3.20
Max Chl Dpth (ft)	10.47	Hydr. Depth (ft)	3.15	7.47	3.81
Conv. Total (cfs)	710013.1	Conv. (cfs)	17406.7	657768.5	34837.9
Length Wtd. (ft)	204.07	Wetted Per. (ft)	87.36	637.76	126.69
Min Ch El (ft)	71.32	Shear (lb/sq ft)	0.38	0.91	0.46
Alpha	1.09	Stream Power (lb/ft s)	1.07	5.54	1.48
Frctn Loss (ft)	0.53	Cum Volume (acre-ft)	631.80	1336.09	97.34
C & E Loss (ft)	0.03	Cum SA (acres)	217.56	193.33	26.97

Warning: Divided flow computed for this cross-section.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.

CROSS SECTION OUTPUT Profile #Q100

			Left OB	Channel	Right OB
E.G. Elev (ft)	82.79	Element			
Vel Head (ft)	0.80	Wt. n-Val.	0.050	0.041	0.050
W.S. Elev (ft)	81.99	Reach Len. (ft)	230.23	202.58	217.82
Crit W.S. (ft)	78.41	Flow Area (sq ft)	413.68	5771.77	696.11
E.G. Slope (ft/ft)	0.002262	Area (sq ft)	2611.24	5771.77	696.11
Q Total (cfs)	47312.00	Flow (cfs)	1599.53	42943.09	2769.38
Top Width (ft)	1200.09	Top Width (ft)	415.40	637.59	147.10
Vel Total (ft/s)	6.88	Avg. Vel. (ft/s)	3.87	7.44	3.98
Max Chl Dpth (ft)	12.05	Hydr. Depth (ft)	4.57	9.05	4.73
Conv. Total (cfs)	994774.3	Conv. (cfs)	33631.4	902914.4	58228.5
Length Wtd. (ft)	204.48	Wetted Per. (ft)	91.43	637.76	147.41
Min Ch El (ft)	71.32	Shear (lb/sq ft)	0.64	1.28	0.67
Alpha	1.09	Stream Power (lb/ft s)	2.47	9.51	2.65
Frctn Loss (ft)	0.65	Cum Volume (acre-ft)	1187.02	1677.70	147.28
C & E Loss (ft)	0.06	Cum SA (acres)	315.54	193.51	29.33

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

CROSS SECTION OUTPUT Profile #Q100HC

			Left OB	Channel	Right OB
E.G. Elev (ft)	88.94	Element			
Vel Head (ft)	0.81	Wt. n-Val.	0.050	0.042	0.050
W.S. Elev (ft)	88.13	Reach Len. (ft)	230.23	202.58	217.82
Crit W.S. (ft)	82.71	Flow Area (sq ft)	6590.00	9687.73	1936.41
E.G. Slope (ft/ft)	0.001396	Area (sq ft)	6590.00	9687.73	1936.41
Q Total (cfs)	118891.00	Flow (cfs)	30825.33	79501.77	8563.90
Top Width (ft)	1716.93	Top Width (ft)	836.27	637.59	243.07
Vel Total (ft/s)	6.53	Avg. Vel. (ft/s)	4.68	8.21	4.42
Max Chl Dpth (ft)	18.19	Hydr. Depth (ft)	7.88	15.19	7.97
Conv. Total (cfs)	3181924.0	Conv. (cfs)	824989.7	2127736.0	229198.7
Length Wtd. (ft)	208.03	Wetted Per. (ft)	842.49	637.76	243.62
Min Ch El (ft)	71.32	Shear (lb/sq ft)	0.68	1.32	0.69
Alpha	1.22	Stream Power (lb/ft s)	3.19	10.86	3.06
Frctn Loss (ft)	0.64	Cum Volume (acre-ft)	4595.41	2849.78	363.74
C & E Loss (ft)	0.39	Cum SA (acres)	589.53	193.53	41.43

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

CROSS SECTION

RIVER: San Mateo Creek
REACH: Lower RS: 14640.75

INPUT
Description:
Station Elevation Data num= 87

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	78.41	17.94	78.88	40.67	79.7	90.61	81.17	138.03	82.4
146.04	83.25	160	84.44	162.45	85.4	176.19	91.96	195.58	96.33
210.45	98.33	211.77	98.47	213.87	98.58	215.99	98.71	222.02	99.07
223.99	98.74	231.75	97.7	237.74	94.84	256.35	85.77	262.42	84.67
276.58	83.42	324.2	82.2	382.56	81.2	386.06	81.07	428.68	79.58
470.85	78.72	482.36	78.44	490.35	78.43	559.67	79.16	605.61	79.57
611.79	79.04	628.24	78.14	644.17	77.61	654.59	77.36	685	76.25
710.13	74.66	712.25	74.49	714.16	74	798.82	70.79	805.49	70.45
820.16	70.6	827.56	70.69	895.57	71.62	903.17	72.18	931.44	76.2
940.83	77.72	945.2	79.46	953.88	82.79	959.1	84.66	960.81	85.18
962.3	85.3	976.01	85.63	982.58	84.9	990.45	83.3	1009.76	78.74
1014.64	78.62	1028	78.56	1038.03	78.46	1050.69	78.32	1056.04	78.28

1061.36	77.78	1092.37	74.85	1112.5	74.06	1126.06	72.97	1130.35	72.62
1134.8	72.25	1135.37	72.2	1141.04	71.87	1189.06	72.15	1241.8	72.44
1266.91	72.58	1309.02	72.55	1408.2	72.46	1573.59	72.7	1619.99	73.21
1648.69	73.64	1672.47	74.07	1694.78	75.87	1711.39	77.4	1718.87	79.1
1728.33	83.61	1730.68	84.61	1735.89	88.04	1748.19	95.79	1757.16	99.5
1759.66	100.4	1768.94	102.99						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.05	1061.36	.035	1309.02	.05

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
1112.5	1672.47	142.45	166.43	154.49	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
0	976.01	85.63	F

CROSS SECTION OUTPUT Profile #Q50

E.G. Elev (ft)	80.39	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.86	Wt. n-Val.	0.036	0.043	0.050
W.S. Elev (ft)	79.53	Reach Len. (ft)	142.45	166.43	154.49
Crit W.S. (ft)	77.21	Flow Area (sq ft)	258.69	3860.19	159.40
E.G. Slope (ft/ft)	0.003703	Area (sq ft)	2311.20	3860.19	159.40
Q Total (cfs)	31354.00	Flow (cfs)	1403.27	29306.63	644.10
Top Width (ft)	1257.80	Top Width (ft)	650.53	559.97	47.29
Vel Total (ft/s)	7.33	Avg. Vel. (ft/s)	5.42	7.59	4.04
Max Chl Dpth (ft)	9.08	Hydr. Depth (ft)	2.44	6.89	3.37
Conv. Total (cfs)	515271.9	Conv. (cfs)	23061.4	481625.4	10585.1
Length Wtd. (ft)	161.89	Wetted Per. (ft)	106.34	560.07	47.72
Min Ch El (ft)	71.87	Shear (lb/sq ft)	0.56	1.59	0.77
Alpha	1.03	Stream Power (lb/ft s)	3.05	12.10	3.12
Frctn Loss (ft)	0.42	Cum Volume (acre-ft)	620.45	1316.04	95.74
C & E Loss (ft)	0.13	Cum SA (acres)	214.84	190.54	26.54

Warning: Divided flow computed for this cross-section.
Warning: The cross-section end points had to be extended vertically for the computed water surface.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.

CROSS SECTION OUTPUT Profile #Q100

E.G. Elev (ft)	82.09	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.36	Wt. n-Val.	0.037	0.043	0.050
W.S. Elev (ft)	80.72	Reach Len. (ft)	142.45	166.43	154.49
Crit W.S. (ft)	78.66	Flow Area (sq ft)	388.84	4531.20	217.58
E.G. Slope (ft/ft)	0.004774	Area (sq ft)	3147.04	4531.20	217.58
Q Total (cfs)	47312.00	Flow (cfs)	2715.41	43413.81	1182.78
Top Width (ft)	1348.94	Top Width (ft)	739.16	559.97	49.81
Vel Total (ft/s)	9.21	Avg. Vel. (ft/s)	6.98	9.58	5.44
Max Chl Dpth (ft)	10.27	Hydr. Depth (ft)	3.50	8.09	4.37
Conv. Total (cfs)	684778.7	Conv. (cfs)	39301.9	628357.6	17119.2
Length Wtd. (ft)	160.62	Wetted Per. (ft)	111.55	560.07	50.51
Min Ch El (ft)	71.87	Shear (lb/sq ft)	1.04	2.41	1.28
Alpha	1.03	Stream Power (lb/ft s)	7.25	23.10	6.98
Frctn Loss (ft)	0.44	Cum Volume (acre-ft)	1171.80	1653.74	145.00
C & E Loss (ft)	0.26	Cum SA (acres)	312.49	190.72	28.83

Warning: Divided flow computed for this cross-section.
Warning: The cross-section end points had to be extended vertically for the computed water surface.
Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.

CROSS SECTION OUTPUT Profile #Q100HC

			Left OB	Channel	Right OB
E.G. Elev (ft)	87.91	Element			
Vel Head (ft)	4.70	Wt. n-Val.	0.039	0.043	0.050
W.S. Elev (ft)	83.21	Reach Len. (ft)	142.45	166.43	154.49
Crit W.S. (ft)	83.21	Flow Area (sq ft)	677.62	5920.53	347.61
E.G. Slope (ft/ft)	0.011677	Area (sq ft)	5244.30	5920.53	347.61
Q Total (cfs)	118891.00	Flow (cfs)	9261.45	105871.30	3758.25
Top Width (ft)	1552.34	Top Width (ft)	937.36	559.97	55.01
Vel Total (ft/s)	17.12	Avg. Vel. (ft/s)	13.67	17.88	10.81
Max Chl Dpth (ft)	12.76	Hydr. Depth (ft)	5.57	10.57	6.32
Conv. Total (cfs)	1100214.0	Conv. (cfs)	85705.2	979730.0	34778.8
Length Wtd. (ft)	159.01	Wetted Per. (ft)	122.35	560.07	56.27
Min Ch El (ft)	71.87	Shear (lb/sq ft)	4.04	7.71	4.50
Alpha	1.03	Stream Power (lb/ft s)	55.18	137.81	48.69
Frctn Loss (ft)	0.75	Cum Volume (acre-ft)	4564.13	2813.49	358.03
C & E Loss (ft)	1.08	Cum SA (acres)	584.84	190.74	40.69

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: Divided flow computed for this cross-section.
Warning: The cross-section end points had to be extended vertically for the computed water surface.
Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.

CROSS SECTION

RIVER: San Mateo Creek
REACH: Lower RS: 14474.32

INPUT
Description:
Station Elevation Data num= 78

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	108.23	7.05	108.12	14.85	108.01	19.46	107.52	32.2	105.34
43.5	100.08	55.52	94.24	60.33	91.88	64.41	91.25	94	87.21
95.64	87.03	136.25	82.08	140.72	81.63	152.05	79.6	153.84	79.51
176.78	78.22	213.92	77.71	306.58	77.97	334.86	78.81	385.42	78.75

494.34	78.64	516.51	78.62	568.95	78.46	639.11	78.26	667.2	78.23
695.34	77.02	722.47	75.87	749.21	74.93	795.77	75.99	822.43	76.68
843.49	77.7	868.21	78.93	873.36	79.24	881.73	79.29	890.57	78.45
893.93	75.8	898.72	72.54	904.92	71.28	911.85	70.69	944.2	70.48
976.68	70.98	1001.51	71.13	1014.62	71.21	1035.38	71.3	1051.2	71.82
1084.53	76.22	1100.85	77.95	1106.06	78.15	1121.94	79.13	1122.26	79.15
1122.38	79.16	1152.01	79.26	1161.52	79.17	1192.95	76.51	1212.88	74.82
1217.7	74.42	1239.31	73.21	1263.85	71.95	1265.85	71.96	1288.45	71.95
1306.74	71.94	1446.22	71.84	1486.6	71.82	1517.38	71.8	1554.33	71.86
1588.08	71.93	1700.47	73.17	1711.72	73.34	1761.27	75.3	1766.78	75.48
1768.31	75.68	1786.6	79.01	1794.15	84.11	1811.94	93.98	1817.4	96.95
1819.42	97.87	1826.77	100.04	1835.31	102.7				

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.02	385.42	.035	568.95	.05	1192.95	.035	1486.6	.05

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
1239.31	1700.47	199.28	178.47	167.43	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
0	1122.38	79.16	F

CROSS SECTION OUTPUT Profile #Q50

E.G. Elev (ft)	79.84	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.43	Wt. n-Val.	0.045	0.040	0.050
W.S. Elev (ft)	79.41	Reach Len. (ft)	199.28	178.47	167.43
Crit W.S. (ft)	77.19	Flow Area (sq ft)	2927.88	3379.51	387.04
E.G. Slope (ft/ft)	0.001921	Area (sq ft)	2927.88	3379.51	387.04
Q Total (cfs)	31354.00	Flow (cfs)	9462.34	20530.01	1361.65
Top Width (ft)	1631.51	Top Width (ft)	1083.63	461.16	86.72
Vel Total (ft/s)	4.68	Avg. Vel. (ft/s)	3.23	6.07	3.52
Max Chl Dpth (ft)	8.93	Hydr. Depth (ft)	2.70	7.33	4.46
Conv. Total (cfs)	715358.9	Conv. (cfs)	215888.5	468403.6	31066.9
Length Wtd. (ft)	182.96	Wetted Per. (ft)	1086.61	461.20	87.19
Min Ch El (ft)	71.80	Shear (lb/sq ft)	0.32	0.88	0.53
Alpha	1.27	Stream Power (lb/ft s)	1.04	5.34	1.87
Frctn Loss (ft)	0.36	Cum Volume (acre-ft)	611.88	1302.21	94.77
C & E Loss (ft)	0.01	Cum SA (acres)	212.00	188.59	26.30

Warning: Multiple water surfaces were found that could balance the energy equation. The program selected the water surface whose main channel velocity head was the closest to the previously computed cross section.

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

CROSS SECTION OUTPUT Profile #Q100

E.G. Elev (ft)	81.39	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.49	Wt. n-Val.	0.042	0.040	0.050
W.S. Elev (ft)	80.90	Reach Len. (ft)	199.28	178.47	167.43
Crit W.S. (ft)	78.64	Flow Area (sq ft)	4557.50	4068.86	518.32
E.G. Slope (ft/ft)	0.001744	Area (sq ft)	4557.50	4068.86	518.32
Q Total (cfs)	47312.00	Flow (cfs)	18610.07	26632.79	2069.13
Top Width (ft)	1644.61	Top Width (ft)	1094.52	461.16	88.93
Vel Total (ft/s)	5.17	Avg. Vel. (ft/s)	4.08	6.55	3.99
Max Chl Dpth (ft)	10.42	Hydr. Depth (ft)	4.16	8.82	5.83

Conv. Total (cfs)	1132786.0	Conv. (cfs)	445578.8	637665.9	49541.0
Length Wtd. (ft)	185.00	Wetted Per. (ft)	1097.63	461.20	89.87
Min Ch El (ft)	71.80	Shear (lb/sq ft)	0.45	0.96	0.63
Alpha	1.17	Stream Power (lb/ft s)	1.85	6.29	2.51
Frctn Loss (ft)	0.34	Cum Volume (acre-ft)	1159.21	1637.32	143.69
C & E Loss (ft)	0.01	Cum SA (acres)	309.49	188.77	28.59

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

CROSS SECTION OUTPUT Profile #Q100HC

E.G. Elev (ft)	85.27	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.11	Wt. n-Val.	0.039	0.041	0.050
W.S. Elev (ft)	84.16	Reach Len. (ft)	199.28	178.47	167.43
Crit W.S. (ft)	81.29	Flow Area (sq ft)	8164.25	5571.72	816.00
E.G. Slope (ft/ft)	0.002510	Area (sq ft)	8164.25	5571.72	816.00
Q Total (cfs)	118891.00	Flow (cfs)	59941.39	53879.23	5070.38
Top Width (ft)	1675.06	Top Width (ft)	1120.13	461.16	93.77
Vel Total (ft/s)	8.17	Avg. Vel. (ft/s)	7.34	9.67	6.21
Max Chl Dpth (ft)	13.68	Hydr. Depth (ft)	7.29	12.08	8.70
Conv. Total (cfs)	2373210.0	Conv. (cfs)	1196503.0	1075495.0	101210.9
Length Wtd. (ft)	187.88	Wetted Per. (ft)	1123.44	461.20	95.70
Min Ch El (ft)	71.80	Shear (lb/sq ft)	1.14	1.89	1.34
Alpha	1.07	Stream Power (lb/ft s)	8.36	18.30	8.30
Frctn Loss (ft)	0.49	Cum Volume (acre-ft)	4542.21	2791.53	355.97
C & E Loss (ft)	0.01	Cum SA (acres)	581.47	188.79	40.42

CROSS SECTION

RIVER: San Mateo Creek
REACH: Lower RS: 14295.85

INPUT
Description: Updated Manning's N Distribution
Station Elevation Data num= 83

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	114.43	9.24	113.91	14.57	113.39	23.2	111.82	25.07	111.38
39.73	104.24	46.74	99.88	54.3	97.23	60.26	95.57	70.78	92.65
96.37	88.99	118.4	87.41	132.59	85.93	152.52	85.29	171.21	85.2
182.49	84.43	192.33	83.73	199.7	83.4	260.19	79.39	288.49	78.81
327.06	78.42	334.41	78.38	360.28	78.49	521.98	79.07	548.04	79.04
767.17	78.75	779.9	78.72	879.98	78.5	882.5	78.5	886.03	78.49
890.19	78.4	1028.06	76.75	1031.78	76.64	1034.63	76.55	1039.64	76.43
1123.57	74.47	1153.45	74.06	1220.01	76.92	1230.33	76.95	1240.38	78.18
1254.54	78.73	1263.32	79.1	1275.86	78.62	1288.88	78.59	1307.3	78.72
1309.61	78.43	1323.37	76.46	1335.24	75.44	1353.82	73.39	1354.64	73.29
1379.68	73.45	1401.56	73.4	1440.37	72.72	1453.85	72.82	1469.98	72.75
1517.64	72.3	1618.82	71.34	1655.06	71	1738.96	70.82	1783.15	70.72
1793.46	70.81	1811.86	70.96	1833.82	71.13	1897.96	71.64	1906.52	71.68
1907.25	71.75	1980.28	71.46	1986.91	71.94	2015.83	72.5	2018.94	73.36
2022.54	75.23	2029.21	78.48	2038.38	84.77	2043.31	87.7	2063.23	103.36
2063.55	103.64	2063.7	103.71	2082.33	109.85	2083.02	110.14	2085.68	110.87
2096.86	114.2	2104.03	117.4	2107.83	117.84				

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.02	548.04	.035	779.9	.05	1517.64	.035	1833.82	.05

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
1469.98	2015.83	93.39	88.97	84.07	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
0	1307.3	78.72	F

CROSS SECTION OUTPUT Profile #Q50

E.G. Elev (ft)	79.46	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.57	Wt. n-Val.	0.050	0.040	0.050
W.S. Elev (ft)	78.89	Reach Len. (ft)	93.39	88.97	84.07
Crit W.S. (ft)	75.97	Flow Area (sq ft)	1808.53	4051.26	48.77
E.G. Slope (ft/ft)	0.002072	Area (sq ft)	1808.53	4051.26	48.77
Q Total (cfs)	31354.00	Flow (cfs)	4852.98	26358.88	142.14
Top Width (ft)	1545.21	Top Width (ft)	985.38	545.85	13.98
Vel Total (ft/s)	5.31	Avg. Vel. (ft/s)	2.68	6.51	2.91
Max Chl Dpth (ft)	8.17	Hydr. Depth (ft)	1.84	7.42	3.49
Conv. Total (cfs)	688741.1	Conv. (cfs)	106603.5	579015.4	3122.3
Length Wtd. (ft)	89.45	Wetted Per. (ft)	985.91	545.89	15.43
Min Ch El (ft)	70.72	Shear (lb/sq ft)	0.24	0.96	0.41
Alpha	1.30	Stream Power (lb/ft s)	0.64	6.25	1.19
Frctn Loss (ft)	0.24	Cum Volume (acre-ft)	601.05	1286.99	93.93
C & E Loss (ft)	0.04	Cum SA (acres)	207.27	186.53	26.10

Warning: Divided flow computed for this cross-section.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.

CROSS SECTION OUTPUT Profile #Q100

E.G. Elev (ft)	81.03	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.63	Wt. n-Val.	0.044	0.040	0.050
W.S. Elev (ft)	80.41	Reach Len. (ft)	93.39	88.97	84.07
Crit W.S. (ft)	77.28	Flow Area (sq ft)	3627.51	4879.51	71.66
E.G. Slope (ft/ft)	0.001948	Area (sq ft)	3627.51	4879.51	71.66
Q Total (cfs)	47312.00	Flow (cfs)	12316.48	34760.39	235.13
Top Width (ft)	1787.18	Top Width (ft)	1225.14	545.85	16.19
Vel Total (ft/s)	5.52	Avg. Vel. (ft/s)	3.40	7.12	3.28
Max Chl Dpth (ft)	9.69	Hydr. Depth (ft)	2.96	8.94	4.43
Conv. Total (cfs)	1072063.0	Conv. (cfs)	279084.4	787650.4	5327.8
Length Wtd. (ft)	89.91	Wetted Per. (ft)	1225.71	545.89	18.11
Min Ch El (ft)	70.72	Shear (lb/sq ft)	0.36	1.09	0.48
Alpha	1.33	Stream Power (lb/ft s)	1.22	7.74	1.58
Frctn Loss (ft)	0.23	Cum Volume (acre-ft)	1140.48	1618.98	142.56
C & E Loss (ft)	0.04	Cum SA (acres)	304.18	186.71	28.39

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

CROSS SECTION OUTPUT Profile #Q100HC

E.G. Elev (ft)	84.76	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.24	Wt. n-Val.	0.039	0.040	0.050
W.S. Elev (ft)	83.52	Reach Len. (ft)	93.39	88.97	84.07

Crit W.S. (ft)	81.46	Flow Area (sq ft)	7517.64	6580.08	129.18
E.G. Slope (ft/ft)	0.002743	Area (sq ft)	7517.64	6580.08	129.18
Q Total (cfs)	118891.00	Flow (cfs)	50553.18	67713.65	624.17
Top Width (ft)	1839.61	Top Width (ft)	1273.02	545.85	20.73
Vel Total (ft/s)	8.36	Avg. Vel. (ft/s)	6.72	10.29	4.83
Max Chl Dpth (ft)	12.80	Hydr. Depth (ft)	5.91	12.05	6.23
Conv. Total (cfs)	2269929.0	Conv. (cfs)	965187.9	1292824.0	11916.9
Length Wtd. (ft)	90.78	Wetted Per. (ft)	1273.70	545.89	23.62
Min Ch El (ft)	70.72	Shear (lb/sq ft)	1.01	2.06	0.94
Alpha	1.14	Stream Power (lb/ft s)	6.80	21.24	4.53
Frctn Loss (ft)	0.29	Cum Volume (acre-ft)	4506.34	2766.64	354.15
C & E Loss (ft)	0.03	Cum SA (acres)	576.00	186.73	40.20

CROSS SECTION

RIVER: San Mateo Creek
REACH: Lower RS: 14206.87

INPUT
Description: Updated Manning's N Distribution
Station Elevation Data num= 73

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	97.26	10.99	96.35	24.79	95.13	47.53	92.21	49.01	92.13
49.31	92.11	116.41	88.21	125.61	87.46	158.8	84.42	192.35	83.87
241.23	80.8	258.87	80.03	263.37	79.91	264.72	79.93	300.98	79.3
310.07	79.32	382.89	78.58	404.15	78.46	480.32	78.78	595.77	79.2
677.87	79.09	800.58	78.94	830.93	78.83	859.8	78.73	920.82	78.54
993.7	78.44	1057.97	77.67	1249.46	76.59	1255.01	76.46	1260.41	76.39
1265.26	76.29	1330.37	75.31	1336.95	75.49	1354.86	75.65	1357.26	75.91
1374.71	77.27	1394.77	78.32	1405.67	78.83	1437.21	78.7	1452.51	78.72
1478.81	76.15	1489.92	73.88	1514.82	73.71	1521.78	73.57	1545.64	73.1
1575.12	73.03	1661.87	72.2	1744.96	71.41	1865.23	70.26	1878.99	70.13
1904.13	70.42	1953.89	72.32	1968	72.12	1981.53	71.92	2008	71.67
2047.55	71.3	2058.03	72.18	2079.75	71.88	2087.59	70.84	2096.76	71.68
2104.16	72.17	2116.03	73.23	2116.47	73.29	2117.01	73.65	2121.09	78.53
2129.6	88.28	2132.86	90.96	2142.46	97.96	2147.9	101.53	2154.06	104.41
2160.17	107.51	2166.98	111.04	2186.67	115.76				

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.02	677.87	.035	830.93	.05	1661.87	.035	1968	.05

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
1575.12	2116.03	100.64	98.26	92.36	.1

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
0	1405.67	78.83	F

CROSS SECTION OUTPUT Profile #Q50

E.G. Elev (ft)	79.18	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.98	Wt. n-Val.	0.050	0.039	0.050
W.S. Elev (ft)	78.19	Reach Len. (ft)	100.64	98.26	92.36
Crit W.S. (ft)	76.16	Flow Area (sq ft)	464.71	3579.83	13.34
E.G. Slope (ft/ft)	0.003756	Area (sq ft)	969.78	3579.83	13.34
Q Total (cfs)	31354.00	Flow (cfs)	2116.28	29200.42	37.30
Top Width (ft)	1040.70	Top Width (ft)	495.02	540.91	4.78

Vel Total (ft/s)	7.73	Avg. Vel. (ft/s)	4.55	8.16	2.80
Max Chl Dpth (ft)	8.06	Hydr. Depth (ft)	3.97	6.62	2.79
Conv. Total (cfs)	511620.8	Conv. (cfs)	34532.5	476479.7	608.6
Length Wtd. (ft)	98.38	Wetted Per. (ft)	117.53	541.18	7.01
Min Ch El (ft)	70.13	Shear (lb/sq ft)	0.93	1.55	0.45
Alpha	1.06	Stream Power (lb/ft s)	4.22	12.65	1.25
Frctn Loss (ft)	0.42	Cum Volume (acre-ft)	598.07	1279.20	93.87
C & E Loss (ft)	0.01	Cum SA (acres)	205.68	185.42	26.09

Warning: Divided flow computed for this cross-section.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.

CROSS SECTION OUTPUT Profile #Q100

E.G. Elev (ft)	80.76	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.05	Wt. n-Val.	0.045	0.040	0.050
W.S. Elev (ft)	79.72	Reach Len. (ft)	100.64	98.26	92.36
Crit W.S. (ft)	77.54	Flow Area (sq ft)	2423.45	4406.30	21.64
E.G. Slope (ft/ft)	0.003413	Area (sq ft)	2423.45	4406.30	21.64
Q Total (cfs)	47312.00	Flow (cfs)	8075.01	39169.72	67.27
Top Width (ft)	1845.26	Top Width (ft)	1298.25	540.91	6.10
Vel Total (ft/s)	6.91	Avg. Vel. (ft/s)	3.33	8.89	3.11
Max Chl Dpth (ft)	9.59	Hydr. Depth (ft)	1.87	8.15	3.55
Conv. Total (cfs)	809809.6	Conv. (cfs)	138214.8	670443.4	1151.4
Length Wtd. (ft)	98.59	Wetted Per. (ft)	1298.75	541.18	9.03
Min Ch El (ft)	70.13	Shear (lb/sq ft)	0.40	1.74	0.51
Alpha	1.41	Stream Power (lb/ft s)	1.32	15.42	1.59
Frctn Loss (ft)	0.39	Cum Volume (acre-ft)	1134.00	1609.50	142.47
C & E Loss (ft)	0.01	Cum SA (acres)	301.48	185.60	28.36

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

CROSS SECTION OUTPUT Profile #Q100HC

E.G. Elev (ft)	84.44	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.56	Wt. n-Val.	0.037	0.040	0.050
W.S. Elev (ft)	82.87	Reach Len. (ft)	100.64	98.26	92.36
Crit W.S. (ft)	81.78	Flow Area (sq ft)	6651.48	6113.00	45.22
E.G. Slope (ft/ft)	0.003777	Area (sq ft)	6651.48	6113.00	45.22
Q Total (cfs)	118891.00	Flow (cfs)	47983.38	70720.11	187.51
Top Width (ft)	1916.68	Top Width (ft)	1366.91	540.91	8.85
Vel Total (ft/s)	9.28	Avg. Vel. (ft/s)	7.21	11.57	4.15
Max Chl Dpth (ft)	12.74	Hydr. Depth (ft)	4.87	11.30	5.11
Conv. Total (cfs)	1934612.0	Conv. (cfs)	780792.4	1150768.0	3051.3
Length Wtd. (ft)	99.19	Wetted Per. (ft)	1367.50	541.18	13.22
Min Ch El (ft)	70.13	Shear (lb/sq ft)	1.15	2.66	0.81
Alpha	1.17	Stream Power (lb/ft s)	8.27	30.81	3.34
Frctn Loss (ft)	0.38	Cum Volume (acre-ft)	4491.15	2753.67	353.98
C & E Loss (ft)	0.04	Cum SA (acres)	573.17	185.62	40.17

CROSS SECTION

RIVER: San Mateo Creek

REACH: Lower RS: 14108.61

INPUT
Description: Updated Manning's N Distribution
Station Elevation Data num= 65

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	94.25	6.24	93.65	10.28	93.31	11.98	93.09	85.53	89.28
127.3	86.83	186.6	81.95	189.42	81.69	192.16	81.64	196.74	81.35
251.96	79.52	266.27	79.14	300.67	79.54	321.81	79.17	355.6	79.25
404.74	78.75	440.89	78.54	572.84	79.1	636.92	79.33	746.5	79.2
839.37	78.88	879.42	78.74	927.02	78.59	1044.69	78.41	1059.49	78.25
1109.86	77.81	1356.83	75.43	1395.3	75.27	1418.29	75.26	1467.57	78.22
1477.69	78.67	1502.54	77.91	1516.45	76.46	1572.62	73.24	1583	73.02
1604.35	72.6	1767.6	72.19	1769.49	72.18	1844.35	71.46	1932.03	70.62
1962.32	70.97	1980.79	71.18	2041.72	71.86	2083.83	72.33	2087.39	72.34
2088.14	72.34	2093.25	72.24	2171.96	70.83	2177.82	70.82	2190.76	71.52
2196.59	71.69	2198.69	72.45	2201.28	73.39	2211.12	76.42	2217.93	79.73
2220.7	81.53	2225.41	85.44	2241.36	100.33	2246.92	105.53	2251.34	108.23
2254.53	110.31	2255.46	111.08	2261.26	112.84	2262.75	113.48	2268.58	115.16

Manning's n Values num= 4

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.02	839.37	.05	1769.49	.035	2041.72	.05

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
1604.35	2198.69	93.54	99.45	106.38	.1 .3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
0	1477.69	78.67	F

CROSS SECTION OUTPUT Profile #Q50

			Left OB	Channel	Right OB
E.G. Elev (ft)	78.75	Element			
Vel Head (ft)	1.05	Wt. n-Val.	0.050	0.041	0.050
W.S. Elev (ft)	77.70	Reach Len. (ft)	93.54	99.45	106.38
Crit W.S. (ft)	76.08	Flow Area (sq ft)	319.14	3551.90	41.55
E.G. Slope (ft/ft)	0.004915	Area (sq ft)	781.91	3551.90	41.55
Q Total (cfs)	31354.00	Flow (cfs)	1441.89	29748.42	163.69
Top Width (ft)	1046.63	Top Width (ft)	437.23	594.34	15.06
Vel Total (ft/s)	8.01	Avg. Vel. (ft/s)	4.52	8.38	3.94
Max Chl Dpth (ft)	7.08	Hydr. Depth (ft)	3.20	5.98	2.76
Conv. Total (cfs)	447218.7	Conv. (cfs)	20566.5	424317.4	2334.8
Length Wtd. (ft)	99.22	Wetted Per. (ft)	99.94	594.53	15.98
Min Ch El (ft)	70.62	Shear (lb/sq ft)	0.98	1.83	0.80
Alpha	1.05	Stream Power (lb/ft s)	4.43	15.35	3.14
Frctn Loss (ft)	0.59	Cum Volume (acre-ft)	596.04	1271.15	93.81
C & E Loss (ft)	0.02	Cum SA (acres)	204.61	184.14	26.07

Warning: Divided flow computed for this cross-section.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.

CROSS SECTION OUTPUT Profile #Q100

			Left OB	Channel	Right OB
E.G. Elev (ft)	80.36	Element			
Vel Head (ft)	1.19	Wt. n-Val.	0.049	0.041	0.050
W.S. Elev (ft)	79.17	Reach Len. (ft)	93.54	99.45	106.38
Crit W.S. (ft)	77.42	Flow Area (sq ft)	1759.44	4427.23	65.96

E.G. Slope (ft/ft)	0.004557	Area (sq ft)	1759.44	4427.23	65.96
Q Total (cfs)	47312.00	Flow (cfs)	5844.25	41167.99	299.75
Top Width (ft)	1695.70	Top Width (ft)	1083.27	594.34	18.09
Vel Total (ft/s)	7.57	Avg. Vel. (ft/s)	3.32	9.30	4.54
Max Chl Dpth (ft)	8.55	Hydr. Depth (ft)	1.62	7.45	3.65
Conv. Total (cfs)	700853.8	Conv. (cfs)	86573.6	609839.9	4440.4
Length Wtd. (ft)	98.91	Wetted Per. (ft)	1083.58	594.53	19.34
Min Ch El (ft)	70.62	Shear (lb/sq ft)	0.46	2.12	0.97
Alpha	1.34	Stream Power (lb/ft s)	1.53	19.70	4.41
Frctn Loss (ft)	0.63	Cum Volume (acre-ft)	1129.17	1599.54	142.37
C & E Loss (ft)	0.07	Cum SA (acres)	298.73	184.32	28.34

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

CROSS SECTION OUTPUT Profile #Q100HC

E.G. Elev (ft)	84.02	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.44	Wt. n-Val.	0.036	0.041	0.050
W.S. Elev (ft)	82.58	Reach Len. (ft)	93.54	99.45	106.38
Crit W.S. (ft)	81.50	Flow Area (sq ft)	6468.56	6451.62	137.22
E.G. Slope (ft/ft)	0.003870	Area (sq ft)	6468.56	6451.62	137.22
Q Total (cfs)	118891.00	Flow (cfs)	47430.09	70683.18	777.74
Top Width (ft)	2042.98	Top Width (ft)	1425.37	594.34	23.27
Vel Total (ft/s)	9.11	Avg. Vel. (ft/s)	7.33	10.96	5.67
Max Chl Dpth (ft)	11.96	Hydr. Depth (ft)	4.54	10.86	5.90
Conv. Total (cfs)	1911100.0	Conv. (cfs)	762409.5	1136189.0	12501.7
Length Wtd. (ft)	97.37	Wetted Per. (ft)	1425.77	594.53	25.57
Min Ch El (ft)	70.62	Shear (lb/sq ft)	1.10	2.62	1.30
Alpha	1.12	Stream Power (lb/ft s)	8.04	28.73	7.35
Frctn Loss (ft)	0.49	Cum Volume (acre-ft)	4475.99	2739.50	353.79
C & E Loss (ft)	0.07	Cum SA (acres)	569.94	184.34	40.14

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

CROSS SECTION

RIVER: San Mateo Creek
REACH: Lower RS: 14009.16

INPUT
Description:
Station Elevation Data num= 66

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	93.29	7.72	92.32	62.52	90.8	132.12	86.6	149.89	85.68
158.74	85.16	173.07	83.98	232.69	79.87	255.75	79.13	265.77	78.81
297.43	78.03	335.32	78.89	357.02	79.14	362.56	79.04	422.01	79.18
446.54	78.93	498.12	78.63	690.12	79.44	698.83	79.48	713.17	79.46
875.56	78.9	923.79	78.73	954.2	78.64	1030.24	78.52	1117.03	77.56
1426.08	74.84	1472.13	74.39	1479.08	74.36	1483.21	74.36	1491.98	74.89

1555.9	77.71	1577.05	78.68	1579.07	78.75	1648.33	74.68	1673.87	72.27
1688.14	72.2	1705.24	72.13	1868.98	71.68	1893.1	71.62	1959.36	71.43
1971.74	71.4	2001.53	71.12	2024.5	71.39	2080.05	71.47	2168.6	71.6
2177.07	71.61	2241.75	71.72	2266.51	71.73	2272.94	72.17	2279.11	72.89
2287.03	72.97	2291.6	73.07	2294.64	74.83	2295.96	75.73	2312.73	97.79
2315.5	101.44	2315.72	101.72	2316.74	102.67	2322.85	108.42	2324.94	109.94
2337.52	115.66	2342.69	117.62	2346.03	117.54	2360.58	118.46	2363.08	118.74
2366.38	118.7								

Manning's n Values num= 4

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.02	875.56	.05	1893.1	.035	2177.07	.05

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
1673.87	2272.94	100.03	103.03	102.07	.1	.3

CROSS SECTION OUTPUT Profile #Q50

E.G. Elev (ft)	78.13	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.27	Wt. n-Val.	0.050	0.041	0.050
W.S. Elev (ft)	76.86	Reach Len. (ft)	100.03	103.03	102.07
Crit W.S. (ft)		Flow Area (sq ft)	554.08	3113.37	86.86
E.G. Slope (ft/ft)	0.007390	Area (sq ft)	554.08	3113.37	86.86
Q Total (cfs)	31354.00	Flow (cfs)	1787.79	29060.38	505.83
Top Width (ft)	1025.97	Top Width (ft)	403.02	599.07	23.88
Vel Total (ft/s)	8.35	Avg. Vel. (ft/s)	3.23	9.33	5.82
Max Chl Dpth (ft)	5.74	Hydr. Depth (ft)	1.37	5.20	3.64
Conv. Total (cfs)	364728.4	Conv. (cfs)	20796.6	338047.7	5884.1
Length Wtd. (ft)	102.78	Wetted Per. (ft)	403.26	599.09	25.24
Min Ch El (ft)	71.12	Shear (lb/sq ft)	0.63	2.40	1.59
Alpha	1.17	Stream Power (lb/ft s)	2.05	22.38	9.25
Frctn Loss (ft)	0.81	Cum Volume (acre-ft)	594.61	1263.54	93.66
C & E Loss (ft)	0.03	Cum SA (acres)	203.70	182.77	26.02

Warning: Divided flow computed for this cross-section.

CROSS SECTION OUTPUT Profile #Q100

E.G. Elev (ft)	79.66	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.94	Wt. n-Val.	0.050	0.041	0.050
W.S. Elev (ft)	77.72	Reach Len. (ft)	100.03	103.03	102.07
Crit W.S. (ft)	77.45	Flow Area (sq ft)	954.10	3625.23	107.54
E.G. Slope (ft/ft)	0.009499	Area (sq ft)	954.10	3625.23	107.54
Q Total (cfs)	47312.00	Flow (cfs)	4130.22	42385.48	796.30
Top Width (ft)	1153.97	Top Width (ft)	530.37	599.07	24.53
Vel Total (ft/s)	10.09	Avg. Vel. (ft/s)	4.33	11.69	7.40
Max Chl Dpth (ft)	6.60	Hydr. Depth (ft)	1.80	6.05	4.38
Conv. Total (cfs)	485426.3	Conv. (cfs)	42376.5	434879.7	8170.1
Length Wtd. (ft)	102.60	Wetted Per. (ft)	530.66	599.09	26.31
Min Ch El (ft)	71.12	Shear (lb/sq ft)	1.07	3.59	2.42
Alpha	1.23	Stream Power (lb/ft s)	4.62	41.96	17.95
Frctn Loss (ft)	0.83	Cum Volume (acre-ft)	1126.25	1590.35	142.16
C & E Loss (ft)	0.20	Cum SA (acres)	296.99	182.96	28.29

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 OUTPUT Profile #Q100HC

			Left OB	Channel	Right OB
E.G. Elev (ft)	83.46	Element			
Vel Head (ft)	2.19	Wt. n-Val.	0.038	0.041	0.050
W.S. Elev (ft)	81.27	Reach Len. (ft)	100.03	103.03	102.07
Crit W.S. (ft)	81.27	Flow Area (sq ft)	5045.72	5752.52	199.44
E.G. Slope (ft/ft)	0.006923	Area (sq ft)	5045.72	5752.52	199.44
Q Total (cfs)	118891.00	Flow (cfs)	39373.19	77803.49	1714.32
Top Width (ft)	2087.75	Top Width (ft)	1461.45	599.07	27.23
Vel Total (ft/s)	10.81	Avg. Vel. (ft/s)	7.80	13.53	8.60
Max Chl Dpth (ft)	10.15	Hydr. Depth (ft)	3.45	9.60	7.32
Conv. Total (cfs)	1428935.0	Conv. (cfs)	473221.0	935109.5	20604.1
Length Wtd. (ft)	102.06	Wetted Per. (ft)	1461.90	599.09	30.77
Min Ch El (ft)	71.12	Shear (lb/sq ft)	1.49	4.15	2.80
Alpha	1.21	Stream Power (lb/ft s)	11.64	56.13	24.08
Frctn Loss (ft)	0.76	Cum Volume (acre-ft)	4463.63	2725.57	353.38
C & E Loss (ft)	0.01	Cum SA (acres)	566.84	182.98	40.08

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: San Mateo Creek
REACH: Lower RS: 13906.13

INPUT
Description:
Station Elevation Data num= 76

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	92.54	5.96	92.16	14.1	91.4	14.65	91.37	15.11	91.34
15.49	91.31	23.03	91.22	82.25	89.97	107.38	88.4	162.65	85
180.35	84.65	209.77	82.61	267.6	79.07	281.9	78.01	312.97	75.46
325.14	75.19	352.53	74.24	379.51	75.7	384.55	75.3	393.62	75.99
402	76.8	430.21	78.73	441.39	78.8	459.71	79.08	463.86	79.09
472.95	79.11	475.87	79.08	541.11	78.7	612.9	79.01	714.38	79.21
747.77	79.17	825.98	79.17	927.71	78.82	951.83	78.74	970.64	78.68
1008.39	78.62	1123.02	77.31	1160.28	76.88	1220.67	76.32	1416.22	74.52
1594.78	72.94	1626.09	74.6	1652.51	74.95	1670.3	74.33	1697.19	73.46
1712.24	72.03	1757.27	71.8	1845.23	71.43	1994.38	71	2001.9	70.98
2060.05	70.77	2065.38	70.82	2156.22	71.71	2187.44	71.73	2216.87	71.76
2281.67	71.79	2294.86	71.52	2308.13	71.24	2318.98	71.96	2335.46	71.67
2350.65	70.56	2359.01	70.89	2369.1	72.27	2371.4	72.66	2378.54	78.57
2378.75	78.74	2379.61	79.32	2387.68	84.68	2398.09	88.77	2398.61	88.95
2399.29	89.07	2401.06	89.44	2401.09	89.45	2423.44	96.8	2432.18	99.53
2441.34	101.86								

Manning's n Values num= 7

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.02	463.86	.02	927.71	.05	1123.02	.035	1220.67	.05
2001.9	.035	2294.86	.05						

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
1712.24	2369.1	92.63	93.13	94.58	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
0	1123.02	77.31	F

CROSS SECTION OUTPUT Profile #Q50

			Left OB	Channel	Right OB
E.G. Elev (ft)	77.30	Element			
Vel Head (ft)	1.18	Wt. n-Val.	0.050	0.042	0.050
W.S. Elev (ft)	76.12	Reach Len. (ft)	92.63	93.13	94.58
Crit W.S. (ft)	75.57	Flow Area (sq ft)	811.10	3085.48	15.63
E.G. Slope (ft/ft)	0.008405	Area (sq ft)	900.31	3085.48	15.63
Q Total (cfs)	31354.00	Flow (cfs)	3180.37	28105.71	67.92
Top Width (ft)	1223.00	Top Width (ft)	559.66	656.86	6.48
Vel Total (ft/s)	8.01	Avg. Vel. (ft/s)	3.92	9.11	4.35
Max Chl Dpth (ft)	5.56	Hydr. Depth (ft)	1.73	4.70	2.41
Conv. Total (cfs)	341989.8	Conv. (cfs)	34689.5	306559.6	740.8
Length Wtd. (ft)	93.05	Wetted Per. (ft)	469.81	657.04	7.76
Min Ch El (ft)	70.56	Shear (lb/sq ft)	0.91	2.46	1.06
Alpha	1.18	Stream Power (lb/ft s)	3.55	22.45	4.59
Frctn Loss (ft)	0.86	Cum Volume (acre-ft)	592.94	1256.21	93.54
C & E Loss (ft)	0.01	Cum SA (acres)	202.60	181.29	25.98

Warning: Divided flow computed for this cross-section.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.

CROSS SECTION OUTPUT Profile #Q100

			Left OB	Channel	Right OB
E.G. Elev (ft)	78.62	Element			
Vel Head (ft)	1.27	Wt. n-Val.	0.043	0.042	0.050
W.S. Elev (ft)	77.35	Reach Len. (ft)	92.63	93.13	94.58
Crit W.S. (ft)	76.75	Flow Area (sq ft)	1686.72	3894.25	24.52
E.G. Slope (ft/ft)	0.007043	Area (sq ft)	1686.72	3894.25	24.52
Q Total (cfs)	47312.00	Flow (cfs)	9281.68	37916.75	113.57
Top Width (ft)	1377.60	Top Width (ft)	712.77	656.86	7.97
Vel Total (ft/s)	8.44	Avg. Vel. (ft/s)	5.50	9.74	4.63
Max Chl Dpth (ft)	6.79	Hydr. Depth (ft)	2.37	5.93	3.08
Conv. Total (cfs)	563741.2	Conv. (cfs)	110594.9	451793.1	1353.2
Length Wtd. (ft)	93.01	Wetted Per. (ft)	713.17	657.04	9.69
Min Ch El (ft)	70.56	Shear (lb/sq ft)	1.04	2.61	1.11
Alpha	1.15	Stream Power (lb/ft s)	5.72	25.38	5.16
Frctn Loss (ft)	0.83	Cum Volume (acre-ft)	1123.22	1581.45	142.01
C & E Loss (ft)	0.05	Cum SA (acres)	295.57	181.47	28.25

Warning: Multiple water surfaces were found that could balance the energy equation. The program selected the water surface whose main channel velocity head was the closest to the previously computed cross section.
Warning: 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.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water

surface was used.

CROSS SECTION OUTPUT Profile #Q100HC

E.G. Elev (ft)	82.49	Element	Left OB	Channel	Right OB
Vel Head (ft)	2.93	Wt. n-Val.	0.041	0.042	0.050
W.S. Elev (ft)	79.56	Reach Len. (ft)	92.63	93.13	94.58
Crit W.S. (ft)	80.13	Flow Area (sq ft)	3839.15	5347.19	45.19
E.G. Slope (ft/ft)	0.011347	Area (sq ft)	3839.15	5347.19	45.19
Q Total (cfs)	118891.00	Flow (cfs)	36946.97	81621.43	322.60
Top Width (ft)	2120.40	Top Width (ft)	1452.67	656.86	10.87
Vel Total (ft/s)	12.88	Avg. Vel. (ft/s)	9.62	15.26	7.14
Max Chl Dpth (ft)	9.00	Hydr. Depth (ft)	2.64	8.14	4.16
Conv. Total (cfs)	1116108.0	Conv. (cfs)	346845.6	766234.1	3028.4
Length Wtd. (ft)	92.93	Wetted Per. (ft)	1453.21	657.04	13.35
Min Ch El (ft)	70.56	Shear (lb/sq ft)	1.87	5.77	2.40
Alpha	1.14	Stream Power (lb/ft s)	18.01	88.00	17.12
Frctn Loss (ft)	0.89	Cum Volume (acre-ft)	4453.43	2712.45	353.09
C & E Loss (ft)	0.07	Cum SA (acres)	563.50	181.49	40.03

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Note: Program found supercritical flow starting at this cross section.

CROSS SECTION

RIVER: San Mateo Creek
REACH: Lower RS: 13813.01

INPUT
Description:
Station Elevation Data num= 79

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	90.43	46.07	88.91	114.69	85.85	118.94	85.75	122.66	85.6
159.5	84.03	195.94	79.72	201.81	79.01	209.78	78.25	245.97	76.05
266.61	73.93	285.45	73.75	326.82	71.64	333.67	71.75	375.69	72.47
445.49	72.53	550.13	72.09	620.9	71	656.67	71.04	711.19	71.03
718.16	70.94	731.07	71.06	739.91	71.67	743.89	72.44	745.13	72.67
750.49	74.78	765.8	77.26	766.52	77.35	768.87	76.86	784.64	74.93
816.22	76.55	817.91	76.62	831.36	78.54	857.99	78.51	971.85	78.7
977.08	78.7	998.84	78.73	1016.4	78.19	1037.65	78.21	1052.24	78.04
1223.56	76.05	1338.8	74.98	1478.15	73.72	1505.61	73.47	1578.36	72.98
1686.09	72.24	1720.96	72.19	1830.79	72.17	1836.11	72.17	1868.32	72.11
1999.95	70.82	2002.4	70.81	2003.94	70.75	2104.48	70.37	2128.22	70.29
2146.2	70.26	2155.3	70.3	2189.66	70.59	2312.43	71.63	2325.19	71.74
2342.82	72.01	2389.64	70.97	2410.55	70.56	2411.18	70.55	2411.33	70.56
2411.6	70.54	2430.18	70.28	2436.8	70.19	2462.58	71.71	2462.84	71.79
2463.83	72.47	2464.05	72.19	2469.44	75.54	2482.82	87.24	2485.38	89.34
2487.8	91.33	2498.73	97.95	2500.37	98.5	2505.34	99.05		

Manning's n Values num= 8

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	977.08	.05	1052.24	.035	1478.15	.02	1578.36	.05
2104.48	.035	2430.18	.05	2505.34	.07				

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
1868.32	2464.05	96.66	91.12	77.43	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
0	1223.56	76.05	F

CROSS SECTION OUTPUT Profile #Q50

			Left OB	Channel	Right OB
E.G. Elev (ft)	76.43	Element			
Vel Head (ft)	1.26	Wt. n-Val.	0.041	0.040	0.050
W.S. Elev (ft)	75.16	Reach Len. (ft)	96.66	91.12	77.43
Crit W.S. (ft)	74.96	Flow Area (sq ft)	1118.12	2479.13	7.11
E.G. Slope (ft/ft)	0.010288	Area (sq ft)	2659.47	2479.13	7.11
Q Total (cfs)	31354.00	Flow (cfs)	7412.01	23916.95	25.05
Top Width (ft)	1654.50	Top Width (ft)	1053.99	595.73	4.78
Vel Total (ft/s)	8.70	Avg. Vel. (ft/s)	6.63	9.65	3.52
Max Chl Dpth (ft)	4.97	Hydr. Depth (ft)	2.04	4.16	1.49
Conv. Total (cfs)	309124.4	Conv. (cfs)	73076.2	235801.3	246.9
Length Wtd. (ft)	92.99	Wetted Per. (ft)	549.29	596.17	5.63
Min Ch El (ft)	70.19	Shear (lb/sq ft)	1.31	2.67	0.81
Alpha	1.08	Stream Power (lb/ft s)	8.67	25.77	2.86
Frctn Loss (ft)	0.39	Cum Volume (acre-ft)	589.15	1250.26	93.51
C & E Loss (ft)	0.28	Cum SA (acres)	200.88	179.95	25.97

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

CROSS SECTION OUTPUT Profile #Q100

			Left OB	Channel	Right OB
E.G. Elev (ft)	77.74	Element			
Vel Head (ft)	1.80	Wt. n-Val.	0.039	0.040	0.050
W.S. Elev (ft)	75.94	Reach Len. (ft)	96.66	91.12	77.43
Crit W.S. (ft)	75.94	Flow Area (sq ft)	1578.11	2942.67	11.28
E.G. Slope (ft/ft)	0.011753	Area (sq ft)	3525.36	2942.67	11.28
Q Total (cfs)	47312.00	Flow (cfs)	13260.18	34001.63	50.19
Top Width (ft)	1773.27	Top Width (ft)	1171.69	595.73	5.85
Vel Total (ft/s)	10.44	Avg. Vel. (ft/s)	8.40	11.55	4.45
Max Chl Dpth (ft)	5.75	Hydr. Depth (ft)	2.49	4.94	1.93
Conv. Total (cfs)	436417.6	Conv. (cfs)	122315.1	313639.5	463.0
Length Wtd. (ft)	93.10	Wetted Per. (ft)	633.09	596.17	6.96
Min Ch El (ft)	70.19	Shear (lb/sq ft)	1.83	3.62	1.19
Alpha	1.06	Stream Power (lb/ft s)	15.37	41.85	5.29
Frctn Loss (ft)	0.70	Cum Volume (acre-ft)	1117.68	1574.14	141.97
C & E Loss (ft)	0.31	Cum SA (acres)	293.56	180.13	28.23

Warning: The energy equation could not be balanced within the specified number of iterations. The program selected the water surface that had the least amount of error between computed and assumed values.
Warning: Divided flow computed for this cross-section.
Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.

This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.

CROSS SECTION OUTPUT Profile #Q100HC

			Left OB	Channel	Right OB
E.G. Elev (ft)	80.78	Element			
Vel Head (ft)	4.53	Wt. n-Val.	0.037	0.040	0.050
W.S. Elev (ft)	76.25	Reach Len. (ft)	96.66	91.12	77.43
Crit W.S. (ft)	77.62	Flow Area (sq ft)	3888.02	3123.65	13.11
E.G. Slope (ft/ft)	0.027417	Area (sq ft)	3888.02	3123.65	13.11
Q Total (cfs)	118891.00	Flow (cfs)	61440.16	57356.49	94.35
Top Width (ft)	1816.67	Top Width (ft)	1214.74	595.73	6.20
Vel Total (ft/s)	16.92	Avg. Vel. (ft/s)	15.80	18.36	7.19
Max Chl Dpth (ft)	6.06	Hydr. Depth (ft)	3.20	5.24	2.12
Conv. Total (cfs)	718028.3	Conv. (cfs)	371060.7	346397.8	569.8
Length Wtd. (ft)	94.18	Wetted Per. (ft)	1215.69	596.17	7.42
Min Ch El (ft)	70.19	Shear (lb/sq ft)	5.47	8.97	3.03
Alpha	1.02	Stream Power (lb/ft s)	86.50	164.67	21.77
Frctn Loss (ft)	1.56	Cum Volume (acre-ft)	4445.21	2703.39	353.03
C & E Loss (ft)	0.16	Cum SA (acres)	560.66	180.15	40.01

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: San Mateo Creek
REACH: Lower RS: 13721.89

INPUT
Description:
Station Elevation Data num= 90

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	90.28	24.23	89.47	70.68	88.17	86.02	86.92	114.97	85.99
139.93	84.78	145.11	84.27	148.3	83.92	183.76	78.12	202.89	74.51
214.49	72.52	228.47	70.92	252.92	70.57	297.87	71.4	337.91	72.06
384.48	72.82	391.81	72.76	409.01	72.93	569.03	72.42	633.84	72.16
649.31	71.94	656.83	71.92	704.02	71.52	707.56	71.5	714.34	73.04
722.66	74.99	724.91	75.44	727.08	76.17	734.66	78.44	736.91	78.12
748.66	75.71	759.32	72.77	762.57	72.39	788.31	71.03	791.65	70.85
793.61	70.71	794.7	70.74	814.87	70.89	868.87	71.37	872.51	71.28
877.29	71.39	911.66	72.31	913.77	72.68	930.02	73.56	931.36	73.5
940.33	73.62	944.5	73.81	973.65	75.4	986.82	75.23	1023.97	74.38
1052.35	74.83	1192.68	74.83	1201.55	75	1234.43	75.25	1247.95	75.21
1644.56	72.51	1670.3	72.34	1764.51	72.2	1773.04	72.2	1888.95	72.18
1895.47	72.01	1915.14	71.61	1959.71	70.65	1974.64	71.04	1979.44	70.33
2093.85	70.04	2132.78	69.97	2227.8	69.82	2230.8	69.82	2258.7	69.96
2358.2	70.45	2379.47	70.65	2385.16	70.71	2394.71	70.87	2405.93	71.07

2433.02	71.17	2449.26	71.56	2457.25	71.74	2466.83	71.66	2494.92	71.44
2512.08	71.93	2514.62	72.56	2523.68	79.04	2538.85	92.04	2545.46	98.14
2554.03	105.93	2559.41	110.87	2564.42	112.19	2564.78	112.23	2569.62	111.96

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	1644.56	.02	1773.04	.05	2132.78	.035	2466.83	.05

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
1915.14	2449.26	104.34	105.73	83.35	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
0	1234.45	75.25	F

CROSS SECTION OUTPUT Profile #Q50

E.G. Elev (ft)	75.76	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.33	Wt. n-Val.	0.034	0.040	0.045
W.S. Elev (ft)	75.43	Reach Len. (ft)	104.34	105.73	83.35
Crit W.S. (ft)	74.55	Flow Area (sq ft)	4048.87	2717.37	252.78
E.G. Slope (ft/ft)	0.002263	Area (sq ft)	4048.87	2717.37	252.78
Q Total (cfs)	31354.00	Flow (cfs)	16129.40	14289.87	934.73
Top Width (ft)	2295.75	Top Width (ft)	1692.26	534.12	69.37
Vel Total (ft/s)	4.47	Avg. Vel. (ft/s)	3.98	5.26	3.70
Max Chl Dpth (ft)	5.61	Hydr. Depth (ft)	2.39	5.09	3.64
Conv. Total (cfs)	659134.1	Conv. (cfs)	339077.6	300406.3	19650.2
Length Wtd. (ft)	104.88	Wetted Per. (ft)	1693.66	534.20	70.37
Min Ch El (ft)	69.82	Shear (lb/sq ft)	0.34	0.72	0.51
Alpha	1.06	Stream Power (lb/ft s)	1.35	3.78	1.88
Frctn Loss (ft)	0.44	Cum Volume (acre-ft)	581.71	1244.83	93.28
C & E Loss (ft)	0.12	Cum SA (acres)	197.84	178.77	25.90

Warning: Multiple water surfaces were found that could balance the energy equation. The program selected the water surface whose main channel velocity head was the closest to the previously computed cross section.
Warning: 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.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.

CROSS SECTION OUTPUT Profile #Q100

E.G. Elev (ft)	76.16	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.76	Wt. n-Val.	0.034	0.040	0.045
W.S. Elev (ft)	75.40	Reach Len. (ft)	104.34	105.73	83.35
Crit W.S. (ft)	75.25	Flow Area (sq ft)	4009.72	2705.01	251.18
E.G. Slope (ft/ft)	0.005271	Area (sq ft)	4009.72	2705.01	251.18
Q Total (cfs)	47312.00	Flow (cfs)	24254.31	21645.58	1412.11
Top Width (ft)	2295.39	Top Width (ft)	1691.94	534.12	69.34
Vel Total (ft/s)	6.79	Avg. Vel. (ft/s)	6.05	8.00	5.62
Max Chl Dpth (ft)	5.58	Hydr. Depth (ft)	2.37	5.06	3.62
Conv. Total (cfs)	651654.4	Conv. (cfs)	334068.1	298136.5	19449.8
Length Wtd. (ft)	104.68	Wetted Per. (ft)	1693.33	534.20	70.33
Min Ch El (ft)	69.82	Shear (lb/sq ft)	0.78	1.67	1.18
Alpha	1.06	Stream Power (lb/ft s)	4.71	13.33	6.61

Frctn Loss (ft)	0.48	Cum Volume (acre-ft)	1109.32	1568.24	141.73
C & E Loss (ft)	0.03	Cum SA (acres)	290.39	178.95	28.17

Warning: Divided flow computed for this cross-section.

CROSS SECTION OUTPUT Profile #Q100HC

E.G. Elev (ft)	79.13	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.56	Wt. n-Val.	0.034	0.040	0.045
W.S. Elev (ft)	77.57	Reach Len. (ft)	104.34	105.73	83.35
Crit W.S. (ft)	76.84	Flow Area (sq ft)	7706.59	3862.39	404.70
E.G. Slope (ft/ft)	0.006138	Area (sq ft)	7706.59	3862.39	404.70
Q Total (cfs)	118891.00	Flow (cfs)	73373.73	42253.71	3263.56
Top Width (ft)	2327.12	Top Width (ft)	1720.63	534.12	72.36
Vel Total (ft/s)	9.93	Avg. Vel. (ft/s)	9.52	10.94	8.06
Max Chl Dpth (ft)	7.75	Hydr. Depth (ft)	4.48	7.23	5.59
Conv. Total (cfs)	1517469.0	Conv. (cfs)	936507.9	539306.6	41654.6
Length Wtd. (ft)	104.55	Wetted Per. (ft)	1722.78	534.20	74.06
Min Ch El (ft)	69.82	Shear (lb/sq ft)	1.71	2.77	2.09
Alpha	1.02	Stream Power (lb/ft s)	16.32	30.31	16.89
Frctn Loss (ft)	0.61	Cum Volume (acre-ft)	4432.35	2696.08	352.66
C & E Loss (ft)	0.03	Cum SA (acres)	557.41	178.97	39.94

Warning: Divided flow computed for this cross-section.
Note: Hydraulic jump has occurred between this cross section and the previous upstream section.

CROSS SECTION

RIVER: San Mateo Creek
REACH: Lower RS: 13616.16

INPUT
Description:
Station Elevation Data num= 95

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	95.01	15.77	94.44	34.73	94.26	63.86	92.57	92.64	90.27
100.55	89.27	153.81	82.69	179.27	78.86	190.9	75.98	195.5	75.49
211.74	72.15	233.92	70.7	273.77	70.47	322.28	71.21	358.12	71.82
379.11	71.93	408.3	71.7	512.29	72.71	644.61	72.29	691.05	72.28
701.3	72.3	718.18	71.43	735.63	71.52	739.28	71.58	744.9	71.94
754.05	76.6	758.51	78.58	759.54	78.86	761.42	78.81	773.81	78.48
780.8	76.21	785.34	74.89	796.4	71.76	799.94	71.43	809.31	71.73
836.65	71.9	892.27	72.77	930.42	71.77	951.08	71.17	960.83	72.14
962.75	72.77	965.32	73.68	974.83	77.41	983.99	78.89	985.37	79.01
987.44	78.45	1007.92	72.09	1018.18	71.38	1024.04	70.97	1031.04	71.25
1064.23	72.32	1093.85	72.87	1325.6	74.67	1415.22	74.44	1710.54	72.44
1802.82	72.3	1856.63	72.22	1867.61	72.21	1911.84	72.2	1932.71	71.68
1938.19	71.56	2035.15	69.85	2233.34	69.59	2308.39	69.49	2349.11	69.38
2379.02	69.33	2402.86	69.42	2406.17	69.43	2410.53	69.46	2484.49	69.46
2507.8	69.32	2508.7	69.32	2511.82	69.3	2555.84	68.35	2573.55	67.23
2583.14	66.29	2586.46	65.96	2590.24	65.67	2601.22	66.68	2611.07	67.65
2616.44	68.56	2619.87	69.14	2626.5	69.81	2632.67	71.05	2636.99	71.41
2642.67	75.18	2647.19	77.16	2651.48	79.87	2657.93	82.83	2670.46	89.09
2672.78	90.02	2675.05	90.48	2682.44	91.86	2688.41	92.83	2690.77	92.84

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	1802.82	.02	1856.63	.05	2233.34	.035	2583.14	.05

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
2035.15	2626.5	106.9	107.52	109.59	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
0	1325.6	74.67	F

CROSS SECTION OUTPUT Profile #Q50

E.G. Elev (ft)	75.20	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.49	Wt. n-Val.	0.041	0.040	0.050
W.S. Elev (ft)	73.71	Reach Len. (ft)	106.90	107.52	109.59
Crit W.S. (ft)	73.67	Flow Area (sq ft)	742.05	2638.84	34.90
E.G. Slope (ft/ft)	0.010246	Area (sq ft)	2208.95	2638.84	34.90
Q Total (cfs)	31354.00	Flow (cfs)	3948.36	27219.53	186.11
Top Width (ft)	2036.02	Top Width (ft)	1430.71	591.35	13.95
Vel Total (ft/s)	9.18	Avg. Vel. (ft/s)	5.32	10.31	5.33
Max Chl Dpth (ft)	8.04	Hydr. Depth (ft)	1.45	4.46	2.50
Conv. Total (cfs)	309759.3	Conv. (cfs)	39007.5	268913.1	1838.7
Length Wtd. (ft)	107.47	Wetted Per. (ft)	511.75	591.72	14.78
Min Ch El (ft)	65.67	Shear (lb/sq ft)	0.93	2.85	1.51
Alpha	1.14	Stream Power (lb/ft s)	4.94	29.42	8.05
Frctn Loss (ft)	1.06	Cum Volume (acre-ft)	574.22	1238.33	93.00
C & E Loss (ft)	0.00	Cum SA (acres)	194.09	177.40	25.82

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 #Q100

E.G. Elev (ft)	75.66	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.66	Wt. n-Val.	0.036	0.040	0.050
W.S. Elev (ft)	75.00	Reach Len. (ft)	106.90	107.52	109.59
Crit W.S. (ft)	74.67	Flow Area (sq ft)	4312.30	3403.18	54.19
E.G. Slope (ft/ft)	0.003964	Area (sq ft)	4312.30	3403.18	54.19
Q Total (cfs)	47312.00	Flow (cfs)	21312.71	25780.73	218.56
Top Width (ft)	2380.59	Top Width (ft)	1773.35	591.35	15.90
Vel Total (ft/s)	6.09	Avg. Vel. (ft/s)	4.94	7.58	4.03
Max Chl Dpth (ft)	9.33	Hydr. Depth (ft)	2.43	5.75	3.41
Conv. Total (cfs)	751497.1	Conv. (cfs)	338528.1	409497.4	3471.6
Length Wtd. (ft)	107.27	Wetted Per. (ft)	1776.07	591.72	17.12
Min Ch El (ft)	65.67	Shear (lb/sq ft)	0.60	1.42	0.78
Alpha	1.14	Stream Power (lb/ft s)	2.97	10.78	3.16
Frctn Loss (ft)	0.35	Cum Volume (acre-ft)	1099.35	1560.82	141.44
C & E Loss (ft)	0.03	Cum SA (acres)	286.24	177.59	28.08

Warning: Divided flow computed for this cross-section.

CROSS SECTION OUTPUT Profile #Q100HC

E.G. Elev (ft)	78.48	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.45	Wt. n-Val.	0.036	0.040	0.050

W.S. Elev (ft)	77.03	Reach Len. (ft)	106.90	107.52	109.59
Crit W.S. (ft)	76.22	Flow Area (sq ft)	7953.78	4605.66	90.96
E.G. Slope (ft/ft)	0.005628	Area (sq ft)	7953.78	4605.66	90.96
Q Total (cfs)	118891.00	Flow (cfs)	67625.66	50743.91	521.44
Top Width (ft)	2418.88	Top Width (ft)	1807.13	591.35	20.40
Vel Total (ft/s)	9.40	Avg. Vel. (ft/s)	8.50	11.02	5.73
Max Chl Dpth (ft)	11.36	Hydr. Depth (ft)	4.40	7.79	4.46
Conv. Total (cfs)	1584739.0	Conv. (cfs)	901405.5	676383.0	6950.4
Length Wtd. (ft)	107.20	Wetted Per. (ft)	1811.53	591.72	22.06
Min Ch El (ft)	65.67	Shear (lb/sq ft)	1.54	2.73	1.45
Alpha	1.05	Stream Power (lb/ft s)	13.12	30.13	8.30
Frctn Loss (ft)	0.57	Cum Volume (acre-ft)	4413.59	2685.81	352.18
C & E Loss (ft)	0.02	Cum SA (acres)	553.18	177.61	39.86

Warning: Divided flow computed for this cross-section.

CROSS SECTION

RIVER: San Mateo Creek
REACH: Lower RS: 13508.64

INPUT
Description:
Station Elevation Data num= 94

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	95.93	6.15	95.74	39.53	94.35	48.72	93.72	57.1	93.23
61.06	92.91	102.02	87.74	144.07	82.09	151.59	80.64	183.13	72.99
191.78	72.16	219.64	71.5	309.54	71.01	345.07	71.21	367.65	71.29
390.58	71.28	406.84	71.27	434.82	71.44	551.03	72.59	620.01	72.37
644.98	72.37	682.43	72.43	702.81	71.38	733.3	70.57	747.67	72.03
751.7	72.27	758.23	74.87	764.6	78.09	768.46	78.01	771.97	78.54
784.2	75	787.54	74.12	793.22	72.44	797.34	72.18	807.98	71.31
818.25	71.47	880.41	73.38	887.53	73.6	888.24	73.61	889.6	73.63
892.76	73.54	965.48	72.45	965.75	72.53	965.99	72.51	968.67	72.49
995.54	72.67	1003.56	72.1	1013.47	72.22	1042.52	72.17	1074.98	72.23
1109.24	72.28	1361.45	74.15	1526.67	73.69	1601.26	73.18	1695.99	72.55
1840.1	72.33	1855.93	72.31	1895.86	71.9	1902.27	71.84	1949.95	71.15
2050.43	69.31	2211.81	69.03	2286.18	68.84	2378.95	68.61	2470.11	67.92
2476.62	67.9	2495.28	67.89	2521.95	67.89	2565.39	67.57	2592	67.38
2595.65	67.28	2633.78	66.25	2635.65	66.21	2648.62	65.95	2690.12	65.11
2695.5	64.82	2698.98	64.98	2703.66	65.79	2704.06	65.89	2707.19	67.92
2709.83	68.61	2714.56	69.27	2721.53	77.11	2725.47	80.07	2727.32	81.44
2743.62	92.08	2745.38	93.66	2753.46	95.9	2753.91	96.02	2756.1	95.99
2762.06	96.4	2768.15	96.75	2772.69	97.26	2788.03	98.13		

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	1840.1	.02	1895.86	.05	2286.18	.035	2648.62	.05

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
2050.43	2714.56	89.44	101.07	116.92	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
0	1344.3	74.03	F

CROSS SECTION OUTPUT Profile #Q50

E.G. Elev (ft)	74.13	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.51	Wt. n-Val.	0.047	0.040	0.050
W.S. Elev (ft)	72.62	Reach Len. (ft)	89.44	101.07	116.92
Crit W.S. (ft)	72.31	Flow Area (sq ft)	350.48	2968.94	4.99
E.G. Slope (ft/ft)	0.009586	Area (sq ft)	949.71	2968.94	4.99
Q Total (cfs)	31354.00	Flow (cfs)	1491.22	29847.18	15.60
Top Width (ft)	1853.94	Top Width (ft)	1186.83	664.13	2.98
Vel Total (ft/s)	9.43	Avg. Vel. (ft/s)	4.25	10.05	3.13
Max Chl Dpth (ft)	7.80	Hydr. Depth (ft)	0.96	4.47	1.68
Conv. Total (cfs)	320231.8	Conv. (cfs)	15230.5	304842.0	159.3
Length Wtd. (ft)	100.61	Wetted Per. (ft)	365.10	664.99	4.48
Min Ch El (ft)	64.82	Shear (lb/sq ft)	0.57	2.67	0.67
Alpha	1.09	Stream Power (lb/ft s)	2.44	26.86	2.08
Frctn Loss (ft)	1.04	Cum Volume (acre-ft)	570.34	1231.41	92.95
C & E Loss (ft)	0.00	Cum SA (acres)	190.88	175.85	25.80

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 #Q100

E.G. Elev (ft)	75.27	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.56	Wt. n-Val.	0.036	0.040	0.050
W.S. Elev (ft)	74.71	Reach Len. (ft)	89.44	101.07	116.92
Crit W.S. (ft)	73.67	Flow Area (sq ft)	4284.52	4358.11	13.17
E.G. Slope (ft/ft)	0.002792	Area (sq ft)	4284.52	4358.11	13.17
Q Total (cfs)	47312.00	Flow (cfs)	17172.31	30109.01	30.68
Top Width (ft)	2515.91	Top Width (ft)	1846.94	664.13	4.84
Vel Total (ft/s)	5.47	Avg. Vel. (ft/s)	4.01	6.91	2.33
Max Chl Dpth (ft)	9.89	Hydr. Depth (ft)	2.32	6.56	2.72
Conv. Total (cfs)	895463.0	Conv. (cfs)	325016.2	569866.1	580.7
Length Wtd. (ft)	98.58	Wetted Per. (ft)	1848.27	664.99	7.28
Min Ch El (ft)	64.82	Shear (lb/sq ft)	0.40	1.14	0.32
Alpha	1.21	Stream Power (lb/ft s)	1.62	7.89	0.73
Frctn Loss (ft)	0.48	Cum Volume (acre-ft)	1088.80	1551.25	141.36
C & E Loss (ft)	0.14	Cum SA (acres)	281.79	176.04	28.06

Warning: Multiple water surfaces were found that could balance the energy equation. The program selected the water surface whose main channel velocity head was the closest to the previously computed cross section.
Warning: 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.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.

CROSS SECTION OUTPUT Profile #Q100HC

E.G. Elev (ft)	77.89	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.38	Wt. n-Val.	0.036	0.040	0.050
W.S. Elev (ft)	76.51	Reach Len. (ft)	89.44	101.07	116.92
Crit W.S. (ft)	75.73	Flow Area (sq ft)	7615.08	5550.08	23.28

E.G. Slope (ft/ft)	0.005050	Area (sq ft)	7615.08	5550.08	23.28
Q Total (cfs)	118891.00	Flow (cfs)	58527.84	60274.91	88.25
Top Width (ft)	2534.84	Top Width (ft)	1864.28	664.13	6.43
Vel Total (ft/s)	9.01	Avg. Vel. (ft/s)	7.69	10.86	3.79
Max Chl Dpth (ft)	11.69	Hydr. Depth (ft)	4.08	8.36	3.62
Conv. Total (cfs)	1672979.0	Conv. (cfs)	823576.4	848160.4	1241.8
Length Wtd. (ft)	95.98	Wetted Per. (ft)	1866.49	664.99	9.68
Min Ch El (ft)	64.82	Shear (lb/sq ft)	1.29	2.63	0.76
Alpha	1.09	Stream Power (lb/ft s)	9.89	28.58	2.87
Frctn Loss (ft)	0.60	Cum Volume (acre-ft)	4394.49	2673.27	352.04
C & E Loss (ft)	0.06	Cum SA (acres)	548.68	176.06	39.82

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.

CROSS SECTION

RIVER: San Mateo Creek
REACH: Lower RS: 13407.57

INPUT
Description:
Station Elevation Data num= 102

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	93.74	32.24	92.16	48.91	91.54	96.09	91.22	132.82	88.08
135.54	87.82	143	86.85	199.43	80.26	217.47	77.85	235.12	77.02
266.7	74.58	307.28	73.54	354.35	71.71	426.96	71.72	442.42	71.73
541.67	71.67	661.47	72.39	675.58	71.63	720.26	71.82	776.8	71.61
792.98	71.38	821.25	70.68	833.25	71.91	836.38	72.21	841.38	74.43
847.53	77.21	850.49	78.05	854.1	78.73	857.18	78.53	858.14	78.17
862.77	76.45	874.36	72.62	878.13	71.98	898.24	72.21	914.78	71.96
944.91	72.55	968.16	72.78	1002.2	71.62	1010.49	71.55	1016.34	71.44
1030.06	71.98	1031.16	72.26	1038.7	76.22	1042.51	77.97	1044.65	78.33
1053.74	78.17	1057.48	77.42	1062.96	74.1	1063.58	74.06	1068.61	71.92
1073.4	71.83	1080.35	71.72	1093.47	71.7	1207.79	71.94	1316.02	72.13
1500.94	73.6	1596.95	73.38	1721.05	73.11	1791.98	72.64	1859.49	72.53
1982.05	71.27	2012.08	70.96	2018.47	70.89	2123.39	69.35	2151.1	69.03
2167.88	68.62	2176.54	68.64	2183.51	68.72	2402.48	68.13	2462.91	67.97
2598.65	66.92	2654.31	66.62	2660.1	66.58	2664.53	66.6	2669.76	66.57
2774.87	65.92	2805.76	65.72	2810.59	65.69	2822.92	65.19	2834.38	64.73
2847.11	64.24	2852.95	64.63	2857.46	64.93	2861.13	65.32	2863.19	66.92
2865.03	67.51	2867.43	69	2868.52	69.86	2876.62	75	2892.51	84.04
2893.72	84.35	2895.52	84.79	2903.25	85.49	2909.12	86.18	2920.53	86.33
2925.33	86.71	2930.06	87.59	2978.88	90.84	2991.07	91.7	2993.13	92.04
2995.16	92.28	3003.11	93.01						

Manning's n Values num= 6

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	1982.05	.02	2012.08	.05	2402.48	.035	2822.92	.035
2852.95	.05								

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
2151.1	2867.43	95.24	92.14	91.38	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
0	1488.61	73.57	F

E.G. Elev (ft)	77.23	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.95	Wt. n-Val.	0.036	0.041	0.050
W.S. Elev (ft)	75.28	Reach Len. (ft)	95.24	92.14	91.38
Crit W.S. (ft)	75.26	Flow Area (sq ft)	5750.52	5684.93	29.53
E.G. Slope (ft/ft)	0.007898	Area (sq ft)	5750.52	5684.93	29.53
Q Total (cfs)	118891.00	Flow (cfs)	45794.11	72951.04	145.85
Top Width (ft)	2572.32	Top Width (ft)	1846.31	716.33	9.68
Vel Total (ft/s)	10.37	Avg. Vel. (ft/s)	7.96	12.83	4.94
Max Chl Dpth (ft)	11.04	Hydr. Depth (ft)	3.11	7.94	3.05
Conv. Total (cfs)	1337793.0	Conv. (cfs)	515287.4	820864.3	1641.1
Length Wtd. (ft)	93.31	Wetted Per. (ft)	1849.25	717.48	11.55
Min Ch El (ft)	64.24	Shear (lb/sq ft)	1.53	3.91	1.26
Alpha	1.17	Stream Power (lb/ft s)	12.21	50.13	6.23
Frctn Loss (ft)	0.52	Cum Volume (acre-ft)	4380.77	2660.24	351.97
C & E Loss (ft)	0.19	Cum SA (acres)	544.87	174.46	39.80

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.
Note: Manning's n values were composited to a single value in the main channel.

CROSS SECTION

RIVER: San Mateo Creek
REACH: Lower RS: 13315.43

INPUT
Description:
Station Elevation Data num= 94

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	92.37	48.24	90.74	104.79	86.53	134.15	85.14	150.09	84.65
168.88	82.74	205.62	78.17	255.87	76.49	292.04	74.79	340.93	73.77
386.48	71.99	419.8	71.99	603.33	72	638.41	72.21	691.28	69.13
750.71	69.17	791.18	69.15	827.43	70.12	836.9	70.4	846.96	71.82
850.53	72.27	863.22	78.21	864.14	78.71	872.17	78.93	872.59	78.94
872.72	78.9	891.98	72.54	901.98	69.38	912.59	68.66	921	67.6
981.83	70.09	984.79	70.26	985.32	70.26	985.84	70.28	987.07	70.39
1056.81	71.86	1066.85	71.97	1110.41	71.71	1110.78	71.71	1169.07	71.38
1284.66	71.63	1471.9	71.96	1587.84	72.9	1786.7	72.46	1825.86	72.59
1894.49	71.61	2055.73	71.3	2055.96	71.3	2070.39	71.29	2072.43	71.34
2075.04	71.43	2086.88	71.49	2095.85	71.55	2107.2	71.35	2136.89	68.9
2182.4	67.51	2226.09	66.5	2303.2	66.75	2361.98	67.47	2484.16	67.2
2491.8	67.15	2570.4	66.58	2734.58	65.37	2759.22	65.24	2784.58	65.34
2887.37	65.73	2932.42	65.9	2934.69	65.89	2935.37	65.86	2936.1	65.86
2937.24	65.83	2940.25	65.8	2946.58	65.76	2978.7	65.35	2982.37	65.1
2984.8	65.77	2985.75	66.06	2985.88	66.6	2986.32	67.22	2990.16	69.62
2991.47	70.68	2993.36	72.26	2998.53	73.99	2999.61	74.31	3002.35	75.03
3036.03	79.84	3049.82	81.54	3061.08	82.33	3067.73	83.11	3078.3	85.15
3094.99	94.72	3103.97	99.78	3110.4	102.53	3114.75	104.55		

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	2055.73	.02	2086.88	.05	2491.8	.035	2990.16	.05

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
2182.4	2986.32	395.33	410.1 440.35	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
0	1559.49	73.08	F

CROSS SECTION OUTPUT Profile #Q50

E.G. Elev (ft)	72.28	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.87	Wt. n-Val.	0.050	0.038	0.036
W.S. Elev (ft)	71.41	Reach Len. (ft)	395.33	410.10	440.35
Crit W.S. (ft)	69.96	Flow Area (sq ft)	188.97	4066.61	13.44
E.G. Slope (ft/ft)	0.004322	Area (sq ft)	783.91	4066.61	13.44
Q Total (cfs)	31354.00	Flow (cfs)	636.81	30654.64	62.55
Top Width (ft)	1313.45	Top Width (ft)	503.51	803.92	6.02
Vel Total (ft/s)	7.34	Avg. Vel. (ft/s)	3.37	7.54	4.65
Max Chl Dpth (ft)	6.31	Hydr. Depth (ft)	1.23	5.06	2.23
Conv. Total (cfs)	476934.7	Conv. (cfs)	9686.6	466296.5	951.5
Length Wtd. (ft)	409.93	Wetted Per. (ft)	153.74	804.84	7.35
Min Ch El (ft)	65.10	Shear (lb/sq ft)	0.33	1.36	0.49
Alpha	1.03	Stream Power (lb/ft s)	1.12	10.28	2.30
Frctn Loss (ft)	2.16	Cum Volume (acre-ft)	567.96	1216.96	92.92
C & E Loss (ft)	0.01	Cum SA (acres)	188.57	172.64	25.78

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 #Q100

E.G. Elev (ft)	73.83	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.19	Wt. n-Val.	0.043	0.039	0.036
W.S. Elev (ft)	72.64	Reach Len. (ft)	395.33	410.10	440.35
Crit W.S. (ft)	71.07	Flow Area (sq ft)	579.14	5055.76	21.88
E.G. Slope (ft/ft)	0.004605	Area (sq ft)	2210.10	5055.76	21.88
Q Total (cfs)	47312.00	Flow (cfs)	2066.87	45124.01	121.12
Top Width (ft)	2434.03	Top Width (ft)	1621.94	803.92	8.17
Vel Total (ft/s)	8.36	Avg. Vel. (ft/s)	3.57	8.93	5.53
Max Chl Dpth (ft)	7.54	Hydr. Depth (ft)	1.22	6.29	2.68
Conv. Total (cfs)	697170.8	Conv. (cfs)	30456.6	664929.4	1784.8
Length Wtd. (ft)	409.68	Wetted Per. (ft)	476.68	804.84	9.87
Min Ch El (ft)	65.10	Shear (lb/sq ft)	0.35	1.81	0.64
Alpha	1.10	Stream Power (lb/ft s)	1.25	16.12	3.53
Frctn Loss (ft)	2.40	Cum Volume (acre-ft)	1079.09	1532.27	141.29
C & E Loss (ft)	0.03	Cum SA (acres)	275.23	172.83	28.03

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 #Q100HC

E.G. Elev (ft)	76.52	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.31	Wt. n-Val.	0.036	0.039	0.039
W.S. Elev (ft)	75.21	Reach Len. (ft)	395.33	410.10	440.35
Crit W.S. (ft)	74.33	Flow Area (sq ft)	6874.31	7124.85	53.33

E.G. Slope (ft/ft)	0.004087	Area (sq ft)	6874.31	7124.85	53.33
Q Total (cfs)	118891.00	Flow (cfs)	43958.27	74627.65	305.08
Top Width (ft)	2693.51	Top Width (ft)	1872.28	803.92	17.31
Vel Total (ft/s)	8.46	Avg. Vel. (ft/s)	6.39	10.47	5.72
Max Chl Dpth (ft)	10.11	Hydr. Depth (ft)	3.67	8.86	3.08
Conv. Total (cfs)	1859640.0	Conv. (cfs)	687575.7	1167293.0	4771.9
Length Wtd. (ft)	405.54	Wetted Per. (ft)	1874.45	804.84	19.38
Min Ch El (ft)	65.10	Shear (lb/sq ft)	0.94	2.26	0.70
Alpha	1.17	Stream Power (lb/ft s)	5.98	23.66	4.02
Frctn Loss (ft)	1.78	Cum Volume (acre-ft)	4366.97	2646.69	351.88
C & E Loss (ft)	0.02	Cum SA (acres)	540.80	172.85	39.77

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: San Mateo Creek
REACH: Lower RS: 12905.33

INPUT
Description:
Station Elevation Data num= 110

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	93.53	8.94	92.81	12.86	92.58	21.37	92.42	75	88.52
119.37	85.3	151.36	82.61	159.86	82.35	181.68	80.01	207.47	78.46
280.15	75.79	315.78	74.33	410.87	72.29	417.03	72.21	435.69	72.41
608.09	72.57	637.12	72.56	651.24	69.94	659.02	69.32	662.84	68.46
663.99	68.45	683.25	66.39	721.77	66.53	742.22	66.68	763.86	66.92
782.63	67.15	836.9	69.71	847.94	70.06	849.5	70.22	853.01	70.49
872.91	72.29	883.79	74.72	885.7	75.28	887.66	75.3	893.09	75.49
898.77	74.5	905.28	73.17	907.69	72.26	911.2	69.82	915.49	67.44
923.04	65.18	955.74	64.57	979.48	63.54	1012.57	63.44	1030.68	63.99
1044.9	64.94	1053.6	64.86	1056.58	66.16	1060.81	67.68	1064.12	69.1
1066.55	70.49	1080.18	72.59	1090.29	72.57	1115.14	72.39	1273.23	71.38
1303.49	71.21	1356.83	71.31	1654.83	71.73	1677.09	71.89	1708.19	71.8
1796.13	72.07	1876.91	71.75	2054.9	68.24	2073.05	67.89	2075.92	67.97
2108.71	68.74	2126.96	69.16	2168.26	71.06	2174.61	71.41	2188.21	72.17
2193.39	72.25	2200.37	71.13	2231.23	66.53	2249.65	65.34	2258.16	64.43
2273.46	64.7	2331.83	65.73	2333.6	65.73	2336.35	65.71	2337.46	65.72
2339.36	65.72	2356.36	65.72	2471.15	65.74	2716.21	65.8	2782.85	65.21
2915.49	65.84	2927.34	65.85	3009.56	65.93	3011.51	65.9	3038.99	65.39
3056.6	65.4	3099.89	65.82	3126.83	65.67	3127.2	65.67	3144.61	63.94
3169.67	62.49	3179.14	62.49	3215.34	62.47	3228.33	62.47	3242.92	63.84
3253.1	64.6	3255.64	65.06	3259.54	66.88	3266.26	72.71	3274.58	80.86
3276.1	82.12	3279.28	84.73	3283.12	85.74	3293.27	87.83	3294.87	88.3

Manning's n Values num= 7

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	2108.71	.02	2174.61	.05	2273.46	.035	2339.36	.05
2471.15	.035	3294.87	.05						

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
2231.23	3259.54	1161.81	1209.87 1227.39	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent

0 1677.09 71.89 F

CROSS SECTION OUTPUT Profile #Q50

			Left OB	Channel	Right OB
E.G. Elev (ft)	70.11	Element			
Vel Head (ft)	0.98	Wt. n-Val.	0.038	0.037	0.035
W.S. Elev (ft)	69.12	Reach Len. (ft)	1161.81	1209.87	1227.39
Crit W.S. (ft)	68.42	Flow Area (sq ft)	93.39	3895.81	2.90
E.G. Slope (ft/ft)	0.006555	Area (sq ft)	1105.74	3895.81	2.90
Q Total (cfs)	31354.00	Flow (cfs)	251.24	31093.83	8.93
Top Width (ft)	1479.86	Top Width (ft)	448.96	1028.31	2.59
Vel Total (ft/s)	7.85	Avg. Vel. (ft/s)	2.69	7.98	3.08
Max Chl Dpth (ft)	6.65	Hydr. Depth (ft)	0.70	3.79	1.12
Conv. Total (cfs)	387263.9	Conv. (cfs)	3103.2	384050.4	110.3
Length Wtd. (ft)	1201.21	Wetted Per. (ft)	132.90	1029.09	3.42
Min Ch El (ft)	62.47	Shear (lb/sq ft)	0.29	1.55	0.35
Alpha	1.03	Stream Power (lb/ft s)	0.77	12.36	1.07
Frctn Loss (ft)	6.45	Cum Volume (acre-ft)	559.39	1179.48	92.84
C & E Loss (ft)	0.04	Cum SA (acres)	184.25	164.02	25.74

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 #Q100

			Left OB	Channel	Right OB
E.G. Elev (ft)	71.40	Element			
Vel Head (ft)	1.48	Wt. n-Val.	0.035	0.037	0.035
W.S. Elev (ft)	69.92	Reach Len. (ft)	1161.81	1209.87	1227.39
Crit W.S. (ft)	69.44	Flow Area (sq ft)	224.92	4715.53	5.33
E.G. Slope (ft/ft)	0.007729	Area (sq ft)	1500.36	4715.53	5.33
Q Total (cfs)	47312.00	Flow (cfs)	936.43	46353.76	21.81
Top Width (ft)	1574.95	Top Width (ft)	543.13	1028.31	3.50
Vel Total (ft/s)	9.57	Avg. Vel. (ft/s)	4.16	9.83	4.09
Max Chl Dpth (ft)	7.45	Hydr. Depth (ft)	1.14	4.59	1.52
Conv. Total (cfs)	538171.9	Conv. (cfs)	10651.9	527272.0	248.1
Length Wtd. (ft)	1199.80	Wetted Per. (ft)	196.87	1029.09	4.64
Min Ch El (ft)	62.47	Shear (lb/sq ft)	0.55	2.21	0.55
Alpha	1.04	Stream Power (lb/ft s)	2.30	21.73	2.27
Frctn Loss (ft)	5.85	Cum Volume (acre-ft)	1062.25	1486.27	141.16
C & E Loss (ft)	0.16	Cum SA (acres)	265.41	164.20	27.97

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 #Q100HC

			Left OB	Channel	Right OB
E.G. Elev (ft)	74.72	Element			

Vel Head (ft)	1.53	Wt. n-Val.	0.034	0.037	0.035
W.S. Elev (ft)	73.19	Reach Len. (ft)	1161.81	1209.87	1227.39
Crit W.S. (ft)	71.97	Flow Area (sq ft)	5116.02	8079.37	22.95
E.G. Slope (ft/ft)	0.004707	Area (sq ft)	5116.02	8079.37	22.95
Q Total (cfs)	118891.00	Flow (cfs)	30248.97	88522.42	119.60
Top Width (ft)	2869.70	Top Width (ft)	1834.18	1028.31	7.21
Vel Total (ft/s)	8.99	Avg. Vel. (ft/s)	5.91	10.96	5.21
Max Chl Dpth (ft)	10.72	Hydr. Depth (ft)	2.79	7.86	3.18
Conv. Total (cfs)	1732970.0	Conv. (cfs)	440912.8	1290314.0	1743.3
Length Wtd. (ft)	1192.08	Wetted Per. (ft)	1838.80	1029.09	9.59
Min Ch El (ft)	62.47	Shear (lb/sq ft)	0.82	2.31	0.70
Alpha	1.22	Stream Power (lb/ft s)	4.83	25.28	3.67
Frctn Loss (ft)	4.16	Cum Volume (acre-ft)	4312.56	2575.12	351.50
C & E Loss (ft)	0.04	Cum SA (acres)	523.98	164.22	39.65

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: San Mateo Creek
REACH: Lower RS: 11695.46

INPUT
Description:
Station Elevation Data num= 133

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	95.11	2.21	94.93	11.41	94.03	52.62	92.7	58.81	91.73
65.23	91.41	72.89	90.05	86.67	86.23	88.14	86.09	97.43	84.97
121.79	83.73	160.94	82.22	328.18	73.68	350.27	72.95	408.73	72.21
415.23	72.17	436.65	72.47	525.46	73.46	562.85	72.83	599.83	72.15
614.25	72.57	622.39	72.84	629.02	73.05	638.53	72.27	640.65	71.88
647.32	70.35	660.58	66.72	682.58	66.02	699.46	64.71	709.54	64.54
727.57	64.5	806.68	63.44	845.64	63.6	849.21	63.83	859.29	65.14
862.56	65.28	865.03	65.87	872.11	69.92	875.55	71.91	876.48	72.06
887.24	73.47	895.63	73.53	905.91	72.8	907.95	72.42	920.58	66.82
921.58	66.36	924.05	66.02	931.15	64.9	937.02	64.55	998.42	64.3
1047.95	63.93	1065.11	64.38	1070.37	65.21	1071.26	65.35	1082.68	70.47
1085.37	71.75	1089.35	72.42	1090.51	72.55	1093.23	72.55	1133.54	72.47
1157.77	72.53	1232.93	70.28	1443.76	68.69	1454.46	68.64	1467.99	68.67
1695.89	69.45	1851.89	68.23	1915.31	67.36	2042.89	66.27	2091.23	65.66
2094.91	65.66	2129.83	65.66	2169.05	65.67	2173.4	65.82	2180.47	65.12
2190.07	64.96	2237.15	64.21	2255.6	64.35	2266.67	63.85	2274.22	63.53
2374.13	59.22	2374.24	59.22	2393.35	59.26	2444.07	59.27	2478.98	59.28
2566.64	59.3	2723.39	58.77	2760.87	58.64	2852.67	60.52	2864.18	60.43
2885	60.09	2902.24	60.48	2920.42	60.72	2925.76	61.47	2937.98	63.54
2946.64	64.77	2950.35	65.79	2957.34	65.48	2958.05	65.58	2961.9	63.54
2966.39	60.93	2967.8	60.23	2968.57	59.85	2973.41	58.75	2976.47	58.74
3168.63	59.02	3188.71	58.95	3203.49	58.98	3217.96	58.98	3229.93	58.98
3280.64	57.81	3282.03	57.71	3300.8	56.41	3331.69	54.08	3348.55	53.64
3360.83	53.78	3380.37	53.82	3388.07	53.92	3395.96	54.52	3421.59	56.41
3421.69	56.43	3435.66	58.75	3436.13	58.82	3445.06	60.33	3457.28	64.57
3460.12	65.78	3467.61	70.09	3468.42	70.58	3468.89	71.01	3469.2	71.21
3481.04	81.02	3487.44	84.61	3491.52	86.82				

Manning's n Values num= 9

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	2094.91	.02	2129.83	.05	2374.24	.035	2444.07	.05
2478.98	.035	2723.39	.05	2967.8	.035	3421.69	.05		

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
2967.8	3445.06	914.27	997.45 1009.86	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
0	1692.41	69.38	F

CROSS SECTION OUTPUT Profile #Q50

E.G. Elev (ft)	63.62	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.86	Wt. n-Val.	0.040	0.035	0.050
W.S. Elev (ft)	62.76	Reach Len. (ft)	914.27	997.45	1009.86
Crit W.S. (ft)	61.82	Flow Area (sq ft)	2021.10	2436.17	8.48
E.G. Slope (ft/ft)	0.004478	Area (sq ft)	2021.10	2436.17	8.48
Q Total (cfs)	31354.00	Flow (cfs)	11057.26	20278.28	18.46
Top Width (ft)	1129.98	Top Width (ft)	645.73	477.26	6.99
Vel Total (ft/s)	7.02	Avg. Vel. (ft/s)	5.47	8.32	2.18
Max Chl Dpth (ft)	9.12	Hydr. Depth (ft)	3.13	5.10	1.21
Conv. Total (cfs)	468541.5	Conv. (cfs)	165235.2	303030.3	275.9
Length Wtd. (ft)	979.83	Wetted Per. (ft)	646.66	478.05	7.40
Min Ch El (ft)	53.64	Shear (lb/sq ft)	0.87	1.42	0.32
Alpha	1.12	Stream Power (lb/ft s)	4.78	11.86	0.70
Frctn Loss (ft)	1.98	Cum Volume (acre-ft)	517.69	1091.55	92.68
C & E Loss (ft)	0.08	Cum SA (acres)	169.65	143.11	25.61

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

CROSS SECTION OUTPUT Profile #Q100

E.G. Elev (ft)	65.38	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.93	Wt. n-Val.	0.040	0.035	0.050
W.S. Elev (ft)	64.46	Reach Len. (ft)	914.27	997.45	1009.86
Crit W.S. (ft)	62.78	Flow Area (sq ft)	3169.42	3247.90	24.54
E.G. Slope (ft/ft)	0.003357	Area (sq ft)	3273.75	3247.90	24.54
Q Total (cfs)	47312.00	Flow (cfs)	18923.91	28322.16	65.93
Top Width (ft)	1448.38	Top Width (ft)	959.23	477.26	11.89
Vel Total (ft/s)	7.34	Avg. Vel. (ft/s)	5.97	8.72	2.69
Max Chl Dpth (ft)	10.82	Hydr. Depth (ft)	4.34	6.81	2.06
Conv. Total (cfs)	816624.8	Conv. (cfs)	326634.6	488852.3	1137.9
Length Wtd. (ft)	975.48	Wetted Per. (ft)	731.92	478.05	12.59
Min Ch El (ft)	53.64	Shear (lb/sq ft)	0.91	1.42	0.41
Alpha	1.11	Stream Power (lb/ft s)	5.42	12.42	1.10
Frctn Loss (ft)	2.14	Cum Volume (acre-ft)	998.58	1375.68	140.73
C & E Loss (ft)	0.02	Cum SA (acres)	245.37	143.29	27.75

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

CROSS SECTION OUTPUT Profile #Q100HC

			Left OB	Channel	Right OB
E.G. Elev (ft)	70.52	Element			
Vel Head (ft)	1.39	Wt. n-Val.	0.041	0.035	0.050
W.S. Elev (ft)	69.13	Reach Len. (ft)	914.27	997.45	1009.86
Crit W.S. (ft)	66.31	Flow Area (sq ft)	7719.35	5479.24	102.65
E.G. Slope (ft/ft)	0.002686	Area (sq ft)	9495.39	5479.24	102.65
Q Total (cfs)	118891.00	Flow (cfs)	57966.72	60492.48	431.80
Top Width (ft)	2330.43	Top Width (ft)	1832.29	477.26	20.89
Vel Total (ft/s)	8.94	Avg. Vel. (ft/s)	7.51	11.04	4.21
Max Chl Dpth (ft)	15.49	Hydr. Depth (ft)	6.27	11.48	4.92
Conv. Total (cfs)	2294114.0	Conv. (cfs)	1118523.0	1167259.0	8332.0
Length Wtd. (ft)	965.06	Wetted Per. (ft)	1233.27	478.05	22.74
Min Ch El (ft)	53.64	Shear (lb/sq ft)	1.05	1.92	0.76
Alpha	1.12	Stream Power (lb/ft s)	7.88	21.22	3.18
Frctn Loss (ft)	2.60	Cum Volume (acre-ft)	4117.70	2386.83	349.73
C & E Loss (ft)	0.04	Cum SA (acres)	475.09	143.31	39.25

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: San Mateo Creek
REACH: Lower RS: 10698.02

INPUT
Description:
Station Elevation Data num= 104

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	80.34	57.37	78.39	74.11	77.74	92.5	77.1	179.77	73.06
238.97	71.37	356.97	67.67	411.4	65.69	418.05	65.62	449.09	65.29
482.68	64.53	625.32	64.17	655.12	64.66	698.48	64.11	705.86	64.12
898.81	64.73	930.71	64.93	1098.97	65.16	1508.72	66.48	1674.25	65.58
1923.44	62.81	1927.88	62.76	2006.27	61.84	2163.88	60.05	2189.39	59.76
2232.57	59.75	2262.84	59.75	2370.22	59.31	2439.73	59.57	2452.6	58.9
2458.58	59.47	2468.44	59.57	2500.08	63.48	2501.18	63.58	2501.59	63.67
2502.18	63.75	2539.41	65.26	2539.8	65.28	2571.06	65.42	2608.71	65.43
2617.45	65.43	2620.22	65.63	2634.3	66.75	2640.32	66.11	2644.74	65.55
2646.51	65.33	2652.01	62.56	2658.27	59.11	2663.4	58.4	2704.38	57.28
2706.45	57.26	2713.43	57.34	2713.51	57.34	2751.57	56.15	2761.55	57.49
2820.29	56.76	2821.16	56.77	2821.36	56.76	2821.46	56.76	2822.06	56.73
2950.91	53.64	2988.21	52.69	2995.95	52.5	2997.88	52.45	3053.94	47.32
3082.65	46.23	3091.94	45.84	3115.03	45.13	3125.6	45.19	3131.48	45.22
3152.86	45.6	3185	48.25	3187.42	48.39	3191.44	48.63	3194.29	48.78
3194.5	48.79	3215.72	51.07	3229.66	52.46	3233.87	52.65	3243.96	52.44
3258.72	52.05	3266.03	52.52	3268.63	53.47	3273.17	55.75	3275.4	56.89
3283.07	60.66	3287.07	63.28	3289.07	64.63	3293.8	70.74	3295.07	72.23
3300.16	76.93	3301.52	77.95	3317.99	86.45	3328.07	92.21	3332.97	94.94

3350.99	102.48	3355.08	104.54	3357.74	104.9	3364.48	105.61	3373.08	105.69
3384.12	108.62	3401.84	110.76	3413.24	111.48	3434.72	114.28		

Manning's n Values num= 8

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	1923.44	.02	2163.88	.035	2232.57	.05	2644.74	.035
2713.43	.05	2988.21	.035	3194.29	.05				

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
2820.29	3275.4	601.47	594.45	599.46	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
0	1508.72	66.48	F

CROSS SECTION OUTPUT Profile #Q50

			Element	Left OB	Channel	Right OB
E.G. Elev (ft)	61.56		Wt. n-Val.	0.045	0.038	0.050
Vel Head (ft)	0.60		Reach Len. (ft)	601.47	594.45	599.46
W.S. Elev (ft)	60.97		Flow Area (sq ft)	1072.08	4545.91	16.88
Crit W.S. (ft)	56.13		Area (sq ft)	1072.08	4545.91	16.88
E.G. Slope (ft/ft)	0.001141		Flow (cfs)	2231.90	29096.54	25.56
Q Total (cfs)	31354.00		Top Width (ft)	561.88	455.11	8.14
Top Width (ft)	1025.13		Avg. Vel. (ft/s)	2.08	6.40	1.51
Vel Total (ft/s)	5.56		Hydr. Depth (ft)	1.91	9.99	2.07
Max Chl Dpth (ft)	15.84		Conv. (cfs)	66069.0	861321.7	756.7
Conv. Total (cfs)	928147.4		Wetted Per. (ft)	562.67	456.77	9.10
Length Wtd. (ft)	595.44		Shear (lb/sq ft)	0.14	0.71	0.13
Min Ch El (ft)	45.13		Stream Power (lb/ft s)	0.28	4.54	0.20
Alpha	1.24		Cum Volume (acre-ft)	485.23	1011.61	92.39
Frctn Loss (ft)	1.20		Cum SA (acres)	156.98	132.44	25.43
C & E Loss (ft)	0.03					

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

CROSS SECTION OUTPUT Profile #Q100

			Element	Left OB	Channel	Right OB
E.G. Elev (ft)	63.23		Wt. n-Val.	0.042	0.039	0.050
Vel Head (ft)	0.87		Reach Len. (ft)	601.47	594.45	599.46
W.S. Elev (ft)	62.36		Flow Area (sq ft)	1946.96	5178.27	29.65
Crit W.S. (ft)	58.15		Area (sq ft)	1946.96	5178.27	29.65
E.G. Slope (ft/ft)	0.001546		Flow (cfs)	6089.67	41157.69	64.64
Q Total (cfs)	47312.00		Top Width (ft)	696.52	455.11	10.26
Top Width (ft)	1161.89		Avg. Vel. (ft/s)	3.13	7.95	2.18
Vel Total (ft/s)	6.61		Hydr. Depth (ft)	2.80	11.38	2.89
Max Chl Dpth (ft)	17.23		Conv. (cfs)	154862.5	1046655.0	1643.9
Conv. Total (cfs)	1203161.0		Wetted Per. (ft)	697.76	456.77	11.64
Length Wtd. (ft)	596.14		Shear (lb/sq ft)	0.27	1.09	0.25
Min Ch El (ft)	45.13		Stream Power (lb/ft s)	0.84	8.70	0.54
Alpha	1.29		Cum Volume (acre-ft)	943.79	1279.21	140.11
Frctn Loss (ft)	1.37		Cum SA (acres)	228.00	132.62	27.50
C & E Loss (ft)	0.01					

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

CROSS SECTION OUTPUT Profile #Q100HC

E.G. Elev (ft)	67.88	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.83	Wt. n-Val.	0.036	0.039	0.050
W.S. Elev (ft)	66.04	Reach Len. (ft)	601.47	594.45	599.46
Crit W.S. (ft)	63.99	Flow Area (sq ft)	5289.68	6856.76	76.99
E.G. Slope (ft/ft)	0.002706	Area (sq ft)	6366.57	6856.76	76.99
Q Total (cfs)	118891.00	Flow (cfs)	34728.34	83843.43	319.23
Top Width (ft)	2657.19	Top Width (ft)	2187.32	455.11	14.76
Vel Total (ft/s)	9.73	Avg. Vel. (ft/s)	6.57	12.23	4.15
Max Chl Dpth (ft)	20.91	Hydr. Depth (ft)	4.35	15.07	5.21
Conv. Total (cfs)	2285550.0	Conv. (cfs)	667614.6	1611799.0	6136.8
Length Wtd. (ft)	597.38	Wetted Per. (ft)	1217.99	456.77	17.53
Min Ch El (ft)	45.13	Shear (lb/sq ft)	0.73	2.54	0.74
Alpha	1.25	Stream Power (lb/ft s)	4.82	31.01	3.08
Frctn Loss (ft)	1.95	Cum Volume (acre-ft)	3951.24	2245.59	347.65
C & E Loss (ft)	0.03	Cum SA (acres)	432.90	132.64	38.84

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: San Mateo Creek
REACH: Lower RS: 10103.57

INPUT
Description:
Station Elevation Data num= 82

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	67.34	130.33	65.81	195.26	65.09	221.36	64.83	248.87	64.13
336.13	62.4	510.97	58.61	523.87	59.15	555.28	59.35	902.03	63.9
947.08	64.18	1035.49	64.29	1427.38	62.94	1509.66	61.96	1635.36	61.06
1812.24	59.81	1855.93	59.55	1914.45	59.19	2093.27	58.16	2121.07	58.27
2263.61	58.85	2275.77	58.53	2319.92	57.15	2324.87	56.99	2334.86	57.08
2346.69	57.59	2380.02	58.42	2386.2	58.51	2393.6	58.6	2417.19	58.65
2452.49	58.56	2457.43	58.54	2471.42	58.41	2488.91	57.27	2527.02	56.51
2534.65	56.49	2538.38	56.56	2575.98	54.47	2587.15	53.99	2592.03	53.76
2597.8	53.19	2618.19	52.63	2620.91	52.55	2632.34	52.33	2654.67	51.29
2668.03	51.68	2694.8	52.62	2754.59	52.54	2808.44	52.52	2838.38	52.2
2848.01	52.42	2875.4	52.48	2919	51.9	2960	51.14	2966.18	51.23
3000.02	51.69	3010.18	51.92	3012.58	51.92	3018.26	51.9	3026.7	52.62
3027.81	52.58	3029.55	53.28	3031.73	54.53	3033.14	56.4	3035.24	58.56
3038.06	61.59	3040.77	64.63	3052.2	70.04	3054.13	71	3058.65	72.16
3062.92	73.23	3081.15	78.33	3115.32	80.62	3140.42	82.29	3142.37	82.42

3143.83	82.52	3145.71	82.6	3200.24	85.72	3277.48	89.45	3281.55	89.6
3297.95	90.61	3314.17	91.66						

Manning's n Values num= 8

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	1855.93	.02	2121.07	.05	2319.92	.02	2386.2	.05
2452.49	.02	2618.19	.05	3115.32	.035				

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
2597.8	3029.55	615.7	627.48	572.22	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
0	1035.49	64.29	F

CROSS SECTION OUTPUT Profile #Q50

E.G. Elev (ft)	60.33	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.91	Wt. n-Val.	0.022	0.047	0.050
W.S. Elev (ft)	59.41	Reach Len. (ft)	615.70	627.48	572.22
Crit W.S. (ft)	57.71	Flow Area (sq ft)	975.02	3126.02	21.97
E.G. Slope (ft/ft)	0.004510	Area (sq ft)	1002.03	3126.02	21.97
Q Total (cfs)	31354.00	Flow (cfs)	6545.19	24729.50	79.31
Top Width (ft)	1243.95	Top Width (ft)	805.71	431.75	6.48
Vel Total (ft/s)	7.60	Avg. Vel. (ft/s)	6.71	7.91	3.61
Max Chl Dpth (ft)	8.27	Hydr. Depth (ft)	1.35	7.24	3.39
Conv. Total (cfs)	466888.7	Conv. (cfs)	97463.7	368244.1	1180.9
Length Wtd. (ft)	623.78	Wetted Per. (ft)	719.78	432.00	9.03
Min Ch El (ft)	51.14	Shear (lb/sq ft)	0.38	2.04	0.68
Alpha	1.02	Stream Power (lb/ft s)	2.56	16.12	2.47
Frctn Loss (ft)	3.41	Cum Volume (acre-ft)	470.91	959.26	92.12
C & E Loss (ft)	0.06	Cum SA (acres)	147.53	126.38	25.33

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

CROSS SECTION OUTPUT Profile #Q100

E.G. Elev (ft)	61.85	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.98	Wt. n-Val.	0.024	0.047	0.050
W.S. Elev (ft)	60.87	Reach Len. (ft)	615.70	627.48	572.22
Crit W.S. (ft)	59.66	Flow Area (sq ft)	2185.82	3755.07	32.40
E.G. Slope (ft/ft)	0.003742	Area (sq ft)	2468.18	3755.07	32.40
Q Total (cfs)	47312.00	Flow (cfs)	16563.08	30628.03	120.89
Top Width (ft)	1639.50	Top Width (ft)	1199.91	431.75	7.84
Vel Total (ft/s)	7.92	Avg. Vel. (ft/s)	7.58	8.16	3.73
Max Chl Dpth (ft)	9.73	Hydr. Depth (ft)	2.34	8.70	4.13
Conv. Total (cfs)	773452.4	Conv. (cfs)	270771.8	500704.4	1976.2
Length Wtd. (ft)	622.29	Wetted Per. (ft)	935.74	432.00	11.02
Min Ch El (ft)	51.14	Shear (lb/sq ft)	0.55	2.03	0.69
Alpha	1.01	Stream Power (lb/ft s)	4.13	16.56	2.56
Frctn Loss (ft)	3.11	Cum Volume (acre-ft)	913.31	1218.25	139.68
C & E Loss (ft)	0.08	Cum SA (acres)	214.90	126.57	27.37

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

CROSS SECTION OUTPUT Profile #Q100HC

			Left OB	Channel	Right OB
E.G. Elev (ft)	65.89	Element			
Vel Head (ft)	1.73	Wt. n-Val.	0.026	0.047	0.050
W.S. Elev (ft)	64.16	Reach Len. (ft)	615.70	627.48	572.22
Crit W.S. (ft)	62.82	Flow Area (sq ft)	6043.06	5176.55	63.13
E.G. Slope (ft/ft)	0.004027	Area (sq ft)	7868.53	5176.55	63.13
Q Total (cfs)	118891.00	Flow (cfs)	64201.38	54385.36	304.27
Top Width (ft)	2664.38	Top Width (ft)	2221.82	431.75	10.80
Vel Total (ft/s)	10.54	Avg. Vel. (ft/s)	10.62	10.51	4.82
Max Chl Dpth (ft)	13.02	Hydr. Depth (ft)	3.96	11.99	5.84
Conv. Total (cfs)	1873482.0	Conv. (cfs)	1011684.0	857003.5	4794.7
Length Wtd. (ft)	619.88	Wetted Per. (ft)	1525.43	432.00	15.45
Min Ch El (ft)	51.14	Shear (lb/sq ft)	1.00	3.01	1.03
Alpha	1.00	Stream Power (lb/ft s)	10.58	31.65	4.95
Frctn Loss (ft)	2.97	Cum Volume (acre-ft)	3852.96	2163.48	346.68
C & E Loss (ft)	0.01	Cum SA (acres)	402.46	126.59	38.66

Warning: Multiple water surfaces were found that could balance the energy equation. The program selected the water surface whose main channel velocity head was the closest to the previously computed cross section.
Warning: 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: San Mateo Creek
REACH: Lower RS: 9476.099

INPUT
Description:
Station Elevation Data num= 62

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	68.47	61.01	65.67	61.94	65.64	62.56	65.62	191.76	65.28
280.56	64.56	503.79	60.62	569.49	59.38	581.88	59.13	596.07	59.13
609.58	59.19	1350.6	59.4	1492.58	59.09	1811.19	58.99	1915.94	58.67
2001.84	57.84	2179.62	57.61	2206.51	57.32	2301.51	55.49	2371.26	54.15
2453.33	52.57	2458	52.51	2469.05	52.45	2472.74	52.46	2483.67	52.57
2512.72	52.75	2715.36	53.39	2737.41	52.13	2759.94	50.84	2763.9	50.85
2793.27	48.06	2806.09	46.73	2811.55	46.28	2814.12	46.16	2816.12	46.07
2900.54	45.96	2946.77	45.95	2996.02	45.94	3020.52	45.94	3029.82	46.99
3036.84	48.06	3056.8	50.29	3069.71	50.99	3080.21	52.98	3081.9	53.29
3085.7	55.29	3104.93	65.39	3108.17	66.23	3123.12	71.35	3127.23	71.79
3140.84	73.68	3157.57	74.58	3173.3	75.2	3191.88	75.93	3263.73	79.05
3286.95	79.33	3327.83	80.76	3341.46	80.89	3355.65	81.15	3377.36	83.57

3433.65 86.54 3487.14 86.18

Manning's n Values num= 4

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	2301.51	.02	2371.26	.05	3173.3	.035

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
2793.27	3036.84	632.1	587.55 573.86	.1	.3

CROSS SECTION OUTPUT Profile #Q50

			Left OB	Channel	Right OB
E.G. Elev (ft)	56.87	Element			
Vel Head (ft)	1.48	Wt. n-Val.	0.049	0.050	0.050
W.S. Elev (ft)	55.38	Reach Len. (ft)	632.10	587.55	573.86
Crit W.S. (ft)		Flow Area (sq ft)	1179.29	2254.27	228.85
E.G. Slope (ft/ft)	0.006748	Area (sq ft)	1179.29	2254.27	228.85
Q Total (cfs)	31354.00	Flow (cfs)	5568.70	24243.48	1541.82
Top Width (ft)	778.87	Top Width (ft)	486.26	243.57	49.04
Vel Total (ft/s)	8.56	Avg. Vel. (ft/s)	4.72	10.75	6.74
Max Chl Dpth (ft)	9.44	Hydr. Depth (ft)	2.43	9.26	4.67
Conv. Total (cfs)	381686.2	Conv. (cfs)	67790.3	295126.7	18769.3
Length Wtd. (ft)	590.87	Wetted Per. (ft)	486.49	243.80	49.92
Min Ch El (ft)	45.94	Shear (lb/sq ft)	1.02	3.90	1.93
Alpha	1.30	Stream Power (lb/ft s)	4.82	41.89	13.01
Frctn Loss (ft)	3.02	Cum Volume (acre-ft)	455.49	920.51	90.47
C & E Loss (ft)	0.15	Cum SA (acres)	138.40	121.52	24.96

Warning: The energy loss was greater than 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 #Q100

			Left OB	Channel	Right OB
E.G. Elev (ft)	58.66	Element			
Vel Head (ft)	1.77	Wt. n-Val.	0.046	0.050	0.050
W.S. Elev (ft)	56.89	Reach Len. (ft)	632.10	587.55	573.86
Crit W.S. (ft)		Flow Area (sq ft)	1972.91	2622.13	305.08
E.G. Slope (ft/ft)	0.006997	Area (sq ft)	1972.91	2622.13	305.08
Q Total (cfs)	47312.00	Flow (cfs)	13121.17	31759.91	2430.92
Top Width (ft)	860.16	Top Width (ft)	564.68	243.57	51.92
Vel Total (ft/s)	9.66	Avg. Vel. (ft/s)	6.65	12.11	7.97
Max Chl Dpth (ft)	10.95	Hydr. Depth (ft)	3.49	10.77	5.88
Conv. Total (cfs)	565608.1	Conv. (cfs)	156861.7	379685.1	29061.3
Length Wtd. (ft)	593.66	Wetted Per. (ft)	564.93	243.80	53.16
Min Ch El (ft)	45.94	Shear (lb/sq ft)	1.53	4.70	2.51
Alpha	1.22	Stream Power (lb/ft s)	10.15	56.90	19.97
Frctn Loss (ft)	3.25	Cum Volume (acre-ft)	881.93	1172.32	137.46
C & E Loss (ft)	0.14	Cum SA (acres)	202.43	121.70	26.98

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 #Q100HC

			Left OB	Channel	Right OB
E.G. Elev (ft)	62.91	Element			
Vel Head (ft)	1.82	Wt. n-Val.	0.041	0.050	0.050
W.S. Elev (ft)	61.09	Reach Len. (ft)	632.10	587.55	573.86
Crit W.S. (ft)	60.79	Flow Area (sq ft)	8007.85	3644.24	539.70

E.G. Slope (ft/ft)	0.005805	Area (sq ft)	8007.85	3644.24	539.70
Q Total (cfs)	118891.00	Flow (cfs)	63661.64	50068.77	5160.58
Top Width (ft)	2619.64	Top Width (ft)	2316.16	243.57	59.90
Vel Total (ft/s)	9.75	Avg. Vel. (ft/s)	7.95	13.74	9.56
Max Chl Dpth (ft)	15.15	Hydr. Depth (ft)	3.46	14.96	9.01
Conv. Total (cfs)	1560484.0	Conv. (cfs)	835580.1	657169.2	67734.4
Length Wtd. (ft)	602.51	Wetted Per. (ft)	2316.44	243.80	62.19
Min Ch El (ft)	45.94	Shear (lb/sq ft)	1.25	5.42	3.14
Alpha	1.23	Stream Power (lb/ft s)	9.96	74.42	30.07
Frctn Loss (ft)	3.40	Cum Volume (acre-ft)	3740.76	2099.95	342.72
C & E Loss (ft)	0.04	Cum SA (acres)	370.39	121.72	38.20

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

RIVER: San Mateo Creek
REACH: Lower RS: 8888.551

INPUT
Description:
Station Elevation Data num= 64

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	80.35	.13	80.36	13.56	79.85	91.05	76.49	277.46	69.9
359.03	66.43	407.56	65.16	534.91	62.09	578.82	60.58	608.84	60.26
728.64	58.62	1086.65	56.94	1387.14	56.2	1640.07	55.84	1920.87	54.3
1950.03	53.95	1964.74	53.78	1996.69	53.68	2016.78	53.47	2121.09	52.31
2122.38	52.3	2169.63	52.39	2257.06	52.5	2287.36	52.52	2319.48	50.53
2333.25	48.89	2357.53	46.81	2410.42	45.84	2442.82	45.86	2463.2	45.86
2490.3	45.87	2581.97	45.73	2582.94	45.73	2682.65	45.56	2736.89	46
2740.31	46.02	2852.96	46.94	2879.31	47.47	2985.08	50.07	2992.5	50.31
3017.87	51.83	3031.05	52.58	3036.67	52.1	3038.71	51.96	3061.21	50.41
3076.83	50.19	3168.61	52.51	3177.53	52.88	3186.39	54.03	3208.61	57.19
3218.04	59.25	3233.68	64.84	3235.03	65.19	3272.77	74.95	3277.04	76.17
3283.12	78.11	3290.21	79.03	3293.84	79.59	3297.84	80.31	3318.47	82.17
3328.94	83.11	3385.03	85.12	3419.86	85.85	3421.11	85.92		

Manning's n Values num= 6

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	1950.03	.02	2121.09	.05	2463.2	.035	2736.89	.05
3318.47	.035								

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
2357.53	2852.96	583.69	598.13	621.47	.1 .3

CROSS SECTION OUTPUT Profile #Q50

E.G. Elev (ft)	53.70	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.99	Wt. n-Val.	0.049	0.040	0.050
W.S. Elev (ft)	52.71	Reach Len. (ft)	583.69	598.13	621.47
Crit W.S. (ft)		Flow Area (sq ft)	251.59	3330.38	829.51
E.G. Slope (ft/ft)	0.004004	Area (sq ft)	251.59	3330.38	829.51
Q Total (cfs)	31354.00	Flow (cfs)	481.08	27933.55	2939.37
Top Width (ft)	1088.32	Top Width (ft)	272.42	495.43	320.47
Vel Total (ft/s)	7.11	Avg. Vel. (ft/s)	1.91	8.39	3.54
Max Chl Dpth (ft)	7.15	Hydr. Depth (ft)	0.92	6.72	2.59

Conv. Total (cfs)	495491.6	Conv. (cfs)	7602.6	441437.8	46451.3
Length Wtd. (ft)	597.98	Wetted Per. (ft)	272.67	495.44	320.70
Min Ch El (ft)	45.56	Shear (lb/sq ft)	0.23	1.68	0.65
Alpha	1.27	Stream Power (lb/ft s)	0.44	14.09	2.29
Frctn Loss (ft)	3.78	Cum Volume (acre-ft)	445.11	882.85	83.50
C & E Loss (ft)	0.05	Cum SA (acres)	132.90	116.54	22.53

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.

CROSS SECTION OUTPUT Profile #Q100

E.G. Elev (ft)	55.27	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.29	Wt. n-Val.	0.043	0.040	0.050
W.S. Elev (ft)	53.98	Reach Len. (ft)	583.69	598.13	621.47
Crit W.S. (ft)	52.20	Flow Area (sq ft)	677.14	3960.67	1246.76
E.G. Slope (ft/ft)	0.004393	Area (sq ft)	677.14	3960.67	1246.76
Q Total (cfs)	47312.00	Flow (cfs)	2419.20	38975.77	5917.02
Top Width (ft)	1238.68	Top Width (ft)	410.19	495.43	333.06
Vel Total (ft/s)	8.04	Avg. Vel. (ft/s)	3.57	9.84	4.75
Max Chl Dpth (ft)	8.42	Hydr. Depth (ft)	1.65	7.99	3.74
Conv. Total (cfs)	713823.5	Conv. (cfs)	36499.9	588050.0	89273.6
Length Wtd. (ft)	598.24	Wetted Per. (ft)	410.45	495.44	333.36
Min Ch El (ft)	45.56	Shear (lb/sq ft)	0.45	2.19	1.03
Alpha	1.29	Stream Power (lb/ft s)	1.62	21.58	4.87
Frctn Loss (ft)	3.90	Cum Volume (acre-ft)	862.70	1127.92	127.24
C & E Loss (ft)	0.07	Cum SA (acres)	195.36	116.72	24.44

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

CROSS SECTION OUTPUT Profile #Q100HC

E.G. Elev (ft)	59.47	Element	Left OB	Channel	Right OB
Vel Head (ft)	2.22	Wt. n-Val.	0.035	0.040	0.050
W.S. Elev (ft)	57.25	Reach Len. (ft)	583.69	598.13	621.47
Crit W.S. (ft)		Flow Area (sq ft)	3237.26	5579.45	2372.65
E.G. Slope (ft/ft)	0.005499	Area (sq ft)	3237.26	5579.45	2372.65
Q Total (cfs)	118891.00	Flow (cfs)	23433.82	76954.90	18502.29
Top Width (ft)	2188.24	Top Width (ft)	1336.88	495.43	355.92
Vel Total (ft/s)	10.63	Avg. Vel. (ft/s)	7.24	13.79	7.80
Max Chl Dpth (ft)	11.69	Hydr. Depth (ft)	2.42	11.26	6.67
Conv. Total (cfs)	1603260.0	Conv. (cfs)	316007.9	1037746.0	249505.6
Length Wtd. (ft)	598.17	Wetted Per. (ft)	1337.15	495.44	356.45
Min Ch El (ft)	45.56	Shear (lb/sq ft)	0.83	3.87	2.29
Alpha	1.27	Stream Power (lb/ft s)	6.02	53.32	17.82
Frctn Loss (ft)	3.04	Cum Volume (acre-ft)	3659.17	2037.74	323.54
C & E Loss (ft)	0.01	Cum SA (acres)	343.89	116.74	35.46

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

CROSS SECTION

RIVER: San Mateo Creek
REACH: Lower RS: 8290.415

INPUT
Description:
Station Elevation Data num= 82

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	79.85	16.23	79.94	50.96	78.61	58.27	78.26	267.42	69.91
432.85	63.96	524.53	61.37	650.86	59.02	770.15	57.4	819.9	56.94
1162.11	54.1	1449.92	54.41	1662.02	54.01	1800.97	55.21	1858.71	55.33
1870.69	54.31	1883.34	53.23	1893.09	53	1896.58	52.37	1906	48.35
1909.55	47.31	1919.76	45.35	1922.53	45.03	1936.15	45.19	1964.88	45.32
2050.56	45.81	2087.83	46.02	2105.8	45.77	2142.88	45.61	2152.49	45.66
2190.09	45.04	2194.46	45.12	2227.79	45.74	2228.65	45.74	2230.72	45.77
2302.39	45.81	2500.84	45.93	2569.75	44.11	2626.16	42.43	2626.24	42.43
2658.69	42.32	2671.47	42.29	2672.93	42.32	2740.82	44	2770.06	44.76
2792.68	45.35	2809.63	45.63	2811.18	45.65	2816.82	45.75	2853.21	45.97
2905.56	46.07	2998.53	47.05	3063.33	47.23	3101.47	47.19	3172.75	50.53
3189.52	50.97	3218.09	51.57	3218.82	51.65	3219.13	51.72	3220.85	52.11
3225.81	52.88	3235.37	56.7	3238.75	58.13	3249.65	60.74	3261.17	64.7
3261.77	64.78	3266.83	65.64	3270.86	66.88	3288.17	72.13	3295.58	72.19
3300.09	73.2	3311.97	73.85	3319.71	74.16	3332.25	75.37	3345.66	76.26
3377.92	78.4	3402.5	79.29	3452.98	80.5	3473.27	81.31	3480.09	81.5
3487.84	81.88	3597.48	86.98						

Manning's n Values num= 8

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	1870.69	.02	2050.56	.05	2194.46	.035	2302.39	.05
2626.16	.035	2770.06	.05	3345.66	.035				

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
2087.83	2905.56	624.1	622.8 620.76	.1	.3

CROSS SECTION OUTPUT Profile #Q50

E.G. Elev (ft)	49.87	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.53	Wt. n-Val.	0.022	0.042	0.050
W.S. Elev (ft)	48.34	Reach Len. (ft)	624.10	622.80	620.76
Crit W.S. (ft)	48.34	Flow Area (sq ft)	491.04	2684.43	299.50
E.G. Slope (ft/ft)	0.011428	Area (sq ft)	491.04	2684.43	299.50
Q Total (cfs)	31354.00	Flow (cfs)	6790.93	23395.67	1167.39
Top Width (ft)	1219.87	Top Width (ft)	181.78	817.73	220.36
Vel Total (ft/s)	9.02	Avg. Vel. (ft/s)	13.83	8.72	3.90
Max Chl Dpth (ft)	6.05	Hydr. Depth (ft)	2.70	3.28	1.36
Conv. Total (cfs)	293293.4	Conv. (cfs)	63524.2	218849.2	10920.1
Length Wtd. (ft)	622.72	Wetted Per. (ft)	182.14	817.84	220.39
Min Ch El (ft)	42.29	Shear (lb/sq ft)	1.92	2.34	0.97
Alpha	1.21	Stream Power (lb/ft s)	26.60	20.41	3.78
Frctn Loss (ft)	3.32	Cum Volume (acre-ft)	440.13	841.55	75.45
C & E Loss (ft)	0.32	Cum SA (acres)	129.86	107.52	18.67

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

CROSS SECTION OUTPUT Profile #Q100

			Left OB	Channel	Right OB
E.G. Elev (ft)	51.30	Element			
Vel Head (ft)	2.00	Wt. n-Val.	0.022	0.042	0.050
W.S. Elev (ft)	49.30	Reach Len. (ft)	624.10	622.80	620.76
Crit W.S. (ft)	49.30	Flow Area (sq ft)	668.24	3476.55	522.97
E.G. Slope (ft/ft)	0.010679	Area (sq ft)	668.24	3476.55	522.97
Q Total (cfs)	47312.00	Flow (cfs)	10788.46	33832.25	2691.29
Top Width (ft)	1242.83	Top Width (ft)	184.07	817.73	241.03
Vel Total (ft/s)	10.14	Avg. Vel. (ft/s)	16.14	9.73	5.15
Max Chl Dpth (ft)	7.01	Hydr. Depth (ft)	3.63	4.25	2.17
Conv. Total (cfs)	457842.5	Conv. (cfs)	104400.9	327397.7	26043.8
Length Wtd. (ft)	622.70	Wetted Per. (ft)	184.62	817.84	241.09
Min Ch El (ft)	42.29	Shear (lb/sq ft)	2.41	2.83	1.45
Alpha	1.25	Stream Power (lb/ft s)	38.96	27.58	7.44
Frctn Loss (ft)	2.92	Cum Volume (acre-ft)	853.68	1076.86	114.62
C & E Loss (ft)	0.43	Cum SA (acres)	191.38	107.70	20.35

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 conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water 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 #Q100HC

			Left OB	Channel	Right OB
E.G. Elev (ft)	56.42	Element			
Vel Head (ft)	2.20	Wt. n-Val.	0.023	0.043	0.050
W.S. Elev (ft)	54.23	Reach Len. (ft)	624.10	622.80	620.76
Crit W.S. (ft)	54.23	Flow Area (sq ft)	1644.26	7501.72	1982.46
E.G. Slope (ft/ft)	0.004707	Area (sq ft)	1644.26	7501.72	1982.46
Q Total (cfs)	118891.00	Flow (cfs)	27695.56	77675.51	13519.93
Top Width (ft)	1630.43	Top Width (ft)	489.08	817.73	323.62
Vel Total (ft/s)	10.68	Avg. Vel. (ft/s)	16.84	10.35	6.82
Max Chl Dpth (ft)	11.94	Hydr. Depth (ft)	3.36	9.17	6.13
Conv. Total (cfs)	1732858.0	Conv. (cfs)	403667.8	1132135.0	197055.5
Length Wtd. (ft)	622.66	Wetted Per. (ft)	490.36	817.84	324.09
Min Ch El (ft)	42.29	Shear (lb/sq ft)	0.99	2.70	1.80
Alpha	1.24	Stream Power (lb/ft s)	16.60	27.91	12.26

Frctn Loss (ft)	2.39	Cum Volume (acre-ft)	3626.47	1947.93	292.47
C & E Loss (ft)	0.27	Cum SA (acres)	331.65	107.73	30.61

Warning: The energy equation could not be balanced within the specified number of iterations. The program selected the water surface that had the least amount of error between computed and assumed values.
Warning: Divided flow computed for this cross-section.
Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water 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: San Mateo Creek
REACH: Lower RS: 7667.615

INPUT
Description:
Station Elevation Data num= 102

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	73.94	29.83	73.49	70.61	72.31	76.47	72.08	177.17	68.44
257.15	64.74	375.32	61.78	508.97	59.22	625.85	55.8	727.73	54.12
829	52.98	931.72	52.51	1078.07	51.83	1324.06	51.93	1416.77	51.91
1777.42	52.44	1830.59	53.41	1874.61	52.29	1919.49	52.33	1985.09	51.85
2021.56	50.31	2042.49	49.5	2051.59	49.2	2077.77	48.32	2101.43	48.1
2118.34	46.93	2122.34	46.71	2127.32	46.43	2127.71	46.37	2129.16	45.91
2150.56	39.04	2153.31	38.71	2167.01	38.37	2189.83	37.72	2208.97	37.41
2232.38	37.85	2285.17	38.63	2299.2	38.82	2337.92	39.33	2434.8	39.66
2626.47	39.42	2642.31	39.41	2652.92	39.39	2723.67	39.31	2749.1	39.28
2760.55	39.28	2773.19	39.57	2789.59	39.96	2794.72	40.32	2809.9	44.41
2812.64	44.92	2815.64	45.74	2817.86	46.01	2818.48	45.97	2841.34	39.28
2841.81	39.07	2842.23	38.98	2872.15	38.81	2907.81	38.44	2935.48	38.12
2951.52	38.44	2974.57	37.97	2988.73	38.57	3005.42	38.94	3033.83	38.79
3059.77	39.07	3083.4	40.38	3099.38	39.38	3122.38	39.82	3124.41	39.74
3125.32	39.76	3127.3	39.8	3131.3	39.8	3170.36	39.21	3180.14	38.83
3204.98	39.18	3225.45	39.12	3226.2	39.21	3228.44	39.42	3265.11	44.66
3270.22	45.7	3281.89	47.55	3284.32	48.63	3295.56	51.82	3299.55	52.71
3306.94	56.42	3307.44	56.54	3307.56	56.57	3308.65	56.97	3328.65	63.22
3335.81	64.6	3342.12	65.89	3347.61	66.81	3360.37	69.05	3380.5	72.57
3388.42	73.07	3403.38	73.92	3412.24	74.76	3454.54	77.16	3487.97	77.95
3529.46	79.67	3537.23	80.04						

Manning's n Values num= 7

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	2051.59	.02	2122.34	.035	2299.2	.05	2652.92	.035
2723.67	.05	3360.37	.02						

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
2150.56	3005.42	556.83	550.63	551.5	.1	.3

CROSS SECTION OUTPUT Profile #Q50

E.G. Elev (ft)	44.91	Element	Left OB	Channel	Right OB

Vel Head (ft)	0.47	Wt. n-Val.	0.035	0.044	0.050
W.S. Elev (ft)	44.44	Reach Len. (ft)	556.83	550.63	551.50
Crit W.S. (ft)	42.16	Flow Area (sq ft)	45.34	4457.98	1229.87
E.G. Slope (ft/ft)	0.003073	Area (sq ft)	45.34	4457.98	1229.87
Q Total (cfs)	31354.00	Flow (cfs)	200.12	25423.30	5730.58
Top Width (ft)	1116.09	Top Width (ft)	16.81	841.17	258.12
Vel Total (ft/s)	5.47	Avg. Vel. (ft/s)	4.41	5.70	4.66
Max Chl Dpth (ft)	7.03	Hydr. Depth (ft)	2.70	5.30	4.76
Conv. Total (cfs)	565576.8	Conv. (cfs)	3609.9	458596.3	103370.6
Length Wtd. (ft)	550.76	Wetted Per. (ft)	17.65	842.61	258.58
Min Ch El (ft)	37.41	Shear (lb/sq ft)	0.49	1.02	0.91
Alpha	1.02	Stream Power (lb/ft s)	2.18	5.79	4.25
Frctn Loss (ft)	1.20	Cum Volume (acre-ft)	436.29	790.49	64.55
C & E Loss (ft)	0.03	Cum SA (acres)	128.43	95.66	15.26

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 #Q100

E.G. Elev (ft)	46.84	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.58	Wt. n-Val.	0.035	0.044	0.050
W.S. Elev (ft)	46.26	Reach Len. (ft)	556.83	550.63	551.50
Crit W.S. (ft)	43.10	Flow Area (sq ft)	81.27	6009.21	1710.96
E.G. Slope (ft/ft)	0.002622	Area (sq ft)	81.27	6009.21	1710.96
Q Total (cfs)	47312.00	Flow (cfs)	402.39	37970.49	8939.12
Top Width (ft)	1145.73	Top Width (ft)	22.51	854.86	268.35
Vel Total (ft/s)	6.06	Avg. Vel. (ft/s)	4.95	6.32	5.22
Max Chl Dpth (ft)	8.85	Hydr. Depth (ft)	3.61	7.03	6.38
Conv. Total (cfs)	923892.2	Conv. (cfs)	7857.7	741474.4	174560.0
Length Wtd. (ft)	550.77	Wetted Per. (ft)	23.64	856.69	268.98
Min Ch El (ft)	37.41	Shear (lb/sq ft)	0.56	1.15	1.04
Alpha	1.02	Stream Power (lb/ft s)	2.79	7.26	5.44
Frctn Loss (ft)	1.08	Cum Volume (acre-ft)	848.32	1009.05	98.70
C & E Loss (ft)	0.03	Cum SA (acres)	189.90	95.75	16.72

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

CROSS SECTION OUTPUT Profile #Q100HC

E.G. Elev (ft)	51.94	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.31	Wt. n-Val.	0.029	0.045	0.050
W.S. Elev (ft)	50.63	Reach Len. (ft)	556.83	550.63	551.50
Crit W.S. (ft)	46.40	Flow Area (sq ft)	404.74	9740.13	2925.55
E.G. Slope (ft/ft)	0.003180	Area (sq ft)	404.74	9740.13	2925.55
Q Total (cfs)	118891.00	Flow (cfs)	3142.35	92709.50	23039.15
Top Width (ft)	1277.32	Top Width (ft)	136.52	854.86	285.94
Vel Total (ft/s)	9.10	Avg. Vel. (ft/s)	7.76	9.52	7.88
Max Chl Dpth (ft)	13.22	Hydr. Depth (ft)	2.96	11.39	10.23
Conv. Total (cfs)	2108418.0	Conv. (cfs)	55726.6	1644114.0	408577.4
Length Wtd. (ft)	550.87	Wetted Per. (ft)	137.77	856.69	287.17
Min Ch El (ft)	37.41	Shear (lb/sq ft)	0.58	2.26	2.02
Alpha	1.02	Stream Power (lb/ft s)	4.53	21.48	15.93
Frctn Loss (ft)	1.63	Cum Volume (acre-ft)	3611.79	1824.68	257.50
C & E Loss (ft)	0.01	Cum SA (acres)	327.17	95.77	26.27

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: San Mateo Creek
REACH: Lower RS: 7116.984

INPUT
Description:
Station Elevation Data num= 67

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	72.96	117.54	71.06	288.52	63.65	337.8	62.28	450	59.02
535.24	56.66	661.84	52.95	791.61	52.24	962.44	51.42	1250.11	49.88
1607.77	48.32	1833.42	47.4	2081.58	48.29	2321.68	48.59	2414.49	49.01
2443.12	48.75	2452.3	48.51	2452.36	48.51	2463.84	48.22	2494.04	45.94
2494.69	45.89	2495.34	45.7	2512.82	40.39	2514.09	40.26	2527.76	38.82
2531.78	38.39	2561.5	37.77	2621.18	35.85	2654.9	34.51	2728	33.82
2788.9	34.67	2810.72	34.58	2828.79	34.5	2835.31	34.61	2852.52	35.21
2867.31	35.64	2898.33	36.53	2957.86	37.77	2959.46	37.8	3015.31	38.57
3019.63	38.63	3085.13	39.31	3195.17	39.47	3453.83	37.66	3485.15	38.02
3525.61	36.97	3530.18	36.84	3544.46	37.01	3552.2	37.52	3573.96	38.12
3581.72	39.88	3586.91	43.03	3590.77	44.9	3597.22	46.35	3607.98	47.7
3621.87	48.65	3625.51	48.9	3649.4	51.09	3662.71	53.03	3670.82	55.79
3679.78	59.08	3692.34	60.59	3722.18	64.8	3745.5	65.93	3759.57	66.65
3763.49	66.71	3772.78	67.07						

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	2452.3	.05	2527.76	.035	2867.31	.05	3621.87	.02

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
2531.78	3573.96	569.88	563.21	532.8	.1	.3

CROSS SECTION OUTPUT Profile #Q50

			Left OB	Channel	Right OB
E.G. Elev (ft)	43.68	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.38	Wt. n-Val.	0.045	0.041	0.050
W.S. Elev (ft)	43.30	Reach Len. (ft)	569.88	563.21	532.80
Crit W.S. (ft)		Flow Area (sq ft)	87.88	6232.56	42.97
E.G. Slope (ft/ft)	0.001633	Area (sq ft)	87.88	6232.56	42.97
Q Total (cfs)	31354.00	Flow (cfs)	253.35	30994.87	105.78
Top Width (ft)	1084.21	Top Width (ft)	28.53	1042.18	13.50
Vel Total (ft/s)	4.93	Avg. Vel. (ft/s)	2.88	4.97	2.46
Max Chl Dpth (ft)	9.48	Hydr. Depth (ft)	3.08	5.98	3.18
Conv. Total (cfs)	775974.5	Conv. (cfs)	6270.2	767086.5	2617.8
Length Wtd. (ft)	562.63	Wetted Per. (ft)	29.06	1042.36	14.64
Min Ch El (ft)	33.82	Shear (lb/sq ft)	0.31	0.61	0.30
Alpha	1.01	Stream Power (lb/ft s)	0.89	3.03	0.74
Frctn Loss (ft)	0.55	Cum Volume (acre-ft)	435.44	722.92	56.49
C & E Loss (ft)	0.04	Cum SA (acres)	128.14	83.76	13.54

Warning: The conveyance ratio (upstream 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 #Q100

			Left OB	Channel	Right OB
E.G. Elev (ft)	45.73	Element			
Vel Head (ft)	0.49	Wt. n-Val.	0.045	0.042	0.050
W.S. Elev (ft)	45.24	Reach Len. (ft)	569.88	563.21	532.80
Crit W.S. (ft)		Flow Area (sq ft)	149.71	8262.93	73.33
E.G. Slope (ft/ft)	0.001529	Area (sq ft)	149.71	8262.93	73.33
Q Total (cfs)	47312.00	Flow (cfs)	508.82	46599.79	203.39
Top Width (ft)	1095.46	Top Width (ft)	34.94	1042.18	18.34
Vel Total (ft/s)	5.58	Avg. Vel. (ft/s)	3.40	5.64	2.77
Max Chl Dpth (ft)	11.42	Hydr. Depth (ft)	4.28	7.93	4.00
Conv. Total (cfs)	1209852.0	Conv. (cfs)	13011.4	1191639.0	5200.9
Length Wtd. (ft)	562.55	Wetted Per. (ft)	35.77	1042.36	19.89
Min Ch El (ft)	33.82	Shear (lb/sq ft)	0.40	0.76	0.35
Alpha	1.01	Stream Power (lb/ft s)	1.36	4.27	0.98
Frctn Loss (ft)	0.60	Cum Volume (acre-ft)	846.84	918.85	87.40
C & E Loss (ft)	0.03	Cum SA (acres)	189.53	83.76	14.90

CROSS SECTION OUTPUT Profile #Q100HC

			Left OB	Channel	Right OB
E.G. Elev (ft)	50.30	Element			
Vel Head (ft)	1.37	Wt. n-Val.	0.041	0.042	0.050
W.S. Elev (ft)	48.93	Reach Len. (ft)	569.88	563.21	532.80
Crit W.S. (ft)		Flow Area (sq ft)	1037.56	12103.05	187.85
E.G. Slope (ft/ft)	0.002761	Area (sq ft)	1037.56	12103.05	187.85
Q Total (cfs)	118891.00	Flow (cfs)	2902.93	115279.20	708.85
Top Width (ft)	2130.99	Top Width (ft)	1036.94	1042.18	51.87
Vel Total (ft/s)	8.92	Avg. Vel. (ft/s)	2.80	9.52	3.77
Max Chl Dpth (ft)	15.11	Hydr. Depth (ft)	1.00	11.61	3.62
Conv. Total (cfs)	2262590.0	Conv. (cfs)	55245.0	2193855.0	13490.0
Length Wtd. (ft)	562.84	Wetted Per. (ft)	1037.97	1042.36	53.66
Min Ch El (ft)	33.82	Shear (lb/sq ft)	0.17	2.00	0.60
Alpha	1.11	Stream Power (lb/ft s)	0.48	19.06	2.28
Frctn Loss (ft)	1.29	Cum Volume (acre-ft)	3602.57	1686.62	237.79
C & E Loss (ft)	0.07	Cum SA (acres)	319.67	83.78	24.13

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: San Mateo Creek
REACH: Lower RS: 6553.777

INPUT
Description:
Station Elevation Data num= 67

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	74.74	2.14	74.75	71.35	71.83	245.13	68.96	477.05	58.84
674.44	52.54	788.4	50.77	924.42	48.76	950.91	48.27	1364.63	47.14
1459.47	47.19	1536.34	46.96	1986.82	45.12	2284.68	45.81	2580.32	45.84
2705.18	45.5	2780.9	45.57	2898.39	45.74	2933.39	45.79	2954.52	46.14
2965.63	46.2	2983.47	46.27	3044.72	46.59	3083.22	46.8	3088.15	46.11
3088.84	46.06	3095.34	45.61	3097.99	44.61	3109.84	39.3	3123.82	38.62
3174.27	35.12	3228.69	34.06	3262.1	33.43	3265.35	33.36	3285.04	32.93

3375.66	32.93	3397.73	32.94	3421.43	32.94	3525.69	32.87	3562.15	32.84
3618.36	32.62	3702.27	32.28	3702.89	32.28	3754.12	32.22	3790.01	32.21
3843.61	33.65	3893.13	35.16	3936.47	36.23	3958.66	37.28	3976.05	38.1
3981.88	39.71	3984.69	40.21	3988.93	41.96	3996.9	46.49	4015.5	47.51
4037.36	48.71	4046.22	49.32	4054.55	49.56	4064.65	49.89	4126.52	51.65
4134.54	51.66	4206.32	52.02	4251.39	52.86	4267.36	54.31	4312.4	56.73
4372.53	59.52	4412.63	61.01						

Manning's n Values num= 7

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	3044.72	.02	3088.84	.035	3265.35	.05	3397.73	.035
3618.36	.05	4015.5	.02						

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
3174.27	3893.13	469.22	407.1 351.14	.1	.3

CROSS SECTION OUTPUT Profile #Q50

			Left OB	Channel	Right OB
E.G. Elev (ft)	43.09	Element			
Vel Head (ft)	0.25	Wt. n-Val.	0.035	0.042	0.050
W.S. Elev (ft)	42.84	Reach Len. (ft)	469.22	407.10	351.14
Crit W.S. (ft)		Flow Area (sq ft)	369.55	7046.30	573.59
E.G. Slope (ft/ft)	0.000646	Area (sq ft)	369.55	7046.30	573.59
Q Total (cfs)	31354.00	Flow (cfs)	1173.12	28776.27	1404.61
Top Width (ft)	888.55	Top Width (ft)	72.33	718.86	97.35
Vel Total (ft/s)	3.92	Avg. Vel. (ft/s)	3.17	4.08	2.45
Max Chl Dpth (ft)	10.63	Hydr. Depth (ft)	5.11	9.80	5.89
Conv. Total (cfs)	1233684.0	Conv. (cfs)	46158.6	1132258.0	55267.0
Length Wtd. (ft)	411.05	Wetted Per. (ft)	73.23	718.93	98.25
Min Ch El (ft)	32.21	Shear (lb/sq ft)	0.20	0.40	0.24
Alpha	1.04	Stream Power (lb/ft s)	0.65	1.61	0.58
Frctn Loss (ft)	0.34	Cum Volume (acre-ft)	432.45	637.08	52.72
C & E Loss (ft)	0.03	Cum SA (acres)	127.48	72.37	12.87

CROSS SECTION OUTPUT Profile #Q100

			Left OB	Channel	Right OB
E.G. Elev (ft)	45.10	Element			
Vel Head (ft)	0.38	Wt. n-Val.	0.035	0.042	0.050
W.S. Elev (ft)	44.71	Reach Len. (ft)	469.22	407.10	351.14
Crit W.S. (ft)		Flow Area (sq ft)	508.81	8391.49	758.84
E.G. Slope (ft/ft)	0.000796	Area (sq ft)	508.81	8391.49	758.84
Q Total (cfs)	47312.00	Flow (cfs)	2130.21	42758.04	2423.74
Top Width (ft)	896.06	Top Width (ft)	76.55	718.86	100.64
Vel Total (ft/s)	4.90	Avg. Vel. (ft/s)	4.19	5.10	3.19
Max Chl Dpth (ft)	12.50	Hydr. Depth (ft)	6.65	11.67	7.54
Conv. Total (cfs)	1677198.0	Conv. (cfs)	75515.5	1515762.0	85921.1
Length Wtd. (ft)	412.76	Wetted Per. (ft)	77.85	718.93	102.04
Min Ch El (ft)	32.21	Shear (lb/sq ft)	0.32	0.58	0.37
Alpha	1.03	Stream Power (lb/ft s)	1.36	2.95	1.18
Frctn Loss (ft)	0.41	Cum Volume (acre-ft)	842.53	811.18	82.31
C & E Loss (ft)	0.03	Cum SA (acres)	188.80	72.37	14.18

CROSS SECTION OUTPUT Profile #Q100HC

			Left OB	Channel	Right OB
E.G. Elev (ft)	48.95	Element			
Vel Head (ft)	1.15	Wt. n-Val.	0.035	0.042	0.050
W.S. Elev (ft)	47.80	Reach Len. (ft)	469.22	407.10	351.14

Crit W.S. (ft)		Flow Area (sq ft)	4004.78	10608.02	1091.59
E.G. Slope (ft/ft)	0.001922	Area (sq ft)	4004.78	10608.02	1091.59
Q Total (cfs)	118891.00	Flow (cfs)	14564.48	98277.74	6048.78
Top Width (ft)	2896.47	Top Width (ft)	2050.02	718.86	127.59
Vel Total (ft/s)	7.57	Avg. Vel. (ft/s)	3.64	9.26	5.54
Max Chl Dpth (ft)	15.59	Hydr. Depth (ft)	1.95	14.76	8.56
Conv. Total (cfs)	2711845.0	Conv. (cfs)	332208.6	2241667.0	137969.7
Length Wtd. (ft)	418.34	Wetted Per. (ft)	2051.55	718.93	129.49
Min Ch El (ft)	32.21	Shear (lb/sq ft)	0.23	1.77	1.01
Alpha	1.29	Stream Power (lb/ft s)	0.85	16.40	5.61
Frctn Loss (ft)	1.10	Cum Volume (acre-ft)	3569.59	1539.80	229.97
C & E Loss (ft)	0.10	Cum SA (acres)	299.48	72.39	23.03

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

CROSS SECTION

RIVER: San Mateo Creek
REACH: Lower RS: 6146.684

INPUT
Description: Updated Manning's N Distribution
Station Elevation Data num= 103

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	67.37	73.94	66.21	281.44	57.36	460.67	51.79	738.33	47.62
855.23	45.95	861.94	45.96	868.72	46.34	870.48	46.57	874.41	47.48
877.58	47.8	1199.64	43.91	1346.56	44.45	1370.86	44.24	1861.14	42.72
2188.85	43.37	2366.94	44.17	2690.87	44.97	2791.78	45.17	3014.8	44
3126.98	43.15	3162.65	43.05	3198.36	44.59	3219.78	45.27	3234.4	45.58
3264.38	46.22	3293.7	46.07	3311.26	45.57	3325.14	44.79	3336.98	45.06
3352.36	44.4	3373.25	41.02	3374.86	40.77	3376.23	40.49	3378.86	40.35
3381.42	40.08	3382.13	40	3389.66	39.28	3392.69	39.13	3459.2	37.82
3511.56	38.17	3523.07	37.98	3543.15	37.83	3556.05	37.64	3582.52	38.33
3598.62	37.92	3619.82	37.63	3647.76	34.53	3675.46	34.13	3697.23	33.81
3737.97	33.37	3763.67	32.92	3774.27	32.73	3822.48	32.67	3935.19	32.53
3971.58	32.48	4054.03	32.69	4068.32	32.4	4093.99	31.89	4104.15	31.6
4116.51	32.69	4120.1	33.01	4123.97	33.1	4129.79	35.14	4132.13	35.87
4138.29	39.7	4144.43	43.03	4146.87	45.14	4148.3	45.76	4151.89	46.4
4166.22	45.73	4180.9	45.16	4194.78	45.7	4208.68	46.3	4216.59	46.99
4260.17	46.68	4294.45	46.79	4329.78	48.38	4379.38	48.63	4549.26	47.05
4587.08	47.84	4621.53	48.99	4653.62	51.46	4687.91	52.76	4704.58	52.97
4713.51	53.08	4745.95	53.64	4767.84	55.71	4780.44	57.46	4785.49	58.45
4789.67	59.19	4799.79	63.62	4801.91	64.59	4806.18	65.99	4822.81	71.26
4842.1	78.88	4843.16	79.37	4853.9	85.67	4862.42	89.5	4873.75	93.65
4887.25	97.07	4894.23	98.15	4900.61	98.79				

Manning's n Values num= 7

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	3234.4	.02	3381.42	.035	3675.46	.05	3822.48	.035
4116.51	.02	4704.58	.05						

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

3647.76 4129.79 280.12 247.83 242.98 .1 .3

CROSS SECTION OUTPUT Profile #Q50

E.G. Elev (ft)	42.72	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.50	Wt. n-Val.	0.035	0.038	0.020
W.S. Elev (ft)	42.22	Reach Len. (ft)	280.12	247.83	242.98
Crit W.S. (ft)		Flow Area (sq ft)	1155.31	4518.21	48.90
E.G. Slope (ft/ft)	0.001130	Area (sq ft)	1155.31	4518.21	48.90
Q Total (cfs)	31354.00	Flow (cfs)	4317.84	26767.55	268.61
Top Width (ft)	777.11	Top Width (ft)	281.93	482.03	13.15
Vel Total (ft/s)	5.48	Avg. Vel. (ft/s)	3.74	5.92	5.49
Max Chl Dpth (ft)	10.62	Hydr. Depth (ft)	4.10	9.37	3.72
Conv. Total (cfs)	932649.6	Conv. (cfs)	128437.5	796222.1	7989.9
Length Wtd. (ft)	254.24	Wetted Per. (ft)	282.34	482.47	14.99
Min Ch El (ft)	31.60	Shear (lb/sq ft)	0.29	0.66	0.23
Alpha	1.07	Stream Power (lb/ft s)	1.08	3.91	1.26
Frctn Loss (ft)	0.54	Cum Volume (acre-ft)	424.23	583.04	50.21
C & E Loss (ft)	0.12	Cum SA (acres)	125.58	66.76	12.42

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

CROSS SECTION OUTPUT Profile #Q100

E.G. Elev (ft)	44.66	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.66	Wt. n-Val.	0.035	0.038	0.020
W.S. Elev (ft)	44.00	Reach Len. (ft)	280.12	247.83	242.98
Crit W.S. (ft)		Flow Area (sq ft)	2386.55	5378.20	74.96
E.G. Slope (ft/ft)	0.001256	Area (sq ft)	2386.55	5378.20	74.96
Q Total (cfs)	47312.00	Flow (cfs)	9128.19	37676.34	507.47
Top Width (ft)	1878.89	Top Width (ft)	1381.10	482.03	15.77
Vel Total (ft/s)	6.03	Avg. Vel. (ft/s)	3.82	7.01	6.77
Max Chl Dpth (ft)	12.40	Hydr. Depth (ft)	1.73	11.16	4.75
Conv. Total (cfs)	1335189.0	Conv. (cfs)	257606.1	1063262.0	14321.2
Length Wtd. (ft)	256.08	Wetted Per. (ft)	1381.68	482.47	18.18
Min Ch El (ft)	31.60	Shear (lb/sq ft)	0.14	0.87	0.32
Alpha	1.16	Stream Power (lb/ft s)	0.52	6.12	2.19
Frctn Loss (ft)	0.62	Cum Volume (acre-ft)	826.94	746.83	78.95
C & E Loss (ft)	0.17	Cum SA (acres)	180.95	66.76	13.71

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.

CROSS SECTION OUTPUT Profile #Q100HC

E.G. Elev (ft)	47.75	Element	Left OB	Channel	Right OB
Vel Head (ft)	2.12	Wt. n-Val.	0.035	0.038	0.020
W.S. Elev (ft)	45.62	Reach Len. (ft)	280.12	247.83	242.98
Crit W.S. (ft)	45.62	Flow Area (sq ft)	5795.90	6158.48	107.67
E.G. Slope (ft/ft)	0.003830	Area (sq ft)	5795.90	6158.48	107.67
Q Total (cfs)	118891.00	Flow (cfs)	35123.38	82415.43	1352.19

Top Width (ft)	3041.16	Top Width (ft)	2517.07	482.03	42.06
Vel Total (ft/s)	9.86	Avg. Vel. (ft/s)	6.06	13.38	12.56
Max Chl Dpth (ft)	14.02	Hydr. Depth (ft)	2.30	12.78	2.56
Conv. Total (cfs)	1920985.0	Conv. (cfs)	567507.1	1331630.0	21848.0
Length Wtd. (ft)	263.27	Wetted Per. (ft)	2517.77	482.47	45.01
Min Ch El (ft)	31.60	Shear (lb/sq ft)	0.55	3.05	0.57
Alpha	1.41	Stream Power (lb/ft s)	3.34	40.85	7.18
Frctn Loss (ft)	0.87	Cum Volume (acre-ft)	3516.80	1461.45	225.13
C & E Loss (ft)	0.28	Cum SA (acres)	274.88	66.78	22.35

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

CROSS SECTION

RIVER: San Mateo Creek
REACH: Lower RS: 5898.852

INPUT
Description:
Station Elevation Data num= 74

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	54.42	396.05	39.79	449.33	39.53	867.45	38.96	942.47	39.42
989.29	39.63	1658.74	42.41	1811.89	43.06	1875.95	43.27	1936.43	43.22
2199.24	42.45	2223.83	42.43	2260.33	42.11	2350.7	41.33	2368.57	40.51
2411.02	39.43	2416.88	39.28	2440.34	38.62	2459.04	37.97	2483.51	36.28
2552.4	35.84	2599.38	35.77	2601.8	35.77	2623.6	36.48	2693.25	38.42
2708.23	39.35	2721.65	39.19	2770.51	39.18	2797.98	37.64	2825.42	35.79
2833.18	35.27	2850.05	34	2860.92	33.08	2878.16	32.82	2881.96	32.76
2902.98	32.59	2999.9	33.11	3010.01	33.14	3053.25	33.3	3054.55	33.36
3060.75	33.64	3081.03	33.05	3111.07	32.4	3111.88	32.64	3115.25	33.33
3115.74	34	3117.54	35.18	3121.34	38.21	3123.17	38.79	3124.81	39.53
3149.5	42.03	3167.05	44.51	3193.07	45.12	3215.98	46.56	3231.87	46.9
3239.81	46.81	3275.55	46.42	3380.58	45.16	3414.31	45.06	3455.06	45.29
3491.3	46.01	3541.73	46.23	3605.7	48.37	3616.53	48.72	3618.08	48.77
3623.65	49.17	3648.73	51.18	3665.08	52.51	3683.68	57.4	3689.53	58.85
3701.64	60.59	3718.68	62.87	3744.57	66.56	3767.22	69.82		

Manning's n Values num= 7

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	2260.33	.02	2411.02	.035	2599.38	.05	2825.42	.035
3239.81	.02	3616.53	.05						

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
2850.05	3115.74	604.78	585.72	573.19	.1 .3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
0	1875.95	43.27	F

CROSS SECTION OUTPUT Profile #Q50

E.G. Elev (ft)	42.05	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.75	Wt. n-Val.	0.039	0.035	0.035
W.S. Elev (ft)	40.30	Reach Len. (ft)	604.78	585.72	573.19
Crit W.S. (ft)	39.98	Flow Area (sq ft)	1345.62	1945.02	32.15
E.G. Slope (ft/ft)	0.005477	Area (sq ft)	2001.59	1945.02	32.15
Q Total (cfs)	31354.00	Flow (cfs)	8197.46	23010.14	146.40
Top Width (ft)	1525.47	Top Width (ft)	1243.06	265.69	16.72
Vel Total (ft/s)	9.44	Avg. Vel. (ft/s)	6.09	11.83	4.55
Max Chl Dpth (ft)	7.90	Hydr. Depth (ft)	2.84	7.32	1.92
Conv. Total (cfs)	423676.0	Conv. (cfs)	110769.5	310928.2	1978.3
Length Wtd. (ft)	592.99	Wetted Per. (ft)	473.74	266.20	18.42
Min Ch El (ft)	32.40	Shear (lb/sq ft)	0.97	2.50	0.60
Alpha	1.26	Stream Power (lb/ft s)	5.92	29.55	2.72
Frctn Loss (ft)	5.00	Cum Volume (acre-ft)	414.08	564.65	49.99
C & E Loss (ft)	0.08	Cum SA (acres)	120.67	64.63	12.34

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

CROSS SECTION OUTPUT Profile #Q100

E.G. Elev (ft)	43.87	Element	Left OB	Channel	Right OB
Vel Head (ft)	2.38	Wt. n-Val.	0.039	0.035	0.035
W.S. Elev (ft)	41.49	Reach Len. (ft)	604.78	585.72	573.19
Crit W.S. (ft)	41.33	Flow Area (sq ft)	1928.57	2260.67	58.98
E.G. Slope (ft/ft)	0.006348	Area (sq ft)	3687.94	2260.67	58.98
Q Total (cfs)	47312.00	Flow (cfs)	15170.41	31829.96	311.63
Top Width (ft)	1900.25	Top Width (ft)	1606.10	265.69	28.45
Vel Total (ft/s)	11.14	Avg. Vel. (ft/s)	7.87	14.08	5.28
Max Chl Dpth (ft)	9.09	Hydr. Depth (ft)	3.72	8.51	2.07
Conv. Total (cfs)	593811.5	Conv. (cfs)	190403.3	399496.9	3911.2
Length Wtd. (ft)	593.86	Wetted Per. (ft)	518.56	266.20	30.21
Min Ch El (ft)	32.40	Shear (lb/sq ft)	1.47	3.37	0.77
Alpha	1.24	Stream Power (lb/ft s)	11.59	47.39	4.09
Frctn Loss (ft)	5.36	Cum Volume (acre-ft)	807.41	725.10	78.58
C & E Loss (ft)	0.14	Cum SA (acres)	171.35	64.63	13.58

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

CROSS SECTION OUTPUT Profile #Q100HC

E.G. Elev (ft)	46.31	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.19	Wt. n-Val.	0.036	0.035	0.035

W.S. Elev (ft)	45.12	Reach Len. (ft)	604.78	585.72	573.19
Crit W.S. (ft)	44.23	Flow Area (sq ft)	12012.49	3225.33	221.73
E.G. Slope (ft/ft)	0.002911	Area (sq ft)	12012.49	3225.33	221.73
Q Total (cfs)	118891.00	Flow (cfs)	78918.41	38972.50	1000.09
Top Width (ft)	2974.13	Top Width (ft)	2598.38	265.69	110.06
Vel Total (ft/s)	7.69	Avg. Vel. (ft/s)	6.57	12.08	4.51
Max Chl Dpth (ft)	12.72	Hydr. Depth (ft)	4.62	12.14	2.01
Conv. Total (cfs)	2203602.0	Conv. (cfs)	1462724.0	722341.1	18536.3
Length Wtd. (ft)	599.44	Wetted Per. (ft)	2598.85	266.20	112.03
Min Ch El (ft)	32.40	Shear (lb/sq ft)	0.84	2.20	0.36
Alpha	1.30	Stream Power (lb/ft s)	5.52	26.61	1.62
Frctn Loss (ft)	0.66	Cum Volume (acre-ft)	3459.54	1434.76	224.21
C & E Loss (ft)	0.27	Cum SA (acres)	258.43	64.65	21.92

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.

CROSS SECTION

RIVER: San Mateo Creek
REACH: Lower RS: 5313.135

INPUT
Description:
Station Elevation Data num= 65

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	54.8	235.9	35.44	377.06	35.34	407.89	35.07	474.34	32.93
484.38	32.81	517.48	34.18	558.19	36.22	572.64	36.28	1081.71	38.43
1730.88	40.34	1838.88	41.44	1922.89	40.19	1944.98	39.87	1946.14	39.81
1947.51	39.76	2071.35	36.04	2166.08	33.77	2192.86	32.86	2207.76	32.8
2378.28	32.12	2384.91	32.11	2528.49	32.05	2733.34	32.68	2768.74	32.82
2797.22	32.8	2907.86	31.84	2955.55	31.32	2982.22	31.03	2991.16	31.06
3069.24	31.32	3080.18	31.24	3122.41	30.9	3130.16	30.85	3133.53	31.01
3136.32	31.35	3145.48	32.39	3153.92	37.51	3154.56	37.9	3155.56	38.35
3158.71	39.74	3159.79	39.91	3163.25	40.32	3164.99	40.37	3171.31	40.51
3173.89	40.79	3228.93	41.25	3234.23	41.29	3236.17	41.32	3319.53	45.76
3324.98	45.83	3355.5	45.72	3365.71	45.15	3382.83	43.86	3391.49	43.98
3431.96	45.92	3448.73	46.4	3454.08	46.98	3475.98	49.36	3509.76	52.7
3520.54	57.38	3526.3	59.6	3542.39	64.53	3548.64	66.63	3560.91	71.06

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	1922.89	.02	2207.76	.05	2955.55	.035	3454.08	.05

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
2797.22	3145.48	603.98	623.48 637.26	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
0	1838.88	41.44	F

CROSS SECTION OUTPUT Profile #Q50

E.G. Elev (ft)	36.97	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.50	Wt. n-Val.	0.047	0.039	0.035

W.S. Elev (ft)	35.48	Reach Len. (ft)	603.98	623.48	637.26
Crit W.S. (ft)	35.48	Flow Area (sq ft)	1993.49	1352.70	7.86
E.G. Slope (ft/ft)	0.014652	Area (sq ft)	2221.26	1352.70	7.86
Q Total (cfs)	31354.00	Flow (cfs)	15857.75	15447.64	48.61
Top Width (ft)	1363.73	Top Width (ft)	1010.38	348.26	5.09
Vel Total (ft/s)	9.35	Avg. Vel. (ft/s)	7.95	11.42	6.18
Max Chl Dpth (ft)	4.63	Hydr. Depth (ft)	2.84	3.88	1.54
Conv. Total (cfs)	259030.5	Conv. (cfs)	131008.5	127620.4	401.6
Length Wtd. (ft)	617.10	Wetted Per. (ft)	702.47	348.35	5.95
Min Ch El (ft)	30.85	Shear (lb/sq ft)	2.60	3.55	1.21
Alpha	1.10	Stream Power (lb/ft s)	20.65	40.56	7.47
Frctn Loss (ft)	2.44	Cum Volume (acre-ft)	384.77	542.48	49.72
C & E Loss (ft)	0.34	Cum SA (acres)	105.03	60.51	12.19

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: 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 #Q100

E.G. Elev (ft)	38.37	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.91	Wt. n-Val.	0.045	0.039	0.035
W.S. Elev (ft)	36.46	Reach Len. (ft)	603.98	623.48	637.26
Crit W.S. (ft)	36.46	Flow Area (sq ft)	2704.56	1695.59	13.67
E.G. Slope (ft/ft)	0.013845	Area (sq ft)	3257.56	1695.59	13.67
Q Total (cfs)	47312.00	Flow (cfs)	25532.78	21680.38	98.84
Top Width (ft)	1487.41	Top Width (ft)	1132.44	348.26	6.71
Vel Total (ft/s)	10.72	Avg. Vel. (ft/s)	9.44	12.79	7.23
Max Chl Dpth (ft)	5.61	Hydr. Depth (ft)	3.66	4.87	2.04
Conv. Total (cfs)	402090.7	Conv. (cfs)	216995.6	184255.1	840.0
Length Wtd. (ft)	616.14	Wetted Per. (ft)	740.00	348.35	7.85
Min Ch El (ft)	30.85	Shear (lb/sq ft)	3.16	4.21	1.50
Alpha	1.07	Stream Power (lb/ft s)	29.82	53.79	10.88
Frctn Loss (ft)	2.37	Cum Volume (acre-ft)	759.19	698.51	78.10
C & E Loss (ft)	0.44	Cum SA (acres)	152.34	60.51	13.35

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: 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 #Q100HC

E.G. Elev (ft)	45.38	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.29	Wt. n-Val.	0.037	0.040	0.035
W.S. Elev (ft)	45.09	Reach Len. (ft)	603.98	623.48	637.26
Crit W.S. (ft)	39.78	Flow Area (sq ft)	22447.51	4699.98	606.29
E.G. Slope (ft/ft)	0.000575	Area (sq ft)	22447.51	4699.98	606.29
Q Total (cfs)	118891.00	Flow (cfs)	93853.42	23664.62	1372.96
Top Width (ft)	3236.75	Top Width (ft)	2678.90	348.26	209.59
Vel Total (ft/s)	4.28	Avg. Vel. (ft/s)	4.18	5.04	2.26
Max Chl Dpth (ft)	14.24	Hydr. Depth (ft)	8.38	13.50	2.89
Conv. Total (cfs)	4957558.0	Conv. (cfs)	3913532.0	986775.3	57250.3
Length Wtd. (ft)	609.67	Wetted Per. (ft)	2679.54	348.35	211.76
Min Ch El (ft)	30.85	Shear (lb/sq ft)	0.30	0.48	0.10
Alpha	1.03	Stream Power (lb/ft s)	1.26	2.44	0.23
Frctn Loss (ft)	0.17	Cum Volume (acre-ft)	3220.32	1381.47	218.77
C & E Loss (ft)	0.05	Cum SA (acres)	221.80	60.53	19.82

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.

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

CROSS SECTION

RIVER: San Mateo Creek
REACH: Lower RS: 4689.719

INPUT
Description:
Station Elevation Data num= 56

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	50.59	5.54	50.1	16.15	49.6	23.42	49.07	197.5	32.89
240.38	32.9	387.06	32.88	467.24	32.94	633.12	33.02	1195.92	36.5
1491.91	38.33	1533.6	38.56	1611.23	38.32	1676.8	38.37	1720.88	37.97
1733.94	38.62	1755.25	38.9	1772.27	37.68	1778.83	37.11	1801.66	34.35
1820.46	33.84	1852.87	32.96	1912.02	32.49	1913.47	32.47	2024.61	31.11
2128.28	30.42	2223.82	30.53	2359.57	28.7	2386.54	28.48	2534.69	27.3
2585.14	27.2	2636.08	26.73	2782.14	25.37	2815.27	26.01	2872.84	23.84
3012.04	23.21	3020.96	23.24	3075.22	24.09	3158.31	25.38	3191	26.39
3194.81	26.51	3211.9	27.08	3239.93	28	3259.34	29.49	3272.86	31.14
3283.9	32.16	3287.07	32.58	3293.44	33.43	3304.17	36.6	3315.74	39.95
3337.62	42.38	3377.29	44.79	3406.49	47.33	3412.31	47.71	3416.72	48.32
3416.91	48.34								

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	1195.92	.02	1913.47	.05	3075.22	.035	3211.9	.05

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
2585.14	3211.9	557.08	599.98 624.49	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
0	1533.6	38.56	F

CROSS SECTION OUTPUT Profile #Q50

E.G. Elev (ft)	33.02	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.38	Wt. n-Val.	0.050	0.046	0.050
W.S. Elev (ft)	32.65	Reach Len. (ft)	557.08	599.98	624.49
Crit W.S. (ft)	29.36	Flow Area (sq ft)	1997.79	4771.39	262.33
E.G. Slope (ft/ft)	0.001808	Area (sq ft)	1997.79	4771.39	262.33
Q Total (cfs)	31354.00	Flow (cfs)	5214.18	25382.24	757.58
Top Width (ft)	1395.33	Top Width (ft)	692.90	626.76	75.67
Vel Total (ft/s)	4.46	Avg. Vel. (ft/s)	2.61	5.32	2.89
Max Chl Dpth (ft)	9.44	Hydr. Depth (ft)	2.88	7.61	3.47
Conv. Total (cfs)	737405.2	Conv. (cfs)	122630.6	596957.2	17817.4
Length Wtd. (ft)	596.51	Wetted Per. (ft)	692.92	626.86	75.93
Min Ch El (ft)	23.21	Shear (lb/sq ft)	0.33	0.86	0.39
Alpha	1.22	Stream Power (lb/ft s)	0.85	4.57	1.13
Frctn Loss (ft)	2.27	Cum Volume (acre-ft)	355.52	498.65	47.75
C & E Loss (ft)	0.06	Cum SA (acres)	93.22	53.53	11.60

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

CROSS SECTION OUTPUT Profile #Q100

E.G. Elev (ft)	34.74	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.46	Wt. n-Val.	0.049	0.046	0.050
W.S. Elev (ft)	34.28	Reach Len. (ft)	557.08	599.98	624.49
Crit W.S. (ft)	30.51	Flow Area (sq ft)	3215.84	5791.93	394.01
E.G. Slope (ft/ft)	0.001778	Area (sq ft)	3940.37	5791.93	394.01
Q Total (cfs)	47312.00	Flow (cfs)	11142.57	34795.11	1374.33
Top Width (ft)	2145.45	Top Width (ft)	1434.29	626.76	84.40
Vel Total (ft/s)	5.03	Avg. Vel. (ft/s)	3.46	6.01	3.49
Max Chl Dpth (ft)	11.07	Hydr. Depth (ft)	4.12	9.24	4.67
Conv. Total (cfs)	1122177.0	Conv. (cfs)	264286.7	825293.1	32597.3
Length Wtd. (ft)	594.51	Wetted Per. (ft)	780.78	626.86	84.83
Min Ch El (ft)	23.21	Shear (lb/sq ft)	0.46	1.03	0.52
Alpha	1.17	Stream Power (lb/ft s)	1.58	6.16	1.80
Frctn Loss (ft)	1.46	Cum Volume (acre-ft)	709.29	644.92	75.12
C & E Loss (ft)	0.01	Cum SA (acres)	134.54	53.53	12.69

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

CROSS SECTION OUTPUT Profile #Q100HC

			Left OB	Channel	Right OB
E.G. Elev (ft)	45.16	Element			
Vel Head (ft)	0.13	Wt. n-Val.	0.036	0.046	0.050
W.S. Elev (ft)	45.03	Reach Len. (ft)	557.08	599.98	624.49
Crit W.S. (ft)	34.28	Flow Area (sq ft)	27876.07	12535.06	1598.26
E.G. Slope (ft/ft)	0.000167	Area (sq ft)	27876.07	12535.06	1598.26
Q Total (cfs)	118891.00	Flow (cfs)	77459.98	38693.82	2737.19
Top Width (ft)	3313.26	Top Width (ft)	2518.30	626.76	168.20
Vel Total (ft/s)	2.83	Avg. Vel. (ft/s)	2.78	3.09	1.71
Max Chl Dpth (ft)	21.82	Hydr. Depth (ft)	11.07	20.00	9.50
Conv. Total (cfs)	9202570.0	Conv. (cfs)	5995668.0	2995034.0	211868.0
Length Wtd. (ft)	575.13	Wetted Per. (ft)	2519.18	626.86	169.65
Min Ch El (ft)	23.21	Shear (lb/sq ft)	0.12	0.21	0.10
Alpha	1.02	Stream Power (lb/ft s)	0.32	0.64	0.17
Frctn Loss (ft)	0.09	Cum Volume (acre-ft)	2871.44	1258.13	202.64
C & E Loss (ft)	0.01	Cum SA (acres)	185.77	53.55	17.06

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

CROSS SECTION

RIVER: San Mateo Creek
REACH: Lower RS: 4089.740

INPUT
Description:
Station Elevation Data num= 60

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	43.73	120.02	32.57	131.17	32.57	253.76	31.11	357.24	32.72
427	32.77	899.22	32.98	954.04	33.32	993.06	33.55	1222.54	34.9
1471.85	35.92	1705.94	34.44	1743.07	34.06	1777.93	33.7	1813.15	33.33
1910.27	31.81	2036.45	28.67	2135.46	27.2	2288.12	25.54	2333	26.35
2484.7	26.4	2540.37	26.42	2640.58	25.78	2741.76	25.56	2849.16	25.52
3080.64	26.31	3081.74	26.32	3095.12	26.39	3102.66	26.27	3106.67	26.2
3116.51	26.34	3145.31	27.09	3172.38	27.65	3180.44	27.82	3183.26	27.7
3186.33	27.58	3202.22	26.94	3203.62	27.23	3205.09	28.53	3208.91	30.7
3212.53	35.02	3212.79	35.32	3219.19	37.95	3219.44	38.02	3219.93	38.04
3226.98	38.68	3236.81	38.22	3248.61	39.25	3257.08	39.88	3269.27	41.94
3289.72	45.01	3346.69	49.12	3362.24	50.24	3384.82	51.78	3392.9	52.57
3399.42	53.43	3407.75	54.71	3416.41	56.08	3477.19	65.71	3486.14	68.15

Manning's n Values num= 7

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	1743.07	.02	1777.93	.05	3102.66	.035	3172.38	.05
3346.69	.07	3416.41	.05						

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
2135.46	3145.31	589.66	603.63	611.39	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
0	1471.85	35.92	F

CROSS SECTION OUTPUT Profile #Q50

			Left OB	Channel	Right OB
E.G. Elev (ft)	30.69	Element			

Vel Head (ft)	0.98	Wt. n-Val.	0.050	0.049	0.041
W.S. Elev (ft)	29.72	Reach Len. (ft)	589.66	603.63	611.39
Crit W.S. (ft)	29.15	Flow Area (sq ft)	198.22	3678.80	137.96
E.G. Slope (ft/ft)	0.012685	Area (sq ft)	198.22	3678.80	137.96
Q Total (cfs)	31354.00	Flow (cfs)	832.41	29578.46	943.13
Top Width (ft)	1212.73	Top Width (ft)	141.01	1009.85	61.87
Vel Total (ft/s)	7.81	Avg. Vel. (ft/s)	4.20	8.04	6.84
Max Chl Dpth (ft)	4.20	Hydr. Depth (ft)	1.41	3.64	2.23
Conv. Total (cfs)	278390.9	Conv. (cfs)	7390.9	262625.9	8374.0
Length Wtd. (ft)	603.10	Wetted Per. (ft)	141.04	1009.88	62.73
Min Ch El (ft)	25.52	Shear (lb/sq ft)	1.11	2.88	1.74
Alpha	1.03	Stream Power (lb/ft s)	4.67	23.19	11.91
Frctn Loss (ft)	0.57	Cum Volume (acre-ft)	341.48	440.46	44.88
C & E Loss (ft)	0.25	Cum SA (acres)	87.89	42.26	10.62

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

CROSS SECTION OUTPUT Profile #Q100

E.G. Elev (ft)	33.26	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.61	Wt. n-Val.	0.050	0.049	0.042
W.S. Elev (ft)	32.65	Reach Len. (ft)	589.66	603.63	611.39
Crit W.S. (ft)	30.07	Flow Area (sq ft)	794.08	6644.67	325.50
E.G. Slope (ft/ft)	0.003631	Area (sq ft)	971.04	6644.67	325.50
Q Total (cfs)	47312.00	Flow (cfs)	2855.52	42450.94	2005.54
Top Width (ft)	1587.83	Top Width (ft)	512.75	1009.85	65.24
Vel Total (ft/s)	6.09	Avg. Vel. (ft/s)	3.60	6.39	6.16
Max Chl Dpth (ft)	7.13	Hydr. Depth (ft)	2.85	6.58	4.99
Conv. Total (cfs)	785156.5	Conv. (cfs)	47388.2	704485.8	33282.4
Length Wtd. (ft)	602.78	Wetted Per. (ft)	279.06	1009.88	67.27
Min Ch El (ft)	25.52	Shear (lb/sq ft)	0.65	1.49	1.10
Alpha	1.05	Stream Power (lb/ft s)	2.32	9.53	6.76
Frctn Loss (ft)	0.49	Cum Volume (acre-ft)	677.88	559.27	69.96
C & E Loss (ft)	0.13	Cum SA (acres)	122.09	42.26	11.61

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

CROSS SECTION OUTPUT Profile #Q100HC

E.G. Elev (ft)	45.06	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.11	Wt. n-Val.	0.037	0.049	0.042
W.S. Elev (ft)	44.95	Reach Len. (ft)	589.66	603.63	611.39
Crit W.S. (ft)	33.22	Flow Area (sq ft)	24623.65	19067.44	1519.97
E.G. Slope (ft/ft)	0.000160	Area (sq ft)	24623.65	19067.44	1519.97
Q Total (cfs)	118891.00	Flow (cfs)	63795.02	51718.38	3377.61
Top Width (ft)	3289.35	Top Width (ft)	2135.46	1009.85	144.04
Vel Total (ft/s)	2.63	Avg. Vel. (ft/s)	2.59	2.71	2.22
Max Chl Dpth (ft)	19.43	Hydr. Depth (ft)	11.53	18.88	10.55

Conv. Total (cfs)	9396470.0	Conv. (cfs)	5041996.0	4087527.0	266947.1
Length Wtd. (ft)	596.15	Wetted Per. (ft)	2137.30	1009.88	148.34
Min Ch El (ft)	25.52	Shear (lb/sq ft)	0.12	0.19	0.10
Alpha	1.00	Stream Power (lb/ft s)	0.30	0.51	0.23
Frctn Loss (ft)	0.06	Cum Volume (acre-ft)	2535.74	1040.49	180.29
C & E Loss (ft)	0.01	Cum SA (acres)	156.01	42.28	14.82

Warning: The cross-section end points had to be extended vertically for the computed water surface.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.

CROSS SECTION

RIVER: San Mateo Creek
REACH: Lower RS: 3486.110

INPUT
Description:
Station Elevation Data num= 71

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	46.29	164.35	29.36	170.65	29.14	191.87	28.38	194.63	28.28
197.81	27.46	214.3	26.61	218.17	25.64	221.29	25.46	236.53	24.81
427.84	25.58	485.93	26.09	545.78	26.08	561.55	26.23	566.9	26.28
642.16	27.68	660.34	27.89	777.29	31.38	781.75	31.52	782.34	31.54
782.75	31.57	783.12	31.57	914.19	32.95	938	32.41	961.74	32.7
1060.96	32.15	1484.48	33.24	1802.93	34.08	1912.47	34.47	2024.12	33.2
2043.89	32.97	2057.85	32.81	2104.9	32.26	2122.22	31.43	2159.87	29.34
2170.7	28.93	2182.95	28.24	2195.59	27.58	2201.42	26.91	2330.08	23.53
2435.73	20.75	2455.24	20.59	2503.12	19.86	2521.29	19.73	2523.59	19.71
2690.84	17.56	2853.72	14.86	2859.84	14.93	2870.57	15.13	3028.74	16.36
3069.91	16.52	3112.95	16.69	3124.02	16.88	3135.84	17.01	3137.38	17.04
3165.78	17.62	3171.12	17.92	3179.97	18.42	3213.55	20.32	3218.35	20.85
3244.42	23.69	3284.83	28.14	3300.66	29.84	3305.02	30.69	3314.02	32.6
3324.12	38.65	3348.28	55.29	3359.46	64.31	3363.44	66.09	3370.03	68.46
3373.53	69.23								

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	2024.12	.02	2057.85	.05	3069.91	.035	3171.12	.07

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
2435.73	3218.35	577.29	602.58 615.08	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
0	1912.47	34.47	F

CROSS SECTION OUTPUT Profile #Q50

E.G. Elev (ft)	29.87	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.13	Wt. n-Val.	0.050	0.048	0.070
W.S. Elev (ft)	29.74	Reach Len. (ft)	577.29	602.58	615.08
Crit W.S. (ft)	21.04	Flow Area (sq ft)	1443.86	9696.45	361.10
E.G. Slope (ft/ft)	0.000317	Area (sq ft)	3310.12	9696.45	361.10
Q Total (cfs)	31354.00	Flow (cfs)	2261.59	28725.52	366.89
Top Width (ft)	1708.63	Top Width (ft)	844.64	782.62	81.36

Vel Total (ft/s)	2.73	Avg. Vel. (ft/s)	1.57	2.96	1.02
Max Chl Dpth (ft)	14.88	Hydr. Depth (ft)	5.10	12.39	4.44
Conv. Total (cfs)	1762121.0	Conv. (cfs)	127103.4	1614398.0	20619.3
Length Wtd. (ft)	600.26	Wetted Per. (ft)	283.21	782.78	81.85
Min Ch El (ft)	14.86	Shear (lb/sq ft)	0.10	0.24	0.09
Alpha	1.11	Stream Power (lb/ft s)	0.16	0.73	0.09
Frctn Loss (ft)	0.25	Cum Volume (acre-ft)	317.73	347.79	41.37
C & E Loss (ft)	0.01	Cum SA (acres)	81.22	29.84	9.61

Warning: Divided flow computed for this cross-section.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.

CROSS SECTION OUTPUT Profile #Q100

E.G. Elev (ft)	32.64	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.18	Wt. n-Val.	0.050	0.048	0.070
W.S. Elev (ft)	32.46	Reach Len. (ft)	577.29	602.58	615.08
Crit W.S. (ft)	22.23	Flow Area (sq ft)	2282.68	11824.14	601.74
E.G. Slope (ft/ft)	0.000351	Area (sq ft)	5886.11	11824.14	601.74
Q Total (cfs)	47312.00	Flow (cfs)	4454.94	42041.95	815.11
Top Width (ft)	2139.05	Top Width (ft)	1261.43	782.62	95.00
Vel Total (ft/s)	3.22	Avg. Vel. (ft/s)	1.95	3.56	1.35
Max Chl Dpth (ft)	17.60	Hydr. Depth (ft)	6.57	15.11	6.33
Conv. Total (cfs)	2524826.0	Conv. (cfs)	237739.5	2243587.0	43498.7
Length Wtd. (ft)	597.60	Wetted Per. (ft)	347.93	782.78	95.75
Min Ch El (ft)	14.86	Shear (lb/sq ft)	0.14	0.33	0.14
Alpha	1.12	Stream Power (lb/ft s)	0.28	1.18	0.19
Frctn Loss (ft)	0.22	Cum Volume (acre-ft)	631.47	431.31	63.46
C & E Loss (ft)	0.00	Cum SA (acres)	110.08	29.84	10.49

Warning: Divided flow computed for this cross-section.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.

CROSS SECTION OUTPUT Profile #Q100HC

E.G. Elev (ft)	44.99	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.07	Wt. n-Val.	0.037	0.048	0.070
W.S. Elev (ft)	44.92	Reach Len. (ft)	577.29	602.58	615.08
Crit W.S. (ft)	26.36	Flow Area (sq ft)	34424.42	21579.55	1916.69
E.G. Slope (ft/ft)	0.000068	Area (sq ft)	34424.42	21579.55	1916.69
Q Total (cfs)	118891.00	Flow (cfs)	66597.63	50161.64	2131.73
Top Width (ft)	3319.95	Top Width (ft)	2422.45	782.62	114.88
Vel Total (ft/s)	2.05	Avg. Vel. (ft/s)	1.93	2.32	1.11
Max Chl Dpth (ft)	30.06	Hydr. Depth (ft)	14.21	27.57	16.68
Conv. Total (cfs)	14450080.0	Conv. (cfs)	8094314.0	6096675.0	259091.9
Length Wtd. (ft)	587.22	Wetted Per. (ft)	2423.88	782.78	119.27
Min Ch El (ft)	14.86	Shear (lb/sq ft)	0.06	0.12	0.07
Alpha	1.04	Stream Power (lb/ft s)	0.12	0.27	0.08
Frctn Loss (ft)	0.04	Cum Volume (acre-ft)	2136.08	758.86	156.17
C & E Loss (ft)	0.00	Cum SA (acres)	125.16	29.86	13.00

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

CROSS SECTION

RIVER: San Mateo Creek
REACH: Lower RS: 2883.526

INPUT
Description:
Station Elevation Data num= 64

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	43.87	138.59	25.27	144.34	25.32	155.04	25.36	280.43	25.37
674.52	26.23	703.51	26.26	745.97	27.28	773.14	27.93	1090.82	30.95
1473.75	31.96	1666.35	32.14	1987.05	30.26	1995.18	30.17	2049.39	29.29
2070	28.97	2129.96	27.88	2184.8	26.9	2187.91	27.91	2192.7	27.96
2197.21	29.24	2202.11	28.51	2203.97	28.52	2205.47	27.61	2207.06	27.26
2208.89	26.15	2213.35	25.91	2220.99	25.72	2397.39	21.6	2470.49	19.84
2556.9	17.85	2588.28	17.51	2637.19	15.79	2730.4	14.12	2756.38	14.59
2761.02	14.65	2778.21	14.83	2858.77	15.67	2870.81	16.19	2891.7	17.09
2895.51	17.12	2905.94	17.23	2934.43	19.59	2957.04	19.85	2959.64	19.84
2961.43	20.49	2966.51	21.04	2966.67	21.06	2995.29	26.1	3002.44	25.94
3011.47	26.86	3014.13	27.24	3015.87	27.92	3022.73	34.3	3027.64	39.08
3036	48.34	3044.12	55.97	3056.9	67.69	3058.44	68.95	3066.94	75.22
3074.67	80.81	3080.16	85.53	3086.85	91.92	3086.9	91.96		

Manning's n Values num= 4

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	2129.96	.05	2778.21	.035	2870.81	.05

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
2470.49	2957.04	193.46 203.76	211.14	.1	.3

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
0	280.43	40	T
280.43	1666.35	32	F

CROSS SECTION OUTPUT Profile #Q50

			Left OB	Channel	Right OB
E.G. Elev (ft)	29.60	Element			
Vel Head (ft)	0.25	Wt. n-Val.	0.050	0.046	0.050
W.S. Elev (ft)	29.35	Reach Len. (ft)	193.46	203.76	211.14
Crit W.S. (ft)	21.72	Flow Area (sq ft)	1872.61	6210.50	311.79
E.G. Slope (ft/ft)	0.000582	Area (sq ft)	4250.13	6210.50	311.79
Q Total (cfs)	31354.00	Flow (cfs)	4003.43	26692.29	658.28
Top Width (ft)	1785.51	Top Width (ft)	1238.60	486.55	60.36
Vel Total (ft/s)	3.73	Avg. Vel. (ft/s)	2.14	4.30	2.11
Max Chl Dpth (ft)	15.23	Hydr. Depth (ft)	4.41	12.76	5.17
Conv. Total (cfs)	1299458.0	Conv. (cfs)	165920.9	1106255.0	27282.2
Length Wtd. (ft)	202.57	Wetted Per. (ft)	425.71	486.76	61.71
Min Ch El (ft)	14.12	Shear (lb/sq ft)	0.16	0.46	0.18
Alpha	1.18	Stream Power (lb/ft s)	0.34	1.99	0.39
Frctn Loss (ft)	0.16	Cum Volume (acre-ft)	267.63	237.76	36.62
C & E Loss (ft)	0.02	Cum SA (acres)	67.41	21.06	8.61

Warning: Divided flow computed for this cross-section.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.

CROSS SECTION OUTPUT Profile #Q100

E.G. Elev (ft)	32.41	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.19	Wt. n-Val.	0.042	0.046	0.050
W.S. Elev (ft)	32.22	Reach Len. (ft)	193.46	203.76	211.14
Crit W.S. (ft)	23.34	Flow Area (sq ft)	7833.64	7609.25	489.78
E.G. Slope (ft/ft)	0.000403	Area (sq ft)	8986.93	7609.25	489.78
Q Total (cfs)	47312.00	Flow (cfs)	15142.06	31057.59	1112.34
Top Width (ft)	2933.70	Top Width (ft)	2383.70	486.55	63.46
Vel Total (ft/s)	2.97	Avg. Vel. (ft/s)	1.93	4.08	2.27
Max Chl Dpth (ft)	18.10	Hydr. Depth (ft)	3.58	15.64	7.72
Conv. Total (cfs)	2356878.0	Conv. (cfs)	754311.8	1547154.0	55412.1
Length Wtd. (ft)	200.26	Wetted Per. (ft)	2191.20	486.76	65.94
Min Ch El (ft)	14.12	Shear (lb/sq ft)	0.09	0.39	0.19
Alpha	1.39	Stream Power (lb/ft s)	0.17	1.61	0.42
Frctn Loss (ft)	0.09	Cum Volume (acre-ft)	532.92	296.89	55.75
C & E Loss (ft)	0.00	Cum SA (acres)	85.93	21.06	9.37

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

CROSS SECTION OUTPUT Profile #Q100HC

E.G. Elev (ft)	44.95	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.09	Wt. n-Val.	0.038	0.046	0.050
W.S. Elev (ft)	44.86	Reach Len. (ft)	193.46	203.76	211.14
Crit W.S. (ft)	28.52	Flow Area (sq ft)	35508.13	13757.49	1372.72
E.G. Slope (ft/ft)	0.000078	Area (sq ft)	39699.56	13757.49	1372.72
Q Total (cfs)	118891.00	Flow (cfs)	80040.63	36519.31	2331.05
Top Width (ft)	3032.86	Top Width (ft)	2470.49	486.55	75.82
Vel Total (ft/s)	2.35	Avg. Vel. (ft/s)	2.25	2.65	1.70
Max Chl Dpth (ft)	30.74	Hydr. Depth (ft)	16.21	28.28	18.11
Conv. Total (cfs)	13438980.0	Conv. (cfs)	9047486.0	4128003.0	263493.0
Length Wtd. (ft)	196.75	Wetted Per. (ft)	2191.20	486.76	83.62
Min Ch El (ft)	14.12	Shear (lb/sq ft)	0.08	0.14	0.08
Alpha	1.02	Stream Power (lb/ft s)	0.18	0.37	0.14
Frctn Loss (ft)	0.02	Cum Volume (acre-ft)	1644.91	514.44	132.95
C & E Loss (ft)	0.00	Cum SA (acres)	92.74	21.08	11.66

Warning: The cross-section end points had to be extended vertically for the computed water surface.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.

CROSS SECTION

RIVER: San Mateo Creek
REACH: Lower RS: 2679.762

INPUT
Description:
Station Elevation Data num= 65

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	45.67	152.32	25.49	152.41	25.46	152.57	25.37	152.72	25.31
152.79	25.3	152.89	25.27	153.02	25.22	153.12	25.22	153.24	25.16
153.33	25.11	153.43	25.08	153.53	25.05	153.63	25.03	153.67	25.03
154.23	25.06	155.91	25.03	157.89	25.03	685	26.22	729.8	26.27
1169.08	30.4	1188.39	30.44	1207.6	30.5	1402.35	30.69	1687.97	30.94

1883.46	29.77	2002.09	28.51	2131.34	26.39	2171.25	26.45	2174.8	26.43		
2255.35	26.14	2261.8	26.09	2291.45	25.82	2306.04	24.96	2320.77	23.7		
2334.58	21.2	2348.29	19.69	2368.87	20.19	2402.21	21.36	2439.75	20.12		
2446.69	19.89	2497.77	19.68	2543.21	19.57	2661.08	14.9	2684.03	14.19		
2696.76	14.24	2707.56	14.28	2708.82	14.29	2746.46	14.85	2766.76	16.57		
2783.75	17.87	2807.02	19.65	2809.85	19.63	2824.64	19.51	2846.41	20.28		
2856.24	21.35	2856.84	21.42	2861.82	23.3	2864.07	23.87	2868.1	30.22		
2872.97	37.3	2876.16	41.47	2889.55	57.34	2890.45	58.31	2899.74	68.73		

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	2174.8	.07	2261.8	.05	2696.76	.035	2783.75	.05

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
2402.21	2856.24	387.64	396.16	397.97	.1	.3

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
0	400	40	T
400	1687.97	30.94	F

CROSS SECTION OUTPUT Profile #Q50

			Left OB	Channel	Right OB
E.G. Elev (ft)	29.43	Element			
Vel Head (ft)	0.41	Wt. n-Val.	0.049	0.045	0.050
W.S. Elev (ft)	29.02	Reach Len. (ft)	387.64	396.16	397.97
Crit W.S. (ft)	23.13	Flow Area (sq ft)	1449.68	5058.28	58.38
E.G. Slope (ft/ft)	0.001058	Area (sq ft)	3833.80	5058.28	58.38
Q Total (cfs)	31354.00	Flow (cfs)	3814.52	27395.64	143.84
Top Width (ft)	1809.69	Top Width (ft)	1344.56	454.03	11.10
Vel Total (ft/s)	4.77	Avg. Vel. (ft/s)	2.63	5.42	2.46
Max Chl Dpth (ft)	14.83	Hydr. Depth (ft)	3.24	11.14	5.26
Conv. Total (cfs)	963973.3	Conv. (cfs)	117276.7	842274.1	4422.5
Length Wtd. (ft)	394.74	Wetted Per. (ft)	448.48	454.43	14.35
Min Ch El (ft)	14.19	Shear (lb/sq ft)	0.21	0.74	0.27
Alpha	1.16	Stream Power (lb/ft s)	0.56	3.98	0.66
Frctn Loss (ft)	0.53	Cum Volume (acre-ft)	249.68	211.41	35.73
C & E Loss (ft)	0.01	Cum SA (acres)	61.68	18.86	8.44

Warning: Divided flow computed for this cross-section.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.

CROSS SECTION OUTPUT Profile #Q100

			Left OB	Channel	Right OB
E.G. Elev (ft)	32.32	Element			
Vel Head (ft)	0.23	Wt. n-Val.	0.040	0.045	0.050
W.S. Elev (ft)	32.09	Reach Len. (ft)	387.64	396.16	397.97
Crit W.S. (ft)	24.68	Flow Area (sq ft)	7745.95	6451.66	95.52
E.G. Slope (ft/ft)	0.000543	Area (sq ft)	9591.88	6451.66	95.52
Q Total (cfs)	47312.00	Flow (cfs)	17943.22	29167.74	201.04
Top Width (ft)	2766.87	Top Width (ft)	2299.69	454.03	13.15
Vel Total (ft/s)	3.31	Avg. Vel. (ft/s)	2.32	4.52	2.10
Max Chl Dpth (ft)	17.90	Hydr. Depth (ft)	3.87	14.21	7.27
Conv. Total (cfs)	2029819.0	Conv. (cfs)	769815.1	1251379.0	8625.2
Length Wtd. (ft)	392.54	Wetted Per. (ft)	2002.67	454.43	18.04
Min Ch El (ft)	14.19	Shear (lb/sq ft)	0.13	0.48	0.18
Alpha	1.34	Stream Power (lb/ft s)	0.30	2.18	0.38
Frctn Loss (ft)	0.23	Cum Volume (acre-ft)	491.66	264.01	54.33

C & E Loss (ft)	0.00	Cum SA (acres)	75.53	18.86	9.19

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

CROSS SECTION OUTPUT Profile #Q100HC

E.G. Elev (ft)	44.93	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.11	Wt. n-Val.	0.037	0.046	0.050
W.S. Elev (ft)	44.82	Reach Len. (ft)	387.64	396.16	397.97
Crit W.S. (ft)	30.57	Flow Area (sq ft)	33240.69	12232.96	321.29
E.G. Slope (ft/ft)	0.000093	Area (sq ft)	39486.45	12232.96	321.29
Q Total (cfs)	118891.00	Flow (cfs)	83861.19	34617.33	412.49
Top Width (ft)	2872.58	Top Width (ft)	2395.80	454.03	22.75
Vel Total (ft/s)	2.60	Avg. Vel. (ft/s)	2.52	2.83	1.28
Max Chl Dpth (ft)	30.63	Hydr. Depth (ft)	16.60	26.94	14.12
Conv. Total (cfs)	12301400.0	Conv. (cfs)	8676937.0	3581781.0	42679.4
Length Wtd. (ft)	390.06	Wetted Per. (ft)	2002.67	454.43	34.00
Min Ch El (ft)	14.19	Shear (lb/sq ft)	0.10	0.16	0.06
Alpha	1.01	Stream Power (lb/ft s)	0.24	0.44	0.07
Frctn Loss (ft)	0.04	Cum Volume (acre-ft)	1469.06	453.66	128.84
C & E Loss (ft)	0.00	Cum SA (acres)	81.93	18.88	11.42

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

CROSS SECTION

RIVER: San Mateo Creek
REACH: Lower RS: 2283.606

INPUT
Description: CS Modified with Blocked Obstructions to Approximate Pier Placement
Station Elevation Data num= 86

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	50.74	42.78	45.14	46.09	43.64	52.72	39.85	58.82	37.31
61.61	36.95	65.89	35.72	71.12	33.52	75.43	33.36	80.7	30.98
84.08	29.01	88.42	27.45	92.78	26.21	97.15	25.21	98.62	25.11
122.61	26.69	198.23	25.43	293.95	25.53	627.39	26.31	659.77	26.35
868.5	26.56	1089.31	28.67	1293.99	29.12	1313	29.19	1603.67	29.45
1749.84	29.39	1784.45	29.15	1932.01	27.38	2047.8	26.16	2065.96	26.39
2097.45	26.35	2101.37	26.02	2108.61	25.28	2124.15	21.46	2130.46	21.08
2136.12	21.06	2142.2	21.81	2157.02	25.66	2167.33	26.38	2167.53	26.39
2175.98	27.04	2189.51	26.68	2204.26	25.94	2286.03	26.1	2286.09	26.1
2287.27	26.1	2361.89	20.7	2375.17	19.79	2463.42	18.67	2533.64	19.71
2553.3	19.74	2601.28	19.8	2630.31	19.88	2668.83	19.99	2683.93	19.35
2699.63	18.69	2701.74	18.64	2742.9	17.75	2749.25	17.45	2750.91	17.37
2754.51	17.37	2764.19	17.89	2775.18	18.47	2801.95	19.93	2812.08	21.62
2823.26	23.74	2831.99	26.57	2838.6	31.04	2844.01	34.82	2847.37	36.09
2849.48	36.44	2857.12	35.86	2868.74	37.27	2873.98	37.97	2878.95	39.58
2884.38	42.66	2886.96	44.69	2888.97	46.04	2890.89	47.23	2911.85	58.02
2919.17	62.34	2940.49	73.07	2952.28	78.22	2954.21	79.14	2954.89	79.33
2968.95	82.03								

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val

```
      0    .035 2167.33     .07 2286.09     .05  2553.3    .035 2701.74     .05

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
      2375.17 2801.95           218.79  208.19  198.85             .1       .3
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       0     470      40       T
     470 2175.98   27.04       F
Blocked Obstructions     num=       1
   Sta L   Sta R    Elev
  2813.5  2824.5     100
```

CROSS SECTION OUTPUT Profile #Q50

E.G. Elev (ft)	28.90	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.49	Wt. n-Val.	0.041	0.044	0.050
W.S. Elev (ft)	28.41	Reach Len. (ft)	218.79	208.19	198.85
Crit W.S. (ft)	24.61	Flow Area (sq ft)	2428.40	3928.52	112.17
E.G. Slope (ft/ft)	0.001734	Area (sq ft)	3442.32	3928.52	112.17
Q Total (cfs)	31354.00	Flow (cfs)	6728.93	24277.39	347.68
Top Width (ft)	1953.93	Top Width (ft)	1505.39	426.78	21.76
Vel Total (ft/s)	4.85	Avg. Vel. (ft/s)	2.77	6.18	3.10
Max Chl Dpth (ft)	11.04	Hydr. Depth (ft)	2.17	9.21	5.15
Conv. Total (cfs)	752954.8	Conv. (cfs)	161592.7	583012.8	8349.4
Length Wtd. (ft)	210.54	Wetted Per. (ft)	1122.53	426.91	33.66
Min Ch El (ft)	17.37	Shear (lb/sq ft)	0.23	1.00	0.36
Alpha	1.33	Stream Power (lb/ft s)	0.65	6.16	1.12
Frctn Loss (ft)	0.20	Cum Volume (acre-ft)	217.31	170.54	34.95
C & E Loss (ft)	0.05	Cum SA (acres)	49.00	14.85	8.29

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

CROSS SECTION OUTPUT Profile #Q100

E.G. Elev (ft)	32.09	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.22	Wt. n-Val.	0.038	0.044	0.050
W.S. Elev (ft)	31.87	Reach Len. (ft)	218.79	208.19	198.85
Crit W.S. (ft)	26.42	Flow Area (sq ft)	8435.65	5404.51	196.26
E.G. Slope (ft/ft)	0.000610	Area (sq ft)	10790.97	5404.51	196.26
Q Total (cfs)	47312.00	Flow (cfs)	22347.05	24562.40	402.55
Top Width (ft)	2750.05	Top Width (ft)	2296.44	426.78	26.84
Vel Total (ft/s)	3.37	Avg. Vel. (ft/s)	2.65	4.54	2.05
Max Chl Dpth (ft)	14.50	Hydr. Depth (ft)	4.43	12.66	7.31
Conv. Total (cfs)	1915760.0	Conv. (cfs)	904878.0	994581.8	16300.0
Length Wtd. (ft)	213.23	Wetted Per. (ft)	1906.57	426.91	46.72
Min Ch El (ft)	17.37	Shear (lb/sq ft)	0.17	0.48	0.16
Alpha	1.24	Stream Power (lb/ft s)	0.45	2.19	0.33
Frctn Loss (ft)	0.09	Cum Volume (acre-ft)	400.97	210.09	53.00
C & E Loss (ft)	0.02	Cum SA (acres)	55.08	14.85	9.00

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.

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

CROSS SECTION OUTPUT Profile #Q100HC

			Left OB	Channel	Right OB
E.G. Elev (ft)	44.89	Element			
Vel Head (ft)	0.11	Wt. n-Val.	0.037	0.044	0.050
W.S. Elev (ft)	44.78	Reach Len. (ft)	218.79	208.19	198.85
Crit W.S. (ft)	30.93	Flow Area (sq ft)	33031.33	10914.22	891.73
E.G. Slope (ft/ft)	0.000095	Area (sq ft)	40696.89	10914.22	891.73
Q Total (cfs)	118891.00	Flow (cfs)	86551.32	31370.76	968.92
Top Width (ft)	2832.51	Top Width (ft)	2331.59	426.78	74.14
Vel Total (ft/s)	2.65	Avg. Vel. (ft/s)	2.62	2.87	1.09
Max Chl Dpth (ft)	27.41	Hydr. Depth (ft)	17.34	25.57	12.03
Conv. Total (cfs)	12207490.0	Conv. (cfs)	8886917.0	3221088.0	99486.8
Length Wtd. (ft)	215.80	Wetted Per. (ft)	1906.57	426.91	122.99
Min Ch El (ft)	17.37	Shear (lb/sq ft)	0.10	0.15	0.04
Alpha	1.02	Stream Power (lb/ft s)	0.27	0.44	0.05
Frctn Loss (ft)	0.02	Cum Volume (acre-ft)	1112.29	348.40	123.30
C & E Loss (ft)	0.00	Cum SA (acres)	60.90	14.88	10.98

Warning: Divided flow computed for this cross-section.

CROSS SECTION

RIVER: San Mateo Creek
REACH: Lower RS: 2075.420

INPUT
Description: CS Modified with Blocked Obstructions to Approximate Pier Placement
Station Elevation Data num= 87

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	56.14	14.77	54.31	19	52.24	27.57	46.86	35.56	43.25
39.25	42.77	44.96	41.01	52.02	37.81	57.89	37.63	65.16	34.08
69.88	31.11	75.99	28.75	82.17	26.85	88.44	25.31	90.58	25.16
126.36	27.69	254.47	25.75	460.21	26.05	596.07	26.4	637.79	26.45
957.52	26.78	1023.17	26.78	1089.97	26.83	1353.33	27.4	1459.51	27.35
1581.22	27.4	1936.42	26.32	1943.98	26.24	1949.29	26.07	1956.6	25.84
2078.61	22.19	2098.24	21.45	2109.81	20.82	2118.13	20.67	2130.12	20.28
2141.05	19.69	2151.46	20.58	2183.71	21.18	2203.83	22.33	2208.77	22.61
2216.07	23.3	2222.31	24.59	2247.77	25.87	2255.23	26.38	2281.94	25.74
2320.81	25.31	2324.59	25.1	2414.84	20.13	2419.95	19.76	2435.57	18.62
2445.33	18.15	2495.95	15.99	2535.91	14.32	2558.42	13.37	2601.04	13.16
2662.71	13.1	2663.22	13.1	2686.86	14.05	2687.18	14.06	2714.03	16
2741.84	18	2763.44	19.28	2774.96	19.63	2789.04	20.05	2827.31	21.15
2832.73	21.64	2838.78	22.73	2852.04	24.01	2853.37	24.68	2855.4	25.2
2863.67	27.8	2871.29	31.67	2889.08	41.1	2904.28	43.42	2905.7	43.98
2910.35	44.37	2918.94	46.39	2921.14	47.14	2934.71	54.07	2935.48	54.48
2936.41	55.21	2955.33	68.92	2957.51	70.01	2964.63	74.6	2978.74	78.46
2987.73	78.95	3018.94	79.77						

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	2203.83	.07	2324.59	.05	2535.91	.035	2686.86	.05

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
2495.95	2714.03	167.27	168.07	167.81	.1	.3

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
0	596.07	40	T
596.07	2255.23	26.38	F

Blocked Obstructions num= 1

Sta L	Sta R	Elev
2761.5	2772.5	100

CROSS SECTION OUTPUT Profile #Q50

			Left OB	Channel	Right OB
E.G. Elev (ft)	28.65	Element			
Vel Head (ft)	0.33	Wt. n-Val.	0.042	0.038	0.050
W.S. Elev (ft)	28.32	Reach Len. (ft)	167.27	168.07	167.81
Crit W.S. (ft)	22.22	Flow Area (sq ft)	5096.67	3147.52	1109.97
E.G. Slope (ft/ft)	0.000614	Area (sq ft)	6174.86	3147.52	1109.97
Q Total (cfs)	31354.00	Flow (cfs)	10200.62	18093.58	3059.81
Top Width (ft)	2776.29	Top Width (ft)	2418.55	218.08	139.66
Vel Total (ft/s)	3.35	Avg. Vel. (ft/s)	2.00	5.75	2.76
Max Chl Dpth (ft)	15.22	Hydr. Depth (ft)	2.68	14.43	7.95
Conv. Total (cfs)	1265166.0	Conv. (cfs)	411605.3	730094.3	123466.4
Length Wtd. (ft)	167.73	Wetted Per. (ft)	1900.56	218.22	158.63
Min Ch El (ft)	13.10	Shear (lb/sq ft)	0.10	0.55	0.27
Alpha	1.88	Stream Power (lb/ft s)	0.21	3.18	0.74
Frctn Loss (ft)	0.06	Cum Volume (acre-ft)	193.16	153.63	32.16
C & E Loss (ft)	0.06	Cum SA (acres)	39.14	13.31	7.92

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

CROSS SECTION OUTPUT Profile #Q100

			Left OB	Channel	Right OB
E.G. Elev (ft)	31.99	Element			
Vel Head (ft)	0.16	Wt. n-Val.	0.039	0.038	0.050
W.S. Elev (ft)	31.82	Reach Len. (ft)	167.27	168.07	167.81
Crit W.S. (ft)	24.35	Flow Area (sq ft)	11753.28	3911.61	1611.38
E.G. Slope (ft/ft)	0.000282	Area (sq ft)	14665.32	3911.61	1611.38
Q Total (cfs)	47312.00	Flow (cfs)	26169.54	17546.88	3595.58
Top Width (ft)	2791.83	Top Width (ft)	2427.20	218.08	146.55
Vel Total (ft/s)	2.74	Avg. Vel. (ft/s)	2.23	4.49	2.23
Max Chl Dpth (ft)	18.72	Hydr. Depth (ft)	6.19	17.94	11.00
Conv. Total (cfs)	2818593.0	Conv. (cfs)	1559039.0	1045348.0	214205.2
Length Wtd. (ft)	167.60	Wetted Per. (ft)	1900.56	218.22	173.37
Min Ch El (ft)	13.10	Shear (lb/sq ft)	0.11	0.32	0.16
Alpha	1.41	Stream Power (lb/ft s)	0.24	1.41	0.36
Frctn Loss (ft)	0.03	Cum Volume (acre-ft)	337.04	187.83	48.87
C & E Loss (ft)	0.02	Cum SA (acres)	43.22	13.31	8.61

Warning: Divided flow computed for this cross-section.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.

CROSS SECTION OUTPUT Profile #Q100HC

			Left OB	Channel	Right OB
E.G. Elev (ft)	44.87	Element			

Vel Head (ft)	0.11	Wt. n-Val.	0.038	0.038	0.050
W.S. Elev (ft)	44.76	Reach Len. (ft)	167.27	168.07	167.81
Crit W.S. (ft)	29.81	Flow Area (sq ft)	36339.94	6733.82	3695.77
E.G. Slope (ft/ft)	0.000077	Area (sq ft)	46287.80	6733.82	3695.77
Q Total (cfs)	118891.00	Flow (cfs)	90305.32	22611.83	5973.85
Top Width (ft)	2868.81	Top Width (ft)	2463.74	218.08	186.99
Vel Total (ft/s)	2.54	Avg. Vel. (ft/s)	2.49	3.36	1.62
Max Chl Dpth (ft)	31.66	Hydr. Depth (ft)	19.13	30.88	19.76
Conv. Total (cfs)	13517370.0	Conv. (cfs)	10267310.0	2570864.0	679199.5
Length Wtd. (ft)	167.46	Wetted Per. (ft)	1900.56	218.22	242.34
Min Ch El (ft)	13.10	Shear (lb/sq ft)	0.09	0.15	0.07
Alpha	1.08	Stream Power (lb/ft s)	0.23	0.50	0.12
Frctn Loss (ft)	0.01	Cum Volume (acre-ft)	893.84	306.22	112.83
C & E Loss (ft)	0.00	Cum SA (acres)	48.85	13.33	10.38

Warning: Divided flow computed for this cross-section.

CROSS SECTION

RIVER: San Mateo Creek
REACH: Lower RS: 1907.350

INPUT
Description: CS Modified with Blocked Obstructions to Approximate Pier Placement
Station Elevation Data num= 66

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	44.14	8.14	40.06	15.75	35.14	25.65	31.24	35.72	28.07
45.97	25.5	49.47	25.25	108.86	29.55	333.9	26.31	503.43	26.59
568.57	26.47	620	26.24	715.16	25.82	922.32	25.68	1102.29	25.73
1684.23	23.31	1876.22	23.1	1960.34	20.75	2123.72	19.23	2153.15	18.62
2187.86	17.51	2202.67	17.03	2221.09	17.59	2232.69	18.93	2232.87	18.94
2233.62	19.26	2239.75	21.26	2249.93	25.47	2259.31	26.83	2291.49	25.66
2309.73	25.25	2319.57	24.93	2333.71	23.84	2344.88	22.98	2381.9	19.92
2423.76	16.33	2453.52	14.85	2474.37	13.94	2508.74	13.18	2555.4	12.14
2619.59	10.65	2632.17	10.36	2668.37	12.74	2677.94	13.33	2685.8	13.81
2707.32	10.96	2709.78	10.6	2710.95	10.66	2736.96	13.36	2742.11	14.13
2743.31	14.78	2762.87	17.25	2773.99	19.15	2782.14	20.53	2790.38	20.96
2812.63	23.5	2833.42	26.13	2840.74	28.23	2858.94	33.06	2864.5	36.86
2881.91	46.17	2889.82	50.73	2902.76	58.27	2910.76	63.13	2911.45	63.3
2917.14	65.31								

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	2187.86	.07	2333.71	.05	2508.74	.035	2742.11	.05

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
2453.52	2743.31	205	206.77	220.21	.1	.3

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
0	922.32	40	T
922.32	2259.31	26.83	F

Blocked Obstructions num= 1

Sta L	Sta R	Elev
2696	2707	100

CROSS SECTION OUTPUT Profile #Q50

E.G. Elev (ft)	28.52	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.12	Wt. n-Val.	0.039	0.038	0.050
W.S. Elev (ft)	28.41	Reach Len. (ft)	205.00	206.77	220.21
Crit W.S. (ft)	19.65	Flow Area (sq ft)	8262.34	4472.71	710.04
E.G. Slope (ft/ft)	0.000224	Area (sq ft)	9847.77	4472.71	710.04
Q Total (cfs)	31354.00	Flow (cfs)	14740.25	15441.28	1172.47
Top Width (ft)	2700.61	Top Width (ft)	2323.73	278.79	98.10
Vel Total (ft/s)	2.33	Avg. Vel. (ft/s)	1.78	3.45	1.65
Max Chl Dpth (ft)	18.05	Hydr. Depth (ft)	5.40	16.04	7.24
Conv. Total (cfs)	2096187.0	Conv. (cfs)	985466.9	1032334.0	78385.9
Length Wtd. (ft)	206.11	Wetted Per. (ft)	1533.10	312.80	99.17
Min Ch El (ft)	10.36	Shear (lb/sq ft)	0.08	0.20	0.10
Alpha	1.37	Stream Power (lb/ft s)	0.13	0.69	0.17
Frctn Loss (ft)	0.04	Cum Volume (acre-ft)	162.39	138.93	28.65
C & E Loss (ft)	0.01	Cum SA (acres)	30.04	12.36	7.46

Warning: Divided flow computed for this cross-section.
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 #Q100

E.G. Elev (ft)	31.93	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.10	Wt. n-Val.	0.039	0.038	0.050
W.S. Elev (ft)	31.83	Reach Len. (ft)	205.00	206.77	220.21
Crit W.S. (ft)	21.83	Flow Area (sq ft)	13504.19	5427.11	1067.94
E.G. Slope (ft/ft)	0.000156	Area (sq ft)	18092.59	5427.11	1067.94
Q Total (cfs)	47312.00	Flow (cfs)	27964.18	17570.90	1776.92
Top Width (ft)	2819.16	Top Width (ft)	2429.37	278.79	111.00
Vel Total (ft/s)	2.37	Avg. Vel. (ft/s)	2.07	3.24	1.66
Max Chl Dpth (ft)	21.47	Hydr. Depth (ft)	8.82	19.47	9.62
Conv. Total (cfs)	3788173.0	Conv. (cfs)	2239033.0	1406865.0	142274.4
Length Wtd. (ft)	205.99	Wetted Per. (ft)	1533.10	319.64	112.52
Min Ch El (ft)	10.36	Shear (lb/sq ft)	0.09	0.17	0.09
Alpha	1.17	Stream Power (lb/ft s)	0.18	0.54	0.15
Frctn Loss (ft)	0.03	Cum Volume (acre-ft)	274.14	169.81	43.71
C & E Loss (ft)	0.00	Cum SA (acres)	33.89	12.36	8.11

Warning: Divided flow computed for this cross-section.
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 #Q100HC

E.G. Elev (ft)	44.86	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.11	Wt. n-Val.	0.038	0.038	0.050
W.S. Elev (ft)	44.75	Reach Len. (ft)	205.00	206.77	220.21
Crit W.S. (ft)	27.41	Flow Area (sq ft)	33280.45	9027.83	2671.08
E.G. Slope (ft/ft)	0.000074	Area (sq ft)	49639.72	9027.83	2671.08
Q Total (cfs)	118891.00	Flow (cfs)	87090.16	26949.56	4851.28
Top Width (ft)	2868.25	Top Width (ft)	2453.52	278.79	135.94
Vel Total (ft/s)	2.64	Avg. Vel. (ft/s)	2.62	2.99	1.82
Max Chl Dpth (ft)	34.39	Hydr. Depth (ft)	21.73	32.38	19.65
Conv. Total (cfs)	13839740.0	Conv. (cfs)	10137900.0	3137118.0	564722.6
Length Wtd. (ft)	205.93	Wetted Per. (ft)	1533.10	345.47	140.77

Min Ch El (ft)	10.36	Shear (lb/sq ft)	0.10	0.12	0.09
Alpha	1.03	Stream Power (lb/ft s)	0.26	0.36	0.16
Frctn Loss (ft)	0.02	Cum Volume (acre-ft)	709.66	275.82	100.57
C & E Loss (ft)	0.00	Cum SA (acres)	39.41	12.38	9.76

Warning: Divided flow computed for this cross-section.
Warning: The cross-section end points had to be extended vertically for the computed water surface.
Note: Manning's n values were composited to a single value in the main channel.

CROSS SECTION

RIVER: San Mateo Creek
REACH: Lower RS: 1700.584

INPUT
Description: Updated Manning's N Distribution, CS Modified with Blocked
Obstructions to Approximate Pier Placement

Station Elevation Data num= 88

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	51.57	5.89	48.65	17.96	40.9	33.64	34.78	49.57	29.8
65.75	25.78	71.26	25.38	164.51	32.07	424.44	28.26	435.81	28.64
456.68	28.36	480.09	27.56	521.88	26.72	628.46	26.53	695.8	26.23
832.49	25.62	924.21	24.72	975.25	24.61	1001.28	24.66	1097.17	23.95
1904.23	20.27	1954.8	20.01	2008.9	19.38	2032.35	19.16	2250.8	17.41
2263.36	17.56	2267.25	17.61	2270.07	17.66	2281.28	17.89	2295.91	18.31
2307.04	18.63	2315.53	19.61	2326.96	22.62	2336.55	25.3	2353.74	26.81
2356.82	27.13	2363.23	26.93	2383.7	26.36	2405.78	21.32	2412.11	20.56
2413.65	20.66	2416.62	20.86	2429.98	24.04	2430.84	24.04	2440.61	23.56
2440.74	23.54	2440.82	23.53	2462.16	19.51	2473.05	16.02	2478.88	13.19
2496.22	13.42	2530.96	13.57	2549.15	13.63	2633.31	13.54	2641.5	13.54
2646.06	13.41	2655.02	13.17	2674.52	12.63	2678.56	12.5	2708	11.55
2725.66	10.98	2731.49	10.79	2737.91	10.54	2744.96	10.91	2757.58	12.14
2759.22	12.74	2761.01	13.31	2765.65	15.01	2773.4	18.28	2775.26	19.73
2783.33	22.93	2784.63	23.27	2792.92	25.03	2795.85	25.7	2796.54	25.7
2798.66	25.83	2835.35	27.58	2844.32	29.5	2864.09	33.52	2877.06	40.47
2894.05	49.55	2894.66	49.8	2908.66	57.76	2909.94	58.43	2916.25	60.82
2928.34	65.53	2934.9	66.29	2943.48	67.12				

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	2295.91	.07	2413.65	.05	2678.56	.035	2708	.05

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
2473.05	2765.65	191.48	175.29	163.76	.1	.3

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
0	1340	40	T
1340	2356.82	27.13	F

Blocked Obstructions num= 1

Sta L	Sta R	Elev
2704.5	2715.5	100

CROSS SECTION OUTPUT Profile #Q50

E.G. Elev (ft)	28.47	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.09	Wt. n-Val.	0.036	0.048	0.050
W.S. Elev (ft)	28.38	Reach Len. (ft)	191.48	175.29	163.76

Crit W.S. (ft)	20.27	Flow Area (sq ft)	8610.86	4334.05	286.48
E.G. Slope (ft/ft)	0.000210	Area (sq ft)	11605.96	4334.05	286.48
Q Total (cfs)	31354.00	Flow (cfs)	19906.89	11147.18	299.92
Top Width (ft)	2442.72	Top Width (ft)	2087.67	281.60	73.44
Vel Total (ft/s)	2.37	Avg. Vel. (ft/s)	2.31	2.57	1.05
Max Chl Dpth (ft)	17.84	Hydr. Depth (ft)	7.60	15.39	3.90
Conv. Total (cfs)	2162362.0	Conv. (cfs)	1372900.0	768777.5	20684.6
Length Wtd. (ft)	181.43	Wetted Per. (ft)	1135.92	316.65	75.65
Min Ch El (ft)	10.54	Shear (lb/sq ft)	0.10	0.18	0.05
Alpha	1.02	Stream Power (lb/ft s)	0.23	0.46	0.05
Frctn Loss (ft)	0.09	Cum Volume (acre-ft)	111.91	118.03	26.13
C & E Loss (ft)	0.07	Cum SA (acres)	19.66	11.03	7.03

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

CROSS SECTION OUTPUT Profile #Q100

E.G. Elev (ft)	31.90	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.11	Wt. n-Val.	0.037	0.048	0.050
W.S. Elev (ft)	31.79	Reach Len. (ft)	191.48	175.29	163.76
Crit W.S. (ft)	22.64	Flow Area (sq ft)	12476.17	5294.70	564.86
E.G. Slope (ft/ft)	0.000170	Area (sq ft)	19316.46	5294.70	564.86
Q Total (cfs)	47312.00	Flow (cfs)	32734.75	13846.18	731.08
Top Width (ft)	2778.62	Top Width (ft)	2407.07	281.60	89.95
Vel Total (ft/s)	2.58	Avg. Vel. (ft/s)	2.62	2.62	1.29
Max Chl Dpth (ft)	21.25	Hydr. Depth (ft)	11.01	18.80	6.28
Conv. Total (cfs)	3629433.0	Conv. (cfs)	2511172.0	1062178.0	56082.8
Length Wtd. (ft)	185.87	Wetted Per. (ft)	1135.92	323.47	92.50
Min Ch El (ft)	10.54	Shear (lb/sq ft)	0.12	0.17	0.06
Alpha	1.02	Stream Power (lb/ft s)	0.31	0.45	0.08
Frctn Loss (ft)	0.05	Cum Volume (acre-ft)	186.12	144.37	39.58
C & E Loss (ft)	0.01	Cum SA (acres)	22.51	11.03	7.60

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

CROSS SECTION OUTPUT Profile #Q100HC

E.G. Elev (ft)	44.84	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.16	Wt. n-Val.	0.037	0.049	0.050
W.S. Elev (ft)	44.68	Reach Len. (ft)	191.48	175.29	163.76
Crit W.S. (ft)	27.13	Flow Area (sq ft)	27074.17	8922.78	1941.99
E.G. Slope (ft/ft)	0.000101	Area (sq ft)	50846.21	8922.78	1941.99
Q Total (cfs)	118891.00	Flow (cfs)	90518.41	24751.38	3621.21
Top Width (ft)	2861.85	Top Width (ft)	2460.97	281.60	119.28
Vel Total (ft/s)	3.13	Avg. Vel. (ft/s)	3.34	2.77	1.86
Max Chl Dpth (ft)	34.14	Hydr. Depth (ft)	23.89	31.69	16.28
Conv. Total (cfs)	11809630.0	Conv. (cfs)	8991336.0	2458594.0	359700.7

Length Wtd. (ft)	186.98	Wetted Per. (ft)	1135.92	349.24	124.81
Min Ch El (ft)	10.54	Shear (lb/sq ft)	0.15	0.16	0.10
Alpha	1.04	Stream Power (lb/ft s)	0.50	0.45	0.18
Frctn Loss (ft)	0.03	Cum Volume (acre-ft)	473.21	233.21	88.91
C & E Loss (ft)	0.02	Cum SA (acres)	27.85	11.05	9.11

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.

CROSS SECTION

RIVER: San Mateo Creek
REACH: Lower RS: 1525.293

INPUT
Description: CS Modified with Blocked Obstructions to Approximate Pier Placement
Station Elevation Data num= 78

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	51.07	5.07	47.72	26.85	39	49.08	31.89	71.8	26.11
79.57	25.54	194.28	33.97	213.43	35.33	257	34.67	319.43	36.65
432.1	35.1	465.96	33.93	560.72	30.37	651.59	27.46	661.61	27.13
719.9	25.24	898.8	23.32	1140.23	22.67	1274.91	22.87	1794.68	18.94
1828.89	18.72	1940.3	18.45	2055.67	18.11	2245.94	18.88	2286.04	19.11
2300.32	19.03	2342.84	18.78	2371.7	19.47	2373.54	19.69	2375.71	19.36
2382.38	18.32	2388.08	16.96	2399.37	17.01	2416.19	17.48	2436.79	19.12
2441.57	20.55	2456.96	26.12	2474.44	28.13	2475.92	28.33	2485.12	27.98
2488.94	27.69	2495.78	26.09	2510.48	19.33	2510.88	19.12	2511.05	19.12
2530.93	19.8	2536.26	19.82	2557.09	19.91	2567.51	20.6	2576.45	20.27
2613.85	15.31	2628.35	13.34	2636.67	12.85	2652.73	12.23	2717.45	9.03
2725	8.84	2752.8	8.14	2792.83	9.26	2799.13	9.44	2803.06	9.59
2805.02	9.98	2822.59	11.82	2827.86	13.22	2833.37	15.07	2837.72	18.7
2846.22	23.39	2849.21	25.06	2861.99	28.36	2867.24	29.72	2868.81	30.21
2886.11	39.95	2886.67	40.17	2899.72	44.58	2902.16	45.24	2920	52.33
2934.84	58.15	2940.66	60.74	2949.13	63.81				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.035	2300.32	.07	2536.26	.05

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
2613.85	2833.37	330.77	218.57	153.37	.1	.3

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
0	1940.3	40	T
1940.3	2475.92	28.33	F

Blocked Obstructions num= 1

Sta L	Sta R	Elev
2733.5	2744.5	100

CROSS SECTION OUTPUT Profile #Q50

E.G. Elev (ft)	28.31	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.80	Wt. n-Val.	0.054	0.050	0.050
W.S. Elev (ft)	27.52	Reach Len. (ft)	330.77	218.57	153.37
Crit W.S. (ft)	19.67	Flow Area (sq ft)	943.21	3522.58	122.80
E.G. Slope (ft/ft)	0.001866	Area (sq ft)	12696.70	3522.58	122.80

Q Total (cfs)	31354.00	Flow (cfs)	4373.59	26564.16	416.24
Top Width (ft)	2217.56	Top Width (ft)	1983.69	208.52	25.36
Vel Total (ft/s)	6.83	Avg. Vel. (ft/s)	4.64	7.54	3.39
Max Chl Dpth (ft)	19.38	Hydr. Depth (ft)	7.60	16.89	4.84
Conv. Total (cfs)	725737.4	Conv. (cfs)	101233.6	614869.1	9634.6
Length Wtd. (ft)	227.27	Wetted Per. (ft)	126.24	247.47	28.63
Min Ch El (ft)	8.14	Shear (lb/sq ft)	0.87	1.66	0.50
Alpha	1.10	Stream Power (lb/ft s)	4.04	12.51	1.69
Frctn Loss (ft)	0.34	Cum Volume (acre-ft)	58.50	102.22	25.36
C & E Loss (ft)	0.04	Cum SA (acres)	10.71	10.04	6.84

Warning: Divided flow computed for this cross-section.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.

CROSS SECTION OUTPUT Profile #Q100

E.G. Elev (ft)	31.84	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.21	Wt. n-Val.	0.043	0.050	0.050
W.S. Elev (ft)	31.63	Reach Len. (ft)	330.77	218.57	153.37
Crit W.S. (ft)	22.73	Flow Area (sq ft)	8294.99	4380.51	257.19
E.G. Slope (ft/ft)	0.000378	Area (sq ft)	21342.13	4380.51	257.19
Q Total (cfs)	47312.00	Flow (cfs)	29995.40	16818.95	497.65
Top Width (ft)	2445.56	Top Width (ft)	2199.08	208.52	37.97
Vel Total (ft/s)	3.66	Avg. Vel. (ft/s)	3.62	3.84	1.93
Max Chl Dpth (ft)	23.49	Hydr. Depth (ft)	12.32	21.01	6.77
Conv. Total (cfs)	2433639.0	Conv. (cfs)	1542906.0	865134.4	25598.3
Length Wtd. (ft)	255.39	Wetted Per. (ft)	677.33	255.70	41.96
Min Ch El (ft)	8.14	Shear (lb/sq ft)	0.29	0.40	0.14
Alpha	1.01	Stream Power (lb/ft s)	1.04	1.55	0.28
Frctn Loss (ft)	0.17	Cum Volume (acre-ft)	96.75	124.90	38.04
C & E Loss (ft)	0.08	Cum SA (acres)	12.39	10.04	7.36

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

CROSS SECTION OUTPUT Profile #Q100HC

E.G. Elev (ft)	44.78	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.37	Wt. n-Val.	0.043	0.050	0.050
W.S. Elev (ft)	44.42	Reach Len. (ft)	330.77	218.57	153.37
Crit W.S. (ft)	28.33	Flow Area (sq ft)	16907.64	7046.84	899.27
E.G. Slope (ft/ft)	0.000298	Area (sq ft)	53234.43	7046.84	899.27
Q Total (cfs)	118891.00	Flow (cfs)	85455.86	30968.48	2466.66
Top Width (ft)	2874.93	Top Width (ft)	2600.53	208.52	65.87
Vel Total (ft/s)	4.78	Avg. Vel. (ft/s)	5.05	4.39	2.74
Max Chl Dpth (ft)	36.28	Hydr. Depth (ft)	25.10	33.79	13.65
Conv. Total (cfs)	6883830.0	Conv. (cfs)	4947924.0	1793086.0	142820.5
Length Wtd. (ft)	260.32	Wetted Per. (ft)	677.33	281.27	72.79
Min Ch El (ft)	8.14	Shear (lb/sq ft)	0.46	0.47	0.23
Alpha	1.03	Stream Power (lb/ft s)	2.35	2.05	0.63
Frctn Loss (ft)	0.15	Cum Volume (acre-ft)	244.45	201.08	83.56

C & E Loss (ft)	0.16	Cum SA (acres)	16.72	10.06	8.76

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.

CROSS SECTION

RIVER: San Mateo Creek
REACH: Lower RS: 1306.721

INPUT
Description:
Station Elevation Data num= 90

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	50.27	7.39	50.71	13.86	51.26	25.56	52.19	28.23	52.38
32.56	52.69	37.15	52.7	55.11	52.64	66.57	52.55	84.24	52.96
85.62	52.94	86.9	52.9	88.44	52.94	120.44	52.73	125.16	52.69
134.36	52.8	135.53	52.82	152.02	52.1	171.05	53.23	178.87	53.3
242.82	52.98	248.31	52.92	271.23	53.28	275.12	53.21	277.91	53.21
336.46	53.28	338.36	53.3	339.29	53.35	341.53	53.35	365.78	53.08
389.33	52.59	396.79	52.51	407.25	52.6	411.86	52.3	415.45	51.1
422.62	46.99	434.58	39.78	439.64	37.68	457.1	30.09	483.3	20.4
483.48	20.34	483.5	20.33	483.6	20.3	507.69	14.45	528.46	13.2
530.21	13.11	558.45	11.61	561.4	11.47	611.24	10.54	621.64	10.3
641.47	9.84	679.09	10.12	699.71	10.62	718.91	11.08	735.19	11.03
748.6	11.41	756.57	11.69	768.08	12.29	787.67	14.67	795.7	17.97
802.54	20.15	816.15	25.4	817.26	25.75	818.08	26.14	818.77	26.26
840.21	32.25	847.14	32.63	849.85	33.19	854.99	36.28	867.48	44.01
874.58	47.69	878.1	49.51	890.65	55.08	895.99	58.26	897.3	58.74
899.18	59.58	908.75	63.85	911.62	64.34	919.2	64.45	925.85	64.35
927.15	64.29	934.51	64.5	940.09	64.07	944.42	64.19	958.07	65
1000	65.57	1005.44	65.51	1007.75	65.54	1014.93	65.6	1033.54	66.55

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.02	134.36	.05	899.18	.02

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
507.69	787.67	221.39	253.51	221.56	.3	.5

CROSS SECTION OUTPUT Profile #Q50

			Left OB	Channel	Right OB
E.G. Elev (ft)	27.93	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.65	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	27.28	Reach Len. (ft)	7.00	7.00	7.00
Crit W.S. (ft)	18.67	Flow Area (sq ft)	304.64	4465.62	211.11
E.G. Slope (ft/ft)	0.001233	Area (sq ft)	304.64	4465.62	211.11
Q Total (cfs)	31354.00	Flow (cfs)	1138.87	29511.71	703.42
Top Width (ft)	357.72	Top Width (ft)	42.99	279.98	34.75
Vel Total (ft/s)	6.29	Avg. Vel. (ft/s)	3.74	6.61	3.33
Max Chl Dpth (ft)	17.44	Hydr. Depth (ft)	7.09	15.95	6.08
Conv. Total (cfs)	892790.1	Conv. (cfs)	32428.8	840331.7	20029.5
Length Wtd. (ft)	7.00	Wetted Per. (ft)	44.94	280.26	37.01
Min Ch El (ft)	9.84	Shear (lb/sq ft)	0.52	1.23	0.44

Alpha	1.06	Stream Power (lb/ft s)	1.95	8.11	1.46
Frctn Loss (ft)	0.01	Cum Volume (acre-ft)	9.13	82.18	24.78
C & E Loss (ft)	0.06	Cum SA (acres)	3.01	8.81	6.74

CROSS SECTION OUTPUT Profile #Q100

		Element	Left OB	Channel	Right OB
E.G. Elev (ft)	31.60	Wt. n-Val.	0.050	0.050	0.050
Vel Head (ft)	0.96	Reach Len. (ft)	7.00	7.00	7.00
W.S. Elev (ft)	30.64	Flow Area (sq ft)	464.24	5406.08	348.02
Crit W.S. (ft)	20.96	Area (sq ft)	464.24	5406.08	348.02
E.G. Slope (ft/ft)	0.001430	Flow (cfs)	2178.31	43698.13	1435.56
Q Total (cfs)	47312.00	Top Width (ft)	51.85	279.98	46.77
Top Width (ft)	378.60	Avg. Vel. (ft/s)	4.69	8.08	4.12
Vel Total (ft/s)	7.61	Hydr. Depth (ft)	8.95	19.31	7.44
Max Chl Dpth (ft)	20.80	Conv. (cfs)	57602.8	1155544.0	37961.8
Conv. Total (cfs)	1251109.0	Wetted Per. (ft)	54.42	280.26	49.49
Length Wtd. (ft)	7.00	Shear (lb/sq ft)	0.76	1.72	0.63
Min Ch El (ft)	9.84	Stream Power (lb/ft s)	3.57	13.92	2.59
Alpha	1.07	Cum Volume (acre-ft)	13.96	100.35	36.97
Frctn Loss (ft)	0.01	Cum SA (acres)	3.84	8.81	7.21
C & E Loss (ft)	0.10				

Warning: The conveyance ratio (upstream 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 #Q100HC

		Element	Left OB	Channel	Right OB
E.G. Elev (ft)	44.48	Wt. n-Val.	0.050	0.050	0.050
Vel Head (ft)	1.94	Reach Len. (ft)	7.00	7.00	7.00
W.S. Elev (ft)	42.54	Flow Area (sq ft)	1242.72	8738.37	1136.56
Crit W.S. (ft)	28.70	Area (sq ft)	1242.72	8738.37	1136.56
E.G. Slope (ft/ft)	0.001581	Flow (cfs)	8926.90	102282.60	7681.48
Q Total (cfs)	118891.00	Top Width (ft)	77.69	279.98	77.43
Top Width (ft)	435.10	Avg. Vel. (ft/s)	7.18	11.71	6.76
Vel Total (ft/s)	10.69	Hydr. Depth (ft)	16.00	31.21	14.68
Max Chl Dpth (ft)	32.70	Conv. (cfs)	224524.8	2572561.0	193200.8
Conv. Total (cfs)	2990287.0	Wetted Per. (ft)	82.90	280.26	83.08
Length Wtd. (ft)	7.00	Shear (lb/sq ft)	1.48	3.08	1.35
Min Ch El (ft)	9.84	Stream Power (lb/ft s)	10.63	36.02	9.12
Alpha	1.09	Cum Volume (acre-ft)	37.61	161.48	79.98
Frctn Loss (ft)	0.02	Cum SA (acres)	6.56	8.83	8.51
C & E Loss (ft)	0.23				

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.

BRIDGE

RIVER: San Mateo Creek
REACH: Lower RS: 1300

INPUT
Description: I-5 Bridge

Distance from Upstream XS = 7
Deck/Roadway Width = 199.7
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
0	50.03	0	401.9	58.07	0	401.9	58.07	52.49
907.9	68.19	62.61	907.9	68.19	0	1200	74.03	0

Upstream Bridge Cross Section Data
Station Elevation Data num= 90

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	50.27	7.39	50.71	13.86	51.26	25.56	52.19	28.23	52.38
32.56	52.69	37.15	52.7	55.11	52.64	66.57	52.55	84.24	52.96
85.62	52.94	86.9	52.9	88.44	52.94	120.44	52.73	125.16	52.69
134.36	52.8	135.53	52.82	152.02	52.1	171.05	53.23	178.87	53.3
242.82	52.98	248.31	52.92	271.23	53.28	275.12	53.21	277.91	53.21
336.46	53.28	338.36	53.3	339.29	53.35	341.53	53.35	365.78	53.08
389.33	52.59	396.79	52.51	407.25	52.6	411.86	52.3	415.45	51.1
422.62	46.99	434.58	39.78	439.64	37.68	457.1	30.09	483.3	20.4
483.48	20.34	483.5	20.33	483.6	20.3	507.69	14.45	528.46	13.2
530.21	13.11	558.45	11.61	561.4	11.47	611.24	10.54	621.64	10.3
641.47	9.84	679.09	10.12	699.71	10.62	718.91	11.08	735.19	11.03
748.6	11.41	756.57	11.69	768.08	12.29	787.67	14.67	795.7	17.97
802.54	20.15	816.15	25.4	817.26	25.75	818.08	26.14	818.77	26.26
840.21	32.25	847.14	32.63	849.85	33.19	854.99	36.28	867.48	44.01
874.58	47.69	878.1	49.51	890.65	55.08	895.99	58.26	897.3	58.74
899.18	59.58	908.75	63.85	911.62	64.34	919.2	64.45	925.85	64.35
927.15	64.29	934.51	64.5	940.09	64.07	944.42	64.19	958.07	65
1000	65.57	1005.44	65.51	1007.75	65.54	1014.93	65.6	1033.54	66.55

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.02	134.36	.05	899.18	.02

Bank Sta: Left	Right	Coeff Contr.	Expan.
507.69	787.67	.3	.5

Downstream Deck/Roadway Coordinates
num= 6

Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord
0	53.47	0	230	58.07	0	230	58.07	52.49
736	68.19	62.61	736	68.19	0	1200	77.47	0

Downstream Bridge Cross Section Data
Station Elevation Data num= 79

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	48.99	.6	48.97	35.35	49.91	61.75	53.81	61.78	53.81
61.81	53.82	83.28	54.31	91.24	54.54	98.22	54.53	109	54.19
114.66	54.06	138.42	54.21	143.5	54.25	175.83	54.37	183.22	54.15
200.82	54.33	209.98	53.9	220.67	54.17	226.57	53.67	229.54	53.24
232.27	52.57	234.56	51.54	237.5	50.31	251.74	41.4	271.79	32
286.55	24.61	302.37	15.01	306.27	14.37	311.05	13.38	315.99	12.63
320.82	12.88	343.05	13.99	347.74	14.27	351.53	14.31	381.31	14.6
391.04	14.4	429.91	13.32	443.95	12.85	481.63	11.63	504.45	12.84
504.82	12.85	541.43	13.82	570.22	15	602	16.29	602.23	16.31
603.01	16.42	630.2	20.63	634.39	22.22	653.73	27.04	654.8	27.32
656.2	27.75	679.92	35.43	682.86	35.51	690.33	39.43	697.91	43.37
713.85	53.87	721.88	58.53	724.16	59.87	729.07	61.76	733.98	63.4

744.31	63.95	750.69	64.23	752.82	64.22	753.93	64.41	765.94	66.02
768.65	66.34	774.72	66.48	780.96	66.85	792.91	66.81	804.58	66.96
814.86	66.99	828.41	67.2	846.92	66.85	867.3	66.49	896.4	66.97
900.58	67.04	914.56	67.11	934.65	66.8	943.58	67.55		

Manning's n Values num= 2

Sta	n Val	Sta	n Val
0	.05	896.4	.02

Bank Sta: Left	Right	Coeff Contr.	Expan.
302.37	570.22	.3	.5

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 = 60
Energy head used in spillway design =
Spillway height used in design =
Weir crest shape = Broad Crested

Number of Piers = 4

Pier Data
Pier Station Upstream= 501.9 Downstream= 330
Upstream num= 2

Width	Elev	Width	Elev
12.25	0	12.25	168

Downstream num= 2

Width	Elev	Width	Elev
12.25	0	12.25	168

Pier Data
Pier Station Upstream= 603.9 Downstream= 432
Upstream num= 2

Width	Elev	Width	Elev
12.25	0	12.25	168

Downstream num= 2

Width	Elev	Width	Elev
12.25	0	12.25	168

Pier Data
Pier Station Upstream= 705.9 Downstream= 534
Upstream num= 2

Width	Elev	Width	Elev
12.25	0	12.25	168

Downstream num= 2

Width	Elev	Width	Elev
12.25	0	12.25	168

Pier Data
Pier Station Upstream= 807.9 Downstream= 636
Upstream num= 2

Width	Elev	Width	Elev
12.25	0	12.25	168

Downstream num= 2

Width	Elev	Width	Elev
12.25	0	12.25	168

Number of Bridge Coefficient Sets = 1

Low Flow Methods and Data
Energy
Selected Low Flow Methods = Energy

High Flow Method
Energy Only

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

BRIDGE OUTPUT Profile #Q50

E.G. US. (ft)	27.93	Element	Inside BR US	Inside BR DS
W.S. US. (ft)	27.28	E.G. Elev (ft)	27.85	27.06
Q Total (cfs)	31354.00	W.S. Elev (ft)	26.99	25.77
Q Bridge (cfs)	31354.00	Crit W.S. (ft)	19.19	21.40
Q Weir (cfs)		Max Chl Dpth (ft)	17.15	14.14
Weir Sta Lft (ft)		Vel Total (ft/s)	7.32	9.05
Weir Sta Rgt (ft)		Flow Area (sq ft)	4284.38	3465.88
Weir Submerg		Froude # Chl	0.34	0.47
Weir Max Depth (ft)		Specif Force (cu ft)	39717.46	29131.91
Min El Weir Flow (ft)	60.00	Hydr Depth (ft)	13.96	10.99
Min El Prs (ft)	62.57	W.P. Total (ft)	406.83	400.34
Delta EG (ft)	1.17	Conv. Total (cfs)	643883.4	443521.7
Delta WS (ft)	1.55	Top Width (ft)	306.89	315.42
BR Open Area (sq ft)	15758.87	Frctn Loss (ft)	0.66	0.17
BR Open Vel (ft/s)	9.05	C & E Loss (ft)	0.13	0.13
Coef of Q		Shear Total (lb/sq ft)	1.56	2.70
Br Sel Method	Energy only	Power Total (lb/ft s)	11.41	24.43

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

BRIDGE OUTPUT Profile #Q100

E.G. US. (ft)	31.60	Element	Inside BR US	Inside BR DS
W.S. US. (ft)	30.64	E.G. Elev (ft)	31.48	30.53
Q Total (cfs)	47312.00	W.S. Elev (ft)	30.18	28.73
Q Bridge (cfs)	47312.00	Crit W.S. (ft)	21.65	23.60
Q Weir (cfs)		Max Chl Dpth (ft)	20.34	17.10
Weir Sta Lft (ft)		Vel Total (ft/s)	8.94	10.69
Weir Sta Rgt (ft)		Flow Area (sq ft)	5294.54	4424.17
Weir Submerg		Froude # Chl	0.38	0.49
Weir Max Depth (ft)		Specif Force (cu ft)	61127.18	47724.53
Min El Weir Flow (ft)	60.00	Hydr Depth (ft)	16.20	13.33
Min El Prs (ft)	62.57	W.P. Total (ft)	453.34	441.60
Delta EG (ft)	1.44	Conv. Total (cfs)	863007.9	630022.1
Delta WS (ft)	1.91	Top Width (ft)	326.88	331.91
BR Open Area (sq ft)	15758.87	Frctn Loss (ft)	0.80	0.19
BR Open Vel (ft/s)	10.69	C & E Loss (ft)	0.15	0.19
Coef of Q		Shear Total (lb/sq ft)	2.19	3.53
Br Sel Method	Energy only	Power Total (lb/ft s)	19.58	37.72

BRIDGE OUTPUT Profile #Q100HC

E.G. US. (ft)	44.48	Element	Inside BR US	Inside BR DS
W.S. US. (ft)	42.54	E.G. Elev (ft)	44.23	43.13
Q Total (cfs)	118891.00	W.S. Elev (ft)	41.54	40.08
Q Bridge (cfs)	118891.00	Crit W.S. (ft)	30.10	31.49
Q Weir (cfs)		Max Chl Dpth (ft)	31.70	28.45
Weir Sta Lft (ft)		Vel Total (ft/s)	12.68	13.95
Weir Sta Rgt (ft)		Flow Area (sq ft)	9376.39	8521.89
Weir Submerg		Froude # Chl	0.44	0.49
Weir Max Depth (ft)		Specif Force (cu ft)	178665.40	156465.30
Min El Weir Flow (ft)	60.00	Hydr Depth (ft)	24.49	21.96
Min El Prs (ft)	62.57	W.P. Total (ft)	605.32	593.23
Delta EG (ft)	1.81	Conv. Total (cfs)	1834940.0	1543729.0
Delta WS (ft)	2.34	Top Width (ft)	382.82	388.01
BR Open Area (sq ft)	15758.87	Frctn Loss (ft)	0.99	0.17
BR Open Vel (ft/s)	13.95	C & E Loss (ft)	0.11	0.30
Coef of Q		Shear Total (lb/sq ft)	4.06	5.32
Br Sel Method	Energy only	Power Total (lb/ft s)	51.48	74.21

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.
Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream 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: San Mateo Creek
REACH: Lower RS: 1053.212

INPUT
Description:
Station Elevation Data num= 79

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	48.99	.6	48.97	35.35	49.91	61.75	53.81	61.78	53.81
61.81	53.82	83.28	54.31	91.24	54.54	98.22	54.53	109	54.19
114.66	54.06	138.42	54.21	143.5	54.25	175.83	54.37	183.22	54.15
200.82	54.33	209.98	53.9	220.67	54.17	226.57	53.67	229.54	53.24
232.27	52.57	234.56	51.54	237.5	50.31	251.74	41.4	271.79	32
286.55	24.61	302.37	15.01	306.27	14.37	311.05	13.38	315.99	12.63
320.82	12.88	343.05	13.99	347.74	14.27	351.53	14.31	381.31	14.6
391.04	14.4	429.91	13.32	443.95	12.85	481.63	11.63	504.45	12.84
504.82	12.85	541.43	13.82	570.22	15	602	16.29	602.23	16.31
603.01	16.42	630.2	20.63	634.39	22.22	653.73	27.04	654.8	27.32
656.2	27.75	679.92	35.43	682.86	35.51	690.33	39.43	697.91	43.37
713.85	53.87	721.88	58.53	724.16	59.87	729.07	61.76	733.98	63.4
744.31	63.95	750.69	64.23	752.82	64.22	753.93	64.41	765.94	66.02
768.65	66.34	774.72	66.48	780.96	66.85	792.91	66.81	804.58	66.96
814.86	66.99	828.41	67.2	846.92	66.85	867.3	66.49	896.4	66.97
900.58	67.04	914.56	67.11	934.65	66.8	943.58	67.55		

Manning's n Values num= 2

Sta	n Val	Sta	n Val
0	.05	896.4	.02

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
302.37	570.22	331.16	386.26 449.77	.3	.5

CROSS SECTION OUTPUT Profile #Q50

E.G. Elev (ft)	26.76	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.03	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	25.73	Reach Len. (ft)	331.16	386.26	449.77
Crit W.S. (ft)		Flow Area (sq ft)	94.92	3281.25	568.71
E.G. Slope (ft/ft)	0.002841	Area (sq ft)	94.92	3281.25	568.71
Q Total (cfs)	31354.00	Flow (cfs)	410.93	27594.18	3348.89
Top Width (ft)	364.17	Top Width (ft)	18.06	267.85	78.26
Vel Total (ft/s)	7.95	Avg. Vel. (ft/s)	4.33	8.41	5.89
Max Chl Dpth (ft)	14.10	Hydr. Depth (ft)	5.26	12.25	7.27
Conv. Total (cfs)	588266.5	Conv. (cfs)	7709.9	517724.4	62832.2
Length Wtd. (ft)	395.56	Wetted Per. (ft)	21.01	268.22	79.34
Min Ch El (ft)	11.63	Shear (lb/sq ft)	0.80	2.17	1.27
Alpha	1.05	Stream Power (lb/ft s)	3.47	18.25	7.49
Frctn Loss (ft)	1.56	Cum Volume (acre-ft)	8.41	62.58	22.61
C & E Loss (ft)	0.18	Cum SA (acres)	2.88	7.39	6.45

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 conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 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 #Q100

E.G. Elev (ft)	30.16	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.43	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	28.73	Reach Len. (ft)	331.16	386.26	449.77
Crit W.S. (ft)		Flow Area (sq ft)	158.06	4084.45	820.50
E.G. Slope (ft/ft)	0.002980	Area (sq ft)	158.06	4084.45	820.50
Q Total (cfs)	47312.00	Flow (cfs)	818.58	40706.38	5787.04
Top Width (ft)	380.90	Top Width (ft)	24.05	267.85	89.01
Vel Total (ft/s)	9.34	Avg. Vel. (ft/s)	5.18	9.97	7.05
Max Chl Dpth (ft)	17.10	Hydr. Depth (ft)	6.57	15.25	9.22
Conv. Total (cfs)	866758.4	Conv. (cfs)	14996.5	745742.9	106019.0
Length Wtd. (ft)	396.48	Wetted Per. (ft)	27.71	268.22	90.50
Min Ch El (ft)	11.63	Shear (lb/sq ft)	1.06	2.83	1.69
Alpha	1.05	Stream Power (lb/ft s)	5.50	28.23	11.89
Frctn Loss (ft)	1.55	Cum Volume (acre-ft)	12.75	76.38	33.85
C & E Loss (ft)	0.19	Cum SA (acres)	3.66	7.39	6.87

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 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 #Q100HC

E.G. Elev (ft)	42.66	Element	Left OB	Channel	Right OB
Vel Head (ft)	2.46	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	40.20	Reach Len. (ft)	331.16	386.26	449.77

Crit W.S. (ft)		Flow Area (sq ft)	569.86	7156.84	2044.36
E.G. Slope (ft/ft)	0.002514	Area (sq ft)	569.86	7156.84	2044.36
Q Total (cfs)	118891.00	Flow (cfs)	4068.83	95226.02	19596.16
Top Width (ft)	437.51	Top Width (ft)	48.07	267.85	121.59
Vel Total (ft/s)	12.17	Avg. Vel. (ft/s)	7.14	13.31	9.59
Max Chl Dpth (ft)	28.57	Hydr. Depth (ft)	11.85	26.72	16.81
Conv. Total (cfs)	2371166.0	Conv. (cfs)	81148.8	1899190.0	390826.4
Length Wtd. (ft)	397.23	Wetted Per. (ft)	54.33	268.22	125.30
Min Ch El (ft)	11.63	Shear (lb/sq ft)	1.65	4.19	2.56
Alpha	1.07	Stream Power (lb/ft s)	11.75	55.72	24.55
Frctn Loss (ft)	1.05	Cum Volume (acre-ft)	33.57	121.30	71.70
C & E Loss (ft)	0.01	Cum SA (acres)	6.24	7.41	7.98

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

RIVER: San Mateo Creek
REACH: Lower RS: 977.176

INPUT
Description: Manual Modification of Manning's N Values
Station Elevation Data num= 57

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	32.89	.37	32.89	19.41	33.13	84.16	34.51	88.96	34.54
90.58	34.51	97.36	34.36	99.09	34.31	102.02	34.03	119.08	32.09
123.45	30.02	131.06	28.22	136.27	26.19	152.7	22.08	158.91	19.86
170.94	15.17	173.08	14.25	178.58	13.28	178.89	13.22	180.93	12.68
219.95	13.45	229.16	13.55	232.38	13.74	237.43	13.79	262.37	13.5
270.48	13.33	306.25	12.6	358.06	11.49	362.22	11.6	363.09	11.64
379.14	12.37	428.4	14.61	447.41	17.86	466.86	18.2	486.76	19.28
491.92	19.62	502.84	24.68	505.09	25.48	507.65	26.42	510.83	27.44
521.28	30.25	532.71	31.62	536.89	32.69	546.1	37.23	548.97	38.63
552.13	39.52	561.19	40.26	590.09	42.36	595.7	43.23	609.69	45.52
624.82	45.97	630.04	46.06	641.6	48.42	647.07	48.5	667.36	50.14
686.06	50.58	686.84	50.61						

Manning's n Values num= 1

Sta	n Val
0	.05

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
178.58	379.14	50.27	50.41	43.68	.3	.5

CROSS SECTION OUTPUT Profile #Q50

E.G. Elev (ft)	25.02	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.64	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	23.38	Reach Len. (ft)	7.00	7.00	7.00
Crit W.S. (ft)	20.77	Flow Area (sq ft)	160.31	2123.08	854.83
E.G. Slope (ft/ft)	0.005827	Area (sq ft)	160.31	2123.08	854.83
Q Total (cfs)	31354.00	Flow (cfs)	1047.87	23209.12	7097.01
Top Width (ft)	352.53	Top Width (ft)	31.07	200.56	120.89
Vel Total (ft/s)	9.99	Avg. Vel. (ft/s)	6.54	10.93	8.30
Max Chl Dpth (ft)	11.89	Hydr. Depth (ft)	5.16	10.59	7.07
Conv. Total (cfs)	410754.9	Conv. (cfs)	13727.7	304052.4	92974.8

Length Wtd. (ft)	7.00	Wetted Per. (ft)	32.77	200.69	122.09
Min Ch El (ft)	11.49	Shear (lb/sq ft)	1.78	3.85	2.55
Alpha	1.06	Stream Power (lb/ft s)	11.63	42.07	21.14
Frctn Loss (ft)		Cum Volume (acre-ft)	7.44	38.62	15.26
C & E Loss (ft)		Cum SA (acres)	2.69	5.31	5.43

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

CROSS SECTION OUTPUT Profile #Q100

E.G. Elev (ft)	28.42	Element	Left OB	Channel	Right OB
Vel Head (ft)	2.07	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	26.35	Reach Len. (ft)	7.00	7.00	7.00
Crit W.S. (ft)	22.86	Flow Area (sq ft)	270.13	2718.38	1224.04
E.G. Slope (ft/ft)	0.005335	Area (sq ft)	270.13	2718.38	1224.04
Q Total (cfs)	47312.00	Flow (cfs)	1942.72	33527.79	11841.49
Top Width (ft)	371.59	Top Width (ft)	42.71	200.56	128.31
Vel Total (ft/s)	11.23	Avg. Vel. (ft/s)	7.19	12.33	9.67
Max Chl Dpth (ft)	14.86	Hydr. Depth (ft)	6.32	13.55	9.54
Conv. Total (cfs)	647771.1	Conv. (cfs)	26598.7	459044.9	162127.5
Length Wtd. (ft)	7.00	Wetted Per. (ft)	44.79	200.69	130.09
Min Ch El (ft)	11.49	Shear (lb/sq ft)	2.01	4.51	3.13
Alpha	1.06	Stream Power (lb/ft s)	14.44	55.64	30.31
Frctn Loss (ft)		Cum Volume (acre-ft)	11.12	46.22	23.30
C & E Loss (ft)		Cum SA (acres)	3.41	5.31	5.74

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream 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 #Q100HC

E.G. Elev (ft)	41.60	Element	Left OB	Channel	Right OB
Vel Head (ft)	2.45	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	39.16	Reach Len. (ft)	7.00	7.00	7.00
Crit W.S. (ft)	30.02	Flow Area (sq ft)	1639.76	5287.46	3182.74
E.G. Slope (ft/ft)	0.002792	Area (sq ft)	1639.76	5287.46	3182.74
Q Total (cfs)	118891.00	Flow (cfs)	10906.50	73512.42	34472.07
Top Width (ft)	550.84	Top Width (ft)	178.58	200.56	171.70
Vel Total (ft/s)	11.76	Avg. Vel. (ft/s)	6.65	13.90	10.83
Max Chl Dpth (ft)	27.67	Hydr. Depth (ft)	9.18	26.36	18.54
Conv. Total (cfs)	2250120.0	Conv. (cfs)	206415.4	1391289.0	652415.4
Length Wtd. (ft)	7.00	Wetted Per. (ft)	188.09	200.69	175.69
Min Ch El (ft)	11.49	Shear (lb/sq ft)	1.52	4.59	3.16
Alpha	1.14	Stream Power (lb/ft s)	10.11	63.84	34.20
Frctn Loss (ft)	0.05	Cum Volume (acre-ft)	25.17	66.12	44.72
C & E Loss (ft)	2.31	Cum SA (acres)	5.38	5.33	6.47

Warning: The cross-section end points had to be extended vertically for the computed water surface.
Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than

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

BRIDGE

RIVER: San Mateo Creek
REACH: Lower RS: 970

INPUT
Description: Old PCH Bridge
Distance from Upstream XS = 7
Deck/Roadway Width = 32.81
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
0	30.81	0	100	32.81	0	100	32.81	27.23
536.35	39.37	33.79	536.35	39.37	0	600	40.64	0

Upstream Bridge Cross Section Data
Station Elevation Data num= 57

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	32.89	.37	32.89	19.41	33.13	84.16	34.51	88.96	34.54
90.58	34.51	97.36	34.36	99.09	34.31	102.02	34.03	119.08	32.09
123.45	30.02	131.06	28.22	136.27	26.19	152.7	22.08	158.91	19.86
170.94	15.17	173.08	14.25	178.58	13.28	178.89	13.22	180.93	12.68
219.95	13.45	229.16	13.55	232.38	13.74	237.43	13.79	262.37	13.5
270.48	13.33	306.25	12.6	358.06	11.49	362.22	11.6	363.09	11.64
379.14	12.37	428.4	14.61	447.41	17.86	466.86	18.2	486.76	19.28
491.92	19.62	502.84	24.68	505.09	25.48	507.65	26.42	510.83	27.44
521.28	30.25	532.71	31.62	536.89	32.69	546.1	37.23	548.97	38.63
552.13	39.52	561.19	40.26	590.09	42.36	595.7	43.23	609.69	45.52
624.82	45.97	630.04	46.06	641.6	48.42	647.07	48.5	667.36	50.14
686.06	50.58	686.84	50.61						

Manning's n Values num= 1

Sta	n Val
0	.05

Bank Sta: Left Right Coeff Contr. Expan.
178.58 379.14 .3 .5

Downstream Deck/Roadway Coordinates
num= 6

Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord
0	30.81	0	100	32.81	0	100	32.81	27.23
536.35	39.37	33.79	536.35	39.37	0	600	40.64	0

Downstream Bridge Cross Section Data
Station Elevation Data num= 56

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	29.25	4.51	29.43	20.29	29.64	22.58	29.67	54.24	31.33
70	31.77	72.17	31.8	76.46	32.44	79.54	33	88.17	33.38
96.39	31.6	101.24	31.3	126.59	20.07	136.33	15.74	144.27	14.64
152.53	14.4	157.07	14.26	170.89	12.52	184.84	12.47	196.68	12.42
215.24	12.34	238.1	12.55	241.16	12.55	282.15	11.76	321.28	10.98
324.1	10.92	344.58	11.46	391.53	12.69	404.33	13.19	405.31	13.23

416.29	13.73	427.47	15.65	449.87	19.11	456.43	20.52	465.42	24.49
475.77	26.6	489.07	28.61	504.05	31.95	513.05	35.57	514.14	36.01
520.05	37.56	525.37	38.44	530.68	39.04	539.86	38.93	555.66	40.79
589.31	43.25	598.2	43.9	605.71	44.17	615.17	44.71	626.9	45.92
634.09	46.07	651.03	49.07	659.84	49.21	681.48	50.21	685.93	50.48
693.31	50.92								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.05	513.05	.02	589.31	.05

Bank Sta: Left	Right	Coeff Contr.	Expan.
152.53	344.58	.3	.5

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 = 110
Energy head used in spillway design =
Spillway height used in design =
Weir crest shape = Broad Crested

Number of Piers = 4

Pier Data
Pier Station Upstream= 162.34 Downstream= 162.34
Upstream num= 2

Width	Elev	Width	Elev
12.25	0	12.25	229

Downstream num= 2

Width	Elev	Width	Elev
12.25	0	12.25	229

Pier Data
Pier Station Upstream= 264.34 Downstream= 264.34
Upstream num= 2

Width	Elev	Width	Elev
12.25	0	12.25	229

Downstream num= 2

Width	Elev	Width	Elev
12.25	0	12.25	229

Pier Data
Pier Station Upstream= 366.34 Downstream= 366.34
Upstream num= 2

Width	Elev	Width	Elev
12.25	0	12.25	229

Downstream num= 2

Width	Elev	Width	Elev
12.25	0	12.25	229

Pier Data
Pier Station Upstream= 468.34 Downstream= 468.34
Upstream num= 2

Width	Elev	Width	Elev
12.25	0	12.25	229

Downstream num= 2

Width	Elev	Width	Elev
12.25	0	12.25	229

Number of Bridge Coefficient Sets = 1

Low Flow Methods and Data
Energy
Selected Low Flow Methods = Energy

High Flow Method
Energy Only

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

BRIDGE OUTPUT Profile #Q50

			Inside BR US	Inside BR DS
E.G. US. (ft)	25.02	Element		
W.S. US. (ft)	23.38	E.G. Elev (ft)	24.70	23.91
Q Total (cfs)	31354.00	W.S. Elev (ft)	21.13	20.33
Q Bridge (cfs)	31354.00	Crit W.S. (ft)	21.13	20.33
Q Weir (cfs)		Max Chl Dpth (ft)	9.64	9.41
Weir Sta Lft (ft)		Vel Total (ft/s)	15.03	14.92
Weir Sta Rgt (ft)		Flow Area (sq ft)	2086.45	2101.34
Weir Submerg		Froude # Chl	0.96	0.98
Weir Max Depth (ft)		Specif Force (cu ft)	22869.63	22916.56
Min El Weir Flow (ft)	110.00	Hydr Depth (ft)	7.17	7.18
Min El Prs (ft)	33.79	W.P. Total (ft)	337.05	341.09
Delta EG (ft)	1.19	Conv. Total (cfs)	216139.5	213566.8
Delta WS (ft)	5.36	Top Width (ft)	290.84	292.80
BR Open Area (sq ft)	5156.27	Frctn Loss (ft)		
BR Open Vel (ft/s)	15.03	C & E Loss (ft)		
Coef of Q		Shear Total (lb/sq ft)	8.13	8.29
Br Sel Method	Momentum	Power Total (lb/ft s)	122.21	123.69

Warning: Pier drag coefficient of 2.0 assumed for Class B flow.
Note: The momentum method has computed a class B profile.
Note: The energy method has computed a class B profile.

BRIDGE OUTPUT Profile #Q100

			Inside BR US	Inside BR DS
E.G. US. (ft)	28.42	Element		
W.S. US. (ft)	26.35	E.G. Elev (ft)	28.04	27.23
Q Total (cfs)	47312.00	W.S. Elev (ft)	23.44	22.67
Q Bridge (cfs)	47312.00	Crit W.S. (ft)	23.44	22.67
Q Weir (cfs)		Max Chl Dpth (ft)	11.95	11.75
Weir Sta Lft (ft)		Vel Total (ft/s)	17.07	16.90
Weir Sta Rgt (ft)		Flow Area (sq ft)	2771.79	2799.36
Weir Submerg		Froude # Chl	0.96	0.98
Weir Max Depth (ft)		Specif Force (cu ft)	38978.62	39010.66
Min El Weir Flow (ft)	110.00	Hydr Depth (ft)	9.12	9.21
Min El Prs (ft)	33.79	W.P. Total (ft)	369.41	367.11
Delta EG (ft)	1.17	Conv. Total (cfs)	329814.4	326626.2
Delta WS (ft)	5.85	Top Width (ft)	303.91	303.82
BR Open Area (sq ft)	5156.27	Frctn Loss (ft)		
BR Open Vel (ft/s)	17.07	C & E Loss (ft)		

Coef of Q		Shear Total (lb/sq ft)	9.64	9.99
Br Sel Method	Momentum	Power Total (lb/ft s)	164.53	168.81

Warning: Pier drag coefficient of 2.0 assumed for Class B flow.
Warning: The momentum, Class B, supercritical, water surface downstream of the bridge had a higher energy than the upstream cross section. This is not physically possible. The downstream water surface has been computed by taking the momentum result inside of the bridge and performing an energy balance.
Note: The momentum method has computed a class B profile.
Note: The energy method has computed a class B profile.

BRIDGE OUTPUT Profile #Q100HC

			Inside BR US	Inside BR DS
E.G. US. (ft)	41.60	Element		
W.S. US. (ft)	39.16	E.G. Elev (ft)	40.18	39.25
Q Total (cfs)	118891.00	W.S. Elev (ft)	29.27	29.11
Q Bridge (cfs)	118891.00	Crit W.S. (ft)	29.27	29.11
Q Weir (cfs)		Max Chl Dpth (ft)	17.78	18.19
Weir Sta Lft (ft)		Vel Total (ft/s)	25.96	25.07
Weir Sta Rgt (ft)		Flow Area (sq ft)	4580.12	4742.03
Weir Submerg		Froude # Chl	1.27	1.19
Weir Max Depth (ft)		Specif Force (cu ft)	132678.80	132297.40
Min El Weir Flow (ft)	110.00	Hydr Depth (ft)	18.68	20.67
Min El Prs (ft)	33.79	W.P. Total (ft)	538.95	545.22
Delta EG (ft)	3.36	Conv. Total (cfs)	616876.9	628128.6
Delta WS (ft)	13.25	Top Width (ft)	245.17	229.45
BR Open Area (sq ft)	5156.27	Frctn Loss (ft)		
BR Open Vel (ft/s)	25.96	C & E Loss (ft)		
Coef of Q		Shear Total (lb/sq ft)	19.71	19.45
Br Sel Method	Energy only	Power Total (lb/ft s)	511.56	487.72

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

CROSS SECTION

RIVER: San Mateo Creek
REACH: Lower RS: 926.767

INPUT
Description:
Station Elevation Data num= 56

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	29.25	4.51	29.43	20.29	29.64	22.58	29.67	54.24	31.33
70	31.77	72.17	31.8	76.46	32.44	79.54	33	88.17	33.38
96.39	31.6	101.24	31.3	126.59	20.07	136.33	15.74	144.27	14.64
152.53	14.4	157.07	14.26	170.89	12.52	184.84	12.47	196.68	12.42
215.24	12.34	238.1	12.55	241.16	12.55	282.15	11.76	321.28	10.98
324.1	10.92	344.58	11.46	391.53	12.69	404.33	13.19	405.31	13.23
416.29	13.73	427.47	15.65	449.87	19.11	456.43	20.52	465.42	24.49
475.77	26.6	489.07	28.61	504.05	31.95	513.05	35.57	514.14	36.01
520.05	37.56	525.37	38.44	530.68	39.04	539.86	38.93	555.66	40.79
589.31	43.25	598.2	43.9	605.71	44.17	615.17	44.71	626.9	45.92
634.09	46.07	651.03	49.07	659.84	49.21	681.48	50.21	685.93	50.48

693.31 50.92

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.05	513.05	.02	589.31	.05

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
152.53	344.58	197.34	259.8 349.98	.3	.5

CROSS SECTION OUTPUT Profile #Q50

E.G. Elev (ft)	23.83	Element	Left OB	Channel	Right OB
Vel Head (ft)	5.81	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	18.02	Reach Len. (ft)	197.34	259.80	349.98
Crit W.S. (ft)	19.66	Flow Area (sq ft)	57.24	1133.24	454.18
E.G. Slope (ft/ft)	0.043396	Area (sq ft)	57.24	1133.24	454.18
Q Total (cfs)	31354.00	Flow (cfs)	672.53	22898.46	7783.01
Top Width (ft)	311.62	Top Width (ft)	21.33	192.05	98.24
Vel Total (ft/s)	19.06	Avg. Vel. (ft/s)	11.75	20.21	17.14
Max Chl Dpth (ft)	7.10	Hydr. Depth (ft)	2.68	5.90	4.62
Conv. Total (cfs)	150511.2	Conv. (cfs)	3228.4	109921.4	37361.5
Length Wtd. (ft)	276.50	Wetted Per. (ft)	21.89	192.19	98.62
Min Ch El (ft)	10.92	Shear (lb/sq ft)	7.08	15.98	12.48
Alpha	1.03	Stream Power (lb/ft s)	83.22	322.79	213.81
Frctn Loss (ft)		Cum Volume (acre-ft)	7.33	36.95	14.59
C & E Loss (ft)		Cum SA (acres)	2.67	5.11	5.31

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Note: The energy method has computed a class B profile.

CROSS SECTION OUTPUT Profile #Q100

E.G. Elev (ft)	26.52	Element	Left OB	Channel	Right OB
Vel Head (ft)	6.02	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	20.50	Reach Len. (ft)	197.34	259.80	349.98
Crit W.S. (ft)	21.83	Flow Area (sq ft)	117.05	1609.48	715.93
E.G. Slope (ft/ft)	0.028675	Area (sq ft)	117.05	1609.48	715.93
Q Total (cfs)	47312.00	Flow (cfs)	1528.56	33401.74	12381.70
Top Width (ft)	330.72	Top Width (ft)	26.91	192.05	111.76
Vel Total (ft/s)	19.37	Avg. Vel. (ft/s)	13.06	20.75	17.29
Max Chl Dpth (ft)	9.58	Hydr. Depth (ft)	4.35	8.38	6.41
Conv. Total (cfs)	279398.1	Conv. (cfs)	9026.8	197251.9	73119.3
Length Wtd. (ft)	279.06	Wetted Per. (ft)	28.00	192.19	112.37
Min Ch El (ft)	10.92	Shear (lb/sq ft)	7.48	14.99	11.40
Alpha	1.03	Stream Power (lb/ft s)	97.72	311.13	197.24
Frctn Loss (ft)		Cum Volume (acre-ft)	10.95	44.06	22.33
C & E Loss (ft)		Cum SA (acres)	3.38	5.11	5.62

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Note: The energy method has computed a class B profile.

CROSS SECTION OUTPUT Profile #Q100HC

E.G. Elev (ft)	38.24	Element	Left OB	Channel	Right OB
Vel Head (ft)	12.34	Wt. n-Val.	0.050	0.050	0.050

W.S. Elev (ft)	25.90	Reach Len. (ft)	197.34	259.80	349.98
Crit W.S. (ft)	29.44	Flow Area (sq ft)	295.40	2647.13	1355.70
E.G. Slope (ft/ft)	0.030792	Area (sq ft)	295.40	2647.13	1355.70
Q Total (cfs)	118891.00	Flow (cfs)	5714.99	79320.63	33855.39
Top Width (ft)	358.93	Top Width (ft)	39.11	192.05	127.77
Vel Total (ft/s)	27.66	Avg. Vel. (ft/s)	19.35	29.96	24.97
Max Chl Dpth (ft)	14.98	Hydr. Depth (ft)	7.55	13.78	10.61
Conv. Total (cfs)	677534.1	Conv. (cfs)	32568.5	452031.1	192934.6
Length Wtd. (ft)	284.44	Wetted Per. (ft)	41.34	192.19	129.37
Min Ch El (ft)	10.92	Shear (lb/sq ft)	13.74	26.48	20.14
Alpha	1.04	Stream Power (lb/ft s)	265.75	793.40	503.06
Frctn Loss (ft)	0.35	Cum Volume (acre-ft)	24.55	61.25	42.12
C & E Loss (ft)	0.66	Cum SA (acres)	5.35	5.11	6.26

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 energy loss was 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: The energy method has computed a class B profile.

CROSS SECTION

RIVER: San Mateo Creek
REACH: Lower RS: 666.956

INPUT
Description: Updated Manning's N Distribution
Station Elevation Data num= 49

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	33.02	1.35	33.04	8.65	33.12	30.8	31.1	42.56	29.97
50	29.25	62.16	27.01	63.65	26.67	64.93	26.17	74.65	23.12
84.37	19.74	86.38	19.52	89.01	19.85	133.79	22.24	134.15	22.27
159.53	21.92	165.53	21.66	180.4	20.09	228.59	13.27	231.95	12.14
235.4	11.04	236.33	10.72	241.52	9.02	247.9	6.93	253.65	6.12
254.2	6.04	271.29	6.36	297.87	5.87	351.04	6.33	385.58	6.79
398.35	6.96	412.59	7.47	413.83	7.53	447.08	9.01	477.96	10.39
512.64	12.73	551.71	13.35	614.27	14.49	638.54	14.72	680.93	17.25
686.32	17.57	714.97	18.74	737.8	19.67	746.93	20.04	752.92	20.65
773.29	23.85	806.8	28.99	839.21	34.23	851.16	36.59		

Manning's n Values num= 4

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.02	42.56	.05	680.93	.02	714.97	.05

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
241.52	447.08	187.2	184.7	178.1	.1	.3

CROSS SECTION OUTPUT Profile #Q50

E.G. Elev (ft)	18.71	Element	Left OB	Channel	Right OB
Vel Head (ft)	2.40	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	16.31	Reach Len. (ft)	187.20	184.70	178.10
Crit W.S. (ft)	15.78	Flow Area (sq ft)	99.45	1966.31	708.26
E.G. Slope (ft/ft)	0.009909	Area (sq ft)	99.45	1966.31	708.26
Q Total (cfs)	31354.00	Flow (cfs)	587.00	26174.21	4592.79
Top Width (ft)	458.02	Top Width (ft)	34.40	205.56	218.07
Vel Total (ft/s)	11.30	Avg. Vel. (ft/s)	5.90	13.31	6.48

Max Chl Dpth (ft)	10.44	Hydr. Depth (ft)	2.89	9.57	3.25
Conv. Total (cfs)	314968.7	Conv. (cfs)	5896.7	262934.8	46137.2
Length Wtd. (ft)	183.62	Wetted Per. (ft)	35.29	206.01	218.24
Min Ch El (ft)	5.87	Shear (lb/sq ft)	1.74	5.90	2.01
Alpha	1.21	Stream Power (lb/ft s)	10.29	78.60	13.02
Frctn Loss (ft)	1.32	Cum Volume (acre-ft)	6.98	27.71	9.92
C & E Loss (ft)	0.35	Cum SA (acres)	2.54	3.92	4.04

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

CROSS SECTION OUTPUT Profile #Q100

E.G. Elev (ft)	21.23	Element	Left OB	Channel	Right OB
Vel Head (ft)	3.37	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	17.86	Reach Len. (ft)	187.20	184.70	178.10
Crit W.S. (ft)	17.86	Flow Area (sq ft)	161.20	2284.68	1066.42
E.G. Slope (ft/ft)	0.011808	Area (sq ft)	161.20	2284.68	1066.42
Q Total (cfs)	47312.00	Flow (cfs)	1195.07	36690.77	9426.15
Top Width (ft)	497.16	Top Width (ft)	45.34	205.56	246.26
Vel Total (ft/s)	13.47	Avg. Vel. (ft/s)	7.41	16.06	8.84
Max Chl Dpth (ft)	11.99	Hydr. Depth (ft)	3.56	11.11	4.33
Conv. Total (cfs)	435395.8	Conv. (cfs)	10997.9	337652.4	86745.6
Length Wtd. (ft)	183.24	Wetted Per. (ft)	46.34	206.01	246.48
Min Ch El (ft)	5.87	Shear (lb/sq ft)	2.56	8.18	3.19
Alpha	1.20	Stream Power (lb/ft s)	19.01	131.29	28.19
Frctn Loss (ft)	1.60	Cum Volume (acre-ft)	10.32	32.44	15.17
C & E Loss (ft)	0.49	Cum SA (acres)	3.21	3.92	4.18

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 velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water 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 #Q100HC

E.G. Elev (ft)	29.26	Element	Left OB	Channel	Right OB
Vel Head (ft)	7.12	Wt. n-Val.	0.050	0.050	0.047
W.S. Elev (ft)	22.14	Reach Len. (ft)	187.20	184.70	178.10
Crit W.S. (ft)	23.92	Flow Area (sq ft)	496.75	3164.86	2309.56
E.G. Slope (ft/ft)	0.017027	Area (sq ft)	496.75	3164.86	2309.56
Q Total (cfs)	118891.00	Flow (cfs)	4710.49	75844.47	38336.04
Top Width (ft)	673.14	Top Width (ft)	152.27	205.56	315.32
Vel Total (ft/s)	19.91	Avg. Vel. (ft/s)	9.48	23.96	16.60
Max Chl Dpth (ft)	16.27	Hydr. Depth (ft)	3.26	15.40	7.32
Conv. Total (cfs)	911123.0	Conv. (cfs)	36098.9	581235.3	293788.8
Length Wtd. (ft)	182.71	Wetted Per. (ft)	154.02	206.01	315.72
Min Ch El (ft)	5.87	Shear (lb/sq ft)	3.43	16.33	7.78
Alpha	1.16	Stream Power (lb/ft s)	32.51	391.35	129.07

Frctn Loss (ft)	6.37	Cum Volume (acre-ft)	22.75	43.92	27.40
C & E Loss (ft)	2.61	Cum SA (acres)	4.91	3.92	4.48

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: San Mateo Creek
REACH: Lower RS: 482.270

INPUT
Description: Updated Manning's N Distribution
Station Elevation Data num= 48

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	36.42	9.65	33.24	15.01	32.16	32.78	30.31	49.46	28.57
55.27	27.77	81.73	26.6	87.4	26.19	88.06	26.15	107.47	23.41
115.16	22.33	116.57	22	162.37	18.02	163.67	17.92	251.33	16.33
252.08	16.33	253.16	16.25	322.39	13.16	334.08	12.38	352.55	11.37
370.58	9.79	381.86	8.14	386.95	7.4	400.88	7.22	428.26	6.67
431.06	6.61	491.01	5.27	527.34	5.05	565.92	6.28	566.05	6.28
631.1	8.1	707.57	12.27	723.73	13.01	786.61	13.09	807.94	13.12
893.68	13.28	909.24	13.8	961.41	13.84	977.55	13.86	994.19	14.92
1006.45	15.7	1042.54	19.54	1046.98	20.08	1063.09	24.32	1079.91	30.34
1088.51	33.07	1092.19	34.36	1092.51	34.49				

Manning's n Values num= 6

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.05	32.78	.02	87.4	.05	786.61	.035	961.41	.02
994.19	.05								

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
381.86	631.1	215.55	198.2	189.25	.1	.3

CROSS SECTION OUTPUT Profile #Q50

E.G. Elev (ft)	17.04	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.23	Wt. n-Val.	0.050	0.050	0.043
W.S. Elev (ft)	15.80	Reach Len. (ft)	215.55	198.20	189.25
Crit W.S. (ft)		Flow Area (sq ft)	357.56	2357.97	1134.36
E.G. Slope (ft/ft)	0.005472	Area (sq ft)	357.56	2357.97	1134.36
Q Total (cfs)	31354.00	Flow (cfs)	1636.88	23179.54	6537.58
Top Width (ft)	744.24	Top Width (ft)	118.69	249.24	376.32
Vel Total (ft/s)	8.14	Avg. Vel. (ft/s)	4.58	9.83	5.76
Max Chl Dpth (ft)	10.75	Hydr. Depth (ft)	3.01	9.46	3.01
Conv. Total (cfs)	423862.9	Conv. (cfs)	22128.4	313355.4	88379.1
Length Wtd. (ft)	198.27	Wetted Per. (ft)	118.99	249.36	376.52
Min Ch El (ft)	5.05	Shear (lb/sq ft)	1.03	3.23	1.03
Alpha	1.20	Stream Power (lb/ft s)	4.70	31.75	5.93
Frctn Loss (ft)	1.57	Cum Volume (acre-ft)	5.99	18.54	6.15
C & E Loss (ft)	0.05	Cum SA (acres)	2.21	2.96	2.82

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

additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 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 #Q100

E.G. Elev (ft)	18.81	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.75	Wt. n-Val.	0.050	0.050	0.041
W.S. Elev (ft)	17.06	Reach Len. (ft)	215.55	198.20	189.25
Crit W.S. (ft)	16.09	Flow Area (sq ft)	533.58	2671.86	1615.74
E.G. Slope (ft/ft)	0.006696	Area (sq ft)	533.58	2671.86	1615.74
Q Total (cfs)	47312.00	Flow (cfs)	2768.25	31578.98	12964.77
Top Width (ft)	808.30	Top Width (ft)	170.91	249.24	388.15
Vel Total (ft/s)	9.81	Avg. Vel. (ft/s)	5.19	11.82	8.02
Max Chl Dpth (ft)	12.01	Hydr. Depth (ft)	3.12	10.72	4.16
Conv. Total (cfs)	578186.8	Conv. (cfs)	33830.0	385917.9	158438.8
Length Wtd. (ft)	197.78	Wetted Per. (ft)	171.23	249.36	388.42
Min Ch El (ft)	5.05	Shear (lb/sq ft)	1.30	4.48	1.74
Alpha	1.17	Stream Power (lb/ft s)	6.76	52.94	13.95
Frctn Loss (ft)	1.77	Cum Volume (acre-ft)	8.83	21.94	9.69
C & E Loss (ft)	0.04	Cum SA (acres)	2.75	2.96	2.88

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

CROSS SECTION OUTPUT Profile #Q100HC

E.G. Elev (ft)	25.58	Element	Left OB	Channel	Right OB
Vel Head (ft)	7.24	Wt. n-Val.	0.050	0.050	0.040
W.S. Elev (ft)	18.34	Reach Len. (ft)	215.55	198.20	189.25
Crit W.S. (ft)	20.40	Flow Area (sq ft)	792.77	2989.88	2118.66
E.G. Slope (ft/ft)	0.024002	Area (sq ft)	792.77	2989.88	2118.66
Q Total (cfs)	118891.00	Flow (cfs)	8489.37	72114.29	38287.34
Top Width (ft)	872.54	Top Width (ft)	223.15	249.24	400.15
Vel Total (ft/s)	20.15	Avg. Vel. (ft/s)	10.71	24.12	18.07
Max Chl Dpth (ft)	13.29	Hydr. Depth (ft)	3.55	12.00	5.29
Conv. Total (cfs)	767401.7	Conv. (cfs)	54796.0	465473.6	247132.0
Length Wtd. (ft)	197.57	Wetted Per. (ft)	223.50	249.36	400.48
Min Ch El (ft)	5.05	Shear (lb/sq ft)	5.32	17.97	7.93
Alpha	1.15	Stream Power (lb/ft s)	56.92	433.35	143.26
Frctn Loss (ft)	3.67	Cum Volume (acre-ft)	19.98	30.87	18.34
C & E Loss (ft)	0.01	Cum SA (acres)	4.11	2.96	3.01

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

CROSS SECTION

RIVER: San Mateo Creek
REACH: Lower RS: 284.051

INPUT
Description: Updated Manning's N Distribution

Station Elevation Data num= 49

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	29.29	14.99	25.99	15.5	26.02	18.96	25.77	25.76	25.36
90.16	21.53	153.47	17.75	180.86	16.81	196.92	16.19	210.26	15.71
254.28	15.45	262.8	15.33	273.55	15.03	375.82	12.63	386.67	12.49
398.3	11.44	540.33	7.72	557.56	7.12	573.23	6.8	587.64	6.79
607.67	6.73	618.25	6.7	740	6.37	740.69	6.38	742.97	6.44
743.19	6.45	813.41	7.82	818	8.11	820.46	8.22	827.66	8.04
874.75	9.08	880.64	9.17	905.24	10.67	932.78	12.86	946.65	12.46
982.37	12.36	997.9	11.46	1031.24	13.14	1043.3	13.06	1125.93	12.49
1170.38	12.94	1172.1	12.95	1197.86	13.09	1219.04	13.2	1227.3	12.98
1232.68	13.82	1245.69	18.25	1269.03	25.93	1288.02	30.34		

Manning's n Values num= 6

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.05	25.76	.02	90.16	.05	1043.3	.035	1172.1	.02
1197.86	.05								

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
540.33	813.41	216.3	198.7 198.95	.1	.3

CROSS SECTION OUTPUT Profile #Q50

			Left OB	Channel	Right OB
E.G. Elev (ft)	15.41	Element			
Vel Head (ft)	1.77	Wt. n-Val.	0.050	0.050	0.048
W.S. Elev (ft)	13.64	Reach Len. (ft)	216.30	198.70	198.95
Crit W.S. (ft)	13.64	Flow Area (sq ft)	628.79	1865.41	768.32
E.G. Slope (ft/ft)	0.012520	Area (sq ft)	628.79	1865.41	768.32
Q Total (cfs)	31354.00	Flow (cfs)	4378.45	22330.02	4645.53
Top Width (ft)	898.56	Top Width (ft)	207.39	273.08	418.09
Vel Total (ft/s)	9.61	Avg. Vel. (ft/s)	6.96	11.97	6.05
Max Chl Dpth (ft)	7.27	Hydr. Depth (ft)	3.03	6.83	1.84
Conv. Total (cfs)	280218.5	Conv. (cfs)	39131.3	199569.0	41518.2
Length Wtd. (ft)	201.72	Wetted Per. (ft)	207.50	273.11	418.38
Min Ch El (ft)	6.37	Shear (lb/sq ft)	2.37	5.34	1.44
Alpha	1.24	Stream Power (lb/ft s)	16.49	63.91	8.68
Frctn Loss (ft)	3.15	Cum Volume (acre-ft)	3.55	8.93	2.02
C & E Loss (ft)	0.03	Cum SA (acres)	1.40	1.77	1.10

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 #Q100

			Left OB	Channel	Right OB
E.G. Elev (ft)	17.00	Element			
Vel Head (ft)	2.12	Wt. n-Val.	0.050	0.050	0.045
W.S. Elev (ft)	14.89	Reach Len. (ft)	216.30	198.70	198.95
Crit W.S. (ft)	14.89	Flow Area (sq ft)	921.92	2207.40	1294.96
E.G. Slope (ft/ft)	0.012526	Area (sq ft)	921.92	2207.40	1294.96
Q Total (cfs)	47312.00	Flow (cfs)	7114.26	29569.30	10628.44
Top Width (ft)	956.24	Top Width (ft)	260.75	273.08	422.41
Vel Total (ft/s)	10.69	Avg. Vel. (ft/s)	7.72	13.40	8.21

Max Chl Dpth (ft)	8.52	Hydr. Depth (ft)	3.54	8.08	3.07
Conv. Total (cfs)	422734.0	Conv. (cfs)	63566.1	264202.5	94965.4
Length Wtd. (ft)	202.08	Wetted Per. (ft)	260.88	273.11	422.89
Min Ch El (ft)	6.37	Shear (lb/sq ft)	2.76	6.32	2.39
Alpha	1.19	Stream Power (lb/ft s)	21.33	84.67	19.65
Frctn Loss (ft)	3.09	Cum Volume (acre-ft)	5.23	10.84	3.37
C & E Loss (ft)	0.00	Cum SA (acres)	1.68	1.77	1.12

Warning: The energy equation could not be balanced within the specified number of iterations. The program selected the water surface that had the least amount of error between computed and assumed values.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water 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 #Q100HC

E.G. Elev (ft)	22.11	Element	Left OB	Channel	Right OB
Vel Head (ft)	3.57	Wt. n-Val.	0.050	0.050	0.043
W.S. Elev (ft)	18.54	Reach Len. (ft)	216.30	198.70	198.95
Crit W.S. (ft)	18.54	Flow Area (sq ft)	2196.61	3205.00	2857.68
E.G. Slope (ft/ft)	0.012851	Area (sq ft)	2196.61	3205.00	2857.68
Q Total (cfs)	118891.00	Flow (cfs)	23022.61	55759.76	40108.63
Top Width (ft)	1106.37	Top Width (ft)	400.12	273.08	433.17
Vel Total (ft/s)	14.39	Avg. Vel. (ft/s)	10.48	17.40	14.04
Max Chl Dpth (ft)	12.17	Hydr. Depth (ft)	5.49	11.74	6.60
Conv. Total (cfs)	1048760.0	Conv. (cfs)	203086.8	491867.4	353805.9
Length Wtd. (ft)	203.06	Wetted Per. (ft)	400.31	273.11	434.25
Min Ch El (ft)	6.37	Shear (lb/sq ft)	4.40	9.42	5.28
Alpha	1.11	Stream Power (lb/ft s)	46.14	163.80	74.10
Frctn Loss (ft)	2.85	Cum Volume (acre-ft)	12.59	16.78	7.53
C & E Loss (ft)	0.08	Cum SA (acres)	2.56	1.77	1.20

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water 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: San Mateo Creek
REACH: Lower RS: 85.341

INPUT
Description: Updated Manning's N Distribution
Station Elevation Data num= 41

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	29.1	7.21	26.82	11.67	26.16	31.09	24.98	46	24.19
64.71	23.2	107.34	21.1	119.79	20.49	201.37	15.73	256.42	13.63
328.02	12.88	354.26	12.74	357.36	12.66	373.28	12.5	678.15	7.34
761.15	7.26	870.99	6.93	976.8	6.61	1046.13	6.4	1046.94	6.4

1047.19	6.39	1047.33	6.39	1047.81	6.38	1049.08	6.38	1143.89	5.54
1192.74	5.15	1277.42	5.45	1351.66	6.37	1351.75	6.37	1351.78	6.37
1373.79	7.14	1410.76	8.43	1426.05	8.97	1426.1	8.97	1426.95	9.08
1466.22	14.03	1468.42	14.73	1474.52	16.25	1506.75	24.56	1523.54	27.51
1533.44	29.48								

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.05	46	.02	107.34	.05	1410.76	.02	1426.1	.05

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
870.99	1373.79	68.18	85.34	37.96	.1	.3

CROSS SECTION OUTPUT Profile #Q50

			Left OB	Channel	Right OB
E.G. Elev (ft)	12.01	Element			
Vel Head (ft)	1.87	Wt. n-Val.	0.050	0.050	0.041
W.S. Elev (ft)	10.14	Reach Len. (ft)			
Crit W.S. (ft)	10.31	Flow Area (sq ft)	802.29	2049.75	114.63
E.G. Slope (ft/ft)	0.023847	Area (sq ft)	802.29	2049.75	114.63
Q Total (cfs)	31354.00	Flow (cfs)	6300.88	24004.91	1048.20
Top Width (ft)	922.74	Top Width (ft)	358.36	502.80	61.58
Vel Total (ft/s)	10.57	Avg. Vel. (ft/s)	7.85	11.71	9.14
Max Chl Dpth (ft)	4.99	Hydr. Depth (ft)	2.24	4.08	1.86
Conv. Total (cfs)	203037.3	Conv. (cfs)	40802.3	155447.2	6787.8
Length Wtd. (ft)		Wetted Per. (ft)	358.38	502.83	61.69
Min Ch El (ft)	5.15	Shear (lb/sq ft)	3.33	6.07	2.77
Alpha	1.08	Stream Power (lb/ft s)	26.17	71.07	25.30
Frctn Loss (ft)	3.40	Cum Volume (acre-ft)			
C & E Loss (ft)	0.01	Cum SA (acres)			

Warning: The energy loss was greater than 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 #Q100

			Left OB	Channel	Right OB
E.G. Elev (ft)	13.57	Element			
Vel Head (ft)	2.45	Wt. n-Val.	0.050	0.050	0.039
W.S. Elev (ft)	11.12	Reach Len. (ft)			
Crit W.S. (ft)	11.43	Flow Area (sq ft)	1182.88	2543.73	178.96
E.G. Slope (ft/ft)	0.023747	Area (sq ft)	1182.88	2543.73	178.96
Q Total (cfs)	47312.00	Flow (cfs)	10864.97	34329.59	2117.44
Top Width (ft)	988.58	Top Width (ft)	416.40	502.80	69.37
Vel Total (ft/s)	12.11	Avg. Vel. (ft/s)	9.19	13.50	11.83
Max Chl Dpth (ft)	5.97	Hydr. Depth (ft)	2.84	5.06	2.58
Conv. Total (cfs)	307021.5	Conv. (cfs)	70506.0	222774.8	13740.7
Length Wtd. (ft)		Wetted Per. (ft)	416.44	502.83	69.54
Min Ch El (ft)	5.15	Shear (lb/sq ft)	4.21	7.50	3.82
Alpha	1.08	Stream Power (lb/ft s)	38.68	101.22	45.14
Frctn Loss (ft)	3.40	Cum Volume (acre-ft)			
C & E Loss (ft)	0.03	Cum SA (acres)			

Warning: The energy loss was greater than 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 #Q100HC

E.G. Elev (ft)	18.64	Element	Left OB	Channel	Right OB
Vel Head (ft)	4.32	Wt. n-Val.	0.050	0.050	0.038
W.S. Elev (ft)	14.32	Reach Len. (ft)			
Crit W.S. (ft)	15.14	Flow Area (sq ft)	2872.65	4150.85	441.03
E.G. Slope (ft/ft)	0.022658	Area (sq ft)	2872.65	4150.85	441.03
Q Total (cfs)	118891.00	Flow (cfs)	35234.23	75844.04	7812.73
Top Width (ft)	1228.81	Top Width (ft)	632.66	502.80	93.34
Vel Total (ft/s)	15.93	Avg. Vel. (ft/s)	12.27	18.27	17.71
Max Chl Dpth (ft)	9.17	Hydr. Depth (ft)	4.54	8.26	4.72
Conv. Total (cfs)	789835.5	Conv. (cfs)	234073.6	503859.1	51902.8
Length Wtd. (ft)		Wetted Per. (ft)	632.73	502.83	93.74
Min Ch El (ft)	5.15	Shear (lb/sq ft)	6.42	11.68	6.66
Alpha	1.10	Stream Power (lb/ft s)	78.77	213.36	117.90
Frctn Loss (ft)	3.40	Cum Volume (acre-ft)			
C & E Loss (ft)	0.08	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: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

SUMMARY OF MANNING'S N VALUES

River:San Mateo Creek

Reach	River Sta.	n1	n2	n3	n4	n5	n6	n7	n8	n9	n10	n11	n12	n13
Lower	17108.89	.035	.05	.035	.05	.02	.05							
Lower	16909.21	.035	.05	.035	.05	.02	.05							
Lower	16706.13	.035	.05	.035	.05	.02	.05							
Lower	16505.64	.035	.05	.035	.05	.02	.05							
Lower	16299.19	.035	.05	.035	.05	.02	.05							
Lower	16105.61	.05	.035	.05										
Lower	16066.6*	.05	.047	.038	.038	.05	.047	.035	.038	.05				
Lower	16027.6*	.05	.044	.041	.041	.05	.044	.035	.041	.05				
Lower	15988.6*	.05	.041	.044	.044	.05	.041	.035	.044	.05				
Lower	15949.6*	.05	.038	.047	.047	.05	.038	.035	.047	.05				
Lower	15910.69	.05	.035	.05	.035	.05								
Lower	15871.7*	.05	.038	.047	.035	.038	.05	.047	.038	.035	.035	.035	.047	
.047														
Lower	15832.8*	.05	.04	.045	.035	.04	.05	.045	.04	.035	.035	.035	.045	
.045														
Lower	15793.8*	.05	.043	.043	.035	.043	.05	.043	.043	.035	.035	.035	.043	
.043														
Lower	15754.9*	.05	.045	.04	.035	.045	.05	.04	.045	.035	.035	.035	.04	
.04														
Lower	15716.0*	.05	.048	.037	.035	.048	.05	.037	.048	.035	.035	.035	.037	
.037														
Lower	15677.08	.05	.035	.05	.035	.05	.035							
Lower	15455.59	.05	.035	.05	.035	.05	.035							
Lower	15282.84	.05	.035	.05	.035	.05	.035							
Lower	15076.02	.05	.035	.05	.035									
Lower	14843.33	.05	.035	.05	.035									
Lower	14640.75	.05	.035	.05										
Lower	14474.32	.02	.035	.05	.035	.05								
Lower	14295.85	.02	.035	.05	.035	.05								

Lower	14206.87	.02	.035	.05	.035	.05				
Lower	14108.61	.02	.05	.035	.05					
Lower	14009.16	.02	.05	.035	.05					
Lower	13906.13	.02	.02	.05	.035	.05	.035	.05		
Lower	13813.01	.035	.05	.035	.02	.05	.035	.05	.07	
Lower	13721.89	.035	.02	.05	.035	.05				
Lower	13616.16	.035	.02	.05	.035	.05				
Lower	13508.64	.035	.02	.05	.035	.05				
Lower	13407.57	.035	.02	.05	.035	.035	.05			
Lower	13315.43	.035	.02	.05	.035	.05				
Lower	12905.33	.035	.02	.05	.035	.05	.035	.05		
Lower	11695.46	.035	.02	.05	.035	.05	.035	.05	.035	.05
Lower	10698.02	.035	.02	.035	.05	.035	.05	.035	.05	
Lower	10103.57	.035	.02	.05	.02	.05	.02	.05	.035	
Lower	9476.099	.035	.02	.05	.035					
Lower	8888.551	.035	.02	.05	.035	.05	.035			
Lower	8290.415	.035	.02	.05	.035	.05	.035	.05	.035	
Lower	7667.615	.035	.02	.035	.05	.035	.05	.02		
Lower	7116.984	.035	.05	.035	.05	.02				
Lower	6553.777	.035	.02	.035	.05	.035	.05	.02		
Lower	6146.684	.035	.02	.035	.05	.035	.02	.05		
Lower	5898.852	.035	.02	.035	.05	.035	.02	.05		
Lower	5313.135	.035	.02	.05	.035	.05				
Lower	4689.719	.035	.02	.05	.035	.05				
Lower	4089.740	.035	.02	.05	.035	.05	.07	.05		
Lower	3486.110	.035	.02	.05	.035	.07				
Lower	2883.526	.035	.05	.035	.05					
Lower	2679.762	.035	.07	.05	.035	.05				
Lower	2283.606	.035	.07	.05	.035	.05				
Lower	2075.420	.035	.07	.05	.035	.05				
Lower	1907.350	.035	.07	.05	.035	.05				
Lower	1700.584	.035	.07	.05	.035	.05				
Lower	1525.293	.035	.07	.05						
Lower	1306.721	.02	.05	.02						
Lower	1300	Bridge								
Lower	1053.212	.05	.02							
Lower	977.176	.05								
Lower	970	Bridge								
Lower	926.767	.05	.02	.05						
Lower	666.956	.02	.05	.02	.05					
Lower	482.270	.05	.02	.05	.035	.02	.05			
Lower	284.051	.05	.02	.05	.035	.02	.05			
Lower	85.341	.05	.02	.05	.02	.05				

SUMMARY OF REACH LENGTHS

River: San Mateo Creek

Reach	River Sta.	Left	Channel	Right
Lower	17108.89	209.32	199.68	212.7
Lower	16909.21	217.14	203.08	206.1
Lower	16706.13	213.02	200.49	184.93
Lower	16505.64	199.4	206.45	210.25
Lower	16299.19	219.05	193.6	180.85
Lower	16105.61	33.01	38.98	40.87

Lower	16066.6*	33.01	38.98	40.87
Lower	16027.6*	33.01	38.98	40.87
Lower	15988.6*	33.01	38.98	40.87
Lower	15949.6*	33.01	38.98	40.87
Lower	15910.69	44.06	38.94	33.57
Lower	15871.7*	44.06	38.94	33.57
Lower	15832.8*	44.06	38.94	33.57
Lower	15793.8*	44.06	38.94	33.57
Lower	15754.9*	44.06	38.94	33.57
Lower	15716.0*	44.06	38.94	33.57
Lower	15677.08	229.4	221.5	185.6
Lower	15455.59	159.78	172.75	206.99
Lower	15282.84	247.92	206.82	172.28
Lower	15076.02	240.22	232.69	186.85
Lower	14843.33	230.23	202.58	217.82
Lower	14640.75	142.45	166.43	154.49
Lower	14474.32	199.28	178.47	167.43
Lower	14295.85	93.39	88.97	84.07
Lower	14206.87	100.64	98.26	92.36
Lower	14108.61	93.54	99.45	106.38
Lower	14009.16	100.03	103.03	102.07
Lower	13906.13	92.63	93.13	94.58
Lower	13813.01	96.66	91.12	77.43
Lower	13721.89	104.34	105.73	83.35
Lower	13616.16	106.9	107.52	109.59
Lower	13508.64	89.44	101.07	116.92
Lower	13407.57	95.24	92.14	91.38
Lower	13315.43	395.33	410.1	440.35
Lower	12905.33	1161.81	1209.87	1227.39
Lower	11695.46	914.27	997.45	1009.86
Lower	10698.02	601.47	594.45	599.46
Lower	10103.57	615.7	627.48	572.22
Lower	9476.099	632.1	587.55	573.86
Lower	8888.551	583.69	598.13	621.47
Lower	8290.415	624.1	622.8	620.76
Lower	7667.615	556.83	550.63	551.5
Lower	7116.984	569.88	563.21	532.8
Lower	6553.777	469.22	407.1	351.14
Lower	6146.684	280.12	247.83	242.98
Lower	5898.852	604.78	585.72	573.19
Lower	5313.135	603.98	623.48	637.26
Lower	4689.719	557.08	599.98	624.49
Lower	4089.740	589.66	603.63	611.39
Lower	3486.110	577.29	602.58	615.08
Lower	2883.526	193.46	203.76	211.14
Lower	2679.762	387.64	396.16	397.97
Lower	2283.606	218.79	208.19	198.85
Lower	2075.420	167.27	168.07	167.81
Lower	1907.350	205	206.77	220.21
Lower	1700.584	191.48	175.29	163.76
Lower	1525.293	330.77	218.57	153.37
Lower	1306.721	221.39	253.51	221.56
Lower	1300	Bridge		
Lower	1053.212	331.16	386.26	449.77
Lower	977.176	50.27	50.41	43.68
Lower	970	Bridge		
Lower	926.767	197.34	259.8	349.98
Lower	666.956	187.2	184.7	178.1
Lower	482.270	215.55	198.2	189.25

Lower	284.051	216.3	198.7	198.95
Lower	85.341	68.18	85.34	37.96

SUMMARY OF CONTRACTION AND EXPANSION COEFFICIENTS
River: San Mateo Creek

Reach	River Sta.	Contr.	Expan.
Lower	17108.89	.1	.3
Lower	16909.21	.1	.3
Lower	16706.13	.1	.3
Lower	16505.64	.1	.3
Lower	16299.19	.1	.3
Lower	16105.61	.1	.3
Lower	16066.6*	.1	.3
Lower	16027.6*	.1	.3
Lower	15988.6*	.1	.3
Lower	15949.6*	.1	.3
Lower	15910.69	.1	.3
Lower	15871.7*	.1	.3
Lower	15832.8*	.1	.3
Lower	15793.8*	.1	.3
Lower	15754.9*	.1	.3
Lower	15716.0*	.1	.3
Lower	15677.08	.1	.3
Lower	15455.59	.1	.3
Lower	15282.84	.1	.3
Lower	15076.02	.1	.3
Lower	14843.33	.1	.3
Lower	14640.75	.1	.3
Lower	14474.32	.1	.3
Lower	14295.85	.1	.3
Lower	14206.87	.1	.3
Lower	14108.61	.1	.3
Lower	14009.16	.1	.3
Lower	13906.13	.1	.3
Lower	13813.01	.1	.3
Lower	13721.89	.1	.3
Lower	13616.16	.1	.3
Lower	13508.64	.1	.3
Lower	13407.57	.1	.3
Lower	13315.43	.1	.3
Lower	12905.33	.1	.3
Lower	11695.46	.1	.3
Lower	10698.02	.1	.3
Lower	10103.57	.1	.3
Lower	9476.099	.1	.3
Lower	8888.551	.1	.3
Lower	8290.415	.1	.3
Lower	7667.615	.1	.3
Lower	7116.984	.1	.3
Lower	6553.777	.1	.3
Lower	6146.684	.1	.3
Lower	5898.852	.1	.3
Lower	5313.135	.1	.3

Lower	4689.719		.1	.3
Lower	4089.740		.1	.3
Lower	3486.110		.1	.3
Lower	2883.526		.1	.3
Lower	2679.762		.1	.3
Lower	2283.606		.1	.3
Lower	2075.420		.1	.3
Lower	1907.350		.1	.3
Lower	1700.584		.1	.3
Lower	1525.293		.1	.3
Lower	1306.721		.3	.5
Lower	1300	Bridge		
Lower	1053.212		.3	.5
Lower	977.176		.3	.5
Lower	970	Bridge		
Lower	926.767		.3	.5
Lower	666.956		.1	.3
Lower	482.270		.1	.3
Lower	284.051		.1	.3
Lower	85.341		.1	.3

Profile Output Table - Standard Table 1

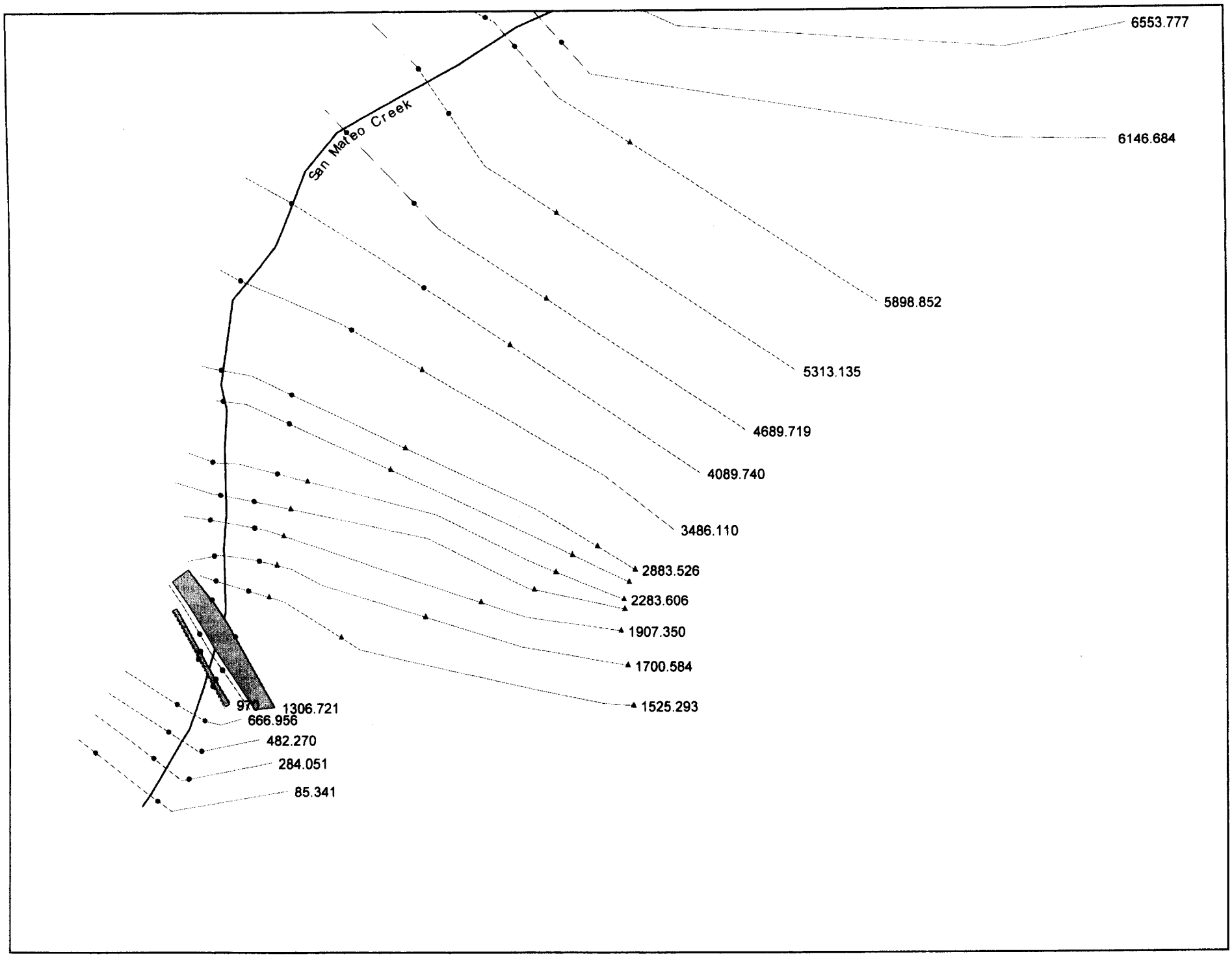
Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
Lower	17108.89	Q50	31354.00	90.54	98.95	97.85	100.07	0.004296	10.15	4071.72	1029.82	0.64
Lower	17108.89	Q100	47312.00	90.54	100.55	99.32	101.81	0.003984	11.07	5787.93	1100.20	0.64
Lower	17108.89	Q100HC	118891.00	90.54	104.90	102.99	107.06	0.004319	14.85	10815.60	1201.98	0.71
Lower	16909.21	Q50	31354.00	88.57	96.37	96.37	98.56	0.012640	13.85	2920.65	702.41	0.93
Lower	16909.21	Q100	47312.00	88.57	98.08	98.08	100.44	0.010714	14.80	4264.44	834.49	0.89
Lower	16909.21	Q100HC	118891.00	88.57	103.62		105.99	0.005936	15.37	10207.56	1195.06	0.72
Lower	16706.13	Q50	31354.00	83.98	94.88	92.39	96.20	0.004365	9.84	3802.91	634.51	0.55
Lower	16706.13	Q100	47312.00	83.98	96.56	94.62	98.39	0.005142	11.88	4966.18	750.59	0.62
Lower	16706.13	Q100HC	118891.00	83.98	102.10		104.82	0.005141	15.48	10083.24	1024.34	0.66
Lower	16505.64	Q50	31354.00	84.57	93.95		95.27	0.004999	9.64	3795.30	717.15	0.57
Lower	16505.64	Q100	47312.00	84.57	95.56		97.30	0.005579	11.40	5028.00	816.06	0.62
Lower	16505.64	Q100HC	118891.00	84.57	101.28		103.75	0.004994	14.46	10418.29	1014.47	0.64
Lower	16299.19	Q50	31354.00	84.80	92.78		94.12	0.006088	9.80	3688.86	742.17	0.64
Lower	16299.19	Q100	47312.00	84.80	94.14		96.00	0.006981	11.74	4729.97	789.36	0.70
Lower	16299.19	Q100HC	118891.00	84.80	97.74	97.74	102.09	0.010982	18.49	7802.25	929.67	0.93
Lower	16105.61	Q50	31354.00	84.43	90.45	90.45	92.45	0.012101	12.27	3090.18	796.87	0.91
Lower	16105.61	Q100	47312.00	84.43	91.85	91.85	94.26	0.011426	13.77	4271.07	888.68	0.91
Lower	16105.61	Q100HC	118891.00	84.43	95.83	96.14	99.85	0.011610	18.61	8245.59	1085.20	0.99
Lower	16066.6*	Q50	31354.00	83.22	89.11	89.62	91.83	0.016804	13.99	2583.21	697.73	1.08
Lower	16066.6*	Q100	47312.00	83.22	90.50	91.09	93.68	0.015027	15.46	3613.51	782.46	1.06
Lower	16066.6*	Q100HC	118891.00	83.22	95.16	95.42	99.39	0.010693	18.57	7717.99	988.52	0.98
Lower	16027.6*	Q50	31354.00	82.01	88.14	88.81	91.09	0.020293	14.41	2424.12	657.30	1.13
Lower	16027.6*	Q100	47312.00	82.01	89.52	90.34	93.00	0.018235	15.97	3387.51	740.02	1.11
Lower	16027.6*	Q100HC	118891.00	82.01	94.00	94.70	98.86	0.013532	19.49	7120.22	928.73	1.04

Lower	15988.6*	Q50	31354.00	80.79	87.33	87.99	90.27	0.021824	14.30	2386.71	640.87	1.12
Lower	15988.6*	Q100	47312.00	80.79	88.62	89.43	92.23	0.020725	16.11	3273.77	728.54	1.13
Lower	15988.6*	Q100HC	118891.00	80.79	92.70	93.86	98.21	0.017492	20.46	6643.09	914.19	1.12
Lower	15949.6*	Q50	31354.00	79.58	86.79	87.21	89.37	0.019366	13.34	2524.06	666.07	1.03
Lower	15949.6*	Q100	47312.00	79.58	87.86	88.72	91.38	0.021543	15.79	3290.51	751.86	1.11
Lower	15949.6*	Q100HC	118891.00	79.58	91.47	92.96	97.42	0.021502	21.09	6368.64	915.15	1.18
Lower	15910.69	Q50	31354.00	78.37	86.07	86.59	88.71	0.014833	13.46	2590.51	793.87	1.03
Lower	15910.69	Q100	47312.00	78.37	87.17	87.96	90.67	0.015832	15.84	3490.45	831.42	1.11
Lower	15910.69	Q100HC	118891.00	78.37	91.30	92.33	96.58	0.013329	20.46	7164.66	947.44	1.11
Lower	15871.7*	Q50	31354.00	78.36	85.81	86.07	88.10	0.013111	12.49	2711.13	767.70	0.97
Lower	15871.7*	Q100	47312.00	78.36	87.16	87.44	89.90	0.012172	13.93	3800.55	832.66	0.96
Lower	15871.7*	Q100HC	118891.00	78.36	90.45	91.66	96.00	0.015257	20.33	6694.66	925.73	1.14
Lower	15832.8*	Q50	31354.00	78.34	85.31	85.54	87.58	0.014153	12.42	2697.85	758.40	0.98
Lower	15832.8*	Q100	47312.00	78.34	86.63	86.95	89.41	0.013120	13.95	3745.81	816.76	0.98
Lower	15832.8*	Q100HC	118891.00	78.34	90.34	91.15	95.38	0.013510	19.26	6980.87	922.75	1.07
Lower	15793.8*	Q50	31354.00	78.33	85.30	84.99	87.03	0.010653	10.86	3099.21	787.61	0.84
Lower	15793.8*	Q100	47312.00	78.33	86.61	86.37	88.83	0.010435	12.46	4164.01	826.94	0.86
Lower	15793.8*	Q100HC	118891.00	78.33	91.36	90.55	94.78	0.008160	15.83	8387.49	954.09	0.83
Lower	15754.9*	Q50	31354.00	78.32	85.19		86.57	0.007755	9.71	3464.16	809.09	0.73
Lower	15754.9*	Q100	47312.00	78.32	86.55		88.35	0.007772	11.25	4589.36	844.16	0.76
Lower	15754.9*	Q100HC	118891.00	78.32	91.36		94.37	0.006597	14.78	8909.80	951.32	0.76
Lower	15716.0*	Q50	31354.00	78.30	85.14		86.22	0.005746	8.55	3918.12	834.91	0.63
Lower	15716.0*	Q100	47312.00	78.30	86.53		87.98	0.005964	10.04	5099.08	865.77	0.66
Lower	15716.0*	Q100HC	118891.00	78.30	91.40		94.01	0.005532	13.65	9530.19	957.09	0.69
Lower	15677.08	Q50	31354.00	78.29	85.10		85.95	0.004512	7.60	4419.17	863.00	0.54
Lower	15677.08	Q100	47312.00	78.29	86.50		87.69	0.004883	9.06	5647.81	889.13	0.58
Lower	15677.08	Q100HC	118891.00	78.29	91.42		93.71	0.004979	12.76	10192.43	964.18	0.64
Lower	15455.59	Q50	31354.00	77.64	83.62		84.71	0.006883	8.75	3938.73	882.54	0.67
Lower	15455.59	Q100	47312.00	77.64	84.52		86.22	0.008810	11.00	4733.41	890.96	0.78
Lower	15455.59	Q100HC	118891.00	77.64	88.20	87.75	91.99	0.010869	16.71	8195.41	1064.74	0.94
Lower	15282.84	Q50	31354.00	76.42	81.82		83.20	0.010936	10.56	3720.43	1156.62	0.88
Lower	15282.84	Q100	47312.00	76.42	83.20		84.66	0.008466	11.03	5339.68	1188.50	0.81
Lower	15282.84	Q100HC	118891.00	76.42	88.47		90.22	0.004544	12.28	11932.81	1296.39	0.65
Lower	15076.02	Q50	31354.00	74.40	80.99		81.62	0.004144	7.04	5476.40	1428.47	0.53
Lower	15076.02	Q100	47312.00	74.40	82.77		83.41	0.002935	7.16	8054.98	1453.65	0.47
Lower	15076.02	Q100HC	118891.00	74.40	88.46		89.34	0.001939	8.58	16687.25	1574.63	0.42
Lower	14843.33	Q50	31354.00	71.32	80.41	77.16	80.95	0.001950	6.10	5518.45	1143.51	0.39
Lower	14843.33	Q100	47312.00	71.32	81.99	78.41	82.79	0.002262	7.44	6881.56	1200.09	0.44
Lower	14843.33	Q100HC	118891.00	71.32	88.13	82.71	88.94	0.001396	8.21	18214.14	1716.93	0.37
Lower	14640.75	Q50	31354.00	71.87	79.53	77.21	80.39	0.003703	7.59	4278.29	1257.80	0.51
Lower	14640.75	Q100	47312.00	71.87	80.72	78.66	82.09	0.004774	9.58	5137.62	1348.94	0.59
Lower	14640.75	Q100HC	118891.00	71.87	83.21	83.21	87.91	0.011677	17.88	6945.77	1552.34	0.97
Lower	14474.32	Q50	31354.00	71.80	79.41	77.19	79.84	0.001921	6.07	6694.43	1631.51	0.40
Lower	14474.32	Q100	47312.00	71.80	80.90	78.64	81.39	0.001744	6.55	9144.68	1644.61	0.39
Lower	14474.32	Q100HC	118891.00	71.80	84.16	81.29	85.27	0.002510	9.67	14551.96	1675.06	0.49

Lower	14295.85	Q50	31354.00	70.72	78.89	75.97	79.46	0.002072	6.51	5908.57	1545.21	0.42
Lower	14295.85	Q100	47312.00	70.72	80.41	77.28	81.03	0.001948	7.12	8578.67	1787.18	0.42
Lower	14295.85	Q100HC	118891.00	70.72	83.52	81.46	84.76	0.002743	10.29	14226.89	1839.61	0.52
Lower	14206.87	Q50	31354.00	70.13	78.19	76.16	79.18	0.003756	8.16	4057.88	1040.70	0.56
Lower	14206.87	Q100	47312.00	70.13	79.72	77.54	80.76	0.003413	8.89	6851.39	1845.26	0.55
Lower	14206.87	Q100HC	118891.00	70.13	82.87	81.78	84.44	0.003777	11.57	12809.69	1916.68	0.61
Lower	14108.61	Q50	31354.00	70.62	77.70	76.08	78.75	0.004915	8.38	3912.58	1046.63	0.60
Lower	14108.61	Q100	47312.00	70.62	79.17	77.42	80.36	0.004557	9.30	6252.63	1695.70	0.60
Lower	14108.61	Q100HC	118891.00	70.62	82.58	81.50	84.02	0.003870	10.96	13057.40	2042.98	0.59
Lower	14009.16	Q50	31354.00	71.12	76.86		78.13	0.007390	9.33	3754.30	1025.97	0.72
Lower	14009.16	Q100	47312.00	71.12	77.72	77.45	79.66	0.009499	11.69	4686.87	1153.97	0.84
Lower	14009.16	Q100HC	118891.00	71.12	81.27	81.27	83.46	0.006923	13.53	10997.67	2087.75	0.77
Lower	13906.13	Q50	31354.00	70.56	76.12	75.57	77.30	0.008405	9.11	3912.21	1223.00	0.74
Lower	13906.13	Q100	47312.00	70.56	77.35	76.75	78.62	0.007043	9.74	5605.49	1377.60	0.70
Lower	13906.13	Q100HC	118891.00	70.56	79.56	80.13	82.49	0.011347	15.26	9231.53	2120.40	0.94
Lower	13813.01	Q50	31354.00	70.19	75.16	74.96	76.43	0.010288	9.65	3604.36	1654.50	0.83
Lower	13813.01	Q100	47312.00	70.19	75.94	75.94	77.74	0.011753	11.55	4532.06	1773.27	0.92
Lower	13813.01	Q100HC	118891.00	70.19	76.25	77.62	80.78	0.027417	18.36	7024.78	1816.67	1.41
Lower	13721.89	Q50	31354.00	69.82	75.43	74.55	75.76	0.002263	5.26	7019.02	2295.75	0.41
Lower	13721.89	Q100	47312.00	69.82	75.40	75.25	76.16	0.005271	8.00	6965.90	2295.39	0.63
Lower	13721.89	Q100HC	118891.00	69.82	77.57	76.84	79.13	0.006138	10.94	11973.69	2327.12	0.72
Lower	13616.16	Q50	31354.00	65.67	73.71	73.67	75.20	0.010246	10.31	3415.78	2036.02	0.86
Lower	13616.16	Q100	47312.00	65.67	75.00	74.67	75.66	0.003964	7.58	7769.67	2380.59	0.56
Lower	13616.16	Q100HC	118891.00	65.67	77.03	76.22	78.48	0.005628	11.02	12650.41	2418.88	0.70
Lower	13508.64	Q50	31354.00	64.82	72.62	72.31	74.13	0.009586	10.05	3324.41	1853.94	0.84
Lower	13508.64	Q100	47312.00	64.82	74.71	73.67	75.27	0.002792	6.91	8655.79	2515.91	0.48
Lower	13508.64	Q100HC	118891.00	64.82	76.51	75.73	77.89	0.005050	10.86	13188.44	2534.84	0.66
Lower	13407.57	Q50	31354.00	64.24	71.56	71.32	73.08	0.011245	10.04	3262.51	976.76	0.86
Lower	13407.57	Q100	47312.00	64.24	72.74	72.52	74.66	0.010427	11.41	4426.96	2086.25	0.86
Lower	13407.57	Q100HC	118891.00	64.24	75.28	75.26	77.23	0.007898	12.83	11464.97	2572.32	0.80
Lower	13315.43	Q50	31354.00	65.10	71.41	69.96	72.28	0.004322	7.54	4269.03	1313.45	0.59
Lower	13315.43	Q100	47312.00	65.10	72.64	71.07	73.83	0.004605	8.93	5656.79	2434.03	0.63
Lower	13315.43	Q100HC	118891.00	65.10	75.21	74.33	76.52	0.004087	10.47	14052.49	2693.51	0.62
Lower	12905.33	Q50	31354.00	62.47	69.12	68.42	70.11	0.006555	7.98	3992.10	1479.86	0.72
Lower	12905.33	Q100	47312.00	62.47	69.92	69.44	71.40	0.007729	9.83	4945.78	1574.95	0.81
Lower	12905.33	Q100HC	118891.00	62.47	73.19	71.97	74.72	0.004707	10.96	13218.33	2869.70	0.69
Lower	11695.46	Q50	31354.00	53.64	62.76	61.82	63.62	0.004478	8.32	4465.75	1129.98	0.65
Lower	11695.46	Q100	47312.00	53.64	64.46	62.78	65.38	0.003357	8.72	6441.86	1448.38	0.59
Lower	11695.46	Q100HC	118891.00	53.64	69.13	66.31	70.52	0.002686	11.04	13301.25	2330.43	0.57
Lower	10698.02	Q50	31354.00	45.13	60.97	56.13	61.56	0.001141	6.40	5634.87	1025.13	0.36
Lower	10698.02	Q100	47312.00	45.13	62.36	58.15	63.23	0.001546	7.95	7154.88	1161.89	0.42
Lower	10698.02	Q100HC	118891.00	45.13	66.04	63.99	67.88	0.002706	12.23	12223.44	2657.19	0.56
Lower	10103.57	Q50	31354.00	51.14	59.41	57.71	60.33	0.004510	7.91	4123.01	1243.95	0.52
Lower	10103.57	Q100	47312.00	51.14	60.87	59.66	61.85	0.003742	8.16	5973.29	1639.50	0.49

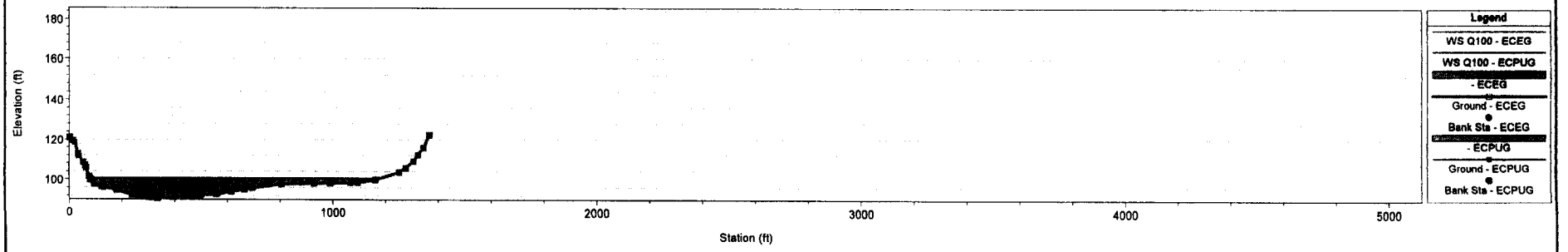
Lower	10103.57	Q100HC	118891.00	51.14	64.16	62.82	65.89	0.004027	10.51	11282.74	2664.38	0.53
Lower	9476.099	Q50	31354.00	45.94	55.38		56.87	0.006748	10.75	3662.40	778.87	0.62
Lower	9476.099	Q100	47312.00	45.94	56.89		58.66	0.006997	12.11	4900.13	860.16	0.65
Lower	9476.099	Q100HC	118891.00	45.94	61.09	60.79	62.91	0.005805	13.74	12191.78	2619.64	0.63
Lower	8888.551	Q50	31354.00	45.56	52.71		53.70	0.004004	8.39	4411.48	1088.32	0.57
Lower	8888.551	Q100	47312.00	45.56	53.98	52.20	55.27	0.004393	9.84	5884.58	1238.68	0.61
Lower	8888.551	Q100HC	118891.00	45.56	57.25		59.47	0.005499	13.79	11189.36	2188.24	0.72
Lower	8290.415	Q50	31354.00	42.29	48.34	48.34	49.87	0.011428	8.72	3474.97	1219.87	0.85
Lower	8290.415	Q100	47312.00	42.29	49.30	49.30	51.30	0.010679	9.73	4667.75	1242.83	0.83
Lower	8290.415	Q100HC	118891.00	42.29	54.23	54.23	56.42	0.004707	10.35	11128.43	1630.43	0.60
Lower	7667.615	Q50	31354.00	37.41	44.44	42.16	44.91	0.003073	5.70	5733.19	1116.09	0.44
Lower	7667.615	Q100	47312.00	37.41	46.26	43.10	46.84	0.002622	6.32	7801.43	1145.73	0.42
Lower	7667.615	Q100HC	118891.00	37.41	50.63	46.40	51.94	0.003180	9.52	13070.41	1277.32	0.50
Lower	7116.984	Q50	31354.00	33.82	43.30		43.68	0.001633	4.97	6363.41	1084.21	0.36
Lower	7116.984	Q100	47312.00	33.82	45.24		45.73	0.001529	5.64	8485.97	1095.46	0.35
Lower	7116.984	Q100HC	118891.00	33.82	48.93		50.30	0.002761	9.52	13328.46	2130.99	0.49
Lower	6553.777	Q50	31354.00	32.21	42.84		43.09	0.000646	4.08	7989.44	888.55	0.23
Lower	6553.777	Q100	47312.00	32.21	44.71		45.10	0.000796	5.10	9659.14	896.06	0.26
Lower	6553.777	Q100HC	118891.00	32.21	47.80		48.95	0.001922	9.26	15704.39	2896.47	0.43
Lower	6146.684	Q50	31354.00	31.60	42.22		42.72	0.001130	5.92	5722.42	777.11	0.34
Lower	6146.684	Q100	47312.00	31.60	44.00		44.66	0.001256	7.01	7839.71	1878.89	0.37
Lower	6146.684	Q100HC	118891.00	31.60	45.62	45.62	47.75	0.003830	13.38	12062.05	3041.16	0.66
Lower	5898.852	Q50	31354.00	32.40	40.30	39.98	42.05	0.005477	11.83	3322.79	1525.47	0.77
Lower	5898.852	Q100	47312.00	32.40	41.49	41.33	43.87	0.006348	14.08	4248.22	1900.25	0.85
Lower	5898.852	Q100HC	118891.00	32.40	45.12	44.23	46.31	0.002911	12.08	15459.54	2974.13	0.61
Lower	5313.135	Q50	31354.00	30.85	35.48	35.48	36.97	0.014652	11.42	3354.05	1363.73	1.02
Lower	5313.135	Q100	47312.00	30.85	36.46	36.46	38.37	0.013845	12.79	4413.82	1487.41	1.02
Lower	5313.135	Q100HC	118891.00	30.85	45.09	39.78	45.38	0.000575	5.04	27753.78	3236.75	0.24
Lower	4689.719	Q50	31354.00	23.21	32.65	29.36	33.02	0.001808	5.32	7031.51	1395.33	0.34
Lower	4689.719	Q100	47312.00	23.21	34.28	30.51	34.74	0.001778	6.01	9401.78	2145.45	0.35
Lower	4689.719	Q100HC	118891.00	23.21	45.03	34.28	45.16	0.000167	3.09	42009.40	3313.26	0.12
Lower	4089.740	Q50	31354.00	25.52	29.72	29.15	30.69	0.012685	8.04	4014.98	1212.73	0.74
Lower	4089.740	Q100	47312.00	25.52	32.65	30.07	33.26	0.003631	6.39	7764.25	1587.83	0.44
Lower	4089.740	Q100HC	118891.00	25.52	44.95	33.22	45.06	0.000160	2.71	45211.06	3289.35	0.11
Lower	3486.110	Q50	31354.00	14.86	29.74	21.04	29.87	0.000317	2.96	11501.41	1708.63	0.15
Lower	3486.110	Q100	47312.00	14.86	32.46	22.23	32.64	0.000351	3.56	14708.55	2139.05	0.16
Lower	3486.110	Q100HC	118891.00	14.86	44.92	26.36	44.99	0.000068	2.32	57920.65	3319.95	0.08
Lower	2883.526	Q50	31354.00	14.12	29.35	21.72	29.60	0.000582	4.30	8394.90	1785.51	0.21
Lower	2883.526	Q100	47312.00	14.12	32.22	23.34	32.41	0.000403	4.08	15932.67	2933.70	0.18
Lower	2883.526	Q100HC	118891.00	14.12	44.86	28.52	44.95	0.000078	2.65	50638.33	3032.86	0.09
Lower	2679.762	Q50	31354.00	14.19	29.02	23.13	29.43	0.001058	5.42	6566.34	1809.69	0.29
Lower	2679.762	Q100	47312.00	14.19	32.09	24.68	32.32	0.000543	4.52	14293.13	2766.87	0.21
Lower	2679.762	Q100HC	118891.00	14.19	44.82	30.57	44.93	0.000093	2.83	45794.93	2872.58	0.10
Lower	2283.606	Q50	31354.00	17.37	28.41	24.61	28.90	0.001734	6.18	6469.09	1953.93	0.36

Lower	2283.606	Q100	47312.00	17.37	31.87	26.42	32.09	0.000610	4.54	14036.42	2750.05	0.23
Lower	2283.606	Q100HC	118891.00	17.37	44.78	30.93	44.89	0.000095	2.87	44837.28	2832.51	0.10
Lower	2075.420	Q50	31354.00	13.10	28.32	22.22	28.65	0.000614	5.75	9354.16	2776.29	0.27
Lower	2075.420	Q100	47312.00	13.10	31.82	24.35	31.99	0.000282	4.49	17276.26	2791.83	0.19
Lower	2075.420	Q100HC	118891.00	13.10	44.76	29.81	44.87	0.000077	3.36	46769.53	2868.81	0.11
Lower	1907.350	Q50	31354.00	10.36	28.41	19.65	28.52	0.000224	3.45	13445.08	2700.61	0.15
Lower	1907.350	Q100	47312.00	10.36	31.83	21.83	31.93	0.000156	3.24	19999.24	2819.16	0.13
Lower	1907.350	Q100HC	118891.00	10.36	44.75	27.41	44.86	0.000074	2.99	44979.37	2868.25	0.09
Lower	1700.584	Q50	31354.00	10.54	28.38	20.27	28.47	0.000210	2.57	13231.39	2442.72	0.12
Lower	1700.584	Q100	47312.00	10.54	31.79	22.64	31.90	0.000170	2.62	18335.74	2778.62	0.11
Lower	1700.584	Q100HC	118891.00	10.54	44.68	27.13	44.84	0.000101	2.77	37938.94	2861.85	0.09
Lower	1525.293	Q50	31354.00	8.14	27.52	19.67	28.31	0.001866	7.54	4588.59	2217.56	0.32
Lower	1525.293	Q100	47312.00	8.14	31.63	22.73	31.84	0.000378	3.84	12932.69	2445.56	0.15
Lower	1525.293	Q100HC	118891.00	8.14	44.42	28.33	44.78	0.000298	4.39	24853.75	2874.93	0.13
Lower	1306.721	Q50	31354.00	9.84	27.28	18.67	27.93	0.001233	6.61	4981.36	357.72	0.29
Lower	1306.721	Q100	47312.00	9.84	30.64	20.96	31.60	0.001430	8.08	6218.34	378.60	0.32
Lower	1306.721	Q100HC	118891.00	9.84	42.54	28.70	44.48	0.001581	11.71	11117.65	435.10	0.37
Lower	1300		Bridge									
Lower	1053.212	Q50	31354.00	11.63	25.73		26.76	0.002841	8.41	3944.88	364.17	0.42
Lower	1053.212	Q100	47312.00	11.63	28.73		30.16	0.002980	9.97	5063.01	380.90	0.45
Lower	1053.212	Q100HC	118891.00	11.63	40.20		42.66	0.002514	13.31	9771.06	437.51	0.45
Lower	977.176	Q50	31354.00	11.49	23.38	20.77	25.02	0.005827	10.93	3138.21	352.53	0.59
Lower	977.176	Q100	47312.00	11.49	26.35	22.86	28.42	0.005335	12.33	4212.55	371.59	0.59
Lower	977.176	Q100HC	118891.00	11.49	39.16	30.02	41.60	0.002792	13.90	10109.96	550.84	0.48
Lower	970		Bridge									
Lower	926.767	Q50	31354.00	10.92	18.02	19.66	23.83	0.043396	20.21	1644.66	311.62	1.47
Lower	926.767	Q100	47312.00	10.92	20.50	21.83	26.52	0.028675	20.75	2442.46	330.72	1.26
Lower	926.767	Q100HC	118891.00	10.92	25.90	29.44	38.24	0.030792	29.96	4298.23	358.93	1.42
Lower	666.956	Q50	31354.00	5.87	16.31	15.78	18.71	0.009909	13.31	2774.02	458.02	0.76
Lower	666.956	Q100	47312.00	5.87	17.86	17.86	21.23	0.011808	16.06	3512.30	497.16	0.85
Lower	666.956	Q100HC	118891.00	5.87	22.14	23.92	29.26	0.017027	23.96	5971.17	673.14	1.08
Lower	482.270	Q50	31354.00	5.05	15.80		17.04	0.005472	9.83	3849.90	744.24	0.56
Lower	482.270	Q100	47312.00	5.05	17.06	16.09	18.81	0.006696	11.82	4821.18	808.30	0.64
Lower	482.270	Q100HC	118891.00	5.05	18.34	20.40	25.58	0.024002	24.12	5901.31	872.54	1.23
Lower	284.051	Q50	31354.00	6.37	13.64	13.64	15.41	0.012520	11.97	3262.52	898.56	0.81
Lower	284.051	Q100	47312.00	6.37	14.89	14.89	17.00	0.012526	13.40	4424.28	956.24	0.83
Lower	284.051	Q100HC	118891.00	6.37	18.54	18.54	22.11	0.012851	17.40	8259.28	1106.37	0.89
Lower	85.341	Q50	31354.00	5.15	10.14	10.31	12.01	0.023847	11.71	2966.68	922.74	1.02
Lower	85.341	Q100	47312.00	5.15	11.12	11.43	13.57	0.023747	13.50	3905.57	988.58	1.06
Lower	85.341	Q100HC	118891.00	5.15	14.32	15.14	18.64	0.022658	18.27	7464.54	1228.81	1.12

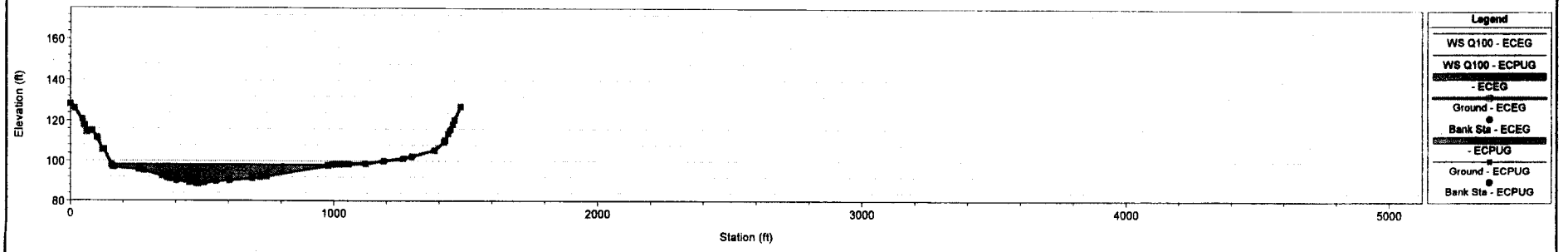


1 in Horiz. = 800 ft 1 in Vert. = 600 ft

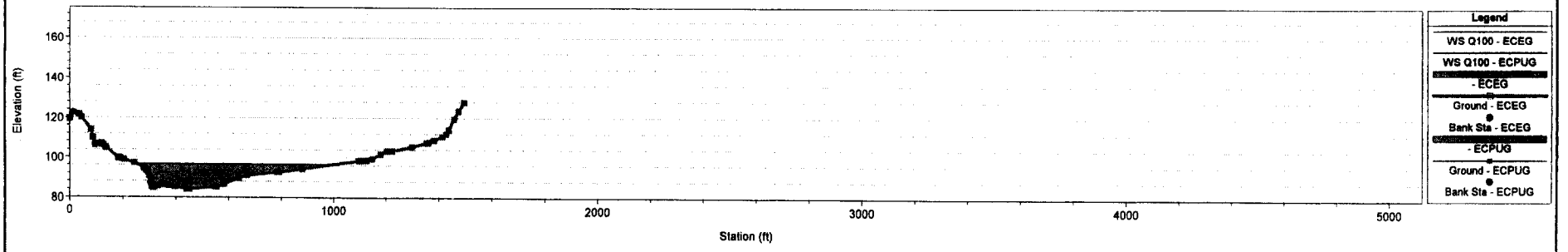
Project Model - Model F2-X4 Plan: 1) ECPUG 2) ECEG
RS = 17108.89



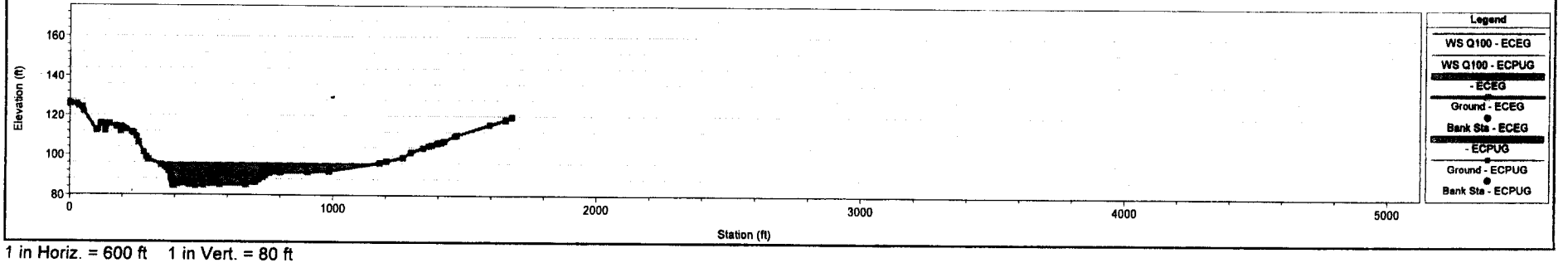
Project Model - Model F2-X4 Plan: 1) ECPUG 2) ECEG
RS = 16909.21



Project Model - Model F2-X4 Plan: 1) ECPUG 2) ECEG
RS = 16706.13 Updated Manning's N Distribution

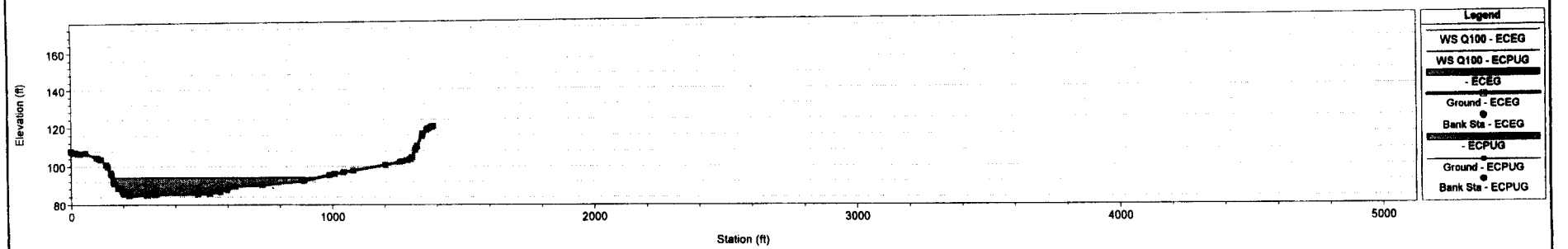


Project Model - Model F2-X4 Plan: 1) ECPUG 2) ECEG
RS = 16505.64

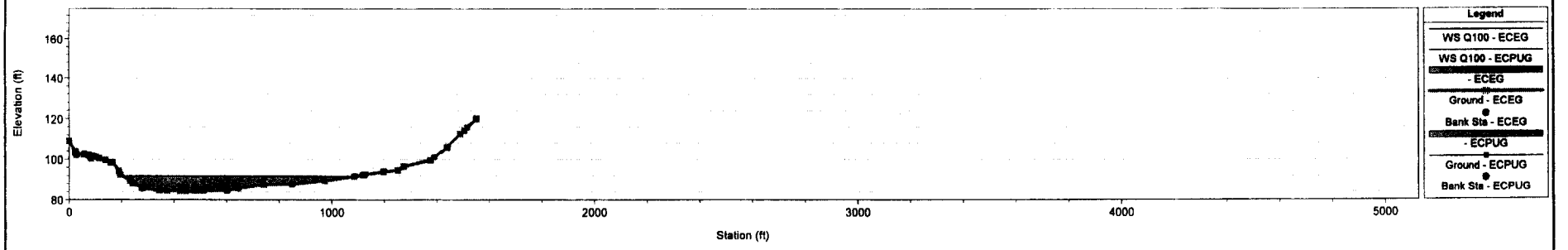


1 in Horiz. = 600 ft 1 in Vert. = 80 ft

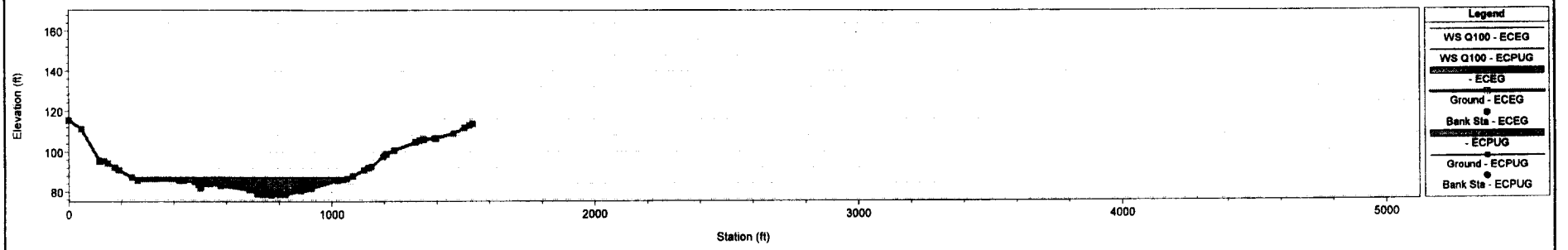
Project Model - Model F2-X4 Plan: 1) ECPUG 2) ECEG
RS = 16299.19



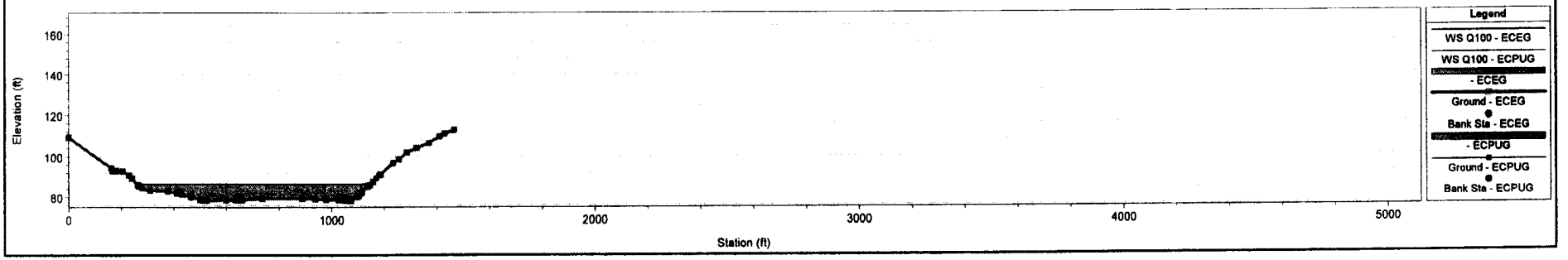
Project Model - Model F2-X4 Plan: 1) ECPUG 2) ECEG
RS = 16105.61



Project Model - Model F2-X4 Plan: 1) ECPUG 2) ECEG
RS = 15910.69

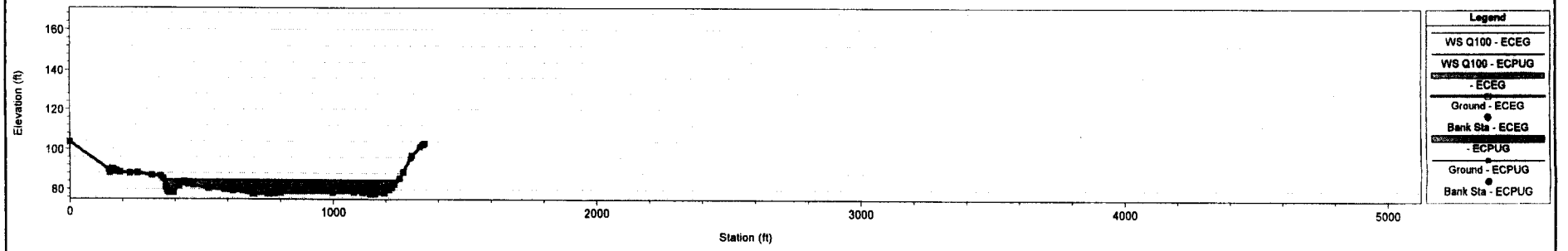


Project Model - Model F2-X4 Plan: 1) ECPUG 2) ECEG
RS = 15677.08

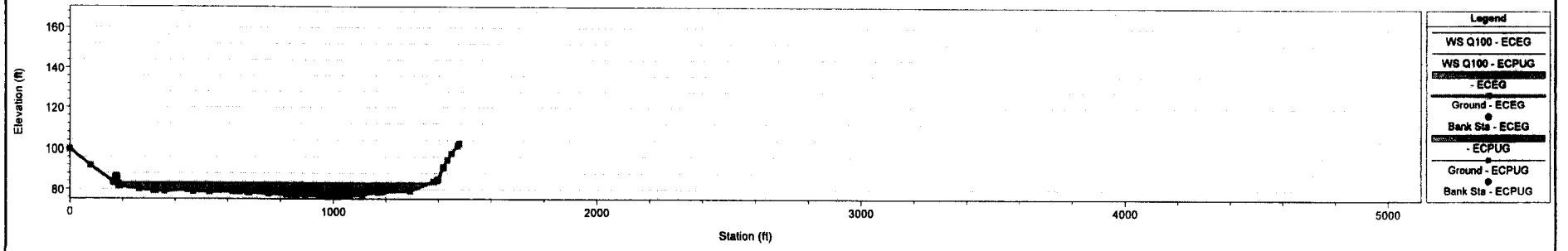


1 in Horiz. = 600 ft 1 in Vert. = 80 ft

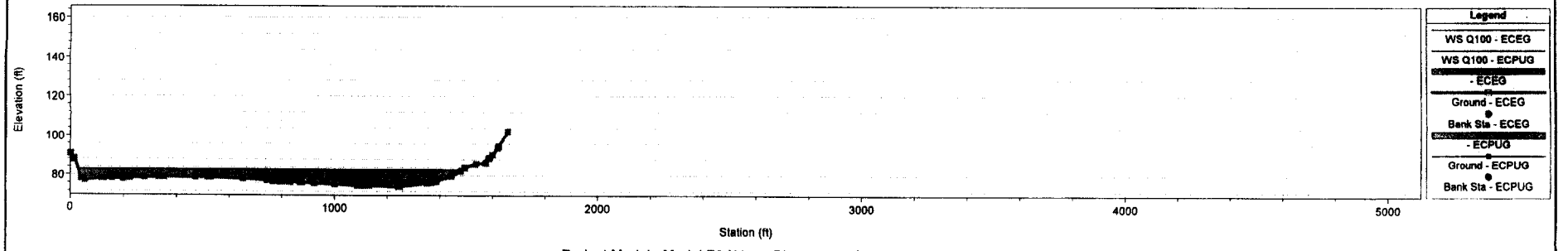
Project Model - Model F2-X4 Plan: 1) ECPUG 2) ECEG
RS = 15455.59



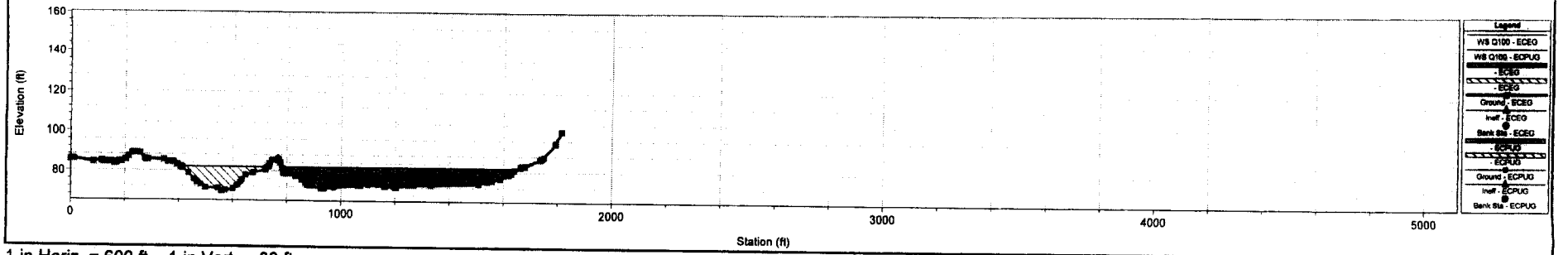
Project Model - Model F2-X4 Plan: 1) ECPUG 2) ECEG
RS = 15282.84



Project Model - Model F2-X4 Plan: 1) ECPUG 2) ECEG
RS = 15076.02 Updated Manning's N Distribution

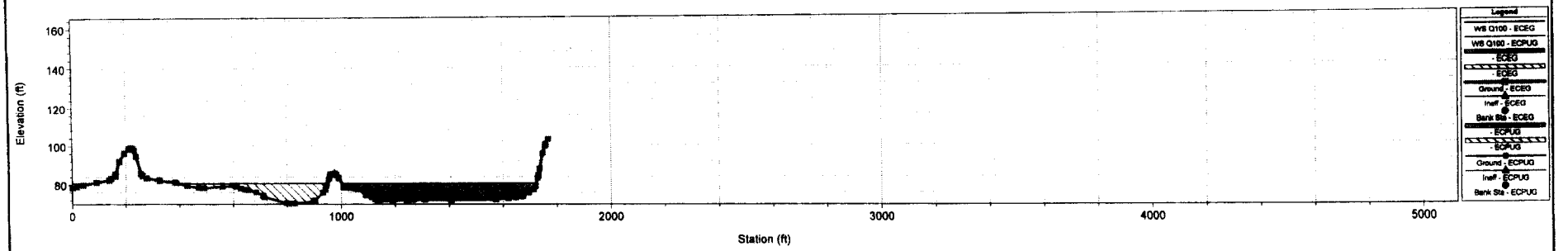


Project Model - Model F2-X4 Plan: 1) ECPUG 2) ECEG
RS = 14843.33

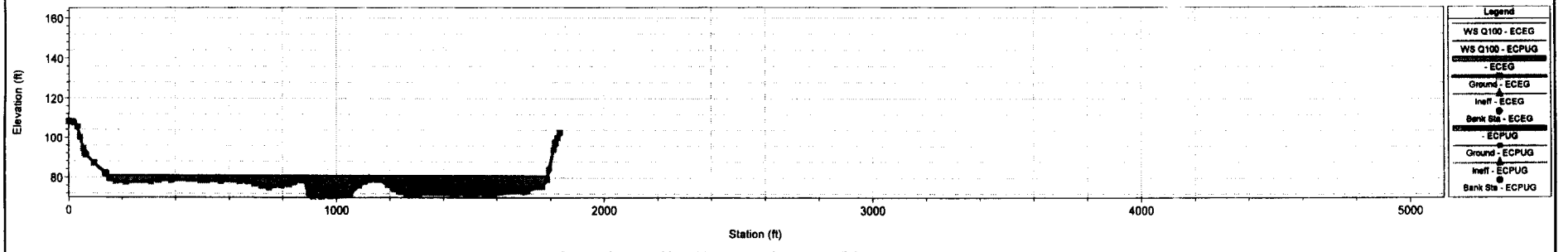


1 in Horiz. = 600 ft 1 in Vert. = 80 ft

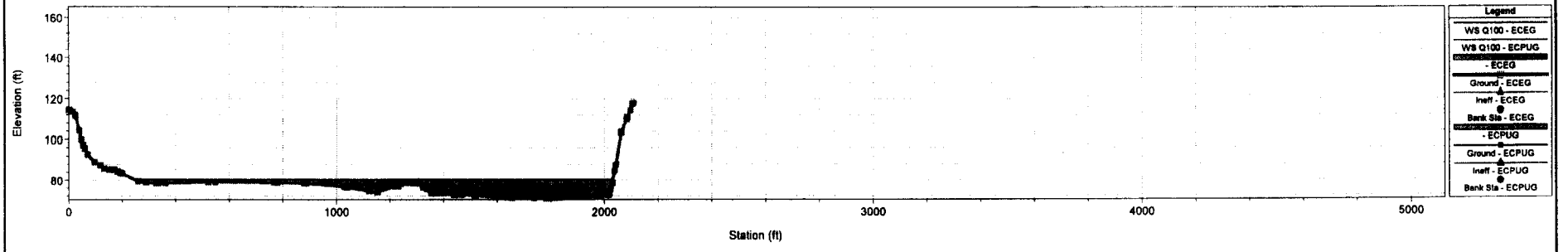
Project Model - Model F2-X4 Plan: 1) ECPUG 2) ECEG
RS = 14640.75



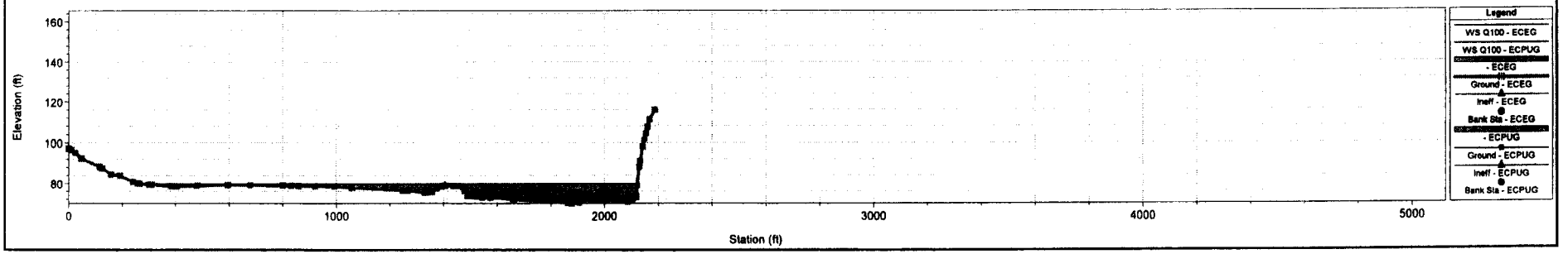
Project Model - Model F2-X4 Plan: 1) ECPUG 2) ECEG
RS = 14474.32



Project Model - Model F2-X4 Plan: 1) ECPUG 2) ECEG
RS = 14295.85 Updated Manning's N Distribution



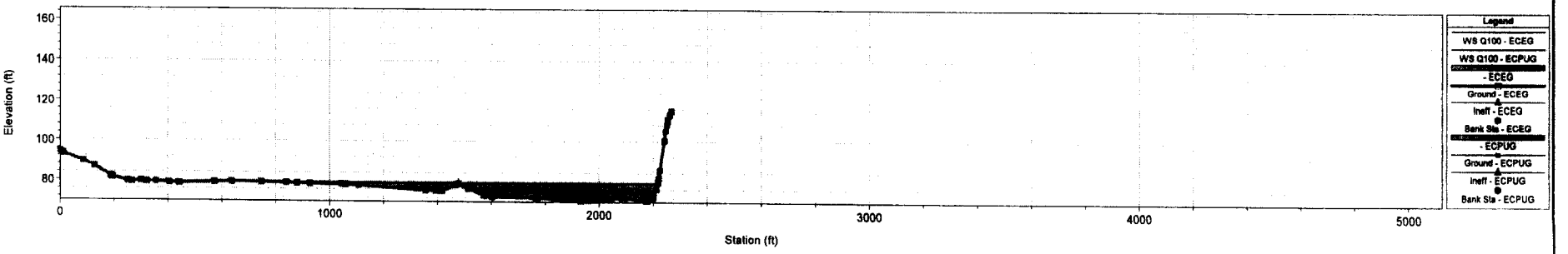
Project Model - Model F2-X4 Plan: 1) ECPUG 2) ECEG
RS = 14206.87 Updated Manning's N Distribution



1 in Horiz. = 600 ft 1 in Vert. = 80 ft

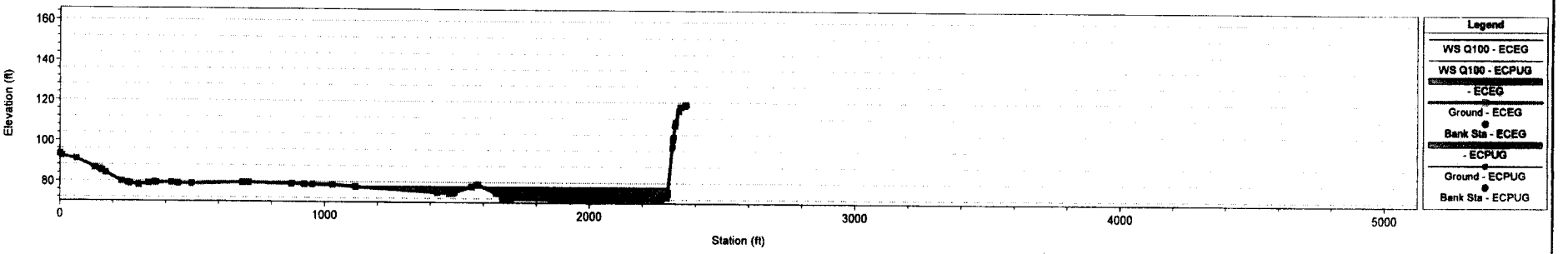
Project Model - Model F2-X4 Plan: 1) ECPUG 2) ECEG

RS = 14108.61 Updated Manning's N Distribution



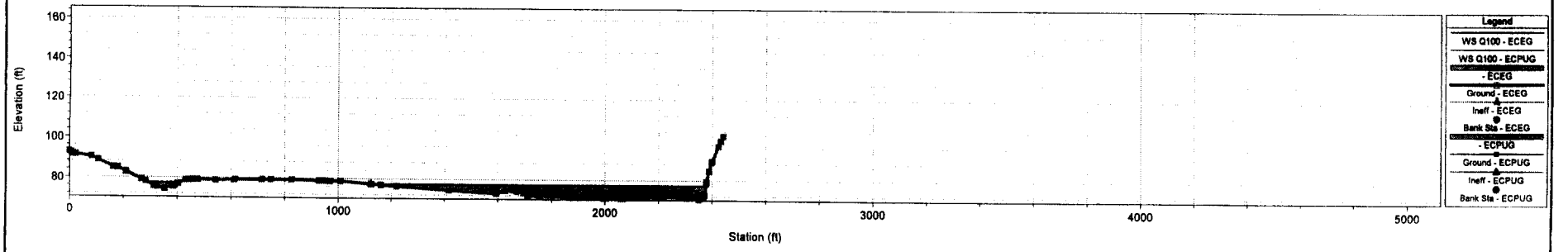
Project Model - Model F2-X4 Plan: 1) ECPUG 2) ECEG

RS = 14009.16



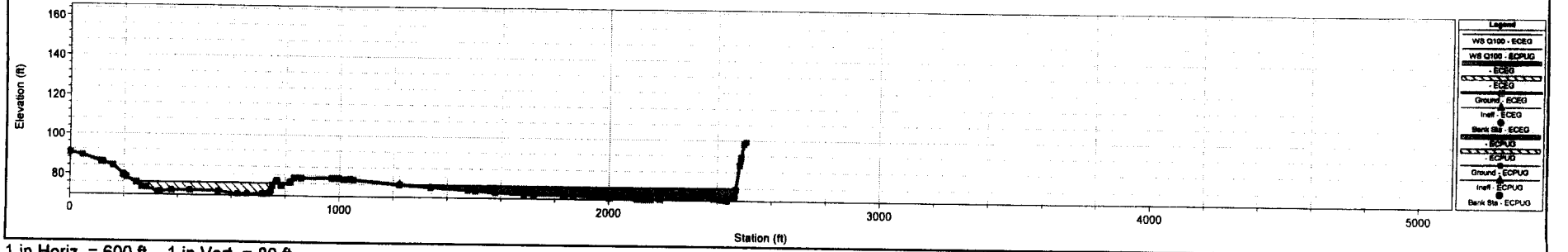
Project Model - Model F2-X4 Plan: 1) ECPUG 2) ECEG

RS = 13906.13



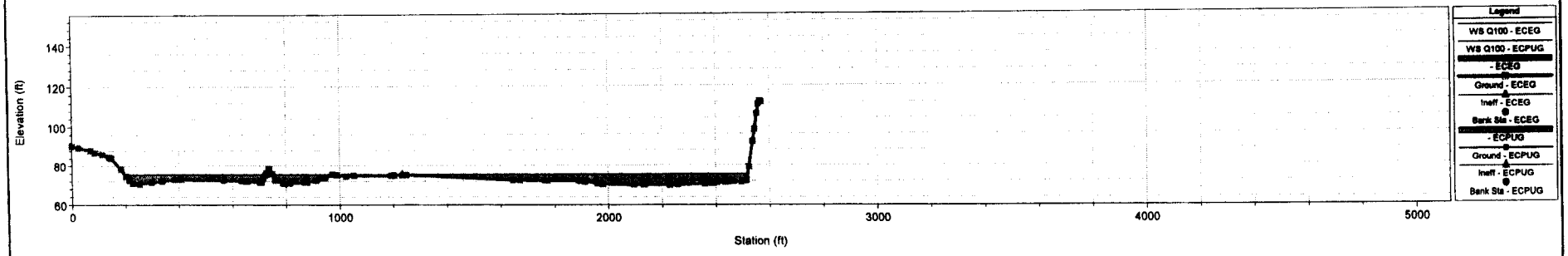
Project Model - Model F2-X4 Plan: 1) ECPUG 2) ECEG

RS = 13813.01

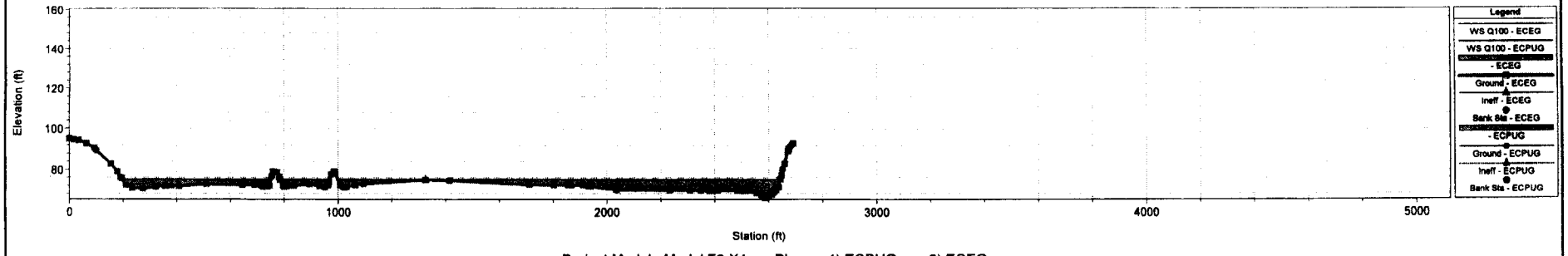


1 in Horiz. = 600 ft 1 in Vert. = 80 ft

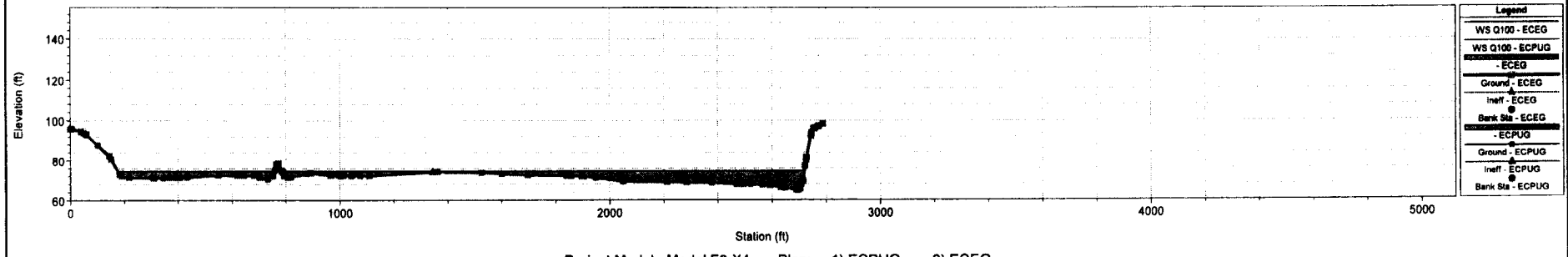
Project Model - Model F2-X4 Plan: 1) ECPUG 2) ECEG
RS = 13721.89



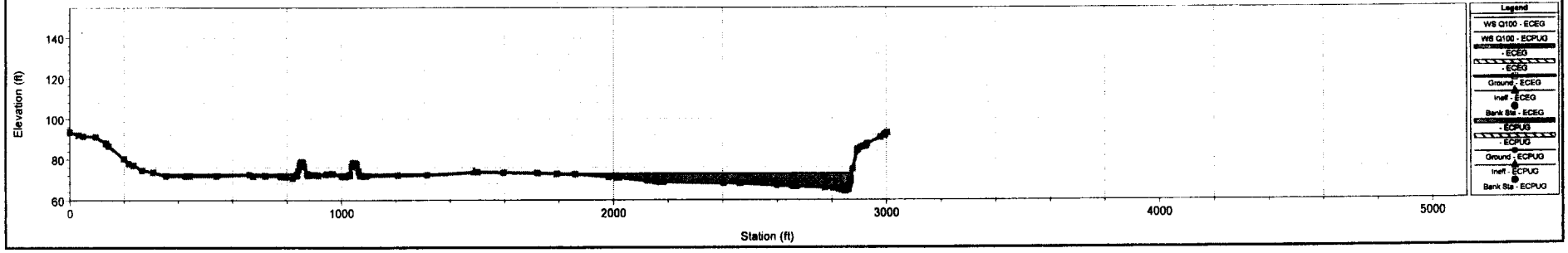
Project Model - Model F2-X4 Plan: 1) ECPUG 2) ECEG
RS = 13616.16



Project Model - Model F2-X4 Plan: 1) ECPUG 2) ECEG
RS = 13508.64

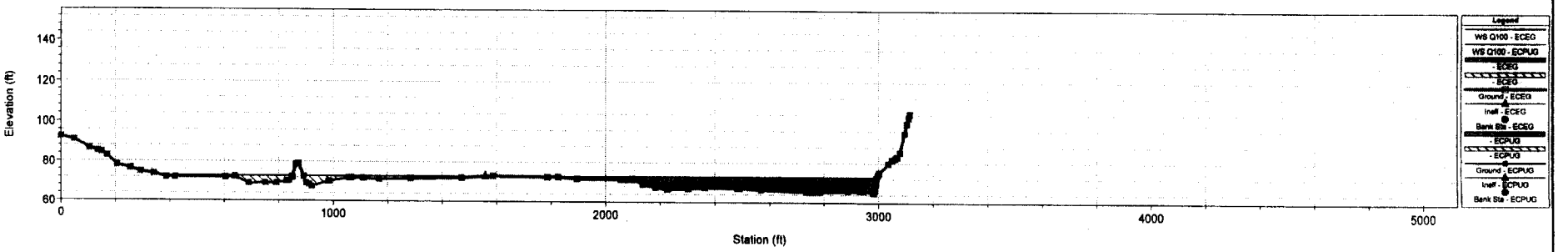


Project Model - Model F2-X4 Plan: 1) ECPUG 2) ECEG
RS = 13407.57

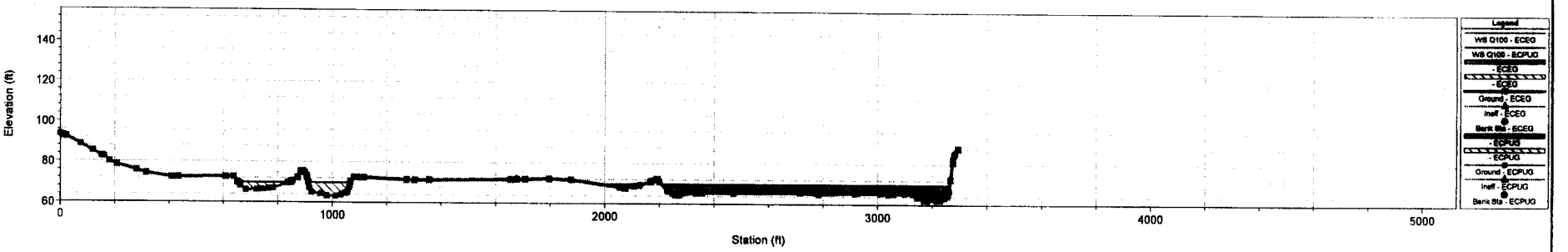


1 in Horiz. = 600 ft 1 in Vert. = 80 ft

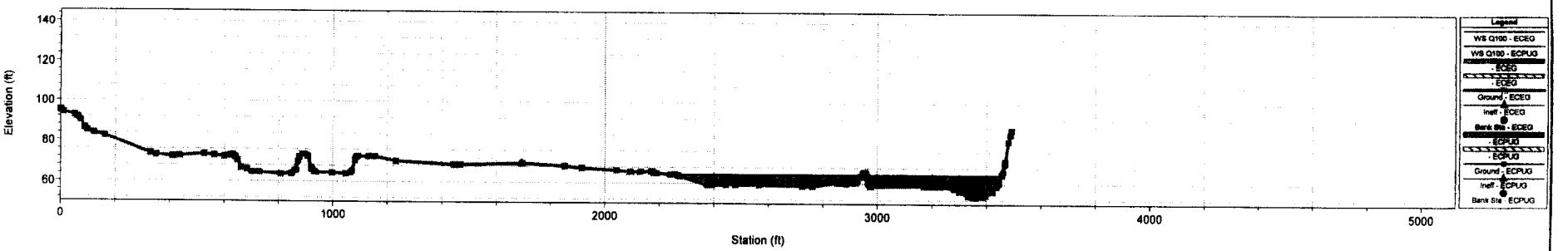
Project Model - Model F2-X4 Plan: 1) ECPUG 2) ECEG
RS = 13315.43



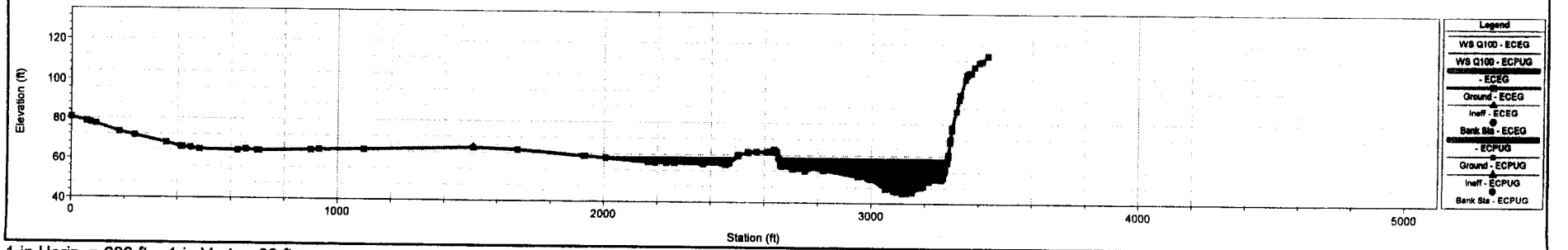
Project Model - Model F2-X4 Plan: 1) ECPUG 2) ECEG
RS = 12905.33



Project Model - Model F2-X4 Plan: 1) ECPUG 2) ECEG
RS = 11695.46

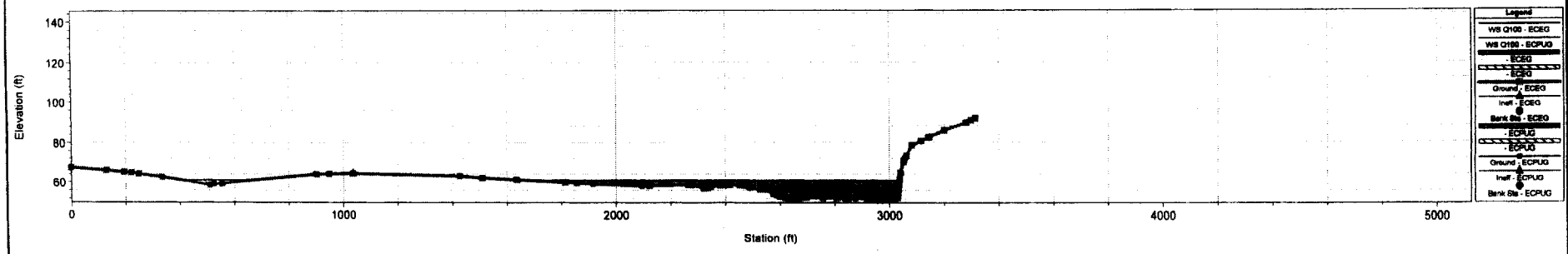


Project Model - Model F2-X4 Plan: 1) ECPUG 2) ECEG
RS = 10698.02

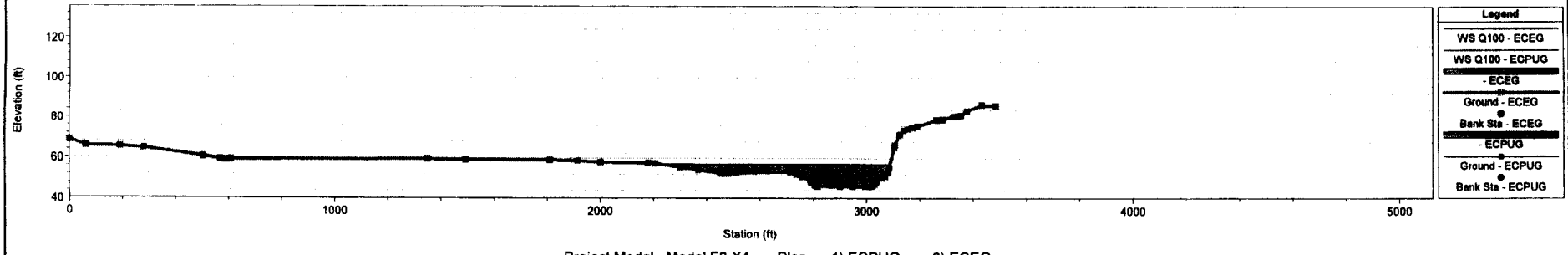


1 in Horiz. = 600 ft 1 in Vert. = 80 ft

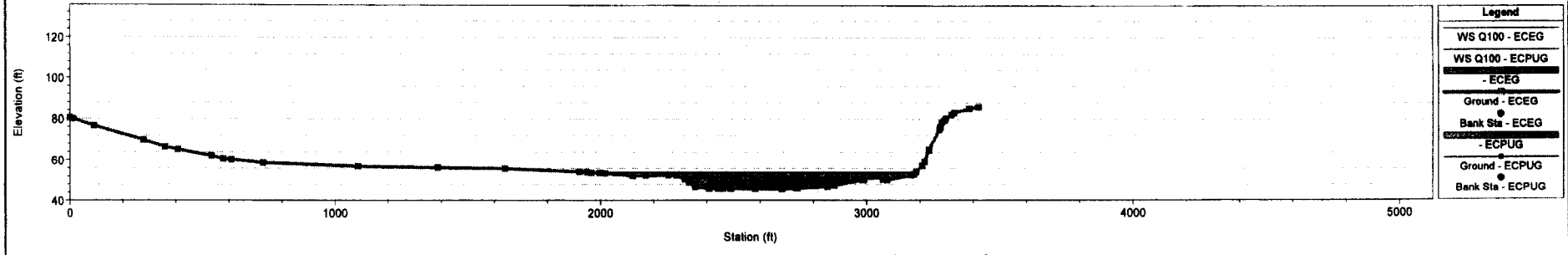
Project Model - Model F2-X4 Plan: 1) ECPUG 2) ECEG
RS = 10103.57



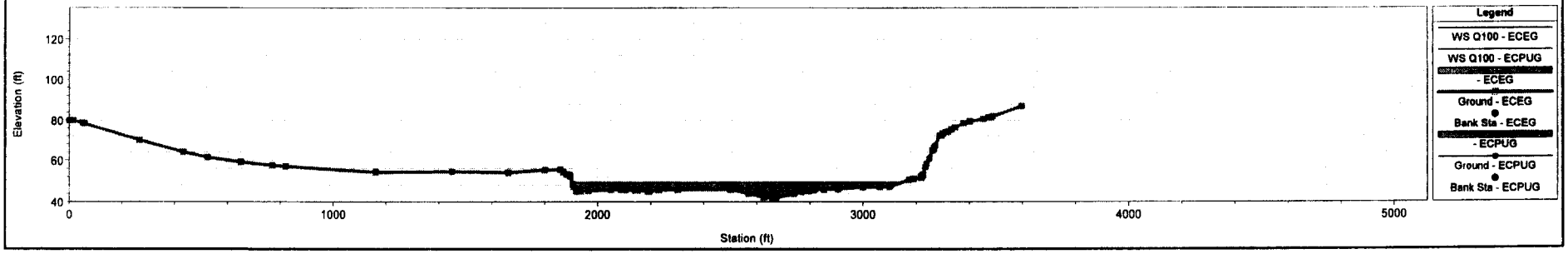
Project Model - Model F2-X4 Plan: 1) ECPUG 2) ECEG
RS = 9476.099



Project Model - Model F2-X4 Plan: 1) ECPUG 2) ECEG
RS = 8868.551

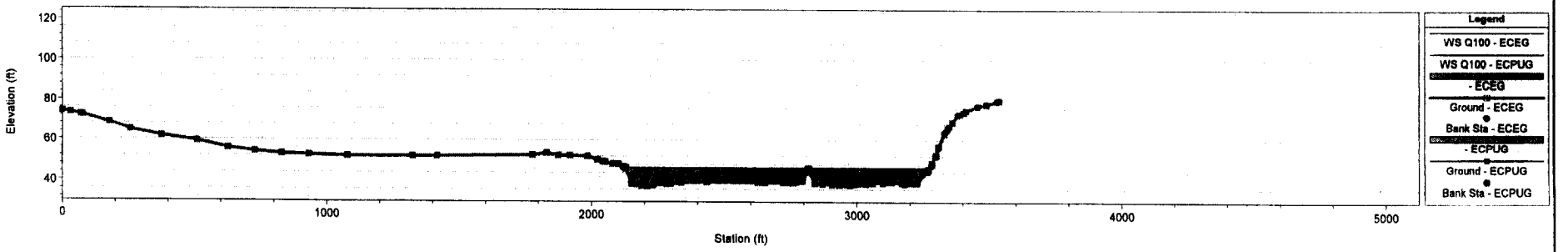


Project Model - Model F2-X4 Plan: 1) ECPUG 2) ECEG
RS = 8290.415

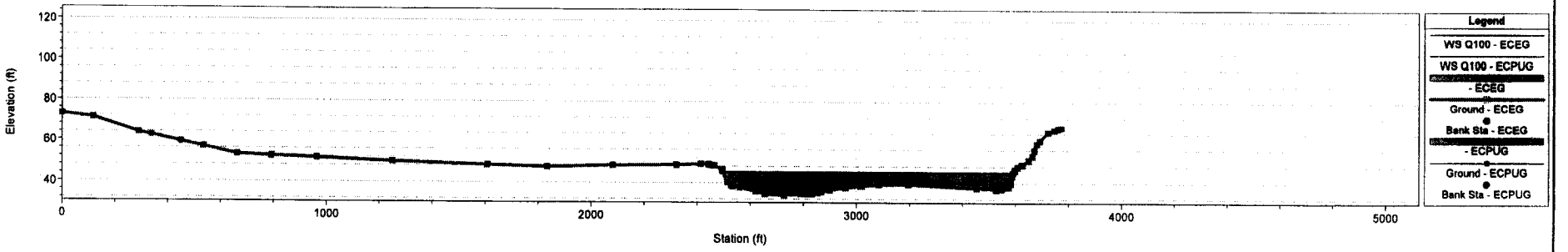


1 in Horiz. = 600 ft 1 in Vert. = 80 ft

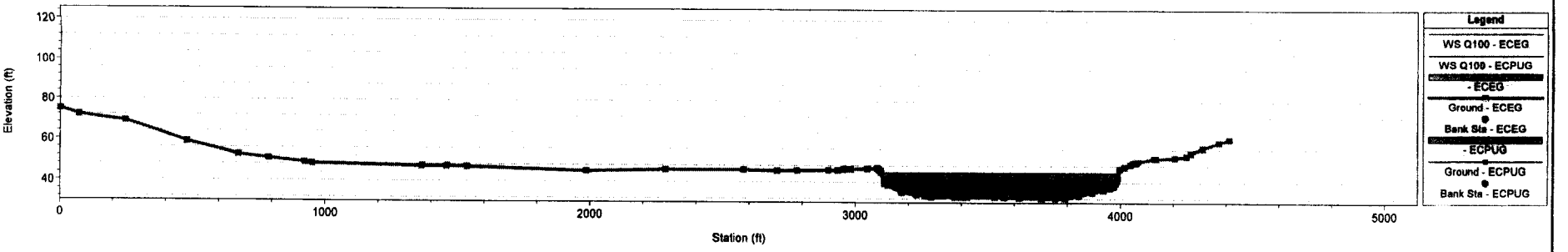
Project Model - Model F2-X4 Plan: 1) ECPUG 2) ECEG
RS = 7667.615



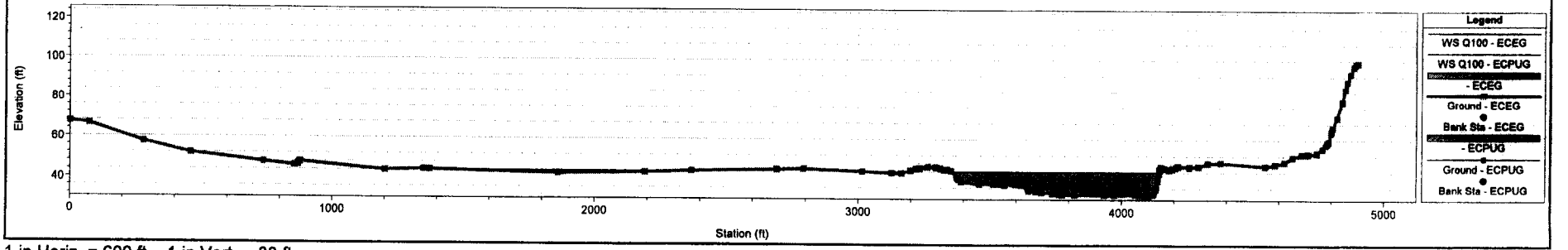
Project Model - Model F2-X4 Plan: 1) ECPUG 2) ECEG
RS = 7116.984



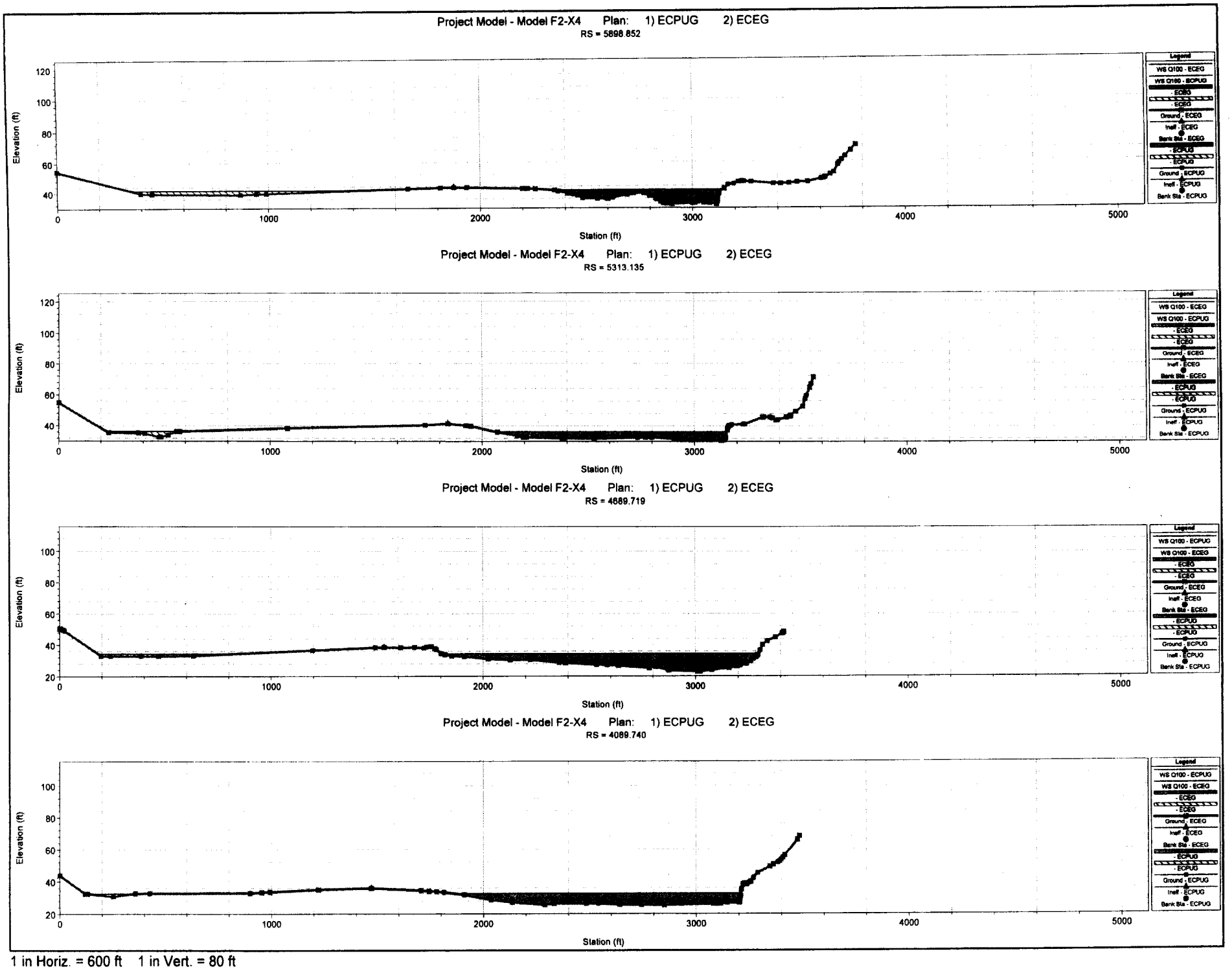
Project Model - Model F2-X4 Plan: 1) ECPUG 2) ECEG
RS = 6553.777



Project Model - Model F2-X4 Plan: 1) ECPUG 2) ECEG
RS = 6146.684 Updated Manning's N Distribution

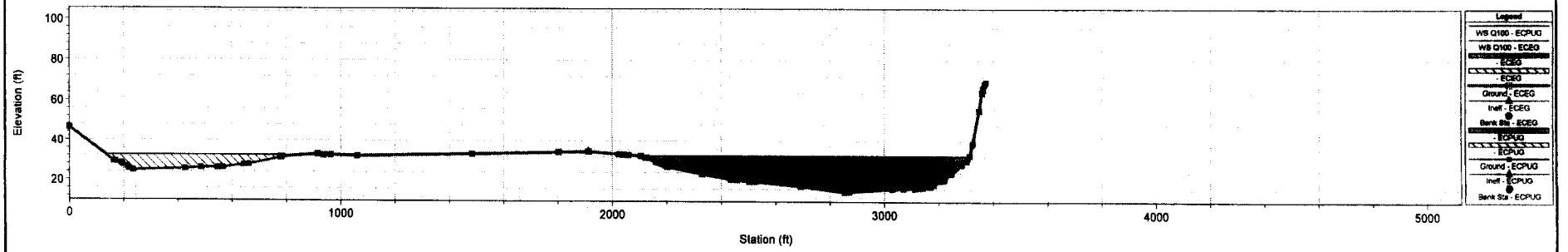


1 in Horiz. = 600 ft 1 in Vert. = 80 ft

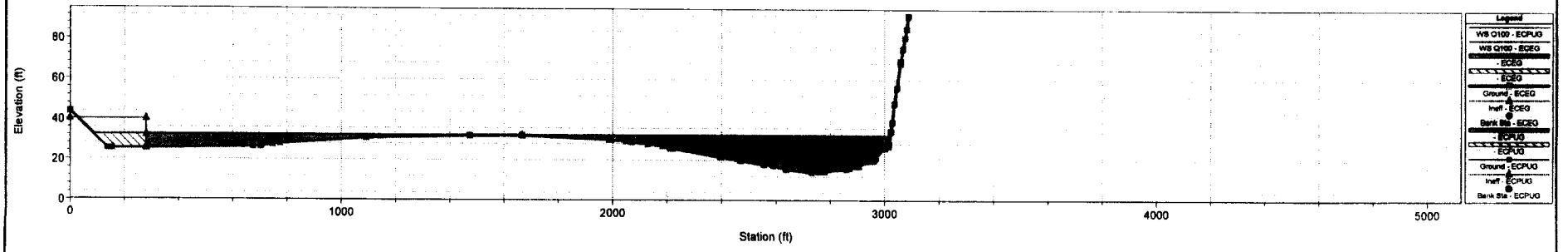


1 in Horiz. = 600 ft 1 in Vert. = 80 ft

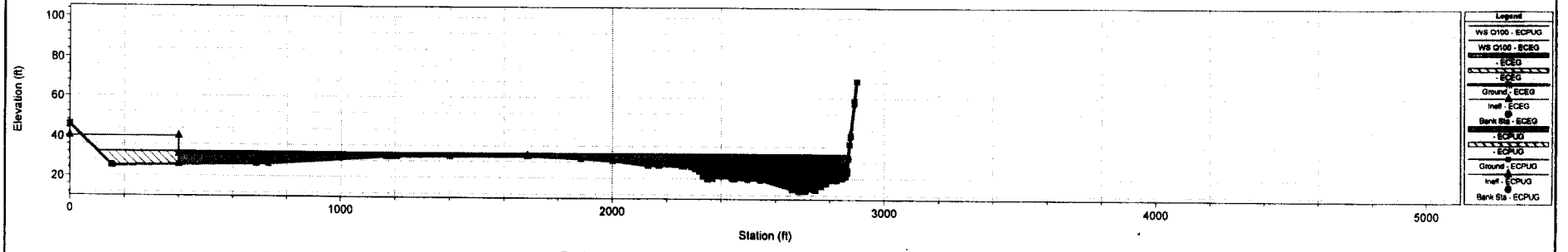
Project Model - Model F2-X4 Plan: 1) ECPUG 2) ECEG
RS = 3486.110



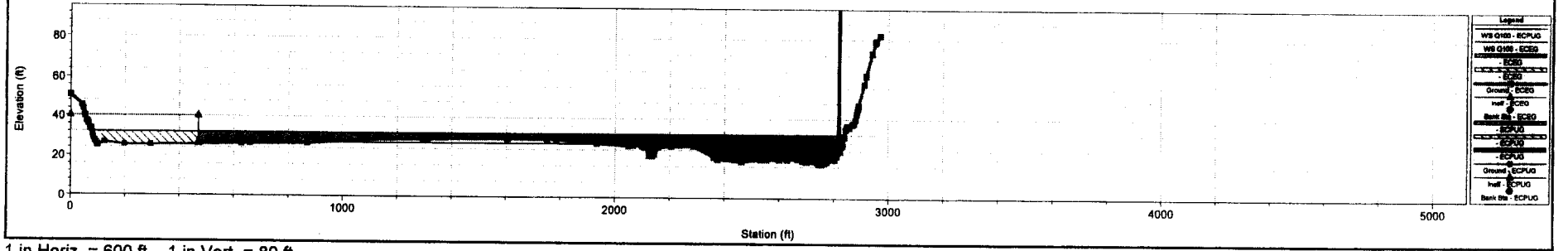
Project Model - Model F2-X4 Plan: 1) ECPUG 2) ECEG
RS = 2883.526



Project Model - Model F2-X4 Plan: 1) ECPUG 2) ECEG
RS = 2679.762



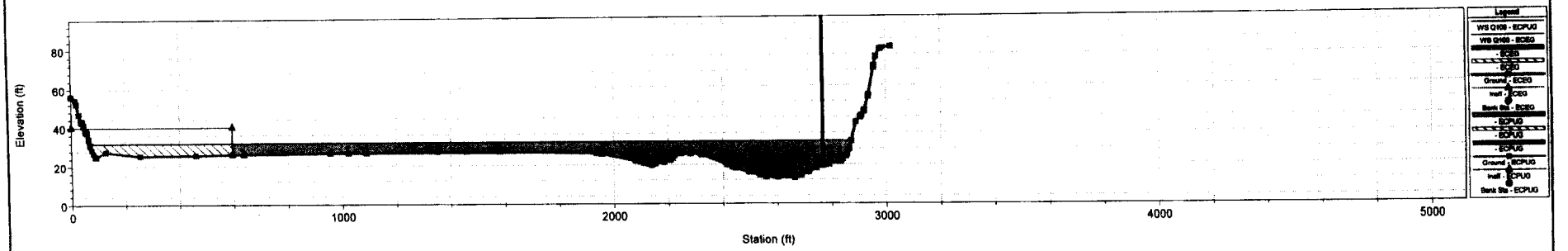
Project Model - Model F2-X4 Plan: 1) ECPUG 2) ECEG
RS = 2283.606 CS Modified with Blocked Obstructions to Approximate Pier Placem



1 in Horiz. = 600 ft 1 in Vert. = 80 ft

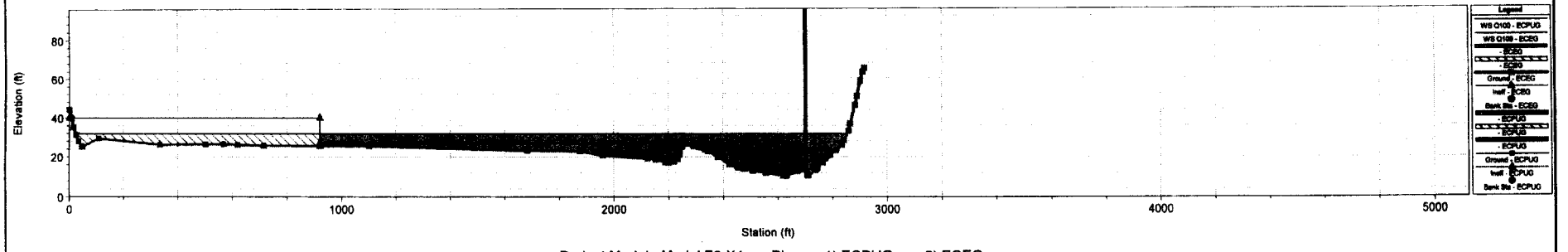
Project Model - Model F2-X4 Plan: 1) ECPUG 2) ECEG

RS = 2075.420 CS Modified with Blocked Obstructions to Approximate Pier Placem



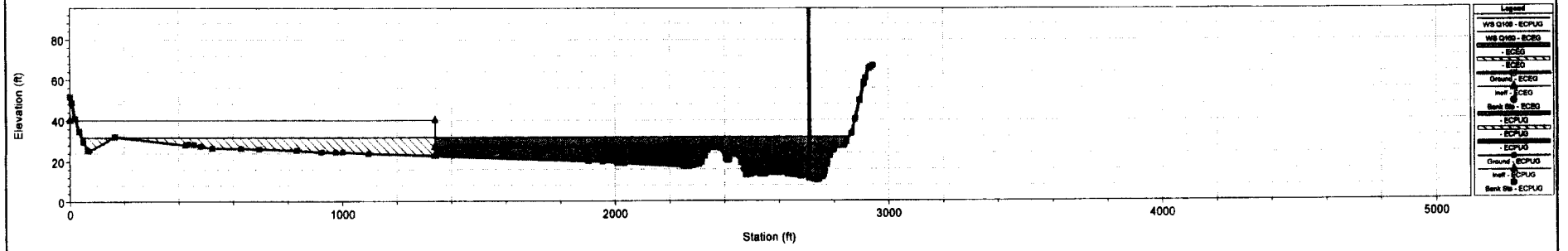
Project Model - Model F2-X4 Plan: 1) ECPUG 2) ECEG

RS = 1907.350 CS Modified with Blocked Obstructions to Approximate Pier Placem



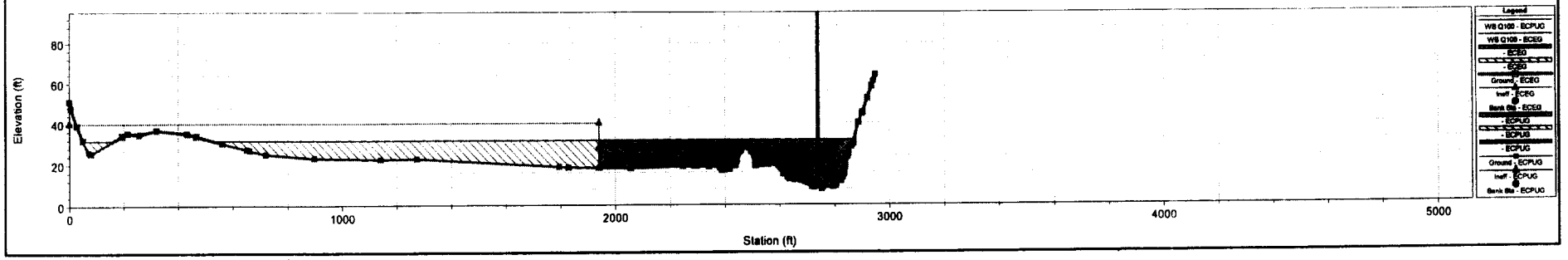
Project Model - Model F2-X4 Plan: 1) ECPUG 2) ECEG

RS = 1700.584 Updated Manning's N Distribution, CS Modified with Blocked Obstr

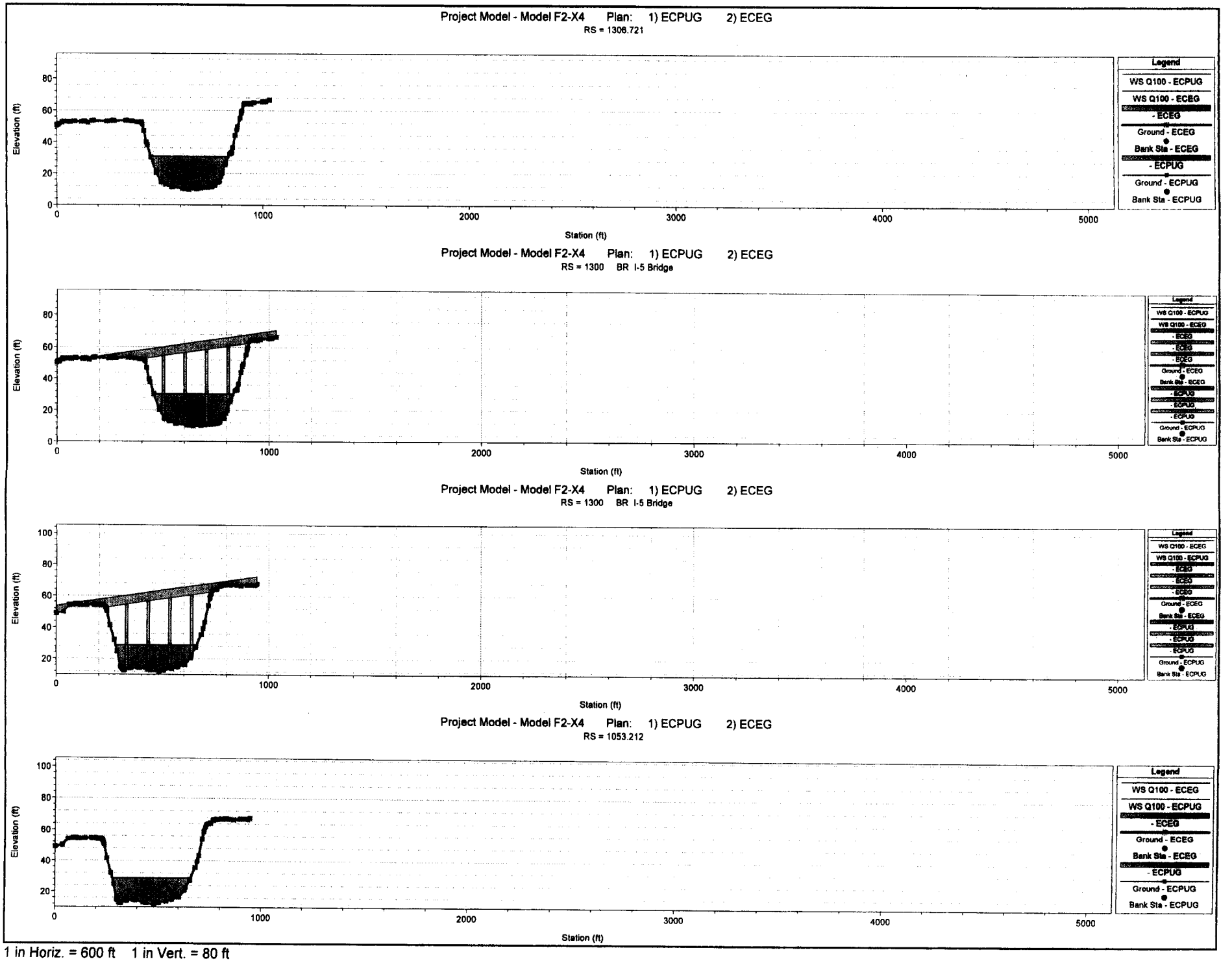


Project Model - Model F2-X4 Plan: 1) ECPUG 2) ECEG

RS = 1525.293 CS Modified with Blocked Obstructions to Approximate Pier Placem

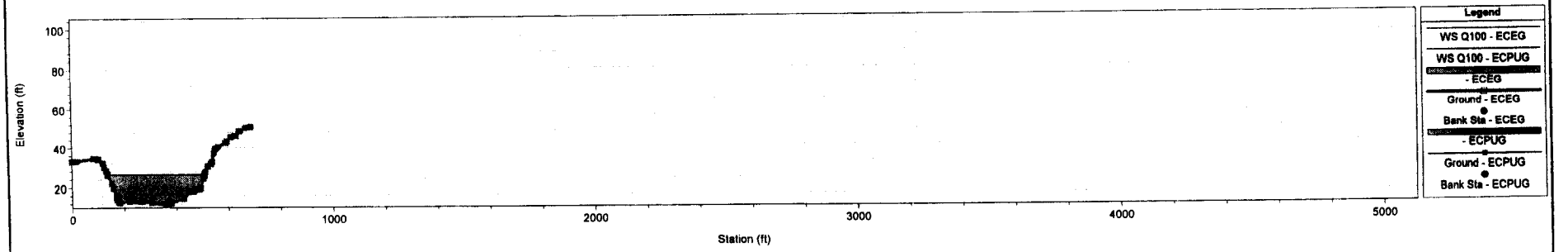


1 in Horiz. = 600 ft 1 in Vert. = 80 ft

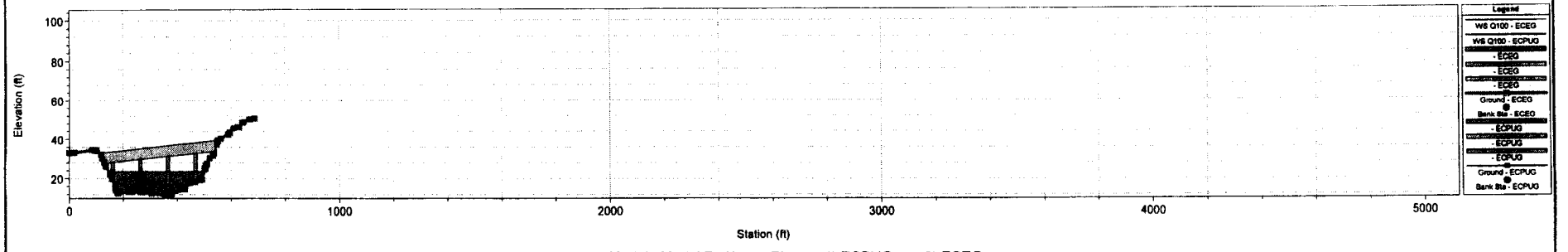


1 in Horiz. = 600 ft 1 in Vert. = 80 ft

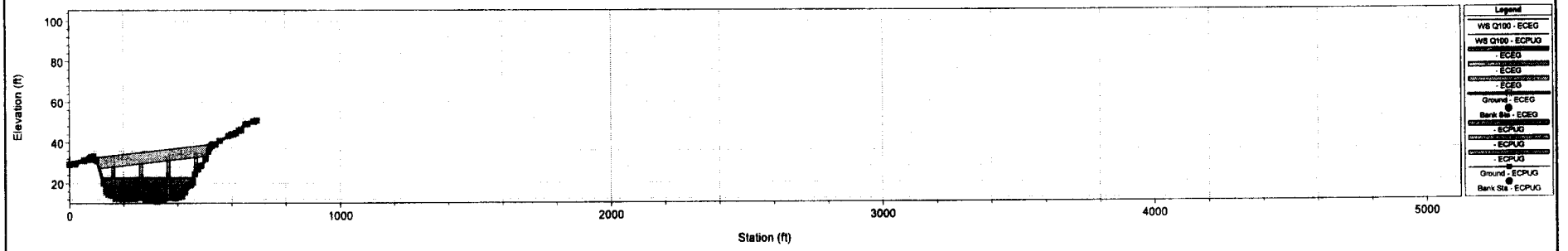
Project Model - Model F2-X4 Plan: 1) ECPUG 2) ECEG
RS = 977.176 Manual Modification of Manning's N Values



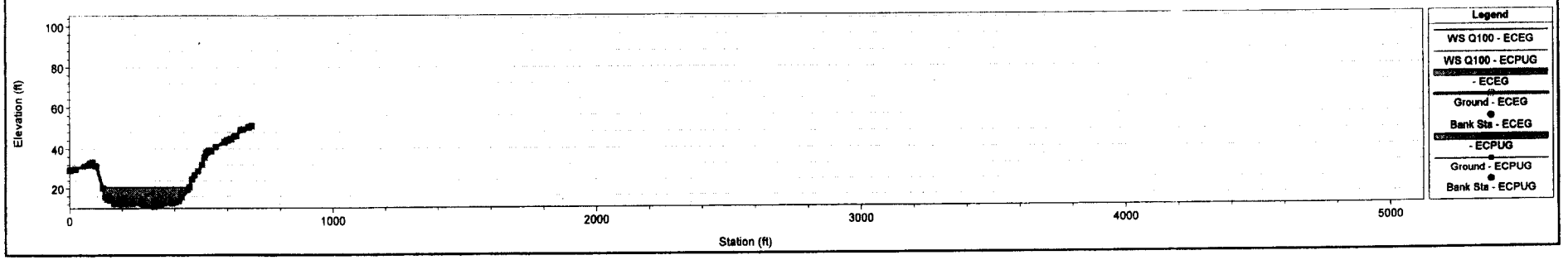
Project Model - Model F2-X4 Plan: 1) ECPUG 2) ECEG
RS = 970 BR Old PCH Bridge



Project Model - Model F2-X4 Plan: 1) ECPUG 2) ECEG
RS = 970 BR Old PCH Bridge

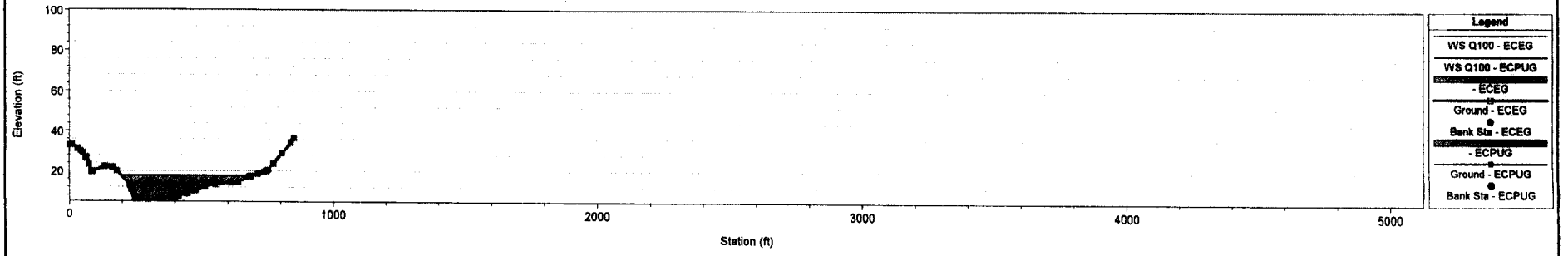


Project Model - Model F2-X4 Plan: 1) ECPUG 2) ECEG
RS = 926.767

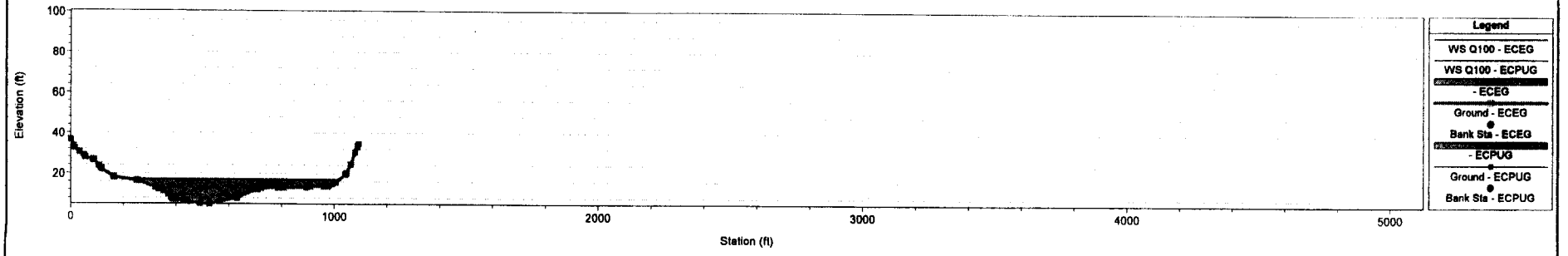


1 in Horiz. = 600 ft 1 in Vert. = 80 ft

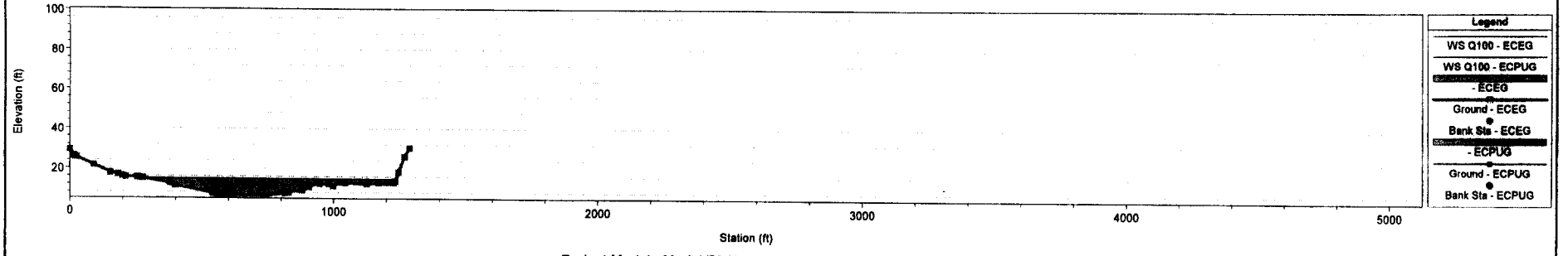
Project Model - Model F2-X4 Plan: 1) ECPUG 2) ECEG
RS = 666.956 Updated Manning's N Distribution



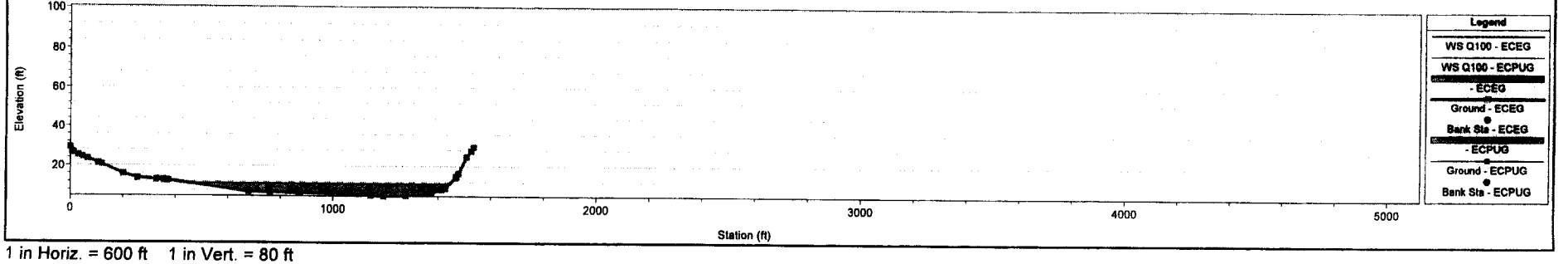
Project Model - Model F2-X4 Plan: 1) ECPUG 2) ECEG
RS = 482.270 Updated Manning's N Distribution



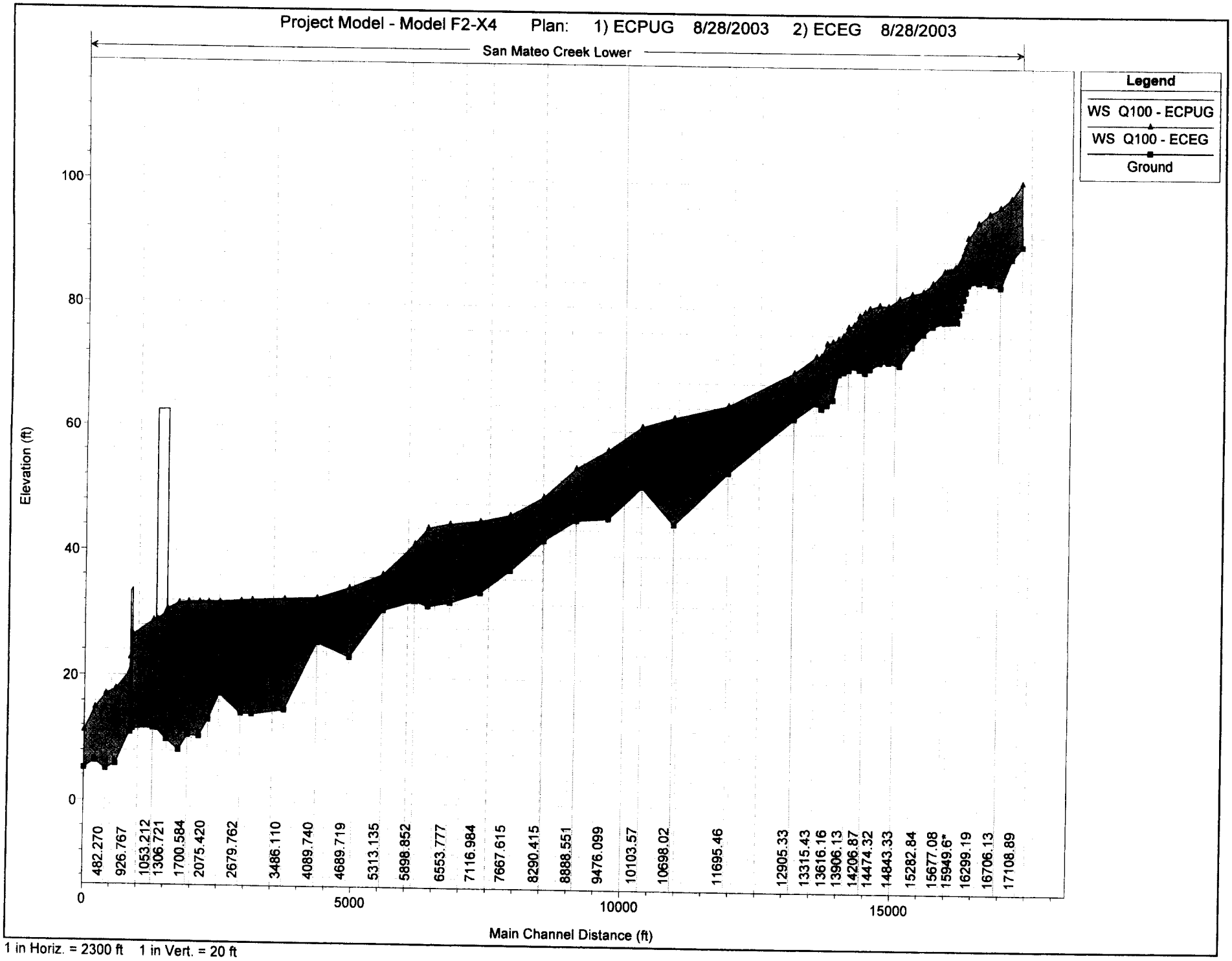
Project Model - Model F2-X4 Plan: 1) ECPUG 2) ECEG
RS = 284.051 Updated Manning's N Distribution



Project Model - Model F2-X4 Plan: 1) ECPUG 2) ECEG
RS = 85.341 Updated Manning's N Distribution



1 in Horiz. = 600 ft 1 in Vert. = 80 ft


Project Model - Model F2-X4 Plan: 1) ECPUG 8/28/2003 2) ECEG 8/28/2003
San Mateo Creek Lower
Legend
WS Q100 - ECPUG
WS Q100 - ECEG
Ground
Elevation (ft)
100
80
60
40
20
0
482.270
926.767
1053.212
1306.721
1700.584
2075.420
2679.762
3486.110
4089.740
4689.719
5313.135
5898.852
6553.777
7116.984
7667.615
8290.415
8888.551
9476.099
10103.57
10698.02
11695.46
12905.33
13315.43
13616.16
13906.13
14206.87
14474.32
14843.33
15282.84
15677.08
15949.6*
16299.19
16706.13
17108.89
0
5000
10000
15000
Main Channel Distance (ft)
1 in Horiz. = 2300 ft 1 in Vert. = 20 ft

APPENDIX AA
HYDRAULIC MODEL INPUT & RESULTS
FEC-W ALTERNATIVE AT SAN JUAN CREEK
(MODEL "HY1P")

Appendix AA. **Hydraulic Model Input & Results**
FEC-W Alternative at San Juan Creek

- Model Report
- Project geometry, plan view
- Cross-sections comparing 100-yr existing and project geometries and water surface elevations
- Geometry and water surface elevation profile

Cross-sections associated with the proposed bridge structure include:

758	(2488)
698	(2291)
638	(2094)
578	(1898)
519	(1701)
459	(1495)
497	(1302)
362	(1186)

HEC-RAS Version 3.1.1 May 2003
U.S. Army Corp of Engineers
Hydrologic Engineering Center
609 Second Street, Suite D
Davis, California 95616-4687
(916) 756-1104

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

PROJECT DATA
Project Title: Project Model HY1pier new
Project File : PMHY1Pnew.prj
Run Date and Time: 10/7/2003 8:14:08 PM

Project in English units

Project Description:
FEC-W at San Juan

PLAN DATA

Plan Title: Existing Flow/Proposed-Ultimate Geometry
Plan File : c:\projects\2PDA0104\hydr\LHS\Modeling\Model H\PMHY1Pnew.p03

Geometry Title: Proposed Conditions - Ultimate
Geometry File : c:\projects\2PDA0104\hydr\LHS\Modeling\Model H\PMHY1Pnew.g03

Flow Title : Existing Conditions
Flow File : c:\projects\2PDA0104\hydr\LHS\Modeling\Model H\PMHY1Pnew.f01

Plan Summary Information:

Number of:	Cross Sections	= 17	Mulitple Openings	=	0
	Culverts	= 0	Inline Structures	=	0
	Bridges	= 0	Lateral Structures	=	0

Computational Information

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

Computation Options
Critical depth computed only where necessary

Conveyance Calculation Method: At breaks in n values only
Friction Slope Method: Average Conveyance
Computational Flow Regime: Mixed Flow

FLOW DATA

Flow Title: Existing Conditions
Flow File : c:\projects\2PDA0104\hydr\LHS\Modeling\Model H\PMHY1Pnew.f01

Flow Data (cfs)

River	Reach	RS	Q2	Q5	Q10	Q25	Q50	Q100	Q100HC
San Juan	Middle	3288.713	364	2279	4713	12182	19237	30456	76204

Boundary Conditions

River	Reach	Profile	Upstream	Downstream
San Juan	Middle	Q2	Normal S = 0.001	Normal S = 0.001
San Juan	Middle	Q5	Normal S = 0.001	Normal S = 0.001
San Juan	Middle	Q10	Normal S = 0.001	Normal S = 0.001
San Juan	Middle	Q25	Normal S = 0.001	Normal S = 0.001
San Juan	Middle	Q50	Normal S = 0.001	Normal S = 0.001
San Juan	Middle	Q100	Normal S = 0.001	Normal S = 0.001
San Juan	Middle	Q100HC	Normal S = 0.001	Normal S = 0.001

GEOMETRY DATA

Geometry Title: Proposed Conditions - Ultimate
Geometry File : c:\projects\2PDA0104\hydr\LHS\Modeling\Model H\PMHY1Pnew.g03

CROSS SECTION

RIVER: San Juan
REACH: Middle RS: 3288.713

INPUT
Description:
Station Elevation Data num= 64

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	299.83	3.94	296.98	10.52	292.4	12.26	291.42	15.15	290.32
19.46	288.96	26.25	287.53	37.73	286.5	38.69	286.41	48.92	285.44
62.09	284.28	75.69	283.49	103.89	282.14	111.14	281.63	115.67	280.88
119.12	280.29	121.8	279.44	139.09	273.7	140.14	273.26	140.34	273.21
143.47	272.41	154.81	269.56	158.56	269.35	159.51	269.28	160.97	269.18
168.57	268.64	173.26	268.29	195.42	268.48	245.44	269.11	262.38	269.61
271.89	269.74	282.95	269.88	291.84	270	372.43	270	403.89	270.71
406.05	270.71	466.66	272.38	499.62	275.81	504.36	276.29	505.83	276.43
515.55	277.4	520.58	277.98	534.76	279.31	553.61	281.01	558.88	281.35
570.54	282.89	571.44	283	600.42	286.49	616.22	288.61	624.22	289.53
629.89	289.86	708.99	293.69	837.48	299.74	850.97	300.45	933.92	307.06

958.08	309.14	982.52	310.23	989.52	310.62	992.36	310.67	1070.17	311.75
1099.26	312.14	1100.14	312.14	1102.7	312.14	1257.57	311.18		

Manning's n Values num= 2

Sta	n Val	Sta	n Val
0	.07	37.73	.05

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
143.47	466.66	200.03	187.87 156.08	.1	.3

CROSS SECTION OUTPUT Profile #Q50

			Left OB	Channel	Right OB
E.G. Elev (ft)	281.68	Element			
Vel Head (ft)	0.35	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	281.33	Reach Len. (ft)	200.03	187.87	156.08
Crit W.S. (ft)	274.77	Flow Area (sq ft)	125.98	3676.61	393.07
E.G. Slope (ft/ft)	0.001055	Area (sq ft)	125.98	3676.61	393.07
Q Total (cfs)	19237.00	Flow (cfs)	304.06	17936.50	996.45
Top Width (ft)	445.65	Top Width (ft)	30.53	323.19	91.93
Vel Total (ft/s)	4.58	Avg. Vel. (ft/s)	2.41	4.88	2.54
Max Chl Dpth (ft)	13.04	Hydr. Depth (ft)	4.13	11.38	4.28
Conv. Total (cfs)	592201.3	Conv. (cfs)	9360.3	552166.0	30675.1
Length Wtd. (ft)	186.60	Wetted Per. (ft)	31.87	323.63	92.37
Min Ch El (ft)	268.29	Shear (lb/sq ft)	0.26	0.75	0.28
Alpha	1.08	Stream Power (lb/ft s)	0.63	3.65	0.71
Frctn Loss (ft)	0.19	Cum Volume (acre-ft)	53.83	137.33	52.71
C & E Loss (ft)	0.00	Cum SA (acres)	10.58	11.34	10.44

CROSS SECTION OUTPUT Profile #Q100

			Left OB	Channel	Right OB
E.G. Elev (ft)	284.73	Element			
Vel Head (ft)	0.51	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	284.22	Reach Len. (ft)	200.03	187.87	156.08
Crit W.S. (ft)	276.48	Flow Area (sq ft)	280.31	4610.48	691.37
E.G. Slope (ft/ft)	0.001166	Area (sq ft)	280.31	4610.48	691.37
Q Total (cfs)	30456.00	Flow (cfs)	646.59	27496.77	2312.64
Top Width (ft)	518.47	Top Width (ft)	80.36	323.19	114.92
Vel Total (ft/s)	5.46	Avg. Vel. (ft/s)	2.31	5.96	3.34
Max Chl Dpth (ft)	15.93	Hydr. Depth (ft)	3.49	14.27	6.02
Conv. Total (cfs)	891848.9	Conv. (cfs)	18934.3	805193.1	67721.5
Length Wtd. (ft)	186.07	Wetted Per. (ft)	81.80	323.63	115.54
Min Ch El (ft)	268.29	Shear (lb/sq ft)	0.25	1.04	0.44
Alpha	1.11	Stream Power (lb/ft s)	0.58	6.19	1.46
Frctn Loss (ft)	0.22	Cum Volume (acre-ft)	91.00	169.23	92.04
C & E Loss (ft)	0.00	Cum SA (acres)	14.43	11.34	13.60

CROSS SECTION OUTPUT Profile #Q100HC

			Left OB	Channel	Right OB
E.G. Elev (ft)	291.99	Element			
Vel Head (ft)	1.17	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	290.82	Reach Len. (ft)	200.03	187.87	156.08
Crit W.S. (ft)	281.68	Flow Area (sq ft)	1016.10	6741.85	1633.47
E.G. Slope (ft/ft)	0.001699	Area (sq ft)	1016.10	6741.85	1633.47
Q Total (cfs)	76204.00	Flow (cfs)	5091.69	62531.15	8581.16
Top Width (ft)	635.78	Top Width (ft)	129.62	323.19	182.97
Vel Total (ft/s)	8.11	Avg. Vel. (ft/s)	5.01	9.28	5.25
Max Chl Dpth (ft)	22.53	Hydr. Depth (ft)	7.84	20.86	8.93

Conv. Total (cfs)	1848572.0	Conv. (cfs)	123515.1	1516893.0	208163.6
Length Wtd. (ft)	185.58	Wetted Per. (ft)	131.66	323.63	183.95
Min Ch El (ft)	268.29	Shear (lb/sq ft)	0.82	2.21	0.94
Alpha	1.14	Stream Power (lb/ft s)	4.10	20.50	4.95
Frctn Loss (ft)	0.32	Cum Volume (acre-ft)	235.02	251.65	230.60
C & E Loss (ft)	0.00	Cum SA (acres)	23.22	11.34	22.48

CROSS SECTION

RIVER: San Juan
REACH: Middle RS: 3100.847

INPUT
Description:
Station Elevation Data num= 77

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	301.85	9.53	296.73	10.56	296.06	10.95	295.89	12.37	295.19
20.82	291.11	21.72	290.85	22.24	290.82	24.84	290.35	34.24	288.64
63.78	287.25	70.68	286.86	130.31	283.19	137.31	282.83	170.07	281.29
186.12	280.37	199.78	278.45	200.19	278.39	202.02	278.19	203.69	277.81
215.41	274.91	229.94	271.49	244.33	269.09	244.94	269.01	250.87	268.73
272.27	267.71	272.67	267.7	278.07	267.49	288.1	267.49	338.12	268.38
362.65	269.09	380.52	269.61	391.89	269.84	397.78	269.87	418.14	270.05
447.7	270.07	465.88	269.7	470.97	269.54	486.49	269.14	491.98	269.38
521.58	269.94	524.3	270.24	530.18	271	534.69	271.85	539	272.43
561.25	275.47	563.79	275.85	568.58	276.38	568.89	276.42	578.25	277.57
586.79	278.74	624.15	283	628.55	283.32	693.95	289.09	701.67	289.45
717.9	290.05	746.33	291.15	783.05	292.12	793.12	292.58	827.21	293.98
846.49	295.54	861.42	296.42	875.95	298.13	884.06	299.03	899.42	299.99
905.15	300.42	927.11	301.69	1007.16	307.46	1018.24	308.1	1025.36	308.47
1073.11	310.68	1127.63	311.36	1141.9	311.56	1155.11	311.7	1171.43	311.7
1229.52	311.45	1241.94	311.39						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.07	24.84	.05	1229.52	.02

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
229.94	534.69	154.4	175.03 193.83	.1	.3

CROSS SECTION OUTPUT Profile #Q50

E.G. Elev (ft)	281.49	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.36	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	281.13	Reach Len. (ft)	154.40	175.03	193.83
Crit W.S. (ft)		Flow Area (sq ft)	211.22	3639.31	327.07
E.G. Slope (ft/ft)	0.001009	Area (sq ft)	211.22	3639.31	327.07
Q Total (cfs)	19237.00	Flow (cfs)	471.67	17931.22	834.11
Top Width (ft)	434.90	Top Width (ft)	57.09	304.75	73.06
Vel Total (ft/s)	4.60	Avg. Vel. (ft/s)	2.23	4.93	2.55
Max Chl Dpth (ft)	13.64	Hydr. Depth (ft)	3.70	11.94	4.48
Conv. Total (cfs)	605631.3	Conv. (cfs)	14849.5	564522.0	26259.8
Length Wtd. (ft)	174.14	Wetted Per. (ft)	58.05	305.18	73.66
Min Ch El (ft)	267.49	Shear (lb/sq ft)	0.23	0.75	0.28
Alpha	1.09	Stream Power (lb/ft s)	0.51	3.70	0.71
Frctn Loss (ft)	0.28	Cum Volume (acre-ft)	53.06	121.55	51.42
C & E Loss (ft)	0.05	Cum SA (acres)	10.38	9.98	10.15

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

CROSS SECTION OUTPUT Profile #Q100

E.G. Elev (ft)	284.52	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.53	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	283.98	Reach Len. (ft)	154.40	175.03	193.83
Crit W.S. (ft)		Flow Area (sq ft)	456.68	4508.57	573.03
E.G. Slope (ft/ft)	0.001158	Area (sq ft)	456.68	4508.57	573.03
Q Total (cfs)	30456.00	Flow (cfs)	1168.22	27457.38	1830.41
Top Width (ft)	518.63	Top Width (ft)	112.51	304.75	101.37
Vel Total (ft/s)	5.50	Avg. Vel. (ft/s)	2.56	6.09	3.19
Max Chl Dpth (ft)	16.49	Hydr. Depth (ft)	4.06	14.79	5.65
Conv. Total (cfs)	894805.2	Conv. (cfs)	34322.6	806704.8	53777.8
Length Wtd. (ft)	173.84	Wetted Per. (ft)	113.55	305.18	102.11
Min Ch El (ft)	267.49	Shear (lb/sq ft)	0.29	1.07	0.41
Alpha	1.13	Stream Power (lb/ft s)	0.74	6.51	1.30
Frctn Loss (ft)	0.32	Cum Volume (acre-ft)	89.31	149.56	89.77
C & E Loss (ft)	0.07	Cum SA (acres)	13.98	9.98	13.21

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream 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 #Q100HC

E.G. Elev (ft)	291.66	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.22	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	290.44	Reach Len. (ft)	154.40	175.03	193.83
Crit W.S. (ft)		Flow Area (sq ft)	1524.16	6477.00	1476.16
E.G. Slope (ft/ft)	0.001759	Area (sq ft)	1524.16	6477.00	1476.16
Q Total (cfs)	76204.00	Flow (cfs)	7203.94	61889.64	7110.42
Top Width (ft)	703.70	Top Width (ft)	205.61	304.75	193.34
Vel Total (ft/s)	8.04	Avg. Vel. (ft/s)	4.73	9.56	4.82
Max Chl Dpth (ft)	22.95	Hydr. Depth (ft)	7.41	21.25	7.64
Conv. Total (cfs)	1816769.0	Conv. (cfs)	171748.1	1475503.0	169518.5
Length Wtd. (ft)	173.62	Wetted Per. (ft)	206.94	305.18	194.33
Min Ch El (ft)	267.49	Shear (lb/sq ft)	0.81	2.33	0.83
Alpha	1.21	Stream Power (lb/ft s)	3.82	22.27	4.02
Frctn Loss (ft)	0.43	Cum Volume (acre-ft)	229.18	223.15	225.03
C & E Loss (ft)	0.08	Cum SA (acres)	22.45	9.98	21.81

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

CROSS SECTION

RIVER: San Juan

REACH: Middle RS: 2925.817

INPUT
Description:
Station Elevation Data num= 55

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	305.86	.23	305.72	6.42	302.44	11.87	300	15.61	299
23.51	297.38	43.43	294.63	70.46	290.95	77.65	289.85	82.63	289.36
84.86	289.14	111.55	287.05	148.04	284.54	156.48	283.99	162.08	283.67
239.78	279.77	255.13	278.96	262.26	278.62	281.35	276.75	293.71	275.83
336.86	272.42	337.44	272.38	357.85	271.45	361.53	271.16	373.2	270.18
391.91	269.58	400.9	269.29	429.13	268.24	452.57	267.8	498.04	267.87
499.94	267.93	502.87	268.2	503.27	268.24	516.88	269.08	523.46	269.9
532.45	271.1	538.61	272.57	565.87	278.96	571.6	279.82	580.15	280.58
665.32	283.07	709.1	284.25	781.21	287.16	840.55	289.66	863.76	289.98
864.73	290.03	867.1	290.21	917.25	294.92	977.9	299.9	980.61	300.04
1013.11	301.12	1020.52	301.59	1106.68	303.72	1146.26	304.74	1180.46	305.69

Manning's n Values num= 2

Sta	n Val	Sta	n Val
0	.07	82.63	.05

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
361.53	532.45	192.48	217.14 231.53	.1	.3

CROSS SECTION OUTPUT Profile #Q50

			Left OB	Channel	Right OB
E.G. Elev (ft)	281.15	Element			
Vel Head (ft)	0.89	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	280.26	Reach Len. (ft)	192.48	217.14	231.53
Crit W.S. (ft)		Flow Area (sq ft)	597.44	1960.39	180.52
E.G. Slope (ft/ft)	0.002885	Area (sq ft)	597.44	1960.39	180.52
Q Total (cfs)	19237.00	Flow (cfs)	2611.28	15899.30	726.42
Top Width (ft)	346.54	Top Width (ft)	131.52	170.92	44.10
Vel Total (ft/s)	7.03	Avg. Vel. (ft/s)	4.37	8.11	4.02
Max Chl Dpth (ft)	12.46	Hydr. Depth (ft)	4.54	11.47	4.09
Conv. Total (cfs)	358152.2	Conv. (cfs)	48616.5	296011.2	13524.5
Length Wtd. (ft)	213.92	Wetted Per. (ft)	131.85	171.17	45.10
Min Ch El (ft)	267.80	Shear (lb/sq ft)	0.82	2.06	0.72
Alpha	1.17	Stream Power (lb/ft s)	3.57	16.73	2.90
Frctn Loss (ft)	1.06	Cum Volume (acre-ft)	51.62	110.30	50.29
C & E Loss (ft)	0.12	Cum SA (acres)	10.04	9.03	9.89

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

CROSS SECTION OUTPUT Profile #Q100

			Left OB	Channel	Right OB
E.G. Elev (ft)	284.12	Element			
Vel Head (ft)	1.26	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	282.86	Reach Len. (ft)	192.48	217.14	231.53
Crit W.S. (ft)		Flow Area (sq ft)	1005.95	2404.06	392.36
E.G. Slope (ft/ft)	0.003258	Area (sq ft)	1005.95	2404.06	392.36
Q Total (cfs)	30456.00	Flow (cfs)	5302.63	23738.55	1414.82

Top Width (ft)	479.71	Top Width (ft)	183.23	170.92	125.55
Vel Total (ft/s)	8.01	Avg. Vel. (ft/s)	5.27	9.87	3.61
Max Chl Dpth (ft)	15.06	Hydr. Depth (ft)	5.49	14.07	3.13
Conv. Total (cfs)	533577.9	Conv. (cfs)	92900.1	415890.7	24787.1
Length Wtd. (ft)	213.09	Wetted Per. (ft)	183.63	171.17	126.60
Min Ch El (ft)	267.80	Shear (lb/sq ft)	1.11	2.86	0.63
Alpha	1.27	Stream Power (lb/ft s)	5.87	28.21	2.27
Frctn Loss (ft)	1.21	Cum Volume (acre-ft)	86.72	135.68	87.62
C & E Loss (ft)	0.18	Cum SA (acres)	13.46	9.03	12.71

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 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 #Q100HC

E.G. Elev (ft)	291.15	Element	Left OB	Channel	Right OB
Vel Head (ft)	2.02	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	289.13	Reach Len. (ft)	192.48	217.14	231.53
Crit W.S. (ft)		Flow Area (sq ft)	2470.83	3476.45	1757.80
E.G. Slope (ft/ft)	0.003682	Area (sq ft)	2470.83	3476.45	1757.80
Q Total (cfs)	76204.00	Flow (cfs)	19157.02	46667.89	10379.09
Top Width (ft)	742.99	Top Width (ft)	276.55	170.92	295.53
Vel Total (ft/s)	9.89	Avg. Vel. (ft/s)	7.75	13.42	5.90
Max Chl Dpth (ft)	21.33	Hydr. Depth (ft)	8.93	20.34	5.95
Conv. Total (cfs)	1255810.0	Conv. (cfs)	315699.7	769067.4	171043.2
Length Wtd. (ft)	212.01	Wetted Per. (ft)	277.16	171.17	296.69
Min Ch El (ft)	267.80	Shear (lb/sq ft)	2.05	4.67	1.36
Alpha	1.33	Stream Power (lb/ft s)	15.89	62.67	8.04
Frctn Loss (ft)	1.20	Cum Volume (acre-ft)	222.10	203.15	217.83
C & E Loss (ft)	0.20	Cum SA (acres)	21.59	9.03	20.72

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

CROSS SECTION

RIVER: San Juan
REACH: Middle RS: 2708.681

INPUT
Description:
Station Elevation Data num= 59

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	314.13	3.41	312.77	18.07	308.42	21.86	307.38	26.78	306.34
31.91	304.98	40.44	302	54.3	298.63	80.03	293.1	91.59	291.52
98.48	290.55	137.02	288.01	139.76	287.81	154.99	286.72	159.05	286.45
213.56	283.49	223.19	282.9	287.27	279.99	300	279.52	336.97	277.56
380.68	274.97	427.18	272.21	451.08	271.12	472.39	270.24	472.84	270.22

492.41	269.93	492.67	269.93	505.12	269.67	512.48	269.9	549.96	270.48
597.21	268.47	601.94	268.23	603.31	268.4	603.52	268.43	605.57	269.08
607.41	269.51	613.85	271.04	619.07	273.9	627.48	278.54	629.92	279.56
635.96	280.91	640.14	281.96	645.52	282.2	650.2	282.43	698.08	281.79
713.62	281.59	717.65	281.64	788.51	282.68	790.04	282.72	867.3	285.4
935.34	287.8	953.57	288.67	970.64	289.21	989.93	290.08	1008.38	290.86
1100.06	297.62	1149.17	299.97	1160.6	300.45	1164.7	300.54		

Manning's n Values num= 2

Sta	n Val	Sta	n Val
0	.07	139.76	.05

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
451.08	613.85	198.27	220.74 244.45	.1	.3

CROSS SECTION OUTPUT Profile #Q50

			Left OB	Channel	Right OB
E.G. Elev (ft)	279.98	Element			
Vel Head (ft)	2.05	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	277.93	Reach Len. (ft)	198.27	220.74	244.45
Crit W.S. (ft)	277.01	Flow Area (sq ft)	425.50	1308.85	43.21
E.G. Slope (ft/ft)	0.010500	Area (sq ft)	425.50	1308.85	43.21
Q Total (cfs)	19237.00	Flow (cfs)	2991.98	15969.92	275.10
Top Width (ft)	296.36	Top Width (ft)	121.07	162.77	12.52
Vel Total (ft/s)	10.82	Avg. Vel. (ft/s)	7.03	12.20	6.37
Max Chl Dpth (ft)	9.70	Hydr. Depth (ft)	3.51	8.04	3.45
Conv. Total (cfs)	187733.6	Conv. (cfs)	29198.7	155850.2	2684.7
Length Wtd. (ft)	217.58	Wetted Per. (ft)	121.26	163.19	14.29
Min Ch El (ft)	268.23	Shear (lb/sq ft)	2.30	5.26	1.98
Alpha	1.13	Stream Power (lb/ft s)	16.17	64.15	12.62
Frctn Loss (ft)	2.06	Cum Volume (acre-ft)	49.36	102.15	49.69
C & E Loss (ft)	0.14	Cum SA (acres)	9.49	8.20	9.74

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 #Q100

			Left OB	Channel	Right OB
E.G. Elev (ft)	282.74	Element			
Vel Head (ft)	3.02	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	279.72	Reach Len. (ft)	198.27	220.74	244.45
Crit W.S. (ft)	279.20	Flow Area (sq ft)	672.36	1599.96	68.93
E.G. Slope (ft/ft)	0.012228	Area (sq ft)	672.36	1599.96	68.93
Q Total (cfs)	30456.00	Flow (cfs)	5834.98	24084.77	536.26
Top Width (ft)	335.98	Top Width (ft)	156.43	162.77	16.77
Vel Total (ft/s)	13.01	Avg. Vel. (ft/s)	8.68	15.05	7.78
Max Chl Dpth (ft)	11.49	Hydr. Depth (ft)	4.30	9.83	4.11
Conv. Total (cfs)	275425.3	Conv. (cfs)	52767.9	217807.9	4849.6
Length Wtd. (ft)	216.69	Wetted Per. (ft)	156.67	163.19	18.92
Min Ch El (ft)	268.23	Shear (lb/sq ft)	3.28	7.48	2.78
Alpha	1.15	Stream Power (lb/ft s)	28.43	112.66	21.63
Frctn Loss (ft)	2.36	Cum Volume (acre-ft)	83.01	125.70	86.40
C & E Loss (ft)	0.23	Cum SA (acres)	12.71	8.20	12.33

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 OUTPUT Profile #Q100HC

E.G. Elev (ft)	289.76	Element	Left OB	Channel	Right OB
Vel Head (ft)	3.99	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	285.77	Reach Len. (ft)	198.27	220.74	244.45
Crit W.S. (ft)	285.77	Flow Area (sq ft)	2012.92	2585.30	903.94
E.G. Slope (ft/ft)	0.009842	Area (sq ft)	2012.92	2585.30	903.94
Q Total (cfs)	76204.00	Flow (cfs)	22109.66	48077.44	6016.90
Top Width (ft)	706.27	Top Width (ft)	279.53	162.77	263.97
Vel Total (ft/s)	13.85	Avg. Vel. (ft/s)	10.98	18.60	6.66
Max Chl Dpth (ft)	17.54	Hydr. Depth (ft)	7.20	15.88	3.42
Conv. Total (cfs)	768149.5	Conv. (cfs)	222869.2	484628.9	60651.4
Length Wtd. (ft)	215.21	Wetted Per. (ft)	279.92	163.19	266.46
Min Ch El (ft)	268.23	Shear (lb/sq ft)	4.42	9.73	2.08
Alpha	1.34	Stream Power (lb/ft s)	48.53	181.01	13.87
Frctn Loss (ft)	1.94	Cum Volume (acre-ft)	212.20	188.04	210.76
C & E Loss (ft)	0.24	Cum SA (acres)	20.37	8.20	19.23

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: San Juan
REACH: Middle RS: 2487.946

INPUT
Description:
Station Elevation Data num= 61

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	302.79	3.85	302.39	7.33	301.86	9	301.32	16.83	299.23
29.52	293.14	33.87	290.83	34.91	290.52	42.11	288.54	46.78	287.46
57.88	285.92	74.39	283.64	82.9	282.45	86.03	282.11	109.77	280.27
122.33	279.67	170.44	277.86	287.88	273.79	339.29	272.25	388.88	270.21
394.16	270	440.86	268.1	448.61	268.03	478.51	267.74	506.65	268.46
518.75	268.42	538.09	268.12	539.65	268.11	540.12	268.08	540.74	268.11
576.92	268.75	580.72	268.82	581.79	269.11	585.33	270	589.84	271.32
590.14	271.38	591.4	272.11	599.55	277.13	600.05	277.43	600.2	277.49
608.8	280.67	611.04	281.3	614.99	281.64	621.43	282.38	634.27	282.18
635.38	282.16	635.9	282.12	692.25	280.25	703.47	279.97	735.47	280.09
755.02	280.41	771.7	281.11	795.47	283.18	824.47	284.92	842.18	286.52
905.97	290.25	906.95	290.31	907.26	290.32	907.8	290.37	935.8	292.58
964.74	294.88								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.07	57.88	.05	935.8	.035

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
394.16	585.33	179.39	196.94 216.01	.1	.3

CROSS SECTION OUTPUT Profile #Q50

			Left OB	Channel	Right OB
E.G. Elev (ft)	277.78	Element			
Vel Head (ft)	1.58	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	276.20	Reach Len. (ft)	179.39	196.94	216.01
Crit W.S. (ft)		Flow Area (sq ft)	526.24	1483.12	45.66
E.G. Slope (ft/ft)	0.008552	Area (sq ft)	526.24	1483.12	45.66
Q Total (cfs)	19237.00	Flow (cfs)	3001.92	15962.55	272.53
Top Width (ft)	379.76	Top Width (ft)	175.87	191.17	12.71
Vel Total (ft/s)	9.36	Avg. Vel. (ft/s)	5.70	10.76	5.97
Max Chl Dpth (ft)	8.46	Hydr. Depth (ft)	2.99	7.76	3.59
Conv. Total (cfs)	208013.6	Conv. (cfs)	32460.4	172606.4	2946.9
Length Wtd. (ft)	195.83	Wetted Per. (ft)	175.98	191.38	14.26
Min Ch El (ft)	267.74	Shear (lb/sq ft)	1.60	4.14	1.71
Alpha	1.16	Stream Power (lb/ft s)	9.11	44.53	10.20
Frctn Loss (ft)	2.01	Cum Volume (acre-ft)	47.20	95.08	49.44
C & E Loss (ft)	0.05	Cum SA (acres)	8.81	7.30	9.67

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 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 #Q100

			Left OB	Channel	Right OB
E.G. Elev (ft)	280.15	Element			
Vel Head (ft)	2.26	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	277.89	Reach Len. (ft)	179.39	196.94	216.01
Crit W.S. (ft)		Flow Area (sq ft)	864.65	1806.18	69.58
E.G. Slope (ft/ft)	0.009783	Area (sq ft)	864.65	1806.18	69.58
Q Total (cfs)	30456.00	Flow (cfs)	6241.04	23710.07	504.90
Top Width (ft)	431.69	Top Width (ft)	224.56	191.17	15.96
Vel Total (ft/s)	11.11	Avg. Vel. (ft/s)	7.22	13.13	7.26
Max Chl Dpth (ft)	10.15	Hydr. Depth (ft)	3.85	9.45	4.36
Conv. Total (cfs)	307920.1	Conv. (cfs)	63098.9	239716.5	5104.7
Length Wtd. (ft)	194.97	Wetted Per. (ft)	224.70	191.38	17.94
Min Ch El (ft)	267.74	Shear (lb/sq ft)	2.35	5.76	2.37
Alpha	1.18	Stream Power (lb/ft s)	16.96	75.67	17.19
Frctn Loss (ft)	1.97	Cum Volume (acre-ft)	79.51	117.07	86.01
C & E Loss (ft)	0.01	Cum SA (acres)	11.84	7.30	12.24

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 #Q100HC

			Left OB	Channel	Right OB
E.G. Elev (ft)	286.63	Element			
Vel Head (ft)	3.19	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	283.44	Reach Len. (ft)	179.39	196.94	216.01
Crit W.S. (ft)	282.78	Flow Area (sq ft)	2433.98	2866.26	640.14
E.G. Slope (ft/ft)	0.008285	Area (sq ft)	2433.98	2866.26	640.14
Q Total (cfs)	76204.00	Flow (cfs)	25535.54	47108.93	3559.53
Top Width (ft)	723.91	Top Width (ft)	318.32	191.17	214.42

Vel Total (ft/s)	12.83	Avg. Vel. (ft/s)	10.49	16.44	5.56
Max Chl Dpth (ft)	15.70	Hydr. Depth (ft)	7.65	14.99	2.99
Conv. Total (cfs)	837202.0	Conv. (cfs)	280541.8	517554.1	39106.1
Length Wtd. (ft)	192.26	Wetted Per. (ft)	318.66	191.38	217.20
Min Ch El (ft)	267.74	Shear (lb/sq ft)	3.95	7.75	1.52
Alpha	1.25	Stream Power (lb/ft s)	41.45	127.32	8.48
Frctn Loss (ft)	1.34	Cum Volume (acre-ft)	202.08	174.23	206.43
C & E Loss (ft)	0.27	Cum SA (acres)	19.01	7.30	17.89

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

CROSS SECTION

RIVER: San Juan
REACH: Middle RS: 2291.008

INPUT
Description:
Station Elevation Data num= 68

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	308.94	9.61	307.01	10.63	306.84	12.07	306.42	23.64	303.53
30.43	301.56	37.04	299.05	45.8	294.85	56.15	290.08	68.25	287.32
76.46	285.57	93.48	283.17	102.2	281.95	110.47	280.82	113.62	280.53
150.4	279.15	153.18	279.04	153.34	279.04	159.11	278.87	175.55	278.38
217.65	277.15	228.2	276.91	232.75	276.79	280.28	275.81	454.42	270.42
477.4	270	514.86	267.76	538.46	266.56	551.22	265.91	580.85	264.7
584.34	264.68	592.6	264.96	610.86	265.26	650.93	267.19	657.57	267.5
670.28	268.11	678.27	268.49	681.99	268.59	687.22	268.89	711.34	269.58
717.56	270.89	721.02	271.57	729.62	274.33	738.62	277.27	743.6	279.09
744.77	279.33	753.15	281.02	756.01	281.24	763.91	281.96	770.73	281.89
780.54	281.85	799.2	280.94	837.03	278.9	855.71	279.21	859.25	279.49
872.39	281.89	872.5	281.9	872.62	281.94	889.51	287.54	895.91	289.18
897.44	289.64	900.28	290.51	905.01	291.04	907.22	291.23	923.07	291.59
923.46	291.6	924.12	291.63	934.83	291.77				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.07	93.48	.05	897.44	.035

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
514.86	657.57	195.93	197.13	191.6	.1	.3

CROSS SECTION OUTPUT Profile #Q50

E.G. Elev (ft)	275.72	Element	Left OB	Channel	Right OB
Vel Head (ft)	2.11	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	273.60	Reach Len. (ft)	195.93	197.13	191.60
Crit W.S. (ft)	273.33	Flow Area (sq ft)	418.41	1087.74	301.22
E.G. Slope (ft/ft)	0.012508	Area (sq ft)	418.41	1087.74	301.22
Q Total (cfs)	19237.00	Flow (cfs)	2603.30	13993.61	2640.08
Top Width (ft)	375.74	Top Width (ft)	163.25	142.71	69.78
Vel Total (ft/s)	10.64	Avg. Vel. (ft/s)	6.22	12.86	8.76
Max Chl Dpth (ft)	8.92	Hydr. Depth (ft)	2.56	7.62	4.32
Conv. Total (cfs)	172002.6	Conv. (cfs)	23276.8	125120.2	23605.6

Length Wtd. (ft)	196.09	Wetted Per. (ft)	163.37	142.84	70.35
Min Ch El (ft)	264.68	Shear (lb/sq ft)	2.00	5.95	3.34
Alpha	1.20	Stream Power (lb/ft s)	12.44	76.50	29.31
Frctn Loss (ft)	1.94	Cum Volume (acre-ft)	45.25	89.27	48.58
C & E Loss (ft)	0.15	Cum SA (acres)	8.11	6.55	9.46

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

CROSS SECTION OUTPUT Profile #Q100

E.G. Elev (ft)	278.17	Element	Left OB	Channel	Right OB
Vel Head (ft)	2.35	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	275.82	Reach Len. (ft)	195.93	197.13	191.60
Crit W.S. (ft)		Flow Area (sq ft)	860.07	1404.33	463.64
E.G. Slope (ft/ft)	0.010474	Area (sq ft)	860.07	1404.33	463.64
Q Total (cfs)	30456.00	Flow (cfs)	6208.13	19601.88	4645.99
Top Width (ft)	454.42	Top Width (ft)	235.09	142.71	76.61
Vel Total (ft/s)	11.16	Avg. Vel. (ft/s)	7.22	13.96	10.02
Max Chl Dpth (ft)	11.14	Hydr. Depth (ft)	3.66	9.84	6.05
Conv. Total (cfs)	297585.6	Conv. (cfs)	60659.7	191529.9	45396.0
Length Wtd. (ft)	195.89	Wetted Per. (ft)	235.25	142.84	77.53
Min Ch El (ft)	264.68	Shear (lb/sq ft)	2.39	6.43	3.91
Alpha	1.21	Stream Power (lb/ft s)	17.26	89.73	39.19
Frctn Loss (ft)	1.60	Cum Volume (acre-ft)	75.96	109.81	84.69
C & E Loss (ft)	0.19	Cum SA (acres)	10.90	6.55	12.01

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 energy loss was greater than 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 #Q100HC

E.G. Elev (ft)	285.01	Element	Left OB	Channel	Right OB
Vel Head (ft)	2.27	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	282.74	Reach Len. (ft)	195.93	197.13	191.60
Crit W.S. (ft)		Flow Area (sq ft)	3310.86	2391.21	1337.07
E.G. Slope (ft/ft)	0.005948	Area (sq ft)	3310.86	2391.21	1337.07
Q Total (cfs)	76204.00	Flow (cfs)	30121.49	35864.20	10218.31
Top Width (ft)	778.44	Top Width (ft)	418.28	142.71	217.45
Vel Total (ft/s)	10.83	Avg. Vel. (ft/s)	9.10	15.00	7.64
Max Chl Dpth (ft)	18.06	Hydr. Depth (ft)	7.92	16.76	6.15
Conv. Total (cfs)	988092.8	Conv. (cfs)	390567.8	465030.1	132494.9
Length Wtd. (ft)	195.66	Wetted Per. (ft)	418.65	142.84	219.60
Min Ch El (ft)	264.68	Shear (lb/sq ft)	2.94	6.22	2.26
Alpha	1.25	Stream Power (lb/ft s)	26.72	93.23	17.28
Frctn Loss (ft)	0.94	Cum Volume (acre-ft)	190.25	162.34	201.52
C & E Loss (ft)	0.17	Cum SA (acres)	17.49	6.55	16.82

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

CROSS SECTION

RIVER: San Juan
REACH: Middle RS: 2093.873

INPUT
Description:
Station Elevation Data num= 45

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	301.61	11.06	300.36	13.81	299.69	27.62	296.58	41.24	292.97
48.55	290.93	51.62	290.29	53.55	290.09	59.64	289.85	112.73	286.97
141.7	285.59	148.79	285.25	171.67	283.95	196.35	282.32	208.73	281.58
232.72	280.07	281.09	278.3	314.01	277.09	325.69	276.67	414.51	273.48
520	269.79	533.85	268.77	607.27	264.96	627.21	263.93	643.68	263.08
645.67	262.95	648.96	262.83	685.49	261.59	698.77	262	717.21	263.02
730.75	263.75	735.9	264.03	769.24	266.07	816.27	269.92	821.1	270.49
836.91	272.27	863.01	275.61	869.09	276.02	901.48	278.28	903.32	278.42
931.15	280.04	935.18	280.27	954.77	281.77	1007.99	285.69	1012.12	286.03

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.07	141.7	.05	931.15	.035

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
627.21	735.9	210.18	196.32	186.35	.1	.3

CROSS SECTION OUTPUT Profile #Q50

			Left OB	Channel	Right OB
E.G. Elev (ft)	273.63	Element			
Vel Head (ft)	1.61	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	272.02	Reach Len. (ft)	210.18	196.32	186.35
Crit W.S. (ft)		Flow Area (sq ft)	638.91	1016.72	441.04
E.G. Slope (ft/ft)	0.007992	Area (sq ft)	638.91	1016.72	441.04
Q Total (cfs)	19237.00	Flow (cfs)	4083.64	11984.04	3169.32
Top Width (ft)	378.52	Top Width (ft)	171.02	108.69	98.81
Vel Total (ft/s)	9.17	Avg. Vel. (ft/s)	6.39	11.79	7.19
Max Chl Dpth (ft)	10.43	Hydr. Depth (ft)	3.74	9.35	4.46
Conv. Total (cfs)	215183.3	Conv. (cfs)	45679.3	134052.4	35451.7
Length Wtd. (ft)	196.87	Wetted Per. (ft)	171.22	108.80	99.15
Min Ch El (ft)	261.59	Shear (lb/sq ft)	1.86	4.66	2.22
Alpha	1.23	Stream Power (lb/ft s)	11.90	54.96	15.95
Frctn Loss (ft)	0.81	Cum Volume (acre-ft)	42.88	84.51	46.95
C & E Loss (ft)	0.23	Cum SA (acres)	7.36	5.98	9.09

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 OUTPUT Profile #Q100

			Left OB	Channel	Right OB
E.G. Elev (ft)	276.38	Element			
Vel Head (ft)	1.71	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	274.67	Reach Len. (ft)	210.18	196.32	186.35

Crit W.S. (ft)		Flow Area (sq ft)	1191.10	1304.37	730.57
E.G. Slope (ft/ft)	0.006539	Area (sq ft)	1191.10	1304.37	730.57
Q Total (cfs)	30456.00	Flow (cfs)	8191.33	16419.44	5845.23
Top Width (ft)	474.24	Top Width (ft)	245.79	108.69	119.75
Vel Total (ft/s)	9.44	Avg. Vel. (ft/s)	6.88	12.59	8.00
Max Chl Dpth (ft)	13.08	Hydr. Depth (ft)	4.85	12.00	6.10
Conv. Total (cfs)	376633.3	Conv. (cfs)	101297.9	203050.6	72284.9
Length Wtd. (ft)	197.17	Wetted Per. (ft)	246.04	108.80	120.26
Min Ch El (ft)	261.59	Shear (lb/sq ft)	1.98	4.89	2.48
Alpha	1.24	Stream Power (lb/ft s)	13.59	61.61	19.84
Frctn Loss (ft)	0.82	Cum Volume (acre-ft)	71.35	103.68	82.06
C & E Loss (ft)	0.17	Cum SA (acres)	9.82	5.98	11.58

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

CROSS SECTION OUTPUT Profile #Q100HC

E.G. Elev (ft)	283.91	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.72	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	282.18	Reach Len. (ft)	210.18	196.32	186.35
Crit W.S. (ft)		Flow Area (sq ft)	3791.43	2121.12	2005.36
E.G. Slope (ft/ft)	0.003946	Area (sq ft)	3791.43	2121.12	2005.36
Q Total (cfs)	76204.00	Flow (cfs)	30254.82	28681.52	17267.66
Top Width (ft)	761.74	Top Width (ft)	428.57	108.69	224.48
Vel Total (ft/s)	9.62	Avg. Vel. (ft/s)	7.98	13.52	8.61
Max Chl Dpth (ft)	20.59	Hydr. Depth (ft)	8.85	19.52	8.93
Conv. Total (cfs)	1213168.0	Conv. (cfs)	481656.6	456609.7	274901.2
Length Wtd. (ft)	198.37	Wetted Per. (ft)	428.98	108.80	225.27
Min Ch El (ft)	261.59	Shear (lb/sq ft)	2.18	4.80	2.19
Alpha	1.20	Stream Power (lb/ft s)	17.37	64.93	18.88
Frctn Loss (ft)	0.59	Cum Volume (acre-ft)	174.28	152.13	194.17
C & E Loss (ft)	0.09	Cum SA (acres)	15.58	5.98	15.85

CROSS SECTION

RIVER: San Juan
REACH: Middle RS: 1897.550

INPUT
Description:
Station Elevation Data num= 48

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	301.44	17.89	301.26	18.12	301.26	21.83	300.87	37.56	299.24
38.27	299.13	71.72	291.95	72.86	291.62	73.32	291.54	83.35	290.2
97.18	288.24	102.43	287.84	170.15	282.63	181.97	281.88	212.85	280.46
249.19	279.12	304.8	277.08	312.81	276.87	323.58	276.48	499.78	270.55
518.35	268.74	521.52	268.41	542.62	265.56	564.93	262.77	590.12	259.87
599.09	259.49	625.77	258.37	628.41	258.25	634.86	258.23	659.57	258.33
681.99	259.27	701.79	260.13	709.29	260.38	716.42	260.99	737.42	262.78
777.03	265.98	805.65	268.58	823.99	269.83	849.1	271.69	871.14	273.84
892.93	275.45	938.62	278.84	951.35	280.01	966.77	281.81	1014.36	288.72
1023.64	289.49	1032.39	290.33	1038.29	290.49				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.07	249.19	.05	892.93	.035

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
564.93	737.42	190.27	196.3	217.1	.1	.3

CROSS SECTION OUTPUT Profile #Q50

E.G. Elev (ft)	272.58	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.83	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	271.75	Reach Len. (ft)	190.27	196.30	217.10
Crit W.S. (ft)		Flow Area (sq ft)	340.36	2069.79	491.47
E.G. Slope (ft/ft)	0.002514	Area (sq ft)	340.36	2069.79	491.47
Q Total (cfs)	19237.00	Flow (cfs)	1137.69	16144.08	1955.24
Top Width (ft)	385.61	Top Width (ft)	100.82	172.49	112.30
Vel Total (ft/s)	6.63	Avg. Vel. (ft/s)	3.34	7.80	3.98
Max Chl Dpth (ft)	13.52	Hydr. Depth (ft)	3.38	12.00	4.38
Conv. Total (cfs)	383652.8	Conv. (cfs)	22689.4	321969.1	38994.3
Length Wtd. (ft)	198.89	Wetted Per. (ft)	101.31	172.84	112.66
Min Ch El (ft)	258.23	Shear (lb/sq ft)	0.53	1.88	0.68
Alpha	1.21	Stream Power (lb/ft s)	1.76	14.66	2.72
Frctn Loss (ft)	0.63	Cum Volume (acre-ft)	40.51	77.55	44.96
C & E Loss (ft)	0.01	Cum SA (acres)	6.70	5.34	8.64

CROSS SECTION OUTPUT Profile #Q100

E.G. Elev (ft)	275.39	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.16	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	274.24	Reach Len. (ft)	190.27	196.30	217.10
Crit W.S. (ft)		Flow Area (sq ft)	683.05	2498.82	802.76
E.G. Slope (ft/ft)	0.002879	Area (sq ft)	683.05	2498.82	802.76
Q Total (cfs)	30456.00	Flow (cfs)	2697.58	23649.11	4109.31
Top Width (ft)	486.32	Top Width (ft)	174.73	172.49	139.10
Vel Total (ft/s)	7.64	Avg. Vel. (ft/s)	3.95	9.46	5.12
Max Chl Dpth (ft)	16.01	Hydr. Depth (ft)	3.91	14.49	5.77
Conv. Total (cfs)	567570.7	Conv. (cfs)	50271.4	440719.1	76580.1
Length Wtd. (ft)	199.41	Wetted Per. (ft)	175.26	172.84	139.58
Min Ch El (ft)	258.23	Shear (lb/sq ft)	0.70	2.60	1.03
Alpha	1.27	Stream Power (lb/ft s)	2.77	24.60	5.29
Frctn Loss (ft)	0.66	Cum Volume (acre-ft)	66.83	95.11	78.78
C & E Loss (ft)	0.00	Cum SA (acres)	8.80	5.34	11.02

CROSS SECTION OUTPUT Profile #Q100HC

E.G. Elev (ft)	283.22	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.42	Wt. n-Val.	0.050	0.050	0.049
W.S. Elev (ft)	281.80	Reach Len. (ft)	190.27	196.30	217.10
Crit W.S. (ft)		Flow Area (sq ft)	2825.25	3803.04	2225.21
E.G. Slope (ft/ft)	0.002344	Area (sq ft)	2825.25	3803.04	2225.21
Q Total (cfs)	76204.00	Flow (cfs)	16674.15	42969.83	16560.02
Top Width (ft)	782.94	Top Width (ft)	381.20	172.49	229.26
Vel Total (ft/s)	8.61	Avg. Vel. (ft/s)	5.90	11.30	7.44
Max Chl Dpth (ft)	23.57	Hydr. Depth (ft)	7.41	22.05	9.71
Conv. Total (cfs)	1573870.0	Conv. (cfs)	344377.4	887471.9	342020.3
Length Wtd. (ft)	200.46	Wetted Per. (ft)	381.87	172.84	230.06
Min Ch El (ft)	258.23	Shear (lb/sq ft)	1.08	3.22	1.42

Alpha	1.24	Stream Power (lb/ft s)	6.39	36.39	10.53
Frctn Loss (ft)	0.50	Cum Volume (acre-ft)	158.31	138.78	185.12
C & E Loss (ft)	0.00	Cum SA (acres)	13.63	5.34	14.88

CROSS SECTION

RIVER: San Juan
REACH: Middle RS: 1701.250

INPUT
Description:
Station Elevation Data num= 61

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	301.78	3.26	301.62	9.7	301.24	44.24	300.02	52.03	299.71
54.59	299.53	55.57	299.37	58.9	299.02	113.38	292.48	139.84	290.09
140.72	290.02	141.13	289.98	151.37	289.46	228.14	285.44	233.99	285.12
236.25	285	244.8	284.55	246.69	284.45	273.22	283.08	324.9	280.01
341.66	279.26	352.78	278.7	378.14	277	411.92	274.71	425.36	273.68
429.36	273.54	502.62	269.89	522.05	268.61	555.14	265.71	572.46	264.16
596.79	262.62	607.7	261.92	610.7	261.7	611.2	261.66	611.5	261.65
649.71	260.48	680.93	260.62	691.62	260.68	696.69	260.69	698.97	260.8
710.81	261.21	753.32	262.73	792.49	264.01	805.53	264.45	806.26	264.48
807.32	264.55	823.35	265.65	854.08	267.78	886.15	270.01	924.46	273.66
928.63	274.06	946.04	275.46	958.25	276.55	986.75	279.23	994.29	280.17
996.82	280.59	999.26	281.63	1011.82	285.95	1018.89	288.3	1023.34	289.4
1027.18	290.01								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.02	236.25	.05	924.46	.035

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
596.79	753.32	203.51	206.44	198.52	.1 .3

CROSS SECTION OUTPUT Profile #Q50

			Left OB	Channel	Right OB
E.G. Elev (ft)	271.94	Element			
Vel Head (ft)	0.93	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	271.01	Reach Len. (ft)	203.51	206.44	198.52
Crit W.S. (ft)		Flow Area (sq ft)	464.47	1525.80	698.73
E.G. Slope (ft/ft)	0.004082	Area (sq ft)	464.47	1525.80	698.73
Q Total (cfs)	19237.00	Flow (cfs)	2212.18	13214.68	3810.14
Top Width (ft)	416.42	Top Width (ft)	116.59	156.53	143.30
Vel Total (ft/s)	7.15	Avg. Vel. (ft/s)	4.76	8.66	5.45
Max Chl Dpth (ft)	10.53	Hydr. Depth (ft)	3.98	9.75	4.88
Conv. Total (cfs)	301097.2	Conv. (cfs)	34625.1	206835.9	59636.2
Length Wtd. (ft)	204.49	Wetted Per. (ft)	116.91	156.62	143.56
Min Ch El (ft)	260.48	Shear (lb/sq ft)	1.01	2.48	1.24
Alpha	1.17	Stream Power (lb/ft s)	4.82	21.50	6.76
Frctn Loss (ft)	1.09	Cum Volume (acre-ft)	38.76	69.45	41.99
C & E Loss (ft)	0.05	Cum SA (acres)	6.23	4.60	8.00

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

CROSS SECTION OUTPUT Profile #Q100

E.G. Elev (ft)	274.74	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.14	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	273.59	Reach Len. (ft)	203.51	206.44	198.52
Crit W.S. (ft)		Flow Area (sq ft)	832.73	1930.23	1104.01
E.G. Slope (ft/ft)	0.003840	Area (sq ft)	832.73	1930.23	1104.01
Q Total (cfs)	30456.00	Flow (cfs)	4435.81	18965.70	7054.49
Top Width (ft)	495.83	Top Width (ft)	168.89	156.53	170.42
Vel Total (ft/s)	7.88	Avg. Vel. (ft/s)	5.33	9.83	6.39
Max Chl Dpth (ft)	13.11	Hydr. Depth (ft)	4.93	12.33	6.48
Conv. Total (cfs)	491494.6	Conv. (cfs)	71584.4	306065.8	113844.3
Length Wtd. (ft)	203.96	Wetted Per. (ft)	169.26	156.62	170.81
Min Ch El (ft)	260.48	Shear (lb/sq ft)	1.18	2.95	1.55
Alpha	1.19	Stream Power (lb/ft s)	6.28	29.03	9.90
Frctn Loss (ft)	0.79	Cum Volume (acre-ft)	63.51	85.13	74.03
C & E Loss (ft)	0.01	Cum SA (acres)	8.05	4.60	10.25

CROSS SECTION OUTPUT Profile #Q100HC

E.G. Elev (ft)	282.72	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.44	Wt. n-Val.	0.050	0.050	0.049
W.S. Elev (ft)	281.28	Reach Len. (ft)	203.51	206.44	198.52
Crit W.S. (ft)		Flow Area (sq ft)	2583.09	3133.88	2740.25
E.G. Slope (ft/ft)	0.002690	Area (sq ft)	2583.09	3133.88	2740.25
Q Total (cfs)	76204.00	Flow (cfs)	16956.84	35603.33	23643.83
Top Width (ft)	694.93	Top Width (ft)	293.28	156.53	245.12
Vel Total (ft/s)	9.01	Avg. Vel. (ft/s)	6.56	11.36	8.63
Max Chl Dpth (ft)	20.80	Hydr. Depth (ft)	8.81	20.02	11.18
Conv. Total (cfs)	1469231.0	Conv. (cfs)	326931.8	686440.6	455858.7
Length Wtd. (ft)	203.09	Wetted Per. (ft)	293.90	156.62	246.00
Min Ch El (ft)	260.48	Shear (lb/sq ft)	1.48	3.36	1.87
Alpha	1.15	Stream Power (lb/ft s)	9.69	38.18	16.14
Frctn Loss (ft)	0.46	Cum Volume (acre-ft)	146.50	123.15	172.75
C & E Loss (ft)	0.12	Cum SA (acres)	12.16	4.60	13.70

CROSS SECTION

RIVER: San Juan
REACH: Middle RS: 1494.809

INPUT
Description:
Station Elevation Data num= 70

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	301.35	6.54	300.68	12.26	300.07	41.18	297.58	42.1	297.53
42.65	297.48	44.58	297.3	107.7	291.56	109.69	291.42	122.26	290.51
149.57	288.99	187.28	286.29	250.35	281.56	268.22	280.3	270.41	280.2
305.93	278.46	316.45	278.11	326.72	278.14	384.52	276.74	397.54	276.49
397.99	276.48	404.35	276.32	436.23	273.11	442.98	272.51	466.38	270.45
474.27	270.02	497.03	269.44	520.51	268.4	545.13	267.64	566.04	267.09
607.73	264.39	620.98	263.5	634.55	262.64	637.08	262.41	639.13	262.27
655.61	261.27	665.6	260.77	670.68	260.48	683.18	260.2	703.38	259.46
708.78	259.47	749.74	259.64	759.22	260.23	765.79	260.73	774.64	261.29
781.56	261.73	810.61	264.33	817.07	264.7	824.06	264.75	851.03	265.66

861.2	266.13	903.44	267.13	913.25	267.67	916.45	267.89	930.83	268.89
944.91	269.84	948.5	269.98	955.89	270.67	999.07	273.87	999.54	273.91
1018.77	275.58	1063.59	279.15	1074.46	280.03	1075.84	280.17	1109.31	286.14
1114.03	286.96	1121.11	288.48	1131.28	289.64	1135.46	290.08	1135.84	290.09

Manning's n Values num= 4

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.07	397.54	.02	442.98	.05	999.54	.035

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
655.61	774.64	212.58	192.35	175.17	.1	.3

CROSS SECTION OUTPUT Profile #Q50

			Left OB	Channel	Right OB
E.G. Elev (ft)	270.80	Element			
Vel Head (ft)	1.44	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	269.36	Reach Len. (ft)	212.58	192.35	175.17
Crit W.S. (ft)		Flow Area (sq ft)	549.72	1109.44	604.20
E.G. Slope (ft/ft)	0.007209	Area (sq ft)	549.72	1109.44	604.20
Q Total (cfs)	19237.00	Flow (cfs)	3198.78	12392.40	3645.82
Top Width (ft)	438.92	Top Width (ft)	156.75	119.03	163.14
Vel Total (ft/s)	8.50	Avg. Vel. (ft/s)	5.82	11.17	6.03
Max Chl Dpth (ft)	9.90	Hydr. Depth (ft)	3.51	9.32	3.70
Conv. Total (cfs)	226561.4	Conv. (cfs)	37673.2	145949.9	42938.2
Length Wtd. (ft)	194.23	Wetted Per. (ft)	156.98	119.12	163.39
Min Ch El (ft)	259.46	Shear (lb/sq ft)	1.58	4.19	1.66
Alpha	1.29	Stream Power (lb/ft s)	9.17	46.82	10.04
Frctn Loss (ft)	0.75	Cum Volume (acre-ft)	36.39	63.20	39.02
C & E Loss (ft)	0.27	Cum SA (acres)	5.59	3.95	7.30

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

CROSS SECTION OUTPUT Profile #Q100

			Left OB	Channel	Right OB
E.G. Elev (ft)	273.93	Element			
Vel Head (ft)	1.10	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	272.83	Reach Len. (ft)	212.58	192.35	175.17
Crit W.S. (ft)		Flow Area (sq ft)	1223.02	1522.46	1253.73
E.G. Slope (ft/ft)	0.003925	Area (sq ft)	1223.02	1522.46	1253.73
Q Total (cfs)	30456.00	Flow (cfs)	7297.36	15495.19	7663.45
Top Width (ft)	545.63	Top Width (ft)	216.22	119.03	210.38
Vel Total (ft/s)	7.62	Avg. Vel. (ft/s)	5.97	10.18	6.11
Max Chl Dpth (ft)	13.37	Hydr. Depth (ft)	5.66	12.79	5.96
Conv. Total (cfs)	486126.3	Conv. (cfs)	116477.5	247327.9	122320.8
Length Wtd. (ft)	194.81	Wetted Per. (ft)	216.57	119.12	210.76
Min Ch El (ft)	259.46	Shear (lb/sq ft)	1.38	3.13	1.46
Alpha	1.22	Stream Power (lb/ft s)	8.26	31.87	8.91
Frctn Loss (ft)	0.50	Cum Volume (acre-ft)	58.71	76.95	68.66
C & E Loss (ft)	0.16	Cum SA (acres)	7.15	3.95	9.38

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.

CROSS SECTION OUTPUT Profile #Q100HC

			Left OB	Channel	Right OB
E.G. Elev (ft)	282.15	Element			
Vel Head (ft)	1.05	Wt. n-Val.	0.047	0.050	0.049
W.S. Elev (ft)	281.10	Reach Len. (ft)	212.58	192.35	175.17
Crit W.S. (ft)		Flow Area (sq ft)	3671.09	2506.71	3415.23
E.G. Slope (ft/ft)	0.001926	Area (sq ft)	3671.09	2506.71	3415.23
Q Total (cfs)	76204.00	Flow (cfs)	26594.56	24921.88	24687.56
Top Width (ft)	824.13	Top Width (ft)	398.70	119.03	306.40
Vel Total (ft/s)	7.94	Avg. Vel. (ft/s)	7.24	9.94	7.23
Max Chl Dpth (ft)	21.64	Hydr. Depth (ft)	9.21	21.06	11.15
Conv. Total (cfs)	1736200.0	Conv. (cfs)	605919.4	567809.6	562471.0
Length Wtd. (ft)	195.20	Wetted Per. (ft)	399.33	119.12	307.16
Min Ch El (ft)	259.46	Shear (lb/sq ft)	1.11	2.53	1.34
Alpha	1.07	Stream Power (lb/ft s)	8.01	25.16	9.67
Frctn Loss (ft)	0.31	Cum Volume (acre-ft)	131.89	109.79	158.72
C & E Loss (ft)	0.10	Cum SA (acres)	10.54	3.95	12.44

CROSS SECTION

RIVER: San Juan
REACH: Middle RS: 1302.462

INPUT
Description:
Station Elevation Data num= 81

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	307.57	1.26	307.49	26.01	305.57	39.63	304.83	41.42	304.73
65.04	303.3	96.14	301.45	105.67	300.91	115.75	300.34	116.14	300.3
116.93	300.14	123.64	299.02	135.44	295.14	142.94	292.32	151.89	290.14
165.47	289.15	174.55	288.52	186.26	288.1	236.59	286.48	315.84	283.14
386.53	280.03	396.15	279.03	422.69	276.05	443.79	273.69	449.11	273.05
450.7	272.86	451.21	272.82	455.58	272.54	485.54	270.66	493.94	270.46
518.89	268.98	535.13	268.39	567.22	267.55	589.31	266.55	639.8	264.08
643.78	263.88	655.32	263.35	657.94	263.3	666.09	262.73	696.09	261.06
706.73	260.04	735.39	258.97	747.3	258.53	782.34	258.07	792.58	257.98
807.08	258.14	812.4	258.2	884.4	258.34	899.55	258.38	900.27	258.38
907.18	258.46	931.67	259.23	942.8	259.63	943.89	259.79	944.72	259.89
952.07	260.47	960.2	261.11	968.64	262.38	977.28	263.74	995.67	266.95
1002.05	267.45	1016.05	268.74	1017.08	268.83	1032.23	269.14	1060.63	270.03
1094.46	270.43	1117.05	270.61	1127.03	271.04	1165.61	273.97	1175.62	274.7
1184.56	275.36	1188.76	275.87	1188.83	275.88	1197.18	276.89	1203.46	277.72
1227.09	280.27	1241.59	281.2	1259.36	283.05	1275.96	284.73	1309.54	287.26
1320.92	288.09								

Manning's n Values num= 7

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.07	39.63	.02	105.67	.07	422.69	.02	449.11	.05
1175.62	.02	1188.83	.035						

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
735.39	931.67	116.82 116.22	118.65	.1	.3

Blocked Obstructions num= 6

Sta L	Sta R	Elev	Sta L	Sta R	Elev	Sta L	Sta R	Elev

142.14	153.14	300	342.26	353.27	300	542.39	553.39	300
742.52	753.52	300	942.65	953.65	300	1142.78	1153.78	300

CROSS SECTION OUTPUT Profile #Q50

			Left OB	Channel	Right OB
E.G. Elev (ft)	269.79	Element			
Vel Head (ft)	0.56	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	269.23	Reach Len. (ft)	116.82	116.22	118.65
Crit W.S. (ft)		Flow Area (sq ft)	1026.02	2016.77	383.74
E.G. Slope (ft/ft)	0.002378	Area (sq ft)	1026.02	2016.77	383.74
Q Total (cfs)	19237.00	Flow (cfs)	4576.78	13350.08	1310.14
Top Width (ft)	487.51	Top Width (ft)	209.74	185.28	92.49
Vel Total (ft/s)	5.61	Avg. Vel. (ft/s)	4.46	6.62	3.41
Max Chl Dpth (ft)	11.25	Hydr. Depth (ft)	4.89	10.88	4.15
Conv. Total (cfs)	394462.0	Conv. (cfs)	93848.5	273748.6	26864.9
Length Wtd. (ft)	116.74	Wetted Per. (ft)	212.36	206.61	111.33
Min Ch El (ft)	257.98	Shear (lb/sq ft)	0.72	1.45	0.51
Alpha	1.14	Stream Power (lb/ft s)	3.20	9.59	1.75
Frctn Loss (ft)	0.17	Cum Volume (acre-ft)	32.54	56.30	37.03
C & E Loss (ft)	0.08	Cum SA (acres)	4.70	3.28	6.79

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.

CROSS SECTION OUTPUT Profile #Q100

			Left OB	Channel	Right OB
E.G. Elev (ft)	273.27	Element			
Vel Head (ft)	0.55	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	272.71	Reach Len. (ft)	116.82	116.22	118.65
Crit W.S. (ft)		Flow Area (sq ft)	1866.58	2661.34	953.05
E.G. Slope (ft/ft)	0.001792	Area (sq ft)	1866.58	2661.34	953.05
Q Total (cfs)	30456.00	Flow (cfs)	9299.14	17993.46	3163.40
Top Width (ft)	656.86	Top Width (ft)	271.47	185.28	200.11
Vel Total (ft/s)	5.56	Avg. Vel. (ft/s)	4.98	6.76	3.32
Max Chl Dpth (ft)	14.73	Hydr. Depth (ft)	6.88	14.36	4.76
Conv. Total (cfs)	719547.7	Conv. (cfs)	219699.7	425110.1	74737.9
Length Wtd. (ft)	116.86	Wetted Per. (ft)	281.15	213.57	226.45
Min Ch El (ft)	257.98	Shear (lb/sq ft)	0.74	1.39	0.47
Alpha	1.16	Stream Power (lb/ft s)	3.70	9.42	1.56
Frctn Loss (ft)	0.14	Cum Volume (acre-ft)	51.17	67.71	64.22
C & E Loss (ft)	0.06	Cum SA (acres)	5.96	3.28	8.56

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.

CROSS SECTION OUTPUT Profile #Q100HC

			Left OB	Channel	Right OB
E.G. Elev (ft)	281.73	Element			
Vel Head (ft)	0.71	Wt. n-Val.	0.048	0.050	0.048
W.S. Elev (ft)	281.02	Reach Len. (ft)	116.82	116.22	118.65
Crit W.S. (ft)		Flow Area (sq ft)	4441.50	4200.78	2962.17
E.G. Slope (ft/ft)	0.001371	Area (sq ft)	4441.50	4200.78	2962.17
Q Total (cfs)	76204.00	Flow (cfs)	28838.77	32040.90	15324.33
Top Width (ft)	830.73	Top Width (ft)	360.35	185.28	285.10
Vel Total (ft/s)	6.57	Avg. Vel. (ft/s)	6.49	7.63	5.17

Max Chl Dpth (ft)	23.04	Hydr. Depth (ft)	12.33	22.67	10.39
Conv. Total (cfs)	2058085.0	Conv. (cfs)	778865.2	865347.0	413872.9
Length Wtd. (ft)	117.07	Wetted Per. (ft)	387.07	230.19	344.71
Min Ch El (ft)	257.98	Shear (lb/sq ft)	0.98	1.56	0.74
Alpha	1.06	Stream Power (lb/ft s)	6.38	11.91	3.80
Frctn Loss (ft)	0.13	Cum Volume (acre-ft)	112.10	94.98	145.90
C & E Loss (ft)	0.05	Cum SA (acres)	8.69	3.28	11.25

Warning: Divided flow computed for this cross-section.

CROSS SECTION

RIVER: San Juan
REACH: Middle RS: 1186.241

INPUT
Description:
Station Elevation Data num= 75

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	320.83	4.66	320.15	21.18	317.73	48.36	314.66	54.64	313.8
71.47	311.5	80.37	310.54	86.57	309.81	94.34	308.28	95.62	307.96
112.28	303.69	115.37	302.8	124.07	299.73	128.6	297.43	140.63	291.78
143.03	291.12	146.01	290.06	152.44	289.3	155.15	289	158.82	288.69
191.23	286.94	239.74	285.24	254.46	284.73	261.72	284.47	296.81	283.07
313.47	282.41	356.97	280.57	371.07	280.01	377.21	279.45	409.79	276.76
450.29	273.42	450.77	273.38	471.68	271.88	509.78	269.33	542.76	267.13
630.46	262.56	678.99	260.4	713.45	258.97	721.12	258.52	738.43	257.77
747.42	257.36	763.95	256.58	786.55	255.88	793.62	255.61	823.12	254.48
844.21	254.74	858.62	254.78	894.7	256.48	900.55	256.76	919.6	257.85
927.33	258.31	964.42	260.19	980.35	261.61	1000.44	262.89	1014.52	263.78
1016.71	263.93	1018.13	263.98	1042.57	264.98	1065.49	265.64	1072.88	265.74
1081.76	265.74	1150.88	268.22	1158.53	268.6	1166.92	269.42	1189.88	271.35
1215.71	275.16	1217.43	275.41	1230.53	277.32	1247.07	279.41	1251.1	279.88
1256.44	280.23	1280.3	281.64	1321.82	283.98	1355.43	285.52	1365.96	286.04

Manning's n Values num= 6

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.07	54.64	.02	95.62	.07	409.79	.02	450.77	.05
1215.71	.035								

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
763.95	894.7	184.9	202.39 220.04	.1	.3

Blocked Obstructions num= 6

Sta L	Sta R	Elev	Sta L	Sta R	Elev	Sta L	Sta R	Elev
142.14	153.14	300	342.26	353.27	300	542.39	553.39	300
742.52	753.52	300	942.65	953.65	300	1142.78	1153.78	300

CROSS SECTION OUTPUT Profile #Q50

E.G. Elev (ft)	269.54	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.30	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	269.24	Reach Len. (ft)	184.90	202.39	220.04
Crit W.S. (ft)		Flow Area (sq ft)	1548.22	1816.66	1441.69
E.G. Slope (ft/ft)	0.000972	Area (sq ft)	1548.22	1816.66	1441.69
Q Total (cfs)	19237.00	Flow (cfs)	5024.79	9721.96	4490.25
Top Width (ft)	609.99	Top Width (ft)	230.85	130.75	248.40
Vel Total (ft/s)	4.00	Avg. Vel. (ft/s)	3.25	5.35	3.11

Max Chl Dpth (ft)	14.76	Hydr. Depth (ft)	6.71	13.89	5.80
Conv. Total (cfs)	617152.8	Conv. (cfs)	161203.0	311895.4	144054.3
Length Wtd. (ft)	201.87	Wetted Per. (ft)	259.72	130.83	270.67
Min Ch El (ft)	254.48	Shear (lb/sq ft)	0.36	0.84	0.32
Alpha	1.22	Stream Power (lb/ft s)	1.17	4.51	1.01
Frctn Loss (ft)	0.14	Cum Volume (acre-ft)	29.09	51.19	34.55
C & E Loss (ft)	0.03	Cum SA (acres)	4.11	2.86	6.33

Warning: Divided flow computed for this cross-section.

CROSS SECTION OUTPUT Profile #Q100

E.G. Elev (ft)	273.06	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.34	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	272.72	Reach Len. (ft)	184.90	202.39	220.04
Crit W.S. (ft)		Flow Area (sq ft)	2442.23	2271.91	2372.85
E.G. Slope (ft/ft)	0.000842	Area (sq ft)	2442.23	2271.91	2372.85
Q Total (cfs)	30456.00	Flow (cfs)	8896.22	13140.74	8419.04
Top Width (ft)	695.27	Top Width (ft)	282.03	130.75	282.49
Vel Total (ft/s)	4.30	Avg. Vel. (ft/s)	3.64	5.78	3.55
Max Chl Dpth (ft)	18.24	Hydr. Depth (ft)	8.66	17.38	8.40
Conv. Total (cfs)	1049368.0	Conv. (cfs)	306521.0	452766.9	290080.0
Length Wtd. (ft)	202.47	Wetted Per. (ft)	324.95	130.83	318.88
Min Ch El (ft)	254.48	Shear (lb/sq ft)	0.40	0.91	0.39
Alpha	1.18	Stream Power (lb/ft s)	1.44	5.28	1.39
Frctn Loss (ft)	0.13	Cum Volume (acre-ft)	45.40	61.13	59.69
C & E Loss (ft)	0.03	Cum SA (acres)	5.22	2.86	7.90

Warning: Divided flow computed for this cross-section.

CROSS SECTION OUTPUT Profile #Q100HC

E.G. Elev (ft)	281.56	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.56	Wt. n-Val.	0.048	0.050	0.050
W.S. Elev (ft)	281.01	Reach Len. (ft)	184.90	202.39	220.04
Crit W.S. (ft)		Flow Area (sq ft)	5208.41	3355.01	4959.68
E.G. Slope (ft/ft)	0.000863	Area (sq ft)	5208.41	3355.01	4959.68
Q Total (cfs)	76204.00	Flow (cfs)	26446.03	25478.41	24279.56
Top Width (ft)	872.32	Top Width (ft)	388.68	130.75	352.89
Vel Total (ft/s)	5.64	Avg. Vel. (ft/s)	5.08	7.59	4.90
Max Chl Dpth (ft)	26.53	Hydr. Depth (ft)	13.40	25.66	14.05
Conv. Total (cfs)	2593280.0	Conv. (cfs)	899978.3	867049.6	826252.0
Length Wtd. (ft)	202.54	Wetted Per. (ft)	465.33	130.83	422.95
Min Ch El (ft)	254.48	Shear (lb/sq ft)	0.60	1.38	0.63
Alpha	1.13	Stream Power (lb/ft s)	3.06	10.50	3.09
Frctn Loss (ft)	0.13	Cum Volume (acre-ft)	99.16	84.90	135.11
C & E Loss (ft)	0.05	Cum SA (acres)	7.68	2.86	10.38

Warning: Divided flow computed for this cross-section.

CROSS SECTION

RIVER: San Juan
REACH: Middle RS: 983.852

INPUT
Description:
Station Elevation Data num= 86

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	317.57	.69	317.38	6.63	315.95	26.49	310.98	33.55	309.51
39.06	308.51	53.06	305.99	55.37	305.58	56.45	305.33	90.4	299.63
90.63	299.57	90.91	299.47	91.85	299.15	105.72	294.56	110.71	293.21
125.15	289.27	125.81	289.03	133.96	287.86	137.24	287.21	143.42	286.89
150.94	286.62	182.28	285.98	192.63	285.76	210.73	284.8	227.98	283.8
244.85	282.46	247.38	282.26	266.51	280.72	304.91	278.02	338.52	275.28
346.34	274.64	373.83	272.51	377.58	272.26	418.89	269.48	427.25	268.91
434.32	268.42	510.78	261.57	531.75	260.51	559.37	259.37	578.3	258.54
610.3	257.13	622.26	256.51	654.98	254.4	669.82	253.43	687.46	252.16
705.83	250.84	712.91	250.19	730.73	249.82	732.59	249.8	744.67	250.55
753.22	250.98	755.45	251.23	770.42	253.49	799.43	257.04	803.33	257.56
805.45	257.82	805.95	257.91	806.15	257.93	812.63	258.52	827.54	259.87
831.93	260.08	848.84	260.43	872.89	261.01	883.21	261.53	914.17	261.93
917.11	261.92	920.99	261.89	937.75	262.39	1010.44	264.44	1011.22	264.46
1012.57	264.51	1041.87	265.63	1057.37	266.27	1109.6	268.52	1126.08	269.53
1139.96	270.33	1158.71	272.74	1158.78	272.75	1171.96	274.88	1198.3	279.04
1202.49	279.34	1219.91	280.56	1278.74	282.55	1285.14	282.8	1294.91	283.07
1302	283.24								

Manning's n Values num= 7

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.02	39.06	.07	182.28	.035	247.38	.07	338.52	.02
377.58	.05	1158.78	.035						

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
669.82	770.42	165.21	174.16	184.96	.1	.3

CROSS SECTION OUTPUT Profile #Q50

			Left OB	Channel	Right OB
E.G. Elev (ft)	269.38	Element			
Vel Head (ft)	0.19	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	269.18	Reach Len. (ft)	165.21	174.16	184.96
Crit W.S. (ft)		Flow Area (sq ft)	2131.04	1803.20	2274.46
E.G. Slope (ft/ft)	0.000492	Area (sq ft)	2131.04	1803.20	2274.46
Q Total (cfs)	19237.00	Flow (cfs)	5904.55	8119.08	5213.37
Top Width (ft)	697.20	Top Width (ft)	246.59	100.60	350.01
Vel Total (ft/s)	3.10	Avg. Vel. (ft/s)	2.77	4.50	2.29
Max Chl Dpth (ft)	19.38	Hydr. Depth (ft)	8.64	17.92	6.50
Conv. Total (cfs)	867643.8	Conv. (cfs)	266312.1	366193.7	235138.0
Length Wtd. (ft)	173.99	Wetted Per. (ft)	247.13	100.94	350.55
Min Ch El (ft)	249.80	Shear (lb/sq ft)	0.26	0.55	0.20
Alpha	1.29	Stream Power (lb/ft s)	0.73	2.47	0.46
Frctn Loss (ft)	0.10	Cum Volume (acre-ft)	21.28	42.78	25.16
C & E Loss (ft)	0.01	Cum SA (acres)	3.09	2.32	4.82

CROSS SECTION OUTPUT Profile #Q100

			Left OB	Channel	Right OB
E.G. Elev (ft)	272.90	Element			
Vel Head (ft)	0.22	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	272.68	Reach Len. (ft)	165.21	174.16	184.96
Crit W.S. (ft)		Flow Area (sq ft)	3083.19	2154.72	3575.84
E.G. Slope (ft/ft)	0.000474	Area (sq ft)	3083.19	2154.72	3575.84
Q Total (cfs)	30456.00	Flow (cfs)	9573.15	10724.85	10157.99
Top Width (ft)	786.57	Top Width (ft)	298.16	100.60	387.81

Vel Total (ft/s)	3.46	Avg. Vel. (ft/s)	3.10	4.98	2.84
Max Chl Dpth (ft)	22.88	Hydr. Depth (ft)	10.34	21.42	9.22
Conv. Total (cfs)	1399280.0	Conv. (cfs)	439832.0	492746.2	466702.2
Length Wtd. (ft)	174.67	Wetted Per. (ft)	298.83	100.94	388.53
Min Ch El (ft)	249.80	Shear (lb/sq ft)	0.31	0.63	0.27
Alpha	1.21	Stream Power (lb/ft s)	0.95	3.14	0.77
Frctn Loss (ft)	0.09	Cum Volume (acre-ft)	33.67	50.85	44.66
C & E Loss (ft)	0.01	Cum SA (acres)	3.99	2.32	6.21

CROSS SECTION OUTPUT Profile #Q100HC

E.G. Elev (ft)	281.38	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.38	Wt. n-Val.	0.048	0.050	0.050
W.S. Elev (ft)	281.01	Reach Len. (ft)	165.21	174.16	184.96
Crit W.S. (ft)		Flow Area (sq ft)	6009.50	2992.57	7040.59
E.G. Slope (ft/ft)	0.000478	Area (sq ft)	6009.50	2992.57	7040.59
Q Total (cfs)	76204.00	Flow (cfs)	27290.57	18627.35	30286.08
Top Width (ft)	970.16	Top Width (ft)	406.87	100.60	462.69
Vel Total (ft/s)	4.75	Avg. Vel. (ft/s)	4.54	6.22	4.30
Max Chl Dpth (ft)	31.21	Hydr. Depth (ft)	14.77	29.75	15.22
Conv. Total (cfs)	3485006.0	Conv. (cfs)	1248069.0	851877.0	1385061.0
Length Wtd. (ft)	175.14	Wetted Per. (ft)	407.86	100.94	463.97
Min Ch El (ft)	249.80	Shear (lb/sq ft)	0.44	0.88	0.45
Alpha	1.07	Stream Power (lb/ft s)	2.00	5.51	1.95
Frctn Loss (ft)	0.09	Cum Volume (acre-ft)	75.35	70.15	104.80
C & E Loss (ft)	0.00	Cum SA (acres)	6.00	2.32	8.32

CROSS SECTION

RIVER: San Juan
REACH: Middle RS: 809.691

INPUT
Description:
Station Elevation Data num= 75

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	312.47	3.69	310.72	6.91	309.49	9.09	308.77	20.77	307.47
25.44	306.77	38.72	306.01	47.79	305.36	54.63	304.88	71.48	303.71
94.38	302.68	117.36	301.48	123.31	300.97	125.3	300.75	128.76	299.68
133.28	298.36	139.57	295.76	150.4	291.2	152.65	290.52	164.58	288.58
167.09	288.23	180.63	286.72	193.54	285.79	204.85	285.11	209.04	284.86
226.76	283.77	270.22	281.25	290.89	279.76	300.44	278.96	313.24	277.88
336.04	275.54	355.07	273.87	382.38	271.46	386.54	271.1	441.14	267.68
496.06	264.02	547.93	261.02	556.53	260.66	614.21	257.09	635.42	255.77
641.32	255.42	665.07	253.83	720.16	250.15	737.79	248.93	753.47	248.93
757.92	248.98	766.64	250.55	767.98	250.74	770.97	251.89	776.35	253.84
783.88	256.28	786.11	257.04	796.64	259.98	807.27	261.52	808.58	261.66
814.95	261.53	837.14	261.78	840.44	261.99	844.54	262.11	896.06	262.66
901.7	262.71	929.85	263.53	1008.93	265.83	1055.89	267.22	1144.03	269.82
1159.29	270.17	1160.79	270.32	1169.12	271.18	1204.17	276.07	1228.56	279.32
1233.22	279.69	1258.05	280.52	1312.59	281.99	1359.85	283.32	1365.64	283.46

Manning's n Values num= 7

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.02	54.63	.07	204.85	.035	300.44	.07	355.07	.02
382.38	.05	1160.79	.035						

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
665.07	776.35	154.77	163.75	172.54	.1	.3

CROSS SECTION OUTPUT Profile #Q50

E.G. Elev (ft)	269.27	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.27	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	269.00	Reach Len. (ft)	154.77	163.75	172.54
Crit W.S. (ft)		Flow Area (sq ft)	1865.36	2016.54	1657.42
E.G. Slope (ft/ft)	0.000629	Area (sq ft)	1865.36	2016.54	1657.42
Q Total (cfs)	19237.00	Flow (cfs)	5374.31	10318.22	3544.47
Top Width (ft)	696.38	Top Width (ft)	245.07	111.28	340.03
Vel Total (ft/s)	3.47	Avg. Vel. (ft/s)	2.88	5.12	2.14
Max Chl Dpth (ft)	20.07	Hydr. Depth (ft)	7.61	18.12	4.87
Conv. Total (cfs)	766814.6	Conv. (cfs)	214227.6	411299.2	141287.8
Length Wtd. (ft)	163.54	Wetted Per. (ft)	245.54	112.15	341.16
Min Ch El (ft)	248.93	Shear (lb/sq ft)	0.30	0.71	0.19
Alpha	1.43	Stream Power (lb/ft s)	0.86	3.61	0.41
Frctn Loss (ft)	0.10	Cum Volume (acre-ft)	13.70	35.14	16.81
C & E Loss (ft)	0.00	Cum SA (acres)	2.16	1.89	3.35

CROSS SECTION OUTPUT Profile #Q100

E.G. Elev (ft)	272.81	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.28	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	272.53	Reach Len. (ft)	154.77	163.75	172.54
Crit W.S. (ft)		Flow Area (sq ft)	2824.23	2408.97	3006.26
E.G. Slope (ft/ft)	0.000558	Area (sq ft)	2824.23	2408.97	3006.26
Q Total (cfs)	30456.00	Flow (cfs)	9159.55	13070.69	8225.76
Top Width (ft)	808.56	Top Width (ft)	294.82	111.28	402.45
Vel Total (ft/s)	3.70	Avg. Vel. (ft/s)	3.24	5.43	2.74
Max Chl Dpth (ft)	23.60	Hydr. Depth (ft)	9.58	21.65	7.47
Conv. Total (cfs)	1288959.0	Conv. (cfs)	387650.5	553177.8	348130.7
Length Wtd. (ft)	164.10	Wetted Per. (ft)	295.42	112.15	403.75
Min Ch El (ft)	248.93	Shear (lb/sq ft)	0.33	0.75	0.26
Alpha	1.30	Stream Power (lb/ft s)	1.08	4.06	0.71
Frctn Loss (ft)	0.09	Cum Volume (acre-ft)	22.47	41.72	30.69
C & E Loss (ft)	0.00	Cum SA (acres)	2.86	1.89	4.53

CROSS SECTION OUTPUT Profile #Q100HC

E.G. Elev (ft)	281.30	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.41	Wt. n-Val.	0.048	0.050	0.049
W.S. Elev (ft)	280.89	Reach Len. (ft)	154.77	163.75	172.54
Crit W.S. (ft)		Flow Area (sq ft)	5674.10	3339.35	6644.77
E.G. Slope (ft/ft)	0.000525	Area (sq ft)	5674.10	3339.35	6644.77
Q Total (cfs)	76204.00	Flow (cfs)	26388.57	21840.70	27974.72
Top Width (ft)	996.64	Top Width (ft)	389.88	111.28	495.48
Vel Total (ft/s)	4.87	Avg. Vel. (ft/s)	4.65	6.54	4.21
Max Chl Dpth (ft)	31.96	Hydr. Depth (ft)	14.55	30.01	13.41
Conv. Total (cfs)	3326298.0	Conv. (cfs)	1151859.0	953344.7	1221094.0
Length Wtd. (ft)	164.69	Wetted Per. (ft)	390.85	112.15	497.28
Min Ch El (ft)	248.93	Shear (lb/sq ft)	0.48	0.98	0.44
Alpha	1.11	Stream Power (lb/ft s)	2.21	6.38	1.84
Frctn Loss (ft)	0.09	Cum Volume (acre-ft)	53.19	57.49	75.75
C & E Loss (ft)	0.00	Cum SA (acres)	4.49	1.89	6.29

CROSS SECTION

RIVER: San Juan
REACH: Middle RS: 645.940

INPUT
Description:
Station Elevation Data num= 82

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	308.49	15.12	308.13	38.26	306.87	45.43	306.3	52.74	305.77
69.84	304.64	80.3	303.94	101.92	302.43	110.17	301.89	125.22	300.79
127.95	300.21	139.41	298.27	159.81	291.52	162.01	290.83	165.98	290.3
171.3	289.59	173.7	289.39	181.59	289.12	193.32	288.73	245.92	285.13
252.62	284.67	262.77	284.15	314.99	280.67	331.64	279.33	349.6	278.03
351.26	277.9	359.56	277.27	363.19	276.89	425.06	270.44	462.34	267.83
524.5	263.47	559	260.9	575.26	258.27	583.34	257.25	599.75	253.99
607.44	253.39	614.08	252.7	633.33	253.46	662.12	253.39	665.11	253.39
670.19	253.36	672.97	253.41	681.94	252.92	722.28	250.65	762.39	248.38
763.36	248.5	772.65	250.6	773.91	250.87	774.11	250.95	779.46	253.78
786.83	257.67	789.1	258.99	791.73	259.87	799.23	261.68	802.78	262.02
811.45	262.39	825.81	261.94	848.46	261.49	854.01	261.38	878.98	261.83
883.09	261.83	887.92	262.02	895.98	262.27	940.84	263.83	1096.03	268.69
1109.32	269.41	1123.31	269.68	1131.47	270	1140.2	270.34	1160.63	270.34
1166.34	270.54	1170.4	270.64	1184.14	270.96	1201.21	271.02	1221.42	271.77
1232.97	272.65	1266.04	276.14	1289.32	279	1291.1	279.17	1305.77	280.43
1364.54	281.57	1396.88	282.26						

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.02	69.84	.07	181.59	.02	363.19	.05	1131.47	.035

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
599.75	779.46	200.24	200.37	215.03	.1	.3

CROSS SECTION OUTPUT Profile #Q50

			Left OB	Channel	Right OB
E.G. Elev (ft)	269.17	Element			
Vel Head (ft)	0.26	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	268.92	Reach Len. (ft)	200.24	200.37	215.03
Crit W.S. (ft)		Flow Area (sq ft)	903.60	3067.08	1567.70
E.G. Slope (ft/ft)	0.000547	Area (sq ft)	903.60	3067.08	1567.70
Q Total (cfs)	19237.00	Flow (cfs)	2044.68	14066.38	3125.94
Top Width (ft)	653.35	Top Width (ft)	152.91	179.71	320.73
Vel Total (ft/s)	3.47	Avg. Vel. (ft/s)	2.26	4.59	1.99
Max Chl Dpth (ft)	20.54	Hydr. Depth (ft)	5.91	17.07	4.89
Conv. Total (cfs)	822633.3	Conv. (cfs)	87436.7	601521.7	133674.9
Length Wtd. (ft)	202.26	Wetted Per. (ft)	153.79	180.91	322.56
Min Ch El (ft)	248.38	Shear (lb/sq ft)	0.20	0.58	0.17
Alpha	1.37	Stream Power (lb/ft s)	0.45	2.65	0.33
Frctn Loss (ft)	0.11	Cum Volume (acre-ft)	8.78	25.59	10.43
C & E Loss (ft)	0.01	Cum SA (acres)	1.45	1.35	2.04

CROSS SECTION OUTPUT Profile #Q100

			Left OB	Channel	Right OB
E.G. Elev (ft)	272.72	Element			

Vel Head (ft)	0.29	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	272.43	Reach Len. (ft)	200.24	200.37	215.03
Crit W.S. (ft)		Flow Area (sq ft)	1520.29	3699.00	2939.04
E.G. Slope (ft/ft)	0.000520	Area (sq ft)	1520.29	3699.00	2939.04
Q Total (cfs)	30456.00	Flow (cfs)	4051.43	18735.43	7669.14
Top Width (ft)	824.15	Top Width (ft)	193.79	179.71	450.64
Vel Total (ft/s)	3.73	Avg. Vel. (ft/s)	2.66	5.07	2.61
Max Chl Dpth (ft)	24.05	Hydr. Depth (ft)	7.84	20.58	6.52
Conv. Total (cfs)	1336162.0	Conv. (cfs)	177743.8	821958.6	336459.5
Length Wtd. (ft)	203.23	Wetted Per. (ft)	194.83	180.91	452.56
Min Ch El (ft)	248.38	Shear (lb/sq ft)	0.25	0.66	0.21
Alpha	1.32	Stream Power (lb/ft s)	0.67	3.36	0.55
Frctn Loss (ft)	0.12	Cum Volume (acre-ft)	14.75	30.24	18.92
C & E Loss (ft)	0.02	Cum SA (acres)	1.99	1.35	2.84

CROSS SECTION OUTPUT Profile #Q100HC

E.G. Elev (ft)	281.21	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.42	Wt. n-Val.	0.049	0.050	0.048
W.S. Elev (ft)	280.79	Reach Len. (ft)	200.24	200.37	215.03
Crit W.S. (ft)		Flow Area (sq ft)	3498.84	5201.52	7038.02
E.G. Slope (ft/ft)	0.000519	Area (sq ft)	3498.84	5201.52	7038.02
Q Total (cfs)	76204.00	Flow (cfs)	13823.15	33038.51	29342.34
Top Width (ft)	1011.31	Top Width (ft)	286.60	179.71	545.00
Vel Total (ft/s)	4.84	Avg. Vel. (ft/s)	3.95	6.35	4.17
Max Chl Dpth (ft)	32.41	Hydr. Depth (ft)	12.21	28.94	12.91
Conv. Total (cfs)	3346197.0	Conv. (cfs)	606989.1	1450756.0	1288453.0
Length Wtd. (ft)	205.08	Wetted Per. (ft)	288.02	180.91	547.34
Min Ch El (ft)	248.38	Shear (lb/sq ft)	0.39	0.93	0.42
Alpha	1.15	Stream Power (lb/ft s)	1.55	5.91	1.74
Frctn Loss (ft)	0.12	Cum Volume (acre-ft)	36.90	41.44	48.65
C & E Loss (ft)	0.02	Cum SA (acres)	3.28	1.35	4.23

CROSS SECTION

RIVER: San Juan
REACH: Middle RS: 445.567

INPUT
Description:
Station Elevation Data num= 93

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	306.23	26.83	304.93	31.17	304.72	34.74	304.49	35.78	304.44
49.33	304.1	67.08	303.6	102.02	302.6	110.43	302.36	122.03	300.28
124.55	299.98	126.34	299.57	127.01	299.29	144.53	291.58	145.87	291
150.46	289.58	152.15	289.19	157.21	288.14	160.42	287.94	171.88	286.99
203.76	284.23	213.58	283.27	231.95	281.27	249.38	280.02	281.74	278.22
288.78	277.83	310.6	276.97	362.08	274.11	380.72	273.44	395.61	272.41
415.9	271.38	445.83	269.87	449.05	269.68	451.34	269.53	461.86	268.74
492.61	266.33	513.62	264.86	577.97	261.39	584.03	260.93	591.07	260.5
591.44	260.47	591.66	260.43	592.67	260.17	601.56	257.98	614.32	252.86
619.83	250.94	620.53	250.67	621.75	250.19	622.06	250.13	631.94	248.42
640.13	247.91	642.82	247.72	652.19	247.79	655.78	247.8	685.2	248.82
697.89	249.18	714.96	248.72	715.14	248.72	748.96	247.98	749.46	247.97
749.66	247.99	758.53	249.24	760.02	249.65	763.06	250.64	766.64	252.41
767.4	252.82	776.65	257.77	779.15	258.56	782.7	260.19	784.81	260.55

790.61	261.33	800.22	261.35	819.07	261.22	828.11	261.63	862.97	264.14
875.55	265.08	956.58	269.49	967.81	270.05	983.98	270.71	991.82	270.92
1024.86	272.74	1049.99	272.63	1059.88	272.79	1082.13	273.15	1118.21	275.48
1128.01	276.25	1162.3	279.24	1164.8	279.51	1190	280.5	1205.7	280.73
1214.54	280.91	1247.54	280.97	1341.62	282.03				

Manning's n Values num= 6

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	26.83	.02	67.08	.07	281.74	.035	415.9	.05
1059.88	.035								

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
614.32	767.4	195.88	209.44 196.54	.1	.3

CROSS SECTION OUTPUT Profile #Q50

			Left OB	Channel	Right OB
E.G. Elev (ft)	269.05	Element			
Vel Head (ft)	0.34	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	268.71	Reach Len. (ft)	195.88	209.44	196.54
Crit W.S. (ft)		Flow Area (sq ft)	831.88	3052.82	898.91
E.G. Slope (ft/ft)	0.000553	Area (sq ft)	831.88	3052.82	898.91
Q Total (cfs)	19237.00	Flow (cfs)	1792.42	15587.94	1856.64
Top Width (ft)	480.06	Top Width (ft)	152.10	153.08	174.88
Vel Total (ft/s)	4.02	Avg. Vel. (ft/s)	2.15	5.11	2.07
Max Chl Dpth (ft)	20.99	Hydr. Depth (ft)	5.47	19.94	5.14
Conv. Total (cfs)	818049.0	Conv. (cfs)	76222.4	662873.6	78953.0
Length Wtd. (ft)	205.60	Wetted Per. (ft)	153.66	154.58	176.92
Min Ch El (ft)	247.72	Shear (lb/sq ft)	0.19	0.68	0.18
Alpha	1.36	Stream Power (lb/ft s)	0.40	3.48	0.36
Frctn Loss (ft)	0.15	Cum Volume (acre-ft)	4.79	11.51	4.34
C & E Loss (ft)	0.02	Cum SA (acres)	0.75	0.58	0.82

CROSS SECTION OUTPUT Profile #Q100

			Left OB	Channel	Right OB
E.G. Elev (ft)	272.59	Element			
Vel Head (ft)	0.46	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	272.13	Reach Len. (ft)	195.88	209.44	196.54
Crit W.S. (ft)		Flow Area (sq ft)	1448.62	3576.19	1618.57
E.G. Slope (ft/ft)	0.000654	Area (sq ft)	1448.62	3576.19	1618.57
Q Total (cfs)	30456.00	Flow (cfs)	4097.63	22068.21	4290.17
Top Width (ft)	612.69	Top Width (ft)	213.21	153.08	246.40
Vel Total (ft/s)	4.58	Avg. Vel. (ft/s)	2.83	6.17	2.65
Max Chl Dpth (ft)	24.41	Hydr. Depth (ft)	6.79	23.36	6.57
Conv. Total (cfs)	1190878.0	Conv. (cfs)	160223.7	862902.1	167752.4
Length Wtd. (ft)	204.35	Wetted Per. (ft)	214.87	154.58	248.52
Min Ch El (ft)	247.72	Shear (lb/sq ft)	0.28	0.94	0.27
Alpha	1.41	Stream Power (lb/ft s)	0.78	5.83	0.70
Frctn Loss (ft)	0.16	Cum Volume (acre-ft)	7.92	13.51	7.67
C & E Loss (ft)	0.01	Cum SA (acres)	1.06	0.58	1.12

CROSS SECTION OUTPUT Profile #Q100HC

			Left OB	Channel	Right OB
E.G. Elev (ft)	281.06	Element			
Vel Head (ft)	0.65	Wt. n-Val.	0.048	0.050	0.049
W.S. Elev (ft)	280.42	Reach Len. (ft)	195.88	209.44	196.54
Crit W.S. (ft)		Flow Area (sq ft)	3872.61	4844.78	4554.61
E.G. Slope (ft/ft)	0.000720	Area (sq ft)	3872.61	4844.78	4554.61

Q Total (cfs)	76204.00	Flow (cfs)	17926.86	38399.74	19877.40
Top Width (ft)	944.07	Top Width (ft)	370.49	153.08	420.51
Vel Total (ft/s)	5.74	Avg. Vel. (ft/s)	4.63	7.93	4.36
Max Chl Dpth (ft)	32.70	Hydr. Depth (ft)	10.45	31.65	10.83
Conv. Total (cfs)	2840319.0	Conv. (cfs)	668179.9	1431257.0	740881.8
Length Wtd. (ft)	201.78	Wetted Per. (ft)	372.37	154.58	422.92
Min Ch El (ft)	247.72	Shear (lb/sq ft)	0.47	1.41	0.48
Alpha	1.26	Stream Power (lb/ft s)	2.16	11.16	2.11
Frctn Loss (ft)	0.17	Cum Volume (acre-ft)	19.95	18.33	20.04
C & E Loss (ft)	0.01	Cum SA (acres)	1.77	0.58	1.84

CROSS SECTION

RIVER: San Juan
REACH: Middle RS: 236.129

INPUT
Description:
Station Elevation Data num= 73

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	299.07	18.15	296.64	23.17	295.64	62.85	289.84	63.6	289.7
64.01	289.61	65.34	289.36	78.6	286.35	93.96	282.81	96.21	282.39
100.82	281.62	111.47	280.03	129.4	279.58	132.87	279.26	150.97	276.8
161.53	275.55	207.67	273.83	219.25	273.35	229.37	273.32	232.78	273.32
241.37	273.27	250.21	272.86	260.51	272.41	299.99	270.32	312.18	269.51
338.41	268.65	348.51	268.32	381.54	266.08	406.99	264.37	420.48	263.42
445.13	261.58	452.92	260.58	468.07	259.07	480.3	257.99	485.78	257.14
523.51	252.19	528.93	251.48	535.34	250.65	536.18	250.54	537	250.46
563.08	248.48	577.26	247.4	577.47	247.4	577.69	247.4	588.34	247.73
602.72	248.16	610.09	249.45	612.51	249.85	614.16	250.42	618.01	251.63
630.9	256.16	631.8	256.47	634.97	257.57	642.73	259.87	649.06	260.98
656.79	261.3	671.56	261.63	685.81	261.91	728.29	263.89	754.77	265.31
808.26	268.54	835.28	270.12	862.6	271.45	864.84	271.62	917.72	275.61
948.8	277.7	979.58	279.77	996.4	279.92	1054.92	280.6	1071.91	280.82
1075.14	280.85	1095.58	281.1	1253.39	282.16				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.07	338.41	.05	864.84	.035

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
528.93	618.01	0	0	.1	.3

CROSS SECTION OUTPUT Profile #Q50

E.G. Elev (ft)	268.89	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.50	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	268.39	Reach Len. (ft)			
Crit W.S. (ft)	259.72	Flow Area (sq ft)	1300.27	1735.72	1024.33
E.G. Slope (ft/ft)	0.001001	Area (sq ft)	1300.27	1735.72	1024.33
Q Total (cfs)	19237.00	Flow (cfs)	4509.79	11760.63	2966.59
Top Width (ft)	459.49	Top Width (ft)	182.62	89.08	187.80
Vel Total (ft/s)	4.74	Avg. Vel. (ft/s)	3.47	6.78	2.90
Max Chl Dpth (ft)	20.99	Hydr. Depth (ft)	7.12	19.49	5.45
Conv. Total (cfs)	608148.6	Conv. (cfs)	142570.1	371794.4	93784.1
Length Wtd. (ft)		Wetted Per. (ft)	183.48	89.70	189.43
Min Ch El (ft)	247.40	Shear (lb/sq ft)	0.44	1.21	0.34

Alpha	1.43	Stream Power (lb/ft s)	1.54	8.19	0.98
Frctn Loss (ft)		Cum Volume (acre-ft)			
C & E Loss (ft)		Cum SA (acres)			

CROSS SECTION OUTPUT Profile #Q100

E.G. Elev (ft)	272.42	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.57	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	271.85	Reach Len. (ft)			
Crit W.S. (ft)	263.39	Flow Area (sq ft)	2075.88	2043.58	1779.75
E.G. Slope (ft/ft)	0.001002	Area (sq ft)	2075.88	2043.58	1779.75
Q Total (cfs)	30456.00	Flow (cfs)	8792.12	15447.02	6216.86
Top Width (ft)	596.73	Top Width (ft)	257.80	89.08	249.85
Vel Total (ft/s)	5.16	Avg. Vel. (ft/s)	4.24	7.56	3.49
Max Chl Dpth (ft)	24.45	Hydr. Depth (ft)	8.05	22.94	7.12
Conv. Total (cfs)	962313.3	Conv. (cfs)	277803.0	488076.9	196433.3
Length Wtd. (ft)		Wetted Per. (ft)	258.74	89.70	251.58
Min Ch El (ft)	247.40	Shear (lb/sq ft)	0.50	1.42	0.44
Alpha	1.37	Stream Power (lb/ft s)	2.12	10.77	1.55
Frctn Loss (ft)		Cum Volume (acre-ft)			
C & E Loss (ft)		Cum SA (acres)			

CROSS SECTION OUTPUT Profile #Q100HC

E.G. Elev (ft)	280.88	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.75	Wt. n-Val.	0.053	0.050	0.049
W.S. Elev (ft)	280.13	Reach Len. (ft)			
Crit W.S. (ft)	270.76	Flow Area (sq ft)	5001.69	2781.47	4326.32
E.G. Slope (ft/ft)	0.001001	Area (sq ft)	5001.69	2781.47	4326.32
Q Total (cfs)	76204.00	Flow (cfs)	26638.21	25813.76	23752.04
Top Width (ft)	903.78	Top Width (ft)	418.14	89.08	396.56
Vel Total (ft/s)	6.29	Avg. Vel. (ft/s)	5.33	9.28	5.49
Max Chl Dpth (ft)	32.73	Hydr. Depth (ft)	11.96	31.22	10.91
Conv. Total (cfs)	2408528.0	Conv. (cfs)	841935.7	815878.1	750714.5
Length Wtd. (ft)		Wetted Per. (ft)	419.43	89.70	398.57
Min Ch El (ft)	247.40	Shear (lb/sq ft)	0.75	1.94	0.68
Alpha	1.22	Stream Power (lb/ft s)	3.97	17.99	3.72
Frctn Loss (ft)		Cum Volume (acre-ft)			
C & E Loss (ft)		Cum SA (acres)			

SUMMARY OF MANNING'S N VALUES

River:San Juan

Reach	River Sta.	n1	n2	n3	n4	n5	n6	n7
Middle	3288.713	.07	.05					
Middle	3100.847	.07	.05	.02				
Middle	2925.817	.07	.05					
Middle	2708.681	.07	.05					
Middle	2487.946	.07	.05	.035				
Middle	2291.008	.07	.05	.035				
Middle	2093.873	.07	.05	.035				
Middle	1897.550	.07	.05	.035				

Middle	1701.250	.02	.05	.035				
Middle	1494.809	.07	.02	.05	.035			
Middle	1302.462	.07	.02	.07	.02	.05	.02	.035
Middle	1186.241	.07	.02	.07	.02	.05	.035	
Middle	983.852	.02	.07	.035	.07	.02	.05	.035
Middle	809.691	.02	.07	.035	.07	.02	.05	.035
Middle	645.940	.02	.07	.02	.05	.035		
Middle	445.567	.035	.02	.07	.035	.05	.035	
Middle	236.129	.07	.05	.035				

SUMMARY OF REACH LENGTHS

River: San Juan

Reach	River Sta.	Left	Channel	Right
Middle	3288.713	200.03	187.87	156.08
Middle	3100.847	154.4	175.03	193.83
Middle	2925.817	192.48	217.14	231.53
Middle	2708.681	198.27	220.74	244.45
Middle	2487.946	179.39	196.94	216.01
Middle	2291.008	195.93	197.13	191.6
Middle	2093.873	210.18	196.32	186.35
Middle	1897.550	190.27	196.3	217.1
Middle	1701.250	203.51	206.44	198.52
Middle	1494.809	212.58	192.35	175.17
Middle	1302.462	116.82	116.22	118.65
Middle	1186.241	184.9	202.39	220.04
Middle	983.852	165.21	174.16	184.96
Middle	809.691	154.77	163.75	172.54
Middle	645.940	200.24	200.37	215.03
Middle	445.567	195.88	209.44	196.54
Middle	236.129	0	0	0

SUMMARY OF CONTRACTION AND EXPANSION COEFFICIENTS
River: San Juan

Reach	River Sta.	Contr.	Expan.
Middle	3288.713	.1	.3
Middle	3100.847	.1	.3
Middle	2925.817	.1	.3
Middle	2708.681	.1	.3
Middle	2487.946	.1	.3
Middle	2291.008	.1	.3
Middle	2093.873	.1	.3
Middle	1897.550	.1	.3
Middle	1701.250	.1	.3
Middle	1494.809	.1	.3
Middle	1302.462	.1	.3
Middle	1186.241	.1	.3
Middle	983.852	.1	.3

Middle	809.691	.1	.3
Middle	645.940	.1	.3
Middle	445.567	.1	.3
Middle	236.129	.1	.3

Profile Output Table - Standard Table 1

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
Middle	3288.713	Q50	19237.00	268.29	281.33	274.77	281.68	0.001055	4.88	4195.66	445.65	0.25
Middle	3288.713	Q100	30456.00	268.29	284.22	276.48	284.73	0.001166	5.96	5582.16	518.47	0.28
Middle	3288.713	Q100HC	76204.00	268.29	290.82	281.68	291.99	0.001699	9.28	9391.41	635.78	0.36
Middle	3100.847	Q50	19237.00	267.49	281.13		281.49	0.001009	4.93	4177.60	434.90	0.25
Middle	3100.847	Q100	30456.00	267.49	283.98		284.52	0.001158	6.09	5538.27	518.63	0.28
Middle	3100.847	Q100HC	76204.00	267.49	290.44		291.66	0.001759	9.56	9477.32	703.70	0.37
Middle	2925.817	Q50	19237.00	267.80	280.26		281.15	0.002885	8.11	2738.35	346.54	0.42
Middle	2925.817	Q100	30456.00	267.80	282.86		284.12	0.003258	9.87	3802.37	479.71	0.46
Middle	2925.817	Q100HC	76204.00	267.80	289.13		291.15	0.003682	13.42	7705.08	742.99	0.52
Middle	2708.681	Q50	19237.00	268.23	277.93	277.01	279.98	0.010500	12.20	1777.55	296.36	0.76
Middle	2708.681	Q100	30456.00	268.23	279.72	279.20	282.74	0.012228	15.05	2341.25	335.98	0.85
Middle	2708.681	Q100HC	76204.00	268.23	285.77	285.77	289.76	0.009842	18.60	5502.16	706.27	0.82
Middle	2487.946	Q50	19237.00	267.74	276.20		277.78	0.008552	10.76	2055.02	379.76	0.68
Middle	2487.946	Q100	30456.00	267.74	277.89		280.15	0.009783	13.13	2740.41	431.69	0.75
Middle	2487.946	Q100HC	76204.00	267.74	283.44	282.78	286.63	0.008285	16.44	5940.38	723.91	0.75
Middle	2291.008	Q50	19237.00	264.68	273.60	273.33	275.72	0.012508	12.86	1807.38	375.74	0.82
Middle	2291.008	Q100	30456.00	264.68	275.82		278.17	0.010474	13.96	2728.04	454.42	0.78
Middle	2291.008	Q100HC	76204.00	264.68	282.74		285.01	0.005948	15.00	7039.14	778.44	0.65
Middle	2093.873	Q50	19237.00	261.59	272.02		273.63	0.007992	11.79	2096.68	378.52	0.68
Middle	2093.873	Q100	30456.00	261.59	274.67		276.38	0.006539	12.59	3226.04	474.24	0.64
Middle	2093.873	Q100HC	76204.00	261.59	282.18		283.91	0.003946	13.52	7917.91	761.74	0.54
Middle	1897.550	Q50	19237.00	258.23	271.75		272.58	0.002514	7.80	2901.63	385.61	0.40
Middle	1897.550	Q100	30456.00	258.23	274.24		275.39	0.002879	9.46	3984.63	486.32	0.44
Middle	1897.550	Q100HC	76204.00	258.23	281.80		283.22	0.002344	11.30	8853.50	782.94	0.42
Middle	1701.250	Q50	19237.00	260.48	271.01		271.94	0.004082	8.66	2689.00	416.42	0.49
Middle	1701.250	Q100	30456.00	260.48	273.59		274.74	0.003840	9.83	3866.97	495.83	0.49
Middle	1701.250	Q100HC	76204.00	260.48	281.28		282.72	0.002690	11.36	8457.22	694.93	0.45
Middle	1494.809	Q50	19237.00	259.46	269.36		270.80	0.007209	11.17	2263.36	438.92	0.64
Middle	1494.809	Q100	30456.00	259.46	272.83		273.93	0.003925	10.18	3999.21	545.63	0.50
Middle	1494.809	Q100HC	76204.00	259.46	281.10		282.15	0.001926	9.94	9593.04	824.13	0.38
Middle	1302.462	Q50	19237.00	257.98	269.23		269.79	0.002378	6.62	3426.53	487.51	0.35
Middle	1302.462	Q100	30456.00	257.98	272.71		273.27	0.001792	6.76	5480.97	656.86	0.31
Middle	1302.462	Q100HC	76204.00	257.98	281.02		281.73	0.001371	7.63	11604.46	830.73	0.28
Middle	1186.241	Q50	19237.00	254.48	269.24		269.54	0.000972	5.35	4806.56	609.99	0.25
Middle	1186.241	Q100	30456.00	254.48	272.72		273.06	0.000842	5.78	7087.00	695.27	0.24
Middle	1186.241	Q100HC	76204.00	254.48	281.01		281.56	0.000863	7.59	13523.10	872.32	0.26

Middle	983.852	Q50	19237.00	249.80	269.18		269.38	0.000492	4.50	6208.70	697.20	0.19
Middle	983.852	Q100	30456.00	249.80	272.68		272.90	0.000474	4.98	8813.75	786.57	0.19
Middle	983.852	Q100HC	76204.00	249.80	281.01		281.38	0.000478	6.22	16042.66	970.16	0.20
Middle	809.691	Q50	19237.00	248.93	269.00		269.27	0.000629	5.12	5539.32	696.38	0.21
Middle	809.691	Q100	30456.00	248.93	272.53		272.81	0.000558	5.43	8239.45	808.56	0.21
Middle	809.691	Q100HC	76204.00	248.93	280.89		281.30	0.000525	6.54	15658.23	996.64	0.21
Middle	645.940	Q50	19237.00	248.38	268.92		269.17	0.000547	4.59	5538.38	653.35	0.20
Middle	645.940	Q100	30456.00	248.38	272.43		272.72	0.000520	5.07	8158.33	824.15	0.20
Middle	645.940	Q100HC	76204.00	248.38	280.79		281.21	0.000519	6.35	15738.38	1011.31	0.21
Middle	445.567	Q50	19237.00	247.72	268.71		269.05	0.000553	5.11	4783.61	480.06	0.20
Middle	445.567	Q100	30456.00	247.72	272.13		272.59	0.000654	6.17	6643.37	612.69	0.22
Middle	445.567	Q100HC	76204.00	247.72	280.42		281.06	0.000720	7.93	13272.00	944.07	0.25
Middle	236.129	Q50	19237.00	247.40	268.39	259.72	268.89	0.001001	6.78	4060.32	459.49	0.27
Middle	236.129	Q100	30456.00	247.40	271.85	263.39	272.42	0.001002	7.56	5899.21	596.73	0.28
Middle	236.129	Q100HC	76204.00	247.40	280.13	270.76	280.88	0.001001	9.28	12109.48	903.78	0.29

HEC-RAS Version 3.1.1 May 2003
U.S. Army Corp of Engineers
Hydrologic Engineering Center
609 Second Street, Suite D
Davis, California 95616-4687
(916) 756-1104

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X     X  XXXXXX    XXXX        XXXX       XX      XXXX
X     X  X        X    X       X   X     X  X    X
X     X  X        X            X   X    X    X   X
XXXXXXX  XXXX     X       XXX  XXXX     XXXXXX    XXXX
X     X  X        X            X  X     X    X        X
X     X  X        X    X       X   X    X    X        X
X     X  XXXXXX    XXXX        X    X   X    X   XXXXX
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PROJECT DATA
Project Title: Project Model HY1pier new
Project File : PMHY1Pnew.prj
Run Date and Time: 10/7/2003 8:17:36 PM

Project in English units

Project Description:
FEC-W at San Juan

PLAN DATA

Plan Title: Existing Flow/Existing Geometry
Plan File : c:\projects\2PDA0104\hydr\LHS\Modeling\Model H\PMHY1Pnew.p01

Geometry Title: Existing Conditions
Geometry File : c:\projects\2PDA0104\hydr\LHS\Modeling\Model H\PMHY1Pnew.g01

Flow Title : Existing Conditions
Flow File : c:\projects\2PDA0104\hydr\LHS\Modeling\Model H\PMHY1Pnew.f01

Plan Summary Information:

Number of:	Cross Sections	= 17	Mulitple Openings	=	0
	Culverts	= 0	Inline Structures	=	0
	Bridges	= 0	Lateral Structures	=	0

Computational Information

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

Computation Options
Critical depth computed only where necessary

Conveyance Calculation Method: At breaks in n values only
Friction Slope Method: Average Conveyance
Computational Flow Regime: Mixed Flow

FLOW DATA

Flow Title: Existing Conditions
Flow File : c:\projects\2PDA0104\hydr\LHS\Modeling\Model H\PMHY1Pnew.f01

Flow Data (cfs)

River	Reach	RS	Q2	Q5	Q10	Q25	Q50	Q100	Q100HC
San Juan	Middle	3288.713	364	2279	4713	12182	19237	30456	76204

Boundary Conditions

River	Reach	Profile	Upstream	Downstream
San Juan	Middle	Q2	Normal S = 0.001	Normal S = 0.001
San Juan	Middle	Q5	Normal S = 0.001	Normal S = 0.001
San Juan	Middle	Q10	Normal S = 0.001	Normal S = 0.001
San Juan	Middle	Q25	Normal S = 0.001	Normal S = 0.001
San Juan	Middle	Q50	Normal S = 0.001	Normal S = 0.001
San Juan	Middle	Q100	Normal S = 0.001	Normal S = 0.001
San Juan	Middle	Q100HC	Normal S = 0.001	Normal S = 0.001

GEOMETRY DATA

Geometry Title: Existing Conditions
Geometry File : c:\projects\2PDA0104\hydr\LHS\Modeling\Model H\PMHY1Pnew.g01

CROSS SECTION

RIVER: San Juan
REACH: Middle RS: 3288.713

INPUT
Description:
Station Elevation Data num= 64

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	299.83	3.94	296.98	10.52	292.4	12.26	291.42	15.15	290.32
19.46	288.96	26.25	287.53	37.73	286.5	38.69	286.41	48.92	285.44
62.09	284.28	75.69	283.49	103.89	282.14	111.14	281.63	115.67	280.88
119.12	280.29	121.8	279.44	139.09	273.7	140.14	273.26	140.34	273.21
143.47	272.41	154.81	269.56	158.56	269.35	159.51	269.28	160.97	269.18
168.57	268.64	173.26	268.29	195.42	268.48	245.44	269.11	262.38	269.61
271.89	269.74	282.95	269.88	291.84	270	372.43	270	403.89	270.71
406.05	270.71	466.66	272.38	499.62	275.81	504.36	276.29	505.83	276.43
515.55	277.4	520.58	277.98	534.76	279.31	553.61	281.01	558.88	281.35
570.54	282.89	571.44	283	600.42	286.49	616.22	288.61	624.22	289.53
629.89	289.86	708.99	293.69	837.48	299.74	850.97	300.45	933.92	307.06

958.08	309.14	982.52	310.23	989.52	310.62	992.36	310.67	1070.17	311.75
1099.26	312.14	1100.14	312.14	1102.7	312.14	1257.57	311.18		

Manning's n Values num= 2

Sta	n Val	Sta	n Val
0	.07	37.73	.05

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
143.47	466.66	200.03	187.87 156.08	.1	.3

CROSS SECTION OUTPUT Profile #Q50

			Left OB	Channel	Right OB
E.G. Elev (ft)	281.68	Element			
Vel Head (ft)	0.35	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	281.33	Reach Len. (ft)	200.03	187.87	156.08
Crit W.S. (ft)	274.77	Flow Area (sq ft)	125.98	3676.61	393.07
E.G. Slope (ft/ft)	0.001055	Area (sq ft)	125.98	3676.61	393.07
Q Total (cfs)	19237.00	Flow (cfs)	304.06	17936.50	996.45
Top Width (ft)	445.65	Top Width (ft)	30.53	323.19	91.93
Vel Total (ft/s)	4.58	Avg. Vel. (ft/s)	2.41	4.88	2.54
Max Chl Dpth (ft)	13.04	Hydr. Depth (ft)	4.13	11.38	4.28
Conv. Total (cfs)	592201.3	Conv. (cfs)	9360.3	552166.0	30675.1
Length Wtd. (ft)	186.60	Wetted Per. (ft)	31.87	323.63	92.37
Min Ch El (ft)	268.29	Shear (lb/sq ft)	0.26	0.75	0.28
Alpha	1.08	Stream Power (lb/ft s)	0.63	3.65	0.71
Frctn Loss (ft)	0.19	Cum Volume (acre-ft)	54.29	137.63	53.38
C & E Loss (ft)	0.00	Cum SA (acres)	10.67	11.38	10.55

CROSS SECTION OUTPUT Profile #Q100

			Left OB	Channel	Right OB
E.G. Elev (ft)	284.73	Element			
Vel Head (ft)	0.51	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	284.22	Reach Len. (ft)	200.03	187.87	156.08
Crit W.S. (ft)	276.48	Flow Area (sq ft)	280.31	4610.48	691.37
E.G. Slope (ft/ft)	0.001166	Area (sq ft)	280.31	4610.48	691.37
Q Total (cfs)	30456.00	Flow (cfs)	646.59	27496.77	2312.64
Top Width (ft)	518.47	Top Width (ft)	80.36	323.19	114.92
Vel Total (ft/s)	5.46	Avg. Vel. (ft/s)	2.31	5.96	3.34
Max Chl Dpth (ft)	15.93	Hydr. Depth (ft)	3.49	14.27	6.02
Conv. Total (cfs)	891848.9	Conv. (cfs)	18934.3	805193.1	67721.5
Length Wtd. (ft)	186.07	Wetted Per. (ft)	81.80	323.63	115.54
Min Ch El (ft)	268.29	Shear (lb/sq ft)	0.25	1.04	0.44
Alpha	1.11	Stream Power (lb/ft s)	0.58	6.19	1.46
Frctn Loss (ft)	0.22	Cum Volume (acre-ft)	91.78	169.63	93.10
C & E Loss (ft)	0.00	Cum SA (acres)	14.52	11.38	13.73

CROSS SECTION OUTPUT Profile #Q100HC

			Left OB	Channel	Right OB
E.G. Elev (ft)	291.99	Element			
Vel Head (ft)	1.17	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	290.82	Reach Len. (ft)	200.03	187.87	156.08
Crit W.S. (ft)	281.68	Flow Area (sq ft)	1016.10	6741.85	1633.47
E.G. Slope (ft/ft)	0.001699	Area (sq ft)	1016.10	6741.85	1633.47
Q Total (cfs)	76204.00	Flow (cfs)	5091.69	62531.15	8581.16
Top Width (ft)	635.78	Top Width (ft)	129.62	323.19	182.97
Vel Total (ft/s)	8.11	Avg. Vel. (ft/s)	5.01	9.28	5.25
Max Chl Dpth (ft)	22.53	Hydr. Depth (ft)	7.84	20.86	8.93

Conv. Total (cfs)	1848572.0	Conv. (cfs)	123515.1	1516893.0	208163.6
Length Wtd. (ft)	185.58	Wetted Per. (ft)	131.66	323.63	183.95
Min Ch El (ft)	268.29	Shear (lb/sq ft)	0.82	2.21	0.94
Alpha	1.14	Stream Power (lb/ft s)	4.10	20.50	4.95
Frctn Loss (ft)	0.32	Cum Volume (acre-ft)	236.28	252.25	232.71
C & E Loss (ft)	0.00	Cum SA (acres)	23.33	11.38	22.63

CROSS SECTION

RIVER: San Juan
REACH: Middle RS: 3100.847

INPUT
Description:
Station Elevation Data num= 77

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	301.85	9.53	296.73	10.56	296.06	10.95	295.89	12.37	295.19
20.82	291.11	21.72	290.85	22.24	290.82	24.84	290.35	34.24	288.64
63.78	287.25	70.68	286.86	130.31	283.19	137.31	282.83	170.07	281.29
186.12	280.37	199.78	278.45	200.19	278.39	202.02	278.19	203.69	277.81
215.41	274.91	229.94	271.49	244.33	269.09	244.94	269.01	250.87	268.73
272.27	267.71	272.67	267.7	278.07	267.49	288.1	267.49	338.12	268.38
362.65	269.09	380.52	269.61	391.89	269.84	397.78	269.87	418.14	270.05
447.7	270.07	465.88	269.7	470.97	269.54	486.49	269.14	491.98	269.38
521.58	269.94	524.3	270.24	530.18	271	534.69	271.85	539	272.43
561.25	275.47	563.79	275.85	568.58	276.38	568.89	276.42	578.25	277.57
586.79	278.74	624.15	283	628.55	283.32	693.95	289.09	701.67	289.45
717.9	290.05	746.33	291.15	783.05	292.12	793.12	292.58	827.21	293.98
846.49	295.54	861.42	296.42	875.95	298.13	884.06	299.03	899.42	299.99
905.15	300.42	927.11	301.69	1007.16	307.46	1018.24	308.1	1025.36	308.47
1073.11	310.68	1127.63	311.36	1141.9	311.56	1155.11	311.7	1171.43	311.7
1229.52	311.45	1241.94	311.39						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.07	24.84	.05	1229.52	.02

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
229.94	534.69	154.4	175.03	193.83	.1	.3

CROSS SECTION OUTPUT Profile #Q50

E.G. Elev (ft)	281.49	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.36	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	281.13	Reach Len. (ft)	154.40	175.03	193.83
Crit W.S. (ft)		Flow Area (sq ft)	211.22	3639.31	327.07
E.G. Slope (ft/ft)	0.001009	Area (sq ft)	211.22	3639.31	327.07
Q Total (cfs)	19237.00	Flow (cfs)	471.67	17931.22	834.11
Top Width (ft)	434.90	Top Width (ft)	57.09	304.75	73.06
Vel Total (ft/s)	4.60	Avg. Vel. (ft/s)	2.23	4.93	2.55
Max Chl Dpth (ft)	13.64	Hydr. Depth (ft)	3.70	11.94	4.48
Conv. Total (cfs)	605631.3	Conv. (cfs)	14849.5	564522.0	26259.8
Length Wtd. (ft)	174.14	Wetted Per. (ft)	58.05	305.18	73.66
Min Ch El (ft)	267.49	Shear (lb/sq ft)	0.23	0.75	0.28
Alpha	1.09	Stream Power (lb/ft s)	0.51	3.70	0.71
Frctn Loss (ft)	0.28	Cum Volume (acre-ft)	53.51	121.85	52.09
C & E Loss (ft)	0.05	Cum SA (acres)	10.47	10.02	10.26

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.

CROSS SECTION OUTPUT Profile #Q100

		Element	Left OB	Channel	Right OB
E.G. Elev (ft)	284.52	Wt. n-Val.	0.050	0.050	0.050
Vel Head (ft)	0.53	Reach Len. (ft)	154.40	175.03	193.83
W.S. Elev (ft)	283.98	Flow Area (sq ft)	456.68	4508.57	573.03
Crit W.S. (ft)		Area (sq ft)	456.68	4508.57	573.03
E.G. Slope (ft/ft)	0.001158	Flow (cfs)	1168.22	27457.38	1830.41
Q Total (cfs)	30456.00	Top Width (ft)	112.51	304.75	101.37
Top Width (ft)	518.63	Avg. Vel. (ft/s)	2.56	6.09	3.19
Vel Total (ft/s)	5.50	Hydr. Depth (ft)	4.06	14.79	5.65
Max Chl Dpth (ft)	16.49	Conv. (cfs)	34322.6	806704.8	53777.8
Conv. Total (cfs)	894805.2	Wetted Per. (ft)	113.55	305.18	102.11
Length Wtd. (ft)	173.84	Shear (lb/sq ft)	0.29	1.07	0.41
Min Ch El (ft)	267.49	Stream Power (lb/ft s)	0.74	6.51	1.30
Alpha	1.13	Cum Volume (acre-ft)	90.09	149.97	90.84
Frctn Loss (ft)	0.32	Cum SA (acres)	14.08	10.02	13.34
C & E Loss (ft)	0.07				

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

CROSS SECTION OUTPUT Profile #Q100HC

		Element	Left OB	Channel	Right OB
E.G. Elev (ft)	291.66	Wt. n-Val.	0.050	0.050	0.050
Vel Head (ft)	1.22	Reach Len. (ft)	154.40	175.03	193.83
W.S. Elev (ft)	290.44	Flow Area (sq ft)	1524.16	6477.00	1476.16
Crit W.S. (ft)		Area (sq ft)	1524.16	6477.00	1476.16
E.G. Slope (ft/ft)	0.001759	Flow (cfs)	7203.94	61889.64	7110.42
Q Total (cfs)	76204.00	Top Width (ft)	205.61	304.75	193.34
Top Width (ft)	703.70	Avg. Vel. (ft/s)	4.73	9.56	4.82
Vel Total (ft/s)	8.04	Hydr. Depth (ft)	7.41	21.25	7.64
Max Chl Dpth (ft)	22.95	Conv. (cfs)	171748.1	1475503.0	169518.5
Conv. Total (cfs)	1816769.0	Wetted Per. (ft)	206.94	305.18	194.33
Length Wtd. (ft)	173.62	Shear (lb/sq ft)	0.81	2.33	0.83
Min Ch El (ft)	267.49	Stream Power (lb/ft s)	3.82	22.27	4.02
Alpha	1.21	Cum Volume (acre-ft)	230.45	223.74	227.14
Frctn Loss (ft)	0.43	Cum SA (acres)	22.56	10.02	21.96
C & E Loss (ft)	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 conveyance ratio (upstream 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: San Juan

REACH: Middle RS: 2925.817

INPUT
Description:
Station Elevation Data num= 55

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	305.86	.23	305.72	6.42	302.44	11.87	300	15.61	299
23.51	297.38	43.43	294.63	70.46	290.95	77.65	289.85	82.63	289.36
84.86	289.14	111.55	287.05	148.04	284.54	156.48	283.99	162.08	283.67
239.78	279.77	255.13	278.96	262.26	278.62	281.35	276.75	293.71	275.83
336.86	272.42	337.44	272.38	357.85	271.45	361.53	271.16	373.2	270.18
391.91	269.58	400.9	269.29	429.13	268.24	452.57	267.8	498.04	267.87
499.94	267.93	502.87	268.2	503.27	268.24	516.88	269.08	523.46	269.9
532.45	271.1	538.61	272.57	565.87	278.96	571.6	279.82	580.15	280.58
665.32	283.07	709.1	284.25	781.21	287.16	840.55	289.66	863.76	289.98
864.73	290.03	867.1	290.21	917.25	294.92	977.9	299.9	980.61	300.04
1013.11	301.12	1020.52	301.59	1106.68	303.72	1146.26	304.74	1180.46	305.69

Manning's n Values num= 2

Sta	n Val	Sta	n Val
0	.07	82.63	.05

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
361.53	532.45	192.48	217.14 231.53	.1	.3

CROSS SECTION OUTPUT Profile #Q50

			Left OB	Channel	Right OB
E.G. Elev (ft)	281.15	Element			
Vel Head (ft)	0.89	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	280.26	Reach Len. (ft)	192.48	217.14	231.53
Crit W.S. (ft)		Flow Area (sq ft)	597.44	1960.39	180.52
E.G. Slope (ft/ft)	0.002885	Area (sq ft)	597.44	1960.39	180.52
Q Total (cfs)	19237.00	Flow (cfs)	2611.28	15899.30	726.42
Top Width (ft)	346.54	Top Width (ft)	131.52	170.92	44.10
Vel Total (ft/s)	7.03	Avg. Vel. (ft/s)	4.37	8.11	4.02
Max Chl Dpth (ft)	12.46	Hydr. Depth (ft)	4.54	11.47	4.09
Conv. Total (cfs)	358152.2	Conv. (cfs)	48616.5	296011.2	13524.5
Length Wtd. (ft)	213.92	Wetted Per. (ft)	131.85	171.17	45.10
Min Ch El (ft)	267.80	Shear (lb/sq ft)	0.82	2.06	0.72
Alpha	1.17	Stream Power (lb/ft s)	3.57	16.73	2.90
Frctn Loss (ft)	1.06	Cum Volume (acre-ft)	52.08	110.60	50.96
C & E Loss (ft)	0.12	Cum SA (acres)	10.14	9.07	10.00

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

CROSS SECTION OUTPUT Profile #Q100

			Left OB	Channel	Right OB
E.G. Elev (ft)	284.12	Element			
Vel Head (ft)	1.26	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	282.86	Reach Len. (ft)	192.48	217.14	231.53
Crit W.S. (ft)		Flow Area (sq ft)	1005.95	2404.06	392.36
E.G. Slope (ft/ft)	0.003258	Area (sq ft)	1005.95	2404.06	392.36
Q Total (cfs)	30456.00	Flow (cfs)	5302.63	23738.55	1414.82

Top Width (ft)	479.71	Top Width (ft)	183.23	170.92	125.55
Vel Total (ft/s)	8.01	Avg. Vel. (ft/s)	5.27	9.87	3.61
Max Chl Dpth (ft)	15.06	Hydr. Depth (ft)	5.49	14.07	3.13
Conv. Total (cfs)	533577.9	Conv. (cfs)	92900.1	415890.7	24787.1
Length Wtd. (ft)	213.09	Wetted Per. (ft)	183.63	171.17	126.60
Min Ch El (ft)	267.80	Shear (lb/sq ft)	1.11	2.86	0.63
Alpha	1.27	Stream Power (lb/ft s)	5.87	28.21	2.27
Frctn Loss (ft)	1.21	Cum Volume (acre-ft)	87.50	136.08	88.69
C & E Loss (ft)	0.18	Cum SA (acres)	13.55	9.07	12.84

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 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 #Q100HC

E.G. Elev (ft)	291.15	Element	Left OB	Channel	Right OB
Vel Head (ft)	2.02	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	289.13	Reach Len. (ft)	192.48	217.14	231.53
Crit W.S. (ft)		Flow Area (sq ft)	2470.83	3476.45	1757.80
E.G. Slope (ft/ft)	0.003682	Area (sq ft)	2470.83	3476.45	1757.80
Q Total (cfs)	76204.00	Flow (cfs)	19157.02	46667.89	10379.09
Top Width (ft)	742.99	Top Width (ft)	276.55	170.92	295.53
Vel Total (ft/s)	9.89	Avg. Vel. (ft/s)	7.75	13.42	5.90
Max Chl Dpth (ft)	21.33	Hydr. Depth (ft)	8.93	20.34	5.95
Conv. Total (cfs)	1255810.0	Conv. (cfs)	315699.7	769067.4	171043.2
Length Wtd. (ft)	212.01	Wetted Per. (ft)	277.16	171.17	296.69
Min Ch El (ft)	267.80	Shear (lb/sq ft)	2.05	4.67	1.36
Alpha	1.33	Stream Power (lb/ft s)	15.89	62.67	8.04
Frctn Loss (ft)	1.20	Cum Volume (acre-ft)	223.37	203.75	219.95
C & E Loss (ft)	0.20	Cum SA (acres)	21.71	9.07	20.87

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

CROSS SECTION

RIVER: San Juan
REACH: Middle RS: 2708.681

INPUT
Description:
Station Elevation Data num= 59

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	314.13	3.41	312.77	18.07	308.42	21.86	307.38	26.78	306.34
31.91	304.98	40.44	302	54.3	298.63	80.03	293.1	91.59	291.52
98.48	290.55	137.02	288.01	139.76	287.81	154.99	286.72	159.05	286.45
213.56	283.49	223.19	282.9	287.27	279.99	300	279.52	336.97	277.56
380.68	274.97	427.18	272.21	451.08	271.12	472.39	270.24	472.84	270.22

492.41	269.93	492.67	269.93	505.12	269.67	512.48	269.9	549.96	270.48
597.21	268.47	601.94	268.23	603.31	268.4	603.52	268.43	605.57	269.08
607.41	269.51	613.85	271.04	619.07	273.9	627.48	278.54	629.92	279.56
635.96	280.91	640.14	281.96	645.52	282.2	650.2	282.43	698.08	281.79
713.62	281.59	717.65	281.64	788.51	282.68	790.04	282.72	867.3	285.4
935.34	287.8	953.57	288.67	970.64	289.21	989.93	290.08	1008.38	290.86
1100.06	297.62	1149.17	299.97	1160.6	300.45	1164.7	300.54		

Manning's n Values num= 2

Sta	n Val	Sta	n Val
0	.07	139.76	.05

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
451.08	613.85	198.27	220.74 244.45	.1	.3

CROSS SECTION OUTPUT Profile #Q50

			Left OB	Channel	Right OB
E.G. Elev (ft)	279.98	Element			
Vel Head (ft)	2.05	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	277.93	Reach Len. (ft)	198.27	220.74	244.45
Crit W.S. (ft)	277.01	Flow Area (sq ft)	425.50	1308.85	43.21
E.G. Slope (ft/ft)	0.010500	Area (sq ft)	425.50	1308.85	43.21
Q Total (cfs)	19237.00	Flow (cfs)	2992.00	15969.91	275.10
Top Width (ft)	296.36	Top Width (ft)	121.07	162.77	12.52
Vel Total (ft/s)	10.82	Avg. Vel. (ft/s)	7.03	12.20	6.37
Max Chl Dpth (ft)	9.70	Hydr. Depth (ft)	3.51	8.04	3.45
Conv. Total (cfs)	187734.9	Conv. (cfs)	29199.0	155851.2	2684.7
Length Wtd. (ft)	217.58	Wetted Per. (ft)	121.26	163.19	14.29
Min Ch El (ft)	268.23	Shear (lb/sq ft)	2.30	5.26	1.98
Alpha	1.13	Stream Power (lb/ft s)	16.17	64.15	12.62
Frctn Loss (ft)	2.06	Cum Volume (acre-ft)	49.82	102.45	50.37
C & E Loss (ft)	0.14	Cum SA (acres)	9.58	8.24	9.85

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 OUTPUT Profile #Q100

			Left OB	Channel	Right OB
E.G. Elev (ft)	282.74	Element			
Vel Head (ft)	3.02	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	279.72	Reach Len. (ft)	198.27	220.74	244.45
Crit W.S. (ft)	279.20	Flow Area (sq ft)	672.33	1599.94	68.93
E.G. Slope (ft/ft)	0.012228	Area (sq ft)	672.33	1599.94	68.93
Q Total (cfs)	30456.00	Flow (cfs)	5834.90	24084.85	536.25
Top Width (ft)	335.97	Top Width (ft)	156.43	162.77	16.77
Vel Total (ft/s)	13.01	Avg. Vel. (ft/s)	8.68	15.05	7.78
Max Chl Dpth (ft)	11.49	Hydr. Depth (ft)	4.30	9.83	4.11
Conv. Total (cfs)	275417.4	Conv. (cfs)	52765.7	217802.3	4849.4
Length Wtd. (ft)	216.69	Wetted Per. (ft)	156.67	163.19	18.92
Min Ch El (ft)	268.23	Shear (lb/sq ft)	3.28	7.48	2.78
Alpha	1.15	Stream Power (lb/ft s)	28.43	112.67	21.63
Frctn Loss (ft)	2.36	Cum Volume (acre-ft)	83.79	126.10	87.47
C & E Loss (ft)	0.23	Cum SA (acres)	12.80	8.24	12.46

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

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.

This may indicate the need for additional cross sections.

CROSS SECTION OUTPUT Profile #Q100HC

			Left OB	Channel	Right OB
E.G. Elev (ft)	289.76	Element			
Vel Head (ft)	3.99	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	285.77	Reach Len. (ft)	198.27	220.74	244.45
Crit W.S. (ft)	285.77	Flow Area (sq ft)	2012.92	2585.30	903.94
E.G. Slope (ft/ft)	0.009842	Area (sq ft)	2012.92	2585.30	903.94
Q Total (cfs)	76204.00	Flow (cfs)	22109.66	48077.44	6016.90
Top Width (ft)	706.27	Top Width (ft)	279.53	162.77	263.97
Vel Total (ft/s)	13.85	Avg. Vel. (ft/s)	10.98	18.60	6.66
Max Chl Dpth (ft)	17.54	Hydr. Depth (ft)	7.20	15.88	3.42
Conv. Total (cfs)	768149.5	Conv. (cfs)	222869.2	484628.9	60651.4
Length Wtd. (ft)	215.20	Wetted Per. (ft)	279.92	163.19	266.46
Min Ch El (ft)	268.23	Shear (lb/sq ft)	4.42	9.73	2.08
Alpha	1.34	Stream Power (lb/ft s)	48.53	181.01	13.87
Frctn Loss (ft)	1.95	Cum Volume (acre-ft)	213.47	188.64	212.87
C & E Loss (ft)	0.23	Cum SA (acres)	20.48	8.24	19.38

Warning: The energy equation could not be balanced within the specified number of iterations. The program selected the water surface that had the least amount of error between computed and assumed values.

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

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

Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water 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: San Juan
REACH: Middle RS: 2487.946

INPUT
Description:
Station Elevation Data num= 61

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	302.79	3.85	302.39	7.33	301.86	9	301.32	16.83	299.23
29.52	293.14	33.87	290.83	34.91	290.52	42.11	288.54	46.78	287.46
57.88	285.92	74.39	283.64	82.9	282.45	86.03	282.11	109.77	280.27
122.33	279.67	170.44	277.86	287.88	273.79	339.29	272.25	388.88	270.21
394.16	270	440.86	268.1	448.61	268.03	478.51	267.74	506.65	268.46
518.75	268.42	538.09	268.12	539.65	268.11	540.12	268.08	540.74	268.11
576.92	268.75	580.72	268.82	581.79	269.11	585.33	270	589.84	271.32
590.14	271.38	591.4	272.11	599.55	277.13	600.05	277.43	600.2	277.49
608.8	280.67	611.04	281.3	614.99	281.64	621.43	282.38	634.27	282.18
635.38	282.16	635.9	282.12	692.25	280.25	703.47	279.97	735.47	280.09
755.02	280.41	771.7	281.11	795.47	283.18	824.47	284.92	842.18	286.52
905.97	290.25	906.95	290.31	907.26	290.32	907.8	290.37	935.8	292.58
964.74	294.88								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.07	57.88	.05	935.8	.035

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
394.16	585.33	179.39	196.94 216.01	.1	.3

CROSS SECTION OUTPUT Profile #Q50

E.G. Elev (ft)	277.78	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.58	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	276.20	Reach Len. (ft)	179.39	196.94	216.01
Crit W.S. (ft)		Flow Area (sq ft)	526.34	1483.23	45.66
E.G. Slope (ft/ft)	0.008550	Area (sq ft)	526.34	1483.23	45.66
Q Total (cfs)	19237.00	Flow (cfs)	3002.26	15962.20	272.55
Top Width (ft)	379.77	Top Width (ft)	175.89	191.17	12.71
Vel Total (ft/s)	9.36	Avg. Vel. (ft/s)	5.70	10.76	5.97
Max Chl Dpth (ft)	8.46	Hydr. Depth (ft)	2.99	7.76	3.59
Conv. Total (cfs)	208044.2	Conv. (cfs)	32468.8	172627.9	2947.6
Length Wtd. (ft)	195.83	Wetted Per. (ft)	176.00	191.38	14.26
Min Ch El (ft)	267.74	Shear (lb/sq ft)	1.60	4.14	1.71
Alpha	1.16	Stream Power (lb/ft s)	9.11	44.52	10.20
Frctn Loss (ft)	2.01	Cum Volume (acre-ft)	47.65	95.38	50.12
C & E Loss (ft)	0.05	Cum SA (acres)	8.91	7.34	9.78

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

Warning: The energy loss was greater than 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 #Q100

E.G. Elev (ft)	280.16	Element	Left OB	Channel	Right OB
Vel Head (ft)	2.26	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	277.90	Reach Len. (ft)	179.39	196.94	216.01
Crit W.S. (ft)		Flow Area (sq ft)	865.83	1807.18	69.66
E.G. Slope (ft/ft)	0.009761	Area (sq ft)	865.83	1807.18	69.66
Q Total (cfs)	30456.00	Flow (cfs)	6245.58	23705.36	505.06
Top Width (ft)	431.84	Top Width (ft)	224.70	191.17	15.97
Vel Total (ft/s)	11.10	Avg. Vel. (ft/s)	7.21	13.12	7.25
Max Chl Dpth (ft)	10.16	Hydr. Depth (ft)	3.85	9.45	4.36
Conv. Total (cfs)	308264.8	Conv. (cfs)	63215.5	239937.3	5112.0
Length Wtd. (ft)	194.97	Wetted Per. (ft)	224.84	191.38	17.95
Min Ch El (ft)	267.74	Shear (lb/sq ft)	2.35	5.75	2.36
Alpha	1.18	Stream Power (lb/ft s)	16.93	75.48	17.14
Frctn Loss (ft)	1.98	Cum Volume (acre-ft)	80.29	117.47	87.08
C & E Loss (ft)	0.01	Cum SA (acres)	11.94	7.34	12.37

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 #Q100HC

E.G. Elev (ft)	286.62	Element	Left OB	Channel	Right OB
Vel Head (ft)	3.22	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	283.40	Reach Len. (ft)	179.39	196.94	216.01
Crit W.S. (ft)	282.78	Flow Area (sq ft)	2422.72	2859.50	632.56
E.G. Slope (ft/ft)	0.008380	Area (sq ft)	2422.72	2859.50	632.56
Q Total (cfs)	76204.00	Flow (cfs)	25497.00	47191.13	3515.87
Top Width (ft)	723.07	Top Width (ft)	318.06	191.17	213.83

Vel Total (ft/s)	12.88	Avg. Vel. (ft/s)	10.52	16.50	5.56
Max Chl Dpth (ft)	15.66	Hydr. Depth (ft)	7.62	14.96	2.96
Conv. Total (cfs)	832460.4	Conv. (cfs)	278531.9	515520.8	38407.7
Length Wtd. (ft)	192.25	Wetted Per. (ft)	318.41	191.38	216.61
Min Ch El (ft)	267.74	Shear (lb/sq ft)	3.98	7.82	1.53
Alpha	1.25	Stream Power (lb/ft s)	41.89	129.00	8.49
Frctn Loss (ft)	1.36	Cum Volume (acre-ft)	203.37	174.84	208.56
C & E Loss (ft)	0.27	Cum SA (acres)	19.12	7.34	18.04

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

CROSS SECTION

RIVER: San Juan
REACH: Middle RS: 2291.008

INPUT
Description:
Station Elevation Data num= 68

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	308.94	9.61	307.01	10.63	306.84	12.07	306.42	23.64	303.53
30.43	301.56	37.04	299.05	45.8	294.85	56.15	290.08	68.25	287.32
76.46	285.57	93.48	283.17	102.2	281.95	110.47	280.82	113.62	280.53
150.4	279.15	153.18	279.04	153.34	279.04	159.11	278.87	175.55	278.38
217.65	277.15	228.2	276.91	232.75	276.79	280.28	275.81	454.42	270.42
477.4	270	514.86	267.76	538.46	266.56	551.22	265.91	580.85	264.7
584.34	264.68	592.6	264.96	610.86	265.26	650.93	267.19	657.57	267.5
670.28	268.11	678.27	268.49	681.99	268.59	687.22	268.89	711.34	269.58
717.56	270.89	721.02	271.57	729.62	274.33	738.62	277.27	743.6	279.09
744.77	279.33	753.15	281.02	756.01	281.24	763.91	281.96	770.73	281.89
780.54	281.85	799.2	280.94	837.03	278.9	855.71	279.21	859.25	279.49
872.39	281.89	872.5	281.9	872.62	281.94	889.51	287.54	895.91	289.18
897.44	289.64	900.28	290.51	905.01	291.04	907.22	291.23	923.07	291.59
923.46	291.6	924.12	291.63	934.83	291.77				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.07	93.48	.05	897.44	.035

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
514.86	657.57	195.93	197.13	191.6	.1	.3

CROSS SECTION OUTPUT Profile #Q50

E.G. Elev (ft)	275.72	Element	Left OB	Channel	Right OB
Vel Head (ft)	2.12	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	273.60	Reach Len. (ft)	195.93	197.13	191.60
Crit W.S. (ft)	273.33	Flow Area (sq ft)	418.22	1087.57	301.14
E.G. Slope (ft/ft)	0.012517	Area (sq ft)	418.22	1087.57	301.14
Q Total (cfs)	19237.00	Flow (cfs)	2602.56	13994.60	2639.84
Top Width (ft)	375.70	Top Width (ft)	163.21	142.71	69.78
Vel Total (ft/s)	10.65	Avg. Vel. (ft/s)	6.22	12.87	8.77
Max Chl Dpth (ft)	8.92	Hydr. Depth (ft)	2.56	7.62	4.32
Conv. Total (cfs)	171945.7	Conv. (cfs)	23262.4	125087.6	23595.6

Length Wtd. (ft)	196.09	Wetted Per. (ft)	163.33	142.84	70.34
Min Ch El (ft)	264.68	Shear (lb/sq ft)	2.00	5.95	3.35
Alpha	1.20	Stream Power (lb/ft s)	12.45	76.56	29.33
Frctn Loss (ft)	1.94	Cum Volume (acre-ft)	45.71	89.57	49.26
C & E Loss (ft)	0.15	Cum SA (acres)	8.21	6.58	9.57

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 #Q100

E.G. Elev (ft)	278.17	Element	Left OB	Channel	Right OB
Vel Head (ft)	2.36	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	275.81	Reach Len. (ft)	195.93	197.13	191.60
Crit W.S. (ft)		Flow Area (sq ft)	856.55	1402.19	462.49
E.G. Slope (ft/ft)	0.010542	Area (sq ft)	856.55	1402.19	462.49
Q Total (cfs)	30456.00	Flow (cfs)	6197.21	19615.13	4643.66
Top Width (ft)	453.71	Top Width (ft)	234.44	142.71	76.57
Vel Total (ft/s)	11.19	Avg. Vel. (ft/s)	7.24	13.99	10.04
Max Chl Dpth (ft)	11.13	Hydr. Depth (ft)	3.65	9.83	6.04
Conv. Total (cfs)	296628.6	Conv. (cfs)	60358.3	191043.1	45227.3
Length Wtd. (ft)	195.90	Wetted Per. (ft)	234.59	142.84	77.48
Min Ch El (ft)	264.68	Shear (lb/sq ft)	2.40	6.46	3.93
Alpha	1.21	Stream Power (lb/ft s)	17.39	90.37	39.44
Frctn Loss (ft)	1.62	Cum Volume (acre-ft)	76.74	110.21	85.76
C & E Loss (ft)	0.19	Cum SA (acres)	10.99	6.58	12.14

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

CROSS SECTION OUTPUT Profile #Q100HC

E.G. Elev (ft)	284.98	Element	Left OB	Channel	Right OB
Vel Head (ft)	2.31	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	282.67	Reach Len. (ft)	195.93	197.13	191.60
Crit W.S. (ft)		Flow Area (sq ft)	3284.48	2382.20	1323.35
E.G. Slope (ft/ft)	0.006070	Area (sq ft)	3284.48	2382.20	1323.35
Q Total (cfs)	76204.00	Flow (cfs)	30047.80	36003.26	10152.94
Top Width (ft)	777.80	Top Width (ft)	417.83	142.71	217.26
Vel Total (ft/s)	10.90	Avg. Vel. (ft/s)	9.15	15.11	7.67
Max Chl Dpth (ft)	17.99	Hydr. Depth (ft)	7.86	16.69	6.09
Conv. Total (cfs)	978105.0	Conv. (cfs)	385674.1	462114.4	130316.5
Length Wtd. (ft)	195.66	Wetted Per. (ft)	418.19	142.84	219.40
Min Ch El (ft)	264.68	Shear (lb/sq ft)	2.98	6.32	2.29
Alpha	1.25	Stream Power (lb/ft s)	27.23	95.51	17.54
Frctn Loss (ft)	0.96	Cum Volume (acre-ft)	191.62	162.99	203.71
C & E Loss (ft)	0.17	Cum SA (acres)	17.60	6.58	16.97

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

CROSS SECTION

RIVER: San Juan
REACH: Middle RS: 2093.873

INPUT
Description:
Station Elevation Data num= 45

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	301.61	11.06	300.36	13.81	299.69	27.62	296.58	41.24	292.97
48.55	290.93	51.62	290.29	53.55	290.09	59.64	289.85	112.73	286.97
141.7	285.59	148.79	285.25	171.67	283.95	196.35	282.32	208.73	281.58
232.72	280.07	281.09	278.3	314.01	277.09	325.69	276.67	414.51	273.48
520	269.79	533.85	268.77	607.27	264.96	627.21	263.93	643.68	263.08
645.67	262.95	648.96	262.83	685.49	261.59	698.77	262	717.21	263.02
730.75	263.75	735.9	264.03	769.24	266.07	816.27	269.92	821.1	270.49
836.91	272.27	863.01	275.61	869.09	276.02	901.48	278.28	903.32	278.42
931.15	280.04	935.18	280.27	954.77	281.77	1007.99	285.69	1012.12	286.03

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.07	141.7	.05	931.15	.035

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
627.21	735.9	210.18	196.32	186.35	.1	.3

CROSS SECTION OUTPUT Profile #Q50

			Left OB	Channel	Right OB
E.G. Elev (ft)	273.63	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.62	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	272.01	Reach Len. (ft)	210.18	196.32	186.35
Crit W.S. (ft)		Flow Area (sq ft)	637.02	1015.52	439.95
E.G. Slope (ft/ft)	0.008033	Area (sq ft)	637.02	1015.52	439.95
Q Total (cfs)	19237.00	Flow (cfs)	4079.09	11991.39	3166.53
Top Width (ft)	378.10	Top Width (ft)	170.70	108.69	98.71
Vel Total (ft/s)	9.19	Avg. Vel. (ft/s)	6.40	11.81	7.20
Max Chl Dpth (ft)	10.42	Hydr. Depth (ft)	3.73	9.34	4.46
Conv. Total (cfs)	214628.3	Conv. (cfs)	45510.6	133788.6	35329.1
Length Wtd. (ft)	196.87	Wetted Per. (ft)	170.91	108.80	99.05
Min Ch El (ft)	261.59	Shear (lb/sq ft)	1.87	4.68	2.23
Alpha	1.23	Stream Power (lb/ft s)	11.97	55.28	16.03
Frctn Loss (ft)	0.82	Cum Volume (acre-ft)	43.34	84.81	47.63
C & E Loss (ft)	0.24	Cum SA (acres)	7.46	6.02	9.20

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 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 #Q100

			Left OB	Channel	Right OB
E.G. Elev (ft)	276.36	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.73	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	274.63	Reach Len. (ft)	210.18	196.32	186.35
Crit W.S. (ft)		Flow Area (sq ft)	1181.65	1300.18	725.96
E.G. Slope (ft/ft)	0.006636	Area (sq ft)	1181.65	1300.18	725.96

Q Total (cfs)	30456.00	Flow (cfs)	8166.90	16452.56	5836.54
Top Width (ft)	472.86	Top Width (ft)	244.72	108.69	119.45
Vel Total (ft/s)	9.49	Avg. Vel. (ft/s)	6.91	12.65	8.04
Max Chl Dpth (ft)	13.04	Hydr. Depth (ft)	4.83	11.96	6.08
Conv. Total (cfs)	373865.2	Conv. (cfs)	100253.4	201964.8	71646.9
Length Wtd. (ft)	197.16	Wetted Per. (ft)	244.97	108.80	119.96
Min Ch El (ft)	261.59	Shear (lb/sq ft)	2.00	4.95	2.51
Alpha	1.24	Stream Power (lb/ft s)	13.81	62.65	20.16
Frctn Loss (ft)	0.83	Cum Volume (acre-ft)	72.16	104.10	83.14
C & E Loss (ft)	0.17	Cum SA (acres)	9.91	6.02	11.71

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 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 #Q100HC

E.G. Elev (ft)	283.86	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.75	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	282.11	Reach Len. (ft)	210.18	196.32	186.35
Crit W.S. (ft)		Flow Area (sq ft)	3758.64	2112.79	1988.20
E.G. Slope (ft/ft)	0.004028	Area (sq ft)	3758.64	2112.79	1988.20
Q Total (cfs)	76204.00	Flow (cfs)	30191.56	28791.54	17220.90
Top Width (ft)	759.41	Top Width (ft)	427.29	108.69	223.44
Vel Total (ft/s)	9.70	Avg. Vel. (ft/s)	8.03	13.63	8.66
Max Chl Dpth (ft)	20.52	Hydr. Depth (ft)	8.80	19.44	8.90
Conv. Total (cfs)	1200633.0	Conv. (cfs)	475683.4	453625.3	271324.1
Length Wtd. (ft)	198.36	Wetted Per. (ft)	427.70	108.80	224.22
Min Ch El (ft)	261.59	Shear (lb/sq ft)	2.21	4.88	2.23
Alpha	1.20	Stream Power (lb/ft s)	17.75	66.55	19.32
Frctn Loss (ft)	0.61	Cum Volume (acre-ft)	175.78	152.82	196.43
C & E Loss (ft)	0.09	Cum SA (acres)	15.70	6.02	16.00

CROSS SECTION

RIVER: San Juan
REACH: Middle RS: 1897.550

INPUT
Description:
Station Elevation Data num= 48

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	301.44	17.89	301.26	18.12	301.26	21.83	300.87	37.56	299.24
38.27	299.13	71.72	291.95	72.86	291.62	73.32	291.54	83.35	290.2
97.18	288.24	102.43	287.84	170.15	282.63	181.97	281.88	212.85	280.46
249.19	279.12	304.8	277.08	312.81	276.87	323.58	276.48	499.78	270.55
518.35	268.74	521.52	268.41	542.62	265.56	564.93	262.77	590.12	259.87
599.09	259.49	625.77	258.37	628.41	258.25	634.86	258.23	659.57	258.33
681.99	259.27	701.79	260.13	709.29	260.38	716.42	260.99	737.42	262.78
777.03	265.98	805.65	268.58	823.99	269.83	849.1	271.69	871.14	273.84
892.93	275.45	938.62	278.84	951.35	280.01	966.77	281.81	1014.36	288.72
1023.64	289.49	1032.39	290.33	1038.29	290.49				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.07	249.19	.05	892.93	.035

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
564.93	737.42	190.27	196.3	217.1	.1	.3

CROSS SECTION OUTPUT Profile #Q50

			Left OB	Channel	Right OB
E.G. Elev (ft)	272.57	Element			
Vel Head (ft)	0.83	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	271.74	Reach Len. (ft)	190.27	196.30	217.10
Crit W.S. (ft)		Flow Area (sq ft)	339.14	2067.70	490.11
E.G. Slope (ft/ft)	0.002524	Area (sq ft)	339.14	2067.70	490.11
Q Total (cfs)	19237.00	Flow (cfs)	1135.88	16149.51	1951.61
Top Width (ft)	385.13	Top Width (ft)	100.46	172.49	112.18
Vel Total (ft/s)	6.64	Avg. Vel. (ft/s)	3.35	7.81	3.98
Max Chl Dpth (ft)	13.51	Hydr. Depth (ft)	3.38	11.99	4.37
Conv. Total (cfs)	382878.5	Conv. (cfs)	22607.7	321427.5	38843.3
Length Wtd. (ft)	198.89	Wetted Per. (ft)	100.95	172.84	112.54
Min Ch El (ft)	258.23	Shear (lb/sq ft)	0.53	1.89	0.69
Alpha	1.21	Stream Power (lb/ft s)	1.77	14.73	2.73
Frctn Loss (ft)	0.63	Cum Volume (acre-ft)	40.98	77.86	45.64
C & E Loss (ft)	0.01	Cum SA (acres)	6.80	5.38	8.75

CROSS SECTION OUTPUT Profile #Q100

			Left OB	Channel	Right OB
E.G. Elev (ft)	275.36	Element			
Vel Head (ft)	1.17	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	274.19	Reach Len. (ft)	190.27	196.30	217.10
Crit W.S. (ft)		Flow Area (sq ft)	675.31	2491.16	796.59
E.G. Slope (ft/ft)	0.002917	Area (sq ft)	675.31	2491.16	796.59
Q Total (cfs)	30456.00	Flow (cfs)	2677.73	23682.98	4095.29
Top Width (ft)	484.40	Top Width (ft)	173.41	172.49	138.50
Vel Total (ft/s)	7.68	Avg. Vel. (ft/s)	3.97	9.51	5.14
Max Chl Dpth (ft)	15.96	Hydr. Depth (ft)	3.89	14.44	5.75
Conv. Total (cfs)	563864.8	Conv. (cfs)	49575.7	438468.5	75820.6
Length Wtd. (ft)	199.40	Wetted Per. (ft)	173.94	172.84	138.98
Min Ch El (ft)	258.23	Shear (lb/sq ft)	0.71	2.63	1.04
Alpha	1.27	Stream Power (lb/ft s)	2.80	24.96	5.37
Frctn Loss (ft)	0.67	Cum Volume (acre-ft)	67.68	95.55	79.89
C & E Loss (ft)	0.00	Cum SA (acres)	8.90	5.38	11.16

CROSS SECTION OUTPUT Profile #Q100HC

			Left OB	Channel	Right OB
E.G. Elev (ft)	283.16	Element			
Vel Head (ft)	1.45	Wt. n-Val.	0.050	0.050	0.049
W.S. Elev (ft)	281.71	Reach Len. (ft)	190.27	196.30	217.10
Crit W.S. (ft)		Flow Area (sq ft)	2792.49	3788.18	2205.49
E.G. Slope (ft/ft)	0.002393	Area (sq ft)	2792.49	3788.18	2205.49
Q Total (cfs)	76204.00	Flow (cfs)	16559.84	43130.66	16513.50
Top Width (ft)	780.33	Top Width (ft)	379.32	172.49	228.52
Vel Total (ft/s)	8.67	Avg. Vel. (ft/s)	5.93	11.39	7.49
Max Chl Dpth (ft)	23.48	Hydr. Depth (ft)	7.36	21.96	9.65
Conv. Total (cfs)	1557803.0	Conv. (cfs)	338525.2	881699.9	337577.7
Length Wtd. (ft)	200.45	Wetted Per. (ft)	379.99	172.84	229.32
Min Ch El (ft)	258.23	Shear (lb/sq ft)	1.10	3.27	1.44

Alpha	1.24	Stream Power (lb/ft s)	6.51	37.28	10.76
Frctn Loss (ft)	0.51	Cum Volume (acre-ft)	159.97	139.52	187.46
C & E Loss (ft)	0.00	Cum SA (acres)	13.76	5.38	15.04

CROSS SECTION

RIVER: San Juan
REACH: Middle RS: 1701.250

INPUT
Description:
Station Elevation Data num= 61

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	301.78	3.26	301.62	9.7	301.24	44.24	300.02	52.03	299.71
54.59	299.53	55.57	299.37	58.9	299.02	113.38	292.48	139.84	290.09
140.72	290.02	141.13	289.98	151.37	289.46	228.14	285.44	233.99	285.12
236.25	285	244.8	284.55	246.69	284.45	273.22	283.08	324.9	280.01
341.66	279.26	352.78	278.7	378.14	277	411.92	274.71	425.36	273.68
429.36	273.54	502.62	269.89	522.05	268.61	555.14	265.71	572.46	264.16
596.79	262.62	607.7	261.92	610.7	261.7	611.2	261.66	611.5	261.65
649.71	260.48	680.93	260.62	691.62	260.68	696.69	260.69	698.97	260.8
710.81	261.21	753.32	262.73	792.49	264.01	805.53	264.45	806.26	264.48
807.32	264.55	823.35	265.65	854.08	267.78	886.15	270.01	924.46	273.66
928.63	274.06	946.04	275.46	958.25	276.55	986.75	279.23	994.29	280.17
996.82	280.59	999.26	281.63	1011.82	285.95	1018.89	288.3	1023.34	289.4
1027.18	290.01								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.02	236.25	.05	924.46	.035

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
596.79	753.32	203.51	206.44	198.52	.1 .3

CROSS SECTION OUTPUT Profile #Q50

			Left OB	Channel	Right OB
E.G. Elev (ft)	271.93	Element			
Vel Head (ft)	0.94	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	270.99	Reach Len. (ft)	203.51	206.44	198.52
Crit W.S. (ft)		Flow Area (sq ft)	462.26	1522.83	696.02
E.G. Slope (ft/ft)	0.004115	Area (sq ft)	462.26	1522.83	696.02
Q Total (cfs)	19237.00	Flow (cfs)	2208.27	13224.55	3804.18
Top Width (ft)	415.84	Top Width (ft)	116.21	156.53	143.10
Vel Total (ft/s)	7.18	Avg. Vel. (ft/s)	4.78	8.68	5.47
Max Chl Dpth (ft)	10.51	Hydr. Depth (ft)	3.98	9.73	4.86
Conv. Total (cfs)	299898.0	Conv. (cfs)	34426.2	206166.1	59305.7
Length Wtd. (ft)	204.52	Wetted Per. (ft)	116.53	156.62	143.36
Min Ch El (ft)	260.48	Shear (lb/sq ft)	1.02	2.50	1.25
Alpha	1.17	Stream Power (lb/ft s)	4.87	21.69	6.82
Frctn Loss (ft)	1.14	Cum Volume (acre-ft)	39.23	69.77	42.68
C & E Loss (ft)	0.06	Cum SA (acres)	6.33	4.64	8.12

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 energy loss was greater than 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 #Q100

E.G. Elev (ft)	274.69	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.16	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	273.53	Reach Len. (ft)	203.51	206.44	198.52
Crit W.S. (ft)		Flow Area (sq ft)	822.28	1920.50	1093.43
E.G. Slope (ft/ft)	0.003921	Area (sq ft)	822.28	1920.50	1093.43
Q Total (cfs)	30456.00	Flow (cfs)	4418.44	19004.34	7033.21
Top Width (ft)	493.50	Top Width (ft)	167.20	156.53	169.76
Vel Total (ft/s)	7.94	Avg. Vel. (ft/s)	5.37	9.90	6.43
Max Chl Dpth (ft)	13.05	Hydr. Depth (ft)	4.92	12.27	6.44
Conv. Total (cfs)	486379.2	Conv. (cfs)	70562.1	303497.4	112319.7
Length Wtd. (ft)	203.97	Wetted Per. (ft)	167.58	156.62	170.15
Min Ch El (ft)	260.48	Shear (lb/sq ft)	1.20	3.00	1.57
Alpha	1.19	Stream Power (lb/ft s)	6.45	29.70	10.12
Frctn Loss (ft)	0.82	Cum Volume (acre-ft)	64.41	85.61	75.18
C & E Loss (ft)	0.01	Cum SA (acres)	8.16	4.64	10.39

CROSS SECTION OUTPUT Profile #Q100HC

E.G. Elev (ft)	282.65	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.47	Wt. n-Val.	0.050	0.050	0.049
W.S. Elev (ft)	281.18	Reach Len. (ft)	203.51	206.44	198.52
Crit W.S. (ft)		Flow Area (sq ft)	2554.68	3118.68	2716.45
E.G. Slope (ft/ft)	0.002751	Area (sq ft)	2554.68	3118.68	2716.45
Q Total (cfs)	76204.00	Flow (cfs)	16897.53	35713.73	23592.74
Top Width (ft)	693.07	Top Width (ft)	291.64	156.53	244.89
Vel Total (ft/s)	9.08	Avg. Vel. (ft/s)	6.61	11.45	8.69
Max Chl Dpth (ft)	20.70	Hydr. Depth (ft)	8.76	19.92	11.09
Conv. Total (cfs)	1452865.0	Conv. (cfs)	322159.3	680898.8	449806.6
Length Wtd. (ft)	203.10	Wetted Per. (ft)	292.26	156.62	245.75
Min Ch El (ft)	260.48	Shear (lb/sq ft)	1.50	3.42	1.90
Alpha	1.15	Stream Power (lb/ft s)	9.93	39.16	16.49
Frctn Loss (ft)	0.47	Cum Volume (acre-ft)	148.30	123.96	175.20
C & E Loss (ft)	0.12	Cum SA (acres)	12.29	4.64	13.86

CROSS SECTION

RIVER: San Juan
REACH: Middle RS: 1494.809

INPUT
Description:
Station Elevation Data num= 70

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	301.35	6.54	300.68	12.26	300.07	41.18	297.58	42.1	297.53
42.65	297.48	44.58	297.3	107.7	291.56	109.69	291.42	122.26	290.51
149.57	288.99	187.28	286.29	250.35	281.56	268.22	280.3	270.41	280.2
305.93	278.46	316.45	278.11	326.72	278.14	384.52	276.74	397.54	276.49
397.99	276.48	404.35	276.32	436.23	273.11	442.98	272.51	466.38	270.45
474.27	270.02	497.03	269.44	520.51	268.4	545.13	267.64	566.04	267.09
607.73	264.39	620.98	263.5	634.55	262.64	637.08	262.41	639.13	262.27
655.61	261.27	665.6	260.77	670.68	260.48	683.18	260.2	703.38	259.46
708.78	259.47	749.74	259.64	759.22	260.23	765.79	260.73	774.64	261.29
781.56	261.73	810.61	264.33	817.07	264.7	824.06	264.75	851.03	265.66

861.2	266.13	903.44	267.13	913.25	267.67	916.45	267.89	930.83	268.89
944.91	269.84	948.5	269.98	955.89	270.67	999.07	273.87	999.54	273.91
1018.77	275.58	1063.59	279.15	1074.46	280.03	1075.84	280.17	1109.31	286.14
1114.03	286.96	1121.11	288.48	1131.28	289.64	1135.46	290.08	1135.84	290.09

Manning's n Values num= 4

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.07	397.54	.02	442.98	.05	999.54	.035

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
655.61	774.64	212.58	192.35	175.17	.1 .3

CROSS SECTION OUTPUT Profile #Q50

E.G. Elev (ft)	270.73	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.55	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	269.18	Reach Len. (ft)	212.58	192.35	175.17
Crit W.S. (ft)		Flow Area (sq ft)	521.95	1088.09	575.17
E.G. Slope (ft/ft)	0.007899	Area (sq ft)	521.95	1088.09	575.17
Q Total (cfs)	19237.00	Flow (cfs)	3125.18	12557.68	3554.15
Top Width (ft)	432.21	Top Width (ft)	152.70	119.03	160.48
Vel Total (ft/s)	8.80	Avg. Vel. (ft/s)	5.99	11.54	6.18
Max Chl Dpth (ft)	9.72	Hydr. Depth (ft)	3.42	9.14	3.58
Conv. Total (cfs)	216451.6	Conv. (cfs)	35164.0	141297.0	39990.7
Length Wtd. (ft)	193.62	Wetted Per. (ft)	152.92	119.12	160.73
Min Ch El (ft)	259.46	Shear (lb/sq ft)	1.68	4.50	1.76
Alpha	1.29	Stream Power (lb/ft s)	10.08	51.98	10.90
Frctn Loss (ft)	0.67	Cum Volume (acre-ft)	36.93	63.59	39.79
C & E Loss (ft)	0.31	Cum SA (acres)	5.70	3.99	7.42

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

CROSS SECTION OUTPUT Profile #Q100

E.G. Elev (ft)	273.86	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.13	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	272.73	Reach Len. (ft)	212.58	192.35	175.17
Crit W.S. (ft)		Flow Area (sq ft)	1201.72	1510.71	1233.01
E.G. Slope (ft/ft)	0.004080	Area (sq ft)	1201.72	1510.71	1233.01
Q Total (cfs)	30456.00	Flow (cfs)	7228.05	15596.02	7631.93
Top Width (ft)	543.18	Top Width (ft)	215.10	119.03	209.05
Vel Total (ft/s)	7.72	Avg. Vel. (ft/s)	6.01	10.32	6.19
Max Chl Dpth (ft)	13.27	Hydr. Depth (ft)	5.59	12.69	5.90
Conv. Total (cfs)	476782.5	Conv. (cfs)	113153.6	244152.5	119476.4
Length Wtd. (ft)	194.17	Wetted Per. (ft)	215.46	119.12	209.43
Min Ch El (ft)	259.46	Shear (lb/sq ft)	1.42	3.23	1.50
Alpha	1.22	Stream Power (lb/ft s)	8.55	33.35	9.28
Frctn Loss (ft)	0.45	Cum Volume (acre-ft)	59.68	77.48	69.88
C & E Loss (ft)	0.18	Cum SA (acres)	7.27	3.99	9.52

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 conveyance ratio (upstream 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 #Q100HC

E.G. Elev (ft)	282.06	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.07	Wt. n-Val.	0.047	0.050	0.049
W.S. Elev (ft)	280.99	Reach Len. (ft)	212.58	192.35	175.17
Crit W.S. (ft)		Flow Area (sq ft)	3628.82	2494.07	3382.71
E.G. Slope (ft/ft)	0.001977	Area (sq ft)	3628.82	2494.07	3382.71
Q Total (cfs)	76204.00	Flow (cfs)	26520.64	25034.55	24648.81
Top Width (ft)	822.03	Top Width (ft)	397.20	119.03	305.81
Vel Total (ft/s)	8.02	Avg. Vel. (ft/s)	7.31	10.04	7.29
Max Chl Dpth (ft)	21.53	Hydr. Depth (ft)	9.14	20.95	11.06
Conv. Total (cfs)	1713880.0	Conv. (cfs)	596467.2	563044.0	554368.6
Length Wtd. (ft)	194.68	Wetted Per. (ft)	397.82	119.12	306.56
Min Ch El (ft)	259.46	Shear (lb/sq ft)	1.13	2.58	1.36
Alpha	1.07	Stream Power (lb/ft s)	8.23	25.94	9.92
Frctn Loss (ft)	0.27	Cum Volume (acre-ft)	133.85	110.66	161.30
C & E Loss (ft)	0.13	Cum SA (acres)	10.68	3.99	12.60

CROSS SECTION

RIVER: San Juan
REACH: Middle RS: 1302.462

INPUT
Description:
Station Elevation Data num= 81

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	307.57	1.26	307.49	26.01	305.57	39.63	304.83	41.42	304.73
65.04	303.3	96.14	301.45	105.67	300.91	115.75	300.34	116.14	300.3
116.93	300.14	123.64	299.02	135.44	295.14	142.94	292.32	151.89	290.14
165.47	289.15	174.55	288.52	186.26	288.1	236.59	286.48	315.84	283.14
386.53	280.03	396.15	279.03	422.69	276.05	443.79	273.69	449.11	273.05
450.7	272.86	451.21	272.82	455.58	272.54	485.54	270.66	493.94	270.46
518.89	268.98	535.13	268.39	567.22	267.55	589.31	266.55	639.8	264.08
643.78	263.88	655.32	263.35	657.94	263.3	666.09	262.73	696.09	261.06
706.73	260.04	735.39	258.97	747.3	258.53	782.34	258.07	792.58	257.98
807.08	258.14	812.4	258.2	884.4	258.34	899.55	258.38	900.27	258.38
907.18	258.46	931.67	259.23	942.8	259.63	943.89	259.79	944.72	259.89
952.07	260.47	960.2	261.11	968.64	262.38	977.28	263.74	995.67	266.95
1002.05	267.45	1016.05	268.74	1017.08	268.83	1032.23	269.14	1060.63	270.03
1094.46	270.43	1117.05	270.61	1127.03	271.04	1165.61	273.97	1175.62	274.7
1184.56	275.36	1188.76	275.87	1188.83	275.88	1197.18	276.89	1203.46	277.72
1227.09	280.27	1241.59	281.2	1259.36	283.05	1275.96	284.73	1309.54	287.26
1320.92	288.09								

Manning's n Values num= 7

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.07	39.63	.02	105.67	.07	422.69	.02	449.11	.05
1175.62	.02	1188.83	.035						

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
735.39	931.67	116.82 116.22	118.65	.1	.3

CROSS SECTION OUTPUT Profile #Q50

E.G. Elev (ft)	269.75	Element	Left OB	Channel	Right OB

Vel Head (ft)	0.51	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	269.24	Reach Len. (ft)	116.82	116.22	118.65
Crit W.S. (ft)		Flow Area (sq ft)	1040.26	2135.48	484.24
E.G. Slope (ft/ft)	0.001925	Area (sq ft)	1040.26	2135.48	484.24
Q Total (cfs)	19237.00	Flow (cfs)	3808.63	13671.25	1757.13
Top Width (ft)	520.80	Top Width (ft)	220.84	196.28	103.67
Vel Total (ft/s)	5.26	Avg. Vel. (ft/s)	3.66	6.40	3.63
Max Chl Dpth (ft)	11.26	Hydr. Depth (ft)	4.71	10.88	4.67
Conv. Total (cfs)	438420.9	Conv. (cfs)	86800.5	311574.6	40045.8
Length Wtd. (ft)	116.76	Wetted Per. (ft)	221.11	196.31	104.31
Min Ch El (ft)	257.98	Shear (lb/sq ft)	0.57	1.31	0.56
Alpha	1.19	Stream Power (lb/ft s)	2.07	8.37	2.02
Frctn Loss (ft)	0.15	Cum Volume (acre-ft)	33.12	56.47	37.66
C & E Loss (ft)	0.07	Cum SA (acres)	4.79	3.29	6.89

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.

CROSS SECTION OUTPUT Profile #Q100

E.G. Elev (ft)	273.23	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.53	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	272.71	Reach Len. (ft)	116.82	116.22	118.65
Crit W.S. (ft)		Flow Area (sq ft)	1916.23	2816.08	1091.50
E.G. Slope (ft/ft)	0.001475	Area (sq ft)	1916.23	2816.08	1091.50
Q Total (cfs)	30456.00	Flow (cfs)	7832.79	18977.12	3646.09
Top Width (ft)	695.95	Top Width (ft)	282.39	196.28	217.28
Vel Total (ft/s)	5.23	Avg. Vel. (ft/s)	4.09	6.74	3.34
Max Chl Dpth (ft)	14.73	Hydr. Depth (ft)	6.79	14.35	5.02
Conv. Total (cfs)	792965.0	Conv. (cfs)	203937.6	494096.2	94931.2
Length Wtd. (ft)	116.88	Wetted Per. (ft)	282.75	196.31	218.01
Min Ch El (ft)	257.98	Shear (lb/sq ft)	0.62	1.32	0.46
Alpha	1.24	Stream Power (lb/ft s)	2.55	8.90	1.54
Frctn Loss (ft)	0.12	Cum Volume (acre-ft)	52.07	67.93	65.20
C & E Loss (ft)	0.07	Cum SA (acres)	6.05	3.29	8.67

CROSS SECTION OUTPUT Profile #Q100HC

E.G. Elev (ft)	281.67	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.65	Wt. n-Val.	0.049	0.050	0.049
W.S. Elev (ft)	281.02	Reach Len. (ft)	116.82	116.22	118.65
Crit W.S. (ft)		Flow Area (sq ft)	4586.07	4449.04	3285.38
E.G. Slope (ft/ft)	0.001001	Area (sq ft)	4586.07	4449.04	3285.38
Q Total (cfs)	76204.00	Flow (cfs)	26073.29	33497.62	16633.09
Top Width (ft)	874.93	Top Width (ft)	371.47	196.28	307.19
Vel Total (ft/s)	6.19	Avg. Vel. (ft/s)	5.69	7.53	5.06
Max Chl Dpth (ft)	23.04	Hydr. Depth (ft)	12.35	22.67	10.70
Conv. Total (cfs)	2408858.0	Conv. (cfs)	824193.4	1058881.0	525782.7
Length Wtd. (ft)	117.11	Wetted Per. (ft)	372.26	196.31	308.32
Min Ch El (ft)	257.98	Shear (lb/sq ft)	0.77	1.42	0.67
Alpha	1.09	Stream Power (lb/ft s)	4.38	10.66	3.37
Frctn Loss (ft)	0.09	Cum Volume (acre-ft)	113.81	95.33	147.89
C & E Loss (ft)	0.05	Cum SA (acres)	8.81	3.29	11.37

CROSS SECTION

RIVER: San Juan
REACH: Middle RS: 1186.241

INPUT
Description:
Station Elevation Data num= 75

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	320.83	4.66	320.15	21.18	317.73	48.36	314.66	54.64	313.8
71.47	311.5	80.37	310.54	86.57	309.81	94.34	308.28	95.62	307.96
112.28	303.69	115.37	302.8	124.07	299.73	128.6	297.43	140.63	291.78
143.03	291.12	146.01	290.06	152.44	289.3	155.15	289	158.82	288.69
191.23	286.94	239.74	285.24	254.46	284.73	261.72	284.47	296.81	283.07
313.47	282.41	356.97	280.57	371.07	280.01	377.21	279.45	409.79	276.76
450.29	273.42	450.77	273.38	471.68	271.88	509.78	269.33	542.76	267.13
630.46	262.56	678.99	260.4	713.45	258.97	721.12	258.52	738.43	257.77
747.42	257.36	763.95	256.58	786.55	255.88	793.62	255.61	823.12	254.48
844.21	254.74	858.62	254.78	894.7	256.48	900.55	256.76	919.6	257.85
927.33	258.31	964.42	260.19	980.35	261.61	1000.44	262.89	1014.52	263.78
1016.71	263.93	1018.13	263.98	1042.57	264.98	1065.49	265.64	1072.88	265.74
1081.76	265.74	1150.88	268.22	1158.53	268.6	1166.92	269.42	1189.88	271.35
1215.71	275.16	1217.43	275.41	1230.53	277.32	1247.07	279.41	1251.1	279.88
1256.44	280.23	1280.3	281.64	1321.82	283.98	1355.43	285.52	1365.96	286.04

Manning's n Values num= 6

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.07	54.64	.02	95.62	.07	409.79	.02	450.77	.05
1215.71	.035								

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
763.95	894.7	184.9	202.39 220.04	.1	.3

CROSS SECTION OUTPUT Profile #Q50

			Left OB	Channel	Right OB
E.G. Elev (ft)	269.53	Element			
Vel Head (ft)	0.27	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	269.26	Reach Len. (ft)	184.90	202.39	220.04
Crit W.S. (ft)		Flow Area (sq ft)	1709.59	1818.81	1566.99
E.G. Slope (ft/ft)	0.000892	Area (sq ft)	1709.59	1818.81	1566.99
Q Total (cfs)	19237.00	Flow (cfs)	5418.75	9335.70	4482.54
Top Width (ft)	654.41	Top Width (ft)	253.09	130.75	270.56
Vel Total (ft/s)	3.78	Avg. Vel. (ft/s)	3.17	5.13	2.86
Max Chl Dpth (ft)	14.78	Hydr. Depth (ft)	6.75	13.91	5.79
Conv. Total (cfs)	643957.6	Conv. (cfs)	181392.5	312512.2	150052.9
Length Wtd. (ft)	201.69	Wetted Per. (ft)	253.42	130.83	270.92
Min Ch El (ft)	254.48	Shear (lb/sq ft)	0.38	0.77	0.32
Alpha	1.23	Stream Power (lb/ft s)	1.19	3.98	0.92
Frctn Loss (ft)	0.13	Cum Volume (acre-ft)	29.43	51.19	34.86
C & E Loss (ft)	0.02	Cum SA (acres)	4.15	2.86	6.38

CROSS SECTION OUTPUT Profile #Q100

			Left OB	Channel	Right OB
E.G. Elev (ft)	273.04	Element			
Vel Head (ft)	0.30	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	272.75	Reach Len. (ft)	184.90	202.39	220.04
Crit W.S. (ft)		Flow Area (sq ft)	2682.89	2274.86	2577.17
E.G. Slope (ft/ft)	0.000751	Area (sq ft)	2682.89	2274.86	2577.17
Q Total (cfs)	30456.00	Flow (cfs)	9315.86	12435.71	8704.43

Top Width (ft)	739.74	Top Width (ft)	304.34	130.75	304.64
Vel Total (ft/s)	4.04	Avg. Vel. (ft/s)	3.47	5.47	3.38
Max Chl Dpth (ft)	18.27	Hydr. Depth (ft)	8.82	17.40	8.46
Conv. Total (cfs)	1111261.0	Conv. (cfs)	339911.7	453746.8	317602.3
Length Wtd. (ft)	202.43	Wetted Per. (ft)	304.79	130.83	305.19
Min Ch El (ft)	254.48	Shear (lb/sq ft)	0.41	0.82	0.40
Alpha	1.17	Stream Power (lb/ft s)	1.43	4.46	1.34
Frctn Loss (ft)	0.12	Cum Volume (acre-ft)	45.91	61.14	60.21
C & E Loss (ft)	0.02	Cum SA (acres)	5.27	2.86	7.96

CROSS SECTION OUTPUT Profile #Q100HC

E.G. Elev (ft)	281.52	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.46	Wt. n-Val.	0.048	0.050	0.050
W.S. Elev (ft)	281.06	Reach Len. (ft)	184.90	202.39	220.04
Crit W.S. (ft)		Flow Area (sq ft)	5646.55	3361.63	5358.38
E.G. Slope (ft/ft)	0.000658	Area (sq ft)	5646.55	3361.63	5358.38
Q Total (cfs)	76204.00	Flow (cfs)	28092.70	22308.96	25802.34
Top Width (ft)	925.01	Top Width (ft)	418.51	130.75	375.75
Vel Total (ft/s)	5.30	Avg. Vel. (ft/s)	4.98	6.64	4.82
Max Chl Dpth (ft)	26.58	Hydr. Depth (ft)	13.49	25.71	14.26
Conv. Total (cfs)	2971461.0	Conv. (cfs)	1095433.0	869904.4	1006124.0
Length Wtd. (ft)	202.53	Wetted Per. (ft)	419.28	130.83	376.82
Min Ch El (ft)	254.48	Shear (lb/sq ft)	0.55	1.06	0.58
Alpha	1.06	Stream Power (lb/ft s)	2.75	7.00	2.81
Frctn Loss (ft)	0.11	Cum Volume (acre-ft)	100.09	84.91	136.12
C & E Loss (ft)	0.03	Cum SA (acres)	7.75	2.86	10.44

CROSS SECTION

RIVER: San Juan
REACH: Middle RS: 983.852

INPUT
Description:
Station Elevation Data num= 86

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	317.57	.69	317.38	6.63	315.95	26.49	310.98	33.55	309.51
39.06	308.51	53.06	305.99	55.37	305.58	56.45	305.33	90.4	299.63
90.63	299.57	90.91	299.47	91.85	299.15	105.72	294.56	110.71	293.21
125.15	289.27	125.81	289.03	133.96	287.86	137.24	287.21	143.42	286.89
150.94	286.62	182.28	285.98	192.63	285.76	210.73	284.8	227.98	283.8
244.85	282.46	247.38	282.26	266.51	280.72	304.91	278.02	338.52	275.28
346.34	274.64	373.83	272.51	377.58	272.26	418.89	269.48	427.25	268.91
434.32	268.42	510.78	261.57	531.75	260.51	559.37	259.37	578.3	258.54
610.3	257.13	622.26	256.51	654.98	254.4	669.82	253.43	687.46	252.16
705.83	250.84	712.91	250.19	730.73	249.82	732.59	249.8	744.67	250.55
753.22	250.98	755.45	251.23	770.42	253.49	799.43	257.04	803.33	257.56
805.45	257.82	805.95	257.91	806.15	257.93	812.63	258.52	827.54	259.87
831.93	260.08	848.84	260.43	872.89	261.01	883.21	261.53	914.17	261.93
917.11	261.92	920.99	261.89	937.75	262.39	1010.44	264.44	1011.22	264.46
1012.57	264.51	1041.87	265.63	1057.37	266.27	1109.6	268.52	1126.08	269.53
1139.96	270.33	1158.71	272.74	1158.78	272.75	1171.96	274.88	1198.3	279.04
1202.49	279.34	1219.91	280.56	1278.74	282.55	1285.14	282.8	1294.91	283.07
1302	283.24								

Manning's n Values num= 7

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.02	39.06	.07	182.28	.035	247.38	.07	338.52	.02
377.58	.05	1158.78	.035						

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
669.82	770.42	165.21	174.16 184.96	.1	.3

CROSS SECTION OUTPUT Profile #Q50

			Left OB	Channel	Right OB
E.G. Elev (ft)	269.38	Element			
Vel Head (ft)	0.19	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	269.18	Reach Len. (ft)	165.21	174.16	184.96
Crit W.S. (ft)		Flow Area (sq ft)	2131.04	1803.20	2274.46
E.G. Slope (ft/ft)	0.000492	Area (sq ft)	2131.04	1803.20	2274.46
Q Total (cfs)	19237.00	Flow (cfs)	5904.55	8119.08	5213.37
Top Width (ft)	697.20	Top Width (ft)	246.59	100.60	350.01
Vel Total (ft/s)	3.10	Avg. Vel. (ft/s)	2.77	4.50	2.29
Max Chl Dpth (ft)	19.38	Hydr. Depth (ft)	8.64	17.92	6.50
Conv. Total (cfs)	867643.8	Conv. (cfs)	266312.1	366193.7	235138.0
Length Wtd. (ft)	173.99	Wetted Per. (ft)	247.13	100.94	350.55
Min Ch El (ft)	249.80	Shear (lb/sq ft)	0.26	0.55	0.20
Alpha	1.29	Stream Power (lb/ft s)	0.73	2.47	0.46
Frctn Loss (ft)	0.10	Cum Volume (acre-ft)	21.28	42.78	25.16
C & E Loss (ft)	0.01	Cum SA (acres)	3.09	2.32	4.82

CROSS SECTION OUTPUT Profile #Q100

			Left OB	Channel	Right OB
E.G. Elev (ft)	272.90	Element			
Vel Head (ft)	0.22	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	272.68	Reach Len. (ft)	165.21	174.16	184.96
Crit W.S. (ft)		Flow Area (sq ft)	3083.19	2154.72	3575.84
E.G. Slope (ft/ft)	0.000474	Area (sq ft)	3083.19	2154.72	3575.84
Q Total (cfs)	30456.00	Flow (cfs)	9573.15	10724.85	10157.99
Top Width (ft)	786.57	Top Width (ft)	298.16	100.60	387.81
Vel Total (ft/s)	3.46	Avg. Vel. (ft/s)	3.10	4.98	2.84
Max Chl Dpth (ft)	22.88	Hydr. Depth (ft)	10.34	21.42	9.22
Conv. Total (cfs)	1399280.0	Conv. (cfs)	439832.0	492746.2	466702.2
Length Wtd. (ft)	174.67	Wetted Per. (ft)	298.83	100.94	388.53
Min Ch El (ft)	249.80	Shear (lb/sq ft)	0.31	0.63	0.27
Alpha	1.21	Stream Power (lb/ft s)	0.95	3.14	0.77
Frctn Loss (ft)	0.09	Cum Volume (acre-ft)	33.67	50.85	44.66
C & E Loss (ft)	0.01	Cum SA (acres)	3.99	2.32	6.21

CROSS SECTION OUTPUT Profile #Q100HC

			Left OB	Channel	Right OB
E.G. Elev (ft)	281.38	Element			
Vel Head (ft)	0.38	Wt. n-Val.	0.048	0.050	0.050
W.S. Elev (ft)	281.01	Reach Len. (ft)	165.21	174.16	184.96
Crit W.S. (ft)		Flow Area (sq ft)	6009.50	2992.57	7040.59
E.G. Slope (ft/ft)	0.000478	Area (sq ft)	6009.50	2992.57	7040.59
Q Total (cfs)	76204.00	Flow (cfs)	27290.57	18627.35	30286.08
Top Width (ft)	970.16	Top Width (ft)	406.87	100.60	462.69
Vel Total (ft/s)	4.75	Avg. Vel. (ft/s)	4.54	6.22	4.30
Max Chl Dpth (ft)	31.21	Hydr. Depth (ft)	14.77	29.75	15.22
Conv. Total (cfs)	3485006.0	Conv. (cfs)	1248069.0	851877.0	1385061.0
Length Wtd. (ft)	175.14	Wetted Per. (ft)	407.86	100.94	463.97

Min Ch El (ft)	249.80	Shear (lb/sq ft)	0.44	0.88	0.45
Alpha	1.07	Stream Power (lb/ft s)	2.00	5.51	1.95
Frctn Loss (ft)	0.09	Cum Volume (acre-ft)	75.35	70.15	104.80
C & E Loss (ft)	0.00	Cum SA (acres)	6.00	2.32	8.32

CROSS SECTION

RIVER: San Juan
REACH: Middle RS: 809.691

INPUT
Description:
Station Elevation Data num= 75

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	312.47	3.69	310.72	6.91	309.49	9.09	308.77	20.77	307.47
25.44	306.77	38.72	306.01	47.79	305.36	54.63	304.88	71.48	303.71
94.38	302.68	117.36	301.48	123.31	300.97	125.3	300.75	128.76	299.68
133.28	298.36	139.57	295.76	150.4	291.2	152.65	290.52	164.58	288.58
167.09	288.23	180.63	286.72	193.54	285.79	204.85	285.11	209.04	284.86
226.76	283.77	270.22	281.25	290.89	279.76	300.44	278.96	313.24	277.88
336.04	275.54	355.07	273.87	382.38	271.46	386.54	271.1	441.14	267.68
496.06	264.02	547.93	261.02	556.53	260.66	614.21	257.09	635.42	255.77
641.32	255.42	665.07	253.83	720.16	250.15	737.79	248.93	753.47	248.93
757.92	248.98	766.64	250.55	767.98	250.74	770.97	251.89	776.35	253.84
783.88	256.28	786.11	257.04	796.64	259.98	807.27	261.52	808.58	261.66
814.95	261.53	837.14	261.78	840.44	261.99	844.54	262.11	896.06	262.66
901.7	262.71	929.85	263.53	1008.93	265.83	1055.89	267.22	1144.03	269.82
1159.29	270.17	1160.79	270.32	1169.12	271.18	1204.17	276.07	1228.56	279.32
1233.22	279.69	1258.05	280.52	1312.59	281.99	1359.85	283.32	1365.64	283.46

Manning's n Values num= 7

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.02	54.63	.07	204.85	.035	300.44	.07	355.07	.02
382.38	.05	1160.79	.035						

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
665.07	776.35	154.77	163.75	172.54	.1	.3

CROSS SECTION OUTPUT Profile #Q50

E.G. Elev (ft)	269.27	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.27	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	269.00	Reach Len. (ft)	154.77	163.75	172.54
Crit W.S. (ft)		Flow Area (sq ft)	1865.36	2016.54	1657.42
E.G. Slope (ft/ft)	0.000629	Area (sq ft)	1865.36	2016.54	1657.42
Q Total (cfs)	19237.00	Flow (cfs)	5374.31	10318.22	3544.47
Top Width (ft)	696.38	Top Width (ft)	245.07	111.28	340.03
Vel Total (ft/s)	3.47	Avg. Vel. (ft/s)	2.88	5.12	2.14
Max Chl Dpth (ft)	20.07	Hydr. Depth (ft)	7.61	18.12	4.87
Conv. Total (cfs)	766814.6	Conv. (cfs)	214227.6	411299.2	141287.8
Length Wtd. (ft)	163.54	Wetted Per. (ft)	245.54	112.15	341.16
Min Ch El (ft)	248.93	Shear (lb/sq ft)	0.30	0.71	0.19
Alpha	1.43	Stream Power (lb/ft s)	0.86	3.61	0.41
Frctn Loss (ft)	0.10	Cum Volume (acre-ft)	13.70	35.14	16.81
C & E Loss (ft)	0.00	Cum SA (acres)	2.16	1.89	3.35

CROSS SECTION OUTPUT Profile #Q100

E.G. Elev (ft)	272.81	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.28	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	272.53	Reach Len. (ft)	154.77	163.75	172.54
Crit W.S. (ft)		Flow Area (sq ft)	2824.23	2408.97	3006.26
E.G. Slope (ft/ft)	0.000558	Area (sq ft)	2824.23	2408.97	3006.26
Q Total (cfs)	30456.00	Flow (cfs)	9159.55	13070.69	8225.76
Top Width (ft)	808.56	Top Width (ft)	294.82	111.28	402.45
Vel Total (ft/s)	3.70	Avg. Vel. (ft/s)	3.24	5.43	2.74
Max Chl Dpth (ft)	23.60	Hydr. Depth (ft)	9.58	21.65	7.47
Conv. Total (cfs)	1288959.0	Conv. (cfs)	387650.5	553177.8	348130.7
Length Wtd. (ft)	164.10	Wetted Per. (ft)	295.42	112.15	403.75
Min Ch El (ft)	248.93	Shear (lb/sq ft)	0.33	0.75	0.26
Alpha	1.30	Stream Power (lb/ft s)	1.08	4.06	0.71
Frctn Loss (ft)	0.09	Cum Volume (acre-ft)	22.47	41.72	30.69
C & E Loss (ft)	0.00	Cum SA (acres)	2.86	1.89	4.53

CROSS SECTION OUTPUT Profile #Q100HC

E.G. Elev (ft)	281.30	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.41	Wt. n-Val.	0.048	0.050	0.049
W.S. Elev (ft)	280.89	Reach Len. (ft)	154.77	163.75	172.54
Crit W.S. (ft)		Flow Area (sq ft)	5674.10	3339.35	6644.77
E.G. Slope (ft/ft)	0.000525	Area (sq ft)	5674.10	3339.35	6644.77
Q Total (cfs)	76204.00	Flow (cfs)	26388.57	21840.70	27974.72
Top Width (ft)	996.64	Top Width (ft)	389.88	111.28	495.48
Vel Total (ft/s)	4.87	Avg. Vel. (ft/s)	4.65	6.54	4.21
Max Chl Dpth (ft)	31.96	Hydr. Depth (ft)	14.55	30.01	13.41
Conv. Total (cfs)	3326298.0	Conv. (cfs)	1151859.0	953344.7	1221094.0
Length Wtd. (ft)	164.69	Wetted Per. (ft)	390.85	112.15	497.28
Min Ch El (ft)	248.93	Shear (lb/sq ft)	0.48	0.98	0.44
Alpha	1.11	Stream Power (lb/ft s)	2.21	6.38	1.84
Frctn Loss (ft)	0.09	Cum Volume (acre-ft)	53.19	57.49	75.75
C & E Loss (ft)	0.00	Cum SA (acres)	4.49	1.89	6.29

CROSS SECTION

RIVER: San Juan
REACH: Middle RS: 645.940

INPUT
Description:
Station Elevation Data num= 82

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	308.49	15.12	308.13	38.26	306.87	45.43	306.3	52.74	305.77
69.84	304.64	80.3	303.94	101.92	302.43	110.17	301.89	125.22	300.79
127.95	300.21	139.41	298.27	159.81	291.52	162.01	290.83	165.98	290.3
171.3	289.59	173.7	289.39	181.59	289.12	193.32	288.73	245.92	285.13
252.62	284.67	262.77	284.15	314.99	280.67	331.64	279.33	349.6	278.03
351.26	277.9	359.56	277.27	363.19	276.89	425.06	270.44	462.34	267.83
524.5	263.47	559	260.9	575.26	258.27	583.34	257.25	599.75	253.99
607.44	253.39	614.08	252.7	633.33	253.46	662.12	253.39	665.11	253.39
670.19	253.36	672.97	253.41	681.94	252.92	722.28	250.65	762.39	248.38
763.36	248.5	772.65	250.6	773.91	250.87	774.11	250.95	779.46	253.78
786.83	257.67	789.1	258.99	791.73	259.87	799.23	261.68	802.78	262.02

811.45	262.39	825.81	261.94	848.46	261.49	854.01	261.38	878.98	261.83
883.09	261.83	887.92	262.02	895.98	262.27	940.84	263.83	1096.03	268.69
1109.32	269.41	1123.31	269.68	1131.47	270	1140.2	270.34	1160.63	270.34
1166.34	270.54	1170.4	270.64	1184.14	270.96	1201.21	271.02	1221.42	271.77
1232.97	272.65	1266.04	276.14	1289.32	279	1291.1	279.17	1305.77	280.43
1364.54	281.57	1396.88	282.26						

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.02	69.84	.07	181.59	.02	363.19	.05	1131.47	.035

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
599.75	779.46	200.24	200.37	215.03	.1	.3

CROSS SECTION OUTPUT Profile #Q50

E.G. Elev (ft)	269.17	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.26	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	268.92	Reach Len. (ft)	200.24	200.37	215.03
Crit W.S. (ft)		Flow Area (sq ft)	903.60	3067.08	1567.70
E.G. Slope (ft/ft)	0.000547	Area (sq ft)	903.60	3067.08	1567.70
Q Total (cfs)	19237.00	Flow (cfs)	2044.68	14066.38	3125.94
Top Width (ft)	653.35	Top Width (ft)	152.91	179.71	320.73
Vel Total (ft/s)	3.47	Avg. Vel. (ft/s)	2.26	4.59	1.99
Max Chl Dpth (ft)	20.54	Hydr. Depth (ft)	5.91	17.07	4.89
Conv. Total (cfs)	822633.3	Conv. (cfs)	87436.7	601521.7	133674.9
Length Wtd. (ft)	202.26	Wetted Per. (ft)	153.79	180.91	322.56
Min Ch El (ft)	248.38	Shear (lb/sq ft)	0.20	0.58	0.17
Alpha	1.37	Stream Power (lb/ft s)	0.45	2.65	0.33
Frctn Loss (ft)	0.11	Cum Volume (acre-ft)	8.78	25.59	10.43
C & E Loss (ft)	0.01	Cum SA (acres)	1.45	1.35	2.04

CROSS SECTION OUTPUT Profile #Q100

E.G. Elev (ft)	272.72	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.29	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	272.43	Reach Len. (ft)	200.24	200.37	215.03
Crit W.S. (ft)		Flow Area (sq ft)	1520.29	3699.00	2939.04
E.G. Slope (ft/ft)	0.000520	Area (sq ft)	1520.29	3699.00	2939.04
Q Total (cfs)	30456.00	Flow (cfs)	4051.43	18735.43	7669.14
Top Width (ft)	824.15	Top Width (ft)	193.79	179.71	450.64
Vel Total (ft/s)	3.73	Avg. Vel. (ft/s)	2.66	5.07	2.61
Max Chl Dpth (ft)	24.05	Hydr. Depth (ft)	7.84	20.58	6.52
Conv. Total (cfs)	1336162.0	Conv. (cfs)	177743.8	821958.6	336459.5
Length Wtd. (ft)	203.23	Wetted Per. (ft)	194.83	180.91	452.56
Min Ch El (ft)	248.38	Shear (lb/sq ft)	0.25	0.66	0.21
Alpha	1.32	Stream Power (lb/ft s)	0.67	3.36	0.55
Frctn Loss (ft)	0.12	Cum Volume (acre-ft)	14.75	30.24	18.92
C & E Loss (ft)	0.02	Cum SA (acres)	1.99	1.35	2.84

CROSS SECTION OUTPUT Profile #Q100HC

E.G. Elev (ft)	281.21	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.42	Wt. n-Val.	0.049	0.050	0.048
W.S. Elev (ft)	280.79	Reach Len. (ft)	200.24	200.37	215.03
Crit W.S. (ft)		Flow Area (sq ft)	3498.84	5201.52	7038.02
E.G. Slope (ft/ft)	0.000519	Area (sq ft)	3498.84	5201.52	7038.02

Q Total (cfs)	76204.00	Flow (cfs)	13823.15	33038.51	29342.34
Top Width (ft)	1011.31	Top Width (ft)	286.60	179.71	545.00
Vel Total (ft/s)	4.84	Avg. Vel. (ft/s)	3.95	6.35	4.17
Max Chl Dpth (ft)	32.41	Hydr. Depth (ft)	12.21	28.94	12.91
Conv. Total (cfs)	3346197.0	Conv. (cfs)	606989.1	1450756.0	1288453.0
Length Wtd. (ft)	205.08	Wetted Per. (ft)	288.02	180.91	547.34
Min Ch El (ft)	248.38	Shear (lb/sq ft)	0.39	0.93	0.42
Alpha	1.15	Stream Power (lb/ft s)	1.55	5.91	1.74
Frctn Loss (ft)	0.12	Cum Volume (acre-ft)	36.90	41.44	48.65
C & E Loss (ft)	0.02	Cum SA (acres)	3.28	1.35	4.23

CROSS SECTION

RIVER: San Juan
REACH: Middle RS: 445.567

INPUT
Description:
Station Elevation Data num= 93

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	306.23	26.83	304.93	31.17	304.72	34.74	304.49	35.78	304.44
49.33	304.1	67.08	303.6	102.02	302.6	110.43	302.36	122.03	300.28
124.55	299.98	126.34	299.57	127.01	299.29	144.53	291.58	145.87	291
150.46	289.58	152.15	289.19	157.21	288.14	160.42	287.94	171.88	286.99
203.76	284.23	213.58	283.27	231.95	281.27	249.38	280.02	281.74	278.22
288.78	277.83	310.6	276.97	362.08	274.11	380.72	273.44	395.61	272.41
415.9	271.38	445.83	269.87	449.05	269.68	451.34	269.53	461.86	268.74
492.61	266.33	513.62	264.86	577.97	261.39	584.03	260.93	591.07	260.5
591.44	260.47	591.66	260.43	592.67	260.17	601.56	257.98	614.32	252.86
619.83	250.94	620.53	250.67	621.75	250.19	622.06	250.13	631.94	248.42
640.13	247.91	642.82	247.72	652.19	247.79	655.78	247.8	685.2	248.82
697.89	249.18	714.96	248.72	715.14	248.72	748.96	247.98	749.46	247.97
749.66	247.99	758.53	249.24	760.02	249.65	763.06	250.64	766.64	252.41
767.4	252.82	776.65	257.77	779.15	258.56	782.7	260.19	784.81	260.55
790.61	261.33	800.22	261.35	819.07	261.22	828.11	261.63	862.97	264.14
875.55	265.08	956.58	269.49	967.81	270.05	983.98	270.71	991.82	270.92
1024.86	272.74	1049.99	272.63	1059.88	272.79	1082.13	273.15	1118.21	275.48
1128.01	276.25	1162.3	279.24	1164.8	279.51	1190	280.5	1205.7	280.73
1214.54	280.91	1247.54	280.97	1341.62	282.03				

Manning's n Values num= 6

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	26.83	.02	67.08	.07	281.74	.035	415.9	.05
1059.88	.035								

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
614.32	767.4	195.88	209.44 196.54	.1	.3

CROSS SECTION OUTPUT Profile #Q50

E.G. Elev (ft)	269.05	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.34	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	268.71	Reach Len. (ft)	195.88	209.44	196.54
Crit W.S. (ft)		Flow Area (sq ft)	831.88	3052.82	898.91
E.G. Slope (ft/ft)	0.000553	Area (sq ft)	831.88	3052.82	898.91
Q Total (cfs)	19237.00	Flow (cfs)	1792.42	15587.94	1856.64
Top Width (ft)	480.06	Top Width (ft)	152.10	153.08	174.88

Vel Total (ft/s)	4.02	Avg. Vel. (ft/s)	2.15	5.11	2.07
Max Chl Dpth (ft)	20.99	Hydr. Depth (ft)	5.47	19.94	5.14
Conv. Total (cfs)	818049.0	Conv. (cfs)	76222.4	662873.6	78953.0
Length Wtd. (ft)	205.60	Wetted Per. (ft)	153.66	154.58	176.92
Min Ch El (ft)	247.72	Shear (lb/sq ft)	0.19	0.68	0.18
Alpha	1.36	Stream Power (lb/ft s)	0.40	3.48	0.36
Frctn Loss (ft)	0.15	Cum Volume (acre-ft)	4.79	11.51	4.34
C & E Loss (ft)	0.02	Cum SA (acres)	0.75	0.58	0.82

CROSS SECTION OUTPUT Profile #Q100

E.G. Elev (ft)	272.59	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.46	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	272.13	Reach Len. (ft)	195.88	209.44	196.54
Crit W.S. (ft)		Flow Area (sq ft)	1448.62	3576.19	1618.57
E.G. Slope (ft/ft)	0.000654	Area (sq ft)	1448.62	3576.19	1618.57
Q Total (cfs)	30456.00	Flow (cfs)	4097.63	22068.21	4290.17
Top Width (ft)	612.69	Top Width (ft)	213.21	153.08	246.40
Vel Total (ft/s)	4.58	Avg. Vel. (ft/s)	2.83	6.17	2.65
Max Chl Dpth (ft)	24.41	Hydr. Depth (ft)	6.79	23.36	6.57
Conv. Total (cfs)	1190878.0	Conv. (cfs)	160223.7	862902.1	167752.4
Length Wtd. (ft)	204.35	Wetted Per. (ft)	214.87	154.58	248.52
Min Ch El (ft)	247.72	Shear (lb/sq ft)	0.28	0.94	0.27
Alpha	1.41	Stream Power (lb/ft s)	0.78	5.83	0.70
Frctn Loss (ft)	0.16	Cum Volume (acre-ft)	7.92	13.51	7.67
C & E Loss (ft)	0.01	Cum SA (acres)	1.06	0.58	1.12

CROSS SECTION OUTPUT Profile #Q100HC

E.G. Elev (ft)	281.06	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.65	Wt. n-Val.	0.048	0.050	0.049
W.S. Elev (ft)	280.42	Reach Len. (ft)	195.88	209.44	196.54
Crit W.S. (ft)		Flow Area (sq ft)	3872.61	4844.78	4554.61
E.G. Slope (ft/ft)	0.000720	Area (sq ft)	3872.61	4844.78	4554.61
Q Total (cfs)	76204.00	Flow (cfs)	17926.86	38399.74	19877.40
Top Width (ft)	944.07	Top Width (ft)	370.49	153.08	420.51
Vel Total (ft/s)	5.74	Avg. Vel. (ft/s)	4.63	7.93	4.36
Max Chl Dpth (ft)	32.70	Hydr. Depth (ft)	10.45	31.65	10.83
Conv. Total (cfs)	2840319.0	Conv. (cfs)	668179.9	1431257.0	740881.8
Length Wtd. (ft)	201.78	Wetted Per. (ft)	372.37	154.58	422.92
Min Ch El (ft)	247.72	Shear (lb/sq ft)	0.47	1.41	0.48
Alpha	1.26	Stream Power (lb/ft s)	2.16	11.16	2.11
Frctn Loss (ft)	0.17	Cum Volume (acre-ft)	19.95	18.33	20.04
C & E Loss (ft)	0.01	Cum SA (acres)	1.77	0.58	1.84

CROSS SECTION

RIVER: San Juan
REACH: Middle RS: 236.129

INPUT
Description:
Station Elevation Data num= 73

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	299.07	18.15	296.64	23.17	295.64	62.85	289.84	63.6	289.7

64.01	289.61	65.34	289.36	78.6	286.35	93.96	282.81	96.21	282.39
100.82	281.62	111.47	280.03	129.4	279.58	132.87	279.26	150.97	276.8
161.53	275.55	207.67	273.83	219.25	273.35	229.37	273.32	232.78	273.32
241.37	273.27	250.21	272.86	260.51	272.41	299.99	270.32	312.18	269.51
338.41	268.65	348.51	268.32	381.54	266.08	406.99	264.37	420.48	263.42
445.13	261.58	452.92	260.58	468.07	259.07	480.3	257.99	485.78	257.14
523.51	252.19	528.93	251.48	535.34	250.65	536.18	250.54	537	250.46
563.08	248.48	577.26	247.4	577.47	247.4	577.69	247.4	588.34	247.73
602.72	248.16	610.09	249.45	612.51	249.85	614.16	250.42	618.01	251.63
630.9	256.16	631.8	256.47	634.97	257.57	642.73	259.87	649.06	260.98
656.79	261.3	671.56	261.63	685.81	261.91	728.29	263.89	754.77	265.31
808.26	268.54	835.28	270.12	862.6	271.45	864.84	271.62	917.72	275.61
948.8	277.7	979.58	279.77	996.4	279.92	1054.92	280.6	1071.91	280.82
1075.14	280.85	1095.58	281.1	1253.39	282.16				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.07	338.41	.05	864.84	.035

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
528.93	618.01	0	0	.1	.3

CROSS SECTION OUTPUT Profile #Q50

E.G. Elev (ft)	268.89	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.50	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	268.39	Reach Len. (ft)			
Crit W.S. (ft)	259.72	Flow Area (sq ft)	1300.27	1735.72	1024.33
E.G. Slope (ft/ft)	0.001001	Area (sq ft)	1300.27	1735.72	1024.33
Q Total (cfs)	19237.00	Flow (cfs)	4509.79	11760.63	2966.59
Top Width (ft)	459.49	Top Width (ft)	182.62	89.08	187.80
Vel Total (ft/s)	4.74	Avg. Vel. (ft/s)	3.47	6.78	2.90
Max Chl Dpth (ft)	20.99	Hydr. Depth (ft)	7.12	19.49	5.45
Conv. Total (cfs)	608148.6	Conv. (cfs)	142570.1	371794.4	93784.1
Length Wtd. (ft)		Wetted Per. (ft)	183.48	89.70	189.43
Min Ch El (ft)	247.40	Shear (lb/sq ft)	0.44	1.21	0.34
Alpha	1.43	Stream Power (lb/ft s)	1.54	8.19	0.98
Frctn Loss (ft)		Cum Volume (acre-ft)			
C & E Loss (ft)		Cum SA (acres)			

CROSS SECTION OUTPUT Profile #Q100

E.G. Elev (ft)	272.42	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.57	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	271.85	Reach Len. (ft)			
Crit W.S. (ft)	263.39	Flow Area (sq ft)	2075.88	2043.58	1779.75
E.G. Slope (ft/ft)	0.001002	Area (sq ft)	2075.88	2043.58	1779.75
Q Total (cfs)	30456.00	Flow (cfs)	8792.12	15447.02	6216.86
Top Width (ft)	596.73	Top Width (ft)	257.80	89.08	249.85
Vel Total (ft/s)	5.16	Avg. Vel. (ft/s)	4.24	7.56	3.49
Max Chl Dpth (ft)	24.45	Hydr. Depth (ft)	8.05	22.94	7.12
Conv. Total (cfs)	962313.3	Conv. (cfs)	277803.0	488076.9	196433.3
Length Wtd. (ft)		Wetted Per. (ft)	258.74	89.70	251.58
Min Ch El (ft)	247.40	Shear (lb/sq ft)	0.50	1.42	0.44
Alpha	1.37	Stream Power (lb/ft s)	2.12	10.77	1.55
Frctn Loss (ft)		Cum Volume (acre-ft)			
C & E Loss (ft)		Cum SA (acres)			

CROSS SECTION OUTPUT Profile #Q100HC

		Element	Left OB	Channel	Right OB
E.G. Elev (ft)	280.88	Wt. n-Val.	0.053	0.050	0.049
Vel Head (ft)	0.75	Reach Len. (ft)			
W.S. Elev (ft)	280.13	Flow Area (sq ft)	5001.69	2781.47	4326.32
Crit W.S. (ft)	270.76	Area (sq ft)	5001.69	2781.47	4326.32
E.G. Slope (ft/ft)	0.001001	Flow (cfs)	26638.21	25813.76	23752.04
Q Total (cfs)	76204.00	Top Width (ft)	418.14	89.08	396.56
Top Width (ft)	903.78	Avg. Vel. (ft/s)	5.33	9.28	5.49
Vel Total (ft/s)	6.29	Hydr. Depth (ft)	11.96	31.22	10.91
Max Chl Dpth (ft)	32.73	Conv. (cfs)	841935.7	815878.1	750714.5
Conv. Total (cfs)	2408528.0	Wetted Per. (ft)	419.43	89.70	398.57
Length Wtd. (ft)		Shear (lb/sq ft)	0.75	1.94	0.68
Min Ch El (ft)	247.40	Stream Power (lb/ft s)	3.97	17.99	3.72
Alpha	1.22	Cum Volume (acre-ft)			
Frctn Loss (ft)		Cum SA (acres)			
C & E Loss (ft)					

SUMMARY OF MANNING'S N VALUES

River:San Juan

Reach	River Sta.	n1	n2	n3	n4	n5	n6	n7
Middle	3288.713	.07	.05					
Middle	3100.847	.07	.05	.02				
Middle	2925.817	.07	.05					
Middle	2708.681	.07	.05					
Middle	2487.946	.07	.05	.035				
Middle	2291.008	.07	.05	.035				
Middle	2093.873	.07	.05	.035				
Middle	1897.550	.07	.05	.035				
Middle	1701.250	.02	.05	.035				
Middle	1494.809	.07	.02	.05	.035			
Middle	1302.462	.07	.02	.07	.02	.05	.02	.035
Middle	1186.241	.07	.02	.07	.02	.05	.035	
Middle	983.852	.02	.07	.035	.07	.02	.05	.035
Middle	809.691	.02	.07	.035	.07	.02	.05	.035
Middle	645.940	.02	.07	.02	.05	.035		
Middle	445.567	.035	.02	.07	.035	.05	.035	
Middle	236.129	.07	.05	.035				

SUMMARY OF REACH LENGTHS

River: San Juan

Reach	River Sta.	Left	Channel	Right
Middle	3288.713	200.03	187.87	156.08
Middle	3100.847	154.4	175.03	193.83
Middle	2925.817	192.48	217.14	231.53
Middle	2708.681	198.27	220.74	244.45

Middle	2487.946	179.39	196.94	216.01
Middle	2291.008	195.93	197.13	191.6
Middle	2093.873	210.18	196.32	186.35
Middle	1897.550	190.27	196.3	217.1
Middle	1701.250	203.51	206.44	198.52
Middle	1494.809	212.58	192.35	175.17
Middle	1302.462	116.82	116.22	118.65
Middle	1186.241	184.9	202.39	220.04
Middle	983.852	165.21	174.16	184.96
Middle	809.691	154.77	163.75	172.54
Middle	645.940	200.24	200.37	215.03
Middle	445.567	195.88	209.44	196.54
Middle	236.129	0	0	0

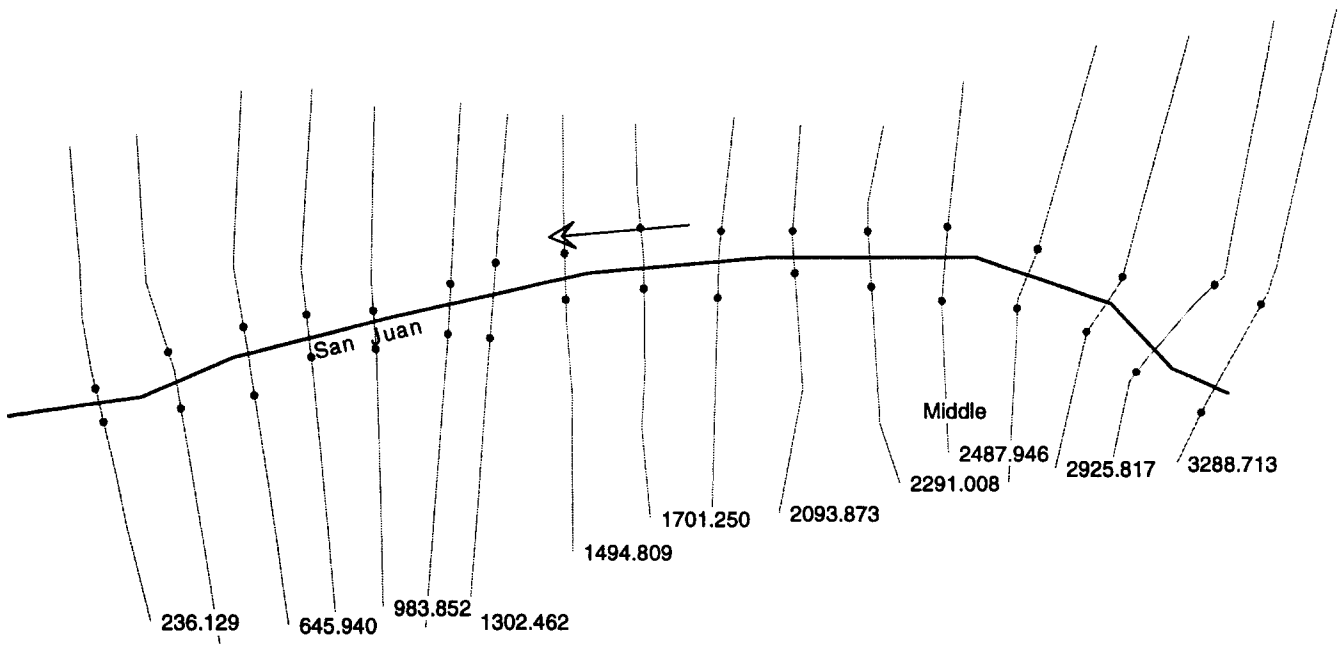
SUMMARY OF CONTRACTION AND EXPANSION COEFFICIENTS
River: San Juan

Reach	River Sta.	Contr.	Expan.
Middle	3288.713	.1	.3
Middle	3100.847	.1	.3
Middle	2925.817	.1	.3
Middle	2708.681	.1	.3
Middle	2487.946	.1	.3
Middle	2291.008	.1	.3
Middle	2093.873	.1	.3
Middle	1897.550	.1	.3
Middle	1701.250	.1	.3
Middle	1494.809	.1	.3
Middle	1302.462	.1	.3
Middle	1186.241	.1	.3
Middle	983.852	.1	.3
Middle	809.691	.1	.3
Middle	645.940	.1	.3
Middle	445.567	.1	.3
Middle	236.129	.1	.3

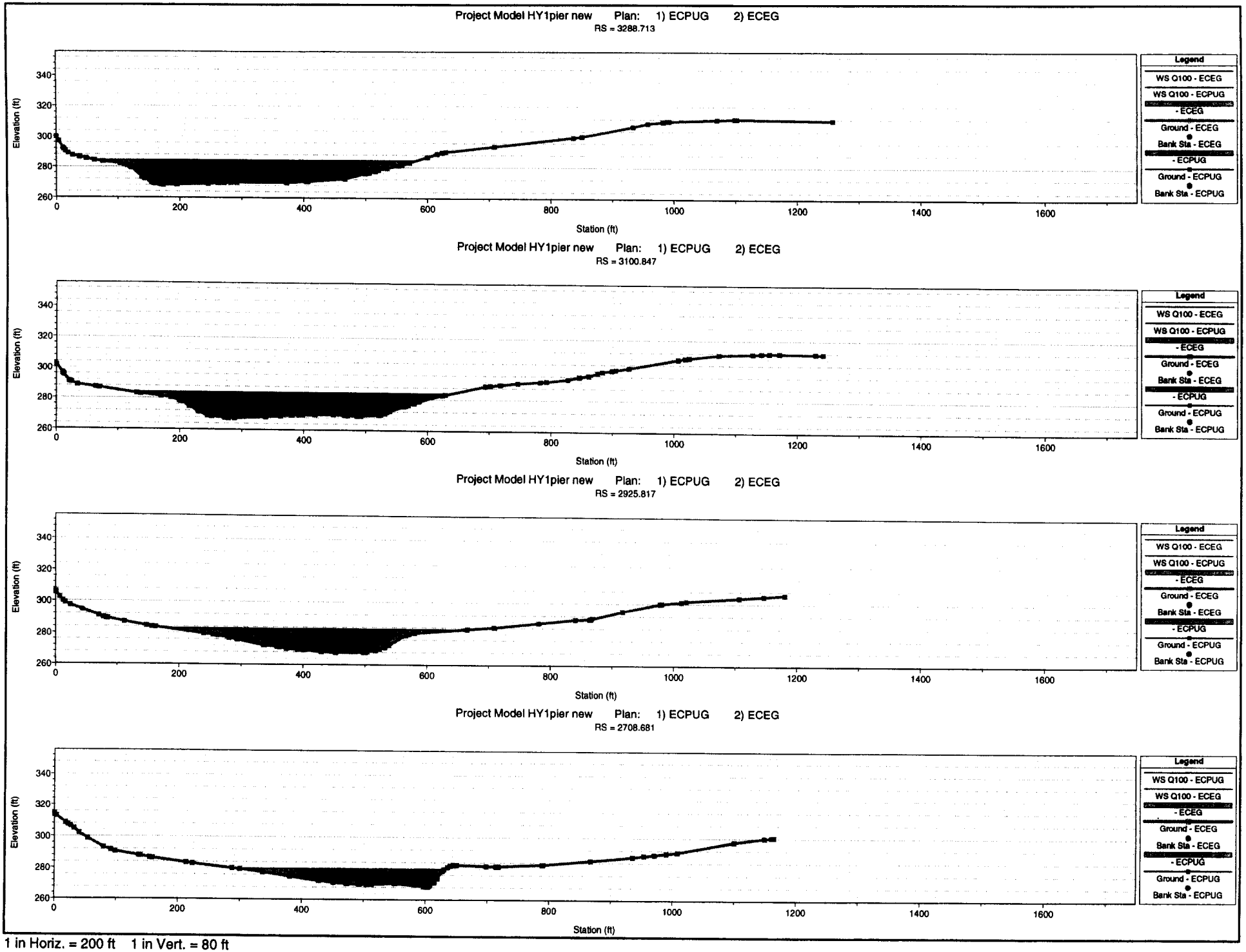
Profile Output Table - Standard Table 1

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
Middle	3288.713	Q50	19237.00	268.29	281.33	274.77	281.68	0.001055	4.88	4195.66	445.65	0.25
Middle	3288.713	Q100	30456.00	268.29	284.22	276.48	284.73	0.001166	5.96	5582.16	518.47	0.28
Middle	3288.713	Q100HC	76204.00	268.29	290.82	281.68	291.99	0.001699	9.28	9391.41	635.78	0.36
Middle	3100.847	Q50	19237.00	267.49	281.13		281.49	0.001009	4.93	4177.60	434.90	0.25
Middle	3100.847	Q100	30456.00	267.49	283.98		284.52	0.001158	6.09	5538.27	518.63	0.28
Middle	3100.847	Q100HC	76204.00	267.49	290.44		291.66	0.001759	9.56	9477.32	703.70	0.37
Middle	2925.817	Q50	19237.00	267.80	280.26		281.15	0.002885	8.11	2738.35	346.54	0.42
Middle	2925.817	Q100	30456.00	267.80	282.86		284.12	0.003258	9.87	3802.37	479.71	0.46
Middle	2925.817	Q100HC	76204.00	267.80	289.13		291.15	0.003682	13.42	7705.08	742.99	0.52

Middle	2708.681	Q50	19237.00	268.23	277.93	277.01	279.98	0.010500	12.20	1777.56	296.36	0.76
Middle	2708.681	Q100	30456.00	268.23	279.72	279.20	282.74	0.012228	15.05	2341.20	335.97	0.85
Middle	2708.681	Q100HC	76204.00	268.23	285.77	285.77	289.76	0.009842	18.60	5502.16	706.27	0.82
Middle	2487.946	Q50	19237.00	267.74	276.20		277.78	0.008550	10.76	2055.24	379.77	0.68
Middle	2487.946	Q100	30456.00	267.74	277.90		280.16	0.009761	13.12	2742.66	431.84	0.75
Middle	2487.946	Q100HC	76204.00	267.74	283.40	282.78	286.62	0.008380	16.50	5914.79	723.07	0.75
Middle	2291.008	Q50	19237.00	264.68	273.60	273.33	275.72	0.012517	12.87	1806.93	375.70	0.82
Middle	2291.008	Q100	30456.00	264.68	275.81		278.17	0.010542	13.99	2721.23	453.71	0.79
Middle	2291.008	Q100HC	76204.00	264.68	282.67		284.98	0.006070	15.11	6990.03	777.80	0.65
Middle	2093.873	Q50	19237.00	261.59	272.01		273.63	0.008033	11.81	2092.50	378.10	0.68
Middle	2093.873	Q100	30456.00	261.59	274.63		276.36	0.006636	12.65	3207.79	472.86	0.64
Middle	2093.873	Q100HC	76204.00	261.59	282.11		283.86	0.004028	13.63	7859.63	759.41	0.54
Middle	1897.550	Q50	19237.00	258.23	271.74		272.57	0.002524	7.81	2896.96	385.13	0.40
Middle	1897.550	Q100	30456.00	258.23	274.19		275.36	0.002917	9.51	3963.06	484.40	0.44
Middle	1897.550	Q100HC	76204.00	258.23	281.71		283.16	0.002393	11.39	8786.16	780.33	0.43
Middle	1701.250	Q50	19237.00	260.48	270.99		271.93	0.004115	8.68	2681.11	415.84	0.49
Middle	1701.250	Q100	30456.00	260.48	273.53		274.69	0.003921	9.90	3836.21	493.50	0.50
Middle	1701.250	Q100HC	76204.00	260.48	281.18		282.65	0.002751	11.45	8389.81	693.07	0.45
Middle	1494.809	Q50	19237.00	259.46	269.18		270.73	0.007899	11.54	2185.21	432.21	0.67
Middle	1494.809	Q100	30456.00	259.46	272.73		273.86	0.004080	10.32	3945.43	543.18	0.51
Middle	1494.809	Q100HC	76204.00	259.46	280.99		282.06	0.001977	10.04	9505.60	822.03	0.39
Middle	1302.462	Q50	19237.00	257.98	269.24		269.75	0.001925	6.40	3659.97	520.80	0.34
Middle	1302.462	Q100	30456.00	257.98	272.71		273.23	0.001475	6.74	5823.81	695.95	0.31
Middle	1302.462	Q100HC	76204.00	257.98	281.02		281.67	0.001001	7.53	12320.49	874.93	0.28
Middle	1186.241	Q50	19237.00	254.48	269.26		269.53	0.000892	5.13	5095.39	654.41	0.24
Middle	1186.241	Q100	30456.00	254.48	272.75		273.04	0.000751	5.47	7534.92	739.74	0.23
Middle	1186.241	Q100HC	76204.00	254.48	281.06		281.52	0.000658	6.64	14366.57	925.01	0.23
Middle	983.852	Q50	19237.00	249.80	269.18		269.38	0.000492	4.50	6208.70	697.20	0.19
Middle	983.852	Q100	30456.00	249.80	272.68		272.90	0.000474	4.98	8813.75	786.57	0.19
Middle	983.852	Q100HC	76204.00	249.80	281.01		281.38	0.000478	6.22	16042.66	970.16	0.20
Middle	809.691	Q50	19237.00	248.93	269.00		269.27	0.000629	5.12	5539.32	696.38	0.21
Middle	809.691	Q100	30456.00	248.93	272.53		272.81	0.000558	5.43	8239.45	808.56	0.21
Middle	809.691	Q100HC	76204.00	248.93	280.89		281.30	0.000525	6.54	15658.23	996.64	0.21
Middle	645.940	Q50	19237.00	248.38	268.92		269.17	0.000547	4.59	5538.38	653.35	0.20
Middle	645.940	Q100	30456.00	248.38	272.43		272.72	0.000520	5.07	8158.33	824.15	0.20
Middle	645.940	Q100HC	76204.00	248.38	280.79		281.21	0.000519	6.35	15738.38	1011.31	0.21
Middle	445.567	Q50	19237.00	247.72	268.71		269.05	0.000553	5.11	4783.61	480.06	0.20
Middle	445.567	Q100	30456.00	247.72	272.13		272.59	0.000654	6.17	6643.37	612.69	0.22
Middle	445.567	Q100HC	76204.00	247.72	280.42		281.06	0.000720	7.93	13272.00	944.07	0.25
Middle	236.129	Q50	19237.00	247.40	268.39	259.72	268.89	0.001001	6.78	4060.32	459.49	0.27
Middle	236.129	Q100	30456.00	247.40	271.85	263.39	272.42	0.001002	7.56	5899.21	596.73	0.28
Middle	236.129	Q100HC	76204.00	247.40	280.13	270.76	280.88	0.001001	9.28	12109.48	903.78	0.29

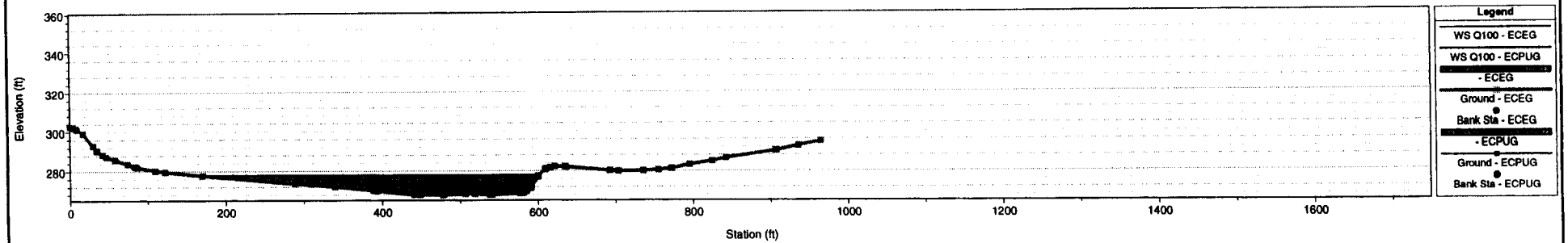


1 in Horiz. = 400 ft 1 in Vert. = 500 ft



1 in Horiz. = 200 ft 1 in Vert. = 80 ft

Project Model HY1pier new Plan: 1) ECPUG 2) ECEG
RS = 2487.946



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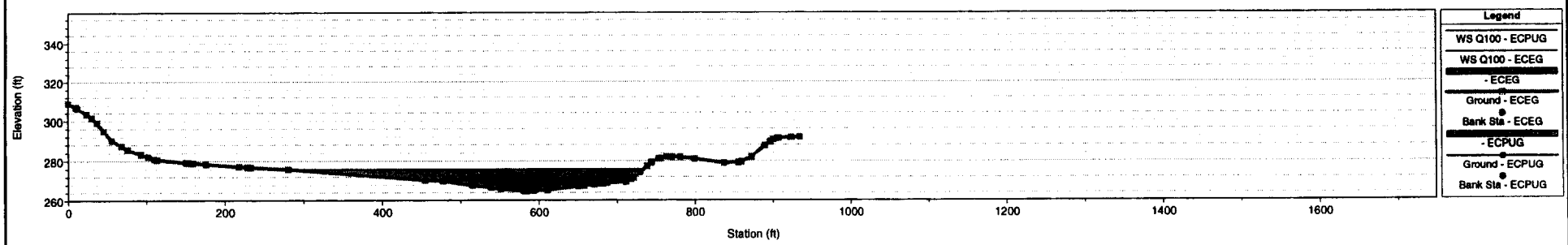

Project Model HY1pier new Plan: 1) ECPUG 2) ECEG
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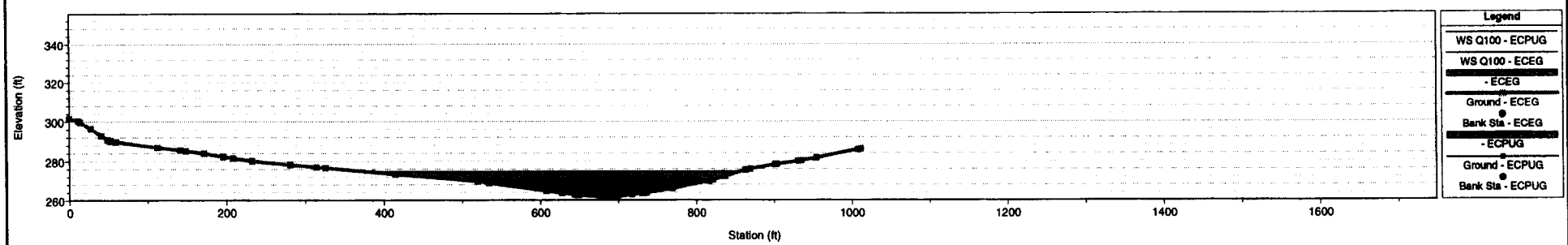

Project Model HY1pier new Plan: 1) ECPUG 2) ECEG
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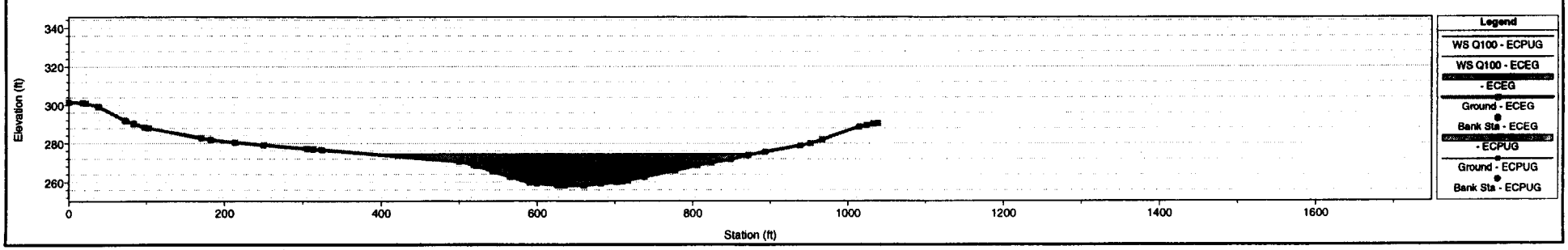

1 in Horiz. = 200 ft 1 in Vert. = 80 ft

Project Model HY1pier new Plan: 1) ECPUG 2) ECEG
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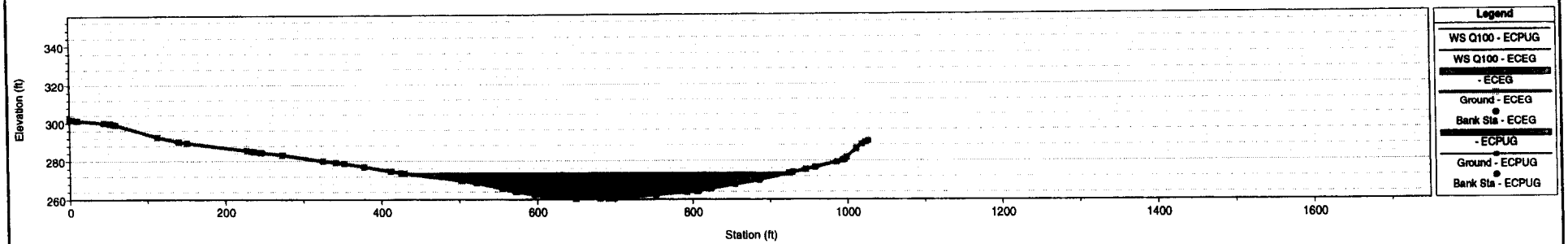

Project Model HY1pier new Plan: 1) ECPUG 2) ECEG
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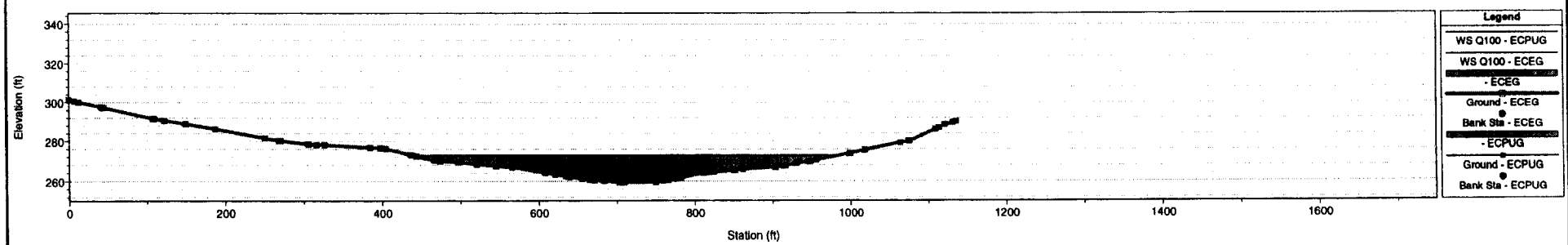
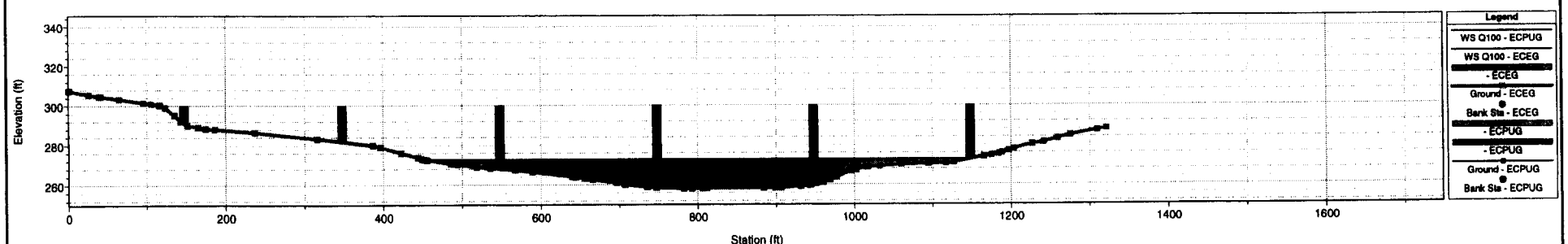
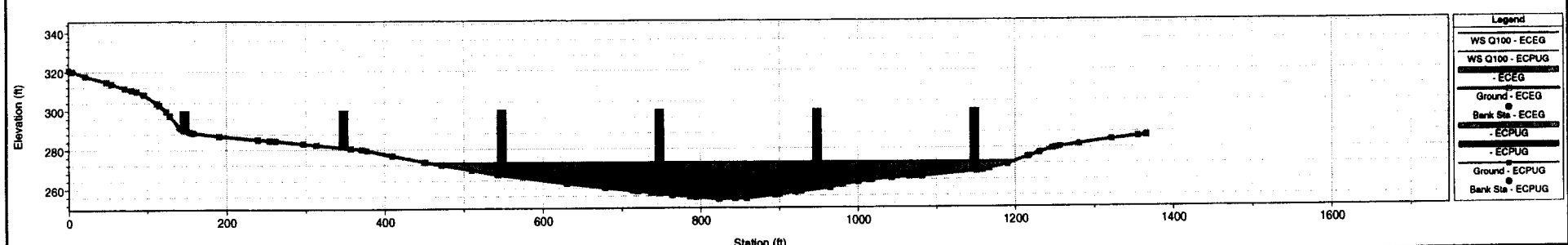


Project Model HY1pier new Plan: 1) ECPUG 2) ECEG
RS = 1302.462

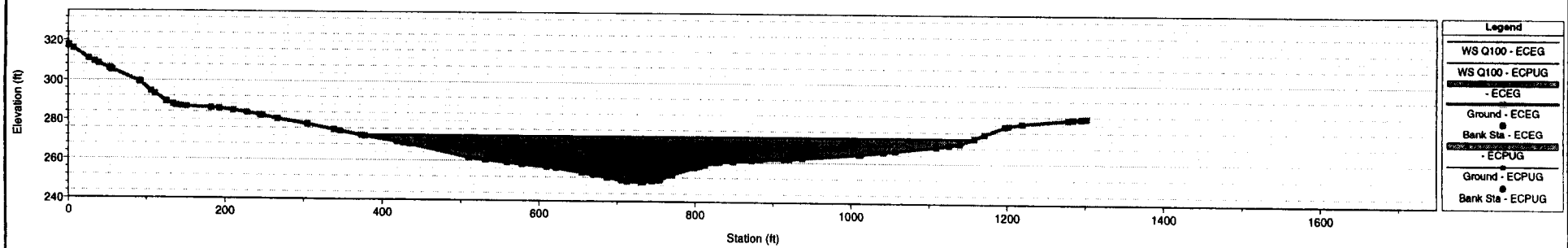


Project Model HY1pier new Plan: 1) ECPUG 2) ECEG
RS = 1186.241

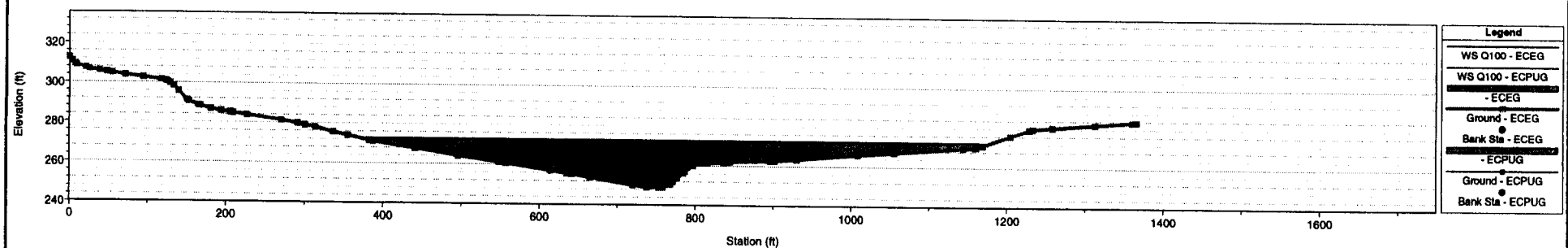


1 in Horiz. = 200 ft 1 in Vert. = 80 ft

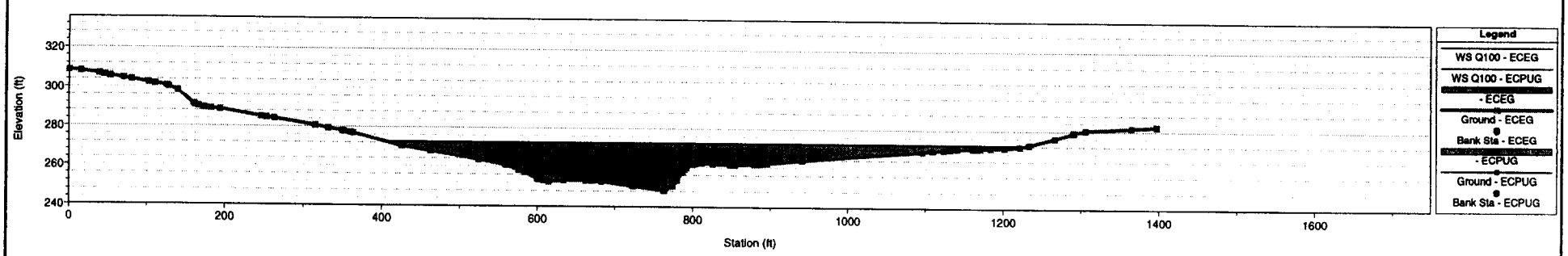
Project Model HY1pier new Plan: 1) ECPUG 2) ECEG
RS = 983.852



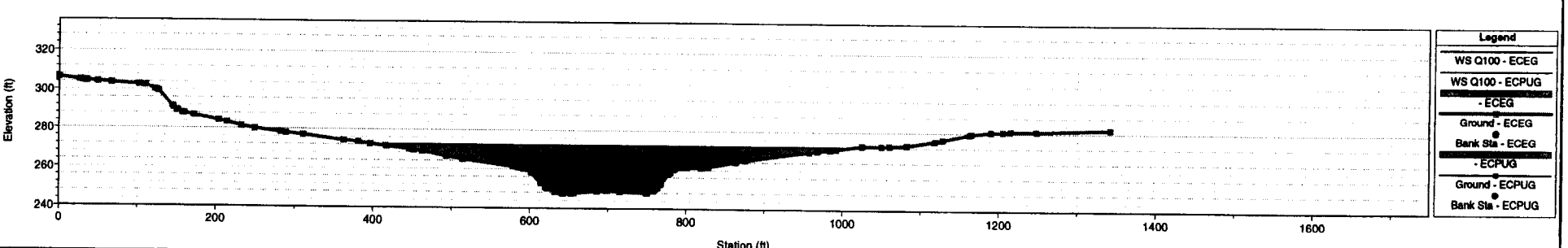
Project Model HY1pier new Plan: 1) ECPUG 2) ECEG
RS = 809.691



Project Model HY1pier new Plan: 1) ECPUG 2) ECEG
RS = 645.940



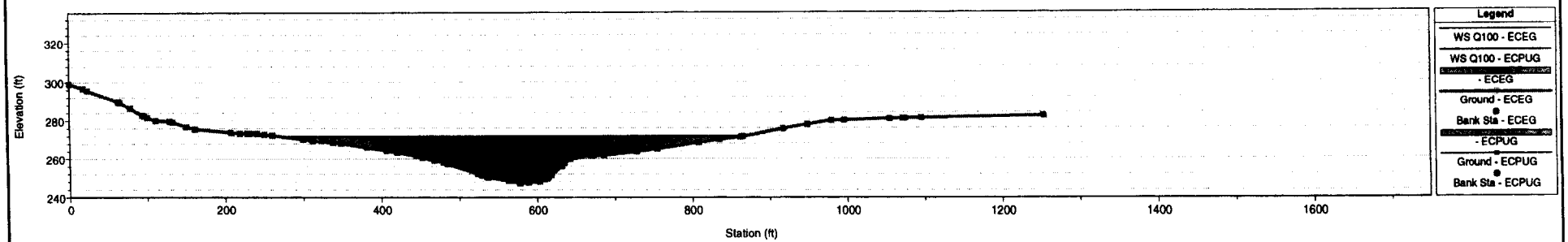
Project Model HY1pier new Plan: 1) ECPUG 2) ECEG
RS = 445.567



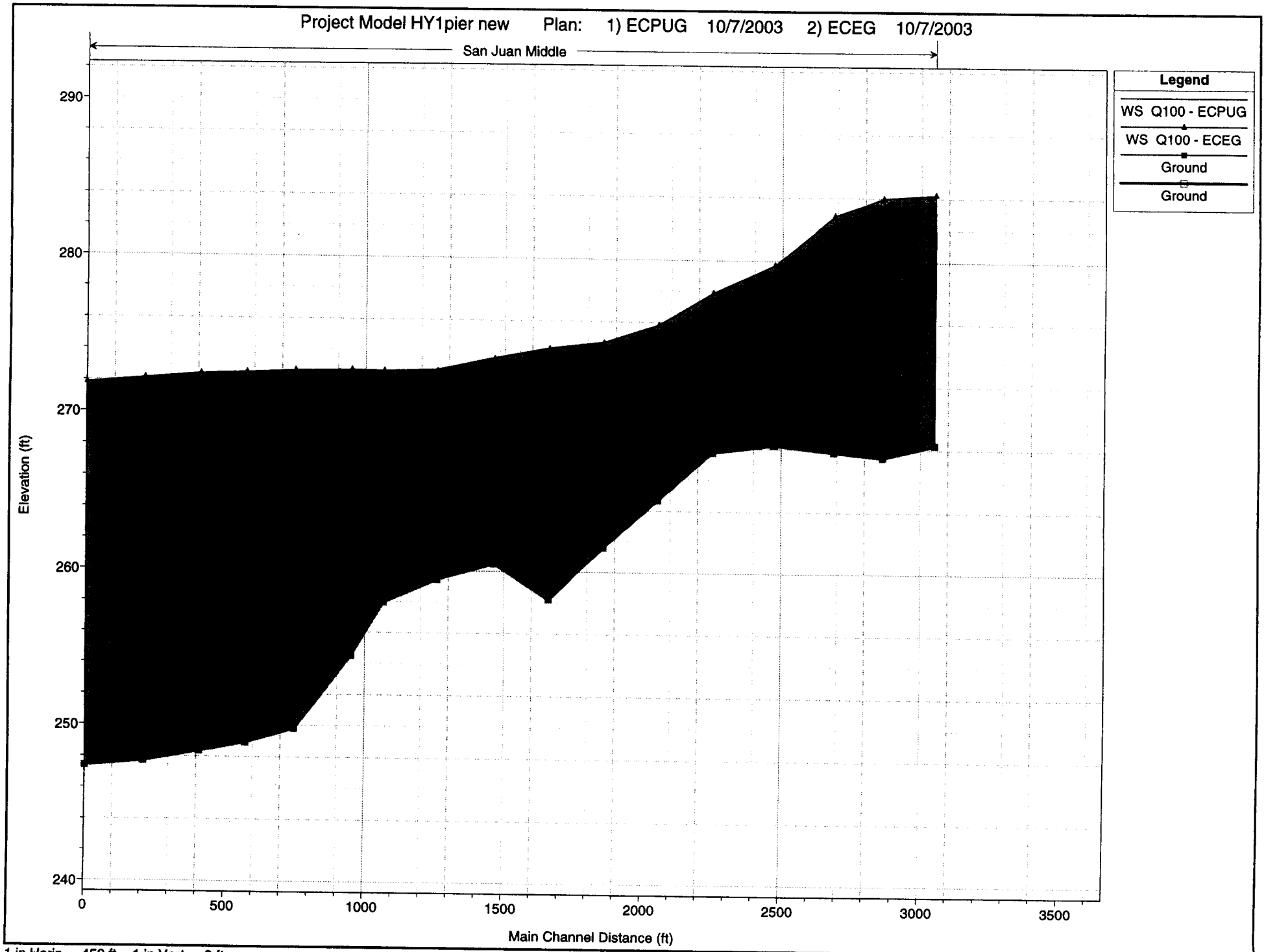
1 in Horiz. = 200 ft 1 in Vert. = 80 ft

Project Model HY1pier new Plan: 1) ECPUG 2) ECEG

RS = 236.129



1 in Horiz. = 200 ft 1 in Vert. = 80 ft


Project Model HY1pier new Plan: 1) ECPUG 10/7/2003 2) ECEG 10/7/2003
San Juan Middle
Legend
WS Q100 - ECPUG
WS Q100 - ECEG
Ground
Ground
Elevation (ft)
290
280
270
260
250
240
0
500
1000
1500
2000
2500
3000
3500
Main Channel Distance (ft)
1 in Horiz. = 450 ft 1 in Vert. = 8 ft

APPENDIX BB
HYDRAULIC MODEL INPUT & RESULTS
A7-FEC-M ALTERNATIVE AT SAN JUAN CREEK
(MODEL "HZ1")

Appendix BB. **Hydraulic Model Input & Results**

A7-FEC-M Alternative at San Juan Creek

- Model Report
- Project geometry, plan view
- Cross-sections comparing 100-yr existing and project geometries and water surface elevations
- Geometry and water surface elevation profile

Cross-sections associated with the proposed bridge structure include:

757	(2483)
696	(2283)
652	(2139)
612	(2008)
574	(1884)
537	(1763)
476	(1561)
397	(1301)
335	(1100)
295	(967)
263	(863)

HEC-RAS Version 3.1.1 May 2003
U.S. Army Corp of Engineers
Hydrologic Engineering Center
609 Second Street, Suite D
Davis, California 95616-4687
(916) 756-1104

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

PROJECT DATA
Project Title: Project Model HZ1
Project File : PMHZ1.prj
Run Date and Time: 9/28/2003 3:14:20 PM

Project in English units

Project Description:
A7C-FECM At San Juan Creek

PLAN DATA

Plan Title: Existing Flow/Proposed-Ultimate Geometry
Plan File : c:\projects\2PDA0104\hydr\LHS\Modeling\Model H\PMHZ1.p03

Geometry Title: Proposed Conditions - Ultimate
Geometry File : c:\projects\2PDA0104\hydr\LHS\Modeling\Model H\PMHZ1.g03

Flow Title : Existing Conditions
Flow File : c:\projects\2PDA0104\hydr\LHS\Modeling\Model H\PMHZ1.f01

Plan Summary Information:

Number of:	Cross Sections	= 22	Mulitple Openings	=	0
	Culverts	= 0	Inline Structures	=	0
	Bridges	= 0	Lateral Structures	=	0

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

Computation Options
Critical depth computed only where necessary

Conveyance Calculation Method: At breaks in n values only
Friction Slope Method: Average Conveyance
Computational Flow Regime: Mixed Flow

FLOW DATA

Flow Title: Existing Conditions
Flow File : c:\projects\2PDA0104\hydr\LHS\Modeling\Model H\PMHZ1.f01

Flow Data (cfs)

River	Reach	RS	Q2	Q5	Q10	Q25	Q50	Q100	Q100HC
San Juan Creek	Middle	4134.311	378	2357	4952	12954	20912	33062	84012

Boundary Conditions

River	Reach	Profile	Upstream	Downstream
San Juan Creek	Middle	Q2	Normal S = 0.001	Normal S = 0.002
San Juan Creek	Middle	Q5	Normal S = 0.001	Normal S = 0.002
San Juan Creek	Middle	Q10	Normal S = 0.001	Normal S = 0.002
San Juan Creek	Middle	Q25	Normal S = 0.001	Normal S = 0.002
San Juan Creek	Middle	Q50	Normal S = 0.001	Normal S = 0.002
San Juan Creek	Middle	Q100	Normal S = 0.001	Normal S = 0.002
San Juan Creek	Middle	Q100HC	Normal S = 0.001	Normal S = 0.002

GEOMETRY DATA

Geometry Title: Proposed Conditions - Ultimate
Geometry File : c:\projects\2PDA0104\hydr\LHS\Modeling\Model H\PMHZ1.g03

CROSS SECTION

RIVER: San Juan Creek
REACH: Middle RS: 4134.311

INPUT
Description:
Station Elevation Data num= 59

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	258.56	7.56	254.99	14.01	252.4	15.42	251.79	16.75	251.38
22.88	250.02	38.38	247.57	55.77	244.82	77.36	241.64	83.68	240.91
107.07	236.84	107.96	236.7	110.05	236.36	147.74	230.28	166.63	228.38
167.51	228.28	168.32	228.24	190.32	227.18	199.83	226.73	225.74	226.28
290.36	225	291.07	224.99	291.49	224.99	295.14	225.01	406.89	225.82
414.99	225.85	431.16	225.55	575.03	222.39	603.14	221.54	647.52	220.29
671.32	219.94	674.1	219.9	725.51	219.64	754.86	219.26	820.14	218.4
832.9	218.43	878.36	218.54	932.12	218.17	962.31	218.24	963.55	218.24
1000.01	218.52	1047.67	219.02	1072.53	219.98	1091.06	220.46	1111.01	221.48
1119.62	222.28	1125.89	222.83	1158.56	225.73	1174.86	227.39	1185.56	228.53
1190.28	229.27	1199.06	230.82	1211.07	234.56	1227.54	239.33	1257.76	246.33

1262.95 247.44 1277.25 249.85 1278.14 249.99 1279.42 250.07

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.07	38.38	.05	1125.89	.035

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
603.14	1111.01	142.56	151.38 160.62	.1	.3

CROSS SECTION OUTPUT Profile #Q50

E.G. Elev (ft)	229.19	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.16	Wt. n-Val.	0.050	0.050	0.040
W.S. Elev (ft)	229.03	Reach Len. (ft)	142.56	151.38	160.62
Crit W.S. (ft)	223.01	Flow Area (sq ft)	1768.14	4990.16	310.20
E.G. Slope (ft/ft)	0.000615	Area (sq ft)	1768.14	4990.16	310.20
Q Total (cfs)	20912.00	Flow (cfs)	3279.36	16876.38	756.26
Top Width (ft)	1028.66	Top Width (ft)	443.02	507.87	77.77
Vel Total (ft/s)	2.96	Avg. Vel. (ft/s)	1.85	3.38	2.44
Max Chl Dpth (ft)	10.86	Hydr. Depth (ft)	3.99	9.83	3.99
Conv. Total (cfs)	842911.8	Conv. (cfs)	132183.2	680245.8	30482.9
Length Wtd. (ft)	150.19	Wetted Per. (ft)	443.16	507.96	78.14
Min Ch El (ft)	218.17	Shear (lb/sq ft)	0.15	0.38	0.15
Alpha	1.14	Stream Power (lb/ft s)	0.28	1.28	0.37
Frctn Loss (ft)	0.11	Cum Volume (acre-ft)	46.28	463.55	35.45
C & E Loss (ft)	0.00	Cum SA (acres)	14.03	44.21	11.03

CROSS SECTION OUTPUT Profile #Q100

E.G. Elev (ft)	231.34	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.22	Wt. n-Val.	0.050	0.050	0.039
W.S. Elev (ft)	231.12	Reach Len. (ft)	142.56	151.38	160.62
Crit W.S. (ft)	224.36	Flow Area (sq ft)	2710.32	6047.08	484.53
E.G. Slope (ft/ft)	0.000690	Area (sq ft)	2710.32	6047.08	484.53
Q Total (cfs)	33062.00	Flow (cfs)	6895.42	24618.58	1548.00
Top Width (ft)	1057.45	Top Width (ft)	460.58	507.87	89.00
Vel Total (ft/s)	3.58	Avg. Vel. (ft/s)	2.54	4.07	3.19
Max Chl Dpth (ft)	12.95	Hydr. Depth (ft)	5.88	11.91	5.44
Conv. Total (cfs)	1258300.0	Conv. (cfs)	262431.2	936953.2	58915.2
Length Wtd. (ft)	150.00	Wetted Per. (ft)	460.85	507.96	89.57
Min Ch El (ft)	218.17	Shear (lb/sq ft)	0.25	0.51	0.23
Alpha	1.11	Stream Power (lb/ft s)	0.64	2.09	0.74
Frctn Loss (ft)	0.12	Cum Volume (acre-ft)	75.92	552.46	61.55
C & E Loss (ft)	0.01	Cum SA (acres)	17.13	44.21	14.84

CROSS SECTION OUTPUT Profile #Q100HC

E.G. Elev (ft)	236.98	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.51	Wt. n-Val.	0.050	0.050	0.038
W.S. Elev (ft)	236.47	Reach Len. (ft)	142.56	151.38	160.62
Crit W.S. (ft)	228.41	Flow Area (sq ft)	5265.65	8766.78	1007.61
E.G. Slope (ft/ft)	0.000986	Area (sq ft)	5265.65	8766.78	1007.61
Q Total (cfs)	84012.00	Flow (cfs)	23783.72	54635.12	5593.15
Top Width (ft)	1108.30	Top Width (ft)	493.77	507.87	106.66
Vel Total (ft/s)	5.59	Avg. Vel. (ft/s)	4.52	6.23	5.55
Max Chl Dpth (ft)	18.30	Hydr. Depth (ft)	10.66	17.26	9.45
Conv. Total (cfs)	2675536.0	Conv. (cfs)	757441.9	1739969.0	178125.6

Length Wtd. (ft)	149.77	Wetted Per. (ft)	494.47	507.96	108.03
Min Ch El (ft)	218.17	Shear (lb/sq ft)	0.66	1.06	0.57
Alpha	1.06	Stream Power (lb/ft s)	2.96	6.62	3.19
Frctn Loss (ft)	0.17	Cum Volume (acre-ft)	187.55	783.06	160.24
C & E Loss (ft)	0.01	Cum SA (acres)	25.98	44.21	22.60

CROSS SECTION

RIVER: San Juan Creek
REACH: Middle RS: 3982.936

INPUT
Description:
Station Elevation Data num= 62

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	262.66	4.4	261.83	7.7	260.79	13.29	259.02	21.22	255.77
25.64	253.76	32.55	250.61	38.11	248.92	63.88	244.28	67.15	243.55
73.17	242.7	76.91	242.25	78.86	242.01	95.62	240.04	155.65	235.16
173.52	233.49	189.06	232.11	197.36	231.5	207.64	230.71	291.7	225.75
294.75	225.6	325.45	224.57	359.52	223.47	366.51	223.35	368	223.32
441.64	222.39	505.82	222.71	520.26	222.7	563.58	221.62	608.54	220.69
666.71	220.32	716.31	219.4	773.67	219.07	780.95	219.03	810.1	218.76
837.19	218.52	873	219.22	884.44	219.34	963.73	220.17	978.58	220.35
985.6	220.43	994.51	220.91	1014.14	221.88	1086.45	225.44	1140.8	227.96
1143.01	228.07	1147.6	228.27	1161.32	228.95	1180.55	229.92	1183.18	230.26
1192.4	231.91	1195.29	232.52	1211.44	236.6	1224.74	239.99	1229.44	240.68
1244	243.16	1249.67	244.77	1260.61	247.77	1264.3	248.66	1269.71	250.09
1274.33	250.84	1281.8	251.59						

Manning's n Values num= 4

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	25.64	.07	76.91	.05	1140.8	.035

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
563.58	1014.14	190.66	191.49	190.18	.1	.3

CROSS SECTION OUTPUT Profile #Q50

E.G. Elev (ft)	229.08	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.19	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	228.88	Reach Len. (ft)	190.66	191.49	190.18
Crit W.S. (ft)		Flow Area (sq ft)	1652.84	4076.37	505.43
E.G. Slope (ft/ft)	0.000872	Area (sq ft)	1652.84	4076.37	505.43
Q Total (cfs)	20912.00	Flow (cfs)	4289.14	15533.70	1089.16
Top Width (ft)	921.40	Top Width (ft)	324.99	450.56	145.85
Vel Total (ft/s)	3.35	Avg. Vel. (ft/s)	2.60	3.81	2.15
Max Chl Dpth (ft)	10.36	Hydr. Depth (ft)	5.09	9.05	3.47
Conv. Total (cfs)	708033.0	Conv. (cfs)	145220.6	525936.1	36876.4
Length Wtd. (ft)	191.33	Wetted Per. (ft)	325.14	450.63	146.01
Min Ch El (ft)	218.52	Shear (lb/sq ft)	0.28	0.49	0.19
Alpha	1.10	Stream Power (lb/ft s)	0.72	1.88	0.41
Frctn Loss (ft)	0.16	Cum Volume (acre-ft)	40.68	447.79	33.95
C & E Loss (ft)	0.00	Cum SA (acres)	12.78	42.54	10.61

CROSS SECTION OUTPUT Profile #Q100

E.G. Elev (ft)	231.21	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.28	Wt. n-Val.	0.050	0.050	0.049
W.S. Elev (ft)	230.93	Reach Len. (ft)	190.66	191.49	190.18
Crit W.S. (ft)		Flow Area (sq ft)	2354.23	4999.57	839.24
E.G. Slope (ft/ft)	0.000967	Area (sq ft)	2354.23	4999.57	839.24
Q Total (cfs)	33062.00	Flow (cfs)	7621.05	22981.56	2459.40
Top Width (ft)	982.20	Top Width (ft)	358.84	450.56	172.80
Vel Total (ft/s)	4.04	Avg. Vel. (ft/s)	3.24	4.60	2.93
Max Chl Dpth (ft)	12.41	Hydr. Depth (ft)	6.56	11.10	4.86
Conv. Total (cfs)	1063278.0	Conv. (cfs)	245093.9	739089.9	79094.6
Length Wtd. (ft)	191.28	Wetted Per. (ft)	359.05	450.63	173.08
Min Ch El (ft)	218.52	Shear (lb/sq ft)	0.40	0.67	0.29
Alpha	1.09	Stream Power (lb/ft s)	1.28	3.08	0.86
Frctn Loss (ft)	0.19	Cum Volume (acre-ft)	67.64	533.26	59.11
C & E Loss (ft)	0.00	Cum SA (acres)	15.79	42.54	14.36

CROSS SECTION OUTPUT Profile #Q100HC

E.G. Elev (ft)	236.80	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.63	Wt. n-Val.	0.050	0.050	0.047
W.S. Elev (ft)	236.17	Reach Len. (ft)	190.66	191.49	190.18
Crit W.S. (ft)		Flow Area (sq ft)	4397.98	7359.27	1807.97
E.G. Slope (ft/ft)	0.001339	Area (sq ft)	4397.98	7359.27	1807.97
Q Total (cfs)	84012.00	Flow (cfs)	22866.16	51522.21	9623.63
Top Width (ft)	1066.51	Top Width (ft)	420.36	450.56	195.60
Vel Total (ft/s)	6.19	Avg. Vel. (ft/s)	5.20	7.00	5.32
Max Chl Dpth (ft)	17.65	Hydr. Depth (ft)	10.46	16.33	9.24
Conv. Total (cfs)	2295523.0	Conv. (cfs)	624789.4	1407780.0	262953.6
Length Wtd. (ft)	191.19	Wetted Per. (ft)	420.79	450.63	196.48
Min Ch El (ft)	218.52	Shear (lb/sq ft)	0.87	1.37	0.77
Alpha	1.06	Stream Power (lb/ft s)	4.54	9.56	4.10
Frctn Loss (ft)	0.27	Cum Volume (acre-ft)	171.74	755.04	155.05
C & E Loss (ft)	0.01	Cum SA (acres)	24.49	42.54	22.04

CROSS SECTION

RIVER: San Juan Creek
REACH: Middle RS: 3791.445

INPUT
Description:
Station Elevation Data num= 47

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	253.91	20.91	251.33	28.7	250.22	37.12	248.21	37.26	248.18
43.51	246.96	66.86	242.55	79.92	239.84	82.4	239.47	92.39	238.59
98.98	237.96	145.36	233.52	152.69	232.84	181.45	231.08	195	230.27
220.35	229.33	395.48	223.71	434.27	222.39	438.2	222.24	505.77	220.38
567.35	219.54	571.63	219.49	603.6	218.75	648.82	217.67	702.3	216.36
703.97	216.34	707.91	216.41	753.36	217.01	791.27	218.29	814.13	218.68
885.89	219.91	890.17	219.98	894.23	220.12	958.29	222.88	1005.78	225.05
1030.17	226.25	1088.8	229.13	1095.42	229.46	1109.83	230.14	1119.83	231.69
1163.1	236.95	1179.89	238.81	1193.22	239.59	1213.81	240.01	1223.89	240.13
1229.22	240.34	1237.27	240.76						

Manning's n Values num= 4

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val

0 .035 37.12 .07 98.98 .05 1088.8 .035

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
434.27	958.29	194.44	186.15	181.77	.1	.3

CROSS SECTION OUTPUT Profile #Q50

E.G. Elev (ft)	228.91	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.21	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	228.70	Reach Len. (ft)	194.44	186.15	181.77
Crit W.S. (ft)		Flow Area (sq ft)	606.40	4980.81	359.90
E.G. Slope (ft/ft)	0.000833	Area (sq ft)	606.40	4980.81	359.90
Q Total (cfs)	20912.00	Flow (cfs)	1110.90	19165.53	635.58
Top Width (ft)	839.87	Top Width (ft)	194.17	524.02	121.68
Vel Total (ft/s)	3.52	Avg. Vel. (ft/s)	1.83	3.85	1.77
Max Chl Dpth (ft)	12.36	Hydr. Depth (ft)	3.12	9.50	2.96
Conv. Total (cfs)	724554.8	Conv. (cfs)	38490.1	664043.4	22021.3
Length Wtd. (ft)	186.55	Wetted Per. (ft)	194.27	524.19	121.82
Min Ch El (ft)	216.34	Shear (lb/sq ft)	0.16	0.49	0.15
Alpha	1.12	Stream Power (lb/ft s)	0.30	1.90	0.27
Frctn Loss (ft)	0.11	Cum Volume (acre-ft)	35.74	427.88	32.06
C & E Loss (ft)	0.02	Cum SA (acres)	11.64	40.40	10.03

CROSS SECTION OUTPUT Profile #Q100

E.G. Elev (ft)	231.02	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.32	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	230.69	Reach Len. (ft)	194.44	186.15	181.77
Crit W.S. (ft)		Flow Area (sq ft)	1051.79	6027.94	641.92
E.G. Slope (ft/ft)	0.000996	Area (sq ft)	1051.79	6027.94	641.92
Q Total (cfs)	33062.00	Flow (cfs)	2594.84	28800.96	1666.20
Top Width (ft)	925.51	Top Width (ft)	246.37	524.02	155.12
Vel Total (ft/s)	4.28	Avg. Vel. (ft/s)	2.47	4.78	2.60
Max Chl Dpth (ft)	14.35	Hydr. Depth (ft)	4.27	11.50	4.14
Conv. Total (cfs)	1047692.0	Conv. (cfs)	82227.0	912664.9	52799.8
Length Wtd. (ft)	186.71	Wetted Per. (ft)	246.51	524.19	155.33
Min Ch El (ft)	216.34	Shear (lb/sq ft)	0.27	0.71	0.26
Alpha	1.13	Stream Power (lb/ft s)	0.65	3.42	0.67
Frctn Loss (ft)	0.14	Cum Volume (acre-ft)	60.18	509.02	55.87
C & E Loss (ft)	0.02	Cum SA (acres)	14.46	40.40	13.64

CROSS SECTION OUTPUT Profile #Q100HC

E.G. Elev (ft)	236.52	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.75	Wt. n-Val.	0.050	0.050	0.048
W.S. Elev (ft)	235.77	Reach Len. (ft)	194.44	186.15	181.77
Crit W.S. (ft)		Flow Area (sq ft)	2488.49	8687.18	1526.93
E.G. Slope (ft/ft)	0.001495	Area (sq ft)	2488.49	8687.18	1526.93
Q Total (cfs)	84012.00	Flow (cfs)	11397.39	64890.70	7723.90
Top Width (ft)	1031.52	Top Width (ft)	312.40	524.02	195.10
Vel Total (ft/s)	6.61	Avg. Vel. (ft/s)	4.58	7.47	5.06
Max Chl Dpth (ft)	19.43	Hydr. Depth (ft)	7.97	16.58	7.83
Conv. Total (cfs)	2172635.0	Conv. (cfs)	294748.0	1678139.0	199747.8
Length Wtd. (ft)	187.02	Wetted Per. (ft)	312.75	524.19	195.64
Min Ch El (ft)	216.34	Shear (lb/sq ft)	0.74	1.55	0.73
Alpha	1.10	Stream Power (lb/ft s)	3.40	11.56	3.69
Frctn Loss (ft)	0.24	Cum Volume (acre-ft)	156.67	719.77	147.77

C & E Loss (ft)	0.03	Cum SA (acres)	22.88	40.40	21.19

CROSS SECTION

RIVER: San Juan Creek
REACH: Middle RS: 3605.298

INPUT
Description:
Station Elevation Data num= 60

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	255.17	7.26	254.7	39.23	252.91	65.58	251.11	78.65	249.08
80.03	248.8	83.65	247.57	90.14	244.94	98.75	241.74	101.71	240.6
102.42	240.46	106.15	240.11	129.63	237.54	141.71	236.15	146.05	235.67
162.84	233.81	172.97	232.49	181.45	231.66	198.17	230.38	247.04	227.71
252.76	227.53	353.99	224.3	367.73	224.05	393.4	223.15	425.97	222.43
461.72	221.61	470.14	221.4	473.73	221.18	483.81	220.99	508.74	220.26
558.11	218.77	561.25	218.65	628.86	216.13	659.68	215.09	678.97	214.89
730.91	214.11	785.51	215.23	827.16	216.31	848.66	216.87	880.47	217.53
893.81	218.01	908.15	218.39	921.2	218.74	937.91	219.14	981.95	219.81
983.19	219.9	987.26	220.44	992.42	221.58	1017.35	224.55	1023.32	225.53
1035.61	227.08	1041.69	227.85	1051.2	229.08	1057.63	229.86	1100.44	231.94
1116.63	232.72	1228.08	238.62	1241.33	239.5	1270.17	240.72	1327.7	242.12

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.035	146.05	.05	1035.61	.035

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
461.72	992.42	270.91	265.6	252.8	.1	.3

CROSS SECTION OUTPUT Profile #Q50

E.G. Elev (ft)	228.78	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.15	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	228.63	Reach Len. (ft)	270.91	265.60	252.80
Crit W.S. (ft)		Flow Area (sq ft)	905.29	5997.34	198.20
E.G. Slope (ft/ft)	0.000456	Area (sq ft)	905.29	5997.34	198.20
Q Total (cfs)	20912.00	Flow (cfs)	1425.62	19160.66	325.72
Top Width (ft)	817.53	Top Width (ft)	231.52	530.70	55.30
Vel Total (ft/s)	2.95	Avg. Vel. (ft/s)	1.57	3.19	1.64
Max Chl Dpth (ft)	14.52	Hydr. Depth (ft)	3.91	11.30	3.58
Conv. Total (cfs)	979155.3	Conv. (cfs)	66751.3	897153.1	15250.9
Length Wtd. (ft)	265.68	Wetted Per. (ft)	231.64	531.05	55.76
Min Ch El (ft)	214.11	Shear (lb/sq ft)	0.11	0.32	0.10
Alpha	1.10	Stream Power (lb/ft s)	0.18	1.03	0.17
Frctn Loss (ft)	0.04	Cum Volume (acre-ft)	32.36	404.43	30.89
C & E Loss (ft)	0.03	Cum SA (acres)	10.69	38.15	9.66

Warning: The conveyance ratio (upstream 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 #Q100

E.G. Elev (ft)	230.85	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.24	Wt. n-Val.	0.050	0.050	0.049

W.S. Elev (ft)	230.60	Reach Len. (ft)	270.91	265.60	252.80
Crit W.S. (ft)		Flow Area (sq ft)	1397.72	7044.69	326.40
E.G. Slope (ft/ft)	0.000619	Area (sq ft)	1397.72	7044.69	326.40
Q Total (cfs)	33062.00	Flow (cfs)	3118.04	29184.42	759.54
Top Width (ft)	877.69	Top Width (ft)	266.47	530.70	80.52
Vel Total (ft/s)	3.77	Avg. Vel. (ft/s)	2.23	4.14	2.33
Max Chl Dpth (ft)	16.49	Hydr. Depth (ft)	5.25	13.27	4.05
Conv. Total (cfs)	1329076.0	Conv. (cfs)	125343.7	1173200.0	30533.1
Length Wtd. (ft)	265.70	Wetted Per. (ft)	266.65	531.05	81.07
Min Ch El (ft)	214.11	Shear (lb/sq ft)	0.20	0.51	0.16
Alpha	1.11	Stream Power (lb/ft s)	0.45	2.12	0.36
Frctn Loss (ft)	0.07	Cum Volume (acre-ft)	54.72	481.09	53.85
C & E Loss (ft)	0.05	Cum SA (acres)	13.32	38.15	13.15

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

CROSS SECTION OUTPUT Profile #Q100HC

E.G. Elev (ft)	236.25	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.66	Wt. n-Val.	0.050	0.050	0.044
W.S. Elev (ft)	235.59	Reach Len. (ft)	270.91	265.60	252.80
Crit W.S. (ft)		Flow Area (sq ft)	2856.04	9689.69	976.82
E.G. Slope (ft/ft)	0.001142	Area (sq ft)	2856.04	9689.69	976.82
Q Total (cfs)	84012.00	Flow (cfs)	12461.70	67443.07	4107.24
Top Width (ft)	1024.01	Top Width (ft)	314.93	530.70	178.38
Vel Total (ft/s)	6.21	Avg. Vel. (ft/s)	4.36	6.96	4.20
Max Chl Dpth (ft)	21.48	Hydr. Depth (ft)	9.07	18.26	5.48
Conv. Total (cfs)	2486122.0	Conv. (cfs)	368772.2	1995806.0	121543.2
Length Wtd. (ft)	265.61	Wetted Per. (ft)	315.36	531.05	179.06
Min Ch El (ft)	214.11	Shear (lb/sq ft)	0.65	1.30	0.39
Alpha	1.10	Stream Power (lb/ft s)	2.82	9.05	1.64
Frctn Loss (ft)	0.15	Cum Volume (acre-ft)	144.74	680.50	142.54
C & E Loss (ft)	0.11	Cum SA (acres)	21.48	38.15	20.41

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.

CROSS SECTION

RIVER: San Juan Creek
REACH: Middle RS: 3339.701

INPUT
Description:
Station Elevation Data num= 67

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	246.62	15.28	245.25	55.17	240.8	63	240.09	63.98	239.96
67.35	239.02	77.54	236.73	78.88	236.29	96.18	232.32	105.34	230.78
108.52	229.87	121.18	228.44	128.75	227.59	135.77	226.86	141.77	226.22
179.97	222.38	201.5	220.09	209.6	217.46	215.68	216.01	225.29	213.17
234.36	210.42	239.59	209.57	244.55	209.27	258.09	208.01	261.91	207.88
274.24	207.31	296.52	207.01	310.32	207	316.27	207.17	321.37	207.25
355.82	207.7	425.81	208.42	445.35	208.91	455.03	209.14	463.71	209.43
516.72	210.44	532.9	210.7	544.19	210.89	566.34	211.46	627.81	212.93
671.42	213.84	700.28	214.66	729.46	215.31	740.4	215.52	765.07	215.9

780.92	216.15	807.2	216.56	864.4	216.77	896.89	216.88	911.21	216.9
915.25	217.1	947.42	219.8	954.73	220.78	961.82	222.21	964.77	222.8
966.57	223.29	971.02	224.29	992.72	229.4	996.34	229.88	997.68	230.06
1022.99	230.84	1080.35	232.42	1143.63	234.23	1164.8	235.01	1302.48	238.8
1311.28	238.99	1346.41	239.71						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.035	121.18	.05	996.34	.035

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
179.97	961.82	248.04	227.45 213.64	.1	.3

CROSS SECTION OUTPUT Profile #Q50

			Left OB	Channel	Right OB
E.G. Elev (ft)	228.71	Element			
Vel Head (ft)	0.04	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	228.66	Reach Len. (ft)	248.04	227.45	213.64
Crit W.S. (ft)		Flow Area (sq ft)	194.58	12423.70	90.55
E.G. Slope (ft/ft)	0.000079	Area (sq ft)	194.58	12423.70	90.55
Q Total (cfs)	20912.00	Flow (cfs)	113.78	20746.44	51.78
Top Width (ft)	870.37	Top Width (ft)	60.76	781.85	27.77
Vel Total (ft/s)	1.65	Avg. Vel. (ft/s)	0.58	1.67	0.57
Max Chl Dpth (ft)	21.66	Hydr. Depth (ft)	3.20	15.89	3.26
Conv. Total (cfs)	2348012.0	Conv. (cfs)	12775.1	2329423.0	5814.0
Length Wtd. (ft)	227.53	Wetted Per. (ft)	61.08	783.96	28.51
Min Ch El (ft)	207.00	Shear (lb/sq ft)	0.02	0.08	0.02
Alpha	1.02	Stream Power (lb/ft s)	0.01	0.13	0.01
Frctn Loss (ft)	0.01	Cum Volume (acre-ft)	28.94	348.27	30.05
C & E Loss (ft)	0.00	Cum SA (acres)	9.78	34.15	9.42

CROSS SECTION OUTPUT Profile #Q100

			Left OB	Channel	Right OB
E.G. Elev (ft)	230.73	Element			
Vel Head (ft)	0.08	Wt. n-Val.	0.049	0.050	0.050
W.S. Elev (ft)	230.65	Reach Len. (ft)	248.04	227.45	213.64
Crit W.S. (ft)		Flow Area (sq ft)	331.28	13978.58	161.08
E.G. Slope (ft/ft)	0.000132	Area (sq ft)	331.28	13978.58	161.08
Q Total (cfs)	33062.00	Flow (cfs)	333.36	32586.15	142.49
Top Width (ft)	911.06	Top Width (ft)	74.18	781.85	55.03
Vel Total (ft/s)	2.28	Avg. Vel. (ft/s)	1.01	2.33	0.88
Max Chl Dpth (ft)	23.65	Hydr. Depth (ft)	4.47	17.88	2.93
Conv. Total (cfs)	2876723.0	Conv. (cfs)	29005.8	2835319.0	12397.6
Length Wtd. (ft)	227.59	Wetted Per. (ft)	74.68	783.96	55.92
Min Ch El (ft)	207.00	Shear (lb/sq ft)	0.04	0.15	0.02
Alpha	1.03	Stream Power (lb/ft s)	0.04	0.34	0.02
Frctn Loss (ft)	0.03	Cum Volume (acre-ft)	49.34	417.00	52.44
C & E Loss (ft)	0.00	Cum SA (acres)	12.26	34.15	12.76

CROSS SECTION OUTPUT Profile #Q100HC

			Left OB	Channel	Right OB
E.G. Elev (ft)	235.99	Element			
Vel Head (ft)	0.30	Wt. n-Val.	0.047	0.050	0.042
W.S. Elev (ft)	235.68	Reach Len. (ft)	248.04	227.45	213.64
Crit W.S. (ft)		Flow Area (sq ft)	769.42	17913.92	881.03
E.G. Slope (ft/ft)	0.000352	Area (sq ft)	769.42	17913.92	881.03
Q Total (cfs)	84012.00	Flow (cfs)	1925.58	80391.29	1695.13

Top Width (ft)	1107.78	Top Width (ft)	98.45	781.85	227.48
Vel Total (ft/s)	4.29	Avg. Vel. (ft/s)	2.50	4.49	1.92
Max Chl Dpth (ft)	28.68	Hydr. Depth (ft)	7.82	22.91	3.87
Conv. Total (cfs)	4480025.0	Conv. (cfs)	102683.5	4286947.0	90394.5
Length Wtd. (ft)	227.62	Wetted Per. (ft)	99.48	783.96	228.43
Min Ch El (ft)	207.00	Shear (lb/sq ft)	0.17	0.50	0.08
Alpha	1.06	Stream Power (lb/ft s)	0.42	2.25	0.16
Frctn Loss (ft)	0.07	Cum Volume (acre-ft)	133.47	596.35	137.15
C & E Loss (ft)	0.01	Cum SA (acres)	20.20	34.15	19.24

CROSS SECTION

RIVER: San Juan Creek
REACH: Middle RS: 3112.250

INPUT
Description: Modify XS 2:1 Slope @ STA 62
Station Elevation Data num= 71

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	278	62	247.72	100.93	245.02	137.44	242.18	149.9	241.53
162.61	240.72	165.68	240.32	171.8	239.34	187.43	233.56	197.14	230.38
201.07	229.51	206.47	228.48	223.5	226.59	223.8	226.56	223.91	226.54
239.17	225.36	269.73	223	282.93	221.62	291.05	220.65	292.27	220.35
298.5	218.78	303.41	216.95	319.34	211.1	324.47	209.83	329.39	209.13
338.56	208.51	387.68	208.21	389.81	208.2	390.19	208.19	486.39	208.77
490.03	208.8	523.54	209.04	659.12	210.3	690.94	210.58	692.71	210.59
696.06	210.59	767.31	211.43	805.48	211.18	840.72	210.48	846.07	210.37
863.66	210.04	882.46	209.51	932.15	209.21	935.76	209.16	940	209.1
956.15	209.29	981.86	211.04	986.11	211.26	987.38	211.33	990.71	211.8
1010.03	214.33	1025.98	217.82	1029.25	218.52	1038.1	220.06	1042.96	220.75
1052.64	221.94	1060.41	223.91	1076.27	227.03	1084.17	228.58	1086.35	229.06
1089.75	229.29	1099.32	230.1	1101.77	230.25	1105.8	230.32	1130.89	231.05
1291.55	234.06	1304.71	234.23	1312.75	234.38	1347.96	235.16	1475.13	237.69
1494.82	238.07								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.035	239.17	.05	1076.27	.035

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
269.73	1052.64	224.26	188.45	190.23	.1	.3

CROSS SECTION OUTPUT Profile #Q50

E.G. Elev (ft)	228.69	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.03	Wt. n-Val.	0.046	0.050	0.049
W.S. Elev (ft)	228.65	Reach Len. (ft)	224.26	188.45	190.23
Crit W.S. (ft)		Flow Area (sq ft)	197.87	13943.00	101.68
E.G. Slope (ft/ft)	0.000054	Area (sq ft)	197.87	13943.00	101.68
Q Total (cfs)	20912.00	Flow (cfs)	109.43	20749.05	53.53
Top Width (ft)	878.93	Top Width (ft)	64.16	782.91	31.86
Vel Total (ft/s)	1.47	Avg. Vel. (ft/s)	0.55	1.49	0.53
Max Chl Dpth (ft)	20.46	Hydr. Depth (ft)	3.08	17.81	3.19
Conv. Total (cfs)	2840841.0	Conv. (cfs)	14865.2	2818704.0	7271.4
Length Wtd. (ft)	188.68	Wetted Per. (ft)	64.42	785.88	32.57
Min Ch El (ft)	208.19	Shear (lb/sq ft)	0.01	0.06	0.01
Alpha	1.02	Stream Power (lb/ft s)	0.01	0.09	0.01

Frctn Loss (ft)	0.01	Cum Volume (acre-ft)	27.82	279.43	29.58
C & E Loss (ft)	0.00	Cum SA (acres)	9.43	30.06	9.27

CROSS SECTION OUTPUT Profile #Q100

E.G. Elev (ft)	230.70	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.07	Wt. n-Val.	0.044	0.050	0.048
W.S. Elev (ft)	230.63	Reach Len. (ft)	224.26	188.45	190.23
Crit W.S. (ft)		Flow Area (sq ft)	334.83	15494.63	186.29
E.G. Slope (ft/ft)	0.000094	Area (sq ft)	334.83	15494.63	186.29
Q Total (cfs)	33062.00	Flow (cfs)	319.29	32590.33	152.37
Top Width (ft)	920.23	Top Width (ft)	73.37	782.91	63.96
Vel Total (ft/s)	2.06	Avg. Vel. (ft/s)	0.95	2.10	0.82
Max Chl Dpth (ft)	22.44	Hydr. Depth (ft)	4.56	19.79	2.91
Conv. Total (cfs)	3409300.0	Conv. (cfs)	32925.0	3360662.0	15712.5
Length Wtd. (ft)	188.86	Wetted Per. (ft)	73.84	785.88	64.76
Min Ch El (ft)	208.19	Shear (lb/sq ft)	0.03	0.12	0.02
Alpha	1.03	Stream Power (lb/ft s)	0.03	0.24	0.01
Frctn Loss (ft)	0.02	Cum Volume (acre-ft)	47.44	340.05	51.58
C & E Loss (ft)	0.00	Cum SA (acres)	11.84	30.06	12.47

CROSS SECTION OUTPUT Profile #Q100HC

E.G. Elev (ft)	235.90	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.26	Wt. n-Val.	0.042	0.050	0.040
W.S. Elev (ft)	235.64	Reach Len. (ft)	224.26	188.45	190.23
Crit W.S. (ft)		Flow Area (sq ft)	739.87	19416.29	1138.53
E.G. Slope (ft/ft)	0.000269	Area (sq ft)	739.87	19416.29	1138.53
Q Total (cfs)	84012.00	Flow (cfs)	1825.94	80305.26	1880.80
Top Width (ft)	1190.45	Top Width (ft)	87.93	782.91	319.61
Vel Total (ft/s)	3.95	Avg. Vel. (ft/s)	2.47	4.14	1.65
Max Chl Dpth (ft)	27.45	Hydr. Depth (ft)	8.41	24.80	3.56
Conv. Total (cfs)	5120710.0	Conv. (cfs)	111295.1	4894776.0	114638.7
Length Wtd. (ft)	189.36	Wetted Per. (ft)	89.25	785.88	320.46
Min Ch El (ft)	208.19	Shear (lb/sq ft)	0.14	0.42	0.06
Alpha	1.06	Stream Power (lb/ft s)	0.34	1.72	0.10
Frctn Loss (ft)	0.05	Cum Volume (acre-ft)	129.17	498.89	132.20
C & E Loss (ft)	0.00	Cum SA (acres)	19.67	30.06	17.89

CROSS SECTION

RIVER: San Juan Creek
REACH: Middle RS: 2923.799

INPUT
Description: Modify XS 2:1 Slope @ STA 135
Station Elevation Data num= 78

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	298	135	236.35	139.49	234.84	146.69	232.27	153.92	230.2
161.73	228.62	167.56	227.95	176.43	227.26	199.36	225.6	215.08	224.46
230.16	223.52	243.17	222.49	271.84	221.13	273.61	221.05	283.42	219.92
286.46	219.49	290.83	218.41	301.73	215.24	313.75	213.03	316.75	212.5
321.4	211.91	336.76	210.12	348.71	209.66	354.55	209.22	363.51	208.47
365.47	208.27	366.65	208.16	380.15	207.86	398.68	207.18	444.19	207.61
473.11	207.89	519.42	208.87	575.15	209.59	601.97	210.17	611.61	210.63

642.54	211.76	663.53	211.8	680.84	211.93	727.3	210.47	729.07	210.47
735.76	210.47	761.84	210.08	783.58	209.75	820.44	209.32	830.35	209.65
852.97	209.73	858.55	209.75	873.12	209.62	898.31	210.15	943.41	209.99
943.75	209.99	943.9	209.99	944.31	210	963.64	210.89	970.48	211.35
995.99	215.06	1005.22	216.39	1008.05	216.67	1014.63	217.56	1033.02	220.33
1047.12	222.43	1064.74	225.69	1067.23	226.11	1069.53	226.49	1082.88	228.7
1088.15	229.87	1088.86	229.98	1104.82	231.45	1148.81	232.51	1153.01	232.56
1156.07	232.6	1160.91	232.75	1167.68	232.93	1232.54	234.6	1236.77	234.77
1249.51	235.2	1365.64	238.06	1423.99	239.86				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.035	199.36	.05	1167.68	.035

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
243.17	1047.12	275	254	216.71	.1	.3

CROSS SECTION OUTPUT Profile #Q50

			Left OB	Channel	Right OB
E.G. Elev (ft)	228.68	Element			
Vel Head (ft)	0.03	Wt. n-Val.	0.047	0.050	0.050
W.S. Elev (ft)	228.64	Reach Len. (ft)	275.00	254.00	216.71
Crit W.S. (ft)		Flow Area (sq ft)	262.30	14015.86	106.95
E.G. Slope (ft/ft)	0.000055	Area (sq ft)	262.30	14015.86	106.95
Q Total (cfs)	20912.00	Flow (cfs)	148.39	20714.90	48.71
Top Width (ft)	920.91	Top Width (ft)	81.55	803.95	35.41
Vel Total (ft/s)	1.45	Avg. Vel. (ft/s)	0.57	1.48	0.46
Max Chl Dpth (ft)	21.46	Hydr. Depth (ft)	3.22	17.43	3.02
Conv. Total (cfs)	2822197.0	Conv. (cfs)	20026.2	2795597.0	6574.0
Length Wtd. (ft)	253.51	Wetted Per. (ft)	81.79	806.08	35.95
Min Ch El (ft)	207.18	Shear (lb/sq ft)	0.01	0.06	0.01
Alpha	1.03	Stream Power (lb/ft s)	0.01	0.09	0.00
Frctn Loss (ft)	0.03	Cum Volume (acre-ft)	26.64	218.95	29.13
C & E Loss (ft)	0.01	Cum SA (acres)	9.05	26.63	9.13

Warning: The conveyance ratio (upstream 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 #Q100

			Left OB	Channel	Right OB
E.G. Elev (ft)	230.68	Element			
Vel Head (ft)	0.07	Wt. n-Val.	0.045	0.050	0.050
W.S. Elev (ft)	230.62	Reach Len. (ft)	275.00	254.00	216.71
Crit W.S. (ft)		Flow Area (sq ft)	432.89	15603.71	187.29
E.G. Slope (ft/ft)	0.000095	Area (sq ft)	432.89	15603.71	187.29
Q Total (cfs)	33062.00	Flow (cfs)	417.61	32512.73	131.66
Top Width (ft)	943.32	Top Width (ft)	90.71	803.95	48.66
Vel Total (ft/s)	2.04	Avg. Vel. (ft/s)	0.96	2.08	0.70
Max Chl Dpth (ft)	23.44	Hydr. Depth (ft)	4.77	19.41	3.85
Conv. Total (cfs)	3399618.0	Conv. (cfs)	42941.2	3343140.0	13537.6
Length Wtd. (ft)	253.34	Wetted Per. (ft)	91.16	806.08	49.37
Min Ch El (ft)	207.18	Shear (lb/sq ft)	0.03	0.11	0.02
Alpha	1.03	Stream Power (lb/ft s)	0.03	0.24	0.02
Frctn Loss (ft)	0.05	Cum Volume (acre-ft)	45.47	272.78	50.77
C & E Loss (ft)	0.02	Cum SA (acres)	11.42	26.63	12.22

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.

CROSS SECTION OUTPUT Profile #Q100HC

E.G. Elev (ft)	235.85	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.25	Wt. n-Val.	0.043	0.050	0.049
W.S. Elev (ft)	235.59	Reach Len. (ft)	275.00	254.00	216.71
Crit W.S. (ft)		Flow Area (sq ft)	923.86	19605.20	818.04
E.G. Slope (ft/ft)	0.000271	Area (sq ft)	923.86	19605.20	818.04
Q Total (cfs)	84012.00	Flow (cfs)	2291.63	80543.80	1176.57
Top Width (ft)	1128.29	Top Width (ft)	105.92	803.95	218.42
Vel Total (ft/s)	3.94	Avg. Vel. (ft/s)	2.48	4.11	1.44
Max Chl Dpth (ft)	28.41	Hydr. Depth (ft)	8.72	24.39	3.75
Conv. Total (cfs)	5101555.0	Conv. (cfs)	139157.3	4890952.0	71445.9
Length Wtd. (ft)	252.80	Wetted Per. (ft)	107.18	806.08	219.22
Min Ch El (ft)	207.18	Shear (lb/sq ft)	0.15	0.41	0.06
Alpha	1.06	Stream Power (lb/ft s)	0.36	1.69	0.09
Frctn Loss (ft)	0.14	Cum Volume (acre-ft)	124.89	414.48	127.93
C & E Loss (ft)	0.05	Cum SA (acres)	19.17	26.63	16.72

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

CROSS SECTION

RIVER: San Juan Creek
REACH: Middle RS: 2669.802

INPUT
Description: Modify XS 2:1 Slope @ STA 290,436,605,738
Station Elevation Data num= 90

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	237.99	44.3	237.04	60.01	236.97	87.22	237.05	126.85	237.42
184.04	238.4	233	239.43	269.33	240.69	290	241.03	436	290
605	290	738	227.88	743.32	227.78	821.99	226.12	832.54	225.74
870.53	224.01	875.19	224.2	888.42	224.66	899.92	225.16	912.86	226.2
936.79	225.92	940.05	225.86	943.75	225.82	957.34	226.29	987.62	227.95
991.84	228.01	1004.44	227.89	1011.85	227.52	1030.74	224.96	1044.56	224.01
1058.91	221.94	1071.01	220.86	1085.49	220	1116.97	219.69	1131.08	219.67
1159.61	218.92	1164.69	218.68	1168.54	218.38	1182.13	217.34	1195.19	215.96
1219.05	213.25	1229.73	212.57	1250.92	211.71	1253.53	211.57	1258.15	211.55
1267.21	211.77	1284.54	212.19	1290.82	211.84	1305.99	210.02	1315.85	209.55
1327.99	209	1336.57	208.56	1340.65	208.49	1344.6	208.49	1354.85	208.6
1356.32	208.64	1357.4	208.69	1377.57	209.18	1385.2	209.73	1390.99	209.96
1398.06	210.97	1405.15	211.96	1413.8	214.26	1420.71	215.92	1428.79	218.2
1436.52	219.78	1442.1	220.99	1444.41	221.54	1447.23	221.74	1481.64	224.64
1520.4	226.61	1527.63	226.93	1569.71	229.82	1605	231.28	1629.02	232.83
1643.16	233.81	1664.05	234.82	1678.85	235.57	1701.78	235.89	1710.75	236.06
1714.63	236.18	1748.57	236.69	1757.88	237.08	1782.47	239.72	1802.16	240.44
1818.59	240.8	1829	241.02	1857.28	241.85	1903.59	243.21	1934.67	244.11

Manning's n Values num= 4

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	738	.05	1818.59	.035	1857.28	.02

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
738 1444.41 160.75 186.48 183.52 .1 .3
Blocked Obstructions num= 1
Sta L Sta R Elev
0 436 300

CROSS SECTION OUTPUT Profile #Q50

E.G. Elev (ft)	228.63	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.17	Wt. n-Val.	0.035	0.050	0.050
W.S. Elev (ft)	228.46	Reach Len. (ft)	160.75	186.48	183.52
Crit W.S. (ft)		Flow Area (sq ft)	0.36	6137.74	339.92
E.G. Slope (ft/ft)	0.000699	Area (sq ft)	0.36	6137.74	339.92
Q Total (cfs)	20912.00	Flow (cfs)	0.17	20330.31	581.53
Top Width (ft)	813.18	Top Width (ft)	1.25	706.41	105.52
Vel Total (ft/s)	3.23	Avg. Vel. (ft/s)	0.46	3.31	1.71
Max Chl Dpth (ft)	19.97	Hydr. Depth (ft)	0.29	8.69	3.22
Conv. Total (cfs)	791126.6	Conv. (cfs)	6.3	769120.4	21999.9
Length Wtd. (ft)	184.27	Wetted Per. (ft)	1.37	708.87	105.76
Min Ch El (ft)	208.49	Shear (lb/sq ft)	0.01	0.38	0.14
Alpha	1.03	Stream Power (lb/ft s)	0.01	1.25	0.24
Frctn Loss (ft)	0.26	Cum Volume (acre-ft)	25.81	160.19	28.02
C & E Loss (ft)	0.05	Cum SA (acres)	8.79	22.23	8.78

Warning: The conveyance ratio (upstream 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 #Q100

E.G. Elev (ft)	230.61	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.27	Wt. n-Val.	0.035	0.050	0.050
W.S. Elev (ft)	230.34	Reach Len. (ft)	160.75	186.48	183.52
Crit W.S. (ft)		Flow Area (sq ft)	6.45	7460.91	564.39
E.G. Slope (ft/ft)	0.000890	Area (sq ft)	6.45	7460.91	564.39
Q Total (cfs)	33062.00	Flow (cfs)	8.77	31773.61	1279.62
Top Width (ft)	849.41	Top Width (ft)	5.26	706.41	137.75
Vel Total (ft/s)	4.12	Avg. Vel. (ft/s)	1.36	4.26	2.27
Max Chl Dpth (ft)	21.84	Hydr. Depth (ft)	1.23	10.56	4.10
Conv. Total (cfs)	1108058.0	Conv. (cfs)	294.0	1064878.0	42885.9
Length Wtd. (ft)	183.73	Wetted Per. (ft)	5.80	708.87	138.04
Min Ch El (ft)	208.49	Shear (lb/sq ft)	0.06	0.58	0.23
Alpha	1.04	Stream Power (lb/ft s)	0.08	2.49	0.52
Frctn Loss (ft)	0.31	Cum Volume (acre-ft)	44.08	205.54	48.90
C & E Loss (ft)	0.05	Cum SA (acres)	11.11	22.23	11.76

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream 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 #Q100HC

E.G. Elev (ft)	235.66	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.80	Wt. n-Val.	0.035	0.050	0.050
W.S. Elev (ft)	234.86	Reach Len. (ft)	160.75	186.48	183.52
Crit W.S. (ft)		Flow Area (sq ft)	52.17	10658.20	1381.06
E.G. Slope (ft/ft)	0.001641	Area (sq ft)	52.17	10658.20	1381.06

Q Total (cfs)	84012.00	Flow (cfs)	193.35	78174.96	5643.69
Top Width (ft)	941.81	Top Width (ft)	14.95	706.41	220.45
Vel Total (ft/s)	6.95	Avg. Vel. (ft/s)	3.71	7.33	4.09
Max Chl Dpth (ft)	26.37	Hydr. Depth (ft)	3.49	15.09	6.26
Conv. Total (cfs)	2073608.0	Conv. (cfs)	4772.2	1929537.0	139299.2
Length Wtd. (ft)	182.47	Wetted Per. (ft)	16.50	708.87	220.88
Min Ch El (ft)	208.49	Shear (lb/sq ft)	0.32	1.54	0.64
Alpha	1.06	Stream Power (lb/ft s)	1.20	11.30	2.62
Frctn Loss (ft)	0.43	Cum Volume (acre-ft)	121.81	326.25	122.46
C & E Loss (ft)	0.04	Cum SA (acres)	18.79	22.23	15.63

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.

CROSS SECTION

RIVER: San Juan Creek
REACH: Middle RS: 2483.318

INPUT
Description:
Station Elevation Data num= 78

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	243.81	19.95	243.04	28.98	242.8	62.49	241.8	63.51	241.78
65.15	241.82	90.27	242.12	103.14	242.07	107.84	242.19	129.63	241.45
135.91	241.1	149.17	240.53	153.2	240.57	162.28	240.44	244.39	239.67
272.02	239.34	274.98	239.34	277.53	239.29	319.9	238.18	385.85	237.84
397.37	237.77	403.1	237.76	407.51	237.68	418.14	237.41	550.85	234.62
574.74	233.72	650.81	231.39	702.8	229.75	713.97	229.5	846.98	226.53
867.23	226.09	916.99	225	972.4	223.35	1053.01	221.51	1084.03	220.68
1103.15	220.26	1117.67	220	1144.23	219.7	1159.08	219.54	1189.29	219.72
1249.45	220.23	1274.61	220.44	1284.73	220.79	1291.05	221.01	1320.82	221.49
1323.98	221.51	1337.92	222.25	1357.69	223.25	1385.2	224.04	1385.95	224.05
1468.26	223.99	1469.67	224.02	1471.21	224.03	1474.07	224.11	1487.14	224.53
1501.94	225.08	1512.53	225.38	1535.07	226.13	1577.32	227.53	1586.06	227.85
1587.87	227.92	1630	228.21	1655.13	228.45	1668.2	228.58	1698.43	229.26
1706.64	229.37	1711.16	230.27	1717.83	231.31	1739.12	238.07	1745.54	239.96
1753.09	241.33	1757.34	241.84	1775.65	243.09	1780.06	243.2	1795.59	243.44
1798.63	243.47	1833.56	243.14	1878.86	242.82				

Manning's n Values num= 2

Sta	n Val	Sta	n Val
0	.035	713.97	.05

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
1053.01	1320.82	191.67	200.23	203.15	.1	.3

Blocked Obstructions num= 1

Sta L	Sta R	Elev
679.5	690.5	270

CROSS SECTION OUTPUT Profile #Q50

E.G. Elev (ft)	228.32	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.64	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	227.68	Reach Len. (ft)	191.67	200.23	203.15
Crit W.S. (ft)		Flow Area (sq ft)	780.30	1975.95	825.26
E.G. Slope (ft/ft)	0.004166	Area (sq ft)	780.30	1975.95	825.26

Q Total (cfs)	20912.00	Flow (cfs)	3134.52	14363.97	3413.51
Top Width (ft)	785.74	Top Width (ft)	257.41	267.81	260.52
Vel Total (ft/s)	5.84	Avg. Vel. (ft/s)	4.02	7.27	4.14
Max Chl Dpth (ft)	8.14	Hydr. Depth (ft)	3.03	7.38	3.17
Conv. Total (cfs)	323978.0	Conv. (cfs)	48561.4	222533.1	52883.6
Length Wtd. (ft)	199.32	Wetted Per. (ft)	257.48	267.85	260.64
Min Ch El (ft)	219.54	Shear (lb/sq ft)	0.79	1.92	0.82
Alpha	1.22	Stream Power (lb/ft s)	3.17	13.95	3.41
Frctn Loss (ft)	0.86	Cum Volume (acre-ft)	24.37	142.83	25.56
C & E Loss (ft)	0.00	Cum SA (acres)	8.31	20.14	8.00

CROSS SECTION OUTPUT Profile #Q100

E.G. Elev (ft)	230.25	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.80	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	229.45	Reach Len. (ft)	191.67	200.23	203.15
Crit W.S. (ft)		Flow Area (sq ft)	1308.47	2451.89	1415.45
E.G. Slope (ft/ft)	0.004124	Area (sq ft)	1308.47	2451.89	1415.45
Q Total (cfs)	33062.00	Flow (cfs)	6167.36	20475.59	6419.05
Top Width (ft)	991.05	Top Width (ft)	337.00	267.81	386.24
Vel Total (ft/s)	6.39	Avg. Vel. (ft/s)	4.71	8.35	4.53
Max Chl Dpth (ft)	9.91	Hydr. Depth (ft)	3.88	9.16	3.66
Conv. Total (cfs)	514866.2	Conv. (cfs)	96042.8	318861.2	99962.2
Length Wtd. (ft)	199.05	Wetted Per. (ft)	337.09	267.85	386.39
Min Ch El (ft)	219.54	Shear (lb/sq ft)	1.00	2.36	0.94
Alpha	1.26	Stream Power (lb/ft s)	4.71	19.68	4.28
Frctn Loss (ft)	0.82	Cum Volume (acre-ft)	41.65	184.32	44.73
C & E Loss (ft)	0.00	Cum SA (acres)	10.48	20.14	10.65

CROSS SECTION OUTPUT Profile #Q100HC

E.G. Elev (ft)	235.19	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.20	Wt. n-Val.	0.049	0.050	0.050
W.S. Elev (ft)	233.98	Reach Len. (ft)	191.67	200.23	203.15
Crit W.S. (ft)		Flow Area (sq ft)	3139.67	3665.03	3214.53
E.G. Slope (ft/ft)	0.003743	Area (sq ft)	3139.67	3665.03	3214.53
Q Total (cfs)	84012.00	Flow (cfs)	22678.38	38121.84	23211.78
Top Width (ft)	1147.53	Top Width (ft)	474.28	267.81	405.43
Vel Total (ft/s)	8.39	Avg. Vel. (ft/s)	7.22	10.40	7.22
Max Chl Dpth (ft)	14.44	Hydr. Depth (ft)	6.62	13.69	7.93
Conv. Total (cfs)	1373187.0	Conv. (cfs)	370681.1	623106.3	379399.5
Length Wtd. (ft)	198.45	Wetted Per. (ft)	481.79	267.85	406.15
Min Ch El (ft)	219.54	Shear (lb/sq ft)	1.52	3.20	1.85
Alpha	1.10	Stream Power (lb/ft s)	11.00	33.26	13.35
Frctn Loss (ft)	0.77	Cum Volume (acre-ft)	115.92	295.59	112.78
C & E Loss (ft)	0.01	Cum SA (acres)	17.88	20.14	14.31

Warning: Divided flow computed for this cross-section.

CROSS SECTION

RIVER: San Juan Creek
REACH: Middle RS: 2283.086

INPUT

Description:

Station Elevation Data num= 53

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	245.16	7.18	244.87	58.01	242.46	92.78	240.81	111.33	240
156.32	238.89	274.12	237.45	298.22	237.36	363.31	237.08	381	236.65
387.49	236.49	429.74	235.47	545.8	233.11	554.61	232.92	563.53	232.71
739.57	229.62	754.12	229.46	762.59	229.37	813.01	228.49	895.4	226.54
943.86	225.6	954.59	225.39	1140.8	221.44	1167.97	220.8	1205.65	220
1216.26	219.48	1231.58	218.74	1246.76	218.49	1260.42	218.12	1287.81	219.33
1289.76	219.42	1333.4	219.81	1368.76	219.63	1382.38	219.62	1421.27	219.99
1437.86	220.49	1449.59	220.81	1478.12	221.6	1508.65	222.55	1574.1	224.15
1627.32	225.85	1653.81	226.71	1695.22	228.07	1719.54	229.55	1732.01	230.41
1737.23	230.94	1770.21	235.74	1797.18	239.33	1801.28	239.72	1821.12	240.94
1826.57	241.1	1850.17	241.69	1933.65	242.78				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.07	58.01	.035	754.12	.05

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
1167.97	1449.59	140.69 143.61	153.2	.1	.3

Blocked Obstructions num= 1

Sta L	Sta R	Elev
814.5	825.5	270

CROSS SECTION OUTPUT Profile #Q50

			Left OB	Channel	Right OB
E.G. Elev (ft)	227.46	Element			
Vel Head (ft)	0.68	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	226.78	Reach Len. (ft)	140.69	143.61	153.20
Crit W.S. (ft)		Flow Area (sq ft)	829.90	2018.92	635.32
E.G. Slope (ft/ft)	0.004449	Area (sq ft)	829.90	2018.92	635.32
Q Total (cfs)	20912.00	Flow (cfs)	3371.95	14875.68	2664.37
Top Width (ft)	770.71	Top Width (ft)	282.73	281.62	206.36
Vel Total (ft/s)	6.00	Avg. Vel. (ft/s)	4.06	7.37	4.19
Max Chl Dpth (ft)	8.66	Hydr. Depth (ft)	2.94	7.17	3.08
Conv. Total (cfs)	313526.5	Conv. (cfs)	50554.5	223026.0	39946.0
Length Wtd. (ft)	144.14	Wetted Per. (ft)	282.79	281.71	206.45
Min Ch El (ft)	218.12	Shear (lb/sq ft)	0.82	1.99	0.85
Alpha	1.21	Stream Power (lb/ft s)	3.31	14.67	3.58
Frctn Loss (ft)	1.04	Cum Volume (acre-ft)	20.83	133.64	22.16
C & E Loss (ft)	0.11	Cum SA (acres)	7.12	18.88	6.92

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

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

Warning: The energy loss was greater than 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 #Q100

			Left OB	Channel	Right OB
E.G. Elev (ft)	229.43	Element			
Vel Head (ft)	0.80	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	228.63	Reach Len. (ft)	140.69	143.61	153.20
Crit W.S. (ft)		Flow Area (sq ft)	1421.12	2539.19	1066.34
E.G. Slope (ft/ft)	0.004075	Area (sq ft)	1421.12	2539.19	1066.34
Q Total (cfs)	33062.00	Flow (cfs)	6948.50	20861.95	5251.55

Top Width (ft)	888.27	Top Width (ft)	351.86	281.62	254.80
Vel Total (ft/s)	6.58	Avg. Vel. (ft/s)	4.89	8.22	4.92
Max Chl Dpth (ft)	10.51	Hydr. Depth (ft)	4.04	9.02	4.19
Conv. Total (cfs)	517951.5	Conv. (cfs)	108855.6	326824.8	82271.2
Length Wtd. (ft)	144.27	Wetted Per. (ft)	352.54	281.71	254.92
Min Ch El (ft)	218.12	Shear (lb/sq ft)	1.03	2.29	1.06
Alpha	1.19	Stream Power (lb/ft s)	5.01	18.84	5.24
Frctn Loss (ft)	1.00	Cum Volume (acre-ft)	35.65	172.85	38.94
C & E Loss (ft)	0.15	Cum SA (acres)	8.97	18.88	9.16

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 #Q100HC

E.G. Elev (ft)	234.41	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.28	Wt. n-Val.	0.049	0.050	0.050
W.S. Elev (ft)	233.12	Reach Len. (ft)	140.69	143.61	153.20
Crit W.S. (ft)		Flow Area (sq ft)	3609.33	3804.78	2340.80
E.G. Slope (ft/ft)	0.004024	Area (sq ft)	3609.33	3804.78	2340.80
Q Total (cfs)	84012.00	Flow (cfs)	26084.94	40680.94	17246.12
Top Width (ft)	1196.00	Top Width (ft)	611.75	281.62	302.63
Vel Total (ft/s)	8.61	Avg. Vel. (ft/s)	7.23	10.69	7.37
Max Chl Dpth (ft)	15.00	Hydr. Depth (ft)	5.90	13.51	7.73
Conv. Total (cfs)	1324308.0	Conv. (cfs)	411185.2	641266.4	271856.0
Length Wtd. (ft)	144.40	Wetted Per. (ft)	621.46	281.71	303.00
Min Ch El (ft)	218.12	Shear (lb/sq ft)	1.46	3.39	1.94
Alpha	1.12	Stream Power (lb/ft s)	10.55	36.28	14.30
Frctn Loss (ft)	0.95	Cum Volume (acre-ft)	101.07	278.42	99.82
C & E Loss (ft)	0.20	Cum SA (acres)	15.50	18.88	12.66

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: San Juan Creek
REACH: Middle RS: 2139.477

INPUT
Description:
Station Elevation Data num= 62

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	244.55	8.73	243.93	24.2	242.54	62.84	240.24	66.6	240.01
66.74	240	66.92	240	80.85	239.65	243.06	235.54	245.16	235.51
247.36	235.5	253.54	235.45	357.36	234.55	444.34	234.43	485.94	234.51

505.91	234.5	527.63	234.25	639.03	231.88	772.91	228.81	775.07	228.76
817.45	227.79	821.81	227.66	826.95	227.52	874.49	226.6	917.92	225.93
961.51	225.07	982.53	225.05	1026.56	224.23	1186.52	220.69	1205	219.99
1242.75	218.66	1246.39	218.55	1255.07	218.3	1259.88	218.16	1273.4	217.76
1310.79	216.99	1311.33	217	1340.68	217.72	1358.63	218.31	1386.51	218.67
1438.51	219.6	1450.7	219.99	1494.16	221.95	1538.72	223.73	1552.69	224.41
1562.27	224.57	1640.75	227.67	1652.8	227.97	1660.8	228.51	1666.36	228.81
1725.96	230.96	1741.37	231.62	1760.78	232.58	1803.33	234.9	1850.54	236.68
1885.31	238.32	1903.76	239.46	1952.06	240.23	1976.28	240.42	1986.59	240.74
2020.17	241.24	2094.78	242.21						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.07	62.84	.035	775.07	.05

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
1205	1450.7	122.96	131.38	126.04	.1	.3

CROSS SECTION OUTPUT Profile #Q50

			Left OB	Channel	Right OB
E.G. Elev (ft)	226.31	Element			
Vel Head (ft)	1.78	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	224.53	Reach Len. (ft)	122.96	131.38	126.04
Crit W.S. (ft)		Flow Area (sq ft)	410.82	1495.63	236.80
E.G. Slope (ft/ft)	0.013492	Area (sq ft)	410.82	1495.63	236.80
Q Total (cfs)	20912.00	Flow (cfs)	2334.10	17208.63	1369.27
Top Width (ft)	549.34	Top Width (ft)	194.51	245.70	109.13
Vel Total (ft/s)	9.76	Avg. Vel. (ft/s)	5.68	11.51	5.78
Max Chl Dpth (ft)	7.54	Hydr. Depth (ft)	2.11	6.09	2.17
Conv. Total (cfs)	180032.8	Conv. (cfs)	20094.5	148150.2	11788.2
Length Wtd. (ft)	129.79	Wetted Per. (ft)	194.57	245.78	109.23
Min Ch El (ft)	216.99	Shear (lb/sq ft)	1.78	5.13	1.83
Alpha	1.21	Stream Power (lb/ft s)	10.10	58.98	10.56
Frctn Loss (ft)	1.34	Cum Volume (acre-ft)	18.82	127.85	20.62
C & E Loss (ft)	0.24	Cum SA (acres)	6.35	18.01	6.36

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 OUTPUT Profile #Q100

			Left OB	Channel	Right OB
E.G. Elev (ft)	228.28	Element			
Vel Head (ft)	2.33	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	225.95	Reach Len. (ft)	122.96	131.38	126.04
Crit W.S. (ft)	225.95	Flow Area (sq ft)	758.02	1844.77	419.41
E.G. Slope (ft/ft)	0.014126	Area (sq ft)	758.02	1844.77	419.41
Q Total (cfs)	33062.00	Flow (cfs)	5098.49	24978.63	2984.88
Top Width (ft)	680.61	Top Width (ft)	288.39	245.70	146.51
Vel Total (ft/s)	10.94	Avg. Vel. (ft/s)	6.73	13.54	7.12
Max Chl Dpth (ft)	8.96	Hydr. Depth (ft)	2.63	7.51	2.86
Conv. Total (cfs)	278178.4	Conv. (cfs)	42897.9	210166.2	25114.3
Length Wtd. (ft)	129.28	Wetted Per. (ft)	288.46	245.78	146.64
Min Ch El (ft)	216.99	Shear (lb/sq ft)	2.32	6.62	2.52
Alpha	1.25	Stream Power (lb/ft s)	15.59	89.62	17.95
Frctn Loss (ft)	1.39	Cum Volume (acre-ft)	32.13	165.62	36.33
C & E Loss (ft)	0.31	Cum SA (acres)	7.93	18.01	8.45

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 OUTPUT Profile #Q100HC

			Left OB	Channel	Right OB
E.G. Elev (ft)	233.26	Element			
Vel Head (ft)	3.28	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	229.97	Reach Len. (ft)	122.96	131.38	126.04
Crit W.S. (ft)		Flow Area (sq ft)	2338.68	2833.27	1212.47
E.G. Slope (ft/ft)	0.012735	Area (sq ft)	2338.68	2833.27	1212.47
Q Total (cfs)	84012.00	Flow (cfs)	23813.78	48488.89	11709.33
Top Width (ft)	976.44	Top Width (ft)	482.83	245.70	247.91
Vel Total (ft/s)	13.16	Avg. Vel. (ft/s)	10.18	17.11	9.66
Max Chl Dpth (ft)	12.98	Hydr. Depth (ft)	4.84	11.53	4.89
Conv. Total (cfs)	744458.0	Conv. (cfs)	211021.7	429676.1	103760.2
Length Wtd. (ft)	128.03	Wetted Per. (ft)	482.94	245.78	248.12
Min Ch El (ft)	216.99	Shear (lb/sq ft)	3.85	9.17	3.89
Alpha	1.22	Stream Power (lb/ft s)	39.20	156.85	37.52
Frctn Loss (ft)	1.08	Cum Volume (acre-ft)	91.46	267.48	93.58
C & E Loss (ft)	0.46	Cum SA (acres)	13.73	18.01	11.69

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

CROSS SECTION

RIVER: San Juan Creek
REACH: Middle RS: 2008.097

INPUT
Description:
Station Elevation Data num= 77

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	258.81	13.41	251.97	16.47	250.69	22.67	248.72	32.76	246.75
42.93	244.93	47.3	244.32	83.75	240.53	88.2	240.08	88.75	240.05
89.55	240.01	114.19	239.43	128.2	239.01	154.35	238.23	222.95	235.98
247.08	235.28	365.1	232.97	396.69	232.5	408.85	232.31	436.78	232.38
548.98	232.62	644.62	232.57	747.73	231.39	768.53	230.95	802.18	230.18
848.02	228.76	854.67	228.46	904.15	226.22	932.09	225.59	937.46	225.35
1029.8	222.71	1061.76	222.08	1064.13	222.03	1158.76	221.78	1194.64	221.09
1274.58	219.62	1285.25	219.41	1291.71	219.24	1324.74	218.2	1355.1	217.25
1388.84	216.23	1398.83	215.92	1415.2	216.08	1424.01	216.36	1468.7	217.35
1507.72	218.69	1519.46	218.8	1535.16	218.66	1554.3	219.54	1554.58	219.54

1557.47	219.57	1599.73	219.64	1613.97	219.41	1620.1	219.54	1651.37	220.05
1679.44	220.48	1682.64	220.62	1694.67	221.64	1719.55	223.64	1754.33	224.84
1766.95	225.55	1791.23	226.99	1799.7	227.57	1817.16	228.86	1829.08	229.49
1842.14	230.32	1896.06	232.8	1906.12	233.16	1912.41	233.44	1929.32	233.75
1965.01	234.2	1994.97	234.43	2022.65	235.32	2041.83	236.06	2099.06	237.66
2123.79	238.36	2136.68	238.92						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.07	128.2	.035	854.67	.05

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
1274.58	1557.47	125.67	124.38	140.61	.1	.3

Blocked Obstructions num= 1

Sta L	Sta R	Elev
964.5	975.5	270

CROSS SECTION OUTPUT Profile #Q50

E.G. Elev (ft)	224.74	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.00	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	223.74	Reach Len. (ft)	125.67	124.38	140.61
Crit W.S. (ft)	222.86	Flow Area (sq ft)	592.20	1697.72	550.77
E.G. Slope (ft/ft)	0.008121	Area (sq ft)	592.20	1697.72	550.77
Q Total (cfs)	20912.00	Flow (cfs)	2608.09	15010.65	3293.26
Top Width (ft)	728.61	Top Width (ft)	280.77	282.89	164.95
Vel Total (ft/s)	7.36	Avg. Vel. (ft/s)	4.40	8.84	5.98
Max Chl Dpth (ft)	7.82	Hydr. Depth (ft)	2.11	6.00	3.34
Conv. Total (cfs)	232059.2	Conv. (cfs)	28941.8	166572.2	36545.2
Length Wtd. (ft)	126.57	Wetted Per. (ft)	280.81	283.01	165.09
Min Ch El (ft)	215.92	Shear (lb/sq ft)	1.07	3.04	1.69
Alpha	1.18	Stream Power (lb/ft s)	4.71	26.89	10.11
Frctn Loss (ft)	1.21	Cum Volume (acre-ft)	17.41	123.04	19.48
C & E Loss (ft)	0.03	Cum SA (acres)	5.68	17.21	5.96

Warning: The energy loss was greater than 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 #Q100

E.G. Elev (ft)	226.40	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.31	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	225.10	Reach Len. (ft)	125.67	124.38	140.61
Crit W.S. (ft)	224.12	Flow Area (sq ft)	998.81	2082.34	801.45
E.G. Slope (ft/ft)	0.008453	Area (sq ft)	998.81	2082.34	801.45
Q Total (cfs)	33062.00	Flow (cfs)	6042.44	21524.40	5495.16
Top Width (ft)	801.67	Top Width (ft)	317.33	282.89	201.46
Vel Total (ft/s)	8.52	Avg. Vel. (ft/s)	6.05	10.34	6.86
Max Chl Dpth (ft)	9.18	Hydr. Depth (ft)	3.15	7.36	3.98
Conv. Total (cfs)	359594.3	Conv. (cfs)	65719.8	234107.1	59767.3
Length Wtd. (ft)	126.85	Wetted Per. (ft)	318.74	283.01	201.62
Min Ch El (ft)	215.92	Shear (lb/sq ft)	1.65	3.88	2.10
Alpha	1.16	Stream Power (lb/ft s)	10.00	40.14	14.38
Frctn Loss (ft)	1.12	Cum Volume (acre-ft)	29.65	159.70	34.56
C & E Loss (ft)	0.01	Cum SA (acres)	7.08	17.21	7.95

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 #Q100HC

E.G. Elev (ft)	231.70	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.74	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	229.96	Reach Len. (ft)	125.67	124.38	140.61
Crit W.S. (ft)		Flow Area (sq ft)	2882.06	3457.39	1971.68
E.G. Slope (ft/ft)	0.006041	Area (sq ft)	2882.06	3457.39	1971.68
Q Total (cfs)	84012.00	Flow (cfs)	24892.84	42360.44	16758.72
Top Width (ft)	1016.16	Top Width (ft)	454.28	282.89	279.00
Vel Total (ft/s)	10.11	Avg. Vel. (ft/s)	8.64	12.25	8.50
Max Chl Dpth (ft)	14.04	Hydr. Depth (ft)	6.34	12.22	7.07
Conv. Total (cfs)	1080909.0	Conv. (cfs)	320274.5	545015.0	215619.9
Length Wtd. (ft)	127.42	Wetted Per. (ft)	465.51	283.01	279.31
Min Ch El (ft)	215.92	Shear (lb/sq ft)	2.33	4.61	2.66
Alpha	1.10	Stream Power (lb/ft s)	20.17	56.45	22.63
Frctn Loss (ft)	0.84	Cum Volume (acre-ft)	84.09	257.99	88.97
C & E Loss (ft)	0.04	Cum SA (acres)	12.40	17.21	10.93

Warning: Divided flow computed for this cross-section.

CROSS SECTION

RIVER: San Juan Creek
REACH: Middle RS: 1883.719

INPUT
Description:
Station Elevation Data num= 65

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	246.86	8.87	245.89	28.39	243.42	55.6	240.53	58.82	240.38
93.36	238.22	100.91	237.9	161.87	235.29	210.24	233.88	247.8	232.6
362.11	230.9	373.13	230.77	391.76	230.83	476.78	231.06	497.19	230.84
594.84	230.86	648.67	230.68	716.62	229.67	719.64	229.64	720.62	229.6
743.06	228.01	774.96	225.08	802.48	222.53	807.24	222.2	818.73	221.42
835.8	220.57	844.71	220.22	867.25	220.03	884.76	219.99	937.79	220.77
987.57	220.25	1041.71	219.11	1100.97	219.16	1143.35	218.65	1172.29	218.08
1177.23	217.96	1179.38	217.91	1194.05	217.5	1241.13	216.18	1280.35	215.08
1330.27	216.04	1380.14	217	1410.05	217.54	1430.64	218.26	1483.89	220.29
1510.71	222.71	1512.59	222.94	1537.7	226.26	1546.8	227.54	1555.32	228.3
1573.89	230.04	1578.97	230.22	1585.44	231.09	1593.5	232.17	1593.64	232.2
1600.87	234.06	1621.2	238.75	1628.3	240.41	1634.26	241.59	1653.21	245.52
1657.09	246.2	1662.98	247.55	1673.49	250.11	1680.33	251.82	1681.75	252.27

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.07	100.91	.035	807.24	.05	1177.23	.035	1194.05	.05

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
1194.05	1410.05	161.58 120.51	124.7	.1	.3

Blocked Obstructions num= 1

Sta L	Sta R	Elev
1029.5	1040.5	270

CROSS SECTION OUTPUT Profile #Q50

E.G. Elev (ft)	223.49	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.29	Wt. n-Val.	0.048	0.050	0.050
W.S. Elev (ft)	222.20	Reach Len. (ft)	161.58	120.51	124.70
Crit W.S. (ft)		Flow Area (sq ft)	937.72	1271.53	264.21
E.G. Slope (ft/ft)	0.011493	Area (sq ft)	937.72	1271.53	264.21
Q Total (cfs)	20912.00	Flow (cfs)	6043.51	13205.06	1663.43
Top Width (ft)	686.74	Top Width (ft)	375.76	216.00	94.97
Vel Total (ft/s)	8.45	Avg. Vel. (ft/s)	6.44	10.39	6.30
Max Chl Dpth (ft)	7.12	Hydr. Depth (ft)	2.50	5.89	2.78
Conv. Total (cfs)	195064.4	Conv. (cfs)	56373.1	123175.1	15516.2
Length Wtd. (ft)	128.97	Wetted Per. (ft)	381.74	216.06	95.11
Min Ch El (ft)	215.08	Shear (lb/sq ft)	1.76	4.22	1.99
Alpha	1.16	Stream Power (lb/ft s)	11.36	43.85	12.55
Frctn Loss (ft)	0.85	Cum Volume (acre-ft)	15.20	118.80	18.17
C & E Loss (ft)	0.16	Cum SA (acres)	4.74	16.50	5.54

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 #Q100

E.G. Elev (ft)	225.28	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.41	Wt. n-Val.	0.048	0.050	0.050
W.S. Elev (ft)	223.86	Reach Len. (ft)	161.58	120.51	124.70
Crit W.S. (ft)		Flow Area (sq ft)	1581.30	1631.80	435.83
E.G. Slope (ft/ft)	0.009178	Area (sq ft)	1581.30	1631.80	435.83
Q Total (cfs)	33062.00	Flow (cfs)	12066.90	17883.82	3111.27
Top Width (ft)	720.51	Top Width (ft)	394.98	216.00	109.53
Vel Total (ft/s)	9.06	Avg. Vel. (ft/s)	7.63	10.96	7.14
Max Chl Dpth (ft)	8.78	Hydr. Depth (ft).	4.00	7.55	3.98
Conv. Total (cfs)	345111.5	Conv. (cfs)	125958.1	186677.0	32476.4
Length Wtd. (ft)	131.22	Wetted Per. (ft)	404.36	216.06	109.77
Min Ch El (ft)	215.08	Shear (lb/sq ft)	2.24	4.33	2.27
Alpha	1.11	Stream Power (lb/ft s)	17.10	47.43	16.24
Frctn Loss (ft)	0.81	Cum Volume (acre-ft)	25.93	154.39	32.57
C & E Loss (ft)	0.11	Cum SA (acres)	6.05	16.50	7.45

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.

CROSS SECTION OUTPUT Profile #Q100HC

E.G. Elev (ft)	230.82	Element	Left OB	Channel	Right OB
Vel Head (ft)	2.17	Wt. n-Val.	0.048	0.050	0.050
W.S. Elev (ft)	228.65	Reach Len. (ft)	161.58	120.51	124.70
Crit W.S. (ft)		Flow Area (sq ft)	3597.53	2666.06	1048.22
E.G. Slope (ft/ft)	0.007215	Area (sq ft)	3597.53	2666.06	1048.22
Q Total (cfs)	84012.00	Flow (cfs)	38384.71	35937.18	9690.11
Top Width (ft)	814.10	Top Width (ft)	449.07	216.00	149.04
Vel Total (ft/s)	11.49	Avg. Vel. (ft/s)	10.67	13.48	9.24

Max Chl Dpth (ft)	13.57	Hydr. Depth (ft)	8.01	12.34	7.03
Conv. Total (cfs)	989070.6	Conv. (cfs)	451902.0	423087.2	114081.4
Length Wtd. (ft)	134.57	Wetted Per. (ft)	468.24	216.06	149.57
Min Ch El (ft)	215.08	Shear (lb/sq ft)	3.46	5.56	3.16
Alpha	1.06	Stream Power (lb/ft s)	36.92	74.92	29.18
Frctn Loss (ft)	0.75	Cum Volume (acre-ft)	74.75	249.25	84.09
C & E Loss (ft)	0.07	Cum SA (acres)	11.10	16.50	10.24

Warning: Divided flow computed for this cross-section.

CROSS SECTION

RIVER: San Juan Creek
REACH: Middle RS: 1763.206

INPUT
Description:
Station Elevation Data num= 66

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	261.59	2.19	260.73	18.67	255.05	27.89	252.36	30.73	251.75
42.4	249.61	65.4	247.47	73.14	246.5	81.3	245.18	114.2	241.53
120.7	240.71	152.32	238.51	162.65	237.79	168.54	237.48	172.91	237.13
201.29	235.52	203.09	235.41	217.78	234.56	244.58	232.98	314.55	230.65
314.87	230.64	315.23	230.63	369.92	229.93	464.89	230.26	494.01	230.33
578.57	229.41	595.34	228.95	598.83	228.87	728.18	225.91	733.09	225.83
782.27	223.85	826.38	221.99	842.25	221.17	871.05	219.87	880.07	219.64
903.85	219.04	968.08	217.79	994.75	217.63	1032.39	217.08	1184.71	214.82
1195.34	214.66	1213.54	214.41	1232.86	214.05	1262.6	214.57	1269.33	214.69
1285.12	214.96	1335.34	215.82	1426.49	217.38	1436.93	217.57	1441.54	217.73
1456.08	218.35	1486.08	219.55	1497.74	220.56	1514.96	222.58	1519.69	223.2
1545.01	226.82	1568.1	229.86	1576.55	232.18	1583.51	233.99	1597.17	238.18
1606.31	241.04	1638.31	249.42	1673.77	260.59	1675.84	261.16	1678.78	262.16
1692.44	266.73								

Manning's n Values num= 6

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.07	152.32	.05	203.09	.035	880.07	.05	1032.39	.035
1184.71	.05								

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
1032.39	1426.49	207.41	202.62	155.96	.1	.3

Blocked Obstructions num= 1

Sta L	Sta R	Elev
984.5	995.5	270

CROSS SECTION OUTPUT Profile #Q50

E.G. Elev (ft)	222.48	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.77	Wt. n-Val.	0.049	0.043	0.050
W.S. Elev (ft)	221.72	Reach Len. (ft)	207.41	202.62	155.96
Crit W.S. (ft)		Flow Area (sq ft)	549.96	2388.65	224.54
E.G. Slope (ft/ft)	0.004251	Area (sq ft)	549.96	2388.65	224.54
Q Total (cfs)	20912.00	Flow (cfs)	2311.88	17743.36	856.76
Top Width (ft)	664.92	Top Width (ft)	189.71	394.10	81.11
Vel Total (ft/s)	6.61	Avg. Vel. (ft/s)	4.20	7.43	3.82
Max Chl Dpth (ft)	7.67	Hydr. Depth (ft)	2.90	6.06	2.77
Conv. Total (cfs)	320722.1	Conv. (cfs)	35456.7	272125.4	13140.0

Length Wtd. (ft)	199.74	Wetted Per. (ft)	197.91	394.15	81.26
Min Ch El (ft)	214.05	Shear (lb/sq ft)	0.74	1.61	0.73
Alpha	1.13	Stream Power (lb/ft s)	3.10	11.95	2.80
Frctn Loss (ft)	1.14	Cum Volume (acre-ft)	12.44	113.73	17.47
C & E Loss (ft)	0.03	Cum SA (acres)	3.69	15.66	5.29

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 #Q100

E.G. Elev (ft)	224.36	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.06	Wt. n-Val.	0.048	0.043	0.050
W.S. Elev (ft)	223.30	Reach Len. (ft)	207.41	202.62	155.96
Crit W.S. (ft)		Flow Area (sq ft)	878.22	3012.43	363.36
E.G. Slope (ft/ft)	0.004400	Area (sq ft)	878.22	3012.43	363.36
Q Total (cfs)	33062.00	Flow (cfs)	4672.05	26627.52	1762.43
Top Width (ft)	714.05	Top Width (ft)	226.06	394.10	93.89
Vel Total (ft/s)	7.77	Avg. Vel. (ft/s)	5.32	8.84	4.85
Max Chl Dpth (ft)	9.25	Hydr. Depth (ft)	3.88	7.64	3.87
Conv. Total (cfs)	498433.3	Conv. (cfs)	70434.5	401428.9	26570.0
Length Wtd. (ft)	198.68	Wetted Per. (ft)	237.45	394.15	94.14
Min Ch El (ft)	214.05	Shear (lb/sq ft)	1.02	2.10	1.06
Alpha	1.13	Stream Power (lb/ft s)	5.40	18.56	5.14
Frctn Loss (ft)	1.09	Cum Volume (acre-ft)	21.37	147.97	31.42
C & E Loss (ft)	0.02	Cum SA (acres)	4.90	15.66	7.16

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 #Q100HC

E.G. Elev (ft)	229.99	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.93	Wt. n-Val.	0.045	0.043	0.050
W.S. Elev (ft)	228.06	Reach Len. (ft)	207.41	202.62	155.96
Crit W.S. (ft)		Flow Area (sq ft)	2282.71	4888.24	889.96
E.G. Slope (ft/ft)	0.004438	Area (sq ft)	2282.71	4888.24	889.96
Q Total (cfs)	84012.00	Flow (cfs)	17495.32	60115.18	6401.50
Top Width (ft)	909.14	Top Width (ft)	387.11	394.10	127.93
Vel Total (ft/s)	10.42	Avg. Vel. (ft/s)	7.66	12.30	7.19
Max Chl Dpth (ft)	14.01	Hydr. Depth (ft)	5.90	12.40	6.96
Conv. Total (cfs)	1261063.0	Conv. (cfs)	262613.6	902359.3	96089.8
Length Wtd. (ft)	197.47	Wetted Per. (ft)	408.10	394.15	128.51
Min Ch El (ft)	214.05	Shear (lb/sq ft)	1.55	3.44	1.92
Alpha	1.15	Stream Power (lb/ft s)	11.88	42.26	13.80
Frctn Loss (ft)	0.89	Cum Volume (acre-ft)	63.84	238.80	81.32
C & E Loss (ft)	0.12	Cum SA (acres)	9.55	15.66	9.84

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: San Juan Creek
REACH: Middle RS: 1560.587

INPUT
Description:
Station Elevation Data num= 64

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	251.61	.16	251.56	4.74	249.75	18.53	247.2	39.36	242.11
44.72	241.48	78.44	237.85	88.23	236.8	95.04	235.9	97.25	235.55
103.57	235.02	150.06	231.92	169.11	231.26	227.81	230.22	302	230.27
338.93	229.75	356.95	229.43	392.21	228.08	413.47	227.27	501.25	224.34
532.29	223.47	588.68	222.14	592.53	222.05	594.98	222.01	637.5	221.96
642.45	221.96	667.21	221.01	674.6	220.81	708.95	219.88	734.27	219.2
753.04	218.63	832.32	216.24	862.85	215.31	887.24	214.57	896.94	214.42
914.78	214.2	937.97	213.88	1024.44	212.64	1031.22	212.54	1095.25	213.85
1128.2	214.42	1145.24	215.06	1191.36	216.79	1274.42	218.54	1314.47	219.49
1318.97	219.91	1332.97	220.39	1341.94	220.7	1356.94	222.01	1379.96	223.82
1380.49	223.84	1383.73	224.06	1414.3	226.21	1437.65	227.83	1450.65	229.08
1465.73	231.58	1467.85	231.86	1472.61	233.08	1519.32	243.89	1537.12	248.69
1556.93	254.9	1563.1	256.77	1568.37	258.57	1568.83	258.75		

Manning's n Values num= 6

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.07	78.44	.05	392.21	.035	674.6	.05	753.04	.035
862.85	.05								

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
862.85	1145.24	134.09	259.45	211.62	.1	.3

Blocked Obstructions num= 1

Sta L	Sta R	Elev
999.5	1010.5	270

CROSS SECTION OUTPUT Profile #Q50

			Left OB	Channel	Right OB
E.G. Elev (ft)	221.31	Element			
Vel Head (ft)	1.09	Wt. n-Val.	0.035	0.050	0.050
W.S. Elev (ft)	220.22	Reach Len. (ft)	134.09	259.45	211.62
Crit W.S. (ft)	219.23	Flow Area (sq ft)	400.37	1750.04	462.33
E.G. Slope (ft/ft)	0.008004	Area (sq ft)	400.37	1750.04	462.33
Q Total (cfs)	20912.00	Flow (cfs)	3066.41	15564.29	2281.31
Top Width (ft)	620.63	Top Width (ft)	166.46	271.39	182.78
Vel Total (ft/s)	8.00	Avg. Vel. (ft/s)	7.66	8.89	4.93
Max Chl Dpth (ft)	7.68	Hydr. Depth (ft)	2.41	6.45	2.53
Conv. Total (cfs)	233747.3	Conv. (cfs)	34275.3	173972.4	25499.7
Length Wtd. (ft)	246.23	Wetted Per. (ft)	166.54	286.05	182.86
Min Ch El (ft)	212.54	Shear (lb/sq ft)	1.20	3.06	1.26
Alpha	1.09	Stream Power (lb/ft s)	9.20	27.19	6.23
Frctn Loss (ft)	1.89	Cum Volume (acre-ft)	10.18	104.11	16.24
C & E Loss (ft)	0.03	Cum SA (acres)	2.84	14.11	4.82

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 #Q100

			Left OB	Channel	Right OB
E.G. Elev (ft)	223.24	Element			

Vel Head (ft)	1.28	Wt. n-Val.	0.037	0.050	0.050
W.S. Elev (ft)	221.97	Reach Len. (ft)	134.09	259.45	211.62
Crit W.S. (ft)		Flow Area (sq ft)	742.29	2223.77	811.52
E.G. Slope (ft/ft)	0.007053	Area (sq ft)	742.29	2223.77	811.52
Q Total (cfs)	33062.00	Flow (cfs)	6490.91	21604.67	4966.42
Top Width (ft)	712.77	Top Width (ft)	230.19	271.39	211.19
Vel Total (ft/s)	8.75	Avg. Vel. (ft/s)	8.74	9.72	6.12
Max Chl Dpth (ft)	9.43	Hydr. Depth (ft)	3.22	8.19	3.84
Conv. Total (cfs)	393686.4	Conv. (cfs)	77290.6	257258.0	59137.8
Length Wtd. (ft)	241.05	Wetted Per. (ft)	230.29	289.54	211.34
Min Ch El (ft)	212.54	Shear (lb/sq ft)	1.42	3.38	1.69
Alpha	1.07	Stream Power (lb/ft s)	12.41	32.85	10.35
Frctn Loss (ft)	1.49	Cum Volume (acre-ft)	17.51	135.79	29.32
C & E Loss (ft)	0.04	Cum SA (acres)	3.81	14.11	6.61

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 #Q100HC

E.G. Elev (ft)	228.98	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.53	Wt. n-Val.	0.038	0.050	0.050
W.S. Elev (ft)	227.45	Reach Len. (ft)	134.09	259.45	211.62
Crit W.S. (ft)		Flow Area (sq ft)	2761.69	3712.43	2172.34
E.G. Slope (ft/ft)	0.004546	Area (sq ft)	2761.69	3712.43	2172.34
Q Total (cfs)	84012.00	Flow (cfs)	27488.51	39754.18	16769.31
Top Width (ft)	1012.47	Top Width (ft)	454.13	271.39	286.95
Vel Total (ft/s)	9.72	Avg. Vel. (ft/s)	9.95	10.71	7.72
Max Chl Dpth (ft)	14.91	Hydr. Depth (ft)	6.08	13.68	7.57
Conv. Total (cfs)	1245974.0	Conv. (cfs)	407679.3	589590.3	248703.9
Length Wtd. (ft)	226.23	Wetted Per. (ft)	454.31	300.51	287.30
Min Ch El (ft)	212.54	Shear (lb/sq ft)	1.73	3.51	2.15
Alpha	1.04	Stream Power (lb/ft s)	17.17	37.55	16.57
Frctn Loss (ft)	0.94	Cum Volume (acre-ft)	51.83	218.80	75.84
C & E Loss (ft)	0.00	Cum SA (acres)	7.55	14.11	9.10

Warning: Divided flow computed for this cross-section.

CROSS SECTION

RIVER: San Juan Creek
REACH: Middle RS: 1301.132

INPUT
Description:
Station Elevation Data num= 80

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	253.61	.45	253.4	2.01	252.72	3.74	251.99	11.13	248.88
27.32	242.12	29.63	241.34	38.12	239.29	40.26	239.01	52.45	237.94
60.61	237.36	69.58	236.85	92.18	235.72	118.76	234.39	166.1	232.95
167.62	232.93	232.98	232.04	311.49	230.12	314.15	230.1	319.27	229.86
408.55	225.83	419.03	225.13	438.65	224.28	445.56	223.98	467.64	223.01
519.76	221.2	545.54	220.78	549.7	220.81	560.46	220.32	568.47	219.87
569.12	219.83	574.72	218.79	591.81	217.4	599.12	215.35	602.3	214.03
604.91	213.42	610.72	211.38	611.79	211.01	612.07	210.89	612.31	210.83

620.74	209.77	624.52	209.59	628.76	210	639.49	210.74	645.29	211.37
660.17	212.96	694.53	215.31	705.99	216.09	706.75	216.13	714.93	216.51
751.31	215.37	796.69	213.95	811.36	213.48	914.37	211.85	916.3	211.82
970.86	211.73	980.23	211.92	998.28	212.3	1066.4	213.91	1167.25	218.49
1179.84	219.04	1184.57	219.24	1198.1	219.85	1224.65	220.85	1241.97	221.21
1284.45	222.72	1313.26	223.92	1322.83	224.37	1340.68	224.94	1359.49	225.56
1371.1	226.01	1405.27	227	1443.81	228.53	1452.14	228.9	1455.13	229.13
1481.41	229.86	1493.42	230.68	1515.71	232.31	1535.67	233.47	1536.41	233.48

Manning's n Values num= 6

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.07	92.18	.05	445.56	.035	568.47	.05	645.29	.035
706.75	.05								

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
602.3	1066.4	121.07	201.09 244.51	.1	.3

Blocked Obstructions num= 1

Sta L	Sta R	Elev
1109.5	1120.5	270

CROSS SECTION OUTPUT Profile #Q50

			Left OB	Channel	Right OB
E.G. Elev (ft)	219.39	Element			
Vel Head (ft)	0.99	Wt. n-Val.	0.050	0.048	0.050
W.S. Elev (ft)	218.40	Reach Len. (ft)	121.07	201.09	244.51
Crit W.S. (ft)		Flow Area (sq ft)	32.71	2442.13	196.71
E.G. Slope (ft/ft)	0.007375	Area (sq ft)	32.71	2442.13	196.71
Q Total (cfs)	20912.00	Flow (cfs)	104.53	19835.97	971.50
Top Width (ft)	574.70	Top Width (ft)	22.77	464.10	87.83
Vel Total (ft/s)	7.83	Avg. Vel. (ft/s)	3.20	8.12	4.94
Max Chl Dpth (ft)	8.81	Hydr. Depth (ft)	1.44	5.26	2.24
Conv. Total (cfs)	243500.8	Conv. (cfs)	1217.1	230971.5	11312.2
Length Wtd. (ft)	203.34	Wetted Per. (ft)	23.35	465.05	92.49
Min Ch El (ft)	209.59	Shear (lb/sq ft)	0.65	2.42	0.98
Alpha	1.04	Stream Power (lb/ft s)	2.06	19.64	4.84
Frctn Loss (ft)	0.66	Cum Volume (acre-ft)	9.51	91.62	14.64
C & E Loss (ft)	0.16	Cum SA (acres)	2.55	11.92	4.16

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.

CROSS SECTION OUTPUT Profile #Q100

			Left OB	Channel	Right OB
E.G. Elev (ft)	221.71	Element			
Vel Head (ft)	1.13	Wt. n-Val.	0.050	0.048	0.050
W.S. Elev (ft)	220.58	Reach Len. (ft)	121.07	201.09	244.51
Crit W.S. (ft)		Flow Area (sq ft)	104.33	3456.36	443.91
E.G. Slope (ft/ft)	0.005434	Area (sq ft)	104.33	3456.36	443.91
Q Total (cfs)	33062.00	Flow (cfs)	449.66	30332.89	2279.45
Top Width (ft)	651.92	Top Width (ft)	47.63	464.10	140.18
Vel Total (ft/s)	8.26	Avg. Vel. (ft/s)	4.31	8.78	5.13
Max Chl Dpth (ft)	10.99	Hydr. Depth (ft)	2.19	7.45	3.17
Conv. Total (cfs)	448500.6	Conv. (cfs)	6099.8	411479.1	30921.7
Length Wtd. (ft)	204.12	Wetted Per. (ft)	48.35	465.05	149.25
Min Ch El (ft)	209.59	Shear (lb/sq ft)	0.73	2.52	1.01

Alpha	1.07	Stream Power (lb/ft s)	3.16	22.13	5.18
Frctn Loss (ft)	0.56	Cum Volume (acre-ft)	16.21	118.88	26.27
C & E Loss (ft)	0.16	Cum SA (acres)	3.39	11.92	5.76

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.

CROSS SECTION OUTPUT Profile #Q100HC

			Left OB	Channel	Right OB
E.G. Elev (ft)	228.05	Element			
Vel Head (ft)	1.57	Wt. n-Val.	0.041	0.048	0.050
W.S. Elev (ft)	226.48	Reach Len. (ft)	121.07	201.09	244.51
Crit W.S. (ft)		Flow Area (sq ft)	938.91	6192.03	1777.85
E.G. Slope (ft/ft)	0.003779	Area (sq ft)	938.91	6192.03	1777.85
Q Total (cfs)	84012.00	Flow (cfs)	6626.86	66880.08	10505.06
Top Width (ft)	982.08	Top Width (ft)	208.11	464.10	309.87
Vel Total (ft/s)	9.43	Avg. Vel. (ft/s)	7.06	10.80	5.91
Max Chl Dpth (ft)	16.89	Hydr. Depth (ft)	4.51	13.34	5.74
Conv. Total (cfs)	1366720.0	Conv. (cfs)	107806.8	1088015.0	170897.8
Length Wtd. (ft)	203.32	Wetted Per. (ft)	208.96	465.05	330.83
Min Ch El (ft)	209.59	Shear (lb/sq ft)	1.06	3.14	1.27
Alpha	1.14	Stream Power (lb/ft s)	7.48	33.92	7.49
Frctn Loss (ft)	0.50	Cum Volume (acre-ft)	46.14	189.30	66.24
C & E Loss (ft)	0.14	Cum SA (acres)	6.53	11.92	7.65

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.

CROSS SECTION

RIVER: San Juan Creek
REACH: Middle RS: 1100.047

INPUT
Description:
Station Elevation Data num= 78

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	257.56	4.56	255.79	11.17	252.95	23.65	245.87	27.21	243.9
28.51	243.35	35.07	240.5	40.09	239.6	51.84	238.7	89.45	237.55
99.07	237.04	111.96	236.37	127.38	235.52	137.61	234.95	151.09	234.42
205.55	232.29	215.98	231.71	223.38	231.4	233.23	231.1	273.34	229.51
291.78	228.46	325.53	226.21	326.95	226.12	374.13	222.52	375.21	222.43
375.59	222.41	377.51	222.43	397.5	221.62	421.97	220.77	424.04	220.62
440.01	220.03	440.84	219.84	448.86	218.04	455.58	215.53	465.53	212.22
468.01	211.5	474.94	209.96	475.58	209.83	482.14	209.16	489.88	208.36
501.32	208.22	505.03	208.11	537.83	209.63	575.15	211.37	579.25	211.51
581.71	211.65	583.64	211.77	606.44	212.45	613.48	212.66	638.22	212.73
665.21	212.32	673.7	212.2	746.14	211.1	750.02	211.04	750.72	211.02
751.47	211.01	754.6	211.01	758.57	211	842.11	210.68	883.58	210.82
905.82	211.29	946.08	212.15	997.47	213.27	1032.49	214.79	1131.13	218.05
1182.49	219.03	1223.39	220.37	1270.09	222.2	1274.27	222.35	1335.99	225.25
1351.73	226.12	1353.4	226.22	1358.48	226.54	1372.95	227.63	1384.41	228.42

1391.73 229.35 1403.1 231.88 1415.34 236.08

Manning's n Values num= 7

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.07	99.07	.05	127.38	.035	325.53	.05	537.83	.05
665.21	.035	905.82	.05						

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
465.53	946.08	112.44	132.82	162.92	.1	.3

Blocked Obstructions num= 2

Sta L	Sta R	Elev	Sta L	Sta R	Elev
1014.5	1025.5	270	1179.5	1190.5	270

CROSS SECTION OUTPUT Profile #Q50

			Element	Left OB	Channel	Right OB
E.G. Elev (ft)	218.57		Wt. n-Val.	0.050	0.041	0.050
Vel Head (ft)	0.47		Reach Len. (ft)	112.44	132.82	162.92
W.S. Elev (ft)	218.10		Flow Area (sq ft)	50.91	3381.85	543.23
Crit W.S. (ft)			Area (sq ft)	50.91	3381.85	543.23
E.G. Slope (ft/ft)	0.001816		Flow (cfs)	129.22	19156.05	1626.73
Q Total (cfs)	20912.00		Top Width (ft)	16.94	480.55	176.76
Top Width (ft)	674.25		Avg. Vel. (ft/s)	2.54	5.66	2.99
Vel Total (ft/s)	5.26		Hydr. Depth (ft)	3.00	7.04	3.07
Max Chl Dpth (ft)	9.99		Conv. (cfs)	3032.7	449565.3	38177.0
Conv. Total (cfs)	490775.0		Wetted Per. (ft)	17.94	481.04	184.56
Length Wtd. (ft)	134.95		Shear (lb/sq ft)	0.32	0.80	0.33
Min Ch El (ft)	208.11		Stream Power (lb/ft s)	0.82	4.51	1.00
Alpha	1.09		Cum Volume (acre-ft)	9.40	78.18	12.56
Frctn Loss (ft)	0.16		Cum SA (acres)	2.49	9.74	3.42
C & E Loss (ft)	0.06					

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.

CROSS SECTION OUTPUT Profile #Q100

			Element	Left OB	Channel	Right OB
E.G. Elev (ft)	220.99		Wt. n-Val.	0.050	0.041	0.050
Vel Head (ft)	0.60		Reach Len. (ft)	112.44	132.82	162.92
W.S. Elev (ft)	220.39		Flow Area (sq ft)	102.81	4481.46	1050.66
Crit W.S. (ft)			Area (sq ft)	102.81	4481.46	1050.66
E.G. Slope (ft/ft)	0.001658		Flow (cfs)	248.18	29199.48	3614.33
Q Total (cfs)	33062.00		Top Width (ft)	35.26	480.55	255.82
Top Width (ft)	771.63		Avg. Vel. (ft/s)	2.41	6.52	3.44
Vel Total (ft/s)	5.87		Hydr. Depth (ft)	2.92	9.33	4.11
Max Chl Dpth (ft)	12.28		Conv. (cfs)	6095.9	717195.9	88775.0
Conv. Total (cfs)	812066.8		Wetted Per. (ft)	36.48	481.04	270.73
Length Wtd. (ft)	135.83		Shear (lb/sq ft)	0.29	0.96	0.40
Min Ch El (ft)	208.11		Stream Power (lb/ft s)	0.70	6.28	1.38
Alpha	1.13		Cum Volume (acre-ft)	15.92	100.55	22.07
Frctn Loss (ft)	0.16		Cum SA (acres)	3.27	9.74	4.64
C & E Loss (ft)	0.07					

Warning: Divided flow computed for this cross-section.

CROSS SECTION OUTPUT Profile #Q100HC

E.G. Elev (ft)	227.41	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.11	Wt. n-Val.	0.050	0.041	0.050
W.S. Elev (ft)	226.31	Reach Len. (ft)	112.44	132.82	162.92
Crit W.S. (ft)		Flow Area (sq ft)	677.12	7325.35	2977.90
E.G. Slope (ft/ft)	0.001700	Area (sq ft)	677.12	7325.35	2977.90
Q Total (cfs)	84012.00	Flow (cfs)	2356.86	66977.45	14677.69
Top Width (ft)	1008.73	Top Width (ft)	141.47	480.55	386.72
Vel Total (ft/s)	7.65	Avg. Vel. (ft/s)	3.48	9.14	4.93
Max Chl Dpth (ft)	18.20	Hydr. Depth (ft)	4.79	15.24	7.70
Conv. Total (cfs)	2037507.0	Conv. (cfs)	57159.9	1624375.0	355971.6
Length Wtd. (ft)	137.16	Wetted Per. (ft)	142.87	481.04	425.44
Min Ch El (ft)	208.11	Shear (lb/sq ft)	0.50	1.62	0.74
Alpha	1.22	Stream Power (lb/ft s)	1.75	14.78	3.66
Frctn Loss (ft)	0.18	Cum Volume (acre-ft)	43.89	158.10	52.90
C & E Loss (ft)	0.09	Cum SA (acres)	6.04	9.74	5.69

Warning: Divided flow computed for this cross-section.

CROSS SECTION

RIVER: San Juan Creek
REACH: Middle RS: 967.228

INPUT
Description:
Station Elevation Data num= 84

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	254.19	4.69	251.78	19.09	243.93	20.53	243.29	25.1	241.43
30.11	239.32	32.44	238.61	39.66	236.64	47.37	235.02	51.68	234.34
60.4	233.14	65	232.29	85.85	230.8	111.05	229.8	112.43	229.71
114.47	229.57	114.53	229.57	118.65	229.33	177.73	226.04	199.09	224.87
216.67	224.3	248.55	223.57	249.76	223.53	256.33	223.16	282.22	221.77
286.11	221.74	324.32	221.72	326.74	221.48	333.92	220.96	337.9	220.1
339.94	219.64	344.8	217.71	357.89	212.12	362.02	210.36	367.42	209.08
369.58	208.51	379.33	207.62	384.33	207.19	384.88	207.2	426.61	208.74
427.78	208.79	450.22	209.87	459.52	209.94	515.36	209.73	521.14	209.71
522.41	209.72	523.95	209.72	547.28	209.71	551.66	209.69	607.97	209.71
637.69	209.62	695.19	209.8	804.44	210.07	811.87	210.1	815.45	210.18
815.99	210.19	845.71	210.65	894.25	211.42	989.13	214.21	1047.99	215.94
1059.3	216.25	1067.21	216.47	1078.26	217.06	1101.06	218.22	1167.51	220.95
1206.43	223.62	1221.5	224.44	1239.96	225.57	1286.93	228.48	1300.69	229.82
1311.44	230.82	1311.73	230.87	1312.68	231.2	1331.35	237.37	1338.2	239.64
1359.25	245.57	1372.5	249.12	1381.08	251.18	1383.33	251.59	1402.93	255
1409.02	256.06	1411.77	256.61	1416.26	257.31	1431.56	259.3		

Manning's n Values num= 7

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.07	114.53	.035	357.89	.05	515.36	.035	815.99	.05
1331.35	.035	1402.93	.05						

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
362.02	894.25	96.73 103.79	95	.1	.3

Blocked Obstructions num= 2

Sta L	Sta R	Elev	Sta L	Sta R	Elev
1074.5	1085.5	270	1254.5	1265.5	270

CROSS SECTION OUTPUT Profile #Q50

E.G. Elev (ft)	218.35	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.27	Wt. n-Val.	0.042	0.040	0.050
W.S. Elev (ft)	218.08	Reach Len. (ft)	96.73	103.79	95.00
Crit W.S. (ft)		Flow Area (sq ft)	69.89	4447.37	727.37
E.G. Slope (ft/ft)	0.000808	Area (sq ft)	69.89	4447.37	727.37
Q Total (cfs)	20912.00	Flow (cfs)	179.59	19195.34	1537.07
Top Width (ft)	743.49	Top Width (ft)	18.16	532.23	193.10
Vel Total (ft/s)	3.99	Avg. Vel. (ft/s)	2.57	4.32	2.11
Max Chl Dpth (ft)	10.89	Hydr. Depth (ft)	3.85	8.36	3.77
Conv. Total (cfs)	735497.8	Conv. (cfs)	6316.5	675121.0	54060.2
Length Wtd. (ft)	103.04	Wetted Per. (ft)	19.73	532.58	195.08
Min Ch El (ft)	207.19	Shear (lb/sq ft)	0.18	0.42	0.19
Alpha	1.10	Stream Power (lb/ft s)	0.46	1.82	0.40
Frctn Loss (ft)	0.08	Cum Volume (acre-ft)	9.24	66.24	10.18
C & E Loss (ft)	0.01	Cum SA (acres)	2.45	8.19	2.73

Warning: Divided flow computed for this cross-section.

CROSS SECTION OUTPUT Profile #Q100

E.G. Elev (ft)	220.77	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.38	Wt. n-Val.	0.041	0.040	0.050
W.S. Elev (ft)	220.39	Reach Len. (ft)	96.73	103.79	95.00
Crit W.S. (ft)		Flow Area (sq ft)	119.06	5676.06	1236.57
E.G. Slope (ft/ft)	0.000835	Area (sq ft)	119.06	5676.06	1236.57
Q Total (cfs)	33062.00	Flow (cfs)	366.09	29292.52	3403.39
Top Width (ft)	806.34	Top Width (ft)	25.47	532.23	248.65
Vel Total (ft/s)	4.70	Avg. Vel. (ft/s)	3.07	5.16	2.75
Max Chl Dpth (ft)	13.20	Hydr. Depth (ft)	4.68	10.66	4.97
Conv. Total (cfs)	1144105.0	Conv. (cfs)	12668.7	1013663.0	117773.8
Length Wtd. (ft)	102.76	Wetted Per. (ft)	27.42	532.58	255.29
Min Ch El (ft)	207.19	Shear (lb/sq ft)	0.23	0.56	0.25
Alpha	1.11	Stream Power (lb/ft s)	0.70	2.87	0.70
Frctn Loss (ft)	0.08	Cum Volume (acre-ft)	15.63	85.07	17.80
C & E Loss (ft)	0.01	Cum SA (acres)	3.19	8.19	3.70

Warning: Divided flow computed for this cross-section.

CROSS SECTION OUTPUT Profile #Q100HC

E.G. Elev (ft)	227.14	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.80	Wt. n-Val.	0.037	0.040	0.050
W.S. Elev (ft)	226.34	Reach Len. (ft)	96.73	103.79	95.00
Crit W.S. (ft)		Flow Area (sq ft)	778.40	8842.70	3015.24
E.G. Slope (ft/ft)	0.001035	Area (sq ft)	778.40	8842.70	3015.24
Q Total (cfs)	84012.00	Flow (cfs)	2735.66	68292.32	12984.02
Top Width (ft)	1069.06	Top Width (ft)	189.68	532.23	347.15
Vel Total (ft/s)	6.65	Avg. Vel. (ft/s)	3.51	7.72	4.31
Max Chl Dpth (ft)	19.15	Hydr. Depth (ft)	4.10	16.61	8.69
Conv. Total (cfs)	2610986.0	Conv. (cfs)	85020.9	2122438.0	403526.7
Length Wtd. (ft)	102.09	Wetted Per. (ft)	191.84	532.58	365.87
Min Ch El (ft)	207.19	Shear (lb/sq ft)	0.26	1.07	0.53
Alpha	1.17	Stream Power (lb/ft s)	0.92	8.29	2.29
Frctn Loss (ft)	0.10	Cum Volume (acre-ft)	42.01	133.45	41.69
C & E Loss (ft)	0.04	Cum SA (acres)	5.62	8.19	4.32

Warning: Divided flow computed for this cross-section.

CROSS SECTION

RIVER: San Juan Creek
REACH: Middle RS: 863.438

INPUT
Description:
Station Elevation Data num= 68

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	237.62	7.88	234.43	16.2	232.23	23.83	230.21	26.37	229.85
48.9	227.71	67.56	226.31	89.19	224.96	94.42	224.64	103.69	224.22
130.59	223	144.11	222.42	162.8	222.22	220.47	221.95	235.61	222.63
241.36	222.77	242.07	222.76	271.51	221.95	277.7	221.78	282.57	220.59
285.53	219.63	302.8	211.07	303.48	210.72	303.63	210.68	304.05	210.58
311.69	208.81	314.59	208.66	323.13	207.96	350.37	208.15	351.54	208.15
352.79	208.17	355.1	208.28	364.15	208.6	386.8	209.35	389.44	209.45
396.25	209.62	433.19	210.08	437.01	210.13	446.42	210.25	507.35	209.94
509.52	209.93	588.33	209.83	634.74	209.68	676.7	209.56	726.22	209.64
744.78	209.67	813.75	209.78	829.97	210.03	857.43	210.81	946.52	213.15
1012.54	214.98	1037.68	216.29	1063.49	216.94	1107.34	218.16	1108.92	218.24
1110.37	218.25	1122.77	218.62	1159.44	220.03	1161.52	220.3	1185.77	222.94
1194.72	224.01	1197.74	224.31	1203.48	224.93	1239.4	229.52	1244.71	230.48
1253.63	231.62	1266.07	234.28	1274.08	236.2				

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.07	89.19	.035	242.07	.05	433.19	.035	726.22	.05

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
302.8	857.43	226.61	244.08	237.58	.1	.3

Blocked Obstructions num= 1

Sta L	Sta R	Elev
1144.5	1155.5	270

CROSS SECTION OUTPUT Profile #Q50

E.G. Elev (ft)	218.26	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.24	Wt. n-Val.	0.050	0.041	0.050
W.S. Elev (ft)	218.02	Reach Len. (ft)	226.61	244.08	237.58
Crit W.S. (ft)		Flow Area (sq ft)	48.75	4641.86	916.83
E.G. Slope (ft/ft)	0.000754	Area (sq ft)	48.75	4641.86	916.83
Q Total (cfs)	20912.00	Flow (cfs)	84.81	19024.69	1802.50
Top Width (ft)	813.60	Top Width (ft)	14.03	554.63	244.94
Vel Total (ft/s)	3.73	Avg. Vel. (ft/s)	1.74	4.10	1.97
Max Chl Dpth (ft)	10.06	Hydr. Depth (ft)	3.48	8.37	3.74
Conv. Total (cfs)	761821.2	Conv. (cfs)	3089.7	693066.8	65664.7
Length Wtd. (ft)	243.16	Wetted Per. (ft)	15.65	555.01	245.06
Min Ch El (ft)	207.96	Shear (lb/sq ft)	0.15	0.39	0.18
Alpha	1.12	Stream Power (lb/ft s)	0.25	1.61	0.35
Frctn Loss (ft)	0.22	Cum Volume (acre-ft)	9.11	55.42	8.39
C & E Loss (ft)	0.00	Cum SA (acres)	2.41	6.90	2.25

CROSS SECTION OUTPUT Profile #Q100

E.G. Elev (ft)	220.68	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.34	Wt. n-Val.	0.050	0.041	0.050
W.S. Elev (ft)	220.34	Reach Len. (ft)	226.61	244.08	237.58
Crit W.S. (ft)		Flow Area (sq ft)	86.93	5927.01	1555.74
E.G. Slope (ft/ft)	0.000770	Area (sq ft)	86.93	5927.01	1555.74
Q Total (cfs)	33062.00	Flow (cfs)	181.56	28938.31	3942.13
Top Width (ft)	867.53	Top Width (ft)	19.46	554.63	293.45
Vel Total (ft/s)	4.37	Avg. Vel. (ft/s)	2.09	4.88	2.53
Max Chl Dpth (ft)	12.38	Hydr. Depth (ft)	4.47	10.69	5.30
Conv. Total (cfs)	1191317.0	Conv. (cfs)	6542.2	1042729.0	142045.9
Length Wtd. (ft)	242.88	Wetted Per. (ft)	21.57	555.01	294.95
Min Ch El (ft)	207.96	Shear (lb/sq ft)	0.19	0.51	0.25
Alpha	1.14	Stream Power (lb/ft s)	0.40	2.51	0.64
Frctn Loss (ft)	0.22	Cum Volume (acre-ft)	15.40	71.25	14.75
C & E Loss (ft)	0.01	Cum SA (acres)	3.14	6.90	3.11

Warning: Divided flow computed for this cross-section.

CROSS SECTION OUTPUT Profile #Q100HC

E.G. Elev (ft)	227.01	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.68	Wt. n-Val.	0.041	0.041	0.050
W.S. Elev (ft)	226.33	Reach Len. (ft)	226.61	244.08	237.58
Crit W.S. (ft)		Flow Area (sq ft)	943.68	9247.13	3473.78
E.G. Slope (ft/ft)	0.000912	Area (sq ft)	943.68	9247.13	3473.78
Q Total (cfs)	84012.00	Flow (cfs)	2786.44	66203.73	15021.83
Top Width (ft)	1136.04	Top Width (ft)	235.44	554.63	345.97
Vel Total (ft/s)	6.15	Avg. Vel. (ft/s)	2.95	7.16	4.32
Max Chl Dpth (ft)	18.37	Hydr. Depth (ft)	4.01	16.67	10.04
Conv. Total (cfs)	2781441.0	Conv. (cfs)	92252.6	2191851.0	497337.6
Length Wtd. (ft)	241.91	Wetted Per. (ft)	237.88	555.01	359.79
Min Ch El (ft)	207.96	Shear (lb/sq ft)	0.23	0.95	0.55
Alpha	1.16	Stream Power (lb/ft s)	0.67	6.79	2.38
Frctn Loss (ft)	0.26	Cum Volume (acre-ft)	40.10	111.90	34.61
C & E Loss (ft)	0.01	Cum SA (acres)	5.14	6.90	3.56

Warning: Divided flow computed for this cross-section.

CROSS SECTION

RIVER: San Juan Creek
REACH: Middle RS: 619.354

INPUT
Description: Modify XS 2:1 Slope @ STA 1145
Station Elevation Data num= 68

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	251.5	2.29	250.96	8.51	249.13	17.29	245.8	21.9	244.04
29.07	241.17	42.54	235.63	44.71	234.9	53.69	231.9	57.67	231.01
63.25	229.55	68.16	229.11	123.75	226.57	145.61	225.65	154.87	225.09
169.76	224.16	188.38	223.01	226.49	220.61	266.41	218.09	285.62	216.56
309.06	215.14	324.91	213.7	331.12	213.39	383.84	210.77	386.78	210.62
402.11	210.34	433.76	209.57	444.88	209.61	463.7	209.68	464.9	209.69
497.28	209.82	548.59	209.91	584.1	209.95	590.95	209.96	619.86	209.94
638.36	209.93	667.54	209.99	667.6	209.99	691.79	210.04	785.89	209.84
884.63	210.08	893.47	210.22	899.36	210.37	926.55	211.14	943.41	211.7

949.72	211.91	992.72	213.93	1011.7	215.53	1026.71	216.74	1038.05	217.52
1041.78	217.79	1053.67	218.14	1076.32	219.09	1077.25	219.16	1079.34	219.09
1098.63	218.1	1100.71	218.33	1105.82	219.04	1111.92	220.98	1113	221.32
1114.67	222.01	1124.53	226.86	1133.96	231.19	1136.79	232.79	1139.07	234.3
1144.36	238	1145.17	238.58	1192.04	263.53				

Manning's n Values num= 6

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	226.49	.05	464.9	.035	584.1	.05	619.86	.035
667.54	.05								

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
383.84	926.55	221.01	236.08 232.98	.1	.3

CROSS SECTION OUTPUT Profile #Q50

			Left OB	Channel	Right OB
E.G. Elev (ft)	218.04	Element			
Vel Head (ft)	0.29	Wt. n-Val.	0.050	0.044	0.050
W.S. Elev (ft)	217.75	Reach Len. (ft)	221.01	236.08	232.98
Crit W.S. (ft)		Flow Area (sq ft)	431.43	4217.63	441.07
E.G. Slope (ft/ft)	0.001133	Area (sq ft)	431.43	4217.63	441.07
Q Total (cfs)	20912.00	Flow (cfs)	1051.56	18778.93	1081.51
Top Width (ft)	770.59	Top Width (ft)	113.18	542.71	114.70
Vel Total (ft/s)	4.11	Avg. Vel. (ft/s)	2.44	4.45	2.45
Max Chl Dpth (ft)	8.18	Hydr. Depth (ft)	3.81	7.77	3.85
Conv. Total (cfs)	621337.2	Conv. (cfs)	31244.0	557959.4	32133.8
Length Wtd. (ft)	234.63	Wetted Per. (ft)	113.41	542.74	114.91
Min Ch El (ft)	209.57	Shear (lb/sq ft)	0.27	0.55	0.27
Alpha	1.09	Stream Power (lb/ft s)	0.66	2.45	0.67
Frctn Loss (ft)	0.35	Cum Volume (acre-ft)	7.86	30.59	4.69
C & E Loss (ft)	0.03	Cum SA (acres)	2.08	3.82	1.27

CROSS SECTION OUTPUT Profile #Q100

			Left OB	Channel	Right OB
E.G. Elev (ft)	220.45	Element			
Vel Head (ft)	0.39	Wt. n-Val.	0.050	0.044	0.050
W.S. Elev (ft)	220.06	Reach Len. (ft)	221.01	236.08	232.98
Crit W.S. (ft)		Flow Area (sq ft)	731.77	5467.68	807.36
E.G. Slope (ft/ft)	0.001122	Area (sq ft)	731.77	5467.68	807.36
Q Total (cfs)	33062.00	Flow (cfs)	2106.26	28793.18	2162.56
Top Width (ft)	873.73	Top Width (ft)	148.56	542.71	182.46
Vel Total (ft/s)	4.72	Avg. Vel. (ft/s)	2.88	5.27	2.68
Max Chl Dpth (ft)	10.48	Hydr. Depth (ft)	4.93	10.07	4.42
Conv. Total (cfs)	986911.5	Conv. (cfs)	62872.6	859485.9	64553.0
Length Wtd. (ft)	234.22	Wetted Per. (ft)	148.86	542.74	182.95
Min Ch El (ft)	209.57	Shear (lb/sq ft)	0.34	0.71	0.31
Alpha	1.13	Stream Power (lb/ft s)	0.99	3.72	0.83
Frctn Loss (ft)	0.34	Cum Volume (acre-ft)	13.27	39.32	8.31
C & E Loss (ft)	0.03	Cum SA (acres)	2.71	3.82	1.81

CROSS SECTION OUTPUT Profile #Q100HC

			Left OB	Channel	Right OB
E.G. Elev (ft)	226.74	Element			
Vel Head (ft)	0.77	Wt. n-Val.	0.049	0.044	0.050
W.S. Elev (ft)	225.97	Reach Len. (ft)	221.01	236.08	232.98
Crit W.S. (ft)		Flow Area (sq ft)	1889.30	8676.71	1930.41
E.G. Slope (ft/ft)	0.001255	Area (sq ft)	1889.30	8676.71	1930.41

Q Total (cfs)	84012.00	Flow (cfs)	9044.15	65689.83	9278.02
Top Width (ft)	984.66	Top Width (ft)	245.78	542.71	196.17
Vel Total (ft/s)	6.72	Avg. Vel. (ft/s)	4.79	7.57	4.81
Max Chl Dpth (ft)	16.40	Hydr. Depth (ft)	7.69	15.99	9.84
Conv. Total (cfs)	2371489.0	Conv. (cfs)	255298.2	1854291.0	261899.7
Length Wtd. (ft)	233.13	Wetted Per. (ft)	246.27	542.74	197.91
Min Ch El (ft)	209.57	Shear (lb/sq ft)	0.60	1.25	0.76
Alpha	1.10	Stream Power (lb/ft s)	2.88	9.48	3.67
Frctn Loss (ft)	0.36	Cum Volume (acre-ft)	32.73	61.68	19.87
C & E Loss (ft)	0.04	Cum SA (acres)	3.89	3.82	2.09

CROSS SECTION

RIVER: San Juan Creek
REACH: Middle RS: 383.277

INPUT
Description:
Station Elevation Data num= 51

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	247.39	6.26	245.82	11.1	244.56	31.13	239.37	40.02	236.96
53.66	233.87	65.31	231.11	67.54	230.56	79.23	229.45	81.2	229.16
95.21	228.43	116.68	227.24	155.36	225.06	238.76	220.35	244.14	220.15
269.9	219.22	297.66	218.21	306.69	217.84	341.14	216.44	456.1	212.62
501.14	211.22	520.47	210.65	537.93	210.14	588.16	209.75	589	209.74
603.7	209.56	612.94	209.45	672.66	208.69	721.33	208.61	772.15	208.52
798.7	208.92	817.18	209.18	875.41	209.98	889.98	210.79	910.33	211.93
943.84	214.1	966.49	215.68	977.2	216.19	997.29	216.97	1029.53	217.95
1041.44	218.53	1053.14	219.12	1066.65	220.07	1071.22	220.79	1080.29	222.43
1084.39	223.59	1098.81	227.95	1103.41	230.42	1106.22	231.63	1109.54	233.63
1109.74	233.78								

Manning's n Values num= 6

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	11.1	.07	155.36	.035	244.14	.05	588.16	.035
721.33	.05								

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
537.93	875.41	226.22	216.58 201.98	.1	.3

CROSS SECTION OUTPUT Profile #Q50

E.G. Elev (ft)	217.66	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.55	Wt. n-Val.	0.050	0.043	0.050
W.S. Elev (ft)	217.11	Reach Len. (ft)	226.22	216.58	201.98
Crit W.S. (ft)		Flow Area (sq ft)	772.86	2682.94	426.28
E.G. Slope (ft/ft)	0.002104	Area (sq ft)	772.86	2682.94	426.28
Q Total (cfs)	20912.00	Flow (cfs)	2484.56	17122.94	1304.50
Top Width (ft)	677.34	Top Width (ft)	213.32	337.48	126.54
Vel Total (ft/s)	5.39	Avg. Vel. (ft/s)	3.21	6.38	3.06
Max Chl Dpth (ft)	8.59	Hydr. Depth (ft)	3.62	7.95	3.37
Conv. Total (cfs)	455859.8	Conv. (cfs)	54160.7	373262.3	28436.7
Length Wtd. (ft)	216.82	Wetted Per. (ft)	213.44	337.50	126.75
Min Ch El (ft)	208.52	Shear (lb/sq ft)	0.48	1.04	0.44
Alpha	1.21	Stream Power (lb/ft s)	1.53	6.67	1.35
Frctn Loss (ft)	0.45	Cum Volume (acre-ft)	4.80	11.90	2.37
C & E Loss (ft)	0.01	Cum SA (acres)	1.25	1.44	0.62

CROSS SECTION OUTPUT Profile #Q100

E.G. Elev (ft)	220.07	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.69	Wt. n-Val.	0.050	0.043	0.050
W.S. Elev (ft)	219.39	Reach Len. (ft)	226.22	216.58	201.98
Crit W.S. (ft)		Flow Area (sq ft)	1323.59	3450.52	785.98
E.G. Slope (ft/ft)	0.001987	Area (sq ft)	1323.59	3450.52	785.98
Q Total (cfs)	33062.00	Flow (cfs)	5025.23	25273.31	2763.47
Top Width (ft)	791.63	Top Width (ft)	272.63	337.48	181.52
Vel Total (ft/s)	5.95	Avg. Vel. (ft/s)	3.80	7.32	3.52
Max Chl Dpth (ft)	10.87	Hydr. Depth (ft)	4.85	10.22	4.33
Conv. Total (cfs)	741704.4	Conv. (cfs)	112734.7	566974.9	61994.9
Length Wtd. (ft)	216.85	Wetted Per. (ft)	272.79	337.50	181.78
Min Ch El (ft)	208.52	Shear (lb/sq ft)	0.60	1.27	0.54
Alpha	1.25	Stream Power (lb/ft s)	2.29	9.29	1.89
Frctn Loss (ft)	0.43	Cum Volume (acre-ft)	8.06	15.15	4.05
C & E Loss (ft)	0.01	Cum SA (acres)	1.64	1.44	0.84

CROSS SECTION OUTPUT Profile #Q100HC

E.G. Elev (ft)	226.34	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.15	Wt. n-Val.	0.049	0.043	0.050
W.S. Elev (ft)	225.20	Reach Len. (ft)	226.22	216.58	201.98
Crit W.S. (ft)		Flow Area (sq ft)	3257.73	5411.95	1961.73
E.G. Slope (ft/ft)	0.001962	Area (sq ft)	3257.73	5411.95	1961.73
Q Total (cfs)	84012.00	Flow (cfs)	19658.36	53085.51	11268.14
Top Width (ft)	936.80	Top Width (ft)	385.02	337.48	214.30
Vel Total (ft/s)	7.90	Avg. Vel. (ft/s)	6.03	9.81	5.74
Max Chl Dpth (ft)	16.68	Hydr. Depth (ft)	8.46	16.04	9.15
Conv. Total (cfs)	1896866.0	Conv. (cfs)	443856.3	1198592.0	254417.7
Length Wtd. (ft)	217.08	Wetted Per. (ft)	385.33	337.50	215.19
Min Ch El (ft)	208.52	Shear (lb/sq ft)	1.04	1.96	1.12
Alpha	1.18	Stream Power (lb/ft s)	6.25	19.26	6.41
Frctn Loss (ft)	0.43	Cum Volume (acre-ft)	19.67	23.50	9.47
C & E Loss (ft)	0.02	Cum SA (acres)	2.29	1.44	0.99

CROSS SECTION

RIVER: San Juan Creek
REACH: Middle RS: 166.695

INPUT
Description:
Station Elevation Data num= 39

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	236.63	22.3	231.47	27.73	230.36	39.64	228.84	63.67	226.53
67.19	226.16	76.47	225.71	164.77	220.93	172.67	220.69	223.16	219.13
283.49	217.7	392.42	214.73	417.92	213.86	449.03	212.86	520.52	210.46
531.27	210.14	536.33	210.01	594.64	209.02	636.73	208.3	648.6	208.09
714.79	206.96	715.75	206.94	786.58	207.71	787.82	207.72	805.56	207.96
835.92	209	876.14	210.33	912.64	212.57	939.76	214.19	954.81	215.1
1020.62	219.06	1030.3	219.99	1032.69	220.36	1037.76	221.65	1049.58	225.1
1060.35	228.8	1067.55	231.56	1070.02	232.88	1079.2	237		

Manning's n Values num= 4

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	172.67	.05	636.73	.035	787.82	.05

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
594.64	835.92	0	0	.1	.3

CROSS SECTION OUTPUT Profile #Q50

			Left OB	Channel	Right OB
E.G. Elev (ft)	217.20	Element			
Vel Head (ft)	0.64	Wt. n-Val.	0.050	0.039	0.050
W.S. Elev (ft)	216.55	Reach Len. (ft)			
Crit W.S. (ft)	213.48	Flow Area (sq ft)	1077.45	2101.92	595.29
E.G. Slope (ft/ft)	0.002003	Area (sq ft)	1077.45	2101.92	595.29
Q Total (cfs)	20912.00	Flow (cfs)	3613.39	15251.67	2046.94
Top Width (ft)	653.28	Top Width (ft)	269.00	241.28	143.00
Vel Total (ft/s)	5.54	Avg. Vel. (ft/s)	3.35	7.26	3.44
Max Chl Dpth (ft)	9.61	Hydr. Depth (ft)	4.01	8.71	4.16
Conv. Total (cfs)	467248.3	Conv. (cfs)	80736.0	340776.3	45736.0
Length Wtd. (ft)		Wetted Per. (ft)	269.11	241.32	143.21
Min Ch El (ft)	206.94	Shear (lb/sq ft)	0.50	1.09	0.52
Alpha	1.35	Stream Power (lb/ft s)	1.68	7.90	1.79
Frctn Loss (ft)		Cum Volume (acre-ft)			
C & E Loss (ft)		Cum SA (acres)			

CROSS SECTION OUTPUT Profile #Q100

			Left OB	Channel	Right OB
E.G. Elev (ft)	219.63	Element			
Vel Head (ft)	0.82	Wt. n-Val.	0.050	0.039	0.050
W.S. Elev (ft)	218.80	Reach Len. (ft)			
Crit W.S. (ft)	215.11	Flow Area (sq ft)	1779.99	2645.55	959.67
E.G. Slope (ft/ft)	0.002000	Area (sq ft)	1779.99	2645.55	959.67
Q Total (cfs)	33062.00	Flow (cfs)	6894.10	22285.33	3882.56
Top Width (ft)	779.45	Top Width (ft)	357.72	241.28	180.44
Vel Total (ft/s)	6.14	Avg. Vel. (ft/s)	3.87	8.42	4.05
Max Chl Dpth (ft)	11.86	Hydr. Depth (ft)	4.98	10.96	5.32
Conv. Total (cfs)	739199.1	Conv. (cfs)	154138.2	498254.7	86806.2
Length Wtd. (ft)		Wetted Per. (ft)	357.86	241.32	180.72
Min Ch El (ft)	206.94	Shear (lb/sq ft)	0.62	1.37	0.66
Alpha	1.40	Stream Power (lb/ft s)	2.41	11.53	2.68
Frctn Loss (ft)		Cum Volume (acre-ft)			
C & E Loss (ft)		Cum SA (acres)			

CROSS SECTION OUTPUT Profile #Q100HC

			Left OB	Channel	Right OB
E.G. Elev (ft)	225.89	Element			
Vel Head (ft)	1.30	Wt. n-Val.	0.050	0.039	0.050
W.S. Elev (ft)	224.59	Reach Len. (ft)			
Crit W.S. (ft)	220.04	Flow Area (sq ft)	4319.17	4042.65	2121.28
E.G. Slope (ft/ft)	0.002002	Area (sq ft)	4319.17	4042.65	2121.28
Q Total (cfs)	84012.00	Flow (cfs)	25950.98	44997.80	13063.23
Top Width (ft)	950.77	Top Width (ft)	497.56	241.28	211.93
Vel Total (ft/s)	8.01	Avg. Vel. (ft/s)	6.01	11.13	6.16
Max Chl Dpth (ft)	17.65	Hydr. Depth (ft)	8.68	16.76	10.01
Conv. Total (cfs)	1877469.0	Conv. (cfs)	579942.9	1005594.0	291932.1
Length Wtd. (ft)		Wetted Per. (ft)	497.83	241.32	212.87
Min Ch El (ft)	206.94	Shear (lb/sq ft)	1.08	2.09	1.25

Alpha	1.30	Stream Power (lb/ft s)	6.52	23.31	7.67
Frctn Loss (ft)		Cum Volume (acre-ft)			
C & E Loss (ft)		Cum SA (acres)			

SUMMARY OF MANNING'S N VALUES

River:San Juan Creek

Reach	River Sta.	n1	n2	n3	n4	n5	n6	n7
Middle	4134.311	.07	.05	.035				
Middle	3982.936	.035	.07	.05	.035			
Middle	3791.445	.035	.07	.05	.035			
Middle	3605.298	.035	.05	.035				
Middle	3339.701	.035	.05	.035				
Middle	3112.250	.035	.05	.035				
Middle	2923.799	.035	.05	.035				
Middle	2669.802	.035	.05	.035	.02			
Middle	2483.318	.035	.05					
Middle	2283.086	.07	.035	.05				
Middle	2139.477	.07	.035	.05				
Middle	2008.097	.07	.035	.05				
Middle	1883.719	.07	.035	.05	.035	.05		
Middle	1763.206	.07	.05	.035	.05	.035	.05	
Middle	1560.587	.07	.05	.035	.05	.035	.05	
Middle	1301.132	.07	.05	.035	.05	.035	.05	
Middle	1100.047	.07	.05	.035	.05	.05	.035	.05
Middle	967.228	.07	.035	.05	.035	.05	.035	.05
Middle	863.438	.07	.035	.05	.035	.05		
Middle	619.354	.035	.05	.035	.05	.035	.05	
Middle	383.277	.035	.07	.035	.05	.035	.05	
Middle	166.695	.035	.05	.035	.05			

SUMMARY OF REACH LENGTHS

River: San Juan Creek

Reach	River Sta.	Left	Channel	Right
Middle	4134.311	142.56	151.38	160.62
Middle	3982.936	190.66	191.49	190.18
Middle	3791.445	194.44	186.15	181.77
Middle	3605.298	270.91	265.6	252.8
Middle	3339.701	248.04	227.45	213.64
Middle	3112.250	224.26	188.45	190.23
Middle	2923.799	275	254	216.71
Middle	2669.802	160.75	186.48	183.52
Middle	2483.318	191.67	200.23	203.15
Middle	2283.086	140.69	143.61	153.2
Middle	2139.477	122.96	131.38	126.04
Middle	2008.097	125.67	124.38	140.61
Middle	1883.719	161.58	120.51	124.7
Middle	1763.206	207.41	202.62	155.96

Middle	1560.587	134.09	259.45	211.62
Middle	1301.132	121.07	201.09	244.51
Middle	1100.047	112.44	132.82	162.92
Middle	967.228	96.73	103.79	95
Middle	863.438	226.61	244.08	237.58
Middle	619.354	221.01	236.08	232.98
Middle	383.277	226.22	216.58	201.98
Middle	166.695	0	0	0

SUMMARY OF CONTRACTION AND EXPANSION COEFFICIENTS
River: San Juan Creek

Reach	River Sta.	Contr.	Expan.
Middle	4134.311	.1	.3
Middle	3982.936	.1	.3
Middle	3791.445	.1	.3
Middle	3605.298	.1	.3
Middle	3339.701	.1	.3
Middle	3112.250	.1	.3
Middle	2923.799	.1	.3
Middle	2669.802	.1	.3
Middle	2483.318	.1	.3
Middle	2283.086	.1	.3
Middle	2139.477	.1	.3
Middle	2008.097	.1	.3
Middle	1883.719	.1	.3
Middle	1763.206	.1	.3
Middle	1560.587	.1	.3
Middle	1301.132	.1	.3
Middle	1100.047	.1	.3
Middle	967.228	.1	.3
Middle	863.438	.1	.3
Middle	619.354	.1	.3
Middle	383.277	.1	.3
Middle	166.695	.1	.3

Profile Output Table - Standard Table 1

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
Middle	4134.311	Q50	20912.00	218.17	229.03	223.01	229.19	0.000615	3.38	7068.50	1028.66	0.19
Middle	4134.311	Q100	33062.00	218.17	231.12	224.36	231.34	0.000690	4.07	9241.93	1057.45	0.21
Middle	4134.311	Q100HC	84012.00	218.17	236.47	228.41	236.98	0.000986	6.23	15040.04	1108.30	0.26
Middle	3982.936	Q50	20912.00	218.52	228.88		229.08	0.000872	3.81	6234.64	921.40	0.22
Middle	3982.936	Q100	33062.00	218.52	230.93		231.21	0.000967	4.60	8193.03	982.20	0.24
Middle	3982.936	Q100HC	84012.00	218.52	236.17		236.80	0.001339	7.00	13565.22	1066.51	0.31
Middle	3791.445	Q50	20912.00	216.34	228.70		228.91	0.000833	3.85	5947.10	839.87	0.22
Middle	3791.445	Q100	33062.00	216.34	230.69		231.02	0.000996	4.78	7721.65	925.51	0.25
Middle	3791.445	Q100HC	84012.00	216.34	235.77		236.52	0.001495	7.47	12702.59	1031.52	0.32

Middle	3605.298	Q50	20912.00	214.11	228.63		228.78	0.000456	3.19	7100.82	817.53	0.17
Middle	3605.298	Q100	33062.00	214.11	230.60		230.85	0.000619	4.14	8768.81	877.69	0.20
Middle	3605.298	Q100HC	84012.00	214.11	235.59		236.25	0.001142	6.96	13522.55	1024.01	0.29
Middle	3339.701	Q50	20912.00	207.00	228.66		228.71	0.000079	1.67	12708.82	870.37	0.07
Middle	3339.701	Q100	33062.00	207.00	230.65		230.73	0.000132	2.33	14470.94	911.06	0.10
Middle	3339.701	Q100HC	84012.00	207.00	235.68		235.99	0.000352	4.49	19564.38	1107.78	0.17
Middle	3112.250	Q50	20912.00	208.19	228.65		228.69	0.000054	1.49	14242.55	878.93	0.06
Middle	3112.250	Q100	33062.00	208.19	230.63		230.70	0.000094	2.10	16015.75	920.23	0.08
Middle	3112.250	Q100HC	84012.00	208.19	235.64		235.90	0.000269	4.14	21294.68	1190.45	0.15
Middle	2923.799	Q50	20912.00	207.18	228.64		228.68	0.000055	1.48	14385.12	920.91	0.06
Middle	2923.799	Q100	33062.00	207.18	230.62		230.68	0.000095	2.08	16223.88	943.32	0.08
Middle	2923.799	Q100HC	84012.00	207.18	235.59		235.85	0.000271	4.11	21347.09	1128.29	0.15
Middle	2669.802	Q50	20912.00	208.49	228.46		228.63	0.000699	3.31	6478.02	813.18	0.20
Middle	2669.802	Q100	33062.00	208.49	230.34		230.61	0.000890	4.26	8031.76	849.41	0.23
Middle	2669.802	Q100HC	84012.00	208.49	234.86		235.66	0.001641	7.33	12091.43	941.81	0.33
Middle	2483.318	Q50	20912.00	219.54	227.68		228.32	0.004166	7.27	3581.51	785.74	0.47
Middle	2483.318	Q100	33062.00	219.54	229.45		230.25	0.004124	8.35	5175.81	991.05	0.49
Middle	2483.318	Q100HC	84012.00	219.54	233.98		235.19	0.003743	10.40	10019.22	1147.53	0.50
Middle	2283.086	Q50	20912.00	218.12	226.78		227.46	0.004449	7.37	3484.15	770.71	0.48
Middle	2283.086	Q100	33062.00	218.12	228.63		229.43	0.004075	8.22	5026.65	888.27	0.48
Middle	2283.086	Q100HC	84012.00	218.12	233.12		234.41	0.004024	10.69	9754.91	1196.00	0.51
Middle	2139.477	Q50	20912.00	216.99	224.53		226.31	0.013492	11.51	2143.26	549.34	0.82
Middle	2139.477	Q100	33062.00	216.99	225.95	225.95	228.28	0.014126	13.54	3022.20	680.61	0.87
Middle	2139.477	Q100HC	84012.00	216.99	229.97		233.26	0.012735	17.11	6384.42	976.44	0.89
Middle	2008.097	Q50	20912.00	215.92	223.74	222.86	224.74	0.008121	8.84	2840.68	728.61	0.64
Middle	2008.097	Q100	33062.00	215.92	225.10	224.12	226.40	0.008453	10.34	3882.60	801.67	0.67
Middle	2008.097	Q100HC	84012.00	215.92	229.96		231.70	0.006041	12.25	8311.13	1016.16	0.62
Middle	1883.719	Q50	20912.00	215.08	222.20		223.49	0.011493	10.39	2473.46	686.74	0.75
Middle	1883.719	Q100	33062.00	215.08	223.86		225.28	0.009178	10.96	3648.93	720.51	0.70
Middle	1883.719	Q100HC	84012.00	215.08	228.65		230.82	0.007215	13.48	7311.81	814.10	0.68
Middle	1763.206	Q50	20912.00	214.05	221.72		222.48	0.004251	7.43	3163.16	664.92	0.53
Middle	1763.206	Q100	33062.00	214.05	223.30		224.36	0.004400	8.84	4254.01	714.05	0.56
Middle	1763.206	Q100HC	84012.00	214.05	228.06		229.99	0.004438	12.30	8060.90	909.14	0.62
Middle	1560.587	Q50	20912.00	212.54	220.22	219.23	221.31	0.008004	8.89	2612.75	620.63	0.62
Middle	1560.587	Q100	33062.00	212.54	221.97		223.24	0.007053	9.72	3777.58	712.77	0.60
Middle	1560.587	Q100HC	84012.00	212.54	227.45		228.98	0.004546	10.71	8646.46	1012.47	0.51
Middle	1301.132	Q50	20912.00	209.59	218.40		219.39	0.007375	8.12	2671.55	574.70	0.62
Middle	1301.132	Q100	33062.00	209.59	220.58		221.71	0.005434	8.78	4004.60	651.92	0.57
Middle	1301.132	Q100HC	84012.00	209.59	226.48		228.05	0.003779	10.80	8908.79	982.08	0.52
Middle	1100.047	Q50	20912.00	208.11	218.10		218.57	0.001816	5.66	3975.99	674.25	0.38
Middle	1100.047	Q100	33062.00	208.11	220.39		220.99	0.001658	6.52	5634.93	771.63	0.38
Middle	1100.047	Q100HC	84012.00	208.11	226.31		227.41	0.001700	9.14	10980.37	1008.73	0.41
Middle	967.228	Q50	20912.00	207.19	218.08		218.35	0.000808	4.32	5244.63	743.49	0.26
Middle	967.228	Q100	33062.00	207.19	220.39		220.77	0.000835	5.16	7031.69	806.34	0.28
Middle	967.228	Q100HC	84012.00	207.19	226.34		227.14	0.001035	7.72	12636.34	1069.06	0.33

Middle	863.438	Q50	20912.00	207.96	218.02		218.26	0.000754	4.10	5607.45	813.60	0.25
Middle	863.438	Q100	33062.00	207.96	220.34		220.68	0.000770	4.88	7569.69	867.53	0.26
Middle	863.438	Q100HC	84012.00	207.96	226.33		227.01	0.000912	7.16	13664.59	1136.04	0.31
Middle	619.354	Q50	20912.00	209.57	217.75		218.04	0.001133	4.45	5090.13	770.59	0.28
Middle	619.354	Q100	33062.00	209.57	220.06		220.45	0.001122	5.27	7006.81	873.73	0.29
Middle	619.354	Q100HC	84012.00	209.57	225.97		226.74	0.001255	7.57	12496.41	984.66	0.33
Middle	383.277	Q50	20912.00	208.52	217.11		217.66	0.002104	6.38	3882.09	677.34	0.40
Middle	383.277	Q100	33062.00	208.52	219.39		220.07	0.001987	7.32	5560.09	791.63	0.40
Middle	383.277	Q100HC	84012.00	208.52	225.20		226.34	0.001962	9.81	10631.41	936.80	0.43
Middle	166.695	Q50	20912.00	206.94	216.55	213.48	217.20	0.002003	7.26	3774.67	653.28	0.43
Middle	166.695	Q100	33062.00	206.94	218.80	215.11	219.63	0.002000	8.42	5385.20	779.45	0.45
Middle	166.695	Q100HC	84012.00	206.94	224.59	220.04	225.89	0.002002	11.13	10483.10	950.77	0.48

HEC-RAS Version 3.1.1 May 2003
U.S. Army Corp of Engineers
Hydrologic Engineering Center
609 Second Street, Suite D
Davis, California 95616-4687
(916) 756-1104

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X     X  XXXXXX    XXXX        XXXX       XX      XXXX
X     X  X        X    X       X   X     X  X    X
X     X  X        X            X   X    X    X   X
XXXXXXX  XXXX     X       XXX  XXXX     XXXXXX    XXXX
X     X  X        X            X  X     X    X        X
X     X  X        X    X       X   X    X    X        X
X     X  XXXXXX    XXXX        X    X   X    X   XXXXX
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PROJECT DATA
Project Title: Project Model HZ1
Project File : PMHZ1.prj
Run Date and Time: 9/28/2003 3:15:34 PM

Project in English units

Project Description:
A7C-FECM At San Juan Creek

PLAN DATA

Plan Title: Existing Flow/Existing Geometry
Plan File : c:\projects\2PDA0104\hydr\LHS\Modeling\Model H\PMHZ1.p01

Geometry Title: Existing Conditions
Geometry File : c:\projects\2PDA0104\hydr\LHS\Modeling\Model H\PMHZ1.g01

Flow Title : Existing Conditions
Flow File : c:\projects\2PDA0104\hydr\LHS\Modeling\Model H\PMHZ1.f01

Plan Summary Information:

Number of:	Cross Sections	= 22	Mulitple Openings	=	0
	Culverts	= 0	Inline Structures	=	0
	Bridges	= 0	Lateral Structures	=	0

Computational Information

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

Computation Options
Critical depth computed only where necessary

Conveyance Calculation Method: At breaks in n values only
Friction Slope Method: Average Conveyance
Computational Flow Regime: Mixed Flow

FLOW DATA

Flow Title: Existing Conditions
Flow File : c:\projects\2PDA0104\hydr\LHS\Modeling\Model H\PMHZ1.f01

Flow Data (cfs)

River	Reach	RS	Q2	Q5	Q10	Q25	Q50	Q100	Q100HC
San Juan Creek	Middle	4134.311	378	2357	4952	12954	20912	33062	84012

Boundary Conditions

River	Reach	Profile	Upstream	Downstream
San Juan Creek	Middle	Q2	Normal S = 0.001	Normal S = 0.002
San Juan Creek	Middle	Q5	Normal S = 0.001	Normal S = 0.002
San Juan Creek	Middle	Q10	Normal S = 0.001	Normal S = 0.002
San Juan Creek	Middle	Q25	Normal S = 0.001	Normal S = 0.002
San Juan Creek	Middle	Q50	Normal S = 0.001	Normal S = 0.002
San Juan Creek	Middle	Q100	Normal S = 0.001	Normal S = 0.002
San Juan Creek	Middle	Q100HC	Normal S = 0.001	Normal S = 0.002

GEOMETRY DATA

Geometry Title: Existing Conditions
Geometry File : c:\projects\2PDA0104\hydr\LHS\Modeling\Model H\PMHZ1.g01

CROSS SECTION

RIVER: San Juan Creek
REACH: Middle RS: 4134.311

INPUT
Description:
Station Elevation Data num= 59

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	258.56	7.56	254.99	14.01	252.4	15.42	251.79	16.75	251.38
22.88	250.02	38.38	247.57	55.77	244.82	77.36	241.64	83.68	240.91
107.07	236.84	107.96	236.7	110.05	236.36	147.74	230.28	166.63	228.38
167.51	228.28	168.32	228.24	190.32	227.18	199.83	226.73	225.74	226.28
290.36	225	291.07	224.99	291.49	224.99	295.14	225.01	406.89	225.82
414.99	225.85	431.16	225.55	575.03	222.39	603.14	221.54	647.52	220.29
671.32	219.94	674.1	219.9	725.51	219.64	754.86	219.26	820.14	218.4
832.9	218.43	878.36	218.54	932.12	218.17	962.31	218.24	963.55	218.24
1000.01	218.52	1047.67	219.02	1072.53	219.98	1091.06	220.46	1111.01	221.48
1119.62	222.28	1125.89	222.83	1158.56	225.73	1174.86	227.39	1185.56	228.53
1190.28	229.27	1199.06	230.82	1211.07	234.56	1227.54	239.33	1257.76	246.33

1262.95 247.44 1277.25 249.85 1278.14 249.99 1279.42 250.07

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.07	38.38	.05	1125.89	.035

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
603.14	1111.01	142.56	151.38 160.62	.1	.3

CROSS SECTION OUTPUT Profile #Q50

E.G. Elev (ft)	229.13	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.16	Wt. n-Val.	0.050	0.050	0.040
W.S. Elev (ft)	228.98	Reach Len. (ft)	142.56	151.38	160.62
Crit W.S. (ft)	223.01	Flow Area (sq ft)	1741.98	4960.16	305.62
E.G. Slope (ft/ft)	0.000631	Area (sq ft)	1741.98	4960.16	305.62
Q Total (cfs)	20912.00	Flow (cfs)	3242.48	16920.13	749.39
Top Width (ft)	1027.69	Top Width (ft)	442.43	507.87	77.39
Vel Total (ft/s)	2.98	Avg. Vel. (ft/s)	1.86	3.41	2.45
Max Chl Dpth (ft)	10.81	Hydr. Depth (ft)	3.94	9.77	3.95
Conv. Total (cfs)	832323.6	Conv. (cfs)	129054.8	673442.1	29826.6
Length Wtd. (ft)	150.20	Wetted Per. (ft)	442.57	507.96	77.76
Min Ch El (ft)	218.17	Shear (lb/sq ft)	0.16	0.38	0.15
Alpha	1.14	Stream Power (lb/ft s)	0.29	1.31	0.38
Frctn Loss (ft)	0.11	Cum Volume (acre-ft)	49.71	458.21	35.54
C & E Loss (ft)	0.00	Cum SA (acres)	15.79	42.65	11.13

CROSS SECTION OUTPUT Profile #Q100

E.G. Elev (ft)	231.30	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.22	Wt. n-Val.	0.050	0.050	0.039
W.S. Elev (ft)	231.08	Reach Len. (ft)	142.56	151.38	160.62
Crit W.S. (ft)	224.36	Flow Area (sq ft)	2691.99	6026.86	480.99
E.G. Slope (ft/ft)	0.000700	Area (sq ft)	2691.99	6026.86	480.99
Q Total (cfs)	33062.00	Flow (cfs)	6868.00	24652.66	1541.34
Top Width (ft)	1057.07	Top Width (ft)	460.33	507.87	88.87
Vel Total (ft/s)	3.59	Avg. Vel. (ft/s)	2.55	4.09	3.20
Max Chl Dpth (ft)	12.91	Hydr. Depth (ft)	5.85	11.87	5.41
Conv. Total (cfs)	1249566.0	Conv. (cfs)	259573.5	931738.0	58254.4
Length Wtd. (ft)	150.01	Wetted Per. (ft)	460.60	507.96	89.44
Min Ch El (ft)	218.17	Shear (lb/sq ft)	0.26	0.52	0.24
Alpha	1.11	Stream Power (lb/ft s)	0.65	2.12	0.75
Frctn Loss (ft)	0.12	Cum Volume (acre-ft)	83.05	544.59	62.00
C & E Loss (ft)	0.01	Cum SA (acres)	19.23	42.65	15.03

CROSS SECTION OUTPUT Profile #Q100HC

E.G. Elev (ft)	236.93	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.52	Wt. n-Val.	0.050	0.050	0.038
W.S. Elev (ft)	236.41	Reach Len. (ft)	142.56	151.38	160.62
Crit W.S. (ft)	228.41	Flow Area (sq ft)	5236.39	8736.67	1001.30
E.G. Slope (ft/ft)	0.001000	Area (sq ft)	5236.39	8736.67	1001.30
Q Total (cfs)	84012.00	Flow (cfs)	23737.26	54695.27	5579.47
Top Width (ft)	1107.73	Top Width (ft)	493.41	507.87	106.45
Vel Total (ft/s)	5.61	Avg. Vel. (ft/s)	4.53	6.26	5.57
Max Chl Dpth (ft)	18.24	Hydr. Depth (ft)	10.61	17.20	9.41
Conv. Total (cfs)	2657315.0	Conv. (cfs)	750813.8	1730021.0	176479.6

Length Wtd. (ft)	149.77	Wetted Per. (ft)	494.11	507.96	107.81
Min Ch El (ft)	218.17	Shear (lb/sq ft)	0.66	1.07	0.58
Alpha	1.06	Stream Power (lb/ft s)	3.00	6.72	3.23
Frctn Loss (ft)	0.17	Cum Volume (acre-ft)	205.47	767.71	161.65
C & E Loss (ft)	0.01	Cum SA (acres)	28.65	42.65	22.77

CROSS SECTION

RIVER: San Juan Creek
REACH: Middle RS: 3982.936

INPUT
Description:
Station Elevation Data num= 62

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	262.66	4.4	261.83	7.7	260.79	13.29	259.02	21.22	255.77
25.64	253.76	32.55	250.61	38.11	248.92	63.88	244.28	67.15	243.55
73.17	242.7	76.91	242.25	78.86	242.01	95.62	240.04	155.65	235.16
173.52	233.49	189.06	232.11	197.36	231.5	207.64	230.71	291.7	225.75
294.75	225.6	325.45	224.57	359.52	223.47	366.51	223.35	368	223.32
441.64	222.39	505.82	222.71	520.26	222.7	563.58	221.62	608.54	220.69
666.71	220.32	716.31	219.4	773.67	219.07	780.95	219.03	810.1	218.76
837.19	218.52	873	219.22	884.44	219.34	963.73	220.17	978.58	220.35
985.6	220.43	994.51	220.91	1014.14	221.88	1086.45	225.44	1140.8	227.96
1143.01	228.07	1147.6	228.27	1161.32	228.95	1180.55	229.92	1183.18	230.26
1192.4	231.91	1195.29	232.52	1211.44	236.6	1224.74	239.99	1229.44	240.68
1244	243.16	1249.67	244.77	1260.61	247.77	1264.3	248.66	1269.71	250.09
1274.33	250.84	1281.8	251.59						

Manning's n Values num= 4

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	25.64	.07	76.91	.05	1140.8	.035

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
563.58	1014.14	190.66 191.49	190.18	.1	.3

CROSS SECTION OUTPUT Profile #Q50

E.G. Elev (ft)	229.02	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.20	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	228.82	Reach Len. (ft)	190.66	191.49	190.18
Crit W.S. (ft)		Flow Area (sq ft)	1632.41	4048.00	496.28
E.G. Slope (ft/ft)	0.000897	Area (sq ft)	1632.41	4048.00	496.28
Q Total (cfs)	20912.00	Flow (cfs)	4269.28	15568.73	1073.99
Top Width (ft)	919.06	Top Width (ft)	323.92	450.56	144.57
Vel Total (ft/s)	3.39	Avg. Vel. (ft/s)	2.62	3.85	2.16
Max Chl Dpth (ft)	10.30	Hydr. Depth (ft)	5.04	8.98	3.43
Conv. Total (cfs)	698263.8	Conv. (cfs)	142553.6	519849.0	35861.2
Length Wtd. (ft)	191.33	Wetted Per. (ft)	324.07	450.63	144.74
Min Ch El (ft)	218.52	Shear (lb/sq ft)	0.28	0.50	0.19
Alpha	1.10	Stream Power (lb/ft s)	0.74	1.93	0.42
Frctn Loss (ft)	0.17	Cum Volume (acre-ft)	44.19	442.56	34.06
C & E Loss (ft)	0.00	Cum SA (acres)	14.53	40.98	10.72

CROSS SECTION OUTPUT Profile #Q100

E.G. Elev (ft)	231.17	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.28	Wt. n-Val.	0.050	0.050	0.049
W.S. Elev (ft)	230.89	Reach Len. (ft)	190.66	191.49	190.18
Crit W.S. (ft)		Flow Area (sq ft)	2339.00	4980.44	831.91
E.G. Slope (ft/ft)	0.000982	Area (sq ft)	2339.00	4980.44	831.91
Q Total (cfs)	33062.00	Flow (cfs)	7605.16	23011.63	2445.21
Top Width (ft)	981.41	Top Width (ft)	358.29	450.56	172.56
Vel Total (ft/s)	4.06	Avg. Vel. (ft/s)	3.25	4.62	2.94
Max Chl Dpth (ft)	12.37	Hydr. Depth (ft)	6.53	11.05	4.82
Conv. Total (cfs)	1055125.0	Conv. (cfs)	242707.4	734381.9	78035.3
Length Wtd. (ft)	191.28	Wetted Per. (ft)	358.50	450.63	172.83
Min Ch El (ft)	218.52	Shear (lb/sq ft)	0.40	0.68	0.30
Alpha	1.09	Stream Power (lb/ft s)	1.30	3.13	0.87
Frctn Loss (ft)	0.19	Cum Volume (acre-ft)	74.82	525.46	59.58
C & E Loss (ft)	0.00	Cum SA (acres)	17.89	40.98	14.55

CROSS SECTION OUTPUT Profile #Q100HC

E.G. Elev (ft)	236.74	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.64	Wt. n-Val.	0.050	0.050	0.047
W.S. Elev (ft)	236.11	Reach Len. (ft)	190.66	191.49	190.18
Crit W.S. (ft)		Flow Area (sq ft)	4371.19	7330.54	1795.50
E.G. Slope (ft/ft)	0.001360	Area (sq ft)	4371.19	7330.54	1795.50
Q Total (cfs)	84012.00	Flow (cfs)	22837.41	51581.71	9592.88
Top Width (ft)	1065.48	Top Width (ft)	419.57	450.56	195.35
Vel Total (ft/s)	6.22	Avg. Vel. (ft/s)	5.22	7.04	5.34
Max Chl Dpth (ft)	17.59	Hydr. Depth (ft)	10.42	16.27	9.19
Conv. Total (cfs)	2277972.0	Conv. (cfs)	619232.8	1398630.0	260109.3
Length Wtd. (ft)	191.19	Wetted Per. (ft)	420.01	450.63	196.22
Min Ch El (ft)	218.52	Shear (lb/sq ft)	0.88	1.38	0.78
Alpha	1.06	Stream Power (lb/ft s)	4.62	9.72	4.15
Frctn Loss (ft)	0.27	Cum Volume (acre-ft)	189.75	739.79	156.49
C & E Loss (ft)	0.01	Cum SA (acres)	27.15	40.98	22.21

CROSS SECTION

RIVER: San Juan Creek
REACH: Middle RS: 3791.445

INPUT
Description:
Station Elevation Data num= 47

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	253.91	20.91	251.33	28.7	250.22	37.12	248.21	37.26	248.18
43.51	246.96	66.86	242.55	79.92	239.84	82.4	239.47	92.39	238.59
98.98	237.96	145.36	233.52	152.69	232.84	181.45	231.08	195	230.27
220.35	229.33	395.48	223.71	434.27	222.39	438.2	222.24	505.77	220.38
567.35	219.54	571.63	219.49	603.6	218.75	648.82	217.67	702.3	216.36
703.97	216.34	707.91	216.41	753.36	217.01	791.27	218.29	814.13	218.68
885.89	219.91	890.17	219.98	894.23	220.12	958.29	222.88	1005.78	225.05
1030.17	226.25	1088.8	229.13	1095.42	229.46	1109.83	230.14	1119.83	231.69
1163.1	236.95	1179.89	238.81	1193.22	239.59	1213.81	240.01	1223.89	240.13
1229.22	240.34	1237.27	240.76						

Manning's n Values num= 4

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val

0 .035 37.12 .07 98.98 .05 1088.8 .035

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
434.27	958.29	194.44	186.15	181.77	.1 .3

CROSS SECTION OUTPUT Profile #Q50

			Left OB	Channel	Right OB
E.G. Elev (ft)	228.85	Element			
Vel Head (ft)	0.22	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	228.63	Reach Len. (ft)	194.44	186.15	181.77
Crit W.S. (ft)		Flow Area (sq ft)	593.31	4945.30	351.70
E.G. Slope (ft/ft)	0.000856	Area (sq ft)	593.31	4945.30	351.70
Q Total (cfs)	20912.00	Flow (cfs)	1093.62	19193.77	624.61
Top Width (ft)	836.38	Top Width (ft)	192.06	524.02	120.30
Vel Total (ft/s)	3.55	Avg. Vel. (ft/s)	1.84	3.88	1.78
Max Chl Dpth (ft)	12.29	Hydr. Depth (ft)	3.09	9.44	2.92
Conv. Total (cfs)	714912.6	Conv. (cfs)	37387.3	656172.1	21353.3
Length Wtd. (ft)	186.55	Wetted Per. (ft)	192.16	524.19	120.44
Min Ch El (ft)	216.34	Shear (lb/sq ft)	0.16	0.50	0.16
Alpha	1.12	Stream Power (lb/ft s)	0.30	1.96	0.28
Frctn Loss (ft)	0.12	Cum Volume (acre-ft)	39.32	422.79	32.21
C & E Loss (ft)	0.02	Cum SA (acres)	13.41	38.84	10.14

CROSS SECTION OUTPUT Profile #Q100

			Left OB	Channel	Right OB
E.G. Elev (ft)	230.97	Element			
Vel Head (ft)	0.33	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	230.65	Reach Len. (ft)	194.44	186.15	181.77
Crit W.S. (ft)		Flow Area (sq ft)	1040.42	6003.71	634.76
E.G. Slope (ft/ft)	0.001012	Area (sq ft)	1040.42	6003.71	634.76
Q Total (cfs)	33062.00	Flow (cfs)	2574.04	28837.31	1650.65
Top Width (ft)	924.44	Top Width (ft)	245.60	524.02	154.82
Vel Total (ft/s)	4.31	Avg. Vel. (ft/s)	2.47	4.80	2.60
Max Chl Dpth (ft)	14.31	Hydr. Depth (ft)	4.24	11.46	4.10
Conv. Total (cfs)	1039371.0	Conv. (cfs)	80920.2	906559.3	51891.4
Length Wtd. (ft)	186.70	Wetted Per. (ft)	245.74	524.19	155.03
Min Ch El (ft)	216.34	Shear (lb/sq ft)	0.27	0.72	0.26
Alpha	1.13	Stream Power (lb/ft s)	0.66	3.48	0.67
Frctn Loss (ft)	0.15	Cum Volume (acre-ft)	67.42	501.32	56.38
C & E Loss (ft)	0.02	Cum SA (acres)	16.57	38.84	13.83

CROSS SECTION OUTPUT Profile #Q100HC

			Left OB	Channel	Right OB
E.G. Elev (ft)	236.46	Element			
Vel Head (ft)	0.76	Wt. n-Val.	0.050	0.050	0.048
W.S. Elev (ft)	235.70	Reach Len. (ft)	194.44	186.15	181.77
Crit W.S. (ft)		Flow Area (sq ft)	2466.36	8650.01	1513.11
E.G. Slope (ft/ft)	0.001521	Area (sq ft)	2466.36	8650.01	1513.11
Q Total (cfs)	84012.00	Flow (cfs)	11343.76	64984.02	7684.22
Top Width (ft)	1030.20	Top Width (ft)	311.66	524.02	194.51
Vel Total (ft/s)	6.65	Avg. Vel. (ft/s)	4.60	7.51	5.08
Max Chl Dpth (ft)	19.36	Hydr. Depth (ft)	7.91	16.51	7.78
Conv. Total (cfs)	2154068.0	Conv. (cfs)	290853.9	1666190.0	197023.3
Length Wtd. (ft)	187.02	Wetted Per. (ft)	312.01	524.19	195.05
Min Ch El (ft)	216.34	Shear (lb/sq ft)	0.75	1.57	0.74
Alpha	1.10	Stream Power (lb/ft s)	3.45	11.77	3.74
Frctn Loss (ft)	0.25	Cum Volume (acre-ft)	174.78	704.67	149.27

C & E Loss (ft)	0.03	Cum SA (acres)	25.55	38.84	21.36

CROSS SECTION

RIVER: San Juan Creek
REACH: Middle RS: 3605.298

INPUT
Description:
Station Elevation Data num= 60

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	255.17	7.26	254.7	39.23	252.91	65.58	251.11	78.65	249.08
80.03	248.8	83.65	247.57	90.14	244.94	98.75	241.74	101.71	240.6
102.42	240.46	106.15	240.11	129.63	237.54	141.71	236.15	146.05	235.67
162.84	233.81	172.97	232.49	181.45	231.66	198.17	230.38	247.04	227.71
252.76	227.53	353.99	224.3	367.73	224.05	393.4	223.15	425.97	222.43
461.72	221.61	470.14	221.4	473.73	221.18	483.81	220.99	508.74	220.26
558.11	218.77	561.25	218.65	628.86	216.13	659.68	215.09	678.97	214.89
730.91	214.11	785.51	215.23	827.16	216.31	848.66	216.87	880.47	217.53
893.81	218.01	908.15	218.39	921.2	218.74	937.91	219.14	981.95	219.81
983.19	219.9	987.26	220.44	992.42	221.58	1017.35	224.55	1023.32	225.53
1035.61	227.08	1041.69	227.85	1051.2	229.08	1057.63	229.86	1100.44	231.94
1116.63	232.72	1228.08	238.62	1241.33	239.5	1270.17	240.72	1327.7	242.12

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.035	146.05	.05	1035.61	.035

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
461.72	992.42	270.91	265.6	252.8	.1	.3

CROSS SECTION OUTPUT Profile #Q50

			Left OB	Channel	Right OB
E.G. Elev (ft)	228.71	Element			
Vel Head (ft)	0.15	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	228.56	Reach Len. (ft)	270.91	265.60	252.80
Crit W.S. (ft)		Flow Area (sq ft)	889.25	5960.47	194.37
E.G. Slope (ft/ft)	0.000467	Area (sq ft)	889.25	5960.47	194.37
Q Total (cfs)	20912.00	Flow (cfs)	1405.12	19186.68	320.20
Top Width (ft)	815.72	Top Width (ft)	230.25	530.70	54.77
Vel Total (ft/s)	2.97	Avg. Vel. (ft/s)	1.58	3.22	1.65
Max Chl Dpth (ft)	14.45	Hydr. Depth (ft)	3.86	11.23	3.55
Conv. Total (cfs)	967829.1	Conv. (cfs)	65030.2	887979.6	14819.2
Length Wtd. (ft)	265.68	Wetted Per. (ft)	230.37	531.05	55.21
Min Ch El (ft)	214.11	Shear (lb/sq ft)	0.11	0.33	0.10
Alpha	1.10	Stream Power (lb/ft s)	0.18	1.05	0.17
Frctn Loss (ft)	0.04	Cum Volume (acre-ft)	36.01	399.49	31.07
C & E Loss (ft)	0.03	Cum SA (acres)	12.46	36.58	9.78

Warning: The conveyance ratio (upstream 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 #Q100

			Left OB	Channel	Right OB
E.G. Elev (ft)	230.80	Element			
Vel Head (ft)	0.25	Wt. n-Val.	0.050	0.050	0.049

W.S. Elev (ft)	230.56	Reach Len. (ft)	270.91	265.60	252.80
Crit W.S. (ft)		Flow Area (sq ft)	1385.09	7019.51	322.60
E.G. Slope (ft/ft)	0.000627	Area (sq ft)	1385.09	7019.51	322.60
Q Total (cfs)	33062.00	Flow (cfs)	3097.27	29211.25	753.48
Top Width (ft)	876.10	Top Width (ft)	265.85	530.70	79.54
Vel Total (ft/s)	3.79	Avg. Vel. (ft/s)	2.24	4.16	2.34
Max Chl Dpth (ft)	16.45	Hydr. Depth (ft)	5.21	13.23	4.06
Conv. Total (cfs)	1319953.0	Conv. (cfs)	123653.9	1166218.0	30081.7
Length Wtd. (ft)	265.70	Wetted Per. (ft)	266.02	531.05	80.09
Min Ch El (ft)	214.11	Shear (lb/sq ft)	0.20	0.52	0.16
Alpha	1.11	Stream Power (lb/ft s)	0.46	2.15	0.37
Frctn Loss (ft)	0.07	Cum Volume (acre-ft)	62.01	473.49	54.38
C & E Loss (ft)	0.05	Cum SA (acres)	15.43	36.58	13.34

Warning: The conveyance ratio (upstream 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 #Q100HC

E.G. Elev (ft)	236.18	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.67	Wt. n-Val.	0.050	0.050	0.044
W.S. Elev (ft)	235.51	Reach Len. (ft)	270.91	265.60	252.80
Crit W.S. (ft)		Flow Area (sq ft)	2832.75	9650.40	963.67
E.G. Slope (ft/ft)	0.001161	Area (sq ft)	2832.75	9650.40	963.67
Q Total (cfs)	84012.00	Flow (cfs)	12410.42	67532.80	4068.78
Top Width (ft)	1021.94	Top Width (ft)	314.26	530.70	176.98
Vel Total (ft/s)	6.25	Avg. Vel. (ft/s)	4.38	7.00	4.22
Max Chl Dpth (ft)	21.40	Hydr. Depth (ft)	9.01	18.18	5.44
Conv. Total (cfs)	2466062.0	Conv. (cfs)	364291.6	1982336.0	119433.7
Length Wtd. (ft)	265.62	Wetted Per. (ft)	314.69	531.05	177.66
Min Ch El (ft)	214.11	Shear (lb/sq ft)	0.65	1.32	0.39
Alpha	1.10	Stream Power (lb/ft s)	2.86	9.21	1.66
Frctn Loss (ft)	0.16	Cum Volume (acre-ft)	162.96	665.57	144.10
C & E Loss (ft)	0.11	Cum SA (acres)	24.15	36.58	20.59

Warning: The conveyance ratio (upstream 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: San Juan Creek
REACH: Middle RS: 3339.701

INPUT
Description:
Station Elevation Data num= 67

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	246.62	15.28	245.25	55.17	240.8	63	240.09	63.98	239.96
67.35	239.02	77.54	236.73	78.88	236.29	96.18	232.32	105.34	230.78
108.52	229.87	121.18	228.44	128.75	227.59	135.77	226.86	141.77	226.22
179.97	222.38	201.5	220.09	209.6	217.46	215.68	216.01	225.29	213.17
234.36	210.42	239.59	209.57	244.55	209.27	258.09	208.01	261.91	207.88
274.24	207.31	296.52	207.01	310.32	207	316.27	207.17	321.37	207.25
355.82	207.7	425.81	208.42	445.35	208.91	455.03	209.14	463.71	209.43
516.72	210.44	532.9	210.7	544.19	210.89	566.34	211.46	627.81	212.93
671.42	213.84	700.28	214.66	729.46	215.31	740.4	215.52	765.07	215.9

780.92	216.15	807.2	216.56	864.4	216.77	896.89	216.88	911.21	216.9
915.25	217.1	947.42	219.8	954.73	220.78	961.82	222.21	964.77	222.8
966.57	223.29	971.02	224.29	992.72	229.4	996.34	229.88	997.68	230.06
1022.99	230.84	1080.35	232.42	1143.63	234.23	1164.8	235.01	1302.48	238.8
1311.28	238.99	1346.41	239.71						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.035	121.18	.05	996.34	.035

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
179.97	961.82	248.04	227.45 213.64	.1	.3

CROSS SECTION OUTPUT Profile #Q50

			Left OB	Channel	Right OB
E.G. Elev (ft)	228.64	Element			
Vel Head (ft)	0.04	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	228.59	Reach Len. (ft)	248.04	227.45	213.64
Crit W.S. (ft)		Flow Area (sq ft)	190.42	12369.88	88.64
E.G. Slope (ft/ft)	0.000081	Area (sq ft)	190.42	12369.88	88.64
Q Total (cfs)	20912.00	Flow (cfs)	110.67	20750.62	50.71
Top Width (ft)	869.47	Top Width (ft)	60.15	781.85	27.47
Vel Total (ft/s)	1.65	Avg. Vel. (ft/s)	0.58	1.68	0.57
Max Chl Dpth (ft)	21.59	Hydr. Depth (ft)	3.17	15.82	3.23
Conv. Total (cfs)	2330614.0	Conv. (cfs)	12333.7	2312629.0	5651.7
Length Wtd. (ft)	227.52	Wetted Per. (ft)	60.47	783.96	28.21
Min Ch El (ft)	207.00	Shear (lb/sq ft)	0.02	0.08	0.02
Alpha	1.02	Stream Power (lb/ft s)	0.01	0.13	0.01
Frctn Loss (ft)	0.01	Cum Volume (acre-ft)	32.66	343.61	30.25
C & E Loss (ft)	0.00	Cum SA (acres)	11.56	32.58	9.54

CROSS SECTION OUTPUT Profile #Q100

			Left OB	Channel	Right OB
E.G. Elev (ft)	230.69	Element			
Vel Head (ft)	0.08	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	230.60	Reach Len. (ft)	248.04	227.45	213.64
Crit W.S. (ft)		Flow Area (sq ft)	327.81	13941.94	158.54
E.G. Slope (ft/ft)	0.000133	Area (sq ft)	327.81	13941.94	158.54
Q Total (cfs)	33062.00	Flow (cfs)	329.53	32592.08	140.40
Top Width (ft)	909.38	Top Width (ft)	74.02	781.85	53.51
Vel Total (ft/s)	2.29	Avg. Vel. (ft/s)	1.01	2.34	0.89
Max Chl Dpth (ft)	23.60	Hydr. Depth (ft)	4.43	17.83	2.96
Conv. Total (cfs)	2863647.0	Conv. (cfs)	28541.7	2822945.0	12160.5
Length Wtd. (ft)	227.59	Wetted Per. (ft)	74.51	783.96	54.39
Min Ch El (ft)	207.00	Shear (lb/sq ft)	0.04	0.15	0.02
Alpha	1.03	Stream Power (lb/ft s)	0.04	0.35	0.02
Frctn Loss (ft)	0.03	Cum Volume (acre-ft)	56.68	409.59	52.98
C & E Loss (ft)	0.00	Cum SA (acres)	14.37	32.58	12.96

CROSS SECTION OUTPUT Profile #Q100HC

			Left OB	Channel	Right OB
E.G. Elev (ft)	235.92	Element			
Vel Head (ft)	0.31	Wt. n-Val.	0.047	0.050	0.042
W.S. Elev (ft)	235.61	Reach Len. (ft)	248.04	227.45	213.64
Crit W.S. (ft)		Flow Area (sq ft)	762.29	17857.18	864.62
E.G. Slope (ft/ft)	0.000356	Area (sq ft)	762.29	17857.18	864.62
Q Total (cfs)	84012.00	Flow (cfs)	1910.19	80436.29	1665.53

Top Width (ft)	1104.82	Top Width (ft)	98.13	781.85	224.84
Vel Total (ft/s)	4.31	Avg. Vel. (ft/s)	2.51	4.50	1.93
Max Chl Dpth (ft)	28.61	Hydr. Depth (ft)	7.77	22.84	3.85
Conv. Total (cfs)	4453908.0	Conv. (cfs)	101268.7	4264341.0	88298.2
Length Wtd. (ft)	227.62	Wetted Per. (ft)	99.16	783.96	225.79
Min Ch El (ft)	207.00	Shear (lb/sq ft)	0.17	0.51	0.09
Alpha	1.06	Stream Power (lb/ft s)	0.43	2.28	0.16
Frctn Loss (ft)	0.07	Cum Volume (acre-ft)	151.78	581.70	138.80
C & E Loss (ft)	0.01	Cum SA (acres)	22.87	32.58	19.42

CROSS SECTION

RIVER: San Juan Creek
REACH: Middle RS: 3112.250

INPUT
Description:
Station Elevation Data num= 71

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	250.65	45.1	248.89	100.93	245.02	137.44	242.18	149.9	241.53
162.61	240.72	165.68	240.32	171.8	239.34	187.43	233.56	197.14	230.38
201.07	229.51	206.47	228.48	223.5	226.59	223.8	226.56	223.91	226.54
239.17	225.36	269.73	223	282.93	221.62	291.05	220.65	292.27	220.35
298.5	218.78	303.41	216.95	319.34	211.1	324.47	209.83	329.39	209.13
338.56	208.51	387.68	208.21	389.81	208.2	390.19	208.19	486.39	208.77
490.03	208.8	523.54	209.04	659.12	210.3	690.94	210.58	692.71	210.59
696.06	210.59	767.31	211.43	805.48	211.18	840.72	210.48	846.07	210.37
863.66	210.04	882.46	209.51	932.15	209.21	935.76	209.16	940	209.1
956.15	209.29	981.86	211.04	986.11	211.26	987.38	211.33	990.71	211.8
1010.03	214.33	1025.98	217.82	1029.25	218.52	1038.1	220.06	1042.96	220.75
1052.64	221.94	1060.41	223.91	1076.27	227.03	1084.17	228.58	1086.35	229.06
1089.75	229.29	1099.32	230.1	1101.77	230.25	1105.8	230.32	1130.89	231.05
1291.55	234.06	1304.71	234.23	1312.75	234.38	1347.96	235.16	1475.13	237.69
1494.82	238.07								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.035	239.17	.05	1076.27	.035

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
269.73	1052.64	224.26	188.45	190.23	.1	.3

CROSS SECTION OUTPUT Profile #Q50

E.G. Elev (ft)	228.62	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.03	Wt. n-Val.	0.046	0.050	0.050
W.S. Elev (ft)	228.58	Reach Len. (ft)	224.26	188.45	190.23
Crit W.S. (ft)		Flow Area (sq ft)	193.46	13889.01	99.49
E.G. Slope (ft/ft)	0.000055	Area (sq ft)	193.46	13889.01	99.49
Q Total (cfs)	20912.00	Flow (cfs)	106.50	20753.30	52.20
Top Width (ft)	878.26	Top Width (ft)	63.80	782.91	31.55
Vel Total (ft/s)	1.47	Avg. Vel. (ft/s)	0.55	1.49	0.52
Max Chl Dpth (ft)	20.39	Hydr. Depth (ft)	3.03	17.74	3.15
Conv. Total (cfs)	2821953.0	Conv. (cfs)	14371.1	2800538.0	7044.3
Length Wtd. (ft)	188.67	Wetted Per. (ft)	64.06	785.88	32.25
Min Ch El (ft)	208.19	Shear (lb/sq ft)	0.01	0.06	0.01
Alpha	1.02	Stream Power (lb/ft s)	0.01	0.09	0.01

Frctn Loss (ft)	0.01	Cum Volume (acre-ft)	31.56	275.05	29.79
C & E Loss (ft)	0.00	Cum SA (acres)	11.21	28.50	9.39

CROSS SECTION OUTPUT Profile #Q100

E.G. Elev (ft)	230.66	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.07	Wt. n-Val.	0.044	0.050	0.048
W.S. Elev (ft)	230.59	Reach Len. (ft)	224.26	188.45	190.23
Crit W.S. (ft)		Flow Area (sq ft)	331.38	15457.88	183.32
E.G. Slope (ft/ft)	0.000095	Area (sq ft)	331.38	15457.88	183.32
Q Total (cfs)	33062.00	Flow (cfs)	315.53	32596.04	150.43
Top Width (ft)	918.48	Top Width (ft)	73.22	782.91	62.34
Vel Total (ft/s)	2.07	Avg. Vel. (ft/s)	0.95	2.11	0.82
Max Chl Dpth (ft)	22.40	Hydr. Depth (ft)	4.53	19.74	2.94
Conv. Total (cfs)	3395236.0	Conv. (cfs)	32402.7	3347385.0	15447.9
Length Wtd. (ft)	188.85	Wetted Per. (ft)	73.69	785.88	63.15
Min Ch El (ft)	208.19	Shear (lb/sq ft)	0.03	0.12	0.02
Alpha	1.03	Stream Power (lb/ft s)	0.03	0.25	0.01
Frctn Loss (ft)	0.02	Cum Volume (acre-ft)	54.81	332.83	52.15
C & E Loss (ft)	0.00	Cum SA (acres)	13.95	28.50	12.67

CROSS SECTION OUTPUT Profile #Q100HC

E.G. Elev (ft)	235.83	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.26	Wt. n-Val.	0.042	0.050	0.040
W.S. Elev (ft)	235.57	Reach Len. (ft)	224.26	188.45	190.23
Crit W.S. (ft)		Flow Area (sq ft)	733.45	19359.06	1115.30
E.G. Slope (ft/ft)	0.000272	Area (sq ft)	733.45	19359.06	1115.30
Q Total (cfs)	84012.00	Flow (cfs)	1811.95	80356.82	1843.23
Top Width (ft)	1186.58	Top Width (ft)	87.74	782.91	315.94
Vel Total (ft/s)	3.96	Avg. Vel. (ft/s)	2.47	4.15	1.65
Max Chl Dpth (ft)	27.38	Hydr. Depth (ft)	8.36	24.73	3.53
Conv. Total (cfs)	5092311.0	Conv. (cfs)	109829.6	4870756.0	111726.0
Length Wtd. (ft)	189.35	Wetted Per. (ft)	89.04	785.88	316.79
Min Ch El (ft)	208.19	Shear (lb/sq ft)	0.14	0.42	0.06
Alpha	1.06	Stream Power (lb/ft s)	0.35	1.74	0.10
Frctn Loss (ft)	0.05	Cum Volume (acre-ft)	147.52	484.54	133.94
C & E Loss (ft)	0.00	Cum SA (acres)	22.34	28.50	18.09

CROSS SECTION

RIVER: San Juan Creek
REACH: Middle RS: 2923.799

INPUT
Description:
Station Elevation Data num= 86

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	243.27	18.09	243.1	50.9	242.1	68.44	242.01	81.52	241.66
107.56	241.43	112.75	241.13	116.71	240.6	124.06	239.4	129.77	238.1
139.49	234.84	146.69	232.27	153.92	230.2	161.73	228.62	167.56	227.95
176.43	227.26	199.36	225.6	215.08	224.46	230.16	223.52	243.17	222.49
271.84	221.13	273.61	221.05	283.42	219.92	286.46	219.49	290.83	218.41
301.73	215.24	313.75	213.03	316.75	212.5	321.4	211.91	336.76	210.12
348.71	209.66	354.55	209.22	363.51	208.47	365.47	208.27	366.65	208.16

380.15	207.86	398.68	207.18	444.19	207.61	473.11	207.89	519.42	208.87
575.15	209.59	601.97	210.17	611.61	210.63	642.54	211.76	663.53	211.8
680.84	211.93	727.3	210.47	729.07	210.47	735.76	210.47	761.84	210.08
783.58	209.75	820.44	209.32	830.35	209.65	852.97	209.73	858.55	209.75
873.12	209.62	898.31	210.15	943.41	209.99	943.75	209.99	943.9	209.99
944.31	210	963.64	210.89	970.48	211.35	995.99	215.06	1005.22	216.39
1008.05	216.67	1014.63	217.56	1033.02	220.33	1047.12	222.43	1064.74	225.69
1067.23	226.11	1069.53	226.49	1082.88	228.7	1088.15	229.87	1088.86	229.98
1104.82	231.45	1148.81	232.51	1153.01	232.56	1156.07	232.6	1160.91	232.75
1167.68	232.93	1232.54	234.6	1236.77	234.77	1249.51	235.2	1365.64	238.06
1423.99	239.86								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.035	199.36	.05	1167.68	.035

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
243.17	1047.12	275	254	216.71	.1	.3

CROSS SECTION OUTPUT Profile #Q50

			Left OB	Channel	Right OB
E.G. Elev (ft)	228.61	Element			
Vel Head (ft)	0.03	Wt. n-Val.	0.047	0.050	0.050
W.S. Elev (ft)	228.57	Reach Len. (ft)	275.00	254.00	216.71
Crit W.S. (ft)		Flow Area (sq ft)	256.69	13960.33	104.52
E.G. Slope (ft/ft)	0.000056	Area (sq ft)	256.69	13960.33	104.52
Q Total (cfs)	20912.00	Flow (cfs)	144.71	20719.71	47.58
Top Width (ft)	919.98	Top Width (ft)	81.03	803.95	34.99
Vel Total (ft/s)	1.46	Avg. Vel. (ft/s)	0.56	1.48	0.46
Max Chl Dpth (ft)	21.39	Hydr. Depth (ft)	3.17	17.36	2.99
Conv. Total (cfs)	2802934.0	Conv. (cfs)	19396.6	2777160.0	6376.9
Length Wtd. (ft)	254.03	Wetted Per. (ft)	81.27	806.08	35.53
Min Ch El (ft)	207.18	Shear (lb/sq ft)	0.01	0.06	0.01
Alpha	1.02	Stream Power (lb/ft s)	0.01	0.09	0.00
Frctn Loss (ft)	0.03	Cum Volume (acre-ft)	30.40	214.81	29.34
C & E Loss (ft)	0.02	Cum SA (acres)	10.83	25.07	9.25

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

CROSS SECTION OUTPUT Profile #Q100

			Left OB	Channel	Right OB
E.G. Elev (ft)	230.64	Element			
Vel Head (ft)	0.07	Wt. n-Val.	0.045	0.050	0.050
W.S. Elev (ft)	230.57	Reach Len. (ft)	275.00	254.00	216.71
Crit W.S. (ft)		Flow Area (sq ft)	428.62	15565.89	185.01
E.G. Slope (ft/ft)	0.000095	Area (sq ft)	428.62	15565.89	185.01
Q Total (cfs)	33062.00	Flow (cfs)	412.99	32518.55	130.45
Top Width (ft)	942.64	Top Width (ft)	90.54	803.95	48.15
Vel Total (ft/s)	2.04	Avg. Vel. (ft/s)	0.96	2.09	0.71
Max Chl Dpth (ft)	23.39	Hydr. Depth (ft)	4.73	19.36	3.84
Conv. Total (cfs)	3385289.0	Conv. (cfs)	42287.4	3329645.0	13357.1
Length Wtd. (ft)	254.31	Wetted Per. (ft)	90.99	806.08	48.86
Min Ch El (ft)	207.18	Shear (lb/sq ft)	0.03	0.11	0.02
Alpha	1.03	Stream Power (lb/ft s)	0.03	0.24	0.02
Frctn Loss (ft)	0.05	Cum Volume (acre-ft)	52.85	265.72	51.34
C & E Loss (ft)	0.03	Cum SA (acres)	13.53	25.07	12.43

Warning: The conveyance ratio (upstream 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 #Q100HC

E.G. Elev (ft)	235.78	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.26	Wt. n-Val.	0.043	0.050	0.049
W.S. Elev (ft)	235.52	Reach Len. (ft)	275.00	254.00	216.71
Crit W.S. (ft)		Flow Area (sq ft)	916.07	19546.02	802.07
E.G. Slope (ft/ft)	0.000274	Area (sq ft)	916.07	19546.02	802.07
Q Total (cfs)	84012.00	Flow (cfs)	2274.59	80585.10	1152.31
Top Width (ft)	1125.09	Top Width (ft)	105.71	803.95	215.43
Vel Total (ft/s)	3.95	Avg. Vel. (ft/s)	2.48	4.12	1.44
Max Chl Dpth (ft)	28.34	Hydr. Depth (ft)	8.67	24.31	3.72
Conv. Total (cfs)	5073316.0	Conv. (cfs)	137358.1	4866372.0	69585.7
Length Wtd. (ft)	254.86	Wetted Per. (ft)	106.95	806.08	216.23
Min Ch El (ft)	207.18	Shear (lb/sq ft)	0.15	0.42	0.06
Alpha	1.06	Stream Power (lb/ft s)	0.36	1.71	0.09
Frctn Loss (ft)	0.13	Cum Volume (acre-ft)	143.27	400.39	129.76
C & E Loss (ft)	0.06	Cum SA (acres)	21.84	25.07	16.93

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

CROSS SECTION

RIVER: San Juan Creek
REACH: Middle RS: 2669.802

INPUT
Description:
Station Elevation Data num= 98

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	237.99	44.3	237.04	60.01	236.97	87.22	237.05	126.85	237.42
184.04	238.4	233	239.43	269.33	240.69	312.14	241.39	385.62	240.04
427.34	239.24	460.56	238.29	475.92	237.56	487.43	237.17	497.63	236.74
538.14	234.98	622.92	231.02	655.04	230.06	677.13	229.26	688.55	228.84
743.32	227.78	821.99	226.12	832.54	225.74	870.53	224.01	875.19	224.2
888.42	224.66	899.92	225.16	912.86	226.2	936.79	225.92	940.05	225.86
943.75	225.82	957.34	226.29	987.62	227.95	991.84	228.01	1004.44	227.89
1011.85	227.52	1030.74	224.96	1044.56	224.01	1058.91	221.94	1071.01	220.86
1085.49	220	1116.97	219.69	1131.08	219.67	1159.61	218.92	1164.69	218.68
1168.54	218.38	1182.13	217.34	1195.19	215.96	1219.05	213.25	1229.73	212.57
1250.92	211.71	1253.53	211.57	1258.15	211.55	1267.21	211.77	1284.54	212.19
1290.82	211.84	1305.99	210.02	1315.85	209.55	1327.99	209	1336.57	208.56
1340.65	208.49	1344.6	208.49	1354.85	208.6	1356.32	208.64	1357.4	208.69
1377.57	209.18	1385.2	209.73	1390.99	209.96	1398.06	210.97	1405.15	211.96
1413.8	214.26	1420.71	215.92	1428.79	218.2	1436.52	219.78	1442.1	220.99
1444.41	221.54	1447.23	221.74	1481.64	224.64	1520.4	226.61	1527.63	226.93
1569.71	229.82	1605	231.28	1629.02	232.83	1643.16	233.81	1664.05	234.82
1678.85	235.57	1701.78	235.89	1710.75	236.06	1714.63	236.18	1748.57	236.69
1757.88	237.08	1782.47	239.72	1802.16	240.44	1818.59	240.8	1829	241.02
1857.28	241.85	1903.59	243.21	1934.67	244.11				

Manning's n Values num= 4

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	677.13	.05	1818.59	.035	1857.28	.02

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
1058.91	1444.41	160.75	186.48	183.52	.1	.3

CROSS SECTION OUTPUT Profile #Q50

E.G. Elev (ft)	228.56	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.20	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	228.36	Reach Len. (ft)	160.75	186.48	183.52
Crit W.S. (ft)		Flow Area (sq ft)	747.31	5323.71	329.15
E.G. Slope (ft/ft)	0.000469	Area (sq ft)	747.31	5323.71	329.15
Q Total (cfs)	20912.00	Flow (cfs)	803.36	19652.86	455.78
Top Width (ft)	835.04	Top Width (ft)	345.51	385.50	104.03
Vel Total (ft/s)	3.27	Avg. Vel. (ft/s)	1.08	3.69	1.38
Max Chl Dpth (ft)	19.87	Hydr. Depth (ft)	2.16	13.81	3.16
Conv. Total (cfs)	965834.6	Conv. (cfs)	37103.8	907680.4	21050.4
Length Wtd. (ft)	183.78	Wetted Per. (ft)	346.07	387.41	104.26
Min Ch El (ft)	208.49	Shear (lb/sq ft)	0.06	0.40	0.09
Alpha	1.21	Stream Power (lb/ft s)	0.07	1.48	0.13
Frctn Loss (ft)	0.19	Cum Volume (acre-ft)	27.23	158.59	28.26
C & E Loss (ft)	0.04	Cum SA (acres)	9.49	21.60	8.90

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

CROSS SECTION OUTPUT Profile #Q100

E.G. Elev (ft)	230.56	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.33	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	230.23	Reach Len. (ft)	160.75	186.48	183.52
Crit W.S. (ft)		Flow Area (sq ft)	1461.62	6045.72	550.34
E.G. Slope (ft/ft)	0.000679	Area (sq ft)	1461.62	6045.72	550.34
Q Total (cfs)	33062.00	Flow (cfs)	2735.24	29241.94	1084.82
Top Width (ft)	930.39	Top Width (ft)	409.63	385.50	135.26
Vel Total (ft/s)	4.10	Avg. Vel. (ft/s)	1.87	4.84	1.97
Max Chl Dpth (ft)	21.74	Hydr. Depth (ft)	3.57	15.68	4.07
Conv. Total (cfs)	1268564.0	Conv. (cfs)	104949.3	1121991.0	41623.7
Length Wtd. (ft)	182.68	Wetted Per. (ft)	410.21	387.41	135.55
Min Ch El (ft)	208.49	Shear (lb/sq ft)	0.15	0.66	0.17
Alpha	1.25	Stream Power (lb/ft s)	0.28	3.20	0.34
Frctn Loss (ft)	0.25	Cum Volume (acre-ft)	46.88	202.71	49.51
C & E Loss (ft)	0.05	Cum SA (acres)	11.95	21.60	11.98

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.

CROSS SECTION OUTPUT Profile #Q100HC

E.G. Elev (ft)	235.59	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.84	Wt. n-Val.	0.049	0.050	0.050
W.S. Elev (ft)	234.74	Reach Len. (ft)	160.75	186.48	183.52
Crit W.S. (ft)		Flow Area (sq ft)	3566.97	7785.17	1355.44
E.G. Slope (ft/ft)	0.001374	Area (sq ft)	3566.97	7785.17	1355.44
Q Total (cfs)	84012.00	Flow (cfs)	15592.83	63378.89	5040.28

Top Width (ft)	1119.30	Top Width (ft)	515.72	385.50	218.07
Vel Total (ft/s)	6.61	Avg. Vel. (ft/s)	4.37	8.14	3.72
Max Chl Dpth (ft)	26.25	Hydr. Depth (ft)	6.92	20.19	6.22
Conv. Total (cfs)	2266830.0	Conv. (cfs)	420728.9	1710103.0	135998.0
Length Wtd. (ft)	180.11	Wetted Per. (ft)	516.40	387.41	218.49
Min Ch El (ft)	208.49	Shear (lb/sq ft)	0.59	1.72	0.53
Alpha	1.24	Stream Power (lb/ft s)	2.59	14.03	1.98
Frctn Loss (ft)	0.38	Cum Volume (acre-ft)	129.12	320.70	124.39
C & E Loss (ft)	0.04	Cum SA (acres)	19.88	21.60	15.86

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

CROSS SECTION

RIVER: San Juan Creek
REACH: Middle RS: 2483.318

INPUT
Description:
Station Elevation Data num= 78

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	243.81	19.95	243.04	28.98	242.8	62.49	241.8	63.51	241.78
65.15	241.82	90.27	242.12	103.14	242.07	107.84	242.19	129.63	241.45
135.91	241.1	149.17	240.53	153.2	240.57	162.28	240.44	244.39	239.67
272.02	239.34	274.98	239.34	277.53	239.29	319.9	238.18	385.85	237.84
397.37	237.77	403.1	237.76	407.51	237.68	418.14	237.41	550.85	234.62
574.74	233.72	650.81	231.39	702.8	229.75	713.97	229.5	846.98	226.53
867.23	226.09	916.99	225	972.4	223.35	1053.01	221.51	1084.03	220.68
1103.15	220.26	1117.67	220	1144.23	219.7	1159.08	219.54	1189.29	219.72
1249.45	220.23	1274.61	220.44	1284.73	220.79	1291.05	221.01	1320.82	221.49
1323.98	221.51	1337.92	222.25	1357.69	223.25	1385.2	224.04	1385.95	224.05
1468.26	223.99	1469.67	224.02	1471.21	224.03	1474.07	224.11	1487.14	224.53
1501.94	225.08	1512.53	225.38	1535.07	226.13	1577.32	227.53	1586.06	227.85
1587.87	227.92	1630	228.21	1655.13	228.45	1668.2	228.58	1698.43	229.26
1706.64	229.37	1711.16	230.27	1717.83	231.31	1739.12	238.07	1745.54	239.96
1753.09	241.33	1757.34	241.84	1775.65	243.09	1780.06	243.2	1795.59	243.44
1798.63	243.47	1833.56	243.14	1878.86	242.82				

Manning's n Values num= 2

Sta	n Val	Sta	n Val
0	.035	713.97	.05

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
1053.01	1320.82	191.67	200.23	203.15	.1 .3

CROSS SECTION OUTPUT Profile #Q50

E.G. Elev (ft)	228.32	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.64	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	227.68	Reach Len. (ft)	191.67	200.23	203.15
Crit W.S. (ft)		Flow Area (sq ft)	780.24	1975.90	825.21
E.G. Slope (ft/ft)	0.004167	Area (sq ft)	780.24	1975.90	825.21
Q Total (cfs)	20912.00	Flow (cfs)	3134.43	14364.17	3413.40
Top Width (ft)	785.73	Top Width (ft)	257.40	267.81	260.52
Vel Total (ft/s)	5.84	Avg. Vel. (ft/s)	4.02	7.27	4.14
Max Chl Dpth (ft)	8.14	Hydr. Depth (ft)	3.03	7.38	3.17

Conv. Total (cfs)	323959.0	Conv. (cfs)	48557.2	222523.1	52878.8
Length Wtd. (ft)	199.32	Wetted Per. (ft)	257.47	267.85	260.63
Min Ch El (ft)	219.54	Shear (lb/sq ft)	0.79	1.92	0.82
Alpha	1.22	Stream Power (lb/ft s)	3.17	13.95	3.41
Frctn Loss (ft)	0.86	Cum Volume (acre-ft)	24.42	142.96	25.83
C & E Loss (ft)	0.00	Cum SA (acres)	8.38	20.20	8.13

CROSS SECTION OUTPUT Profile #Q100

E.G. Elev (ft)	230.26	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.79	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	229.47	Reach Len. (ft)	191.67	200.23	203.15
Crit W.S. (ft)		Flow Area (sq ft)	1314.28	2456.51	1422.11
E.G. Slope (ft/ft)	0.004086	Area (sq ft)	1314.28	2456.51	1422.11
Q Total (cfs)	33062.00	Flow (cfs)	6175.62	20447.13	6439.25
Top Width (ft)	991.91	Top Width (ft)	337.77	267.81	386.33
Vel Total (ft/s)	6.37	Avg. Vel. (ft/s)	4.70	8.32	4.53
Max Chl Dpth (ft)	9.93	Hydr. Depth (ft)	3.89	9.17	3.68
Conv. Total (cfs)	517200.8	Conv. (cfs)	96607.5	319861.9	100731.4
Length Wtd. (ft)	199.07	Wetted Per. (ft)	337.86	267.85	386.47
Min Ch El (ft)	219.54	Shear (lb/sq ft)	0.99	2.34	0.94
Alpha	1.26	Stream Power (lb/ft s)	4.66	19.48	4.25
Frctn Loss (ft)	0.82	Cum Volume (acre-ft)	41.76	184.52	45.36
C & E Loss (ft)	0.00	Cum SA (acres)	10.58	20.20	10.88

CROSS SECTION OUTPUT Profile #Q100HC

E.G. Elev (ft)	235.17	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.20	Wt. n-Val.	0.049	0.050	0.050
W.S. Elev (ft)	233.97	Reach Len. (ft)	191.67	200.23	203.15
Crit W.S. (ft)		Flow Area (sq ft)	3171.88	3660.51	3207.69
E.G. Slope (ft/ft)	0.003748	Area (sq ft)	3171.88	3660.51	3207.69
Q Total (cfs)	84012.00	Flow (cfs)	22793.57	38070.44	23147.99
Top Width (ft)	1158.03	Top Width (ft)	484.84	267.81	405.38
Vel Total (ft/s)	8.37	Avg. Vel. (ft/s)	7.19	10.40	7.22
Max Chl Dpth (ft)	14.43	Hydr. Depth (ft)	6.54	13.67	7.91
Conv. Total (cfs)	1372216.0	Conv. (cfs)	372300.4	621826.1	378089.3
Length Wtd. (ft)	198.45	Wetted Per. (ft)	485.00	267.85	406.09
Min Ch El (ft)	219.54	Shear (lb/sq ft)	1.53	3.20	1.85
Alpha	1.11	Stream Power (lb/ft s)	11.00	33.26	13.34
Frctn Loss (ft)	0.78	Cum Volume (acre-ft)	116.69	296.20	114.78
C & E Loss (ft)	0.01	Cum SA (acres)	18.04	20.20	14.54

CROSS SECTION

RIVER: San Juan Creek
REACH: Middle RS: 2283.086

INPUT
Description:
Station Elevation Data num= 53

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	245.16	7.18	244.87	58.01	242.46	92.78	240.81	111.33	240
156.32	238.89	274.12	237.45	298.22	237.36	363.31	237.08	381	236.65
387.49	236.49	429.74	235.47	545.8	233.11	554.61	232.92	563.53	232.71

739.57	229.62	754.12	229.46	762.59	229.37	813.01	228.49	895.4	226.54
943.86	225.6	954.59	225.39	1140.8	221.44	1167.97	220.8	1205.65	220
1216.26	219.48	1231.58	218.74	1246.76	218.49	1260.42	218.12	1287.81	219.33
1289.76	219.42	1333.4	219.81	1368.76	219.63	1382.38	219.62	1421.27	219.99
1437.86	220.49	1449.59	220.81	1478.12	221.6	1508.65	222.55	1574.1	224.15
1627.32	225.85	1653.81	226.71	1695.22	228.07	1719.54	229.55	1732.01	230.41
1737.23	230.94	1770.21	235.74	1797.18	239.33	1801.28	239.72	1821.12	240.94
1826.57	241.1	1850.17	241.69	1933.65	242.78				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.07	58.01	.035	754.12	.05

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
1167.97	1449.59	140.69	143.61	153.2	.1	.3

CROSS SECTION OUTPUT Profile #Q50

E.G. Elev (ft)	227.46	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.68	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	226.78	Reach Len. (ft)	140.69	143.61	153.20
Crit W.S. (ft)		Flow Area (sq ft)	829.79	2018.81	635.24
E.G. Slope (ft/ft)	0.004450	Area (sq ft)	829.79	2018.81	635.24
Q Total (cfs)	20912.00	Flow (cfs)	3371.71	14876.08	2664.21
Top Width (ft)	770.68	Top Width (ft)	282.71	281.62	206.35
Vel Total (ft/s)	6.00	Avg. Vel. (ft/s)	4.06	7.37	4.19
Max Chl Dpth (ft)	8.66	Hydr. Depth (ft)	2.94	7.17	3.08
Conv. Total (cfs)	313488.1	Conv. (cfs)	50544.7	223004.7	39938.7
Length Wtd. (ft)	144.14	Wetted Per. (ft)	282.77	281.71	206.44
Min Ch El (ft)	218.12	Shear (lb/sq ft)	0.82	1.99	0.85
Alpha	1.21	Stream Power (lb/ft s)	3.31	14.67	3.59
Frctn Loss (ft)	1.03	Cum Volume (acre-ft)	20.87	133.78	22.42
C & E Loss (ft)	0.11	Cum SA (acres)	7.19	18.94	7.05

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

CROSS SECTION OUTPUT Profile #Q100

E.G. Elev (ft)	229.44	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.81	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	228.63	Reach Len. (ft)	140.69	143.61	153.20
Crit W.S. (ft)		Flow Area (sq ft)	1424.42	2539.16	1066.31
E.G. Slope (ft/ft)	0.004131	Area (sq ft)	1424.42	2539.16	1066.31
Q Total (cfs)	33062.00	Flow (cfs)	6769.46	21005.06	5287.48
Top Width (ft)	899.26	Top Width (ft)	362.85	281.62	254.79
Vel Total (ft/s)	6.57	Avg. Vel. (ft/s)	4.75	8.27	4.96
Max Chl Dpth (ft)	10.51	Hydr. Depth (ft)	3.93	9.02	4.19
Conv. Total (cfs)	514412.5	Conv. (cfs)	105326.1	326818.3	82268.1
Length Wtd. (ft)	144.29	Wetted Per. (ft)	362.93	281.71	254.92
Min Ch El (ft)	218.12	Shear (lb/sq ft)	1.01	2.32	1.08
Alpha	1.20	Stream Power (lb/ft s)	4.81	19.23	5.35
Frctn Loss (ft)	1.00	Cum Volume (acre-ft)	35.73	173.03	39.55
C & E Loss (ft)	0.15	Cum SA (acres)	9.03	18.94	9.38

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 #Q100HC

E.G. Elev (ft)	234.38	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.29	Wt. n-Val.	0.049	0.050	0.050
W.S. Elev (ft)	233.09	Reach Len. (ft)	140.69	143.61	153.20
Crit W.S. (ft)		Flow Area (sq ft)	3643.57	3796.39	2331.79
E.G. Slope (ft/ft)	0.004074	Area (sq ft)	3643.57	3796.39	2331.79
Q Total (cfs)	84012.00	Flow (cfs)	25983.75	40779.84	17248.42
Top Width (ft)	1205.38	Top Width (ft)	621.33	281.62	302.43
Vel Total (ft/s)	8.60	Avg. Vel. (ft/s)	7.13	10.74	7.40
Max Chl Dpth (ft)	14.97	Hydr. Depth (ft)	5.86	13.48	7.71
Conv. Total (cfs)	1316245.0	Conv. (cfs)	407096.4	638911.9	270236.9
Length Wtd. (ft)	144.40	Wetted Per. (ft)	621.46	281.71	302.79
Min Ch El (ft)	218.12	Shear (lb/sq ft)	1.49	3.43	1.96
Alpha	1.12	Stream Power (lb/ft s)	10.63	36.82	14.49
Frctn Loss (ft)	0.94	Cum Volume (acre-ft)	101.69	279.06	101.86
C & E Loss (ft)	0.19	Cum SA (acres)	15.60	18.94	12.89

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

CROSS SECTION

RIVER: San Juan Creek
REACH: Middle RS: 2139.477

INPUT
Description:
Station Elevation Data num= 62

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	244.55	8.73	243.93	24.2	242.54	62.84	240.24	66.6	240.01
66.74	240	66.92	240	80.85	239.65	243.06	235.54	245.16	235.51
247.36	235.5	253.54	235.45	357.36	234.55	444.34	234.43	485.94	234.51
505.91	234.5	527.63	234.25	639.03	231.88	772.91	228.81	775.07	228.76
817.45	227.79	821.81	227.66	826.95	227.52	874.49	226.6	917.92	225.93
961.51	225.07	982.53	225.05	1026.56	224.23	1186.52	220.69	1205	219.99
1242.75	218.66	1246.39	218.55	1255.07	218.3	1259.88	218.16	1273.4	217.76
1310.79	216.99	1311.33	217	1340.68	217.72	1358.63	218.31	1386.51	218.67
1438.51	219.6	1450.7	219.99	1494.16	221.95	1538.72	223.73	1552.69	224.41
1562.27	224.57	1640.75	227.67	1652.8	227.97	1660.8	228.51	1666.36	228.81
1725.96	230.96	1741.37	231.62	1760.78	232.58	1803.33	234.9	1850.54	236.68
1885.31	238.32	1903.76	239.46	1952.06	240.23	1976.28	240.42	1986.59	240.74
2020.17	241.24	2094.78	242.21						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.07	62.84	.035	775.07	.05

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
1205	1450.7	122.96	131.38	126.04	.1	.3

CROSS SECTION OUTPUT Profile #Q50

			Left OB	Channel	Right OB
E.G. Elev (ft)	226.31	Element			
Vel Head (ft)	1.78	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	224.53	Reach Len. (ft)	122.96	131.38	126.04
Crit W.S. (ft)		Flow Area (sq ft)	411.43	1496.40	237.14
E.G. Slope (ft/ft)	0.013465	Area (sq ft)	411.43	1496.40	237.14
Q Total (cfs)	20912.00	Flow (cfs)	2336.19	17206.18	1369.63
Top Width (ft)	549.70	Top Width (ft)	194.68	245.70	109.32
Vel Total (ft/s)	9.75	Avg. Vel. (ft/s)	5.68	11.50	5.78
Max Chl Dpth (ft)	7.54	Hydr. Depth (ft)	2.11	6.09	2.17
Conv. Total (cfs)	180212.7	Conv. (cfs)	20132.5	148277.1	11803.0
Length Wtd. (ft)	129.79	Wetted Per. (ft)	194.73	245.78	109.42
Min Ch El (ft)	216.99	Shear (lb/sq ft)	1.78	5.12	1.82
Alpha	1.21	Stream Power (lb/ft s)	10.09	58.85	10.52
Frctn Loss (ft)	1.33	Cum Volume (acre-ft)	18.87	127.99	20.89
C & E Loss (ft)	0.24	Cum SA (acres)	6.42	18.07	6.49

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 energy loss was greater than 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 #Q100

			Left OB	Channel	Right OB
E.G. Elev (ft)	228.28	Element			
Vel Head (ft)	2.33	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	225.95	Reach Len. (ft)	122.96	131.38	126.04
Crit W.S. (ft)	225.95	Flow Area (sq ft)	758.02	1844.77	419.41
E.G. Slope (ft/ft)	0.014126	Area (sq ft)	758.02	1844.77	419.41
Q Total (cfs)	33062.00	Flow (cfs)	5098.49	24978.63	2984.88
Top Width (ft)	680.61	Top Width (ft)	288.39	245.70	146.51
Vel Total (ft/s)	10.94	Avg. Vel. (ft/s)	6.73	13.54	7.12
Max Chl Dpth (ft)	8.96	Hydr. Depth (ft)	2.63	7.51	2.86
Conv. Total (cfs)	278178.4	Conv. (cfs)	42897.9	210166.2	25114.3
Length Wtd. (ft)	129.32	Wetted Per. (ft)	288.46	245.78	146.64
Min Ch El (ft)	216.99	Shear (lb/sq ft)	2.32	6.62	2.52
Alpha	1.25	Stream Power (lb/ft s)	15.59	89.62	17.95
Frctn Loss (ft)	1.45	Cum Volume (acre-ft)	32.21	165.81	36.94
C & E Loss (ft)	0.29	Cum SA (acres)	7.98	18.07	8.68

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 OUTPUT Profile #Q100HC

E.G. Elev (ft)	233.25	Element	Left OB	Channel	Right OB
Vel Head (ft)	3.16	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	230.09	Reach Len. (ft)	122.96	131.38	126.04
Crit W.S. (ft)	230.09	Flow Area (sq ft)	2396.43	2862.50	1242.16
E.G. Slope (ft/ft)	0.012114	Area (sq ft)	2396.43	2862.50	1242.16
Q Total (cfs)	84012.00	Flow (cfs)	24117.41	48108.54	11786.05
Top Width (ft)	984.93	Top Width (ft)	488.02	245.70	251.21
Vel Total (ft/s)	12.92	Avg. Vel. (ft/s)	10.06	16.81	9.49
Max Chl Dpth (ft)	13.10	Hydr. Depth (ft)	4.91	11.65	4.94
Conv. Total (cfs)	763290.7	Conv. (cfs)	219118.6	437089.9	107082.1
Length Wtd. (ft)	128.05	Wetted Per. (ft)	488.13	245.78	251.42
Min Ch El (ft)	216.99	Shear (lb/sq ft)	3.71	8.81	3.74
Alpha	1.22	Stream Power (lb/ft s)	37.37	148.04	35.45
Frctn Loss (ft)	1.12	Cum Volume (acre-ft)	91.94	268.09	95.58
C & E Loss (ft)	0.40	Cum SA (acres)	13.81	18.07	11.92

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: San Juan Creek
REACH: Middle RS: 2008.097

INPUT
Description:
Station Elevation Data num= 77

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	258.81	13.41	251.97	16.47	250.69	22.67	248.72	32.76	246.75
42.93	244.93	47.3	244.32	83.75	240.53	88.2	240.08	88.75	240.05
89.55	240.01	114.19	239.43	128.2	239.01	154.35	238.23	222.95	235.98
247.08	235.28	365.1	232.97	396.69	232.5	408.85	232.31	436.78	232.38
548.98	232.62	644.62	232.57	747.73	231.39	768.53	230.95	802.18	230.18
848.02	228.76	854.67	228.46	904.15	226.22	932.09	225.59	937.46	225.35
1029.8	222.71	1061.76	222.08	1064.13	222.03	1158.76	221.78	1194.64	221.09
1274.58	219.62	1285.25	219.41	1291.71	219.24	1324.74	218.2	1355.1	217.25
1388.84	216.23	1398.83	215.92	1415.2	216.08	1424.01	216.36	1468.7	217.35
1507.72	218.69	1519.46	218.8	1535.16	218.66	1554.3	219.54	1554.58	219.54
1557.47	219.57	1599.73	219.64	1613.97	219.41	1620.1	219.54	1651.37	220.05
1679.44	220.48	1682.64	220.62	1694.67	221.64	1719.55	223.64	1754.33	224.84
1766.95	225.55	1791.23	226.99	1799.7	227.57	1817.16	228.86	1829.08	229.49
1842.14	230.32	1896.06	232.8	1906.12	233.16	1912.41	233.44	1929.32	233.75
1965.01	234.2	1994.97	234.43	2022.65	235.32	2041.83	236.06	2099.06	237.66
2123.79	238.36	2136.68	238.92						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.07	128.2	.035	854.67	.05

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
1274.58	1557.47	125.67	124.38 140.61	.1	.3

CROSS SECTION OUTPUT Profile #Q50

			Left OB	Channel	Right OB
E.G. Elev (ft)	224.74	Element			
Vel Head (ft)	0.99	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	223.76	Reach Len. (ft)	125.67	124.38	140.61
Crit W.S. (ft)	222.86	Flow Area (sq ft)	597.04	1702.59	553.62
E.G. Slope (ft/ft)	0.008024	Area (sq ft)	597.04	1702.59	553.62
Q Total (cfs)	20912.00	Flow (cfs)	2624.22	14992.56	3295.22
Top Width (ft)	729.71	Top Width (ft)	281.37	282.89	165.45
Vel Total (ft/s)	7.33	Avg. Vel. (ft/s)	4.40	8.81	5.95
Max Chl Dpth (ft)	7.84	Hydr. Depth (ft)	2.12	6.02	3.35
Conv. Total (cfs)	233452.8	Conv. (cfs)	29295.7	167370.7	36786.5
Length Wtd. (ft)	126.56	Wetted Per. (ft)	281.42	283.01	165.59
Min Ch El (ft)	215.92	Shear (lb/sq ft)	1.06	3.01	1.67
Alpha	1.18	Stream Power (lb/ft s)	4.67	26.54	9.97
Frctn Loss (ft)	1.25	Cum Volume (acre-ft)	17.45	123.16	19.75
C & E Loss (ft)	0.04	Cum SA (acres)	5.74	17.27	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 #Q100

			Left OB	Channel	Right OB
E.G. Elev (ft)	226.38	Element			
Vel Head (ft)	1.38	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	225.00	Reach Len. (ft)	125.67	124.38	140.61
Crit W.S. (ft)	224.10	Flow Area (sq ft)	974.16	2054.53	781.73
E.G. Slope (ft/ft)	0.009090	Area (sq ft)	974.16	2054.53	781.73
Q Total (cfs)	33062.00	Flow (cfs)	5738.64	21825.05	5498.31
Top Width (ft)	807.49	Top Width (ft)	324.89	282.89	199.71
Vel Total (ft/s)	8.68	Avg. Vel. (ft/s)	5.89	10.62	7.03
Max Chl Dpth (ft)	9.08	Hydr. Depth (ft)	3.00	7.26	3.91
Conv. Total (cfs)	346781.5	Conv. (cfs)	60191.6	228919.2	57670.8
Length Wtd. (ft)	126.83	Wetted Per. (ft)	324.95	283.01	199.87
Min Ch El (ft)	215.92	Shear (lb/sq ft)	1.70	4.12	2.22
Alpha	1.18	Stream Power (lb/ft s)	10.02	43.76	15.61
Frctn Loss (ft)	1.18	Cum Volume (acre-ft)	29.77	159.93	35.20
C & E Loss (ft)	0.01	Cum SA (acres)	7.12	17.27	8.18

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 #Q100HC

			Left OB	Channel	Right OB
E.G. Elev (ft)	231.59	Element			
Vel Head (ft)	1.83	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	229.75	Reach Len. (ft)	125.67	124.38	140.61
Crit W.S. (ft)	227.75	Flow Area (sq ft)	2848.25	3399.37	1914.79
E.G. Slope (ft/ft)	0.006568	Area (sq ft)	2848.25	3399.37	1914.79
Q Total (cfs)	84012.00	Flow (cfs)	24297.00	42942.52	16772.48

Top Width (ft)	1017.31	Top Width (ft)	458.66	282.89	275.77
Vel Total (ft/s)	10.29	Avg. Vel. (ft/s)	8.53	12.63	8.76
Max Chl Dpth (ft)	13.83	Hydr. Depth (ft)	6.21	12.02	6.94
Conv. Total (cfs)	1036604.0	Conv. (cfs)	299794.8	529857.3	206951.5
Length Wtd. (ft)	127.40	Wetted Per. (ft)	458.81	283.01	276.08
Min Ch El (ft)	215.92	Shear (lb/sq ft)	2.55	4.93	2.84
Alpha	1.11	Stream Power (lb/ft s)	21.72	62.22	24.91
Frctn Loss (ft)	0.87	Cum Volume (acre-ft)	84.54	258.64	91.01
C & E Loss (ft)	0.03	Cum SA (acres)	12.48	17.27	11.16

CROSS SECTION

RIVER: San Juan Creek
REACH: Middle RS: 1883.719

INPUT
Description:
Station Elevation Data num= 65

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	246.86	8.87	245.89	28.39	243.42	55.6	240.53	58.82	240.38
93.36	238.22	100.91	237.9	161.87	235.29	210.24	233.88	247.8	232.6
362.11	230.9	373.13	230.77	391.76	230.83	476.78	231.06	497.19	230.84
594.84	230.86	648.67	230.68	716.62	229.67	719.64	229.64	720.62	229.6
743.06	228.01	774.96	225.08	802.48	222.53	807.24	222.2	818.73	221.42
835.8	220.57	844.71	220.22	867.25	220.03	884.76	219.99	937.79	220.77
987.57	220.25	1041.71	219.11	1100.97	219.16	1143.35	218.65	1172.29	218.08
1177.23	217.96	1179.38	217.91	1194.05	217.5	1241.13	216.18	1280.35	215.08
1330.27	216.04	1380.14	217	1410.05	217.54	1430.64	218.26	1483.89	220.29
1510.71	222.71	1512.59	222.94	1537.7	226.26	1546.8	227.54	1555.32	228.3
1573.89	230.04	1578.97	230.22	1585.44	231.09	1593.5	232.17	1593.64	232.2
1600.87	234.06	1621.2	238.75	1628.3	240.41	1634.26	241.59	1653.21	245.52
1657.09	246.2	1662.98	247.55	1673.49	250.11	1680.33	251.82	1681.75	252.27

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.07	100.91	.035	807.24	.05	1177.23	.035	1194.05	.05

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
1194.05	1410.05	161.58 120.51	124.7	.1	.3

CROSS SECTION OUTPUT Profile #Q50

E.G. Elev (ft)	223.46	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.36	Wt. n-Val.	0.048	0.050	0.050
W.S. Elev (ft)	222.10	Reach Len. (ft)	161.58	120.51	124.70
Crit W.S. (ft)		Flow Area (sq ft)	931.03	1249.65	254.65
E.G. Slope (ft/ft)	0.012446	Area (sq ft)	931.03	1249.65	254.65
Q Total (cfs)	20912.00	Flow (cfs)	5921.02	13350.09	1640.89
Top Width (ft)	695.12	Top Width (ft)	385.27	216.00	93.85
Vel Total (ft/s)	8.59	Avg. Vel. (ft/s)	6.36	10.68	6.44
Max Chl Dpth (ft)	7.02	Hydr. Depth (ft)	2.42	5.79	2.71
Conv. Total (cfs)	187444.8	Conv. (cfs)	53073.1	119663.6	14708.1
Length Wtd. (ft)	129.03	Wetted Per. (ft)	385.36	216.06	93.98
Min Ch El (ft)	215.08	Shear (lb/sq ft)	1.88	4.49	2.11
Alpha	1.19	Stream Power (lb/ft s)	11.94	48.01	13.57
Frctn Loss (ft)	0.90	Cum Volume (acre-ft)	15.24	118.95	18.44
C & E Loss (ft)	0.17	Cum SA (acres)	4.78	16.56	5.68

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 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 #Q100

			Left OB	Channel	Right OB
E.G. Elev (ft)	225.20	Element			
Vel Head (ft)	1.43	Wt. n-Val.	0.048	0.050	0.050
W.S. Elev (ft)	223.77	Reach Len. (ft)	161.58	120.51	124.70
Crit W.S. (ft)		Flow Area (sq ft)	1591.85	1610.39	425.01
E.G. Slope (ft/ft)	0.009513	Area (sq ft)	1591.85	1610.39	425.01
Q Total (cfs)	33062.00	Flow (cfs)	12199.28	17811.09	3051.63
Top Width (ft)	729.69	Top Width (ft)	404.91	216.00	108.78
Vel Total (ft/s)	9.11	Avg. Vel. (ft/s)	7.66	11.06	7.18
Max Chl Dpth (ft)	8.69	Hydr. Depth (ft)	3.93	7.46	3.91
Conv. Total (cfs)	338975.3	Conv. (cfs)	125075.8	182612.1	31287.5
Length Wtd. (ft)	131.56	Wetted Per. (ft)	405.07	216.06	109.01
Min Ch El (ft)	215.08	Shear (lb/sq ft)	2.33	4.43	2.32
Alpha	1.11	Stream Power (lb/ft s)	17.89	48.96	16.63
Frctn Loss (ft)	0.83	Cum Volume (acre-ft)	26.06	154.69	33.26
C & E Loss (ft)	0.11	Cum SA (acres)	6.06	16.56	7.68

Warning: The conveyance ratio (upstream 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 #Q100HC

			Left OB	Channel	Right OB
E.G. Elev (ft)	230.69	Element			
Vel Head (ft)	2.15	Wt. n-Val.	0.048	0.050	0.050
W.S. Elev (ft)	228.54	Reach Len. (ft)	161.58	120.51	124.70
Crit W.S. (ft)		Flow Area (sq ft)	3647.19	2640.78	1030.84
E.G. Slope (ft/ft)	0.007126	Area (sq ft)	3647.19	2640.78	1030.84
Q Total (cfs)	84012.00	Flow (cfs)	39441.80	35151.89	9418.31
Top Width (ft)	822.20	Top Width (ft)	458.41	216.00	147.79
Vel Total (ft/s)	11.48	Avg. Vel. (ft/s)	10.81	13.31	9.14
Max Chl Dpth (ft)	13.46	Hydr. Depth (ft)	7.96	12.23	6.98
Conv. Total (cfs)	995232.9	Conv. (cfs)	467240.1	416420.5	111572.3
Length Wtd. (ft)	135.21	Wetted Per. (ft)	458.79	216.06	148.32
Min Ch El (ft)	215.08	Shear (lb/sq ft)	3.54	5.44	3.09
Alpha	1.05	Stream Power (lb/ft s)	38.24	72.38	28.25
Frctn Loss (ft)	0.74	Cum Volume (acre-ft)	75.17	250.02	86.25
C & E Loss (ft)	0.09	Cum SA (acres)	11.15	16.56	10.47

CROSS SECTION

RIVER: San Juan Creek
REACH: Middle RS: 1763.206

INPUT
Description:
Station Elevation Data num= 66

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	261.59	2.19	260.73	18.67	255.05	27.89	252.36	30.73	251.75
42.4	249.61	65.4	247.47	73.14	246.5	81.3	245.18	114.2	241.53
120.7	240.71	152.32	238.51	162.65	237.79	168.54	237.48	172.91	237.13
201.29	235.52	203.09	235.41	217.78	234.56	244.58	232.98	314.55	230.65
314.87	230.64	315.23	230.63	369.92	229.93	464.89	230.26	494.01	230.33
578.57	229.41	595.34	228.95	598.83	228.87	728.18	225.91	733.09	225.83
782.27	223.85	826.38	221.99	842.25	221.17	871.05	219.87	880.07	219.64
903.85	219.04	968.08	217.79	994.75	217.63	1032.39	217.08	1184.71	214.82
1195.34	214.66	1213.54	214.41	1232.86	214.05	1262.6	214.57	1269.33	214.69
1285.12	214.96	1335.34	215.82	1426.49	217.38	1436.93	217.57	1441.54	217.73
1456.08	218.35	1486.08	219.55	1497.74	220.56	1514.96	222.58	1519.69	223.2
1545.01	226.82	1568.1	229.86	1576.55	232.18	1583.51	233.99	1597.17	238.18
1606.31	241.04	1638.31	249.42	1673.77	260.59	1675.84	261.16	1678.78	262.16
1692.44	266.73								

Manning's n Values num= 6

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.07	152.32	.05	203.09	.035	880.07	.05	1032.39	.035
1184.71	.05								

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
1032.39	1426.49	207.41 202.62	155.96	.1	.3

CROSS SECTION OUTPUT Profile #Q50

			Left OB	Channel	Right OB
E.G. Elev (ft)	222.38	Element			
Vel Head (ft)	0.78	Wt. n-Val.	0.049	0.043	0.050
W.S. Elev (ft)	221.60	Reach Len. (ft)	207.41	202.62	155.96
Crit W.S. (ft)		Flow Area (sq ft)	571.09	2342.24	215.05
E.G. Slope (ft/ft)	0.004462	Area (sq ft)	571.09	2342.24	215.05
Q Total (cfs)	20912.00	Flow (cfs)	2499.27	17589.14	823.59
Top Width (ft)	672.64	Top Width (ft)	198.43	394.10	80.10
Vel Total (ft/s)	6.68	Avg. Vel. (ft/s)	4.38	7.51	3.83
Max Chl Dpth (ft)	7.55	Hydr. Depth (ft)	2.88	5.94	2.68
Conv. Total (cfs)	313062.8	Conv. (cfs)	37415.2	263317.9	12329.6
Length Wtd. (ft)	199.95	Wetted Per. (ft)	198.50	394.15	80.25
Min Ch El (ft)	214.05	Shear (lb/sq ft)	0.80	1.66	0.75
Alpha	1.13	Stream Power (lb/ft s)	3.51	12.43	2.86
Frctn Loss (ft)	1.13	Cum Volume (acre-ft)	12.46	113.98	17.77
C & E Loss (ft)	0.03	Cum SA (acres)	3.70	15.71	5.43

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 OUTPUT Profile #Q100

			Left OB	Channel	Right OB
E.G. Elev (ft)	224.25	Element			
Vel Head (ft)	1.06	Wt. n-Val.	0.048	0.043	0.050
W.S. Elev (ft)	223.19	Reach Len. (ft)	207.41	202.62	155.96
Crit W.S. (ft)		Flow Area (sq ft)	914.97	2970.15	353.33
E.G. Slope (ft/ft)	0.004485	Area (sq ft)	914.97	2970.15	353.33
Q Total (cfs)	33062.00	Flow (cfs)	5099.26	26255.21	1707.53
Top Width (ft)	721.75	Top Width (ft)	234.51	394.10	93.14
Vel Total (ft/s)	7.80	Avg. Vel. (ft/s)	5.57	8.84	4.83
Max Chl Dpth (ft)	9.14	Hydr. Depth (ft)	3.90	7.54	3.79
Conv. Total (cfs)	493675.0	Conv. (cfs)	76141.1	392037.5	25496.5
Length Wtd. (ft)	198.94	Wetted Per. (ft)	234.61	394.15	93.38

Min Ch El (ft)	214.05	Shear (lb/sq ft)	1.09	2.11	1.06
Alpha	1.12	Stream Power (lb/ft s)	6.09	18.65	5.12
Frctn Loss (ft)	1.06	Cum Volume (acre-ft)	21.41	148.36	32.14
C & E Loss (ft)	0.02	Cum SA (acres)	4.88	15.71	7.39

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 #Q100HC

E.G. Elev (ft)	229.86	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.86	Wt. n-Val.	0.045	0.043	0.050
W.S. Elev (ft)	228.00	Reach Len. (ft)	207.41	202.62	155.96
Crit W.S. (ft)		Flow Area (sq ft)	2373.26	4864.55	882.28
E.G. Slope (ft/ft)	0.004298	Area (sq ft)	2373.26	4864.55	882.28
Q Total (cfs)	84012.00	Flow (cfs)	19108.68	58679.19	6224.13
Top Width (ft)	917.06	Top Width (ft)	395.49	394.10	127.47
Vel Total (ft/s)	10.35	Avg. Vel. (ft/s)	8.05	12.06	7.05
Max Chl Dpth (ft)	13.95	Hydr. Depth (ft)	6.00	12.34	6.92
Conv. Total (cfs)	1281474.0	Conv. (cfs)	291473.5	895060.6	94939.5
Length Wtd. (ft)	197.77	Wetted Per. (ft)	395.67	394.15	128.05
Min Ch El (ft)	214.05	Shear (lb/sq ft)	1.61	3.31	1.85
Alpha	1.12	Stream Power (lb/ft s)	12.96	39.95	13.04
Frctn Loss (ft)	0.83	Cum Volume (acre-ft)	64.00	239.64	83.52
C & E Loss (ft)	0.10	Cum SA (acres)	9.57	15.71	10.08

CROSS SECTION

RIVER: San Juan Creek
REACH: Middle RS: 1560.587

INPUT
Description:
Station Elevation Data num= 64

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	251.61	.16	251.56	4.74	249.75	18.53	247.2	39.36	242.11
44.72	241.48	78.44	237.85	88.23	236.8	95.04	235.9	97.25	235.55
103.57	235.02	150.06	231.92	169.11	231.26	227.81	230.22	302	230.27
338.93	229.75	356.95	229.43	392.21	228.08	413.47	227.27	501.25	224.34
532.29	223.47	588.68	222.14	592.53	222.05	594.98	222.01	637.5	221.96
642.45	221.96	667.21	221.01	674.6	220.81	708.95	219.88	734.27	219.2
753.04	218.63	832.32	216.24	862.85	215.31	887.24	214.57	896.94	214.42
914.78	214.2	937.97	213.88	1024.44	212.64	1031.22	212.54	1095.25	213.85
1128.2	214.42	1145.24	215.06	1191.36	216.79	1274.42	218.54	1314.47	219.49
1318.97	219.91	1332.97	220.39	1341.94	220.7	1356.94	222.01	1379.96	223.82
1380.49	223.84	1383.73	224.06	1414.3	226.21	1437.65	227.83	1450.65	229.08
1465.73	231.58	1467.85	231.86	1472.61	233.08	1519.32	243.89	1537.12	248.69
1556.93	254.9	1563.1	256.77	1568.37	258.57	1568.83	258.75		

Manning's n Values num= 6

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.07	78.44	.05	392.21	.035	674.6	.05	753.04	.035
862.85	.05								

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
862.85	1145.24	134.09 259.45	211.62	.1	.3

CROSS SECTION OUTPUT Profile #Q50

E.G. Elev (ft)	221.23	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.06	Wt. n-Val.	0.035	0.050	0.050
W.S. Elev (ft)	220.16	Reach Len. (ft)	134.09	259.45	211.62
Crit W.S. (ft)	219.10	Flow Area (sq ft)	390.97	1814.31	452.00
E.G. Slope (ft/ft)	0.007331	Area (sq ft)	390.97	1814.31	452.00
Q Total (cfs)	20912.00	Flow (cfs)	2843.48	15953.12	2115.41
Top Width (ft)	627.87	Top Width (ft)	164.36	282.39	181.12
Vel Total (ft/s)	7.87	Avg. Vel. (ft/s)	7.27	8.79	4.68
Max Chl Dpth (ft)	7.62	Hydr. Depth (ft)	2.38	6.42	2.50
Conv. Total (cfs)	244232.9	Conv. (cfs)	33209.2	186317.7	24706.0
Length Wtd. (ft)	247.08	Wetted Per. (ft)	164.44	282.45	181.20
Min Ch El (ft)	212.54	Shear (lb/sq ft)	1.09	2.94	1.14
Alpha	1.10	Stream Power (lb/ft s)	7.91	25.85	5.34
Frctn Loss (ft)	1.81	Cum Volume (acre-ft)	10.17	104.31	16.58
C & E Loss (ft)	0.02	Cum SA (acres)	2.84	14.14	4.96

Warning: The energy loss was greater than 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 #Q100

E.G. Elev (ft)	223.17	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.25	Wt. n-Val.	0.037	0.050	0.050
W.S. Elev (ft)	221.92	Reach Len. (ft)	134.09	259.45	211.62
Crit W.S. (ft)		Flow Area (sq ft)	731.83	2309.90	801.53
E.G. Slope (ft/ft)	0.006420	Area (sq ft)	731.83	2309.90	801.53
Q Total (cfs)	33062.00	Flow (cfs)	6084.99	22327.34	4649.68
Top Width (ft)	712.35	Top Width (ft)	219.31	282.39	210.65
Vel Total (ft/s)	8.60	Avg. Vel. (ft/s)	8.31	9.67	5.80
Max Chl Dpth (ft)	9.38	Hydr. Depth (ft)	3.34	8.18	3.81
Conv. Total (cfs)	412619.4	Conv. (cfs)	75941.7	278649.0	58028.8
Length Wtd. (ft)	241.98	Wetted Per. (ft)	219.41	282.45	210.80
Min Ch El (ft)	212.54	Shear (lb/sq ft)	1.34	3.28	1.52
Alpha	1.09	Stream Power (lb/ft s)	11.12	31.69	8.84
Frctn Loss (ft)	1.42	Cum Volume (acre-ft)	17.49	136.08	30.08
C & E Loss (ft)	0.04	Cum SA (acres)	3.80	14.14	6.85

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 OUTPUT Profile #Q100HC

E.G. Elev (ft)	228.92	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.52	Wt. n-Val.	0.038	0.050	0.050
W.S. Elev (ft)	227.40	Reach Len. (ft)	134.09	259.45	211.62
Crit W.S. (ft)		Flow Area (sq ft)	2740.22	3858.92	2158.77
E.G. Slope (ft/ft)	0.004143	Area (sq ft)	2740.22	3858.92	2158.77
Q Total (cfs)	84012.00	Flow (cfs)	25962.21	42183.66	15866.13
Top Width (ft)	1021.54	Top Width (ft)	452.89	282.39	286.27
Vel Total (ft/s)	9.59	Avg. Vel. (ft/s)	9.47	10.93	7.35
Max Chl Dpth (ft)	14.86	Hydr. Depth (ft)	6.05	13.67	7.54
Conv. Total (cfs)	1305291.0	Conv. (cfs)	403373.7	655405.7	246511.4
Length Wtd. (ft)	227.46	Wetted Per. (ft)	453.07	282.45	286.61
Min Ch El (ft)	212.54	Shear (lb/sq ft)	1.56	3.53	1.95

Alpha	1.06	Stream Power (lb/ft s)	14.82	38.63	14.32
Frctn Loss (ft)	0.89	Cum Volume (acre-ft)	51.83	219.35	78.07
C & E Loss (ft)	0.00	Cum SA (acres)	7.55	14.14	9.34

CROSS SECTION

RIVER: San Juan Creek
REACH: Middle RS: 1301.132

INPUT
Description:
Station Elevation Data num= 80

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	253.61	.45	253.4	2.01	252.72	3.74	251.99	11.13	248.88
27.32	242.12	29.63	241.34	38.12	239.29	40.26	239.01	52.45	237.94
60.61	237.36	69.58	236.85	92.18	235.72	118.76	234.39	166.1	232.95
167.62	232.93	232.98	232.04	311.49	230.12	314.15	230.1	319.27	229.86
408.55	225.83	419.03	225.13	438.65	224.28	445.56	223.98	467.64	223.01
519.76	221.2	545.54	220.78	549.7	220.81	560.46	220.32	568.47	219.87
569.12	219.83	574.72	218.79	591.81	217.4	599.12	215.35	602.3	214.03
604.91	213.42	610.72	211.38	611.79	211.01	612.07	210.89	612.31	210.83
620.74	209.77	624.52	209.59	628.76	210	639.49	210.74	645.29	211.37
660.17	212.96	694.53	215.31	705.99	216.09	706.75	216.13	714.93	216.51
751.31	215.37	796.69	213.95	811.36	213.48	914.37	211.85	916.3	211.82
970.86	211.73	980.23	211.92	998.28	212.3	1066.4	213.91	1167.25	218.49
1179.84	219.04	1184.57	219.24	1198.1	219.85	1224.65	220.85	1241.97	221.21
1284.45	222.72	1313.26	223.92	1322.83	224.37	1340.68	224.94	1359.49	225.56
1371.1	226.01	1405.27	227	1443.81	228.53	1452.14	228.9	1455.13	229.13
1481.41	229.86	1493.42	230.68	1515.71	232.31	1535.67	233.47	1536.41	233.48

Manning's n Values num= 6

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.07	92.18	.05	445.56	.035	568.47	.05	645.29	.035
706.75	.05								

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
602.3	1066.4	121.07	201.09	244.51	.1	.3

CROSS SECTION OUTPUT Profile #Q50

			Left OB	Channel	Right OB
E.G. Elev (ft)	219.39	Element			
Vel Head (ft)	0.98	Wt. n-Val.	0.050	0.048	0.050
W.S. Elev (ft)	218.40	Reach Len. (ft)	121.07	201.09	244.51
Crit W.S. (ft)		Flow Area (sq ft)	32.85	2445.03	222.42
E.G. Slope (ft/ft)	0.007346	Area (sq ft)	32.85	2445.03	222.42
Q Total (cfs)	20912.00	Flow (cfs)	104.85	19835.78	971.37
Top Width (ft)	585.91	Top Width (ft)	22.84	464.10	98.97
Vel Total (ft/s)	7.74	Avg. Vel. (ft/s)	3.19	8.11	4.37
Max Chl Dpth (ft)	8.81	Hydr. Depth (ft)	1.44	5.27	2.25
Conv. Total (cfs)	243982.3	Conv. (cfs)	1223.3	231425.9	11333.1
Length Wtd. (ft)	203.30	Wetted Per. (ft)	23.43	465.05	99.07
Min Ch El (ft)	209.59	Shear (lb/sq ft)	0.64	2.41	1.03
Alpha	1.06	Stream Power (lb/ft s)	2.05	19.56	4.50
Frctn Loss (ft)	0.66	Cum Volume (acre-ft)	9.51	91.63	14.94
C & E Loss (ft)	0.15	Cum SA (acres)	2.55	11.92	4.28

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream 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 #Q100

E.G. Elev (ft)	221.71	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.11	Wt. n-Val.	0.050	0.048	0.050
W.S. Elev (ft)	220.60	Reach Len. (ft)	121.07	201.09	244.51
Crit W.S. (ft)		Flow Area (sq ft)	105.03	3463.13	495.24
E.G. Slope (ft/ft)	0.005365	Area (sq ft)	105.03	3463.13	495.24
Q Total (cfs)	33062.00	Flow (cfs)	450.84	30238.85	2372.31
Top Width (ft)	663.62	Top Width (ft)	47.95	464.10	151.57
Vel Total (ft/s)	8.14	Avg. Vel. (ft/s)	4.29	8.73	4.79
Max Chl Dpth (ft)	11.01	Hydr. Depth (ft)	2.19	7.46	3.27
Conv. Total (cfs)	451362.6	Conv. (cfs)	6154.9	412820.9	32386.8
Length Wtd. (ft)	204.10	Wetted Per. (ft)	48.67	465.05	151.72
Min Ch El (ft)	209.59	Shear (lb/sq ft)	0.72	2.49	1.09
Alpha	1.08	Stream Power (lb/ft s)	3.10	21.78	5.24
Frctn Loss (ft)	0.56	Cum Volume (acre-ft)	16.21	118.89	26.93
C & E Loss (ft)	0.15	Cum SA (acres)	3.39	11.92	5.97

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

CROSS SECTION OUTPUT Profile #Q100HC

E.G. Elev (ft)	228.03	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.53	Wt. n-Val.	0.041	0.048	0.050
W.S. Elev (ft)	226.51	Reach Len. (ft)	121.07	201.09	244.51
Crit W.S. (ft)		Flow Area (sq ft)	944.73	6204.98	1900.78
E.G. Slope (ft/ft)	0.003679	Area (sq ft)	944.73	6204.98	1900.78
Q Total (cfs)	84012.00	Flow (cfs)	6596.36	66226.05	11189.59
Top Width (ft)	994.66	Top Width (ft)	208.73	464.10	321.83
Vel Total (ft/s)	9.28	Avg. Vel. (ft/s)	6.98	10.67	5.89
Max Chl Dpth (ft)	16.92	Hydr. Depth (ft)	4.53	13.37	5.91
Conv. Total (cfs)	1385036.0	Conv. (cfs)	108748.6	1091814.0	184473.4
Length Wtd. (ft)	203.67	Wetted Per. (ft)	209.57	465.05	322.08
Min Ch El (ft)	209.59	Shear (lb/sq ft)	1.04	3.06	1.36
Alpha	1.14	Stream Power (lb/ft s)	7.23	32.71	7.98
Frctn Loss (ft)	0.48	Cum Volume (acre-ft)	46.15	189.38	68.21
C & E Loss (ft)	0.14	Cum SA (acres)	6.53	11.92	7.86

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

CROSS SECTION

RIVER: San Juan Creek
REACH: Middle RS: 1100.047

INPUT
Description:

Station Elevation Data num= 78

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	257.56	4.56	255.79	11.17	252.95	23.65	245.87	27.21	243.9
28.51	243.35	35.07	240.5	40.09	239.6	51.84	238.7	89.45	237.55
99.07	237.04	111.96	236.37	127.38	235.52	137.61	234.95	151.09	234.42
205.55	232.29	215.98	231.71	223.38	231.4	233.23	231.1	273.34	229.51
291.78	228.46	325.53	226.21	326.95	226.12	374.13	222.52	375.21	222.43
375.59	222.41	377.51	222.43	397.5	221.62	421.97	220.77	424.04	220.62
440.01	220.03	440.84	219.84	448.86	218.04	455.58	215.53	465.53	212.22
468.01	211.5	474.94	209.96	475.58	209.83	482.14	209.16	489.88	208.36
501.32	208.22	505.03	208.11	537.83	209.63	575.15	211.37	579.25	211.51
581.71	211.65	583.64	211.77	606.44	212.45	613.48	212.66	638.22	212.73
665.21	212.32	673.7	212.2	746.14	211.1	750.02	211.04	750.72	211.02
751.47	211.01	754.6	211.01	758.57	211	842.11	210.68	883.58	210.82
905.82	211.29	946.08	212.15	997.47	213.27	1032.49	214.79	1131.13	218.05
1182.49	219.03	1223.39	220.37	1270.09	222.2	1274.27	222.35	1335.99	225.25
1351.73	226.12	1353.4	226.22	1358.48	226.54	1372.95	227.63	1384.41	228.42
1391.73	229.35	1403.1	231.88	1415.34	236.08				

Manning's n Values num= 7

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.07	99.07	.05	127.38	.035	325.53	.05	537.83	.05
665.21	.035	905.82	.05						

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
465.53	946.08	112.44	132.82	162.92	.1	.3

CROSS SECTION OUTPUT Profile #Q50

			Left OB	Channel	Right OB
E.G. Elev (ft)	218.57	Element			
Vel Head (ft)	0.47	Wt. n-Val.	0.050	0.041	0.050
W.S. Elev (ft)	218.10	Reach Len. (ft)	112.44	132.82	162.92
Crit W.S. (ft)		Flow Area (sq ft)	50.92	3382.17	585.75
E.G. Slope (ft/ft)	0.001823	Area (sq ft)	50.92	3382.17	585.75
Q Total (cfs)	20912.00	Flow (cfs)	129.51	19196.52	1585.97
Top Width (ft)	685.29	Top Width (ft)	16.95	480.55	187.79
Vel Total (ft/s)	5.20	Avg. Vel. (ft/s)	2.54	5.68	2.71
Max Chl Dpth (ft)	9.99	Hydr. Depth (ft)	3.00	7.04	3.12
Conv. Total (cfs)	489817.8	Conv. (cfs)	3033.5	449636.4	37147.9
Length Wtd. (ft)	134.87	Wetted Per. (ft)	17.94	481.04	187.89
Min Ch El (ft)	208.11	Shear (lb/sq ft)	0.32	0.80	0.35
Alpha	1.11	Stream Power (lb/ft s)	0.82	4.54	0.96
Frctn Loss (ft)	0.16	Cum Volume (acre-ft)	9.40	78.18	12.67
C & E Loss (ft)	0.06	Cum SA (acres)	2.49	9.74	3.47

Warning: The conveyance ratio (upstream 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 #Q100

			Left OB	Channel	Right OB
E.G. Elev (ft)	221.00	Element			
Vel Head (ft)	0.60	Wt. n-Val.	0.050	0.041	0.050
W.S. Elev (ft)	220.39	Reach Len. (ft)	112.44	132.82	162.92
Crit W.S. (ft)		Flow Area (sq ft)	102.85	4482.09	1132.59
E.G. Slope (ft/ft)	0.001669	Area (sq ft)	102.85	4482.09	1132.59
Q Total (cfs)	33062.00	Flow (cfs)	249.05	29305.37	3507.58
Top Width (ft)	793.70	Top Width (ft)	35.30	480.55	277.85
Vel Total (ft/s)	5.78	Avg. Vel. (ft/s)	2.42	6.54	3.10

Max Chl Dpth (ft)	12.28	Hydr. Depth (ft)	2.91	9.33	4.08
Conv. Total (cfs)	809323.9	Conv. (cfs)	6096.5	717365.5	85861.9
Length Wtd. (ft)	135.67	Wetted Per. (ft)	36.52	481.04	277.98
Min Ch El (ft)	208.11	Shear (lb/sq ft)	0.29	0.97	0.42
Alpha	1.16	Stream Power (lb/ft s)	0.71	6.35	1.31
Frctn Loss (ft)	0.16	Cum Volume (acre-ft)	15.92	100.55	22.36
C & E Loss (ft)	0.07	Cum SA (acres)	3.27	9.74	4.76

CROSS SECTION OUTPUT Profile #Q100HC

E.G. Elev (ft)	227.41	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.07	Wt. n-Val.	0.050	0.041	0.050
W.S. Elev (ft)	226.34	Reach Len. (ft)	112.44	132.82	162.92
Crit W.S. (ft)		Flow Area (sq ft)	681.51	7340.24	3202.32
E.G. Slope (ft/ft)	0.001659	Area (sq ft)	681.51	7340.24	3202.32
Q Total (cfs)	84012.00	Flow (cfs)	2353.11	66386.54	15272.35
Top Width (ft)	1031.69	Top Width (ft)	141.93	480.55	409.21
Vel Total (ft/s)	7.48	Avg. Vel. (ft/s)	3.45	9.04	4.77
Max Chl Dpth (ft)	18.23	Hydr. Depth (ft)	4.80	15.27	7.83
Conv. Total (cfs)	2062603.0	Conv. (cfs)	57771.8	1629875.0	374955.9
Length Wtd. (ft)	137.20	Wetted Per. (ft)	143.34	481.04	409.48
Min Ch El (ft)	208.11	Shear (lb/sq ft)	0.49	1.58	0.81
Alpha	1.23	Stream Power (lb/ft s)	1.70	14.29	3.86
Frctn Loss (ft)	0.18	Cum Volume (acre-ft)	43.89	158.11	53.89
C & E Loss (ft)	0.08	Cum SA (acres)	6.04	9.74	5.81

CROSS SECTION

RIVER: San Juan Creek
REACH: Middle RS: 967.228

INPUT
Description:
Station Elevation Data num= 84

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	254.19	4.69	251.78	19.09	243.93	20.53	243.29	25.1	241.43
30.11	239.32	32.44	238.61	39.66	236.64	47.37	235.02	51.68	234.34
60.4	233.14	65	232.29	85.85	230.8	111.05	229.8	112.43	229.71
114.47	229.57	114.53	229.57	118.65	229.33	177.73	226.04	199.09	224.87
216.67	224.3	248.55	223.57	249.76	223.53	256.33	223.16	282.22	221.77
286.11	221.74	324.32	221.72	326.74	221.48	333.92	220.96	337.9	220.1
339.94	219.64	344.8	217.71	357.89	212.12	362.02	210.36	367.42	209.08
369.58	208.51	379.33	207.62	384.33	207.19	384.88	207.2	426.61	208.74
427.78	208.79	450.22	209.87	459.52	209.94	515.36	209.73	521.14	209.71
522.41	209.72	523.95	209.72	547.28	209.71	551.66	209.69	607.97	209.71
637.69	209.62	695.19	209.8	804.44	210.07	811.87	210.1	815.45	210.18
815.99	210.19	845.71	210.65	894.25	211.42	989.13	214.21	1047.99	215.94
1059.3	216.25	1067.21	216.47	1078.26	217.06	1101.06	218.22	1167.51	220.95
1206.43	223.62	1221.5	224.44	1239.96	225.57	1286.93	228.48	1300.69	229.82
1311.44	230.82	1311.73	230.87	1312.68	231.2	1331.35	237.37	1338.2	239.64
1359.25	245.57	1372.5	249.12	1381.08	251.18	1383.33	251.59	1402.93	255
1409.02	256.06	1411.77	256.61	1416.26	257.31	1431.56	259.3		

Manning's n Values num= 7

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.07	114.53	.035	357.89	.05	515.36	.035	815.99	.05

1331.35 .035 1402.93 .05

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
362.02	894.25	96.73	103.79	95	.1	.3

CROSS SECTION OUTPUT Profile #Q50

E.G. Elev (ft)	218.35	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.27	Wt. n-Val.	0.042	0.040	0.050
W.S. Elev (ft)	218.08	Reach Len. (ft)	96.73	103.79	95.00
Crit W.S. (ft)		Flow Area (sq ft)	69.87	4446.77	737.43
E.G. Slope (ft/ft)	0.000814	Area (sq ft)	69.87	4446.77	737.43
Q Total (cfs)	20912.00	Flow (cfs)	180.17	19259.86	1471.97
Top Width (ft)	754.46	Top Width (ft)	18.15	532.23	204.08
Vel Total (ft/s)	3.98	Avg. Vel. (ft/s)	2.58	4.33	2.00
Max Chl Dpth (ft)	10.89	Hydr. Depth (ft)	3.85	8.35	3.61
Conv. Total (cfs)	732868.9	Conv. (cfs)	6314.0	674969.1	51585.8
Length Wtd. (ft)	103.06	Wetted Per. (ft)	19.73	532.58	204.19
Min Ch El (ft)	207.19	Shear (lb/sq ft)	0.18	0.42	0.18
Alpha	1.11	Stream Power (lb/ft s)	0.46	1.84	0.37
Frctn Loss (ft)	0.08	Cum Volume (acre-ft)	9.24	66.24	10.19
C & E Loss (ft)	0.01	Cum SA (acres)	2.45	8.19	2.74

CROSS SECTION OUTPUT Profile #Q100

E.G. Elev (ft)	220.77	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.39	Wt. n-Val.	0.041	0.040	0.050
W.S. Elev (ft)	220.39	Reach Len. (ft)	96.73	103.79	95.00
Crit W.S. (ft)		Flow Area (sq ft)	118.98	5674.30	1271.39
E.G. Slope (ft/ft)	0.000849	Area (sq ft)	118.98	5674.30	1271.39
Q Total (cfs)	33062.00	Flow (cfs)	368.81	29519.38	3173.82
Top Width (ft)	817.24	Top Width (ft)	25.45	532.23	259.57
Vel Total (ft/s)	4.68	Avg. Vel. (ft/s)	3.10	5.20	2.50
Max Chl Dpth (ft)	13.20	Hydr. Depth (ft)	4.68	10.66	4.90
Conv. Total (cfs)	1134726.0	Conv. (cfs)	12657.9	1013139.0	108929.0
Length Wtd. (ft)	102.80	Wetted Per. (ft)	27.40	532.58	259.73
Min Ch El (ft)	207.19	Shear (lb/sq ft)	0.23	0.56	0.26
Alpha	1.14	Stream Power (lb/ft s)	0.71	2.94	0.65
Frctn Loss (ft)	0.08	Cum Volume (acre-ft)	15.63	85.06	17.86
C & E Loss (ft)	0.01	Cum SA (acres)	3.19	8.19	3.76

CROSS SECTION OUTPUT Profile #Q100HC

E.G. Elev (ft)	227.15	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.81	Wt. n-Val.	0.037	0.040	0.050
W.S. Elev (ft)	226.34	Reach Len. (ft)	96.73	103.79	95.00
Crit W.S. (ft)		Flow Area (sq ft)	777.95	8841.43	3115.52
E.G. Slope (ft/ft)	0.001045	Area (sq ft)	777.95	8841.43	3115.52
Q Total (cfs)	84012.00	Flow (cfs)	2746.84	68609.79	12655.36
Top Width (ft)	1079.98	Top Width (ft)	189.64	532.23	358.11
Vel Total (ft/s)	6.60	Avg. Vel. (ft/s)	3.53	7.76	4.06
Max Chl Dpth (ft)	19.15	Hydr. Depth (ft)	4.10	16.61	8.70
Conv. Total (cfs)	2598283.0	Conv. (cfs)	84953.1	2121931.0	391399.1
Length Wtd. (ft)	102.12	Wetted Per. (ft)	191.79	532.58	358.45
Min Ch El (ft)	207.19	Shear (lb/sq ft)	0.26	1.08	0.57
Alpha	1.20	Stream Power (lb/ft s)	0.93	8.41	2.30
Frctn Loss (ft)	0.10	Cum Volume (acre-ft)	42.01	133.44	42.07

C & E Loss (ft)	0.04	Cum SA (acres)	5.62	8.19	4.37

CROSS SECTION

RIVER: San Juan Creek
REACH: Middle RS: 863.438

INPUT
Description:
Station Elevation Data num= 68

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	237.62	7.88	234.43	16.2	232.23	23.83	230.21	26.37	229.85
48.9	227.71	67.56	226.31	89.19	224.96	94.42	224.64	103.69	224.22
130.59	223	144.11	222.42	162.8	222.22	220.47	221.95	235.61	222.63
241.36	222.77	242.07	222.76	271.51	221.95	277.7	221.78	282.57	220.59
285.53	219.63	302.8	211.07	303.48	210.72	303.63	210.68	304.05	210.58
311.69	208.81	314.59	208.66	323.13	207.96	350.37	208.15	351.54	208.15
352.79	208.17	355.1	208.28	364.15	208.6	386.8	209.35	389.44	209.45
396.25	209.62	433.19	210.08	437.01	210.13	446.42	210.25	507.35	209.94
509.52	209.93	588.33	209.83	634.74	209.68	676.7	209.56	726.22	209.64
744.78	209.67	813.75	209.78	829.97	210.03	857.43	210.81	946.52	213.15
1012.54	214.98	1037.68	216.29	1063.49	216.94	1107.34	218.16	1108.92	218.24
1110.37	218.25	1122.77	218.62	1159.44	220.03	1161.52	220.3	1185.77	222.94
1194.72	224.01	1197.74	224.31	1203.48	224.93	1239.4	229.52	1244.71	230.48
1253.63	231.62	1266.07	234.28	1274.08	236.2				

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.07	89.19	.035	242.07	.05	433.19	.035	726.22	.05

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
302.8	857.43	226.61	244.08	237.58	.1	.3

CROSS SECTION OUTPUT Profile #Q50

E.G. Elev (ft)	218.26	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.24	Wt. n-Val.	0.050	0.041	0.050
W.S. Elev (ft)	218.02	Reach Len. (ft)	226.61	244.08	237.58
Crit W.S. (ft)		Flow Area (sq ft)	48.75	4641.86	916.83
E.G. Slope (ft/ft)	0.000754	Area (sq ft)	48.75	4641.86	916.83
Q Total (cfs)	20912.00	Flow (cfs)	84.81	19024.69	1802.50
Top Width (ft)	813.60	Top Width (ft)	14.03	554.63	244.94
Vel Total (ft/s)	3.73	Avg. Vel. (ft/s)	1.74	4.10	1.97
Max Chl Dpth (ft)	10.06	Hydr. Depth (ft)	3.48	8.37	3.74
Conv. Total (cfs)	761821.2	Conv. (cfs)	3089.7	693066.8	65664.7
Length Wtd. (ft)	243.16	Wetted Per. (ft)	15.65	555.01	245.06
Min Ch El (ft)	207.96	Shear (lb/sq ft)	0.15	0.39	0.18
Alpha	1.12	Stream Power (lb/ft s)	0.25	1.61	0.35
Frctn Loss (ft)	0.22	Cum Volume (acre-ft)	9.11	55.42	8.39
C & E Loss (ft)	0.00	Cum SA (acres)	2.41	6.90	2.25

CROSS SECTION OUTPUT Profile #Q100

E.G. Elev (ft)	220.68	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.34	Wt. n-Val.	0.050	0.041	0.050
W.S. Elev (ft)	220.34	Reach Len. (ft)	226.61	244.08	237.58

Crit W.S. (ft)		Flow Area (sq ft)	86.90	5926.03	1562.59
E.G. Slope (ft/ft)	0.000776	Area (sq ft)	86.90	5926.03	1562.59
Q Total (cfs)	33062.00	Flow (cfs)	182.12	29032.89	3846.99
Top Width (ft)	878.51	Top Width (ft)	19.45	554.63	304.43
Vel Total (ft/s)	4.36	Avg. Vel. (ft/s)	2.10	4.90	2.46
Max Chl Dpth (ft)	12.38	Hydr. Depth (ft)	4.47	10.68	5.13
Conv. Total (cfs)	1187107.0	Conv. (cfs)	6539.1	1042440.0	138128.0
Length Wtd. (ft)	242.88	Wetted Per. (ft)	21.57	555.01	304.60
Min Ch El (ft)	207.96	Shear (lb/sq ft)	0.20	0.52	0.25
Alpha	1.14	Stream Power (lb/ft s)	0.41	2.53	0.61
Frctn Loss (ft)	0.22	Cum Volume (acre-ft)	15.40	71.24	14.77
C & E Loss (ft)	0.01	Cum SA (acres)	3.14	6.90	3.14

CROSS SECTION OUTPUT Profile #Q100HC

E.G. Elev (ft)	227.01	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.69	Wt. n-Val.	0.041	0.041	0.050
W.S. Elev (ft)	226.32	Reach Len. (ft)	226.61	244.08	237.58
Crit W.S. (ft)		Flow Area (sq ft)	943.23	9246.06	3546.32
E.G. Slope (ft/ft)	0.000920	Area (sq ft)	943.23	9246.06	3546.32
Q Total (cfs)	84012.00	Flow (cfs)	2795.64	66459.39	14756.97
Top Width (ft)	1147.00	Top Width (ft)	235.42	554.63	356.95
Vel Total (ft/s)	6.12	Avg. Vel. (ft/s)	2.96	7.19	4.16
Max Chl Dpth (ft)	18.36	Hydr. Depth (ft)	4.01	16.67	9.94
Conv. Total (cfs)	2770204.0	Conv. (cfs)	92183.1	2191426.0	486595.0
Length Wtd. (ft)	241.92	Wetted Per. (ft)	237.85	555.01	357.46
Min Ch El (ft)	207.96	Shear (lb/sq ft)	0.23	0.96	0.57
Alpha	1.18	Stream Power (lb/ft s)	0.67	6.88	2.37
Frctn Loss (ft)	0.26	Cum Volume (acre-ft)	40.10	111.90	34.81
C & E Loss (ft)	0.01	Cum SA (acres)	5.14	6.90	3.59

CROSS SECTION

RIVER: San Juan Creek
REACH: Middle RS: 619.354

INPUT
Description:
Station Elevation Data num= 77

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	251.5	2.29	250.96	8.51	249.13	17.29	245.8	21.9	244.04
29.07	241.17	42.54	235.63	44.71	234.9	53.69	231.9	57.67	231.01
63.25	229.55	68.16	229.11	123.75	226.57	145.61	225.65	154.87	225.09
169.76	224.16	188.38	223.01	226.49	220.61	266.41	218.09	285.62	216.56
309.06	215.14	324.91	213.7	331.12	213.39	383.84	210.77	386.78	210.62
402.11	210.34	433.76	209.57	444.88	209.61	463.7	209.68	464.9	209.69
497.28	209.82	548.59	209.91	584.1	209.95	590.95	209.96	619.86	209.94
638.36	209.93	667.54	209.99	667.6	209.99	691.79	210.04	785.89	209.84
884.63	210.08	893.47	210.22	899.36	210.37	926.55	211.14	943.41	211.7
949.72	211.91	992.72	213.93	1011.7	215.53	1026.71	216.74	1038.05	217.52
1041.78	217.79	1053.67	218.14	1076.32	219.09	1077.25	219.16	1079.34	219.09
1098.63	218.1	1100.71	218.33	1105.82	219.04	1111.92	220.98	1113	221.32
1114.67	222.01	1124.53	226.86	1133.96	231.19	1136.79	232.79	1139.07	234.3
1144.36	238	1145.17	238.58	1145.52	238.85	1157.37	248.37	1160.64	251.02
1162.97	252.45	1170.45	257.49	1175.67	259.68	1178.44	260.57	1180.12	260.98
1183.68	261.85	1192.04	263.53						

Manning's n Values num= 7

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	226.49	.05	464.9	.035	584.1	.05	619.86	.035
667.54	.05	1180.12	.035						

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
383.84	926.55	221.01	236.08	232.98	.1	.3

CROSS SECTION OUTPUT Profile #Q50

			Left OB	Channel	Right OB
E.G. Elev (ft)	218.04	Element			
Vel Head (ft)	0.29	Wt. n-Val.	0.050	0.044	0.050
W.S. Elev (ft)	217.75	Reach Len. (ft)	221.01	236.08	232.98
Crit W.S. (ft)		Flow Area (sq ft)	431.43	4217.63	441.07
E.G. Slope (ft/ft)	0.001133	Area (sq ft)	431.43	4217.63	441.07
Q Total (cfs)	20912.00	Flow (cfs)	1051.56	18778.93	1081.51
Top Width (ft)	770.59	Top Width (ft)	113.18	542.71	114.70
Vel Total (ft/s)	4.11	Avg. Vel. (ft/s)	2.44	4.45	2.45
Max Chl Dpth (ft)	8.18	Hydr. Depth (ft)	3.81	7.77	3.85
Conv. Total (cfs)	621337.2	Conv. (cfs)	31244.0	557959.4	32133.8
Length Wtd. (ft)	234.63	Wetted Per. (ft)	113.41	542.74	114.91
Min Ch El (ft)	209.57	Shear (lb/sq ft)	0.27	0.55	0.27
Alpha	1.09	Stream Power (lb/ft s)	0.66	2.45	0.67
Frctn Loss (ft)	0.35	Cum Volume (acre-ft)	7.86	30.59	4.69
C & E Loss (ft)	0.03	Cum SA (acres)	2.08	3.82	1.27

CROSS SECTION OUTPUT Profile #Q100

			Left OB	Channel	Right OB
E.G. Elev (ft)	220.45	Element			
Vel Head (ft)	0.39	Wt. n-Val.	0.050	0.044	0.050
W.S. Elev (ft)	220.05	Reach Len. (ft)	221.01	236.08	232.98
Crit W.S. (ft)		Flow Area (sq ft)	731.76	5467.66	807.35
E.G. Slope (ft/ft)	0.001122	Area (sq ft)	731.76	5467.66	807.35
Q Total (cfs)	33062.00	Flow (cfs)	2106.26	28793.21	2162.54
Top Width (ft)	873.73	Top Width (ft)	148.56	542.71	182.46
Vel Total (ft/s)	4.72	Avg. Vel. (ft/s)	2.88	5.27	2.68
Max Chl Dpth (ft)	10.48	Hydr. Depth (ft)	4.93	10.07	4.42
Conv. Total (cfs)	986903.1	Conv. (cfs)	62871.9	859479.3	64551.9
Length Wtd. (ft)	234.22	Wetted Per. (ft)	148.86	542.74	182.95
Min Ch El (ft)	209.57	Shear (lb/sq ft)	0.34	0.71	0.31
Alpha	1.13	Stream Power (lb/ft s)	0.99	3.72	0.83
Frctn Loss (ft)	0.34	Cum Volume (acre-ft)	13.27	39.32	8.31
C & E Loss (ft)	0.03	Cum SA (acres)	2.71	3.82	1.81

CROSS SECTION OUTPUT Profile #Q100HC

			Left OB	Channel	Right OB
E.G. Elev (ft)	226.74	Element			
Vel Head (ft)	0.77	Wt. n-Val.	0.049	0.044	0.050
W.S. Elev (ft)	225.97	Reach Len. (ft)	221.01	236.08	232.98
Crit W.S. (ft)		Flow Area (sq ft)	1889.29	8676.70	1930.41
E.G. Slope (ft/ft)	0.001255	Area (sq ft)	1889.29	8676.70	1930.41
Q Total (cfs)	84012.00	Flow (cfs)	9044.15	65689.84	9278.01
Top Width (ft)	984.66	Top Width (ft)	245.78	542.71	196.17
Vel Total (ft/s)	6.72	Avg. Vel. (ft/s)	4.79	7.57	4.81
Max Chl Dpth (ft)	16.40	Hydr. Depth (ft)	7.69	15.99	9.84
Conv. Total (cfs)	2371484.0	Conv. (cfs)	255297.4	1854288.0	261899.0

Length Wtd. (ft)	233.13	Wetted Per. (ft)	246.27	542.74	197.91
Min Ch El (ft)	209.57	Shear (lb/sq ft)	0.60	1.25	0.76
Alpha	1.10	Stream Power (lb/ft s)	2.88	9.48	3.67
Frctn Loss (ft)	0.36	Cum Volume (acre-ft)	32.73	61.68	19.87
C & E Loss (ft)	0.04	Cum SA (acres)	3.89	3.82	2.09

CROSS SECTION

RIVER: San Juan Creek
REACH: Middle RS: 383.277

INPUT
Description:
Station Elevation Data num= 51

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	247.39	6.26	245.82	11.1	244.56	31.13	239.37	40.02	236.96
53.66	233.87	65.31	231.11	67.54	230.56	79.23	229.45	81.2	229.16
95.21	228.43	116.68	227.24	155.36	225.06	238.76	220.35	244.14	220.15
269.9	219.22	297.66	218.21	306.69	217.84	341.14	216.44	456.1	212.62
501.14	211.22	520.47	210.65	537.93	210.14	588.16	209.75	589	209.74
603.7	209.56	612.94	209.45	672.66	208.69	721.33	208.61	772.15	208.52
798.7	208.92	817.18	209.18	875.41	209.98	889.98	210.79	910.33	211.93
943.84	214.1	966.49	215.68	977.2	216.19	997.29	216.97	1029.53	217.95
1041.44	218.53	1053.14	219.12	1066.65	220.07	1071.22	220.79	1080.29	222.43
1084.39	223.59	1098.81	227.95	1103.41	230.42	1106.22	231.63	1109.54	233.63
1109.74	233.78								

Manning's n Values num= 6

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	11.1	.07	155.36	.035	244.14	.05	588.16	.035
721.33	.05								

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
537.93	875.41	226.22	216.58	201.98	.1	.3

CROSS SECTION OUTPUT Profile #Q50

E.G. Elev (ft)	217.66	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.55	Wt. n-Val.	0.050	0.043	0.050
W.S. Elev (ft)	217.11	Reach Len. (ft)	226.22	216.58	201.98
Crit W.S. (ft)		Flow Area (sq ft)	772.86	2682.94	426.28
E.G. Slope (ft/ft)	0.002104	Area (sq ft)	772.86	2682.94	426.28
Q Total (cfs)	20912.00	Flow (cfs)	2484.56	17122.94	1304.50
Top Width (ft)	677.34	Top Width (ft)	213.32	337.48	126.54
Vel Total (ft/s)	5.39	Avg. Vel. (ft/s)	3.21	6.38	3.06
Max Chl Dpth (ft)	8.59	Hydr. Depth (ft)	3.62	7.95	3.37
Conv. Total (cfs)	455859.8	Conv. (cfs)	54160.7	373262.3	28436.7
Length Wtd. (ft)	216.82	Wetted Per. (ft)	213.44	337.50	126.75
Min Ch El (ft)	208.52	Shear (lb/sq ft)	0.48	1.04	0.44
Alpha	1.21	Stream Power (lb/ft s)	1.53	6.67	1.35
Frctn Loss (ft)	0.45	Cum Volume (acre-ft)	4.80	11.90	2.37
C & E Loss (ft)	0.01	Cum SA (acres)	1.25	1.44	0.62

CROSS SECTION OUTPUT Profile #Q100

E.G. Elev (ft)	220.07	Element	Left OB	Channel	Right OB

Vel Head (ft)	0.69	Wt. n-Val.	0.050	0.043	0.050
W.S. Elev (ft)	219.39	Reach Len. (ft)	226.22	216.58	201.98
Crit W.S. (ft)		Flow Area (sq ft)	1323.57	3450.50	785.97
E.G. Slope (ft/ft)	0.001987	Area (sq ft)	1323.57	3450.50	785.97
Q Total (cfs)	33062.00	Flow (cfs)	5025.21	25273.35	2763.44
Top Width (ft)	791.63	Top Width (ft)	272.63	337.48	181.52
Vel Total (ft/s)	5.95	Avg. Vel. (ft/s)	3.80	7.32	3.52
Max Chl Dpth (ft)	10.87	Hydr. Depth (ft)	4.85	10.22	4.33
Conv. Total (cfs)	741695.6	Conv. (cfs)	112732.9	566969.2	61993.6
Length Wtd. (ft)	216.85	Wetted Per. (ft)	272.79	337.50	181.78
Min Ch El (ft)	208.52	Shear (lb/sq ft)	0.60	1.27	0.54
Alpha	1.25	Stream Power (lb/ft s)	2.29	9.29	1.89
Frctn Loss (ft)	0.43	Cum Volume (acre-ft)	8.06	15.15	4.05
C & E Loss (ft)	0.01	Cum SA (acres)	1.64	1.44	0.84

CROSS SECTION OUTPUT Profile #Q100HC

E.G. Elev (ft)	226.34	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.15	Wt. n-Val.	0.049	0.043	0.050
W.S. Elev (ft)	225.20	Reach Len. (ft)	226.22	216.58	201.98
Crit W.S. (ft)		Flow Area (sq ft)	3257.73	5411.95	1961.72
E.G. Slope (ft/ft)	0.001962	Area (sq ft)	3257.73	5411.95	1961.72
Q Total (cfs)	84012.00	Flow (cfs)	19658.34	53085.53	11268.13
Top Width (ft)	936.80	Top Width (ft)	385.02	337.48	214.30
Vel Total (ft/s)	7.90	Avg. Vel. (ft/s)	6.03	9.81	5.74
Max Chl Dpth (ft)	16.68	Hydr. Depth (ft)	8.46	16.04	9.15
Conv. Total (cfs)	1896862.0	Conv. (cfs)	443855.1	1198590.0	254417.0
Length Wtd. (ft)	217.08	Wetted Per. (ft)	385.33	337.50	215.19
Min Ch El (ft)	208.52	Shear (lb/sq ft)	1.04	1.96	1.12
Alpha	1.18	Stream Power (lb/ft s)	6.25	19.26	6.41
Frctn Loss (ft)	0.43	Cum Volume (acre-ft)	19.67	23.50	9.47
C & E Loss (ft)	0.02	Cum SA (acres)	2.29	1.44	0.99

CROSS SECTION

RIVER: San Juan Creek
REACH: Middle RS: 166.695

INPUT
Description:
Station Elevation Data num= 39

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	236.63	22.3	231.47	27.73	230.36	39.64	228.84	63.67	226.53
67.19	226.16	76.47	225.71	164.77	220.93	172.67	220.69	223.16	219.13
283.49	217.7	392.42	214.73	417.92	213.86	449.03	212.86	520.52	210.46
531.27	210.14	536.33	210.01	594.64	209.02	636.73	208.3	648.6	208.09
714.79	206.96	715.75	206.94	786.58	207.71	787.82	207.72	805.56	207.96
835.92	209	876.14	210.33	912.64	212.57	939.76	214.19	954.81	215.1
1020.62	219.06	1030.3	219.99	1032.69	220.36	1037.76	221.65	1049.58	225.1
1060.35	228.8	1067.55	231.56	1070.02	232.88	1079.2	237		

Manning's n Values num= 4

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	172.67	.05	636.73	.035	787.82	.05

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

594.64	835.92		0	0	0	.1	.3

CROSS SECTION OUTPUT Profile #Q50

E.G. Elev (ft)	217.20	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.64	Wt. n-Val.	0.050	0.039	0.050
W.S. Elev (ft)	216.55	Reach Len. (ft)			
Crit W.S. (ft)	213.48	Flow Area (sq ft)	1077.45	2101.92	595.29
E.G. Slope (ft/ft)	0.002003	Area (sq ft)	1077.45	2101.92	595.29
Q Total (cfs)	20912.00	Flow (cfs)	3613.39	15251.67	2046.94
Top Width (ft)	653.28	Top Width (ft)	269.00	241.28	143.00
Vel Total (ft/s)	5.54	Avg. Vel. (ft/s)	3.35	7.26	3.44
Max Chl Dpth (ft)	9.61	Hydr. Depth (ft)	4.01	8.71	4.16
Conv. Total (cfs)	467248.3	Conv. (cfs)	80736.0	340776.3	45736.0
Length Wtd. (ft)		Wetted Per. (ft)	269.11	241.32	143.21
Min Ch El (ft)	206.94	Shear (lb/sq ft)	0.50	1.09	0.52
Alpha	1.35	Stream Power (lb/ft s)	1.68	7.90	1.79
Frctn Loss (ft)		Cum Volume (acre-ft)			
C & E Loss (ft)		Cum SA (acres)			

CROSS SECTION OUTPUT Profile #Q100

E.G. Elev (ft)	219.63	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.82	Wt. n-Val.	0.050	0.039	0.050
W.S. Elev (ft)	218.80	Reach Len. (ft)			
Crit W.S. (ft)	215.11	Flow Area (sq ft)	1779.99	2645.55	959.67
E.G. Slope (ft/ft)	0.002000	Area (sq ft)	1779.99	2645.55	959.67
Q Total (cfs)	33062.00	Flow (cfs)	6894.10	22285.33	3882.56
Top Width (ft)	779.45	Top Width (ft)	357.72	241.28	180.44
Vel Total (ft/s)	6.14	Avg. Vel. (ft/s)	3.87	8.42	4.05
Max Chl Dpth (ft)	11.86	Hydr. Depth (ft)	4.98	10.96	5.32
Conv. Total (cfs)	739199.1	Conv. (cfs)	154138.2	498254.7	86806.2
Length Wtd. (ft)		Wetted Per. (ft)	357.86	241.32	180.72
Min Ch El (ft)	206.94	Shear (lb/sq ft)	0.62	1.37	0.66
Alpha	1.40	Stream Power (lb/ft s)	2.41	11.53	2.68
Frctn Loss (ft)		Cum Volume (acre-ft)			
C & E Loss (ft)		Cum SA (acres)			

CROSS SECTION OUTPUT Profile #Q100HC

E.G. Elev (ft)	225.89	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.30	Wt. n-Val.	0.050	0.039	0.050
W.S. Elev (ft)	224.59	Reach Len. (ft)			
Crit W.S. (ft)	220.04	Flow Area (sq ft)	4319.17	4042.64	2121.28
E.G. Slope (ft/ft)	0.002002	Area (sq ft)	4319.17	4042.64	2121.28
Q Total (cfs)	84012.00	Flow (cfs)	25950.96	44997.82	13063.22
Top Width (ft)	950.77	Top Width (ft)	497.56	241.28	211.93
Vel Total (ft/s)	8.01	Avg. Vel. (ft/s)	6.01	11.13	6.16
Max Chl Dpth (ft)	17.65	Hydr. Depth (ft)	8.68	16.75	10.01
Conv. Total (cfs)	1877465.0	Conv. (cfs)	579941.3	1005593.0	291931.5
Length Wtd. (ft)		Wetted Per. (ft)	497.83	241.32	212.87
Min Ch El (ft)	206.94	Shear (lb/sq ft)	1.08	2.09	1.25
Alpha	1.30	Stream Power (lb/ft s)	6.52	23.31	7.67
Frctn Loss (ft)		Cum Volume (acre-ft)			
C & E Loss (ft)		Cum SA (acres)			

SUMMARY OF MANNING'S N VALUES

River:San Juan Creek

Reach	River Sta.	n1	n2	n3	n4	n5	n6	n7
Middle	4134.311	.07	.05	.035				
Middle	3982.936	.035	.07	.05	.035			
Middle	3791.445	.035	.07	.05	.035			
Middle	3605.298	.035	.05	.035				
Middle	3339.701	.035	.05	.035				
Middle	3112.250	.035	.05	.035				
Middle	2923.799	.035	.05	.035				
Middle	2669.802	.035	.05	.035	.02			
Middle	2483.318	.035	.05					
Middle	2283.086	.07	.035	.05				
Middle	2139.477	.07	.035	.05				
Middle	2008.097	.07	.035	.05				
Middle	1883.719	.07	.035	.05	.035	.05		
Middle	1763.206	.07	.05	.035	.05	.035	.05	
Middle	1560.587	.07	.05	.035	.05	.035	.05	
Middle	1301.132	.07	.05	.035	.05	.035	.05	
Middle	1100.047	.07	.05	.035	.05	.05	.035	.05
Middle	967.228	.07	.035	.05	.035	.05	.035	.05
Middle	863.438	.07	.035	.05	.035	.05		
Middle	619.354	.035	.05	.035	.05	.035	.05	.035
Middle	383.277	.035	.07	.035	.05	.035	.05	
Middle	166.695	.035	.05	.035	.05			

SUMMARY OF REACH LENGTHS

River: San Juan Creek

Reach	River Sta.	Left	Channel	Right
Middle	4134.311	142.56	151.38	160.62
Middle	3982.936	190.66	191.49	190.18
Middle	3791.445	194.44	186.15	181.77
Middle	3605.298	270.91	265.6	252.8
Middle	3339.701	248.04	227.45	213.64
Middle	3112.250	224.26	188.45	190.23
Middle	2923.799	275	254	216.71
Middle	2669.802	160.75	186.48	183.52
Middle	2483.318	191.67	200.23	203.15
Middle	2283.086	140.69	143.61	153.2
Middle	2139.477	122.96	131.38	126.04
Middle	2008.097	125.67	124.38	140.61
Middle	1883.719	161.58	120.51	124.7
Middle	1763.206	207.41	202.62	155.96
Middle	1560.587	134.09	259.45	211.62
Middle	1301.132	121.07	201.09	244.51
Middle	1100.047	112.44	132.82	162.92
Middle	967.228	96.73	103.79	95
Middle	863.438	226.61	244.08	237.58

Middle	619.354	221.01	236.08	232.98
Middle	383.277	226.22	216.58	201.98
Middle	166.695	0	0	0

SUMMARY OF CONTRACTION AND EXPANSION COEFFICIENTS
River: San Juan Creek

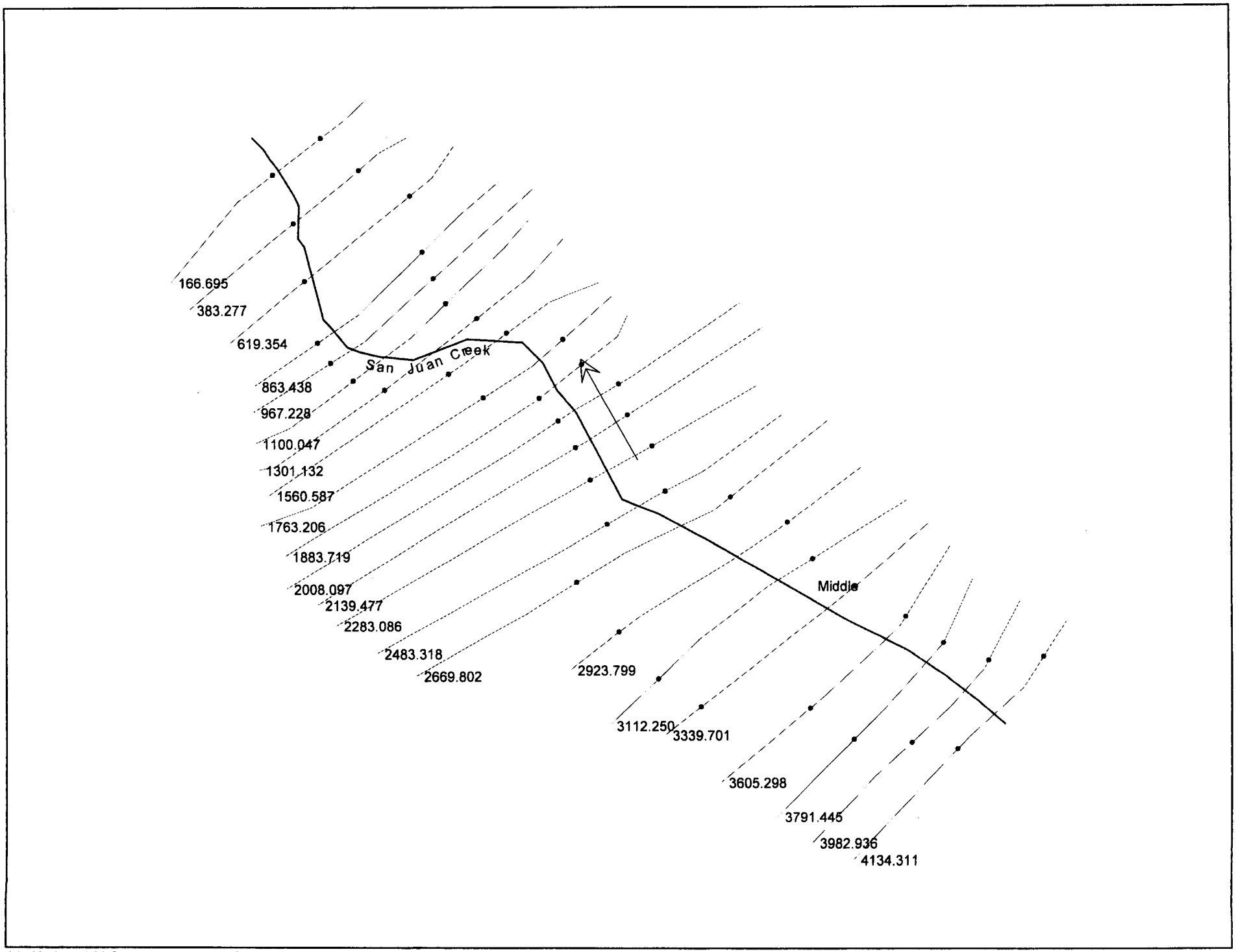
Reach	River Sta.	Contr.	Expan.
Middle	4134.311	.1	.3
Middle	3982.936	.1	.3
Middle	3791.445	.1	.3
Middle	3605.298	.1	.3
Middle	3339.701	.1	.3
Middle	3112.250	.1	.3
Middle	2923.799	.1	.3
Middle	2669.802	.1	.3
Middle	2483.318	.1	.3
Middle	2283.086	.1	.3
Middle	2139.477	.1	.3
Middle	2008.097	.1	.3
Middle	1883.719	.1	.3
Middle	1763.206	.1	.3
Middle	1560.587	.1	.3
Middle	1301.132	.1	.3
Middle	1100.047	.1	.3
Middle	967.228	.1	.3
Middle	863.438	.1	.3
Middle	619.354	.1	.3
Middle	383.277	.1	.3
Middle	166.695	.1	.3

Profile Output Table - Standard Table 1

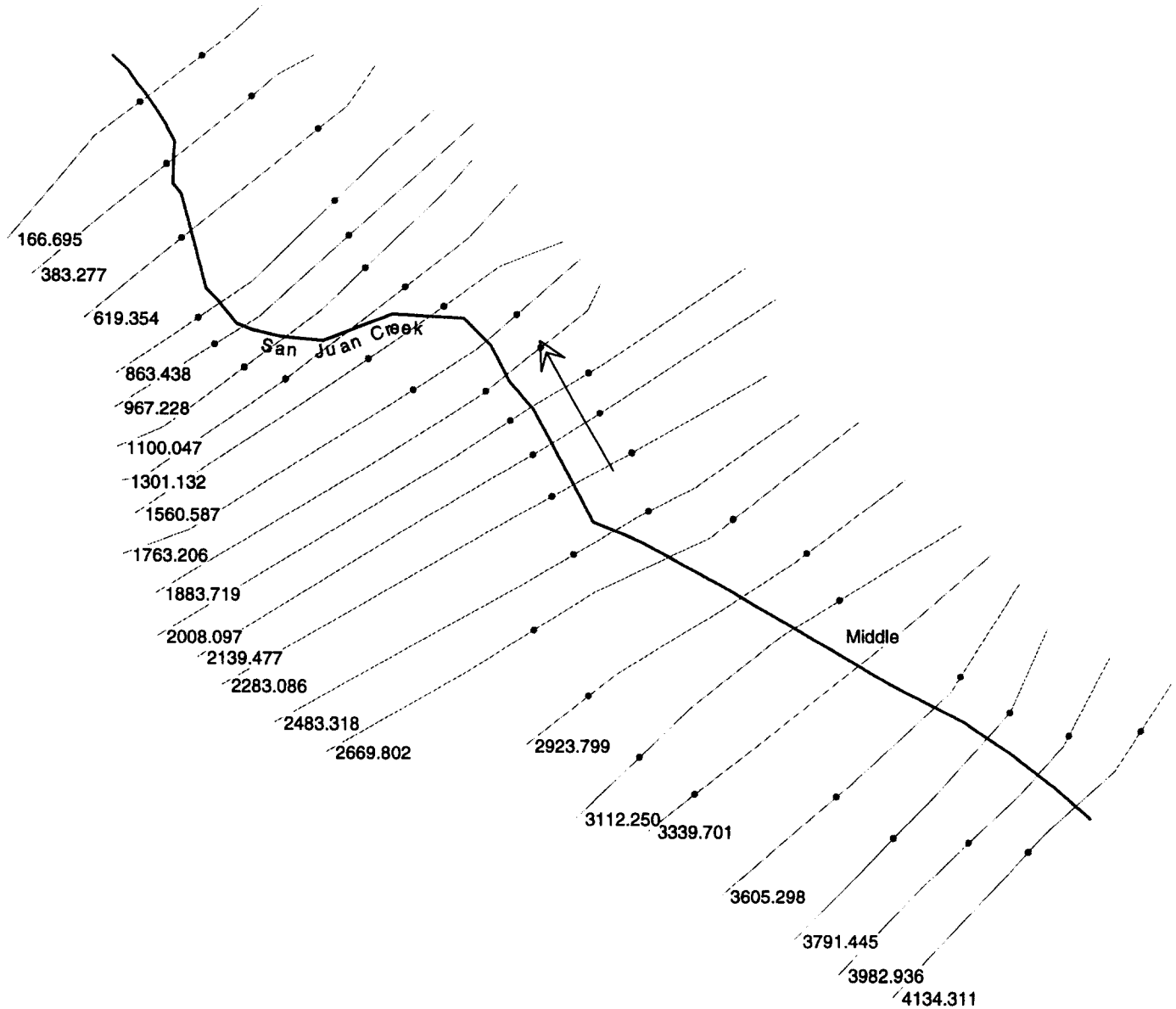
Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
Middle	4134.311	Q50	20912.00	218.17	228.98	223.01	229.13	0.000631	3.41	7007.75	1027.69	0.19
Middle	4134.311	Q100	33062.00	218.17	231.08	224.36	231.30	0.000700	4.09	9199.84	1057.07	0.21
Middle	4134.311	Q100HC	84012.00	218.17	236.41	228.41	236.93	0.001000	6.26	14974.36	1107.73	0.27
Middle	3982.936	Q50	20912.00	218.52	228.82		229.02	0.000897	3.85	6176.69	919.06	0.23
Middle	3982.936	Q100	33062.00	218.52	230.89		231.17	0.000982	4.62	8151.34	981.41	0.24
Middle	3982.936	Q100HC	84012.00	218.52	236.11		236.74	0.001360	7.04	13497.23	1065.48	0.31
Middle	3791.445	Q50	20912.00	216.34	228.63		228.85	0.000856	3.88	5890.31	836.38	0.22
Middle	3791.445	Q100	33062.00	216.34	230.65		230.97	0.001012	4.80	7678.88	924.44	0.25
Middle	3791.445	Q100HC	84012.00	216.34	235.70		236.46	0.001521	7.51	12629.48	1030.20	0.33
Middle	3605.298	Q50	20912.00	214.11	228.56		228.71	0.000467	3.22	7044.09	815.72	0.17
Middle	3605.298	Q100	33062.00	214.11	230.56		230.80	0.000627	4.16	8727.20	876.10	0.20
Middle	3605.298	Q100HC	84012.00	214.11	235.51		236.18	0.001161	7.00	13446.82	1021.94	0.29
Middle	3339.701	Q50	20912.00	207.00	228.59		228.64	0.000081	1.68	12648.94	869.47	0.07

Middle	3339.701	Q100	33062.00	207.00	230.60		230.69	0.000133	2.34	14428.29	909.38	0.10
Middle	3339.701	Q100HC	84012.00	207.00	235.61		235.92	0.000356	4.50	19484.09	1104.82	0.17
Middle	3112.250	Q50	20912.00	208.19	228.58		228.62	0.000055	1.49	14181.96	878.26	0.06
Middle	3112.250	Q100	33062.00	208.19	230.59		230.66	0.000095	2.11	15972.58	918.48	0.08
Middle	3112.250	Q100HC	84012.00	208.19	235.57		235.83	0.000272	4.15	21207.81	1186.58	0.15
Middle	2923.799	Q50	20912.00	207.18	228.57		228.61	0.000056	1.48	14321.54	919.98	0.06
Middle	2923.799	Q100	33062.00	207.18	230.57		230.64	0.000095	2.09	16179.52	942.64	0.08
Middle	2923.799	Q100HC	84012.00	207.18	235.52		235.78	0.000274	4.12	21264.16	1125.09	0.15
Middle	2669.802	Q50	20912.00	208.49	228.36		228.56	0.000469	3.69	6400.17	835.04	0.18
Middle	2669.802	Q100	33062.00	208.49	230.23		230.56	0.000679	4.84	8057.69	930.39	0.22
Middle	2669.802	Q100HC	84012.00	208.49	234.74		235.59	0.001374	8.14	12707.58	1119.30	0.32
Middle	2483.318	Q50	20912.00	219.54	227.68		228.32	0.004167	7.27	3581.36	785.73	0.47
Middle	2483.318	Q100	33062.00	219.54	229.47		230.26	0.004086	8.32	5192.89	991.91	0.48
Middle	2483.318	Q100HC	84012.00	219.54	233.97		235.17	0.003748	10.40	10040.08	1158.03	0.50
Middle	2283.086	Q50	20912.00	218.12	226.78		227.46	0.004450	7.37	3483.83	770.68	0.49
Middle	2283.086	Q100	33062.00	218.12	228.63		229.44	0.004131	8.27	5029.89	899.26	0.49
Middle	2283.086	Q100HC	84012.00	218.12	233.09		234.38	0.004074	10.74	9771.75	1205.38	0.52
Middle	2139.477	Q50	20912.00	216.99	224.53		226.31	0.013465	11.50	2144.98	549.70	0.82
Middle	2139.477	Q100	33062.00	216.99	225.95	225.95	228.28	0.014126	13.54	3022.20	680.61	0.87
Middle	2139.477	Q100HC	84012.00	216.99	230.09	230.09	233.25	0.012114	16.81	6501.10	984.93	0.87
Middle	2008.097	Q50	20912.00	215.92	223.76	222.86	224.74	0.008024	8.81	2853.26	729.71	0.63
Middle	2008.097	Q100	33062.00	215.92	225.00	224.10	226.38	0.009090	10.62	3810.43	807.49	0.69
Middle	2008.097	Q100HC	84012.00	215.92	229.75	227.75	231.59	0.006568	12.63	8162.41	1017.31	0.64
Middle	1883.719	Q50	20912.00	215.08	222.10		223.46	0.012446	10.68	2435.33	695.12	0.78
Middle	1883.719	Q100	33062.00	215.08	223.77		225.20	0.009513	11.06	3627.25	729.69	0.71
Middle	1883.719	Q100HC	84012.00	215.08	228.54		230.69	0.007126	13.31	7318.81	822.20	0.67
Middle	1763.206	Q50	20912.00	214.05	221.60		222.38	0.004462	7.51	3128.38	672.64	0.54
Middle	1763.206	Q100	33062.00	214.05	223.19		224.25	0.004485	8.84	4238.45	721.75	0.57
Middle	1763.206	Q100HC	84012.00	214.05	228.00		229.86	0.004298	12.06	8120.10	917.06	0.61
Middle	1560.587	Q50	20912.00	212.54	220.16	219.10	221.23	0.007331	8.79	2657.28	627.87	0.61
Middle	1560.587	Q100	33062.00	212.54	221.92		223.17	0.006420	9.67	3843.26	712.35	0.60
Middle	1560.587	Q100HC	84012.00	212.54	227.40		228.92	0.004143	10.93	8757.90	1021.54	0.52
Middle	1301.132	Q50	20912.00	209.59	218.40		219.39	0.007346	8.11	2700.30	585.91	0.62
Middle	1301.132	Q100	33062.00	209.59	220.60		221.71	0.005365	8.73	4063.40	663.62	0.56
Middle	1301.132	Q100HC	84012.00	209.59	226.51		228.03	0.003679	10.67	9050.48	994.66	0.51
Middle	1100.047	Q50	20912.00	208.11	218.10		218.57	0.001823	5.68	4018.84	685.29	0.38
Middle	1100.047	Q100	33062.00	208.11	220.39		221.00	0.001669	6.54	5717.54	793.70	0.38
Middle	1100.047	Q100HC	84012.00	208.11	226.34		227.41	0.001659	9.04	11224.06	1031.69	0.41
Middle	967.228	Q50	20912.00	207.19	218.08		218.35	0.000814	4.33	5254.07	754.46	0.26
Middle	967.228	Q100	33062.00	207.19	220.39		220.77	0.000849	5.20	7064.67	817.24	0.28
Middle	967.228	Q100HC	84012.00	207.19	226.34		227.15	0.001045	7.76	12734.89	1079.98	0.34
Middle	863.438	Q50	20912.00	207.96	218.02		218.26	0.000754	4.10	5607.45	813.60	0.25
Middle	863.438	Q100	33062.00	207.96	220.34		220.68	0.000776	4.90	7575.52	878.51	0.26
Middle	863.438	Q100HC	84012.00	207.96	226.32		227.01	0.000920	7.19	13735.61	1147.00	0.31

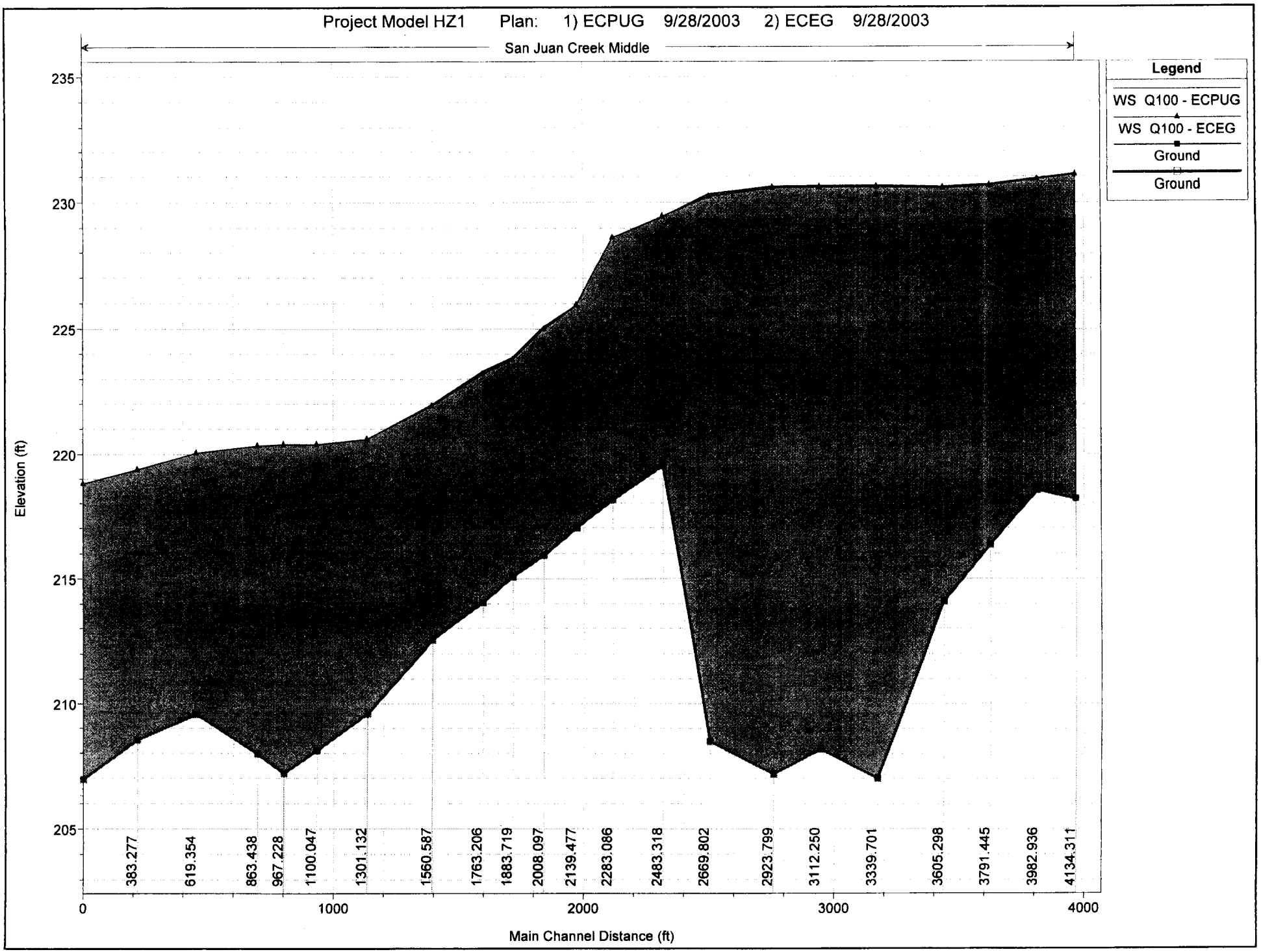
Middle	619.354	Q50	20912.00	209.57	217.75		218.04	0.001133	4.45	5090.13	770.59	0.28
Middle	619.354	Q100	33062.00	209.57	220.05		220.45	0.001122	5.27	7006.77	873.73	0.29
Middle	619.354	Q100HC	84012.00	209.57	225.97		226.74	0.001255	7.57	12496.40	984.66	0.33
Middle	383.277	Q50	20912.00	208.52	217.11		217.66	0.002104	6.38	3882.09	677.34	0.40
Middle	383.277	Q100	33062.00	208.52	219.39		220.07	0.001987	7.32	5560.04	791.63	0.40
Middle	383.277	Q100HC	84012.00	208.52	225.20		226.34	0.001962	9.81	10631.39	936.80	0.43
Middle	166.695	Q50	20912.00	206.94	216.55	213.48	217.20	0.002003	7.26	3774.67	653.28	0.43
Middle	166.695	Q100	33062.00	206.94	218.80	215.11	219.63	0.002000	8.42	5385.20	779.45	0.45
Middle	166.695	Q100HC	84012.00	206.94	224.59	220.04	225.89	0.002002	11.13	10483.09	950.77	0.48



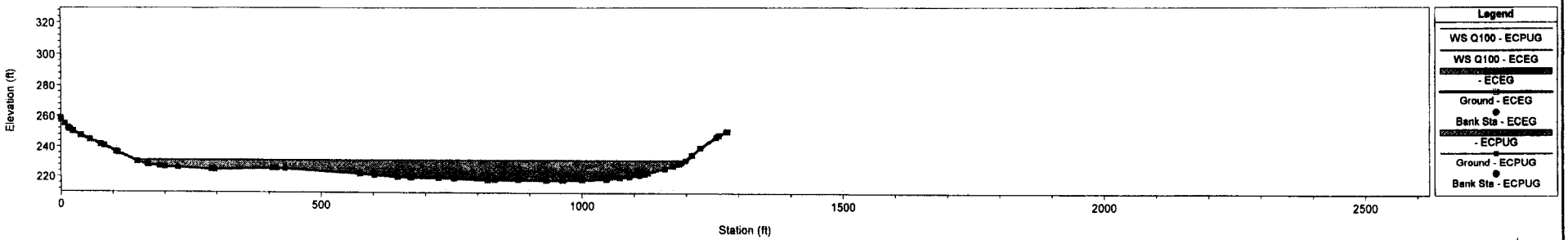
1 in Horiz. = 500 ft 1 in Vert. = 400 ft



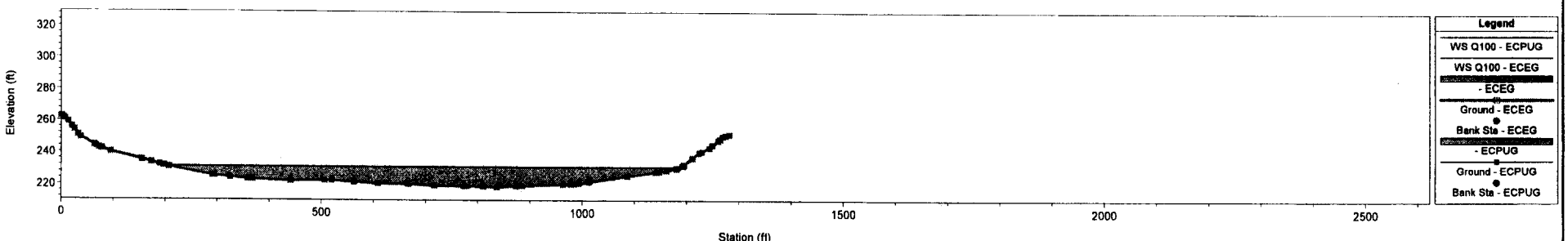
1 in Horiz. = 500 ft 1 in Vert. = 500 ft


Project Model HZ1 Plan: 1) ECPUG 9/28/2003 2) ECEG 9/28/2003
San Juan Creek Middle
Legend
WS Q100 - ECPUG
WS Q100 - ECEG
Ground
Ground
Elevation (ft)
235
230
225
220
215
210
205
383.277
619.354
863.438
967.228
1100.047
1301.132
1560.587
1763.206
1883.719
2008.097
2139.477
2283.086
2483.318
2669.802
2923.799
3112.250
3339.701
3605.298
3791.445
3982.936
4134.311
0
1000
2000
3000
4000
Main Channel Distance (ft)
1 in Horiz. = 500 ft 1 in Vert. = 5 ft

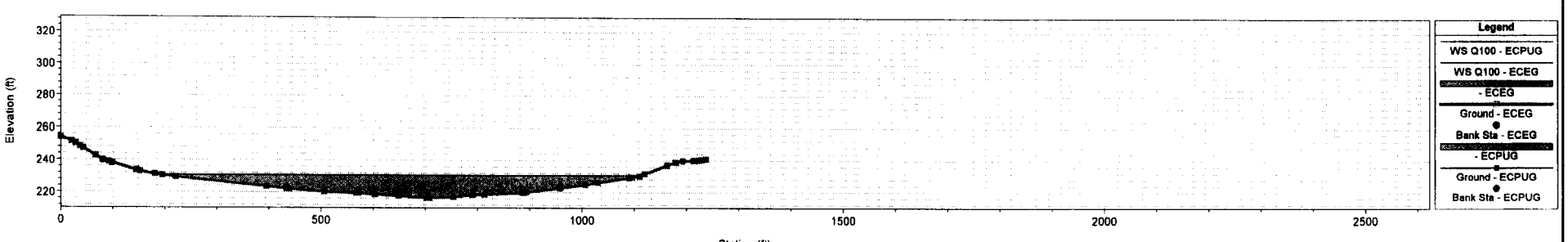
Project Model HZ1 Plan: 1) ECPUG 2) ECEG
RS = 4134.311



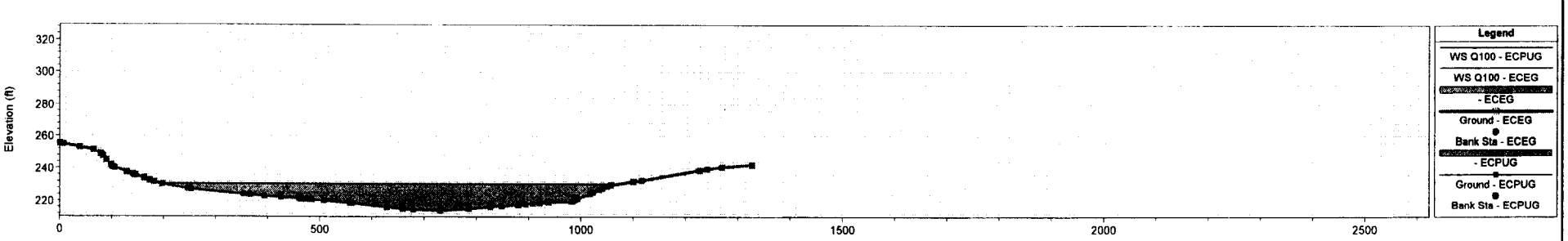
Project Model HZ1 Plan: 1) ECPUG 2) ECEG
RS = 3982.936



Project Model HZ1 Plan: 1) ECPUG 2) ECEG
RS = 3791.445

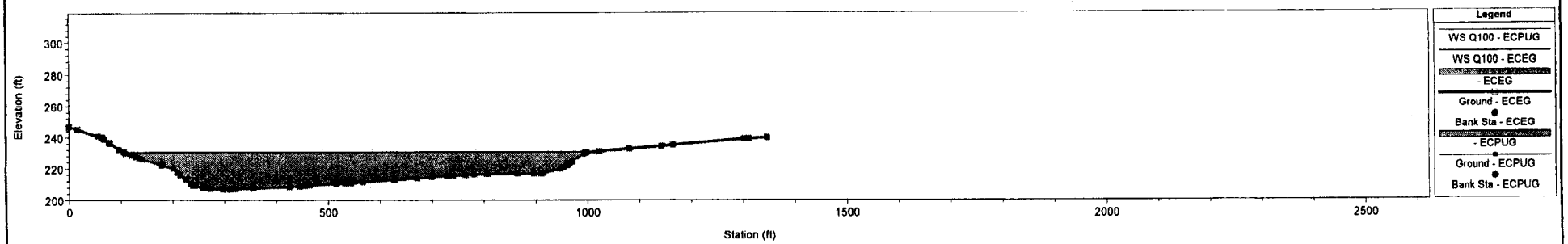


Project Model HZ1 Plan: 1) ECPUG 2) ECEG
RS = 3605.298

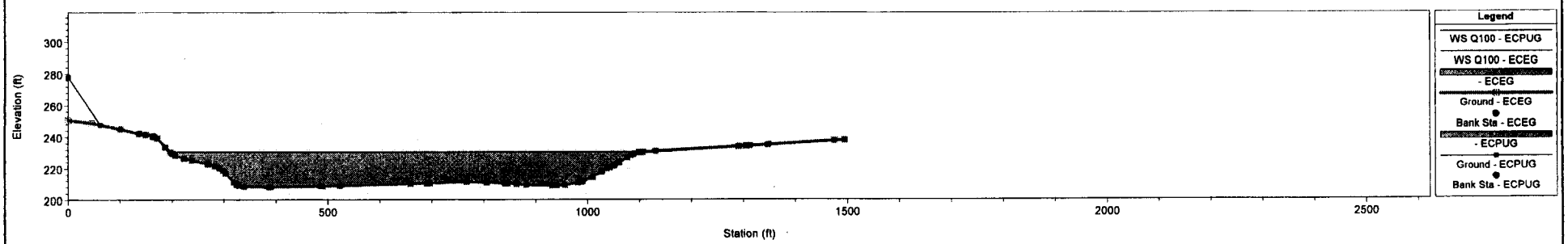


1 in Horiz. = 300 ft 1 in Vert. = 100 ft

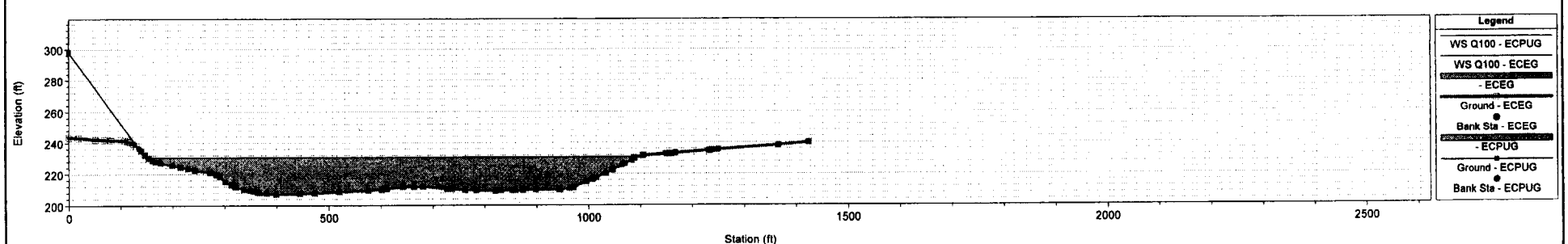
Project Model HZ1 Plan: 1) ECPUG 2) ECEG
RS = 3339.701



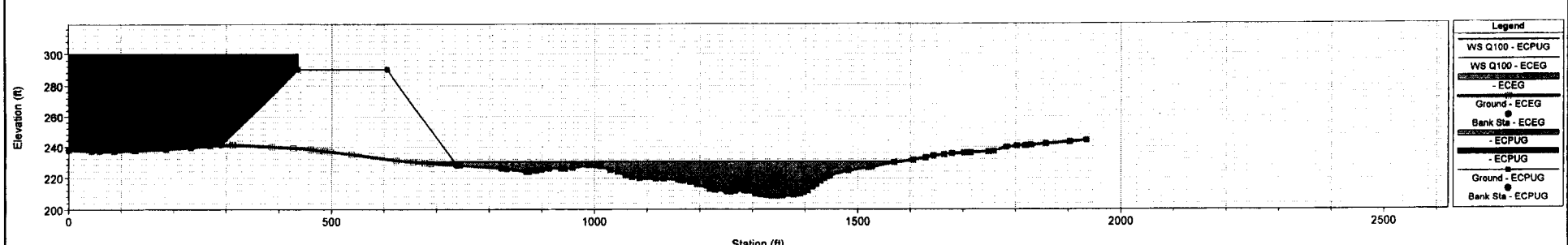
Project Model HZ1 Plan: 1) ECPUG 2) ECEG
RS = 3112.250 Modify XS 2:1 Slope @ STA 62



Project Model HZ1 Plan: 1) ECPUG 2) ECEG
RS = 2923.799 Modify XS 2:1 Slope @ STA 135

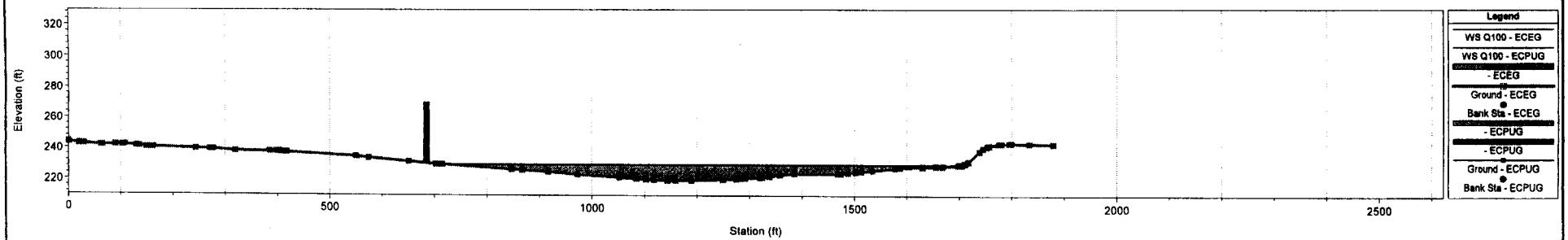


Project Model HZ1 Plan: 1) ECPUG 2) ECEG
RS = 2669.802 Modify XS 2:1 Slope @ STA 290,436,605,738

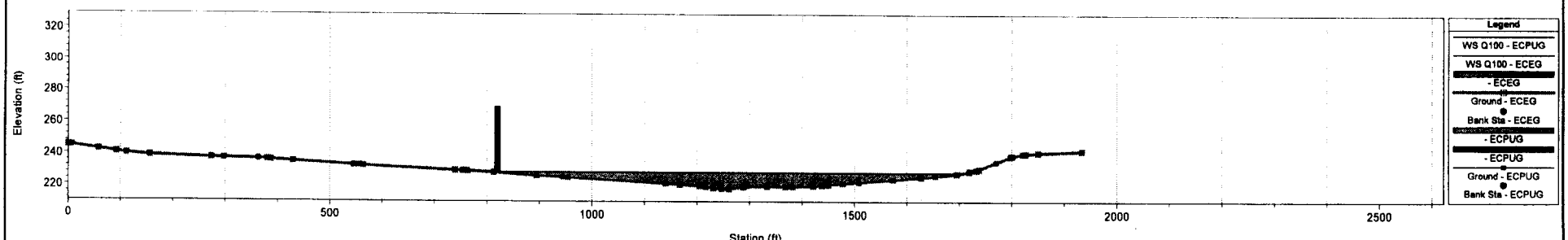


1 in Horiz. = 300 ft 1 in Vert. = 100 ft

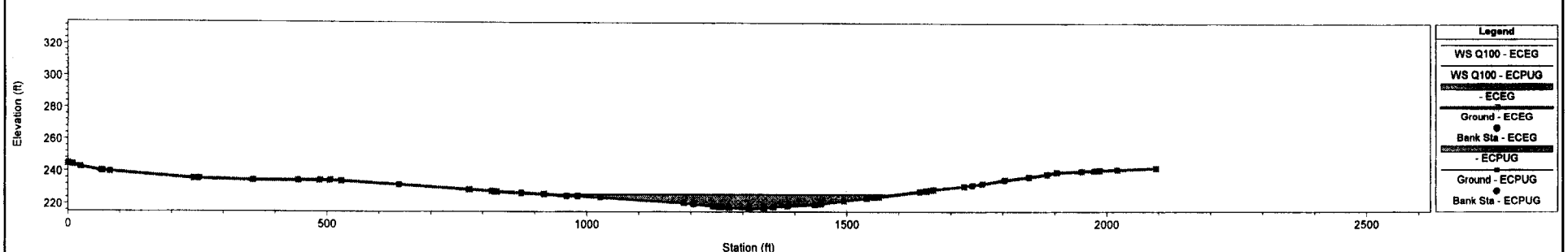
Project Model HZ1 Plan: 1) ECPUG 2) ECEG
RS = 2483.318



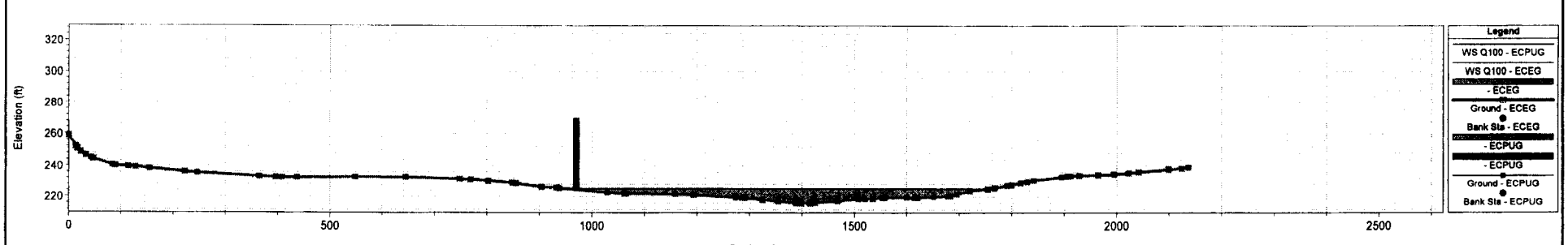
Project Model HZ1 Plan: 1) ECPUG 2) ECEG
RS = 2283.086



Project Model HZ1 Plan: 1) ECPUG 2) ECEG
RS = 2139.477

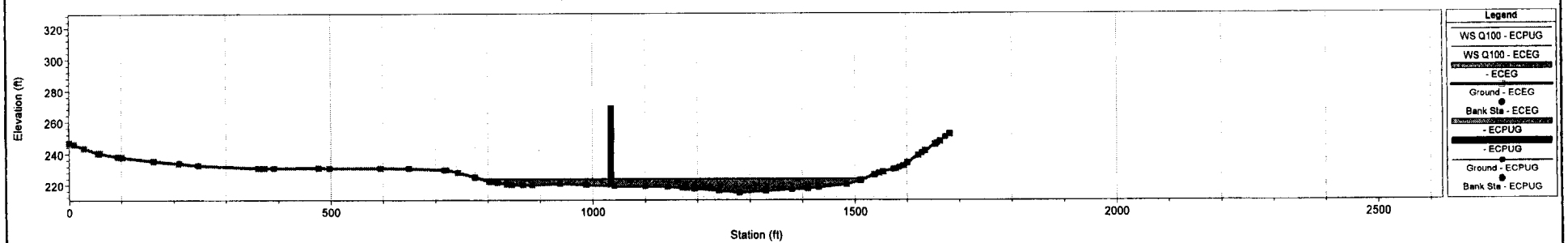


Project Model HZ1 Plan: 1) ECPUG 2) ECEG
RS = 2008.097

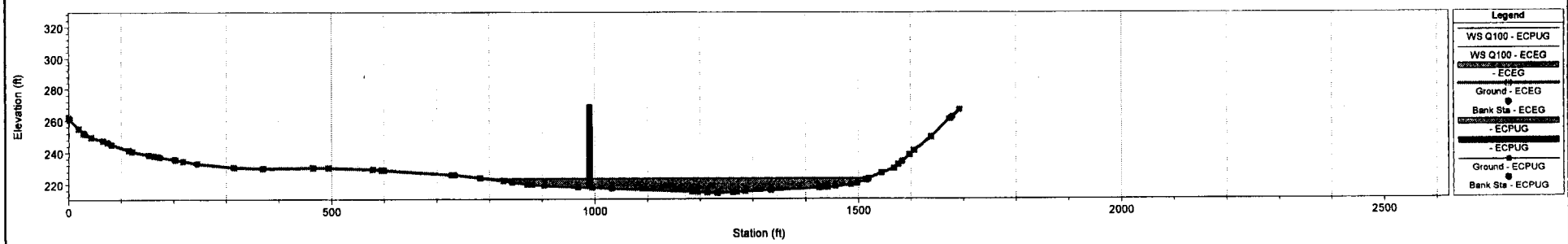


1 in Horiz. = 300 ft 1 in Vert. = 100 ft

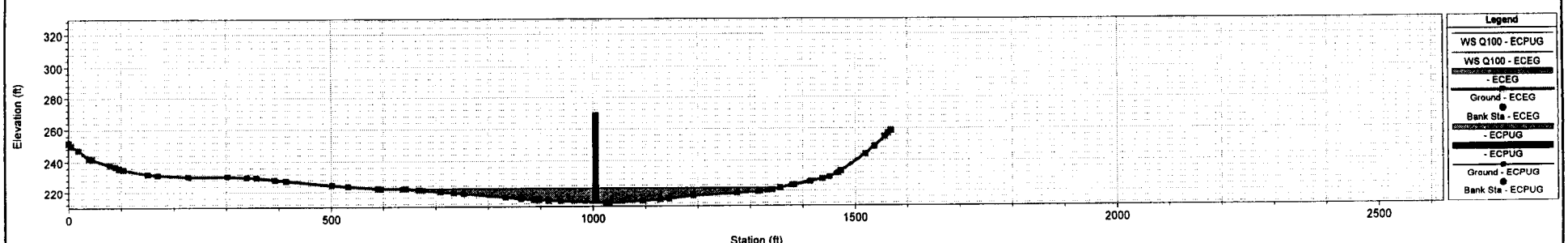
Project Model HZ1 Plan: 1) ECPUG 2) ECEG
RS = 1883.719



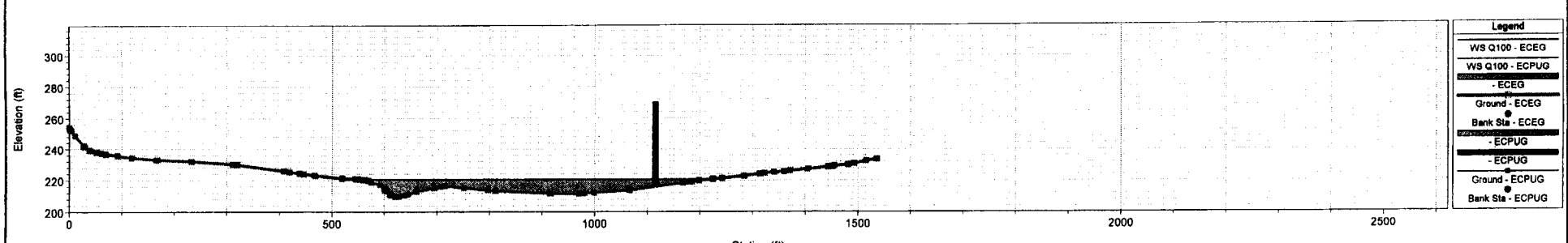
Project Model HZ1 Plan: 1) ECPUG 2) ECEG
RS = 1763.206



Project Model HZ1 Plan: 1) ECPUG 2) ECEG
RS = 1560.587

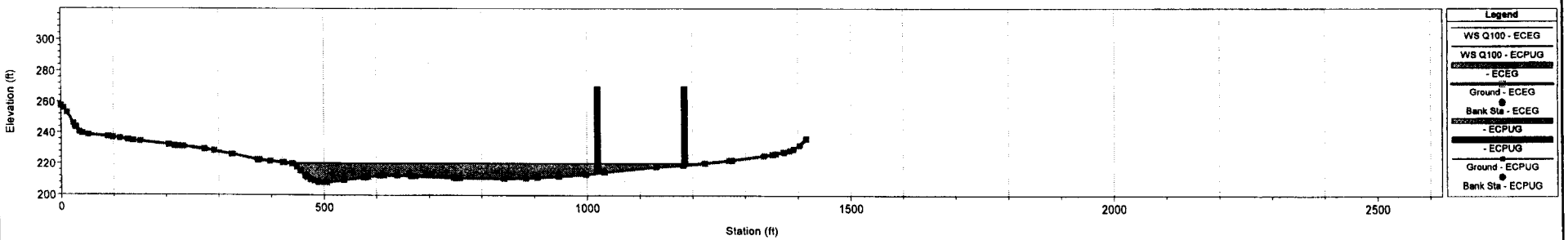


Project Model HZ1 Plan: 1) ECPUG 2) ECEG
RS = 1301.132

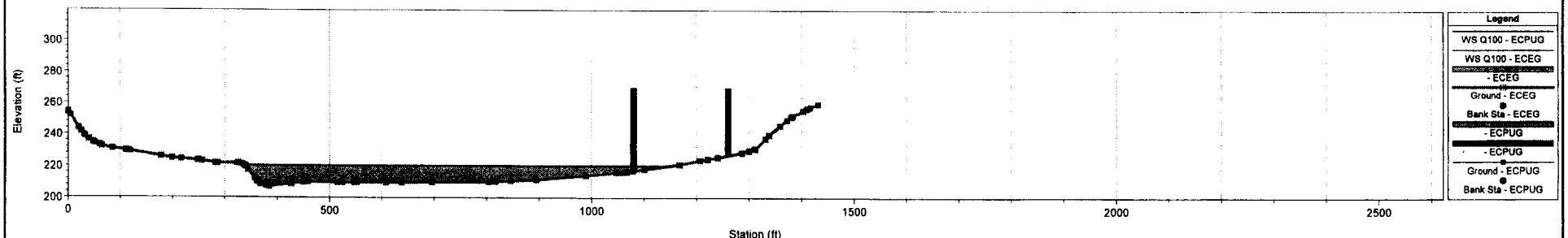


1 in Horiz. = 300 ft 1 in Vert. = 100 ft

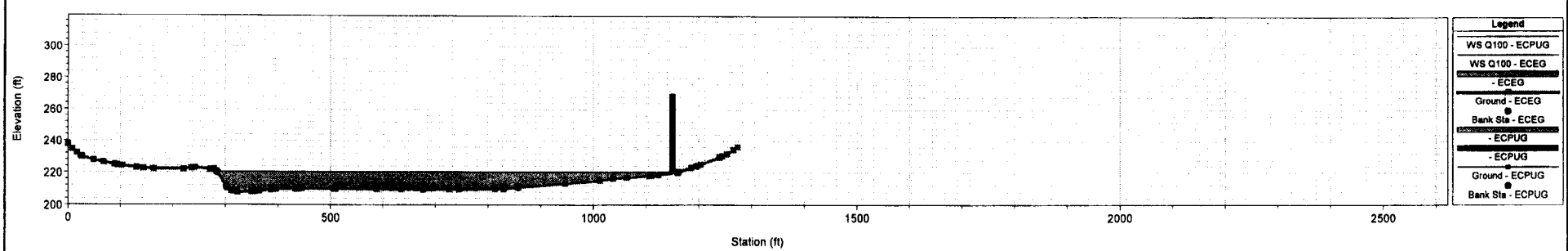
Project Model HZ1 Plan: 1) ECPUG 2) ECEG
RS = 1100.047



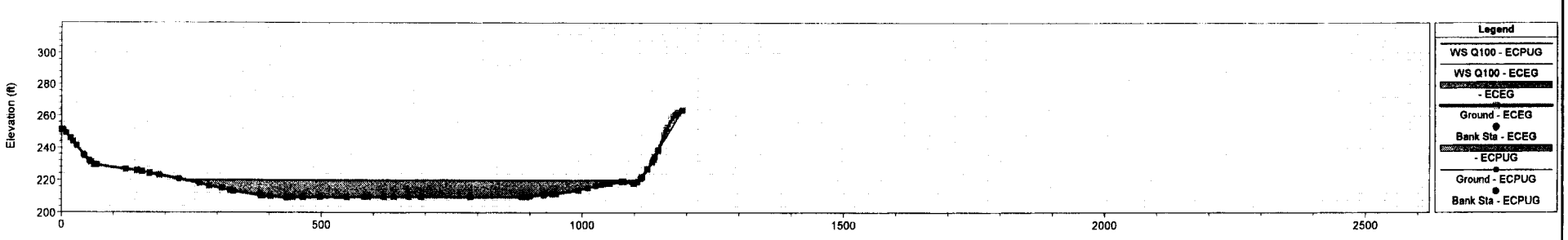
Project Model HZ1 Plan: 1) ECPUG 2) ECEG
RS = 967.228



Project Model HZ1 Plan: 1) ECPUG 2) ECEG
RS = 863.438

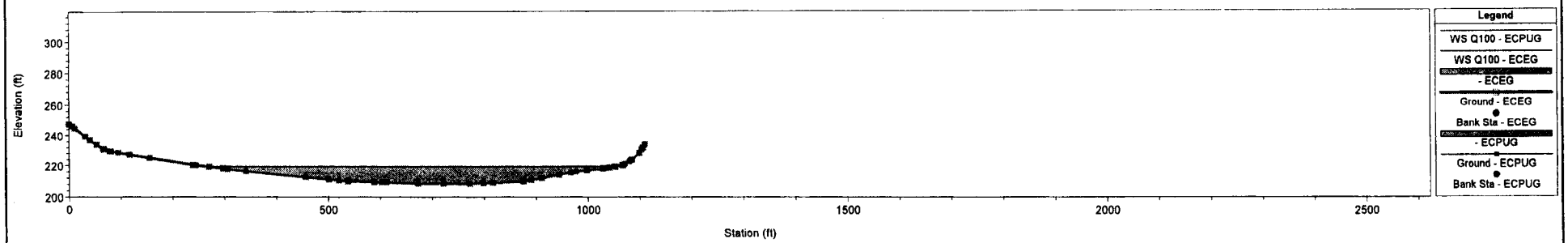


Project Model HZ1 Plan: 1) ECPUG 2) ECEG
RS = 619.354 Modify XS 2:1 Slope @ STA 1145

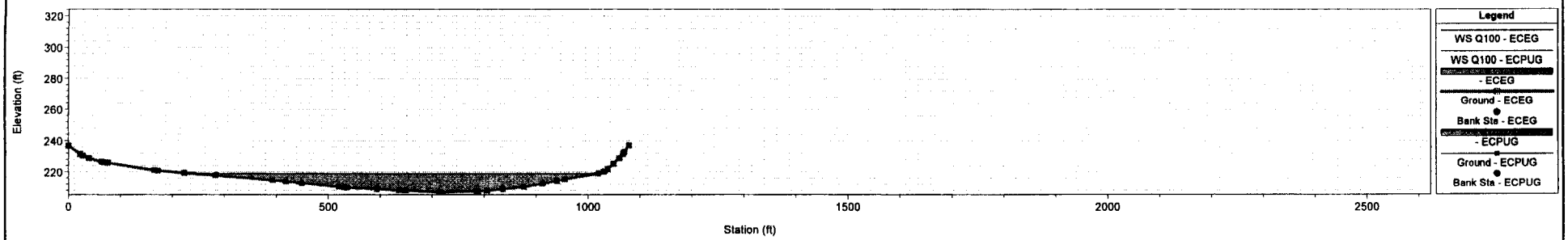


1 in Horiz. = 300 ft 1 in Vert. = 100 ft

Project Model HZ1 Plan: 1) ECPUG 2) ECEG
RS = 383.277



Project Model HZ1 Plan: 1) ECPUG 2) ECEG
RS = 166.695

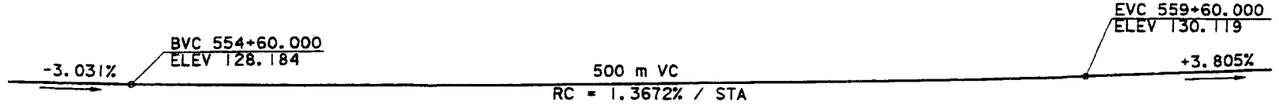


1 in Horiz. = 300 ft 1 in Vert. = 100 ft

APPENDIX CC
BRIDGE PLANS (PREPARED BY CDMG)

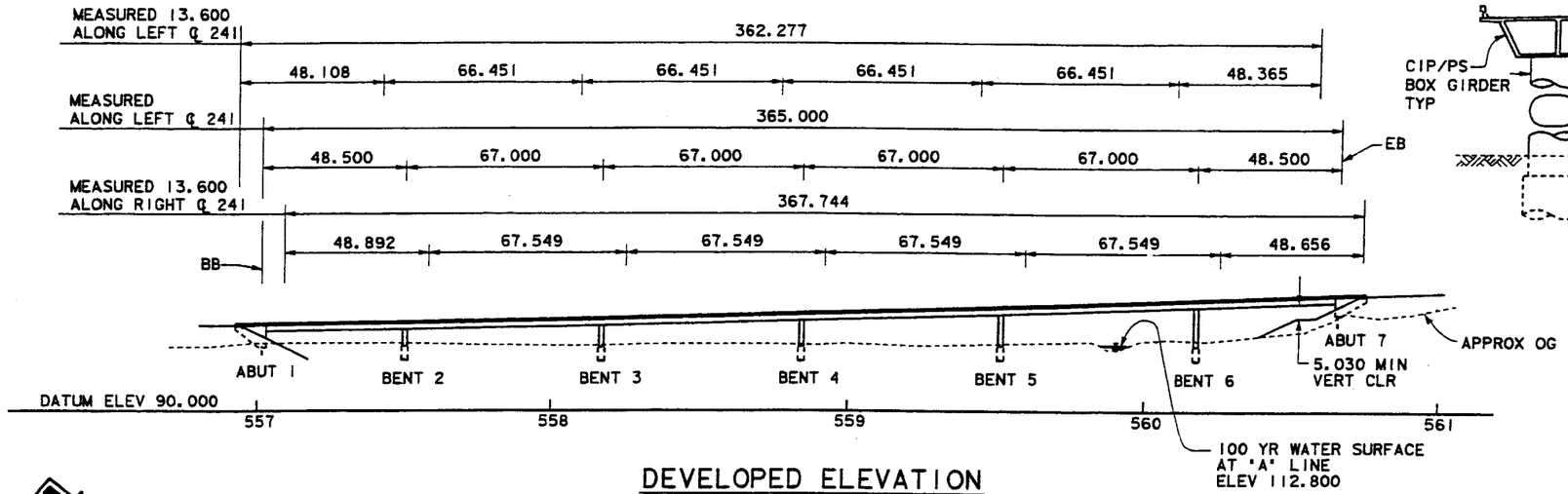
Appendix CC. Alignment Drawings

- FEC Alternative Bridge Plans



PROFILE GRADE

NO SCALE



DEVELOPED ELEVATION

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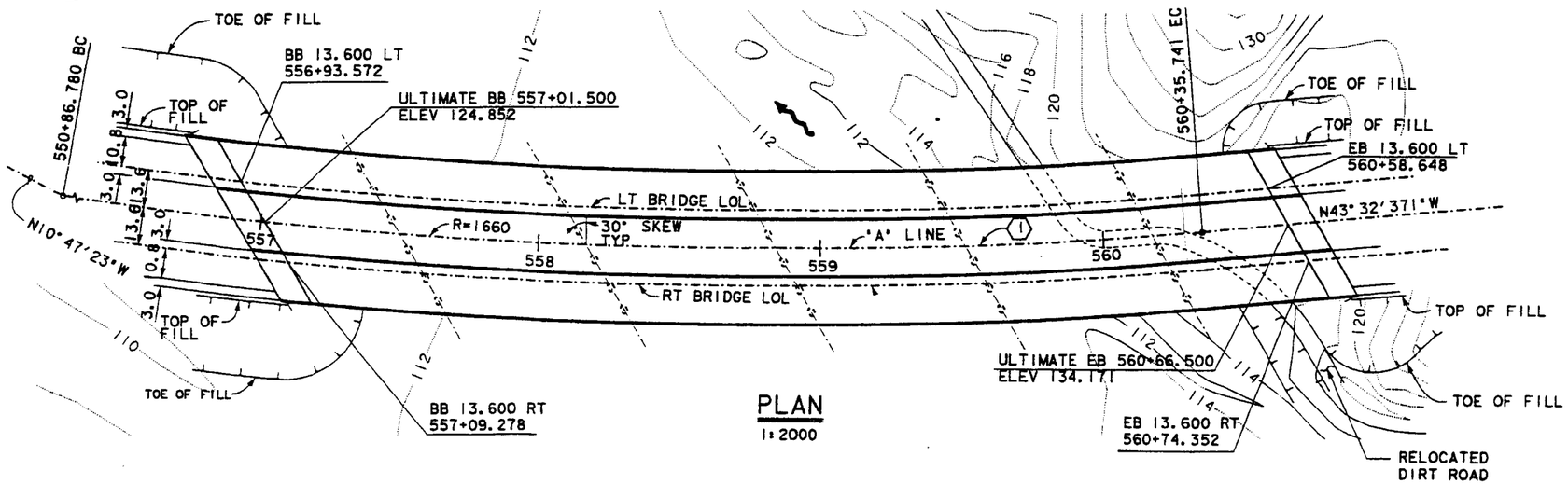
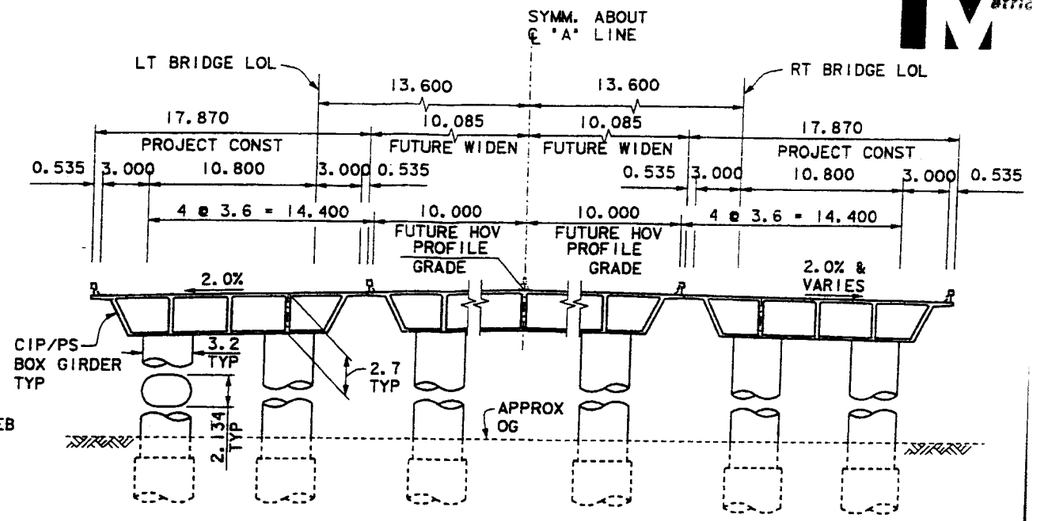


PLAN

1:2000



TYPICAL SECTION

1:400

COST DATA

DATE OF ESTIMATE		MAY 2001
STRUCTURE DEPTH	=	-
LENGTH	=	-
WIDTH (m)	=	-
AREA (m^2)	=	-
NEW CONST. COST/SQ M. INCLUDING 10% MOBILIZATION & 25% CONTINGENCY	=	
BRIDGE REMOVAL COST MOBIL & COATINGS INCL	=	
BRIDGE RETROFIT	=	
TOTAL COST	=	
GRAND TOTAL	=	

LEGEND

- PROJECT CONSTRUCTION
- EXISTING CONSTRUCTION
- POINT OF MINIMUM VERTICAL CLEARANCE

CURVE DATA

① ℄ 'A' LINE

R = 1660
Δ = 32°45'14"
L = 948.961
T = 480.241

ALL DIMENSIONS ARE IN METERS UNLESS OTHERWISE SHOWN

FEC

APPROVED		DESIGN	BY	CHECKED	CDMG
TCA APPROVED CHIEF ENGINEER	COMP MANAGER OF ENGINEERING	DETAILS	BY L. ZHANG	CHECKED	TRANSPORTATION CORRIDOR AGENCIES
	CALTRANS	QUANTITIES	BY	CHECKED	

BRIDGE NO.

KILOMETER POST

CANADA GOBERNADORA BRIDGE

GENERAL PLAN

DESIGN GENERAL PLAN SHEET (METRIC) (REV. 3/1/99)

CU
EA

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES (PRELIMINARY STAGE ONLY)

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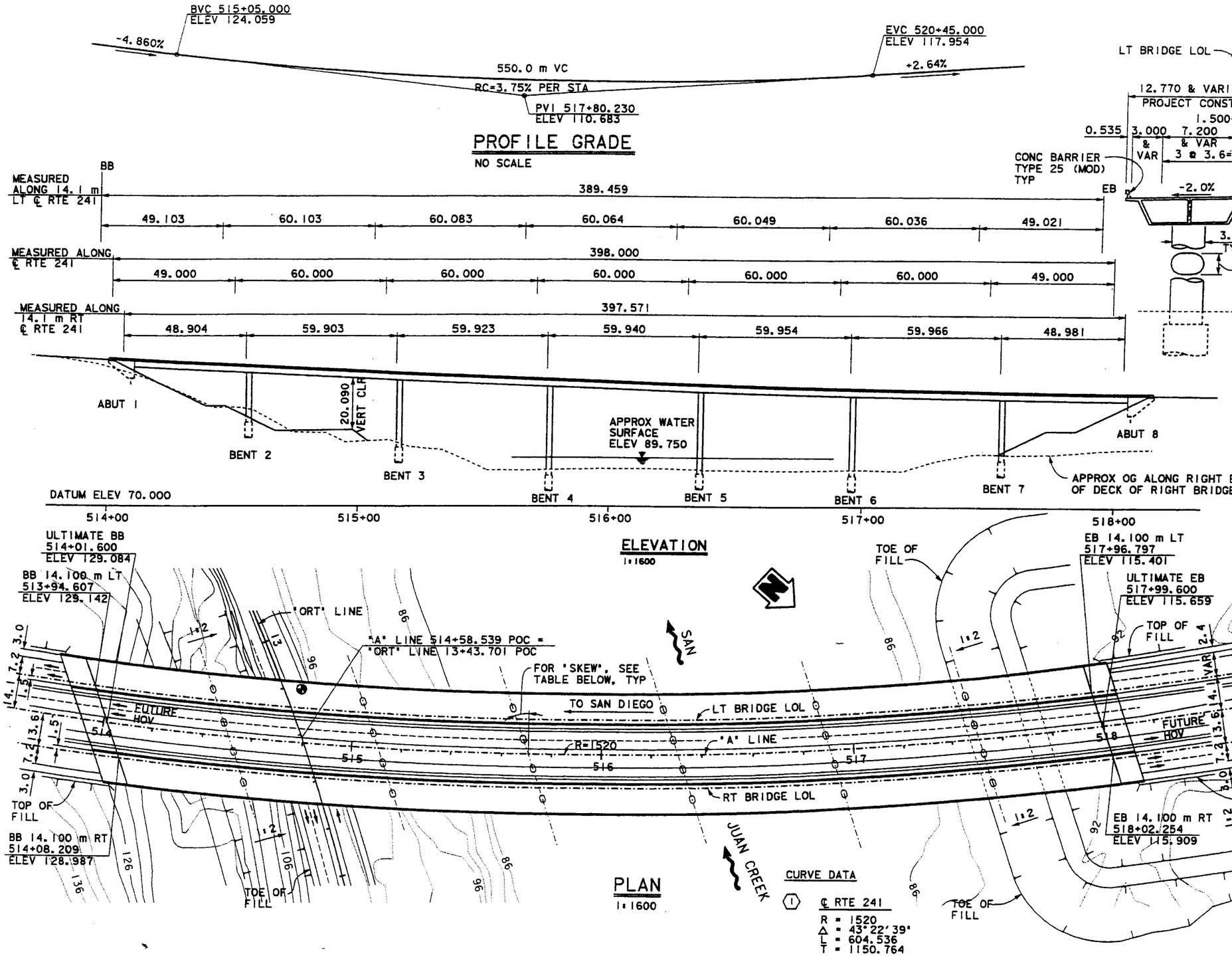

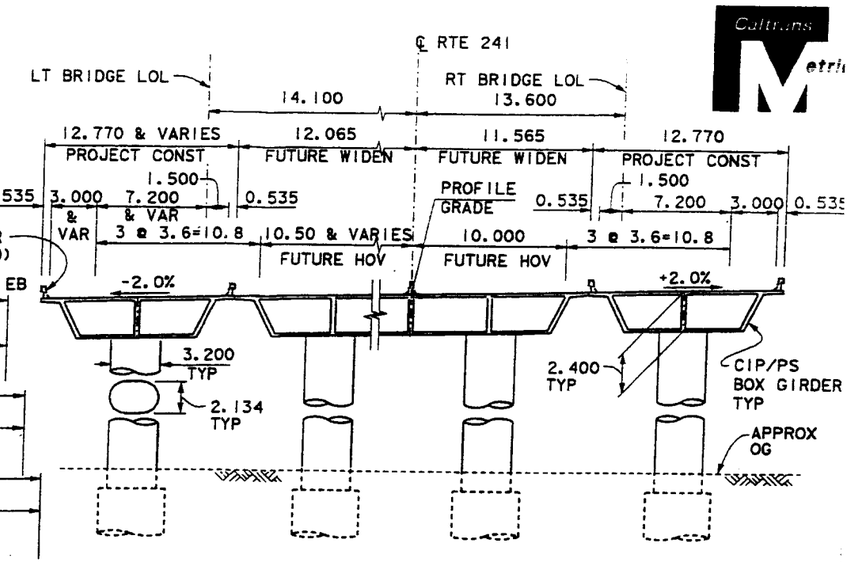

TYPICAL SECTION

1:400

COST DATA

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WIDTH (m)	=	-
AREA (m^2)	=	-
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BRIDGE REMOVAL COST MOBIL & COATINGS INCL	=	
BRIDGE RETROFIT	=	
TOTAL COST	=	
GRAND TOTAL	=	

LEGEND

- PROJECT CONSTRUCTION
- EXISTING CONSTRUCTION
- POINT OF MINIMUM VERTICAL CLEARANCE

LOCATION	SKEW ANGLE
ABUT 1	26°08'32"
BENT 2	24°17'41"
BENT 3	22°01'59"
BENT 4	19°46'18"
BENT 5	17°30'34"
BENT 6	15°14'53"
BENT 7	12°59'10"
ABUT 8	11°08'20"

ALL DIMENSIONS ARE IN METERS UNLESS OTHERWISE SHOWN

FEC

APPROVED

TCA APPROVED CHIEF ENGINEER

COMG MANAGER OF ENGINEERING

CALTRANS

DESIGN	BY		CHECKED
DETAILS	BY	L. ZHANG	CHECKED
QUANTITIES	BY		CHECKED

CDMG

TRANSPORTATION CORRIDOR AGENCIES

BRIDGE NO.

KILOMETER POST

SAN JUAN CREEK BRIDGE
GENERAL PLAN

CU
EA

DESIGN GENERAL PLAN SHEET (METRIC) (REV.3/1/99)

DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES (PRELIMINARY STAGE ONLY)

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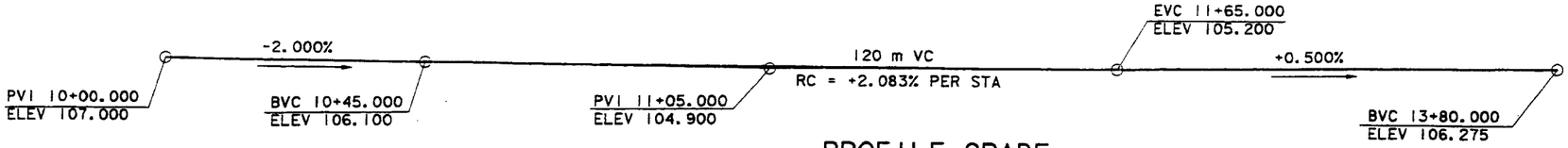
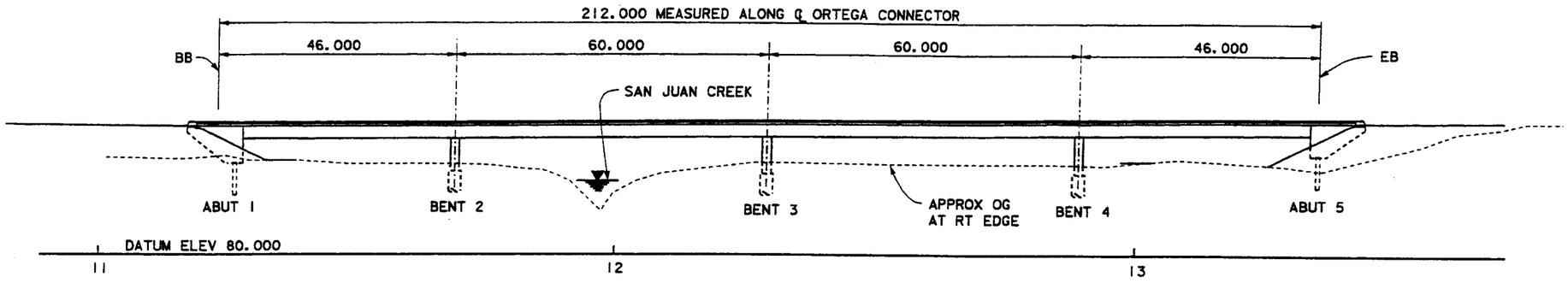
jk219u_sanjuanfe.dgn 1-JUL-2001



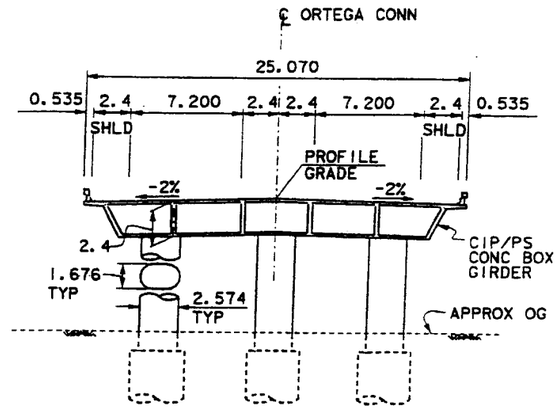
PROFILE GRADE

NO SCALE



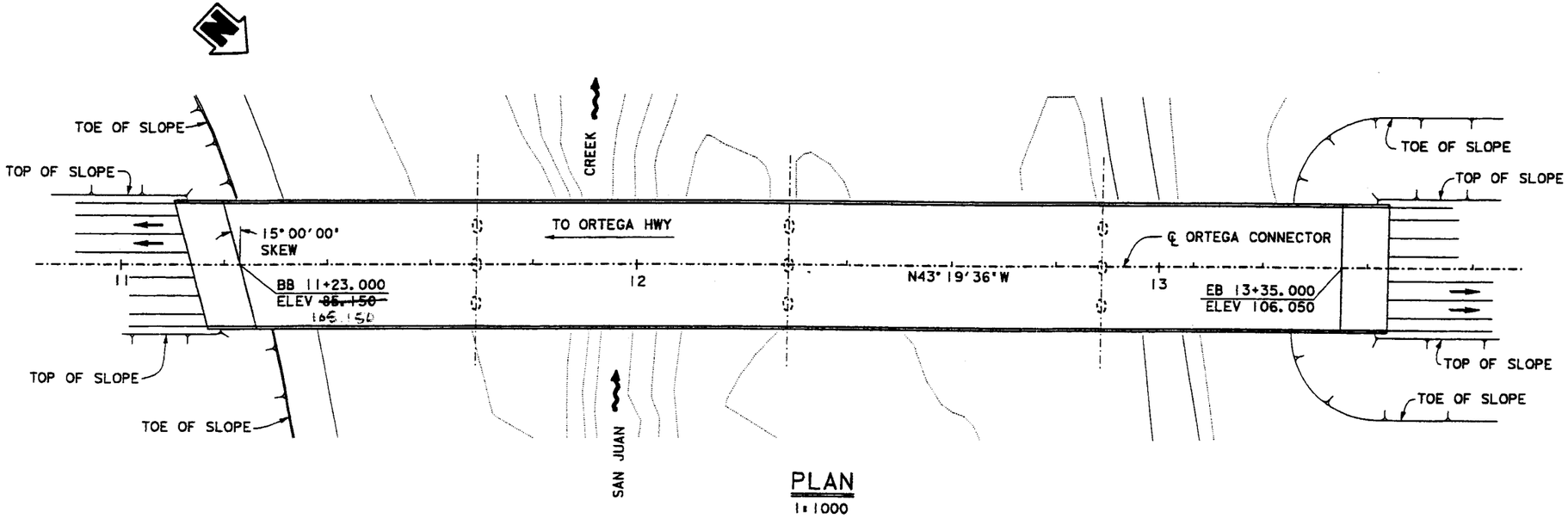
ELEVATION

1:1000



TYPICAL SECTION

1:400



PLAN

1:1000

COST DATA

DATE OF ESTIMATE		MAY 2001
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LENGTH	=	175.00 m
WIDTH (m)	=	24.610
AREA (m^2)	=	4307
NEW CONST. COST/SQ M. INCLUDING 10% MOBILIZATION & 25% CONTINGENCY	=	
BRIDGE REMOVAL COST MOBIL & COATINGS INCL	=	
BRIDGE RETROFIT	=	
TOTAL COST	=	
GRAND TOTAL	=	

LEGEND

- PROJECT CONSTRUCTION
- EXISTING CONSTRUCTION
- POINT OF MINIMUM VERTICAL CLEARANCE

ALL DIMENSIONS ARE IN METERS UNLESS OTHERWISE SHOWN

FEC

APPROVED TCA APPROVED CHIEF ENGINEER	CDMG MANAGER OF ENGINEERING CALTRANS	DESIGN BY	CHECKED	CDMG	TRANSPORTATION CORRIDOR AGENCIES	BRIDGE NO.
		DETAILS BY L. ZHANG	CHECKED			KILOMETER POST
		QUANTITIES BY	CHECKED			

SAN JUAN CREEK BRIDGE (ORTEGA CON)

GENERAL PLAN

DESIGN GENERAL PLAN SHEET (METRIC) (REV.3/1/99)

CU
EA

DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES (PRELIMINARY STAGE ONLY)

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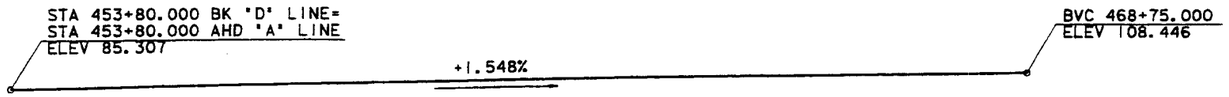

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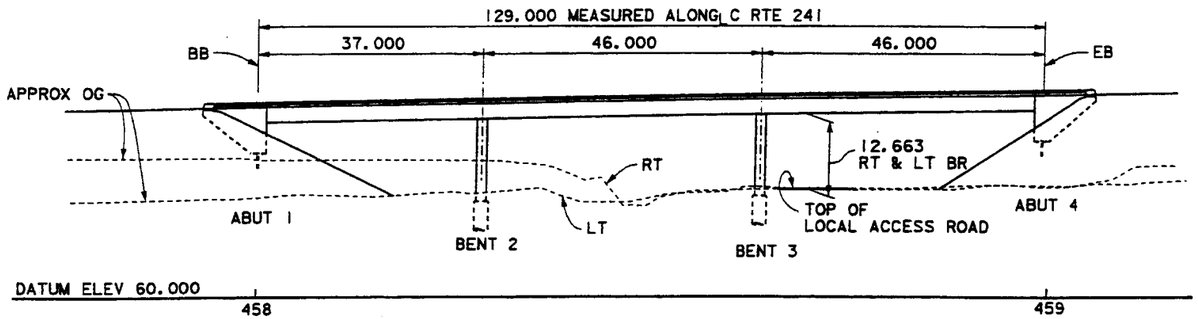

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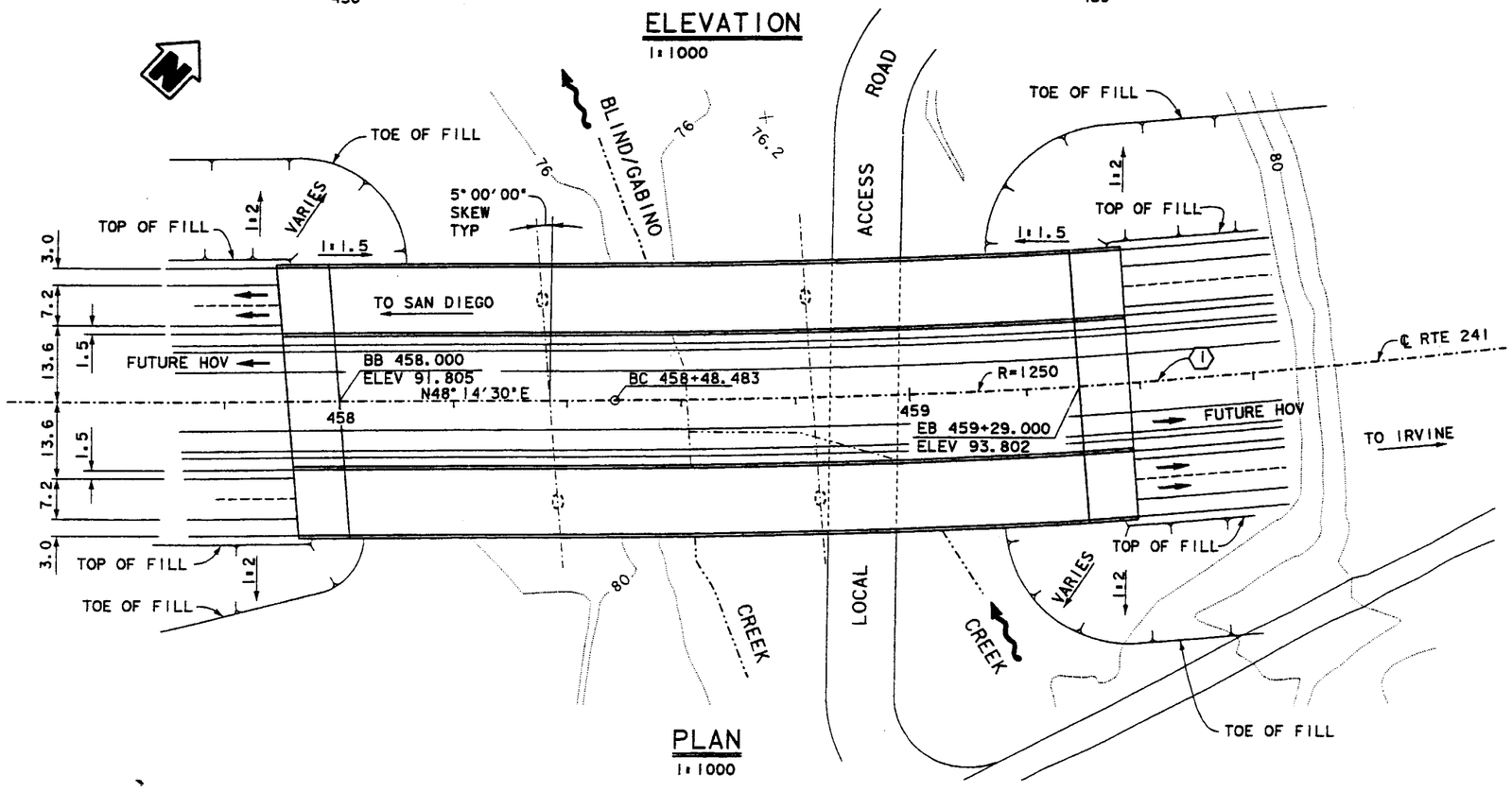

PLAN

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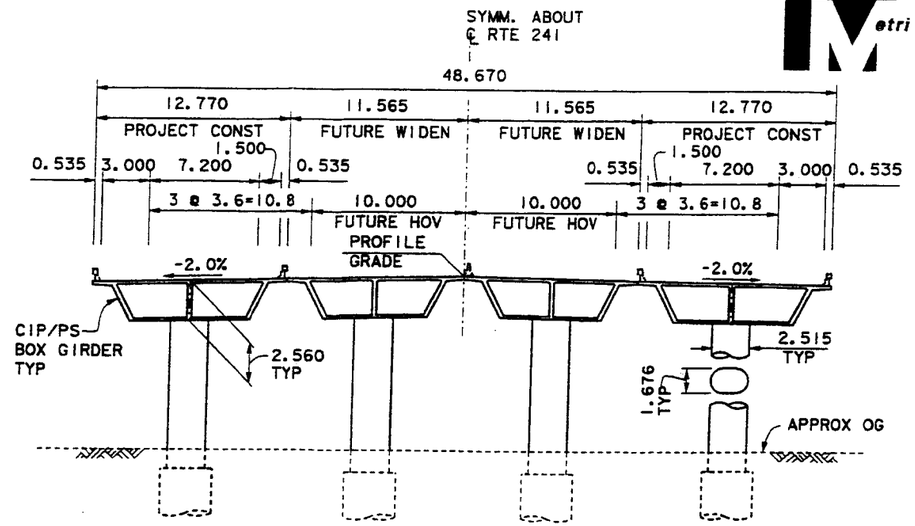

TYPICAL SECTION

1:400

COST DATA

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WIDTH (m)	= -		
AREA (m^2)	= -		
NEW CONST. COST/SQ M. INCLUDING 10% MOBILIZATION & 25% CONTINGENCY	=		
BRIDGE REMOVAL COST MOBIL & COATINGS INCL	=		
BRIDGE RETROFIT	=		
TOTAL COST	=		
GRAND TOTAL	=		

LEGEND

- PROJECT CONSTRUCTION
- EXISTING CONSTRUCTION
- POINT OF MINIMUM VERTICAL CLEARANCE

CURVE DATA

(1) ℄ RTE 241

R = 1250
Δ = 45°04'37"
L = 996.879
T =

ALL DIMENSIONS ARE IN METERS UNLESS OTHERWISE SHOWN

FEC

APPROVED		DESIGN	BY	CHECKED	CDMG
TCA APPROVED CHIEF ENGINEER	CDMG MANAGER OF ENGINEERING	DETAILS	BY L. ZHANG	CHECKED	TRANSPORTATION CORRIDOR AGENCIES
	CALTRANS	QUANTITIES	BY	CHECKED	

BRIDGE NO.

KILOMETER POST

BLIND/GABINO CREEK BRIDGE ✓

GENERAL PLAN

DESIGN GENERAL PLAN SHEET (METRIC) (REV. 3/1/99)

CU
EA

DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES (PRELIMINARY STAGE ONLY)

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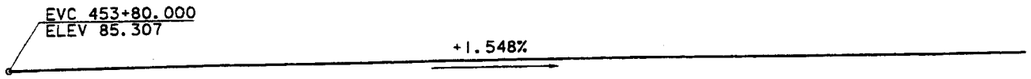
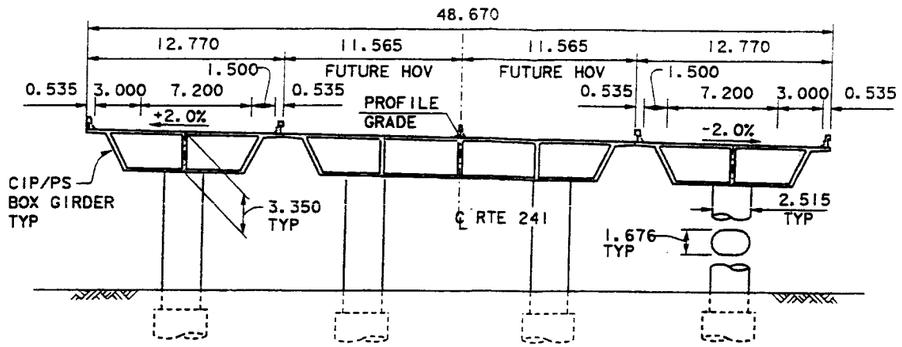


PROFILE GRADE

NO SCALE



TYPICAL SECTION

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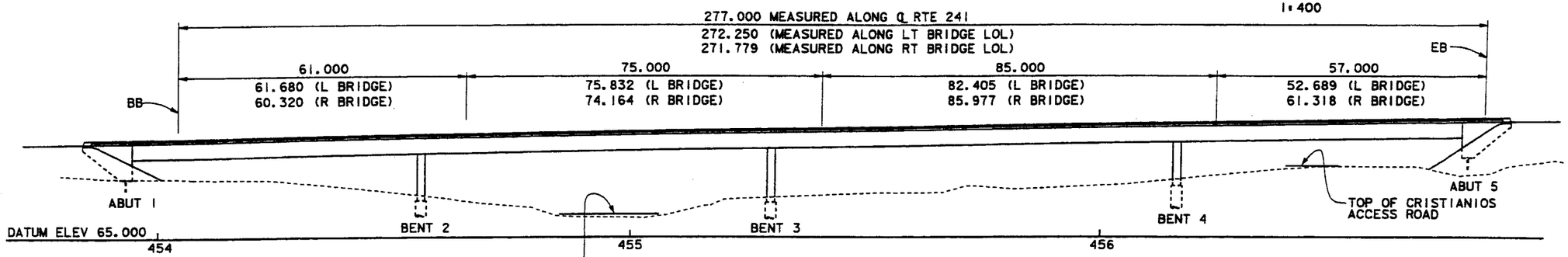
LEGEND

- PROJECT CONSTRUCTION
- EXISTING CONSTRUCTION
- POINT OF MINIMUM VERTICAL CLEARANCE



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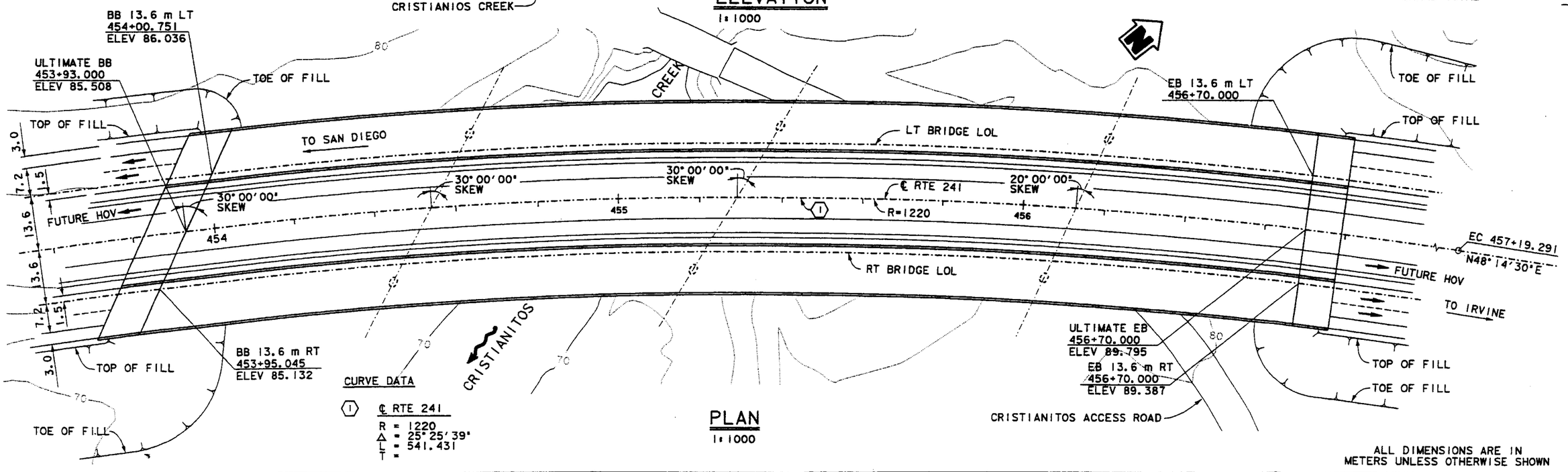

CURVE DATA

① ℄ RTE 241
R = 1220
Δ = 25° 25' 39"
L = 541.431
T =

PLAN

1:1000

ALL DIMENSIONS ARE IN METERS UNLESS OTHERWISE SHOWN

FEC

COST DATA

DATE OF ESTIMATE		MAY 2001
STRUCTURE DEPTH	=	-
LENGTH	=	-
WIDTH (m)	=	-
AREA (m^2)	=	-
NEW CONST. COST/SQ M. INCLUDING 10% MOBILIZATION & 25% CONTINGENCY	=	
BRIDGE REMOVAL COST MOBIL & COATINGS INCL	=	
BRIDGE RETROFIT	=	
TOTAL COST	=	
GRAND TOTAL	=	

APPROVED

TCA APPROVED CHIEF ENGINEER

CDMG MANAGER OF ENGINEERING

CALTRANS

DESIGN	BY		CHECKED
DETAILS	BY	L. ZHANG	CHECKED
QUANTITIES	BY		CHECKED

CDMG

TRANSPORTATION CORRIDOR AGENCIES

BRIDGE NO.

KILOMETER POST

CRISTIANITOS CREEK BRIDGE
GENERAL PLAN

CU
EA

DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES (PRELIMINARY STAGE ONLY)

SHEET OF

DESIGN GENERAL PLAN SHEET (METRIC) (REV. 3/1/99)

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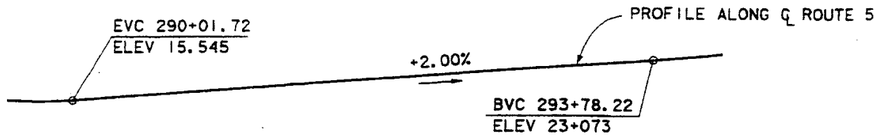
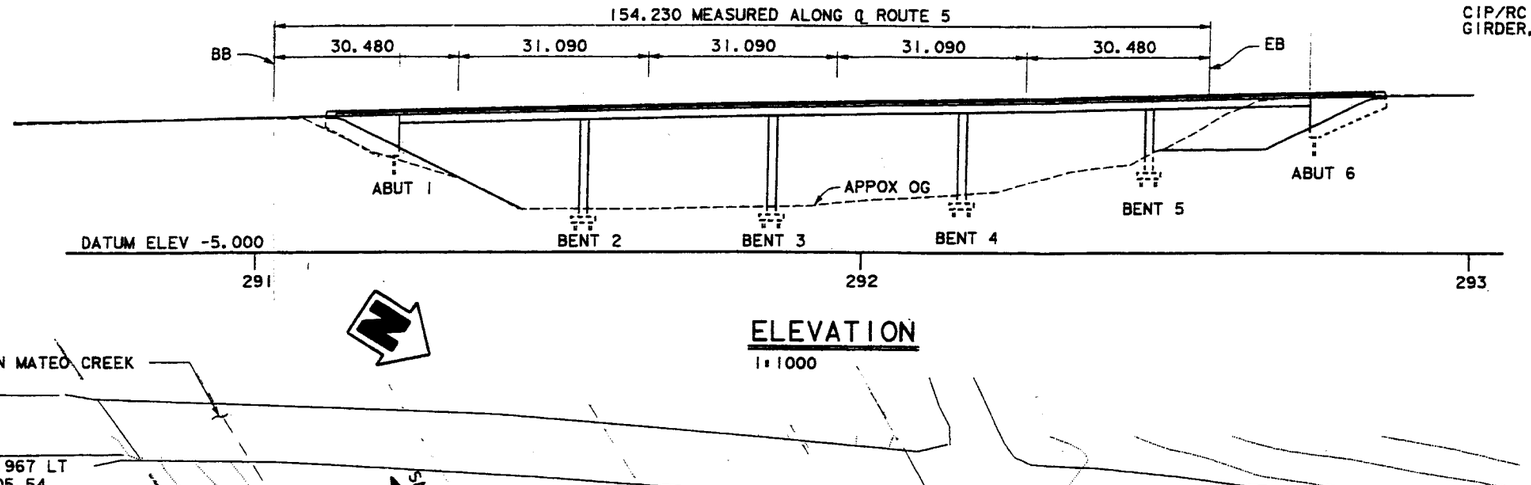
12-JUL-2001



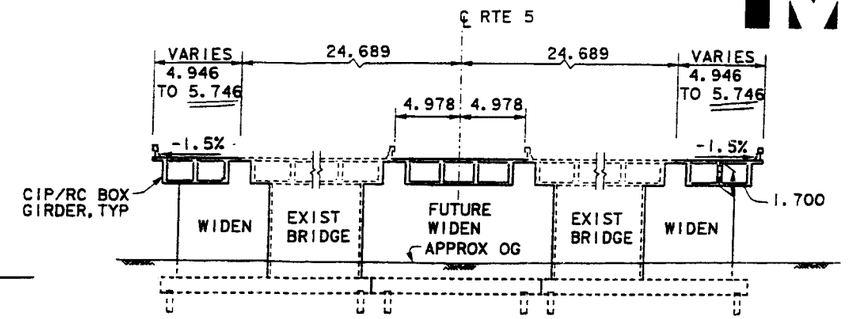
PROFILE GRADE

NO SCALE



ELEVATION

1:1000



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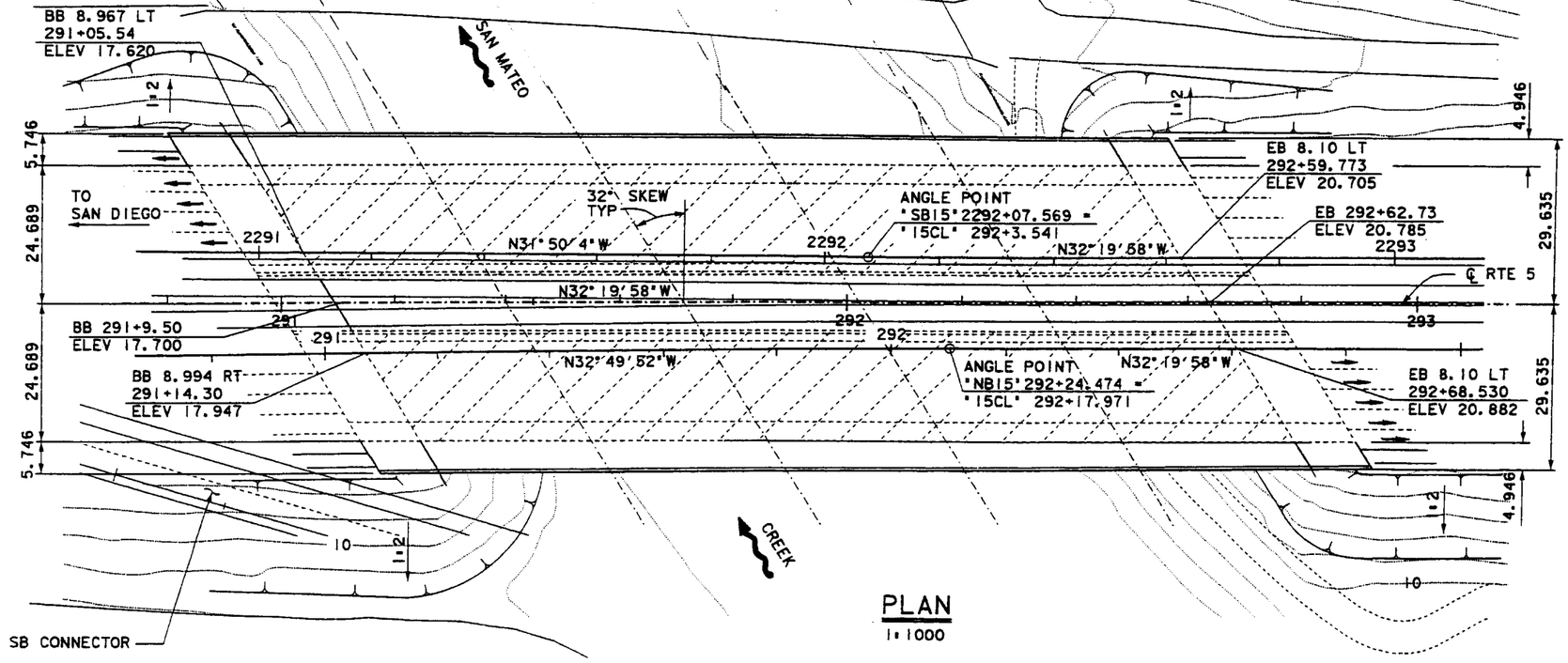
1:400



PLAN

1:1000

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LENGTH	=	175.00 m
WIDTH (m)	=	24.610
AREA (m^2)	=	4307
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BRIDGE REMOVAL COST MOBIL & COATINGS INCL	=	
BRIDGE RETROFIT	=	
TOTAL COST	=	
GRAND TOTAL	=	

LEGEND

- PROJECT CONSTRUCTION
- EXISTING CONSTRUCTION
- POINT OF MINIMUM VERTICAL CLEARANCE

ALL DIMENSIONS ARE IN METERS UNLESS OTHERWISE SHOWN

FEC

APPROVED

TCA APPROVED CHIEF ENGINEER

CDMG MANAGER OF ENGINEERING

CALTRANS

DESIGN	BY		CHECKED
DETAILS	BY	L. ZHANG	CHECKED
QUANTITIES	BY		CHECKED

CDMG

TRANSPORTATION CORRIDOR AGENCIES

BRIDGE NO.

KILOMETER POST

SAN MATEO CREEK UC (WIDENING)

GENERAL PLAN

CU

EA

DESIGN GENERAL PLAN SHEET (METRIC) (REV. 3/1/99)

DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES (PRELIMINARY STAGE ONLY)

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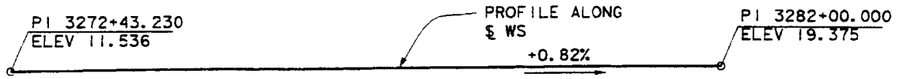
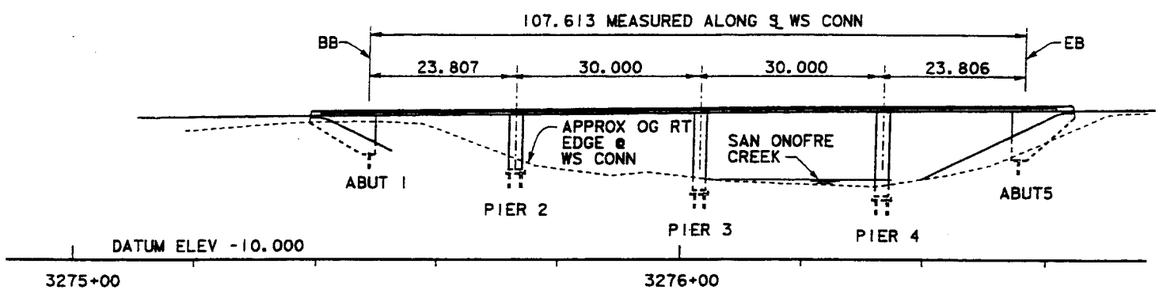
12-JUL-2001



PROFILE GRADE

NO SCALE



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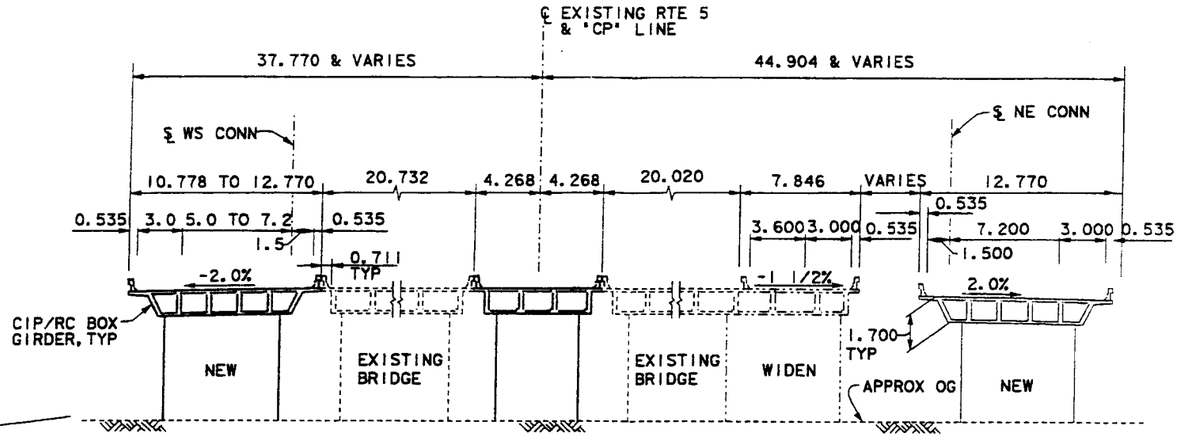

TYPICAL SECTION

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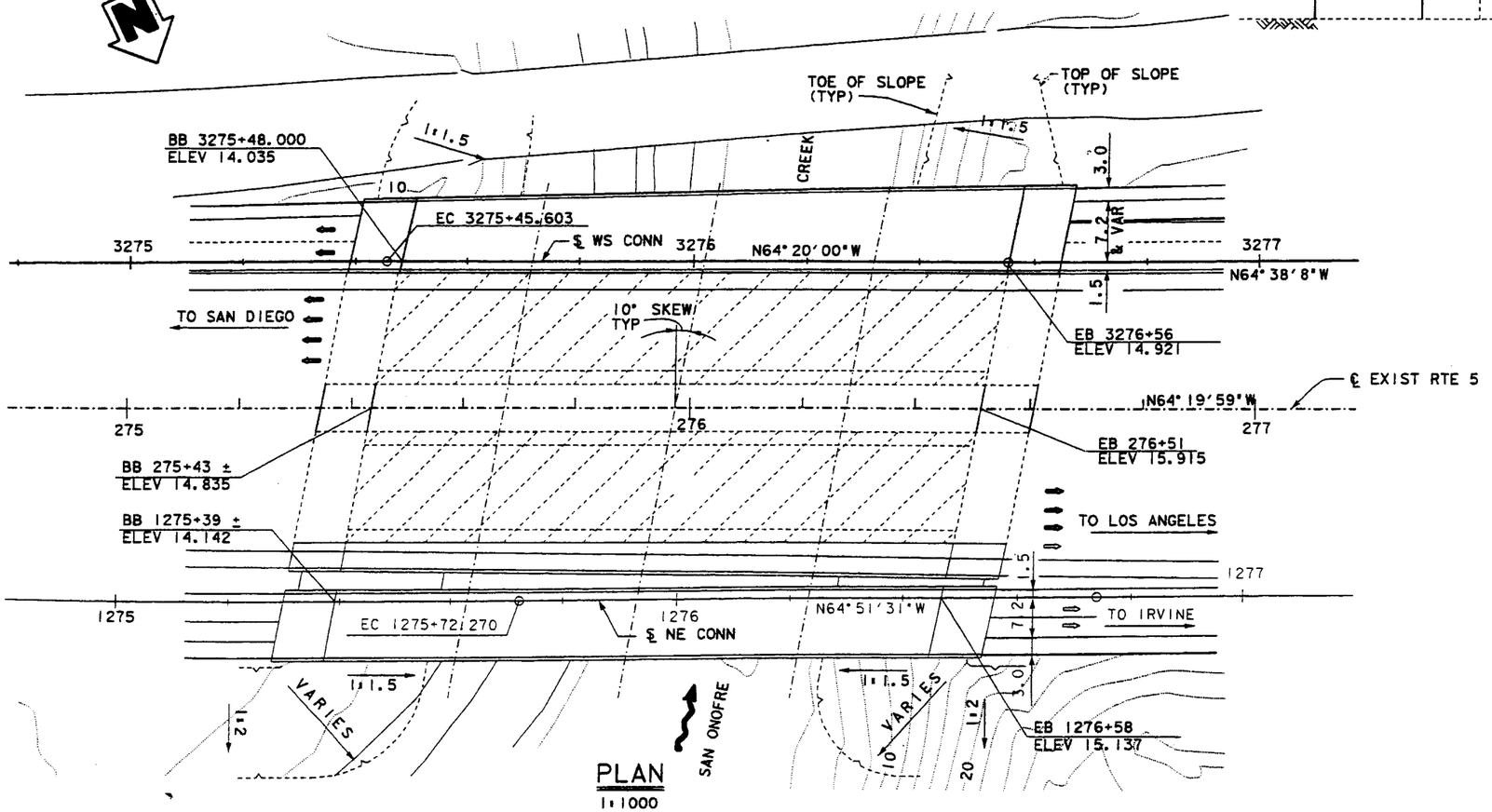

PLAN

1:1000

COST DATA

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AREA (m^2)	=	-
NEW CONST. COST/SQ M. INCLUDING 10% MOBILIZATION & 25% CONTINGENCY	=	
BRIDGE REMOVAL COST MOBIL & COATINGS INCL	=	
BRIDGE RETROFIT	=	
TOTAL COST	=	
GRAND TOTAL	=	

LEGEND

——— PROJECT CONSTRUCTION

- - - - - - - EXISTING CONSTRUCTION

POINT OF MINIMUM VERTICAL CLEARANCE

ALL DIMENSIONS ARE IN METERS UNLESS OTHERWISE SHOWN

FEC

APPROVED

TCA APPROVED CHIEF ENGINEER

COMC MANAGER OF ENGINEERING

CALTRANS

DESIGN	BY		CHECKED
DETAILS	BY	JA. WANG	CHECKED
QUANTITIES	BY		CHECKED

CDMG

TRANSPORTATION CORRIDOR AGENCIES

BRIDGE NO.

KILOMETER POST

SAN ONOFRE CREEK BRIDGE (K)

GENERAL PLAN

DESIGN GENERAL PLAN SHEET (METRIC) (REV. 3/1/99)

CU
EA

DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES (PRELIMINARY STAGE ONLY)

SHEET OF

12-JUL-2001

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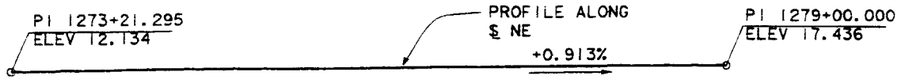
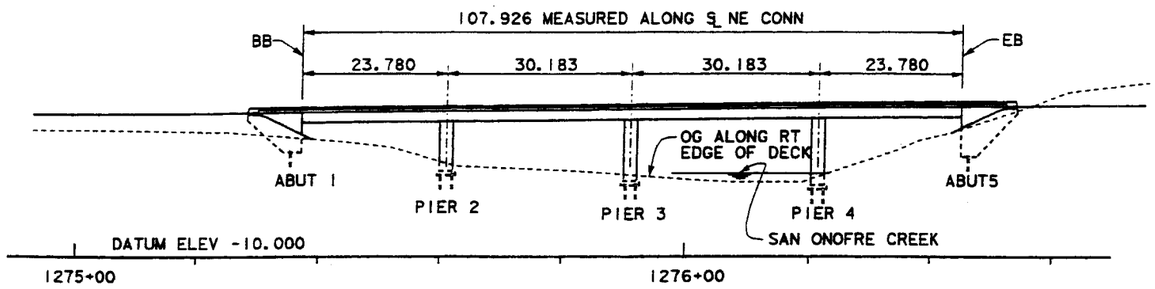


PROFILE GRADE

NO SCALE



ELEVATION

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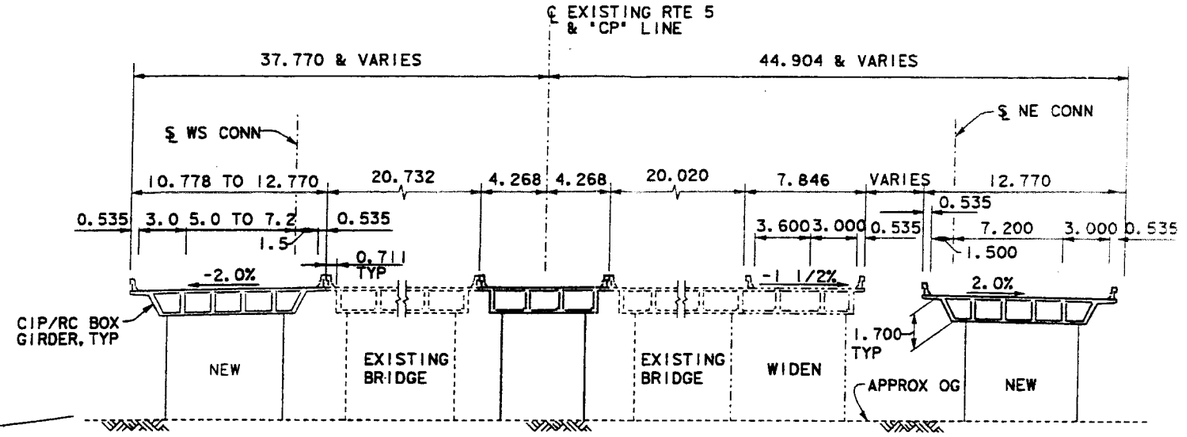

TYPICAL SECTION

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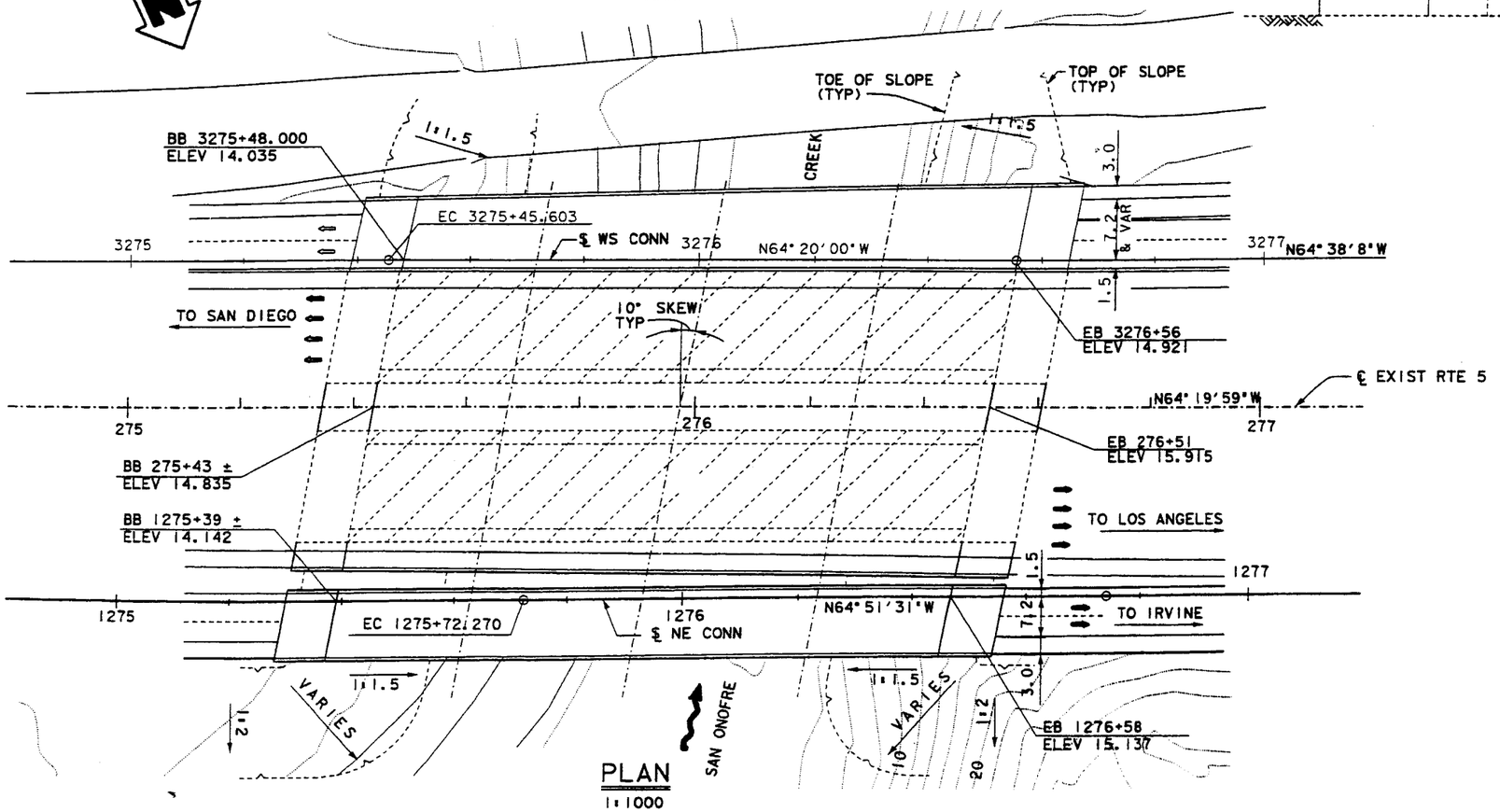

PLAN

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COST DATA

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WIDTH (m)	=	-
AREA (m^2)	=	-
NEW CONST. COST/SQ M. INCLUDING 10% MOBILIZATION & 25% CONTINGENCY	=	
BRIDGE REMOVAL COST MOBIL & COATINGS INCL	=	
BRIDGE RETROFIT	=	
TOTAL COST	=	
GRAND TOTAL	=	

LEGEND

——— PROJECT CONSTRUCTION

- - - - - - - EXISTING CONSTRUCTION

POINT OF MINIMUM VERTICAL CLEARANCE

ALL DIMENSIONS ARE IN METERS UNLESS OTHERWISE SHOWN

FEC

APPROVED

TCA APPROVED CHIEF ENGINEER

CDMG MANAGER OF ENGINEERING

CALTRANS

DESIGN	BY		CHECKED
DETAILS	BY	JA. WANG	CHECKED
QUANTITIES	BY		CHECKED

CDMG

TRANSPORTATION CORRIDOR AGENCIES

BRIDGE NO.

KILOMETER POST

SAN ONOFRE CREEK BRIDGE (S)

GENERAL PLAN

CU
EA

DISREGARD PRINTS BEARING EARLIER REVISION DATES

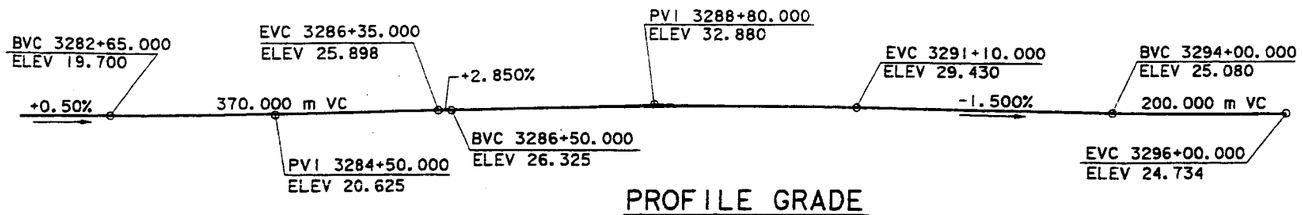
REVISION DATES (PRELIMINARY STAGE ONLY)

SHEET OF

DESIGN GENERAL PLAN SHEET (METRIC) (REV. 3/1/99)

12-JUL-2001

J:\21984\Cadd\str\sheets\ONOFRE NE.dgn

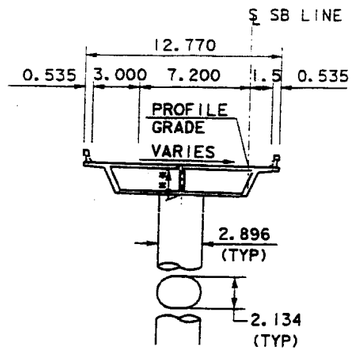


PROFILE GRADE

NO SCALE

COST DATA

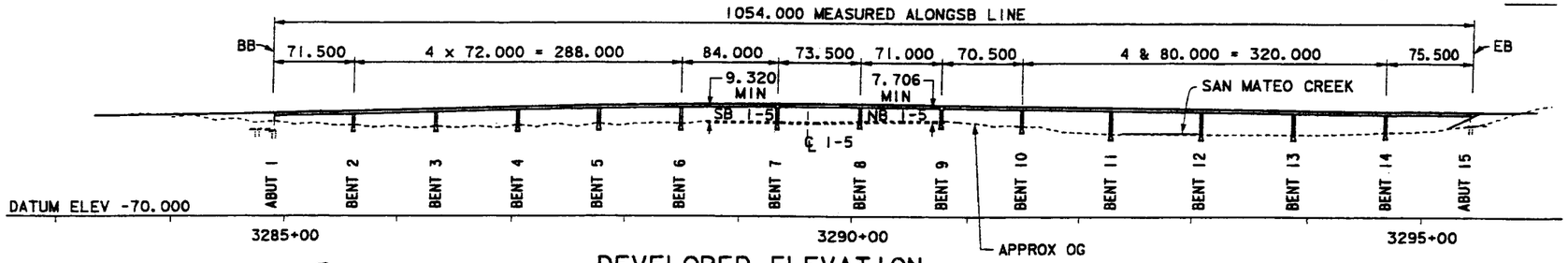
DATE OF ESTIMATE	MAY 2001		
STRUCTURE DEPTH	= 1700 mm		
LENGTH	= 175.00 m		
WIDTH (m)	= 24.610		
AREA (m^2)	= 4307		
NEW CONST. COST/SQ M. INCLUDING 10% MOBILIZATION & 25% CONTINGENCY	=		
BRIDGE REMOVAL COST MOBIL & COATINGS INCL	=		
BRIDGE RETROFIT	=		
TOTAL COST	=		
GRAND TOTAL	=		



TYPICAL SECTION

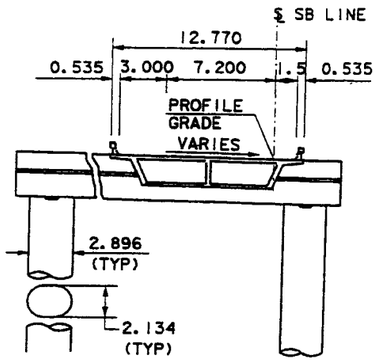
1:400

** GIRDER DEPTH VARIES FROM 2.52 m TO 2.76 m TO SUIT SPAN LEGNTH (TAPERING OVER FULL SPAN LEGTHS)



DEVELOPED ELEVATION

1:5000



TYPICAL SECTION @ BENTS 7 & 9

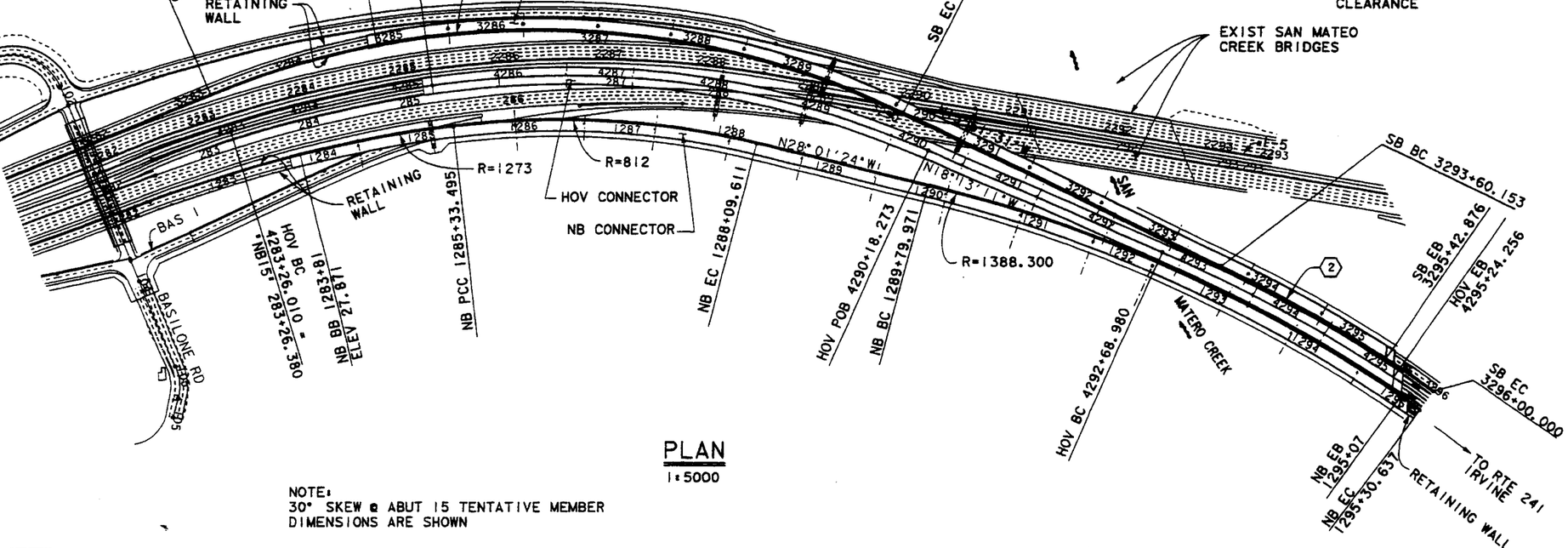
1:400

LEGEND

- PROJECT CONSTRUCTION
- EXISTING CONSTRUCTION
- POINT OF MINIMUM VERTICAL CLEARANCE

CURVE DATA

① ℄ SB LINE	② ℄ SB LINE
R = 815.000	R = 1411.700
Δ = 48°46'36"	Δ = 09°44'10"
L = 693.882	L = 239.866



PLAN

1:5000

NOTE:
30° SKEW @ ABUT 15 TENTATIVE MEMBER
DIMENSIONS ARE SHOWN

ALL DIMENSIONS ARE IN METERS UNLESS OTHERWISE SHOWN

FEC

APPROVED		DESIGN	BY	CHECKED	CDMG
TCA APPROVED CHIEF ENGINEER	CDMG MANAGER OF ENGINEERING	DETAILS	BY L. ZHANG	CHECKED	TRANSPORTATION CORRIDOR AGENCIES
	CALTRANS	QUANTITIES	BY	CHECKED	CU EA

BRIDGE NO.

KILOMETER POST

S241-S5 SEPARATION (CONNECTOR)
GENERAL PLAN

DESIGN GENERAL PLAN SHEET (METRIC) (REV. 3/1/99)

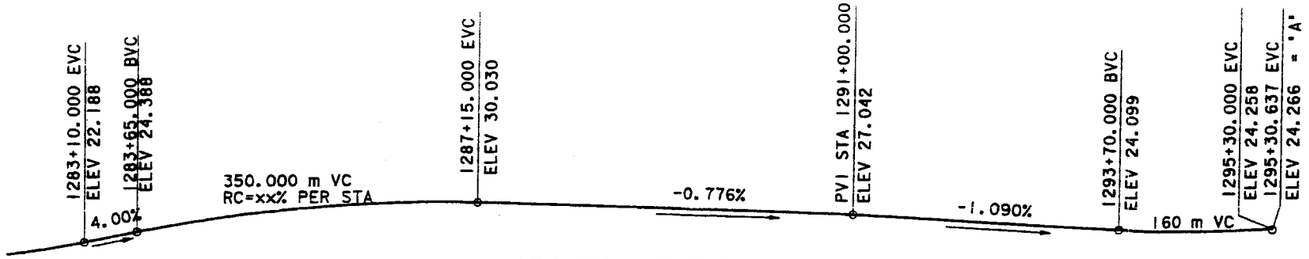
DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES (PRELIMINARY STAGE ONLY)

SHEET OF

12-JUL-2001

J:\21984\cloud\str\sheets\S241-S5SWGP.dgn

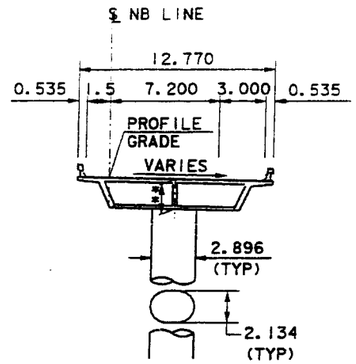


PROFILE GRADE

NO SCALE

COST DATA

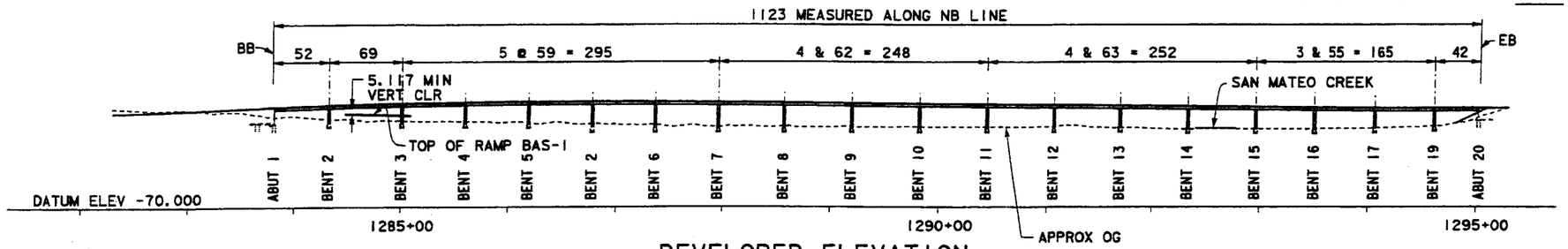
DATE OF ESTIMATE	MAY 2001	
STRUCTURE DEPTH	= 1700 mm	
LENGTH	= 175.00 m	
WIDTH (m)	= 24.610	
AREA (m^2)	= 4307	
NEW CONST. COST/SQ M. INCLUDING 10% MOBILIZATION & 25% CONTINGENCY	=	
BRIDGE REMOVAL COST MOBIL & COATINGS INCL	=	
BRIDGE RETROFIT	=	
TOTAL COST	=	
GRAND TOTAL	=	



TYPICAL SECTION

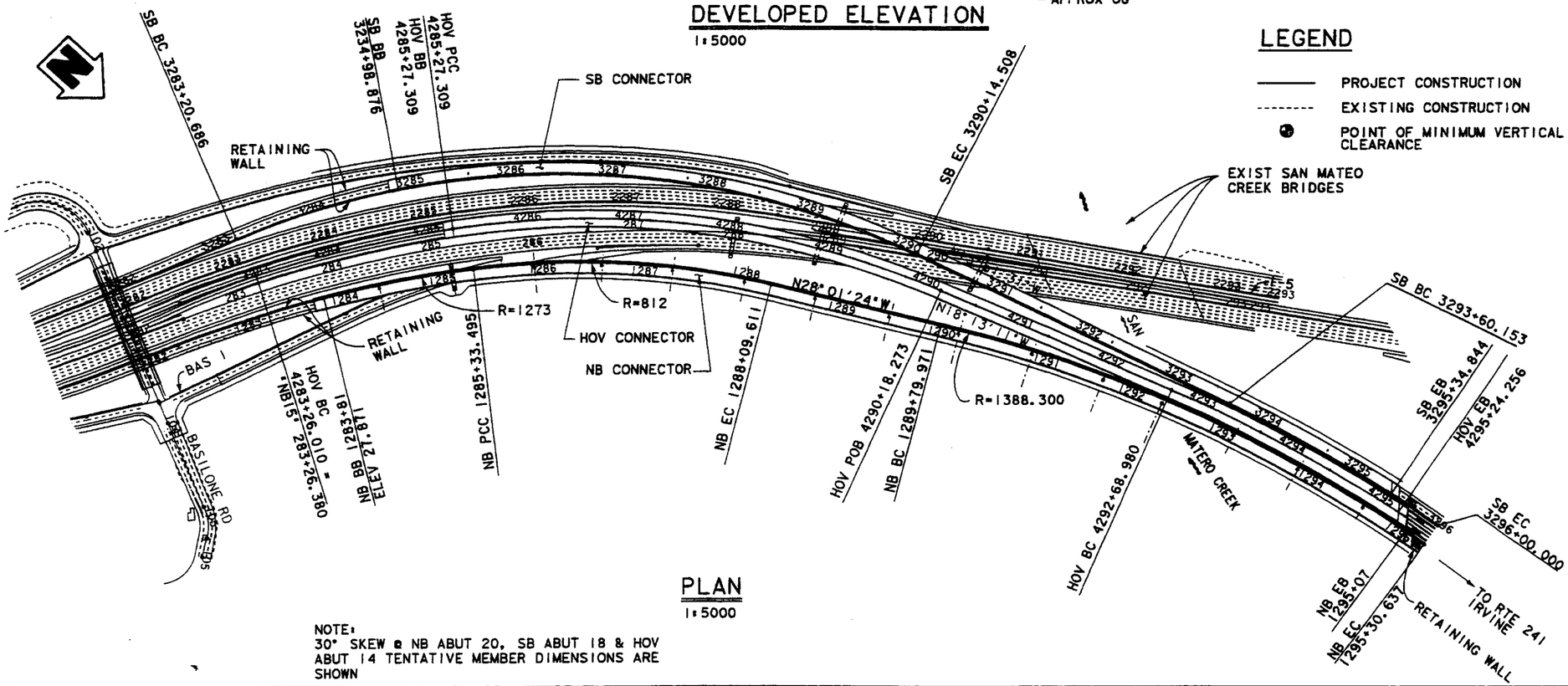
1:400

** GIRDER DEPTH VARIES FROM 2.52 m TO 2.76 m TO SUIT SPAN LEGNTH (TAPERING OVER FULL SPAN LEGTHS)



DEVELOPED ELEVATION

1:5000

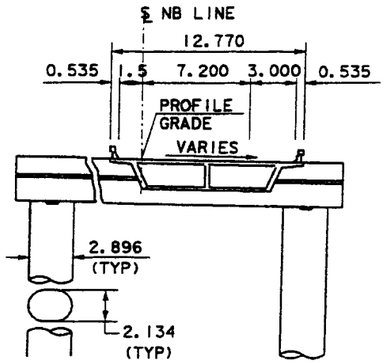


PLAN

1:5000

LEGEND

- PROJECT CONSTRUCTION
- EXISTING CONSTRUCTION
- POINT OF MINIMUM VERTICAL CLEARANCE



TYPICAL SECTION @ BENT 3

1:400

NOTE:
30° SKEW @ NB ABUT 20, SB ABUT 18 & HOV ABUT 14 TENTATIVE MEMBER DIMENSIONS ARE SHOWN

ALL DIMENSIONS ARE IN METERS UNLESS OTHERWISE SHOWN

FEC

APPROVED

TCA APPROVED CHIEF ENGINEER

COMG MANAGER OF ENGINEERING

CALTRANS

DESIGN	BY		CHECKED
DETAILS	BY	L. ZHANG	CHECKED
QUANTITIES	BY		CHECKED

CDMG

TRANSPORTATION CORRIDOR AGENCIES

BRIDGE NO.

KILOMETER POST

N5-N241 OC CONNECTOR
GENERAL PLAN

CU
EA

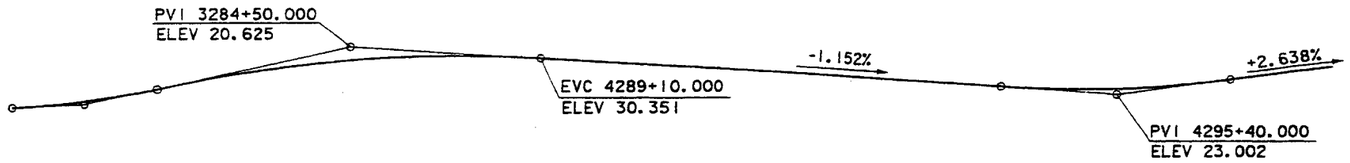
DESIGN GENERAL PLAN SHEET (METRIC) (REV. 3/1/99)

DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES (PRELIMINARY STAGE ONLY)

SHEET OF

Jun 21, 2001 - 09:21:29 d:\2198\cadd\str\sheets\52198GP.dgn

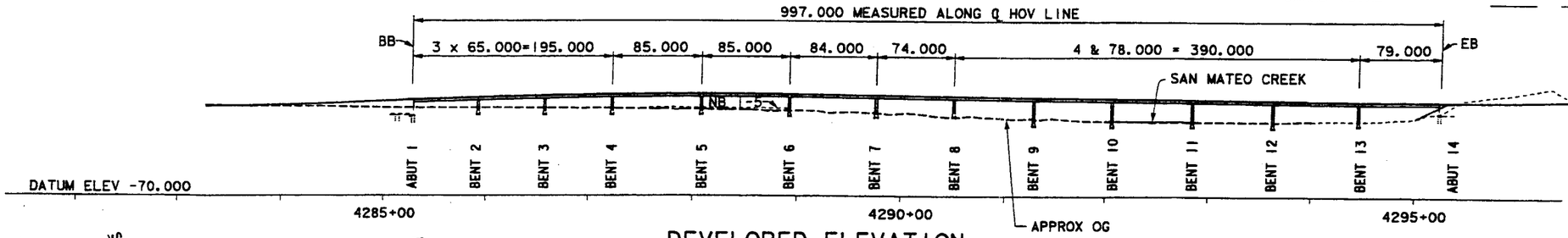


PROFILE GRADE

NO SCALE

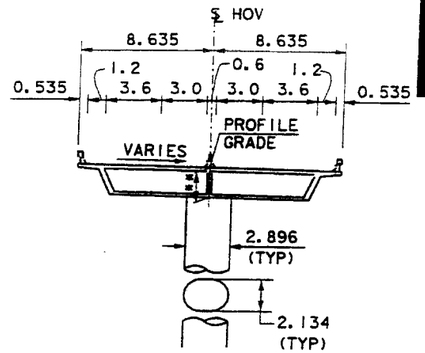
COST DATA

DATE OF ESTIMATE		MAY 2001
STRUCTURE DEPTH	=	1700 mm
LENGTH	=	175.00 m
WIDTH (m)	=	24.610
AREA (m^2)	=	4307
NEW CONST. COST/SQ M. INCLUDING 10% MOBILIZATION & 25% CONTINGENCY	=	
BRIDGE REMOVAL COST MOBIL & COATINGS INCL	=	
BRIDGE RETROFIT	=	
TOTAL COST	=	
GRAND TOTAL	=	



DEVELOPED ELEVATION

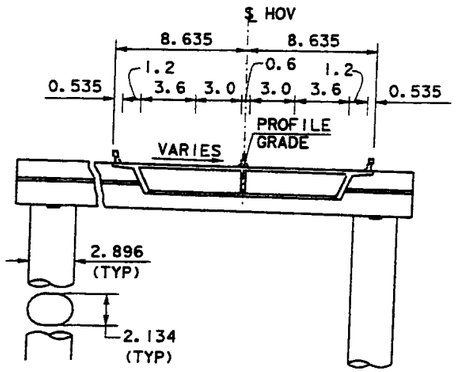
1:5000



TYPICAL SECTION

1:400

** GIRDER DEPTH VARIES FROM 2.52 m TO 2.76 m TO SUIT SPAN LEGNTH (TAPERING OVER FULL SPAN LEGTHS)

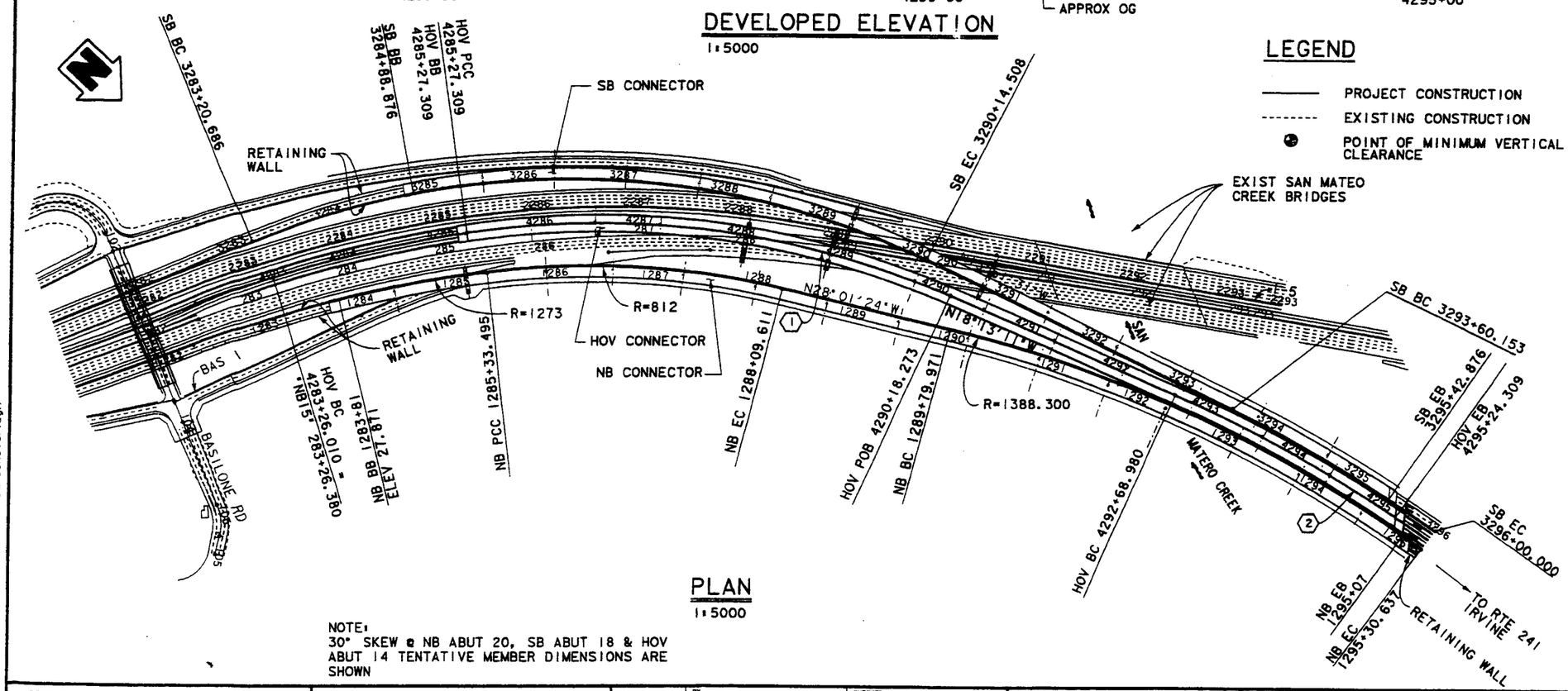


TYPICAL SECTION @ BENTS 5 & 6

1:400

LEGEND

- PROJECT CONSTRUCTION
- EXISTING CONSTRUCTION
- POINT OF MINIMUM VERTICAL CLEARANCE



PLAN

1:5000

CURVE DATA

① ℄ HOV	② ℄ HOV
R = 70.080	R = 120.000
Δ = 32°06'43"	Δ = 12°05'50"
L = 39.277	L = 23.647

NOTE:
30° SKEW @ NB ABUT 20, SB ABUT 18 & HOV ABUT 14 TENTATIVE MEMBER DIMENSIONS ARE SHOWN

ALL DIMENSIONS ARE IN METERS UNLESS OTHERWISE SHOWN

FEC

APPROVED	CDMG MANAGER OF ENGINEERING	DESIGN	BY	CHECKED	CDMG	TRANSPORTATION CORRIDOR AGENCIES
TCA APPROVED CHIEF ENGINEER	CALTRANS	DETAILS	BY L. ZHANG	CHECKED		
		QUANTITIES	BY	CHECKED		

BRIDGE NO.

KILOMETER POST

S241-S5 HOV CONNECTOR
GENERAL PLAN

DESIGN GENERAL PLAN SHEET (METRIC) (REV.3/1/99)

CU
EA

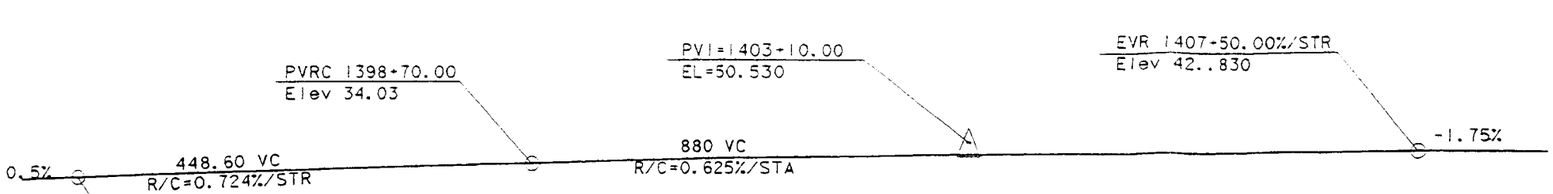
DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES (PRELIMINARY STAGE ONLY)

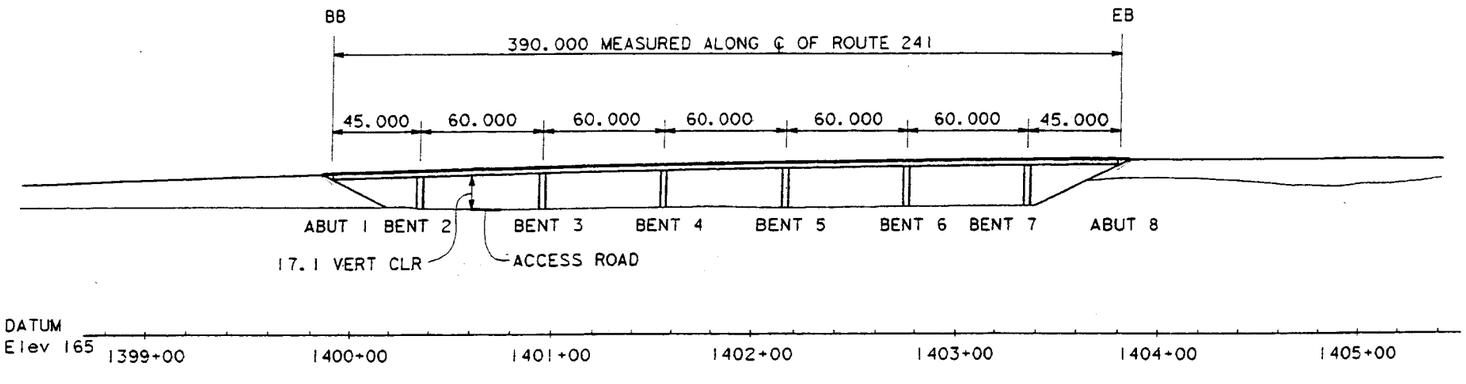
SHEET OF

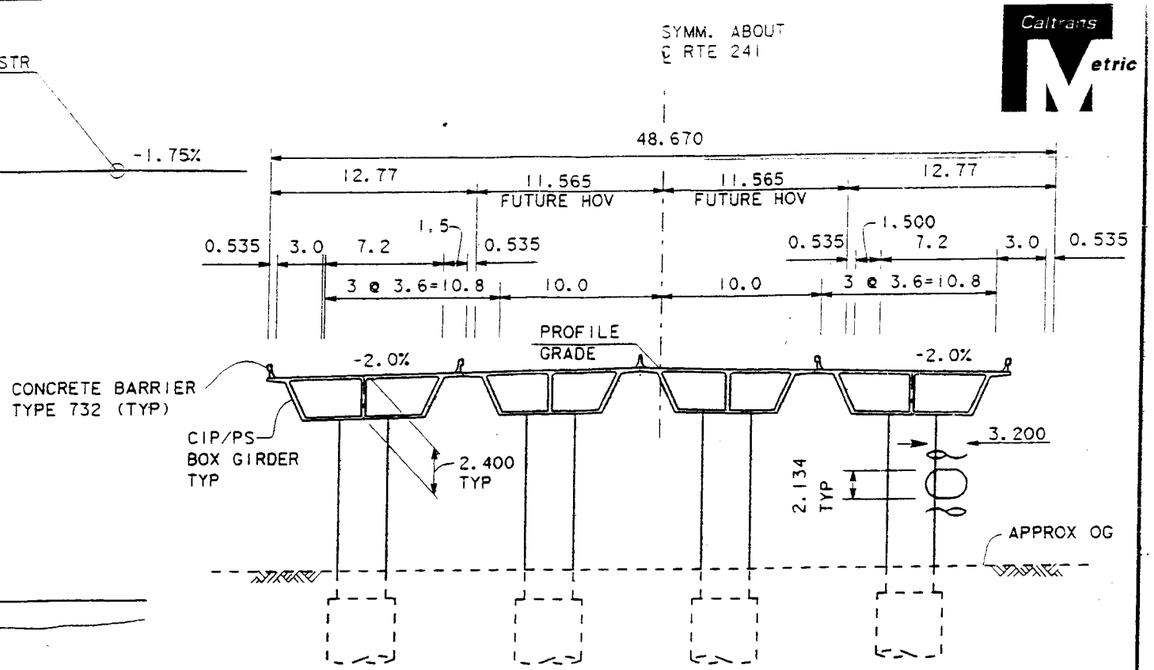
Appendix CC. Alignment Drawings

- FEC-AFV Alternative Bridge Plans

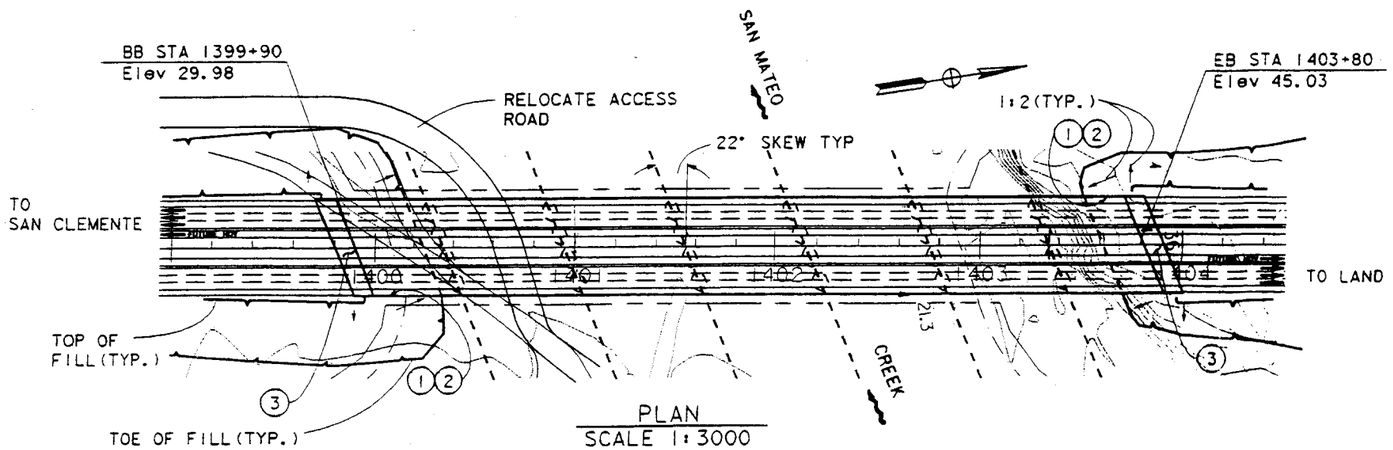


PROFILE GRADE
NO SCALE





TYPICAL SECTION
1:400



ELEVATION
SCALE 1:3000

PLAN
SCALE 1:3000

COST DATA

DATE OF ESTIMATE	AUGUST 2001
STRUCTURE DEPTH	=X.XX
LENGTH	=XX.XX+/-
WIDTH (AVERAGE)	=XX.XXX+/-
AREA	=XXX.Xm2+/-
COST/SQ. METER INCLUDING 10% MOBILIZATION & 25% CONTINGENCY	=$XXXX/m2
TOTAL COST	=$XXX,XXX

ASSUMED FOUNDATION TYPE
PRECAST CONCRETE
PILES OR CIDH PILES

LEGEND

(1) PAINT BRIDGE NAME
(2) PAINT BRIDGE NO. AND YEAR CONSTRUCTED
(3) STRUCTURE APPROACH TYPE
POINT OF MINIMUM VERTICAL CLEARANCE
INDICATES DIRECTION OF TRAFFIC

ALL DIMENSIONS ARE IN METERS UNLESS OTHERWISE SHOWN

FEC-AFV

APPROVED
TCA APPROVED CHIEF ENGINEER
CONS MANAGER OF ENGINEERING
CALTRANS

DESIGN	BY	CHECKED
DETAILS	BY	CHECKED
QUANTITIES	BY	CHECKED

CDMG

TRANSPORTATION CORRIDOR AGENCIES

BRIDGE NO.
KILOMETER POST

SAN MATEO CREEK BRIDGE
GENERAL PLAN

CU
EA

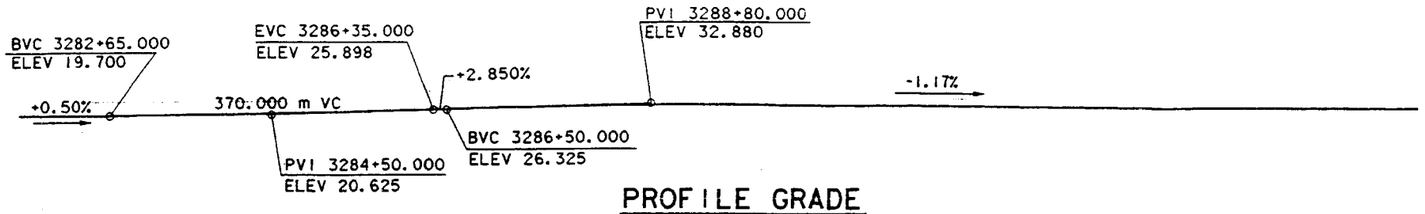
DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES (PRELIMINARY STAGE ONLY)

SHEET OF

DESIGN GENERAL PLAN SHEET (METRIC) (REV. 3/1/99)

RECOMMENDED FOR APPROVAL

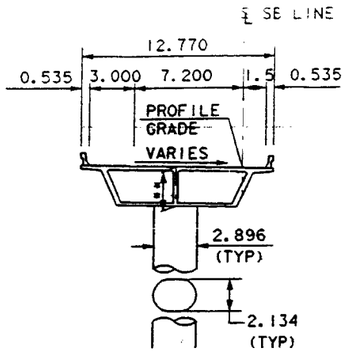


PROFILE GRADE

NO SCALE

COST DATA

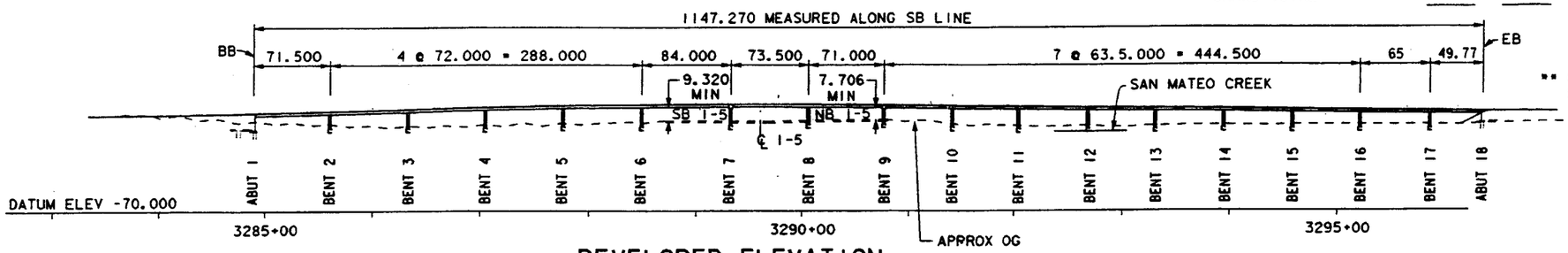
DATE OF ESTIMATE		2001	
STRUCTURE DEPTH	=	XXXX mm	
LENGTH	=	XXX.00 m	
WIDTH (m)	=	XX.XXX	
AREA (m^2)	=	XXXX	
NEW CONST. COST/SQ M. INCLUDING 10% MOBILIZATION & 25% CONTINGENCY	=		
BRIDGE REMOVAL COST MOBIL & COATINGS INCL	=		
BRIDGE RETROFIT	=		
TOTAL COST	=		
GRAND TOTAL	=		



TYPICAL SECTION

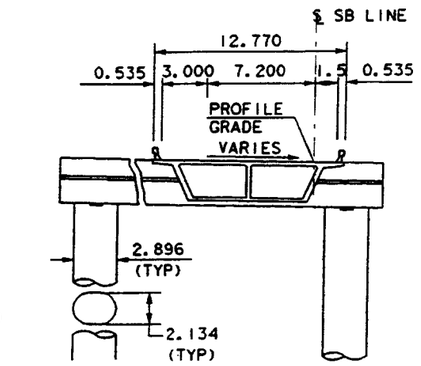
1:400

** GIRDER DEPTH VARIES FROM 2.60 m TO 3.36 m TO SUIT SPAN LEGNTH (TAPERING OVER FULL SPAN LEGTHS)



DEVELOPED ELEVATION

1:5000

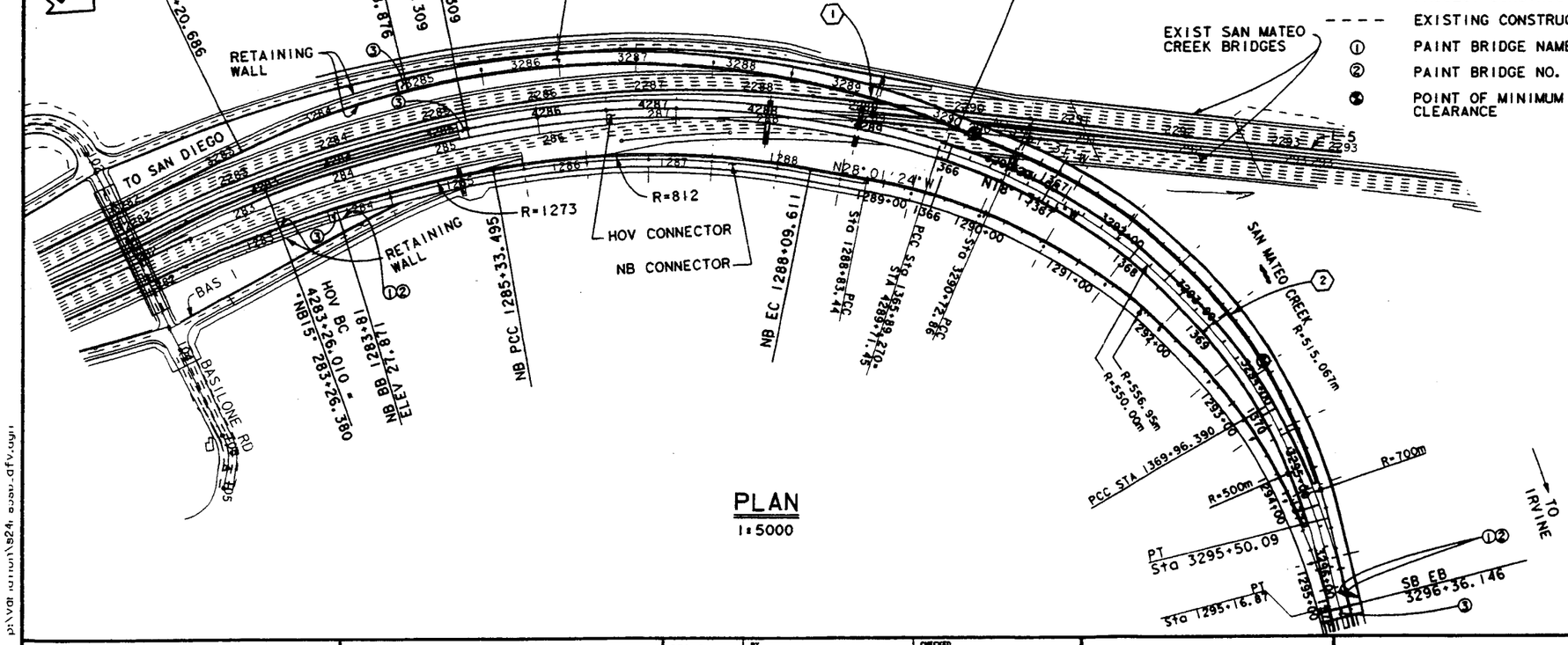


TYPICAL SECTION @ BENTS 7 & 9

1:400

LEGEND

- PROJECT CONSTRUCTION
- EXISTING CONSTRUCTION
- ① PAINT BRIDGE NAME
- ② PAINT BRIDGE NO. AND YEAR CONSTRUCTED
- ④ POINT OF MINIMUM VERTICAL CLEARANCE



PLAN

1:5000

CURVE DATA

① ℄ SB	② ℄ SB
R = 815.000	R = 515.067
Δ = 48°46'36.48"	Δ = 53°05'13.2"
L = 693.822	L = 477.232

ALL DIMENSIONS ARE IN METERS UNLESS OTHERWISE SHOWN

FEC-AFV

APPROVED		DESIGN	BY	CHECKED	CDMG	TRANSPORTATION CORRIDOR AGENCIES	BRIDGE NO.
TCA APPROVED CHIEF ENGINEER	CDMG MANAGER OF ENGINEERING	DETAILS	BY	CHECKED			KILOMETER POST
	CALTRANS	QUANTITIES	BY	CHECKED			

S241-S5 SEPERATION CONNECTOR

GENERAL PLAN

CU
EA

DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES (PRELIMINARY STAGE ONLY)

SHEET OF

DESIGN GENERAL PLAN SHEET (METRIC) (REV. 3/1/99)

DATE PLOTTED = 24-AUG-01

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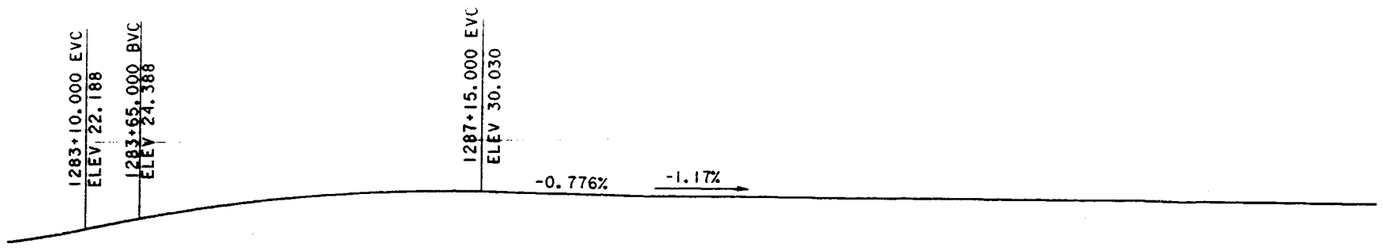
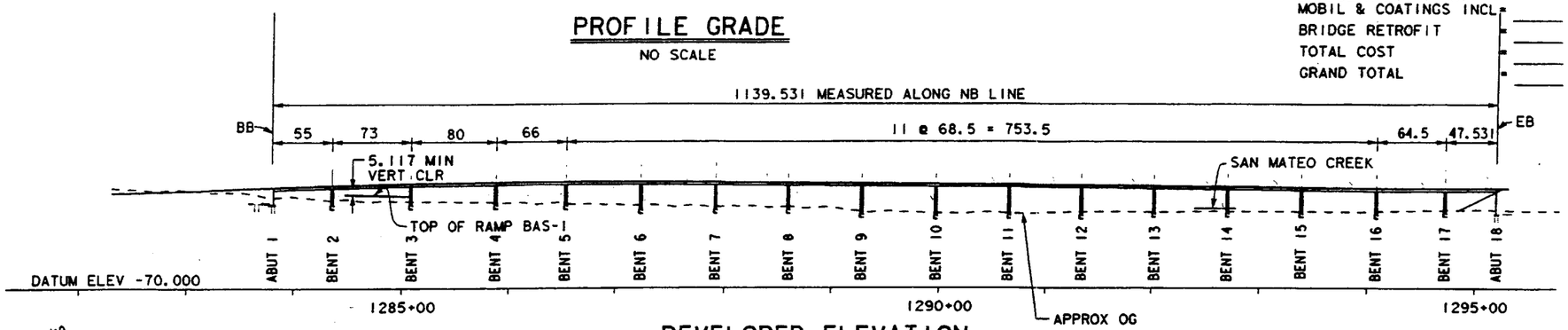


PROFILE GRADE

NO SCALE

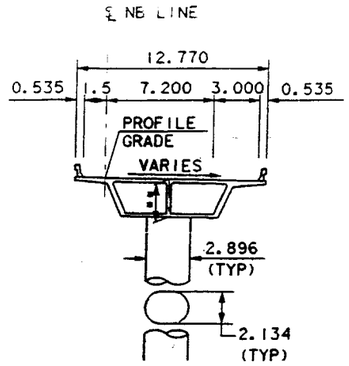


DEVELOPED ELEVATION

1:5000

COST DATA

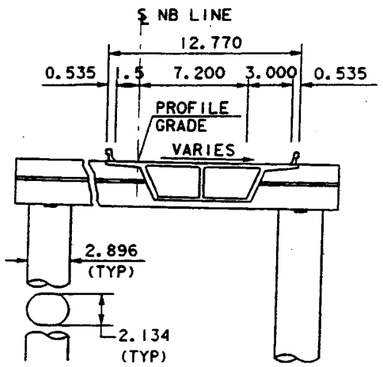
DATE OF ESTIMATE	XXX 2001	
STRUCTURE DEPTH	= XXXX mm	
LENGTH	= XXX.00 m	
WIDTH (m)	= XX.XXX	
AREA (m^2)	= XXXX	
NEW CONST. COST/SQ M. INCLUDING 10% MOBILIZATION & 25% CONTINGENCY	=	
BRIDGE REMOVAL COST MOBIL & COATINGS INCL	=	
BRIDGE RETROFIT	=	
TOTAL COST	=	
GRAND TOTAL	=	



TYPICAL SECTION

1:400

** GIRDER DEPTH VARIES FROM 2.52 m TO 3.20 m TO SUIT SPAN LEGNTH (TAPERING OVER FULL SPAN LEGTHS)

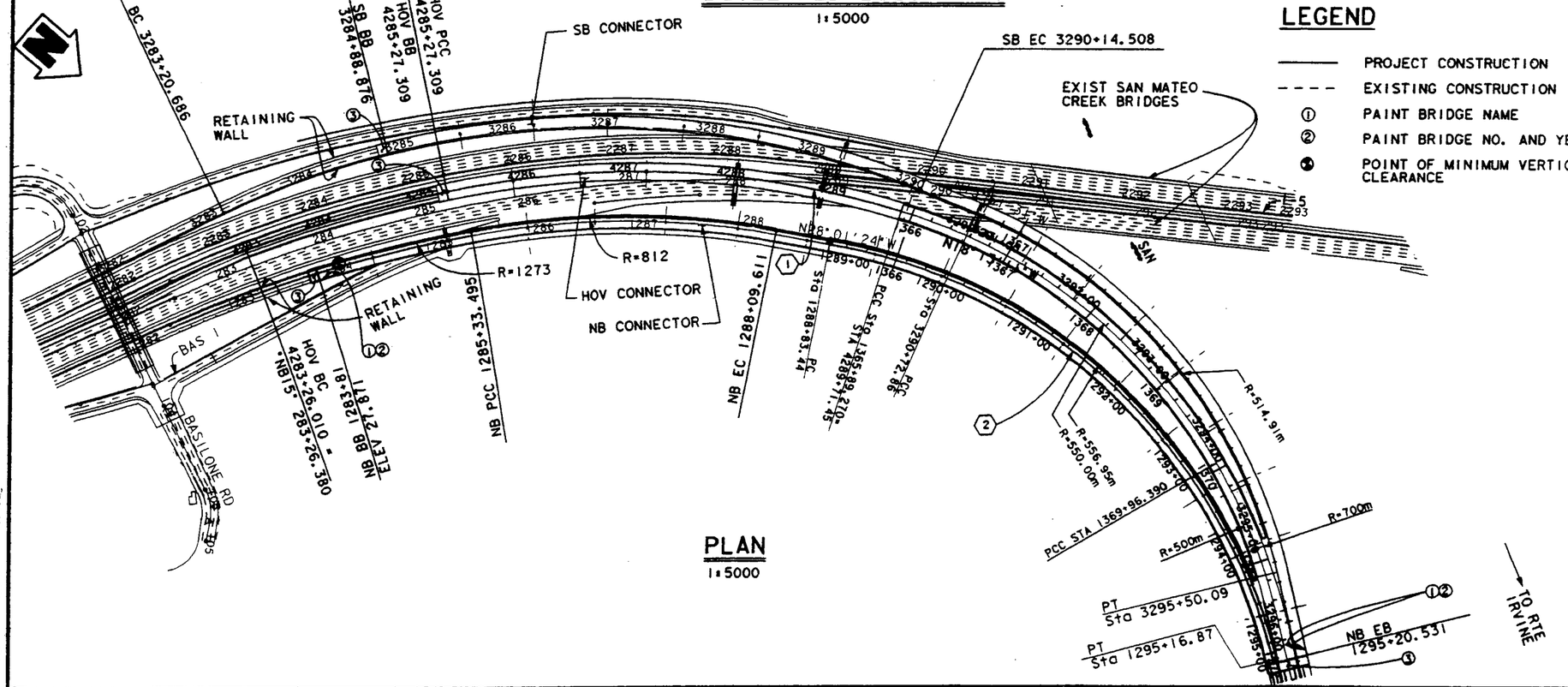


TYPICAL SECTION @ BENT 3

1:400

LEGEND

- ——— PROJECT CONSTRUCTION
- - - - EXISTING CONSTRUCTION
- ① PAINT BRIDGE NAME
- ② PAINT BRIDGE NO. AND YEAR CONSTRUCTED
- ④ POINT OF MINIMUM VERTICAL CLEARANCE



PLAN

1:5000

CURVE DATA

① ℄ NB	② ℄ NB
R = 812.000	R = 555.956
Δ = 20°53'48.84"	Δ = 65°16'46.92"
L = 296.153	L = 633.426

ALL DIMENSIONS ARE IN METERS UNLESS OTHERWISE SHOWN

FEC-AFV

APPROVED		DESIGN	BY	CHECKED	CDMG
TCA APPROVED CHIEF ENGINEER	CDMG MANAGER OF ENGINEERING	DETAILS	BY	CHECKED	TRANSPORTATION CORRIDOR AGENCIES
	CALTRANS	QUANTITIES	BY	CHECKED	

BRIDGE NO. | KILOMETER POST

N5-N241 OC CONNECTOR
GENERAL PLAN

DESIGN GENERAL PLAN SHEET (METRIC) (REV. 3/1/98)

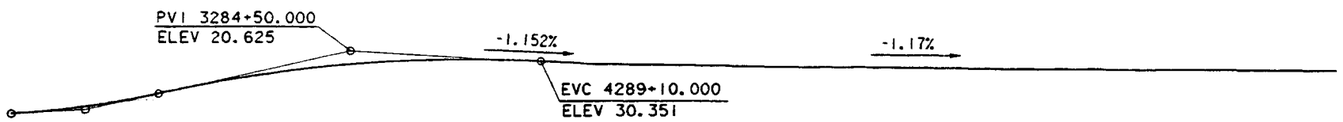
CU EA

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES (PRELIMINARY STAGE ONLY) | SHEET | OF

USERNAME = >> $USER

\Var \s241- afv.d

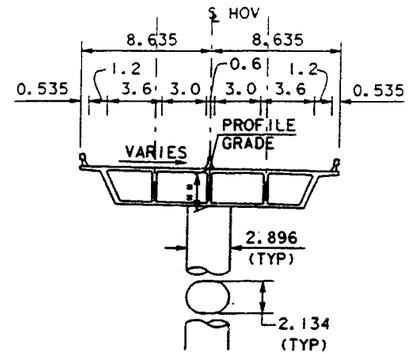


PROFILE GRADE

NO SCALE

COST DATA

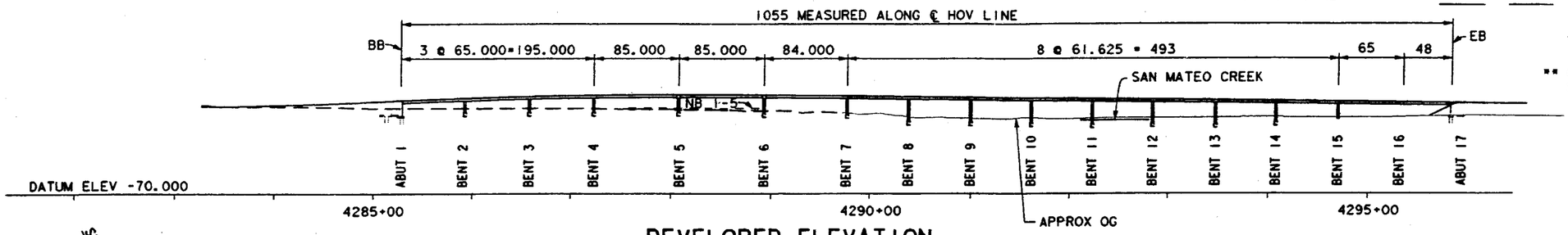
DATE OF ESTIMATE	= XXX 2001		
STRUCTURE DEPTH	= XXXX mm		
LENGTH	= XXX.00 m		
WIDTH (m)	= XX.XXX		
AREA (m^2)	= XXXX		
NEW CONST. COST/SQ M. INCLUDING 10% MOBILIZATION & 25% CONTINGENCY	=		
BRIDGE REMOVAL COST MOBIL & COATINGS INCL	=		
BRIDGE RETROFIT	=		
TOTAL COST	=		
GRAND TOTAL	=		



TYPICAL SECTION

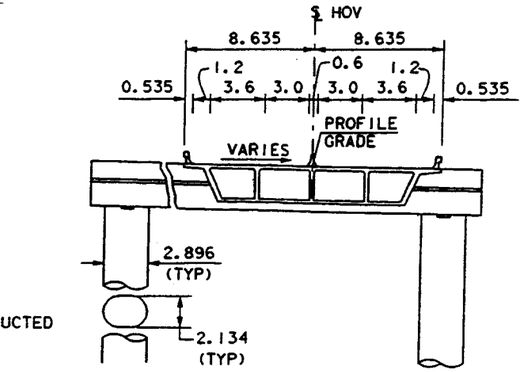
1:400

** GIRDER DEPTH VARIES FROM 2.48 m TO 3.40 m TO SUIT SPAN LEGNTH (TAPERING OVER FULL SPAN LEGTHS)



DEVELOPED ELEVATION

1:5000

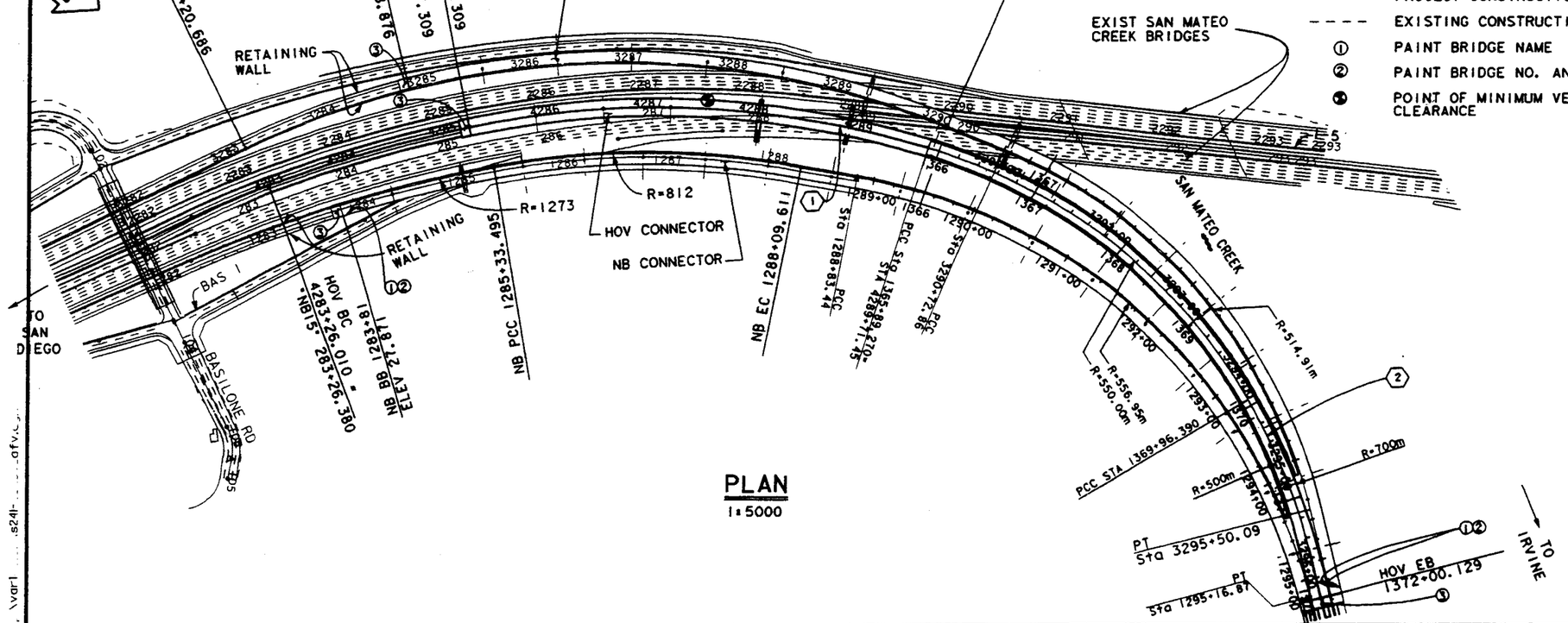


TYPICAL SECTION @ BENTS 5 & 6

1:400

LEGEND

- ——— PROJECT CONSTRUCTION
- - - - EXISTING CONSTRUCTION
- ① PAINT BRIDGE NAME
- ② PAINT BRIDGE NO. AND YEAR CONSTRUCTED
- ③ POINT OF MINIMUM VERTICAL CLEARANCE



PLAN

1:5000

CURVE DATA

① ℄ HOV	② ℄ HOV
R = 876.000	R = 550.000
Δ = 29°03'39.6"	Δ = 58°31'37.56"
L = 444.316	L = 561.641

ALL DIMENSIONS ARE IN METERS UNLESS OTHERWISE SHOWN

FEC-AFV

APPROVED		DESIGN	BY	CHECKED	CDMG
TCA APPROVED CHIEF ENGINEER	CDMG MANAGER OF ENGINEERING	DETAILS	BY	CHECKED	TRANSPORTATION CORRIDOR AGENCIES
	CALTRANS	QUANTITIES	BY	CHECKED	

BRIDGE NO.

KILOMETER POST

S241-S5 HOV CONNECTOR
GENERAL PLAN

CU
EA

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES (PRELIMINARY STAGE ONLY)

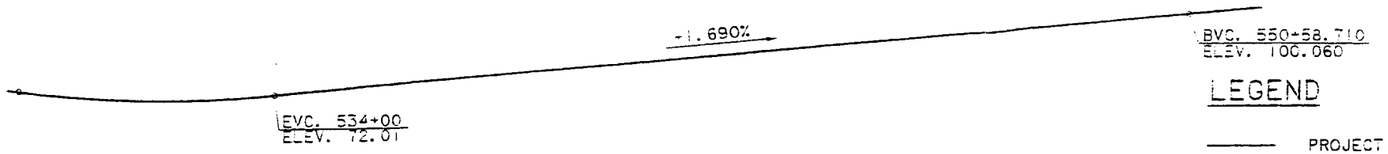
SHEET OF

DESIGN GENERAL PLAN SHEET (METRIC) (REV. 3/1/99)

USERNAME => $USER

Appendix CC. Alignment Drawings

- CC Alternative Bridge Plans



PROFILE GRADE

1:4000

LEGEND

PROJECT CONSTRUCTION

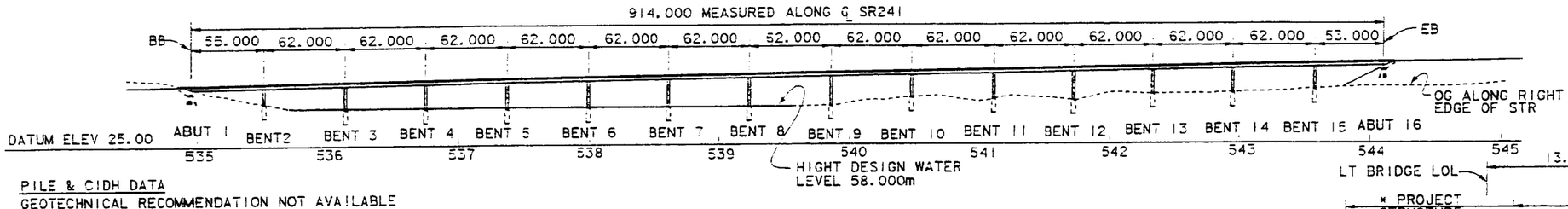
POINT OF MINIMUM VERTICAL CLEARANCE

(1) CURVE DATA (℄ SR241)

R = 1830
Δ = 43°06'17"
T = 722.788
L = 1376.743

COST DATA
(PROJECT STRUCTURE ONLY)

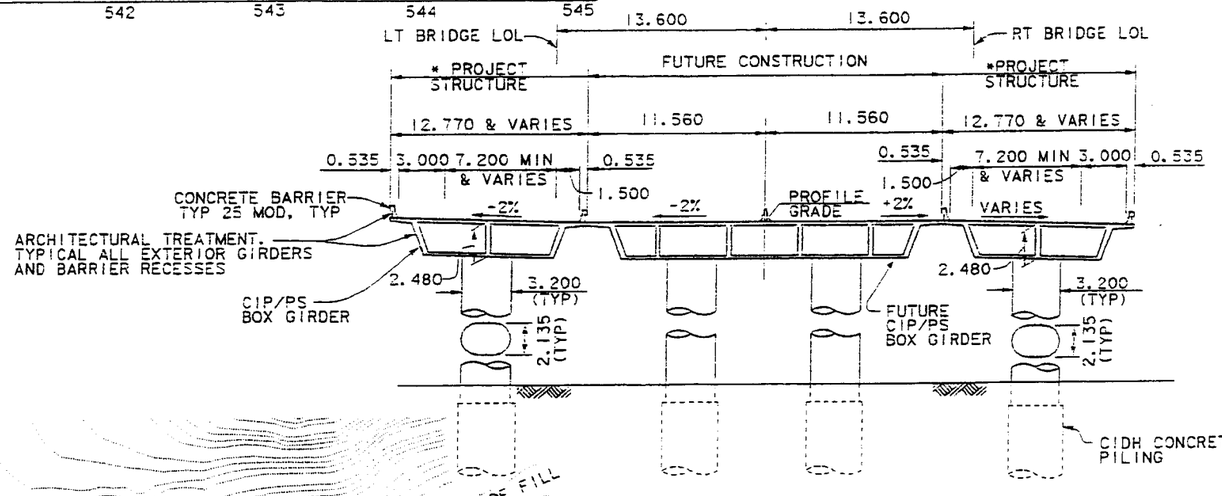
		LT	RT
DATE OF ESTIMATE		MAY 2001	
STRUCTURE DEPTH	=	2480	
LENGTH	=	914	
WIDTH (m)	=	12.770 MIN	12.770 MIN
AREA (m^2)	=	12700	13900
NEW CONST. COST/SQ INCLUDING 10% MOBILIZATION & 25% CONTINGENCY	=		
BRIDGE REMOVAL COST MOBIL & COATINGS INCL	=		
BRIDGE RETROFIT	=		
TOTAL COST	=		
GRAND TOTAL	=		

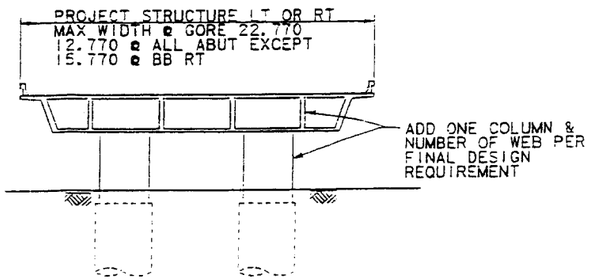


PILE & CIDH DATA
GEOTECHNICAL RECOMMENDATION NOT AVAILABLE

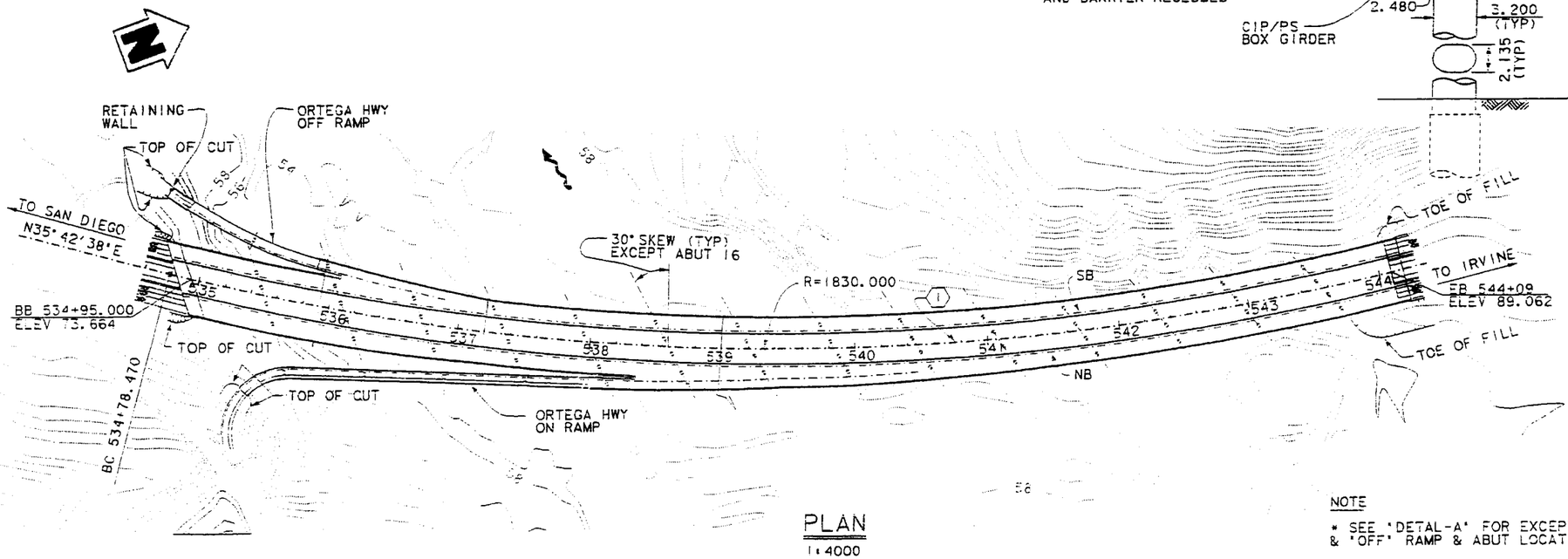
ELEVATION

1:4000





DETAIL A



PLAN

1:4000

TYPICAL SECTION

1:400

NOTE

* SEE 'DETAL-A' FOR EXCEPTIONS NEAR 'ON' & 'OFF' RAMP & ABUT LOCATIONS.

ALL DIMENSIONS ARE IN METERS UNLESS OTHERWISE SHOWN

CC

APPROVED

REGISTERED CIVIL ENGINEER

CDMG MANAGER OF ENGINEERING

CALTRANS

	BY	CHECKED
DESIGN		
DETAILS	JA. WANG	
QUANTITIES		

CDMG

TRANSPORTATION CORRIDOR AGENCIES

BRIDGE NO.

KILOMETER POST

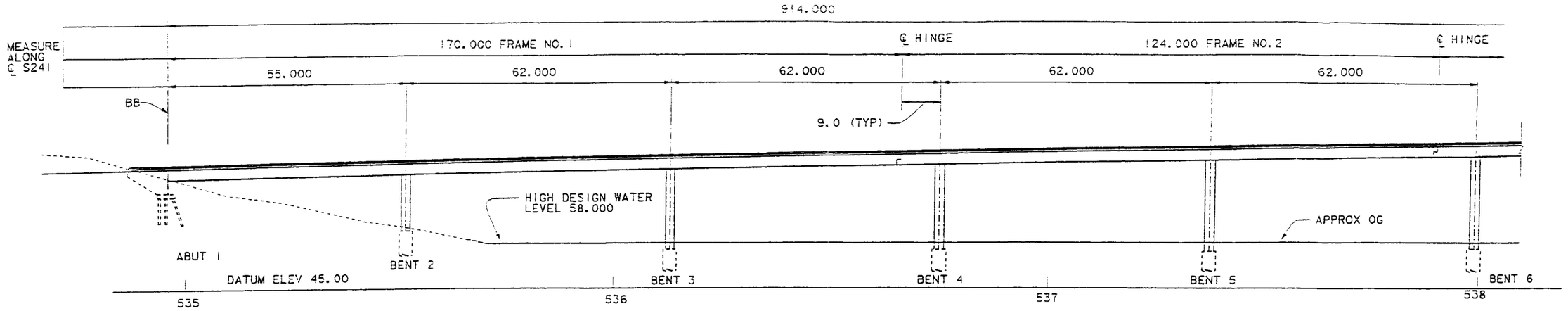
SAN JUAN CREEK BRIDGE

GENERAL PLAN

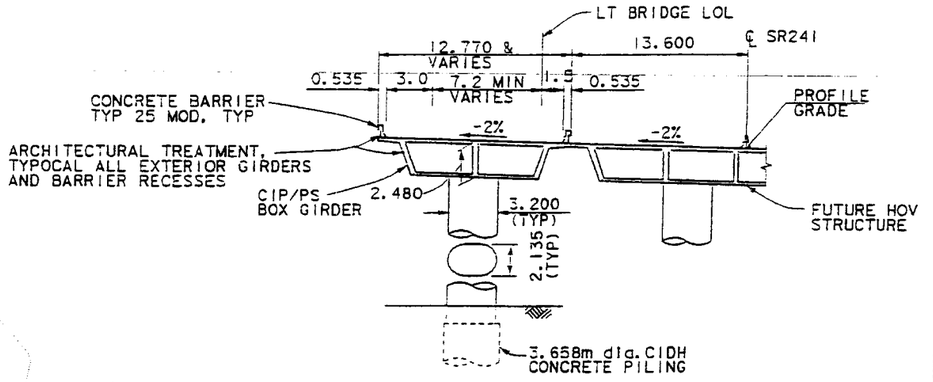
CU
EA

DISREGARD PRINTS BEARING EARLIER REVISION DATES

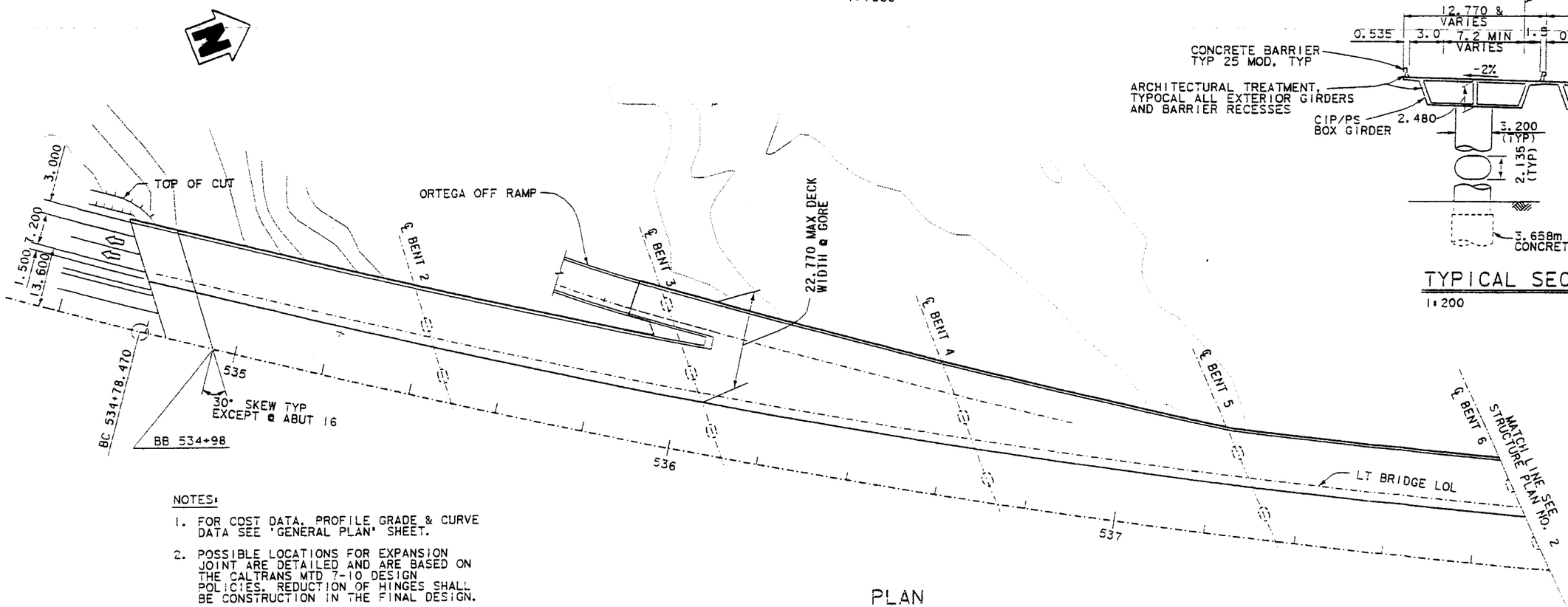
DESIGN GENERAL PLAN SHEET (METRIC) (REV. 2/1/99)



ELEVATION
1:1000



TYPICAL SECTION
1:200



NOTES:

1. FOR COST DATA, PROFILE GRADE & CURVE DATA SEE 'GENERAL PLAN' SHEET.
2. POSSIBLE LOCATIONS FOR EXPANSION JOINT ARE DETAILED AND ARE BASED ON THE CALTRANS MTD 7-10 DESIGN POLICIES. REDUCTION OF HINGES SHALL BE CONSTRUCTION IN THE FINAL DESIGN.

PLAN
1:1000

ALL DIMENSIONS ARE IN METERS UNLESS OTHERWISE SHOWN

CC

APPROVED	CDMG MANAGER OF ENGINEERING	DESIGN	BY	CHECKED	CDMG
		DETAILS	BY J.A. WANG	CHECKED	
CDA APPROVED CHIEF ENGINEER	CALTRANS	QUANTITIES	BY	CHECKED	

TRANSPORTATION CORRIDOR AGENCIES

BRIDGE NO.

KILOMETER POST

SAN JUAN CREEK BRIDGE SB

STRUCTURE PLAN NO. 1

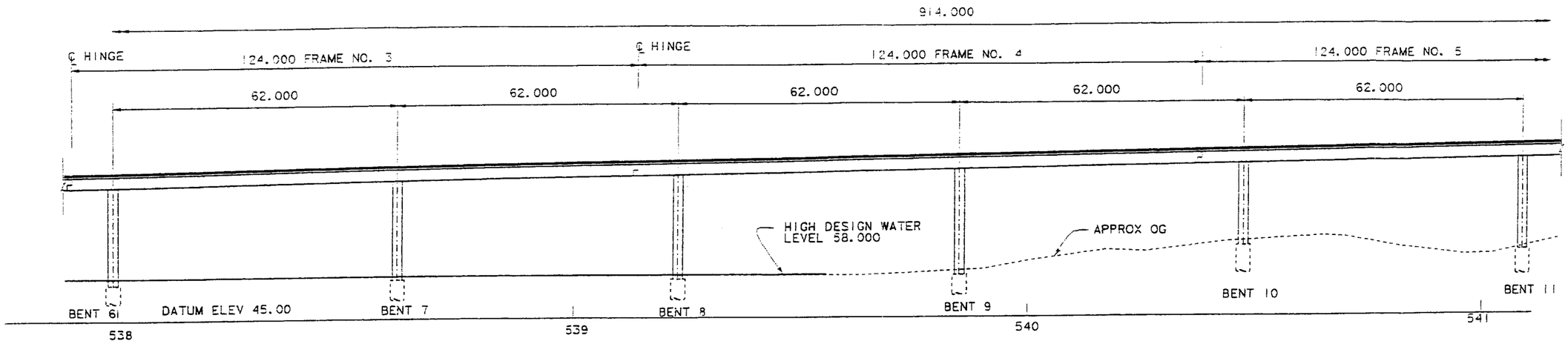
DESIGN GENERAL PLAN SHEET (METRIC) (REV. 2/1/99)

CU
EA

DISREGARD PRINTS BEARING EARLIER REVISION DATES

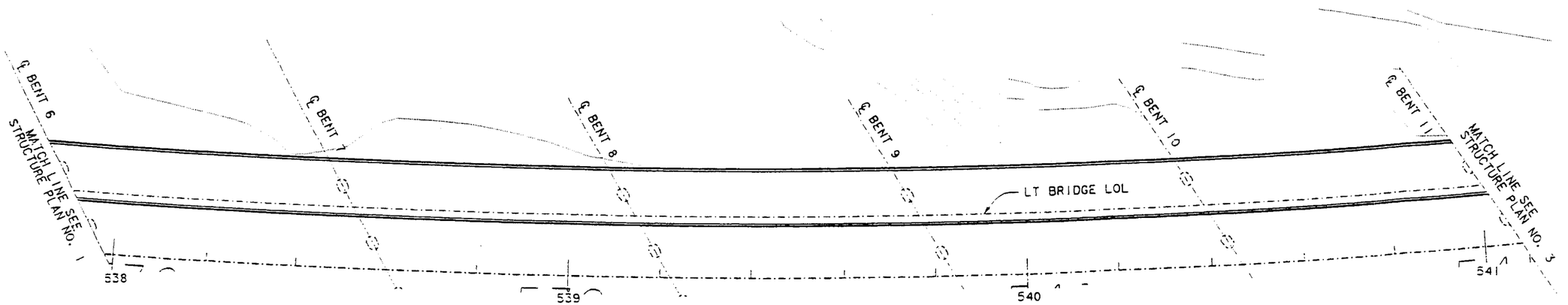
REVISION DATES (PRELIMINARY STAGE ONLY)

SHEET



ELEVATION

1:1000



PLAN

1:1000

ALL DIMENSIONS ARE IN METERS UNLESS OTHERWISE SHOWN

CC

APPROVED

DESIGN BY CHECKED

DETAILS BY J.R. WANG CHECKED

QUANTITIES BY CHECKED

CDMG

TRANSPORTATION CORRIDOR AGENCIES

SAN JUAN CREEK BRIDGE SB

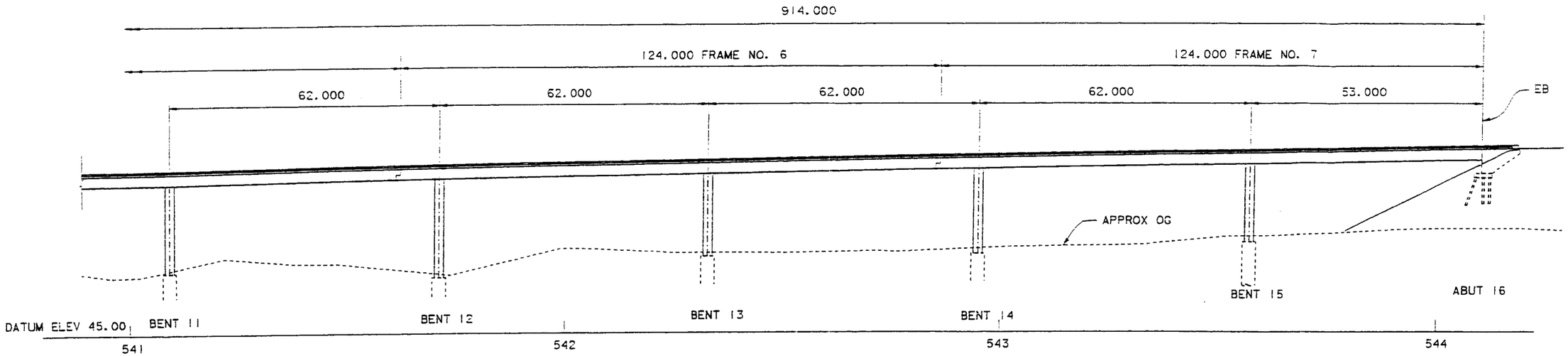
STRUCTURE PLAN NO. 2

DESIGN GENERAL PLAN SHEET (METRIC) (REV. 2/1/99)

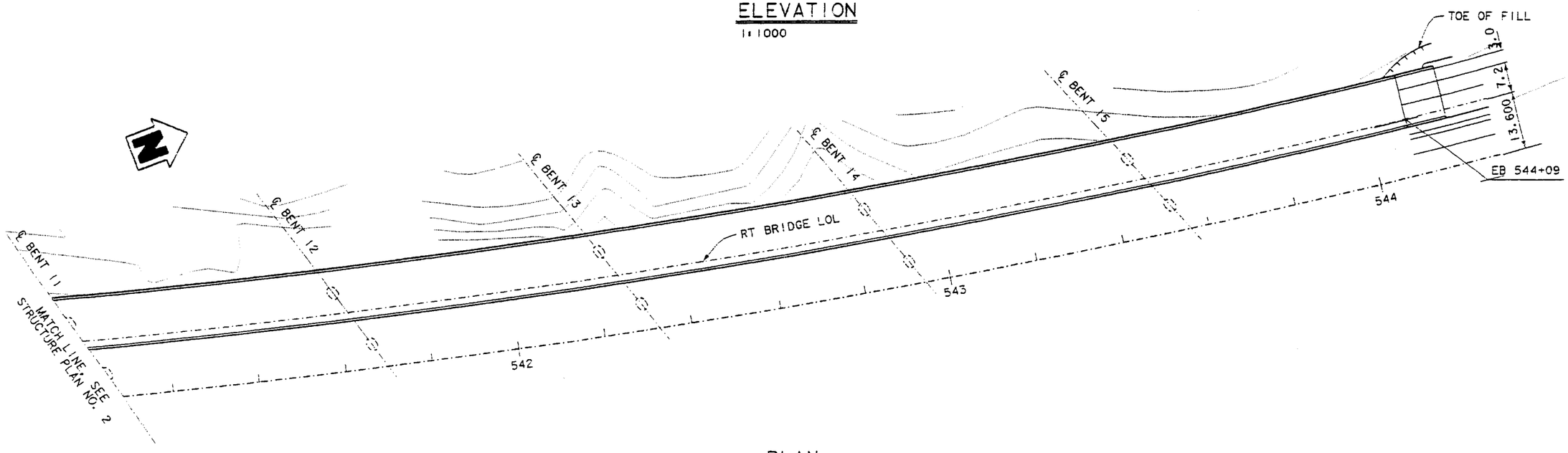
DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES (PRELIMINARY PLANS ONLY)

Caltrans Metric



ELEVATION
1:1000



PLAN
1:1000

ALL DIMENSIONS ARE IN METERS UNLESS OTHERWISE SHOWN

CC

APPROVED

TCA APPROVED CHIEF ENGINEER

CDMG MANAGER OF ENGINEERING

CALTRANS

DESIGN	BY		CHECKED
DETAILS	BY	JA. WANG	CHECKED
QUANTITIES	BY		CHECKED

CDMG

TRANSPORTATION CORRIDOR AGENCIES

BRIDGE NO.

KILOMETER POST

SAN JUAN CREEK BRIDGE SB
STRUCTURE PLAN NO. 3

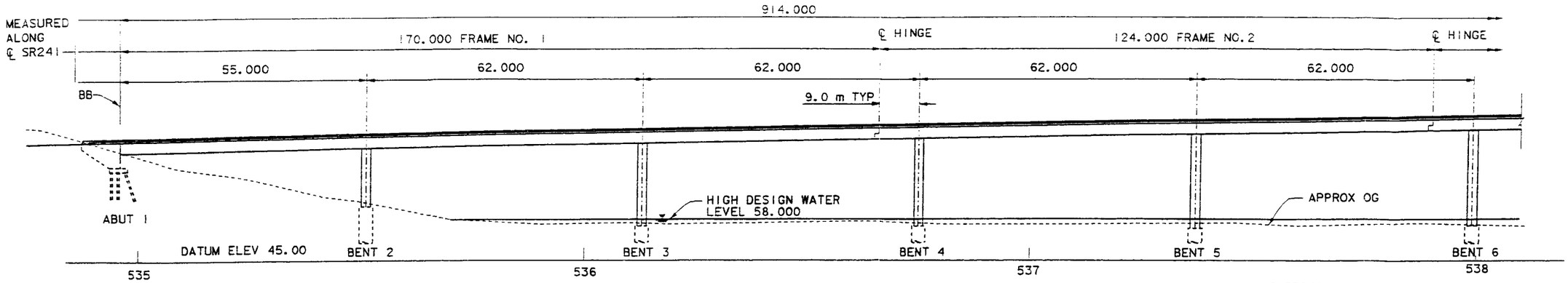
DESIGN GENERAL PLAN SHEET (METRIC) (REV. 2/1/99)

CU
EA

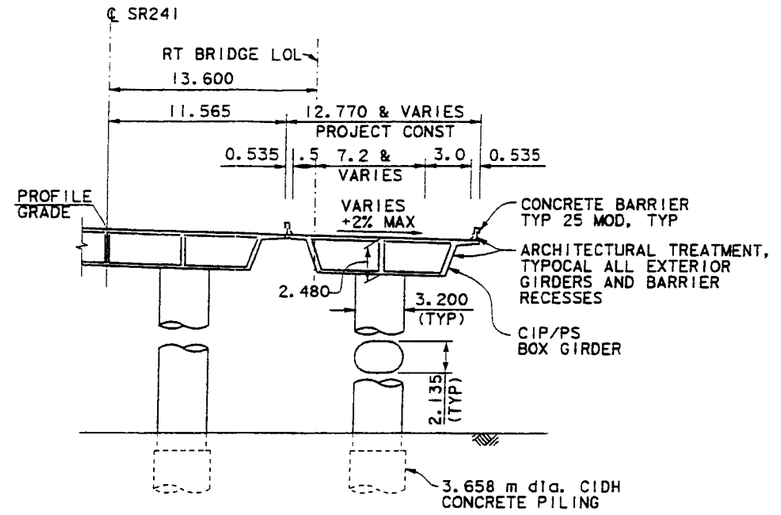
DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES (PRELIMINARY, STAGE, CAL)

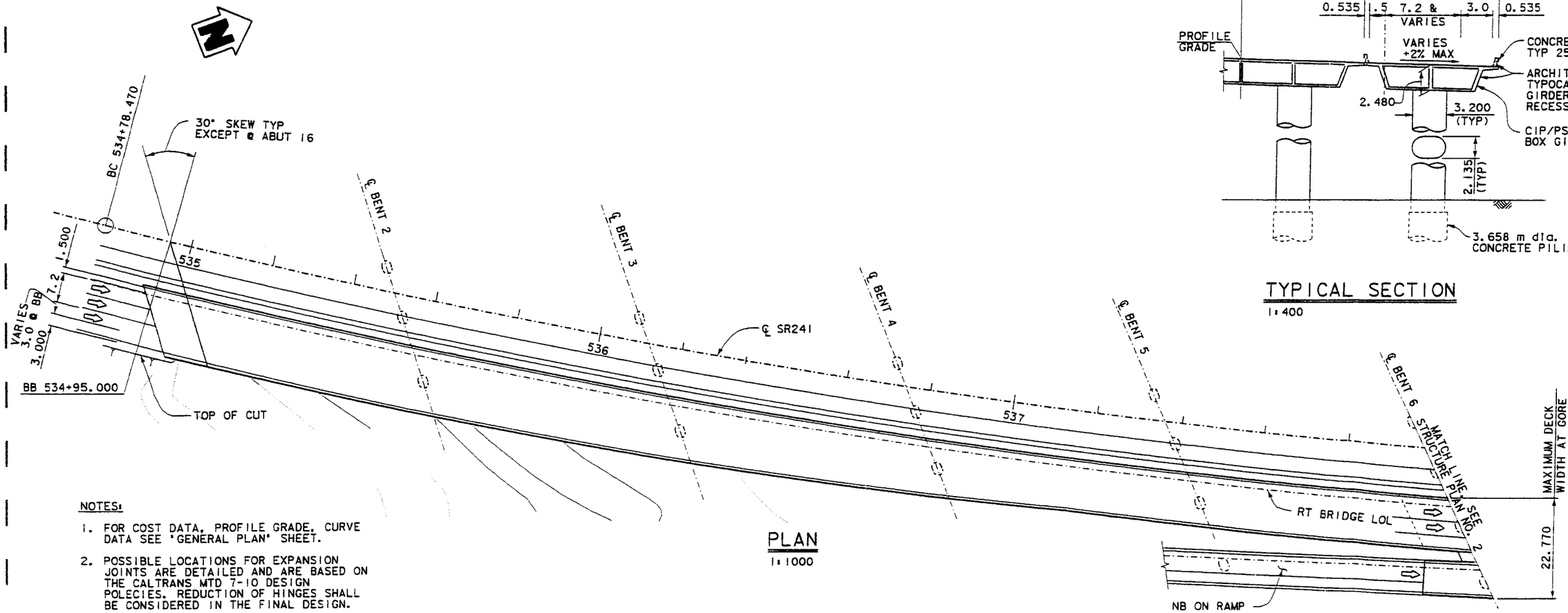
SHEET NO.



ELEVATION
1:1000



TYPICAL SECTION
1:400



PLAN
1:1000

NOTES:

1. FOR COST DATA, PROFILE GRADE, CURVE DATA SEE 'GENERAL PLAN' SHEET.
2. POSSIBLE LOCATIONS FOR EXPANSION JOINTS ARE DETAILED AND ARE BASED ON THE CALTRANS MTD 7-10 DESIGN POLECIES. REDUCTION OF HINGES SHALL BE CONSIDERED IN THE FINAL DESIGN.

ALL DIMENSIONS ARE IN METERS UNLESS OTHERWISE SHOWN

CC

APPROVED

TCA APPROVED CHIEF ENGINEER

CDMG MANAGER OF ENGINEERING

CALTRANS

DESIGN	BY		CHECKED
DETAILS	BY	JA. WANG	CHECKED
QUANTITIES	BY		CHECKED

CDMG

TRANSPORTATION CORRIDOR AGENCIES

BRIDGE NO.

KILOMETER POST

CU

EA

SAN JUAN CREEK BRIDGE NB
STRUCTURE PLAN NO. 1

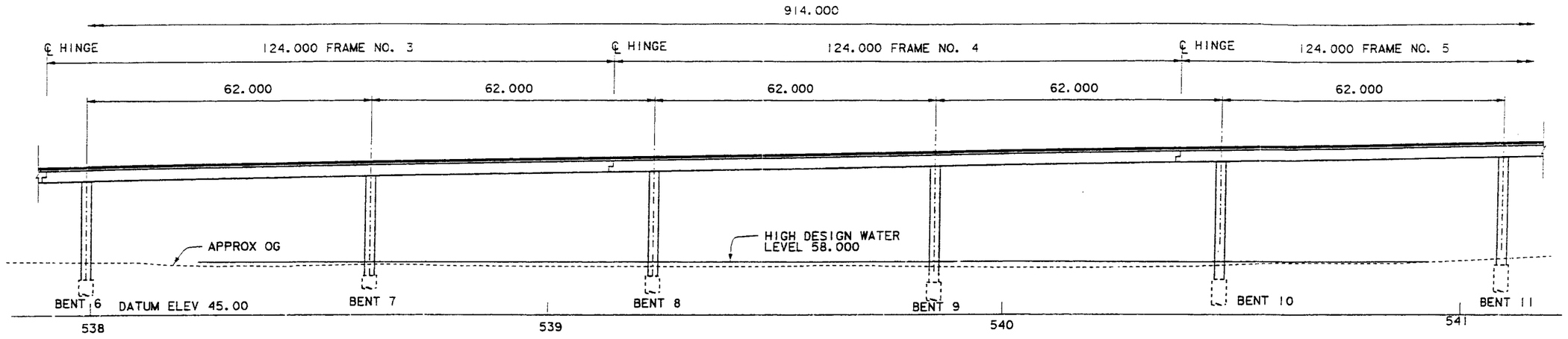
DESIGN GENERAL PLAN SHEET (METRIC) (REV. 3/1/99)

DISREGARD PRINTS BEARING EARLIER REVISION DATES

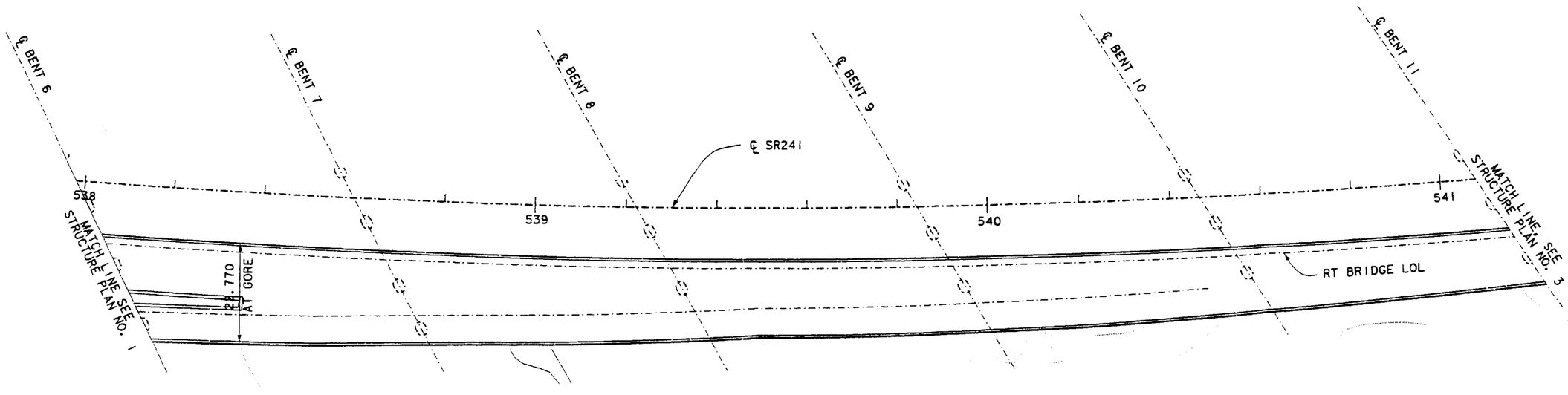
REVISION DATES (PRELIMINARY STAGE ONLY)

SHEET

USERNAME = J.Zhong



ELEVATION
1 : 1000



PLAN
1 : 1000

ALL DIMENSIONS ARE IN METERS UNLESS OTHERWISE SHOWN

CC

APPROVED		DESIGN	BY		CHECKED	BRIDGE NO.	SAN JUAN CREEK BRIDGE NB
	COMG MANAGER OF ENGINEERING	DETAILS	BY	JA. WANG	CHECKED	KILOMETER POST	STRUCTURE PLAN NO. 2
DCA APPROVED CHIEF ENGINEER	CALTRANS	QUANTITIES	BY		CHECKED		

CDMG

TRANSPORTATION CORRIDOR AGENCIES

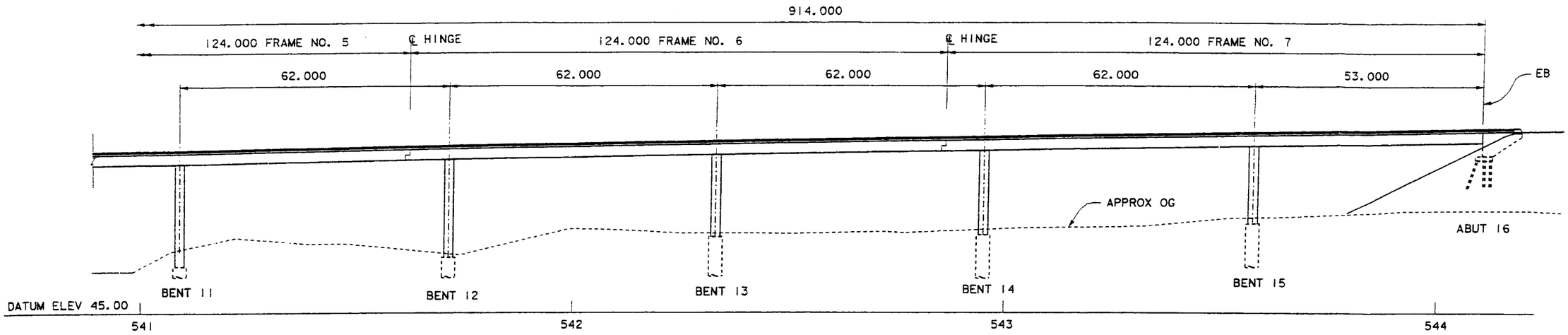
DESIGN GENERAL PLAN SHEET (METRIC) (REV. 3/1/99)

CU
EA

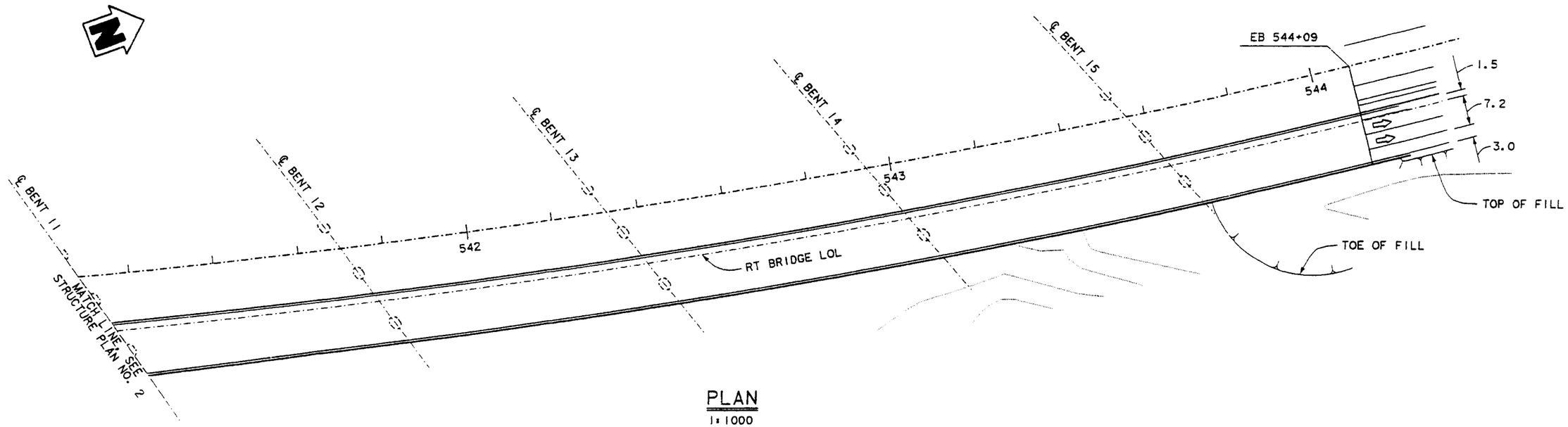
DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES (PRELIMINARY STAGE ONLY)

SHEET



ELEVATION
1:1000



PLAN
1:1000

ALL DIMENSIONS ARE IN METERS UNLESS OTHERWISE SHOWN

CC

APPROVED

TCA APPROVED CHIEF ENGINEER

CDMG MANAGER OF ENGINEERING

CALTRANS

DESIGN	BY		CHECKED
DETAILS	BY	JA. WANG	CHECKED
QUANTITIES	BY		CHECKED

CDMG

TRANSPORTATION CORRIDOR AGENCIES

BRIDGE NO.

KILOMETER POST

SAN JUAN CREEK BRIDGE NB
STRUCTURE PLAN NO. 3

DESIGN GENERAL PLAN SHEET (METRIC) (REV. 3/1/99)

CU
EA

DISREGARD PRINTS BEARING EARLIER REVISION DATES

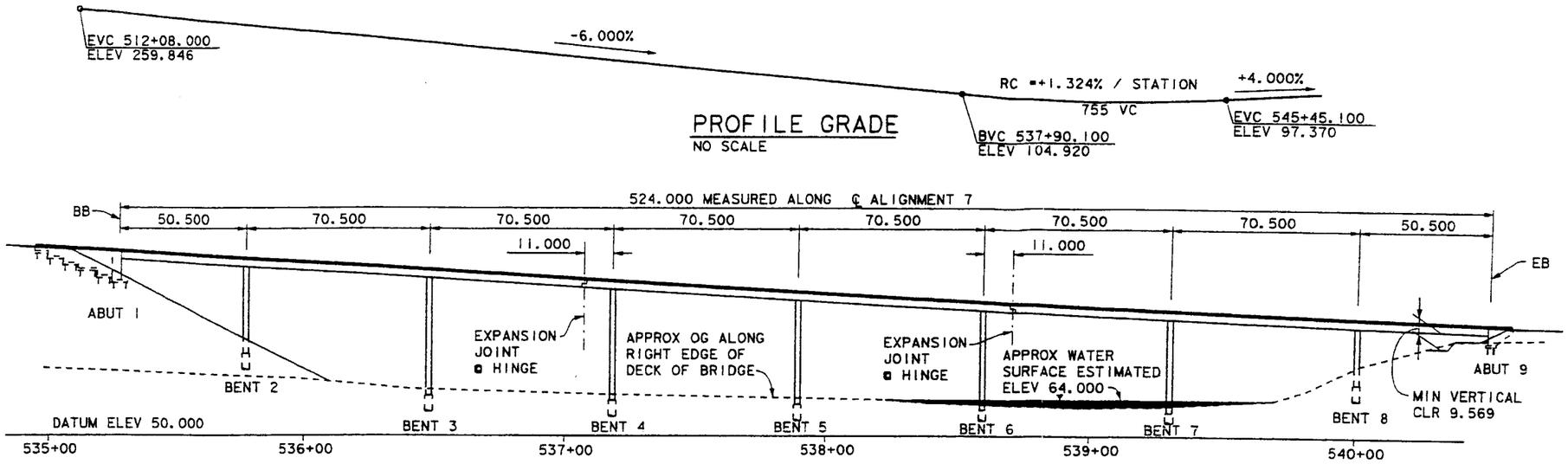
REVISION DATES (PRELIMINARY STAGE ONLY)

SHEET OF

USERNAME = J.Zhang

Appendix CC. Alignment Drawings

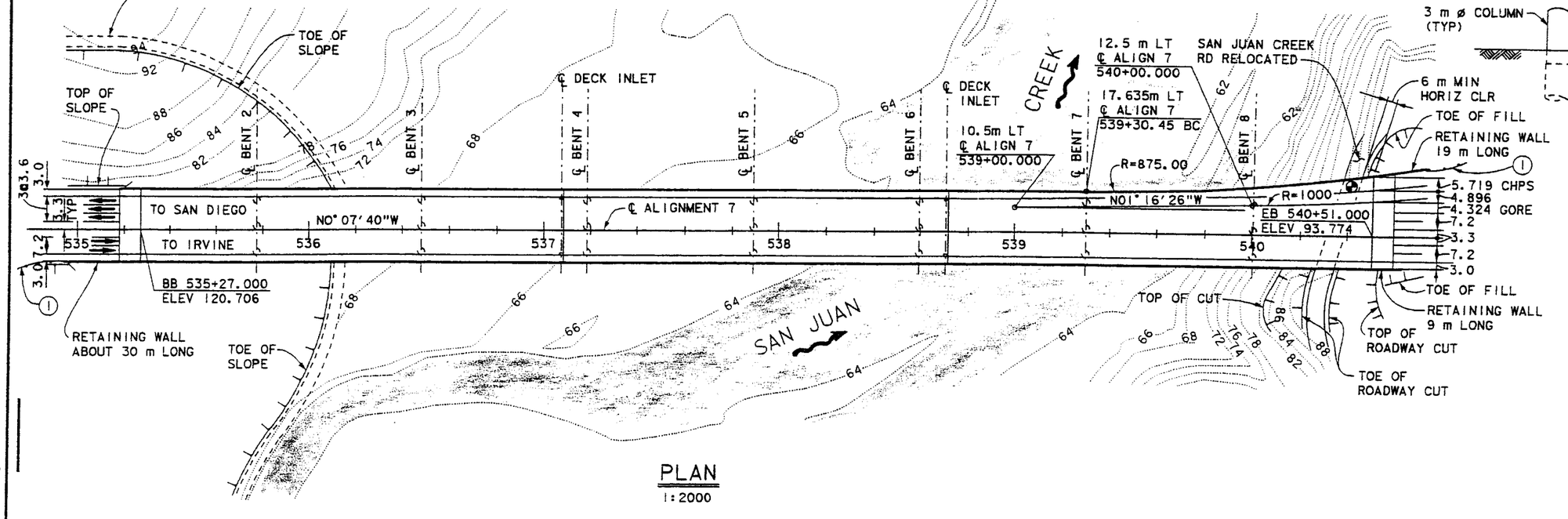
- A7C Alternative Bridge Plans



PROFILE GRADE
NO SCALE

ELEVATION
1:2000

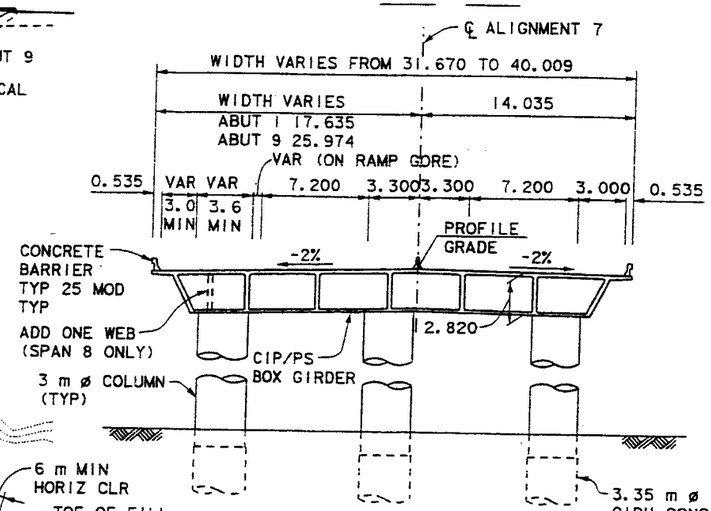
PILE & CIDH DATA
GEOTECHNICAL RECOMMENDATION
NOT AVAILABLE



PLAN
1:2000

COST DATA

DATE OF ESTIMATE		FEB 2002
STRUCTURE DEPTH	=	2.820 m
LENGTH	=	524.00
WIDTH (m)	=	32.309 AVERAGE
AREA (m^2)	=	16,930
NEW CONST. COST/SQ INCLUDING 10% MOBILIZATION & 25% CONTINGENCY	=	
BRIDGE REMOVAL COST MOBIL & COATINGS INCL	=	
BRIDGE RETROFIT	=	
TOTAL COST	=	
GRAND TOTAL	=	



TYPICAL SECTION
1:400

LEGEND

- ▫ DECK INLET
- ◘ POINT OF MINIMUM VERTICAL CLEARANCE
- ① MBGR

ALL DIMENSIONS ARE IN METERS UNLESS OTHERWISE SHOWN

A7

APPROVED		DESIGN	BY		CHECKED
TCA APPROVED CHIEF ENGINEER	CDMG MANAGER OF ENGINEERING	DETAILS	BY	L. ZHANG	CHECKED
	CALTRANS	QUANTITIES	BY		CHECKED

CDMG

TRANSPORTATION CORRIDOR AGENCIES

BRIDGE NO.

KILOMETER POST

SAN JUAN CREEK BRIDGE
GENERAL PLAN

DESIGN GENERAL PLAN SHEET (METRIC) (REV. 3/1/99)

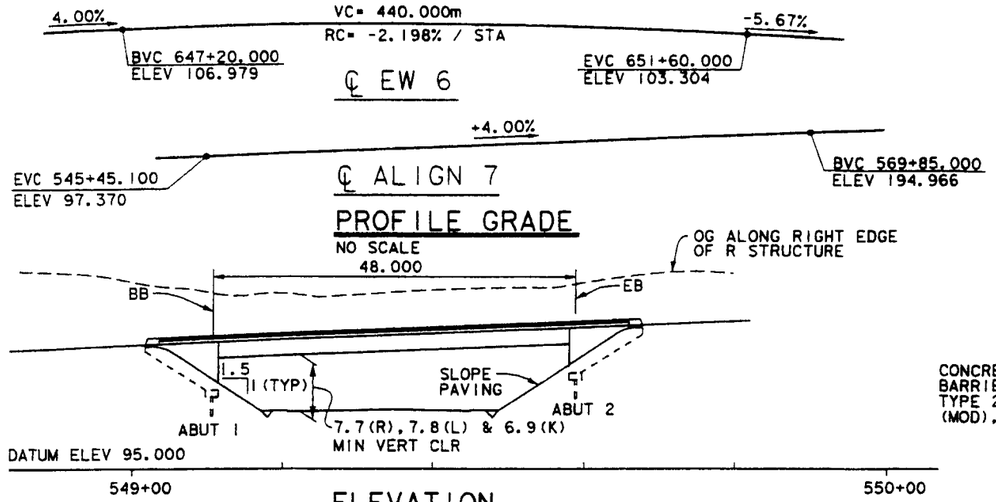
CU
EA

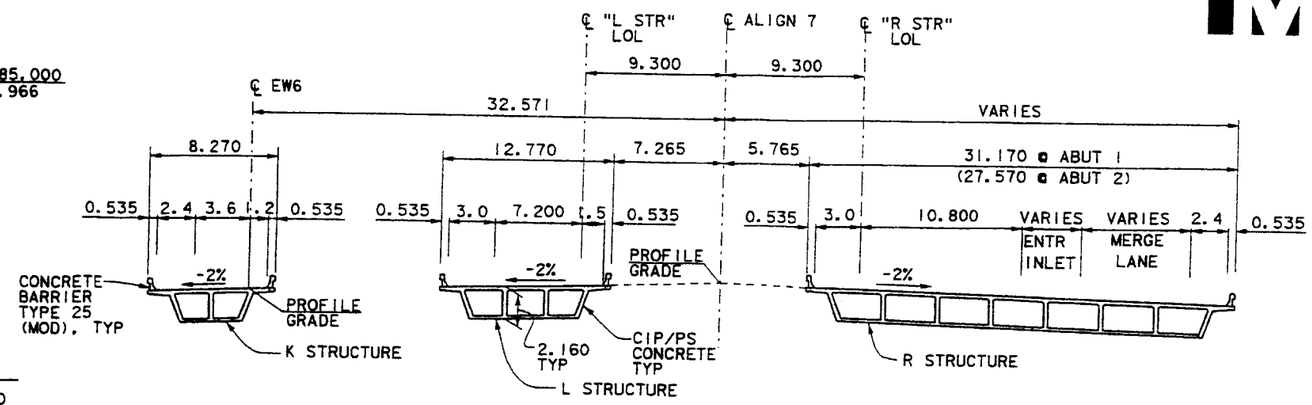
DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES (PRELIMINARY STAGE ONLY)

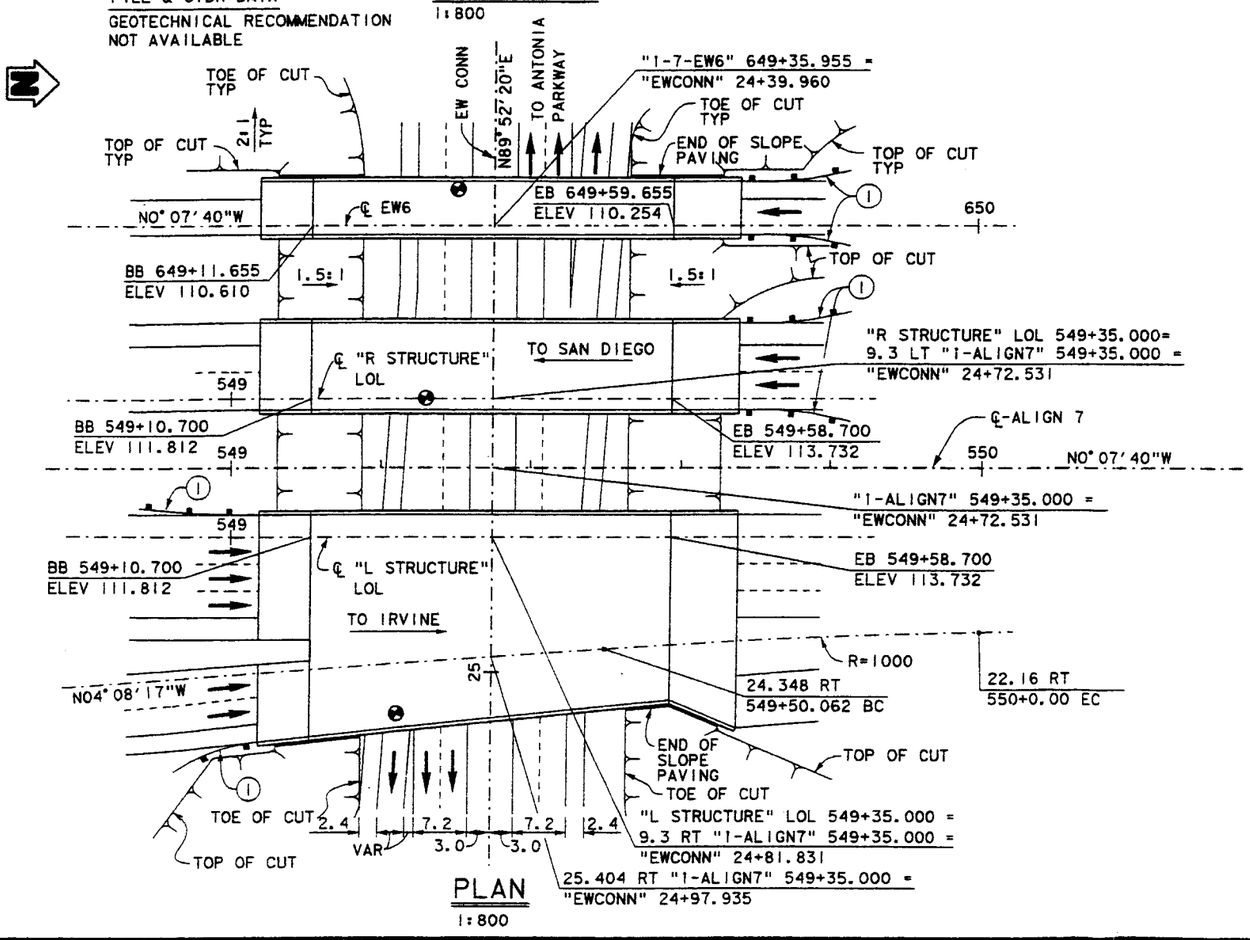
SHEET OF

USERNAME = %USER





TYPICAL SECTION
1:400



PLAN
1:800

COST DATA

		K	L	R
DATE OF ESTIMATE		MAR 2002		
STRUCTURE DEPTH	=	2.16	2.16	2.16
LENGTH	=	48	48	48
WIDTH (m)	=	8.27	12.77	29.37 (AVERAGE)
AREA (m^2)	=	397	613	1410
NEW CONST. COST/SQ INCLUDING 10% MOBILIZATION & 25% CONTINGENCY	=			
BRIDGE REMOVAL COST MOBIL & COATINGS INCL	=			
BRIDGE RETROFIT	=			
TOTAL COST	=			
GRAND TOTAL	=			

LEGEND

- POINT OF MINIMUM VERTICAL CLEARANCE
- (1) MBGR

ALL DIMENSIONS ARE IN METERS UNLESS OTHERWISE SHOWN

A7

APPROVED	CDMG MANAGER OF ENGINEERING	DESIGN	BY	CHECKED	CDMG
TCA APPROVED CHIEF ENGINEER	CALTRANS	DETAILS	BY L. ZHANG	CHECKED	
		QUANTITIES	BY	CHECKED	

TRANSPORTATION CORRIDOR AGENCIES

BRIDGE NO.

KILOMETER POST

E/W CONNECTOR (K, L & R)

GENERAL PLAN

DESIGN GENERAL PLAN SHEET (METRIC) (REV.3/1/99)

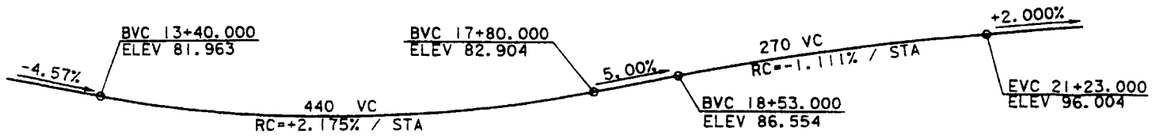
CU
EA

DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES (PRELIMINARY STAGE ONLY)

SHEET OF

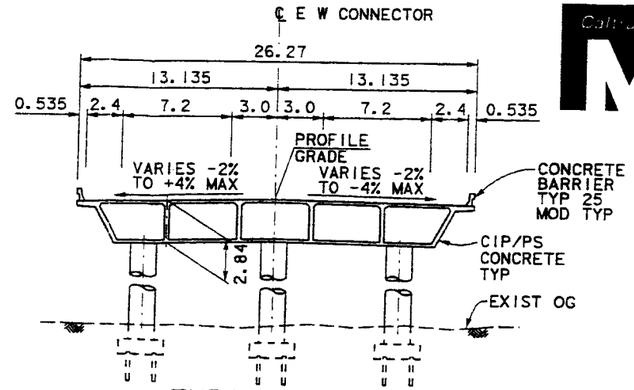
USERNAME => $USER



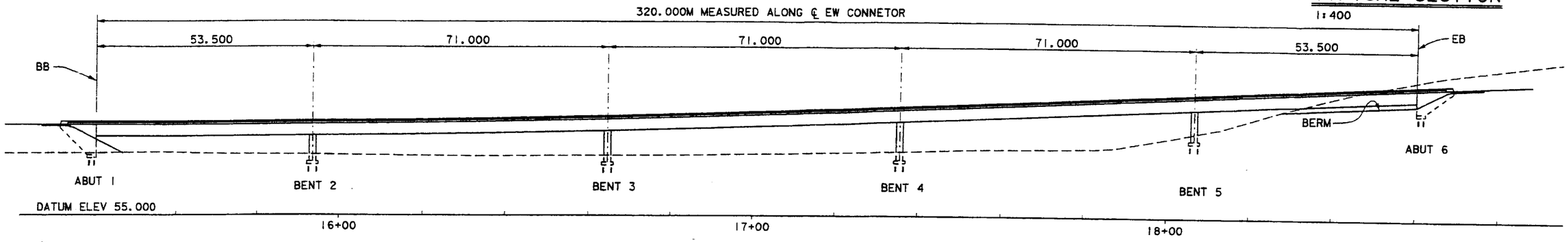
PROFILE GRADE
NO SCALE

COST DATA
(PROJECT STRUCTURE ONLY)

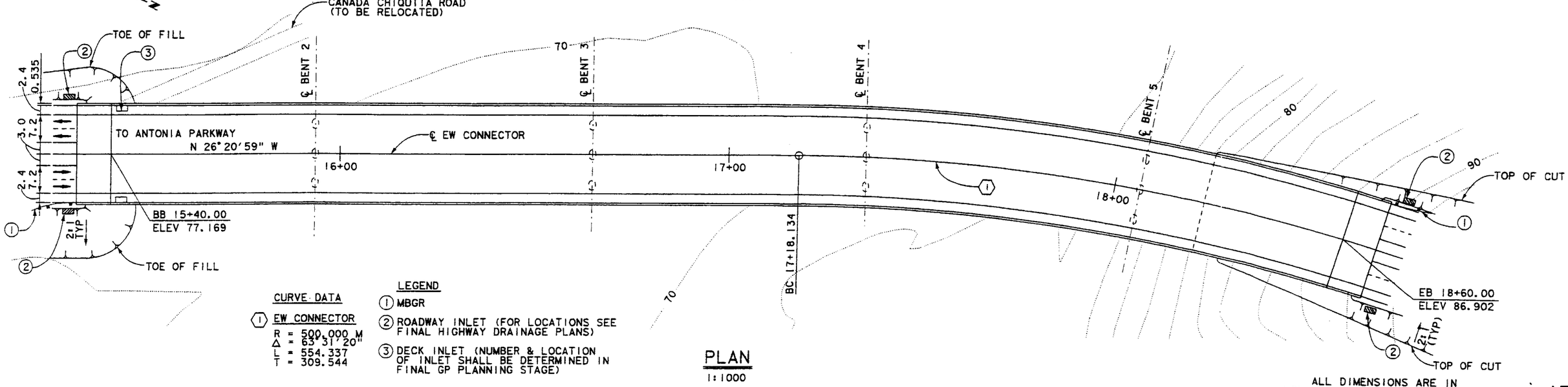
DATE OF ESTIMATE	MARCH 2001
STRUCTURE DEPTH	= 2,840
LENGTH (m)	= 320.000
WIDTH (m)	= 26.270
AREA (m^2)	= 8406.4
NEW CONST. COST/SQ INCLUDING 10% MOBILIZATION & 25% CONTINGENCY	=
BRIDGE REMOVAL COST MOBIL & COATINGS INCL	=
BRIDGE RETROFIT	=
TOTAL COST	=
GRAND TOTAL	=



TYPICAL SECTION
1:400



ELEVATION
1:1000



CURVE DATA

(1) EW CONNECTOR
R = 500.000 M
Δ = 63°31'20"
L = 554.337
T = 309.544

LEGEND

(1) MBGR
(2) ROADWAY INLET (FOR LOCATIONS SEE FINAL HIGHWAY DRAINAGE PLANS)
(3) DECK INLET (NUMBER & LOCATION OF INLET SHALL BE DETERMINED IN FINAL GP PLANNING STAGE)

PLAN
1:1000

ALL DIMENSIONS ARE IN METERS UNLESS OTHERWISE SHOWN

A7

APPROVED

TCA APPROVED CHIEF ENGINEER

CDMG MANAGER OF ENGINEERING

CALTRANS

DESIGN	BY		CHECKED
DETAILS	BY	JA. WANG	CHECKED
QUANTITIES	BY		CHECKED

CDMG

TRANSPORTATION CORRIDOR AGENCIES

BRIDGE NO.

KILOMETER POST

EW CONNECTOR OVER CANADA CHIQUITA
GENERAL PLAN

CU
EA

DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES (PRELIMINARY STAGE ONLY)

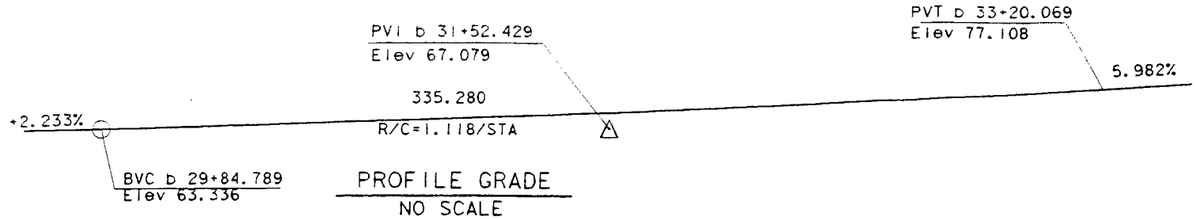
SHEET OF

DESIGN GENERAL PLAN SHEET (METRIC) (REV.3/1/99)

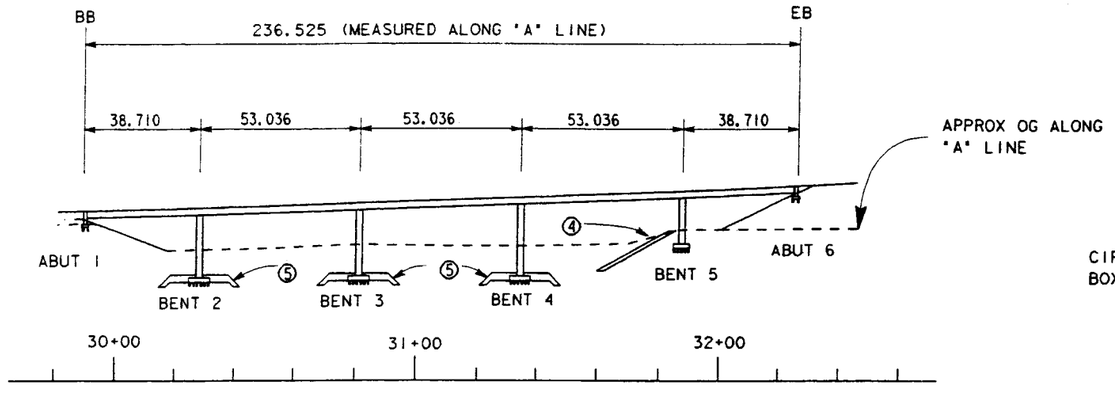
USERNAME => $USER

Appendix CC. Alignment Drawings

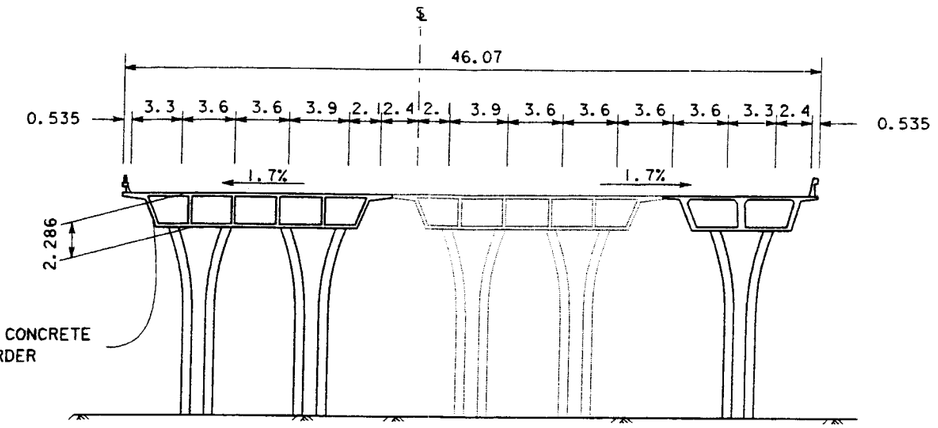
- AIO Alternative Bridge Plans



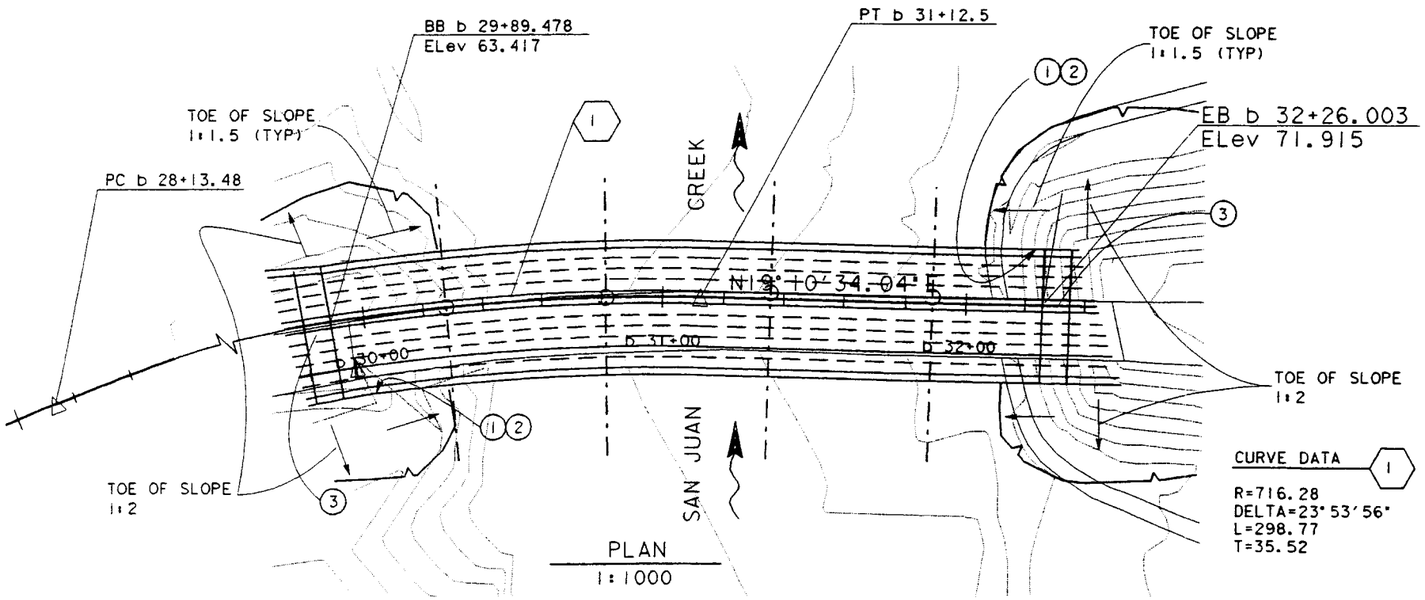
PROFILE GRADE
NO SCALE



ELEVATION
1:1000



TYPICAL SECTION
NO SCALE



PLAN
1:1000

CURVE DATA (1)
R=716.28
DELTA=23°53'56"
L=298.77
T=35.52

LEGEND
1. PAINT BRIDGE NAME
2. PAINT BRIDGE NO. AND YEAR CONSTRUCTED
3. STRUCTURE APPROACH TYPE N(9S)
4. RIPRAP BANK PROTECTION
5. RIPRAP PILE CAP PROTECTION
→ INDICATES DIRECTION OF TRAFFIC

ASSUMED FOUNDATION TYPE
CIDH PILES

COST DATA

DATE OF ESTIMATE	=XX-XX-XX
STRUCTURE DEPTH	=XX.XX
LENGTH	=XX.XX+/-
WIDTH (AVERAGE)	=XX.XXX+/-
AREA	=XXX.Xm2+/-
COST/SQ. METER INCLUDING 10% MOBILIZATION & 25% CONTINGENCY	=$XXXX/m2
TOTAL COST	=$XXX,XXX

ALL DIMENSIONS ARE IN METERS UNLESS OTHERWISE SHOWN

A10

APPROVED

TCA APPROVED CHIEF ENGINEER

CDMG MANAGER OF ENGINEERING

CALTRANS

DESIGN	BY	CHECKED
DETAILS	BY	CHECKED
QUANTITIES	BY	CHECKED

CDMG

TRANSPORTATION CORRIDOR AGENCIES

BRIDGE NO.

KILOMETER POST

SAN JUAN CREEK BRIDGE

GENERAL PLAN

DESIGN GENERAL PLAN SHEET (METRIC) (REV.3/1/99)

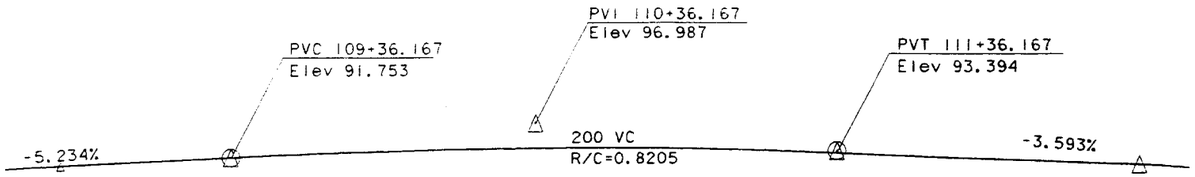
CU
EA

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

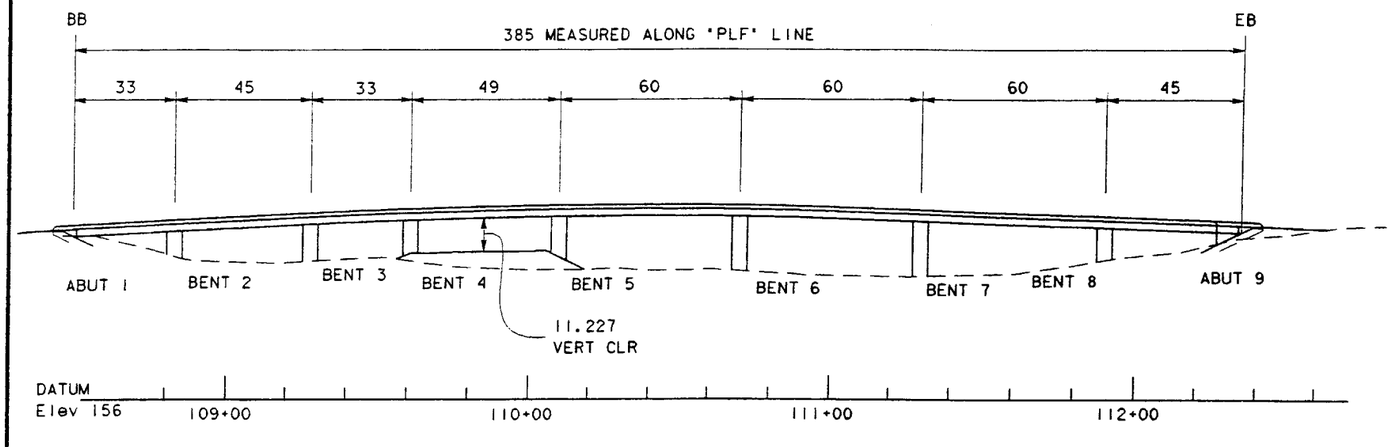
REVISION DATES (PRELIMINARY STAGE ONLY)

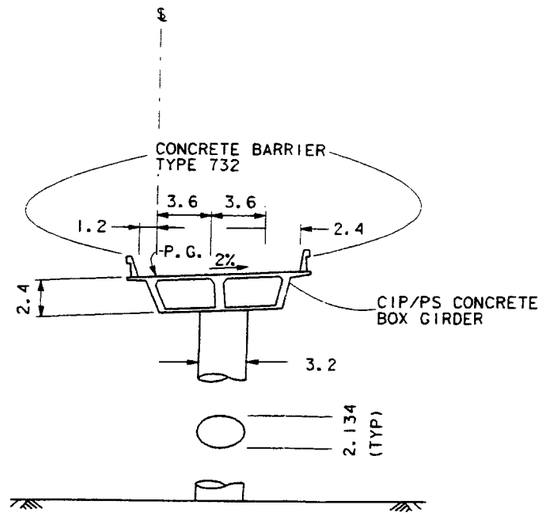
SHEET OF

USERNAME => $USER

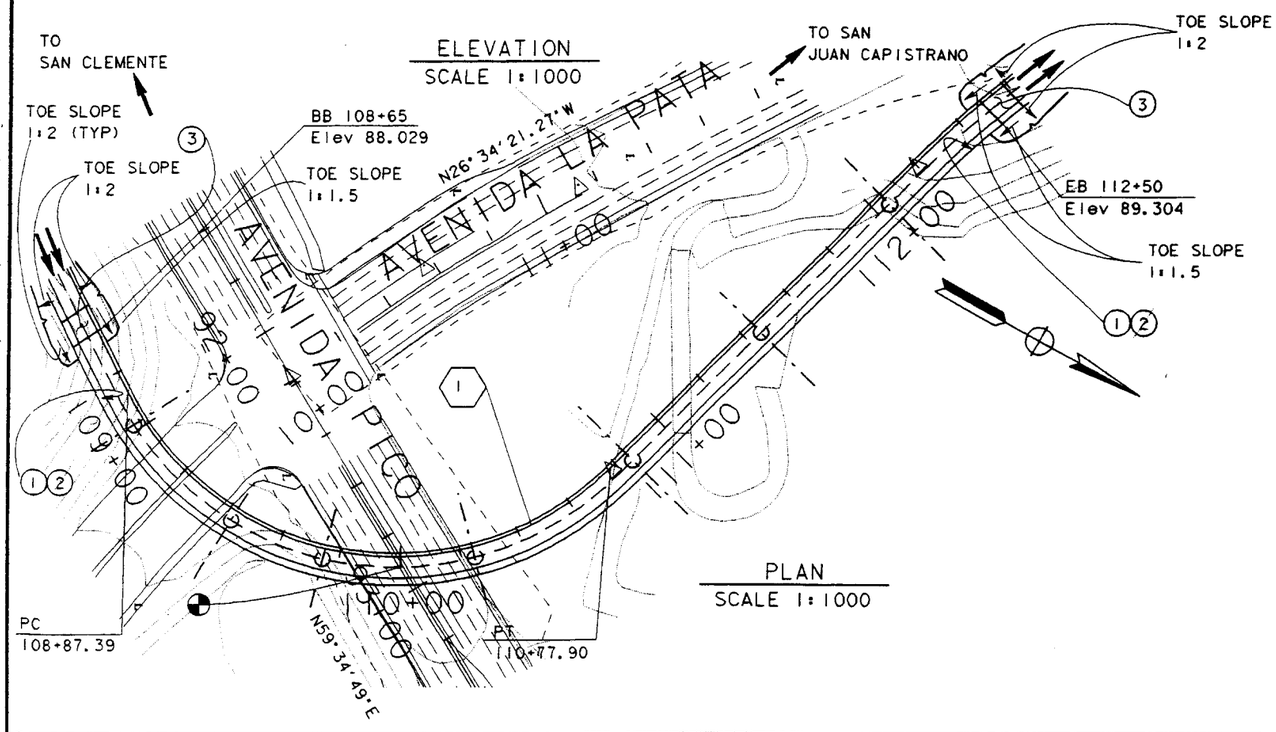


PROFILE GRADE
NO SCALE





TYPICAL SECTION
1:200



ELEVATION
SCALE 1:1000

PLAN
SCALE 1:1000

CURVE DATA (1)
R=100.00
DELTA=109°9'14.4"
L=190.509
T=140.594

CURVE DATA (2)
R=400
DELTA=29°44'49.2"
L=203.934
T=106.234

ASSUMED FOUNDATION TYPE

CIDH PILES

COST DATA

DATE OF ESTIMATE	=XX-XX-XX
STRUCTURE DEPTH	=X.X
LENGTH	=XX.X+/-
WIDTH (AVERAGE)	=XX.XXX+/-
AREA	=XXX.Xm2+/-
COST/SQ. METER INCLUDING 10% MOBILIZATION & 25% CONTINGENCY	=$XXXX/m2
TOTAL COST	=$XXX,XXX

LEGEND

(1) PAINT BRIDGE NAME
(2) PAINT BRIDGE NO. AND YEAR CONSTRUCTED
(3) STRUCTURE APPROACH TYPE N(9S)
POINT OF MINIMUM VERTICAL CLEARANCE
INDICATES DIRECTION OF TRAFFIC

ALL DIMENSIONS ARE IN METERS UNLESS OTHERWISE SHOWN A10

APPROVED		DESIGN	BY	CHECKED	CDMG
TCA APPROVED CHIEF ENGINEER	CDMG MANAGER OF ENGINEERING	DETAILS	BY	CHECKED	TRANSPORTATION CORRIDOR AGENCIES
	CALTRANS	QUANTITIES	BY	CHECKED	

BRIDGE NO.
KILOMETER POST

AVENIDA PICO TO AVENIDA LA PATA FLYOVER RAMP

GENERAL PLAN

DESIGN GENERAL PLAN SHEET (METRIC) (REV. 3/1/99)

CU
EA

DISREGARD PRINTS BEARING EARLIER REVISION DATES

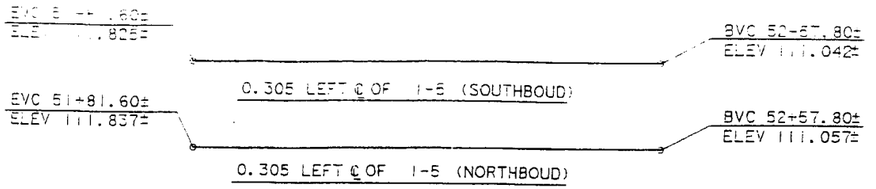
REVISION DATES (PRELIMINARY STAGE ONLY)

SHEET OF

USERNAME => @USER

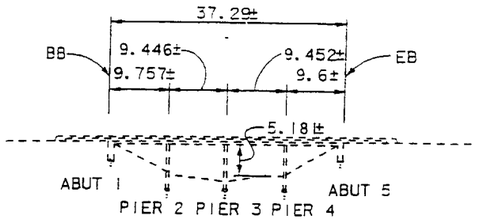
Appendix CC. Alignment Drawings

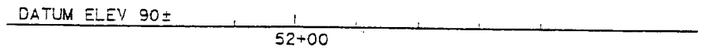
- I5 Alternative Bridge Plans



PROFILE GRADE

NO SCALE





ELEVATION

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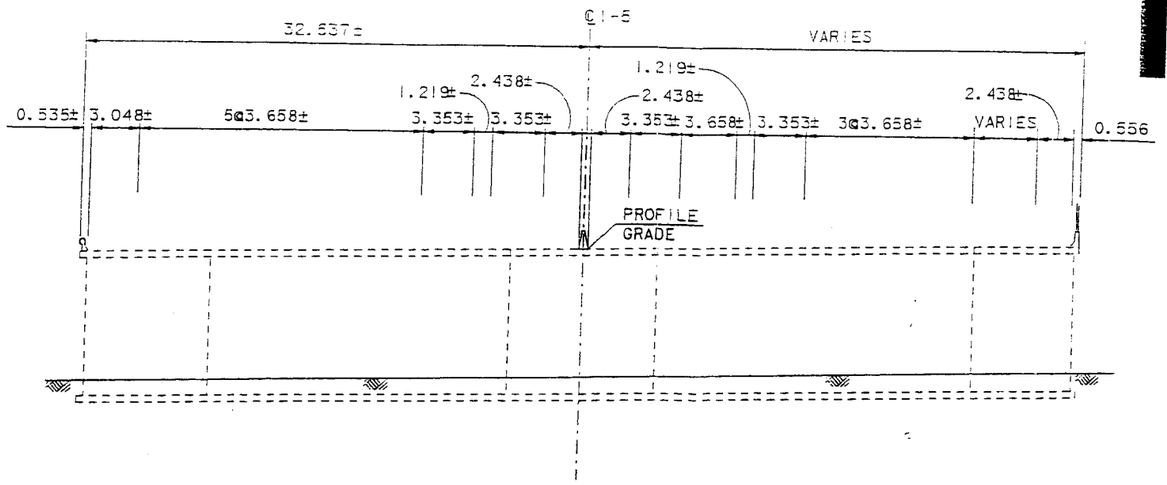
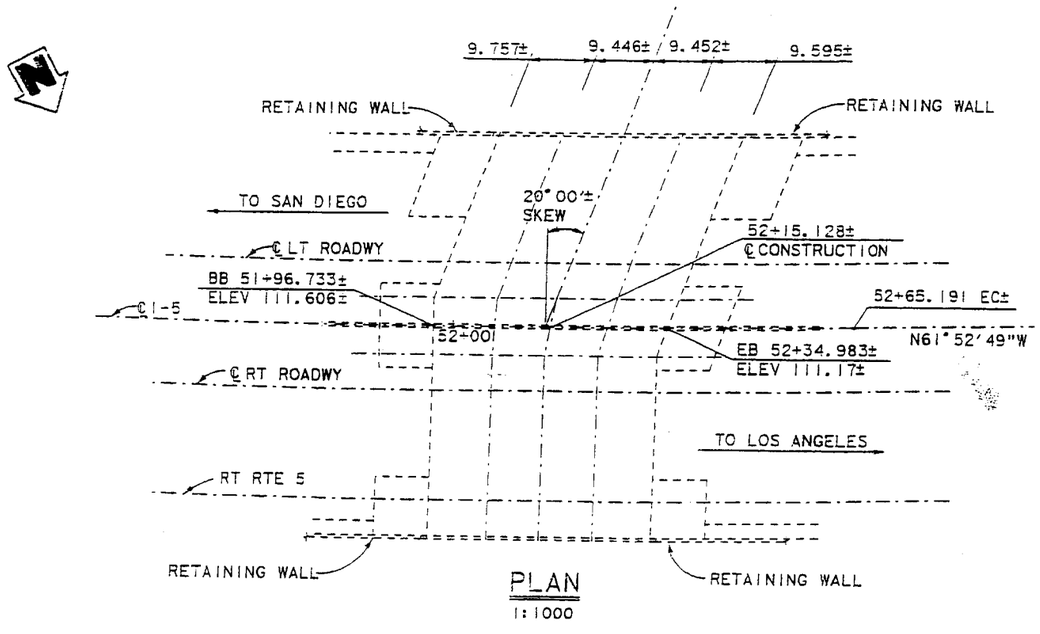


TYPICAL SECTION

1:400



PLAN

1:1000

LEGEND

- PROJECT CONSTRUCTION
- EXISTING CONSTRUCTION
- POINT OF MINIMUM VERTICAL CLEARANCE

ALL DIMENSIONS ARE IN METERS UNLESS OTHERWISE SHOWN

15W

APPROVED

TCA APPROVED CHIEF ENGINEER

CDMG MANAGER OF ENGINEERING

CALTRANS

	BY	CHECKED
DESIGN		
DETAILS	JA. WANG	
QUANTITIES		

CDMG

TRANSPORTATION CORRIDOR AGENCIES

BRIDGE NO. 55-14 R/L

KILOMETER POST

ALISO CREEK BRIDGE (WIDENING)

GENERAL PLAN

IGN GENERAL PLAN SHEET (METRIC) (REV.3/1/99)

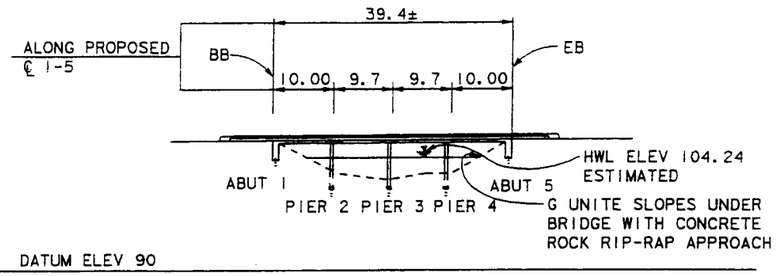
CU EA

DISREGARD PRINTS BEARING EARLIER REVISION DATES

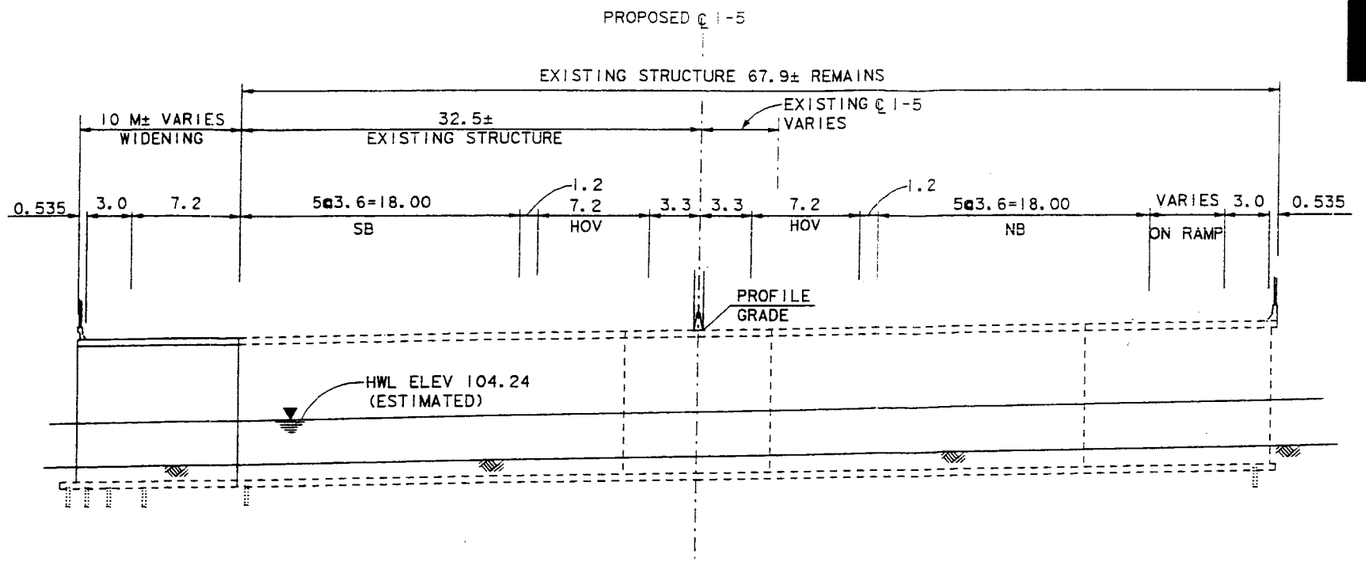
REVISION DATES (PRELIMINARY STAGE ONLY)

SHEET

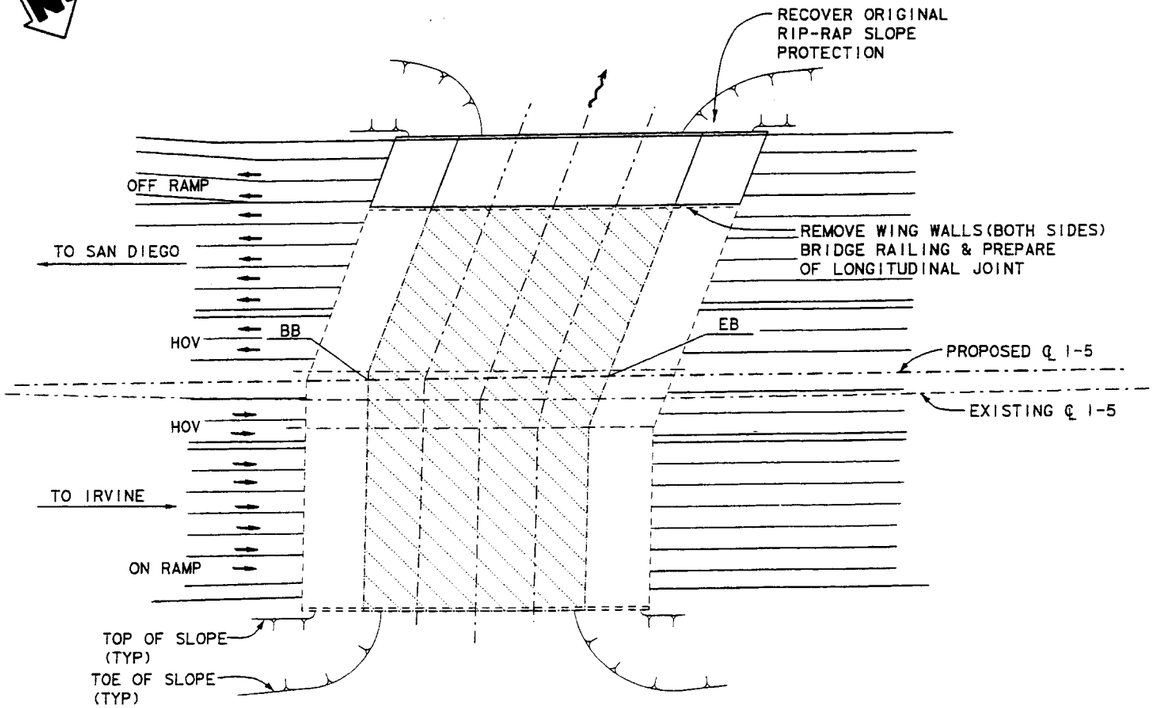
USERNAME => I Zhong



ELEVATION
1:1000



TYPICAL SECTION
1:400



PLAN
1:1000

COST DATA (WIDENING)

DATE OF ESTIMATE	SEP 2001
STRUCTURE DEPTH (m/m)	= 0.387
LENGTH (m)	= 39.757
WIDTH (m) VARIES	= 10
AREA (m^2)	= 398
NEW CONST. COST/SQ INCLUDING 10% MOBILIZATION & 25% CONTINGENCY	=
BRIDGE REMOVAL COST MOBIL & COATINGS INCL	= LS
BRIDGE RETROFIT	=
TOTAL COST	=
GRAND TOTAL	=

LEGEND

——— PROJECT CONSTRUCTION

- - - - - - EXISTING CONSTRUCTION

POINT OF MINIMUM VERTICAL CLEARANCE

ALL DIMENSIONS ARE IN METERS UNLESS OTHERWISE SHOWN

15W

APPROVED

TCA APPROVED CHIEF ENGINEER

COMG MANAGER OF ENGINEERING

CALTRANS

	BY	CHECKED
DESIGN		
DETAILS	JA. WANG	
QUANTITIES		

CDMG

TRANSPORTATION CORRIDOR AGENCIES

BRIDGE NO. 55-14 R/L

KILOMETER POST

ALISO CREEK BRIDGE (WIDENING)
GENERAL PLAN

DESIGN GENERAL PLAN SHEET (METRIC) (REV. 3/1/99)

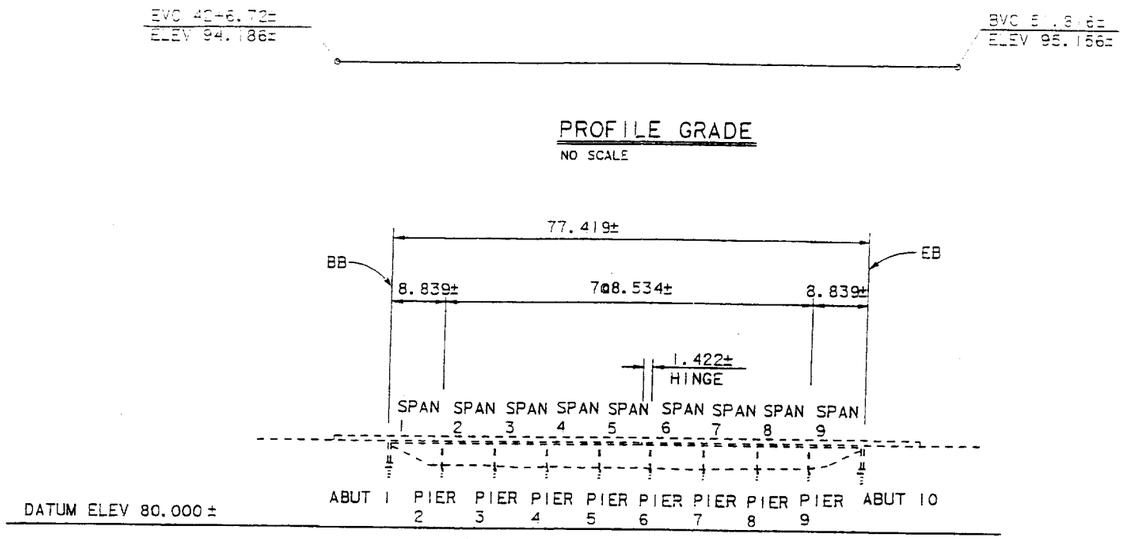
CU
EA

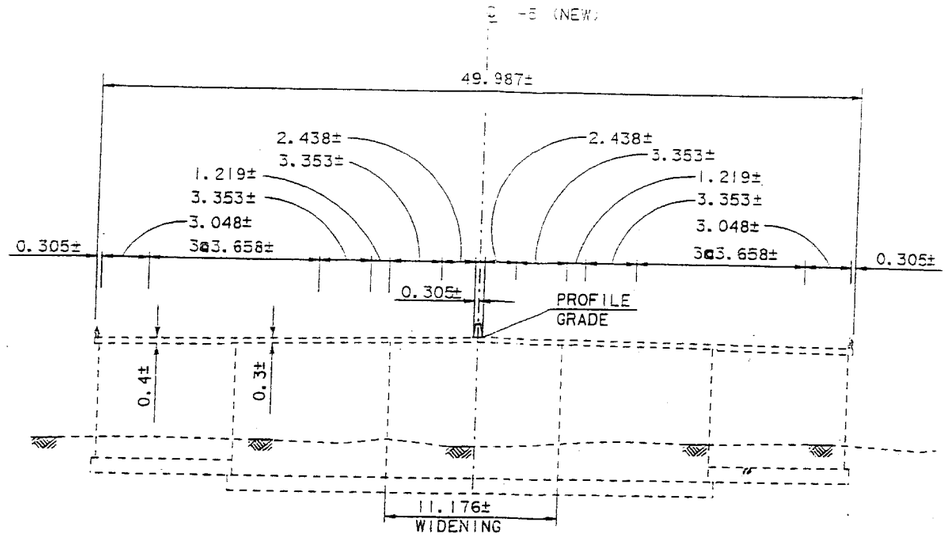
DISREGARD PRINTS BEARING EARLIER REVISION DATES

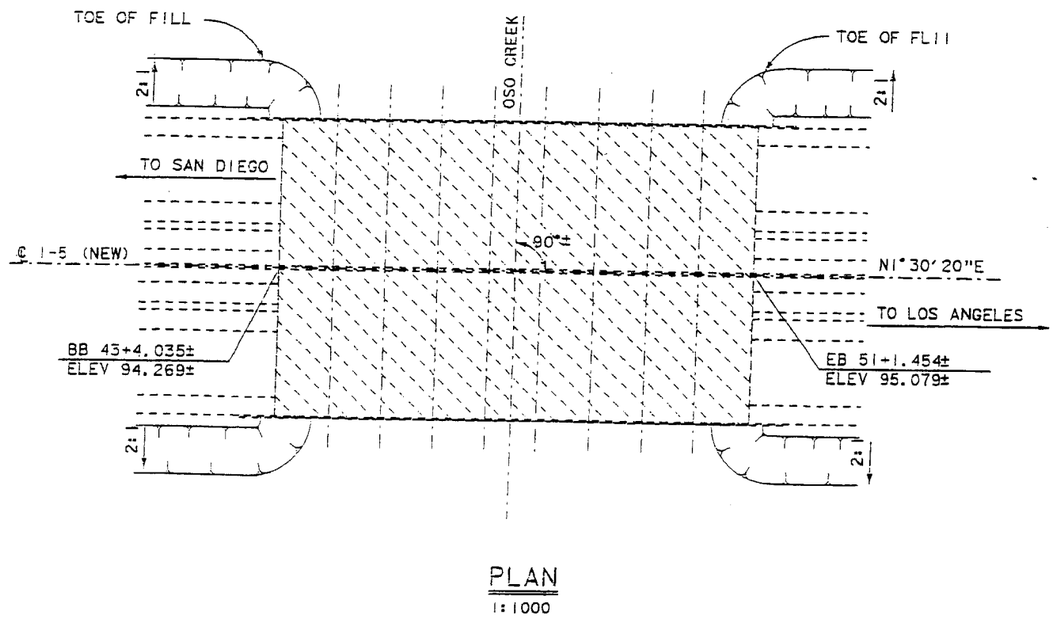
REVISION DATES (PRELIMINARY STAGE ONLY)

SHEET OF

USERNAME => JANGONG







LEGEND

- PROJECT CONSTRUCTION
- EXISTING CONSTRUCTION
- POINT OF MINIMUM VERTICAL CLEARANCE

ALL DIMENSIONS ARE IN METERS UNLESS OTHERWISE SHOWN

15W

APPROVED

TCA APPROVED CHIEF ENGINEER

CDMG MANAGER OF ENGINEERING

CALTRANS

DESIGN	BY		CHECKED
DETAILS	BY	JA. WANG	CHECKED
QUANTITIES	BY		CHECKED

CDMG

TRANSPORTATION CORRIDOR AGENCIES

BRIDGE NO. 55-233

KILOMETER POST

OSO CREEK BRIDGE (WIDENING)

GENERAL PLAN

CU

EA

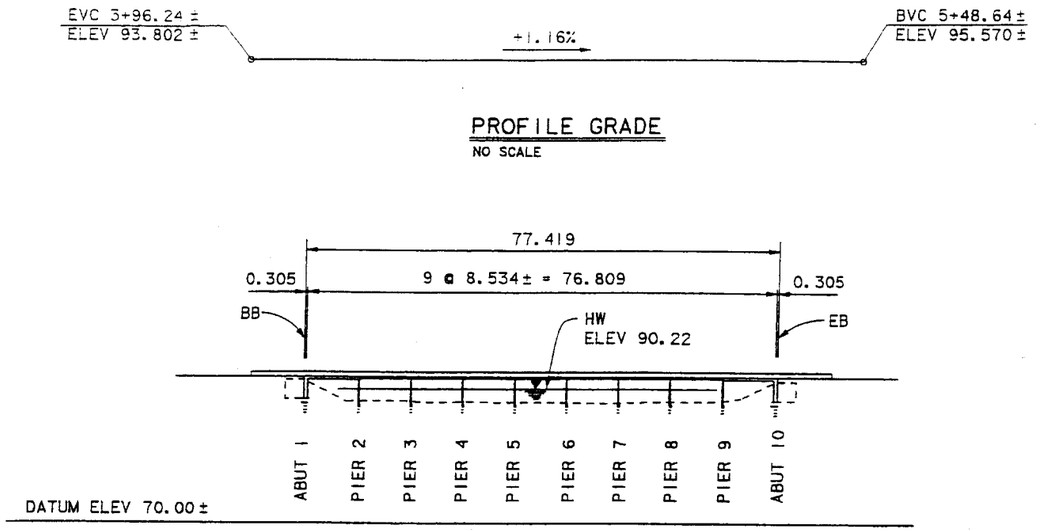
DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES (PRELIMINARY STAGE ONLY)

SHEET OF

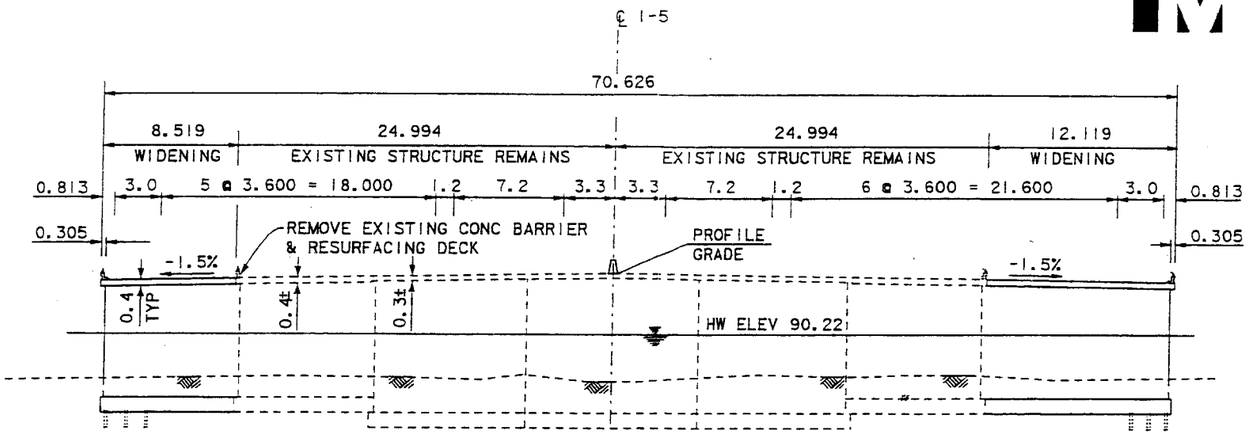
SIGN GENERAL PLAN SHEET (METRIC) (REV.3/1/99)

USERNAME = J.ZHONG

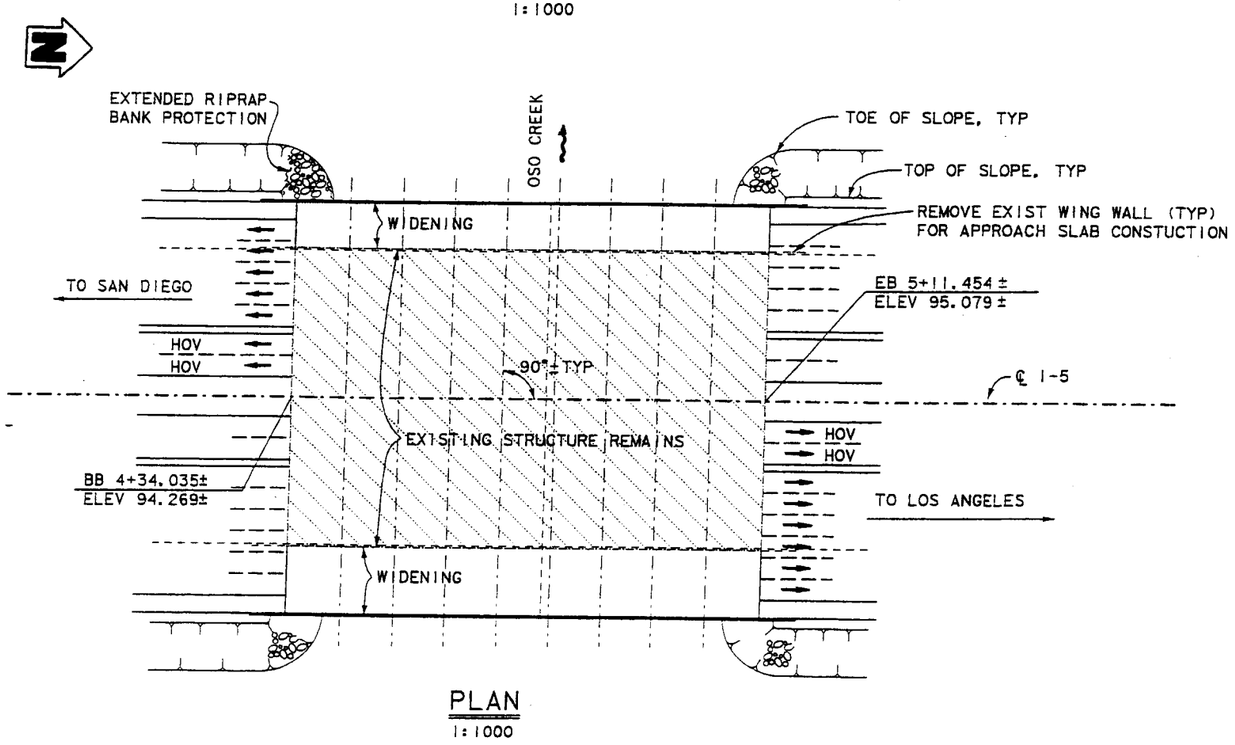


PROFILE GRADE
NO SCALE

ELEVATION
1:1000



TYPICAL SECTION
1:400



PLAN
1:1000

COST DATA

DATE OF ESTIMATE	= SEP 2001		
STRUCTURE DEPTH (mm)	= 0.4		
LENGTH (m)	= 77.419		
		LT	RT
WIDTH (m)	=	8.519	12.119
AREA (m^2)	= 1598		
NEW CONST. COST/SQ M INCLUDING 10% MOBILIZATION & 25% CONTINGENCY	=		
BRIDGE WING WALL REMOVAL JOINT PREPARATION & DECK FINAL FINISH COST MOBIL & COATINGS INCL	= LS		
RIVER BED & BANK RIPRAP WORK	= LS		
BRIDGE RETROFIT	=		
TOTAL COST	=		
GRAND TOTAL	=		

LEGEND

——— PROJECT CONSTRUCTION

- - - - - - EXISTING CONSTRUCTION

ALL DIMENSIONS ARE IN METERS UNLESS OTHERWISE SHOWN

15W-F

APPROVED

TCA APPROVED CHIEF ENGINEER

CDMG MANAGER OF ENGINEERING

CALTRANS

	BY	CHECKED
DESIGN		
DETAILS	JA. WANG	
QUANTITIES		

CDMG

TRANSPORTATION CORRIDOR AGENCIES

BRIDGE NO. 55-233

KILOMETER POST

OSO CREEK BRIDGE (WIDENING)
GENERAL PLAN

CU
EA

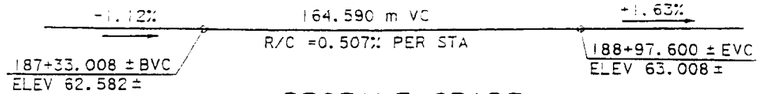
DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES (PRELIMINARY STAGE ONLY)

SHEET OF

DESIGN GENERAL PLAN SHEET (METRIC) (REV. 3/1/99)

USERNAME => LZhang



PROFILE GRADE
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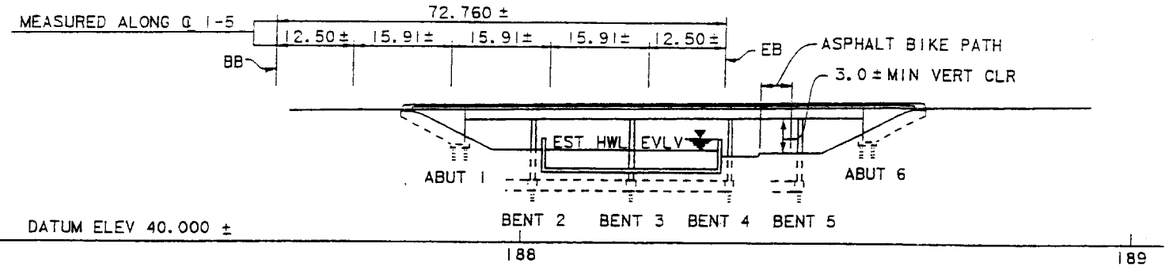

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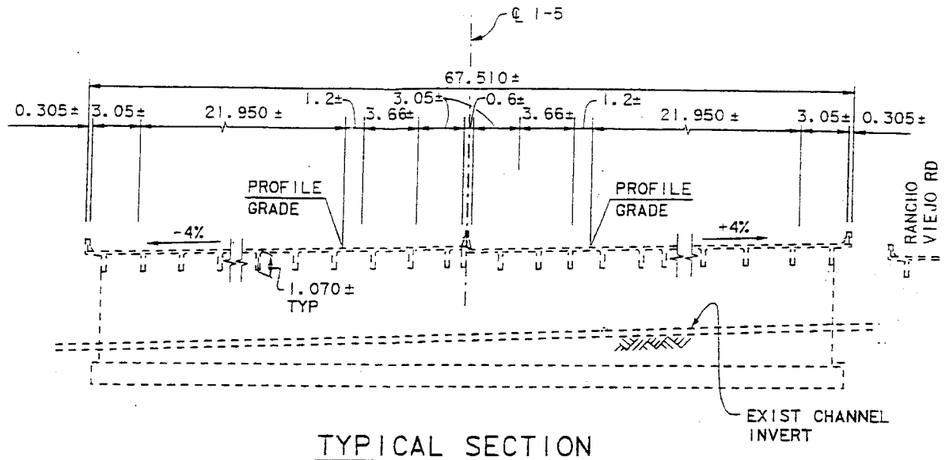
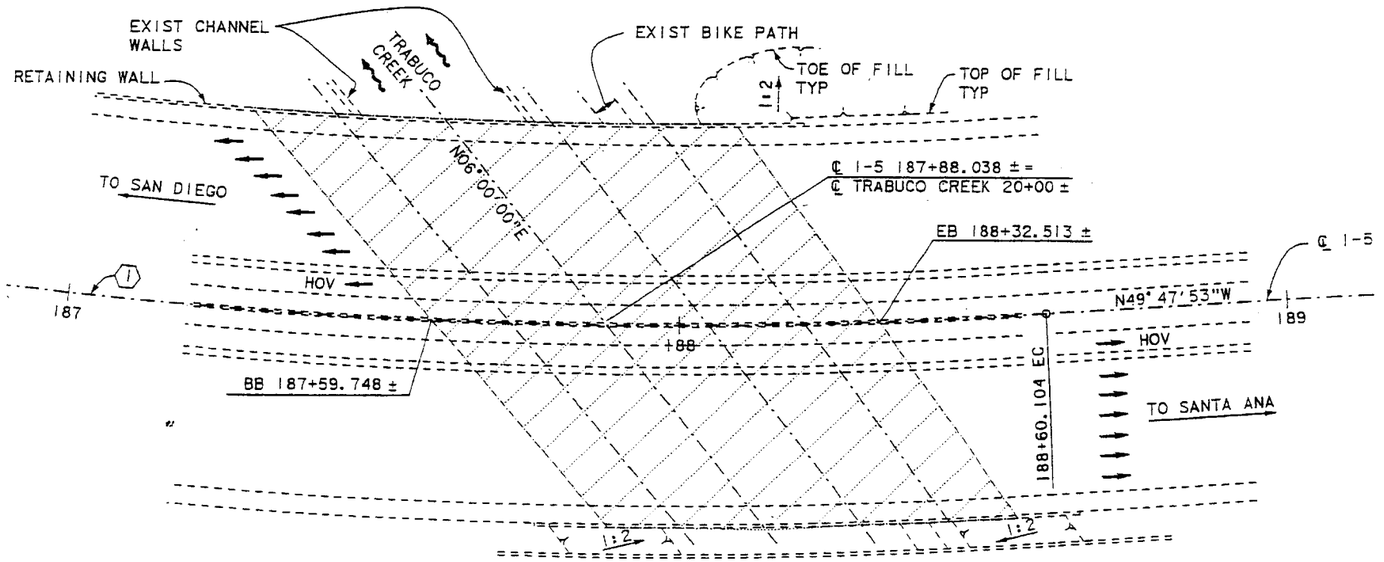


TYPICAL SECTION
1:400



PLAN
1:1000

LEGEND

- PROJECT CONSTRUCTION
- EXISTING CONSTRUCTION
- POINT OF MINIMUM VERTICAL CLEARANCE

CURVE DATA

(1) ℄ I-5
R = 914.40
Δ = 30°54'40"
L = 493.320

ALL DIMENSIONS ARE IN METERS UNLESS OTHERWISE SHOWN

15W

APPROVED

CDMG MANAGER OF ENGINEERING

CALTRANS

TCA APPROVED CHIEF ENGINEER

DESIGN	BY		CHECKED
DETAILS	BY	L. ZHANG	CHECKED
QUANTITIES	BY		CHECKED

CDMG

TRANSPORTATION CORRIDOR AGENCIES

BRIDGE NO.	55-289
KILOMETER POST	

TRABUCO CREEK BRIDGE UC (WIDENING)

GENERAL PLAN

CU
EA

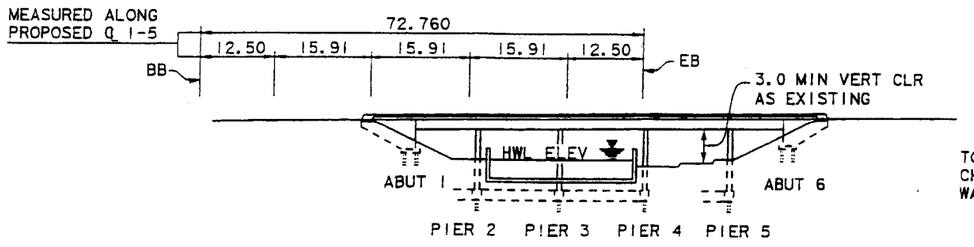
DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES (PRELIMINARY STAGE ONLY:

SHEET OF

ESIGN GENERAL PLAN SHEET (METRIC) (REV.3/1/99)

Caltrans Metric



ELEVATION
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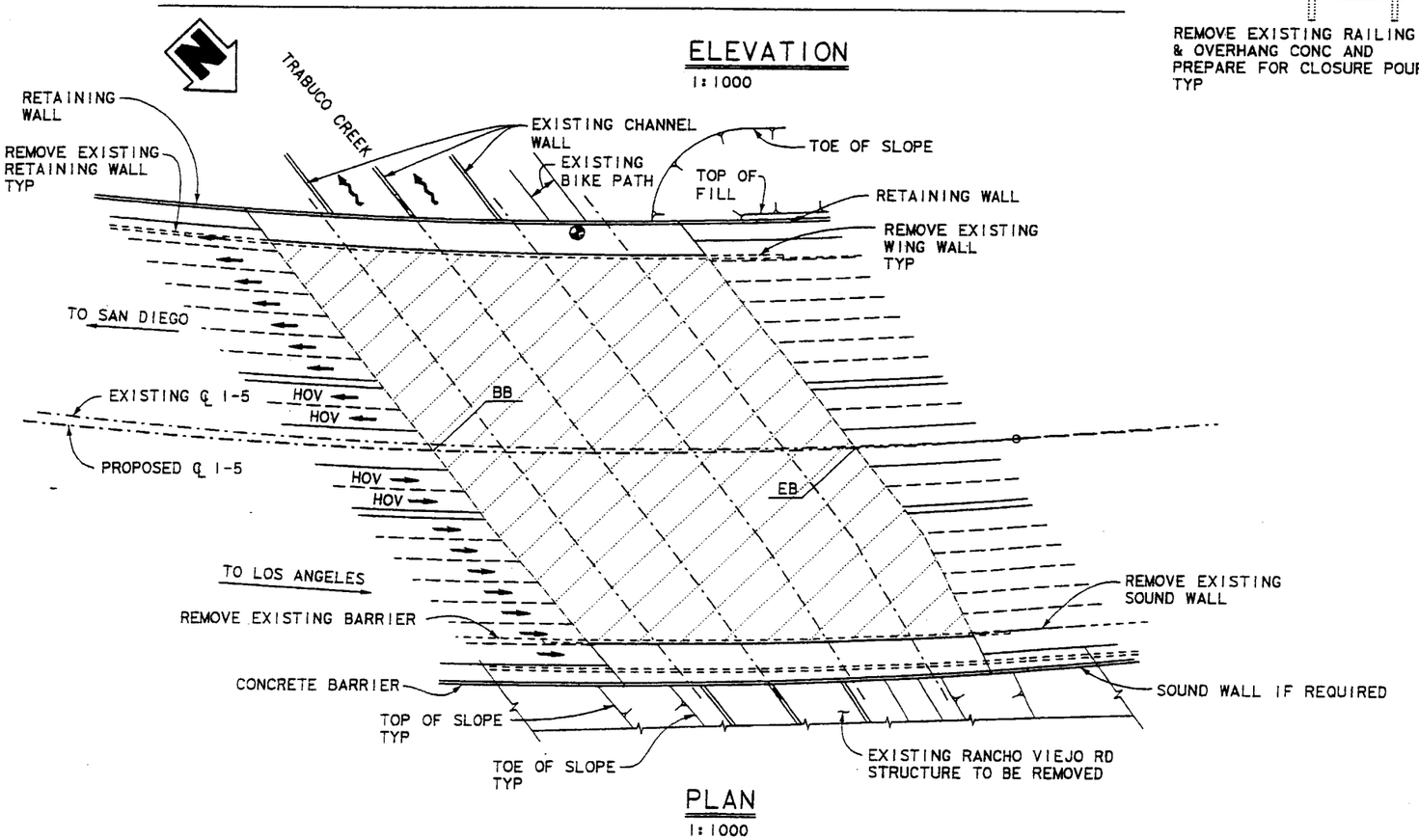
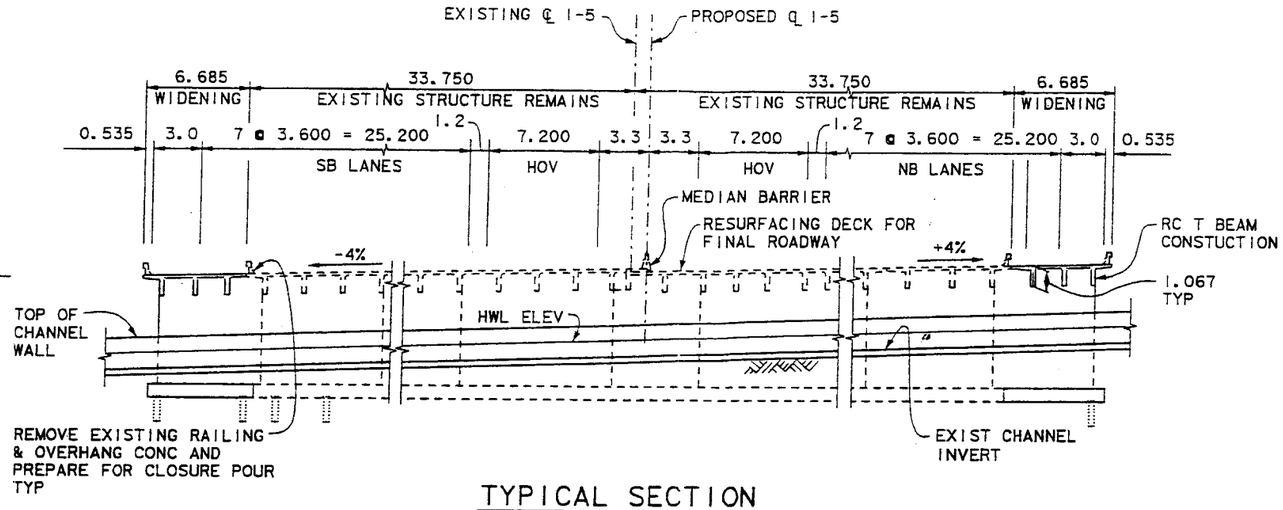


PLAN
1:1000



TYPICAL SECTION
1:400

COST DATA

DATE OF ESTIMATE		SEP 2001	
STRUCTURE DEPTH (mm)	=	1067	
LENGTH (m)	=	72.760	
		LT	RT
WIDTH (m) VARIES	=	6.685 AVERAGE	6.685 AVERAGE
AREA (m^2)	=	487	487
NEW CONST. COST/SQ INCLUDING 10% MOBILIZATION & 25% CONTINGENCY	=		
BRIDGE REMOVAL COST MOBIL & COATINGS INCL	=		
BRIDGE RETROFIT	=	LS	
TOTAL COST	=	LS	
GRAND TOTAL	=		

LEGEND

- ——— PROJECT CONSTRUCTION
- - - - - - EXISTING CONSTRUCTION
- ◒ POINT OF MINIMUM VERTICAL CLEARANCE

ALL DIMENSIONS ARE IN METERS UNLESS OTHERWISE SHOWN

15W-F

APPROVED		DESIGN	BY	CHECKED	CDMG	TRANSPORTATION CORRIDOR AGENCIES
TCA APPROVED CHIEF ENGINEER	CDMG MANAGER OF ENGINEERING	DETAILS	BY L. ZHANG	CHECKED		BRIDGE NO. 55-289
	CALTRANS	QUANTITIES	BY	CHECKED		KILOMETER POST

TRABUCO CREEK BRIDGE UC (WIDENING)

GENERAL PLAN

ESIGN GENERAL PLAN SHEET (METRIC) (REV. 3/1/99)

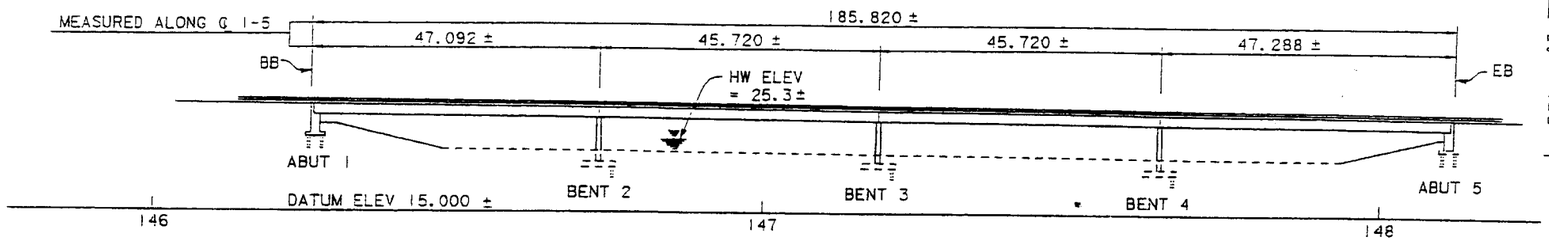
CU
EA

DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES (PRELIMINARY STAGE ONLY)

SHEET OF

USERNAME = LZhang



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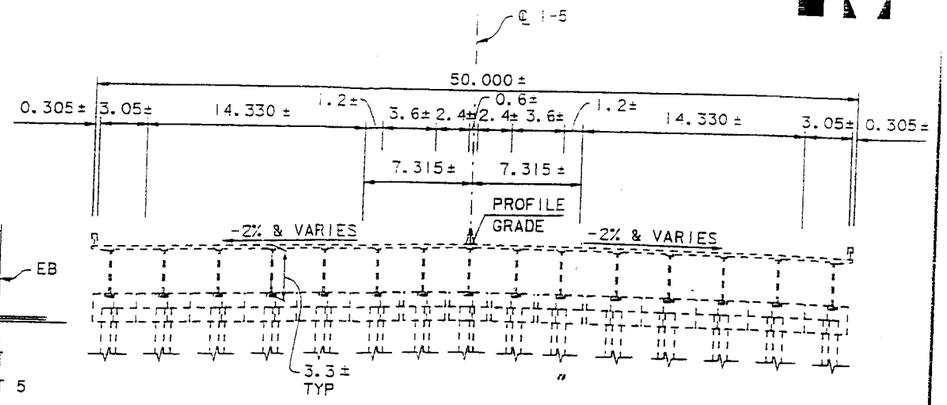

TYPICAL SECTION
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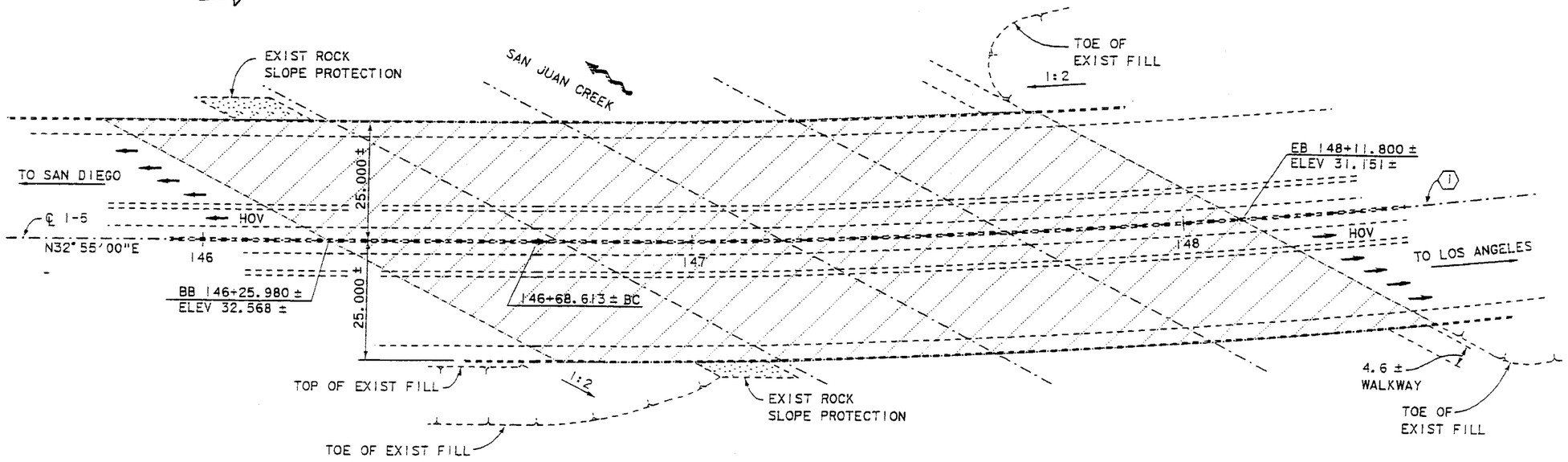


PLAN
1:1000

LEGEND

- PROJECT CONSTRUCTION
- EXISTING CONSTRUCTION
- POINT OF MINIMUM VERTICAL CLEARANCE

CURVE DATA

(1) ℄ I-5
R = 1670.300
Δ = 51°48'13"
L = 1510.200

ALL DIMENSIONS ARE IN METERS UNLESS OTHERWISE SHOWN

15W

APPROVED

TCA APPROVED CHIEF ENGINEER

COMD MANAGER OF ENGINEERING

CALTRANS

	BY		CHECKED
DESIGN	BY		CHECKED
DETAILS	BY	L. ZHANG	CHECKED
QUANTITIES	BY		CHECKED

CDMG

TRANSPORTATION CORRIDOR AGENCIES

BRIDGE NO. 55-228

KILOMETER POST

SAN JUAN CREEK BRIDGE UC (WIDENING)

GENERAL PLAN

CU
EA

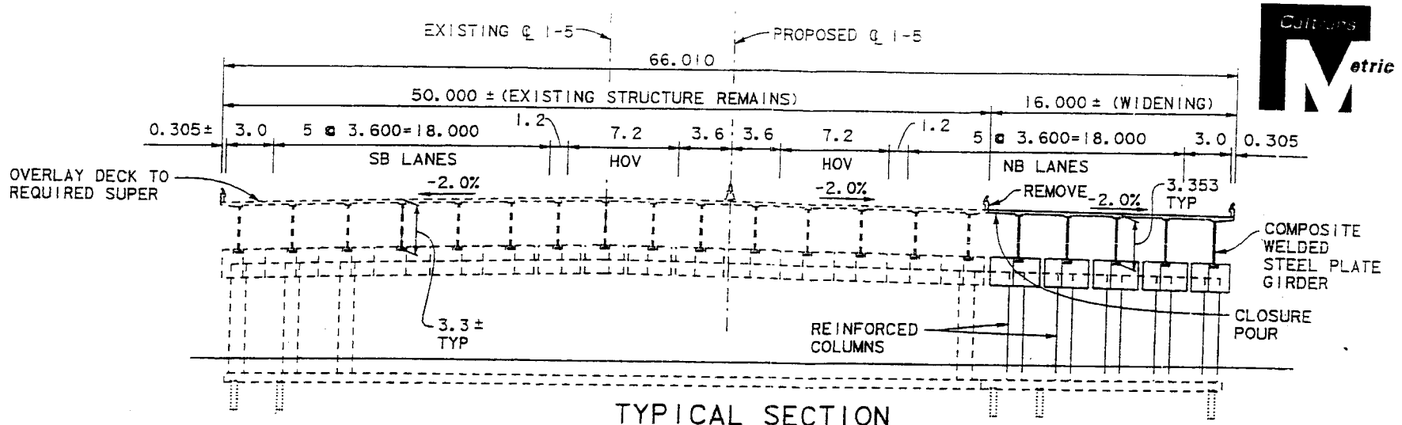
DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES (PRELIMINARY STAGE ONLY)

SHEET OF

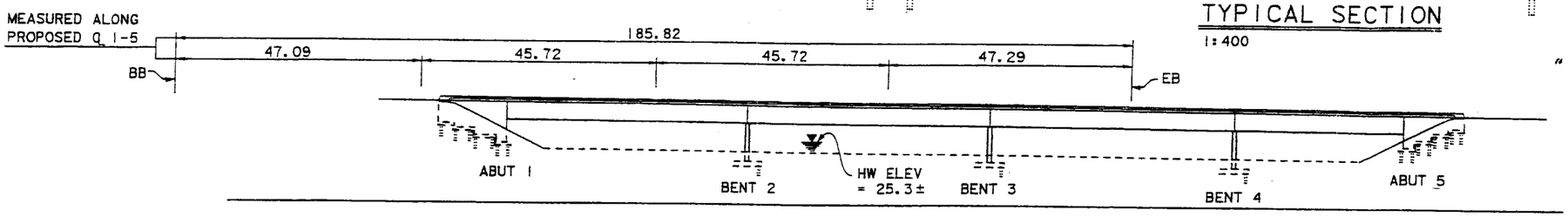
SIGN GENERAL PLAN SHEET (METRIC) (REV.3/1/99)

USERNAME = l.zhang



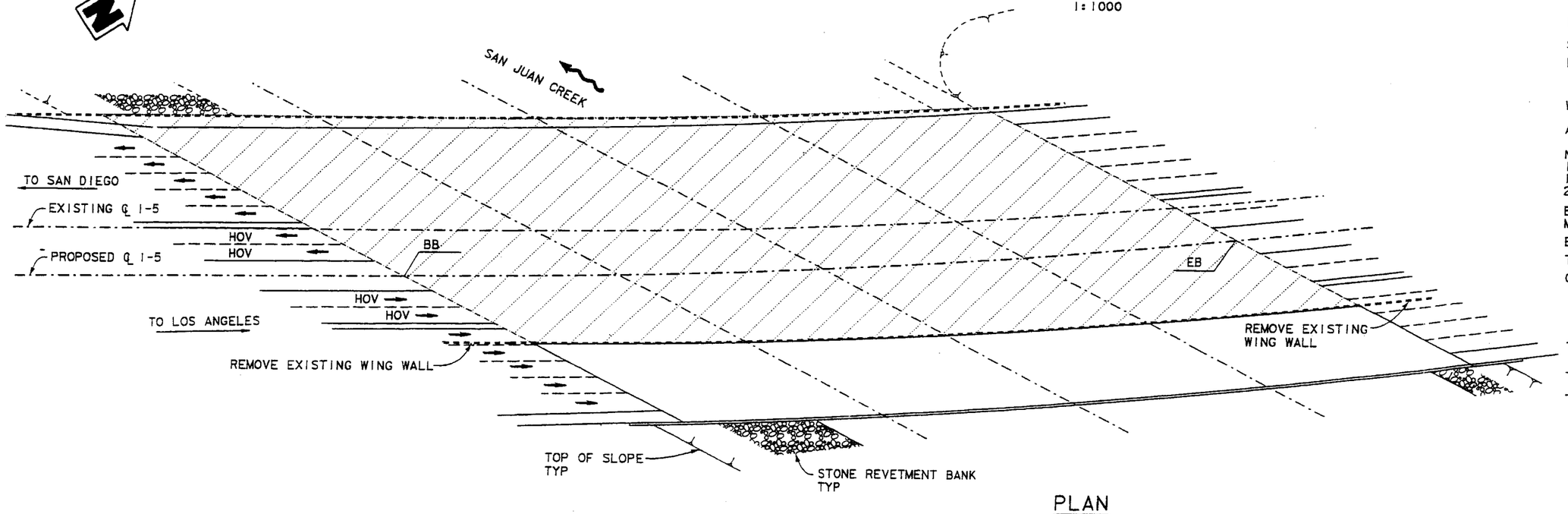
TYPICAL SECTION

1:400



ELEVATION

1:1000



PLAN

1:1000

COST DATA

DATE OF ESTIMATE	SEP 2001
STRUCTURE DEPTH (mm)	= 3353
LENGTH (m)	= 185.820
WIDTH (m) VARIES	= 16.00
AREA (m^2)	= 2974
NEW CONST. COST/SQ INCLUDING 10% MOBILIZATION & 25% CONTINGENCY	=
BRIDGE REMOVAL COST MOBIL & COATINGS INCL	= LS
BRIDGE RETROFIT	=
TOTAL COST	=
GRAND TOTAL	=

LEGEND

PROJECT CONSTRUCTION

EXISTING CONSTRUCTION

ALL DIMENSIONS ARE IN METERS UNLESS OTHERWISE SHOWN

15W

APPROVED

TCA APPROVED CHIEF ENGINEER

COMM MANAGER OF ENGINEERING

CALTRANS

	BY	CHECKED
DESIGN		
DETAILS	L. ZHANG	
QUANTITIES		

CDMG

TRANSPORTATION CORRIDOR AGENCIES

BRIDGE NO. 55-228

KILOMETER POST

SAN JUAN CREEK BRIDGE UC (WIDENING)

GENERAL PLAN

CU

EA

DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES (PRELIMINARY STAGE ONLY)

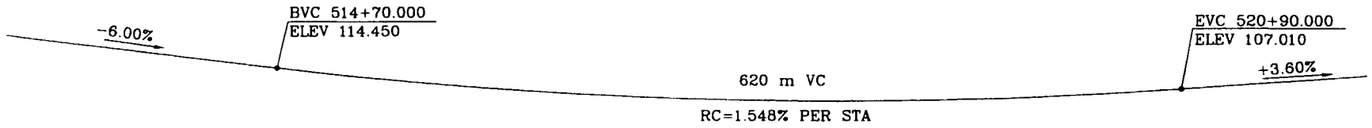
SHEET OF

DESIGN GENERAL PLAN SHEET (METRIC) (REV. 3/1/99)

USERNAME => LZhang

Appendix CC. Alignment Drawings

- FEC-M Alternative Bridge Plans



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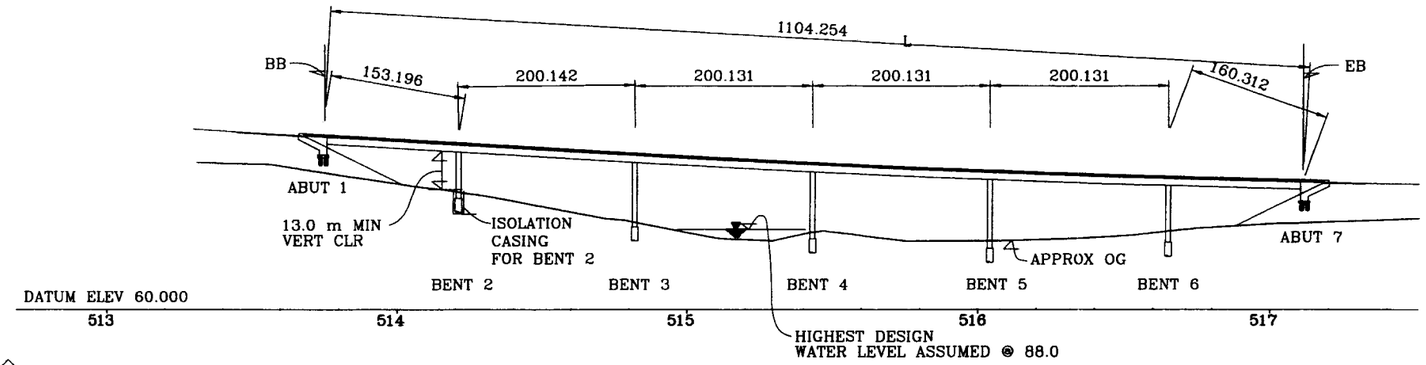
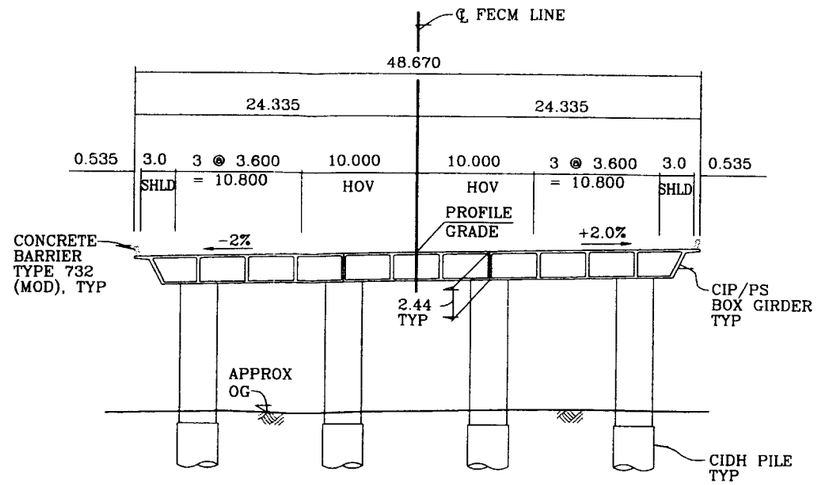
NO SCALE



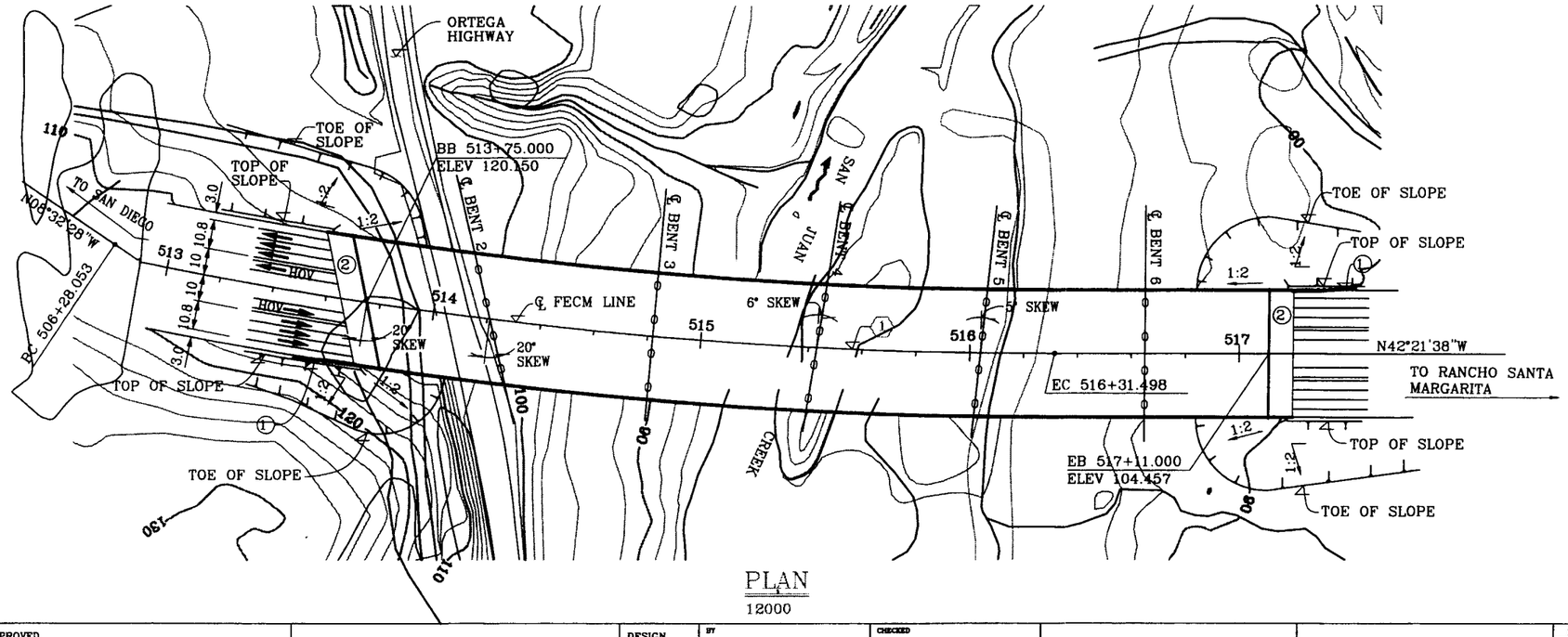
ELEVATION

12000



TYPICAL SECTION

1:500



PLAN

12000

LEGEND

① MBGR

② APPROACH SLAB TYPE N(9S)

CURVE DATA

① ℄ FECM LINE

R = 1700.000
Δ = 33°49'10"
L = 1003.445
T = 516.816

ALL DIMENSIONS ARE IN
METERS UNLESS OTHERWISE SHOWN U_FECM

APPROVED TCA APPROVED CHIEF ENGINEER	CDMG MANAGER OF ENGINEERING CALTRANS	DESIGN	BY	CHECKED	CDMG	TRANSPORTATION CORRIDOR AGENCIES	BRIDGE NO.
		DETAILS	BY L. ZHANG	CHECKED			KILOMETER POST
		QUANTITIES	BY	CHECKED			

SAN JUAN CREEK BRIDGE

GENERAL PLAN

DESIGN GENERAL PLAN SHEET (METRIC) (REV.5/1/99)

CU
EA

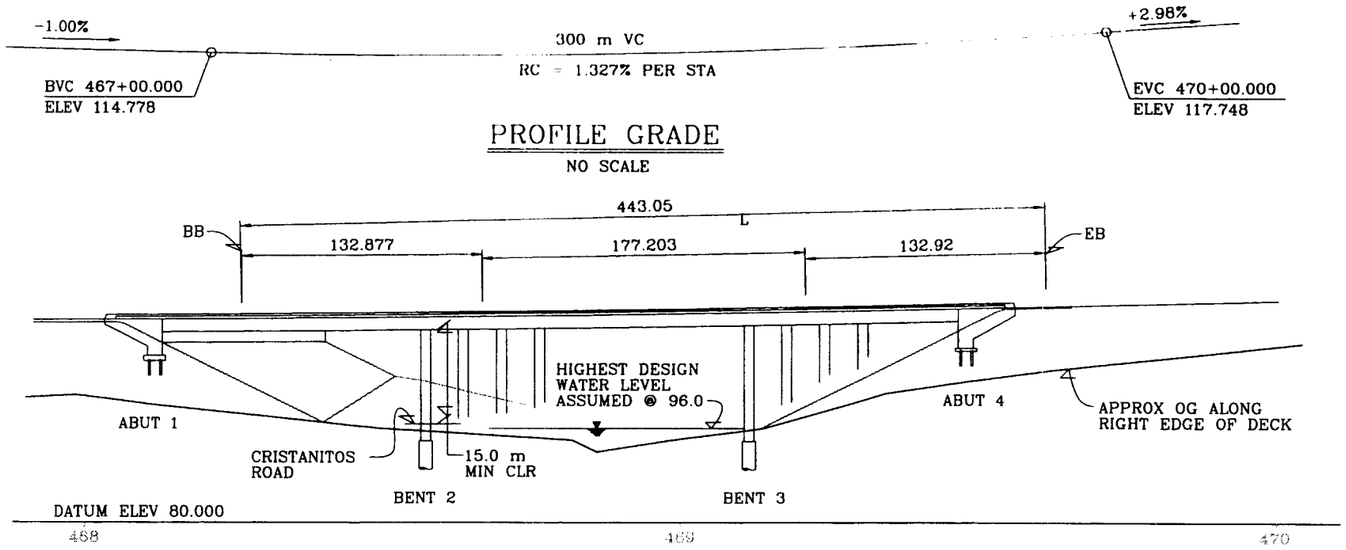
DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES (PRELIMINARY STAGE ONLY) | SHEET | OF

$DATE

$$$$$$$$$$DGNSPEC$$$$$$$$$$

USERNAME =>$USER

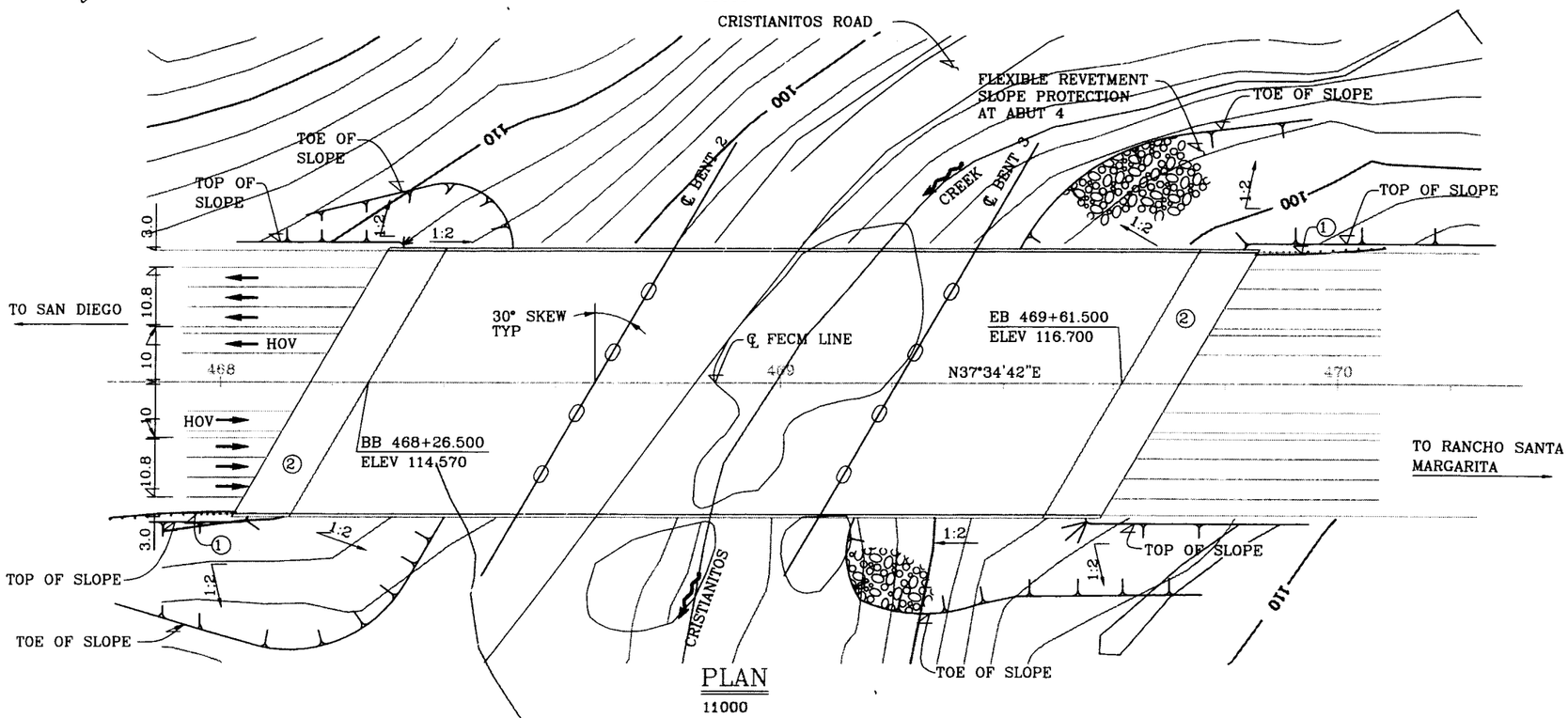


PROFILE GRADE

NO SCALE

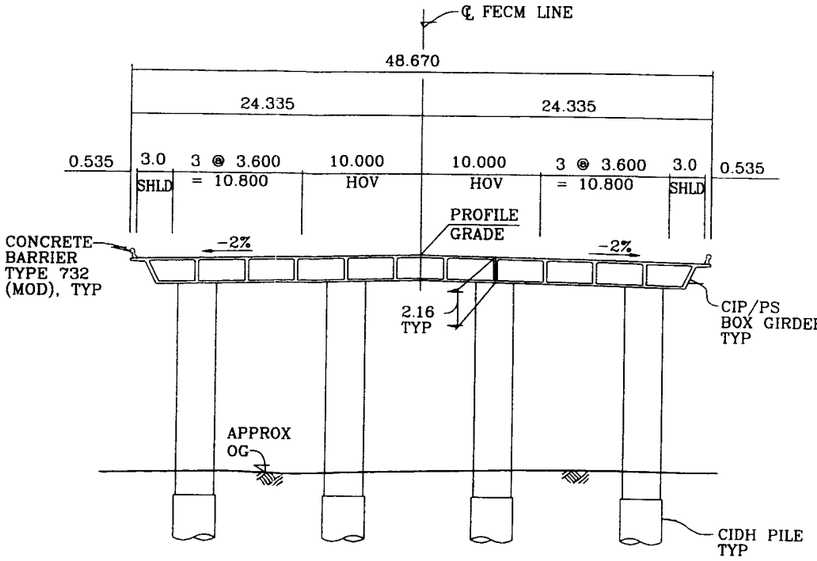
ELEVATION

11000



PLAN

11000



TYPICAL SECTION

1:500

LEGEND

① MBGR

② APPROACH SLAB TYPE N(9S)

ALL DIMENSIONS ARE IN
METERS UNLESS OTHERWISE SHOWN U_FECM

APPROVED TCA APPROVED CHIEF ENGINEER	CDMG MANAGER OF ENGINEERING CALTRANS	DESIGN	BY	CHECKED	CDMG	TRANSPORTATION CORRIDOR AGENCIES	BRIDGE NO.
		DETAILS	BY L. ZHANG	CHECKED			KILOMETER POST
		QUANTITIES	BY	CHECKED			

CRISTIANITOS CREEK BRIDGE
GENERAL PLAN

DESIGN GENERAL PLAN SHEET (METRIC) (REV.2/1/99)

CU
EA

DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES (PRELIMINARY STAGE ONLY) | SHEET | OF

$DATE
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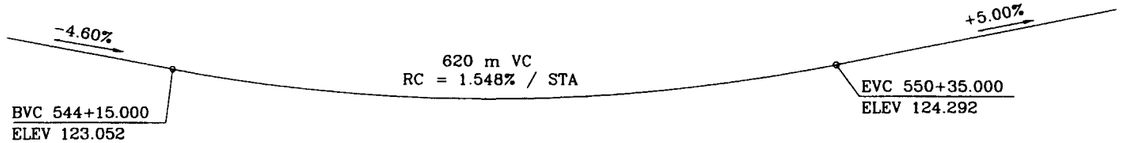
Appendix CC. Alignment Drawings

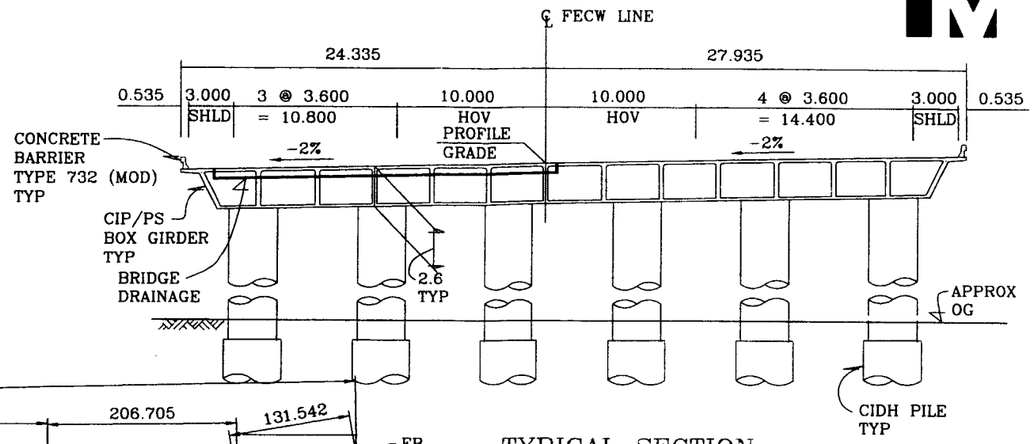
- FEC-W Alternative Bridge Plans

Caltrans Metric



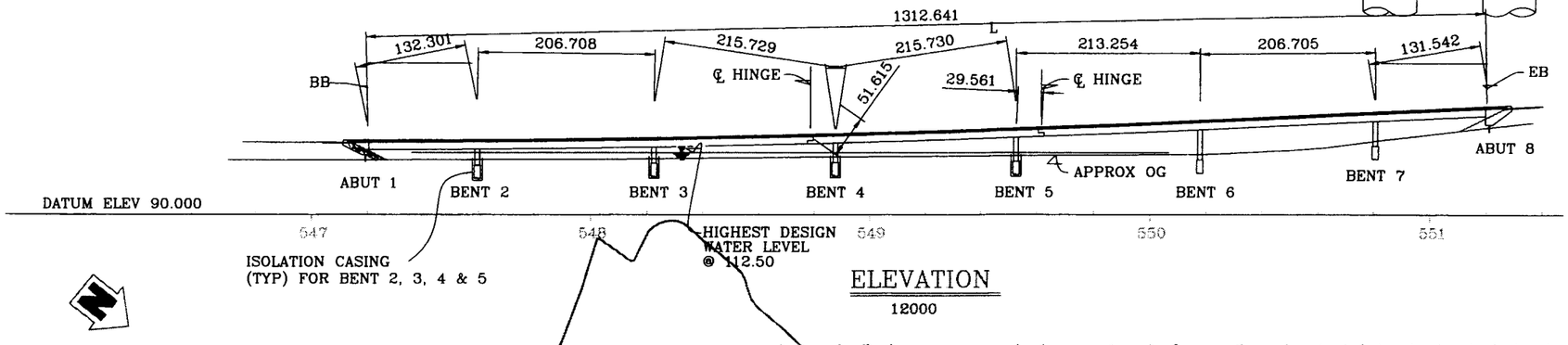
PROFILE GRADE

NO SCALE



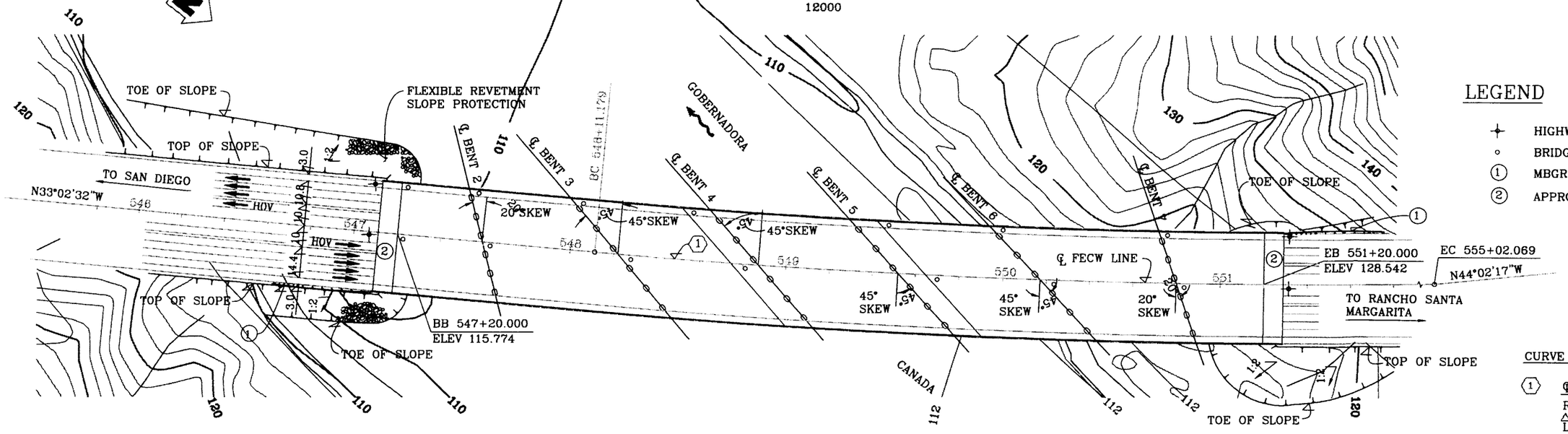
TYPICAL SECTION

1400



ELEVATION

12000



LEGEND

- HIGHWAY DRAINAGE INLET
- BRIDGE DRAINAGE INLET
- (1) MBGR
- (2) APPROACH SLAB TYPE N(9S)

CURVE DATA

(1) ℄ FECW LINE

R = 3600.000
Δ = 10°59'45"
L = 690.890

PLAN

12000

ALL DIMENSIONS ARE IN METERS UNLESS OTHERWISE SHOWN

℄ FECW

APPROVED		DESIGN	BY	CHECKED	CDMG	TRANSPORTATION CORRIDOR AGENCIES	BRIDGE NO.
TCA APPROVED CHIEF ENGINEER	CDMG MANAGER OF ENGINEERING	DETAILS	BY L. ZHANG	CHECKED			KILOMETER POST
	CALTRANS	QUANTITIES	BY	CHECKED			

CANADA GOBERNADORA BRIDGE

GENERAL PLAN

CU
EA

DISREGARD PRINTS BEARING EARLIER REVISION DATES

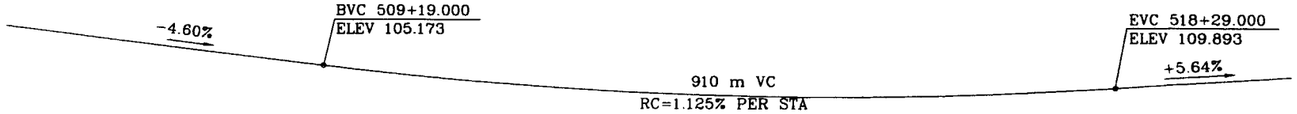
REVISION DATES (PRELIMINARY STAGE ONLY)

SHEET OF

DESIGN GENERAL PLAN SHEET (METRIC) (REV.3/1/99)

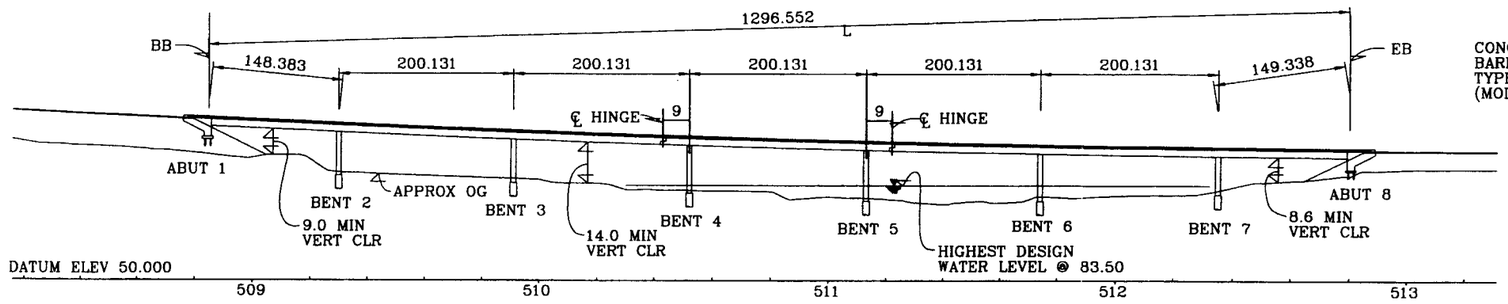
$$$$$$$$$$DGNSPEC$$$$$$$$$$

$DATE



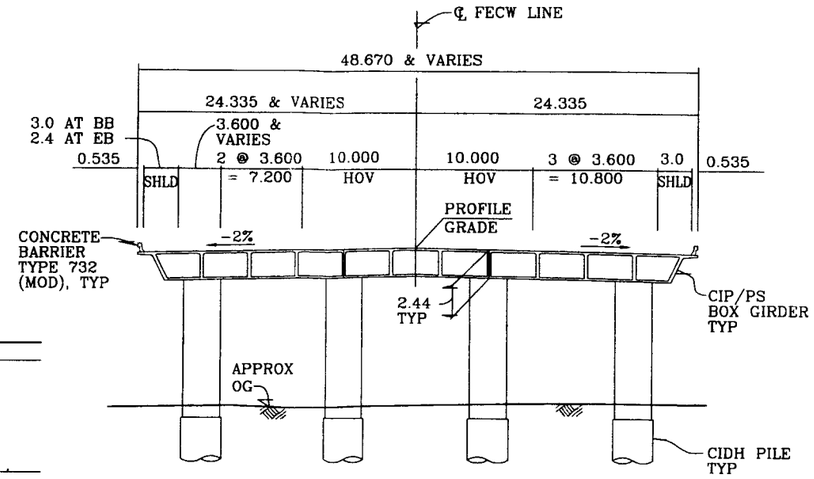
PROFILE GRADE

NO SCALE



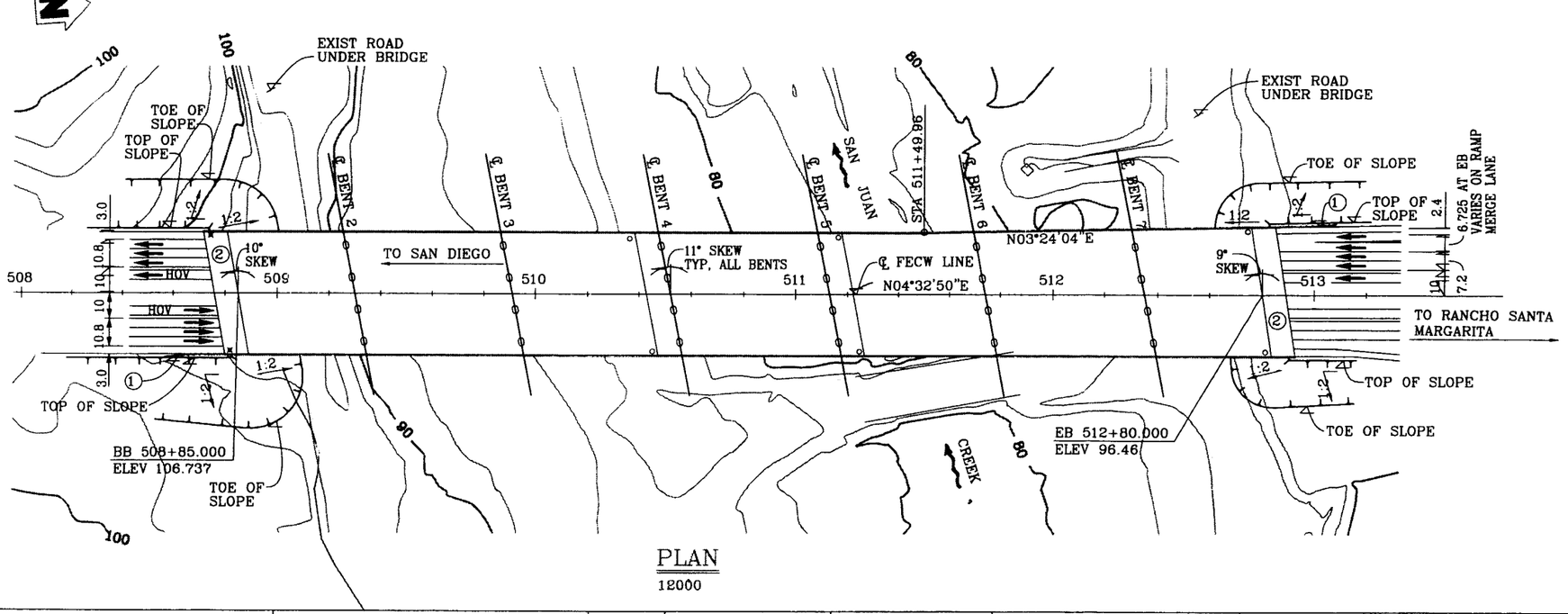
ELEVATION

12000



TYPICAL SECTION

1:500



PLAN

12000

LEGEND

- ✕ INLET @ APPROACH SLAB
- ∘ BRIDGE DRAINAGE INLET
- (1) MBGR
- (2) APPROACH SLAB TYPE N(9S)

ALL DIMENSIONS ARE IN
METERS UNLESS OTHERWISE SHOWN U_FECW

APPROVED		DESIGN	BY	CHECKED	CDMG	BRIDGE NO.	SAN JUAN CREEK BRIDGE
TCA APPROVED CHIEF ENGINEER	CDMG MANAGER OF ENGINEERING	DETAILS	BY L. ZHANG	CHECKED	TRANSPORTATION CORRIDOR AGENCIES	KILOMETER POST	GENERAL PLAN
DESIGN GENERAL PLAN SHEET (METRIC) (REV.3/1/99)	CALTRANS	QUANTITIES	BY	CHECKED	CU EA	DISREGARD PRINTS BEARING EARLIER REVISION DATES →	REVISION DATES (PRELIMINARY STAGE ONLY) / SHEET / OF

$$$$$$$$$$DGNSPEC$$$$$$$$$$

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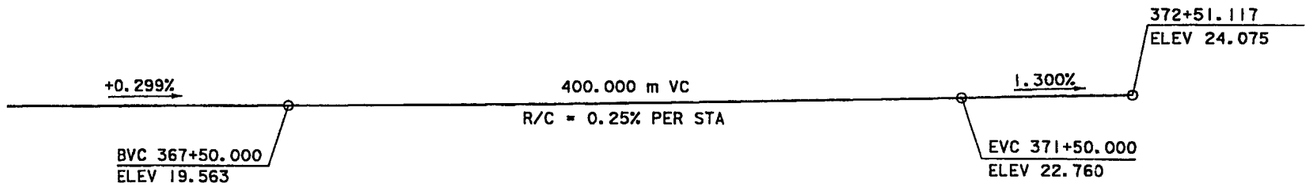

PROFILE GRADE

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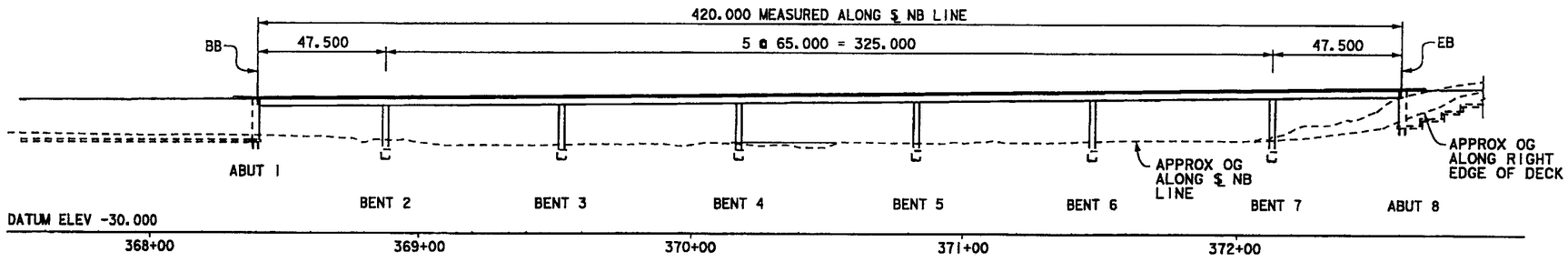
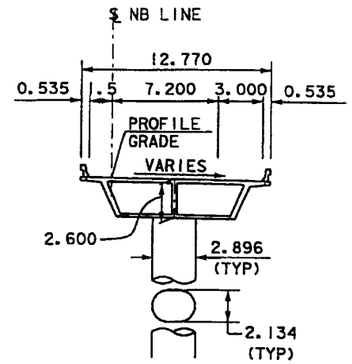


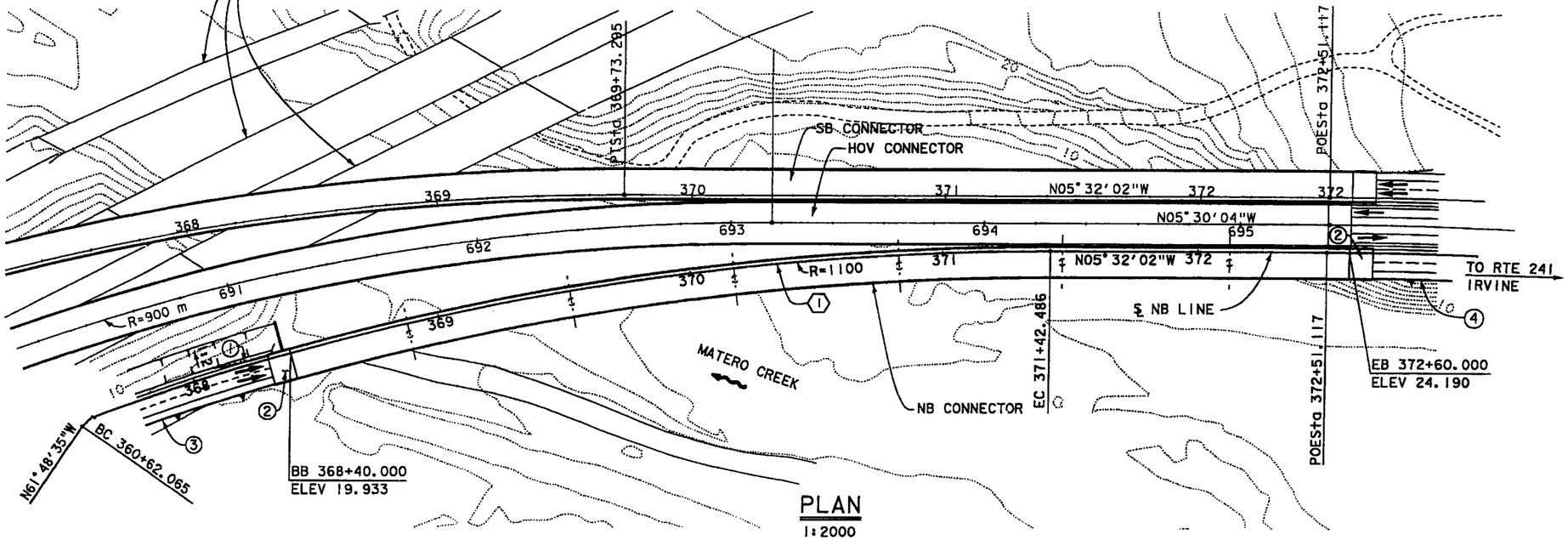
DEVELOPED ELEVATION

1:2000



TYPICAL SECTION

1:400



PLAN

1:2000

LEGEND

1. MBGR
2. APPROACH SLAB TYPE N(9S)
3. RETAINING WALL. APPROX FROM STA 360+60 (15 M HIGH) TO STA 368+40 (12 M HIGH)
4. RETAINING WALL. APPROX FROM STA 372+60 (13 M HIGH) TAPERED TO STA 377+90 (1 M HIGH)

CURVE DATA

① ℄ NB LINE

R = 1100.000
Δ = 56° 16' 34"
L = 1080.421
T = 588.283

ALL DIMENSIONS ARE IN METERS UNLESS OTHERWISE SHOWN U_FECW

APPROVED		DESIGN	BY R. CHEN	CHECKED	CDMG
TCA APPROVED CHIEF ENGINEER	COMP MANAGER OF ENGINEERING	DETAILS	BY L. ZHANG	CHECKED	TRANSPORTATION CORRIDOR AGENCIES
	CALTRANS	QUANTITIES	BY	CHECKED	

BRIDGE NO.

KILOMETER POST

N5-N241 SEPARATION CONNECTOR
GENERAL PLAN

DESIGN GENERAL PLAN SHEET (METRIC) (REV. 3/1/99)

CU
EA

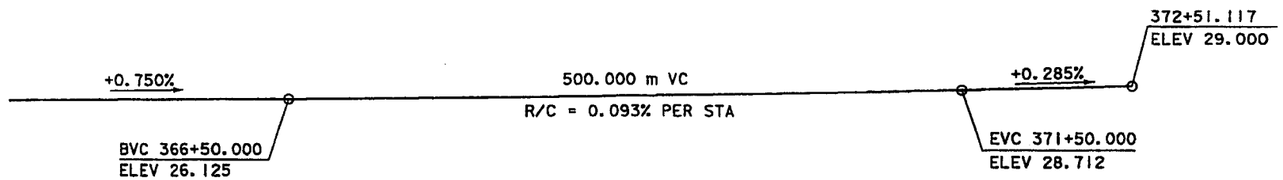
DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES (PRELIMINARY STAGE ONLY)

SHEET OF

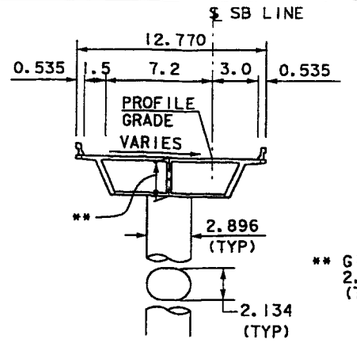
16-JUN-2003 N5-N241SEPGP.dgn

USERNAME => #USER



PROFILE GRADE

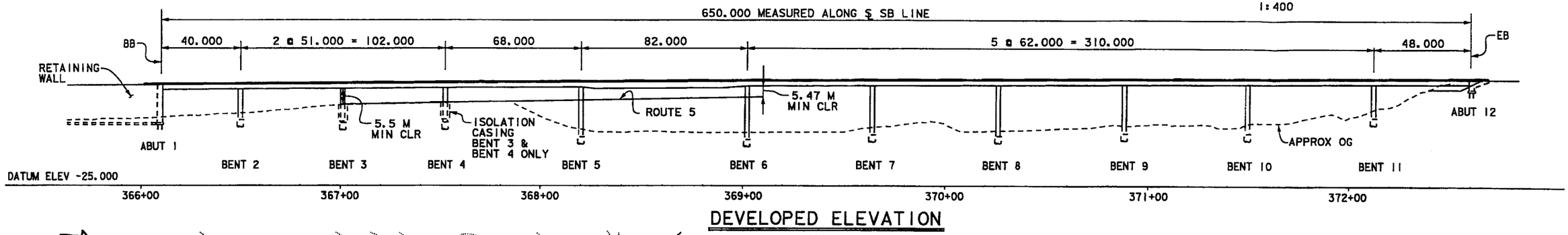
NO SCALE



** GIRDER DEPTH VARIES FROM 2.48 m TO 3.28 m TO SUIT SPAN LENGTH (TAPERING OVER FULL SPAN LENGTH)

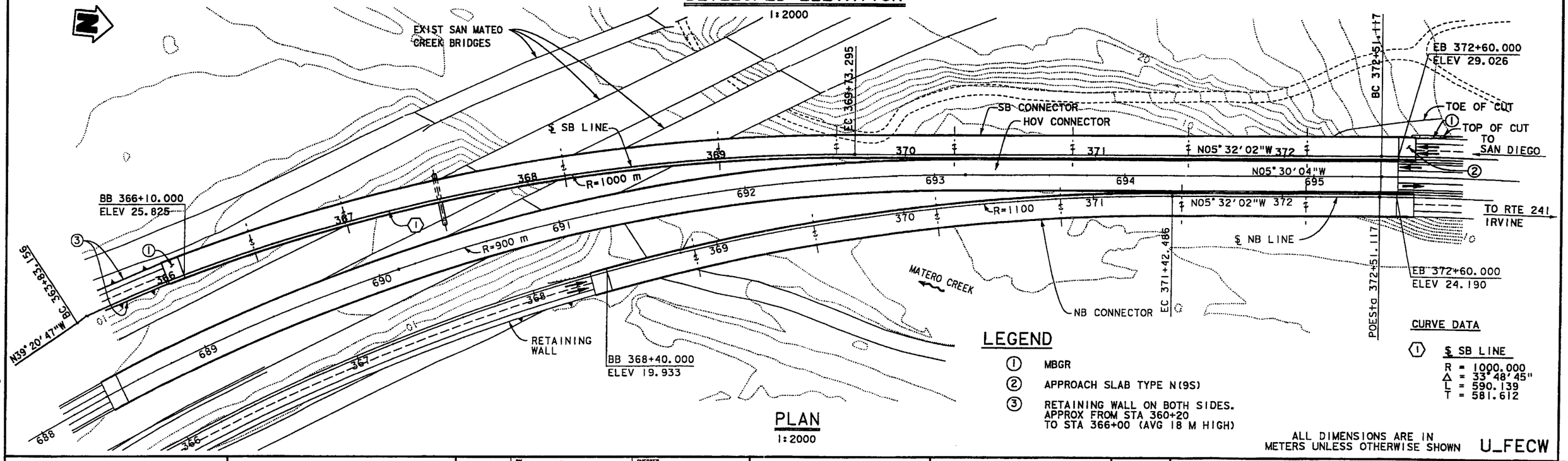
TYPICAL SECTION

1:400



DEVELOPED ELEVATION

1:2000



PLAN

1:2000

LEGEND

① MBGR

② APPROACH SLAB TYPE N(9S)

③ RETAINING WALL ON BOTH SIDES. APPROX FROM STA 360+20 TO STA 366+00 (AVG 18 M HIGH)

CURVE DATA

① ℄ SB LINE

R = 1000.000
Δ = 33°48'45"
L = 590.139
T = 581.612

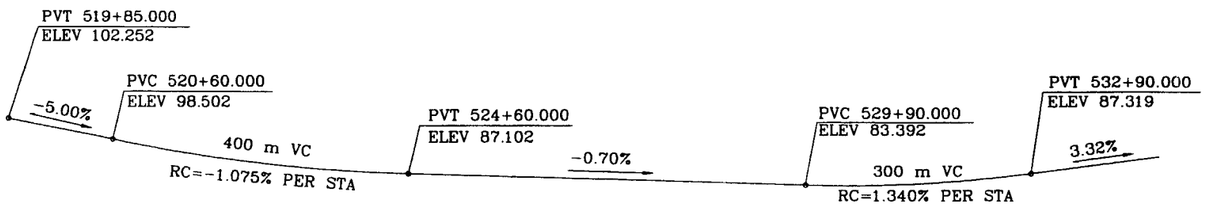
ALL DIMENSIONS ARE IN METERS UNLESS OTHERWISE SHOWN U_FECW

APPROVED TCA APPROVED CHIEF ENGINEER	COMG MANAGER OF ENGINEERING CALTRANS	DESIGN BY R. CHEN CHECKED DETAILS BY L. ZHANG CHECKED QUANTITIES BY CHECKED	CDMG	TRANSPORTATION CORRIDOR AGENCIES CU EA	BRIDGE NO. KILOMETER POST S5-S241 SEPARATION CONNECTOR GENERAL PLAN
DESIGN GENERAL PLAN SHEET (METRIC) (REV. 3/1/99)				DISREGARD PRINTS BEARING EARLIER REVISION DATES	REVISION DATES (PRELIMINARY STAGE ONLY) SHEET OF

16-JUN-2003 S5-S241SEPGP.dgn USERNAME => $USER

Appendix CC. Alignment Drawings

- A7-FEC-M Alternative Bridge Plans



PROFILE GRADE

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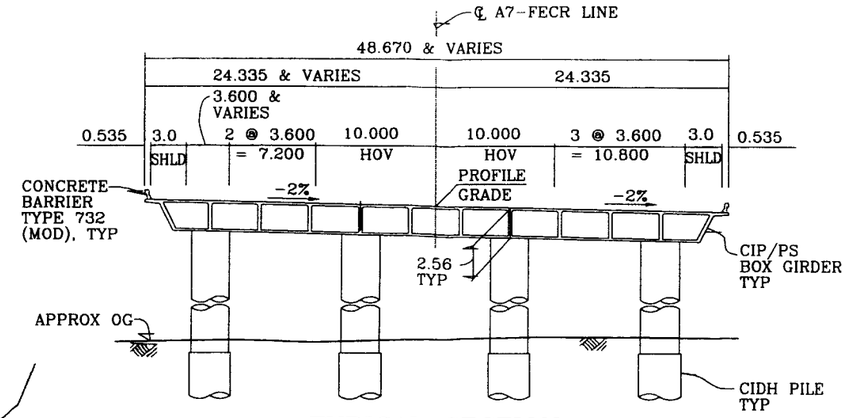

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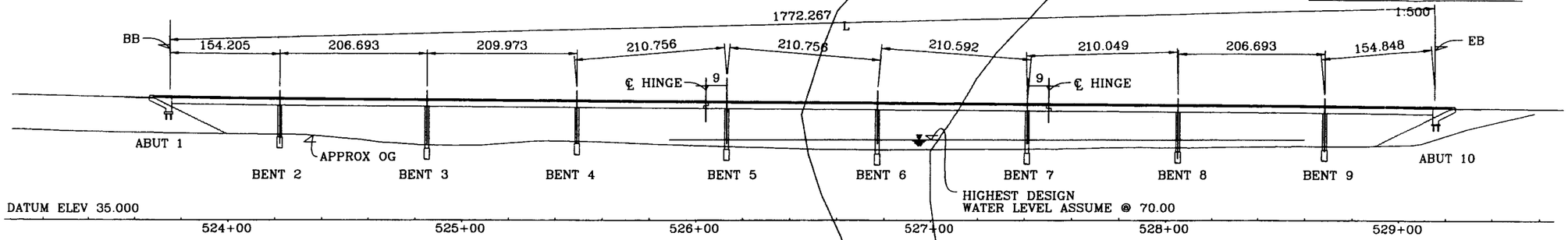


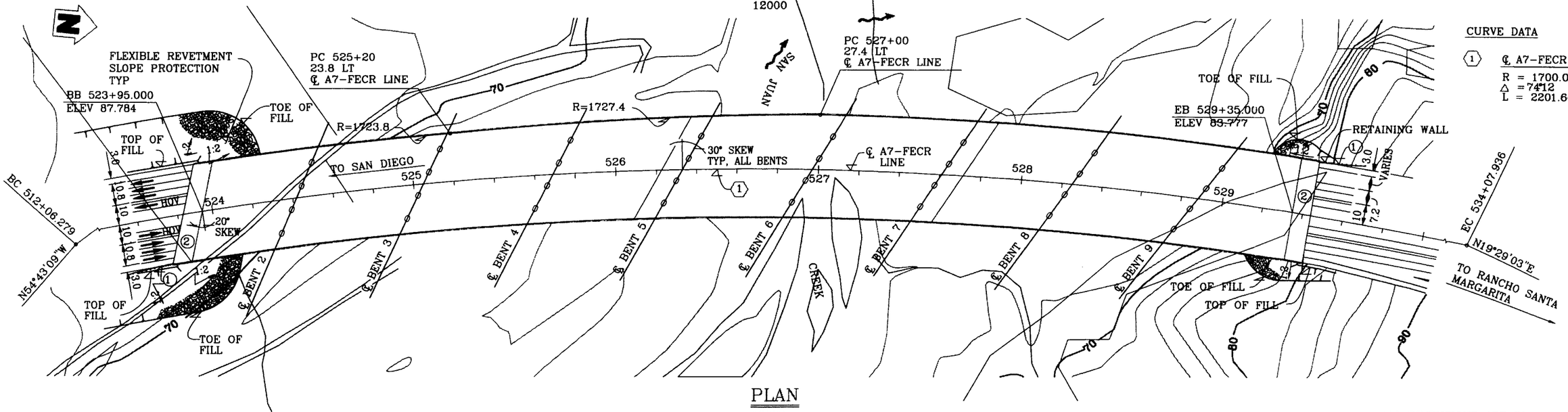
ELEVATION

12000

LEGEND

① MBGR

② APPROACH SLAB TYPE N(9S)



PLAN

12000

CURVE DATA

① ℄ A7-FECR LINE
R = 1700.000
Δ = 74°12'12"
L = 2201.66

ALL DIMENSIONS ARE IN METERS UNLESS OTHERWISE SHOWN

U_A7-FECR

APPROVED		DESIGN	BY	CHECKED	CDMG	BRIDGE NO.	SAN JUAN CREEK BRIDGE
TCA APPROVED CHIEF ENGINEER	CDMG MANAGER OF ENGINEERING	DETAILS	BY L. ZHANG	CHECKED	TRANSPORTATION CORRIDOR AGENCIES	KILOMETER POST	GENERAL PLAN
	CALTRANS	QUANTITIES	BY	CHECKED			
DESIGN GENERAL PLAN SHEET (METRIC) (REV.3/1/99)					CU EA	DISREGARD PRINTS BEARING EARLIER REVISION DATES	REVISION DATES (PRELIMINARY STAGE ONLY) SHEET OF

$DATE
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