SOUTH ORANGE COUNTY TRANSPORTATION INFRASTRUCTURE IMPROVEMENT PROJECT LOCATION HYDRAULICS STUDIES VOLUME 3 (APPENDICES N TO Y)

FINAL

Prepared for:

Foothill/Eastern Transportation Corridor Agency
125 Pacifica
Irvine, CA 92618-3406
Contact: Macie Cleary-Milan, Deputy Director, Environmental and Planning

Prepared by:

PSOMAS
3187 Red Hill Avenue, Suite 250
Costa Mesa, CA 92626
Contact: William Whittenberg, Project Manager

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APPENDIX N
HYDRAULIC MODEL INPUT & RESULTS
AIO ALTERNATIVE AT SAN JUAN CREEK
(MODEL "D5")

Appendix N. **Hydraulic Model Input & Results**

AIO Alternative at San Juan Creek (Model D5)

- 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 widened bridge structure include:

795 (2608)

745 (2444)

HEC-RAS Version 3.0.1 Mar 2001
U.S. Army Corp of Engineers
Hydrologic Engineering Center
609 Second Street, Suite D
Davis, California 95616-4687
(916) 756-1104

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

PROJECT DATA
Project Title: Project Model - D5
Project File : PMD5.prj
Run Date and Time: 2/19/03 12:28:51 PM

Project in English units

Project Description:
AIO Alternative - San Juan Creek Crossing

PLAN DATA

Plan Title: Existing Flow/Existing Geometry
Plan File : p:\2PDA0104\Hydr\LHS\Modeling\Model D\HecRas D\PMD5.p01

Geometry Title: Existing Conditions
Geometry File : p:\2PDA0104\Hydr\LHS\Modeling\Model D\HecRas D\PMD5.g01

Flow Title : Existing Conditions
Flow File : p:\2PDA0104\Hydr\LHS\Modeling\Model D\HecRas D\PMD5.f01

Plan Summary Information:
Number of: Cross Sections = 138 Mulitple Openings = 0
Culverts = 0 Inline Weirs = 0
Bridges = 1

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 : p:\2PDA0104\Hydr\LHS\Modeling\Model D\HecRas D\PMD5.f01

Flow Data (cfs)

River	Reach	RS	Q2	Q5	Q10	Q25	Q50	Q100	Q100HC
San Juan	Upper	11261.86	399	2710	5235	13333	21312	33597	84230
San Juan	Upper	6151.870	422	2755	5241	13703	22162	34722	86997

Boundary Conditions

River	Reach	Profile	Upstream	Downstream
San Juan	Upper	Q2	Normal S = .007	Normal S = .006
San Juan	Upper	Q5	Normal S = .007	Normal S = .006
San Juan	Upper	Q10	Normal S = .007	Normal S = .006
San Juan	Upper	Q25	Normal S = .007	Normal S = .006
San Juan	Upper	Q50	Normal S = .007	Normal S = .006
San Juan	Upper	Q100	Normal S = .007	Normal S = .006
San Juan	Upper	Q100HC	Normal S = .007	Normal S = .006

GEOMETRY DATA

Geometry Title: Existing Conditions

Geometry File : p:\2PDA0104\Hydr\LHS\Modeling\Model D\HecRas D\PMD5.g01

CROSS SECTION RIVER: San Juan
REACH: Upper RS: 11261.86

INPUT
Description: Manual Modification of Manning's N Values
Station Elevation Data num= 77

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	242.54	4.3	242.24	17.83	241.34	54.62	239.7	59.18	239.5
123.46	236.63	252.74	235.97	254.58	235.92	258.01	235.88	345.45	235.75
381	235.91	416.15	236.08	421.47	236.09	444.76	236.48	616.89	237.54
635.95	236.85	686.17	237.78	686.35	237.78	686.66	237.76	705.96	236.3
708.32	235.71	712.55	234.41	719.34	230.57	733.27	223.18	741.67	221.95
761.26	220.33	764.68	220.33	795.12	220.3	799.34	220.3	801.34	220.35
818.73	221.46	873.43	224.78	896.84	225.07	943.86	225.66	963.45	225.9
1024.79	223.71	1034.82	223.73	1056.83	223.25	1126.76	222.61	1155.33	223.03
1185.38	223.52	1191.02	222.57	1192.05	222.48	1202.64	218.02	1206.6	216.44
1218.59	215.06	1223.77	214.46	1227.31	214.32	1282.3	216.37	1294.49	216.87
1330.81	218.33	1349.69	217.75	1364.3	217.74	1409.65	216.8	1415.9	217.4
1418.57	217.99	1426.08	219.58	1427.14	219.78	1440.15	223.77	1449.59	224.59
1452.99	224.9	1460.48	225.02	1497.36	225.89	1543.03	226.26	1544	226.23
1544.51	226.23	1545.71	226.27	1661.88	227.31	1687.17	228	1726.31	230.17
1731.68	230.61	1760.22	235.86	1764.18	236.51	1779.94	238.34	1809.73	240.73
1820.32	241.62	1820.66	241.64						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.07	54.62	.035	764.68	.05

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
1202.64	1418.57	130.03	143.07	149.61	.1 .3

CROSS SECTION RIVER: San Juan
REACH: Upper RS: 11118.79

INPUT
Description:
Station Elevation Data num= 73

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	236.28	6.22	236.08	23.39	235.63	72.28	235.01	95.7	234.71
116.39	234.76	145.25	235.39	253.54	235.79	296.34	235.95	305.3	236
306.56	236.01	307.67	236.01	517.86	235.46	582.18	235.91	651.6	235.74
682.29	234.27	691.5	233.97	727.73	228.91	734.54	228.53	741.74	227.01
761.35	223.21	771.59	222.64	772.91	222.56	777.01	222.33	793.57	221.41
795.23	221.26	799.6	221.41	818.65	222.32	835.77	223.06	838.02	223.54
858.58	230	868.91	230.97	873.43	231.61	877.11	231.89	921.97	231.07
922.09	231.07	922.12	231.07	969.56	227.62	975.21	226.75	1009.04	223.72
1016.91	223.3	1063.95	222.15	1075.79	222.76	1092.71	222.9	1162.63	223.35
1187.76	222.47	1242.01	217.99	1252.71	216.77	1255.07	216.57	1255.52	216.54
1317.4	216.46	1319.11	216.45	1372.17	216.23	1398.59	217.3	1421.05	217
1440.94	216.26	1453.06	216.41	1456.68	217.54	1457.61	217.97	1465.34	221.17
1469.74	223.55	1476.75	224.23	1483.58	225.18	1489.7	224.96	1548.76	224.65
1611.98	227.28	1707.68	229.93	1716.91	230.38	1728.83	231.47	1773.15	235.81
1777.73	236.17	1778.68	236.35	1807.01	237.16				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.07	72.28	.035	777.01	.05

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
1242.01	1457.61	113.3	131.05	129.24	.1 .3

CROSS SECTION RIVER: San Juan
REACH: Upper RS: 10987.74

INPUT
Description:
Station Elevation Data num= 86

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	236.29	4.65	236.1	17.71	235.99	40.01	235.81	61.33	235.71
108.51	235.52	135.11	236.1	160.74	235.99	218.01	234.83	278.02	233.69
285.21	233.54	392.39	233.47	443.26	233.45	562.6	232.91	589.54	232.87
600.16	232.54	647.72	231.1	683.46	231.18	692.86	230.59	705.84	229.38
708.6	228.65	713.49	226.92	723.65	223.34	726.23	222.95	734.77	221.65
736.86	221.37	742.25	220.66	781.95	221.62	787.48	221.88	789.8	222.37
802.82	224.27	805.64	225.65	808.72	227.16	812.84	229.18	814.74	230.22
815.95	230.46	827.13	232.22	835.58	232.69	842.86	232.81	865.03	230.7
874.42	229.56	880.31	228.4	884.46	227.12	897.57	223.21	899.81	222.46
900.69	222.26	920.38	221.07	924.94	220.81	935.4	220.22	943.09	220.04
1006.44	218.49	1014.33	219.06	1040.71	222.3	1049.72	223.1	1065.02	223
1092.15	221.8	1106.38	221.42	1157.88	218.22	1200.31	216.53	1236.43	216.46
1266.17	216.4	1271.79	216.38	1382.69	215.95	1401.69	216.34	1412.06	217.68
1439.71	217.96	1447.39	218.97	1452.82	219.2	1467.43	218.38	1501.43	219.15
1519.8	219.56	1548.43	221.03	1558.95	221.44	1589.62	222.71	1603.43	223.49
1604.51	223.52	1605.84	223.54	1625.44	223.62	1645.18	223.96	1647.53	224.07
1649.57	224.32	1723.55	231.37	1734.13	232.95	1747.54	235.46	1759.85	236.07
1771.3	236.43								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.07	17.71	.035	726.23	.05

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
1157.88	1412.06	237.19	239.78	243.42	.1 .3

CROSS SECTION RIVER: San Juan
REACH: Upper RS: 10747.97

INPUT
Description: Manual Modification of Manning's N Values
Station Elevation Data num= 48

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	236.04	2.48	235.82	22.5	235.29	61.52	234.89	88.93	234.64
109.76	234.6	183.4	233.36	265.76	230.92	366.1	230.11	416.67	229.73
448.27	229.72	483.41	229.02	550.09	226.85	628.93	225.02	650.44	224.67
700.42	222.47	706	222.26	708.53	221.48	728.5	217.27	732.25	216.48
748.15	216.28	752.69	216.01	770.01	216.56	815.29	216.82	856.16	216.23
885	216.05	924.46	215.81	989.32	216.22	1025	215.84	1088.35	215.17
1100.74	215.11	1106.09	215.22	1106.35	215.22	1167.83	215.55	1185.06	215.41
1227.01	215.06	1328.48	216.48	1329.47	216.54	1346.04	221.53	1349.24	222.67
1362.65	225.06	1406.84	228.93	1410.82	229.21	1412.05	229.37	1417.98	230.91
1425.04	234.92	1427.99	236.1	1431.23	236.75				

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.05	61.52	.035	728.5	.05	885	.035	1025	.05

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
732.25	1328.48	153.99	201.69	181.38	.1	.3

CROSS SECTION RIVER: San Juan
REACH: Upper RS: 10546.27

INPUT
Description: Manual Modification of Manning's N Values
Station Elevation Data num= 49

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	236.22	15.31	236.1	82.15	233.76	145.91	232.57	204.39	230.63
237.53	229.94	279.43	229.37	322	228.82	357.76	228.36	467.04	225.64
498.68	225.16	542.5	225.53	555.23	225.12	584.32	224.17	590.62	223.73
603.48	222.96	611.71	223	624.09	219.15	633.77	216.5	636.62	216.16
639.41	216.26	650.3	215.4	651.87	215.27	680	214.57	731.07	213.3
734.14	213.24	736.27	213.13	738.91	213.14	785	213.22	794.25	213.24
855.69	215.03	860.69	215.18	900.15	215.88	949.77	216.48	1078.71	216.09
1087.61	216.06	1206.66	216.79	1213.61	217.18	1253.05	218.16	1274.66	219.45
1285.16	219.95	1314.1	223.32	1332.02	224.38	1339.94	224.86	1345.91	225.6
1361.48	227.69	1371.08	228.8	1373.43	229.44	1395.49	235.75		

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.05	322	.035	603.48	.05	680	.035	785	.05

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
651.87	1078.71	193.88	481.55	278.86	.1	.3

CROSS SECTION RIVER: San Juan
REACH: Upper RS: 10064.73

INPUT
Description: Manual Modification of Manning's N Values
Station Elevation Data num= 55

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	236.69	2.25	235.52	3.44	235.23	39.26	231	45.72	230.22
46.1	230.2	54.9	229.94	80	229.2	108.21	228.37	136.39	227.57
139.49	227.54	140.5	227.54	144.18	227.6	241.56	229.75	270.67	229.52
308.9	228.27	350.32	225.72	352.38	225.51	357.79	224.93	392.41	221.01
412.12	217.68	417.62	217.01	425.14	213.21	427.78	212	431.1	210.34
431.53	210.31	449.01	207.79	470.75	208.63	515.87	210.35	524.74	210.61
530.85	210.6	630	211.13	685.58	211.43	715.69	211.75	740.32	211.98
814.18	212.46	842.43	212.85	853.67	213.13	909.6	214.49	967.31	216.31
1043.73	216.78	1139.17	217.15	1168.86	217.63	1227.2	218.61	1249.1	218.99
1297.47	221.72	1310.51	222.39	1317.8	222.77	1323.48	223.09	1327.81	224.11
1341.36	226.67	1347.21	228.87	1363.43	234.6	1371.97	237.09	1372.46	237.17

Manning's n Values num= 6

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.07	54.9	.05	80	.035	270.67	.035	630	.035
853.67	.05								

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
427.78	814.18	211.89	236.17	217.43	.1	.3

CROSS SECTION RIVER: San Juan
REACH: Upper RS: 9828.565

INPUT
Description: Manual Modification of Manning's N Values
Station Elevation Data num= 61

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	236.98	1.55	236.3	7.74	234.46	13.66	232.4	19.63	230.85
48.1	227.01	55.82	225.9	61.58	225.47	89.19	224.43	90.37	224.38
102.46	224.18	103.69	224.17	208.98	223.05	239.58	223.07	242.07	223
253.69	222.62	275.8	223.24	279.3	223.44	284.47	221.81	285.5	221.47
288.04	219.66	289.78	218.35	299.1	212	299.55	211.26	305.25	209.37
310.18	208.19	314.04	208.02	316.25	207.91	317.91	207.84	329.99	208.42
340.14	208.91	355.77	209.46	366.15	209.81	377.03	210.22	433.19	210.2
507.35	210.17	548.46	210.16	566.82	210.11	595.74	210.14	686.65	212
715	212.59	721.13	212.72	803.83	214.42	873.18	215.71	887.08	216.05
902.38	216.51	983.81	216.5	1063.49	217.85	1084.26	218.24	1108.83	218.43
1118.78	218.6	1127.28	219.01	1142.48	219.66	1182	221.49	1216.79	222.99
1218.55	223.27	1225.94	226.07	1235.89	227.79	1243.42	229.53	1268.71	234.66
1274.08	235.96								

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val

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       0     .07   89.19     .035  242.07     .05  433.19     .035     715     .05

 Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          299.1  686.65             118.07  118.56   92.16             .1      .3

 CROSS SECTION          RIVER: San Juan
 REACH: Upper             RS: 9710.010

 INPUT
 Description:
 Station Elevation Data    num=      49
      Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
        0  237.56    9.65  233.67   16.71   230.9   24.72  229.13   28.53  228.26
     47.4  226.46   73.88   223.9   78.37   223.7   81.58  223.63   105.5  223.15
   122.06  222.81  128.27  222.82  178.12  222.64  188.98   222.6  240.96  219.54
   286.21  216.75   293.2  216.54  298.11  213.76  302.07  212.02  304.78  210.35
      306  209.73  310.33  208.75   319.5  207.93  327.69  207.81  340.97   208.4
   381.78  209.58  396.96  210.19  422.01  210.14  445.07  210.09  486.21  210.12
   570.66  210.19  637.15  211.58  656.46  211.95  802.19  214.72  833.25  215.49
   866.72   216.5  916.71  216.49  1038.3  216.49  1044.5   216.6 1052.62  216.99
  1075.97  218.25 1080.92  218.83 1086.83  219.53 1132.21  222.55 1137.29  223.24
  1138.13   223.4 1140.89  224.99 1144.53  226.44 1172.25  237.73

 Manning's n Values        num=       4
      Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
        0    .035   105.5     .05  422.01    .035  656.46     .05

 Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          302.07  656.46             105.82  122.85   111.7             .1      .3

 CROSS SECTION          RIVER: San Juan
 REACH: Upper             RS: 9587.161

 INPUT
 Description: Manual Modification of Manning's N Values
 Station Elevation Data    num=      51
      Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
        0  235.13     .85   234.8   16.38  229.87   27.38  227.87   29.69  227.46
    31.73  227.22   57.78  224.46   97.35  223.56  128.59  222.34  148.19  221.51
      180  220.22  212.56   218.9   281.1  216.65  294.01  216.15  309.99  214.06
   312.35  213.75  326.78  212.04  334.41  212.32  338.81  212.32  344.29  212.59
   353.29  213.96  362.45  212.15  366.12  211.09  370.15  209.41  372.66  209.12
   404.96  208.82     425  208.86  448.67  208.91  545.27  210.01     585   210.6
   626.43  211.21  626.55  211.21  642.39  211.44  675.79  212.15  741.69  213.41
   753.28  213.48  771.95  214.16  797.84  214.81  853.17  216.48  884.32  216.48
   909.54  216.85  996.87  216.79 1043.26  216.64 1056.32  216.22 1058.79  216.5
  1065.87  219.78 1069.48  221.22 1074.99   224.9 1086.45  230.37 1093.15  234.08
  1095.36  235.39

 Manning's n Values        num=       6
      Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
        0    .035     180     .05     425    .035  545.27     .05     585    .035
   642.39     .05

 Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          362.45  675.79             123.08  118.02   93.39             .1      .3

 CROSS SECTION          RIVER: San Juan
 REACH: Upper             RS: 9469.136

 INPUT
 Description:
 Station Elevation Data    num=      53
      Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
        0  237.57   12.94   234.3   17.91   232.7   24.18  230.54   59.34  225.73
    76.13   223.7   81.78  223.42  135.85  220.64  169.07  219.04  180.99  218.57
   187.82  218.35  215.48  217.65  221.82  217.49  328.29     215  340.74  214.75
      358  213.99  370.63  212.99  378.86  212.34  395.08  211.79  399.54  212.37
   404.97  212.66  409.25  212.27  415.36  211.65  421.14  211.09  444.15  210.57
   463.29  210.43  540.01   209.9   570.3  209.82  614.13   210.4  660.46     211
   713.27   211.7  714.02  211.69   724.7  211.51  773.82  210.74   774.7  210.73
   786.16  210.77  789.96  210.35  813.58   210.1  816.39  210.42  837.61  211.74
   855.43  212.89   859.2  213.18  886.42   214.6  922.31  216.41  926.97   216.6
   947.26  216.63 1039.24  216.13 1044.89  216.74 1052.81   221.3 1054.77     222
  1061.39  227.39 1073.18   236.6 1077.41  239.66

 Manning's n Values        num=       4
      Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
        0    .035  215.48     .05  463.29    .035  614.13     .05

 Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          415.36  837.61             89.26   118.5  115.68             .1      .3

 CROSS SECTION          RIVER: San Juan
 REACH: Upper             RS: 9350.632

 INPUT
 Description: Manual Modification of Manning's N Values
 Station Elevation Data    num=      41
      Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
        0  235.55   12.28  233.13   24.99  230.02   52.05  227.19   66.18  225.45
    90.05  224.42  117.19  223.07  181.12   219.9  202.42  218.92  220.15  218.12
   262.29  217.13  319.13   215.8  384.17  214.49  421.88  212.86  466.73  210.99
   480.59  210.33  480.81  210.31   481.1   210.3   481.5  210.29  482.43  210.29
   543.33  210.13  639.13   209.9     680  210.42  694.61  210.61  718.93  210.93
   772.78  210.62  777.09  210.59  809.31  210.02  871.62  211.73  895.72  212.94
    932.8  214.27  978.37  215.79  983.34  215.94  1006.1  216.52 1007.14  216.55
  1013.04  217.67 1021.96  219.37 1024.06  219.91 1061.51  230.84 1065.28  232.96
```

1065.35 233.03

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.07	117.19	.035	202.42	.05	543.33	.035	680	.05

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
466.73	871.62	84.67	94.41	83.86	.1	.3

CROSS SECTION RIVER: San Juan
REACH: Upper RS: 9256.219

INPUT
Description:
Station Elevation Data num= 47

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	235.56	11.33	233.02	23.65	230.11	36.67	228.78	56.57	226.31
63.88	226	149.59	222.37	170.35	221.36	171.49	221.31	219.79	219.17
253.31	217.64	300.03	216.55	413.44	214.26	454.77	212.48	458.88	212.3
495.1	210.77	580.72	209.51	585.58	209.57	628.06	210.1	686.73	209.96
716.31	210.34	716.54	210.34	723.99	210.3	788.11	209.93	818.2	209.76
822.23	209.68	830.02	209.9	836.38	210.22	845.79	210.84	862.11	212.09
871.59	212.66	876.13	212.99	884.78	213.94	909.99	216.15	920.78	216.71
948.86	217.91	978.02	218.84	988.49	219.84	1001.47	220.78	1017.4	221.96
1024.33	222.37	1030.22	223.76	1038.84	226.09	1044.05	229.23	1047.45	230.51
1063.67	234.43	1064.7	234.9						

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.07	63.88	.035	170.35	.05	585.58	.035	723.99	.05

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
495.1	845.79	101.89	118.9	108.87	.1	.3

CROSS SECTION RIVER: San Juan
REACH: Upper RS: 9137.316

INPUT
Description: Manual Modification of Manning's N Values
Station Elevation Data num= 45

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	235.18	22.33	230.75	42.24	228.2	63.9	225.84	101.49	224.61
150.55	222.89	167.63	221.32	180	220.74	235.15	218.14	244.78	218.25
309.54	217.04	325.48	217.26	379.62	216.78	417.92	216.26	427.16	216.09
488.07	212.8	495.35	212.5	507.55	211.99	537.37	210.2	581.23	209.62
613.53	209.59	642	209.07	682.73	208.32	704.34	208.03	723.51	207.79
727.77	208.32	756.83	209.99	773.79	209.62	780.18	209.47	835.8	209.21
899.08	210.85	912.49	211.72	931.6	212.97	954.81	214.4	955.14	214.42
991.54	215.27	999.52	215.73	1014.81	216.69	1035.94	220.35	1049.41	224.63
1055.27	226.59	1067.37	231.66	1070.65	233.33	1074.77	235.81	1079.2	237.67

Manning's n Values num= 4

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	180	.05	642	.035	773.79	.05

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
537.37	899.08	68.43	118.37	170.91	.1	.3

CROSS SECTION RIVER: San Juan
REACH: Upper RS: 9018.948

INPUT
Description: Manual Modification of Manning's N Values
Station Elevation Data num= 48

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	236.19	5.61	234.34	19.05	230.7	22.32	229.92	34.98	228.26
58.81	225.12	71.59	224.56	125.23	222.86	136.34	221.54	175.03	217.95
186.19	216.91	194.69	216.65	239.64	216.66	295.33	217.21	331.31	216.54
349.96	216.78	393.11	217.37	395.15	217.35	434.37	217.01	456.94	215.29
464.98	214.87	479.59	211.99	496.75	209.99	501.41	209.82	519.32	209.15
581.79	209.78	592.3	209.97	596.43	209.99	600.8	209.99	617.29	209.94
675	209.57	799.23	208.76	846.63	209.31	856.61	209.49	865.04	209.64
867.03	209.63	887.36	209.5	899.78	209.99	949.51	212.86	954.98	213.65
966.37	215.05	971.53	215.74	976.9	216.45	994.13	221.26	1007.41	226.4
1013.51	229.18	1026.11	234.49	1029.58	236.16				

Manning's n Values num= 4

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	175.03	.05	675	.035	865.04	.05

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
617.29	899.78	103.94	141.14	196.85	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
888	F		

CROSS SECTION RIVER: San Juan
REACH: Upper RS: 8877.807

INPUT
Description: Manual Modification of Manning's N Values
Station Elevation Data num= 50

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	235.47	16	230.13	23.53	228.82	43.04	226.02	53.75	225.26
97.11	223.1	121.98	220.27	148.33	216.92	149.86	216.85	175.44	216.02
182.43	215.79	264.01	215.76	359.16	215.66	400.91	215.23	404.49	215.19
423.94	214.49	448.47	213.08	478.83	211.44	485.24	211.18	487.34	210.83
536.77	209.27	566.36	209.8	576.89	209.87	666.14	210.47	670.81	210.46

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   763.6  210.34  781.64  210.19  791.65  210.67  805.26  211.21  820.04  212.02
  844.24  213.88  847.94  213.98  871.25  211.93   872.2  211.87   873.1  211.78
  885.93  208.92  895.03  204.91  901.36  204.51  923.65  204.73   925.5  204.75
  935.26  204.92  948.14  206.25   961.4   208.7  974.67  211.59  982.85  214.28
  989.46  216.85 1012.58  226.37 1021.32   230.5 1028.34  234.21 1032.01  235.71

Manning's n Values          num=       4
     Sta   n Val      Sta   n Val      Sta   n Val      Sta   n Val
       0    .035   175.44     .05   670.81    .035   935.26     .05

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        885.93   961.4              90.38   91.88   97.21             .1      .3
Ineffective Flow      num=       1
   Sta L   Sta R    Elev  Permanent
888        F

CROSS SECTION           RIVER: San Juan
REACH: Upper               RS: 8785.928

INPUT
Description: Manual Modification of Manning's N Values
Station Elevation Data     num=      53
     Sta    Elev      Sta    Elev      Sta    Elev      Sta    Elev      Sta    Elev
       0  231.65    17.24  226.79    22.09  226.18    61.29  222.04    91.45   220.2
  113.91  217.61   126.85  216.97   154.25  215.99    184.6  215.82   324.44  215.06
  367.24  214.93   375.23  214.64    387.3  214.03    407.3  213.48   467.14  211.83
  486.18   211.6   514.54  211.07   559.35  209.79   569.19  209.86   616.65  210.18
  656.85   209.7   700.89  209.71   776.42  209.15   803.51  210.94   846.49  216.22
  850.58  216.45   866.12  214.61   866.92  214.48   867.87  214.26    870.7  213.58
  883.15  210.23   900.95  205.79   910.93  204.24   934.29  203.03   935.91  202.95
  939.77  202.85   944.19  203.03    960.1  203.43   965.34   204.3   969.91  205.78
  976.64  208.01   978.76  208.86   981.84  211.21   984.92  212.46   987.05  211.72
  989.84  212.14    992.8  214.24   994.96   215.3   996.84  216.96   998.25  217.71
 1017.83  230.92  1023.32  233.95  1025.57  235.44

Manning's n Values          num=       4
     Sta   n Val      Sta   n Val      Sta   n Val      Sta   n Val
       0    .035    184.6     .05   656.85    .035   939.77     .05

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        900.95  969.91              89.24   86.51  114.83             .1      .3
Ineffective Flow      num=       1
   Sta L   Sta R    Elev  Permanent
888        F

CROSS SECTION           RIVER: San Juan
REACH: Upper               RS: 8699.415

INPUT
Description:
Station Elevation Data     num=      57
     Sta    Elev      Sta    Elev      Sta    Elev      Sta    Elev      Sta    Elev
       0  228.96     16.5  224.59    22.67  223.16    25.71  222.88    70.95   218.8
  120.94  217.13   132.52   216.5   138.16  216.41   177.33  216.52   226.62  216.35
  389.19  215.81   440.44  213.92    516.4  210.08   516.93  210.07   518.16  210.05
  540.65  210.23   543.99  209.34   546.05  209.12   554.09  204.61   556.71  203.68
  559.84  203.47   564.63  203.29   567.58  203.49   568.92  203.58   576.85  204.46
  593.65  206.31   607.75   206.8   611.61  206.94    626.8  207.98   653.38     208
  669.55  207.98   689.74  207.95   741.83  207.88    759.1  207.73   776.74  208.88
  800.07  211.05   801.37  211.01   843.83  207.44   844.58  207.28   855.43  205.99
  872.29  203.81   875.46  203.48   931.18  202.95   944.59  203.18   947.68  203.23
   958.4  203.41    961.9   203.6   965.82  204.69   971.93  205.96      986  208.87
  993.13  209.98   997.35  212.14   1012.4  223.31  1013.12  223.91  1013.28  224.02
 1027.96  234.99  1030.08  236.14

Manning's n Values          num=       6
     Sta   n Val      Sta   n Val      Sta   n Val      Sta   n Val      Sta   n Val
       0    .035   226.62     .05   576.85    .035   607.75     .05   669.55    .035
  947.68     .05

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        855.43  971.93              196.8   210.5    198             .1      .3
Ineffective Flow      num=       1
   Sta L   Sta R    Elev  Permanent
888        F

CROSS SECTION           RIVER: San Juan
REACH: Upper               RS: 8488.931

INPUT
Description: Manual Modification of Manning's N Values
Station Elevation Data     num=      44
     Sta    Elev      Sta    Elev      Sta    Elev      Sta    Elev      Sta    Elev
       0  223.53     5.06  222.86    50.35  218.19   100.15  216.85   181.75  215.37
  191.02  215.13   194.19  215.09   206.53  215.12   333.22  216.49   363.57  216.83
  444.57  216.12   466.47   216.8   497.41  217.45   499.38  217.37   501.77  216.86
     505  216.26   509.57   215.4   520.92  209.41   521.52   209.1   521.65  209.03
  521.85     209   546.91  205.67   556.86  204.35      582  203.55   590.02  203.36
     645   203.5   711.54  203.67      715  203.66   770.23  203.53   837.91  203.44
  850.34  203.93   869.98   203.3   929.34  202.79   937.43  202.72   946.04  202.93
   953.2  203.42   954.83  203.48   957.04  204.49   959.37  205.75   971.52  214.75
  979.71  220.55   984.84  223.89   990.63  227.51   990.77  227.61

Manning's n Values          num=       6
     Sta   n Val      Sta   n Val      Sta   n Val      Sta   n Val      Sta   n Val
       0    .035      505     .05   546.91    .035      645     .05      715    .035
  971.52     .05
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Bank Sta: Left 546.91 | Right 959.37 | Lengths: Left Channel 41.88 | Channel 40.32 | Right 46.55 | Coeff Contr. .1 | Expan. .3

CROSS SECTION RIVER: San Juan
REACH: Upper RS: 8448.60*

INPUT
Description:
Station Elevation Data num= 91

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	223.41	4.94	222.8	5.82	222.71	22.26	220.92	41.42	218.8
42.88	218.64	48.31	218.02	49.19	217.94	62.64	217.57	89.34	216.92
95.9	216.76	97.85	216.72	129.23	216.27	141.07	216.11	177.58	215.53
186.64	215.33	189.73	215.29	201.79	215.31	218.68	215.44	248.55	215.82
254.46	215.89	325.57	216.49	336.54	216.58	355.23	216.73	377.59	216.54
434.37	216.35	452.5	216.88	455.77	216.98	469.69	217.27	469.74	217.27
469.79	217.27	469.84	217.27	470.11	217.27	481.32	217.28	486	217
487.92	216.78	490.26	216.19	493.41	215.47	494.34	215.25	496.74	214.71
497.88	214.48	501.63	212.72	508.97	209.26	509.55	208.99	509.68	208.92
509.88	208.89	513.05	208.42	534.36	206.02	537.29	205.68	543.57	204.94
550.35	204.73	566.83	204.23	574.25	204.05	607.9	204.02	625.13	203.98
629.18	203.97	655.59	204.05	686.7	203.93	689.9	203.9	694.22	203.86
741.01	203.72	742.29	203.72	803.64	203.59	815.14	203.97	833.31	203.45
882.59	203.04	888.24	203	895.73	202.94	906.93	203.39	914.47	203.9
916.24	204.02	918.36	204.12	921.23	205	924.26	206.08	932.98	209.28
945.94	213.93	951.7	215.91	954.89	216.88	958.92	217.85	960.55	218.32
961.45	218.55	966.14	219.18	967.69	219.41	969.06	219.61	969.7	219.83
969.89	219.9	970.76	220.53	971.27	220.81	975.12	224.05	980.03	228.35
980.28	228.58								

Manning's n Values num= 14

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	41.42	.038	248.55	.047	452.5	.038	493.41	.05
534.36	.035	548.45	.035	627.09	.047	693.26	.035	717.6	.038
899.75	.047	924.26	.047	945.94	.047	980.28	.047		

Bank Sta: Left 534.36 | Right 924.26 | Lengths: Left Channel 41.88 | Channel 40.32 | Right 46.55 | Coeff Contr. .1 | Expan. .3

CROSS SECTION RIVER: San Juan
REACH: Upper RS: 8408.28*

INPUT
Description:
Station Elevation Data num= 91

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	223.29	4.83	222.73	5.68	222.65	21.74	220.82	40.45	218.59
41.87	218.42	47.17	217.77	48.04	217.7	61.17	217.32	87.24	216.76
93.65	216.61	95.55	216.58	126.19	216.28	137.76	216.16	173.41	215.69
182.25	215.53	185.28	215.5	197.05	215.5	213.55	215.58	242.71	216
248.49	216.08	317.93	216.49	328.64	216.55	346.89	216.63	368.72	216.45
424.17	216.58	441.88	217.07	445.07	217.15	458.66	217.44	458.71	217.44
458.75	217.44	458.81	217.44	459.07	217.44	470.02	217.21	474.59	216.54
476.47	216.2	478.75	215.53	481.83	214.67	482.73	214.42	485.07	213.79
486.19	213.57	489.85	212.06	497.02	209.1	497.59	208.87	497.71	208.82
497.9	208.78	501	208.28	521.81	206.37	524.5	206.1	530.28	205.52
536.51	205.34	551.66	204.9	558.49	204.74	589.42	204.59	605.26	204.45
608.98	204.42	633.27	204.52	661.86	204.18	664.81	204.13	668.77	204.07
711.79	203.92	712.97	203.91	769.37	203.75	779.94	204.02	796.65	203.61
841.95	203.24	847.14	203.21	854.03	203.16	867.81	203.85	877.11	204.47
879.28	204.61	881.89	204.76	885.43	205.51	889.16	206.41	901.71	209.18
920.36	213.1	928.65	214.78	933.24	215.46	939.05	215.8	941.39	216.09
942.68	216.23	949.44	215.77	951.67	215.67	953.65	215.57	954.56	215.78
954.84	215.84	956.09	216.8	956.81	217.17	962.36	222.31	969.43	229.19
969.79	229.55								

Manning's n Values num= 14

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	40.45	.041	242.71	.044	441.88	.041	481.83	.05
521.81	.035	535.09	.035	609.17	.044	671.52	.035	694.45	.041
866.06	.044	889.16	.044	920.36	.044	969.79	.044		

Bank Sta: Left 521.81 | Right 889.16 | Lengths: Left Channel 41.88 | Channel 40.32 | Right 46.55 | Coeff Contr. .1 | Expan. .3

CROSS SECTION RIVER: San Juan
REACH: Upper RS: 8367.96*

INPUT
Description:
Station Elevation Data num= 91

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	223.17	4.71	222.67	5.54	222.59	21.22	220.71	39.48	218.37
40.86	218.2	46.04	217.51	46.88	217.45	59.7	217.06	85.15	216.6
91.39	216.47	93.26	216.45	123.16	216.29	134.45	216.22	169.24	215.85
177.87	215.73	180.82	215.7	192.31	215.68	208.41	215.71	236.87	216.18
242.51	216.27	310.28	216.49	320.74	216.52	338.55	216.53	359.85	216.36
413.97	216.81	431.25	217.25	434.36	217.33	447.63	217.61	447.68	217.61
447.72	217.61	447.78	217.61	448.03	217.6	458.71	217.15	463.17	216.09
465.01	215.61	467.23	214.86	470.24	213.88	471.13	213.59	473.41	212.88
474.5	212.65	478.07	211.4	485.06	208.95	485.62	208.76	485.74	208.71
485.93	208.68	488.96	208.13	509.27	206.73	511.72	206.53	516.99	206.11
522.68	205.95	536.5	205.58	542.72	205.43	570.94	205.16	585.39	204.93
588.79	204.88	610.94	204.99	637.02	204.44	639.71	204.37	643.33	204.29
682.57	204.11	683.65	204.11	735.09	203.9	744.74	204.06	759.98	203.76
801.3	203.44	806.05	203.42	812.32	203.39	828.7	204.31	839.74	205.04
842.32	205.21	845.42	205.39	849.62	206.01	854.05	206.75	870.43	209.09
894.78	212.28	905.6	213.65	911.6	214.04	919.17	213.75	922.23	213.86

923.91	213.91	932.74	212.37	935.65	211.92	938.23	211.52	939.42	211.72
939.78	211.78	941.42	213.07	942.36	213.54	949.6	220.57	958.83	230.03
959.3	230.52								

Manning's n Values num= 14

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	39.48	.044	236.87	.041	431.25	.044	470.24	.05
509.27	.035	521.73	.035	591.26	.041	649.78	.035	671.3	.044
832.38	.041	854.05	.041	894.78	.041	959.3	.041		

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
509.27	854.05	41.88	40.32	46.55	.1	.3

CROSS SECTION RIVER: San Juan
REACH: Upper RS: 8327.64*

INPUT
Description:
Station Elevation Data num= 91

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	223.05	4.6	222.6	5.41	222.53	20.69	220.6	38.5	218.16
39.86	217.98	44.9	217.25	45.73	217.21	58.23	216.81	83.05	216.43
89.14	216.32	90.96	216.32	120.12	216.29	131.13	216.28	165.07	216.01
173.49	215.93	176.37	215.91	187.58	215.87	203.28	215.85	231.04	216.36
236.54	216.46	302.64	216.49	312.83	216.49	330.2	216.43	350.99	216.27
403.77	217.04	420.63	217.44	423.66	217.51	436.6	217.78	436.65	217.78
436.69	217.78	436.74	217.77	436.99	217.77	447.41	217.08	451.76	215.64
453.55	215.02	455.72	214.19	458.65	213.09	459.52	212.76	461.74	211.96
462.8	211.74	466.29	210.74	473.11	208.79	473.66	208.64	473.78	208.61
473.96	208.57	476.91	207.99	496.72	207.08	498.93	206.95	503.7	206.7
508.84	206.57	521.33	206.25	526.95	206.12	552.46	205.72	565.52	205.41
568.59	205.33	588.61	205.46	612.19	204.69	614.61	204.61	617.88	204.5
653.35	204.3	654.32	204.3	700.82	204.05	709.54	204.11	723.31	203.91
760.66	203.64	764.95	203.63	770.62	203.61	789.59	204.77	802.37	205.61
805.36	205.81	808.95	206.03	813.81	206.52	818.95	207.08	839.16	208.99
869.2	211.45	882.55	212.53	889.95	212.61	899.3	211.7	903.07	211.63
905.15	211.58	916.03	208.96	919.62	208.18	922.81	207.48	924.28	207.67
924.73	207.73	926.74	209.34	927.91	209.91	936.84	218.83	948.23	230.88
948.81	231.49								

Manning's n Values num= 14

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	38.5	.047	231.04	.038	420.63	.047	458.65	.05
496.72	.035	508.36	.035	573.35	.038	628.04	.035	648.15	.047
798.69	.038	818.95	.038	869.2	.038	948.81	.038		

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
496.72	818.95	41.88	40.32	46.55	.1	.3

CROSS SECTION RIVER: San Juan
REACH: Upper RS: 8287.319

INPUT
Description: Manual Modification of Manning's N Values
Station Elevation Data num= 52

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	222.93	5.27	222.47	20.17	220.49	37.53	217.95	38.85	217.76
43.77	216.99	56.76	216.56	80.95	216.27	86.89	216.18	117.09	216.3
127.82	216.34	198.14	215.98	225.2	216.54	230.56	216.65	304.93	216.46
342.12	216.18	410	217.62	425.57	217.95	425.62	217.95	425.66	217.95
425.71	217.94	425.95	217.93	436.11	217.01	447.91	211.93	450.08	211.05
454.51	210.08	464.86	207.84	484.17	207.43	486.15	207.38	495	207.18
533.98	206.29	548.39	205.79	566.28	205.93	592.44	204.71	625	204.49
720.02	203.84	728.92	203.83	765	206.18	783.84	207.41	807.88	208.9
859.5	211.4	868.3	211.19	879.42	209.65	886.38	209.26	899.33	205.55
903.6	204.43	907.39	203.43	909.67	203.67	912.07	205.61	913.46	206.28
924.08	217.09	938.32	232.46						

Manning's n Values num= 7

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	37.53	.05	225.2	.035	410	.05	495	.035
625	.05	765	.035						

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
484.17	783.84	21.4	39.31	35.65	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
888	F		

CROSS SECTION RIVER: San Juan
REACH: Upper RS: 8248.00*

INPUT
Description:
Station Elevation Data num= 88

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	222.94	3.21	222.53	5.13	222.35	19.63	220.44	32.04	218.66
36.53	218	37.82	217.81	42.6	217.07	50.62	216.69	55.25	216.55
65.26	216.42	65.4	216.42	78.79	216.25	84.58	216.17	105.83	216.2
113.97	216.23	116.25	216.24	124.42	216.27	176.31	216.08	192.86	215.99
210.35	216.3	219.2	216.52	221.16	216.57	224.42	216.64	272.46	216.59
296.81	216.58	333.01	216.4	359.7	216.95	374.41	217.22	378.9	217.27
399.08	217.5	405.58	217.57	414.24	217.05	414.29	217.04	414.33	217.04
414.38	217.03	414.61	217	416.51	216.7	416.87	216.64	424.5	215.84
426.98	214.84	430.84	213.26	435.99	211.26	438.1	210.49	442.41	209.61
445.12	209.07	452.48	207.58	471.28	207.02	473.02	206.97	480.82	206.79
515.15	205.99	527.85	205.55	543.61	205.66	564.77	204.68	566.65	204.59
595.33	204.35	596.25	204.34	679.03	203.66	686.87	203.64	690.04	203.82

701.81	204.23	718.23	204.8	747.72	205.81	762.14	206.3	779.5	207.04
802.03	208.32	803.14	208.37	848.25	210.07	853.92	210.29	862.57	210.08
868.11	209.39	873.51	208.73	874.24	208.69	880.35	208.44	881.83	208.08
882.11	208.03	893.09	206.21	897.29	205.6	898.85	205.37	901.02	205.15
903.26	205.64	905.62	207.61	906.99	208.36	907.47	208.85	914.24	215.48
917.43	218.65	924.94	226.52	931.44	232.92				

Manning's n Values num= 15

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	36.53	.048	50.62	.037	219.2	.037	399.08	.05
471.28	.035	482.42	.035	491.46	.035	550.2	.037	598.66	.048
616.13	.048	760.12	.035	779.5	.037	802.03	.05	931.44	.037

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
471.28	779.5	21.4	39.31	35.65	.1 .3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
888	F		

CROSS SECTION RIVER: San Juan
REACH: Upper RS: 8208.70*

INPUT
Description:
Station Elevation Data num= 88

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	222.95	3.12	222.42	4.99	222.24	19.1	220.39	31.16	218.69
35.53	218.05	36.78	217.86	41.44	217.14	49.23	216.66	53.74	216.53
63.47	216.41	63.61	216.41	76.64	216.24	82.26	216.15	102.93	216.13
110.86	216.16	113.07	216.17	121.01	216.21	171.49	216.09	187.59	216
204.6	216.24	213.21	216.51	215.12	216.57	218.28	216.62	265.01	216.66
288.69	216.7	323.9	216.63	349.86	217.14	364.17	217.36	368.54	217.36
388.17	217.37	394.48	217.38	402.91	216.14	402.96	216.14	403	216.13
403.04	216.11	403.27	216.07	405.12	215.64	405.47	215.57	412.89	214.68
415.3	213.77	419.06	212.33	424.06	210.6	426.12	209.93	430.31	209.15
432.94	208.66	440.11	207.32	458.39	206.6	459.9	206.56	466.64	206.4
496.33	205.7	507.31	205.32	520.93	205.39	539.23	204.54	540.86	204.47
565.66	204.21	566.45	204.2	638.04	203.47	644.81	203.44	649.29	203.68
665.84	204.05	688.94	204.56	730.45	205.43	750.73	205.86	775.16	206.66
797.31	207.8	798.41	207.84	842.76	209.01	848.33	209.18	856.84	208.97
862.29	208.38	867.6	207.8	868.31	207.77	874.33	207.61	875.78	207.33
876.05	207.32	886.85	206.87	890.98	206.77	892.51	206.73	894.64	206.87
896.85	207.62	899.17	209.61	900.52	210.44	900.99	210.92	907.65	217.16
910.79	220.21	918.16	227.71	924.56	233.37				

Manning's n Values num= 15

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	35.53	.046	49.23	.039	213.21	.039	388.17	.05
458.39	.035	469.84	.035	479.13	.035	539.5	.039	589.3	.046
607.26	.046	755.24	.035	775.16	.039	797.31	.05	924.56	.039

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
458.39	775.16	21.4	39.31	35.65	.1 .3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
888	F		

CROSS SECTION RIVER: San Juan
REACH: Upper RS: 8169.39*

INPUT
Description:
Station Elevation Data num= 88

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	222.96	3.03	222.3	4.85	222.12	18.56	220.34	30.29	218.72
34.53	218.09	35.75	217.92	40.27	217.22	47.85	216.63	52.23	216.52
61.69	216.4	61.83	216.39	74.48	216.22	79.95	216.14	100.04	216.07
107.74	216.1	109.89	216.1	117.61	216.14	166.67	216.11	182.31	216.02
198.84	216.18	207.21	216.49	209.07	216.56	212.15	216.61	257.56	216.73
280.58	216.82	314.8	216.85	340.02	217.33	353.93	217.49	358.17	217.45
377.25	217.25	383.39	217.18	391.58	215.24	391.63	215.23	391.66	215.22
391.71	215.2	391.93	215.14	393.73	214.59	394.07	214.49	401.28	213.51
403.62	212.7	407.28	211.39	412.14	209.93	414.13	209.36	418.21	208.68
420.77	208.25	427.73	207.06	445.5	206.19	446.77	206.15	452.46	206.02
477.5	205.4	486.76	205.08	498.26	205.11	513.69	204.41	515.07	204.34
535.99	204.07	536.66	204.07	597.04	203.29	602.76	203.25	608.53	203.55
629.87	203.87	659.66	204.32	713.17	205.06	739.33	205.41	770.82	206.29
792.6	207.29	793.67	207.32	837.27	207.96	842.75	208.06	851.11	207.86
856.47	207.36	861.68	206.88	862.39	206.84	868.3	206.79	869.73	206.58
870	206.6	880.61	207.52	884.67	207.94	886.18	208.09	888.27	208.59
890.44	209.59	892.72	211.61	894.04	212.52	894.51	213	901.06	218.85
904.14	221.77	911.39	228.91	917.68	233.83				

Manning's n Values num= 15

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	34.53	.044	47.85	.041	207.21	.041	377.25	.05
445.5	.035	457.26	.035	466.8	.035	528.8	.041	579.95	.044
598.38	.044	750.37	.035	770.82	.041	792.6	.05	917.68	.041

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
445.5	770.82	21.4	39.31	35.65	.1 .3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
888	F		

CROSS SECTION RIVER: San Juan
REACH: Upper RS: 8130.08*

INPUT
Description:
Station Elevation Data num= 88

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	222.98	2.94	222.19	4.71	222	18.02	220.29	29.41	218.75
33.53	218.14	34.71	217.97	39.11	217.3	46.46	216.6	50.72	216.5
59.9	216.38	60.04	216.38	72.33	216.21	77.64	216.13	97.14	216
104.62	216.03	106.71	216.04	114.21	216.07	161.85	216.12	177.04	216.03
193.09	216.13	201.22	216.48	203.02	216.55	206.01	216.6	250.11	216.8
272.46	216.94	305.69	217.08	330.18	217.51	343.69	217.63	347.81	217.53
366.34	217.12	372.3	216.99	380.25	214.34	380.3	214.32	380.33	214.31
380.38	214.29	380.59	214.21	382.34	213.53	382.67	213.41	389.67	212.35
391.95	211.63	395.49	210.45	400.21	209.26	402.15	208.8	406.11	208.21
408.59	207.84	415.36	206.81	432.61	205.77	433.65	205.74	438.28	205.63
458.68	205.11	466.22	204.85	475.59	204.84	488.16	204.28	489.28	204.22
506.32	203.94	506.86	203.93	556.05	203.11	560.71	203.05	567.77	203.41
593.91	203.69	630.37	204.09	695.89	204.68	727.92	204.97	766.48	205.91
787.88	206.78	788.94	206.79	831.78	206.9	837.16	206.95	845.38	206.75
850.65	206.35	855.77	205.95	856.46	205.92	862.27	205.97	863.67	205.83
863.94	205.89	874.37	208.18	878.36	209.1	879.84	209.45	881.9	210.31
884.03	211.57	886.27	213.61	887.57	214.6	888.03	215.07	894.46	220.54
897.49	223.33	904.62	230.1	910.79	234.29				

Manning's n Values num= 15

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	33.53	.041	46.46	.044	201.22	.044	366.34	.05
432.61	.035	444.68	.035	454.47	.035	518.1	.044	570.59	.041
589.51	.041	745.49	.035	766.48	.044	787.88	.05	910.79	.044

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
432.61	766.48	21.4	39.31	35.65	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
888	F		

CROSS SECTION RIVER: San Juan
REACH: Upper RS: 8090.77*

INPUT
Description:
Station Elevation Data num= 88

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	222.99	2.86	222.08	4.57	221.88	17.49	220.24	28.53	218.79
32.53	218.19	33.68	218.02	37.94	217.37	45.08	216.58	49.2	216.49
58.12	216.37	58.25	216.37	70.17	216.19	75.32	216.11	94.25	215.93
101.5	215.96	103.53	215.97	110.81	216.01	157.02	216.13	171.76	216.04
187.34	216.07	195.22	216.46	196.97	216.54	199.87	216.59	242.65	216.86
264.34	217.06	296.58	217.3	320.35	217.7	333.45	217.77	337.45	217.62
355.42	217	361.21	216.8	368.92	213.43	368.96	213.41	369	213.4
369.04	213.38	369.25	213.28	370.94	212.48	371.26	212.33	378.06	211.18
380.27	210.56	383.71	209.51	388.29	208.6	390.17	208.24	394.01	207.75
396.42	207.44	402.98	206.55	419.72	205.36	420.52	205.34	424.1	205.24
439.85	204.81	445.68	204.61	452.91	204.57	462.62	204.15	463.49	204.1
476.65	203.8	477.07	203.79	515.06	202.93	518.66	202.86	527.01	203.28
557.94	203.52	601.09	203.85	678.61	204.31	716.51	204.53	762.14	205.54
783.16	206.27	784.2	206.26	826.29	205.85	831.58	205.84	839.65	205.64
844.82	205.33	849.86	205.03	850.54	205	856.25	205.14	857.62	205.08
857.88	205.17	868.13	208.84	872.05	210.27	873.5	210.8	875.53	212.03
877.62	213.54	879.82	215.61	881.1	216.68	881.55	217.14	887.87	222.23
890.84	224.89	897.85	231.29	903.91	234.75				

Manning's n Values num= 15

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	32.53	.039	45.08	.046	195.22	.046	355.42	.05
419.72	.035	432.09	.035	442.14	.035	507.4	.046	561.23	.039
580.64	.039	740.61	.035	762.14	.046	783.16	.05	903.91	.046

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
419.72	762.14	21.4	39.31	35.65	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
888	F		

CROSS SECTION RIVER: San Juan
REACH: Upper RS: 8051.46*

INPUT
Description:
Station Elevation Data num= 88

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	223	2.77	221.96	4.43	221.77	16.95	220.19	27.66	218.82
31.54	218.24	32.64	218.07	36.78	217.45	43.69	216.55	47.69	216.48
56.33	216.35	56.46	216.35	68.02	216.18	73.01	216.1	91.35	215.87
98.39	215.89	100.35	215.9	107.4	215.94	152.2	216.15	166.49	216.05
181.58	216.02	189.23	216.44	190.92	216.54	193.73	216.57	235.2	216.93
256.22	217.18	287.47	217.53	310.51	217.89	323.21	217.9	327.08	217.71
344.51	216.87	350.11	216.6	357.59	212.53	357.63	212.51	357.67	212.49
357.71	212.46	357.91	212.35	359.55	211.42	359.86	211.26	366.45	210.02
368.59	209.49	371.92	208.57	376.36	207.93	378.19	207.68	381.91	207.28
384.24	207.03	390.6	206.29	406.83	204.94	407.39	204.93	409.92	204.85
421.03	204.52	425.14	204.37	430.24	204.3	437.09	204.01	437.7	203.98
446.98	203.66	447.27	203.65	474.07	202.74	476.6	202.66	486.25	203.14
521.97	203.34	571.8	203.61	661.34	203.93	705.11	204.09	757.8	205.16
778.45	205.75	779.47	205.73	820.8	204.79	825.99	204.73	833.92	204.53
839	204.32	843.95	204.1	844.61	204.08	850.22	204.32	851.57	204.33
851.83	204.46	861.89	209.5	865.74	211.44	867.17	212.16	869.15	213.75
871.21	215.52	873.37	217.61	874.63	218.76	875.07	219.21	881.27	223.91
884.2	226.45	891.07	232.49	897.03	235.2				

Manning's n Values num= 15

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	31.54	.037	43.69	.048	189.23	.048	344.51	.05
406.83	.035	419.51	.035	429.81	.035	496.7	.048	551.88	.037
571.77	.037	735.73	.035	757.8	.048	778.45	.05	897.03	.048

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
406.83	757.8	21.4	39.31	35.65	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
888	F		

CROSS SECTION RIVER: San Juan
REACH: Upper RS: 8012.155

INPUT
Description: Manual Modification of Manning's N Values
Station Elevation Data num= 41

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	223.01	2.68	221.85	26.78	218.85	42.31	216.52	54.55	216.34
54.67	216.34	88.46	215.8	97.17	215.83	147.38	216.16	175.83	215.96
184.87	216.53	227.75	217	300.67	218.08	312.97	218.04	316.72	217.8
339.02	216.41	348.16	210.37	348.46	210.18	356.91	208.42	360.14	207.63
372.07	206.62	393.94	204.53	411.55	203.88	417.48	203.51	434.55	202.47
445.49	203.01	486	203.16	542.52	203.37	693.7	203.65	753.46	204.79
773.73	205.24	815.31	203.74	833.18	203.3	838.69	203.16	845.52	203.58
845.77	203.74	860.83	213.52	868.59	221.28	874.68	225.6	884.3	233.68
890.15	235.66								

Manning's n Values num= 6

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	42.31	.05	417.48	.035	486	.05	542.52	.035
773.73	.05								

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
393.94	753.46	39.95	38.28	37.37	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
888	F		

CROSS SECTION RIVER: San Juan
REACH: Upper RS: 7973.87*

INPUT
Description:
Station Elevation Data num= 95

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	223.14	2.66	222.09	2.75	222.07	4.18	221.89	8.43	221.4
16.25	220.46	26.54	219.2	41.94	217	48.44	216.79	54.07	216.6
54.19	216.6	74.46	215.9	78.73	215.69	87.68	215.22	96.32	214.9
99.97	214.78	109.04	214.68	116.16	214.61	123.58	214.54	132.03	214.51
146.08	214.64	156.36	214.63	174.28	214.69	180.64	215.07	183.24	215.28
195.25	215.74	222.09	216.5	225.75	216.57	255.87	217.22	257.11	217.23
273.03	217.19	273.28	217.19	284.49	217.09	294.4	216.92	298.02	216.89
310.22	216.61	313.93	216.34	336.04	214.78	345.1	209.76	345.39	209.6
346.98	209.3	353.52	208	353.77	207.95	356.97	207.14	358.34	206.97
360.16	206.83	368.8	206.18	390.47	204.34	406.6	203.72	409.47	203.63
415.87	203.3	423.93	202.9	427.94	202.7	434.28	202.39	445.04	202.85
479.02	203.04	484.9	203.07	517.71	203.26	530.78	203.36	540.51	203.38
611.7	203.47	618.15	203.47	683.78	203.53	684.89	203.52	689.25	203.51
702.04	203.66	715.42	203.88	732.07	204.19	748.04	204.54	768.71	205.07
778.88	204.86	795.05	204.31	811.1	203.75	825.2	203.4	829.32	203.29
830.67	203.25	831.35	203.29	834.94	203.55	836.13	203.72	836.15	203.72
841.91	205.28	842.16	205.47	846.37	208.55	849.47	210.76	852.01	212.53
856.16	215.02	857.52	215.82	858.15	216.37	858.89	216.96	864.57	221.9
865.43	222.59	868.85	224.59	871.64	226.14	881.45	232.6	887.41	234.18

Manning's n Values num= 14

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	41.94	.047	109.04	.038	390.47	.035	413.89	.035
439.94	.035	482.03	.047	491.06	.038	538.25	.038	623.96	.047
748.04	.05	768.71	.05	795.05	.05	887.41	.05		

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
390.47	748.04	39.95	38.28	37.37	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
888	F		

CROSS SECTION RIVER: San Juan
REACH: Upper RS: 7935.60*

INPUT
Description:
Station Elevation Data num= 95

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	223.28	2.63	222.33	2.72	222.31	4.14	222.13	8.35	221.68
16.1	220.77	26.31	219.55	41.57	217.49	48.01	217.15	53.59	216.86
53.71	216.85	73.8	215.78	78.03	215.44	86.9	214.64	95.46	213.98
99.08	213.7	108.07	213.45	115.13	213.26	122.48	213.07	130.86	212.94
144.79	213.12	154.97	213.17	172.74	213.42	179.04	213.78	181.62	214.03
193.52	214.83	220.11	216.04	223.74	216.14	253.6	216.99	254.83	217
270.61	216.67	270.86	216.66	281.97	216.3	291.79	215.82	295.38	215.71
307.46	215.18	311.15	214.88	333.05	213.14	342.03	209.14	342.33	209.02
343.9	208.75	350.38	207.53	350.63	207.47	353.8	206.65	355.16	206.43
356.96	206.31	365.52	205.73	387.01	204.15	404.31	203.45	407.39	203.37
414.25	203.09	422.9	202.74	427.2	202.57	434.01	202.3	444.59	202.68

478.02	202.94	483.8	202.99	516.07	203.23	528.92	203.38	538.49	203.4
608.52	203.43	614.86	203.43	679.42	203.42	680.51	203.41	684.8	203.38
697.38	203.43	710.54	203.59	726.91	203.89	742.63	204.3	763.69	204.9
774.05	204.84	790.54	204.3	806.9	203.77	821.26	203.39	825.47	203.27
826.84	203.23	827.53	203.34	831.2	203.95	832.4	204.21	832.42	204.22
838.29	206.98	838.55	207.19	842.84	210.67	846.01	213.11	848.59	215.05
852.82	217.39	854.2	218.12	854.85	218.59	855.6	219.05	861.4	223.35
862.27	223.9	865.75	225.51	868.59	226.68	878.59	231.52	884.67	232.71

Manning's n Values num= 14

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	41.57	.044	108.07	.041	387.01	.035	410.29	.035
436.21	.035	478.07	.044	487.04	.041	533.98	.041	619.22	.044
742.63	.05	763.69	.05	790.54	.05	884.67	.05		

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
387.01	742.63	39.95	38.28	37.37	.1 .3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
888	F		

CROSS SECTION RIVER: San Juan
REACH: Upper RS: 7897.32*

INPUT
Description:
Station Elevation Data num= 95

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	223.41	2.61	222.57	2.7	222.55	4.1	222.36	8.28	221.95
15.96	221.08	26.07	219.9	41.19	217.97	47.58	217.51	53.11	217.12
53.23	217.11	73.14	215.66	77.33	215.19	86.13	214.07	94.61	213.05
98.19	212.62	107.11	212.22	114.1	211.91	121.38	211.59	129.68	211.38
143.49	211.61	153.59	211.71	171.19	212.15	177.44	212.49	179.99	212.78
191.79	213.91	218.14	215.58	221.74	215.7	251.33	216.76	252.54	216.77
268.19	216.15	268.43	216.14	279.44	215.51	289.18	214.72	292.73	214.52
304.71	213.75	308.36	213.43	330.07	211.51	338.97	208.53	339.26	208.44
340.82	208.2	347.25	207.06	347.49	207	350.63	206.16	351.98	205.89
353.76	205.78	362.25	205.29	383.54	203.95	402.02	203.19	405.31	203.12
412.64	202.88	421.87	202.59	426.47	202.45	433.73	202.22	444.14	202.52
477.01	202.85	482.69	202.9	514.43	203.21	527.07	203.4	536.48	203.41
605.34	203.4	611.57	203.39	675.05	203.3	676.13	203.29	680.34	203.24
692.71	203.19	705.66	203.31	721.76	203.6	737.21	204.05	758.67	204.73
769.23	204.83	786.03	204.3	802.69	203.78	817.33	203.39	821.61	203.26
823.01	203.21	823.71	203.38	827.45	204.34	828.68	204.7	828.7	204.71
834.68	208.69	834.94	208.92	839.32	212.8	842.54	215.47	845.17	217.56
849.48	219.76	850.89	220.42	851.54	220.82	852.32	221.15	858.22	224.8
859.1	225.21	862.65	226.44	865.55	227.22	875.74	230.44	881.93	231.23

Manning's n Values num= 14

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	41.19	.041	107.11	.044	383.54	.035	406.7	.035
432.47	.035	474.1	.041	483.03	.044	529.7	.044	614.48	.041
737.21	.05	758.67	.05	786.03	.05	881.93	.05		

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
383.54	737.21	39.95	38.28	37.37	.1 .3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
888	F		

CROSS SECTION RIVER: San Juan
REACH: Upper RS: 7859.05*

INPUT
Description:
Station Elevation Data num= 95

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	223.55	2.59	222.8	2.67	222.78	4.07	222.6	8.2	222.23
15.81	221.4	25.84	220.25	40.82	218.46	47.15	217.88	52.63	217.37
52.75	217.36	72.48	215.55	76.63	214.94	85.35	213.49	93.75	212.12
97.31	211.55	106.14	210.99	113.07	210.56	120.29	210.12	128.51	209.82
142.19	210.09	152.2	210.26	169.64	210.88	175.83	211.19	178.36	211.53
190.05	212.99	216.17	215.12	219.73	215.27	249.06	216.53	250.26	216.53
265.76	215.63	266.01	215.61	276.92	214.72	286.56	213.62	290.09	213.33
301.96	212.32	305.57	211.97	327.09	209.87	335.91	207.92	336.2	207.85
337.74	207.66	344.11	206.59	344.35	206.53	347.47	205.67	348.8	205.35
350.57	205.26	358.98	204.84	380.08	203.76	399.73	202.93	403.23	202.86
411.02	202.67	420.85	202.43	425.73	202.32	433.46	202.13	443.7	202.36
476.01	202.75	481.59	202.81	512.79	203.18	525.21	203.43	534.47	203.42
602.16	203.36	608.29	203.35	670.69	203.19	671.75	203.17	675.89	203.1
688.05	202.96	700.78	203.03	716.6	203.3	731.8	203.81	753.65	204.56
764.4	204.81	781.51	204.3	798.49	203.8	813.39	203.38	817.76	203.24
819.18	203.2	819.9	203.43	823.7	204.74	824.95	205.19	824.97	205.2
831.07	210.39	831.33	210.65	835.79	214.92	839.07	217.83	841.75	220.08
846.14	222.12	847.57	222.72	848.24	223.04	849.03	223.24	855.04	226.26
855.94	226.52	859.56	227.37	862.51	227.76	872.88	229.37	879.19	229.76

Manning's n Values num= 14

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	40.82	.038	106.14	.047	380.08	.035	403.11	.035
428.74	.035	470.14	.038	479.01	.047	525.43	.047	609.74	.038
731.8	.05	753.65	.05	781.51	.05	879.19	.05		

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
380.08	731.8	39.95	38.28	37.37	.1 .3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
888	F		

CROSS SECTION RIVER: San Juan
REACH: Upper RS: 7820.775

INPUT
Description: Manual Modification of Manning's N Values
Station Elevation Data num= 59

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	223.68	2.65	223.02	4.03	222.83	8.13	222.5	15.67	221.71
46.72	218.24	71.82	215.43	75.93	214.69	96.42	210.47	105.17	209.76
112.04	209.21	119.19	208.65	127.34	208.26	150.81	208.8	174.23	209.9
188.32	212.07	214.2	214.66	246.79	216.3	247.98	216.3	263.34	215.11
263.58	215.09	274.39	213.93	283.95	212.52	334.66	207.11	340.97	206.12
345.62	204.81	347.37	204.73	376.61	203.57	397.44	202.67	419.82	202.28
425	202.19	433.19	202.05	475	202.65	511.15	203.16	523.36	203.45
598.98	203.33	605	203.31	666.33	203.08	667.37	203.05	683.39	202.72
695.9	202.75	711.45	203.01	726.38	203.56	759.58	204.79	777	204.3
809.46	203.38	815.35	203.18	816.08	203.47	821.23	205.68	821.25	205.69
832.26	217.05	835.6	220.19	838.33	222.6	842.8	224.49	844.94	225.27
845.74	225.33	851.86	227.71	856.46	228.3	876.45	228.28		

Manning's n Values num= 6

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	105.17	.05	425	.035	475	.05	605	.035
777	.05								

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
376.61 726.38 42.15 43.12 43.34 .1 .3
Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
888	F		

CROSS SECTION RIVER: San Juan
REACH: Upper RS: 7777.65*

INPUT
Description:
Station Elevation Data num= 96

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	223.49	3.25	222.74	4.95	222.47	9.99	221.86	16.37	220.99
19.25	220.7	34.19	219.13	42.72	218.24	45.2	218.04	57.38	217.02
74.94	215.55	88.21	214.43	89.94	214.21	93.26	213.79	97.53	213.17
108.47	211.58	116.16	210.41	118.42	210.05	129.17	209.23	137.6	208.59
145.41	208	146.39	207.94	156.4	207.49	177.72	207.97	199.01	208.91
200.62	209.13	211.81	210.64	235.33	212.7	264.94	213.99	266.03	213.99
284.17	212.94	284.45	212.92	297.21	211.92	308.5	210.73	314.62	210.25
368.39	206	375.84	205.16	381.33	204.07	383.4	204	395.83	203.58
400.9	203.4	417.93	202.81	422.37	202.64	441.94	201.9	460.66	201.53
467.75	201.4	473.72	201.29	483.16	201.13	504.63	201.4	520.8	201.61
541.39	201.87	553.35	202.02	564.34	202.25	632.42	202.16	637.84	202.15
693.04	201.97	693.06	201.97	693.99	201.94	708.42	201.69	712.57	201.7
719.68	201.76	733.68	202.06	747.12	202.6	761.63	203.3	768.1	203.61
780.55	203.65	786.66	203.36	798.09	202.85	798.77	202.82	818.65	202.37
820.51	202.33	826.15	202.23	830.78	202.65	831.82	202.74	833.02	202.84
834.93	203.07	836.71	203.29	837.45	203.63	842.63	206.19	842.65	206.21
843.4	206.93	848.01	211.23	853.1	215.85	853.74	216.42	857.1	219.2
859.85	221.35	864.35	223.22	865.09	223.5	866.51	223.96	867.31	224.03
871.03	225.31	873.47	226.21	878.11	226.95	885.16	227.36	895.32	227.88
898.24	228.05								

Manning's n Values num= 14

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	116.71	.047	121.82	.038	392.38	.047	417.93	.038
426.98	.05	463.47	.038	510.53	.05	566.99	.047	632.88	.035
747.12	.05	761.63	.05	798.09	.05	898.24	.05		

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
417.93 747.12 42.15 43.12 43.34 .1 .3
Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
888	F		

CROSS SECTION RIVER: San Juan
REACH: Upper RS: 7734.52*

INPUT
Description:
Station Elevation Data num= 96

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	223.29	3.86	222.45	5.87	222.11	11.84	221.22	19.41	220.02
22.82	219.69	40.54	217.9	50.66	216.9	53.6	216.73	68.04	215.8
88.86	214.46	104.6	213.43	106.64	213.24	110.58	212.88	115.64	212.36
128.62	211.03	137.75	209.97	140.42	209.64	153.16	208.7	163.17	207.96
172.43	207.29	173.58	207.22	185.45	206.72	204.64	207.15	223.78	207.91
225.24	208.08	235.3	209.21	256.46	210.74	283.1	211.69	284.07	211.68
304.99	210.76	305.32	210.75	320.04	209.91	333.06	208.93	340.11	208.53
402.12	204.89	410.71	204.2	417.05	203.34	419.43	203.26	433.76	202.84
439.62	202.66	459.25	202.04	464.27	201.87	486.45	201.13	507.64	200.66
515.67	200.52	522.44	200.4	533.13	200.21	552.22	200.42	566.6	200.57
584.91	200.77	595.55	200.88	605.32	201.06	665.86	200.99	670.68	200.98
719.77	200.85	719.79	200.85	720.62	200.84	733.45	200.65	737.14	200.67
743.46	200.77	755.91	201.12	767.86	201.63	782.47	202.5	788.99	202.88
801.53	202.51	807.67	202.1	819.19	201.41	819.87	201.36	839.88	201.02
841.76	200.99	847.44	200.94	852.1	201.92	853.15	202.13	854.35	202.38
856.27	202.89	858.07	203.4	858.81	203.8	864.03	206.71	864.05	206.72
864.81	207.41	869.45	211.28	874.58	215.3	875.22	215.79	878.6	218.21
881.37	220.1	885.9	221.96	886.65	222.23	888.07	222.64	888.88	222.73
892.63	223.85	895.09	224.71	899.75	225.61	906.85	226.43	917.08	227.48

920.02 227.81

Manning's n Values num= 14

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	128.25	.044	133.87	.041	431.18	.044	459.25	.041
467.74	.05	501.95	.041	546.06	.05	598.99	.044	660.77	.035
767.86	.05	782.47	.05	819.19	.05	920.02	.05		

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
459.25	767.86	42.15	43.12	43.34	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
888			F

CROSS SECTION RIVER: San Juan
REACH: Upper RS: 7691.40*

INPUT
Description:
Station Elevation Data num= 96

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	223.1	4.46	222.17	6.79	221.74	13.7	220.58	22.46	219.05
26.4	218.68	46.89	216.68	58.6	215.57	62	215.42	78.7	214.58
102.78	213.38	120.98	212.44	123.35	212.27	127.91	211.98	133.76	211.55
148.78	210.47	159.33	209.54	162.42	209.22	177.16	208.16	188.73	207.34
199.44	206.57	200.78	206.51	214.51	205.95	231.55	206.32	248.56	206.92
249.85	207.04	258.79	207.78	277.59	208.77	301.25	209.38	302.12	209.38
325.82	208.59	326.19	208.58	342.86	207.9	357.61	207.14	365.6	206.82
435.85	203.78	445.58	203.24	452.76	202.6	455.46	202.53	471.69	202.11
478.33	201.91	500.57	201.28	506.18	201.11	530.95	200.36	554.63	199.8
563.6	199.64	571.15	199.5	583.1	199.28	599.81	199.43	612.41	199.53
628.44	199.67	637.74	199.74	646.3	199.86	699.31	199.83	703.53	199.82
746.5	199.74	746.52	199.74	747.24	199.73	758.47	199.62	761.7	199.63
767.24	199.79	778.14	200.17	788.61	200.67	803.32	201.7	809.88	202.16
822.5	201.38	828.69	200.83	840.28	199.96	840.97	199.91	861.12	199.67
863.01	199.65	868.72	199.66	873.42	201.18	874.48	201.52	875.69	201.92
877.62	202.72	879.43	203.51	880.18	203.96	885.44	207.22	885.46	207.24
886.22	207.89	890.89	211.33	896.05	214.75	896.7	215.16	900.11	217.23
902.89	218.85	907.46	220.69	908.21	220.97	909.64	221.33	910.46	221.44
914.22	222.4	916.7	223.21	921.4	224.26	928.55	225.5	938.85	227.08
941.81	227.58								

Manning's n Values num= 14

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	139.79	.041	145.91	.044	469.97	.041	500.57	.044
508.49	.05	540.42	.044	581.59	.05	63[illegible]	.041	688.65	.035
788.61	.05	803.32	.05	840.28	.05	941.81	.05		

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
500.57	788.61	42.15	43.12	43.34	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
888			F

CROSS SECTION RIVER: San Juan
REACH: Upper RS: 7648.27*

INPUT
Description:
Station Elevation Data num= 96

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	222.9	5.07	221.88	7.71	221.38	15.55	219.94	25.5	218.09
29.97	217.67	53.24	215.45	66.53	214.23	70.39	214.11	89.36	213.36
116.71	212.29	137.37	211.44	140.06	211.31	145.23	211.07	151.88	210.75
168.93	209.92	180.91	209.1	184.42	208.81	201.16	207.63	214.3	206.71
226.46	205.86	227.98	205.8	243.56	205.18	258.47	205.5	273.34	205.92
274.47	205.99	282.28	206.35	298.72	206.81	319.41	207.07	320.16	207.07
346.64	206.42	347.05	206.41	365.69	205.89	382.17	205.35	391.09	205.1
469.58	202.67	480.46	202.28	488.47	201.87	491.49	201.79	509.63	201.37
517.04	201.17	541.89	200.51	548.09	200.34	575.46	199.58	601.61	198.94
611.52	198.76	619.87	198.6	633.07	198.36	647.41	198.44	658.21	198.49
671.96	198.56	679.94	198.6	687.28	198.66	732.75	198.66	736.37	198.66
773.23	198.62	773.24	198.62	773.87	198.62	783.5	198.59	786.27	198.6
791.02	198.8	800.37	199.23	809.35	199.7	824.16	200.9	830.76	201.43
843.47	200.24	849.7	199.57	861.38	198.51	862.07	198.45	882.35	198.32
884.26	198.31	890.01	198.37	894.74	200.45	895.8	200.92	897.02	201.45
898.97	202.54	900.79	203.62	901.54	204.13	906.84	207.74	906.86	207.75
907.62	208.36	912.33	211.37	917.53	214.2	918.17	214.53	921.61	216.24
924.41	217.6	929.01	219.42	929.76	219.71	931.21	220.01	932.03	220.14
935.82	220.94	938.32	221.71	943.05	222.91	950.24	224.56	960.61	226.67
963.59	227.34								

Manning's n Values num= 14

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	151.33	.038	157.96	.047	508.77	.038	541.89	.047
549.25	.05	578.89	.047	617.13	.05	663	.038	716.53	.035
809.35	.05	824.16	.05	861.38	.05	963.59	.05		

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
541.89	809.35	42.15	43.12	43.34	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
888			F

CROSS SECTION RIVER: San Juan
REACH: Upper RS: 7605.154

INPUT

Description: Manual Modification of Manning's N Values

Station Elevation Data num= 44

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	222.71	28.54	217.12	59.59	214.23	74.47	212.9	78.79	212.8
130.63	211.2	156.77	210.34	170	209.94	189.08	209.36	202.49	208.66
253.47	205.15	272.62	204.41	299.08	204.95	338.21	204.76	416.58	203.38
547.56	200.64	555.75	200.43	583.21	199.75	590	199.58	648.6	198.08
683.04	197.44	695	197.45	715.48	197.46	799.96	197.51	810.84	197.57
830.09	198.74	845	200.1	851.65	200.71	870.72	198.31	883.17	196.99
903.59	196.97	905.51	196.97	911.3	197.09	917.13	200.31	918.36	200.99
920.32	202.37	929.03	208.84	933.77	211.42	939	213.65	951.32	218.45
957.42	219.49	971.94	223.63	982.38	226.27	985.38	227.11		

Manning's n Values num= 6

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	170	.05	547.56	.035	590	.05	695	.035
845	.05								

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
583.21	830.09	34.01	45.05	44.87	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
888	F		

CROSS SECTION RIVER: San Juan
REACH: Upper RS: 7560.10*

INPUT
Description:

Station Elevation Data num= 89

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	222.65	2.95	222.07	28.15	217.12	33.9	216.5	56.48	214.42
58.77	214.22	70.02	213.24	73.45	212.95	77.71	212.84	119.72	211.48
128.84	211.21	133.84	211.06	144.11	210.74	154.62	210.42	167.67	210.04
169.54	209.99	186.48	209.3	187.63	209.23	199.71	208.44	202	208.26
221.15	206.63	234.91	205.71	249.99	204.67	258.25	204.32	268.88	203.91
294.97	204.26	303.41	204.18	333.56	204.01	388.81	203.1	410.86	202.73
525.48	200.52	540.04	200.23	548.12	200.04	575.2	199.43	583.14	199.25
600.18	198.87	651.64	197.86	672.67	197.55	675.79	197.51	691.91	197.27
703.7	197.29	723.91	197.31	740.85	197.32	774.55	197.36	776.26	197.36
793.18	197.39	807.24	197.42	817.97	197.48	828.06	198.03	836.96	198.51
841.94	198.87	845.41	199.11	849.08	199.38	852.99	199.65	855.87	199.85
860.14	200.15	876.81	198.44	880.64	198.05	894.02	196.89	894.63	196.89
907.37	196.85	915.98	196.82	918.04	196.81	918.77	196.82	924.26	196.91
925.21	197.32	926.71	198.02	930.53	199.8	931.85	200.41	933.96	201.64
934.21	201.79	940.21	205.91	943.33	208.01	943.4	208.05	943.72	208.21
947.24	209.91	948.42	210.48	954.04	212.68	954.97	213.02	967.29	217.15
971.12	217.76	973.85	218.24	980.09	219.91	987.25	222.03	989.46	222.67
994.66	224.03	1000.36	225.66	1000.68	225.75	1003.91	226.71		

Manning's n Values num= 16

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	133.84	.037	167.67	.05	540.04	.037	575.2	.048
582.4	.048	693.73	.035	715.29	.035	771.22	.037	807.01	.048
830.87	.037	836.96	.048	852.99	.048	855.87	.035	894.63	.037
1003.91	.05								

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
575.2	836.96	34.01	45.05	44.87	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
888	F		

CROSS SECTION RIVER: San Juan
REACH: Upper RS: 7515.04*

INPUT
Description:

Station Elevation Data num= 89

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	222.59	2.91	222.01	27.76	217.11	33.43	216.42	55.69	214.4
57.95	214.2	69.05	213.26	72.42	213	76.63	212.88	118.06	211.47
127.04	211.23	131.98	211.08	142.1	210.79	152.46	210.49	165.33	210.15
167.17	210.1	183.89	209.24	185.01	209.16	196.93	208.23	199.18	208.03
218.07	206.11	231.64	205.22	246.51	204.19	254.65	203.81	265.13	203.42
290.86	203.56	299.19	203.45	328.92	203.27	383.39	202.42	405.14	202.09
518.16	200.08	532.52	199.83	540.48	199.66	567.19	199.11	576.28	198.93
595.79	198.53	654.69	197.64	678.75	197.36	682.32	197.32	700.77	197.11
712.41	197.13	732.33	197.15	749.04	197.18	782.28	197.23	783.96	197.23
800.65	197.28	814.51	197.32	825.1	197.39	835.05	197.86	843.82	198.27
849.15	198.58	852.86	198.77	856.79	198.98	860.97	199.2	864.06	199.36
868.62	199.6	886.46	198.12	890.56	197.78	904.88	196.79	905.52	196.79
919.16	196.73	928.36	196.67	930.57	196.65	931.35	196.66	937.23	196.72
938.24	197.07	939.85	197.7	943.94	199.28	945.35	199.83	947.6	200.92
947.86	201.05	954.29	205.14	957.62	207.18	957.7	207.22	958.04	207.39
961.81	209	963.07	209.55	969.09	211.72	970.07	212.05	983.26	215.84
987.35	216.46	990.28	216.99	996.95	218.68	1004.61	221.03	1006.98	221.71
1012.54	223.21	1018.63	225.13	1018.98	225.23	1022.43	226.32		

Manning's n Values num= 16

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	131.98	.039	165.33	.05	532.52	.039	567.19	.046
574.8	.046	692.45	.035	715.24	.035	774.35	.039	812.17	.046
837.39	.039	843.82	.046	860.97	.046	864.06	.035	905.52	.039
1022.43	.05								

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
567.19	843.82	34.01	45.05	44.87	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
888	F		

CROSS SECTION RIVER: San Juan
REACH: Upper RS: 7469.99*

INPUT
Description:
Station Elevation Data num= 89

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	222.53	2.86	221.95	27.36	217.11	32.96	216.35	54.91	214.38
57.13	214.19	68.07	213.29	71.4	213.05	75.54	212.92	116.39	211.47
125.25	211.24	130.12	211.11	140.1	210.84	150.31	210.57	163	210.25
164.81	210.2	181.29	209.17	182.4	209.09	194.15	208.01	196.37	207.79
214.99	205.58	228.36	204.73	243.03	203.72	251.05	203.31	261.39	202.92
286.76	202.87	294.96	202.73	324.27	202.52	377.98	201.74	399.42	201.44
510.84	199.65	525	199.42	532.85	199.27	559.18	198.79	569.41	198.6
591.39	198.2	657.73	197.41	684.84	197.16	688.86	197.13	709.64	196.94
721.11	196.96	740.76	197	757.23	197.03	790.01	197.1	791.66	197.1
808.12	197.17	821.79	197.23	832.23	197.3	842.04	197.69	850.69	198.04
856.37	198.3	860.32	198.43	864.51	198.59	868.96	198.75	872.25	198.87
877.11	199.04	896.11	197.8	900.47	197.52	915.73	196.69	916.42	196.69
930.94	196.6	940.75	196.52	943.1	196.5	943.94	196.5	950.19	196.54
951.28	196.81	952.99	197.37	957.34	198.77	958.84	199.25	961.25	200.19
961.52	200.3	968.37	204.37	971.92	206.35	972	206.39	972.37	206.56
976.38	208.09	977.73	208.61	984.13	210.75	985.18	211.09	999.23	214.54
1003.59	215.17	1006.7	215.74	1013.82	217.44	1021.98	220.02	1024.49	220.75
1030.42	222.39	1036.91	224.6	1037.29	224.71	1040.96	225.92		

Manning's n Values num= 16

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	130.12	.041	163	.05	525	.041	559.18	.044
567.2	.044	691.18	.035	715.19	.035	777.48	.041	817.34	.044
843.91	.041	850.69	.044	868.96	.044	872.25	.035	916.42	.041
1040.96	.05								

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
559.18	850.69	34.01	45.05	44.87	.1 .3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
888	F		

CROSS SECTION RIVER: San Juan
REACH: Upper RS: 7424.94*

INPUT
Description:
Station Elevation Data num= 89

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	222.48	2.82	221.89	26.97	217.11	32.49	216.27	54.12	214.36
56.32	214.18	67.1	213.31	70.38	213.1	74.46	212.96	114.72	211.46
123.45	211.25	128.25	211.13	138.09	210.89	148.16	210.64	160.66	210.35
162.45	210.31	178.69	209.11	179.79	209.02	191.37	207.8	193.56	207.55
211.91	205.05	225.09	204.24	239.55	203.24	247.46	202.8	257.64	202.43
282.65	202.17	290.74	202	319.63	201.78	372.56	201.06	393.69	200.79
503.52	199.22	517.48	199.02	525.22	198.89	551.17	198.47	562.55	198.28
586.99	197.86	660.78	197.19	690.92	196.97	695.39	196.94	718.51	196.77
729.82	196.8	749.18	196.85	765.42	196.89	797.74	196.96	799.37	196.97
815.59	197.06	829.07	197.13	839.36	197.21	849.03	197.53	857.56	197.81
863.58	198.01	867.78	198.09	872.22	198.2	876.95	198.3	880.44	198.38
885.59	198.49	905.76	197.48	910.39	197.26	926.58	196.59	927.31	196.58
942.73	196.48	953.13	196.37	955.63	196.34	956.52	196.34	963.16	196.35
964.31	196.56	966.12	197.05	970.74	198.25	972.34	198.67	974.89	199.46
975.18	199.56	982.44	203.59	986.21	205.52	986.31	205.56	986.69	205.74
990.95	207.18	992.38	207.68	999.18	209.79	1000.29	210.12	1015.2	213.24
1019.83	213.87	1023.13	214.49	1030.68	216.21	1039.34	219.01	1042.01	219.79
1048.31	221.57	1055.19	224.07	1055.59	224.2	1059.49	225.52		

Manning's n Values num= 16

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	128.25	.044	160.66	.05	517.48	.044	551.17	.041
559.6	.041	689.91	.035	715.14	.035	780.61	.044	822.5	.041
850.44	.044	857.56	.041	876.95	.041	880.44	.035	927.31	.044
1059.49	.05								

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
551.17	857.56	34.01	45.05	44.87	.1 .3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
888	F		

CROSS SECTION RIVER: San Juan
REACH: Upper RS: 7379.88*

INPUT
Description:
Station Elevation Data num= 89

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	222.42	2.78	221.83	26.58	217.1	32.01	216.19	53.33	214.33
55.5	214.16	66.12	213.34	69.36	213.15	73.38	213.01	113.05	211.45
121.66	211.27	126.39	211.16	136.08	210.94	146	210.72	158.33	210.45
160.09	210.42	176.1	209.05	177.18	208.95	188.58	207.58	190.75	207.31
208.83	204.52	221.82	203.74	236.06	202.76	243.86	202.29	253.9	201.93
278.54	201.48	286.51	201.27	314.98	201.03	367.15	200.39	387.97	200.14
496.21	198.79	509.96	198.61	517.59	198.5	543.16	198.15	555.69	197.95
582.59	197.52	663.82	196.97	697.01	196.78	701.93	196.75	727.38	196.6
738.52	196.64	757.61	196.69	773.62	196.74	805.46	196.83	807.07	196.84

823.06	196.95	836.34	197.04	846.48	197.12	856.02	197.36	864.43	197.58
870.8	197.72	875.24	197.74	879.93	197.81	884.93	197.85	888.62	197.88
894.08	197.93	915.41	197.16	920.31	196.99	937.43	196.49	938.21	196.48
954.51	196.35	965.52	196.21	968.16	196.18	969.1	196.17	976.12	196.17
977.34	196.3	979.26	196.72	984.14	197.74	985.83	198.09	988.53	198.73
988.84	198.81	996.52	202.82	1000.51	204.69	1000.61	204.73	1001.01	204.91
1005.52	206.27	1007.03	206.74	1014.22	208.82	1015.4	209.15	1031.17	211.93
1036.07	212.57	1039.56	213.24	1047.54	214.97	1056.7	218	1059.53	218.83
1066.19	220.75	1073.47	223.53	1073.89	223.68	1078.02	225.12		

Manning's n Values num= 16

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	126.39	.046	158.33	.05	509.96	.046	543.16	.039
552	.039	688.63	.035	715.1	.035	783.74	.046	827.67	.039
856.96	.046	864.43	.039	884.93	.039	888.62	.035	938.21	.046
1078.02	.05								

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
543.16	864.43	34.01	45.05	44.87	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
888	F		

CROSS SECTION RIVER: San Juan
REACH: Upper RS: 7334.83*

INPUT
Description:
Station Elevation Data num= 89

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	222.36	2.74	221.77	26.19	217.1	31.54	216.12	52.55	214.31
54.68	214.15	65.15	213.36	68.33	213.2	72.3	213.05	111.39	211.45
119.87	211.28	124.52	211.18	134.08	210.99	143.85	210.79	155.99	210.56
157.73	210.52	173.5	208.99	174.56	208.88	185.8	207.37	187.93	207.08
205.75	203.99	218.55	203.25	232.58	202.28	240.27	201.79	250.15	201.43
274.43	200.79	282.29	200.55	310.34	200.29	361.73	199.71	382.25	199.5
488.89	198.35	502.44	198.21	509.95	198.12	535.15	197.83	548.83	197.63
578.2	197.19	666.87	196.75	703.09	196.58	708.46	196.56	736.24	196.44
747.23	196.48	766.04	196.54	781.81	196.6	813.19	196.7	814.78	196.71
830.53	196.84	843.62	196.95	853.61	197.03	863.01	197.2	871.29	197.34
878.01	197.43	882.69	197.4	887.65	197.41	892.92	197.4	896.81	197.39
902.57	197.38	925.06	196.84	930.23	196.73	948.29	196.39	949.1	196.38
966.3	196.23	977.91	196.06	980.69	196.02	981.68	196.01	989.09	195.98
990.37	196.05	992.39	196.4	997.55	197.22	999.33	197.51	1002.17	198.01
1002.5	198.07	1010.6	202.04	1014.81	203.86	1014.91	203.9	1015.34	204.09
1020.09	205.36	1021.63	205.81	1029.27	207.86	1030.51	208.19	1047.14	210.63
1052.3	211.28	1055.99	212	1064.41	213.74	1074.07	216.99	1077.05	217.87
1084.07	219.93	1091.75	223	1092.19	223.16	1096.54	224.73		

Manning's n Values num= 16

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	124.52	.048	155.99	.05	502.44	.048	535.15	.037
544.4	.037	687.36	.035	715.05	.035	786.87	.048	832.83	.037
863.48	.048	871.29	.037	892.92	.037	896.81	.035	949.1	.048
1096.54	.05								

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
535.15	871.29	34.01	45.05	44.87	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
888	F		

CROSS SECTION RIVER: San Juan
REACH: Upper RS: 7289.783

INPUT
Description: Manual Modification of Manning's N Values
Station Elevation Data num= 50

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	222.3	2.7	221.71	31.07	216.04	51.76	214.29	64.17	213.39
109.72	211.44	122.66	211.21	132.07	211.04	155.37	210.63	171.95	208.81
185.12	206.84	202.67	203.46	215.28	202.76	236.67	201.28	278.06	199.82
356.32	199.03	481.57	197.92	527.14	197.51	573.8	196.85	709.18	196.39
715	196.37	745.11	196.27	790	196.45	820.92	196.57	822.48	196.58
838	196.73	870	197.03	878.16	197.11	885.23	197.14	890.15	197.06
895.36	197.02	905	196.9	934.71	196.52	960	196.28	978.08	196.1
994.26	195.85	1003.4	195.79	1005.53	196.07	1016.16	197.32	1024.68	201.27
1029.21	203.07	1029.66	203.26	1034.66	204.45	1045.62	207.22	1068.54	209.98
1081.27	212.5	1091.43	215.98	1101.95	219.11	1110.03	222.47	1115.07	224.33

Manning's n Values num= 8

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	122.66	.05	715	.035	790	.05	838	.035
870	.05	905	.035	960	.05				

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
527.14	878.16	31.39	37.9	42.85	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
888	F		

CROSS SECTION RIVER: San Juan
REACH: Upper RS: 7251.88*

INPUT
Description:
Station Elevation Data num= 76

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev

0	221.43	2.73	220.88	31.41	215.54	46.49	214.16	52.33	213.64
59.28	213.08	64.88	212.5	71.1	212	81.54	211.27	95.37	210.6
110.93	209.86	119.23	209.64	124.01	209.52	133.52	209.28	134.69	209.25
157.08	208.86	173.84	207.3	187.15	205.62	204.9	202.76	217.65	202.14
239.27	200.85	247.62	200.58	281.12	199.54	360.23	198.73	397.59	198.39
463.38	197.94	486.86	197.78	532.93	197.46	577.25	196.85	583.83	196.82
705.82	196.41	711.35	196.39	731.37	196.32	739.95	196.29	783.46	196.52
784.3	196.52	794.69	196.58	814.85	196.67	816.39	196.68	831.72	196.83
863.34	197.13	871.4	197.2	878.61	197.21	883.52	197.13	883.63	197.13
888.94	197.08	898.77	196.95	914.62	196.73	929.07	196.54	954.85	196.25
973.29	196.04	989.79	195.78	999.11	195.7	1001.28	195.93	1007.74	196.53
1012.12	196.97	1020.81	200.3	1022.76	200.95	1025.43	201.83	1025.89	201.99
1030.99	203.01	1042.16	205.38	1051.65	206.36	1055.47	206.76	1065.53	207.76
1073.8	209.11	1078.51	210.55	1080.18	211.26	1083.19	212.5	1088.87	214.66
1091.53	215.57	1099.6	218.31	1100.36	218.64	1105.75	220.96	1107.84	221.79
1112.98	223.65								

Manning's n Values num= 16

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	46.49	.038	124.01	.05	532.93	.035	712.07	.035
714.08	.035	769.99	.038	786.39	.05	832.68	.038	863.53	.05
871.4	.035	898.77	.035	914.62	.035	954.85	.047	1007.74	.038
1112.98	.05								

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
532.93	871.4	31.39	37.9	42.85	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
888	F		

CROSS SECTION RIVER: San Juan
REACH: Upper RS: 7213.99*

INPUT
Description:
Station Elevation Data num= 76

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	220.57	2.76	220.06	31.75	215.04	47	213.55	52.9	212.99
59.92	212.37	65.58	211.61	71.87	210.88	82.43	209.86	96.4	209.11
112.13	208.29	120.53	207.98	125.36	207.83	134.97	207.51	136.15	207.47
158.78	207.09	175.73	205.79	189.19	204.4	207.12	202.05	220.01	201.52
241.87	200.42	250.31	200.18	284.17	199.27	364.15	198.43	401.91	198.07
468.42	197.76	492.15	197.64	538.72	197.42	580.69	196.85	586.93	196.81
702.46	196.42	707.7	196.41	726.66	196.34	734.78	196.32	777.77	196.59
778.6	196.6	788.86	196.66	808.78	196.77	810.3	196.79	825.45	196.93
856.68	197 22	864.64	197.3	871.99	197.28	877	197.2	877.11	197.2
882.52	197.14	892.54	197	908.69	196.76	923.42	196.55	949.71	196.23
968.5	195.99	985.32	195.72	994.82	195.62	997.03	195.79	1003.61	196.25
1008.08	196.62	1016.94	199.34	1018.92	199.86	1021.65	200.59	1022.11	200.72
1027.31	201.57	1038.7	203.53	1048.37	204.38	1052.27	204.73	1062.53	205.55
1070.95	206.64	1075.76	208.61	1077.46	209.46	1080.52	210.92	1086.32	213.33
1089.03	214.38	1097.25	217.5	1098.03	217.86	1103.52	220.3	1105.65	221.12
1110.89	222.96								

Manning's n Values num= 16

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	47	.04	125.36	.05	538.72	.035	711.22	.035
713.15	.035	766.99	.04	782.79	.05	827.36	.04	857.07	.05
864.64	.035	892.54	.035	908.69	.035	949.71	.045	1003.61	.04
1110.89	.05								

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
538.72	864.64	31.39	37.9	42.85	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
888	F		

CROSS SECTION RIVER: San Juan
REACH: Upper RS: 7176.09*

INPUT
Description:
Station Elevation Data num= 76

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	219.7	2.79	219.23	32.09	214.54	47.5	212.93	53.47	212.34
60.57	211.67	66.29	210.72	72.64	209.75	83.31	208.44	97.44	207.61
113.34	206.71	121.82	206.33	126.7	206.13	136.42	205.75	137.62	205.7
160.49	205.32	177.62	204.28	191.22	203.18	209.35	201.35	222.38	200.9
244.47	199.98	253	199.77	287.23	198.99	368.06	198.14	406.23	197.76
473.45	197.57	497.44	197.51	544.52	197.37	584.14	196.84	590.03	196.8
699.11	196.44	704.05	196.42	721.95	196.36	729.62	196.34	772.07	196.67
772.9	196.67	783.03	196.75	802.7	196.88	804.21	196.89	819.17	197.03
850.02	197.32	857.89	197.39	865.37	197.35	870.47	197.27	870.58	197.27
876.1	197.2	886.31	197.05	902.77	196.8	917.78	196.57	944.56	196.2
963.71	195.93	980.85	195.65	990.53	195.53	992.78	195.65	999.49	195.96
1004.04	196.28	1013.07	198.37	1015.09	198.78	1017.86	199.34	1018.34	199.45
1023.64	200.12	1035.24	201.69	1045.1	202.41	1049.06	202.7	1059.52	203.33
1068.1	204.16	1073	206.66	1074.73	207.66	1077.86	209.35	1083.76	212.01
1086.52	213.19	1094.9	216.7	1095.69	217.07	1101.29	219.65	1103.46	220.44
1108.8	222.27								

Manning's n Values num= 16

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	47.5	.043	126.7	.05	544.52	.035	710.37	.035
712.23	.035	763.99	.043	779.18	.05	822.03	.043	850.6	.05
857.89	.035	886.31	.035	902.77	.035	944.56	.043	999.49	.043
1108.8	.05								

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
544.52 857.89 31.39 37.9 42.85 .1 .3
Ineffective Flow num= 1
Sta L Sta R Elev Permanent
888 F

CROSS SECTION RIVER: San Juan
REACH: Upper RS: 7138.19*

INPUT
Description:
Station Elevation Data num= 76

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	218.83	2.82	218.4	32.44	214.04	48.01	212.32	54.03	211.69
61.21	210.96	66.99	209.83	73.41	208.63	84.2	207.03	98.48	206.12
114.54	205.13	123.12	204.67	128.05	204.44	137.87	203.98	139.08	203.93
162.2	203.55	179.51	202.77	193.26	201.97	211.58	200.65	224.74	200.28
247.07	199.55	255.69	199.36	290.28	198.71	371.98	197.84	410.55	197.44
478.49	197.39	502.73	197.37	550.31	197.32	587.59	196.84	593.12	196.8
695.75	196.46	700.4	196.44	717.24	196.39	724.46	196.36	766.38	196.74
767.19	196.75	777.21	196.84	796.63	196.98	798.12	196.99	812.89	197.13
843.36	197.41	851.13	197.48	858.75	197.42	863.95	197.34	864.06	197.34
869.68	197.26	880.08	197.09	896.85	196.83	912.13	196.58	939.42	196.17
958.92	195.88	976.38	195.59	986.24	195.45	988.54	195.51	995.37	195.68
1000	195.93	1009.2	197.41	1011.26	197.7	1014.08	198.1	1014.57	198.17
1019.96	198.68	1031.79	199.85	1041.82	200.43	1045.86	200.66	1056.51	201.11
1065.25	201.69	1070.25	204.71	1072.01	205.86	1075.19	207.77	1081.21	210.68
1084.02	212.01	1092.56	215.9	1093.36	216.29	1099.06	218.99	1101.27	219.77
1106.71	221.59								

Manning's n Values num= 16

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	48.01	.045	128.05	.05	550.31	.035	709.52	.035
711.3	.035	761	.045	775.57	.05	816.71	.045	844.13	.05
851.13	.035	880.08	.035	896.85	.035	939.42	.04	995.37	.045
1106.71	.05								

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
550.31 851.13 31.39 37.9 42.85 .1 .3
Ineffective Flow num= 1
Sta L Sta R Elev Permanent
888 F

CROSS SECTION RIVER: San Juan
REACH: Upper RS: 7100.30*

INPUT
Description:
Station Elevation Data num= 76

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	217.97	2.85	217.57	32.78	213.54	48.51	211.7	54.6	211.03
61.86	210.25	67.7	208.93	74.19	207.5	85.08	205.61	99.51	204.62
115.75	203.55	124.41	203.02	129.4	202.75	139.33	202.22	140.55	202.15
163.91	201.79	181.4	201.26	195.29	200.75	213.8	199.95	227.11	199.66
249.67	199.12	258.38	198.96	293.34	198.44	375.89	197.54	414.87	197.13
483.52	197.2	508.02	197.23	556.1	197.28	591.03	196.84	596.22	196.79
692.39	196.47	696.75	196.46	712.53	196.41	719.29	196.39	760.69	196.82
761.49	196.82	771.38	196.92	790.56	197.08	792.03	197.09	806.62	197.23
836.7	197.51	844.37	197.58	852.13	197.49	857.42	197.41	857.54	197.41
863.26	197.32	873.85	197.14	890.92	196.86	906.49	196.6	934.27	196.15
954.13	195.82	971.91	195.52	981.95	195.36	984.29	195.37	991.24	195.39
995.96	195.58	1005.32	196.44	1007.42	196.61	1010.3	196.86	1010.8	196.9
1016.29	197.24	1028.33	198	1038.55	198.45	1042.66	198.63	1053.51	198.89
1062.41	199.21	1067.49	202.77	1069.28	204.06	1072.53	206.2	1078.65	209.36
1081.51	210.82	1090.21	215.1	1091.02	215.51	1096.83	218.34	1099.08	219.09
1104.62	220.9								

Manning's n Values num= 16

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	48.51	.047	129.4	.05	556.1	.035	708.67	.035
710.38	.035	758	.047	771.97	.05	811.39	.047	837.67	.05
844.37	.035	873.85	.035	890.92	.035	934.27	.038	991.24	.047
1104.62	.05								

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
556.1 844.37 31.38 37.9 42.85 .1 .3
Ineffective Flow num= 1
Sta L Sta R Elev Permanent
888 F

CROSS SECTION RIVER: San Juan
REACH: Upper RS: 7062.404

INPUT
Description: Manual Modification of Manning's N Values
Station Elevation Data num= 31

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	217.1	49.02	211.09	62.5	209.54	74.96	206.38	85.97	204.2
100.55	203.13	125.71	201.36	142.01	200.38	261.07	198.55	419.19	196.81
488.56	197.02	561.89	197.23	599.32	196.78	707.82	196.43	714.13	196.41
755	196.89	765.55	197.01	837.61	197.67	850.9	197.48	885	196.89
987.12	195.11	1003.59	195.53	1035.27	196.47	1039.46	196.6	1059.56	196.74
1066.56	202.26	1069.86	204.62	1079.01	209.63	1088.69	214.73	1094.6	217.68
1102.53	220.22								

Manning's n Values num= 6

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	49.02	.05	707.82	.035	755	.05	885	.035

987.12 .05

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
561.89 837.61 45.82 41.96 42.85 .1 .3
Ineffective Flow num= 1
Sta L Sta R Elev Permanent
888 F

CROSS SECTION RIVER: San Juan
REACH: Upper RS: 7020.44*

INPUT
Description:
Station Elevation Data num= 71

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	216.93	6.78	216.13	39.98	212.16	43.64	211.64	51.94	210.08
56.86	209.19	60.67	208.48	63.56	208.16	66.23	207.87	76.93	205.64
79.43	205.1	81.7	204.71	91.1	203.34	106.55	202.47	133.21	201.01
150.48	200.19	213.17	199.21	263.74	198.43	276.64	198.24	300.48	197.97
444.18	197	467.19	197.07	517.69	197.16	519.88	197.17	576.49	197.31
584.28	197.38	595.39	197.02	607.6	196.84	624.67	196.31	666.68	195.35
667.9	195.32	683.08	194.99	693.71	194.92	709.54	194.76	714.47	194.71
740.55	195.12	746.36	195.2	749.89	195.27	750.16	195.28	759.37	195.54
822.29	197.15	830.62	197.21	836.95	197.18	874.57	196.94	894.74	196.8
907.14	196.82	915.56	196.82	943.93	196.49	987.23	195.57	1005.4	195.72
1016.58	195.84	1026.62	195.96	1027.98	195.99	1032.79	196.11	1035.98	196.2
1040.35	196.31	1044.98	196.43	1058.22	196.57	1059.91	196.67	1065.47	197.22
1067.15	197.47	1074.87	202.71	1077.38	204.29	1078.51	205.01	1085.03	208.38
1088.47	209.84	1088.61	209.9	1099.23	214.62	1099.29	214.65	1105.81	217.08
1114.56	219.29								

Manning's n Values num= 11

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.039	51.94	.05	595.39	.035	715.48	.035	754.31	.046
822.29	.039	874.57	.039	907.14	.046	987.23	.046	1035.98	.039
1114.56	.05								

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
595.39 822.29 45.82 41.96 42.85 .1 .3

CROSS SECTION RIVER: San Juan
REACH: Upper RS: 6978.47*

INPUT
Description:
Station Elevation Data num= 71

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	216.75	7.16	215.94	42.23	211.84	46.1	211.23	54.87	209.08
60.06	207.82	64.08	206.82	67.14	206.49	69.95	206.2	81.26	204.29
83.9	203.82	86.3	203.46	96.22	202.49	112.54	201.8	140.7	200.66
158.94	200	225.16	198.94	278.58	198.11	292.2	197.93	317.38	197.65
469.18	197.18	493.48	197.26	546.82	197.31	549.13	197.31	608.93	197.44
617.16	197.56	628.9	196.81	637.7	196.64	650.02	195.84	680.34	194.09
681.21	194.04	692.17	193.45	699.83	193.35	711.26	193.1	714.82	193.02
737.1	193.47	742.07	193.55	745.09	193.66	745.32	193.67	753.2	194.06
806.97	196.62	816.09	196.85	823.01	196.88	864.15	196.98	886.2	197.04
899.76	197.26	908.96	197.41	939.99	197.19	987.35	196.04	1007.22	195.91
1019.44	195.85	1030.42	195.82	1031.91	195.85	1037.17	195.96	1040.65	196.04
1045.44	196.15	1050.49	196.26	1064.97	196.45	1066.82	196.65	1072.9	197.72
1074.74	198.2	1083.19	203.17	1085.93	204.69	1087.17	205.39	1094.29	208.91
1098.05	210.12	1098.2	210.18	1109.82	214.55	1109.88	214.56	1117.01	216.49
1126.58	218.36								

Manning's n Values num= 11

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.043	54.87	.05	628.9	.035	723.15	.035	753.62	.043
806.97	.043	864.15	.043	899.76	.043	987.35	.043	1040.65	.043
1126.58	.05								

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
628.9 806.97 45.82 41.96 42.85 .1 .3

CROSS SECTION RIVER: San Juan
REACH: Upper RS: 6936.51*

INPUT
Description:
Station Elevation Data num= 71

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	216.57	7.54	215.76	44.48	211.53	48.55	210.82	57.79	208.07
63.26	206.46	67.5	205.16	70.71	204.83	73.68	204.52	85.59	202.95
88.37	202.55	90.89	202.21	101.35	201.63	118.54	201.14	148.2	200.31
167.41	199.81	237.16	198.68	293.42	197.8	307.77	197.62	334.29	197.32
494.17	197.37	519.77	197.45	575.95	197.45	578.39	197.45	641.37	197.57
650.03	197.74	662.4	196.6	667.81	196.44	675.37	195.36	693.99	192.83
694.53	192.75	701.25	191.9	705.96	191.77	712.98	191.43	715.17	191.33
733.66	191.83	737.79	191.91	740.29	192.05	740.48	192.07	747.02	192.59
791.66	196.1	801.55	196.5	809.06	196.58	853.72	197.03	877.66	197.27
892.38	197.7	902.37	197.99	936.06	197.89	987.46	196.5	1009.03	196.09
1022.3	195.85	1034.22	195.67	1035.83	195.7	1041.54	195.81	1045.33	195.89
1050.52	195.99	1056.01	196.09	1071.73	196.33	1073.74	196.62	1080.34	198.21
1082.33	198.94	1091.5	203.62	1094.47	205.1	1095.82	205.78	1103.56	209.43
1107.64	210.4	1107.8	210.45	1120.41	214.47	1120.48	214.48	1128.22	215.89
1138.6	217.42								

Manning's n Values num= 11

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.046	57.79	.05	662.4	.035	730.81	.035	752.93	.039

```
  791.66    .046  853.72    .046  892.38    .039  987.46    .039 1045.33    .046
  1138.6     .05

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         662.4  791.66             45.82   41.96   42.85             .1      .3

CROSS SECTION          RIVER: San Juan
REACH: Upper             RS: 6894.555

INPUT
Description: Manual Modification of Manning's N Values
Station Elevation Data    num=      45
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0   216.4    7.92  215.57   46.73  211.21   51.01  210.41   66.46  205.09
   70.91   203.5   74.29  203.16   89.92  201.61   95.49  200.96  249.15  198.41
  308.26  197.49   351.2  196.99  546.06  197.64  607.64  197.59  673.81   197.7
  682.91  197.92   695.9  196.39  697.91  196.24  707.64  191.57  707.84  191.47
  710.34  190.36  712.09   190.2  715.51  189.63  730.22  190.18   733.5  190.27
  735.49  190.44  776.34  195.57  787.01  196.14  869.12   197.5     885  198.14
  895.78  198.57  932.12  198.59 1025.16  195.86 1038.02  195.53 1039.76  195.56
 1045.92  195.66    1050  195.73 1078.48  196.21 1080.65   196.6 1087.77  198.71
 1103.02   205.5 1112.82  209.96 1117.22  210.68    1131  214.39 1150.63  216.49

Manning's n Values        num=       5
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
       0     .05   695.9    .035  776.34     .05     885    .035    1050     .05

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         695.9  776.34             30.23   37.87   37.36             .1      .3

CROSS SECTION          RIVER: San Juan
REACH: Upper             RS: 6856.68*

INPUT
Description:
Station Elevation Data    num=      82
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  215.08    3.48  214.72    7.87  214.22   11.93  213.75   44.79  209.95
   46.45  209.76   50.71  209.02   65.86  204.47   65.89  204.46   65.96  204.44
   66.06  204.41   70.49   203.1   73.85   202.8   89.38  201.42   94.92  200.85
  120.58  200.29  131.98  200.15  162.95  199.65  247.66  198.19  247.99  198.19
  306.42  197.39  327.07  197.17   349.1     197  403.66  197.25  536.88  197.51
   542.8  197.52  604.01  197.44  613.69  197.45  669.78   197.1  678.83  197.21
  691.74  195.88  694.79  195.69  695.21  195.67  695.53  195.65  701.46  194.25
  707.84  192.68  710.51  192.04  713.86  191.35  714.24  191.27  718.95  190.37
  719.36  190.36  720.26  190.32  722.25  190.24  728.69  189.77  744.59  190.36
  748.13  190.46  750.28  190.62  777.68  193.43  794.41  195.15  804.97  195.69
  810.61  195.81  814.03  195.87  826.01  196.06  886.21     197  901.93  197.55
  912.59  197.92  941.78     198  948.55  198.02  979.76  197.33 1034.62  196.02
  1040.6  195.87 1048.56   195.7 1053.33   195.6 1055.05  195.63 1057.41  195.66
 1061.14  195.82 1065.18  195.99 1078.81  196.58 1080.43  196.61  1084.3  196.69
 1093.36  197.14 1095.51  197.53 1102.55  199.48 1106.01  200.84 1107.46  201.41
 1108.96  202.01 1117.64  205.33 1127.34  209.13 1131.69  209.81 1145.33   213.1
 1148.94   213.5 1164.75  215.34

Manning's n Values        num=      10
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
       0     .05  691.74    .035  696.44    .035   735.7    .038  782.78    .047
  794.41     .05  901.93    .038 1048.56     .05 1065.18     .05 1164.75     .05

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         691.74  794.41             30.23   37.87   37.36             .1      .3

CROSS SECTION          RIVER: San Juan
REACH: Upper             RS: 6818.81*

INPUT
Description:
Station Elevation Data    num=      82
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  213.76    3.46  213.4    7.83  212.88   11.86  212.38   44.52  208.5
   46.17  208.31    50.4  207.63   65.47  203.78    65.5  203.77   65.56  203.75
   65.67  203.73   70.06   202.7    73.4  202.43   88.85  201.23   94.35  200.75
  119.85  200.04  131.19  199.95  161.97  199.47  246.17  197.97   246.5  197.97
  304.58  197.29  325.11  197.09     347  197.02  401.23  197.32  533.65   197.4
  539.53  197.41  600.38   197.3     610  197.29  665.76   196.5  674.75  196.49
  687.58  195.38  692.06  195.11  692.69  195.08  693.15  195.05  701.86  193.77
  711.24  192.25  715.15  191.65  720.09  191.13  720.64  191.07  727.56  190.39
  728.17  190.38  729.48  190.35  732.41  190.28  741.88  189.91  758.95  190.54
  762.76  190.66  765.07   190.8  794.51  193.24  812.49  194.72  822.93  195.23
  828.51  195.38   831.9  195.46  843.75  195.62  903.31   196.5  918.85  196.96
   929.4  197.27  958.28  197.42  964.97  197.44  995.86     197 1050.13  195.99
 1056.05  195.88 1063.92  195.76 1068.64  195.68 1070.34   195.7 1072.68  195.72
 1076.37  195.98 1080.36  196.26 1093.84  197.21 1095.44  197.23 1099.28  197.33
 1108.24  198.08 1110.37  198.47 1117.33  200.24 1120.75  201.42 1122.19  201.91
 1123.68  202.42 1132.26  205.17 1141.86   208.3 1146.16  208.94 1159.65  211.81
 1163.23  212.22 1178.87   214.2

Manning's n Values        num=      10
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
       0     .05  687.58    .035  693.3     .035  741.07    .041  798.34    .044
  812.49     .05  918.85    .041 1063.92     .05 1080.36     .05 1178.87     .05

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         687.58  812.49             30.23   37.87   37.36             .1      .3

CROSS SECTION          RIVER: San Juan
REACH: Upper             RS: 6780.94*
```

INPUT
Description:
Station Elevation Data num= 82

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	212.44	3.44	212.08	7.78	211.53	11.78	211.01	44.25	207.05
45.89	206.86	50.1	206.24	65.07	203.08	65.1	203.07	65.16	203.06
65.27	203.05	69.64	202.3	72.96	202.07	88.31	201.04	93.78	200.64
119.13	199.79	130.4	199.76	160.99	199.29	244.68	197.75	245.01	197.75
302.73	197.18	323.14	197.02	344.9	197.03	398.8	197.4	530.42	197.3
536.27	197.29	596.75	197.15	606.31	197.13	661.73	195.9	670.67	195.78
683.43	194.87	689.34	194.54	690.16	194.49	690.77	194.46	702.26	193.3
714.64	191.83	719.8	191.26	726.31	190.9	727.04	190.86	736.18	190.4
736.97	190.39	738.7	190.37	742.57	190.32	755.06	190.04	773.32	190.72
777.39	190.85	779.86	190.98	811.34	193.04	830.56	194.3	840.89	194.78
846.41	194.95	849.76	195.04	861.49	195.18	920.4	196.01	935.78	196.37
946.21	196.62	974.78	196.83	981.4	196.87	1011.95	196.67	1065.63	195.97
1071.49	195.9	1079.28	195.81	1083.94	195.75	1085.63	195.77	1087.94	195.78
1091.59	196.14	1095.54	196.52	1108.88	197.83	1110.46	197.86	1114.26	197.97
1123.12	199.01	1125.22	199.4	1132.12	201.01	1135.5	202	1136.92	202.41
1138.39	202.83	1146.88	205	1156.37	207.48	1160.63	208.07	1173.98	210.52
1177.52	210.93	1192.98	213.05						

Manning's n Values num= 10

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.05	683.43	.035	690.16	.035	746.43	.044	813.89	.041
830.56	.05	935.78	.044	1079.28	.05	1095.54	.05	1192.98	.05

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
683.43	830.56	30.23	37.87	37.36	.1	.3

CROSS SECTION RIVER: San Juan
REACH: Upper RS: 6743.07*

INPUT
Description:
Station Elevation Data num= 82

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	211.12	3.42	210.77	7.73	210.19	11.71	209.65	43.98	205.6
45.61	205.41	49.79	204.85	64.68	202.39	64.71	202.38	64.77	202.38
64.87	202.37	69.22	201.89	72.51	201.71	87.77	200.85	93.21	200.53
118.4	199.55	129.6	199.56	160.01	199.12	243.2	197.54	243.52	197.53
300.89	197.08	321.18	196.94	342.81	197.04	396.38	197.47	527.2	197.19
533.01	197.18	593.12	197	602.62	196.98	657.71	195.29	666.59	195.06
679.27	194.37	686.61	193.96	687.63	193.91	688.39	193.86	702.67	192.82
718.03	191.4	724.45	190.87	732.54	190.68	733.44	190.66	744.79	190.42
745.78	190.41	747.93	190.4	752.73	190.36	768.25	190.18	787.69	190.9
792.02	191.05	794.65	191.17	828.17	192.85	848.64	193.87	858.85	194.32
864.31	194.52	867.63	194.62	879.22	194.75	937.49	195.51	952.7	195.78
963.03	195.97	991.28	196.25	997.83	196.3	1028.05	196.34	1081.14	195.95
1086.94	195.91	1094.64	195.86	1099.25	195.83	1100.92	195.83	1103.21	195.84
1106.82	196.29	1110.73	196.79	1123.91	198.45	1125.48	198.48	1129.23	198.61
1138	199.95	1140.08	200.33	1146.9	201.77	1150.24	202.58	1151.65	202.9
1153.11	203.24	1161.5	204.84	1170.89	206.65	1175.1	207.2	1188.3	209.23
1191.8	209.65	1207.1	211.91						

Manning's n Values num= 10

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.05	679.27	.035	687.02	.035	751.79	.047	829.45	.038
848.64	.05	952.7	.047	1094.64	.05	1110.73	.05	1207.1	.05

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
679.27	848.64	30.23	37.87	37.36	.1	.3

CROSS SECTION RIVER: San Juan
REACH: Upper RS: 6705.202

INPUT
Description: Manual Modification of Manning's N Values
Station Elevation Data num= 42

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	209.8	3.4	209.45	11.64	208.28	43.71	204.15	64.28	201.7
64.31	201.69	64.37	201.69	117.68	199.3	128.81	199.37	159.03	198.94
242.03	197.31	319.21	196.86	393.95	197.55	523.97	197.08	598.93	196.82
675.11	193.86	683.88	193.38	685.1	193.32	703.07	192.34	721.43	190.98
729.1	190.48	754.58	190.43	757.15	190.42	781.43	190.32	845	192.65
866.71	193.45	882.21	194.09	885.49	194.2	896.96	194.31	1007.78	195.66
1044.14	196.01	1096.65	195.93	1110	195.91	1118.47	195.9	1138.95	199.07
1140.5	199.1	1144.21	199.25	1164.99	203.16	1166.38	203.4	1167.82	203.65
1206.09	208.37	1221.22	210.76						

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.05	683.88	.035	757.15	.05	845	.035	1110	.05

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
675.11	866.71	35.92	40.06	40.02	.1	.3

CROSS SECTION RIVER: San Juan
REACH: Upper RS: 6665.14*

INPUT
Description:
Station Elevation Data num= 82

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	209.96	.13	209.93	.52	209.89	2.7	209.67	3.4	209.6
7.33	209.09	11.65	208.52	43.75	204.62	64.34	202.27	64.37	202.26
64.43	202.26	70.43	201.91	82.97	200.15	84.96	199.87	90.46	199.49

92.96	199.32	93.83	199.29	117.79	198.54	126.47	198.61	128.93	198.64
159.18	198.57	160.94	198.56	193.74	198.01	242.25	197.23	271.51	197.06
314.58	196.82	319.5	196.8	347.56	197.01	380.94	197.24	392.99	197.35
394.31	197.37	524.45	197.38	530.27	197.38	542.42	197.38	546.89	197.37
599.48	196.85	613.37	196.35	651.48	194.76	675.73	193.51	683.04	193.08
684.06	193.03	699.03	192.15	714.34	190.99	720.73	190.55	720.95	190.55
741.96	190.44	744.11	190.42	758.2	190.32	764.34	190.28	810.38	191.43
822.35	191.74	845.66	192.24	847.29	192.27	853.13	192.48	873.43	193.21
889.94	193.73	893.44	193.82	905.66	193.94	1023.72	195.28	1062.46	195.65
1081.5	195.68	1087.71	195.68	1088.56	195.69	1089.93	195.7	1091.77	195.74
1118.4	196.12	1132.62	196.33	1141.65	196.46	1148.07	197.26	1159.46	198.68
1163.47	199.24	1165.12	199.32	1168.75	199.53	1169.07	199.55	1191.21	202.85
1192.69	203.06	1194.22	203.27	1225.37	206.5	1229.22	206.88	1235	207.39
1236.31	207.54	1251.11	209.49						

Manning's n Values num= 10

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.05	675.73	.035	684.78	.035	760.38	.046	842.69	.035
851.03	.035	873.43	.05	1132.62	.05	1159.46	.05	1251.11	.05

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
675.73	873.43	35.92	40.06	40.02	.1	.3

CROSS SECTION RIVER: San Juan
REACH: Upper RS: 6625.07*

INPUT
Description:
Station Elevation Data num= 82

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	210.11	.13	210.08	.52	210.03	2.71	209.83	3.41	209.76
7.34	209.28	11.66	208.76	43.79	205.09	64.4	202.84	64.43	202.83
64.49	202.83	70.49	202.4	83.05	199.43	85.03	198.98	90.54	198.45
93.05	198.24	93.92	198.2	117.9	197.79	126.59	197.86	129.05	197.91
159.32	198.2	161.08	198.21	193.91	197.76	242.47	197.14	271.76	196.97
314.87	196.75	319.8	196.74	347.88	196.89	381.29	197.05	393.35	197.17
394.67	197.18	524.93	197.69	530.76	197.71	542.91	197.75	547.4	197.73
600.03	196.88	613.93	196.42	652.07	194.71	676.35	193.15	682.2	192.78
683.01	192.73	695	191.96	707.24	191	712.36	190.63	712.53	190.62
729.35	190.45	731.06	190.43	742.34	190.29	747.26	190.23	803.33	191.23
817.92	191.49	846.31	191.82	848.3	191.85	855.42	192.1	880.15	192.96
897.67	193.37	901.38	193.45	914.35	193.57	1039.66	194.89	1080.78	195.28
1100.99	195.37	1107.58	195.38	1108.48	195.41	1109.93	195.44	1111.89	195.51
1140.15	196.32	1155.25	196.75	1164.82	197.02	1171.64	197.69	1183.73	198.87
1187.98	199.41	1189.74	199.53	1193.59	199.83	1193.93	199.85	1217.43	202.55
1219	202.72	1220.63	202.89	1253.68	205.74	1257.78	206.07	1263.9	206.42
1265.3	206.52	1281.01	208.23						

Manning's n Values num= 10

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.05	676.35	.035	685.68	.035	763.61	.043	848.46	.035
857.05	.035	880.15	.05	1155.25	.05	1183.73	.05	1281.01	.05

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
676.35	880.15	35.92	40.06	40.02	.1	.3

CROSS SECTION RIVER: San Juan
REACH: Upper RS: 6585.01*

INPUT
Description:
Station Elevation Data num= 82

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	210.26	.13	210.23	.52	210.17	2.71	209.98	3.41	209.91
7.34	209.48	11.67	209	43.83	205.56	64.46	203.41	64.49	203.4
64.55	203.4	70.56	202.88	83.12	198.72	85.11	198.08	90.63	197.42
93.13	197.15	94	197.12	118	197.03	126.7	197.12	129.16	197.18
159.47	197.83	161.23	197.87	194.09	197.5	242.7	197.06	272.01	196.89
315.16	196.68	320.09	196.68	348.2	196.78	381.64	196.86	393.71	196.98
395.04	197	525.41	197.99	531.24	198.03	543.41	198.11	547.9	198.1
600.58	196.92	614.5	196.48	652.67	194.67	676.97	192.8	681.36	192.48
681.97	192.44	690.96	191.77	700.15	191.01	703.98	190.7	704.12	190.7
716.73	190.46	718.02	190.43	726.48	190.26	730.17	190.18	796.29	191.02
813.49	191.25	846.97	191.41	849.32	191.42	857.71	191.71	886.86	192.71
905.4	193.01	909.33	193.07	923.05	193.2	1055.6	194.51	1099.09	194.92
1120.47	195.07	1127.44	195.08	1128.4	195.13	1129.94	195.17	1132	195.29
1161.9	196.51	1177.87	197.17	1188	197.58	1195.21	198.11	1208	199.06
1212.5	199.58	1214.35	199.75	1218.43	200.12	1218.79	200.14	1243.65	202.24
1245.31	202.37	1247.03	202.51	1282	204.99	1286.33	205.25	1292.81	205.44
1294.28	205.49	1310.91	206.96						

Manning's n Values num= 10

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.05	676.97	.035	686.58	.035	766.84	.039	854.23	.035
863.08	.035	886.86	.05	1177.87	.05	1208	.05	1310.91	.05

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
676.97	886.86	35.92	40.06	40.02	.1	.3

CROSS SECTION RIVER: San Juan
REACH: Upper RS: 6544.956

INPUT
Description: Manual Modification of Manning's N Values
Station Elevation Data num= 45

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	210.42	.13	210.38	.52	210.31	2.71	210.13	7.35	209.67
70.62	203.37	83.2	198.01	85.19	197.18	90.71	196.38	93.22	196.06

94.09	196.03	126.82	196.37	161.38	197.52	194.27	197.25	272.26	196.81
315.45	196.61	348.52	196.67	381.99	196.67	394.07	196.8	531.73	198.36
543.91	198.48	548.4	198.46	615.06	196.55	653.27	194.62	677.59	192.45
695.7	190.77	710.62	190.23	713.08	190.14	789.25	190.82	809.06	191
850.33	191	860	191.33	893.58	192.47	1139.96	194.76	1147.31	194.78
1148.32	194.85	1149.94	194.9	1152.12	195.06	1218.78	198.54	1232.27	199.25
1243.27	200.42	1310.31	204.23	1314.88	204.43	1323.27	204.47	1340.8	205.69

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.05	860	.035	1232.27	.05

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
677.59	893.58	14.9	43.68	14.96	.1	.3

CROSS SECTION RIVER: San Juan
REACH: Upper RS: 6501.27*

INPUT
Description:
Station Elevation Data num= 95

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	210.4	.13	210.36	.51	210.3	2.68	210.1	5.86	209.77
7.27	209.62	14.63	208.86	39.9	206.41	61.33	204.33	69.83	203.52
72.08	202.64	76.41	200.87	82.27	198.36	84.24	197.54	89.7	196.58
91.07	196.36	92.18	196.18	92.46	196.16	93.04	196.14	103.67	196.12
112.3	196.12	125.4	196.27	127.83	196.35	159.58	197.4	185.44	197.28
192.1	197.23	213.24	197.11	269.22	196.79	300.18	196.65	311.92	196.6
344.62	196.66	377.72	196.67	389.66	196.79	454.96	197.46	519.58	198.12
525.78	198.17	537.83	198.24	542.21	198.21	542.27	198.21	587.12	196.88
608.18	196.25	645.97	194.36	654.38	193.65	670.01	192.33	672.56	192.17
674.9	192.03	680.84	191.84	686.76	191.65	695.7	191.35	705.32	191.02
707.48	190.94	713.01	190.73	713.49	190.72	729.14	190.49	730.89	190.46
749.31	190.2	755.21	190.12	825.14	190.76	843.33	190.93	858.43	190.94
881.22	190.98	890.1	191.28	920.93	192.35	931.98	192.55	980.2	193.42
992.25	193.53	1024.38	193.88	1044.11	193.96	1053.75	193.93	1089.28	193.77
1120.22	193.9	1125.18	193.94	1136.29	194.09	1152.28	194.3	1159.18	194.35
1160.13	194.42	1161.65	194.47	1163.7	194.62	1172.86	195.11	1206.86	196.99
1226.3	198.05	1237.73	198.67	1238.96	198.74	1249.29	199.81	1253.84	200.07
1263.04	200.67	1296.11	202.73	1312.24	203.99	1314.03	204.1	1316.54	204.23
1324.41	204.33	1328.57	204.65	1338.09	206.12	1339.65	206.33	1340.87	206.49

Manning's n Values num= 7

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.05	670.01	.035	738.91	.035	881.92	.035	920.93	.048
1238.96	.048	1340.87	.048						

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
670.01	920.93	14.9	43.68	14.96	.1	.3

CROSS SECTION RIVER: San Juan
REACH: Upper RS: 6457.60*

INPUT
Description:
Station Elevation Data num= 95

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	210.38	.13	210.35	.51	210.28	2.65	210.08	5.79	209.73
7.19	209.58	14.47	208.78	39.45	206.43	60.63	204.44	69.04	203.66
71.27	202.88	75.55	201.21	81.34	198.71	83.28	197.89	88.68	196.78
90.04	196.51	91.14	196.3	91.42	196.27	91.99	196.24	102.5	196.11
111.03	196	123.98	196.18	126.39	196.25	157.77	197.27	183.34	197.26
189.93	197.21	210.83	197.08	266.17	196.78	296.78	196.64	308.4	196.6
340.73	196.66	373.45	196.67	385.26	196.77	449.81	197.38	513.71	197.96
519.84	197.98	531.75	198	536.08	197.96	536.14	197.96	580.49	196.6
601.31	195.94	638.66	194.11	646.98	193.45	662.44	192.21	666.47	192
670.17	191.8	679.57	191.65	688.96	191.5	703.12	191.24	718.35	190.96
721.76	190.89	730.53	190.68	731.28	190.66	756.06	190.45	758.83	190.42
788	190.18	797.35	190.1	861.04	190.7	877.6	190.86	891.35	190.88
912.11	190.95	920.19	191.24	948.27	192.23	958.6	192.53	1003.7	193.78
1014.96	193.88	1045.01	194.27	1063.46	194.23	1072.47	194.07	1105.69	193.41
1134.63	193.36	1139.26	193.4	1149.65	193.59	1164.6	193.85	1171.06	193.92
1171.94	193.98	1173.37	194.03	1175.28	194.18	1183.84	194.65	1215.64	196.52
1233.81	197.55	1244.5	198.17	1245.66	198.23	1255.31	199.2	1259.56	199.45
1268.17	200.08	1299.09	202.21	1314.18	203.74	1315.84	203.89	1318.19	204.03
1325.56	204.2	1329.45	204.51	1338.34	206.76	1339.8	207.06	1340.95	207.28

Manning's n Values num= 7

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.05	662.44	.035	740.92	.035	903.83	.035	948.27	.047
1245.66	.047	1340.95	.047						

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
662.44	948.27	14.9	43.68	14.96	.1	.3

CROSS SECTION RIVER: San Juan
REACH: Upper RS: 6413.92*

INPUT
Description:
Station Elevation Data num= 95

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	210.37	.13	210.33	.5	210.27	2.62	210.05	5.73	209.69
7.1	209.53	14.3	208.71	39	206.46	59.94	204.55	68.25	203.81
70.45	203.12	74.68	201.54	80.41	199.07	82.33	198.25	87.67	196.97
89.01	196.67	90.09	196.42	90.37	196.38	90.93	196.35	101.32	196.09
109.76	195.89	122.57	196.08	124.94	196.15	155.97	197.15	181.24	197.23
187.75	197.18	208.42	197.06	263.13	196.76	293.39	196.62	304.87	196.59

336.83	196.65	369.18	196.67	380.85	196.76	444.67	197.3	507.83	197.79
513.89	197.79	525.66	197.77	529.95	197.72	530	197.72	573.85	196.32
594.43	195.64	631.36	193.85	639.58	193.24	654.86	192.08	660.37	191.82
665.44	191.57	678.31	191.46	691.16	191.35	710.53	191.13	731.37	190.9
736.04	190.83	748.04	190.62	749.07	190.61	782.99	190.41	786.77	190.38
826.68	190.15	839.48	190.08	896.93	190.65	911.87	190.79	924.27	190.82
943	190.93	950.29	191.19	975.62	192.11	985.23	192.5	1027.19	194.14
1037.68	194.23	1065.64	194.66	1082.8	194.51	1091.19	194.21	1122.1	193.05
1149.03	192.81	1153.34	192.85	1163.01	193.08	1176.92	193.39	1182.93	193.49
1183.76	193.55	1185.08	193.6	1186.86	193.73	1194.83	194.19	1224.42	196.05
1241.33	197.06	1251.27	197.66	1252.35	197.72	1261.34	198.6	1265.29	198.82
1273.3	199.5	1302.07	201.69	1316.11	203.5	1317.66	203.68	1319.85	203.83
1326.7	204.06	1330.32	204.38	1338.6	207.4	1339.95	207.79	1341.02	208.08

Manning's n Values num= 7

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.05	654.86	.035	742.93	.035	925.75	.035	975.62	.045
1252.35	.045	1341.02	.045						

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
654.86	975.62	14.9	43.68	14.96	.1	.3

CROSS SECTION RIVER: San Juan
REACH: Upper RS: 6370.25*

INPUT
Description:
Station Elevation Data num= 95

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	210.35	.12	210.32	.5	210.26	2.59	210.02	5.66	209.65
7.02	209.49	14.14	208.64	38.55	206.48	59.25	204.65	67.46	203.95
69.64	203.36	73.82	201.88	79.48	199.42	81.38	198.6	86.65	197.17
87.98	196.82	89.05	196.54	89.33	196.49	89.88	196.45	100.15	196.07
108.49	195.77	121.15	195.98	123.5	196.05	154.16	197.02	179.14	197.21
185.58	197.16	206.01	197.04	260.08	196.75	289.99	196.61	301.34	196.58
332.93	196.64	364.9	196.67	376.44	196.75	439.52	197.21	501.96	197.62
507.95	197.59	519.58	197.53	523.82	197.47	523.87	197.47	567.21	196.04
587.55	195.33	624.05	193.6	632.18	193.03	647.28	191.96	654.28	191.64
660.71	191.35	677.05	191.27	693.36	191.2	717.94	191.03	744.4	190.84
750.32	190.77	765.55	190.57	766.86	190.55	809.91	190.36	814.71	190.33
865.37	190.13	881.61	190.06	932.82	190.59	946.14	190.72	957.2	190.76
973.89	190.91	980.39	191.15	1002.96	191.99	1011.86	192.47	1050.69	194.51
1060.39	194.58	1086.26	195.05	1102.15	194.78	1109.91	194.35	1138.51	192.68
1163.43	192.27	1167.42	192.3	1176.37	192.57	1189.25	192.93	1194.8	193.06
1195.57	193.12	1196.79	193.17	1198.44	193.29	1205.81	193.73	1233.2	195.58
1248.84	196.56	1258.05	197.15	1259.04	197.2	1267.36	197.99	1271.02	198.2
1278.42	198.91	1305.05	201.17	1318.04	203.25	1319.48	203.47	1321.5	203.63
1327.84	203.93	1331.19	204.25	1338.85	208.04	1340.11	208.52	1341.1	208.87

Manning's n Values num= 7

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.05	647.28	.035	744.94	.035	947.66	.035	1002.96	.043
1259.04	.043	1341.1	.043						

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
647.28	1002.96	14.9	43.68	14.96	.1	.3

CROSS SECTION RIVER: San Juan
REACH: Upper RS: 6326.57*

INPUT
Description:
Station Elevation Data num= 95

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	210.33	.12	210.3	.49	210.24	2.56	209.99	5.6	209.6
6.94	209.44	13.97	208.57	38.09	206.5	58.55	204.76	66.67	204.1
68.82	203.59	72.96	202.21	78.55	199.77	80.43	198.96	85.64	197.37
86.95	196.98	88.01	196.66	88.28	196.59	88.83	196.56	98.98	196.05
107.22	195.66	119.73	195.88	122.05	195.95	152.36	196.9	177.05	197.19
183.41	197.14	203.6	197.01	257.04	196.73	286.6	196.59	297.81	196.58
329.03	196.63	360.63	196.66	372.04	196.73	434.38	197.13	496.08	197.46
502	197.4	513.5	197.29	517.69	197.22	517.74	197.22	560.57	195.76
580.67	195.03	616.75	193.34	624.78	192.82	639.71	191.84	648.19	191.47
655.98	191.12	675.79	191.08	695.55	191.05	725.35	190.92	757.42	190.78
764.6	190.71	783.06	190.51	784.65	190.5	836.83	190.32	842.65	190.29
904.06	190.1	923.75	190.05	968.71	190.53	980.41	190.66	990.12	190.69
1004.77	190.88	1010.48	191.1	1030.31	191.86	1038.49	192.45	1074.18	194.87
1083.1	194.93	1106.89	195.44	1121.5	195.05	1128.63	194.49	1154.93	192.32
1177.84	191.72	1181.5	191.75	1189.73	192.07	1201.57	192.48	1206.68	192.63
1207.38	192.68	1208.5	192.74	1210.02	192.85	1216.8	193.27	1241.97	195.1
1256.36	196.07	1264.82	196.64	1265.73	196.69	1273.38	197.38	1276.74	197.58
1283.55	198.33	1308.03	200.65	1319.98	203.01	1321.3	203.26	1323.16	203.42
1328.99	203.79	1332.07	204.11	1339.11	208.68	1340.26	209.25	1341.17	209.67

Manning's n Values num= 7

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.05	639.71	.035	746.95	.035	969.58	.035	1030.31	.042
1265.73	.042	1341.17	.042						

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
639.71	1030.31	14.9	43.68	14.96	.1	.3

CROSS SECTION RIVER: San Juan
REACH: Upper RS: 6282.89*

INPUT
Description:
Station Elevation Data num= 95

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	210.31	.12	210.29	.49	210.23	2.53	209.97	5.53	209.56
6.86	209.39	13.81	208.5	37.64	206.53	57.86	204.87	65.88	204.25
68.01	203.83	72.09	202.55	77.62	200.12	79.47	199.31	84.62	197.57
85.92	197.13	86.97	196.78	87.24	196.7	87.78	196.66	97.81	196.03
105.95	195.54	118.31	195.79	120.61	195.85	150.55	196.77	174.95	197.16
181.24	197.12	201.18	196.99	253.99	196.72	283.2	196.57	294.29	196.57
325.14	196.63	356.36	196.66	367.63	196.72	429.23	197.04	490.21	197.29
496.06	197.21	507.42	197.05	511.55	196.97	511.61	196.97	553.93	195.48
573.8	194.72	609.44	193.09	617.38	192.61	632.13	191.72	642.1	191.29
651.25	190.89	674.53	190.89	697.75	190.89	732.76	190.81	770.45	190.72
778.88	190.65	800.57	190.46	802.44	190.45	863.75	190.28	870.6	190.24
942.75	190.08	965.88	190.03	1004.61	190.47	1014.68	190.59	1023.04	190.63
1035.66	190.86	1040.58	191.06	1057.65	191.74	1065.12	192.42	1097.68	195. 23
1105.82	195.29	1127.52	195.82	1140.84	195.32	1147.35	194.63	1171.34	191.96
1192.24	191.18	1195.58	191.2	1203.09	191.56	1213.89	192.02	1218.55	192.2
1219.19	192.25	1220.22	192.3	1221.6	192.41	1227.78	192.81	1250.75	194.63
1263.87	195.58	1271.59	196.13	1272.43	196.18	1279.4	196.77	1282.47	196.95
1288.68	197.74	1311.02	200.12	1321.91	202.77	1323.12	203.05	1324.81	203.22
1330.13	203.66	1332.94	203.98	1339.36	209.32	1340.42	209.98	1341.25	210.46

Manning's n Values num= 7

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.05	632.13	.035	748.96	.035	991.5	.035	1057.65	.04
1272.43	.04	1341.25	.04						

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
632.13	1057.65	14.9	43.68	14.96	.1	.3

CROSS SECTION RIVER: San Juan
REACH: Upper RS: 6239.22*

INPUT
Description:
Station Elevation Data num= 95

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	210.3	.12	210.27	.48	210.22	2.5	209.94	5.46	209.52
6.77	209.35	13.64	208.42	37.19	206.55	57.17	204.98	65.09	204.39
67.19	204.07	71.23	202.89	76.69	200.47	78.52	199.67	83.61	197.76
84.89	197.29	85.92	196.91	86.19	196.81	86.73	196.77	96.63	196.02
104.68	195.43	116.89	195.69	119.16	195.75	148.75	196.65	172.85	197.14
179.06	197.09	198.77	196.97	250.95	196.7	279.81	196.56	290.76	196.56
321.24	196.62	352.09	196.66	363.23	196.71	424.09	196.96	484.33	197.12
490.11	197.02	501.34	196.81	505.42	196.73	505.48	196.72	547.29	195.2
566.92	194.42	602.14	192.83	609.98	192.41	624.55	191.59	636	191.11
646.53	190.66	673.26	190.7	699.95	190.74	740.18	190.7	783.47	190.66
793.16	190.6	818.09	190.4	820.23	190.39	890.68	190.24	898.54	190.2
981.43	190.05	1008.01	190.01	1040.5	190.41	1048.95	190.52	1055.96	190.57
1066.55	190.84	1070.68	191.01	1085	191.62	1091.74	192.39	1121.18	195.59
1128.53	195.64	1148.15	196.21	1160.19	195.6	1166.07	194.78	1187.75	191.6
1206.64	190.64	1209.67	190.66	1216.45	191.05	1226.21	191.56	1230.42	191.77
1231	191.81	1231.93	191.87	1233.18	191.97	1238.77	192.35	1259.53	194.16
1271.39	195.08	1278.36	195.63	1279.12	195.67	1285.42	196.16	1288.2	196.33
1293.81	197.16	1314	199.6	1323.85	202.52	1324.93	202.84	1326.47	203.02
1331.27	203.52	1333.81	203.85	1339.62	209.96	1340.57	210.71	1341.32	211.26

Manning's n Values num= 7

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.05	624.55	.035	750.98	.035	1013.41	.035	1085	.038
1279.12	.038	1341.32	.038						

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
624.55	1085	14.9	43.68	14.96	.1	.3

CROSS SECTION RIVER: San Juan
REACH: Upper RS: 6195.54*

INPUT
Description:
Station Elevation Data num= 95

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	210.28	.12	210.26	.47	210.2	2.47	209.91	5.4	209.48
6.69	209.3	13.48	208.35	36.74	206.58	56.47	205.08	64.3	204.54
66.38	204.31	70.36	203.22	75.76	200.83	77.57	200.02	82.6	197.96
83.86	197.44	84.88	197.03	85.15	196.92	85.67	196.87	95.46	196
103.41	195.31	115.48	195.59	117.72	195.65	146.94	196.52	170.76	197.11
176.89	197.07	196.36	196.94	247.91	196.68	276.41	196.54	287.23	196.56
317.34	196.61	347.82	196.66	358.82	196.69	418.94	196.87	478.46	196.96
484.16	196.83	495.25	196.58	499.29	196.48	499.34	196.48	540.65	194.92
560.04	194.11	594.83	192.58	602.58	192.2	616.98	191.47	629.91	190.94
641.8	190.43	672	190.51	702.14	190.59	747.59	190.6	796.5	190.6
807.44	190.54	835.6	190.35	838.02	190.34	917.6	190.19	926.48	190.15
1020.12	190.03	1050.15	189.99	1076.39	190.35	1083.22	190.45	1088.89	190.51
1097.44	190.81	1100.77	190.97	1112.34	191.5	1118.37	192.37	1144.67	195.96
1151.25	195.99	1168.77	196.6	1179.53	195.87	1184.79	194.92	1204.17	191.23
1221.05	190.09	1223.75	190.11	1229.81	190.55	1238.53	191.1	1242.3	191.34
1242.81	191.38	1243.64	191.44	1244.76	191.52	1249.75	191.89	1268.3	193.69
1278.9	194.59	1285.14	195.12	1285.81	195.16	1291.44	195.56	1293.92	195.7
1298.94	196.57	1316.98	199.08	1325.78	202.28	1326.75	202.63	1328.12	202.82
1332.42	203.38	1334.69	203.71	1339.87	210.6	1340.73	211.44	1341.4	212.05

Manning's n Values num= 7

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.05	616.98	.035	752.99	.035	1035.33	.035	1112.34	.037
1285.81	.037	1341.4	.037						

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
616.98	1112.34	14.9	43.68	14.96	.1	.3

CROSS SECTION RIVER: San Juan
REACH: Upper RS: 6151.870

INPUT
Description: Manual Modification of Manning's N Values
Station Elevation Data num= 55

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	210.26	5.33	209.44	13.31	208.28	36.29	206.6	55.78	205.19
65.56	204.55	69.5	203.56	82.83	197.6	84.1	197.03	94.29	195.98
102.14	195.2	116.27	195.55	168.66	197.09	193.95	196.92	273.02	196.53
413.8	196.79	472.58	196.79	493.16	196.23	534.01	194.64	595.18	191.99
609.4	191.35	623.82	190.76	637.07	190.2	670.74	190.32	704.34	190.44
755	190.49	809.52	190.54	821.72	190.48	853.11	190.29	944.52	190.15
954.42	190.11	1092.28	189.97	1121.81	190.45	1139.69	191.38	1145	192.34
1168.17	196.32	1173.96	196.34	1189.4	196.99	1198.88	196.14	1203.51	195.06
1220.58	190.87	1235.45	189.55	1237.83	189.56	1243.17	190.04	1260.74	191.43
1277.08	193.22	1291.91	194.61	1299.65	195.08	1304.07	195.99	1319.96	198.56
1328.57	202.42	1335.56	203.58	1340.13	211.24	1340.88	212.17	1341.47	212.85

Manning's n Values num= 2

Sta	n Val	Sta	n Val
0	.05	755	.035

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
609.4	1139.69	162.9	173.01	158.07	.1 .3

CROSS SECTION RIVER: San Juan
REACH: Upper RS: 5978.856

INPUT
Description: Manual Modification of Manning's N Values
Station Elevation Data num= 50

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	210.11	4.59	209.45	7.39	209.03	36.89	207.17	39.32	207.01
62.22	205.02	71.39	203.83	82.12	198.91	85.52	197.45	87.11	197.28
109.32	195.18	172.51	197.01	172.84	197.02	172.91	197.02	173.21	197.02
214.62	195.89	258.41	195.9	271.12	195.47	424.63	194.69	491.91	192.94
520.46	191.9	589.97	189.76	600.38	189.64	601.23	189.63	661.34	188.48
703.05	188.74	755	188.35	766.28	188.26	813.22	188.44	823.84	188.21
860.44	188.08	952.43	187.97	966.99	187.9	997.98	189.59	1044.05	189.55
1101.22	190.77	1118.35	191.4	1144.21	193	1151.44	193.14	1165.05	193.42
1171.72	193.71	1206.89	195.27	1207.66	195.3	1207.91	195.35	1218.48	196.31
1219.51	196.75	1225.3	199.19	1225.56	199.41	1227.01	201.14	1229.5	203.84

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.035	36.89	.05	755	.035

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
601.23	1044.05	197.39	190.73	235.69	.1 .3

CROSS SECTION RIVER: San Juan
REACH: Upper RS: 5788.123

INPUT
Description:
Station Elevation Data num= 49

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	207.07	1.51	206.99	20.99	205.72	51	203.78	74.18	197.86
75.94	197.55	77.92	196.89	81.59	196.61	110	194.55	145.81	194.13
153.71	194.01	215.72	193.06	270.53	192.21	282.75	192.22	316.2	191.13
343.31	188.76	353.1	188.56	363.39	188.86	398.77	187.9	430.5	187.05
440.75	187.07	492.55	187.14	517.12	186.11	629.64	185.94	672.25	185.91
742.36	186.48	766.07	187.3	821.83	189.22	825.37	189.07	857.76	188.73
891.41	186.26	895.9	185.83	897.63	185.59	939.13	184.68	954.05	184.42
955.71	184.49	957.59	184.36	983.57	184.32	998.21	184.82	1003.23	185.06
1013.8	185.57	1024.53	187.88	1028.42	188.79	1028.93	188.91	1034.85	191.94
1041.83	198.73	1043.79	200.18	1047.69	203.43	1049.41	204.71		

Manning's n Values num= 6

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	20.99	.05	440.75	.035	629.64	.05	766.07	.035
1028.42	.05								

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
492.55	1024.53	66.98	101.35	103.25	.1 .3

CROSS SECTION RIVER: San Juan
REACH: Upper RS: 5686.773

INPUT
Description: Manual Modification of Manning's N Values
Station Elevation Data num= 49

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	206.16	28.01	204.67	35.04	204.27	45.47	202.77	46.63	202.42
50.68	201.05	63.15	196.89	98.34	194.23	100.52	194.07	105.69	193.69
194.58	192.71	226.32	192.36	229.62	192.02	235.83	191.61	256.98	190.25
274.8	187.43	299.49	183.68	322.22	184.63	328.62	184.88	338.04	185.24
355.37	187.45	364.15	187.38	421.15	187.46	451.15	186.26	470.47	185.4
590	185.23	658.52	185.13	678.18	185.1	682.42	185.11	693.45	186.03
699.97	186.26	803.82	191.43	812.9	190.83	824.14	189.77	846.63	185.46
851.78	184.15	854.81	184.03	872.48	183.41	872.82	183.42	873.3	183.44
910.58	184.33	913.38	184.35	920.86	184.41	932.08	186.07	936.98	187.29
944.81	189.91	948.92	192	953.35	195.84	966.54	207.31		

Manning's n Values num= 4

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val

```
       0     .05  355.37    .035     590     .05  803.82    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        451.15  932.08             59.9   92.96   76.35             .1       .3
Ineffective Flow     num=       1
   Sta L   Sta R    Elev  Permanent
888        F

CROSS SECTION          RIVER: San Juan
REACH: Upper              RS: 5593.814

INPUT
Description: Manual Modification of Manning's N Values
Station Elevation Data    num=      50
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  205.85   36.85  203.74   41.08  203.13   57.44  198.12   60.97  196.92
   70.24  195.76   71.69  195.47   74.47  194.94  108.91  190.51  112.36  190.27
  119.95  190.51  193.48  191.97  196.14  191.81  197.28  191.59  208.62  190.15
   209.1  189.93   210.3  189.54  223.64  185.02  225.74  184.98  237.21  183.52
  248.16  184.04     290  185.66   296.1   185.9  296.45  185.91  349.11  188.04
  366.67   187.2  385.69  186.77  436.22   184.7   531.5   184.6     565  184.55
  577.61  184.53  661.26  183.92  713.89  183.82  730.46  184.89  744.92   184.8
   778.7  184.34  787.22  183.76  815.45     184  832.31  183.73  849.08  184.29
  855.93  184.86  880.21   186.7  892.02  187.67  901.17  188.39  909.48  189.31
  917.59  193.76  917.71  193.78  918.13  194.29   930.1  209.14  931.13  210.22

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .05     290    .035     565     .05

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        436.22  855.93             56.58   91.06   69.13             .1       .3
Ineffective Flow     num=       1
   Sta L   Sta R    Elev  Permanent
888        F

CROSS SECTION          RIVER: San Juan
REACH: Upper              RS: 5502.751

INPUT
Description: Manual Modification of Manning's N Values
Station Elevation Data    num=      43
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  204.86   23.16   203.6   25.75  203.38   31.88  201.52   68.63  191.81
   73.08  191.15    77.5  190.87   89.97  190.12   94.16  190.24  142.37  191.72
  148.12  191.28  157.99  190.92  162.57  190.33  167.45  188.16   175.3  183.74
  176.57  183.43  220.71     185  235.75  185.43  243.46  185.65  247.54  185.85
  282.35  187.55  333.43  185.37  372.21  184.06  425.72  184.01   459.6  183.62
  478.95  183.58  516.84  183.34  625.42  182.66  629.53  182.66  667.96  183.04
  689.12  183.06  691.69  183.07  791.93  183.77  795.32  183.81  826.73  185.25
  837.26   185.9  851.15  187.78  855.96  188.36  871.31  190.21  873.39  190.54
  888.49   195.1  890.57  195.44  906.74  203.24

Manning's n Values        num=       5
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
       0     .05  235.75    .035  516.84     .05  689.12    .035  826.73     .05

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        333.43  826.73             78.34  115.61   55.34             .1       .3
Ineffective Flow     num=       1
   Sta L   Sta R    Elev  Permanent
888        F

CROSS SECTION          RIVER: San Juan
REACH: Upper              RS: 5387.141

INPUT
Description: Manual Modification of Manning's N Values
Station Elevation Data    num=      44
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  202.52   11.98  198.33   21.92   193.9   28.17  191.06    35.4  189.79
   41.93  188.74    42.2  188.69   48.79  188.43   61.58  187.98   81.89  185.97
   89.61   185.8   92.55  184.87   93.21  184.86  110.32  183.43  154.59  184.33
  163.18   184.5  180.85  184.86  181.81  184.89  194.88  185.29  226.86  184.68
  243.43  184.05  325.46  183.97  403.65  183.83  459.42  183.74  519.66  183.68
  531.37  183.79  592.59  183.51  606.02  183.45  648.82   182.7  737.13  183.32
  774.24  184.57  782.14  184.96     795  187.72  800.24  188.85  805.38  189.57
  805.58  189.59   815.6  190.63  831.72  192.36     841  194.25  845.27  196.03
  851.06  199.99  852.27  200.98  857.27  205.71  858.83  207.18

Manning's n Values        num=       5
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
       0     .05  154.59    .035  403.65     .05  592.59    .035     795     .05

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        226.86  774.24             129.7  137.48   67.44             .1       .3
Ineffective Flow     num=       1
   Sta L   Sta R    Elev  Permanent
888        F

CROSS SECTION          RIVER: San Juan
REACH: Upper              RS: 5249.660

INPUT
Description: Manual Modification of Manning's N Values
Station Elevation Data    num=      36
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0   202.7     .52   202.6    1.51  201.66    4.92  198.49   13.56  189.72
```

14.07	189.49	22.09	185.24	27.89	183.66	37.64	182.92	59.97	181.47
84.69	182.09	93.23	182.16	120	182.49	134.32	182.66	137.33	182.7
173.64	183.5	182.5	183.61	184.05	183.55	285	183.48	424.26	183.39
468.95	183.81	510	183.62	700.25	182.76	700.34	182.76	700.55	182.76
700.74	182.77	743.86	184.17	750.42	184.62	777.35	187.16	792.49	188.58
821.57	189.96	825.28	190.27	828.14	192.34	831.62	194.54	838.72	202.81
839.47	203.7								

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.05	120	.035	285	.05	510	.035	750.42	.05

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
27.89	743.86	141.78	155.8	79.91	.1 .3

CROSS SECTION RIVER: San Juan
REACH: Upper RS: 5093.864

INPUT
Description: Manual Modification of Manning's N Values
Station Elevation Data num= 38

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	203.51	2.37	203.35	24.51	198.72	28.54	198.21	35.45	196.19
38.92	195.17	41.19	194.5	41.52	194.36	63.35	184.5	69.97	182.66
74.4	182.44	83.85	181.79	99.5	180.73	134.04	181.4	155.14	182.12
166.6	182.38	175.47	182.57	255	183.57	269.15	183.75	283.83	183.12
365.41	183.11	393.38	183.09	473.08	183.82	505	183.68	620.62	183.17
713.73	183.03	771.51	184.47	782.35	184.79	801.73	186.68	817.92	187.32
830.9	187.84	859.17	189.33	865.1	191.19	867.36	191.45	869.67	192.85
873.58	197.08	875.2	198.71	886.16	210.29				

Manning's n Values num= 6

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	35.45	.05	166.6	.035	255	.05	505	.035
782.35	.05								

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
63.35	771.51	102.03	146.85	97.36	.1 .3

CROSS SECTION RIVER: San Juan
REACH: Upper RS: 4947.016

INPUT
Description: Manual Modification of Manning's N Values
Station Elevation Data num= 39

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	203.11	9.94	202.69	18.28	202.26	60.7	198.07	85.14	195.88
95.51	193.74	105.31	190.47	115.7	187.38	120.69	186.24	126.13	185.04
128.34	184.68	130.58	184.32	134.88	183.63	142.97	183.3	164.22	183.14
167.76	183.16	174.18	183.19	188.89	183.26	224.49	183.02	268.68	181.99
302.23	181.85	319.19	182.15	354.59	182.69	388.04	183.27	451.56	183.85
475	183.75	485.44	183.7	665	183.4	701.57	183.34	750.45	184.55
770.04	184.86	785.05	185.1	866.36	188.88	886.57	189.58	891.62	191.63
907.53	202.02	907.69	202.13	908.09	202.44	916.71	209.1		

Manning's n Values num= 6

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.07	128.34	.05	174.18	.035	302.23	.05	475	.035
665	.05								

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
128.34	750.45	101.25	101.15	96.58	.1 .3

CROSS SECTION RIVER: San Juan
REACH: Upper RS: 4845.863

INPUT
Description: Manual Modification of Manning's N Values
Station Elevation Data num= 37

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	203.27	2.7	203.05	22.2	200.57	39.38	198.64	45.86	197.73
65.32	192.84	72.69	191.29	89.71	187.69	101.01	186.43	106.56	185.79
138.3	185.07	139.26	185.08	156.93	183.8	157.18	183.78	230.93	181.97
244.77	181.1	278.92	180.95	320	181.42	406.46	182.41	526.28	183.4
575.56	183.75	663.99	183.6	676.22	183.91	690	184.13	700.75	184.3
717.86	184.58	759.74	185.63	773.79	185.8	845.65	187.78	868.49	188.52
871.5	189.01	874.3	189.1	881.19	189.68	885.07	191.8	889.09	194.41
895.93	200.48	901.87	204.71						

Manning's n Values num= 6

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.07	106.56	.05	156.93	.035	320	.05	575.56	.035
690	.05								

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
156.93	663.99	113.15	117.68	124.47	.1 .3

CROSS SECTION RIVER: San Juan
REACH: Upper RS: 4728.187

INPUT
Description: Manual Modification of Manning's N Values
Station Elevation Data num= 45

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	203.37	9.53	202.76	20.4	202.06	36.42	201.09	50.8	199.14
71.17	195.99	100.99	189.01	102.85	188.51	113.07	187.21	123.91	185.57
136.12	183.73	139.59	183.33	145.56	183.36	163.61	182.2	176.37	181.39
182.05	181.29	203.03	180.94	215.67	180.8	238.29	180.69	305	180.39

370	180.09	380.93	180.04	397.55	180.08	568.85	182.24	649.68	183.55
671.96	184.11	733.05	185.63	801.23	188.49	804.55	188.63	808.66	188.57
852.92	188.6	857.61	189.59	864.28	190.59	866.35	192.27	881.76	203.91
882.65	204.4	886.3	206.66	890.93	209.34	894.01	210.39	927.95	221.47
945.35	228.82	946.78	229.36	946.92	229.4	947.13	229.45	953.14	231.35

Manning's n Values num= 7

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	9.53	.07	123.91	.05	238.29	.035	305	.05
370	.035	671.96	.05						

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
163.61	568.85	103.68	96.65	85.93	.1 .3

CROSS SECTION RIVER: San Juan
REACH: Upper RS: 4631.533

INPUT
Description: Manual Modification of Manning's N Values
Station Elevation Data num= 37

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	203.7	8.12	203.31	18.46	202.36	18.67	202.33	56.14	197.09
56.6	197.04	81.62	192.05	85.3	191.27	93.91	189.44	98.45	188.91
133.04	183.77	161.9	182.23	167.16	182.29	183.87	181.93	192.69	181.74
259.21	180.6	301.66	180.12	332.65	179.99	340	180.01	411.37	180.19
460.04	180.8	504.03	181.5	624.71	183.42	646.81	183.96	660	184.28
781.7	187.28	816.45	188.73	842.43	189.84	843.6	189.82	844.06	189.93
846.04	191.24	875.7	208.82	878.23	210.1	883.52	211.31	904.2	215.08
916.56	216.32	933.35	218.99						

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	18.67	.07	133.04	.05	340	.035	660	.05

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
183.87	504.03	83.04	106.65	96.62	.1 .3

CROSS SECTION RIVER: San Juan
REACH: Upper RS: 4524.879

INPUT
Description: Manual Modification of Manning's N Values
Station Elevation Data num= 42

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	203.49	8.73	202.84	36.07	200.83	53.14	199.51	70.23	197.68
83.18	196.14	121.15	189.14	127.15	187.91	127.61	187.81	157.72	184.03
165.37	183.73	172.29	183.81	190.55	183.45	198.19	183.31	273.27	181.93
283.53	181.72	286.23	181.62	291.78	181.48	305.84	180.44	314.99	180.99
321.12	180.85	329.3	180.71	350	178.47	356.33	177.79	364.66	177.19
379.38	177.67	394.96	177.76	425.04	178.51	471.14	180.69	491.33	181.67
592.54	183.25	618.14	183.87	640	184.4	809.52	188.49	831.63	188.9
834.06	189.26	838.59	189.88	841.25	191.07	849.43	194.04	864.99	201.64
869.63	203.45	873.08	204.07						

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	8.73	.07	165.37	.05	350	.035	640	.05

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
286.23	491.33	102.46	90.4	106.95	.1 .3

CROSS SECTION RIVER: San Juan
REACH: Upper RS: 4434.483

INPUT
Description: Manual Modification of Manning's N Values
Station Elevation Data num= 40

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	202.71	1.83	202.52	3.78	201.81	10.5	199.86	34.89	192.51
40.24	190.96	61.14	187.34	74.08	185.22	75.83	184.93	92.5	183.31
99.46	182.63	102.1	182.37	106.69	182.4	157.49	181.58	159.14	181.53
176.66	180.96	252.87	179.64	305.4	177.68	309.44	177.31	311.99	177.43
313.89	177.33	317.76	177.33	384.57	177.21	404.39	177.39	469.88	180.38
500.79	181.91	519.99	183.3	550.36	183.77	560	183.92	600.21	184.54
626.85	184.93	777.58	187.81	794.64	190.22	801.18	190.33	806.42	191.35
808.69	192.2	812.94	194.2	818	196.77	825.03	198.57	828.85	199.46

Manning's n Values num= 4

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.07	99.46	.05	317.76	.035	560	.05

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
252.87	469.88	229.37	220.73	203.25	.1 .3

CROSS SECTION RIVER: San Juan
REACH: Upper RS: 4213.757

INPUT
Description: Manual Modification of Manning's N Values
Station Elevation Data num= 40

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	200.81	5.26	198.89	8.08	197.81	12.49	196.17	28.49	190.98
37.55	187.18	44.54	184.77	53.68	182.73	67.4	182.76	93.9	181.55
134.36	179.7	143.82	179.39	152.85	179.17	215.97	177.58	217.28	177.55
238.51	177.6	290.3	177.71	365.47	177.34	390	177.26	413.09	177.18
445.34	176.41	472.97	177.11	483.44	177.6	497.22	179.2	517.55	181.23
537.8	183.7	537.88	183.71	547.73	183.71	567.09	184.07	625.37	184.51
700.46	185.13	733.35	186.02	760	186.68	792.43	187.48	806.68	187.89

811.25	188.05	812.52	188.39	827.71	190.67	831.02	192.4	853.65	202.22

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.07	93.9	.05	390	.035	537.8	.05	760	.035

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
152.85	497.22	211.8	205.08	199.31	.1	.3

CROSS SECTION RIVER: San Juan
REACH: Upper RS: 4008.681

INPUT
Description: Manual Modification of Manning's N Values
Station Elevation Data num= 45

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	201.88	6.03	199.17	12.95	196.64	35.87	186.57	36.93	186.03
45.91	183.57	49.77	182.45	50.49	182.24	50.74	182.17	51.67	181.92
52.26	181.86	119.93	178.37	132.49	177.84	136.23	177.87	153.26	177.82
257.16	177.53	349.61	177.27	391.37	176.26	410	176.09	474.15	175.49
481.6	175.85	495.72	176.02	498.86	175.98	499.79	176.12	504.54	177.37
507.19	177.88	511.21	180.96	513.35	182.9	513.95	183.14	519.28	184.66
520.13	184.65	527.43	184.55	542.2	184.47	588.47	185.67	660.87	185.2
708.48	184.85	754	185.73	764.5	185.9	789.79	189.86	794.92	190.26
796.59	190.68	801.16	193.59	805.97	196.28	824.38	203.17	829.56	203.83

Manning's n Values num= 4

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.07	49.77	.05	410	.035	519.28	.05

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
119.93	507.19	243.81	216.85	190.05	.1	.3

CROSS SECTION RIVER: San Juan
REACH: Upper RS: 3791.835

INPUT
Description: Manual Modification of Manning's N Values
Station Elevation Data num= 47

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	200.41	4.26	198.05	4.8	197.85	7.66	197.43	26.58	194.7
59.61	193.56	68.97	193.43	77.7	193.24	96.01	192.43	103.34	192.15
118.37	191.47	125.11	190.83	133.18	189.67	136.17	189.03	137.21	188.63
152.36	181.67	166.58	177.95	206.03	176.05	221.16	175.47	236.77	175.37
251.29	175.28	260.54	175.36	302.78	175.62	355	176.19	420.2	176.91
442.45	177.08	453.3	177.93	470	178.6	477.38	178.9	481.37	179.06
485.68	179.63	513.63	180.39	558.62	182.24	560.18	182.26	588.4	182.65
655.35	182.02	712	181.92	715.03	182.41	722.35	183.13	726.37	185.78
730.07	187.58	736.14	192.28	742.74	196.34	747.69	198.5	755.83	201.84
757.73	202.43	766.25	203.95						

Manning's n Values num= 6

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.07	7.66	.05	236.77	.035	260.54	.05	355	.035
470	.05								

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
166.58	442.45	193.71	199.59	229.82	.1	.3

CROSS SECTION RIVER: San Juan
REACH: Upper RS: 3592.245

INPUT
Description: Manual Modification of Manning's N Values
Station Elevation Data num= 51

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	205.95	.94	205.38	7.17	200.58	12.98	196.61	19.25	194.43
32.77	190.88	50.87	187.88	58.77	184.86	62.36	184.42	90.6	181.99
93.31	181.83	131.73	177.51	135.33	177.11	139.48	176.94	143.89	176.42
146.78	176.29	147.51	176.26	157.53	175.84	198.67	173.2	221.15	173.48
255	175.11	294.51	177.02	315	177.05	386.09	177.15	423.18	176.91
440.34	177.3	482.38	178.27	500.4	178.99	515.32	179.79	550.44	180.6
601.16	182.67	606.88	183.09	610.77	184.52	613.61	185.24	615.56	186.63
616.08	186.89	630.19	196.8	634.73	197.83	639.33	198.25	655	198.33
660.56	198.36	681.87	198.8	765.96	201.31	793.36	202.21	799.31	202.32
804.12	202.27	817.85	202.17	913.94	202.09	920.78	202.14	925.92	202.73
940.9	203.52								

Manning's n Values num= 8

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.07	131.73	.035	198.67	.05	255	.035	315	.05
386.09	.035	440.34	.05	655	.02				

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
135.33	423.18	227.98	216.09	205.8	.1	.3

CROSS SECTION RIVER: San Juan
REACH: Upper RS: 3376.157

INPUT
Description: Manual Modification of Manning's N Values
Station Elevation Data num= 48

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	201.07	3.37	197.95	19.05	184.4	24.22	179.7	25.55	178.3
28.52	177.22	29.4	177.16	29.83	176.92	30.03	176.89	31.14	176.95
33.89	177.33	45.71	179.18	53.46	178.96	58.29	178.68	60.79	178.53
80.26	177.38	114.81	175.93	135	175.61	170	175.06	175.76	174.97
277.41	173.7	290	173.69	297.62	173.68	301.92	173.67	368.9	173.8

370	173.8	380.43	173.82	381.68	173.85	441.58	175.45	450.44	176.6
456.37	177.34	461.78	178.92	482.65	187.5	485.35	188.63	487.9	189.38
496.63	191.83	501.76	192.43	517.34	194.82	521.03	196	530	196.14
577.96	196.9	581.86	197.01	667.6	198.92	692.21	199.27	729.61	200.36
787.24	202.45	809.84	202.7	832.73	203.46				

Manning's n Values num= 7

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.07	58.29	.05	135	.035	170	.05	290	.035
370	.05	530	.02						

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
114.81	441.58	213.06	206.59	170.09	.1	.3

CROSS SECTION RIVER: San Juan
REACH: Upper RS: 3169.567

INPUT
Description: Manual Modification of Manning's N Values
Station Elevation Data num= 37

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	202.81	17.39	187.19	20.1	184.41	26.49	176.65	30.73	174.19
36.31	170.12	63.45	169.65	68.1	169.36	68.33	169.37	70.89	169.5
71.77	169.54	79.63	169.57	102.49	170.28	128.59	171.1	198.45	171.16
267.13	172.44	325	173.69	343.3	174.08	368.86	174.3	385	174.45
392.02	174.51	428.46	174.85	457.13	175.24	466.29	175.91	474.08	176.34
491.45	177.44	514.47	185.13	530.01	190.11	540.37	191.17	560.21	193.29
605.9	194.1	663.72	196.08	731.34	198.35	771.14	200.95	809.16	202.81
836.92	203.19	854.08	203.45						

Manning's n Values num= 6

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.07	68.33	.035	102.49	.05	325	.035	385	.05
540.37	.02								

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
30.73	392.02	233.08	206.98	127.76	.1	.3

CROSS SECTION RIVER: San Juan
REACH: Upper RS: 2962.583

INPUT
Description:
Station Elevation Data num= 48

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	196.65	1.21	194.95	2.74	193.19	7.39	187.41	9.04	185.53
9.93	184.66	15.36	180.15	18.49	177.74	21.12	176.24	27.45	172.63
29.96	170.67	32.82	170.12	40.32	169.22	42.53	169.14	53.73	169.83
66.24	170.54	73.41	170.96	88.51	172.01	95.45	172.5	112.8	173.7
119.62	174.18	151.76	174.34	174.26	174.29	181.79	174.04	238.12	172.4
298.06	170.72	355.76	171.99	382.05	172.57	393.11	173.1	418.99	174.35
421.7	174.38	425.17	174.42	502.17	175.22	524.26	175.57	529.87	175.94
555.35	177.47	582.7	184.53	590.04	186.21	602.82	189.14	610.81	190.23
628.44	192.16	664.5	193.75	706.88	195.82	743.83	197.24	795.3	198.69
826.88	201.82	849.91	203.31	867.7	203.18				

Manning's n Values num= 6

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.07	95.45	.035	112.8	.05	355.76	.035	425.17	.05
590.04	.02								

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
27.45	355.76	219.26	216.54	187.47	.1	.3

CROSS SECTION RIVER: San Juan
REACH: Upper RS: 2746.045

INPUT
Description:
Station Elevation Data num= 66

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	193.09	5.87	190.32	7.53	189.61	20.08	187.13	45.88	181.4
62.08	178.42	67.85	177.35	74.88	176.01	104.52	170.55	124.17	168.6
129.19	168.21	136.57	168.15	140.31	168.12	148.42	167.83	155.03	167.55
165.53	167.39	174.64	167.25	203.55	167.33	227.61	167.69	284.63	168.54
329.45	170.32	372.93	171.35	382.8	171.81	395.64	172.41	432.46	174.56
434.53	174.68	472.25	176.88	496.43	177.65	499.58	177.7	523.92	178.02
572.77	177.97	598.51	179.61	628.03	179.17	637.73	179.28	649.82	179.89
657.53	180.45	662.14	181.22	668.87	182.36	699.31	186.2	702.46	186.74
710.77	187.33	730.98	189.45	737.08	190.23	771.86	191.33	773.38	191.38
807.73	193.38	812.26	193.29	819.59	194.04	832.36	194.19	838.02	194.76
852.47	196.21	862.83	196.32	880.74	196.32	921.34	198.05	924.11	198.18
925.18	198.36	926.23	198.45	927.97	198.45	954.06	199.83	960.65	200.47
967.55	200.25	976.45	200.54	993.9	201.7	1015.04	203.9	1021.08	203.93
1034.59	204.46								

Manning's n Values num= 8

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.02	62.08	.07	165.53	.035	227.61	.05	382.8	.035
434.53	.05	662.14	.02	838.02	.035				

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
104.52	329.45	139.12	137.72	142.04	.1	.3

CROSS SECTION RIVER: San Juan
REACH: Upper RS: 2608.338

INPUT

Description:
Station Elevation Data num= 45

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	197.52	1.98	197.16	8.23	195.57	20.39	192.61	44.27	186.73
50.9	185.94	53.04	185.69	92.16	177.69	96	176.91	110.52	172.48
114.02	171.41	116.04	171.24	130.76	168.57	130.88	168.57	145.73	167.82
173.95	167.14	181.17	167.34	235.62	168.88	271.89	169.71	309.03	171.22
322.92	171.78	327.21	172.04	403.24	176.68	403.38	176.68	404.98	176.75
407.11	176.87	411.05	176.99	505.74	180.17	543.27	182.79	619.05	185.86
621.92	185.99	623.65	186.15	625.34	186.23	646.06	187.2	651.27	187.46
659.44	187.68	684.52	188.97	684.6	188.97	684.63	188.98	684.81	189.01
697.48	191.28	697.49	191.28	714.77	198.08	718.68	199.93	727.14	204.25

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.02	50.9	.07	130.88	.035	327.21	.05	625.34	.02

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
116.04	309.03	157.33	164.71	180.94	.3	.5

BRIDGE RIVER: San Juan
REACH: Upper RS: 2580

INPUT
Description:
Distance from Upstream XS = 30
Deck/Roadway Width = 62.99
Weir Coefficient = 2.6
Upstream Deck/Roadway Coordinates
num= 4

Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord
-47.6437	208.06	0	-47.6437	208.06	200.56	728.35	235.94	228.44
728.35	235.94	0						

Upstream Bridge Cross Section Data
Station Elevation Data num= 45

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	197.52	1.98	197.16	8.23	195.57	20.39	192.61	44.27	186.73
50.9	185.94	53.04	185.69	92.16	177.69	96	176.91	110.52	172.48
114.02	171.41	116.04	171.24	130.76	168.57	130.88	168.57	145.73	167.82
173.95	167.14	181.17	167.34	235.62	168.88	271.89	169.71	309.03	171.22
322.92	171.78	327.21	172.04	403.24	176.68	403.38	176.68	404.98	176.75
407.11	176.87	411.05	176.99	505.74	180.17	543.27	182.79	619.05	185.86
621.92	185.99	623.65	186.15	625.34	186.23	646.06	187.2	651.27	187.46
659.44	187.68	684.52	188.97	684.6	188.97	684.63	188.98	684.81	189.01
697.48	191.28	697.49	191.28	714.77	198.08	718.68	199.93	727.14	204.25

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.02	50.9	.07	130.88	.035	327.21	.05	625.34	.02

Bank Sta: Left	Right	Coeff Contr.	Expan.
116.04	309.03	.3	.5

Downstream Deck/Roadway Coordinates
num= 4

Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord
-47.6437	208.06	0	-47.6437	208.06	200.56	728.35	235.94	228.44
728.35	235.94	0						

Downstream Bridge Cross Section Data
Station Elevation Data num= 41

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	195.62	.85	195.36	3.42	194.45	20.23	187.93	21.53	187.55
26.44	186.13	33.57	183.63	45.92	178.05	46.63	177.78	47.28	177.54
60.9	176.79	78.94	173.17	79.06	173.15	84.86	172.18	86.84	171.91
97.13	170.5	130.03	170.2	155.46	168.82	187	168.81	204.75	168.82
216.73	168.71	237.91	168.51	281.75	169.76	349.25	171.27	381.38	173.34
461.47	177.12	476.01	177.84	496.32	178.63	524.44	180.28	609.93	186.01
645.4	187.24	655.65	189.33	672.2	190.78	674.49	190.75	687.77	190.65
697.57	195.15	697.71	195.19	701.59	196.97	714.78	202.98	715.19	203.14
717.65	204.28								

Manning's n Values num= 4

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.05	21.53	.07	78.94	.035	204.75	.05

Bank Sta: Left	Right	Coeff Contr.	Expan.
130.03	281.75	.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 = 210
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= 79.36 Downstream= 79.36
Upstream num= 2

Width	Elev	Width	Elev
10.56	0	10.56	336

Downstream num= 2

Width	Elev	Width	Elev
10.56	0	10.56	336

```
Pier Data
Pier Station     Upstream=  253.36    Downstream=  253.36
Upstream     num=        2
    Width   Elev    Width   Elev
   10.56       0   10.56     336
Downstream     num=        2
    Width   Elev    Width   Elev
   10.56       0   10.56     336

Pier Data
Pier Station     Upstream=  427.36    Downstream=  427.36
Upstream     num=        2
    Width   Elev    Width   Elev
  10.562       0  10.562     336
Downstream     num=        2
    Width   Elev    Width   Elev
  10.562       0  10.562     336

Pier Data
Pier Station     Upstream=  601.36    Downstream=  601.36
Upstream     num=        2
    Width   Elev    Width   Elev
  10.562       0  10.562     336
Downstream     num=        2
    Width   Elev    Width   Elev
  10.562       0  10.562     336

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 #Q100
Opening : Single BR

  E.G. US. (ft)              183.02    Element                Inside BR US  Inside BR DS
  W.S. US. (ft)              180.96    E.G. Elev (ft)           182.73        181.96
  Q Total (cfs)            34722.00    W.S. Elev (ft)           180.12        180.26
  Q Bridge (cfs)           34722.00    Crit W.S. (ft)           178.82        178.04
  Q Weir (cfs)                         Max Chl Dpth (ft)         12.98         11.75
  Weir Sta Lft (ft)                    Vel Total (ft/s)          11.75          9.89
  Weir Sta Rgt (ft)                    Flow Area (sq ft)       2955.77       3511.86
  Weir Submerg                         Froude # Chl               0.73          0.62
  Weir Max Depth (ft)                  Specif Force (cu ft)    28154.96      27692.65
  Min El Weir Flow (ft)      210.00    Hydr Depth (ft)            7.42          7.78
  Min El Prs (ft)            228.40    W.P. Total (ft)          427.91        498.93
  Delta EG (ft)                2.01    Conv. Total (cfs)       478571.6      498650.6
  Delta WS (ft)                3.14    Top Width (ft)           398.56        451.39
  BR Open Area (sq ft)       25013.34  Frctn Loss (ft)            0.32          0.50
  BR Open Vel (ft/s)           11.75   C & E Loss (ft)            0.46          0.45
  Coef of Q                            Shear Total (lb/sq ft)     2.27          2.13
  Br Sel Method          Energy only   Power Total (lb/ft s)     26.67         21.07


Warning: Pier drag coefficient of 2.0 assumed for Class B flow.
Warning: The velocity head has changed by more than 0.5 ft (0.15 m).  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 Juan
REACH: Upper              RS: 2443.625

INPUT
Description: Manual Modification of Manning's N Values
Station Elevation Data     num=      41
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  195.62     .85  195.36    3.42  194.45   20.23  187.93   21.53  187.55
   26.44  186.13   33.57  183.63   45.92  178.05   46.63  177.78   47.28  177.54
    60.9  176.79   78.94  173.17   79.06  173.15   84.86  172.18   86.84  171.91
   97.13   170.5  130.03   170.2  155.46  168.82     187  168.81  204.75  168.82
  216.73  168.71  237.91  168.51  281.75  169.76  349.25  171.27  381.38  173.34
  461.47  177.12  476.01  177.84  496.32  178.63  524.44  180.28  609.93  186.01
   645.4  187.24  655.65  189.33   672.2  190.78  674.49  190.75  687.77  190.65
  697.57  195.15  697.71  195.19  701.59  196.97  714.78  202.98  715.19  203.14
  717.65  204.28

Manning's n Values         num=       4
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
       0     .05   21.53     .07   78.94    .035  204.75     .05

Bank Sta: Left   Right     Lengths: Left Channel   Right     Coeff Contr.   Expan.
        130.03  281.75              22.78   37.03   49.81             .3       .5
```

CROSS SECTION RIVER: San Juan
REACH: Upper RS: 2406.59*

INPUT
Description:
Station Elevation Data num= 67

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	193.29	.14	193.25	.83	193.06	3.34	192.24	6.67	191.07
19.78	186.6	21.05	186.26	25.85	185.02	32.82	182.85	44.9	178.1
45.59	177.87	46.23	177.66	48.13	177.53	50.54	177.39	51.48	177.34
59.55	176.79	77.18	173.51	77.3	173.49	82.97	172.59	84.91	172.33
86.5	172.11	89.49	171.67	94.97	170.92	127.14	169.88	128.48	169.8
141.12	169.04	144.5	168.86	149.33	168.57	176.86	168.26	184.65	168.18
192.35	168.11	202.81	167.91	202.85	167.91	217.15	167.64	221.29	167.6
243.49	168.45	257.95	169	268.3	169.45	287.61	169.8	338.33	170.72
371.66	172.4	375.12	172.53	375.76	172.55	419.15	174.17	454.75	175.6
469.84	176.24	483.9	176.72	490.91	176.96	510.21	177.91	520.08	178.4
551.88	180.17	603.28	183.67	608.18	183.97	608.78	184.01	632.92	185.04
645.58	185.57	656.21	187.4	673.38	188.81	675.75	188.82	689.53	188.94
698.57	192.27	699.7	192.68	699.84	192.72	703.87	194.18	717.55	199.11
717.98	199.24	720.53	200.18						

Manning's n Values num= 9

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.05	21.05	.066	77.18	.038	127.14	.047	196.66	.047
223.37	.035	268.3	.05	375.12	.05	720.53	.05		

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
127.14	268.3	22.78	37.03	49.81	.3	.5

CROSS SECTION RIVER: San Juan
REACH: Upper RS: 2369.55*

INPUT
Description:
Station Elevation Data num= 67

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	190.96	.14	190.93	.81	190.75	3.27	190.03	6.51	189.01
19.33	185.27	20.57	184.98	25.26	183.9	32.08	182.07	43.88	178.15
44.56	177.96	45.18	177.79	47.03	177.63	49.39	177.48	50.31	177.43
58.19	176.8	75.43	173.84	75.54	173.83	81.09	172.99	82.98	172.74
84.53	172.54	87.46	172.08	92.81	171.35	124.25	169.56	125.39	169.48
136.19	168.75	139.08	168.6	143.21	168.32	166.72	167.71	173.37	167.55
179.95	167.39	188.89	167.11	188.92	167.11	201.13	166.72	204.68	166.68
228.37	167.79	243.8	168.51	254.85	169.15	274.86	169.43	327.41	170.17
361.95	171.46	365.53	171.56	366.19	171.58	411.15	172.84	448.04	174.09
463.67	174.64	478.23	175.06	485.5	175.28	505.49	176.1	515.73	176.51
548.68	178	601.93	181.68	607.01	181.96	607.62	182	632.64	183.27
645.75	183.89	656.77	185.46	674.56	186.83	677.02	186.89	691.29	187.23
700.66	189.9	701.83	190.21	701.98	190.24	706.15	191.38	720.33	195.24
720.77	195.34	723.41	196.07						

Manning's n Values num= 9

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.05	20.57	.062	75.43	.041	124.25	.044	188.57	.044
213.28	.035	254.85	.05	365.53	.05	723.41	.05		

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
124.25	254.85	22.78	37.03	49.81	.3	.5

CROSS SECTION RIVER: San Juan
REACH: Upper RS: 2332.52*

INPUT
Description:
Station Elevation Data num= 67

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	188.63	.14	188.61	.79	188.45	3.19	187.82	6.36	186.94
18.88	183.94	20.09	183.69	24.68	182.79	31.33	181.29	42.86	178.21
43.52	178.05	44.13	177.91	45.94	177.73	48.24	177.57	49.14	177.52
56.84	176.8	73.67	174.18	73.78	174.16	79.2	173.4	81.05	173.16
82.57	172.97	85.42	172.49	90.65	171.77	121.35	169.24	122.31	169.16
131.26	168.46	133.66	168.34	137.08	168.06	156.58	167.16	162.1	166.91
167.56	166.68	174.97	166.31	175	166.31	185.12	165.81	188.06	165.77
213.25	167.14	229.65	168.02	241.4	168.84	262.11	169.06	316.49	169.62
352.23	170.52	355.93	170.59	356.62	170.61	403.14	171.5	441.32	172.57
457.5	173.04	472.57	173.41	480.09	173.61	500.78	174.28	511.37	174.63
545.47	175.84	600.57	179.69	605.83	179.95	606.47	180	632.35	181.5
645.92	182.22	657.33	183.53	675.74	184.86	678.28	184.95	693.06	185.52
702.75	187.52	703.96	187.75	704.11	187.77	708.43	188.59	723.1	191.37
723.56	191.44	726.3	191.97						

Manning's n Values num= 9

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.05	20.09	.058	73.67	.044	121.35	.041	180.47	.041
203.19	.035	241.4	.05	355.93	.05	726.3	.05		

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
121.35	241.4	22.78	37.03	49.81	.3	.5

CROSS SECTION RIVER: San Juan
REACH: Upper RS: 2295.48*

INPUT
Description:
Station Elevation Data num= 67

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	186.3	.13	186.28	.77	186.14	3.12	185.61	6.21	184.88

18.43	182.6	19.61	182.41	24.09	181.67	30.58	180.51	41.83	178.26
42.48	178.14	43.07	178.03	44.84	177.83	47.09	177.67	47.97	177.61
55.48	176.8	71.92	174.52	72.03	174.5	77.31	173.8	79.11	173.58
80.6	173.39	83.39	172.89	88.49	172.19	118.46	168.92	119.22	168.84
126.33	168.17	128.23	168.08	130.95	167.81	146.44	166.61	150.82	166.28
155.16	165.96	161.04	165.51	161.07	165.51	169.11	164.89	171.45	164.85
198.13	166.48	215.51	167.54	227.95	168.54	249.35	168.68	305.57	169.06
342.51	169.58	346.34	169.63	347.05	169.63	395.14	170.17	434.6	171.05
451.32	171.44	466.9	171.76	474.68	171.93	496.06	172.47	507.01	172.75
542.26	173.67	599.22	177.7	604.66	177.95	605.31	177.99	632.07	179.72
646.1	180.55	657.89	181.59	676.92	182.89	679.55	183.02	694.82	183.81
704.84	185.14	706.09	185.28	706.25	185.29	710.71	185.79	725.88	187.5
726.35	187.54	729.18	187.86						

Manning's n Values num= 9

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.05	19.61	.054	71.92	.047	118.46	.038	172.38	.038
193.1	.035	227.95	.05	346.34	.05	729.18	.05		

Bank Sta: Left	Right	Lengths: Left Channel		Right	Coeff Contr.	Expan.
118.46	227.95		22.78	37.03	49.81	.3	.5

CROSS SECTION RIVER: San Juan
REACH: Upper RS: 2258.454

INPUT
Description:
Station Elevation Data num= 31

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	183.97	.13	183.96	6.06	182.82	43.75	177.93	45.94	177.76
46.8	177.7	78.63	173.82	81.35	173.3	115.57	168.6	116.13	168.52
121.4	167.88	122.81	167.82	139.55	165.64	147.14	164.71	153.1	163.98
154.83	163.94	183.01	165.83	201.36	167.05	214.5	168.23	236.6	168.31
336.75	168.66	337.48	168.66	387.14	168.84	461.24	170.11	491.35	170.66
539.05	171.51	597.87	175.71	603.48	175.94	631.79	177.95	706.93	182.76
732.06	183.76								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.05	183.01	.035	336.75	.05

Bank Sta: Left	Right	Lengths: Left Channel		Right	Coeff Contr.	Expan.
115.57	214.5		37.15	40.69	38.12	.1	.3

CROSS SECTION RIVER: San Juan
REACH: Upper RS: 2217.76*

INPUT
Description:
Station Elevation Data num= 72

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	184.18	.17	184.16	3.03	183.69	4.81	183.4	5	183.35
5.55	183.24	5.92	183.16	8.13	182.68	17.8	180.92	27.6	179.98
45.33	178.12	58.67	177.02	61.6	176.87	62.76	176.81	62.96	176.79
67.27	176.38	68.2	176.29	78.67	175.34	89.94	174.13	105.02	173.02
105.44	172.98	109.09	172.53	117.49	171.76	148.36	168.94	154.98	168.31
155.52	168.24	160.65	167.64	162.02	167.57	168.49	166.77	178.31	165.56
185.7	164.7	191.12	164.07	191.5	164.02	193.18	163.95	225.26	165.56
227.4	165.67	246.15	166.83	261.11	167.99	283.96	168.1	354.64	168.42
380.78	168.5	387.48	168.52	388.23	168.52	394.07	168.54	408.98	168.7
417.08	168.8	437.69	169.03	439.56	169.04	492.08	169.93	499.67	170.03
516.16	170.25	547.28	170.71	565.05	170.96	571.43	171.11	580.09	171.37
596.59	171.68	633.84	173.81	637.12	174.04	651.71	174.72	657.38	175.02
659.26	175.07	663.18	175.39	672.23	176.32	676.03	176.78	683.59	177.16
687.85	177.6	692.45	178.03	700.99	178.79	735.99	180.99	753.41	181.97
770.11	182.84	796.09	183.74						

Manning's n Values num= 10

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.046	67.27	.039	154.98	.035	182.51	.035	227.33	.035
261.11	.05	354.64	.05	387.48	.05	408.98	.05	796.09	.05

Bank Sta: Left	Right	Lengths: Left Channel		Right	Coeff Contr.	Expan.
154.98	261.11		37.15	40.69	38.12	.1	.3

CROSS SECTION RIVER: San Juan
REACH: Upper RS: 2177.07*

INPUT
Description:
Station Elevation Data num= 72

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	184.39	.22	184.37	3.81	183.83	6.03	183.5	6.28	183.43
6.97	183.29	7.42	183.18	10.19	182.54	22.32	179.95	34.62	179.03
56.86	177.01	73.59	176.11	77.27	175.97	78.72	175.92	78.97	175.91
84.37	175.48	85.54	175.38	98.68	174.42	112.81	173.04	131.72	172.17
132.25	172.14	136.83	171.77	147.36	171.07	186.08	168.6	194.39	168.02
194.91	167.96	199.9	167.4	201.23	167.31	207.52	166.59	217.07	165.49
224.25	164.69	229.53	164.1	229.89	164.06	231.53	163.96	267.52	165.3
269.91	165.39	290.95	166.62	307.73	167.76	331.32	167.89	404.3	168.28
431.29	168.36	438.21	168.38	438.99	168.38	445.01	168.4	460.41	168.68
468.78	168.83	490.05	169.22	491.99	169.24	546.21	170.15	554.05	170.22
571.07	170.4	603.21	170.75	621.56	170.95	628.15	171.14	637.09	171.52
654.12	171.84	692.58	173.54	695.97	173.78	711.04	174.13	716.9	174.32
718.84	174.36	722.89	174.84	732.22	176.07	736.15	176.75	743.95	176.99
748.36	177.56	753.1	178.11	761.92	179.1	798.06	181.33	816.05	182.22
833.3	182.93	860.12	183.71						

Manning's n Values num= 10

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.043	84.37	.043	194.39	.035	223.79	.035	271.65	.035
307.73	.05	404.3	.05	438.21	.05	460.41	.05	860.12	.05

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
194.39	307.73	37.15	40.69	38.12	.1	.3

CROSS SECTION RIVER: San Juan
REACH: Upper RS: 2136.38*

INPUT
Description:
Station Elevation Data num= 72

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	184.6	.26	184.57	4.58	183.98	7.26	183.6	7.55	183.51
8.38	183.34	8.93	183.21	12.26	182.4	26.85	178.99	41.63	178.07
68.38	175.91	88.5	175.2	92.93	175.08	94.67	175.03	94.98	175.02
101.48	174.57	102.88	174.47	118.68	173.51	135.68	171.94	158.43	171.33
159.06	171.3	164.57	171	177.24	170.39	223.81	168.26	233.79	167.73
234.31	167.67	239.15	167.17	240.45	167.06	246.56	166.4	255.83	165.41
262.81	164.68	267.93	164.14	268.29	164.1	269.88	163.98	309.77	165.03
312.43	165.1	335.74	166.4	354.35	167.52	378.68	167.67	453.96	168.15
481.8	168.23	488.94	168.24	489.74	168.25	495.96	168.26	511.84	168.65
520.47	168.87	542.42	169.41	544.41	169.44	600.35	170.36	608.43	170.41
625.99	170.54	659.14	170.8	678.07	170.94	684.86	171.17	694.09	171.66
711.66	172.01	751.33	173.26	754.83	173.51	770.37	173.53	776.41	173.63
778.41	173.64	782.59	174.28	792.22	175.83	796.27	176.71	804.32	176.81
808.86	177.52	813.76	178.19	822.86	179.42	860.14	181.67	878.69	182.47
896.48	183.01	924.15	183.69						

Manning's n Values num= 10

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.039	101.48	.046	233.79	.035	265.06	.035	315.97	.035
354.35	.05	453.96	.05	488.94	.05	511.84	.05	924.15	.05

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
233.79	354.35	37.15	40.69	38.12	.1	.3

CROSS SECTION RIVER: San Juan
REACH: Upper RS: 2095.690

INPUT
Description: Manual Modification of Manning's N Values
Station Elevation Data num= 47

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	184.81	5.35	184.12	8.48	183.7	8.82	183.59	9.79	183.39
10.43	183.23	31.37	178.02	48.65	177.12	79.91	174.8	110.99	174.13
118.58	173.66	120.22	173.56	138.69	172.59	158.55	170.85	185.13	170.49
207.11	169.71	261.53	167.92	273.2	167.44	285.59	166.22	306.34	164.18
308.23	163.99	354.94	164.82	400.96	167.28	490	167.92	503.62	168.02
532.31	168.09	546.9	168.12	563.27	168.62	572.16	168.9	594.78	169.6
654.48	170.58	662.81	170.6	734.58	170.93	741.58	171.2	751.09	171.81
810.08	172.99	813.68	173.25	829.7	172.94	837.99	172.93	852.22	175.58
856.39	176.67	864.69	176.63	869.37	177.48	883.79	179.73	922.21	182.01
941.33	182.72	988.18	183.67						

Manning's n Values num= 4

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	118.58	.05	306.34	.035	490	.05

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
273.2	400.96	97.79	280.21	315.49	.1	.3

CROSS SECTION RIVER: San Juan
REACH: Upper RS: 1815.468

INPUT
Description: Manual Modification of Manning's N Values
Station Elevation Data num= 45

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	179.36	2.08	178.85	6.28	177.56	30.14	175.76	32.7	175.46
86.02	175.1	87.39	175.09	87.62	175.08	87.99	175.06	132	173.2
202.5	170.23	250.96	169.57	285	167.82	293.94	167.36	330.88	165.46
377.12	164.1	414.9	163.81	477.77	163.14	573.83	163.32	603.6	163.51
604.68	163.38	620.57	162.55	631.33	160.3	637.44	158.18	641.68	157.71
646.53	157.13	649.75	156.78	654.61	156.93	665.23	158.28	666.56	158.49
667.62	158.75	684.92	162.64	695.21	164.31	700.31	164.76	703.34	166.78
707.45	170.49	710	170.97	714.12	171.75	723.72	172.17	724.25	172.17
738.75	172.16	744.8	172.26	867.33	173.98	923.67	175.76	1010.11	177.35

Manning's n Values num= 4

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	202.5	.05	285	.035	620.57	.05

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
620.57	684.92	157.35	199.5	221.7	.1	.3

CROSS SECTION RIVER: San Juan
REACH: Upper RS: 1615.906

INPUT
Description: Manual Modification of Manning's N Values
Station Elevation Data num= 44

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	177.11	44.42	176.08	68.41	175.81	81.79	175.66	117.53	174.86
132.29	174.76	186.79	173.08	192.24	172.93	218.39	172.08	239.31	171.94
334.71	169.35	345	169	437.24	165.85	443.29	165.68	452	165.43

477.2	164.71	492.81	164.25	648.25	163.06	676.88	162.9	682.45	162.6
714.81	162.27	768.99	161.61	800.23	159.03	822.19	157.53	838.02	157.67
860.36	161.95	866.99	162.84	882.33	164.88	894.26	166.49	902.99	167.17
918.58	168.4	947.9	170.66	948.47	170.67	962.33	171	1035.59	171.38
1115.66	171.7	1141.92	171.77	1192.22	172.45	1201.31	172.59	1223.41	173.39
1257.31	174.05	1310.92	176.14	1344.33	176.54	1368.17	177.12		

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	68.41	.02	345	.05	452	.035	918.58	.05

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
768.99	860.36	158.82	235.44	273.12	.1 .3

CROSS SECTION RIVER: San Juan
REACH: Upper RS: 1380.475

INPUT
Description:
Station Elevation Data num= 56

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	177.79	4.62	176.59	9.63	176.35	32.39	175.14	35.77	175.09
50.4	174.87	115.45	172.82	173.47	171.49	228.38	171	243.14	170.89
324.6	170.78	396.47	170.44	439.48	170.52	447.14	170.26	481.59	169.11
527.7	167.7	542.55	166.99	599.17	164.47	608.12	164.07	622.33	163.44
643.38	163.09	679.46	162.19	699.01	161.78	722.2	161.31	812.09	159.88
879.06	158.93	921.4	158.33	927.64	157.96	929.02	157.63	934.75	154.08
936.57	153.2	940.51	151.34	942.47	151.04	948.13	151.76	963.53	159.99
969.15	161.85	971.84	163.3	973.16	163.99	993.78	165.11	1004.59	165.98
1006.97	165.96	1019.49	165.84	1075.03	165.33	1155.65	164.57	1190.39	164.24
1195.11	164.23	1197.13	164.29	1211.81	164.25	1356.61	165.58	1581	171
1619.13	172.04	1626.05	172.09	1637.76	172.47	1694.72	174.38	1695.02	174.4
1788.58	177.19								

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	35.77	.02	447.14	.05	608.12	.035	1019.49	.05

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
812.09	963.53	32.45	39.81	46.27	.1 .3

CROSS SECTION RIVER: San Juan
REACH: Upper RS: 1340.66*

INPUT
Description:
Station Elevation Data num= 107

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	177.75	2.11	177.22	4.63	176.64	9.65	176.37	32.46	175.03
35.31	174.96	35.85	174.94	50.51	174.55	77.39	173.46	78.91	173.4
79.6	173.37	80.14	173.35	115.69	172.25	141.34	171.64	164.14	171.19
173.84	171.01	216.56	170.7	228.86	170.64	229.15	170.64	243.65	170.55
321.39	170.47	325.29	170.46	397.31	170.11	422.04	170.13	440.41	170.12
448.09	169.89	482.61	168.85	521.41	167.79	528.82	167.57	543.7	166.91
595.64	164.77	600.21	164.59	600.44	164.58	609.41	164.23	623.65	163.68
644.74	163.35	680.9	162.53	694.93	162.26	700.49	162.15	703.66	162.09
709.06	161.97	723.73	161.63	812.05	159.9	813.81	159.87	843.79	159.24
856.66	159.09	885.23	158.81	891.63	158.75	908.82	158.58	930.35	158.37
940.82	158.18	948.07	157.82	949.68	157.53	956.33	154.52	958.45	153.77
960.01	153.23	963.03	152.18	965.3	151.92	967.71	152.17	969.69	152.4
971.52	152.6	981.67	156.83	988.43	159.88	992.97	161.34	993.87	161.62
996.48	162.91	997.76	163.52	999.78	163.68	1012.74	164.59	1017.74	164.85
1024.41	165.34	1028.21	165.59	1030.52	165.57	1041.9	165.46	1042.65	165.45
1042.72	165.45	1065.27	165.27	1074.9	165.2	1094.86	165.04	1096.46	165.03
1118.91	164.86	1131.34	164.81	1165.59	164.52	1174.57	164.44	1208.23	164.14
1212.8	164.13	1214.76	164.18	1228.98	164.14	1247.45	164.27	1291.01	164.49
1369.28	164.87	1383.75	165.12	1495.01	167.42	1510.91	167.78	1529.97	168.26
1586.69	169.66	1623.63	170.68	1630.34	170.75	1641.68	171.11	1646.71	171.27
1696.87	173.03	1697.16	173.05	1698.34	173.09	1728.51	174.05	1730.35	174.14
1759.03	175.15	1787.81	176.24						

Manning's n Values num= 12

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	35.31	.032	35.85	.02	448.09	.045	600.21	.025
609.41	.038	812.05	.047	813.81	.05	988.43	.05	1042.65	.05
1065.27	.05	1787.81	.05						

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
813.81	988.43	32.45	39.81	46.27	.1 .3

CROSS SECTION RIVER: San Juan
REACH: Upper RS: 1300.86*

INPUT
Description:
Station Elevation Data num= 107

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	177.72	2.11	177.2	4.64	176.69	9.67	176.39	32.53	174.93
35.38	174.82	35.92	174.79	50.61	174.23	77.56	172.89	79.07	172.81
79.77	172.78	80.31	172.77	115.94	171.68	141.64	171.05	164.48	170.66
174.2	170.52	217.02	170.3	229.35	170.28	229.63	170.28	244.17	170.21
322.07	170.16	325.98	170.15	398.15	169.79	422.93	169.77	441.34	169.72
449.03	169.51	483.63	168.6	522.51	167.65	529.94	167.43	544.85	166.84
596.89	164.86	601.48	164.71	601.71	164.7	610.7	164.4	624.97	163.93
646.11	163.61	682.34	162.88	696.4	162.63	701.97	162.52	705.15	162.46
710.56	162.34	725.26	161.96	813.76	159.9	815.53	159.86	849.69	158.97
864.36	158.82	896.91	158.61	904.19	158.56	923.78	158.44	948.32	158.29
960.25	158.04	968.51	157.68	970.33	157.43	977.92	154.96	980.33	154.34

982.11	153.89	985.55	153.03	988.14	152.8	990.76	153.02	992.92	153.25
994.91	153.43	1005.96	156.96	1013.32	159.77	1017.72	161.13	1018.59	161.39
1021.12	162.52	1022.35	163.06	1024.31	163.25	1036.86	164.35	1041.69	164.58
1048.15	165.01	1051.83	165.21	1054.06	165.19	1065.08	165.07	1065.8	165.06
1065.88	165.06	1087.7	164.92	1097.02	164.86	1116.34	164.73	1117.89	164.72
1139.62	164.6	1151.65	164.64	1184.79	164.38	1193.49	164.31	1226.07	164.05
1230.5	164.04	1232.39	164.07	1246.16	164.03	1264.03	164.12	1306.19	164.14
1381.95	164.15	1395.95	164.3	1503.64	166.12	1519.03	166.46	1537.48	166.93
1592.38	168.33	1628.14	169.32	1634.63	169.4	1645.61	169.75	1650.47	169.9
1699.02	171.68	1699.3	171.7	1700.44	171.74	1729.65	172.73	1731.42	172.85
1759.19	173.99	1787.04	175.29						

Manning's n Values num= 12

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	35.38	.03	35.92	.02	449.03	.04	601.48	.03
610.7	.04	813.76	.045	815.53	.05	1013.32	.05	1065.8	.05
1087.7	.05	1787.04	.05						

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
815.53	1013.32	32.45	39.81	46.27	.1	.3

CROSS SECTION RIVER: San Juan
REACH: Upper RS: 1261.05*

INPUT
Description:
Station Elevation Data num= 107

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	177.68	2.12	177.18	4.65	176.75	9.69	176.41	32.6	174.82
35.46	174.67	36	174.65	50.72	173.9	77.72	172.32	79.24	172.23
79.94	172.2	80.48	172.18	116.18	171.11	141.93	170.45	164.83	170.14
174.57	170.04	217.48	169.89	229.83	169.92	230.12	169.92	244.68	169.87
322.75	169.85	326.66	169.83	398.99	169.46	423.82	169.41	442.27	169.31
449.98	169.14	484.65	168.34	523.61	167.51	531.05	167.3	546	166.76
598.15	164.95	602.74	164.82	602.98	164.81	611.98	164.56	626.28	164.17
647.47	163.88	683.78	163.22	697.86	163	703.45	162.89	706.64	162.83
712.05	162.71	726.79	162.28	815.48	159.89	817.25	159.85	855.59	158.7
872.05	158.55	908.58	158.41	916.76	158.38	938.74	158.3	966.28	158.2
979.67	157.89	988.94	157.53	990.99	157.33	999.5	155.4	1002.21	154.91
1004.21	154.55	1008.06	153.87	1010.97	153.68	1013.81	153.87	1016.14	154.1
1018.3	154.27	1030.26	157.1	1038.22	159.65	1042.47	160.93	1043.32	161.17
1045.75	162.13	1046.95	162.59	1048.84	162.83	1060.97	164.11	1065.65	164.32
1071.9	164.69	1075.45	164.82	1077.61	164.8	1088.26	164.68	1088.96	164.68
1089.03	164.67	1110.13	164.57	1119.14	164.52	1137.82	164.43	1139.31	164.42
1160.33	164.35	1171.95	164.46	1204	164.25	1212.41	164.19	1243.91	163.95
1248.19	163.94	1250.02	163.97	1263.33	163.92	1280.61	163.97	1321.37	163.78
1394.62	163.44	1408.16	163.49	1512.27	164.82	1527.15	165.13	1544.99	165.6
1598.07	166.99	1632.64	167.95	1638.91	168.06	1649.53	168.38	1654.23	168.53
1701.17	170.33	1701.45	170.35	1702.55	170.39	1730.78	171.41	1732.5	171.57
1759.34	172.84	1786.27	174.33						

Manning's n Values num= 12

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	35.46	.027	36	.02	449.98	.035	602.74	.035
611.98	.043	815.48	.043	817.25	.05	1038.22	.05	1088.96	.05
1110.13	.05	1786.27	.05						

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
817.25	1038.22	32.45	39.81	46.27	.1	.3

CROSS SECTION RIVER: San Juan
REACH: Upper RS: 1221.24*

INPUT
Description:
Station Elevation Data num= 107

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	177.65	2.12	177.16	4.66	176.8	9.71	176.43	32.66	174.71
35.53	174.53	36.07	174.5	50.83	173.58	77.88	171.75	79.41	171.65
80.1	171.61	80.65	171.59	116.43	170.54	142.23	169.86	165.18	169.61
174.94	169.55	217.93	169.49	230.31	169.56	230.6	169.56	245.2	169.53
323.43	169.54	327.35	169.52	399.83	169.13	424.72	169.06	443.2	168.91
450.93	168.76	485.67	168.09	524.72	167.37	532.17	167.17	547.15	166.68
599.41	165.03	604.01	164.93	604.25	164.93	613.27	164.73	627.6	164.41
648.83	164.14	685.22	163.57	699.33	163.37	704.93	163.26	708.13	163.21
713.55	163.08	728.32	162.6	817.2	159.89	818.97	159.83	861.48	158.43
879.74	158.28	920.26	158.21	929.32	158.2	953.71	158.16	984.24	158.12
999.09	157.74	1009.37	157.39	1011.65	157.23	1021.09	155.84	1024.09	155.48
1026.31	155.21	1030.58	154.72	1033.81	154.55	1036.86	154.73	1039.37	154.95
1041.69	155.11	1054.55	157.23	1063.12	159.54	1067.22	160.73	1068.04	160.94
1070.39	161.74	1071.55	162.12	1073.38	162.4	1085.09	163.87	1089.6	164.05
1095.64	164.36	1099.07	164.44	1101.15	164.42	1111.44	164.3	1112.11	164.29
1112.18	164.29	1132.56	164.22	1141.26	164.18	1159.3	164.12	1160.74	164.12
1181.04	164.09	1192.26	164.28	1223.21	164.11	1231.33	164.06	1261.75	163.86
1265.88	163.84	1267.65	163.86	1280.5	163.81	1297.19	163.82	1336.56	163.43
1407.29	162.72	1420.36	162.67	1520.91	163.52	1535.28	163.8	1552.5	164.28
1603.76	165.65	1637.14	166.59	1643.2	166.71	1653.45	167.02	1658	167.16
1703.33	168.98	1703.59	169	1704.65	169.04	1731.92	170.09	1733.58	170.29
1759.5	171.68	1785.51	173.38						

Manning's n Values num= 12

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	35.53	.025	36.07	.02	450.93	.03	604.01	.04
613.27	.045	817.2	.04	818.97	.05	1063.12	.05	1112.11	.05
1132.56	.05	1785.51	.05						

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
818.97	1063.12	32.45	39.81	46.27	.1	.3

CROSS SECTION RIVER: San Juan
REACH: Upper RS: 1181.44*

INPUT
Description:
Station Elevation Data num= 107

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	177.62	2.13	177.14	4.67	176.85	9.73	176.45	32.73	174.6
35.61	174.39	36.15	174.35	50.93	173.26	78.05	171.19	79.57	171.07
80.27	171.03	80.82	171.01	116.67	169.97	142.53	169.26	165.52	169.09
175.31	169.07	218.39	169.08	230.8	169.2	231.09	169.2	245.71	169.19
324.11	169.22	328.04	169.2	400.67	168.81	425.61	168.7	444.13	168.51
451.88	168.39	486.69	167.83	525.82	167.23	533.29	167.04	548.3	166.6
600.67	165.12	605.28	165.05	605.52	165.04	614.56	164.89	628.92	164.65
650.19	164.4	686.66	163.91	700.8	163.73	706.41	163.63	709.61	163.58
715.05	163.44	729.85	162.93	818.91	159.88	820.69	159.82	867.38	158.16
887.44	158.01	931.93	158.01	941.89	158.01	968.67	158.02	1002.21	158.03
1018.51	157.6	1029.81	157.25	1032.3	157.13	1042.67	156.28	1045.97	156.05
1048.4	155.88	1053.1	155.56	1056.65	155.43	1059.91	155.58	1062.59	155.8
1065.08	155.94	1078.85	157.36	1088.01	159.43	1091.97	160.52	1092.76	160.71
1095.03	161.35	1096.15	161.65	1097.91	161.98	1109.2	163.63	1113.56	163.79
1119.38	164.04	1122.69	164.05	1124.7	164.03	1134.62	163.91	1135.27	163.9
1135.34	163.9	1154.99	163.86	1163.38	163.85	1180.78	163.82	1182.17	163.82
1201.74	163.84	1212.57	164.11	1242.42	163.98	1250.25	163.93	1279.59	163.76
1283.57	163.75	1285.28	163.75	1297.68	163.7	1313.77	163.66	1351.74	163.08
1419.96	162.01	1432.57	161.85	1529.54	162.23	1543.4	162.48	1560.01	162.95
1609.44	164.32	1641.64	165.23	1647.49	165.37	1657.38	165.66	1661.76	165.79
1705.48	167.63	1705.73	167.65	1706.76	167.69	1733.05	168.78	1734.65	169
1759.65	170.53	1784.74	172.43						

Manning's n Values num= 12

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	35.61	.022	36.15	.02	451.88	.025	605.28	.045
614.56	.047	818.91	.038	820.69	.05	1088.01	.05	1135.27	.05
1154.99	.05	1784.74	.05						

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
820.69	1088.01	32.45	39.81	46.27	.1 .3

CROSS SECTION RIVER: San Juan
REACH: Upper RS: 1141.636

INPUT
Description:
Station Elevation Data num= 56

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	177.58	2.13	177.12	35.68	174.25	78.21	170.62	79.74	170.49
80.44	170.44	80.99	170.42	142.83	168.67	165.87	168.56	218.85	168.68
231.57	168.84	324.79	168.91	426.5	168.34	526.92	167.09	601.93	165.21
606.55	165.16	702.27	164.1	711.1	163.95	716.55	163.81	820.63	159.88
822.41	159.81	873.28	157.89	895.13	157.74	943.61	157.81	983.63	157.88
1020.17	157.95	1070.5	156.54	1079.48	156.31	1082.96	156.43	1085.82	156.65
1103.14	157.49	1112.91	159.32	1116.72	160.32	1122.44	161.55	1133.32	163.39
1143.12	163.71	1157.8	163.52	1158.49	163.51	1177.42	163.51	1185.5	163.51
1202.26	163.51	1222.45	163.58	1232.88	163.93	1261.63	163.84	1330.35	163.51
1366.92	162.73	1444.77	161.03	1538.17	160.93	1551.52	161.15	1567.52	161.62
1665.52	164.42	1708.86	166.34	1734.19	167.46	1735.73	167.72	1759.81	169.37
1783.97	171.48								

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	35.68	.02	606.55	.05	820.63	.035	1177.42	.05

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
822.41	1112.91	36.67	37.86	38.56	.1 .3

CROSS SECTION RIVER: San Juan
REACH: Upper RS: 1103.77*

INPUT
Description:
Station Elevation Data num= 96

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	176.41	2.12	175.99	4.72	175.77	12.67	175.24	32.9	173.68
35.47	173.49	76.05	170.35	77.76	170.23	79.28	170.12	79.97	170.08
80.52	170.06	136.97	168.64	142	168.51	164.7	168.38	164.91	168.37
188.19	168.42	217.58	168.48	230.23	168.61	269.28	168.64	322.9	168.67
338.09	168.6	424.02	167.99	479.79	167.27	523.86	166.71	541.47	166.3
598.44	165.13	603.03	165.09	606.34	165.06	698.19	164.09	699.55	164.07
706.97	163.91	711.7	163.78	712.39	163.76	815.87	159.79	817.64	159.72
863.44	158	883.11	157.82	915.15	157.78	926.77	157.78	962.8	157.8
992.19	157.83	995.71	157.83	1041.02	156.62	1049.11	156.42	1053.57	156.48
1057.53	156.53	1058.55	156.56	1060.84	156.62	1064.46	156.72	1069.38	156.8
1071.93	156.86	1095.33	157.39	1106.39	157.51	1118.1	158.2	1118.63	158.23
1130.04	159.28	1133.62	160.13	1139	161.18	1149.22	162.76	1156.63	163.01
1158.44	163.07	1172.24	162.98	1172.88	162.98	1181.59	163.02	1190.68	163.04
1198.27	163.05	1214.03	163.09	1222.78	163.14	1233	163.19	1234.23	163.23
1242.81	163.54	1269.83	163.63	1274.69	163.64	1334.43	163.52	1364.16	163.03
1367.14	162.98	1368.8	162.94	1441.98	161.19	1485.11	160.95	1495.64	160.92
1529.77	160.92	1542.32	161.12	1557.36	161.52	1561.09	161.62	1572.95	161.94
1574.45	161.98	1649.48	164.39	1673.86	165.51	1689.46	166.26	1690.22	166.29
1701.82	166.88	1703.73	166.97	1714.02	167.49	1715.47	167.72	1738.11	169.34
1760.82	171.35								

Manning's n Values num= 11

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.032	35.47	.02	603.03	.045	711.7	.025	815.87	.038

817.64	.047	960.74	.035	1130.04	.05	1156.63	.05	1190.68	.05
1760.82	.05								

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
817.64	1130.04	36.67	37.86	38.56	.1	.3

CROSS SECTION RIVER: San Juan
REACH: Upper RS: 1065.90*

INPUT
Description:
Station Elevation Data num= 96

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	175.24	2.11	174.87	4.69	174.63	12.6	174.26	32.71	172.9
35.27	172.72	75.61	169.94	77.3	169.84	78.81	169.75	79.51	169.71
80.05	169.7	136.17	168.46	141.17	168.35	163.74	168.19	163.94	168.19
187.09	168.22	216.31	168.27	228.88	168.38	267.71	168.41	321.02	168.44
336.12	168.38	421.55	167.64	476.99	166.9	520.8	166.33	538.31	165.95
594.94	165.05	599.51	165.02	602.79	165	694.12	164.07	695.46	164.05
702.84	163.87	707.55	163.73	708.23	163.71	811.1	159.71	812.86	159.64
853.6	158.11	871.1	157.9	899.59	157.76	909.93	157.75	941.98	157.73
968.12	157.71	971.24	157.71	1011.55	156.7	1018.74	156.54	1025.81	156.59
1032.11	156.63	1033.72	156.65	1037.36	156.7	1043.1	156.78	1050.9	156.86
1054.95	156.92	1092.08	157.51	1109.64	157.53	1128.22	158	1129.06	158.02
1147.17	159.24	1150.52	159.94	1155.56	160.81	1165.13	162.14	1172.06	162.38
1173.75	162.44	1186.67	162.44	1187.28	162.44	1195.43	162.52	1203.94	162.56
1211.04	162.6	1225.79	162.67	1233.99	162.73	1243.56	162.8	1244.71	162.84
1252.74	163.15	1278.03	163.43	1282.58	163.47	1338.5	163.54	1366.34	163.22
1369.13	163.19	1370.68	163.15	1439.19	161.35	1479.56	160.93	1489.42	160.87
1521.37	160.91	1533.12	161.08	1547.2	161.43	1550.69	161.51	1561.79	161.78
1563.19	161.82	1633.43	164.36	1656.26	165.45	1670.87	166.21	1671.57	166.25
1682.43	166.87	1684.22	166.97	1693.86	167.52	1695.21	167.73	1716.4	169.32
1737.66	171.22								

Manning's n Values num= 11

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.03	35.27	.02	599.51	.04	707.55	.03	811.1	.04
812.86	.045	965.99	.035	1147.17	.05	1172.06	.05	1203.94	.05
1737.66	.05								

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
812.86	1147.17	36.67	37.86	38.56	.1	.3

CROSS SECTION RIVER: San Juan
REACH: Upper RS: 1028.04*

INPUT
Description:
Station Elevation Data num= 96

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	174.08	2.09	173.74	4.66	173.5	12.52	173.28	32.52	172.11
35.06	171.96	75.16	169.53	76.85	169.45	78.35	169.38	79.04	169.35
79.58	169.34	135.37	168.29	140.34	168.19	162.78	168.01	162.98	168
185.99	168.03	215.04	168.07	227.54	168.15	266.14	168.17	319.13	168.2
334.14	168.16	419.07	167.28	474.19	166.53	517.74	165.95	535.15	165.6
591.45	164.97	595.98	164.95	599.25	164.94	690.04	164.06	691.38	164.04
698.71	163.83	703.39	163.68	704.07	163.66	806.34	159.62	808.08	159.55
843.76	158.22	859.08	157.98	884.03	157.75	893.08	157.72	921.15	157.65
944.04	157.59	946.78	157.59	982.07	156.78	988.37	156.65	998.06	156.69
1006.68	156.73	1008.88	156.75	1013.87	156.79	1021.73	156.85	1032.43	156.91
1037.97	156.98	1088.84	157.62	1112.88	157.55	1138.34	157.8	1139.49	157.81
1164.3	159.2	1167.42	159.75	1172.11	160.44	1181.03	161.51	1187.49	161.74
1189.07	161.8	1201.11	161.9	1201.67	161.91	1209.27	162.03	1217.19	162.09
1223.82	162.14	1237.56	162.25	1245.2	162.32	1254.11	162.42	1255.18	162.45
1262.66	162.76	1286.24	163.22	1290.47	163.3	1342.58	163.55	1368.51	163.41
1371.12	163.4	1372.57	163.36	1436.4	161.51	1474.02	160.9	1483.21	160.81
1512.98	160.9	1523.92	161.05	1537.04	161.33	1540.29	161.4	1550.64	161.62
1551.94	161.65	1617.39	164.32	1638.66	165.39	1652.27	166.16	1652.93	166.2
1663.05	166.86	1664.71	166.97	1673.69	167.55	1674.96	167.73	1694.7	169.29
1714.51	171.09								

Manning's n Values num= 11

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.027	35.06	.02	595.98	.035	703.39	.035	806.34	.043
808.08	.043	971.25	.035	1164.3	.05	1187.49	.05	1217.19	.05
1714.51	.05								

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
808.08	1164.3	36.67	37.86	38.56	.1	.3

CROSS SECTION RIVER: San Juan
REACH: Upper RS: 990.179*

INPUT
Description:
Station Elevation Data num= 96

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	172.91	2.08	172.62	4.64	172.37	12.45	172.3	32.32	171.32
34.85	171.19	74.72	169.12	76.39	169.06	77.89	169	78.57	168.98
79.11	168.97	134.57	168.11	139.51	168.03	161.81	167.82	162.02	167.82
184.89	167.83	213.77	167.86	226.19	167.92	264.57	167.94	317.25	167.96
332.17	167.93	416.59	166.93	471.38	166.15	514.68	165.57	531.98	165.26
587.95	164.89	592.46	164.89	595.71	164.88	685.96	164.05	687.29	164.03
694.59	163.79	699.23	163.63	699.91	163.6	801.57	159.53	803.31	159.46
833.92	158.33	847.07	158.07	868.47	157.74	876.24	157.7	900.32	157.57
919.96	157.47	922.31	157.47	952.6	156.86	958	156.76	970.31	156.8
981.26	156.83	984.05	156.84	990.39	156.87	1000.37	156.92	1013.96	156.96
1020.99	157.04	1085.59	157.74	1116.13	157.56	1148.46	157.6	1149.93	157.61

1181.43	159.16	1184.33	159.56	1188.67	160.07	1196.94	160.88	1202.93	161.11
1204.39	161.16	1215.54	161.36	1216.07	161.37	1223.1	161.54	1230.45	161.62
1236.59	161.69	1249.33	161.83	1256.41	161.91	1264.67	162.03	1265.66	162.05
1272.59	162.37	1294.44	163.02	1298.37	163.13	1346.66	163.56	1370.69	163.61
1373.1	163.61	1374.45	163.57	1433.6	161.67	1468.47	160.87	1476.99	160.76
1504.58	160.89	1514.72	161.02	1526.88	161.24	1529.9	161.29	1539.48	161.46
1540.69	161.49	1601.35	164.29	1621.06	165.34	1633.67	166.11	1634.28	166.16
1643.66	166.85	1645.2	166.97	1653.53	167.58	1654.7	167.73	1673	169.27
1691.36	170.96								

Manning's n Values num= 11

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.025	34.85	.02	592.46	.03	699.23	.04	801.57	.045
803.31	.04	976.51	.035	1181.43	.05	1202.93	.05	1230.45	.05
1691.36	.05								

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
803.31	1181.43	36.67	37.86	38.56	.1 .3

CROSS SECTION RIVER: San Juan
REACH: Upper RS: 952.315*

INPUT
Description:
Station Elevation Data num= 96

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	171.74	2.07	171.49	4.61	171.24	12.37	171.33	32.13	170.54
34.64	170.43	74.27	168.7	75.94	168.67	77.43	168.63	78.1	168.62
78.64	168.61	133.77	167.94	138.68	167.86	160.85	167.64	161.05	167.63
183.79	167.64	212.5	167.66	224.85	167.69	262.99	167.71	315.36	167.72
330.19	167.71	414.12	166.58	468.58	165.78	511.62	165.18	528.82	164.91
584.46	164.81	588.94	164.82	592.17	164.82	681.88	164.03	683.21	164.02
690.46	163.76	695.08	163.58	695.75	163.55	796.81	159.45	798.53	159.38
824.08	158.44	835.05	158.15	852.92	157.72	859.4	157.67	879.5	157.5
895.89	157.36	897.85	157.35	923.12	156.94	927.63	156.88	942.55	156.9
955.83	156.93	959.22	156.94	966.9	156.96	979.01	156.99	995.48	157.02
1004.01	157.1	1082.34	157.86	1119.38	157.58	1158.58	157.4	1160.36	157.4
1198.56	159.12	1201.23	159.37	1205.23	159.71	1212.84	160.26	1218.36	160.47
1219.7	160.53	1229.98	160.82	1230.46	160.84	1236.94	161.04	1243.71	161.14
1249.36	161.23	1261.09	161.4	1267.61	161.51	1275.22	161.64	1276.13	161.66
1282.52	161.98	1302.64	162.81	1306.26	162.96	1350.74	163.58	1372.87	163.8
1375.09	163.82	1376.33	163.78	1430.81	161.83	1462.93	160.85	1470.77	160.71
1496.18	160.88	1505.52	160.99	1516.72	161.14	1519.5	161.18	1528.33	161.31
1529.44	161.33	1585.31	164.26	1603.46	165.28	1615.08	166.07	1615.64	166.11
1624.28	166.84	1625.7	166.97	1633.36	167.61	1634.44	167.73	1651.29	169.24
1668.2	170.83								

Manning's n Values num= 11

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.022	34.64	.02	588.94	.025	695.08	.045	796.81	.047
798.53	.038	981.77	.035	1198.56	.05	1218.36	.05	1243.71	.05
1668.2	.05								

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
798.53	1198.56	36.67	37.86	38.56	.1 .3

CROSS SECTION RIVER: San Juan
REACH: Upper RS: 914.451

INPUT
Description:
Station Elevation Data num= 45

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	170.57	4.58	170.11	12.3	170.35	31.94	169.75	73.83	168.29
132.97	167.76	159.89	167.45	182.69	167.44	261.42	167.48	328.22	167.49
465.78	165.41	525.66	164.56	588.63	164.76	679.12	164.01	690.92	163.53
793.76	159.29	837.36	157.71	871.81	157.24	897.26	156.99	914.8	157.01
934.39	157.03	943.42	157.04	977.01	157.07	987.03	157.16	1079.1	157.98
1168.7	157.2	1170.79	157.19	1215.69	159.08	1233.79	159.84	1250.78	160.55
1278.82	161.1	1286.61	161.27	1314.15	162.79	1375.05	163.99	1377.08	164.03
1457.38	160.82	1464.55	160.66	1509.1	161.07	1517.17	161.15	1518.19	161.17
1585.86	165.22	1596.48	166.02	1604.89	166.83	1606.19	166.97	1645.05	170.7

Manning's n Values num= 4

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.02	690.92	.05	987.03	.035	1233.79	.05

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
793.76	1215.69	48.05	43.73	44.13	.1 .3

CROSS SECTION RIVER: San Juan
REACH: Upper RS: 870.723*

INPUT
Description:
Station Elevation Data num= 83

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	170.8	4.75	170.19	6.57	170.14	9.82	170.12	12.76	170.19
33.13	169.67	64.92	168.77	75.34	168.46	76.59	168.43	84.47	168.42
90.66	168.37	99.45	168.32	137.94	167.98	165.87	167.68	179.14	167.65
189.52	167.58	199.11	167.53	239.93	167.38	271.19	167.29	307.05	167.17
340.49	167.05	377.37	166.48	429.35	165.86	483.19	165.2	524.55	164.73
545.31	164.49	606.72	164.61	610.63	164.61	620.18	164.55	704.51	163.9
706.98	163.82	716.75	163.51	726.45	163.21	728.18	163.14	778.76	161.12
788.35	160.54	811.13	159.49	823.43	158.98	842.16	158.28	865.18	157.51
886.65	157.19	892.83	157.12	898.17	157.06	922.54	156.85	939.94	156.91
959.38	156.97	968.34	157	985.73	157.05	1001.67	157.1	1006.2	157.15
1011.61	157.18	1102.96	157.76	1113.05	157.68	1167.02	157.33	1191.86	157.17

1193.93	157.16	1225.77	158.26	1226.21	158.28	1238.48	158.81	1253.79	159.48
1268.15	160.09	1283.58	160.43	1291.86	160.61	1298.45	160.77	1321.74	162.06
1324.34	162.11	1357.38	162.79	1373.23	163.18	1374.95	163.22	1393.32	162.62
1441.94	161.27	1442.84	161.24	1448.91	161.16	1486.58	161.78	1493.4	161.9
1494.26	161.92	1546.44	165.29	1551.48	165.68	1560.46	166.5	1567.57	167.29
1568.67	167.43	1576.92	168.34	1601.53	170.87				

Manning's n Values num= 9

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.02	716.75	.044	823.43	.038	976.31	.047	1013.55	.035
1238.48	.05	1253.79	.05	1283.58	.05	1601.53	.05		

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
823.43	1238.48	48.05	43.73	44.13	.1 .3

CROSS SECTION RIVER: San Juan
REACH: Upper RS: 826.996*

INPUT
Description:
Station Elevation Data num= 83

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	171.02	4.92	170.26	6.81	170.11	10.18	169.98	13.22	170.02
34.33	169.6	67.26	168.85	78.06	168.59	79.35	168.57	87.52	168.61
93.93	168.58	103.04	168.54	142.91	168.2	171.84	167.9	185.59	167.85
196.35	167.73	206.29	167.62	248.57	167.29	280.96	167.09	318.12	166.85
352.76	166.6	390.97	166	444.82	165.53	500.6	165	543.45	164.61
564.96	164.42	628.58	164.46	632.64	164.47	642.53	164.41	729.89	163.79
732.45	163.72	742.58	163.5	752.63	163.27	754.42	163.21	806.82	161.17
816.76	160.4	840.36	159.2	853.1	158.66	871	157.98	893	157.3
913.52	156.98	919.43	156.93	924.53	156.88	947.82	156.71	965.09	156.8
984.37	156.91	993.26	156.96	1010.51	157.05	1026.32	157.14	1030.82	157.19
1036.19	157.21	1126.82	157.53	1136.83	157.46	1190.38	157.24	1215.02	157.14
1217.08	157.13	1248.66	157.98	1249.09	158	1261.27	158.55	1273.78	159.11
1285.53	159.64	1298.14	159.96	1304.9	160.13	1310.29	160.27	1329.32	161.33
1331.45	161.38	1358.46	161.97	1371.41	162.36	1372.81	162.4	1387.83	162.08
1427.57	161.67	1428.31	161.66	1433.26	161.66	1464.05	162.5	1469.63	162.65
1470.34	162.68	1512.98	165.72	1517.1	166.14	1524.44	166.98	1530.25	167.75
1531.15	167.88	1537.89	168.78	1558.01	171.04				

Manning's n Values num= 9

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.02	742.58	.038	853.1	.041	1003.45	.044	1040.07	.035
1261.27	.05	1273.78	.05	1298.14	.05	1558.01	.05		

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
853.1	1261.27	48.05	43.73	44.13	.1 .3

CROSS SECTION RIVER: San Juan
REACH: Upper RS: 783.268*

INPUT
Description:
Station Elevation Data num= 83

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	171.25	5.09	170.34	7.05	170.08	10.53	169.83	13.68	169.86
35.52	169.52	69.6	168.94	80.77	168.71	82.11	168.72	90.56	168.81
97.2	168.78	106.62	168.76	147.88	168.41	177.82	168.13	192.05	168.05
203.18	167.87	213.46	167.71	257.22	167.21	290.74	166.9	329.18	166.53
365.03	166.16	404.56	165.52	460.29	165.2	518.01	164.79	562.36	164.5
584.61	164.35	650.44	164.32	654.64	164.32	664.87	164.28	755.28	163.68
757.93	163.63	768.4	163.48	778.81	163.33	780.66	163.27	834.89	161.22
845.16	160.26	869.59	158.9	882.78	158.35	899.85	157.67	920.83	157.1
940.39	156.77	946.03	156.73	950.89	156.69	973.1	156.56	990.23	156.7
1009.36	156.85	1018.18	156.92	1035.3	157.05	1050.98	157.17	1055.44	157.22
1060.77	157.23	1150.68	157.31	1160.61	157.24	1213.73	157.15	1238.18	157.11
1240.22	157.1	1271.56	157.7	1271.98	157.72	1284.07	158.28	1293.78	158.75
1302.9	159.18	1312.69	159.49	1317.95	159.64	1322.13	159.77	1336.91	160.59
1338.56	160.64	1359.53	161.14	1369.59	161.55	1370.68	161.59	1382.34	161.54
1413.2	162.07	1413.77	162.08	1417.62	162.16	1441.53	163.21	1445.86	163.41
1446.41	163.43	1479.53	166.15	1482.72	166.59	1488.42	167.46	1492.94	168.22
1493.64	168.34	1498.87	169.22	1514.49	171.21				

Manning's n Values num= 9

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.02	768.4	.032	882.78	.044	1030.58	.041	1066.59	.035
1284.07	.05	1293.78	.05	1312.69	.05	1514.49	.05		

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
882.78	1284.07	48.05	43.73	44.13	.1 .3

CROSS SECTION RIVER: San Juan
REACH: Upper RS: 739.541*

INPUT
Description:
Station Elevation Data num= 83

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	171.47	5.26	170.42	7.28	170.06	10.89	169.69	14.14	169.69
36.72	169.44	71.94	169.02	83.49	168.84	84.87	168.86	93.61	169
100.46	168.99	110.21	168.99	152.85	168.63	183.8	168.36	198.5	168.26
210.01	168.01	220.64	167.79	265.86	167.12	300.51	166.7	340.25	166.22
377.3	165.71	418.16	165.05	475.76	164.86	535.43	164.59	581.26	164.38
604.26	164.28	672.31	164.18	676.65	164.18	687.22	164.14	780.67	163.57
783.4	163.53	794.23	163.47	804.98	163.4	806.9	163.34	862.95	161.28
873.57	160.11	898.82	158.61	912.45	158.03	928.69	157.37	948.65	156.9
967.26	156.56	972.62	156.54	977.25	156.51	998.38	156.42	1015.37	156.6
1034.35	156.79	1043.1	156.88	1060.08	157.05	1075.64	157.21	1080.06	157.26

1085.34	157.25	1174.54	157.08	1184.39	157.03	1237.09	157.06	1261.34	157.07
1263.36	157.08	1294.45	157.42	1294.87	157.44	1306.86	158.02	1313.78	158.38
1320.27	158.73	1327.25	159.01	1330.99	159.15	1333.97	159.27	1344.49	159.86
1345.67	159.91	1360.61	160.32	1367.77	160.73	1368.55	160.78	1376.85	161
1398.83	162.48	1399.24	162.5	1401.98	162.66	1419.01	163.93	1422.09	164.16
1422.48	164.19	1446.07	166.57	1448.35	167.05	1452.41	167.94	1455.62	168.68
1456.12	168.8	1459.84	169.65	1470.97	171.38				

Manning's n Values num= 9

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.02	794.23	.026	912.45	.047	1057.72	.038	1093.11	.035
1306.86	.05	1313.78	.05	1327.25	.05	1470.97	.05		

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
912.45	1306.86	48.05	43.73	44.13	.1 .3

CROSS SECTION RIVER: San Juan
REACH: Upper RS: 695.814

INPUT
Description:
Station Elevation Data num= 43

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	171.7	7.52	170.03	11.24	169.55	74.28	169.11	86.2	168.97
96.65	169.2	103.73	169.19	113.79	169.21	204.96	168.46	227.81	167.88
274.51	167.04	351.31	165.9	431.76	164.57	491.23	164.53	600.16	164.27
694.17	164.04	709.57	164.01	808.88	163.44	831.16	163.46	833.14	163.4
891.01	161.33	901.98	159.97	928.05	158.32	942.12	157.72	957.53	157.07
994.13	156.35	999.22	156.34	1023.66	156.28	1084.86	157.05	1104.68	157.3
1208.17	156.81	1260.44	156.97	1317.34	157.14	1317.76	157.16	1329.65	157.75
1341.8	158.54	1352.78	159.17	1361.68	159.49	1371.36	160.46	1384.46	162.88
1412.61	167	1420.82	170.09	1427.45	171.55				

Manning's n Values num= 4

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.02	942.12	.05	1084.86	.035	1341.8	.05

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
942.12	1329.65	43.52	42.21	40.09	.1 .3

CROSS SECTION RIVER: San Juan
REACH: Upper RS: 653.607*

INPUT
Description:
Station Elevation Data num= 97

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	171.53	7.23	170.12	10.8	169.69	20.97	169.52	46.91	169.41
71.4	169.13	82.85	168.96	92.9	169.08	99.7	169.04	101.99	169.03
102.8	169.03	109.37	168.96	112.88	168.89	166.05	167.92	169.03	167.88
183.88	167.7	197	167.64	218.97	167.22	236.86	167	254.12	166.66
263.85	166.52	337.67	165.67	415	164.67	472.16	164.69	532.21	164.62
576.86	164.55	589.17	164.53	597.73	164.57	607.87	164.59	659.13	164.59
667.22	164.59	682.02	164.58	682.32	164.58	723.74	163.83	726.03	163.81
745.64	162.62	748.18	162.47	754.74	162.39	768.78	162.18	777.48	162.14
778.65	162.15	781.93	162.15	787.34	162.15	798.89	162.13	799.62	162.11
800.79	162.08	855.44	160.33	856.42	160.29	866.92	159.17	866.96	159.17
892.02	157.37	892.41	157.35	905.54	156.66	919.29	155.96	919.59	155.95
951.94	155.26	956.48	155.23	960.33	155.21	978.29	155.16	1004.26	155.48
1033.05	155.84	1050.79	156.06	1143.4	155.78	1162.12	155.85	1190.17	155.92
1216.15	155.99	1241.09	156.15	1241.47	156.17	1252.11	156.68	1255.27	156.84
1269.22	157.55	1276.94	157.91	1284.68	158.39	1292.51	158.79	1297.21	159.02
1299.65	159.23	1310.85	159.87	1321.05	160.94	1323.84	161.24	1329.3	161.82
1342.24	162.91	1352.87	163.74	1356.63	164.02	1361.24	164.22	1367.29	164.84
1368.94	165.04	1372.09	165.82	1375.03	166.76	1378.36	168.18	1378.48	168.23
1380.5	168.87	1382.19	169.25	1382.68	169.38	1383.69	169.62	1388.94	171.17
1389.48	171.31	1389.84	171.4						

Manning's n Values num= 8

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.02	905.54	.05	976.78	.05	1033.19	.038	1252.11	.047
1269.22	.047	1378.36	.038	1389.84	.05				

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
905.54	1252.11	43.52	42.21	40.09	.1 .3

CROSS SECTION RIVER: San Juan
REACH: Upper RS: 611.400*

INPUT
Description:
Station Elevation Data num= 97

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	171.36	6.94	170.2	10.37	169.84	20.12	169.57	45.01	169.54
68.51	169.15	79.51	168.94	89.15	168.97	95.68	168.88	97.87	168.86
98.65	168.85	104.95	168.71	108.32	168.6	159.34	167.11	162.2	167.07
176.45	166.82	189.05	166.82	210.12	166.57	227.29	166.45	243.85	166.09
253.2	166	324.03	165.44	398.24	164.78	453.09	164.85	510.71	164.86
553.56	164.84	565.37	164.83	573.59	164.91	583.32	164.99	632.51	165.13
640.27	165.14	654.47	165.16	654.76	165.16	694.51	163.9	696.71	163.88
715.52	161.6	717.96	161.33	724.25	161.2	737.73	160.86	746.07	160.85
747.2	160.85	750.35	160.85	755.53	160.84	766.62	160.8	767.32	160.79
768.45	160.76	820.89	159.28	821.83	159.26	831.91	158.37	831.94	158.37
855.99	156.42	856.37	156.4	868.97	155.59	881.05	154.85	881.31	154.84
909.75	154.16	913.75	154.12	917.13	154.09	932.91	154.03	955.84	154.31
981.24	154.62	996.9	154.82	1078.63	154.74	1095.14	154.83	1119.9	154.88
1142.83	154.92	1164.84	155.16	1165.17	155.17	1174.56	155.61	1178.65	155.79
1196.63	156.57	1206.59	156.97	1216.58	157.62	1226.67	158.2	1232.75	158.55

1235.89	158.79	1250.33	159.28	1263.5	160.09	1267.1	160.31	1274.13	160.75
1290.83	161.59	1304.54	162.16	1309.38	162.31	1315.34	162.24	1323.14	162.85
1325.27	163.07	1329.33	163.8	1333.12	164.9	1337.42	166.84	1337.58	166.91
1340.18	167.64	1342.36	168.14	1343	168.33	1344.3	168.66	1351.07	170.93
1351.76	171.13	1352.23	171.24						

Manning's n Values num= 8

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.02	868.97	.05	931.78	.05	981.53	.041	1174.56	.044
1196.63	.044	1337.42	.041	1352.23	.05				

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
868.97	1174.56	43.52	42.21	40.09	.1 .3

CROSS SECTION RIVER: San Juan
REACH: Upper RS: 569.194*

INPUT
Description:
Station Elevation Data num= 97

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	171.19	6.64	170.29	9.93	169.98	19.27	169.62	43.12	169.66
65.63	169.18	76.16	168.93	85.39	168.85	91.65	168.73	93.75	168.69
94.49	168.68	100.54	168.45	103.76	168.32	152.63	166.31	155.37	166.25
169.02	165.95	181.09	165.99	201.28	165.91	217.72	165.9	233.59	165.53
242.54	165.48	310.39	165.21	381.47	164.88	434.02	165.01	489.21	165.11
530.26	165.12	541.57	165.12	549.45	165.26	558.77	165.4	605.89	165.66
613.32	165.69	626.93	165.73	627.2	165.73	665.28	163.96	667.38	163.94
685.4	160.59	687.74	160.19	693.77	160.01	706.67	159.54	714.67	159.55
715.75	159.56	718.77	159.56	723.73	159.54	734.36	159.47	735.03	159.46
736.1	159.44	786.33	158.24	787.23	158.22	796.89	157.57	796.93	157.57
819.96	155.47	820.32	155.45	832.39	154.53	842.81	153.74	843.04	153.73
867.57	153.07	871.01	153.01	873.92	152.96	887.54	152.91	907.41	153.14
929.44	153.41	943	153.57	1013.85	153.71	1028.17	153.81	1049.64	153.83
1069.51	153.85	1088.59	154.17	1088.88	154.18	1097.02	154.53	1102.02	154.74
1124.05	155.58	1136.25	156.03	1148.48	156.84	1160.84	157.62	1168.28	158.08
1172.13	158.36	1189.82	158.69	1205.94	159.23	1210.35	159.39	1218.97	159.69
1239.42	160.27	1256.21	160.57	1262.14	160.61	1269.44	160.26	1279	160.87
1281.6	161.11	1286.57	161.79	1291.21	163.04	1296.48	165.5	1296.68	165.59
1299.86	166.42	1302.54	167.03	1303.31	167.27	1304.91	167.69	1313.19	170.69
1314.04	170.95	1314.61	171.09						

Manning's n Values num= 8

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.02	832.39	.05	886.78	.05	929.86	.044	1097.02	.041
1124.05	.041	1296.48	.044	1314.61	.05				

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
832.39	1097.02	43.52	42.21	40.09	.1 .3

CROSS SECTION RIVER: San Juan
REACH: Upper RS: 526.987*

INPUT
Description:
Station Elevation Data num= 97

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	171.02	6.35	170.37	9.49	170.12	18.43	169.67	41.22	169.79
62.74	169.2	72.81	168.91	81.64	168.73	87.62	168.58	89.63	168.53
90.34	168.51	96.12	168.2	99.2	168.03	145.93	165.5	148.55	165.44
161.6	165.07	173.13	165.17	192.43	165.25	208.16	165.35	223.32	164.96
231.88	164.96	296.75	164.99	364.71	164.98	414.95	165.17	467.72	165.35
506.96	165.4	517.78	165.42	525.3	165.61	534.21	165.8	579.26	166.2
586.37	166.23	599.38	166.3	599.64	166.31	636.04	164.03	638.06	164.01
655.29	159.57	657.52	159.04	663.28	158.83	675.62	158.23	683.27	158.26
684.3	158.26	687.18	158.26	691.93	158.23	702.09	158.15	702.73	158.14
703.76	158.12	751.78	157.2	752.64	157.18	761.88	156.77	761.91	156.77
783.93	154.53	784.28	154.49	795.82	153.46	804.58	152.63	804.76	152.61
825.38	151.97	828.27	151.9	830.72	151.84	842.16	151.78	858.99	151.98
877.63	152.2	889.11	152.33	949.08	152.68	961.2	152.78	979.37	152.78
996.19	152.78	1012.34	153.17	1012.58	153.18	1019.47	153.46	1025.4	153.69
1051.47	154.6	1065.9	155.09	1080.38	156.07	1095.01	157.03	1103.82	157.61
1108.37	157.92	1129.31	158.1	1148.39	158.38	1153.61	158.46	1163.8	158.63
1188.01	158.95	1207.88	158.99	1214.9	158.9	1223.53	158.28	1234.85	158.88
1237.93	159.15	1243.81	159.77	1249.31	161.17	1255.54	164.16	1255.77	164.27
1259.54	165.19	1262.71	165.93	1263.63	166.22	1265.51	166.73	1275.32	170.45
1276.33	170.77	1277	170.93						

Manning's n Values num= 8

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.02	795.82	.05	841.79	.05	878.2	.047	1019.47	.038
1051.47	.038	1255.54	.047	1277	.05				

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
795.82	1019.47	43.52	42.21	40.09	.1 .3

CROSS SECTION RIVER: San Juan
REACH: Upper RS: 484.781

INPUT
Description: Manual Modification of Manning's N Values
Station Elevation Data num= 59

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	170.85	17.58	169.72	39.33	169.91	85.51	168.36	86.19	168.34
94.64	167.74	139.22	164.7	141.72	164.62	154.17	164.2	198.59	164.8
213.06	164.4	446.22	165.59	493.98	165.71	501.16	165.96	509.66	166.2
552.64	166.73	572.08	166.88	606.81	164.1	608.73	164.07	625.17	158.56
627.3	157.9	632.8	157.64	644.57	156.91	652.85	156.97	655.6	156.97

660.13	156.93	670.43	156.81	717.23	156.16	726.86	155.97	748.23	153.54
759.24	152.4	766.49	151.5	787.52	150.72	796.79	150.66	810.56	150.81
894.23	151.76	922.87	151.71	941.93	152.39	948.77	152.64	995.56	154.15
1029.18	156.45	1044.61	157.49	1090.83	157.52	1096.86	157.54	1136.6	157.63
1159.55	157.4	1167.66	157.2	1177.63	156.3	1190.7	156.89	1201.05	157.75
1207.4	159.31	1214.6	162.82	1214.87	162.95	1222.88	164.82	1223.94	165.17
1226.12	165.76	1237.45	170.21	1238.61	170.59	1239.39	170.78		

Manning's n Values num= 4

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.02	796.79	.05	941.93	.035	1214.6	.05

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
759.24	941.93	43.18	43.96	42.55	.1 .3

CROSS SECTION RIVER: San Juan
REACH: Upper RS: 440.825*

INPUT
Description:
Station Elevation Data num= 92

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	170.09	14.82	169.21	30.72	169.37	33.15	169.38	72.07	168.1
72.64	168.09	79.76	167.6	117.33	165.13	119.44	165.06	129.93	164.71
167.37	165.15	171.54	165.04	179.57	164.81	338.08	165.09	340.44	165.08
343.52	165.05	376.07	164.85	416.32	164.51	422.37	164.64	423.36	164.66
429.54	164.76	458.18	164.8	465.76	164.84	482.14	164.85	511.42	162.42
513.03	162.38	526.89	157.88	528.68	157.34	533.32	157.1	543.24	156.45
550.22	156.45	552.53	156.43	556.35	156.37	565.03	156.22	604.48	155.42
612.59	155.21	630.6	153.15	639.88	152.17	642.02	151.91	642.1	151.9
647.52	151.36	669.66	150.57	673.21	150.53	678.18	150.44	679.12	150.43
679.42	150.42	683.89	150.49	694.92	150.66	722.98	151.08	730.16	151.13
738.72	151.22	768.78	151.45	789.11	151.61	821.35	151.56	835.49	151.92
842.81	152.17	848.92	152.42	890.71	153.94	890.94	153.95	920.74	156
926.58	156.39	934.52	156.94	968.46	157.24	975.8	157.29	981.19	157.33
984.95	157.36	987.02	157.37	1005.18	157.05	1006.37	157.1	1016.68	157.37
1018.77	157.4	1037.18	157.68	1044.42	157.7	1050.52	157.35	1053.33	157.28
1065	158.39	1074.24	159.58	1079.92	161.13	1082.78	162.53	1086.35	164.05
1086.59	164.15	1087.28	164.29	1091.44	165.02	1093.74	165.53	1094.69	165.82
1095.28	165.97	1096.64	166.3	1101.41	168	1106.76	170.08	1106.82	170.1
1107.79	170.43	1108.49	170.61						

Manning's n Values num= 8

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.026	639.88	.047	681.59	.047	766.25	.035	842.81	.038
1018.77	.05	1086.35	.05	1108.49	.05				

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
639.88	842.81	43.18	43.96	42.55	.1 .3

CROSS SECTION RIVER: San Juan
REACH: Upper RS: 396.869*

INPUT
Description:
Station Elevation Data num= 92

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	169.34	12.05	168.7	24.99	168.85	26.96	168.86	58.62	167.85
59.09	167.83	64.88	167.46	95.45	165.55	97.16	165.5	105.7	165.23
136.15	165.51	139.54	165.42	146.07	165.21	275.02	164.82	276.94	164.78
279.44	164.71	305.92	164.12	338.67	163.3	343.59	163.32	344.39	163.32
349.42	163.32	372.71	162.99	378.88	162.95	392.21	162.81	416.02	160.74
417.34	160.7	428.61	157.2	430.07	156.78	433.84	156.56	441.91	155.98
447.58	155.92	449.47	155.89	452.58	155.81	459.64	155.62	491.72	154.69
498.32	154.46	512.98	152.75	520.52	151.94	522.77	151.68	522.86	151.67
528.54	151.21	551.8	150.43	555.53	150.36	560.75	150.22	561.74	150.19
562.05	150.19	567.02	150.28	579.29	150.5	610.47	151.08	618.46	151.1
627.98	151.18	661.4	151.34	683.99	151.46	719.83	151.42	735.55	151.68
743.69	151.96	749.06	152.2	785.86	153.72	786.06	153.74	812.29	155.55
817.44	155.9	824.43	156.39	854.31	156.96	860.77	157.05	865.51	157.13
868.82	157.18	870.65	157.19	886.63	156.5	887.68	156.59	896.76	157.11
898.6	157.2	914.81	157.97	921.18	158.2	926.56	158.13	929.02	158.26
939.3	159.88	947.44	161.4	952.43	162.95	954.95	164.2	958.09	165.28
958.31	165.35	958.92	165.44	962.58	165.81	964.6	166.23	965.44	166.47
965.96	166.59	967.15	166.84	971.36	168.14	976.06	169.95	976.12	169.96
976.97	170.27	977.59	170.44						

Manning's n Values num= 8

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.032	520.52	.044	566.39	.044	659.5	.035	743.69	.041
898.6	.05	958.09	.05	977.59	.05				

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
520.52	743.69	43.18	43.96	42.55	.1 .3

CROSS SECTION RIVER: San Juan
REACH: Upper RS: 352.914*

INPUT
Description:
Station Elevation Data num= 92

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	168.58	9.29	168.19	19.26	168.33	20.78	168.33	45.18	167.59
45.54	167.58	50.01	167.32	73.56	165.98	74.88	165.94	81.46	165.74
104.93	165.86	107.55	165.8	112.58	165.62	211.95	164.55	213.44	164.48
215.36	164.37	235.77	163.38	261.01	162.1	264.8	162	265.42	161.98
269.29	161.88	287.25	161.17	292	161.06	302.27	160.78	320.63	159.06
321.64	159.01	330.33	156.52	331.45	156.22	334.36	156.02	340.58	155.52

344.95	155.4	346.4	155.35	348.8	155.26	354.24	155.03	378.97	153.95
384.06	153.7	395.35	152.36	401.17	151.71	403.52	151.44	403.61	151.44
409.57	151.07	433.94	150.28	437.85	150.2	443.32	149.99	444.36	149.96
444.69	149.95	450.15	150.07	463.65	150.35	497.97	151.07	506.75	151.07
517.23	151.14	554.01	151.24	578.87	151.31	618.32	151.27	635.61	151.44
644.56	151.74	649.21	151.98	681	153.51	681.18	153.52	703.85	155.1
708.3	155.4	714.33	155.84	740.15	156.68	745.74	156.82	749.84	156.92
752.7	156.99	754.27	157.01	768.09	155.94	768.99	156.08	776.84	156.85
778.43	156.99	792.43	158.25	797.94	158.7	802.59	158.9	804.72	159.24
813.6	161.38	820.63	163.23	824.95	164.77	827.12	165.86	829.84	166.5
830.02	166.55	830.55	166.59	833.72	166.61	835.47	166.94	836.19	167.11
836.63	167.21	837.67	167.39	841.3	168.27	845.37	169.81	845.41	169.83
846.15	170.1	846.68	170.28						

Manning's n Values num= 8

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.038	401.17	.041	451.19	.041	552.74	.035	644.56	.044
778.43	.05	829.84	.05	846.68	.05				

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
401.17	644.56	43.18	43.96	42.55	.1	.3

CROSS SECTION RIVER: San Juan
REACH: Upper RS: 308.958*

INPUT
Description:
Station Elevation Data num= 92

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	167.83	6.53	167.68	13.53	167.81	14.6	167.8	31.74	167.33
31.99	167.32	35.13	167.17	51.67	166.41	52.6	166.38	57.22	166.25
73.71	166.22	75.55	166.17	79.08	166.02	148.89	164.28	149.93	164.18
151.29	164.03	165.62	162.64	183.35	160.9	186.02	160.68	186.45	160.65
189.17	160.44	201.78	159.36	205.12	159.17	212.34	158.74	225.23	157.38
225.94	157.33	232.05	155.84	232.84	155.66	234.88	155.48	239.25	155.06
242.32	154.88	243.34	154.81	245.02	154.7	248.84	154.43	266.22	153.21
269.79	152.95	277.72	151.96	281.81	151.48	284.27	151.21	284.37	151.2
290.59	150.92	316.08	150.13	320.17	150.03	325.89	149.77	326.97	149.72
327.32	149.72	333.28	149.85	348.01	150.19	385.46	151.06	395.05	151.03
406.49	151.11	446.62	151.13	473.76	151.16	516.8	151.12	535.67	151.2
545.44	151.53	549.36	151.76	576.15	153.3	576.3	153.31	595.41	154.64
599.15	154.91	604.24	155.29	626	156.41	630.71	156.58	634.16	156.71
636.57	156.81	637.9	156.83	649.54	155.39	650.31	155.58	656.92	156.59
658.26	156.79	670.06	158.53	674.71	159.2	678.62	159.67	680.42	160.22
687.9	162.87	693.83	165.05	697.46	166.59	699.3	167.53	701.59	167.73
701.74	167.75	702.19	167.75	704.85	167.4	706.33	167.64	706.93	167.76
707.31	167.83	708.18	167.93	711.25	168.41	714.67	169.68	714.71	169.69
715.34	169.94	715.78	170.11						

Manning's n Values num= 8

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.044	281.81	.038	336	.038	445.99	.035	545.44	.047
658.26	.05	701.59	.05	715.78	.05				

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
281.81	545.44	43.18	43.96	42.55	.1	.3

CROSS SECTION RIVER: San Juan
REACH: Upper RS: 265.003

INPUT
Description: Manual Modification of Manning's N Values
Station Elevation Data num= 38

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	167.07	7.8	167.29	43.55	166.55	85.83	164.01	86.43	163.88
87.21	163.69	107.48	159.31	116.32	157.54	162.45	151.25	165.02	150.97
165.12	150.97	202.49	149.86	208.46	149.54	209.59	149.49	209.95	149.48
216.41	149.64	272.96	151.05	283.35	151	295.74	151.07	339.23	151.03
435.73	150.96	446.32	151.31	471.42	153.09	490.01	154.41	511.85	156.13
520.45	156.62	521.53	156.65	531	154.84	531.62	155.07	538.09	156.58
554.65	160.44	571.47	169.19	573.82	168.9	575.99	168.2	577.99	168.45
581.19	168.55	584.01	169.56	584.88	169.94				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.05	339.23	.035	538.09	.05

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
162.45	446.32	122.99	265	54.95	.1	.3

Profile Output Table - Standard Table 1

Reach	River Sta	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
		(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Upper	11261.86	33597.00	214.32	227.99	225.42	228.83	0.003306	8.58	5227.69	962.44	0.45
Upper	11118.79	33597.00	216.23	225.59	225.59	227.91	0.011038	13.46	3132.41	678.46	0.79
Upper	10987.74	33597.00	215.95	224.01	223.37	225.51	0.009764	11.27	3773.23	830.55	0.72
Upper	10747.97	33597.00	215.06	222.96		223.88	0.004135	7.75	4406.45	661.49	0.51
Upper	10546.27	33597.00	213.13	221.46		222.78	0.006853	9.84	3790.08	681.41	0.69
Upper	10064.73	33597.00	207.79	220.89		221.51	0.001218	6.89	6061.01	889.69	0.38

Upper	9828.565	33597.00	207.84	220.64		221.19	0.001307	6.51	6293.82	876.98
0.35										
Upper	9710.010	33597.00	207.81	220.38		221.02	0.001581	7.09	5993.58	872.89
0.39										
Upper	9587.161	33597.00	208.82	220.01		220.79	0.002116	7.95	5551.20	881.22
0.44										
Upper	9469.136	33597.00	209.82	219.90		220.50	0.001954	6.77	5894.56	899.09
0.39										
Upper	9350.632	33597.00	209.90	219.58		220.25	0.002247	7.13	5578.63	834.77
0.41										
Upper	9256.219	33597.00	209.51	218.92		219.96	0.003508	8.83	4580.26	753.55
0.52										
Upper	9137.316	33597.00	207.79	218.57		219.56	0.003062	8.51	4750.10	799.74
0.49										
Upper	9018.948	33597.00	208.76	217.58	215.28	219.07	0.004826	10.94	4063.51	801.88
0.67										
Upper	8877.807	33597.00	204.51	217.07	215.29	218.43	0.004517	13.10	4227.33	842.89
0.68										
Upper	8785.928	33597.00	202.85	216.46	216.46	217.98	0.004832	13.86	4069.57	855.09
0.69										
Upper	8699.415	33597.00	202.95	215.07	212.84	216.25	0.002853	10.82	4191.19	591.93
0.56										
Upper	8488.931	33597.00	202.72	215.05		215.76	0.001111	6.86	5049.03	461.70
0.36										
Upper	8287.319	33597.00	203.83	212.95	212.12	214.98	0.007450	11.95	3017.57	474.47
0.76										
Upper	8012.155	33597.00	202.47	211.29	209.27	212.67	0.004070	9.91	3686.20	510.63
0.63										
Upper	7820.775	33597.00	202.05	208.76	208.76	211.36	0.013233	13.43	2661.86	536.49
0.98										
Upper	7605.154	33597.00	197.44	204.99	204.99	207.36	0.009642	13.56	2976.25	666.24
0.90										
Upper	7289.783	33597.00	196.27	203.86	201.50	204.60	0.003429	7.37	5083.44	831.62
0.48										
Upper	7062.404	33597.00	196.41	203.24	200.89	203.85	0.003224	6.26	5604.10	968.87
0.44										
Upper	6894.555	33597.00	189.63	201.46	201.46	203.16	0.006833	15.27	4175.56	1002.78
0.88										
Upper	6705.202	33597.00	190.32	200.37		201.40	0.004008	9.67	4805.99	1056.31
0.58										
Upper	6544.956	33597.00	190.14	199.55		200.39	0.003776	8.08	5138.66	1155.48
0.49										
Upper	6151.870	34722.00	189.97	196.29		197.59	0.005392	9.47	3969.79	836.34
0.68										
Upper	5978.856	34722.00	187.90	193.99	193.99	196.21	0.011163	12.53	3076.86	726.31
0.95										
Upper	5788.123	34722.00	184.32	192.51	191.05	193.69	0.004840	9.11	4118.73	784.37
0.65										
Upper	5686.773	34722.00	183.41	191.82	190.63	193.15	0.006376	9.68	3794.29	715.92
0.72										
Upper	5593.814	34722.00	183.73	191.75	189.40	192.60	0.003753	7.78	4742.41	800.41
0.50										
Upper	5502.751	34722.00	182.66	191.59	188.59	192.33	0.002311	7.25	5211.86	800.92
0.45										
Upper	5387.141	34722.00	182.70	191.45	188.13	192.06	0.001918	6.57	5604.24	795.87
0.41										
Upper	5249.660	34722.00	181.47	191.29		191.80	0.001542	5.81	6155.71	814.67
0.36										
Upper	5093.864	34722.00	180.73	191.01		191.54	0.001732	5.94	6017.90	815.59
0.37										
Upper	4947.016	34722.00	181.85	190.40		191.20	0.002956	7.34	5015.85	783.02
0.48										
Upper	4845.863	34722.00	180.95	190.04		190.88	0.003173	7.77	4951.61	803.26
0.50										
Upper	4728.187	34722.00	180.04	189.80		190.56	0.002076	7.47	5191.21	761.37
0.44										
Upper	4631.533	34722.00	179.99	189.47		190.33	0.002665	8.04	4848.44	740.06
0.48										
Upper	4524.879	34722.00	177.19	187.95		189.84	0.005867	12.64	3480.01	659.98
0.76										
Upper	4434.483	34722.00	177.21	187.91		189.23	0.003558	10.62	4249.26	720.46
0.60										
Upper	4213.757	34722.00	176.41	187.55		188.43	0.002647	8.10	4989.56	758.10
0.45										
Upper	4008.681	34722.00	175.49	186.97		187.88	0.002642	7.98	4861.23	736.33
0.45										
Upper	3791.835	34722.00	175.28	185.83		187.14	0.004038	10.01	4054.79	583.15
0.57										
Upper	3592.245	34722.00	173.20	184.48		186.16	0.005240	11.20	3619.51	548.79
0.67										
Upper	3376.157	34722.00	173.67	183.55		185.05	0.004612	10.23	3694.76	453.06
0.60										
Upper	3169.567	34722.00	169.36	183.48		184.24	0.001971	7.24	5105.97	488.65
0.37										
Upper	2962.583	34722.00	169.14	183.17		183.81	0.002094	6.33	5458.22	565.72
0.34										
Upper	2746.045	34722.00	167.25	182.85		183.45	0.001369	6.93	5919.97	633.43
0.32										
Upper	2608.338	34722.00	167.14	180.96	178.50	183.02	0.003248	12.37	3463.68	440.96
0.63										
Upper	2580	Bridge								
Upper	2443.625	34722.00	168.51	177.83	177.83	181.01	0.010746	15.91	2641.71	429.27
0.94										
Upper	2258.454	34722.00	163.94	176.63		177.99	0.004737	11.00	3846.27	557.62
0.60										
Upper	2095.690	34722.00	163.99	172.89	173.87	176.36	0.014965	18.56	2725.84	672.40
1.19										
Upper	1815.468	34722.00	156.78	168.41	169.40	172.59	0.019454	18.01	2144.62	431.70

1.04										
Upper	1615.906	34722.00	157.53	168.80	168.80	171.27	0.006807	15.72	2975.69	572.84
0.90										
Upper	1380.475	34722.00	151.04	166.42	167.17	169.61	0.009068	16.50	2923.05	836.25
1.00										
Upper	1141.636	34722.00	156.31	166.06		167.28	0.003493	10.24	4978.76	1134.66
0.63										
Upper	914.451	34722.00	156.99	165.77		166.52	0.002666	7.65	5553.93	1151.44
0.47										
Upper	695.814	34722.00	156.28	162.92	162.92	165.48	0.010878	12.92	2736.83	538.33
0.93										
Upper	484.781	34722.00	150.66	161.05		162.59	0.003296	10.22	3702.83	593.22
0.58										
Upper	265.003	34722.00	149.48	159.56	158.03	161.42	0.006001	11.34	3251.85	444.56
0.67										

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

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X     X  XXXXXX    XXXX        XXXX       XX      XXXX
X     X  X        X    X       X   X     X  X    X
X     X  X        X            X   X    X    X   X
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 - D5
Project File : PMD5.prj
Run Date and Time: 2/19/03 12:29:07 PM

Project in English units

Project Description:
AIO Alternative - San Juan Creek Crossing

PLAN DATA

Plan Title: Existing Flow/Proposed-Ultimate Geometry
Plan File : p:\2PDA0104\Hydr\LHS\Modeling\Model D\HecRas D\PMD5.p03

Geometry Title: Proposed Conditions - Ultimate
Geometry File : p:\2PDA0104\Hydr\LHS\Modeling\Model D\HecRas D\PMD5.g03

Flow Title : Existing Conditions
Flow File : p:\2PDA0104\Hydr\LHS\Modeling\Model D\HecRas D\PMD5.f01

Plan Summary Information:
Number of: Cross Sections = 138 Mulitple Openings = 0
Culverts = 0 Inline Weirs = 0
Bridges = 1

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 : p:\2PDA0104\Hydr\LHS\Modeling\Model D\HecRas D\PMD5.f01

Flow Data (cfs)

River	Reach	RS	Q2	Q5	Q10	Q25	Q50	Q100	Q100HC
San Juan	Upper	11261.86	399	2710	5235	13333	21312	33597	84230
San Juan	Upper	6151.870	422	2755	5241	13703	22162	34722	86997

Boundary Conditions

River	Reach	Profile	Upstream	Downstream
San Juan	Upper	Q2	Normal S = .007	Normal S = .006
San Juan	Upper	Q5	Normal S = .007	Normal S = .006
San Juan	Upper	Q10	Normal S = .007	Normal S = .006
San Juan	Upper	Q25	Normal S = .007	Normal S = .006
San Juan	Upper	Q50	Normal S = .007	Normal S = .006
San Juan	Upper	Q100	Normal S = .007	Normal S = .006
San Juan	Upper	Q100HC	Normal S = .007	Normal S = .006

GEOMETRY DATA

Geometry Title: Proposed Conditions - Ultimate

Geometry File : p:\2PDA0104\Hydr\LHS\Modeling\Model D\HecRas D\PMD5.g03

CROSS SECTION RIVER: San Juan
REACH: Upper RS: 11261.86

INPUT
Description: Manual Modification of Manning's N Values
Station Elevation Data num= 77

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	242.54	4.3	242.24	17.83	241.34	54.62	239.7	59.18	239.5
123.46	236.63	252.74	235.97	254.58	235.92	258.01	235.88	345.45	235.75
381	235.91	416.15	236.08	421.47	236.09	444.76	236.48	616.89	237.54
635.95	236.85	686.17	237.78	686.35	237.78	686.66	237.76	705.96	236.3
708.32	235.71	712.55	234.41	719.34	230.57	733.27	223.18	741.67	221.95
761.26	220.33	764.68	220.33	795.12	220.3	799.34	220.3	801.34	220.35
818.73	221.46	873.43	224.78	896.84	225.07	943.86	225.66	963.45	225.9
1024.79	223.71	1034.82	223.73	1056.83	223.25	1126.76	222.61	1155.33	223.03
1185.38	223.52	1191.02	222.57	1192.05	222.48	1202.64	218.02	1206.6	216.44
1218.59	215.06	1223.77	214.46	1227.31	214.32	1282.3	216.37	1294.49	216.87
1330.81	218.33	1349.69	217.75	1364.3	217.74	1409.65	216.8	1415.9	217.4
1418.57	217.99	1426.08	219.58	1427.14	219.78	1440.15	223.77	1449.59	224.59
1452.99	224.9	1460.48	225.02	1497.36	225.89	1543.03	226.26	1544	226.23
1544.51	226.23	1545.71	226.27	1661.88	227.31	1687.17	228	1726.31	230.17
1731.68	230.61	1760.22	235.86	1764.18	236.51	1779.94	238.34	1809.73	240.73
1820.32	241.62	1820.66	241.64						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.07	54.62	.035	764.68	.05

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
1202.64	1418.57	130.03	143.07	149.61	.1	.3

CROSS SECTION RIVER: San Juan
REACH: Upper RS: 11118.79

INPUT
Description:
Station Elevation Data num= 73

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	236.28	6.22	236.08	23.39	235.63	72.28	235.01	95.7	234.71
116.39	234.76	145.25	235.39	253.54	235.79	296.34	235.95	305.3	236
306.56	236.01	307.67	236.01	517.86	235.46	582.18	235.91	651.6	235.74
682.29	234.27	691.5	233.97	727.73	228.91	734.54	228.53	741.74	227.01
761.35	223.21	771.59	222.64	772.91	222.56	777.01	222.33	793.57	221.41
795.23	221.26	799.6	221.41	818.65	222.32	835.77	223.06	838.02	223.54
858.58	230	868.91	230.97	873.43	231.61	877.11	231.89	921.97	231.07
922.09	231.07	922.12	231.07	969.56	227.62	975.21	226.75	1009.04	223.72
1016.91	223.3	1063.95	222.15	1075.79	222.76	1092.71	222.9	1162.63	223.35
1187.76	222.47	1242.01	217.99	1252.71	216.77	1255.07	216.57	1255.52	216.54
1317.4	216.46	1319.11	216.45	1372.17	216.23	1398.59	217.3	1421.05	217
1440.94	216.26	1453.06	216.41	1456.68	217.54	1457.61	217.97	1465.34	221.17
1469.74	223.55	1476.75	224.23	1483.58	225.18	1489.7	224.96	1548.76	224.65
1611.98	227.28	1707.68	229.93	1716.91	230.38	1728.83	231.47	1773.15	235.81
1777.73	236.17	1778.68	236.35	1807.01	237.16				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.07	72.28	.035	777.01	.05

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
1242.01	1457.61	113.3	131.05	129.24	.1	.3

CROSS SECTION RIVER: San Juan
REACH: Upper RS: 10987.74

INPUT
Description:
Station Elevation Data num= 86

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	236.29	4.65	236.1	17.71	235.99	40.01	235.81	61.33	235.71
108.51	235.52	135.11	236.1	160.74	235.99	218.01	234.83	278.02	233.69
285.21	233.54	392.39	233.47	443.26	233.45	562.6	232.91	589.54	232.87
600.16	232.54	647.72	231.1	683.46	231.18	692.86	230.59	705.84	229.38
708.6	228.65	713.49	226.92	723.65	223.34	726.23	222.95	734.77	221.65
736.86	221.37	742.25	220.66	781.95	221.62	787.48	221.88	789.8	222.37
802.82	224.27	805.64	225.65	808.72	227.16	812.84	229.18	814.74	230.22
815.95	230.46	827.13	232.22	835.58	232.69	842.86	232.81	865.03	230.7
874.42	229.56	880.31	228.4	884.46	227.12	897.57	223.21	899.81	222.46
900.69	222.26	920.38	221.07	924.94	220.81	935.4	220.22	943.09	220.04
1006.44	218.49	1014.33	219.06	1040.71	222.3	1049.72	223.1	1065.02	223
1092.15	221.8	1106.38	221.42	1157.88	218.22	1200.31	216.53	1236.43	216.46
1266.17	216.4	1271.79	216.38	1382.69	215.95	1401.69	216.34	1412.06	217.68
1439.71	217.96	1447.39	218.97	1452.82	219.2	1467.43	218.38	1501.43	219.15
1519.8	219.56	1548.43	221.03	1558.95	221.44	1589.62	222.71	1603.43	223.49
1604.51	223.52	1605.84	223.54	1625.44	223.62	1645.18	223.96	1647.53	224.07
1649.57	224.32	1723.55	231.37	1734.13	232.95	1747.54	235.46	1759.85	236.07
1771.3	236.43								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.07	17.71	.035	726.23	.05

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
1157.88	1412.06	237.19	239.78	243.42	.1	.3

CROSS SECTION RIVER: San Juan
REACH: Upper RS: 10747.97

INPUT
Description: Manual Modification of Manning's N Values
Station Elevation Data num= 48

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	236.04	2.48	235.82	22.5	235.29	61.52	234.89	88.93	234.64
109.76	234.6	183.4	233.36	265.76	230.92	366.1	230.11	416.67	229.73
448.27	229.72	483.41	229.02	550.09	226.85	628.93	225.02	650.44	224.67
700.42	222.47	706	222.26	708.53	221.48	728.5	217.27	732.25	216.48
748.15	216.28	752.69	216.01	770.01	216.56	815.29	216.82	856.16	216.23
885	216.05	924.46	215.81	989.32	216.22	1025	215.84	1088.35	215.17
1100.74	215.11	1106.09	215.22	1106.35	215.22	1167.83	215.55	1185.06	215.41
1227.01	215.06	1328.48	216.48	1329.47	216.54	1346.04	221.53	1349.24	222.67
1362.65	225.06	1406.84	228.93	1410.82	229.21	1412.05	229.37	1417.98	230.91
1425.04	234.92	1427.99	236.1	1431.23	236.75				

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.05	61.52	.035	728.5	.05	885	.035	1025	.05

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
732.25	1328.48	153.99	201.69	181.38	.1	.3

CROSS SECTION RIVER: San Juan
REACH: Upper RS: 10546.27

INPUT
Description: Manual Modification of Manning's N Values
Station Elevation Data num= 49

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	236.22	15.31	236.1	82.15	233.76	145.91	232.57	204.39	230.63
237.53	229.94	279.43	229.37	322	228.82	357.76	228.36	467.04	225.64
498.68	225.16	542.5	225.53	555.23	225.12	584.32	224.17	590.62	223.73
603.48	222.96	611.71	223	624.09	219.15	633.77	216.5	636.62	216.16
639.41	216.26	650.3	215.4	651.87	215.27	680	214.57	731.07	213.3
734.14	213.24	736.27	213.13	738.91	213.14	785	213.22	794.25	213.24
855.69	215.03	860.69	215.18	900.15	215.88	949.77	216.48	1078.71	216.09
1087.61	216.06	1206.66	216.79	1213.61	217.18	1253.05	218.16	1274.66	219.45
1285.16	219.95	1314.1	223.32	1332.02	224.38	1339.94	224.86	1345.91	225.6
1361.48	227.69	1371.08	228.8	1373.43	229.44	1395.49	235.75		

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.05	322	.035	603.48	.05	680	.035	785	.05

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
651.87	1078.71	193.88	481.55	278.86	.1	.3

CROSS SECTION RIVER: San Juan
REACH: Upper RS: 10064.73

INPUT
Description: Manual Modification of Manning's N Values
Station Elevation Data num= 55

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	236.69	2.25	235.52	3.44	235.23	39.26	231	45.72	230.22
46.1	230.2	54.9	229.94	80	229.2	108.21	228.37	136.39	227.57
139.49	227.54	140.5	227.54	144.18	227.6	241.56	229.75	270.67	229.52
308.9	228.27	350.32	225.72	352.38	225.51	357.79	224.93	392.41	221.01
412.12	217.68	417.62	217.01	425.14	213.21	427.78	212	431.1	210.34
431.53	210.31	449.01	207.79	470.75	208.63	515.87	210.35	524.74	210.61
530.85	210.6	630	211.13	685.58	211.43	715.69	211.75	740.32	211.98
814.18	212.46	842.43	212.85	853.67	213.13	909.6	214.49	967.31	216.31
1043.73	216.78	1139.17	217.15	1168.86	217.63	1227.2	218.61	1249.1	218.99
1297.47	221.72	1310.51	222.39	1317.8	222.77	1323.48	223.09	1327.81	224.11
1341.36	226.67	1347.21	228.87	1363.43	234.6	1371.97	237.09	1372.46	237.17

Manning's n Values num= 6

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.07	54.9	.05	80	.035	270.67	.035	630	.035
853.67	.05								

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
427.78	814.18	211.89	236.17	217.43	.1	.3

CROSS SECTION RIVER: San Juan
REACH: Upper RS: 9828.565

INPUT
Description: Manual Modification of Manning's N Values
Station Elevation Data num= 61

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	236.98	1.55	236.3	7.74	234.46	13.66	232.4	19.63	230.85
48.1	227.01	55.82	225.9	61.58	225.47	89.19	224.43	90.37	224.38
102.46	224.18	103.69	224.17	208.98	223.05	239.58	223.07	242.07	223
253.69	222.62	275.8	223.24	279.3	223.44	284.47	221.81	285.5	221.47
288.04	219.66	289.78	218.35	299.1	212	299.55	211.26	305.25	209.37
310.18	208.19	314.04	208.02	316.25	207.91	317.91	207.84	329.99	208.42
340.14	208.91	355.77	209.46	366.15	209.81	377.03	210.22	433.19	210.2
507.35	210.17	548.46	210.16	566.82	210.11	595.74	210.14	686.65	212
715	212.59	721.13	212.72	803.83	214.42	873.18	215.71	887.08	216.05
902.38	216.51	983.81	216.5	1063.49	217.85	1084.26	218.24	1108.83	218.43
1118.78	218.6	1127.28	219.01	1142.48	219.66	1182	221.49	1216.79	222.99
1218.55	223.27	1225.94	226.07	1235.89	227.79	1243.42	229.53	1268.71	234.66
1274.08	235.96								

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     715     .05

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         299.1  686.65             118.07  118.56   92.16             .1      .3

CROSS SECTION          RIVER: San Juan
REACH: Upper             RS: 9710.010

INPUT
Description:
Station Elevation Data    num=      49
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  237.56    9.65  233.67   16.71   230.9   24.72  229.13   28.53  228.26
    47.4  226.46   73.88   223.9   78.37   223.7   81.58  223.63   105.5  223.15
  122.06  222.81  128.27  222.82  178.12  222.64  188.98   222.6  240.96  219.54
  286.21  216.75   293.2  216.54  298.11  213.76  302.07  212.02  304.78  210.35
     306  209.73  310.33  208.75   319.5  207.93  327.69  207.81  340.97   208.4
  381.78  209.58  396.96  210.19  422.01  210.14  445.07  210.09  486.21  210.12
  570.66  210.19  637.15  211.58  656.46  211.95  802.19  214.72  833.25  215.49
  866.72   216.5  916.71  216.49  1038.3  216.49  1044.5   216.6 1052.62  216.99
 1075.97  218.25 1080.92  218.83 1086.83  219.53 1132.21  222.55 1137.29  223.24
 1138.13   223.4 1140.89  224.99 1144.53  226.44 1172.25  237.73

Manning's n Values        num=       4
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035   105.5     .05  422.01    .035  656.46     .05

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         302.07  656.46             105.82  122.85   111.7             .1      .3

CROSS SECTION          RIVER: San Juan
REACH: Upper             RS: 9587.161

INPUT
Description: Manual Modification of Manning's N Values
Station Elevation Data    num=      51
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  235.13     .85   234.8   16.38  229.87   27.38  227.87   29.69  227.46
   31.73  227.22   57.78  224.46   97.35  223.56  128.59  222.34  148.19  221.51
     180  220.22  212.56   218.9   281.1  216.65  294.01  216.15  309.99  214.06
  312.35  213.75  326.78  212.04  334.41  212.32  338.81  212.32  344.29  212.59
  353.29  213.96  362.45  212.15  366.12  211.09  370.15  209.41  372.66  209.12
  404.96  208.82     425  208.86  448.67  208.91  545.27  210.01     585   210.6
  626.43  211.21  626.55  211.21  642.39  211.44  675.79  212.15  741.69  213.41
  753.28  213.48  771.95  214.16  797.84  214.81  853.17  216.48  884.32  216.48
  909.54  216.85  996.87  216.79 1043.26  216.64 1056.32  216.22 1058.79  216.57
 1065.87  219.78 1069.48  221.22 1074.99   224.9 1086.45  230.37 1093.15  234.08
 1095.36  235.39

Manning's n Values        num=       6
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035     180     .05     425    .035  545.27     .05     585    .035
  642.39     .05

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         362.45  675.79             123.08  118.02   93.39             .1      .3

CROSS SECTION          RIVER: San Juan
REACH: Upper             RS: 9469.136

INPUT
Description:
Station Elevation Data    num=      53
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  237.57   12.94   234.3   17.91   232.7   24.18  230.54   59.34  225.73
   76.13   223.7   81.78  223.42  135.85  220.64  169.07  219.04  180.99  218.57
  187.82  218.35  215.48  217.65  221.82  217.49  328.29     215  340.74  214.75
     358  213.99  370.63  212.99  378.86  212.34  395.08  211.79  399.54  212.37
  404.97  212.66  409.25  212.27  415.36  211.65  421.14  211.09  444.15  210.57
  463.29  210.43  540.01   209.9   570.3  209.82  614.13   210.4  660.46     211
  713.27   211.7  714.02  211.69  724.7  211.51  773.82  210.74   774.7  210.73
  786.16  210.77  789.96  210.35  813.58   210.1  816.39  210.42  837.61  211.74
  855.43  212.89   859.2  213.18  886.42   214.6  922.31  216.41  926.97   216.6
  947.26  216.63 1039.24  216.13 1044.89  216.74 1052.81   221.3 1054.77     222
 1061.39  227.39 1073.18   236.6 1077.41  239.66

Manning's n Values        num=       4
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035  215.48     .05  463.29    .035  614.13     .05

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         415.36  837.61              89.26   118.5  115.68             .1      .3

CROSS SECTION          RIVER: San Juan
REACH: Upper             RS: 9350.632

INPUT
Description: Manual Modification of Manning's N Values
Station Elevation Data    num=      41
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  235.55   12.28  233.13   24.99  230.02   52.05  227.19   66.18  225.45
   90.05  224.42  117.19  223.07  181.12   219.9  202.42  218.92  220.15  218.12
  262.29  217.13  319.13   215.8  384.17  214.49  421.88  212.86  466.73  210.99
  480.59  210.33  480.81  210.31   481.1   210.3   481.5  210.29  482.43  210.29
  543.33  210.13  639.13   209.9     680  210.42  694.61  210.61  718.93  210.93
  772.78  210.62  777.09  210.59  809.31  210.02  871.62  211.73  895.72  212.94
   932.8  214.27  978.37  215.79  983.34  215.94  1006.1  216.52 1007.14  216.55
 1013.04  217.67 1021.96  219.37 1024.06  219.91 1061.51  230.84 1065.28  232.96
```

1065.35 233.03

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.07	117.19	.035	202.42	.05	543.33	.035	680	.05

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
466.73	871.62	84.67	94.41	83.86	.1	.3

CROSS SECTION RIVER: San Juan
REACH: Upper RS: 9256.219

INPUT
Description:
Station Elevation Data num= 47

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	235.56	11.33	233.02	23.65	230.11	36.67	228.78	56.57	226.31
63.88	226	149.59	222.37	170.35	221.36	171.49	221.31	219.79	219.17
253.31	217.64	300.03	216.55	413.44	214.26	454.77	212.48	458.88	212.3
495.1	210.77	580.72	209.51	585.58	209.57	628.06	210.1	686.73	209.96
716.31	210.34	716.54	210.34	723.99	210.3	788.11	209.93	818.2	209.76
822.23	209.68	830.02	209.9	836.38	210.22	845.79	210.84	862.11	212.09
871.59	212.66	876.13	212.99	884.78	213.94	909.99	216.15	920.78	216.71
948.86	217.91	978.02	218.84	988.49	219.84	1001.47	220.78	1017.4	221.96
1024.33	222.37	1030.22	223.76	1038.84	226.09	1044.05	229.23	1047.45	230.51
1063.67	234.43	1064.7	234.9						

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.07	63.88	.035	170.35	.05	585.58	.035	723.99	.05

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
495.1	845.79	101.89	118.9	108.87	.1	.3

CROSS SECTION RIVER: San Juan
REACH: Upper RS: 9137.316

INPUT
Description: Manual Modification of Manning's N Values
Station Elevation Data num= 45

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	235.18	22.33	230.75	42.24	228.2	63.9	225.84	101.49	224.61
150.55	222.89	167.63	221.32	180	220.74	235.15	218.14	244.78	218.25
309.54	217.04	325.48	217.26	379.62	216.78	417.92	216.26	427.16	216.09
488.07	212.8	495.35	212.5	507.55	211.99	537.37	210.2	581.23	209.62
613.53	209.59	642	209.07	682.73	208.32	704.34	208.03	723.51	207.79
727.77	208.32	756.83	209.99	773.79	209.62	780.18	209.47	835.8	209.21
899.08	210.85	912.49	211.72	931.6	212.97	954.81	214.4	955.14	214.42
991.54	215.27	999.52	215.73	1014.81	216.69	1035.94	220.35	1049.41	224.63
1055.27	226.59	1067.37	231.66	1070.65	233.33	1074.77	235.81	1079.2	237.67

Manning's n Values num= 4

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	180	.05	642	.035	773.79	.05

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
537.37	899.08	68.43	118.37	170.91	.1	.3

CROSS SECTION RIVER: San Juan
REACH: Upper RS: 9018.948

INPUT
Description: Manual Modification of Manning's N Values
Station Elevation Data num= 48

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	236.19	5.61	234.34	19.05	230.7	22.32	229.92	34.98	228.26
58.81	225.12	71.59	224.56	125.23	222.86	136.34	221.54	175.03	217.95
186.19	216.91	194.69	216.65	239.64	216.66	295.33	217.21	331.31	216.54
349.96	216.78	393.11	217.37	395.15	217.35	434.37	217.01	456.94	215.29
464.98	214.87	479.59	211.99	496.75	209.99	501.41	209.82	519.32	209.15
581.79	209.78	592.3	209.97	596.43	209.99	600.8	209.99	617.29	209.94
675	209.57	799.23	208.76	846.63	209.31	856.61	209.49	865.04	209.64
867.03	209.63	887.36	209.5	899.78	209.99	949.51	212.86	954.98	213.65
966.37	215.05	971.53	215.74	976.9	216.45	994.13	221.26	1007.41	226.4
1013.51	229.18	1026.11	234.49	1029.58	236.16				

Manning's n Values num= 4

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	175.03	.05	675	.035	865.04	.05

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
617.29	899.78	103.94	141.14	196.85	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
888	F		

CROSS SECTION RIVER: San Juan
REACH: Upper RS: 8877.807

INPUT
Description: Manual Modification of Manning's N Values
Station Elevation Data num= 50

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	235.47	16	230.13	23.53	228.82	43.04	226.02	53.75	225.26
97.11	223.1	121.98	220.27	148.33	216.92	149.86	216.85	175.44	216.02
182.43	215.79	264.01	215.76	359.16	215.66	400.91	215.23	404.49	215.19
423.94	214.49	448.47	213.08	478.83	211.44	485.24	211.18	487.34	210.83
536.77	209.27	566.36	209.8	576.89	209.87	666.14	210.47	670.81	210.46

```
   763.6  210.34  781.64  210.19  791.65  210.67  805.26  211.21  820.04  212.02
  844.24  213.88  847.94  213.98  871.25  211.93   872.2  211.87   873.1  211.78
  885.93  208.92  895.03  204.91  901.36  204.51  923.65  204.73   925.5  204.75
  935.26  204.92  948.14  206.25   961.4   208.7  974.67  211.59  982.85  214.28
  989.46  216.85 1012.58  226.37 1021.32   230.5 1028.34  234.21 1032.01  235.71

Manning's n Values          num=       4
     Sta   n Val      Sta   n Val      Sta   n Val      Sta   n Val
       0    .035   175.44     .05   670.81    .035   935.26     .05

Bank Sta: Left   Right    Lengths: Left Channel   Right      Coeff Contr.   Expan.
        885.93   961.4             90.38   91.88   97.21              .1       .3
Ineffective Flow      num=       1
   Sta L   Sta R    Elev  Permanent
888        F

CROSS SECTION           RIVER: San Juan
REACH: Upper               RS: 8785.928

INPUT
Description: Manual Modification of Manning's N Values
Station Elevation Data     num=      53
     Sta    Elev      Sta    Elev      Sta    Elev      Sta    Elev      Sta    Elev
       0  231.65    17.24  226.79    22.09  226.18    61.29  222.04    91.45   220.2
  113.91  217.61   126.85  216.97   154.25  215.99    184.6  215.82   324.44  215.06
  367.24  214.93   375.23  214.64    387.3  214.03    407.3  213.48   467.14  211.83
  486.18   211.6   514.54  211.07   559.35  209.79   569.19  209.86   616.65  210.18
  656.85   209.7   700.89  209.71   776.42  209.15   803.51  210.94   846.49  216.22
  850.58  216.45   866.12  214.61   866.92  214.48   867.87  214.26    870.7  213.58
  883.15  210.23   900.95  205.79   910.93  204.24   934.29  203.03   935.91  202.95
  939.77  202.85   944.19  203.03    960.1  203.43   965.34   204.3   969.91  205.78
  976.64  208.01   978.76  208.86   981.84  211.21   984.92  212.46   987.05  211.72
  989.84  212.14    992.8  214.24   994.96   215.3   996.84  216.96   998.25  217.71
 1017.83  230.92 1023.32  233.95 1025.57  235.44

Manning's n Values          num=       4
     Sta   n Val      Sta   n Val      Sta   n Val      Sta   n Val
       0    .035    184.6     .05   656.85    .035   939.77     .05

Bank Sta: Left   Right    Lengths: Left Channel   Right      Coeff Contr.   Expan.
        900.95  969.91             89.24   86.51  114.83              .1       .3
Ineffective Flow      num=       1
   Sta L   Sta R    Elev  Permanent
888        F

CROSS SECTION           RIVER: San Juan
REACH: Upper               RS: 8699.415

INPUT
Description:
Station Elevation Data     num=      57
     Sta    Elev      Sta    Elev      Sta    Elev      Sta    Elev      Sta    Elev
       0  228.96     16.5  224.59    22.67  223.16    25.71  222.88    70.95   218.8
  120.94  217.13   132.52   216.5   138.16  216.41   177.33  216.52   226.62  216.35
  389.19  215.81   440.44  213.92    516.4  210.08   516.93  210.07   518.16  210.05
  540.65  210.23   543.99  209.34   546.05  209.12   554.09  204.61   556.71  203.68
  559.84  203.47   564.63  203.29   567.58  203.49   568.92  203.58   576.85  204.46
  593.65  206.31   607.75   206.8   611.61  206.94    626.8  207.98   653.38     208
  669.55  207.98   689.74  207.95   741.83  207.88    759.1  207.73   776.74  208.88
  800.07  211.05   801.37  211.01   843.83  207.44   844.58  207.28   855.43  205.99
  872.29  203.81   875.46  203.48   931.18  202.95   944.59  203.18   947.68  203.23
   958.4  203.41    961.9   203.6   965.82  204.69   971.93  205.96      986  208.87
  993.13  209.98   997.35  212.14   1012.4  223.31 1013.12  223.91 1013.28  224.02
 1027.96  234.99 1030.08  236.14

Manning's n Values          num=       6
     Sta   n Val      Sta   n Val      Sta   n Val      Sta   n Val      Sta   n Val
       0    .035   226.62     .05   576.85    .035   607.75     .05   669.55    .035
  947.68     .05

Bank Sta: Left   Right    Lengths: Left Channel   Right      Coeff Contr.   Expan.
        855.43  971.93             196.8   210.5     198              .1       .3
Ineffective Flow      num=       1
   Sta L   Sta R    Elev  Permanent
888        F

CROSS SECTION           RIVER: San Juan
REACH: Upper               RS: 8488.931

INPUT
Description: Manual Modification of Manning's N Values
Station Elevation Data     num=      44
     Sta    Elev      Sta    Elev      Sta    Elev      Sta    Elev      Sta    Elev
       0  223.53     5.06  222.86   50.35  218.19   100.15  216.85   181.75  215.37
  191.02  215.13   194.19  215.09  206.53  215.12   333.22  216.49   363.57  216.83
  444.57  216.12   466.47   216.8  497.41  217.45   499.38  217.37   501.77  216.86
     505  216.26   509.57   215.4  520.92  209.41   521.52   209.1   521.65  209.03
  521.85     209   546.91  205.67  556.86  204.35      582  203.55   590.02  203.36
     645   203.5   711.54  203.67     715  203.66   770.23  203.53   837.91  203.44
  850.34  203.93   869.98   203.3  929.34  202.79   937.43  202.72   946.04  202.93
   953.2  203.42   954.83  203.48  957.04  204.49   959.37  205.75   971.52  214.75
  979.71  220.55   984.84  223.89  990.63  227.51   990.77  227.61

Manning's n Values          num=       6
     Sta   n Val      Sta   n Val      Sta   n Val      Sta   n Val      Sta   n Val
       0    .035     505     .05   546.91    .035     645     .05     715    .035
  971.52     .05
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Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
546.91 959.37 41.88 40.32 46.55 .1 .3

CROSS SECTION RIVER: San Juan
REACH: Upper RS: 8448.60*

INPUT
Description:
Station Elevation Data num= 91

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	223.41	4.94	222.8	5.82	222.71	22.26	220.92	41.42	218.8
42.88	218.64	48.31	218.02	49.19	217.94	62.64	217.57	89.34	216.92
95.9	216.76	97.85	216.72	129.23	216.27	141.07	216.11	177.58	215.53
186.64	215.33	189.73	215.29	201.79	215.31	218.68	215.44	248.55	215.82
254.46	215.89	325.57	216.49	336.54	216.58	355.23	216.73	377.59	216.54
434.37	216.35	452.5	216.88	455.77	216.98	469.69	217.27	469.74	217.27
469.79	217.27	469.84	217.27	470.11	217.27	481.32	217.28	486	217
487.92	216.78	490.26	216.19	493.41	215.47	494.34	215.25	496.74	214.71
497.88	214.48	501.63	212.72	508.97	209.26	509.55	208.99	509.68	208.92
509.88	208.89	513.05	208.42	534.36	206.02	537.29	205.68	543.57	204.94
550.35	204.73	566.83	204.23	574.25	204.05	607.9	204.02	625.13	203.98
629.18	203.97	655.59	204.05	686.7	203.93	689.9	203.9	694.22	203.86
741.01	203.72	742.29	203.72	803.64	203.59	815.14	203.97	833.31	203.45
882.59	203.04	888.24	203	895.73	202.94	906.93	203.39	914.47	203.9
916.24	204.02	918.36	204.12	921.23	205	924.26	206.08	932.98	209.28
945.94	213.93	951.7	215.91	954.89	216.88	958.92	217.85	960.55	218.32
961.45	218.55	966.14	219.18	967.69	219.41	969.06	219.61	969.7	219.83
969.89	219.9	970.76	220.53	971.27	220.81	975.12	224.05	980.03	228.35
980.28	228.58								

Manning's n Values num= 14

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	41.42	.038	248.55	.047	452.5	.038	493.41	.05
534.36	.035	548.45	.035	627.09	.047	693.26	.035	717.6	.038
899.75	.047	924.26	.047	945.94	.047	980.28	.047		

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
534.36 924.26 41.88 40.32 46.55 .1 .3

CROSS SECTION RIVER: San Juan
REACH: Upper RS: 8408.28*

INPUT
Description:
Station Elevation Data num= 91

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	223.29	4.83	222.73	5.68	222.65	21.74	220.82	40.45	218.59
41.87	218.42	47.17	217.77	48.04	217.7	61.17	217.32	87.24	216.76
93.65	216.61	95.55	216.58	126.19	216.28	137.76	216.16	173.41	215.69
182.25	215.53	185.28	215.5	197.05	215.5	213.55	215.58	242.71	216
248.49	216.08	317.93	216.49	328.64	216.55	346.89	216.63	368.72	216.45
424.17	216.58	441.88	217.07	445.07	217.15	458.66	217.44	458.71	217.44
458.75	217.44	458.81	217.44	459.07	217.44	470.02	217.21	474.59	216.54
476.47	216.2	478.75	215.53	481.83	214.67	482.73	214.42	485.07	213.79
486.19	213.57	489.85	212.06	497.02	209.1	497.59	208.87	497.71	208.82
497.9	208.78	501	208.28	521.81	206.37	524.5	206.1	530.28	205.52
536.51	205.34	551.66	204.9	558.49	204.74	589.42	204.59	605.26	204.45
608.98	204.42	633.27	204.52	661.86	204.18	664.81	204.13	668.77	204.07
711.79	203.92	712.97	203.91	769.37	203.75	779.94	204.02	796.65	203.61
841.95	203.24	847.14	203.21	854.03	203.16	867.81	203.85	877.11	204.47
879.28	204.61	881.89	204.76	885.43	205.51	889.16	206.41	901.71	209.18
920.36	213.1	928.65	214.78	933.24	215.46	939.05	215.8	941.39	216.09
942.68	216.23	949.44	215.77	951.67	215.67	953.65	215.57	954.56	215.78
954.84	215.84	956.09	216.8	956.81	217.17	962.36	222.31	969.43	229.19
969.79	229.55								

Manning's n Values num= 14

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	40.45	.041	242.71	.044	441.88	.041	481.83	.05
521.81	.035	535.09	.035	609.17	.044	671.52	.035	694.45	.041
866.06	.044	889.16	.044	920.36	.044	969.79	.044		

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
521.81 889.16 41.88 40.32 46.55 .1 .3

CROSS SECTION RIVER: San Juan
REACH: Upper RS: 8367.96*

INPUT
Description:
Station Elevation Data num= 91

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	223.17	4.71	222.67	5.54	222.59	21.22	220.71	39.48	218.37
40.86	218.2	46.04	217.51	46.88	217.45	59.7	217.06	85.15	216.6
91.39	216.47	93.26	216.45	123.16	216.29	134.45	216.22	169.24	215.85
177.87	215.73	180.82	215.7	192.31	215.68	208.41	215.71	236.87	216.18
242.51	216.27	310.28	216.49	320.74	216.52	338.55	216.53	359.85	216.36
413.97	216.81	431.25	217.25	434.36	217.33	447.63	217.61	447.68	217.61
447.72	217.61	447.78	217.61	448.03	217.6	458.71	217.15	463.17	216.09
465.01	215.61	467.23	214.86	470.24	213.88	471.13	213.59	473.41	212.88
474.5	212.65	478.07	211.4	485.06	208.95	485.62	208.76	485.74	208.71
485.93	208.68	488.96	208.13	509.27	206.73	511.72	206.53	516.99	206.11
522.68	205.95	536.5	205.58	542.72	205.43	570.94	205.16	585.39	204.93
588.79	204.88	610.94	204.99	637.02	204.44	639.71	204.37	643.33	204.29
682.57	204.11	683.65	204.11	735.09	203.9	744.74	204.06	759.98	203.76
801.3	203.44	806.05	203.42	812.32	203.39	828.7	204.31	839.74	205.04
842.32	205.21	845.42	205.39	849.62	206.01	854.05	206.75	870.43	209.09
894.78	212.28	905.6	213.65	911.6	214.04	919.17	213.75	922.23	213.86

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  923.91  213.91  932.74  212.37  935.65  211.92  938.23  211.52  939.42  211.72
  939.78  211.78  941.42  213.07  942.36  213.54   949.6  220.57  958.83  230.03
   959.3  230.52

Manning's n Values          num=      14
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035   39.48    .044  236.87    .041  431.25    .044  470.24     .05
  509.27    .035  521.73    .035  591.26    .041  649.78    .035   671.3    .044
  832.38    .041  854.05    .041  894.78    .041   959.3    .041

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        509.27  854.05             41.88   40.32   46.55             .1       .3

CROSS SECTION           RIVER: San Juan
REACH: Upper               RS: 8327.64*

INPUT
Description:
Station Elevation Data     num=      91
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  223.05     4.6  222.6     5.41  222.53    20.69   220.6    38.5  218.16
   39.86  217.98    44.9  217.25   45.73  217.21    58.23  216.81   83.05  216.43
   89.14  216.32   90.96  216.32  120.12  216.29   131.13  216.28  165.07  216.01
  173.49  215.93  176.37  215.91  187.58  215.87   203.28  215.85  231.04  216.36
  236.54  216.46  302.64  216.49  312.83  216.49    330.2  216.43  350.99  216.27
  403.77  217.04  420.63  217.44  423.66  217.51    436.6  217.78  436.65  217.78
  436.69  217.78  436.74  217.77  436.99  217.77   447.41  217.08  451.76  215.64
  453.55  215.02  455.72  214.19  458.65  213.09   459.52  212.76  461.74  211.96
   462.8  211.74  466.29  210.74  473.11  208.79   473.66  208.64  473.78  208.61
  473.96  208.57  476.91  207.99  496.72  207.08   498.93  206.95   503.7   206.7
  508.84  206.57  521.33  206.25  526.95  206.12   552.46  205.72  565.52  205.41
  568.59  205.33  588.61  205.46  612.19  204.69   614.61  204.61  617.88   204.5
  653.35   204.3  654.32   204.3  700.82  204.05   709.54  204.11  723.31  203.91
  760.66  203.64  764.95  203.63  770.62  203.61   789.59  204.77  802.37  205.61
  805.36  205.81  808.95  206.03  813.81  206.52   818.95  207.08  839.16  208.99
   869.2  211.45  882.55  212.53  889.95  212.61    899.3   211.7  903.07  211.63
  905.15  211.58  916.03  208.96  919.62  208.18   922.81  207.48  924.28  207.67
  924.73  207.73  926.74  209.34  927.91  209.91   936.84  218.83  948.23  230.88
  948.81  231.49

Manning's n Values          num=      14
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035    38.5    .047  231.04    .038  420.63    .047  458.65     .05
  496.72    .035  508.36    .035  573.35    .038  628.04    .035  648.15    .047
  798.69    .038  818.95    .038   869.2    .038  948.81    .038

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        496.72  818.95             41.88   40.32   46.55             .1       .3

CROSS SECTION           RIVER: San Juan
REACH: Upper               RS: 8287.319

INPUT
Description: Manual Modification of Manning's N Values
Station Elevation Data     num=      52
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  222.93    5.27  222.47   20.17  220.49   37.53  217.95   38.85  217.76
   43.77  216.99   56.76  216.56   80.95  216.27   86.89  216.18  117.09   216.3
  127.82  216.34  198.14  215.98   225.2  216.54  230.56  216.65  304.93  216.46
  342.12  216.18     410  217.62  425.57  217.95  425.62  217.95  425.66  217.95
  425.71  217.94  425.95  217.93  436.11  217.01  447.91  211.93  450.08  211.05
  454.51  210.08  464.86  207.84  484.17  207.43  486.15  207.38     495  207.18
  533.98  206.29  548.39  205.79  566.28  205.93  592.44  204.71     625  204.49
  720.02  203.84  728.92  203.83     765  206.18  783.84  207.41  807.88   208.9
   859.5   211.4   868.3  211.19  879.42  209.65  886.38  209.26  899.33  205.55
   903.6  204.43  907.39  203.43  909.67  203.67  912.07  205.61  913.46  206.28
  924.08  217.09  938.32  232.46

Manning's n Values          num=       7
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035   37.53     .05   225.2    .035     410     .05     495    .035
     625     .05     765    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        484.17  783.84             21.4   39.31   35.65             .1       .3
Ineffective Flow     num=       1
   Sta L   Sta R    Elev  Permanent
888        F

CROSS SECTION           RIVER: San Juan
REACH: Upper               RS: 8248.00*

INPUT
Description:
Station Elevation Data     num=      88
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  222.94    3.21  222.53    5.13  222.35   19.63  220.44   32.04  218.66
   36.53     218   37.82  217.81    42.6  217.07   50.62  216.69   55.25  216.55
   65.26  216.42    65.4  216.42   78.79  216.25   84.58  216.17  105.83   216.2
  113.97  216.23  116.25  216.24  124.42  216.27  176.31  216.08  192.86  215.99
  210.35   216.3   219.2  216.52  221.16  216.57  224.42  216.64  272.46  216.59
  296.81  216.58  333.01   216.4   359.7  216.95  374.41  217.22   378.9  217.27
  399.08   217.5  405.58  217.57  414.24  217.05  414.29  217.04  414.33  217.04
  414.38  217.03  414.61     217  416.51   216.7  416.87  216.64   424.5  215.84
  426.98  214.84  430.84  213.26  435.99  211.26   438.1  210.49  442.41  209.61
  445.12  209.07  452.48  207.58  471.28  207.02  473.02  206.97  480.82  206.79
  515.15  205.99  527.85  205.55  543.61  205.66  564.77  204.68  566.65  204.59
  595.33  204.35  596.25  204.34  679.03  203.66  686.87  203.64  690.04  203.82
```

701.81	204.23	718.23	204.8	747.72	205.81	762.14	206.3	779.5	207.04
802.03	208.32	803.14	208.37	848.25	210.07	853.92	210.29	862.57	210.08
868.11	209.39	873.51	208.73	874.24	208.69	880.35	208.44	881.83	208.08
882.11	208.03	893.09	206.21	897.29	205.6	898.85	205.37	901.02	205.15
903.26	205.64	905.62	207.61	906.99	208.36	907.47	208.85	914.24	215.48
917.43	218.65	924.94	226.52	931.44	232.92				

Manning's n Values num= 15

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	36.53	.048	50.62	.037	219.2	.037	399.08	.05
471.28	.035	482.42	.035	491.46	.035	550.2	.037	598.66	.048
616.13	.048	760.12	.035	779.5	.037	802.03	.05	931.44	.037

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
471.28	779.5	21.4	39.31	35.65	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
888	F		

CROSS SECTION RIVER: San Juan
REACH: Upper RS: 8208.70*

INPUT
Description:
Station Elevation Data num= 88

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	222.95	3.12	222.42	4.99	222.24	19.1	220.39	31.16	218.69
35.53	218.05	36.78	217.86	41.44	217.14	49.23	216.66	53.74	216.53
63.47	216.41	63.61	216.41	76.64	216.24	82.26	216.15	102.93	216.13
110.86	216.16	113.07	216.17	121.01	216.21	171.49	216.09	187.59	216
204.6	216.24	213.21	216.51	215.12	216.57	218.28	216.62	265.01	216.66
288.69	216.7	323.9	216.63	349.86	217.14	364.17	217.36	368.54	217.36
388.17	217.37	394.48	217.38	402.91	216.14	402.96	216.14	403	216.13
403.04	216.11	403.27	216.07	405.12	215.64	405.47	215.57	412.89	214.68
415.3	213.77	419.06	212.33	424.06	210.6	426.12	209.93	430.31	209.15
432.94	208.66	440.11	207.32	458.39	206.6	459.9	206.56	466.64	206.4
496.33	205.7	507.31	205.32	520.93	205.39	539.23	204.54	540.86	204.47
565.66	204.21	566.45	204.2	638.04	203.47	644.81	203.44	649.29	203.68
665.84	204.05	688.94	204.56	730.45	205.43	750.73	205.86	775.16	206.66
797.31	207.8	798.41	207.84	842.76	209.01	848.33	209.18	856.84	208.97
862.29	208.38	867.6	207.8	868.31	207.77	874.33	207.61	875.78	207.33
876.05	207.32	886.85	206.87	890.98	206.77	892.51	206.73	894.64	206.87
896.85	207.62	899.17	209.61	900.52	210.44	900.99	210.92	907.65	217.16
910.79	220.21	918.16	227.71	924.56	233.37				

Manning's n Values num= 15

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	35.53	.046	49.23	.039	213.21	.039	388.17	.05
458.39	.035	469.84	.035	479.13	.035	539.5	.039	589.3	.046
607.26	.046	755.24	.035	775.16	.039	797.31	.05	924.56	.039

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
458.39	775.16	21.4	39.31	35.65	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
888	F		

CROSS SECTION RIVER: San Juan
REACH: Upper RS: 8169.39*

INPUT
Description:
Station Elevation Data num= 88

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	222.96	3.03	222.3	4.85	222.12	18.56	220.34	30.29	218.72
34.53	218.09	35.75	217.92	40.27	217.22	47.85	216.63	52.23	216.52
61.69	216.4	61.83	216.39	74.48	216.22	79.95	216.14	100.04	216.07
107.74	216.1	109.89	216.1	117.61	216.14	166.67	216.11	182.31	216.02
198.84	216.18	207.21	216.49	209.07	216.56	212.15	216.61	257.56	216.73
280.58	216.82	314.8	216.85	340.02	217.33	353.93	217.49	358.17	217.45
377.25	217.25	383.39	217.18	391.58	215.24	391.63	215.23	391.66	215.22
391.71	215.2	391.93	215.14	393.73	214.59	394.07	214.49	401.28	213.51
403.62	212.7	407.28	211.39	412.14	209.93	414.13	209.36	418.21	208.68
420.77	208.25	427.73	207.06	445.5	206.19	446.77	206.15	452.46	206.02
477.5	205.4	486.76	205.08	498.26	205.11	513.69	204.41	515.07	204.34
535.99	204.07	536.66	204.07	597.04	203.29	602.76	203.25	608.53	203.55
629.87	203.87	659.66	204.32	713.17	205.06	739.33	205.41	770.82	206.29
792.6	207.29	793.67	207.32	837.27	207.96	842.75	208.06	851.11	207.86
856.47	207.36	861.68	206.88	862.39	206.84	868.3	206.79	869.73	206.58
870	206.6	880.61	207.52	884.67	207.94	886.18	208.09	888.27	208.59
890.44	209.59	892.72	211.61	894.04	212.52	894.51	213	901.06	218.85
904.14	221.77	911.39	228.91	917.68	233.83				

Manning's n Values num= 15

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	34.53	.044	47.85	.041	207.21	.041	377.25	.05
445.5	.035	457.26	.035	466.8	.035	528.8	.041	579.95	.044
598.38	.044	750.37	.035	770.82	.041	792.6	.05	917.68	.041

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
445.5	770.82	21.4	39.31	35.65	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
888	F		

CROSS SECTION RIVER: San Juan
REACH: Upper RS: 8130.08*

INPUT
Description:
Station Elevation Data num= 88

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	222.98	2.94	222.19	4.71	222	18.02	220.29	29.41	218.75
33.53	218.14	34.71	217.97	39.11	217.3	46.46	216.6	50.72	216.5
59.9	216.38	60.04	216.38	72.33	216.21	77.64	216.13	97.14	216
104.62	216.03	106.71	216.04	114.21	216.07	161.85	216.12	177.04	216.03
193.09	216.13	201.22	216.48	203.02	216.55	206.01	216.6	250.11	216.8
272.46	216.94	305.69	217.08	330.18	217.51	343.69	217.63	347.81	217.53
366.34	217.12	372.3	216.99	380.25	214.34	380.3	214.32	380.33	214.31
380.38	214.29	380.59	214.21	382.34	213.53	382.67	213.41	389.67	212.35
391.95	211.63	395.49	210.45	400.21	209.26	402.15	208.8	406.11	208.21
408.59	207.84	415.36	206.81	432.61	205.77	433.65	205.74	438.28	205.63
458.68	205.11	466.22	204.85	475.59	204.84	488.16	204.28	489.28	204.22
506.32	203.94	506.86	203.93	556.05	203.11	560.71	203.05	567.77	203.41
593.91	203.69	630.37	204.09	695.89	204.68	727.92	204.97	766.48	205.91
787.88	206.78	788.94	206.79	831.78	206.9	837.16	206.95	845.38	206.75
850.65	206.35	855.77	205.95	856.46	205.92	862.27	205.97	863.67	205.83
863.94	205.89	874.37	208.18	878.36	209.1	879.84	209.45	881.9	210.31
884.03	211.57	886.27	213.61	887.57	214.6	888.03	215.07	894.46	220.54
897.49	223.33	904.62	230.1	910.79	234.29				

Manning's n Values num= 15

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	33.53	.041	46.46	.044	201.22	.044	366.34	.05
432.61	.035	444.68	.035	454.47	.035	518.1	.044	570.59	.041
589.51	.041	745.49	.035	766.48	.044	787.88	.05	910.79	.044

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
432.61	766.48	21.4	39.31	35.65	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
888		F	

CROSS SECTION RIVER: San Juan
REACH: Upper RS: 8090.77*

INPUT
Description:
Station Elevation Data num= 88

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	222.99	2.86	222.08	4.57	221.88	17.49	220.24	28.53	218.79
32.53	218.19	33.68	218.02	37.94	217.37	45.08	216.58	49.2	216.49
58.12	216.37	58.25	216.37	70.17	216.19	75.32	216.11	94.25	215.93
101.5	215.96	103.53	215.97	110.81	216.01	157.02	216.13	171.76	216.04
187.34	216.07	195.22	216.46	196.97	216.54	199.87	216.59	242.65	216.86
264.34	217.06	296.58	217.3	320.35	217.7	333.45	217.77	337.45	217.62
355.42	217	361.21	216.8	368.92	213.43	368.96	213.41	369	213.4
369.04	213.38	369.25	213.28	370.94	212.48	371.26	212.33	378.06	211.18
380.27	210.56	383.71	209.51	388.29	208.6	390.17	208.24	394.01	207.75
396.42	207.44	402.98	206.55	419.72	205.36	420.52	205.34	424.1	205.24
439.85	204.81	445.68	204.61	452.91	204.57	462.62	204.15	463.49	204.1
476.65	203.8	477.07	203.79	515.06	202.93	518.66	202.86	527.01	203.28
557.94	203.52	601.09	203.85	678.61	204.31	716.51	204.53	762.14	205.54
783.16	206.27	784.2	206.26	826.29	205.85	831.58	205.84	839.65	205.64
844.82	205.33	849.86	205.03	850.54	205	856.25	205.14	857.62	205.08
857.88	205.17	868.13	208.84	872.05	210.27	873.5	210.8	875.53	212.03
877.62	213.54	879.82	215.61	881.1	216.68	881.55	217.14	887.87	222.23
890.84	224.89	897.85	231.29	903.91	234.75				

Manning's n Values num= 15

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	32.53	.039	45.08	.046	195.22	.046	355.42	.05
419.72	.035	432.09	.035	442.14	.035	507.4	.046	561.23	.039
580.64	.039	740.61	.035	762.14	.046	783.16	.05	903.91	.046

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
419.72	762.14	21.4	39.31	35.65	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
888		F	

CROSS SECTION RIVER: San Juan
REACH: Upper RS: 8051.46*

INPUT
Description:
Station Elevation Data num= 88

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	223	2.77	221.96	4.43	221.77	16.95	220.19	27.66	218.82
31.54	218.24	32.64	218.07	36.78	217.45	43.69	216.55	47.69	216.48
56.33	216.35	56.46	216.35	68.02	216.18	73.01	216.1	91.35	215.87
98.39	215.89	100.35	215.9	107.4	215.94	152.2	216.15	166.49	216.05
181.58	216.02	189.23	216.44	190.92	216.54	193.73	216.57	235.2	216.93
256.22	217.18	287.47	217.53	310.51	217.89	323.21	217.9	327.08	217.71
344.51	216.87	350.11	216.6	357.59	212.53	357.63	212.51	357.67	212.49
357.71	212.46	357.91	212.35	359.55	211.42	359.86	211.26	366.45	210.02
368.59	209.49	371.92	208.57	376.36	207.93	378.19	207.68	381.91	207.28
384.24	207.03	390.6	206.29	406.83	204.94	407.39	204.93	409.92	204.85
421.03	204.52	425.14	204.37	430.24	204.3	437.09	204.01	437.7	203.98
446.98	203.66	447.27	203.65	474.07	202.74	476.6	202.66	486.25	203.14
521.97	203.34	571.8	203.61	661.34	203.93	705.11	204.09	757.8	205.16
778.45	205.75	779.47	205.73	820.8	204.79	825.99	204.73	833.92	204.53
839	204.32	843.95	204.1	844.61	204.08	850.22	204.32	851.57	204.33
851.83	204.46	861.89	209.5	865.74	211.44	867.17	212.16	869.15	213.75
871.21	215.52	873.37	217.61	874.63	218.76	875.07	219.21	881.27	223.91
884.2	226.45	891.07	232.49	897.03	235.2				

Manning's n Values num= 15

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	31.54	.037	43.69	.048	189.23	.048	344.51	.05
406.83	.035	419.51	.035	429.81	.035	496.7	.048	551.88	.037
571.77	.037	735.73	.035	757.8	.048	778.45	.05	897.03	.048

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
406.83	757.8	21.4	39.31	35.65	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
888	F		

CROSS SECTION RIVER: San Juan
REACH: Upper RS: 8012.155

INPUT
Description: Manual Modification of Manning's N Values
Station Elevation Data num= 41

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	223.01	2.68	221.85	26.78	218.85	42.31	216.52	54.55	216.34
54.67	216.34	88.46	215.8	97.17	215.83	147.38	216.16	175.83	215.96
184.87	216.53	227.75	217	300.67	218.08	312.97	218.04	316.72	217.8
339.02	216.41	348.16	210.37	348.46	210.18	356.91	208.42	360.14	207.63
372.07	206.62	393.94	204.53	411.55	203.88	417.48	203.51	434.55	202.47
445.49	203.01	486	203.16	542.52	203.37	693.7	203.65	753.46	204.79
773.73	205.24	815.31	203.74	833.18	203.3	838.69	203.16	845.52	203.58
845.77	203.74	860.83	213.52	868.59	221.28	874.68	225.6	884.3	233.68
890.15	235.66								

Manning's n Values num= 6

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	42.31	.05	417.48	.035	486	.05	542.52	.035
773.73	.05								

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
393.94	753.46	39.95	38.28	37.37	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
888	F		

CROSS SECTION RIVER: San Juan
REACH: Upper RS: 7973.87*

INPUT
Description:
Station Elevation Data num= 95

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	223.14	2.66	222.09	2.75	222.07	4.18	221.89	8.43	221.4
16.25	220.46	26.54	219.2	41.94	217	48.44	216.79	54.07	216.6
54.19	216.6	74.46	215.9	78.73	215.69	87.68	215.22	96.32	214.9
99.97	214.78	109.04	214.68	116.16	214.61	123.58	214.54	132.03	214.51
146.08	214.64	156.36	214.63	174.28	214.69	180.64	215.07	183.24	215.28
195.25	215.74	222.09	216.5	225.75	216.57	255.87	217.22	257.11	217.23
273.03	217.19	273.28	217.19	284.49	217.09	294.4	216.92	298.02	216.89
310.22	216.61	313.93	216.34	336.04	214.78	345.1	209.76	345.39	209.6
346.98	209.3	353.52	208	353.77	207.95	356.97	207.14	358.34	206.97
360.16	206.83	368.8	206.18	390.47	204.34	406.6	203.72	409.47	203.63
415.87	203.3	423.93	202.9	427.94	202.7	434.28	202.39	445.04	202.85
479.02	203.04	484.9	203.07	517.71	203.26	530.78	203.36	540.51	203.38
611.7	203.47	618.15	203.47	683.78	203.53	684.89	203.52	689.25	203.51
702.04	203.66	715.42	203.88	732.07	204.19	748.04	204.54	768.71	205.07
778.88	204.86	795.05	204.31	811.1	203.75	825.2	203.4	829.32	203.29
830.67	203.25	831.35	203.29	834.94	203.55	836.13	203.72	836.15	203.72
841.91	205.28	842.16	205.47	846.37	208.55	849.47	210.76	852.01	212.53
856.16	215.02	857.52	215.82	858.15	216.37	858.89	216.96	864.57	221.9
865.43	222.59	868.85	224.59	871.64	226.14	881.45	232.6	887.41	234.18

Manning's n Values num= 14

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	41.94	.047	109.04	.038	390.47	.035	413.89	.035
439.94	.035	482.03	.047	491.06	.038	538.25	.038	623.96	.047
748.04	.05	768.71	.05	795.05	.05	887.41	.05		

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
390.47	748.04	39.95	38.28	37.37	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
888	F		

CROSS SECTION RIVER: San Juan
REACH: Upper RS: 7935.60*

INPUT
Description:
Station Elevation Data num= 95

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	223.28	2.63	222.33	2.72	222.31	4.14	222.13	8.35	221.68
16.1	220.77	26.31	219.55	41.57	217.49	48.01	217.15	53.59	216.86
53.71	216.85	73.8	215.78	78.03	215.44	86.9	214.64	95.46	213.98
99.08	213.7	108.07	213.45	115.13	213.26	122.48	213.07	130.86	212.94
144.79	213.12	154.97	213.17	172.74	213.42	179.04	213.78	181.62	214.03
193.52	214.83	220.11	216.04	223.74	216.14	253.6	216.99	254.83	217
270.61	216.67	270.86	216.66	281.97	216.3	291.79	215.82	295.38	215.71
307.46	215.18	311.15	214.88	333.05	213.14	342.03	209.14	342.33	209.02
343.9	208.75	350.38	207.53	350.63	207.47	353.8	206.65	355.16	206.43
356.96	206.31	365.52	205.73	387.01	204.15	404.31	203.45	407.39	203.37
414.25	203.09	422.9	202.74	427.2	202.57	434.01	202.3	444.59	202.68

478.02	202.94	483.8	202.99	516.07	203.23	528.92	203.38	538.49	203.4
608.52	203.43	614.86	203.43	679.42	203.42	680.51	203.41	684.8	203.38
697.38	203.43	710.54	203.59	726.91	203.89	742.63	204.3	763.69	204.9
774.05	204.84	790.54	204.3	806.9	203.77	821.26	203.39	825.47	203.27
826.84	203.23	827.53	203.34	831.2	203.95	832.4	204.21	832.42	204.22
838.29	206.98	838.55	207.19	842.84	210.67	846.01	213.11	848.59	215.05
852.82	217.39	854.2	218.12	854.85	218.59	855.6	219.05	861.4	223.35
862.27	223.9	865.75	225.51	868.59	226.68	878.59	231.52	884.67	232.71

Manning's n Values num= 14

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	41.57	.044	108.07	.041	387.01	.035	410.29	.035
436.21	.035	478.07	.044	487.04	.041	533.98	.041	619.22	.044
742.63	.05	763.69	.05	790.54	.05	884.67	.05		

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
387.01	742.63	39.95	38.28	37.37	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
888	F		

CROSS SECTION RIVER: San Juan
REACH: Upper RS: 7897.32*

INPUT
Description:
Station Elevation Data num= 95

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	223.41	2.61	222.57	2.7	222.55	4.1	222.36	8.28	221.95
15.96	221.08	26.07	219.9	41.19	217.97	47.58	217.51	53.11	217.12
53.23	217.11	73.14	215.66	77.33	215.19	86.13	214.07	94.61	213.05
98.19	212.62	107.11	212.22	114.1	211.91	121.38	211.59	129.68	211.38
143.49	211.61	153.59	211.71	171.19	212.15	177.44	212.49	179.99	212.78
191.79	213.91	218.14	215.58	221.74	215.7	251.33	216.76	252.54	216.77
268.19	216.15	268.43	216.14	279.44	215.51	289.18	214.72	292.73	214.52
304.71	213.75	308.36	213.43	330.07	211.51	338.97	208.53	339.26	208.44
340.82	208.2	347.25	207.06	347.49	207	350.63	206.16	351.98	205.89
353.76	205.78	362.25	205.29	383.54	203.95	402.02	203.19	405.31	203.12
412.64	202.88	421.87	202.59	426.47	202.45	433.73	202.22	444.14	202.52
477.01	202.85	482.69	202.9	514.43	203.21	527.07	203.4	536.48	203.41
605.34	203.4	611.57	203.39	675.05	203.3	676.13	203.29	680.34	203.24
692.71	203.19	705.66	203.31	721.76	203.6	737.21	204.05	758.67	204.73
769.23	204.83	786.03	204.3	802.69	203.78	817.33	203.39	821.61	203.26
823.01	203.21	823.71	203.38	827.45	204.34	828.68	204.7	828.7	204.71
834.68	208.69	834.94	208.92	839.32	212.8	842.54	215.47	845.17	217.56
849.48	219.76	850.89	220.42	851.54	220.82	852.32	221.15	858.22	224.8
859.1	225.21	862.65	226.44	865.55	227.22	875.74	230.44	881.93	231.23

Manning's n Values num= 14

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	41.19	.041	107.11	.044	383.54	.035	406.7	.035
432.47	.035	474.1	.041	483.03	.044	529.7	.044	614.48	.041
737.21	.05	758.67	.05	786.03	.05	881.93	.05		

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
383.54	737.21	39.95	38.28	37.37	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
888	F		

CROSS SECTION RIVER: San Juan
REACH: Upper RS: 7859.05*

INPUT
Description:
Station Elevation Data num= 95

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	223.55	2.59	222.8	2.67	222.78	4.07	222.6	8.2	222.23
15.81	221.4	25.84	220.25	40.82	218.46	47.15	217.88	52.63	217.37
52.75	217.36	72.48	215.55	76.63	214.94	85.35	213.49	93.75	212.12
97.31	211.55	106.14	210.99	113.07	210.56	120.29	210.12	128.51	209.82
142.19	210.09	152.2	210.26	169.64	210.88	175.83	211.19	178.36	211.53
190.05	212.99	216.17	215.12	219.73	215.27	249.06	216.53	250.26	216.53
265.76	215.63	266.01	215.61	276.92	214.72	286.56	213.62	290.09	213.33
301.96	212.32	305.57	211.97	327.09	209.87	335.91	207.92	336.2	207.85
337.74	207.66	344.11	206.59	344.35	206.53	347.47	205.67	348.8	205.35
350.57	205.26	358.98	204.84	380.08	203.76	399.73	202.93	403.23	202.86
411.02	202.67	420.85	202.43	425.73	202.32	433.46	202.13	443.7	202.36
476.01	202.75	481.59	202.81	512.79	203.18	525.21	203.43	534.47	203.42
602.16	203.36	608.29	203.35	670.69	203.19	671.75	203.17	675.89	203.1
688.05	202.96	700.78	203.03	716.6	203.3	731.8	203.81	753.65	204.56
764.4	204.81	781.51	204.3	798.49	203.8	813.39	203.38	817.76	203.24
819.18	203.2	819.9	203.43	823.7	204.74	824.95	205.19	824.97	205.2
831.07	210.39	831.33	210.65	835.79	214.92	839.07	217.83	841.75	220.08
846.14	222.12	847.57	222.72	848.24	223.04	849.03	223.24	855.04	226.26
855.94	226.52	859.56	227.37	862.51	227.76	872.88	229.37	879.19	229.76

Manning's n Values num= 14

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	40.82	.038	106.14	.047	380.08	.035	403.11	.035
428.74	.035	470.14	.038	479.01	.047	525.43	.047	609.74	.038
731.8	.05	753.65	.05	781.51	.05	879.19	.05		

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
380.08	731.8	39.95	38.28	37.37	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
888	F		

CROSS SECTION RIVER: San Juan
REACH: Upper RS: 7820.775

INPUT
Description: Manual Modification of Manning's N Values
Station Elevation Data num= 59

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	223.68	2.65	223.02	4.03	222.83	8.13	222.5	15.67	221.71
46.72	218.24	71.82	215.43	75.93	214.69	96.42	210.47	105.17	209.76
112.04	209.21	119.19	208.65	127.34	208.26	150.81	208.8	174.23	209.9
188.32	212.07	214.2	214.66	246.79	216.3	247.98	216.3	263.34	215.11
263.58	215.09	274.39	213.93	283.95	212.52	334.66	207.11	340.97	206.12
345.62	204.81	347.37	204.73	376.61	203.57	397.44	202.67	419.82	202.28
425	202.19	433.19	202.05	475	202.65	511.15	203.16	523.36	203.45
598.98	203.33	605	203.31	666.33	203.08	667.37	203.05	683.39	202.72
695.9	202.75	711.45	203.01	726.38	203.56	759.58	204.79	777	204.3
809.46	203.38	815.35	203.18	816.08	203.47	821.23	205.68	821.25	205.69
832.26	217.05	835.6	220.19	838.33	222.6	842.8	224.49	844.94	225.27
845.74	225.33	851.86	227.71	856.46	228.3	876.45	228.28		

Manning's n Values num= 6

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	105.17	.05	425	.035	475	.05	605	.035
777	.05								

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
376.61	726.38	42.15	43.12	43.34	.1 .3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
888	F		

CROSS SECTION RIVER: San Juan
REACH: Upper RS: 7777.65*

INPUT
Description:
Station Elevation Data num= 96

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	223.49	3.25	222.74	4.95	222.47	9.99	221.86	16.37	220.99
19.25	220.7	34.19	219.13	42.72	218.24	45.2	218.04	57.38	217.02
74.94	215.55	88.21	214.43	89.94	214.21	93.26	213.79	97.53	213.17
108.47	211.58	116.16	210.41	118.42	210.05	129.17	209.23	137.6	208.59
145.41	208	146.39	207.94	156.4	207.49	177.72	207.97	199.01	208.91
200.62	209.13	211.81	210.64	235.33	212.7	264.94	213.99	266.03	213.99
284.17	212.94	284.45	213.92	297.21	211.92	308.5	210.73	314.62	210.25
368.39	206	375.84	205.16	381.33	204.07	383.4	204	395.83	203.58
400.9	203.4	417.93	202.81	422.37	202.64	441.94	201.9	460.66	201.53
467.75	201.4	473.72	201.29	483.16	201.13	504.63	201.4	520.8	201.61
541.39	201.87	553.35	202.02	564.34	202.25	632.42	202.16	637.84	202.15
693.04	201.97	693.06	201.97	693.99	201.94	708.42	201.69	712.57	201.7
719.68	201.76	733.68	202.06	747.12	202.6	761.63	203.3	768.1	203.61
780.55	203.65	786.66	203.36	798.09	202.85	798.77	202.82	818.65	202.37
820.51	202.33	826.15	202.23	830.78	202.65	831.82	202.74	833.02	202.84
834.93	203.07	836.71	203.29	837.45	203.63	842.63	206.19	842.65	206.21
843.4	206.93	848.01	211.23	853.1	215.85	853.74	216.42	857.1	219.2
859.85	221.35	864.35	223.22	865.09	223.5	866.51	223.96	867.31	224.03
871.03	225.31	873.47	226.21	878.11	226.95	885.16	227.36	895.32	227.88
898.24	228.05								

Manning's n Values num= 14

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	116.71	.047	121.82	.038	392.38	.047	417.93	.038
426.98	.05	463.47	.038	510.53	.05	566.99	.047	632.88	.035
747.12	.05	761.63	.05	798.09	.05	898.24	.05		

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
417.93	747.12	42.15	43.12	43.34	.1 .3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
888	F		

CROSS SECTION RIVER: San Juan
REACH: Upper RS: 7734.52*

INPUT
Description:
Station Elevation Data num= 96

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	223.29	3.86	222.45	5.87	222.11	11.84	221.22	19.41	220.02
22.82	219.69	40.54	217.9	50.66	216.9	53.6	216.73	68.04	215.8
88.86	214.46	104.6	213.43	106.64	213.24	110.58	212.88	115.64	212.36
128.62	211.03	137.75	209.97	140.42	209.64	153.16	208.7	163.17	207.96
172.43	207.29	173.58	207.22	185.45	206.72	204.64	207.15	223.78	207.91
225.24	208.08	235.3	209.21	256.46	210.74	283.1	211.69	284.07	211.68
304.99	210.76	305.32	210.75	320.04	209.91	333.06	208.93	340.11	208.53
402.12	204.89	410.71	204.2	417.05	203.34	419.43	203.26	433.76	202.84
439.62	202.66	459.25	202.04	464.27	201.87	486.45	201.13	507.64	200.66
515.67	200.52	522.44	200.4	533.13	200.21	552.22	200.42	566.6	200.57
584.91	200.77	595.55	200.88	605.32	201.06	665.86	200.99	670.68	200.98
719.77	200.85	719.79	200.85	720.62	200.84	733.45	200.65	737.14	200.67
743.46	200.77	755.91	201.12	767.86	201.63	782.47	202.5	788.99	202.88
801.53	202.51	807.67	202.1	819.19	201.41	819.87	201.36	839.88	201.02
841.76	200.99	847.44	200.94	852.1	201.92	853.15	202.13	854.35	202.38
856.27	202.89	858.07	203.4	858.81	203.8	864.03	206.71	864.05	206.72
864.81	207.41	869.45	211.28	874.58	215.3	875.22	215.79	878.6	218.21
881.37	220.1	885.9	221.96	886.65	222.23	888.07	222.64	888.88	222.73
892.63	223.85	895.09	224.71	899.75	225.61	906.85	226.43	917.08	227.48

920.02 227.81

Manning's n Values num= 14

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	128.25	.044	133.87	.041	431.18	.044	459.25	.041
467.74	.05	501.95	.041	546.06	.05	598.99	.044	660.77	.035
767.86	.05	782.47	.05	819.19	.05	920.02	.05		

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
459.25	767.86	42.15	43.12	43.34	.1 .3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
888	F		

CROSS SECTION RIVER: San Juan
REACH: Upper RS: 7691.40*

INPUT
Description:
Station Elevation Data num= 96

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	223.1	4.46	222.17	6.79	221.74	13.7	220.58	22.46	219.05
26.4	218.68	46.89	216.68	58.6	215.57	62	215.42	78.7	214.58
102.78	213.38	120.98	212.44	123.35	212.27	127.91	211.98	133.76	211.55
148.78	210.47	159.33	209.54	162.42	209.22	177.16	208.16	188.73	207.34
199.44	206.57	200.78	206.51	214.51	205.95	231.55	206.32	248.56	206.92
249.85	207.04	258.79	207.78	277.59	208.77	301.25	209.38	302.12	209.38
325.82	208.59	326.19	208.58	342.86	207.9	357.61	207.14	365.6	206.82
435.85	203.78	445.58	203.24	452.76	202.6	455.46	202.53	471.69	202.11
478.33	201.91	500.57	201.28	506.18	201.11	530.95	200.36	554.63	199.8
563.6	199.64	571.15	199.5	583.1	199.28	599.81	199.43	612.41	199.53
628.44	199.67	637.74	199.74	646.3	199.86	699.31	199.83	703.53	199.82
746.5	199.74	746.52	199.74	747.24	199.73	758.47	199.62	761.7	199.63
767.24	199.79	778.14	200.17	788.61	200.67	803.32	201.7	809.88	202.16
822.5	201.38	828.69	200.83	840.28	199.96	840.97	199.91	861.12	199.67
863.01	199.65	868.72	199.66	873.42	201.18	874.48	201.52	875.69	201.92
877.62	202.72	879.43	203.51	880.18	203.96	885.44	207.22	885.46	207.24
886.22	207.89	890.89	211.33	896.05	214.75	896.7	215.16	900.11	217.23
902.89	218.85	907.46	220.69	908.21	220.97	909.64	221.33	910.46	221.44
914.22	222.4	916.7	223.21	921.4	224.26	928.55	225.5	938.85	227.08
941.81	227.58								

Manning's n Values num= 14

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	139.79	.041	145.91	.044	469.97	.041	500.57	.044
508.49	.05	540.42	.044	581.59	.05	631	.041	688.65	.05
788.61	.05	803.32	.05	840.28	.05	941.81	.05		

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
500.57	788.61	42.15	43.12	43.34	.1 .3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
888	F		

CROSS SECTION RIVER: San Juan
REACH: Upper RS: 7648.27*

INPUT
Description:
Station Elevation Data num= 96

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	222.9	5.07	221.88	7.71	221.38	15.55	219.94	25.5	218.09
29.97	217.67	53.24	215.45	66.53	214.23	70.39	214.11	89.36	213.36
116.71	212.29	137.37	211.44	140.06	211.31	145.23	211.07	151.88	210.75
168.93	209.92	180.91	209.1	184.42	208.81	201.16	207.63	214.3	206.71
226.46	205.86	227.98	205.8	243.56	205.18	258.47	205.5	273.34	205.92
274.47	205.99	282.28	206.35	298.72	206.81	319.41	207.07	320.16	207.07
346.64	206.42	347.05	206.41	365.69	205.89	382.17	205.35	391.09	205.1
469.58	202.67	480.46	202.28	488.47	201.87	491.49	201.79	509.63	201.37
517.04	201.17	541.89	200.51	548.09	200.34	575.46	199.58	601.61	198.94
611.52	198.76	619.87	198.6	633.07	198.36	647.41	198.44	658.21	198.49
671.96	198.56	679.94	198.6	687.28	198.66	732.75	198.66	736.37	198.66
773.23	198.62	773.24	198.62	773.87	198.62	783.5	198.59	786.27	198.6
791.02	198.8	800.37	199.23	809.35	199.7	824.16	200.9	830.76	201.43
843.47	200.24	849.7	199.57	861.38	198.51	862.07	198.45	882.35	198.32
884.26	198.31	890.01	198.37	894.74	200.45	895.8	200.92	897.02	201.45
898.97	202.54	900.79	203.62	901.54	204.13	906.84	207.74	906.86	207.75
907.62	208.36	912.33	211.37	917.53	214.2	918.17	214.53	921.61	216.24
924.41	217.6	929.01	219.42	929.76	219.71	931.21	220.01	932.03	220.14
935.82	220.94	938.32	221.71	943.05	222.91	950.24	224.56	960.61	226.67
963.59	227.34								

Manning's n Values num= 14

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	151.33	.038	157.96	.047	508.77	.038	541.89	.047
549.25	.05	578.89	.047	617.13	.05	663	.038	716.53	.035
809.35	.05	824.16	.05	861.38	.05	963.59	.05		

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
541.89	809.35	42.15	43.12	43.34	.1 .3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
888	F		

CROSS SECTION RIVER: San Juan
REACH: Upper RS: 7605.154

INPUT

Description: Manual Modification of Manning's N Values
Station Elevation Data num= 44

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	222.71	28.54	217.12	59.59	214.23	74.47	212.9	78.79	212.8
130.63	211.2	156.77	210.34	170	209.94	189.08	209.36	202.49	208.66
253.47	205.15	272.62	204.41	299.08	204.95	338.21	204.76	416.58	203.38
547.56	200.64	555.75	200.43	583.21	199.75	590	199.58	648.6	198.08
683.04	197.44	695	197.45	715.48	197.46	799.96	197.51	810.84	197.57
830.09	198.74	845	200.1	851.65	200.71	870.72	198.31	883.17	196.99
903.59	196.97	905.51	196.97	911.3	197.09	917.13	200.31	918.36	200.99
920.32	202.37	929.03	208.84	933.77	211.42	939	213.65	951.32	218.45
957.42	219.49	971.94	223.63	982.38	226.27	985.38	227.11		

Manning's n Values num= 6

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	170	.05	547.56	.035	590	.05	695	.035
845	.05								

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
583.21	830.09	34.01	45.05	44.87	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
888	F		

CROSS SECTION RIVER: San Juan
REACH: Upper RS: 7560.10*

INPUT
Description:
Station Elevation Data num= 89

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	222.65	2.95	222.07	28.15	217.12	33.9	216.5	56.48	214.42
58.77	214.22	70.02	213.24	73.45	212.95	77.71	212.84	119.72	211.48
128.84	211.21	133.84	211.06	144.11	210.74	154.62	210.42	167.67	210.04
169.54	209.99	186.48	209.3	187.63	209.23	199.71	208.44	202	208.26
221.15	206.63	234.91	205.71	249.99	204.67	258.25	204.32	268.88	203.91
294.97	204.26	303.41	204.18	333.56	204.01	388.81	203.1	410.86	202.73
525.48	200.52	540.04	200.23	548.12	200.04	575.2	199.43	583.14	199.25
600.18	198.87	651.64	197.86	672.67	197.55	675.79	197.51	691.91	197.27
703.7	197.29	723.91	197.31	740.85	197.32	774.55	197.36	776.26	197.36
793.18	197.39	807.24	197.42	817.97	197.48	828.06	198.03	836.96	198.51
841.94	198.87	845.41	199.11	849.08	199.38	852.99	199.65	855.87	199.85
860.14	200.15	876.81	198.44	880.64	198.05	894.02	196.89	894.63	196.89
907.37	196.85	915.98	196.82	918.04	196.81	918.77	196.82	924.26	196.91
925.21	197.32	926.71	198.02	930.53	199.8	931.85	200.41	933.96	201.64
934.21	201.79	940.21	205.91	943.33	208.01	943.4	208.05	943.72	208.21
947.24	209.91	948.42	210.48	954.04	212.68	954.97	213.02	967.29	217.15
971.12	217.76	973.85	218.24	980.09	219.91	987.25	222.03	989.46	222.67
994.66	224.03	1000.36	225.66	1000.68	225.75	1003.91	226.71		

Manning's n Values num= 16

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	133.84	.037	167.67	.05	540.04	.037	575.2	.048
582.4	.048	693.73	.035	715.29	.035	771.22	.037	807.01	.048
830.87	.037	836.96	.048	852.99	.048	855.87	.035	894.63	.037
1003.91	.05								

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
575.2	836.96	34.01	45.05	44.87	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
888	F		

CROSS SECTION RIVER: San Juan
REACH: Upper RS: 7515.04*

INPUT
Description:
Station Elevation Data num= 89

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	222.59	2.91	222.01	27.76	217.11	33.43	216.42	55.69	214.4
57.95	214.2	69.05	213.26	72.42	213	76.63	212.88	118.06	211.47
127.04	211.23	131.98	211.08	142.1	210.79	152.46	210.49	165.33	210.15
167.17	210.1	183.89	209.24	185.01	209.16	196.93	208.23	199.18	208.03
218.07	206.11	231.64	205.22	246.51	204.19	254.65	203.81	265.13	203.42
290.86	203.56	299.19	203.45	328.92	203.27	383.39	202.42	405.14	202.09
518.16	200.08	532.52	199.83	540.48	199.66	567.19	199.11	576.28	198.93
595.79	198.53	654.69	197.64	678.75	197.36	682.32	197.32	700.77	197.11
712.41	197.13	732.33	197.15	749.04	197.18	782.28	197.23	783.96	197.23
800.65	197.28	814.51	197.32	825.1	197.39	835.05	197.86	843.82	198.27
849.15	198.58	852.86	198.77	856.79	198.98	860.97	199.2	864.06	199.36
868.62	199.6	886.46	198.12	890.56	197.78	904.88	196.79	905.52	196.79
919.16	196.73	928.36	196.67	930.57	196.65	931.35	196.66	937.23	196.72
938.24	197.07	939.85	197.7	943.94	199.28	945.35	199.83	947.6	200.92
947.86	201.05	954.29	205.14	957.62	207.18	957.7	207.22	958.04	207.39
961.81	209	963.07	209.55	969.09	211.72	970.07	212.05	983.26	215.84
987.35	216.46	990.28	216.99	996.95	218.68	1004.61	221.03	1006.98	221.71
1012.54	223.21	1018.63	225.13	1018.98	225.23	1022.43	226.32		

Manning's n Values num= 16

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	131.98	.039	165.33	.05	532.52	.039	567.19	.046
574.8	.046	692.45	.035	715.24	.035	774.35	.039	812.17	.046
837.39	.039	843.82	.046	860.97	.046	864.06	.035	905.52	.039
1022.43	.05								

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
567.19	843.82	34.01	45.05	44.87	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
888	F		

CROSS SECTION RIVER: San Juan
REACH: Upper RS: 7469.99*

INPUT
Description:
Station Elevation Data num= 89

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	222.53	2.86	221.95	27.36	217.11	32.96	216.35	54.91	214.38
57.13	214.19	68.07	213.29	71.4	213.05	75.54	212.92	116.39	211.47
125.25	211.24	130.12	211.11	140.1	210.84	150.31	210.57	163	210.25
164.81	210.2	181.29	209.17	182.4	209.09	194.15	208.01	196.37	207.79
214.99	205.58	228.36	204.73	243.03	203.72	251.05	203.31	261.39	202.92
286.76	202.87	294.96	202.73	324.27	202.52	377.98	201.74	399.42	201.44
510.84	199.65	525	199.42	532.85	199.27	559.18	198.79	569.41	198.6
591.39	198.2	657.73	197.41	684.84	197.16	688.86	197.13	709.64	196.94
721.11	196.96	740.76	197	757.23	197.03	790.01	197.1	791.66	197.1
808.12	197.17	821.79	197.23	832.23	197.3	842.04	197.69	850.69	198.04
856.37	198.3	860.32	198.43	864.51	198.59	868.96	198.75	872.25	198.87
877.11	199.04	896.11	197.8	900.47	197.52	915.73	196.69	916.42	196.69
930.94	196.6	940.75	196.52	943.1	196.5	943.94	196.5	950.19	196.54
951.28	196.81	952.99	197.37	957.34	198.77	958.84	199.25	961.25	200.19
961.52	200.3	968.37	204.37	971.92	206.35	972	206.39	972.37	206.56
976.38	208.09	977.73	208.61	984.13	210.75	985.18	211.09	999.23	214.54
1003.59	215.17	1006.7	215.74	1013.82	217.44	1021.98	220.02	1024.49	220.75
1030.42	222.39	1036.91	224.6	1037.29	224.71	1040.96	225.92		

Manning's n Values num= 16

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	130.12	.041	163	.05	525	.041	559.18	.044
567.2	.044	691.18	.035	715.19	.035	777.48	.041	817.34	.044
843.91	.041	850.69	.044	868.96	.044	872.25	.035	916.42	.041
1040.96	.05								

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
559.18	850.69	34.01	45.05	44.87	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
888	F		

CROSS SECTION RIVER: San Juan
REACH: Upper RS: 7424.94*

INPUT
Description:
Station Elevation Data num= 89

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	222.48	2.82	221.89	26.97	217.11	32.49	216.27	54.12	214.36
56.32	214.18	67.1	213.31	70.38	213.1	74.46	212.96	114.72	211.46
123.45	211.25	128.25	211.13	138.09	210.89	148.16	210.64	160.66	210.35
162.45	210.31	178.69	209.11	179.79	209.02	191.37	207.8	193.56	207.55
211.91	205.05	225.09	204.24	239.55	203.24	247.46	202.8	257.64	202.43
282.65	202.17	290.74	202	319.63	201.78	372.56	201.06	393.69	200.79
503.52	199.22	517.48	199.02	525.22	198.89	551.17	198.47	562.55	198.28
586.99	197.86	660.78	197.19	690.92	196.97	695.39	196.94	718.51	196.77
729.82	196.8	749.18	196.85	765.42	196.89	797.74	196.96	799.37	196.97
815.59	197.06	829.07	197.13	839.36	197.21	849.03	197.53	857.56	197.81
863.58	198.01	867.78	198.09	872.22	198.2	876.95	198.3	880.44	198.38
885.59	198.49	905.76	197.48	910.39	197.26	926.58	196.59	927.31	196.58
942.73	196.48	953.13	196.37	955.63	196.34	956.52	196.34	963.16	196.35
964.31	196.56	966.12	197.05	970.74	198.25	972.34	198.67	974.89	199.46
975.18	199.56	982.44	203.59	986.21	205.52	986.31	205.56	986.69	205.74
990.95	207.18	992.38	207.68	999.18	209.79	1000.29	210.12	1015.2	213.24
1019.83	213.87	1023.13	214.49	1030.68	216.21	1039.34	219.01	1042.01	219.79
1048.31	221.57	1055.19	224.07	1055.59	224.2	1059.49	225.52		

Manning's n Values num= 16

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	128.25	.044	160.66	.05	517.48	.044	551.17	.041
559.6	.041	689.91	.035	715.14	.035	780.61	.044	822.5	.041
850.44	.044	857.56	.041	876.95	.041	880.44	.035	927.31	.044
1059.49	.05								

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
551.17	857.56	34.01	45.05	44.87	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
888	F		

CROSS SECTION RIVER: San Juan
REACH: Upper RS: 7379.88*

INPUT
Description:
Station Elevation Data num= 89

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	222.42	2.78	221.83	26.58	217.1	32.01	216.19	53.33	214.33
55.5	214.16	66.12	213.34	69.36	213.15	73.38	213.01	113.05	211.45
121.66	211.27	126.39	211.16	136.08	210.94	146	210.72	158.33	210.45
160.09	210.42	176.1	209.05	177.18	208.95	188.58	207.58	190.75	207.31
208.83	204.52	221.82	203.74	236.06	202.76	243.86	202.29	253.9	201.93
278.54	201.48	286.51	201.27	314.98	201.03	367.15	200.39	387.97	200.14
496.21	198.79	509.96	198.61	517.59	198.5	543.16	198.15	555.69	197.95
582.59	197.52	663.82	196.97	697.01	196.78	701.93	196.75	727.38	196.6
738.52	196.64	757.61	196.69	773.62	196.74	805.46	196.83	807.07	196.84

823.06	196.95	836.34	197.04	846.48	197.12	856.02	197.36	864.43	197.58
870.8	197.72	875.24	197.74	879.93	197.81	884.93	197.85	888.62	197.88
894.08	197.93	915.41	197.16	920.31	196.99	937.43	196.49	938.21	196.48
954.51	196.35	965.52	196.21	968.16	196.18	969.1	196.17	976.12	196.17
977.34	196.3	979.26	196.72	984.14	197.74	985.83	198.09	988.53	198.73
988.84	198.81	996.52	202.82	1000.51	204.69	1000.61	204.73	1001.01	204.91
1005.52	206.27	1007.03	206.74	1014.22	208.82	1015.4	209.15	1031.17	211.93
1036.07	212.57	1039.56	213.24	1047.54	214.97	1056.7	218	1059.53	218.83
1066.19	220.75	1073.47	223.53	1073.89	223.68	1078.02	225.12		

Manning's n Values num= 16

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	126.39	.046	158.33	.05	509.96	.046	543.16	.039
552	.039	688.63	.035	715.1	.035	783.74	.046	827.67	.039
856.96	.046	864.43	.039	884.93	.039	888.62	.035	938.21	.046
1078.02	.05								

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
543.16	864.43	34.01	45.05	44.87	.1 .3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
888	F		

CROSS SECTION RIVER: San Juan
REACH: Upper RS: 7334.83*

INPUT
Description:
Station Elevation Data num= 89

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	222.36	2.74	221.77	26.19	217.1	31.54	216.12	52.55	214.31
54.68	214.15	65.15	213.36	68.33	213.2	72.3	213.05	111.39	211.45
119.87	211.28	124.52	211.18	134.08	210.99	143.85	210.79	155.99	210.56
157.73	210.52	173.5	208.99	174.56	208.88	185.8	207.37	187.93	207.08
205.75	203.99	218.55	203.25	232.58	202.28	240.27	201.79	250.15	201.43
274.43	200.79	282.29	200.55	310.34	200.29	361.73	199.71	382.25	199.5
488.89	198.35	502.44	198.21	509.95	198.12	535.15	197.83	548.83	197.63
578.2	197.19	666.87	196.75	703.09	196.58	708.46	196.56	736.24	196.44
747.23	196.48	766.04	196.54	781.81	196.6	813.19	196.7	814.78	196.71
830.53	196.84	843.62	196.95	853.61	197.03	863.01	197.2	871.29	197.34
878.01	197.43	882.69	197.4	887.65	197.41	892.92	197.4	896.81	197.39
902.57	197.38	925.06	196.84	930.23	196.73	948.29	196.39	949.1	196.38
966.3	196.23	977.91	196.06	980.69	196.02	981.68	196.01	989.09	195.98
990.37	196.05	992.39	196.4	997.55	197.22	999.33	197.51	1002.17	198.01
1002.5	198.07	1010.6	202.04	1014.81	203.86	1014.91	203.9	1015.34	204.09
1020.09	205.36	1021.68	205.81	1029.27	207.86	1030.51	208.19	1047.14	210.63
1052.3	211.28	1055.99	212	1064.41	213.74	1074.07	216.99	1077.05	217.87
1084.07	219.93	1091.75	223	1092.19	223.16	1096.54	224.73		

Manning's n Values num= 16

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	124.52	.048	155.99	.05	502.44	.048	535.15	.037
544.4	.037	687.36	.035	715.05	.035	786.87	.048	832.83	.037
863.48	.048	871.29	.037	892.92	.037	896.81	.035	949.1	.048
1096.54	.05								

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
535.15	871.29	34.01	45.05	44.87	.1 .3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
888	F		

CROSS SECTION RIVER: San Juan
REACH: Upper RS: 7289.783

INPUT
Description: Manual Modification of Manning's N Values
Station Elevation Data num= 50

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	222.3	2.7	221.71	31.07	216.04	51.76	214.29	64.17	213.39
109.72	211.44	122.66	211.21	132.07	211.04	155.37	210.63	171.95	208.81
185.12	206.84	202.67	203.46	215.28	202.76	236.67	201.28	278.06	199.82
356.32	199.03	481.57	197.92	527.14	197.51	573.8	196.85	709.18	196.39
715	196.37	745.11	196.27	790	196.45	820.92	196.57	822.48	196.58
838	196.73	870	197.03	878.16	197.11	885.23	197.14	890.15	197.06
895.36	197.02	905	196.9	934.71	196.52	960	196.28	978.08	196.1
994.26	195.85	1003.4	195.79	1005.53	196.07	1016.16	197.32	1024.68	201.27
1029.21	203.07	1029.66	203.26	1034.66	204.45	1045.62	207.22	1068.54	209.98
1081.27	212.5	1091.43	215.98	1101.95	219.11	1110.03	222.47	1115.07	224.33

Manning's n Values num= 8

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	122.66	.05	715	.035	790	.05	838	.035
870	.05	905	.035	960	.05				

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
527.14	878.16	31.39	37.9	42.85	.1 .3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
888	F		

CROSS SECTION RIVER: San Juan
REACH: Upper RS: 7251.88*

INPUT
Description:
Station Elevation Data num= 76

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev

```
      0  221.43    2.73  220.88   31.41  215.54   46.49  214.16   52.33  213.64
  59.28  213.08   64.88   212.5    71.1     212   81.54  211.27   95.37   210.6
 110.93  209.86  119.23  209.64  124.01  209.52  133.52  209.28  134.69  209.25
 157.08  208.86  173.84   207.3  187.15  205.62   204.9  202.76  217.65  202.14
 239.27  200.85  247.62  200.58  281.12  199.54  360.23  198.73  397.59  198.39
 463.38  197.94  486.86  197.78  532.93  197.46  577.25  196.85  583.83  196.82
 705.82  196.41  711.35  196.39  731.37  196.32  739.95  196.29  783.46  196.52
  784.3  196.52  794.69  196.58  814.85  196.67  816.39  196.68  831.72  196.83
 863.34  197.13   871.4   197.2  878.61  197.21  883.52  197.13  883.63  197.13
 888.94  197.08  898.77  196.95  914.62  196.73  929.07  196.54  954.85  196.25
 973.29  196.04  989.79  195.78  999.11   195.7 1001.28  195.93 1007.74  196.53
1012.12  196.97 1020.81   200.3 1022.76  200.95 1025.43  201.83 1025.89  201.99
1030.99  203.01 1042.16  205.38 1051.65  206.36 1055.47  206.76 1065.53  207.76
 1073.8  209.11 1078.51  210.55 1080.18  211.26 1083.19   212.5 1088.87  214.66
1091.53  215.57  1099.6  218.31 1100.36  218.64 1105.75  220.96 1107.84  221.79
1112.98  223.65

Manning's n Values        num=      16
     Sta   n Val      Sta   n Val      Sta   n Val      Sta   n Val      Sta   n Val
       0    .035    46.49    .038   124.01     .05   532.93    .035   712.07    .035
  714.08    .035   769.99    .038   786.39     .05   832.68    .038   863.53     .05
   871.4    .035   898.77    .035   914.62    .035   954.85    .047 1007.74    .038
 1112.98     .05

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       532.93   871.4              31.39    37.9   42.85             .1       .3
Ineffective Flow     num=       1
   Sta L   Sta R    Elev  Permanent
888        F

CROSS SECTION          RIVER: San Juan
REACH: Upper              RS: 7213.99*

INPUT
Description:
Station Elevation Data    num=      76
     Sta    Elev      Sta    Elev      Sta    Elev      Sta    Elev      Sta    Elev
       0  220.57     2.76  220.06    31.75  215.04      47  213.55     52.9  212.99
   59.92  212.37    65.58  211.61    71.87  210.88   82.43  209.86     96.4  209.11
  112.13  208.29   120.53  207.98   125.36  207.83  134.97  207.51   136.15  207.47
  158.78  207.09   175.73  205.79   189.19   204.4  207.12  202.05   220.01  201.52
  241.87  200.42   250.31  200.18   284.17  199.27  364.15  198.43   401.91  198.07
  468.42  197.76   492.15  197.64   538.72  197.42  580.69  196.85   586.93  196.81
  702.46  196.42    707.7  196.41   726.66  196.34  734.78  196.32   777.77  196.59
   778.6   196.6   788.86  196.66   808.78  196.77   810.3  196.79   825.45  196.93
  856.68  197.22   864.64   197.3   871.99  197.28     877   197.2   877.11   197.2
  882.52  197.14   892.54     197   908.69  196.76  923.42  196.55   949.71  196.23
   968.5  195.99   985.32  195.72   994.82  195.62  997.03  195.79  1003.61  196.25
 1008.08  196.62  1016.94  199.34  1018.92  199.86 1021.65  200.59  1022.11  200.72
 1027.31  201.57   1038.7  203.53  1048.37  204.38 1052.27  204.73  1062.53  205.55
 1070.95  206.64  1075.76  208.61  1077.46  209.46 1080.52  210.92  1086.32  213.33
 1089.03  214.38  1097.25   217.5  1098.03  217.86 1103.52   220.3  1105.65  221.12
 1110.89  222.96

Manning's n Values        num=      16
     Sta   n Val      Sta   n Val      Sta   n Val      Sta   n Val      Sta   n Val
       0    .035       47    .04   125.36     .05   538.72    .035   711.22    .035
  713.15    .035   766.99    .04   782.79     .05   827.36     .04   857.07     .05
  864.64    .035   892.54    .035  908.69    .035   949.71    .045  1003.61    .04
 1110.89     .05

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       538.72  864.64             31.39    37.9   42.85             .1       .3
Ineffective Flow     num=       1
   Sta L   Sta R    Elev  Permanent
888        F

CROSS SECTION          RIVER: San Juan
REACH: Upper              RS: 7176.09*

INPUT
Description:
Station Elevation Data    num=      76
     Sta    Elev      Sta    Elev      Sta    Elev      Sta    Elev      Sta    Elev
       0   219.7     2.79  219.23    32.09  214.54    47.5  212.93    53.47  212.34
   60.57  211.67    66.29  210.72    72.64  209.75   83.31  208.44    97.44  207.61
  113.34  206.71   121.82  206.33    126.7  206.13  136.42  205.75   137.62   205.7
  160.49  205.32   177.62  204.28   191.22  203.18  209.35  201.35   222.38   200.9
  244.47  199.98      253  199.77   287.23  198.99  368.06  198.14   406.23  197.76
  473.45  197.57   497.44  197.51   544.52  197.37  584.14  196.84   590.03   196.8
  699.11  196.44   704.05  196.42   721.95  196.36  729.62  196.34   772.07  196.67
   772.9  196.67   783.03  196.75    802.7  196.88  804.21  196.89   819.17  197.03
  850.02  197.32   857.89  197.39   865.37  197.35  870.47  197.27   870.58  197.27
   876.1   197.2   886.31  197.05   902.77   196.8  917.78  196.57   944.56   196.2
  963.71  195.93   980.85  195.65   990.53  195.53  992.78  195.65   999.49  195.96
 1004.04  196.28  1013.07  198.37  1015.09  198.78 1017.86  199.34  1018.34  199.45
 1023.64  200.12  1035.24  201.69   1045.1  202.41 1049.06   202.7  1059.52  203.33
  1068.1  204.16     1073  206.66  1074.73  207.66 1077.86  209.35  1083.76  212.01
 1086.52  213.19   1094.9   216.7  1095.69  217.07 1101.29  219.65  1103.46  220.44
  1108.8  222.27

Manning's n Values        num=      16
     Sta   n Val      Sta   n Val      Sta   n Val      Sta   n Val      Sta   n Val
       0    .035     47.5    .043   126.7     .05   544.52    .035   710.37    .035
  712.23    .035   763.99    .043  779.18     .05   822.03    .043    850.6     .05
  857.89    .035   886.31    .035  902.77    .035   944.56    .043   999.49    .043
  1108.8     .05
```

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
544.52 857.89 31.39 37.9 42.85 .1 .3
Ineffective Flow num= 1
Sta L Sta R Elev Permanent
888 F

CROSS SECTION RIVER: San Juan
REACH: Upper RS: 7138.19*

INPUT
Description:
Station Elevation Data num= 76

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	218.83	2.82	218.4	32.44	214.04	48.01	212.32	54.03	211.69
61.21	210.96	66.99	209.83	73.41	208.63	84.2	207.03	98.48	206.12
114.54	205.13	123.12	204.67	128.05	204.44	137.87	203.98	139.08	203.93
162.2	203.55	179.51	202.77	193.26	201.97	211.58	200.65	224.74	200.28
247.07	199.55	255.69	199.36	290.28	198.71	371.98	197.84	410.55	197.44
478.49	197.39	502.73	197.37	550.31	197.32	587.59	196.84	593.12	196.8
695.75	196.46	700.4	196.44	717.24	196.39	724.46	196.36	766.38	196.74
767.19	196.75	777.21	196.84	796.63	196.98	798.12	196.99	812.89	197.13
843.36	197.41	851.13	197.48	858.75	197.42	863.95	197.34	864.06	197.34
869.68	197.26	880.08	197.09	896.85	196.83	912.13	196.58	939.42	196.17
958.92	195.88	976.38	195.59	986.24	195.45	988.54	195.51	995.37	195.68
1000	195.93	1009.2	197.41	1011.26	197.7	1014.08	198.1	1014.57	198.17
1019.96	198.68	1031.79	199.85	1041.82	200.43	1045.86	200.66	1056.51	201.11
1065.25	201.69	1070.25	204.71	1072.01	205.86	1075.19	207.77	1081.21	210.68
1084.02	212.01	1092.56	215.9	1093.36	216.29	1099.06	218.99	1101.27	219.77
1106.71	221.59								

Manning's n Values num= 16

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	48.01	.045	128.05	.05	550.31	.035	709.52	.035
711.3	.035	761	.045	775.57	.05	816.71	.045	844.13	.05
851.13	.035	880.08	.035	896.85	.035	939.42	.04	995.37	.045
1106.71	.05								

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
550.31 851.13 31.39 37.9 42.85 .1 .3
Ineffective Flow num= 1
Sta L Sta R Elev Permanent
888 F

CROSS SECTION RIVER: San Juan
REACH: Upper RS: 7100.30*

INPUT
Description:
Station Elevation Data num= 76

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	217.97	2.85	217.57	32.78	213.54	48.51	211.7	54.6	211.03
61.86	210.25	67.7	208.93	74.19	207.5	85.08	205.61	99.51	204.62
115.75	203.55	124.41	203.02	129.4	202.75	139.33	202.22	140.55	202.15
163.91	201.79	181.4	201.26	195.29	200.75	213.8	199.95	227.11	199.66
249.67	199.12	258.38	198.96	293.34	198.44	375.89	197.54	414.87	197.13
483.52	197.2	508.02	197.23	556.1	197.28	591.03	196.84	596.22	196.79
692.39	196.47	696.75	196.46	712.53	196.41	719.29	196.39	760.69	196.82
761.49	196.82	771.38	196.92	790.56	197.08	792.03	197.09	806.62	197.23
836.7	197.51	844.37	197.58	852.13	197.49	857.42	197.41	857.54	197.41
863.26	197.32	873.85	197.14	890.92	196.86	906.49	196.6	934.27	196.15
954.13	195.82	971.91	195.52	981.95	195.36	984.29	195.37	991.24	195.39
995.96	195.58	1005.32	196.44	1007.42	196.61	1010.3	196.86	1010.8	196.9
1016.29	197.24	1028.33	198	1038.55	198.45	1042.66	198.63	1053.51	198.89
1062.41	199.21	1067.49	202.77	1069.28	204.06	1072.53	206.2	1078.65	209.36
1081.51	210.82	1090.21	215.1	1091.02	215.51	1096.83	218.34	1099.08	219.09
1104.62	220.9								

Manning's n Values num= 16

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	48.51	.047	129.4	.05	556.1	.035	708.67	.035
710.38	.035	758	.047	771.97	.05	811.39	.047	837.67	.05
844.37	.035	873.85	.035	890.92	.035	934.27	.038	991.24	.047
1104.62	.05								

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
556.1 844.37 31.38 37.9 42.85 .1 .3
Ineffective Flow num= 1
Sta L Sta R Elev Permanent
888 F

CROSS SECTION RIVER: San Juan
REACH: Upper RS: 7062.404

INPUT
Description: Manual Modification of Manning's N Values
Station Elevation Data num= 31

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	217.1	49.02	211.09	62.5	209.54	74.96	206.38	85.97	204.2
100.55	203.13	125.71	201.36	142.01	200.38	261.07	198.55	419.19	196.81
488.56	197.02	561.89	197.23	599.32	196.78	707.82	196.43	714.13	196.41
755	196.89	765.55	197.01	837.61	197.67	850.9	197.48	885	196.89
987.12	195.11	1003.59	195.53	1035.27	196.47	1039.46	196.6	1059.56	196.74
1066.56	202.26	1069.86	204.62	1079.01	209.63	1088.69	214.73	1094.6	217.68
1102.53	220.22								

Manning's n Values num= 6

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	49.02	.05	707.82	.035	755	.05	885	.035

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  987.12      .05

Bank Sta: Left   Right     Lengths: Left Channel   Right      Coeff Contr.   Expan.
        561.89  837.61              45.82   41.96   42.85             .1       .3
Ineffective Flow      num=       1
   Sta L   Sta R    Elev  Permanent
888        F

CROSS SECTION           RIVER: San Juan
REACH: Upper               RS: 7020.44*

INPUT
Description:
Station Elevation Data     num=      71
     Sta     Elev      Sta     Elev      Sta     Elev      Sta     Elev      Sta     Elev
       0   216.93     6.78   216.13    39.98   212.16    43.64   211.64    51.94   210.08
   56.86   209.19    60.67   208.48    63.56   208.16    66.23   207.87    76.93   205.64
   79.43    205.1    81.7    204.71    91.1    203.34   106.55   202.47   133.21   201.01
  150.48   200.19   213.17   199.21   263.74   198.43   276.64   198.24   300.48   197.97
  444.18      197   467.19   197.07   517.69   197.16   519.88   197.17   576.49   197.31
  584.28   197.38   595.39   197.02    607.6   196.84   624.67   196.31   666.68   195.35
   667.9   195.32   683.08   194.99   693.71   194.92   709.54   194.76   714.47   194.71
  740.55   195.12   746.36    195.2   749.89   195.27   750.16   195.28   759.37   195.54
  822.29   197.15   830.62   197.21   836.95   197.18   874.57   196.94   894.74    196.8
  907.14   196.82   915.56   196.82   943.93   196.49   987.23   195.57   1005.4   195.72
 1016.58   195.84  1026.62   195.96  1027.98   195.99  1032.79   196.11  1035.98    196.2
 1040.35   196.31  1044.98   196.43  1058.22   196.57  1059.91   196.67  1065.47   197.22
 1067.15   197.47  1074.87   202.71  1077.38   204.29  1078.51   205.01  1085.03   208.38
 1088.47   209.84  1088.61    209.9  1099.23   214.62  1099.29   214.65  1105.81   217.08
 1114.56   219.29

Manning's n Values         num=      11
     Sta   n Val      Sta   n Val      Sta   n Val      Sta   n Val      Sta   n Val
       0    .039    51.94     .05   595.39    .035   715.48    .035   754.31    .046
  822.29    .039   874.57    .039   907.14    .046   987.23    .046  1035.98    .039
 1114.56     .05

Bank Sta: Left   Right     Lengths: Left Channel   Right      Coeff Contr.   Expan.
        595.39  822.29              45.82   41.96   42.85             .1       .3

CROSS SECTION           RIVER: San Juan
REACH: Upper               RS: 6978.47*

INPUT
Description:
Station Elevation Data     num=      71
     Sta     Elev      Sta     Elev      Sta     Elev      Sta     Elev      Sta     Elev
       0   216.75     7.16   215.94    42.23   211.84    46.1    211.23    54.87   209.08
   60.06   207.82    64.08   206.82    67.14   206.49    69.95    206.2    81.26   204.29
    83.9   203.82     86.3   203.46    96.22   202.49   112.54    201.8    140.7   200.66
  158.94      200   225.16   198.94   278.58   198.11    292.2   197.93   317.38   197.65
  469.18   197.18   493.48   197.26   546.82   197.31   549.13   197.31   608.93   197.44
  617.16   197.56    628.9   196.81    637.7   196.64   650.02   195.84   680.34   194.09
  681.21   194.04   692.17   193.45   699.83   193.35   711.26    193.1   714.82   193.02
   737.1   193.47   742.07   193.55   745.09   193.66   745.32   193.67    753.2   194.06
  806.97   196.62   816.09   196.85   823.01   196.88   864.15   196.98    886.2   197.04
  899.76   197.26   908.96   197.41   939.99   197.19   987.35   196.04  1007.22   195.91
 1019.44   195.85  1030.42   195.82  1031.91   195.85  1037.17   195.96  1040.65   196.04
 1045.44   196.15  1050.49   196.26  1064.97   196.45  1066.82   196.65   1072.9   197.72
 1074.74    198.2  1083.19   203.17  1085.93   204.69  1087.17   205.39  1094.29   208.91
 1098.05   210.12   1098.2   210.18  1109.82   214.55  1109.88   214.56  1117.01   216.49
 1126.58   218.36

Manning's n Values         num=      11
     Sta   n Val      Sta   n Val      Sta   n Val      Sta   n Val      Sta   n Val
       0    .043    54.87     .05   628.9     .035   723.15    .035   753.62    .043
  806.97    .043   864.15    .043   899.76    .043   987.35    .043  1040.65    .043
 1126.58     .05

Bank Sta: Left   Right     Lengths: Left Channel   Right      Coeff Contr.   Expan.
         628.9  806.97              45.82   41.96   42.85             .1       .3

CROSS SECTION           RIVER: San Juan
REACH: Upper               RS: 6936.51*

INPUT
Description:
Station Elevation Data     num=      71
     Sta     Elev      Sta     Elev      Sta     Elev      Sta     Elev      Sta     Elev
       0   216.57     7.54   215.76    44.48   211.53    48.55   210.82    57.79   208.07
   63.26   206.46     67.5   205.16    70.71   204.83    73.68   204.52    85.59   202.95
   88.37   202.55    90.89   202.21   101.35   201.63   118.54   201.14    148.2   200.31
  167.41   199.81   237.16   198.68   293.42    197.8   307.77   197.62   334.29   197.32
  494.17   197.37   519.77   197.45   575.95   197.45   578.39   197.45   641.37   197.57
  650.03   197.74    662.4    196.6   667.81   196.44   675.37   195.36   693.99   192.83
  694.53   192.75   701.25    191.9   705.96   191.77   712.98   191.43   715.17   191.33
  733.66   191.83   737.79   191.91   740.29   192.05   740.48   192.07   747.02   192.59
  791.66    196.1   801.55    196.5   809.06   196.58   853.72   197.03   877.66   197.27
  892.38    197.7   902.37   197.99   936.06   197.89   987.46    196.5  1009.03   196.09
  1022.3   195.85  1034.22   195.67  1035.83    195.7  1041.54   195.81  1045.33   195.89
 1050.52   195.99  1056.01   196.09  1071.73   196.33  1073.74   196.62  1080.34   198.21
 1082.33   198.94   1091.5   203.62  1094.47    205.1  1095.82   205.78  1103.56   209.43
 1107.64    210.4  1107.8    210.45  1120.41   214.47  1120.48   214.48  1128.22   215.89
  1138.6   217.42

Manning's n Values         num=      11
     Sta   n Val      Sta   n Val      Sta   n Val      Sta   n Val      Sta   n Val
       0    .046    57.79     .05   662.4     .035   730.81    .035   752.93    .039
```

791.66	.046	853.72	.046	892.38	.039	987.46	.039	1045.33	.046
1138.6	.05								

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
662.4	791.66	45.82	41.96	42.85	.1	.3

CROSS SECTION RIVER: San Juan
REACH: Upper RS: 6894.555

INPUT
Description: Manual Modification of Manning's N Values
Station Elevation Data num= 45

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	216.4	7.92	215.57	46.73	211.21	51.01	210.41	66.46	205.09
70.91	203.5	74.29	203.16	89.92	201.61	95.49	200.96	249.15	198.41
308.26	197.49	351.2	196.99	546.06	197.64	607.64	197.59	673.81	197.7
682.91	197.92	695.9	196.39	697.91	196.24	707.64	191.57	707.84	191.47
710.34	190.36	712.09	190.2	715.51	189.63	730.22	190.18	733.5	190.27
735.49	190.44	776.34	195.57	787.01	196.14	869.12	197.5	885	198.14
895.78	198.57	932.12	198.59	1025.16	195.86	1038.02	195.53	1039.76	195.56
1045.92	195.66	1050	195.73	1078.48	196.21	1080.65	196.6	1087.77	198.71
1103.02	205.5	1112.82	209.96	1117.22	210.68	1131	214.39	1150.63	216.49

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.05	695.9	.035	776.34	.05	885	.035	1050	.05

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
695.9	776.34	30.23	37.87	37.36	.1	.3

CROSS SECTION RIVER: San Juan
REACH: Upper RS: 6856.68*

INPUT
Description:
Station Elevation Data num= 82

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	215.08	3.48	214.72	7.87	214.22	11.93	213.75	44.79	209.95
46.45	209.76	50.71	209.02	65.86	204.47	65.89	204.46	65.96	204.44
66.06	204.41	70.49	203.1	73.85	202.8	89.38	201.42	94.92	200.85
120.58	200.29	131.98	200.15	162.95	199.65	247.66	198.19	247.99	198.19
306.42	197.39	327.07	197.17	349.1	197	403.66	197.25	536.88	197.51
542.8	197.52	604.01	197.44	613.69	197.45	669.78	197.1	678.83	197.21
691.74	195.88	694.79	195.69	695.21	195.67	695.53	195.65	701.46	194.25
707.84	192.68	710.51	192.04	713.86	191.35	714.24	191.27	718.95	190.37
719.36	190.36	720.26	190.32	722.25	190.24	728.69	189.77	744.59	190.36
748.13	190.46	750.28	190.62	777.68	193.43	794.41	195.15	804.97	195.69
810.61	195.81	814.03	195.87	826.01	196.06	886.21	197	901.93	197.55
912.59	197.92	941.78	198	948.55	198.02	979.76	197.33	1034.62	196.02
1040.6	195.87	1048.56	195.7	1053.33	195.6	1055.05	195.63	1057.41	195.66
1061.14	195.82	1065.18	195.99	1078.81	196.58	1080.43	196.61	1084.3	196.69
1093.36	197.14	1095.51	197.53	1102.55	199.48	1106.01	200.84	1107.46	201.41
1108.96	202.01	1117.64	205.33	1127.34	209.13	1131.69	209.81	1145.33	213.1
1148.94	213.5	1164.75	215.34						

Manning's n Values num= 10

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.05	691.74	.035	696.44	.035	735.7	.038	782.78	.047
794.41	.05	901.93	.038	1048.56	.05	1065.18	.05	1164.75	.05

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
691.74	794.41	30.23	37.87	37.36	.1	.3

CROSS SECTION RIVER: San Juan
REACH: Upper RS: 6818.81*

INPUT
Description:
Station Elevation Data num= 82

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	213.76	3.46	213.4	7.83	212.88	11.86	212.38	44.52	208.5
46.17	208.31	50.4	207.63	65.47	203.78	65.5	203.77	65.56	203.75
65.67	203.73	70.06	202.7	73.4	202.43	88.85	201.23	94.35	200.75
119.85	200.04	131.19	199.95	161.97	199.47	246.17	197.97	246.5	197.97
304.58	197.29	325.11	197.09	347	197.02	401.23	197.32	533.65	197.4
539.53	197.41	600.38	197.3	610	197.29	665.76	196.5	674.75	196.49
687.58	195.38	692.06	195.11	692.69	195.08	693.15	195.05	701.86	193.77
711.24	192.25	715.15	191.65	720.09	191.13	720.64	191.07	727.56	190.39
728.17	190.38	729.48	190.35	732.41	190.28	741.88	189.91	758.95	190.54
762.76	190.66	765.07	190.8	794.51	193.24	812.49	194.72	822.93	195.23
828.51	195.38	831.9	195.46	843.75	195.62	903.31	196.5	918.85	196.96
929.4	197.27	958.28	197.42	964.97	197.44	995.86	197	1050.13	195.99
1056.05	195.88	1063.92	195.76	1068.64	195.68	1070.34	195.7	1072.68	195.72
1076.37	195.98	1080.36	196.26	1093.84	197.21	1095.44	197.23	1099.28	197.33
1108.24	198.08	1110.37	198.47	1117.33	200.24	1120.75	201.42	1122.19	201.91
1123.68	202.42	1132.26	205.17	1141.86	208.3	1146.16	208.94	1159.65	211.81
1163.23	212.22	1178.87	214.2						

Manning's n Values num= 10

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.05	687.58	.035	693.3	.035	741.07	.041	798.34	.044
812.49	.05	918.85	.041	1063.92	.05	1080.36	.05	1178.87	.05

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
687.58	812.49	30.23	37.87	37.36	.1	.3

CROSS SECTION RIVER: San Juan
REACH: Upper RS: 6780.94*

INPUT
Description:
Station Elevation Data num= 82

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	212.44	3.44	212.08	7.78	211.53	11.78	211.01	44.25	207.05
45.89	206.86	50.1	206.24	65.07	203.08	65.1	203.07	65.16	203.06
65.27	203.05	69.64	202.3	72.96	202.07	88.31	201.04	93.78	200.64
119.13	199.79	130.4	199.76	160.99	199.29	244.68	197.75	245.01	197.75
302.73	197.18	323.14	197.02	344.9	197.03	398.8	197.4	530.42	197.3
536.27	197.29	596.75	197.15	606.31	197.13	661.73	195.9	670.67	195.78
683.43	194.87	689.34	194.54	690.16	194.49	690.77	194.46	702.26	193.3
714.64	191.83	719.8	191.26	726.31	190.9	727.04	190.86	736.18	190.4
736.97	190.39	738.7	190.37	742.57	190.32	755.06	190.04	773.32	190.72
777.39	190.85	779.86	190.98	811.34	193.04	830.56	194.3	840.89	194.78
846.41	194.95	849.76	195.04	861.49	195.18	920.4	196.01	935.78	196.37
946.21	196.62	974.78	196.83	981.4	196.87	1011.95	196.67	1065.63	195.97
1071.49	195.9	1079.28	195.81	1083.94	195.75	1085.63	195.77	1087.94	195.78
1091.59	196.14	1095.54	196.52	1108.88	197.83	1110.46	197.86	1114.26	197.97
1123.12	199.01	1125.22	199.4	1132.12	201.01	1135.5	202	1136.92	202.41
1138.39	202.83	1146.88	205	1156.37	207.48	1160.63	208.07	1173.98	210.52
1177.52	210.93	1192.98	213.05						

Manning's n Values num= 10

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.05	683.43	.035	690.16	.035	746.43	.044	813.89	.041
830.56	.05	935.78	.044	1079.28	.05	1095.54	.05	1192.98	.05

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
683.43	830.56	30.23	37.87	37.36	.1	.3

CROSS SECTION RIVER: San Juan
REACH: Upper RS: 6743.07*

INPUT
Description:
Station Elevation Data num= 82

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	211.12	3.42	210.77	7.73	210.19	11.71	209.65	43.98	205.6
45.61	205.41	49.79	204.85	64.68	202.39	64.71	202.38	64.77	202.38
64.87	202.37	69.22	201.89	72.51	201.71	87.77	200.85	93.21	200.53
118.4	199.55	129.6	199.56	160.01	199.12	243.2	197.54	243.52	197.53
300.89	197.08	321.18	196.94	342.81	197.04	396.38	197.47	527.2	197.19
533.01	197.18	593.12	197	602.62	196.98	657.71	195.29	666.59	195.06
679.27	194.37	686.61	193.96	687.63	193.91	688.39	193.86	702.67	192.82
718.03	191.4	724.45	190.87	732.54	190.68	733.44	190.66	744.79	190.42
745.78	190.41	747.93	190.4	752.73	190.36	768.25	190.18	787.69	190.9
792.02	191.05	794.65	191.17	828.17	192.85	848.64	193.87	858.85	194.32
864.31	194.52	867.63	194.62	879.22	194.75	937.49	195.51	952.7	195.78
963.03	195.97	991.28	196.25	997.83	196.3	1028.05	196.34	1081.14	195.95
1086.94	195.91	1094.64	195.86	1099.25	195.83	1100.92	195.83	1103.21	195.84
1106.82	196.29	1110.73	196.79	1123.91	198.45	1125.48	198.48	1129.23	198.61
1138	199.95	1140.08	200.33	1146.9	201.77	1150.24	202.58	1151.65	202.9
1153.11	203.24	1161.5	204.84	1170.89	206.65	1175.1	207.2	1188.3	209.23
1191.8	209.65	1207.1	211.91						

Manning's n Values num= 10

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.05	679.27	.035	687.02	.035	751.79	.047	829.45	.038
848.64	.05	952.7	.047	1094.64	.05	1110.73	.05	1207.1	.05

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
679.27	848.64	30.23	37.87	37.36	.1	.3

CROSS SECTION RIVER: San Juan
REACH: Upper RS: 6705.202

INPUT
Description: Manual Modification of Manning's N Values
Station Elevation Data num= 42

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	209.8	3.4	209.45	11.64	208.28	43.71	204.15	64.28	201.7
64.31	201.69	64.37	201.69	117.68	199.3	128.81	199.37	159.03	198.94
242.03	197.31	319.21	196.86	393.95	197.55	523.97	197.08	598.93	196.82
675.11	193.86	683.88	193.38	685.1	193.32	703.07	192.34	721.43	190.98
729.1	190.48	754.58	190.43	757.15	190.42	781.43	190.32	845	192.65
866.71	193.45	882.21	194.09	885.49	194.2	896.96	194.31	1007.78	195.66
1044.14	196.01	1096.65	195.93	1110	195.91	1118.47	195.9	1138.95	199.07
1140.5	199.1	1144.21	199.25	1164.99	203.16	1166.38	203.4	1167.82	203.65
1206.09	208.37	1221.22	210.76						

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.05	683.88	.035	757.15	.05	845	.035	1110	.05

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
675.11	866.71	35.92	40.06	40.02	.1	.3

CROSS SECTION RIVER: San Juan
REACH: Upper RS: 6665.14*

INPUT
Description:
Station Elevation Data num= 82

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	209.96	.13	209.93	.52	209.89	2.7	209.67	3.4	209.6
7.33	209.09	11.65	208.52	43.75	204.62	64.34	202.27	64.37	202.26
64.43	202.26	70.43	201.91	82.97	200.15	84.96	199.87	90.46	199.49

92.96	199.32	93.83	199.29	117.79	198.54	126.47	198.61	128.93	198.64
159.18	198.57	160.94	198.56	193.74	198.01	242.25	197.23	271.51	197.06
314.58	196.82	319.5	196.8	347.56	197.01	380.94	197.24	392.99	197.35
394.31	197.37	524.45	197.38	530.27	197.38	542.42	197.38	546.89	197.37
599.48	196.85	613.37	196.35	651.48	194.76	675.73	193.51	683.04	193.08
684.06	193.03	699.03	192.15	714.34	190.99	720.73	190.55	720.95	190.55
741.96	190.44	744.11	190.42	758.2	190.32	764.34	190.28	810.38	191.43
822.35	191.74	845.66	192.24	847.29	192.27	853.13	192.48	873.43	193.21
889.94	193.73	893.44	193.82	905.66	193.94	1023.72	195.28	1062.46	195.65
1081.5	195.68	1087.71	195.68	1088.56	195.69	1089.93	195.7	1091.77	195.74
1118.4	196.12	1132.62	196.33	1141.65	196.46	1148.07	197.26	1159.46	198.68
1163.47	199.24	1165.12	199.32	1168.75	199.53	1169.07	199.55	1191.21	202.85
1192.69	203.06	1194.22	203.27	1225.37	206.5	1229.22	206.88	1235	207.39
1236.31	207.54	1251.11	209.49						

Manning's n Values num= 10

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.05	675.73	.035	684.78	.035	760.38	.046	842.69	.035
851.03	.035	873.43	.05	1132.62	.05	1159.46	.05	1251.11	.05

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
675.73	873.43	35.92	40.06	40.02	.1	.3

CROSS SECTION RIVER: San Juan
REACH: Upper RS: 6625.07*

INPUT
Description:
Station Elevation Data num= 82

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	210.11	.13	210.08	.52	210.03	2.71	209.83	3.41	209.76
7.34	209.28	11.66	208.76	43.79	205.09	64.4	202.84	64.43	202.83
64.49	202.83	70.49	202.4	83.05	199.43	85.03	198.98	90.54	198.45
93.05	198.24	93.92	198.2	117.9	197.79	126.59	197.86	129.05	197.91
159.32	198.2	161.08	198.21	193.91	197.76	242.47	197.14	271.76	196.97
314.87	196.75	319.8	196.74	347.88	196.89	381.29	197.05	393.35	197.17
394.67	197.18	524.93	197.69	530.76	197.71	542.91	197.75	547.4	197.73
600.03	196.88	613.93	196.42	652.07	194.71	676.35	193.15	682.2	192.78
683.01	192.73	695	191.96	707.24	191	712.36	190.63	712.53	190.62
729.35	190.45	731.06	190.43	742.34	190.29	747.26	190.23	803.33	191.23
817.92	191.49	846.31	191.82	848.3	191.85	855.42	192.1	880.15	192.96
897.67	193.37	901.38	193.45	914.35	193.57	1039.66	194.89	1080.78	195.28
1100.99	195.37	1107.58	195.38	1108.48	195.41	1109.93	195.44	1111.89	195.51
1140.15	196.32	1155.25	196.75	1164.82	197.02	1171.64	197.69	1183.73	198.87
1187.98	199.41	1189.74	199.53	1193.59	199.83	1193.93	199.85	1217.43	202.55
1219	202.72	1220.63	202.89	1253.68	205.74	1257.78	206.07	1263.9	206.42
1265.3	206.52	1281.01	208.23						

Manning's n Values num= 10

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.05	676.35	.035	685.68	.035	763.61	.043	848.46	.035
857.05	.035	880.15	.05	1155.25	.05	1183.73	.05	1281.01	.05

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
676.35	880.15	35.92	40.06	40.02	.1	.3

CROSS SECTION RIVER: San Juan
REACH: Upper RS: 6585.01*

INPUT
Description:
Station Elevation Data num= 82

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	210.26	.13	210.23	.52	210.17	2.71	209.98	3.41	209.91
7.34	209.48	11.67	209	43.83	205.56	64.46	203.41	64.49	203.4
64.55	203.4	70.56	202.88	83.12	198.72	85.11	198.08	90.63	197.42
93.13	197.15	94	197.12	118	197.03	126.7	197.12	129.16	197.18
159.47	197.83	161.23	197.87	194.09	197.5	242.7	197.06	272.01	196.89
315.16	196.68	320.09	196.68	348.2	196.78	381.64	196.86	393.71	196.98
395.04	197	525.41	197.99	531.24	198.03	543.41	198.11	547.9	198.1
600.58	196.92	614.5	196.48	652.67	194.67	676.97	192.8	681.36	192.48
681.97	192.44	690.96	191.77	700.15	191.01	703.98	190.7	704.12	190.7
716.73	190.46	718.02	190.43	726.48	190.26	730.17	190.18	796.29	191.02
813.49	191.25	846.97	191.41	849.32	191.42	857.71	191.71	886.86	192.71
905.4	193.01	909.33	193.07	923.05	193.2	1055.6	194.51	1099.09	194.92
1120.47	195.07	1127.44	195.08	1128.4	195.13	1129.94	195.17	1132	195.29
1161.9	196.51	1177.87	197.17	1188	197.58	1195.21	198.11	1208	199.06
1212.5	199.58	1214.35	199.75	1218.43	200.12	1218.79	200.14	1243.65	202.24
1245.31	202.37	1247.03	202.51	1282	204.99	1286.33	205.25	1292.81	205.44
1294.28	205.49	1310.91	206.96						

Manning's n Values num= 10

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.05	676.97	.035	686.58	.035	766.84	.039	854.23	.035
863.08	.035	886.86	.05	1177.87	.05	1208	.05	1310.91	.05

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
676.97	886.86	35.92	40.06	40.02	.1	.3

CROSS SECTION RIVER: San Juan
REACH: Upper RS: 6544.956

INPUT
Description: Manual Modification of Manning's N Values
Station Elevation Data num= 45

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	210.42	.13	210.38	.52	210.31	2.71	210.13	7.35	209.67
70.62	203.37	83.2	198.01	85.19	197.18	90.71	196.38	93.22	196.06

94.09	196.03	126.82	196.37	161.38	197.52	194.27	197.25	272.26	196.81
315.45	196.61	348.52	196.67	381.99	196.67	394.07	196.8	531.73	198.36
543.91	198.48	548.4	198.46	615.06	196.55	653.27	194.62	677.59	192.45
695.7	190.77	710.62	190.23	713.08	190.14	789.25	190.82	809.06	191
850.33	191	860	191.33	893.58	192.47	1139.96	194.76	1147.31	194.78
1148.32	194.85	1149.94	194.9	1152.12	195.06	1218.78	198.54	1232.27	199.25
1243.27	200.42	1310.31	204.23	1314.88	204.43	1323.27	204.47	1340.8	205.69

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.05	860	.035	1232.27	.05

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

Left	Right	Left	Channel	Right	Coeff Contr.	Expan.
677.59	893.58		14.9	43.68	14.96	.1	.3

CROSS SECTION RIVER: San Juan
REACH: Upper RS: 6501.27*

INPUT
Description:
Station Elevation Data num= 95

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	210.4	.13	210.36	.51	210.3	2.68	210.1	5.86	209.77
7.27	209.62	14.63	208.86	39.9	206.41	61.33	204.33	69.83	203.52
72.08	202.64	76.41	200.87	82.27	198.36	84.24	197.54	89.7	196.58
91.07	196.36	92.18	196.18	92.46	196.16	93.04	196.14	103.67	196.12
112.3	196.12	125.4	196.27	127.83	196.35	159.58	197.4	185.44	197.28
192.1	197.23	213.24	197.11	269.22	196.79	300.18	196.65	311.92	196.6
344.62	196.66	377.72	196.67	389.66	196.79	454.96	197.46	519.58	198.12
525.78	198.17	537.83	198.24	542.21	198.21	542.27	198.21	587.12	196.88
608.18	196.25	645.97	194.36	654.38	193.65	670.01	192.33	672.56	192.17
674.9	192.03	680.84	191.84	686.76	191.65	695.7	191.35	705.32	191.02
707.48	190.94	713.01	190.73	713.49	190.72	729.14	190.49	730.89	190.46
749.31	190.2	755.21	190.12	825.14	190.76	843.33	190.93	858.43	190.94
881.22	190.98	890.1	191.28	920.93	192.35	931.98	192.55	980.2	193.42
992.25	193.53	1024.38	193.88	1044.11	193.96	1053.75	193.93	1089.28	193.77
1120.22	193.9	1125.18	193.94	1136.29	194.09	1152.28	194.3	1159.18	194.35
1160.13	194.42	1161.65	194.47	1163.7	194.62	1172.86	195.11	1206.86	196.99
1226.3	198.05	1237.73	198.67	1238.96	198.74	1249.29	199.81	1253.84	200.07
1263.04	200.67	1296.11	202.73	1312.24	203.99	1314.03	204.1	1316.54	204.23
1324.41	204.33	1328.57	204.65	1338.09	206.12	1339.65	206.33	1340.87	206.49

Manning's n Values num= 7

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.05	670.01	.035	738.91	.035	881.92	.035	920.93	.048
1238.96	.048	1340.87	.048						

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

Left	Right	Left	Channel	Right	Coeff Contr.	Expan.
670.01	920.93		14.9	43.68	14.96	.1	.3

CROSS SECTION RIVER: San Juan
REACH: Upper RS: 6457.60*

INPUT
Description:
Station Elevation Data num= 95

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	210.38	.13	210.35	.51	210.28	2.65	210.08	5.79	209.73
7.19	209.58	14.47	208.78	39.45	206.43	60.63	204.44	69.04	203.66
71.27	202.88	75.55	201.21	81.34	198.71	83.28	197.89	88.68	196.78
90.04	196.51	91.14	196.3	91.42	196.27	91.99	196.24	102.5	196.11
111.03	196	123.98	196.18	126.39	196.25	157.77	197.27	183.34	197.26
189.93	197.21	210.83	197.08	266.17	196.78	296.78	196.64	308.4	196.6
340.73	196.66	373.45	196.67	385.26	196.77	449.81	197.38	513.71	197.96
519.84	197.98	531.75	198	536.08	197.96	536.14	197.96	580.49	196.6
601.31	195.94	638.66	194.11	646.98	193.45	662.44	192.21	666.47	192
670.17	191.8	679.57	191.65	688.96	191.5	703.12	191.24	718.35	190.96
721.76	190.89	730.53	190.68	731.28	190.66	756.06	190.45	758.83	190.42
788	190.18	797.35	190.1	861.04	190.7	877.6	190.86	891.35	190.88
912.11	190.95	920.19	191.24	948.27	192.23	958.6	192.53	1003.7	193.78
1014.96	193.88	1045.01	194.27	1063.46	194.23	1072.47	194.07	1105.69	193.41
1134.63	193.36	1139.26	193.4	1149.65	193.59	1164.6	193.85	1171.06	193.92
1171.94	193.98	1173.37	194.03	1175.28	194.18	1183.84	194.65	1215.64	196.52
1233.81	197.55	1244.5	198.17	1245.66	198.23	1255.31	199.2	1259.56	199.45
1268.17	200.08	1299.09	202.21	1314.18	203.74	1315.84	203.89	1318.19	204.03
1325.56	204.2	1329.45	204.51	1338.34	206.76	1339.8	207.06	1340.95	207.28

Manning's n Values num= 7

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.05	662.44	.035	740.92	.035	903.83	.035	948.27	.047
1245.66	.047	1340.95	.047						

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

Left	Right	Left	Channel	Right	Coeff Contr.	Expan.
662.44	948.27		14.9	43.68	14.96	.1	.3

CROSS SECTION RIVER: San Juan
REACH: Upper RS: 6413.92*

INPUT
Description:
Station Elevation Data num= 95

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	210.37	.13	210.33	.5	210.27	2.62	210.05	5.73	209.69
7.1	209.53	14.3	208.71	39	206.46	59.94	204.55	68.25	203.81
70.45	203.12	74.68	201.54	80.41	199.07	82.33	198.25	87.67	196.97
89.01	196.67	90.09	196.42	90.37	196.38	90.93	196.35	101.32	196.09
109.76	195.89	122.57	196.08	124.94	196.15	155.97	197.15	181.24	197.23
187.75	197.18	208.42	197.06	263.13	196.76	293.39	196.62	304.87	196.59

336.83	196.65	369.18	196.67	380.85	196.76	444.67	197.3	507.83	197.79
513.89	197.79	525.66	197.77	529.95	197.72	530	197.72	573.85	196.32
594.43	195.64	631.36	193.85	639.58	193.24	654.86	192.08	660.37	191.82
665.44	191.57	678.31	191.46	691.16	191.35	710.53	191.13	731.37	190.9
736.04	190.83	748.04	190.62	749.07	190.61	782.99	190.41	786.77	190.38
826.68	190.15	839.48	190.08	896.93	190.65	911.87	190.79	924.27	190.82
943	190.93	950.29	191.19	975.62	192.11	985.23	192.5	1027.19	194.14
1037.68	194.23	1065.64	194.66	1082.8	194.51	1091.19	194.21	1122.1	193.05
1149.03	192.81	1153.34	192.85	1163.01	193.08	1176.92	193.39	1182.93	193.49
1183.76	193.55	1185.08	193.6	1186.86	193.73	1194.83	194.19	1224.42	196.05
1241.33	197.06	1251.27	197.66	1252.35	197.72	1261.34	198.6	1265.29	198.82
1273.3	199.5	1302.07	201.69	1316.11	203.5	1317.66	203.68	1319.85	203.83
1326.7	204.06	1330.32	204.38	1338.6	207.4	1339.95	207.79	1341.02	208.08

Manning's n Values num= 7

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.05	654.86	.035	742.93	.035	925.75	.035	975.62	.045
1252.35	.045	1341.02	.045						

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
654.86	975.62	14.9	43.68	14.96	.1	.3

CROSS SECTION RIVER: San Juan
REACH: Upper RS: 6370.25*

INPUT
Description:
Station Elevation Data num= 95

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	210.35	.12	210.32	.5	210.26	2.59	210.02	5.66	209.65
7.02	209.49	14.14	208.64	38.55	206.48	59.25	204.65	67.46	203.95
69.64	203.36	73.82	201.88	79.48	199.42	81.38	198.6	86.65	197.17
87.98	196.82	89.05	196.54	89.33	196.49	89.88	196.45	100.15	196.07
108.49	195.77	121.15	195.98	123.5	196.05	154.16	197.02	179.14	197.21
185.58	197.16	206.01	197.04	260.08	196.75	289.99	196.61	301.34	196.58
332.93	196.64	364.9	196.67	376.44	196.75	439.52	197.21	501.96	197.62
507.95	197.59	519.58	197.53	523.82	197.47	523.87	197.47	567.21	196.04
587.55	195.33	624.05	193.6	632.18	193.03	647.28	191.96	654.28	191.64
660.71	191.35	677.05	191.27	693.36	191.2	717.94	191.03	744.4	190.84
750.32	190.77	765.55	190.57	766.86	190.55	809.91	190.36	814.71	190.33
865.37	190.13	881.61	190.06	932.82	190.59	946.14	190.72	957.2	190.76
973.89	190.91	980.39	191.15	1002.96	191.99	1011.86	192.47	1050.69	194.51
1060.39	194.58	1086.26	195.05	1102.15	194.78	1109.91	194.35	1138.51	192.68
1163.43	192.27	1167.42	192.3	1176.37	192.57	1189.25	192.93	1194.8	193.06
1195.57	193.12	1196.79	193.17	1198.44	193.29	1205.81	193.73	1233.2	195.58
1248.84	196.56	1258.05	197.15	1259.04	197.2	1267.36	197.99	1271.02	198.2
1278.42	198.91	1305.05	201.17	1318.04	203.25	1319.48	203.47	1321.5	203.63
1327.84	203.93	1331.19	204.25	1338.85	208.04	1340.11	208.52	1341.1	208.87

Manning's n Values num= 7

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.05	647.28	.035	744.94	.035	947.66	.035	1002.96	.043
1259.04	.043	1341.1	.043						

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
647.28	1002.96	14.9	43.68	14.96	.1	.3

CROSS SECTION RIVER: San Juan
REACH: Upper RS: 6326.57*

INPUT
Description:
Station Elevation Data num= 95

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	210.33	.12	210.3	.49	210.24	2.56	209.99	5.6	209.6
6.94	209.44	13.97	208.57	38.09	206.5	58.55	204.76	66.67	204.1
68.82	203.59	72.96	202.21	78.55	199.77	80.43	198.96	85.64	197.37
86.95	196.98	88.01	196.66	88.28	196.59	88.83	196.56	98.98	196.05
107.22	195.66	119.73	195.88	122.05	195.95	152.36	196.9	177.05	197.19
183.41	197.14	203.6	197.01	257.04	196.73	286.6	196.59	297.81	196.58
329.03	196.63	360.63	196.66	372.04	196.73	434.38	197.13	496.08	197.46
502	197.4	513.5	197.29	517.69	197.22	517.74	197.22	560.57	195.76
580.67	195.03	616.75	193.34	624.78	192.82	639.71	191.84	648.19	191.47
655.98	191.12	675.79	191.08	695.55	191.05	725.35	190.92	757.42	190.78
764.6	190.71	783.06	190.51	784.65	190.5	836.83	190.32	842.65	190.29
904.06	190.1	923.75	190.05	968.71	190.53	980.41	190.66	990.12	190.69
1004.77	190.88	1010.48	191.1	1030.31	191.86	1038.49	192.45	1074.18	194.87
1083.1	194.93	1106.89	195.44	1121.5	195.05	1128.63	194.49	1154.93	192.32
1177.84	191.72	1181.5	191.75	1189.73	192.07	1201.57	192.48	1206.68	192.63
1207.38	192.68	1208.5	192.74	1210.02	192.85	1216.8	193.27	1241.97	195.1
1256.36	196.07	1264.82	196.64	1265.73	196.69	1273.38	197.38	1276.74	197.58
1283.55	198.33	1308.03	200.65	1319.98	203.01	1321.3	203.26	1323.16	203.42
1328.99	203.79	1332.07	204.11	1339.11	208.68	1340.26	209.25	1341.17	209.67

Manning's n Values num= 7

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.05	639.71	.035	746.95	.035	969.58	.035	1030.31	.042
1265.73	.042	1341.17	.042						

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
639.71	1030.31	14.9	43.68	14.96	.1	.3

CROSS SECTION RIVER: San Juan
REACH: Upper RS: 6282.89*

INPUT
Description:
Station Elevation Data num= 95

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	210.31	.12	210.29	.49	210.23	2.53	209.97	5.53	209.56
6.86	209.39	13.81	208.5	37.64	206.53	57.86	204.87	65.88	204.25
68.01	203.83	72.09	202.55	77.62	200.12	79.47	199.31	84.62	197.57
85.92	197.13	86.97	196.78	87.24	196.7	87.78	196.66	97.81	196.03
105.95	195.54	118.31	195.79	120.61	195.85	150.55	196.77	174.95	197.16
181.24	197.12	201.18	196.99	253.99	196.72	283.2	196.57	294.29	196.57
325.14	196.63	356.36	196.66	367.63	196.72	429.23	197.04	490.21	197.29
496.06	197.21	507.42	197.05	511.55	196.97	511.61	196.97	553.93	195.48
573.8	194.72	609.44	193.09	617.38	192.61	632.13	191.72	642.1	191.29
651.25	190.89	674.53	190.89	697.75	190.89	732.76	190.81	770.45	190.72
778.88	190.65	800.57	190.46	802.44	190.45	863.75	190.28	870.6	190.24
942.75	190.08	965.88	190.03	1004.61	190.47	1014.68	190.59	1023.04	190.63
1035.66	190.86	1040.58	191.06	1057.65	191.74	1065.12	192.42	1097.68	195.23
1105.82	195.29	1127.52	195.82	1140.84	195.32	1147.35	194.63	1171.34	191.96
1192.24	191.18	1195.58	191.2	1203.09	191.56	1213.89	192.02	1218.55	192.2
1219.19	192.25	1220.22	192.3	1221.6	192.41	1227.78	192.81	1250.75	194.63
1263.87	195.58	1271.59	196.13	1272.43	196.18	1279.4	196.77	1282.47	196.95
1288.68	197.74	1311.02	200.12	1321.91	202.77	1323.12	203.05	1324.81	203.22
1330.13	203.66	1332.94	203.98	1339.36	209.32	1340.42	209.98	1341.25	210.46

Manning's n Values num= 7

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.05	632.13	.035	748.96	.035	991.5	.035	1057.65	.04
1272.43	.04	1341.25	.04						

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
632.13	1057.65	14.9	43.68	14.96	.1	.3

CROSS SECTION RIVER: San Juan
REACH: Upper RS: 6239.22*

INPUT
Description:
Station Elevation Data num= 95

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	210.3	.12	210.27	.48	210.22	2.5	209.94	5.46	209.52
6.77	209.35	13.64	208.42	37.19	206.55	57.17	204.98	65.09	204.39
67.19	204.07	71.23	202.89	76.69	200.47	78.52	199.67	83.61	197.76
84.89	197.29	85.92	196.91	86.19	196.81	86.73	196.77	96.63	196.02
104.68	195.43	116.89	195.69	119.16	195.75	148.75	196.65	172.85	197.14
179.06	197.09	198.77	196.97	250.95	196.7	279.81	196.56	290.76	196.56
321.24	196.62	352.09	196.66	363.23	196.71	424.09	196.96	484.33	197.12
490.11	197.02	501.34	196.81	505.42	196.73	505.48	196.72	547.29	195.2
566.92	194.42	602.14	192.83	609.98	192.41	624.55	191.59	636	191.11
646.53	190.66	673.26	190.7	699.95	190.74	740.18	190.7	783.47	190.66
793.16	190.6	818.09	190.4	820.23	190.39	890.68	190.24	898.54	190.2
981.43	190.05	1008.01	190.01	1040.5	190.41	1048.95	190.52	1055.96	190.57
1066.55	190.84	1070.68	191.01	1085	191.62	1091.74	192.39	1121.18	195.59
1128.53	195.64	1148.15	196.21	1160.19	195.6	1166.07	194.78	1187.75	191.6
1206.64	190.64	1209.67	190.66	1216.45	191.05	1226.21	191.56	1230.42	191.77
1231	191.81	1231.93	191.87	1233.18	191.97	1238.77	192.35	1259.53	194.16
1271.39	195.08	1278.36	195.63	1279.12	195.67	1285.42	196.16	1288.2	196.33
1293.81	197.16	1314	199.6	1323.85	202.52	1324.93	202.84	1326.47	203.02
1331.27	203.52	1333.81	203.85	1339.62	209.96	1340.57	210.71	1341.32	211.26

Manning's n Values num= 7

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.05	624.55	.035	750.98	.035	1013.41	.035	1085	.038
1279.12	.038	1341.32	.038						

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
624.55	1085	14.9	43.68	14.96	.1	.3

CROSS SECTION RIVER: San Juan
REACH: Upper RS: 6195.54*

INPUT
Description:
Station Elevation Data num= 95

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	210.28	.12	210.26	.47	210.2	2.47	209.91	5.4	209.48
6.69	209.3	13.48	208.35	36.74	206.58	56.47	205.08	64.3	204.54
66.38	204.31	70.36	203.22	75.76	200.83	77.57	200.02	82.6	197.96
83.86	197.44	84.88	197.03	85.15	196.92	85.67	196.87	95.46	196
103.41	195.31	115.48	195.59	117.72	195.65	146.94	196.52	170.76	197.11
176.89	197.07	196.36	196.94	247.91	196.68	276.41	196.54	287.23	196.56
317.34	196.61	347.82	196.66	358.82	196.69	418.94	196.87	478.46	196.96
484.16	196.83	495.25	196.58	499.29	196.48	499.34	196.48	540.65	194.92
560.04	194.11	594.83	192.58	602.58	192.2	616.98	191.47	629.91	190.94
641.8	190.43	672	190.51	702.14	190.59	747.59	190.6	796.5	190.6
807.44	190.54	835.6	190.35	838.02	190.34	917.6	190.19	926.48	190.15
1020.12	190.03	1050.15	189.99	1076.39	190.35	1083.22	190.45	1088.89	190.51
1097.44	190.81	1100.77	190.97	1112.34	191.5	1118.37	192.37	1144.67	195.96
1151.25	195.99	1168.77	196.6	1179.53	195.87	1184.79	194.92	1204.17	191.23
1221.05	190.09	1223.75	190.11	1229.81	190.55	1238.53	191.1	1242.3	191.34
1242.81	191.38	1243.64	191.44	1244.76	191.52	1249.75	191.89	1268.3	193.69
1278.9	194.59	1285.14	195.12	1285.81	195.16	1291.44	195.56	1293.92	195.7
1298.94	196.57	1316.98	199.08	1325.78	202.28	1326.75	202.63	1328.12	202.82
1332.42	203.38	1334.69	203.71	1339.87	210.6	1340.73	211.44	1341.4	212.05

Manning's n Values num= 7

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.05	616.98	.035	752.99	.035	1035.33	.035	1112.34	.037
1285.81	.037	1341.4	.037						

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
616.98	1112.34	14.9	43.68	14.96	.1	.3

CROSS SECTION RIVER: San Juan
REACH: Upper RS: 6151.870

INPUT
Description: Manual Modification of Manning's N Values
Station Elevation Data num= 55

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	210.26	5.33	209.44	13.31	208.28	36.29	206.6	55.78	205.19
65.56	204.55	69.5	203.56	82.83	197.6	84.1	197.03	94.29	195.98
102.14	195.2	116.27	195.55	168.66	197.09	193.95	196.92	273.02	196.53
413.8	196.79	472.58	196.79	493.16	196.23	534.01	194.64	595.18	191.99
609.4	191.35	623.82	190.76	637.07	190.2	670.74	190.32	704.34	190.44
755	190.49	809.52	190.54	821.72	190.48	853.11	190.29	944.52	190.15
954.42	190.11	1092.28	189.97	1121.81	190.45	1139.69	191.38	1145	192.34
1168.17	196.32	1173.96	196.34	1189.4	196.99	1198.88	196.14	1203.51	195.06
1220.58	190.87	1235.45	189.55	1237.83	189.56	1243.17	190.04	1260.74	191.43
1277.08	193.22	1291.91	194.61	1299.65	195.08	1304.07	195.99	1319.96	198.56
1328.57	202.42	1335.56	203.58	1340.13	211.24	1340.88	212.17	1341.47	212.85

Manning's n Values num= 2

Sta	n Val	Sta	n Val
0	.05	755	.035

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
609.4	1139.69	162.9	173.01	158.07	.1 .3

CROSS SECTION RIVER: San Juan
REACH: Upper RS: 5978.856

INPUT
Description: Manual Modification of Manning's N Values
Station Elevation Data num= 50

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	210.11	4.59	209.45	7.39	209.03	36.89	207.17	39.32	207.01
62.22	205.02	71.39	203.83	82.12	198.91	85.52	197.45	87.11	197.28
109.32	195.18	172.51	197.01	172.84	197.02	172.91	197.02	173.21	197.02
214.62	195.89	258.41	195.9	271.12	195.47	424.63	194.69	491.91	192.94
520.46	191.9	589.97	189.76	600.38	189.64	601.23	189.63	661.34	188.48
703.05	188.74	755	188.35	766.28	188.26	813.22	188.44	823.84	188.21
860.44	188.08	952.43	187.97	966.99	187.9	997.98	189.59	1044.05	189.55
1101.22	190.77	1118.35	191.4	1144.21	193	1151.44	193.14	1165.05	193.42
1171.72	193.71	1206.89	195.27	1207.66	195.3	1207.91	195.35	1218.48	196.31
1219.51	196.75	1225.3	199.19	1225.56	199.41	1227.01	201.14	1229.5	203.84

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.035	36.89	.05	755	.035

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
601.23	1044.05	197.39	190.73	235.69	.1 .3

CROSS SECTION RIVER: San Juan
REACH: Upper RS: 5788.123

INPUT
Description:
Station Elevation Data num= 49

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	207.07	1.51	206.99	20.99	205.72	51	203.78	74.18	197.86
75.94	197.55	77.92	196.89	81.59	196.61	110	194.55	145.81	194.13
153.71	194.01	215.72	193.06	270.53	192.21	282.75	192.22	316.2	191.13
343.31	188.76	353.1	188.56	363.39	188.86	398.77	187.9	430.5	187.05
440.75	187.07	492.55	187.14	517.12	186.11	629.64	185.94	672.25	185.91
742.36	186.48	766.07	187.3	821.83	189.22	825.37	189.07	857.76	188.73
891.41	186.26	895.9	185.83	897.63	185.59	939.13	184.68	954.05	184.42
955.71	184.49	957.59	184.36	983.57	184.32	998.21	184.82	1003.23	185.06
1013.8	185.57	1024.53	187.88	1028.42	188.79	1028.93	188.91	1034.85	191.94
1041.83	198.73	1043.79	200.18	1047.69	203.43	1049.41	204.71		

Manning's n Values num= 6

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	20.99	.05	440.75	.035	629.64	.05	766.07	.035
1028.42	.05								

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
492.55	1024.53	66.98	101.35	103.25	.1 .3

CROSS SECTION RIVER: San Juan
REACH: Upper RS: 5686.773

INPUT
Description: Manual Modification of Manning's N Values
Station Elevation Data num= 49

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	206.16	28.01	204.67	35.04	204.27	45.47	202.77	46.63	202.42
50.68	201.05	63.15	196.89	98.34	194.23	100.52	194.07	105.69	193.69
194.58	192.71	226.32	192.36	229.62	192.02	235.83	191.61	256.98	190.25
274.8	187.43	299.49	183.68	322.22	184.63	328.62	184.88	338.04	185.24
355.37	187.45	364.15	187.38	421.15	187.46	451.15	186.26	470.47	185.4
590	185.23	658.52	185.13	678.18	185.1	682.42	185.11	693.45	186.03
699.97	186.26	803.82	191.43	812.9	190.83	824.14	189.77	846.63	185.46
851.78	184.15	854.81	184.03	872.48	183.41	872.82	183.42	873.3	183.44
910.58	184.33	913.38	184.35	920.86	184.41	932.08	186.07	936.98	187.29
944.81	189.91	948.92	192	953.35	195.84	966.54	207.31		

Manning's n Values num= 4

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val

```
       0     .05  355.37    .035     590     .05  803.82    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        451.15  932.08             59.9   92.96   76.35            .1       .3
Ineffective Flow     num=       1
   Sta L   Sta R    Elev  Permanent
888        F

CROSS SECTION          RIVER: San Juan
REACH: Upper              RS: 5593.814

INPUT
Description: Manual Modification of Manning's N Values
Station Elevation Data    num=      50
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  205.85   36.85  203.74   41.08  203.13   57.44  198.12   60.97  196.92
   70.24  195.76   71.69  195.47   74.47  194.94  108.91  190.51  112.36  190.27
  119.95  190.51  193.48  191.97  196.14  191.81  197.28  191.59  208.62  190.15
   209.1  189.93   210.3  189.54  223.64  185.02  225.74  184.98  237.21  183.52
  248.16  184.04     290  185.66   296.1   185.9  296.45  185.91  349.11  188.04
  366.67   187.2  385.69  186.77  436.22   184.7   531.5   184.6     565  184.55
  577.61  184.53  661.26  183.92  713.89  183.82  730.46  184.89  744.92   184.8
   778.7  184.34  787.22  183.76  815.45     184  832.31  183.73  849.08  184.29
  855.93  184.86  880.21   186.7  892.02  187.67  901.17  188.39  909.48  189.31
  917.59  193.76  917.71  193.78  918.13  194.29   930.1  209.14  931.13  210.22

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .05     290    .035     565     .05

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        436.22  855.93             56.58   91.06   69.13            .1       .3
Ineffective Flow     num=       1
   Sta L   Sta R    Elev  Permanent
888        F

CROSS SECTION          RIVER: San Juan
REACH: Upper              RS: 5502.751

INPUT
Description: Manual Modification of Manning's N Values
Station Elevation Data    num=      43
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  204.86   23.16   203.6   25.75  203.38   31.88  201.52   68.63  191.81
   73.08  191.15    77.5  190.87   89.97  190.12   94.16  190.24  142.37  191.72
  148.12  191.28  157.99  190.92  162.57  190.33  167.45  188.16   175.3  183.74
  176.57  183.43  220.71     185  235.75  185.43  243.46  185.65  247.54  185.85
  282.35  187.55  333.43  185.37  372.21  184.06  425.72  184.01   459.6  183.62
  478.95  183.58  516.84  183.34  625.42  182.66  629.53  182.66  667.96  183.04
  689.12  183.06  691.69  183.07  791.93  183.77  795.32  183.81  826.73  185.25
  837.26   185.9  851.15  187.78  855.96  188.36  871.31  190.21  873.39  190.54
  888.49   195.1  890.57  195.44  906.74  203.24

Manning's n Values        num=       5
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
       0     .05  235.75    .035  516.84     .05  689.12    .035  826.73     .05

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        333.43  826.73             78.34  115.61   55.34            .1       .3
Ineffective Flow     num=       1
   Sta L   Sta R    Elev  Permanent
888        F

CROSS SECTION          RIVER: San Juan
REACH: Upper              RS: 5387.141

INPUT
Description: Manual Modification of Manning's N Values
Station Elevation Data    num=      44
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  202.52   11.98  198.33   21.92   193.9   28.17  191.06    35.4  189.79
   41.93  188.74    42.2  188.69   48.79  188.43   61.58  187.98   81.89  185.97
   89.61   185.8   92.55  184.87   93.21  184.86  110.32  183.43  154.59  184.33
  163.18   184.5  180.85  184.86  181.81  184.89  194.88  185.29  226.86  184.68
  243.43  184.05  325.46  183.97  403.65  183.83  459.42  183.74  519.66  183.68
  531.37  183.79  592.59  183.51  606.02  183.45  648.82   182.7  737.13  183.32
  774.24  184.57  782.14  184.96     795  187.72  800.24  188.85  805.38  189.57
  805.58  189.59   815.6  190.63  831.72  192.36     841  194.25  845.27  196.03
  851.06  199.99  852.27  200.98  857.27  205.71  858.83  207.18

Manning's n Values        num=       5
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
       0     .05  154.59    .035  403.65     .05  592.59    .035     795     .05

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        226.86  774.24             129.7  137.48   67.44            .1       .3
Ineffective Flow     num=       1
   Sta L   Sta R    Elev  Permanent
888        F

CROSS SECTION          RIVER: San Juan
REACH: Upper              RS: 5249.660

INPUT
Description: Manual Modification of Manning's N Values
Station Elevation Data    num=      36
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0   202.7     .52   202.6    1.51  201.66    4.92  198.49   13.56  189.72
```

14.07	189.49	22.09	185.24	27.89	183.66	37.64	182.92	59.97	181.47
84.69	182.09	93.23	182.16	120	182.49	134.32	182.66	137.33	182.7
173.64	183.5	182.5	183.61	184.05	183.55	285	183.48	424.26	183.39
468.95	183.81	510	183.62	700.25	182.76	700.34	182.76	700.55	182.76
700.74	182.77	743.86	184.17	750.42	184.62	777.35	187.16	792.49	188.58
821.57	189.96	825.28	190.27	828.14	192.34	831.62	194.54	838.72	202.81
839.47	203.7								

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.05	120	.035	285	.05	510	.035	750.42	.05

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
27.89	743.86	141.78	155.8	79.91	.1 .3

CROSS SECTION RIVER: San Juan
REACH: Upper RS: 5093.864

INPUT
Description: Manual Modification of Manning's N Values
Station Elevation Data num= 38

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	203.51	2.37	203.35	24.51	198.72	28.54	198.21	35.45	196.19
38.92	195.17	41.19	194.5	41.52	194.36	63.35	184.5	69.97	182.66
74.4	182.44	83.85	181.79	99.5	180.73	134.04	181.4	155.14	182.12
166.6	182.38	175.47	182.57	255	183.57	269.15	183.75	283.83	183.12
365.41	183.11	393.38	183.09	473.08	183.82	505	183.68	620.62	183.17
713.73	183.03	771.51	184.47	782.35	184.79	801.73	186.68	817.92	187.32
830.9	187.84	859.17	189.33	865.1	191.19	867.36	191.45	869.67	192.85
873.58	197.08	875.2	198.71	886.16	210.29				

Manning's n Values num= 6

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	35.45	.05	166.6	.035	255	.05	505	.035
782.35	.05								

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
63.35	771.51	102.03	146.85	97.36	.1 .3

CROSS SECTION RIVER: San Juan
REACH: Upper RS: 4947.016

INPUT
Description: Manual Modification of Manning's N Values
Station Elevation Data num= 39

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	203.11	9.94	202.69	18.28	202.26	60.7	198.07	85.14	195.88
95.51	193.74	105.31	190.47	115.7	187.38	120.69	186.24	126.13	185.04
128.34	184.68	130.58	184.32	134.88	183.63	142.97	183.3	164.22	183.14
167.76	183.16	174.18	183.19	188.89	183.26	224.49	183.02	268.68	181.99
302.23	181.85	319.19	182.15	354.59	182.69	388.04	183.27	451.56	183.85
475	183.75	485.44	183.7	665	183.4	701.57	183.34	750.45	184.55
770.04	184.86	785.05	185.1	866.36	188.88	886.57	189.58	891.62	191.63
907.53	202.02	907.69	202.13	908.09	202.44	916.71	209.1		

Manning's n Values num= 6

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.07	128.34	.05	174.18	.035	302.23	.05	475	.035
665	.05								

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
128.34	750.45	101.25	101.15	96.58	.1 .3

CROSS SECTION RIVER: San Juan
REACH: Upper RS: 4845.863

INPUT
Description: Manual Modification of Manning's N Values
Station Elevation Data num= 37

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	203.27	2.7	203.05	22.2	200.57	39.38	198.64	45.86	197.73
65.32	192.84	72.69	191.29	89.71	187.69	101.01	186.43	106.56	185.79
138.3	185.07	139.26	185.08	156.93	183.8	157.18	183.78	230.93	181.97
244.77	181.1	278.92	180.95	320	181.42	406.46	182.41	526.28	183.4
575.56	183.75	663.99	183.6	676.22	183.91	690	184.13	700.75	184.3
717.86	184.58	759.74	185.63	773.79	185.8	845.65	187.78	868.49	188.52
871.5	189.01	874.3	189.1	881.19	189.68	885.07	191.8	889.09	194.41
895.93	200.48	901.87	204.71						

Manning's n Values num= 6

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.07	106.56	.05	156.93	.035	320	.05	575.56	.035
690	.05								

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
156.93	663.99	113.15	117.68	124.47	.1 .3

CROSS SECTION RIVER: San Juan
REACH: Upper RS: 4728.187

INPUT
Description: Manual Modification of Manning's N Values
Station Elevation Data num= 45

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	203.37	9.53	202.76	20.4	202.06	36.42	201.09	50.8	199.14
71.17	195.99	100.99	189.01	102.85	188.51	113.07	187.21	123.91	185.57
136.12	183.73	139.59	183.33	145.56	183.36	163.61	182.2	176.37	181.39
182.05	181.29	203.03	180.94	215.67	180.8	238.29	180.69	305	180.39

370	180.09	380.93	180.04	397.55	180.08	568.85	182.24	649.68	183.55
671.96	184.11	733.05	185.63	801.23	188.49	804.55	188.63	808.66	188.57
852.92	188.6	857.61	189.59	864.28	190.59	866.35	192.27	881.76	203.91
882.65	204.4	886.3	206.66	890.93	209.34	894.01	210.39	927.95	221.47
945.35	228.82	946.78	229.36	946.92	229.4	947.13	229.45	953.14	231.35

Manning's n Values num= 7

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	9.53	.07	123.91	.05	238.29	.035	305	.05
370	.035	671.96	.05						

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
163.61	568.85	103.68	96.65	85.93	.1 .3

CROSS SECTION RIVER: San Juan
REACH: Upper RS: 4631.533

INPUT
Description: Manual Modification of Manning's N Values
Station Elevation Data num= 37

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	203.7	8.12	203.31	18.46	202.36	18.67	202.33	56.14	197.09
56.6	197.04	81.62	192.05	85.3	191.27	93.91	189.44	98.45	188.91
133.04	183.77	161.9	182.23	167.16	182.29	183.87	181.93	192.69	181.74
259.21	180.6	301.66	180.12	332.65	179.99	340	180.01	411.37	180.19
460.04	180.8	504.03	181.5	624.71	183.42	646.81	183.96	660	184.28
781.7	187.28	816.45	188.73	842.43	189.84	843.6	189.82	844.06	189.93
846.04	191.24	875.7	208.82	878.23	210.1	883.52	211.31	904.2	215.08
916.56	216.32	933.35	218.99						

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	18.67	.07	133.04	.05	340	.035	660	.05

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
183.87	504.03	83.04	106.65	96.62	.1 .3

CROSS SECTION RIVER: San Juan
REACH: Upper RS: 4524.879

INPUT
Description: Manual Modification of Manning's N Values
Station Elevation Data num= 42

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	203.49	8.73	202.84	36.07	200.83	53.14	199.51	70.23	197.68
83.16	196.14	121.15	189.14	127.15	187.91	127.61	187.81	157.72	184.03
165.37	183.73	172.29	183.81	190.55	183.45	198.19	183.31	273.27	181.93
283.53	181.72	286.23	181.62	291.78	181.48	305.84	180.44	314.99	180.99
321.12	180.85	329.3	180.71	350	178.47	356.33	177.79	364.66	177.19
379.38	177.67	394.96	177.76	425.04	178.51	471.14	180.69	491.33	181.67
592.54	183.25	618.14	183.87	640	184.4	809.52	188.49	831.63	188.9
834.06	189.26	838.59	189.88	841.25	191.07	849.43	194.04	864.99	201.64
869.63	203.45	873.08	204.07						

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	8.73	.07	165.37	.05	350	.035	640	.05

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
286.23	491.33	102.46	90.4	106.95	.1 .3

CROSS SECTION RIVER: San Juan
REACH: Upper RS: 4434.483

INPUT
Description: Manual Modification of Manning's N Values
Station Elevation Data num= 40

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	202.71	1.83	202.52	3.78	201.81	10.5	199.86	34.89	192.51
40.24	190.96	61.14	187.34	74.08	185.22	75.83	184.93	92.5	183.31
99.46	182.63	102.1	182.37	106.69	182.4	157.49	181.58	159.14	181.53
176.66	180.96	252.87	179.64	305.4	177.68	309.44	177.31	311.99	177.43
313.89	177.33	317.76	177.33	384.57	177.21	404.39	177.39	469.88	180.38
500.79	181.91	519.99	183.3	550.36	183.77	560	183.92	600.21	184.54
626.85	184.93	777.58	187.81	794.64	190.22	801.18	190.33	806.42	191.35
808.69	192.2	812.94	194.2	818	196.77	825.03	198.57	828.85	199.46

Manning's n Values num= 4

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.07	99.46	.05	317.76	.035	560	.05

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
252.87	469.88	229.37	220.73	203.25	.1 .3

CROSS SECTION RIVER: San Juan
REACH: Upper RS: 4213.757

INPUT
Description: Manual Modification of Manning's N Values
Station Elevation Data num= 40

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	200.81	5.26	198.89	8.08	197.81	12.49	196.17	28.49	190.98
37.55	187.18	44.54	184.77	53.68	182.73	67.4	182.76	93.9	181.55
134.36	179.7	143.82	179.39	152.85	179.17	215.97	177.58	217.28	177.55
238.51	177.6	290.3	177.71	365.47	177.34	390	177.26	413.09	177.18
445.34	176.41	472.97	177.11	483.44	177.6	497.22	179.2	517.55	181.23
537.8	183.7	537.88	183.71	547.73	183.71	567.09	184.07	625.37	184.51
700.46	185.13	733.35	186.02	760	186.68	792.43	187.48	806.68	187.89

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  811.25  188.05  812.52  188.39  827.71  190.67  831.02   192.4  853.65  202.22

Manning's n Values          num=       5
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
       0     .07    93.9     .05     390    .035   537.8     .05     760    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        152.85  497.22             211.8  205.08  199.31             .1      .3

CROSS SECTION          RIVER: San Juan
REACH: Upper             RS: 4008.681

INPUT
Description: Manual Modification of Manning's N Values
Station Elevation Data     num=      45
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  201.88    6.03  199.17   12.95  196.64   35.87  186.57   36.93  186.03
   45.91  183.57   49.77  182.45   50.49  182.24   50.74  182.17   51.67  181.92
   52.26  181.86  119.93  178.37  132.49  177.84  136.23  177.87  153.26  177.82
  257.16  177.53  349.61  177.27  391.37  176.26     410  176.09  474.15  175.49
   481.6  175.85  495.72  176.02  498.86  175.98  499.79  176.12  504.54  177.37
  507.19  177.88  511.21  180.96  513.35   182.9  513.95  183.14  519.28  184.66
  520.13  184.65  527.43  184.55   542.2  184.47  588.47  185.67  660.87   185.2
  708.48  184.85     754  185.73   764.5   185.9  789.79  189.86  794.92  190.26
  796.59  190.68  801.16  193.59  805.97  196.28  824.38  203.17  829.56  203.83

Manning's n Values          num=       4
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
       0     .07   49.77     .05     410    .035  519.28     .05

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        119.93  507.19             243.81  216.85  190.05             .1      .3

CROSS SECTION          RIVER: San Juan
REACH: Upper             RS: 3791.835

INPUT
Description: Manual Modification of Manning's N Values
Station Elevation Data     num=      47
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  200.41    4.26  198.05     4.8  197.85    7.66  197.43   26.58   194.7
   59.61  193.56   68.97  193.43    77.7  193.24   96.01  192.43  103.34  192.15
  118.37  191.47  125.11  190.83  133.18  189.67  136.17  189.03  137.21  188.63
  152.36  181.67  166.58  177.95  206.03  176.05  221.16  175.47  236.77  175.37
  251.29  175.28  260.54  175.36  302.78  175.62     355  176.19   420.2  176.91
  442.45  177.08   453.3  177.93     470   178.6  477.38   178.9  481.37  179.06
  485.68  179.63  513.63  180.39  558.62  182.24  560.18  182.26   588.4  182.65
  655.35  182.02     712  181.92  715.03  182.41  722.35  183.13  726.37  185.78
  730.07  187.58  736.14  192.28  742.74  196.34  747.69   198.5  755.83  201.84
  757.73  202.43  766.25  203.95

Manning's n Values          num=       6
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
       0     .07    7.66     .05  236.77    .035  260.54     .05     355    .035
     470     .05

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        166.58  442.45             193.71  199.59  229.82             .1      .3

CROSS SECTION          RIVER: San Juan
REACH: Upper             RS: 3592.245

INPUT
Description: Manual Modification of Manning's N Values
Station Elevation Data     num=      51
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  205.95     .94  205.38    7.17  200.58   12.98  196.61   19.25  194.43
   32.77  190.88   50.87  187.88   58.77  184.86   62.36  184.42    90.6  181.99
   93.31  181.83  131.73  177.51  135.33  177.11  139.48  176.94  143.89  176.42
  146.78  176.29  147.51  176.26  157.53  175.84  198.67   173.2  221.15  173.48
     255  175.11  294.51  177.02     315  177.05  386.09  177.15  423.18  176.91
  440.34   177.3  482.38  178.27   500.4  178.99  515.32  179.79  550.44   180.6
  601.16  182.67  606.88  183.09  610.77  184.52  613.61  185.24  615.56  186.63
  616.08  186.89  630.19   196.8  634.73  197.83  639.33  198.25     655  198.33
  660.56  198.36  681.87   198.8  765.96  201.31  793.36  202.21  799.31  202.32
  804.12  202.27  817.85  202.17  913.94  202.09  920.78  202.14  925.92  202.73
   940.9  203.52

Manning's n Values          num=       8
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
       0     .07  131.73     .035  198.67     .05     255    .035     315     .05
  386.09    .035  440.34     .05      655     .02

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        135.33  423.18             227.98  216.09  205.8              .1      .3

CROSS SECTION          RIVER: San Juan
REACH: Upper             RS: 3376.157

INPUT
Description: Manual Modification of Manning's N Values
Station Elevation Data     num=      48
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  201.07    3.37  197.95   19.05   184.4   24.22   179.7   25.55   178.3
   28.52  177.22    29.4  177.16   29.83  176.92   30.03  176.89   31.14  176.95
   33.89  177.33   45.71  179.18   53.46  178.96   58.29  178.68   60.79  178.53
   80.26  177.38  114.81  175.93     135  175.61     170  175.06  175.76  174.97
  277.41   173.7     290  173.69  297.62  173.68  301.92  173.67   368.9   173.8
```

```
    370   173.8  380.43  173.82  381.68  173.85  441.58  175.45  450.44   176.6
 456.37  177.34  461.78  178.92  482.65   187.5  485.35  188.63   487.9  189.38
 496.63  191.83  501.76  192.43  517.34  194.82  521.03     196     530  196.14
 577.96   196.9  581.86  197.01   667.6  198.92  692.21  199.27  729.61  200.36
 787.24  202.45  809.84   202.7  832.73  203.46

Manning's n Values        num=       7
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
       0     .07   58.29     .05     135    .035     170     .05     290    .035
     370     .05     530     .02

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        114.81  441.58           213.06  206.59  170.09             .1      .3

CROSS SECTION          RIVER: San Juan
REACH: Upper             RS: 3169.567

INPUT
Description: Manual Modification of Manning's N Values
Station Elevation Data    num=      37
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  202.81   17.39  187.19    20.1  184.41   26.49  176.65   30.73  174.19
   36.31  170.12   63.45  169.65    68.1  169.36   68.33  169.37   70.89   169.5
   71.77  169.54   79.63  169.57  102.49  170.28  128.59   171.1  198.45  171.16
  267.13  172.44     325  173.69   343.3  174.08  368.86   174.3     385  174.45
  392.02  174.51  428.46  174.85  457.13  175.24  466.29  175.91  474.08  176.34
  491.45  177.44  514.47  185.13  530.01  190.11  540.37  191.17  560.21  193.29
   605.9   194.1  663.72  196.08  731.34  198.35  771.14  200.95  809.16  202.81
  836.92  203.19  854.08  203.45

Manning's n Values        num=       6
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
       0     .07   68.33    .035  102.49     .05     325    .035     385     .05
  540.37     .02

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         30.73  392.02           233.08  206.98  127.76             .1      .3

CROSS SECTION          RIVER: San Juan
REACH: Upper             RS: 2962.583

INPUT
Description:
Station Elevation Data    num=      48
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  196.65    1.21  194.95    2.74  193.19    7.39  187.41    9.04  185.53
    9.93  184.66   15.36  180.15   18.49  177.74   21.12  176.24   27.45  172.63
   29.96  170.67   32.82  170.12   40.32  169.22   42.53  169.14   53.73  169.83
   66.24  170.54   73.41  170.96   88.51  172.01   95.45   172.5   112.8   173.7
  119.62  174.18  151.76  174.34  174.26  174.29  181.79  174.04  238.12   172.4
  298.06  170.72  355.76  171.99  382.05  172.57  393.11   173.1  418.99  174.35
   421.7  174.38  425.17  174.42  502.17  175.22  524.26  175.57  529.87  175.94
  555.35  177.47   582.7  184.53  590.04  186.21  602.82  189.14  610.81  190.23
  628.44  192.16   664.5  193.75  706.88  195.82  743.83  197.24   795.3  198.69
  826.88  201.82  849.91  203.31   867.7  203.18

Manning's n Values        num=       6
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
       0     .07   95.45    .035   112.8     .05  355.76    .035  425.17     .05
  590.04     .02

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         27.45  355.76           219.26  216.54  187.47             .1      .3

CROSS SECTION          RIVER: San Juan
REACH: Upper             RS: 2746.045

INPUT
Description:
Station Elevation Data    num=      66
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  193.09    5.87  190.32    7.53  189.61   20.08  187.13   45.88  181.4
   62.08  178.42   67.85  177.35   74.88  176.01  104.52  170.55  124.17  168.6
  129.19  168.21  136.57  168.15  140.31  168.12  148.42  167.83  155.03  167.55
  165.53  167.39  174.64  167.25  203.55  167.33  227.61  167.69  284.63  168.54
  329.45  170.32  372.93  171.35   382.8  171.81  395.64  172.41  432.46  174.56
  434.53  174.68  472.25  176.88  496.43  177.65  499.58   177.7  523.92  178.02
  572.77  177.97  598.51  179.61  628.03  179.17  637.73  179.28  649.82  179.89
  657.53  180.45  662.14  181.22  668.87  182.36  699.31   186.2  702.46  186.74
  710.77  187.33  730.98  189.45  737.08  190.23  771.86  191.33  773.38  191.38
  807.73  193.38  812.26  193.29  819.59  194.04  832.36  194.19  838.02  194.76
  852.47  196.21  862.83  196.32  880.74  196.32  921.34  198.05  924.11  198.18
  925.18  198.36  926.23  198.45  927.97  198.45  954.06  199.83  960.65  200.47
  967.55  200.25  976.45  200.54   993.9   201.7 1015.04   203.9 1021.08  203.93
 1034.59  204.46

Manning's n Values        num=       8
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
       0     .02   62.08     .07  165.53    .035  227.61     .05   382.8    .035
  434.53     .05  662.14     .02  838.02    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        104.52  329.45           139.12  137.72  142.04             .1      .3

CROSS SECTION          RIVER: San Juan
REACH: Upper             RS: 2608.338

INPUT
```

Description:
Station Elevation Data num= 45

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	197.52	1.98	197.16	8.23	195.57	20.39	192.61	44.27	186.73
50.9	185.94	53.04	185.69	92.16	177.69	96	176.91	110.52	172.48
114.02	171.41	116.04	171.24	130.76	168.57	130.88	168.57	145.73	167.82
173.95	167.14	181.17	167.34	235.62	168.88	271.89	169.71	309.03	171.22
322.92	171.78	327.21	172.04	403.24	176.68	403.38	176.68	404.98	176.75
407.11	176.87	411.05	176.99	505.74	180.17	543.27	182.79	619.05	185.86
621.92	185.99	623.65	186.15	625.34	186.23	646.06	187.2	651.27	187.46
659.44	187.68	684.52	188.97	684.6	188.97	684.63	188.98	684.81	189.01
697.48	191.28	697.49	191.28	714.77	198.08	718.68	199.93	727.14	204.25

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.02	50.9	.07	130.88	.035	327.21	.05	625.34	.02

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
116.04	309.03	157.33	164.71	180.94	.3	.5

BRIDGE RIVER: San Juan
REACH: Upper RS: 2580

INPUT
Description:
Distance from Upstream XS = 7
Deck/Roadway Width = 151.15
Weir Coefficient = 2.6
Upstream Deck/Roadway Coordinates
num= 4

Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord
-47.6437	208.06	0	-47.6437	208.06	200.56	728.35	235.94	228.44
728.35	235.94	0						

Upstream Bridge Cross Section Data
Station Elevation Data num= 45

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	197.52	1.98	197.16	8.23	195.57	20.39	192.61	44.27	186.73
50.9	185.94	53.04	185.69	92.16	177.69	96	176.91	110.52	172.48
114.02	171.41	116.04	171.24	130.76	168.57	130.88	168.57	145.73	167.82
173.95	167.14	181.17	167.34	235.62	168.88	271.89	169.71	309.03	171.22
322.92	171.78	327.21	172.04	403.24	176.68	403.38	176.68	404.98	176.75
407.11	176.87	411.05	176.99	505.74	180.17	543.27	182.79	619.05	185.86
621.92	185.99	623.65	186.15	625.34	186.23	646.06	187.2	651.27	187.46
659.44	187.68	684.52	188.97	684.6	188.97	684.63	188.98	684.81	189.01
697.48	191.28	697.49	191.28	714.77	198.08	718.68	199.93	727.14	204.25

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.02	50.9	.07	130.88	.035	327.21	.05	625.34	.02

Bank Sta: Left	Right	Coeff Contr.	Expan.
116.04	309.03	.3	.5

Downstream Deck/Roadway Coordinates
num= 4

Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord
-47.6437	208.06	0	-47.6437	208.06	200.56	728.35	235.94	228.44
728.35	235.94	0						

Downstream Bridge Cross Section Data
Station Elevation Data num= 41

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	195.62	.85	195.36	3.42	194.45	20.23	187.93	21.53	187.55
26.44	186.13	33.57	183.63	45.92	178.05	46.63	177.78	47.28	177.54
60.9	176.79	78.94	173.17	79.06	173.15	84.86	172.18	86.84	171.91
97.13	170.5	130.03	170.2	155.46	168.82	187	168.81	204.75	168.82
216.73	168.71	237.91	168.51	281.75	169.76	349.25	171.27	381.38	173.34
461.47	177.12	476.01	177.84	496.32	178.63	524.44	180.28	609.93	186.01
645.4	187.24	655.65	189.33	672.2	190.78	674.49	190.75	687.77	190.65
697.57	195.15	697.71	195.19	701.59	196.97	714.78	202.98	715.19	203.14
717.65	204.28								

Manning's n Values num= 4

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.05	21.53	.07	78.94	.035	204.75	.05

Bank Sta: Left	Right	Coeff Contr.	Expan.
130.03	281.75	.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 = 210
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= 79.36 Downstream= 79.36
Upstream num= 2

Width	Elev	Width	Elev
10.56	0	10.56	336

Downstream num= 2

Width	Elev	Width	Elev
10.56	0	10.56	336

Pier Data
Pier Station Upstream= 253.36 Downstream= 253.36
Upstream num= 2

Width	Elev	Width	Elev
10.56	0	10.56	336

Downstream num= 2

Width	Elev	Width	Elev
10.56	0	10.56	336

Pier Data
Pier Station Upstream= 427.36 Downstream= 427.36
Upstream num= 2

Width	Elev	Width	Elev
10.562	0	10.562	336

Downstream num= 2

Width	Elev	Width	Elev
10.562	0	10.562	336

Pier Data
Pier Station Upstream= 601.36 Downstream= 601.36
Upstream num= 2

Width	Elev	Width	Elev
10.562	0	10.562	336

Downstream num= 2

Width	Elev	Width	Elev
10.562	0	10.562	336

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 #Q100
Opening : Single BR

			Inside BR US	Inside BR DS
E.G. US. (ft)	182.61	Element		
W.S. US. (ft)	180.03	E.G. Elev (ft)	182.50	181.23
Q Total (cfs)	34722.00	W.S. Elev (ft)	178.82	178.04
Q Bridge (cfs)	34722.00	Crit W.S. (ft)	178.82	178.04
Q Weir (cfs)		Max Chl Dpth (ft)	11.68	9.53
Weir Sta Lft (ft)		Vel Total (ft/s)	14.10	13.56
Weir Sta Rgt (ft)		Flow Area (sq ft)	2462.02	2560.66
Weir Submerg		Froude # Chl	0.90	0.93
Weir Max Depth (ft)		Specif Force (cu ft)	27241.29	25101.93
Min El Weir Flow (ft)	210.00	Hydr Depth (ft)	6.88	6.34
Min El Prs (ft)	228.40	W.P. Total (ft)	380.93	437.38
Delta EG (ft)	1.26	Conv. Total (cfs)	380241.5	325208.2
Delta WS (ft)	3.13	Top Width (ft)	357.76	403.66
BR Open Area (sq ft)	25013.34	Frctn Loss (ft)		
BR Open Vel (ft/s)	14.10	C & E Loss (ft)		
Coef of Q		Shear Total (lb/sq ft)	3.36	4.17
Br Sel Method	Momentum	Power Total (lb/ft s)	47.45	56.50

Warning: Pier drag coefficient of 2.0 assumed for Class B flow.
Warning: During the class B momentum calculations, the supercritical downstream energy was higher than one of the upstream energies. This is not physically possible. The supercritical answer was backed out from an upstream energy.
Note: The momentum method has computed a class B profile.
Warning: The energy loss was greater 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 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 Juan
REACH: Upper RS: 2443.625

INPUT
Description: Manual Modification of Manning's N Values
Station Elevation Data num= 41

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	195.62	.85	195.36	3.42	194.45	20.23	187.93	21.53	187.55
26.44	186.13	33.57	183.63	45.92	178.05	46.63	177.78	47.28	177.54
60.9	176.79	78.94	173.17	79.06	173.15	84.86	172.18	86.84	171.91
97.13	170.5	130.03	170.2	155.46	168.82	187	168.81	204.75	168.82
216.73	168.71	237.91	168.51	281.75	169.76	349.25	171.27	381.38	173.34
461.47	177.12	476.01	177.84	496.32	178.63	524.44	180.28	609.93	186.01
645.4	187.24	655.65	189.33	672.2	190.78	674.49	190.75	687.77	190.65
697.57	195.15	697.71	195.19	701.59	196.97	714.78	202.98	715.19	203.14
717.65	204.28								

Manning's n Values num= 4

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val

0	.05	21.53	.07	78.94	.035	204.75	.05	

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
130.03	281.75	22.78	37.03	49.81	.3	.5

CROSS SECTION RIVER: San Juan
REACH: Upper RS: 2406.59*

INPUT
Description:
Station Elevation Data num= 67

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	193.29	.14	193.25	.83	193.06	3.34	192.24	6.67	191.07
19.78	186.6	21.05	186.26	25.85	185.02	32.82	182.85	44.9	178.1
45.59	177.87	46.23	177.66	48.13	177.53	50.54	177.39	51.48	177.34
59.55	176.79	77.18	173.51	77.3	173.49	82.97	172.59	84.91	172.33
86.5	172.11	89.49	171.67	94.97	170.92	127.14	169.88	128.48	169.8
141.12	169.04	144.5	168.86	149.33	168.57	176.86	168.26	184.65	168.18
192.35	168.11	202.81	167.91	202.85	167.91	217.15	167.64	221.29	167.6
243.49	168.45	257.95	169	268.3	169.45	287.61	169.8	338.33	170.72
371.66	172.4	375.12	172.53	375.76	172.55	419.15	174.17	454.75	175.6
469.84	176.24	483.9	176.72	490.91	176.96	510.21	177.91	520.08	178.4
551.88	180.17	603.28	183.67	608.18	183.97	608.78	184.01	632.92	185.04
645.58	185.57	656.21	187.4	673.38	188.81	675.75	188.82	689.53	188.94
698.57	192.27	699.7	192.68	699.84	192.72	703.87	194.18	717.55	199.11
717.98	199.24	720.53	200.18						

Manning's n Values num= 9

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.05	21.05	.066	77.18	.038	127.14	.047	196.66	.047
223.37	.035	268.3	.05	375.12	.05	720.53	.05		

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
127.14	268.3	22.78	37.03	49.81	.3	.5

CROSS SECTION RIVER: San Juan
REACH: Upper RS: 2369.55*

INPUT
Description:
Station Elevation Data num= 67

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	190.96	.14	190.93	.81	190.75	3.27	190.03	6.51	189.01
19.33	185.27	20.57	184.98	25.26	183.9	32.08	182.07	43.88	178.15
44.56	177.96	45.18	177.79	47.03	177.63	49.39	177.48	50.31	177.43
58.19	176.8	75.43	173.84	75.54	173.83	81.09	172.99	82.98	172.74
84.53	172.54	87.46	172.08	92.81	171.35	124.25	169.56	125.39	169.48
136.19	168.75	139.08	168.6	143.21	168.32	166.72	167.71	173.37	167.55
179.95	167.39	188.89	167.11	188.92	167.11	201.13	166.72	204.68	166.68
228.37	167.79	243.8	168.51	254.85	169.15	274.86	169.43	327.41	170.17
361.95	171.46	365.53	171.56	366.19	171.58	411.15	172.84	448.04	174.09
463.67	174.64	478.23	175.06	485.5	175.28	505.49	176.1	515.73	176.51
548.68	178	601.93	181.68	607.01	181.96	607.62	182	632.64	183.27
645.75	183.89	656.77	185.46	674.56	186.83	677.02	186.89	691.29	187.23
700.66	189.9	701.83	190.21	701.98	190.24	706.15	191.38	720.33	195.24
720.77	195.34	723.41	196.07						

Manning's n Values num= 9

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.05	20.57	.062	75.43	.041	124.25	.044	188.57	.044
213.28	.035	254.85	.05	365.53	.05	723.41	.05		

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
124.25	254.85	22.78	37.03	49.81	.3	.5

CROSS SECTION RIVER: San Juan
REACH: Upper RS: 2332.52*

INPUT
Description:
Station Elevation Data num= 67

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	188.63	.14	188.61	.79	188.45	3.19	187.82	6.36	186.94
18.88	183.94	20.09	183.69	24.68	182.79	31.33	181.29	42.86	178.21
43.52	178.05	44.13	177.91	45.94	177.73	48.24	177.57	49.14	177.52
56.84	176.8	73.67	174.18	73.78	174.16	79.2	173.4	81.05	173.16
82.57	172.97	85.42	172.49	90.65	171.77	121.35	169.24	122.31	169.16
131.26	168.46	133.66	168.34	137.08	168.06	156.58	167.16	162.1	166.91
167.56	166.68	174.97	166.31	175	166.31	185.12	165.81	188.06	165.77
213.25	167.14	229.65	168.02	241.4	168.84	262.11	169.06	316.49	169.62
352.23	170.52	355.93	170.59	356.62	170.61	403.14	171.5	441.32	172.57
457.5	173.04	472.57	173.41	480.09	173.61	500.78	174.28	511.37	174.63
545.47	175.84	600.57	179.69	605.83	179.95	606.47	180	632.35	181.5
645.92	182.22	657.33	183.53	675.74	184.86	678.28	184.95	693.06	185.52
702.75	187.52	703.96	187.75	704.11	187.77	708.43	188.59	723.1	191.37
723.56	191.44	726.3	191.97						

Manning's n Values num= 9

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.05	20.09	.058	73.67	.044	121.35	.041	180.47	.041
203.19	.035	241.4	.05	355.93	.05	726.3	.05		

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
121.35	241.4	22.78	37.03	49.81	.3	.5

CROSS SECTION RIVER: San Juan
REACH: Upper RS: 2295.48*

INPUT
Description:
Station Elevation Data num= 67

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	186.3	.13	186.28	.77	186.14	3.12	185.61	6.21	184.88
18.43	182.6	19.61	182.41	24.09	181.67	30.58	180.51	41.83	178.26
42.48	178.14	43.07	178.03	44.84	177.83	47.09	177.67	47.97	177.61
55.48	176.8	71.92	174.52	72.03	174.5	77.31	173.8	79.11	173.58
80.6	173.39	83.39	172.89	88.49	172.19	118.46	168.92	119.22	168.84
126.33	168.17	128.23	168.08	130.95	167.81	146.44	166.61	150.82	166.28
155.16	165.96	161.04	165.51	161.07	165.51	169.11	164.89	171.45	164.85
198.13	166.48	215.51	167.54	227.95	168.54	249.35	168.68	305.57	169.06
342.51	169.58	346.34	169.63	347.05	169.63	395.14	170.17	434.6	171.05
451.32	171.44	466.9	171.76	474.68	171.93	496.06	172.47	507.01	172.75
542.26	173.67	599.22	177.7	604.66	177.95	605.31	177.99	632.07	179.72
646.1	180.55	657.89	181.59	676.92	182.89	679.55	183.02	694.82	183.81
704.84	185.14	706.09	185.28	706.25	185.29	710.71	185.79	725.88	187.5
726.35	187.54	729.18	187.86						

Manning's n Values num= 9

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.05	19.61	.054	71.92	.047	118.46	.038	172.38	.038
193.1	.035	227.95	.05	346.34	.05	729.18	.05		

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
118.46	227.95	22.78	37.03	49.81	.3	.5

CROSS SECTION RIVER: San Juan
REACH: Upper RS: 2258.454

INPUT
Description:
Station Elevation Data num= 31

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	183.97	.13	183.96	6.06	182.82	43.75	177.93	45.94	177.76
46.8	177.7	78.63	173.82	81.35	173.3	115.57	168.6	116.13	168.52
121.4	167.88	122.81	167.82	139.55	165.64	147.14	164.71	153.1	163.98
154.83	163.94	183.01	165.83	201.36	167.05	214.5	168.23	236.6	168.31
336.75	168.66	337.48	168.66	387.14	168.84	461.24	170.11	491.35	170.66
539.05	171.51	597.87	175.71	603.48	175.94	631.79	177.95	706.93	182.76
732.06	183.76								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.05	183.01	.035	336.75	.05

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
115.57	214.5	37.15	40.69	38.12	.1	.3

CROSS SECTION RIVER: San Juan
REACH: Upper RS: 2217.76*

INPUT
Description:
Station Elevation Data num= 72

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	184.18	.17	184.16	3.03	183.69	4.81	183.4	5	183.35
5.55	183.24	5.92	183.16	8.13	182.68	17.8	180.92	27.6	179.98
45.33	178.12	58.67	177.02	61.6	176.87	62.76	176.81	62.96	176.79
67.27	176.38	68.2	176.29	78.67	175.34	89.94	174.13	105.02	173.02
105.44	172.98	109.09	172.53	117.49	171.76	148.36	168.94	154.98	168.31
155.52	168.24	160.65	167.64	162.02	167.57	168.49	166.77	178.31	165.56
185.7	164.7	191.12	164.07	191.5	164.02	193.18	163.95	225.26	165.56
227.4	165.67	246.15	166.83	261.11	167.99	283.96	168.1	354.64	168.42
380.78	168.5	387.48	168.52	388.23	168.52	394.07	168.54	408.98	168.7
417.08	168.8	437.69	169.03	439.56	169.04	492.08	169.93	499.67	170.03
516.16	170.25	547.28	170.71	565.05	170.96	571.43	171.11	580.09	171.37
596.59	171.68	633.84	173.81	637.12	174.04	651.71	174.72	657.38	175.02
659.26	175.07	663.18	175.39	672.23	176.32	676.03	176.78	683.59	177.16
687.85	177.6	692.45	178.03	700.99	178.79	735.99	180.99	753.41	181.97
770.11	182.84	796.09	183.74						

Manning's n Values num= 10

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.046	67.27	.039	154.98	.035	182.51	.035	227.33	.035
261.11	.05	354.64	.05	387.48	.05	408.98	.05	796.09	.05

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
154.98	261.11	37.15	40.69	38.12	.1	.3

CROSS SECTION RIVER: San Juan
REACH: Upper RS: 2177.07*

INPUT
Description:
Station Elevation Data num= 72

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	184.39	.22	184.37	3.81	183.83	6.03	183.5	6.28	183.43
6.97	183.29	7.42	183.18	10.19	182.54	22.32	179.95	34.62	179.03
56.86	177.01	73.59	176.11	77.27	175.97	78.72	175.92	78.97	175.91
84.37	175.48	85.54	175.38	98.68	174.42	112.81	173.04	131.72	172.17
132.25	172.14	136.83	171.77	147.36	171.07	186.08	168.6	194.39	168.02
194.91	167.96	199.9	167.4	201.23	167.31	207.52	166.59	217.07	165.49
224.25	164.69	229.53	164.1	229.89	164.06	231.53	163.96	267.52	165.3
269.91	165.39	290.95	166.62	307.73	167.76	331.32	167.89	404.3	168.28
431.29	168.36	438.21	168.38	438.99	168.38	445.01	168.4	460.41	168.68
468.78	168.83	490.05	169.22	491.99	169.24	546.21	170.15	554.05	170.22
571.07	170.4	603.21	170.75	621.56	170.95	628.15	171.14	637.09	171.52

654.12	171.84	692.58	173.54	695.97	173.78	711.04	174.13	716.9	174.32
718.84	174.36	722.89	174.84	732.22	176.07	736.15	176.75	743.95	176.99
748.36	177.56	753.1	178.11	761.92	179.1	798.06	181.33	816.05	182.22
833.3	182.93	860.12	183.71						

Manning's n Values num= 10

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.043	84.37	.043	194.39	.035	223.79	.035	271.65	.035
307.73	.05	404.3	.05	438.21	.05	460.41	.05	860.12	.05

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
194.39	307.73	37.15	40.69	38.12	.1	.3

CROSS SECTION RIVER: San Juan
REACH: Upper RS: 2136.38*

INPUT
Description:
Station Elevation Data num= 72

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	184.6	.26	184.57	4.58	183.98	7.26	183.6	7.55	183.51
8.38	183.34	8.93	183.21	12.26	182.4	26.85	178.99	41.63	178.07
68.38	175.91	88.5	175.2	92.93	175.08	94.67	175.03	94.98	175.02
101.48	174.57	102.88	174.47	118.68	173.51	135.68	171.94	158.43	171.33
159.06	171.3	164.57	171	177.24	170.39	223.81	168.26	233.79	167.73
234.31	167.67	239.15	167.17	240.45	167.06	246.56	166.4	255.83	165.41
262.81	164.68	267.93	164.14	268.29	164.1	269.88	163.98	309.77	165.03
312.43	165.1	335.74	166.4	354.35	167.52	378.68	167.67	453.96	168.15
481.8	168.23	488.94	168.24	489.74	168.25	495.96	168.26	511.84	168.65
520.47	168.87	542.42	169.41	544.41	169.44	600.35	170.36	608.43	170.41
625.99	170.54	659.14	170.8	678.07	170.94	684.86	171.17	694.09	171.66
711.66	172.01	751.33	173.26	754.83	173.51	770.37	173.53	776.41	173.63
778.41	173.64	782.59	174.28	792.22	175.83	796.27	176.71	804.32	176.81
808.86	177.52	813.76	178.19	822.86	179.42	860.14	181.67	878.69	182.47
896.48	183.01	924.15	183.69						

Manning's n Values num= 10

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.039	101.48	.046	233.79	.035	265.06	.035	315.97	.035
354.35	.05	453.96	.05	488.94	.05	511.84	.05	924.15	.05

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
233.79	354.35	37.15	40.69	38.12	.1	.3

CROSS SECTION RIVER: San Juan
REACH: Upper RS: 2095.690

INPUT
Description: Manual Modification of Manning's N Values
Station Elevation Data num= 47

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	184.81	5.35	184.12	8.48	183.7	8.82	183.59	9.79	183.39
10.43	183.23	31.37	178.02	48.65	177.12	79.91	174.8	110.99	174.13
118.58	173.66	120.22	173.56	138.69	172.59	158.55	170.85	185.13	170.49
207.11	169.71	261.53	167.92	273.2	167.44	285.59	166.22	306.34	164.18
308.23	163.99	354.94	164.82	400.96	167.28	490	167.92	503.62	168.02
532.31	168.09	546.9	168.12	563.27	168.62	572.16	168.9	594.78	169.6
654.48	170.58	662.81	170.6	734.58	170.93	741.58	171.2	751.09	171.81
810.08	172.99	813.68	173.25	829.7	172.94	837.99	172.93	852.22	175.58
856.39	176.67	864.69	176.63	869.37	177.48	883.79	179.73	922.21	182.01
941.33	182.72	988.18	183.67						

Manning's n Values num= 4

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	118.58	.05	306.34	.035	490	.05

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
273.2	400.96	97.79	280.21	315.49	.1	.3

CROSS SECTION RIVER: San Juan
REACH: Upper RS: 1815.468

INPUT
Description: Manual Modification of Manning's N Values
Station Elevation Data num= 45

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	179.36	2.08	178.85	6.28	177.56	30.14	175.76	32.7	175.46
86.02	175.1	87.39	175.09	87.62	175.08	87.99	175.06	132	173.2
202.5	170.23	250.96	169.57	285	167.82	293.94	167.36	330.88	165.46
377.12	164.1	414.9	163.81	477.77	163.14	573.83	163.32	603.6	163.51
604.68	163.38	620.57	162.55	631.33	160.3	637.44	158.18	641.68	157.71
646.53	157.13	649.75	156.78	654.61	156.93	665.23	158.28	666.56	158.49
667.62	158.75	684.92	162.64	695.21	164.31	700.31	164.76	703.34	166.78
707.45	170.49	710	170.97	714.12	171.75	723.72	172.17	724.25	172.17
738.75	172.16	744.8	172.26	867.33	173.98	923.67	175.76	1010.11	177.35

Manning's n Values num= 4

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	202.5	.05	285	.035	620.57	.05

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
620.57	684.92	157.35	199.5	221.7	.1	.3

CROSS SECTION RIVER: San Juan
REACH: Upper RS: 1615.906

INPUT
Description: Manual Modification of Manning's N Values

Station Elevation Data num= 44

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	177.11	44.42	176.08	68.41	175.81	81.79	175.66	117.53	174.86
132.29	174.76	186.79	173.08	192.24	172.93	218.39	172.08	239.31	171.94
334.71	169.35	345	169	437.24	165.85	443.29	165.68	452	165.43
477.2	164.71	492.81	164.25	648.25	163.06	676.88	162.9	682.45	162.6
714.81	162.27	768.99	161.61	800.23	159.03	822.19	157.53	838.02	157.67
860.36	161.95	866.99	162.84	882.33	164.88	894.26	166.49	902.99	167.17
918.58	168.4	947.9	170.66	948.47	170.67	962.33	171	1035.59	171.38
1115.66	171.7	1141.92	171.77	1192.22	172.45	1201.31	172.59	1223.41	173.39
1257.31	174.05	1310.92	176.14	1344.33	176.54	1368.17	177.12		

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	68.41	.02	345	.05	452	.035	918.58	.05

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
768.99	860.36	158.82	235.44	273.12	.1	.3

CROSS SECTION RIVER: San Juan
REACH: Upper RS: 1380.475

INPUT
Description:
Station Elevation Data num= 56

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	177.79	4.62	176.59	9.63	176.35	32.39	175.14	35.77	175.09
50.4	174.87	115.45	172.82	173.47	171.49	228.38	171	243.14	170.89
324.6	170.78	396.47	170.44	439.48	170.52	447.14	170.26	481.59	169.11
527.7	167.7	542.55	166.99	599.17	164.47	608.12	164.07	622.33	163.44
643.38	163.09	679.46	162.19	699.01	161.78	722.2	161.31	812.09	159.88
879.06	158.93	921.4	158.33	927.64	157.96	929.02	157.63	934.75	154.08
936.57	153.2	940.51	151.34	942.47	151.04	948.13	151.76	963.53	159.99
969.15	161.85	971.84	163.3	973.16	163.99	993.78	165.11	1004.59	165.98
1006.97	165.96	1019.49	165.84	1075.03	165.33	1155.65	164.57	1190.39	164.24
1195.11	164.23	1197.13	164.29	1211.81	164.25	1356.61	165.58	1581	171
1619.13	172.04	1626.05	172.09	1637.76	172.47	1694.72	174.38	1695.02	174.4
1788.58	177.19								

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	35.77	.02	447.14	.05	608.12	.035	1019.49	.05

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
812.09	963.53	32.45	39.81	46.27	.1	.3

CROSS SECTION RIVER: San Juan
REACH: Upper RS: 1340.66*

INPUT
Description:
Station Elevation Data num= 107

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	177.75	2.11	177.22	4.63	176.64	9.65	176.37	32.46	175.03
35.31	174.96	35.85	174.94	50.51	174.55	77.39	173.46	78.91	173.4
79.6	173.37	80.14	173.35	115.69	172.25	141.34	171.64	164.14	171.19
173.84	171.01	216.56	170.7	228.86	170.64	229.15	170.64	243.65	170.55
321.39	170.47	325.29	170.46	397.31	170.11	422.04	170.13	440.41	170.12
448.09	169.89	482.61	168.85	521.41	167.79	528.82	167.57	543.7	166.91
595.64	164.77	600.21	164.59	600.44	164.58	609.41	164.23	623.65	163.68
644.74	163.35	680.9	162.53	694.93	162.26	700.49	162.15	703.66	162.09
709.06	161.97	723.73	161.63	812.05	159.9	813.81	159.87	843.79	159.24
856.66	159.09	885.23	158.81	891.63	158.75	908.82	158.58	930.35	158.37
940.82	158.18	948.07	157.82	949.68	157.53	956.33	154.52	958.45	153.77
960.01	153.23	963.03	152.18	965.3	151.92	967.71	152.17	969.69	152.4
971.52	152.6	981.67	156.83	988.43	159.88	992.97	161.34	993.87	161.62
996.48	162.91	997.76	163.52	999.78	163.68	1012.74	164.59	1017.74	164.85
1024.41	165.34	1028.21	165.59	1030.52	165.57	1041.9	165.46	1042.65	165.45
1042.72	165.45	1065.27	165.27	1074.9	165.2	1094.86	165.04	1096.46	165.03
1118.91	164.86	1131.34	164.81	1165.59	164.52	1174.57	164.44	1208.23	164.14
1212.8	164.13	1214.76	164.18	1228.98	164.14	1247.45	164.27	1291.01	164.49
1369.28	164.87	1383.75	165.12	1495.01	167.42	1510.91	167.78	1529.97	168.26
1586.69	169.66	1623.63	170.68	1630.34	170.75	1641.68	171.11	1646.71	171.27
1696.87	173.03	1697.16	173.05	1698.34	173.09	1728.51	174.05	1730.35	174.14
1759.03	175.15	1787.81	176.24						

Manning's n Values num= 12

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	35.31	.032	35.85	.02	448.09	.045	600.21	.025
609.41	.038	812.05	.047	813.81	.05	988.43	.05	1042.65	.05
1065.27	.05	1787.81	.05						

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
813.81	988.43	32.45	39.81	46.27	.1	.3

CROSS SECTION RIVER: San Juan
REACH: Upper RS: 1300.86*

INPUT
Description:
Station Elevation Data num= 107

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	177.72	2.11	177.2	4.64	176.69	9.67	176.39	32.53	174.93
35.38	174.82	35.92	174.79	50.61	174.23	77.56	172.89	79.07	172.81
79.77	172.78	80.31	172.77	115.94	171.68	141.64	171.05	164.48	170.66
174.2	170.52	217.02	170.3	229.35	170.28	229.63	170.28	244.17	170.21
322.07	170.16	325.98	170.15	398.15	169.79	422.93	169.77	441.34	169.72
449.03	169.51	483.63	168.6	522.51	167.65	529.94	167.43	544.85	166.84

596.89	164.86	601.48	164.71	601.71	164.7	610.7	164.4	624.97	163.93
646.11	163.61	682.34	162.88	696.4	162.63	701.97	162.52	705.15	162.46
710.56	162.34	725.26	161.96	813.76	159.9	815.53	159.86	849.69	158.97
864.36	158.82	896.91	158.61	904.19	158.56	923.78	158.44	948.32	158.29
960.25	158.04	968.51	157.68	970.33	157.43	977.92	154.96	980.33	154.34
982.11	153.89	985.55	153.03	988.14	152.8	990.76	153.02	992.92	153.25
994.91	153.43	1005.96	156.96	1013.32	159.77	1017.72	161.13	1018.59	161.39
1021.12	162.52	1022.35	163.06	1024.31	163.25	1036.86	164.35	1041.69	164.58
1048.15	165.01	1051.83	165.21	1054.06	165.19	1065.08	165.07	1065.8	165.06
1065.88	165.06	1087.7	164.92	1097.02	164.86	1116.34	164.73	1117.89	164.72
1139.62	164.6	1151.65	164.64	1184.79	164.38	1193.49	164.31	1226.07	164.05
1230.5	164.04	1232.39	164.07	1246.16	164.03	1264.03	164.12	1306.19	164.14
1381.95	164.15	1395.95	164.3	1503.64	166.12	1519.03	166.46	1537.48	166.93
1592.38	168.33	1628.14	169.32	1634.63	169.4	1645.61	169.75	1650.47	169.9
1699.02	171.68	1699.3	171.7	1700.44	171.74	1729.65	172.73	1731.42	172.85
1759.19	173.99	1787.04	175.29						

Manning's n Values num= 12

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	35.38	.03	35.92	.02	449.03	.04	601.48	.03
610.7	.04	813.76	.045	815.53	.05	1013.32	.05	1065.8	.05
1087.7	.05	1787.04	.05						

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
815.53	1013.32	32.45	39.81	46.27	.1 .3

CROSS SECTION RIVER: San Juan
REACH: Upper RS: 1261.05*

INPUT
Description:
Station Elevation Data num= 107

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	177.68	2.12	177.18	4.65	176.75	9.69	176.41	32.6	174.82
35.46	174.67	36	174.65	50.72	173.9	77.72	172.32	79.24	172.23
79.94	172.2	80.48	172.18	116.18	171.11	141.93	170.45	164.83	170.14
174.57	170.04	217.48	169.89	229.83	169.92	230.12	169.92	244.68	169.87
322.75	169.85	326.66	169.83	398.99	169.46	423.82	169.41	442.27	169.31
449.98	169.14	484.65	168.34	523.61	167.51	531.05	167.3	546	166.76
598.15	164.95	602.74	164.82	602.98	164.81	611.98	164.56	626.28	164.17
647.47	163.88	683.78	163.22	697.86	163	703.45	162.89	706.64	162.83
712.05	162.71	726.79	162.28	815.48	159.89	817.25	159.85	855.59	158.7
872.05	158.55	908.58	158.41	916.76	158.38	938.74	158.3	966.28	158.2
979.67	157.89	988.94	157.53	990.99	157.33	999.5	155.4	1002.21	154.91
1004.21	154.55	1008.06	153.87	1010.97	153.68	1013.81	153.87	1016.14	154.1
1018.3	154.27	1030.26	157.1	1038.22	159.65	1042.47	160.93	1043.32	161.17
1045.75	162.13	1046.95	162.59	1048.84	162.83	1060.97	164.11	1065.65	164.32
1071.9	164.69	1075.45	164.82	1077.61	164.8	1088.26	164.68	1088.96	164.68
1089.03	164.67	1110.13	164.57	1119.14	164.52	1137.82	164.43	1139.31	164.42
1160.33	164.35	1171.95	164.46	1204	164.25	1212.41	164.19	1243.91	163.95
1248.19	163.94	1250.02	163.97	1263.33	163.92	1280.61	163.97	1321.37	163.78
1394.62	163.44	1408.16	163.49	1512.27	164.82	1527.15	165.13	1544.99	165.6
1598.07	166.99	1632.64	167.95	1638.91	168.06	1649.53	168.38	1654.23	168.53
1701.17	170.33	1701.45	170.35	1702.55	170.39	1730.78	171.41	1732.5	171.57
1759.34	172.84	1786.27	174.33						

Manning's n Values num= 12

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	35.46	.027	36	.02	449.98	.035	602.74	.035
611.98	.043	815.48	.043	817.25	.05	1038.22	.05	1088.96	.05
1110.13	.05	1786.27	.05						

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
817.25	1038.22	32.45	39.81	46.27	.1 .3

CROSS SECTION RIVER: San Juan
REACH: Upper RS: 1221.24*

INPUT
Description:
Station Elevation Data num= 107

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	177.65	2.12	177.16	4.66	176.8	9.71	176.43	32.66	174.71
35.53	174.53	36.07	174.5	50.83	173.58	77.88	171.75	79.41	171.65
80.1	171.61	80.65	171.59	116.43	170.54	142.23	169.86	165.18	169.61
174.94	169.55	217.93	169.49	230.31	169.56	230.6	169.56	245.2	169.53
323.43	169.54	327.35	169.52	399.83	169.13	424.72	169.06	443.2	168.91
450.93	168.76	485.67	168.09	524.72	167.37	532.17	167.17	547.15	166.68
599.41	165.03	604.01	164.93	604.25	164.93	613.27	164.73	627.6	164.41
648.83	164.14	685.22	163.57	699.33	163.37	704.93	163.26	708.13	163.21
713.55	163.08	728.32	162.6	817.2	159.89	818.97	159.83	861.48	158.43
879.74	158.28	920.26	158.21	929.32	158.2	953.71	158.16	984.24	158.12
999.09	157.74	1009.37	157.39	1011.65	157.23	1021.09	155.84	1024.09	155.48
1026.31	155.21	1030.58	154.72	1033.81	154.55	1036.86	154.73	1039.37	154.95
1041.69	155.11	1054.55	157.23	1063.12	159.54	1067.22	160.73	1068.04	160.94
1070.39	161.74	1071.55	162.12	1073.38	162.4	1085.09	163.87	1089.6	164.05
1095.64	164.36	1099.07	164.44	1101.15	164.42	1111.44	164.3	1112.11	164.29
1112.18	164.29	1132.56	164.22	1141.26	164.18	1159.3	164.12	1160.74	164.12
1181.04	164.09	1192.26	164.28	1223.21	164.11	1231.33	164.06	1261.75	163.86
1265.88	163.84	1267.65	163.86	1280.5	163.81	1297.19	163.82	1336.56	163.43
1407.29	162.72	1420.36	162.67	1520.91	163.52	1535.28	163.8	1552.5	164.28
1603.76	165.65	1637.14	166.59	1643.2	166.71	1653.45	167.02	1658	167.16
1703.33	168.98	1703.59	169	1704.65	169.04	1731.92	170.09	1733.58	170.29
1759.5	171.68	1785.51	173.38						

Manning's n Values num= 12

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	35.53	.025	36.07	.02	450.93	.03	604.01	.04

613.27	.045	817.2	.04	818.97	.05	1063.12	.05	1112.11	.05
1132.56	.05	1785.51	.05						

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
818.97	1063.12	32.45	39.81	46.27	.1	.3

CROSS SECTION RIVER: San Juan
REACH: Upper RS: 1181.44*

INPUT
Description:
Station Elevation Data num= 107

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	177.62	2.13	177.14	4.67	176.85	9.73	176.45	32.73	174.6
35.61	174.39	36.15	174.35	50.93	173.26	78.05	171.19	79.57	171.07
80.27	171.03	80.82	171.01	116.67	169.97	142.53	169.26	165.52	169.09
175.31	169.07	218.39	169.08	230.8	169.2	231.09	169.2	245.71	169.19
324.11	169.22	328.04	169.2	400.67	168.81	425.61	168.7	444.13	168.51
451.88	168.39	486.69	167.83	525.82	167.23	533.29	167.04	548.3	166.6
600.67	165.12	605.28	165.05	605.52	165.04	614.56	164.89	628.92	164.65
650.19	164.4	686.66	163.91	700.8	163.73	706.41	163.63	709.61	163.58
715.05	163.44	729.85	162.93	818.91	159.88	820.69	159.82	867.38	158.16
887.44	158.01	931.93	158.01	941.89	158.01	968.67	158.02	1002.21	158.03
1018.51	157.6	1029.81	157.25	1032.3	157.13	1042.67	156.28	1045.97	156.05
1048.4	155.88	1053.1	155.56	1056.65	155.43	1059.91	155.58	1062.59	155.8
1065.08	155.94	1078.85	157.36	1088.01	159.43	1091.97	160.52	1092.76	160.71
1095.03	161.35	1096.15	161.65	1097.91	161.98	1109.2	163.63	1113.56	163.79
1119.38	164.04	1122.69	164.05	1124.7	164.03	1134.62	163.91	1135.27	163.9
1135.34	163.9	1154.99	163.86	1163.38	163.85	1180.78	163.82	1182.17	163.82
1201.74	163.84	1212.57	164.11	1242.42	163.98	1250.25	163.93	1279.59	163.76
1283.57	163.75	1285.28	163.75	1297.68	163.7	1313.77	163.66	1351.74	163.08
1419.96	162.01	1432.57	161.85	1529.54	162.23	1543.4	162.48	1560.01	162.95
1609.44	164.32	1641.64	165.23	1647.49	165.37	1657.38	165.66	1661.76	165.79
1705.48	167.63	1705.73	167.65	1706.76	167.69	1733.05	168.78	1734.65	169
1759.65	170.53	1784.74	172.43						

Manning's n Values num= 12

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	35.61	.022	36.15	.02	451.88	.025	605.28	.045
614.56	.047	818.91	.038	820.69	.05	1088.01	.05	1135.27	.05
1154.99	.05	1784.74	.05						

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
820.69	1088.01	32.45	39.81	46.27	.1	.3

CROSS SECTION RIVER: San Juan
REACH: Upper RS: 1141.636

INPUT
Description:
Station Elevation Data num= 56

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	177.58	2.13	177.12	35.68	174.25	78.21	170.62	79.74	170.49
80.44	170.44	80.99	170.42	142.83	168.67	165.87	168.56	218.85	168.68
231.57	168.84	324.79	168.91	426.5	168.34	526.92	167.09	601.93	165.21
606.55	165.16	702.27	164.1	711.1	163.95	716.55	163.81	820.63	159.88
822.41	159.81	873.28	157.89	895.13	157.74	943.61	157.81	983.63	157.88
1020.17	157.95	1070.5	156.54	1079.48	156.31	1082.96	156.43	1085.82	156.65
1103.14	157.49	1112.91	159.32	1116.72	160.32	1122.44	161.55	1133.32	163.39
1143.12	163.71	1157.8	163.52	1158.49	163.51	1177.42	163.51	1185.5	163.51
1202.26	163.51	1222.45	163.58	1232.88	163.93	1261.63	163.84	1330.35	163.51
1366.92	162.73	1444.77	161.03	1538.17	160.93	1551.52	161.15	1567.52	161.62
1665.52	164.42	1708.86	166.34	1734.19	167.46	1735.73	167.72	1759.81	169.37
1783.97	171.48								

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	35.68	.02	606.55	.05	820.63	.035	1177.42	.05

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
822.41	1112.91	36.67	37.86	38.56	.1	.3

CROSS SECTION RIVER: San Juan
REACH: Upper RS: 1103.77*

INPUT
Description:
Station Elevation Data num= 96

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	176.41	2.12	175.99	4.72	175.77	12.67	175.24	32.9	173.68
35.47	173.49	76.05	170.35	77.76	170.23	79.28	170.12	79.97	170.08
80.52	170.06	136.97	168.64	142	168.51	164.7	168.38	164.91	168.37
188.19	168.42	217.58	168.48	230.23	168.61	269.28	168.64	322.9	168.67
338.09	168.6	424.02	167.99	479.79	167.27	523.86	166.71	541.47	166.3
598.44	165.13	603.03	165.09	606.34	165.06	698.19	164.09	699.55	164.07
706.97	163.91	711.7	163.78	712.39	163.76	815.87	159.79	817.64	159.72
863.44	158	883.11	157.82	915.15	157.78	926.77	157.78	962.8	157.8
992.19	157.83	995.71	157.83	1041.02	156.62	1049.11	156.42	1053.57	156.48
1057.53	156.53	1058.55	156.56	1060.84	156.62	1064.46	156.72	1069.38	156.8
1071.93	156.86	1095.33	157.39	1106.39	157.51	1118.1	158.2	1118.63	158.23
1130.04	159.28	1133.62	160.13	1139	161.18	1149.22	162.76	1156.63	163.01
1158.44	163.07	1172.24	162.98	1172.88	162.98	1181.59	163.02	1190.68	163.04
1198.27	163.05	1214.03	163.09	1222.78	163.14	1233	163.19	1234.23	163.23
1242.81	163.54	1269.83	163.63	1274.69	163.64	1334.43	163.52	1364.16	163.03
1367.14	162.98	1368.8	162.94	1441.98	161.19	1485.11	160.95	1495.64	160.92
1529.77	160.92	1542.32	161.12	1557.36	161.52	1561.09	161.62	1572.95	161.94
1574.45	161.98	1649.48	164.39	1673.86	165.51	1689.46	166.26	1690.22	166.29
1701.82	166.88	1703.73	166.97	1714.02	167.49	1715.47	167.72	1738.11	169.34

1760.82 171.35

Manning's n Values num= 11

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.032	35.47	.02	603.03	.045	711.7	.025	815.87	.038
817.64	.047	960.74	.035	1130.04	.05	1156.63	.05	1190.68	.05
1760.82	.05								

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
817.64	1130.04	36.67	37.86	38.56	.1 .3

CROSS SECTION RIVER: San Juan
REACH: Upper RS: 1065.90*

INPUT
Description:
Station Elevation Data num= 96

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	175.24	2.11	174.87	4.69	174.63	12.6	174.26	32.71	172.9
35.27	172.72	75.61	169.94	77.3	169.84	78.81	169.75	79.51	169.71
80.05	169.7	136.17	168.46	141.17	168.35	163.74	168.19	163.94	168.19
187.09	168.22	216.31	168.27	228.88	168.38	267.71	168.41	321.02	168.44
336.12	168.38	421.55	167.64	476.99	166.9	520.8	166.33	538.31	165.95
594.94	165.05	599.51	165.02	602.79	165	694.12	164.07	695.46	164.05
702.84	163.87	707.55	163.73	708.23	163.71	811.1	159.71	812.86	159.64
853.6	158.11	871.1	157.9	899.59	157.76	909.93	157.75	941.98	157.73
968.12	157.71	971.24	157.71	1011.55	156.7	1018.74	156.54	1025.81	156.59
1032.11	156.63	1033.72	156.65	1037.36	156.7	1043.1	156.78	1050.9	156.86
1054.95	156.92	1092.08	157.51	1109.64	157.53	1128.22	158	1129.06	158.02
1147.17	159.24	1150.52	159.94	1155.56	160.81	1165.13	162.14	1172.06	162.38
1173.75	162.44	1186.67	162.44	1187.28	162.44	1195.43	162.52	1203.94	162.56
1211.04	162.6	1225.79	162.67	1233.99	162.73	1243.56	162.8	1244.71	162.84
1252.74	163.15	1278.03	163.43	1282.58	163.47	1338.5	163.54	1366.34	163.22
1369.13	163.19	1370.68	163.15	1439.19	161.35	1479.56	160.93	1489.42	160.87
1521.37	160.91	1533.12	161.08	1547.2	161.43	1550.69	161.51	1561.79	161.78
1563.19	161.82	1633.43	164.36	1656.26	165.45	1670.87	166.21	1671.57	166.25
1682.43	166.87	1684.22	166.97	1693.86	167.52	1695.21	167.73	1716.4	169.32
1737.66	171.22								

Manning's n Values num= 11

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.03	35.27	.02	599.51	.04	707.55	.03	811.1	.04
812.86	.045	965.99	.035	1147.17	.05	1172.06	.05	1203.94	.05
1737.66	.05								

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
812.86	1147.17	36.67	37.86	38.56	.1 .3

CROSS SECTION RIVER: San Juan
REACH: Upper RS: 1028.04*

INPUT
Description:
Station Elevation Data num= 96

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	174.08	2.09	173.74	4.66	173.5	12.52	173.28	32.52	172.11
35.06	171.96	75.16	169.53	76.85	169.45	78.35	169.38	79.04	169.35
79.58	169.34	135.37	168.29	140.34	168.19	162.78	168.01	162.98	168
185.99	168.03	215.04	168.07	227.54	168.15	266.14	168.17	319.13	168.2
334.14	168.16	419.07	167.28	474.19	166.53	517.74	165.95	535.15	165.6
591.45	164.97	595.98	164.95	599.25	164.94	690.04	164.06	691.38	164.04
698.71	163.83	703.39	163.68	704.07	163.66	806.34	159.62	808.08	159.55
843.76	158.22	859.08	157.98	884.03	157.75	893.08	157.72	921.15	157.65
944.04	157.59	946.78	157.59	982.07	156.78	988.37	156.65	998.06	156.69
1006.68	156.73	1008.88	156.75	1013.87	156.79	1021.73	156.85	1032.43	156.91
1037.97	156.98	1088.84	157.62	1112.88	157.55	1138.34	157.8	1139.49	157.81
1164.3	159.2	1167.42	159.75	1172.11	160.44	1181.03	161.51	1187.49	161.74
1189.07	161.8	1201.11	161.9	1201.67	161.91	1209.27	162.03	1217.19	162.09
1223.82	162.14	1237.56	162.25	1245.2	162.32	1254.11	162.42	1255.18	162.45
1262.66	162.76	1286.24	163.22	1290.47	163.3	1342.58	163.55	1368.51	163.41
1371.12	163.4	1372.57	163.36	1436.4	161.51	1474.02	160.9	1483.21	160.81
1512.98	160.9	1523.92	161.05	1537.04	161.33	1540.29	161.4	1550.64	161.62
1551.94	161.65	1617.39	164.32	1638.66	165.39	1652.27	166.16	1652.93	166.2
1663.05	166.86	1664.71	166.97	1673.69	167.55	1674.96	167.73	1694.7	169.29
1714.51	171.09								

Manning's n Values num= 11

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.027	35.06	.02	595.98	.035	703.39	.035	806.34	.043
808.08	.043	971.25	.035	1164.3	.05	1187.49	.05	1217.19	.05
1714.51	.05								

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
808.08	1164.3	36.67	37.86	38.56	.1 .3

CROSS SECTION RIVER: San Juan
REACH: Upper RS: 990.179*

INPUT
Description:
Station Elevation Data num= 96

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	172.91	2.08	172.62	4.64	172.37	12.45	172.3	32.32	171.32
34.85	171.19	74.72	169.12	76.39	169.06	77.89	169	78.57	168.98
79.11	168.97	134.57	168.11	139.51	168.03	161.81	167.82	162.02	167.82
184.89	167.83	213.77	167.86	226.19	167.92	264.57	167.94	317.25	167.96
332.17	167.93	416.59	166.93	471.38	166.15	514.68	165.57	531.98	165.26
587.95	164.89	592.46	164.89	595.71	164.88	685.96	164.05	687.29	164.03

694.59	163.79	699.23	163.63	699.91	163.6	801.57	159.53	803.31	159.46
833.92	158.33	847.07	158.07	868.47	157.74	876.24	157.7	900.32	157.57
919.96	157.47	922.31	157.47	952.6	156.86	958	156.76	970.31	156.8
981.26	156.83	984.05	156.84	990.39	156.87	1000.37	156.92	1013.96	156.96
1020.99	157.04	1085.59	157.74	1116.13	157.56	1148.46	157.6	1149.93	157.61
1181.43	159.16	1184.33	159.56	1188.67	160.07	1196.94	160.88	1202.93	161.11
1204.39	161.16	1215.54	161.36	1216.07	161.37	1223.1	161.54	1230.45	161.62
1236.59	161.69	1249.33	161.83	1256.41	161.91	1264.67	162.03	1265.66	162.05
1272.59	162.37	1294.44	163.02	1298.37	163.13	1346.66	163.56	1370.69	163.61
1373.1	163.61	1374.45	163.57	1433.6	161.67	1468.47	160.87	1476.99	160.76
1504.58	160.89	1514.72	161.02	1526.88	161.24	1529.9	161.29	1539.48	161.46
1540.69	161.49	1601.35	164.29	1621.06	165.34	1633.67	166.11	1634.28	166.16
1643.66	166.85	1645.2	166.97	1653.53	167.58	1654.7	167.73	1673	169.27
1691.36	170.96								

Manning's n Values num= 11

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.025	34.85	.02	592.46	.03	699.23	.04	801.57	.045
803.31	.04	976.51	.035	1181.43	.05	1202.93	.05	1230.45	.05
1691.36	.05								

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
803.31	1181.43	36.67	37.86	38.56	.1	.3

CROSS SECTION RIVER: San Juan
REACH: Upper RS: 952.315*

INPUT
Description:
Station Elevation Data num= 96

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	171.74	2.07	171.49	4.61	171.24	12.37	171.33	32.13	170.54
34.64	170.43	74.27	168.7	75.94	168.67	77.43	168.63	78.1	168.62
78.64	168.61	133.77	167.94	138.68	167.86	160.85	167.64	161.05	167.63
183.79	167.64	212.5	167.66	224.85	167.69	262.99	167.71	315.36	167.72
330.19	167.71	414.12	166.58	468.58	165.78	511.62	165.18	528.82	164.91
584.46	164.81	588.94	164.82	592.17	164.82	681.88	164.03	683.21	164.02
690.46	163.76	695.08	163.58	695.75	163.55	796.81	159.45	798.53	159.38
824.08	158.44	835.05	158.15	852.92	157.72	859.4	157.67	879.5	157.5
895.89	157.36	897.85	157.35	923.12	156.94	927.63	156.88	942.55	156.9
955.83	156.93	959.22	156.94	966.9	156.96	979.01	156.99	995.48	157.02
1004.01	157.1	1082.34	157.86	1119.38	157.58	1158.58	157.4	1160.36	157.4
1198.56	159.12	1201.23	159.37	1205.23	159.71	1212.84	160.26	1218.36	160.47
1219.7	160.53	1229.98	160.82	1230.46	160.84	1236.94	161.04	1243.71	161.14
1249.36	161.23	1261.09	161.4	1267.61	161.51	1275.22	161.64	1276.13	161.66
1282.52	161.98	1302.64	162.81	1306.26	162.96	1350.74	163.58	1372.87	163.8
1375.09	163.82	1376.33	163.78	1430.81	161.83	1462.93	160.85	1470.77	160.71
1496.18	160.88	1505.52	160.99	1516.72	161.14	1519.5	161.18	1528.33	161.31
1529.44	161.33	1585.31	164.26	1603.46	165.28	1615.08	166.07	1615.64	166.11
1624.28	166.84	1625.7	166.97	1633.36	167.61	1634.44	167.73	1651.29	169.24
1668.2	170.83								

Manning's n Values num= 11

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.022	34.64	.02	588.94	.025	695.08	.045	796.81	.047
798.53	.038	981.77	.035	1198.56	.05	1218.36	.05	1243.71	.05
1668.2	.05								

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
798.53	1198.56	36.67	37.86	38.56	.1	.3

CROSS SECTION RIVER: San Juan
REACH: Upper RS: 914.451

INPUT
Description:
Station Elevation Data num= 45

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	170.57	4.58	170.11	12.3	170.35	31.94	169.75	73.83	168.29
132.97	167.76	159.89	167.45	182.69	167.44	261.42	167.48	328.22	167.49
465.78	165.41	525.66	164.56	588.63	164.76	679.12	164.01	690.92	163.53
793.76	159.29	837.36	157.71	871.81	157.24	897.26	156.99	914.8	157.01
934.39	157.03	943.42	157.04	977.01	157.07	987.03	157.16	1079.1	157.98
1168.7	157.2	1170.79	157.19	1215.69	159.08	1233.79	159.84	1250.78	160.55
1278.82	161.1	1286.61	161.27	1314.15	162.79	1375.05	163.99	1377.08	164.03
1457.38	160.82	1464.55	160.66	1509.1	161.07	1517.17	161.15	1518.19	161.17
1585.86	165.22	1596.48	166.02	1604.89	166.83	1606.19	166.97	1645.05	170.7

Manning's n Values num= 4

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.02	690.92	.05	987.03	.035	1233.79	.05

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
793.76	1215.69	48.05	43.73	44.13	.1	.3

CROSS SECTION RIVER: San Juan
REACH: Upper RS: 870.723*

INPUT
Description:
Station Elevation Data num= 83

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	170.8	4.75	170.19	6.57	170.14	9.82	170.12	12.76	170.19
33.13	169.67	64.92	168.77	75.34	168.46	76.59	168.43	84.47	168.42
90.66	168.37	99.45	168.32	137.94	167.98	165.87	167.68	179.14	167.65
189.52	167.58	199.11	167.53	239.93	167.38	271.19	167.29	307.05	167.17
340.49	167.05	377.37	166.48	429.35	165.86	483.19	165.2	524.55	164.73
545.31	164.49	606.72	164.61	610.63	164.61	620.18	164.55	704.51	163.9

706.98	163.82	716.75	163.51	726.45	163.21	728.18	163.14	778.76	161.12
788.35	160.54	811.13	159.49	823.43	158.98	842.16	158.28	865.18	157.51
886.65	157.19	892.83	157.12	898.17	157.06	922.54	156.85	939.94	156.91
959.38	156.97	968.34	157	985.73	157.05	1001.67	157.1	1006.2	157.15
1011.61	157.18	1102.96	157.76	1113.05	157.68	1167.02	157.33	1191.86	157.17
1193.93	157.16	1225.77	158.26	1226.21	158.28	1238.48	158.81	1253.79	159.48
1268.15	160.09	1283.58	160.43	1291.86	160.61	1298.45	160.77	1321.74	162.06
1324.34	162.11	1357.38	162.79	1373.23	163.18	1374.95	163.22	1393.32	162.62
1441.94	161.27	1442.84	161.24	1448.91	161.16	1486.58	161.78	1493.4	161.9
1494.26	161.92	1546.44	165.29	1551.48	165.68	1560.46	166.5	1567.57	167.29
1568.67	167.43	1576.92	168.34	1601.53	170.87				

Manning's n Values num= 9

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.02	716.75	.044	823.43	.038	976.31	.047	1013.55	.035
1238.48	.05	1253.79	.05	1283.58	.05	1601.53	.05		

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
823.43	1238.48	48.05	43.73	44.13	.1 .3

CROSS SECTION RIVER: San Juan
REACH: Upper RS: 826.996*

INPUT
Description:
Station Elevation Data num= 83

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	171.02	4.92	170.26	6.81	170.11	10.18	169.98	13.22	170.02
34.33	169.6	67.26	168.85	78.06	168.59	79.35	168.57	87.52	168.61
93.93	168.58	103.04	168.54	142.91	168.2	171.84	167.9	185.59	167.85
196.35	167.73	206.29	167.62	248.57	167.29	280.96	167.09	318.12	166.85
352.76	166.6	390.97	166	444.82	165.53	500.6	165	543.45	164.61
564.96	164.42	628.58	164.46	632.64	164.47	642.53	164.41	729.89	163.79
732.45	163.72	742.58	163.5	752.63	163.27	754.42	163.21	806.82	161.17
816.76	160.4	840.36	159.2	853.1	158.66	871	157.98	893	157.3
913.52	156.98	919.43	156.93	924.53	156.88	947.82	156.71	965.09	156.8
984.37	156.91	993.26	156.96	1010.51	157.05	1026.32	157.14	1030.82	157.19
1036.19	157.21	1126.82	157.53	1136.83	157.46	1190.38	157.24	1215.02	157.14
1217.08	157.13	1248.66	157.98	1249.09	158	1261.27	158.55	1273.78	159.11
1285.53	159.64	1298.14	159.96	1304.9	160.13	1310.29	160.27	1329.32	161.33
1331.45	161.38	1358.46	161.97	1371.41	162.36	1372.81	162.4	1387.83	162.08
1427.57	161.67	1428.31	161.66	1433.26	161.66	1464.05	162.5	1469.63	162.65
1470.34	162.68	1512.98	165.72	1517.1	166.14	1524.44	166.98	1530.25	167.75
1531.15	167.88	1537.89	168.78	1558.01	171.04				

Manning's n Values num= 9

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.02	742.58	.038	853.1	.041	1003.45	.044	1040.07	.035
1261.27	.05	1273.78	.05	1298.14	.05	1558.01	.05		

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
853.1	1261.27	48.05	43.73	44.13	.1 .3

CROSS SECTION RIVER: San Juan
REACH: Upper RS: 783.268*

INPUT
Description:
Station Elevation Data num= 83

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	171.25	5.09	170.34	7.05	170.08	10.53	169.83	13.68	169.86
35.52	169.52	69.6	168.94	80.77	168.71	82.11	168.72	90.56	168.81
97.2	168.78	106.62	168.76	147.88	168.41	177.82	168.13	192.05	168.05
203.18	167.87	213.46	167.71	257.22	167.21	290.74	166.9	329.18	166.53
365.03	166.16	404.56	165.52	460.29	165.2	518.01	164.79	562.36	164.5
584.61	164.35	650.44	164.32	654.64	164.32	664.87	164.28	755.28	163.68
757.93	163.63	768.4	163.48	778.81	163.33	780.66	163.27	834.89	161.22
845.16	160.26	869.59	158.9	882.78	158.35	899.85	157.67	920.83	157.1
940.39	156.77	946.03	156.73	950.89	156.69	973.1	156.56	990.23	156.7
1009.36	156.85	1018.18	156.92	1035.3	157.05	1050.98	157.17	1055.44	157.22
1060.77	157.23	1150.68	157.31	1160.61	157.24	1213.73	157.15	1238.18	157.11
1240.22	157.1	1271.56	157.7	1271.98	157.72	1284.07	158.28	1293.78	158.75
1302.9	159.18	1312.69	159.49	1317.95	159.64	1322.13	159.77	1336.91	160.59
1338.56	160.64	1359.53	161.14	1369.59	161.55	1370.68	161.59	1382.34	161.54
1413.2	162.07	1413.77	162.08	1417.62	162.16	1441.53	163.21	1445.86	163.41
1446.41	163.43	1479.53	166.15	1482.72	166.59	1488.42	167.46	1492.94	168.22
1493.64	168.34	1498.87	169.22	1514.49	171.21				

Manning's n Values num= 9

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.02	768.4	.032	882.78	.044	1030.58	.041	1066.59	.035
1284.07	.05	1293.78	.05	1312.69	.05	1514.49	.05		

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
882.78	1284.07	48.05	43.73	44.13	.1 .3

CROSS SECTION RIVER: San Juan
REACH: Upper RS: 739.541*

INPUT
Description:
Station Elevation Data num= 83

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	171.47	5.26	170.42	7.28	170.06	10.89	169.69	14.14	169.69
36.72	169.44	71.94	169.02	83.49	168.84	84.87	168.86	93.61	169
100.46	168.99	110.21	168.99	152.85	168.63	183.8	168.36	198.5	168.26
210.01	168.01	220.64	167.79	265.86	167.12	300.51	166.7	340.25	166.22
377.3	165.71	418.16	165.05	475.76	164.86	535.43	164.59	581.26	164.38

604.26	164.28	672.31	164.18	676.65	164.18	687.22	164.14	780.67	163.57
783.4	163.53	794.23	163.47	804.98	163.4	806.9	163.34	862.95	161.28
873.57	160.11	898.82	158.61	912.45	158.03	928.69	157.37	948.65	156.9
967.26	156.56	972.62	156.54	977.25	156.51	998.38	156.42	1015.37	156.6
1034.35	156.79	1043.1	156.88	1060.08	157.05	1075.64	157.21	1080.06	157.26
1085.34	157.25	1174.54	157.08	1184.39	157.03	1237.09	157.06	1261.34	157.07
1263.36	157.08	1294.45	157.42	1294.87	157.44	1306.86	158.02	1313.78	158.38
1320.27	158.73	1327.25	159.01	1330.99	159.15	1333.97	159.27	1344.49	159.86
1345.67	159.91	1360.61	160.32	1367.77	160.73	1368.55	160.78	1376.85	161
1398.83	162.48	1399.24	162.5	1401.98	162.66	1419.01	163.93	1422.09	164.16
1422.48	164.19	1446.07	166.57	1448.35	167.05	1452.41	167.94	1455.62	168.68
1456.12	168.8	1459.84	169.65	1470.97	171.38				

Manning's n Values num= 9

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.02	794.23	.026	912.45	.047	1057.72	.038	1093.11	.035
1306.86	.05	1313.78	.05	1327.25	.05	1470.97	.05		

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
912.45	1306.86	48.05	43.73	44.13	.1 .3

CROSS SECTION RIVER: San Juan
REACH: Upper RS: 695.814

INPUT
Description:
Station Elevation Data num= 43

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	171.7	7.52	170.03	11.24	169.55	74.28	169.11	86.2	168.97
96.65	169.2	103.73	169.19	113.79	169.21	204.96	168.46	227.81	167.88
274.51	167.04	351.31	165.9	431.76	164.57	491.23	164.53	600.16	164.27
694.17	164.04	709.57	164.01	808.88	163.44	831.16	163.46	833.14	163.4
891.01	161.33	901.98	159.97	928.05	158.32	942.12	157.72	957.53	157.07
994.13	156.35	999.22	156.34	1023.66	156.28	1084.86	157.05	1104.68	157.3
1208.17	156.81	1260.44	156.97	1317.34	157.14	1317.76	157.16	1329.65	157.75
1341.8	158.54	1352.78	159.17	1361.68	159.49	1371.36	160.46	1384.46	162.88
1412.61	167	1420.82	170.09	1427.45	171.55				

Manning's n Values num= 4

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.02	942.12	.05	1084.86	.035	1341.8	.05

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
942.12	1329.65	43.52	42.21	40.09	.1 .3

CROSS SECTION RIVER: San Juan
REACH: Upper RS: 653.607*

INPUT
Description:
Station Elevation Data num= 97

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	171.53	7.23	170.12	10.8	169.69	20.97	169.52	46.91	169.41
71.4	169.13	82.85	168.96	92.9	169.08	99.7	169.04	101.99	169.03
102.8	169.03	109.37	168.96	112.88	168.89	166.05	167.92	169.03	167.88
183.88	167.7	197	167.64	218.97	167.22	236.86	167	254.12	166.66
263.85	166.52	337.67	165.67	415	164.67	472.16	164.69	532.21	164.62
576.86	164.55	589.17	164.53	597.73	164.57	607.87	164.59	659.13	164.59
667.22	164.59	682.02	164.58	682.32	164.58	723.74	163.83	726.03	163.81
745.64	162.62	748.18	162.47	754.74	162.39	768.78	162.18	777.48	162.14
778.65	162.15	781.93	162.15	787.34	162.15	798.89	162.13	799.62	162.11
800.79	162.08	855.44	160.33	856.42	160.29	866.92	159.17	866.96	159.17
892.02	157.37	892.41	157.35	905.54	156.66	919.29	155.96	919.59	155.95
951.94	155.26	956.48	155.23	960.33	155.21	978.29	155.16	1004.26	155.48
1033.05	155.84	1050.79	156.06	1143.4	155.78	1162.12	155.85	1190.17	155.92
1216.15	155.99	1241.09	156.15	1241.47	156.17	1252.11	156.68	1255.27	156.84
1269.22	157.55	1276.94	157.91	1284.68	158.39	1292.51	158.79	1297.21	159.02
1299.65	159.23	1310.85	159.87	1321.05	160.94	1323.84	161.24	1329.3	161.82
1342.24	162.91	1352.87	163.74	1356.63	164.02	1361.24	164.22	1367.29	164.84
1368.94	165.04	1372.09	165.82	1375.03	166.76	1378.36	168.18	1378.48	168.23
1380.5	168.87	1382.19	169.25	1382.68	169.38	1383.69	169.62	1388.94	171.17
1389.48	171.31	1389.84	171.4						

Manning's n Values num= 8

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.02	905.54	.05	976.78	.05	1033.19	.038	1252.11	.047
1269.22	.047	1378.36	.038	1389.84	.05				

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
905.54	1252.11	43.52	42.21	40.09	.1 .3

CROSS SECTION RIVER: San Juan
REACH: Upper RS: 611.400*

INPUT
Description:
Station Elevation Data num= 97

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	171.36	6.94	170.2	10.37	169.84	20.12	169.57	45.01	169.54
68.51	169.15	79.51	168.94	89.15	168.97	95.68	168.88	97.87	168.86
98.65	168.85	104.95	168.71	108.32	168.6	159.34	167.11	162.2	167.07
176.45	166.82	189.05	166.82	210.12	166.57	227.29	166.45	243.85	166.09
253.2	166	324.03	165.44	398.24	164.78	453.09	164.85	510.71	164.86
553.56	164.84	565.37	164.83	573.59	164.91	583.32	164.99	632.51	165.13
640.27	165.14	654.47	165.16	654.76	165.16	694.51	163.9	696.71	163.88
715.52	161.6	717.96	161.33	724.25	161.2	737.73	160.86	746.07	160.85
747.2	160.85	750.35	160.85	755.53	160.84	766.62	160.8	767.32	160.79
768.45	160.76	820.89	159.28	821.83	159.26	831.91	158.37	831.94	158.37

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  855.99  156.42  856.37   156.4  868.97  155.59  881.05  154.85  881.31  154.84
  909.75  154.16  913.75  154.12  917.13  154.09  932.91  154.03  955.84  154.31
  981.24  154.62   996.9  154.82 1078.63  154.74 1095.14  154.83  1119.9  154.88
 1142.83  154.92 1164.84  155.16 1165.17  155.17 1174.56  155.61 1178.65  155.79
 1196.63  156.57 1206.59  156.97 1216.58  157.62 1226.67   158.2 1232.75  158.55
 1235.89  158.79 1250.33  159.28  1263.5  160.09  1267.1  160.31 1274.13  160.75
 1290.83  161.59 1304.54  162.16 1309.38  162.31 1315.34  162.24 1323.14  162.85
 1325.27  163.07 1329.33   163.8 1333.12   164.9 1337.42  166.84 1337.58  166.91
 1340.18  167.64 1342.36  168.14    1343  168.33  1344.3  168.66 1351.07  170.93
 1351.76  171.13 1352.23  171.24

Manning's n Values        num=       8
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
       0     .02  868.97     .05  931.78     .05  981.53     .041 1174.56     .044
 1196.63    .044 1337.42    .041 1352.23     .05

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        868.97 1174.56             43.52   42.21   40.09            .1       .3

CROSS SECTION          RIVER: San Juan
REACH: Upper              RS: 569.194*

INPUT
Description:
Station Elevation Data    num=      97
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  171.19    6.64  170.29    9.93  169.98   19.27  169.62   43.12  169.66
   65.63  169.18   76.16  168.93   85.39  168.85   91.65  168.73   93.75  168.69
   94.49  168.68  100.54  168.45  103.76  168.32  152.63  166.31  155.37  166.25
  169.02  165.95  181.09  165.99  201.28  165.91  217.72   165.9  233.59  165.53
  242.54  165.48  310.39  165.21  381.47  164.88  434.02  165.01  489.21  165.11
  530.26  165.12  541.57  165.12  549.45  165.26  558.77   165.4  605.89  165.66
  613.32  165.69  626.93  165.73   627.2  165.73  665.28  163.96  667.38  163.94
   685.4  160.59  687.74  160.19  693.77  160.01  706.67  159.54  714.67  159.55
  715.75  159.56  718.77  159.56  723.73  159.54  734.36  159.47  735.03  159.46
   736.1  159.44  786.33  158.24  787.23  158.22  796.89  157.57  796.93  157.57
  819.96  155.47  820.32  155.45  832.39  154.53  842.81  153.74  843.04  153.73
  867.57  153.07  871.01  153.01  873.92  152.96  887.54  152.91  907.41  153.14
  929.44  153.41     943  153.57 1013.85  153.71 1028.17  153.81 1049.64  153.83
 1069.51  153.85 1088.59  154.17 1088.88  154.18 1097.02  154.53 1102.02  154.74
 1124.05  155.58 1136.25  156.03 1148.48  156.84 1160.84  157.62 1168.28  158.08
 1172.13  158.36 1189.82  158.69 1205.94  159.23 1210.35  159.39 1218.97  159.69
 1239.42  160.27 1256.21  160.57 1262.14  160.61 1269.44  160.26    1279  160.87
  1281.6  161.11 1286.57  161.79 1291.21  163.04 1296.48   165.5 1296.68  165.59
 1299.86  166.42 1302.54  167.03 1303.31  167.27 1304.91  167.69 1313.19  170.69
 1314.04  170.95 1314.61  171.09

Manning's n Values        num=       8
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
       0     .02  832.39     .05  886.78     .05  929.86     .044 1097.02     .041
 1124.05    .041 1296.48    .044 1314.61     .05

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        832.39 1097.02             43.52   42.21   40.09            .1       .3

CROSS SECTION          RIVER: San Juan
REACH: Upper              RS: 526.987*

INPUT
Description:
Station Elevation Data    num=      97
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  171.02    6.35  170.37    9.49  170.12   18.43  169.67   41.22  169.79
   62.74   169.2   72.81  168.91   81.64  168.73   87.62  168.58   89.63  168.53
   90.34  168.51   96.12   168.2    99.2  168.03  145.93   165.5  148.55  165.44
   161.6  165.07  173.13  165.17  192.43  165.25  208.16  165.35  223.32  164.96
  231.88  164.96  296.75  164.99  364.71  164.98  414.95  165.17  467.72  165.35
  506.96   165.4  517.78  165.42   525.3  165.61  534.21   165.8  579.26   166.2
  586.37  166.23  599.38   166.3  599.64  166.31  636.04  164.03  638.06  164.01
  655.29  159.57  657.52  159.04  663.28  158.83  675.62  158.23  683.27  158.26
   684.3  158.26  687.18  158.26  691.93  158.23  702.09  158.15  702.73  158.14
  703.76  158.12  751.78   157.2  752.64  157.18  761.88  156.77  761.91  156.77
  783.93  154.53  784.28  154.49  795.82  153.46  804.58  152.63  804.76  152.61
  825.38  151.97  828.27   151.9  830.72  151.84  842.16  151.78  858.99  151.98
  877.63   152.2  889.11  152.33  949.08  152.68   961.2  152.78  979.37  152.78
  996.19  152.78 1012.34  153.17 1012.58  153.18 1019.47  153.46  1025.4  153.69
 1051.47   154.6  1065.9  155.09 1080.38  156.07 1095.01  157.03 1103.82  157.61
 1108.37  157.92 1129.31   158.1 1148.39  158.38 1153.61  158.46  1163.8  158.63
 1188.01  158.95 1207.88  158.99  1214.9   158.9 1223.53  158.28 1234.85  158.88
 1237.93  159.15 1243.81  159.77 1249.31  161.17 1255.54  164.16 1255.77  164.27
 1259.54  165.19 1262.71  165.93 1263.63  166.22 1265.51  166.73 1275.32  170.45
 1276.33  170.77    1277  170.93

Manning's n Values        num=       8
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
       0     .02  795.82     .05  841.79     .05   878.2     .047 1019.47     .038
 1051.47    .038 1255.54    .047    1277     .05

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        795.82 1019.47             43.52   42.21   40.09            .1       .3

CROSS SECTION          RIVER: San Juan
REACH: Upper              RS: 484.781

INPUT
Description: Manual Modification of Manning's N Values
Station Elevation Data    num=      59
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
```

0	170.85	17.58	169.72	39.33	169.91	85.51	168.36	86.19	168.34
94.64	167.74	139.22	164.7	141.72	164.62	154.17	164.2	198.59	164.8
213.06	164.4	446.22	165.59	493.98	165.71	501.16	165.96	509.66	166.2
552.64	166.73	572.08	166.88	606.81	164.1	608.73	164.07	625.17	158.56
627.3	157.9	632.8	157.64	644.57	156.91	652.85	156.97	655.6	156.97
660.13	156.93	670.43	156.81	717.23	156.16	726.86	155.97	748.23	153.54
759.24	152.4	766.49	151.5	787.52	150.72	796.79	150.66	810.56	150.81
894.23	151.76	922.87	151.71	941.93	152.39	948.77	152.64	995.56	154.15
1029.18	156.45	1044.61	157.49	1090.83	157.52	1096.86	157.54	1136.6	157.63
1159.55	157.4	1167.66	157.2	1177.63	156.3	1190.7	156.89	1201.05	157.75
1207.4	159.31	1214.6	162.82	1214.87	162.95	1222.88	164.82	1223.94	165.17
1226.12	165.76	1237.45	170.21	1238.61	170.59	1239.39	170.78		

Manning's n Values num= 4

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.02	796.79	.05	941.93	.035	1214.6	.05

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
759.24	941.93	43.18	43.96	42.55	.1 .3

CROSS SECTION RIVER: San Juan
REACH: Upper RS: 440.825*

INPUT
Description:
Station Elevation Data num= 92

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	170.09	14.82	169.21	30.72	169.37	33.15	169.38	72.07	168.1
72.64	168.09	79.76	167.6	117.33	165.13	119.44	165.06	129.93	164.71
167.37	165.15	171.54	165.04	179.57	164.81	338.08	165.09	340.44	165.08
343.52	165.05	376.07	164.85	416.32	164.51	422.37	164.64	423.36	164.66
429.54	164.76	458.18	164.8	465.76	164.84	482.14	164.85	511.42	162.42
513.03	162.38	526.89	157.88	528.68	157.34	533.32	157.1	543.24	156.45
550.22	156.45	552.53	156.43	556.35	156.37	565.03	156.22	604.48	155.42
612.59	155.21	630.6	153.15	639.88	152.17	642.02	151.91	642.1	151.9
647.52	151.36	669.66	150.57	673.21	150.53	678.18	150.44	679.12	150.43
679.42	150.42	683.89	150.49	694.92	150.66	722.98	151.08	730.16	151.13
738.72	151.22	768.78	151.45	789.11	151.61	821.35	151.56	835.49	151.92
842.81	152.17	848.92	152.42	890.71	153.94	890.94	153.95	920.74	156
926.58	156.39	934.52	156.94	968.46	157.24	975.8	157.29	981.19	157.33
984.95	157.36	987.02	157.37	1005.18	157.05	1006.37	157.1	1016.68	157.37
1018.77	157.4	1037.18	157.68	1044.42	157.7	1050.52	157.35	1053.33	157.28
1065	158.39	1074.24	159.58	1079.92	161.13	1082.78	162.53	1086.35	164.05
1086.59	164.15	1087.28	164.29	1091.44	165.02	1093.74	165.53	1094.69	165.82
1095.28	165.97	1096.64	166.3	1101.41	168	1106.76	170.08	1106.82	170.1
1107.79	170.43	1108.43	170.61						

Manning's n Values num= 8

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.026	639.88	.047	681.59	.047	766.25	.035	842.81	.038
1018.77	.05	1086.35	.05	1108.49	.05				

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
639.88	842.81	43.18	43.96	42.55	.1 .3

CROSS SECTION RIVER: San Juan
REACH: Upper RS: 396.869*

INPUT
Description:
Station Elevation Data num= 92

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	169.34	12.05	168.7	24.99	168.85	26.96	168.86	58.62	167.85
59.09	167.83	64.88	167.46	95.45	165.55	97.16	165.5	105.7	165.23
136.15	165.51	139.54	165.42	146.07	165.21	275.02	164.82	276.94	164.78
279.44	164.71	305.92	164.12	338.67	163.3	343.59	163.32	344.39	163.32
349.42	163.32	372.71	162.99	378.88	162.95	392.21	162.81	416.02	160.74
417.34	160.7	428.61	157.2	430.07	156.78	433.84	156.56	441.91	155.98
447.58	155.92	449.47	155.89	452.58	155.81	459.64	155.62	491.72	154.69
498.32	154.46	512.98	152.75	520.52	151.94	522.77	151.68	522.86	151.67
528.54	151.21	551.8	150.43	555.53	150.36	560.75	150.22	561.74	150.19
562.05	150.19	567.02	150.28	579.29	150.5	610.47	151.08	618.46	151.1
627.98	151.18	661.4	151.34	683.99	151.46	719.83	151.42	735.55	151.68
743.69	151.96	749.06	152.2	785.86	153.72	786.06	153.74	812.29	155.55
817.44	155.9	824.43	156.39	854.31	156.96	860.77	157.05	865.51	157.13
868.82	157.18	870.65	157.19	886.63	156.5	887.68	156.59	896.76	157.11
898.6	157.2	914.81	157.97	921.18	158.2	926.56	158.13	929.02	158.26
939.3	159.88	947.44	161.4	952.43	162.95	954.95	164.2	958.09	165.28
958.31	165.35	958.92	165.44	962.58	165.81	964.6	166.23	965.44	166.47
965.96	166.59	967.15	166.84	971.36	168.14	976.06	169.95	976.12	169.96
976.97	170.27	977.59	170.44						

Manning's n Values num= 8

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.032	520.52	.044	566.39	.044	659.5	.035	743.69	.041
898.6	.05	958.09	.05	977.59	.05				

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
520.52	743.69	43.18	43.96	42.55	.1 .3

CROSS SECTION RIVER: San Juan
REACH: Upper RS: 352.914*

INPUT
Description:
Station Elevation Data num= 92

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	168.58	9.29	168.19	19.26	168.33	20.78	168.33	45.18	167.59

45.54	167.58	50.01	167.32	73.56	165.98	74.88	165.94	81.46	165.74
104.93	165.86	107.55	165.8	112.58	165.62	211.95	164.55	213.44	164.48
215.36	164.37	235.77	163.38	261.01	162.1	264.8	162	265.42	161.98
269.29	161.88	287.25	161.17	292	161.06	302.27	160.78	320.63	159.06
321.64	159.01	330.33	156.52	331.45	156.22	334.36	156.02	340.58	155.52
344.95	155.4	346.4	155.35	348.8	155.26	354.24	155.03	378.97	153.95
384.06	153.7	395.35	152.36	401.17	151.71	403.52	151.44	403.61	151.44
409.57	151.07	433.94	150.28	437.85	150.2	443.32	149.99	444.36	149.96
444.69	149.95	450.15	150.07	463.65	150.35	497.97	151.07	506.75	151.07
517.23	151.14	554.01	151.24	578.87	151.31	618.32	151.27	635.61	151.44
644.56	151.74	649.21	151.98	681	153.51	681.18	153.52	703.85	155.1
708.3	155.4	714.33	155.84	740.15	156.68	745.74	156.82	749.84	156.92
752.7	156.99	754.27	157.01	768.09	155.94	768.99	156.08	776.84	156.85
778.43	156.99	792.43	158.25	797.94	158.7	802.59	158.9	804.72	159.24
813.6	161.38	820.63	163.23	824.95	164.77	827.12	165.86	829.84	166.5
830.02	166.55	830.55	166.59	833.72	166.61	835.47	166.94	836.19	167.11
836.63	167.21	837.67	167.39	841.3	168.27	845.37	169.81	845.41	169.83
846.15	170.1	846.68	170.28						

Manning's n Values num= 8

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.038	401.17	.041	451.19	.041	552.74	.035	644.56	.044
778.43	.05	829.84	.05	846.68	.05				

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
401.17	644.56	43.18	43.96	42.55	.1	.3

CROSS SECTION RIVER: San Juan
REACH: Upper RS: 308.958*

INPUT
Description:
Station Elevation Data num= 92

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	167.83	6.53	167.68	13.53	167.81	14.6	167.8	31.74	167.33
31.99	167.32	35.13	167.17	51.67	166.41	52.6	166.38	57.22	166.25
73.71	166.22	75.55	166.17	79.08	166.02	148.89	164.28	149.93	164.18
151.29	164.03	165.62	162.64	183.35	160.9	186.02	160.68	186.45	160.65
189.17	160.44	201.78	159.36	205.12	159.17	212.34	158.74	225.23	157.38
225.94	157.33	232.05	155.84	232.84	155.66	234.88	155.48	239.25	155.06
242.32	154.88	243.34	154.81	245.02	154.7	248.84	154.43	266.22	153.21
269.79	152.95	277.72	151.96	281.81	151.48	284.27	151.21	284.37	151.2
290.59	150.92	316.08	150.13	320.17	150.03	325.89	149.77	326.97	149.72
327.32	149.72	333.28	149.85	348.01	150.19	385.46	151.06	395.05	151.03
406.49	151.11	446.62	151.13	473.76	151.16	516.8	151.12	535.67	151.2
545.44	151.53	549.36	151.76	576.15	153.3	576.3	153.31	595.41	154.64
599.15	154.91	604.24	155.29	626	156.41	630.71	156.58	634.16	156.71
636.57	156.81	637.9	156.83	649.54	155.39	650.31	155.58	656.92	156.59
658.26	156.79	670.06	158.53	674.71	159.2	678.62	159.67	680.42	160.22
687.9	162.87	693.83	165.05	697.46	166.59	699.3	167.53	701.59	167.73
701.74	167.75	702.19	167.75	704.85	167.4	706.33	167.64	706.93	167.76
707.31	167.83	708.18	167.93	711.25	168.41	714.67	169.68	714.71	169.69
715.34	169.94	715.78	170.11						

Manning's n Values num= 8

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.044	281.81	.038	336	.038	445.99	.035	545.44	.047
658.26	.05	701.59	.05	715.78	.05				

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
281.81	545.44	43.18	43.96	42.55	.1	.3

CROSS SECTION RIVER: San Juan
REACH: Upper RS: 265.003

INPUT
Description: Manual Modification of Manning's N Values
Station Elevation Data num= 38

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	167.07	7.8	167.29	43.55	166.55	85.83	164.01	86.43	163.88
87.21	163.69	107.48	159.31	116.32	157.54	162.45	151.25	165.02	150.97
165.12	150.97	202.49	149.86	208.46	149.54	209.59	149.49	209.95	149.48
216.41	149.64	272.96	151.05	283.35	151	295.74	151.07	339.23	151.03
435.73	150.96	446.32	151.31	471.42	153.09	490.01	154.41	511.85	156.13
520.45	156.62	521.53	156.65	531	154.84	531.62	155.07	538.09	156.58
554.65	160.44	571.47	169.19	573.82	168.9	575.99	168.2	577.99	168.45
581.19	168.55	584.01	169.56	584.88	169.94				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.05	339.23	.035	538.09	.05

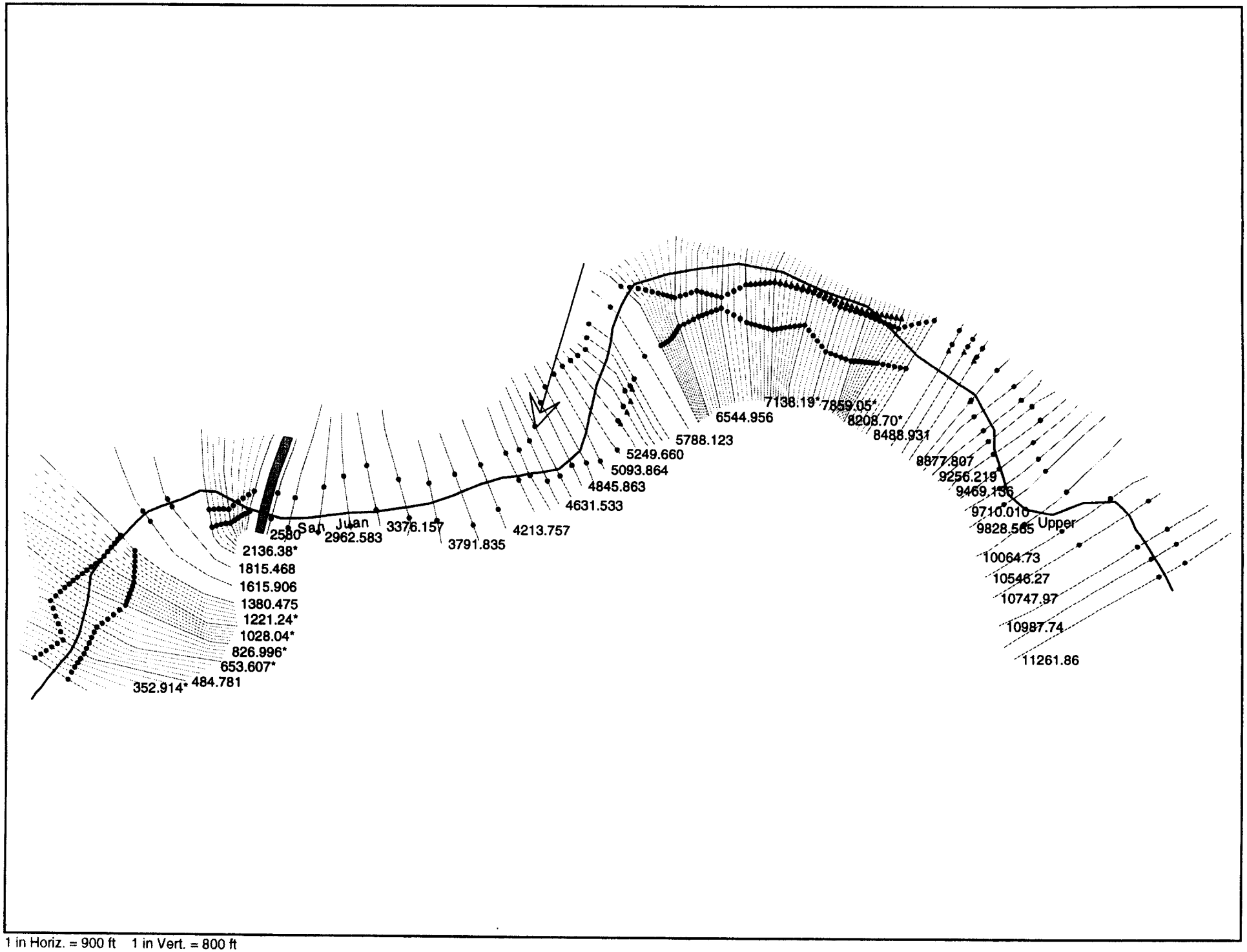
Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
162.45	446.32	122.99	265	54.95	.1	.3

Profile Output Table - Standard Table 1

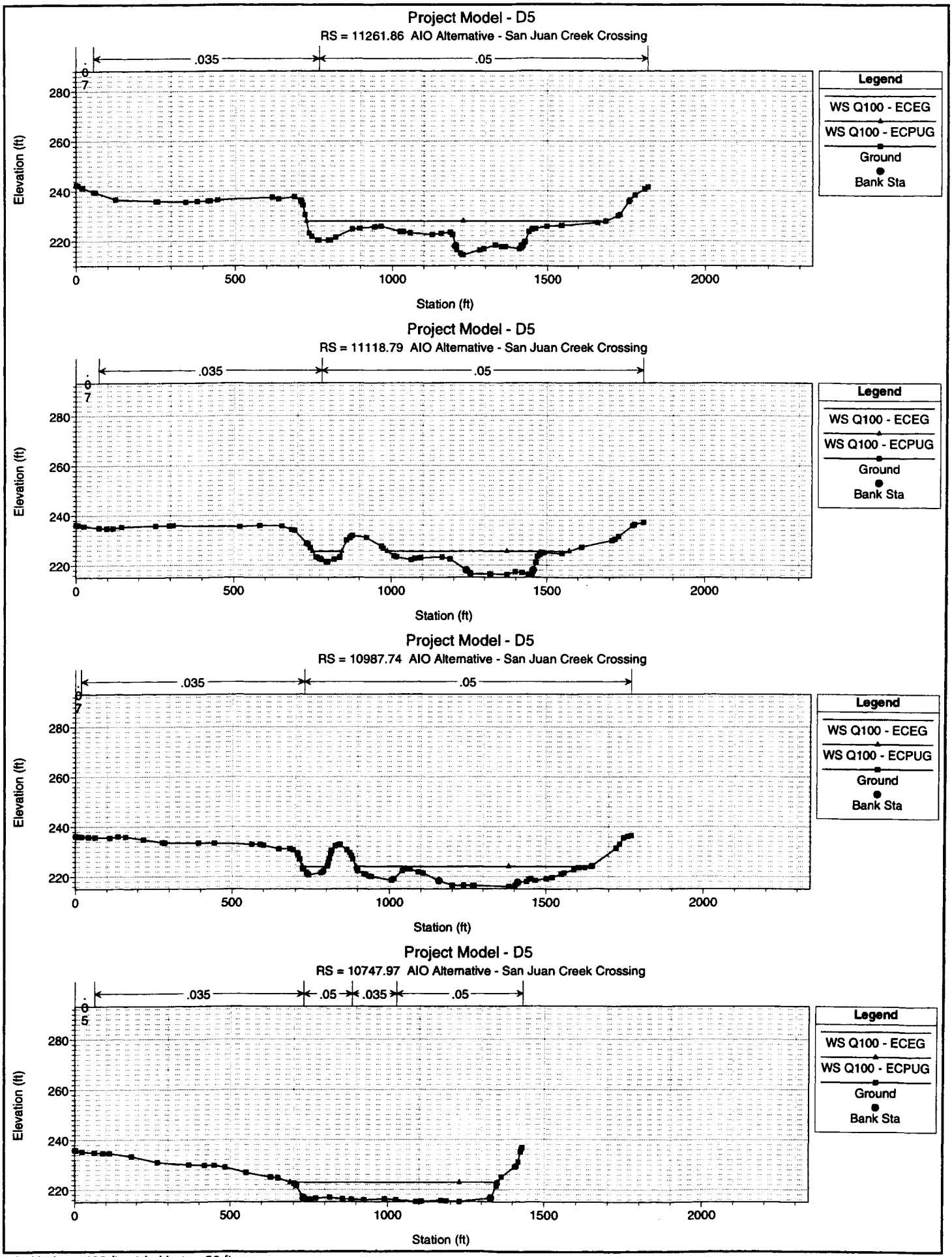
Reach	River Sta	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
		(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Upper	11261.86	33597.00	214.32	227.99	225.42	228.83	0.003306	8.58	5227.69	962.44	0.45
Upper	11118.79	33597.00	216.23	225.59	225.59	227.91	0.011038	13.46	3132.41	678.46	0.79
Upper	10987.74	33597.00	215.95	224.01	223.37	225.51	0.009764	11.27	3773.23	830.55	0.72
Upper	10747.97	33597.00	215.06	222.96		223.88	0.004135	7.75	4406.45	661.49	

0.51										
Upper	10546.27	33597.00	213.13	221.46		222.78	0.006853	9.84	3790.08	681.41
0.69										
Upper	10064.73	33597.00	207.79	220.89		221.51	0.001218	6.89	6061.01	889.69
0.38										
Upper	9828.565	33597.00	207.84	220.64		221.19	0.001307	6.51	6293.82	876.98
0.35										
Upper	9710.010	33597.00	207.81	220.38		221.02	0.001581	7.09	5993.58	872.89
0.39										
Upper	9587.161	33597.00	208.82	220.01		220.79	0.002116	7.95	5551.20	881.22
0.44										
Upper	9469.136	33597.00	209.82	219.90		220.50	0.001954	6.77	5894.56	899.09
0.39										
Upper	9350.632	33597.00	209.90	219.58		220.25	0.002247	7.13	5578.63	834.77
0.41										
Upper	9256.219	33597.00	209.51	218.92		219.96	0.003508	8.83	4580.26	753.55
0.52										
Upper	9137.316	33597.00	207.79	218.57		219.56	0.003062	8.51	4750.10	799.74
0.49										
Upper	9018.948	33597.00	208.76	217.58	215.28	219.07	0.004826	10.94	4063.51	801.88
0.67										
Upper	8877.807	33597.00	204.51	217.07	215.29	218.43	0.004517	13.10	4227.33	842.89
0.68										
Upper	8785.928	33597.00	202.85	216.46	216.46	217.98	0.004832	13.86	4069.57	855.09
0.69										
Upper	8699.415	33597.00	202.95	215.07	212.84	216.25	0.002853	10.82	4191.19	591.93
0.56										
Upper	8488.931	33597.00	202.72	215.05		215.76	0.001111	6.86	5049.03	461.70
0.36										
Upper	8287.319	33597.00	203.83	212.95	212.12	214.98	0.007450	11.95	3017.57	474.47
0.76										
Upper	8012.155	33597.00	202.47	211.29	209.27	212.67	0.004070	9.91	3686.20	510.63
0.63										
Upper	7820.775	33597.00	202.05	208.76	208.76	211.36	0.013233	13.43	2661.86	536.49
0.98										
Upper	7605.154	33597.00	197.44	204.99	204.99	207.36	0.009642	13.56	2976.25	666.24
0.90										
Upper	7289.783	33597.00	196.27	203.86	201.50	204.60	0.003429	7.37	5083.44	831.62
0.48										
Upper	7062.404	33597.00	196.41	203.24	200.89	203.85	0.003224	6.26	5604.10	968.87
0.44										
Upper	6894.555	33597.00	189.63	201.46	201.46	203.16	0.006833	15.27	4175.56	1002.78
0.88										
Upper	6705.202	33597.00	190.32	200.37		201.40	0.004008	9.67	4805.99	1056.31
0.58										
Upper	6544.956	33597.00	190.14	199.55		200.39	0.003776	8.08	5138.66	1155.48
0.49										
Upper	6151.870	34722.00	189.97	196.29		197.59	0.005392	9.47	3969.79	836.34
0.68										
Upper	5978.856	34722.00	187.90	193.99	193.99	196.21	0.011163	12.53	3076.86	726.31
0.95										
Upper	5788.123	34722.00	184.32	192.51	191.05	193.69	0.004841	9.11	4118.60	784.35
0.65										
Upper	5686.773	34722.00	183.41	191.82	190.63	193.15	0.006378	9.68	3793.98	715.91
0.72										
Upper	5593.814	34722.00	183.73	191.75	189.40	192.60	0.003754	7.78	4742.03	800.38
0.50										
Upper	5502.751	34722.00	182.66	191.59	188.59	192.33	0.002312	7.25	5211.45	800.90
0.45										
Upper	5387.141	34722.00	182.70	191.44	188.13	192.06	0.001918	6.57	5603.77	795.87
0.41										
Upper	5249.660	34722.00	181.47	191.29		191.80	0.001542	5.81	6155.19	814.67
0.36										
Upper	5093.864	34722.00	180.73	191.01		191.54	0.001733	5.94	6017.29	815.59
0.37										
Upper	4947.016	34722.00	181.85	190.39		191.20	0.002957	7.35	5015.00	783.01
0.48										
Upper	4845.863	34722.00	180.95	190.04		190.88	0.003175	7.77	4950.54	803.25
0.50										
Upper	4728.187	34722.00	180.04	189.80		190.56	0.002077	7.47	5190.07	761.36
0.44										
Upper	4631.533	34722.00	179.99	189.47		190.32	0.002667	8.05	4847.11	740.01
0.48										
Upper	4524.879	34722.00	177.19	187.93		189.84	0.005902	12.67	3472.24	659.44
0.76										
Upper	4434.483	34722.00	177.21	187.90		189.22	0.003578	10.64	4240.51	720.31
0.60										
Upper	4213.757	34722.00	176.41	187.53		188.41	0.002664	8.12	4978.13	757.54
0.45										
Upper	4008.681	34722.00	175.49	186.95		187.86	0.002663	8.00	4846.32	736.16
0.45										
Upper	3791.835	34722.00	175.28	185.79		187.12	0.004107	10.07	4031.19	582.98
0.57										
Upper	3592.245	34722.00	173.20	184.33		186.09	0.005601	11.45	3537.67	546.85
0.69										
Upper	3376.157	34722.00	173.67	183.30		184.89	0.005096	10.55	3579.06	452.16
0.62										
Upper	3169.567	34722.00	169.36	183.21		184.00	0.002143	7.43	4973.56	487.62
0.39										
Upper	2962.583	34722.00	169.14	182.86		183.54	0.002329	6.55	5280.34	564.12
0.35										
Upper	2746.045	34722.00	167.25	182.49		183.14	0.001533	7.21	5689.20	628.89
0.34										
Upper	2608.338	34722.00	167.14	180.03	178.50	182.61	0.004439	13.72	3062.29	421.01
0.72										
Upper	2580	Bridge								
Upper	2443.625	34722.00	168.51	176.90	177.83	181.23	0.016604	18.37	2256.53	397.93
1.15										

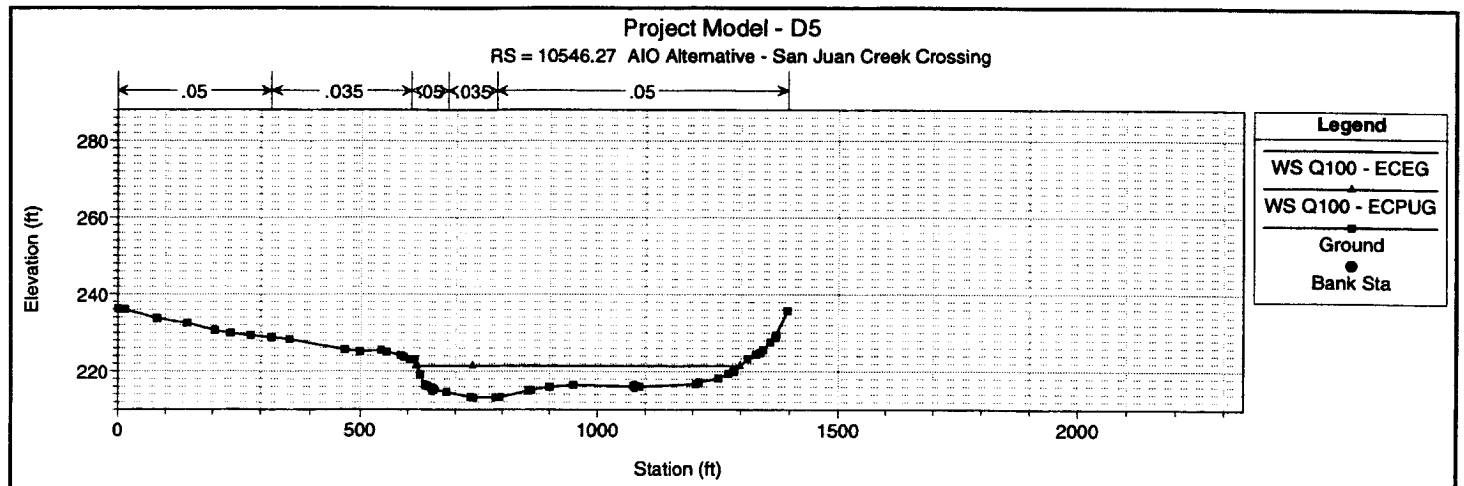
Upper	2258.454	34722.00	163.94	176.63		177.99	0.004737	11.00	3846.27	557.62
0.60										
Upper	2095.690	34722.00	163.99	172.89	173.87	176.36	0.014965	18.56	2725.84	672.40
1.19										
Upper	1815.468	34722.00	156.78	168.41	169.40	172.59	0.019454	18.01	2144.62	431.70
1.04										
Upper	1615.906	34722.00	157.53	168.80	168.80	171.27	0.006807	15.72	2975.69	572.84
0.90										
Upper	1380.475	34722.00	151.04	166.42	167.17	169.61	0.009068	16.50	2923.05	836.25
1.00										
Upper	1141.636	34722.00	156.31	166.06		167.28	0.003493	10.24	4978.76	1134.66
0.63										
Upper	914.451	34722.00	156.99	165.77		166.52	0.002666	7.65	5553.93	1151.44
0.47										
Upper	695.814	34722.00	156.28	162.92	162.92	165.48	0.010878	12.92	2736.83	538.33
0.93										
Upper	484.781	34722.00	150.66	161.05		162.59	0.003296	10.22	3702.83	593.22
0.58										
Upper	265.003	34722.00	149.48	159.56	158.03	161.42	0.006001	11.34	3251.85	444.56
0.67										

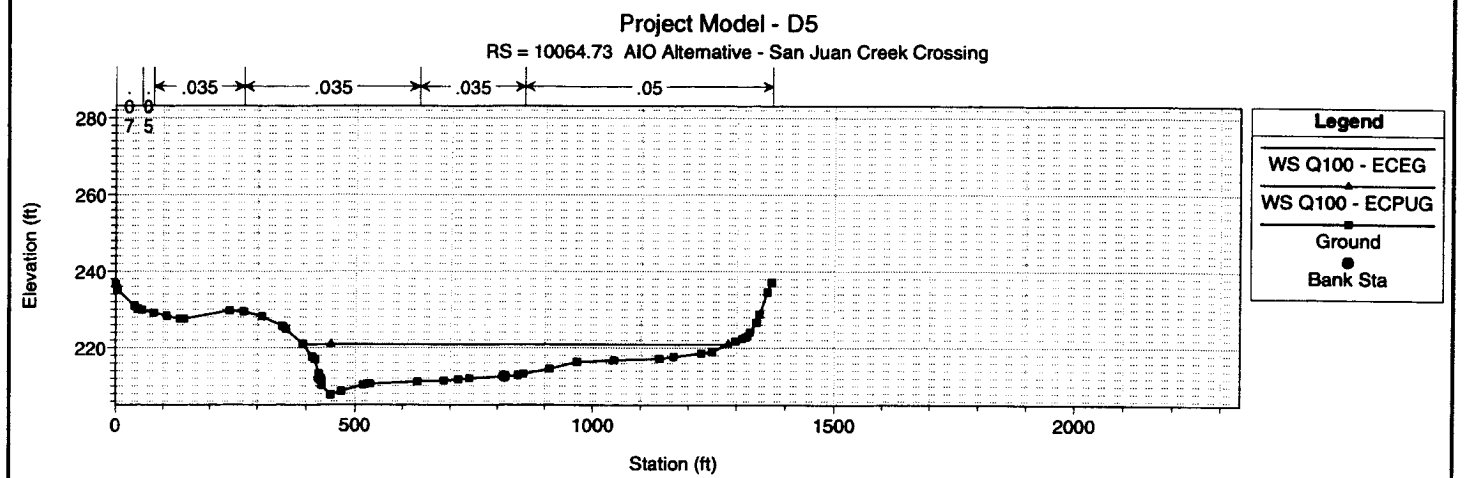


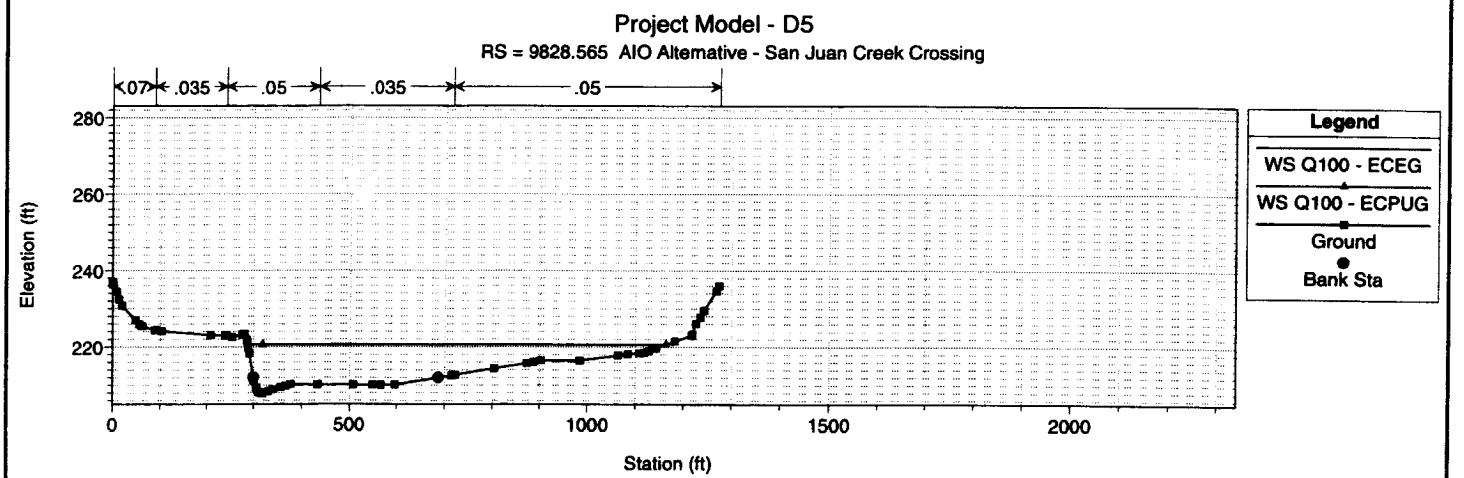
1 in Horiz. = 900 ft 1 in Vert. = 800 ft

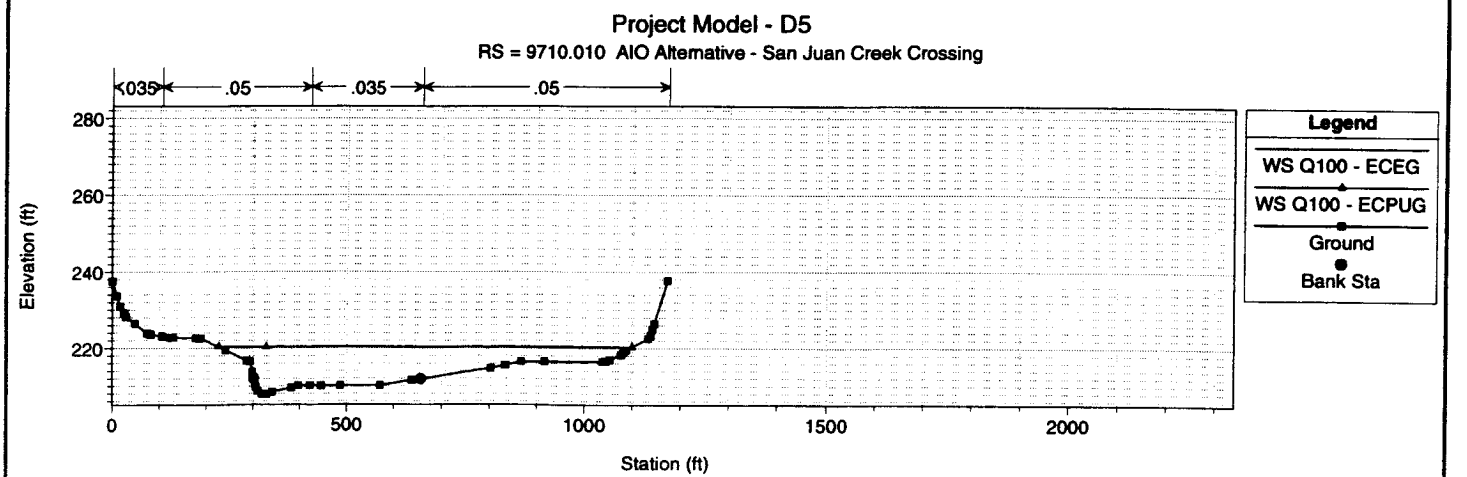


1 in Horiz. = 400 ft 1 in Vert. = 50 ft

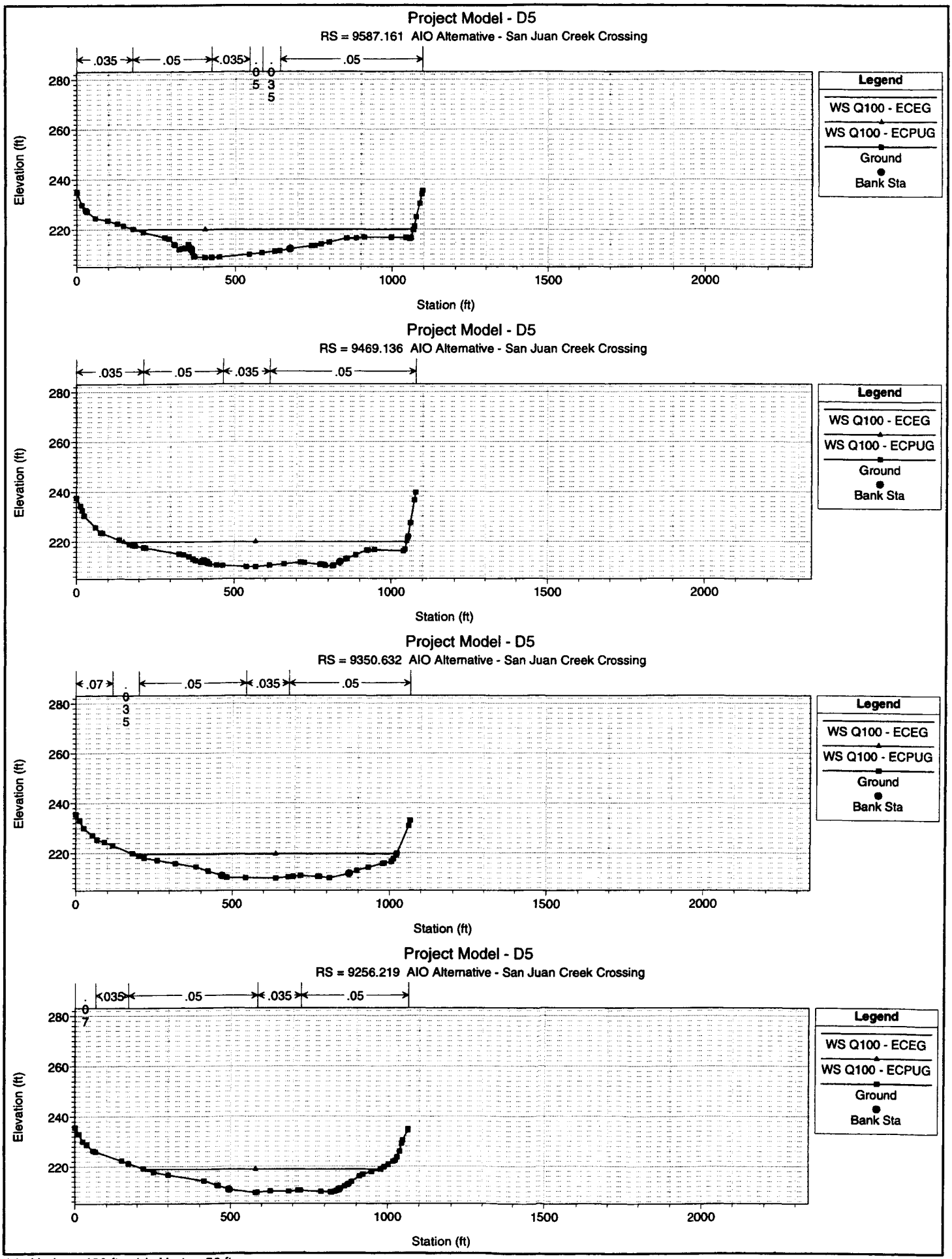




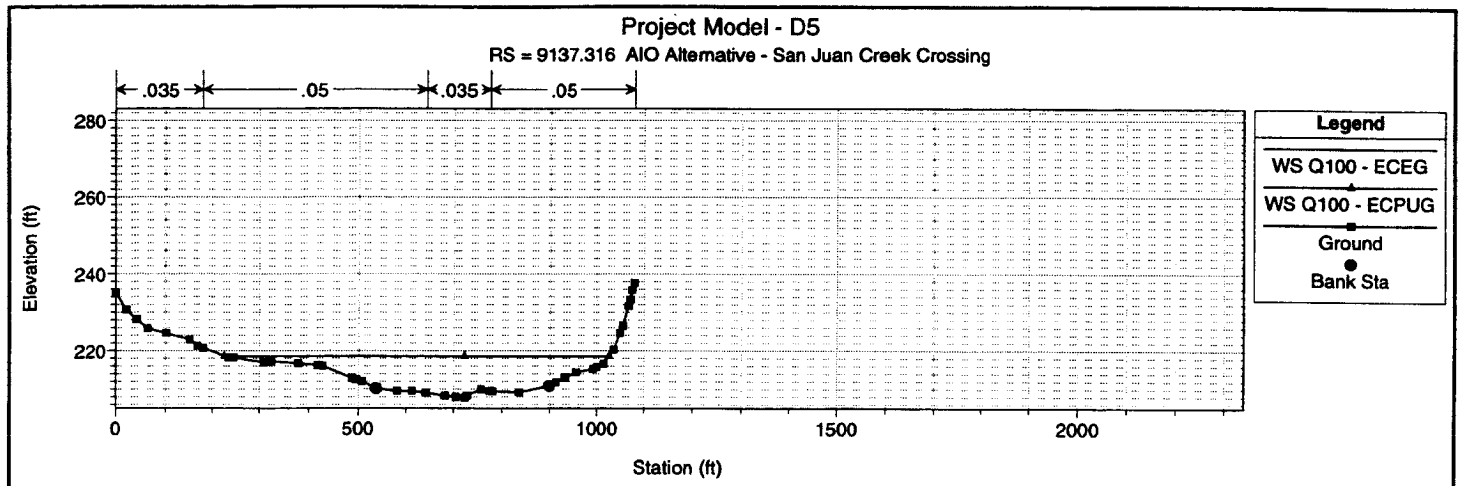


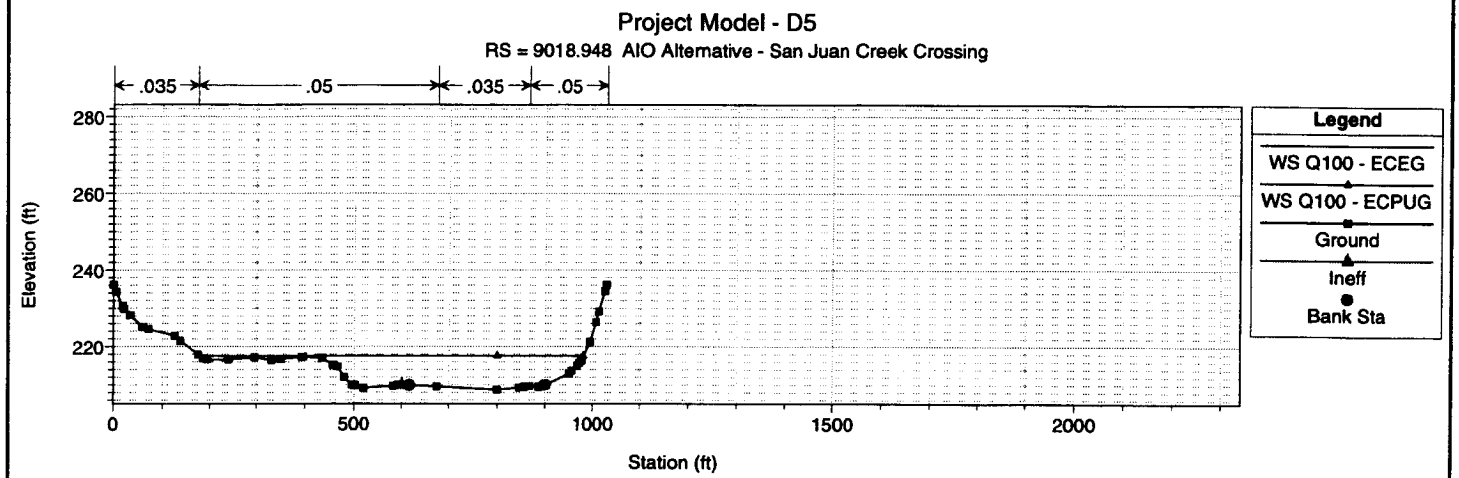


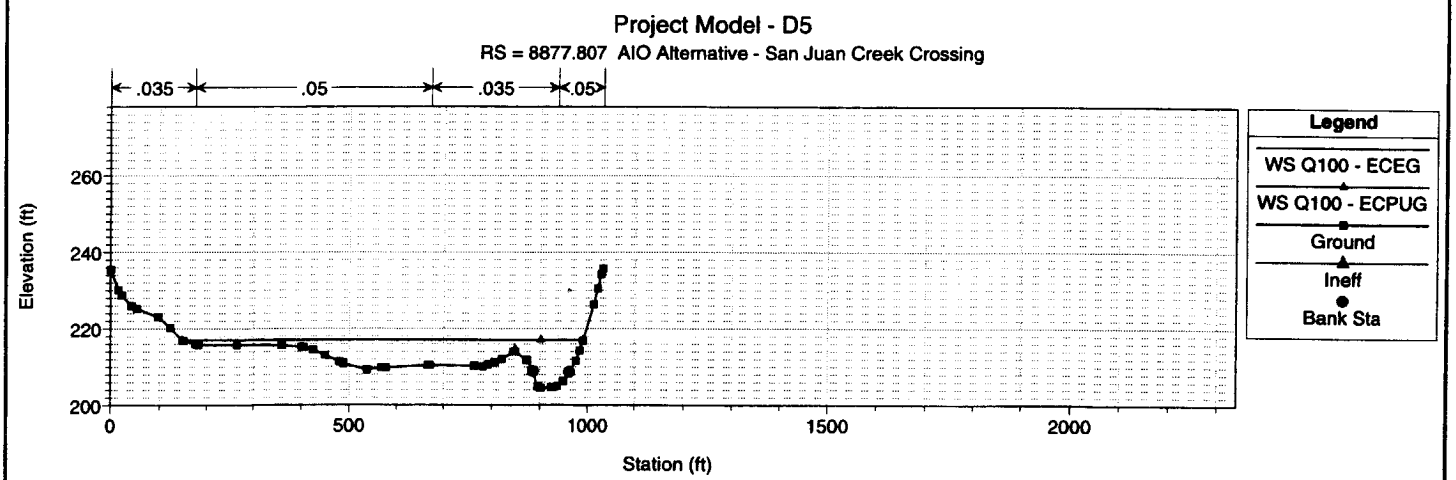
1 in Horiz. = 400 ft 1 in Vert. = 50 ft

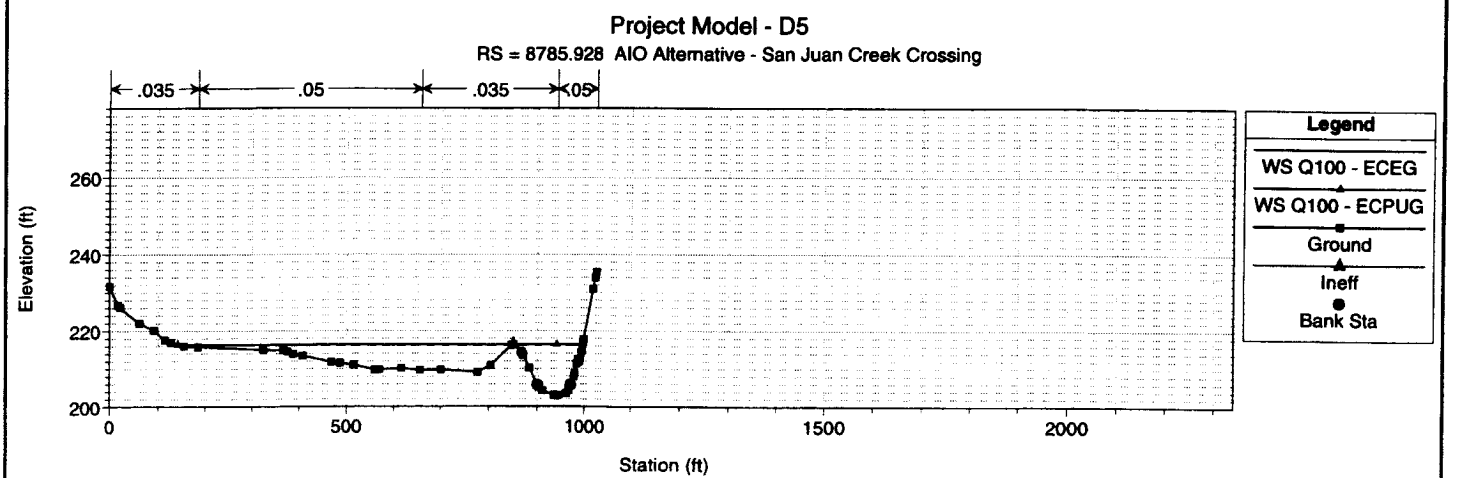


1 in Horiz. = 400 ft 1 in Vert. = 50 ft

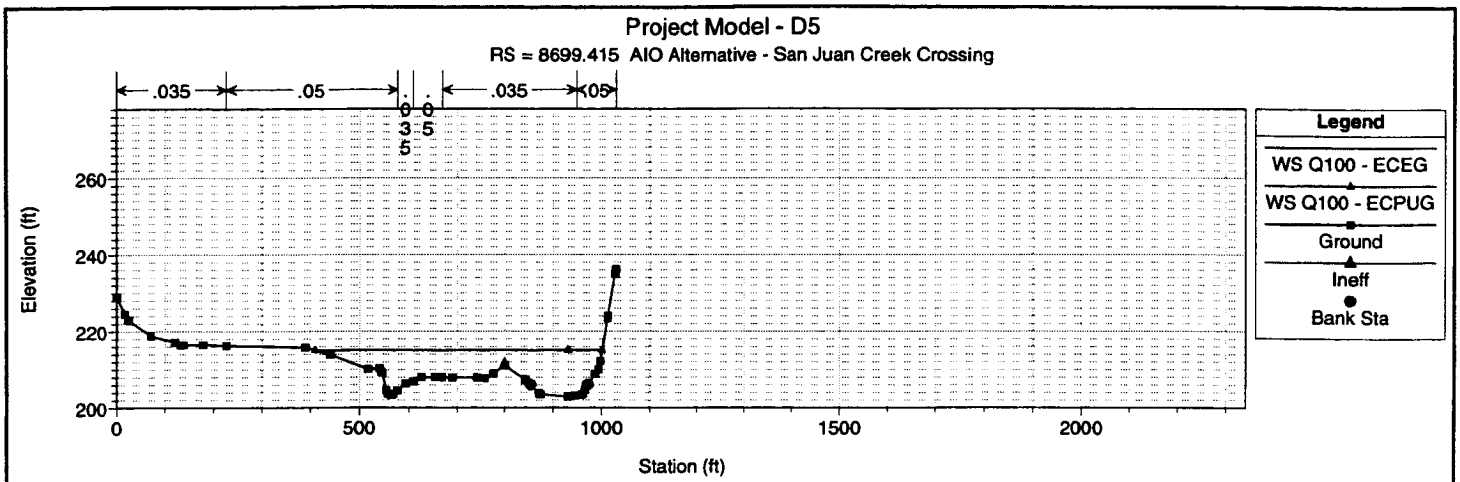


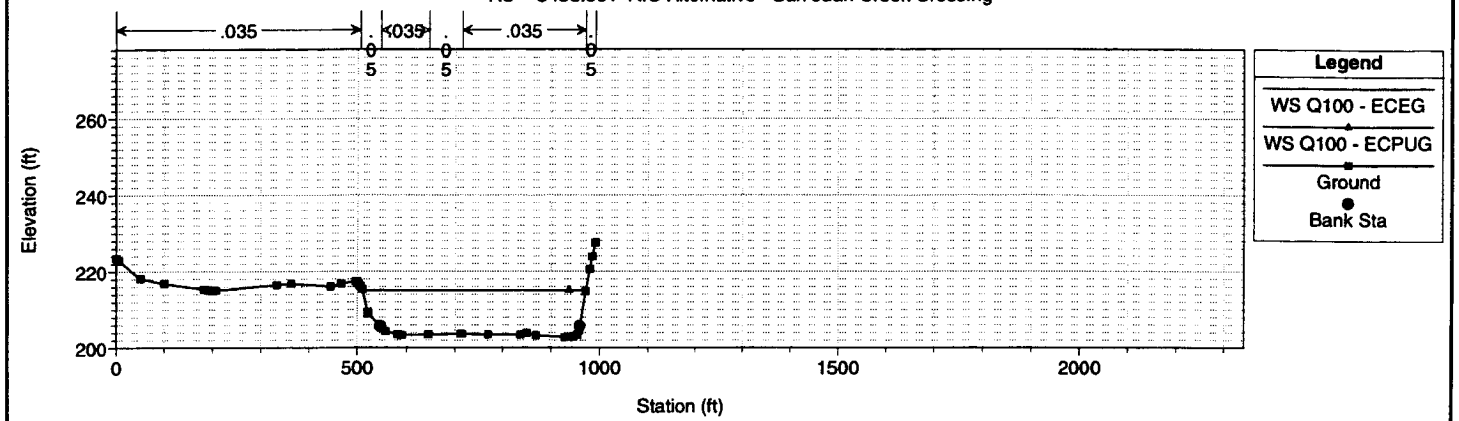


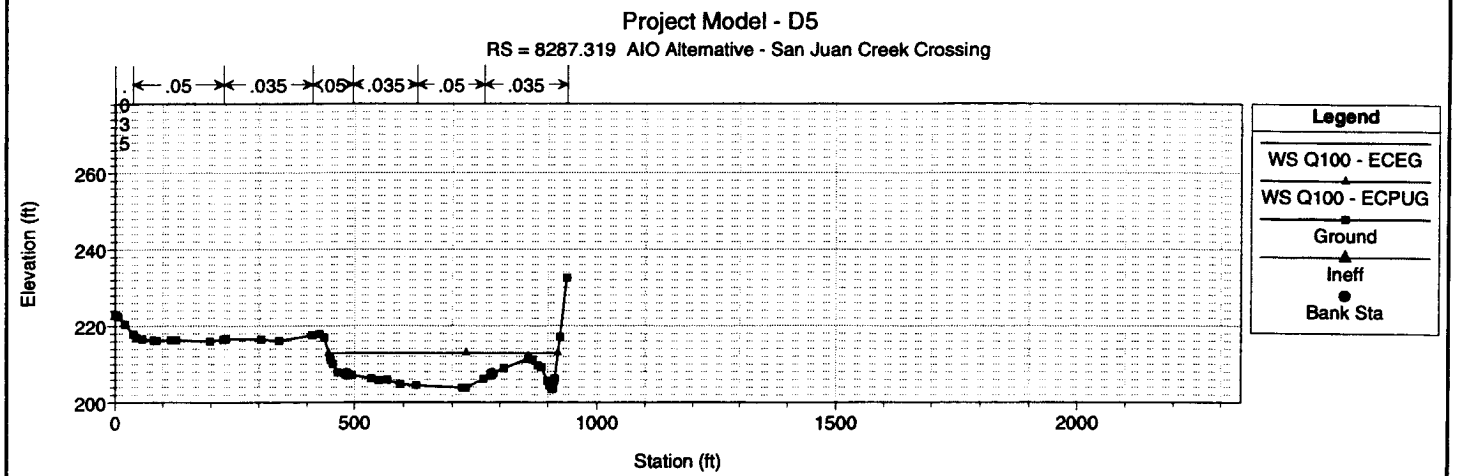


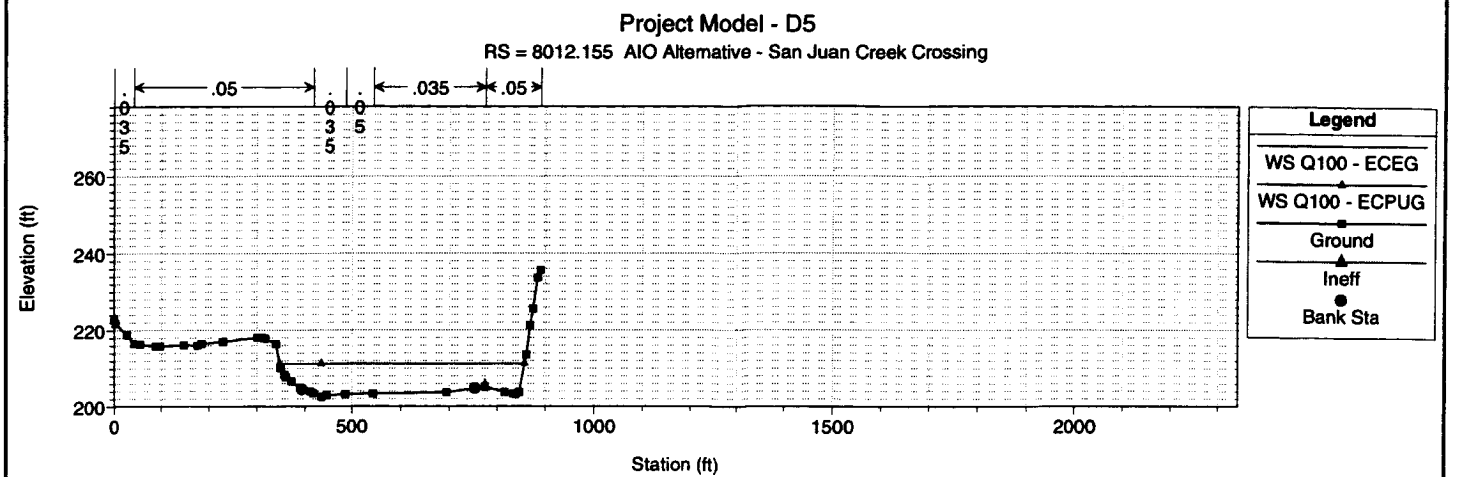


1 in Horiz. = 400 ft 1 in Vert. = 50 ft

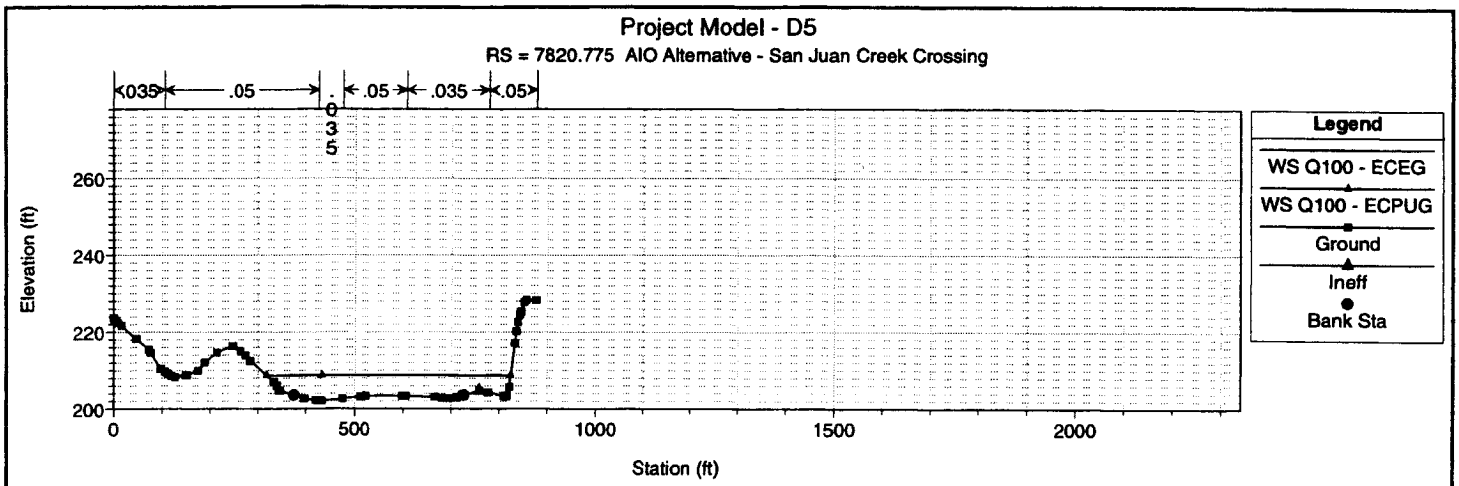


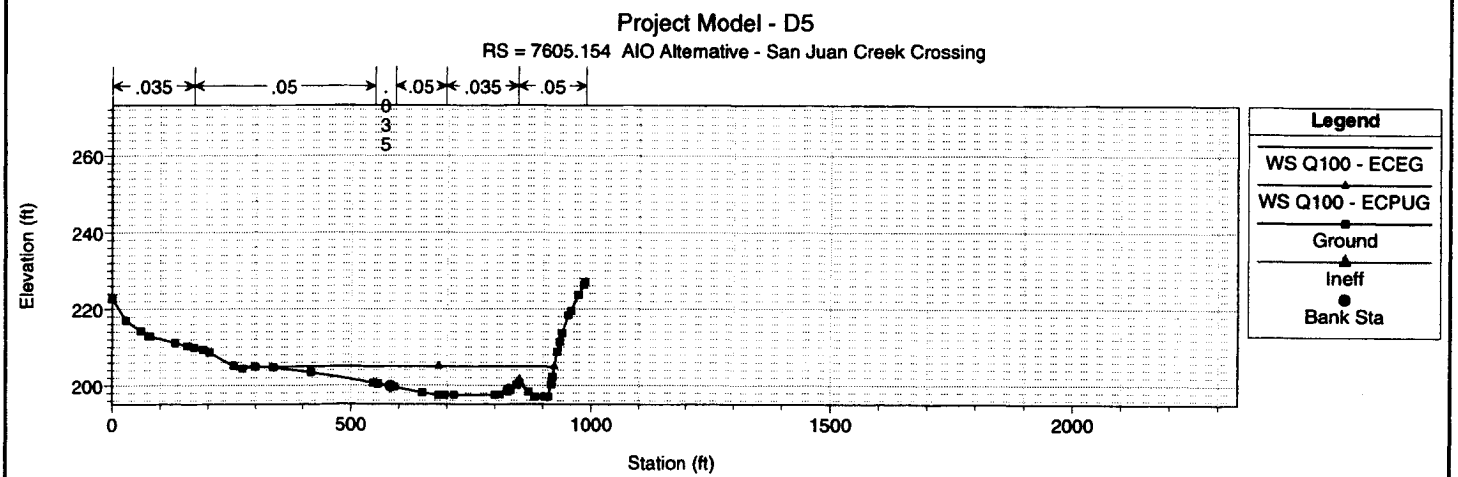


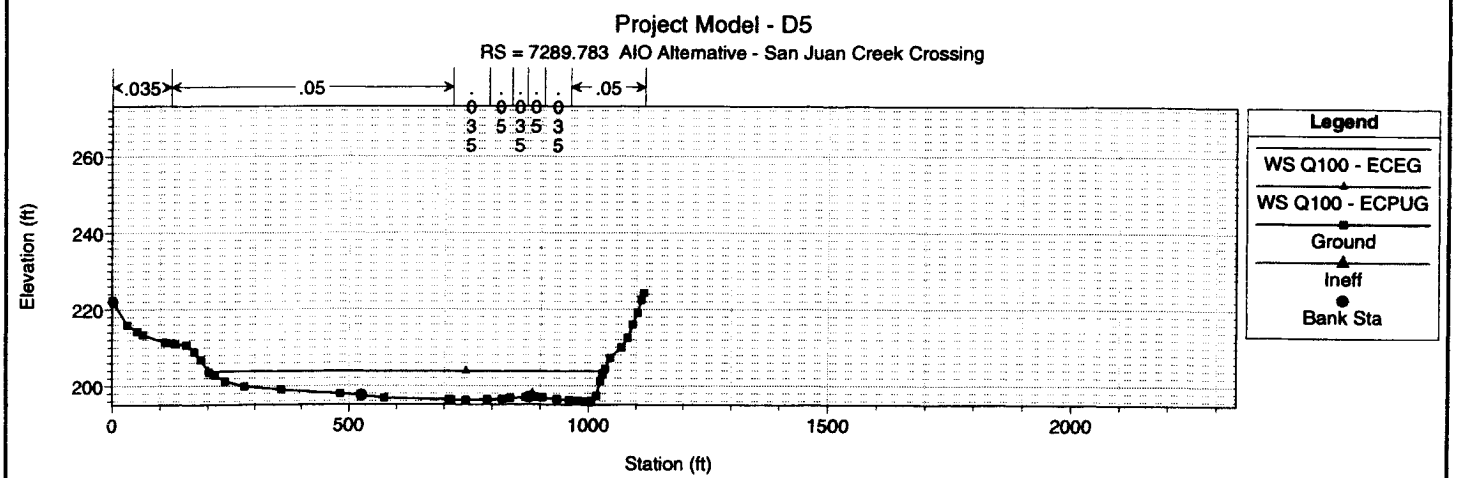


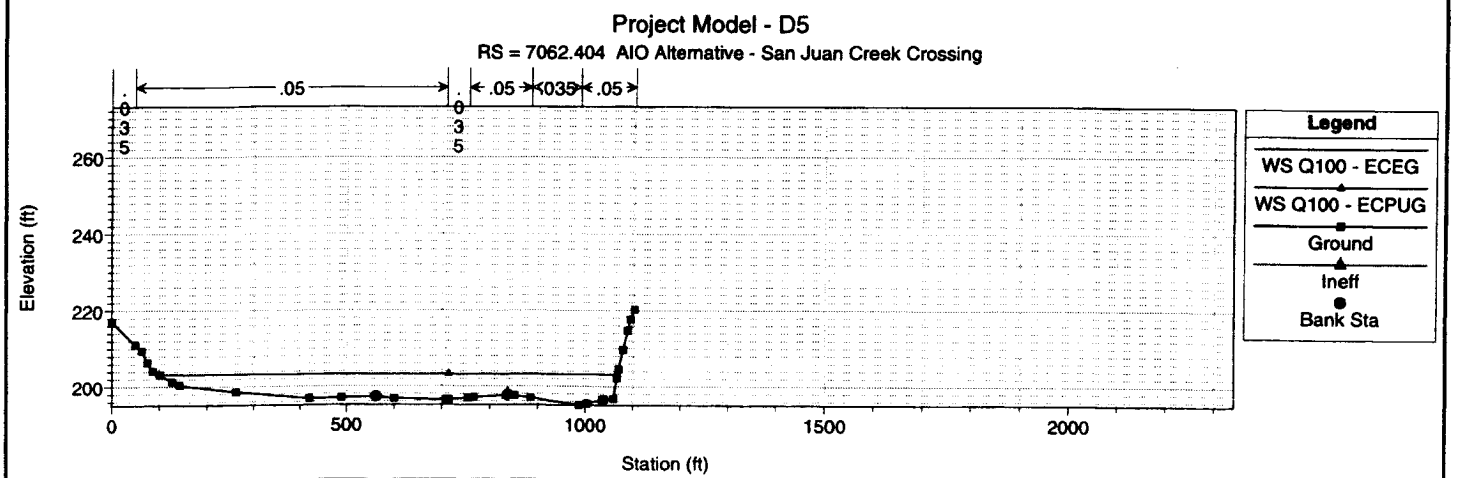


1 in Horiz. = 400 ft 1 in Vert. = 50 ft

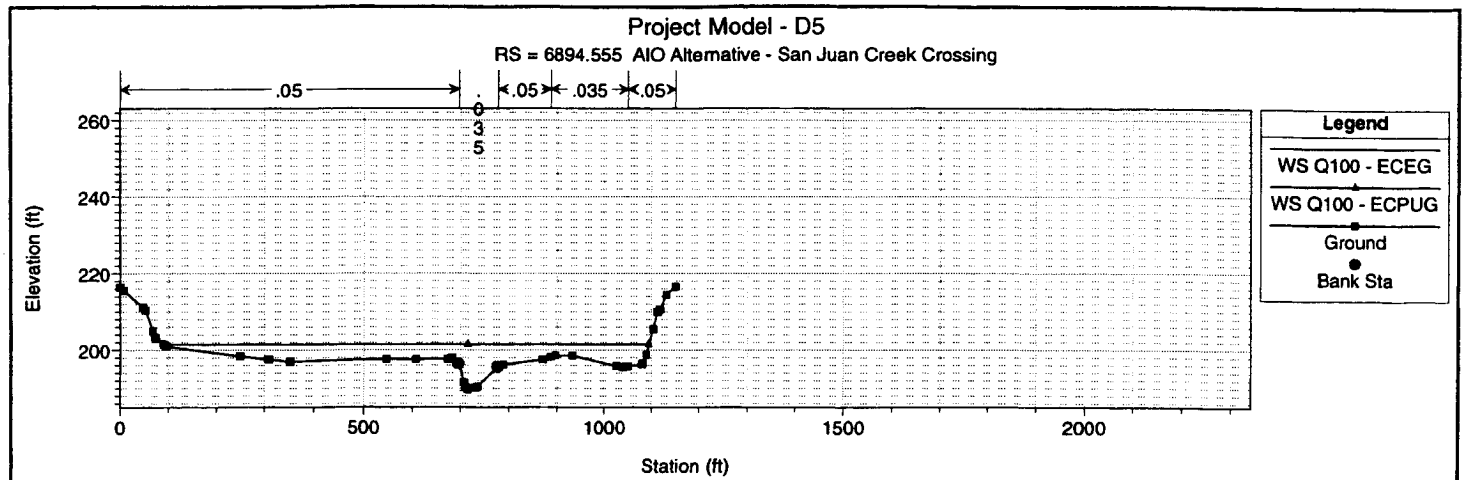


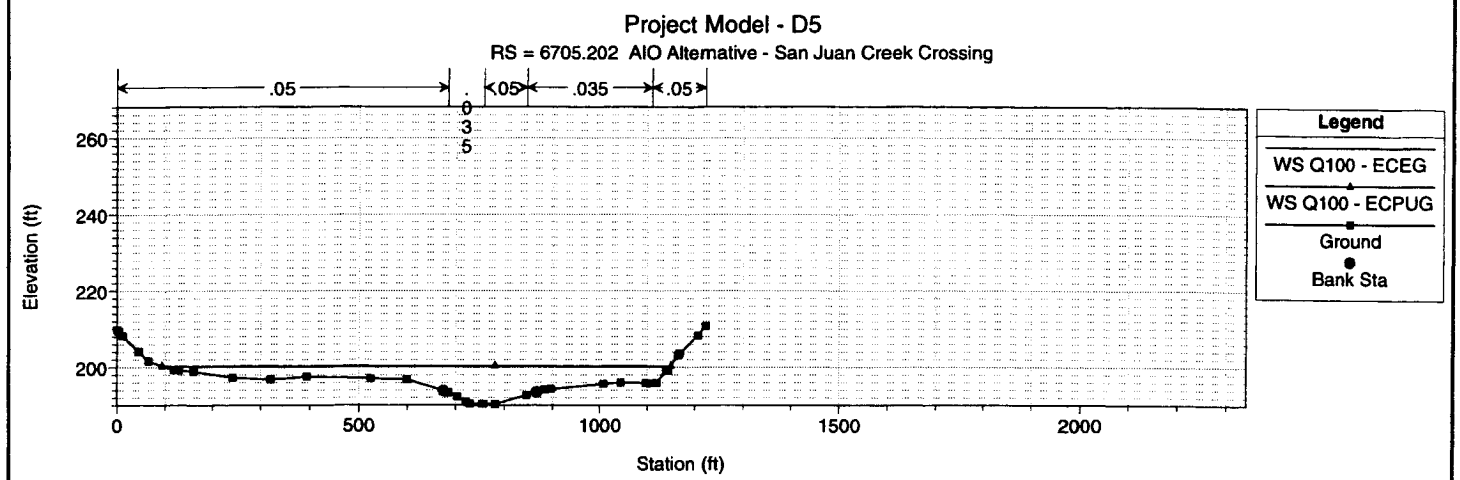


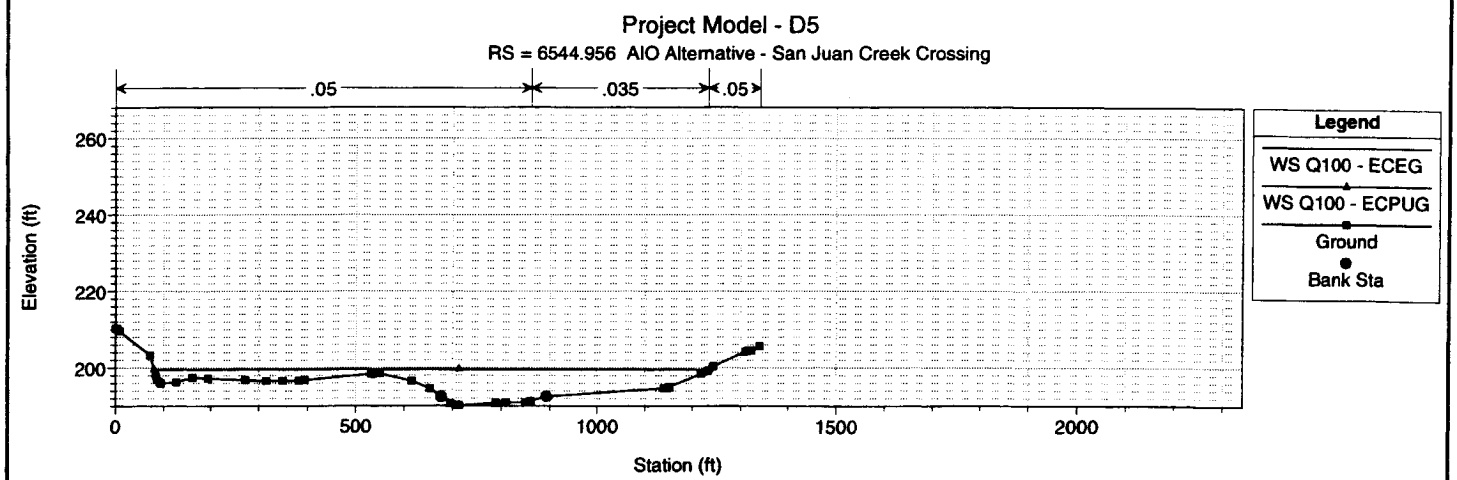


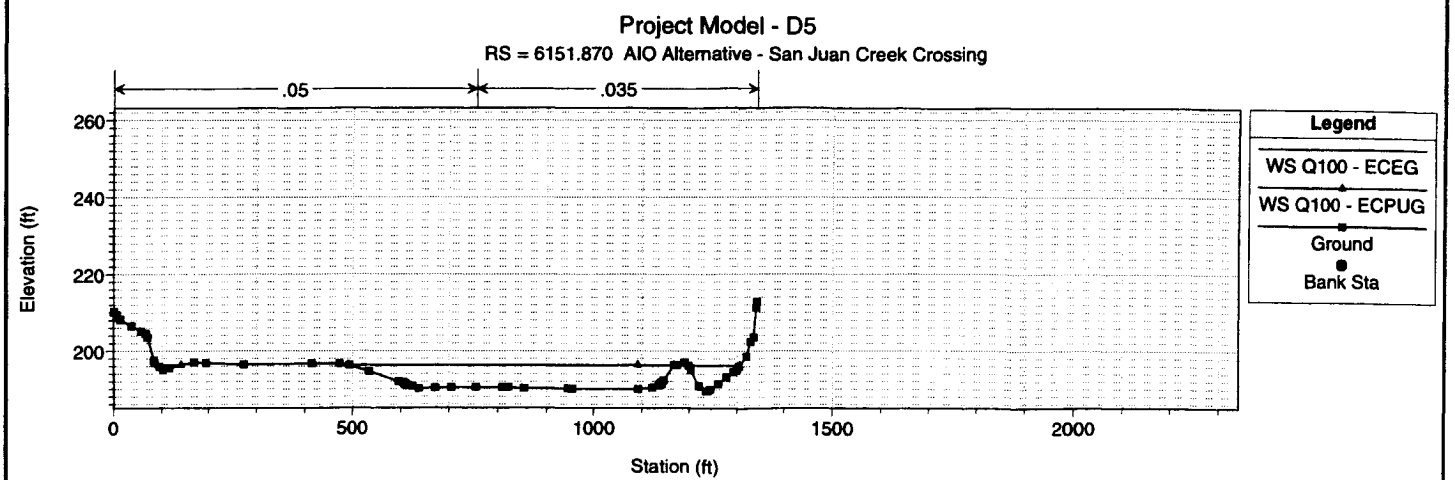


1 in Horiz. = 400 ft 1 in Vert. = 50 ft

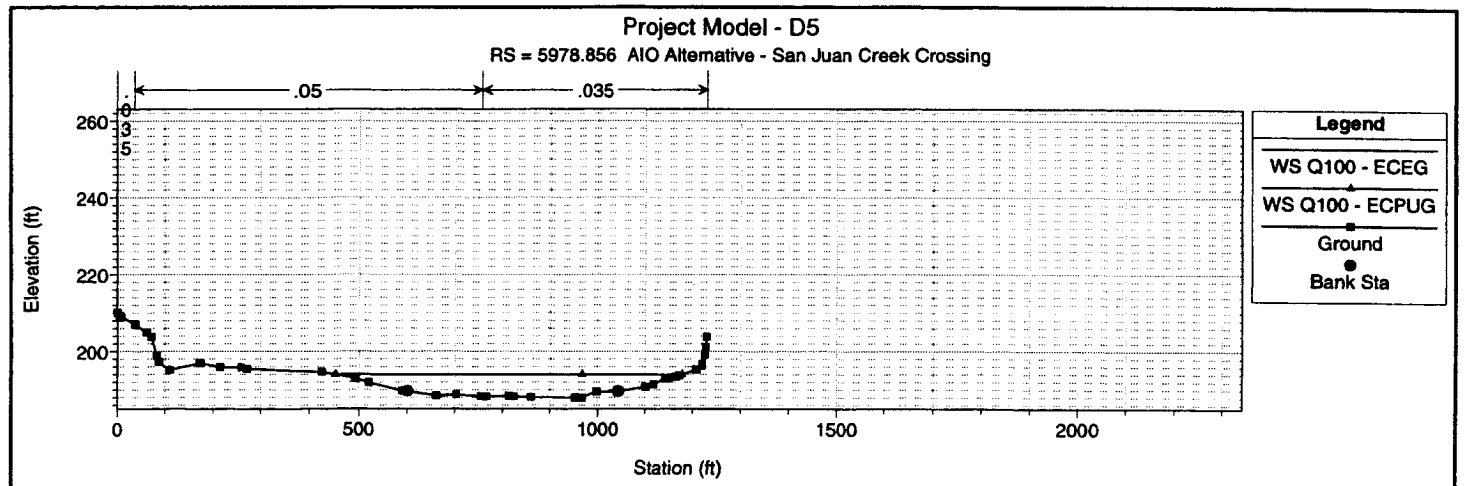


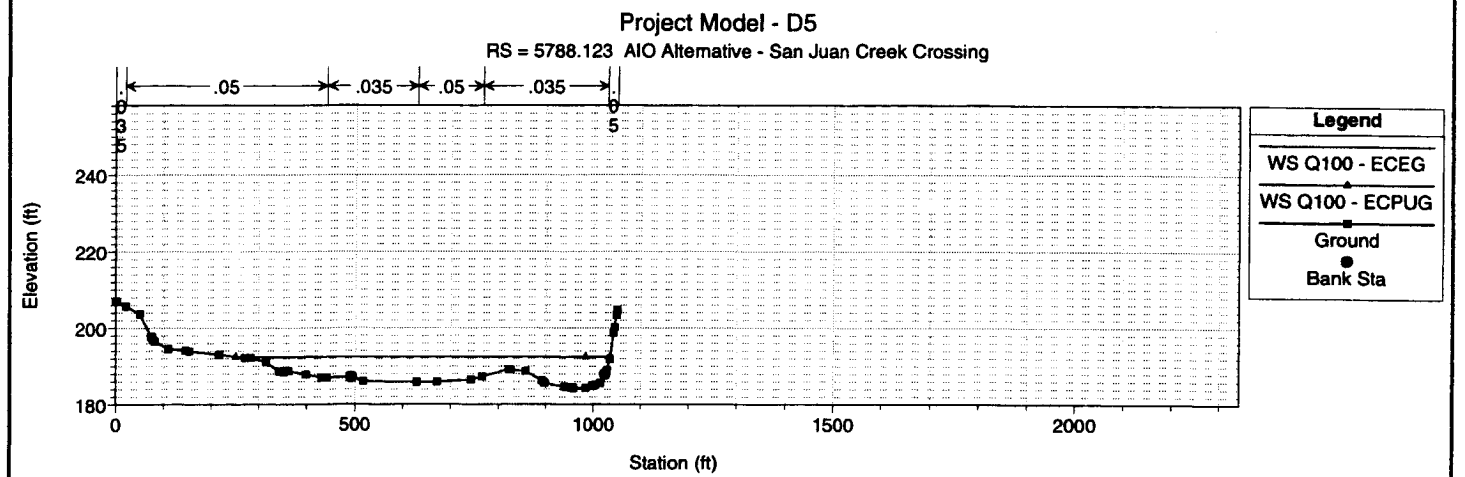


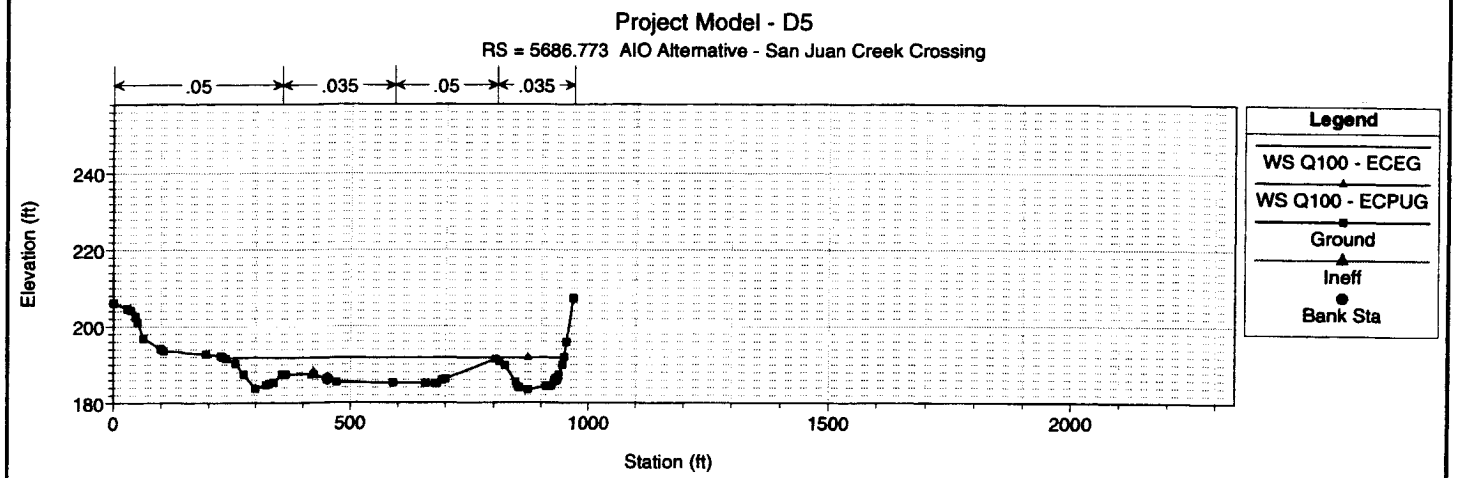


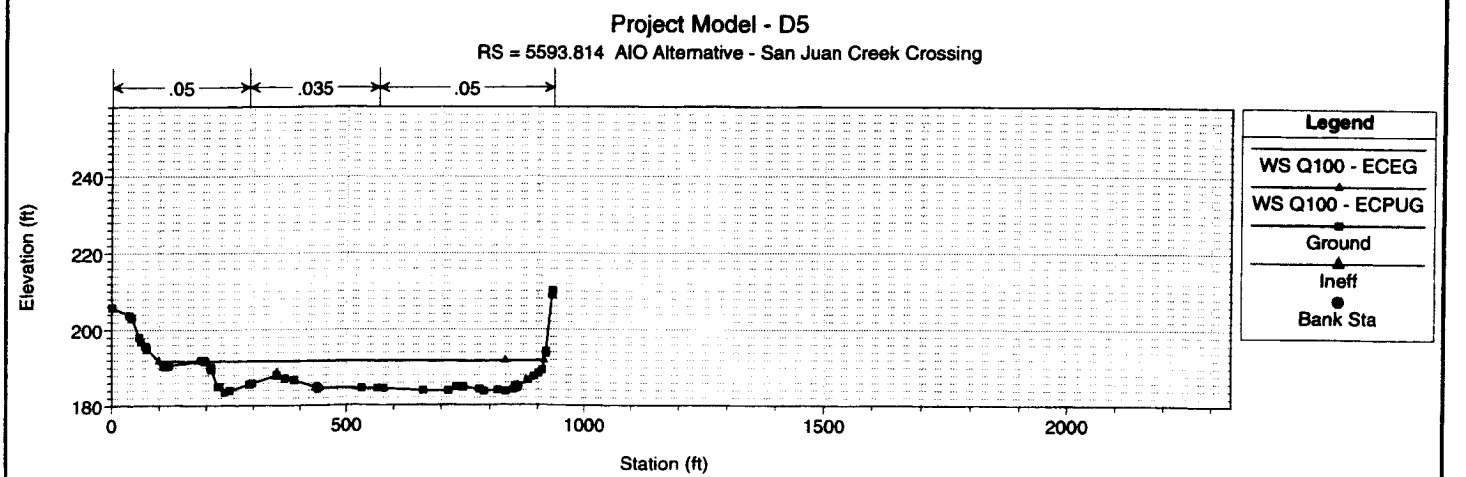


1 in Horiz. = 400 ft 1 in Vert. = 50 ft

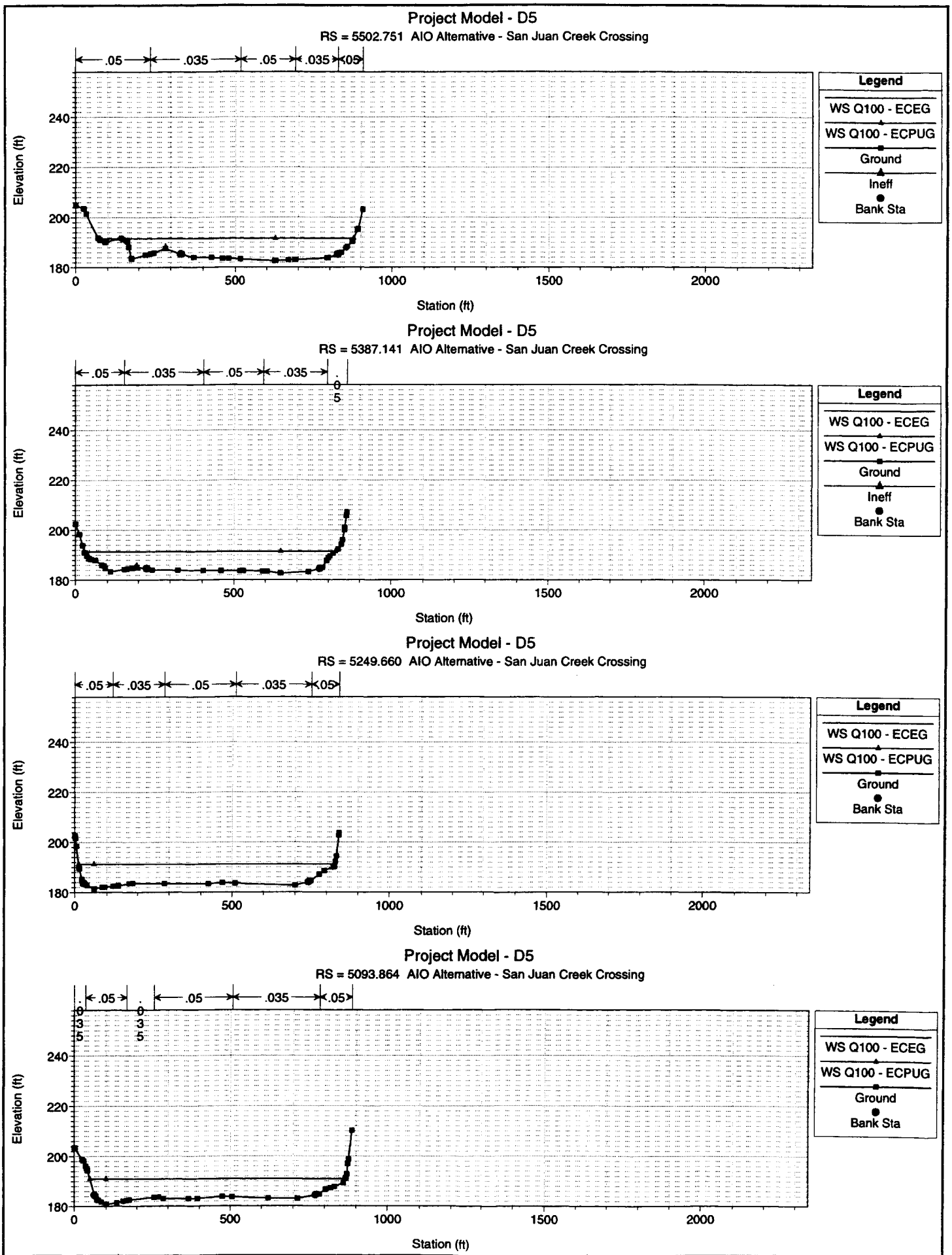




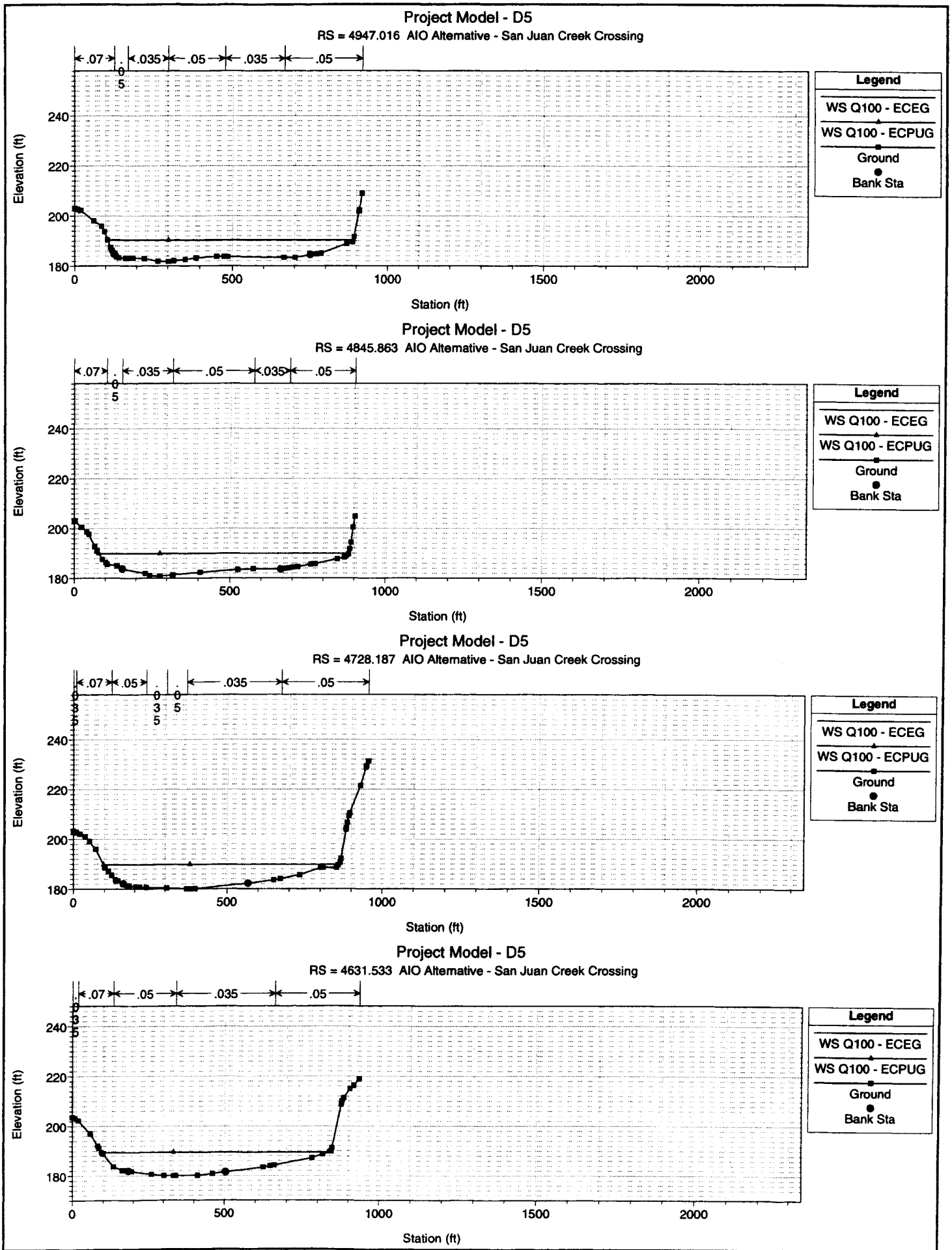




1 in Horiz. = 400 ft 1 in Vert. = 50 ft



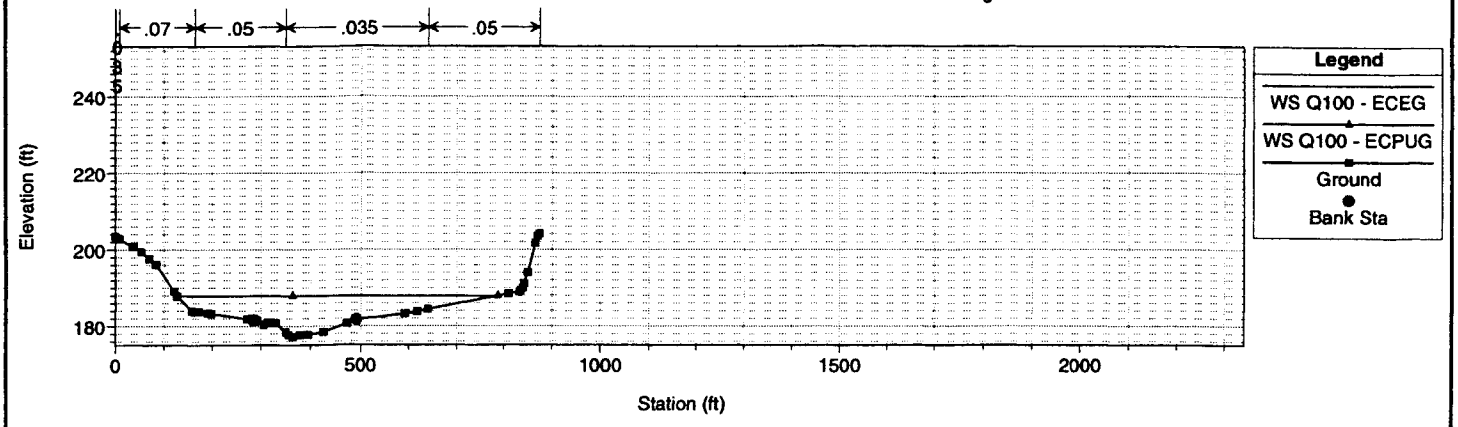
1 in Horiz. = 400 ft 1 in Vert. = 50 ft



1 in Horiz. = 400 ft 1 in Vert. = 50 ft

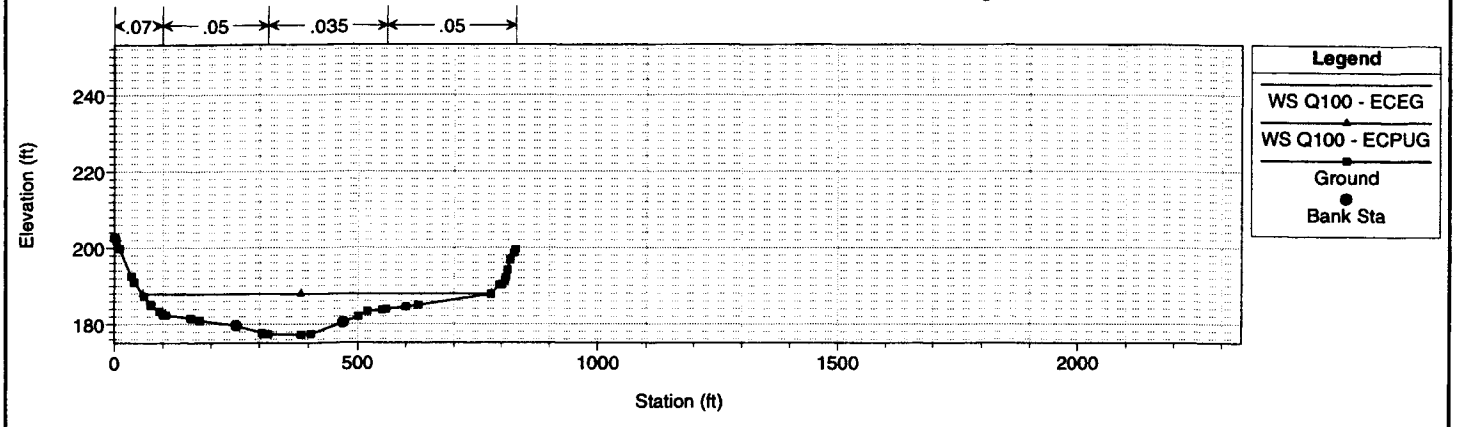
Project Model - D5

RS = 4524.879 AIO Alternative - San Juan Creek Crossing



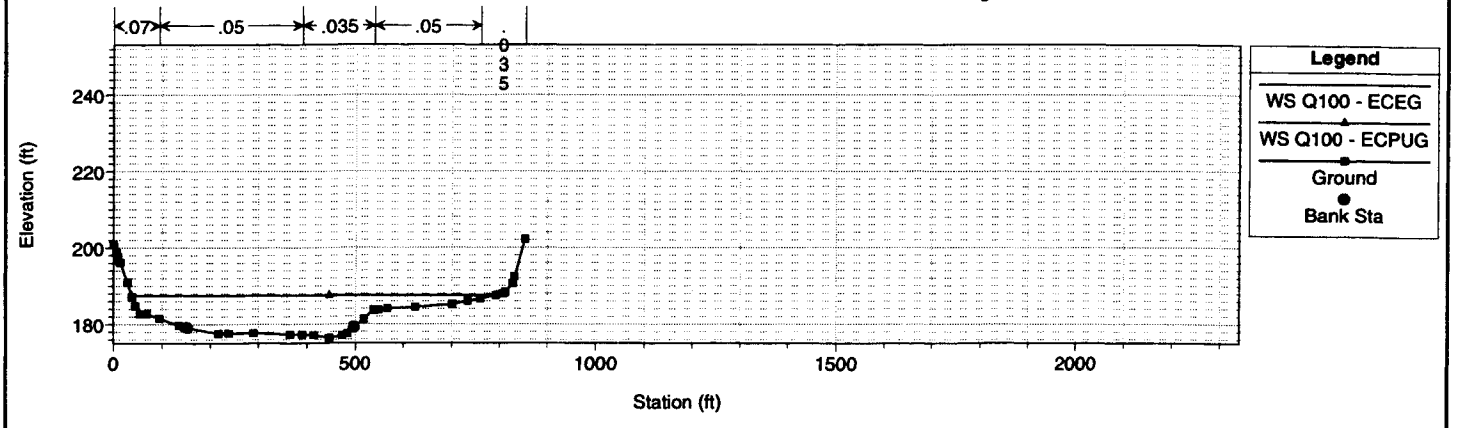
Project Model - D5

RS = 4434.483 AIO Alternative - San Juan Creek Crossing



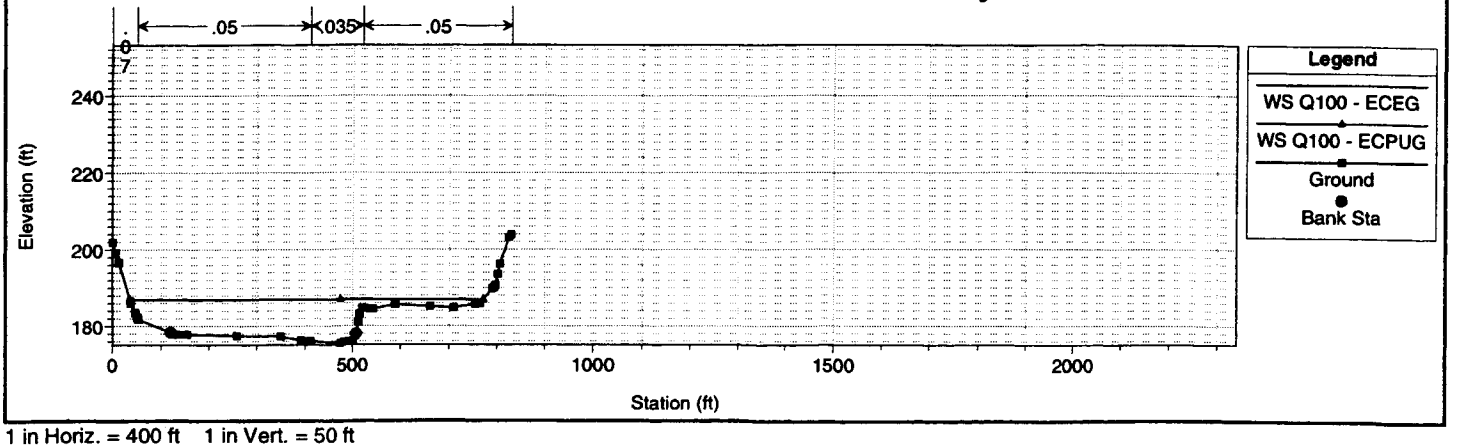
Project Model - D5

RS = 4213.757 AIO Alternative - San Juan Creek Crossing

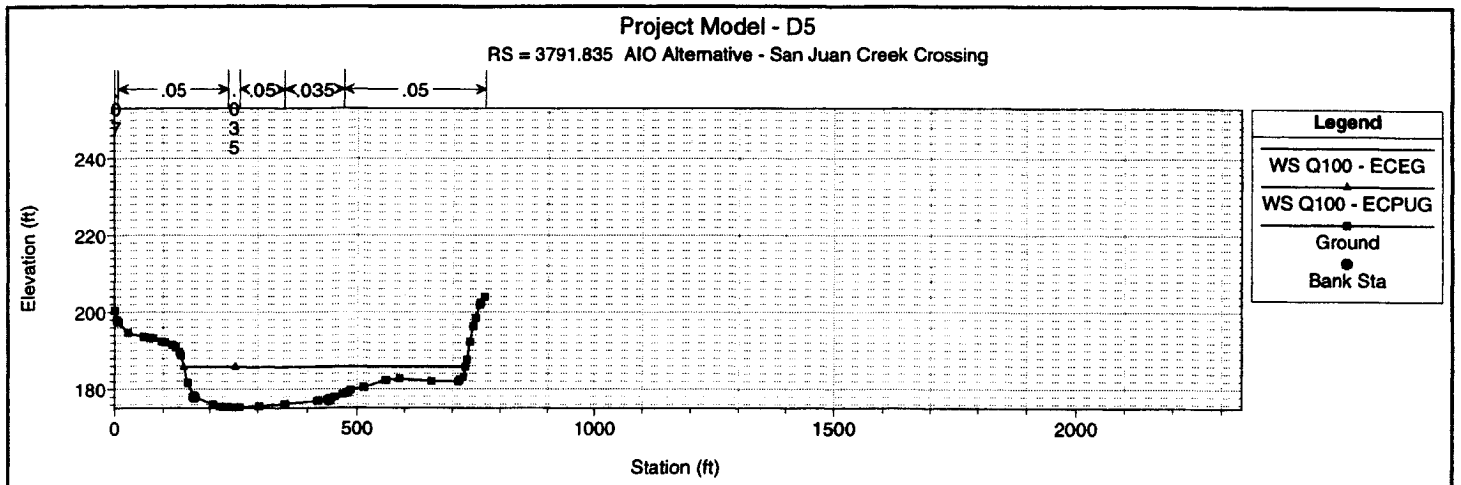


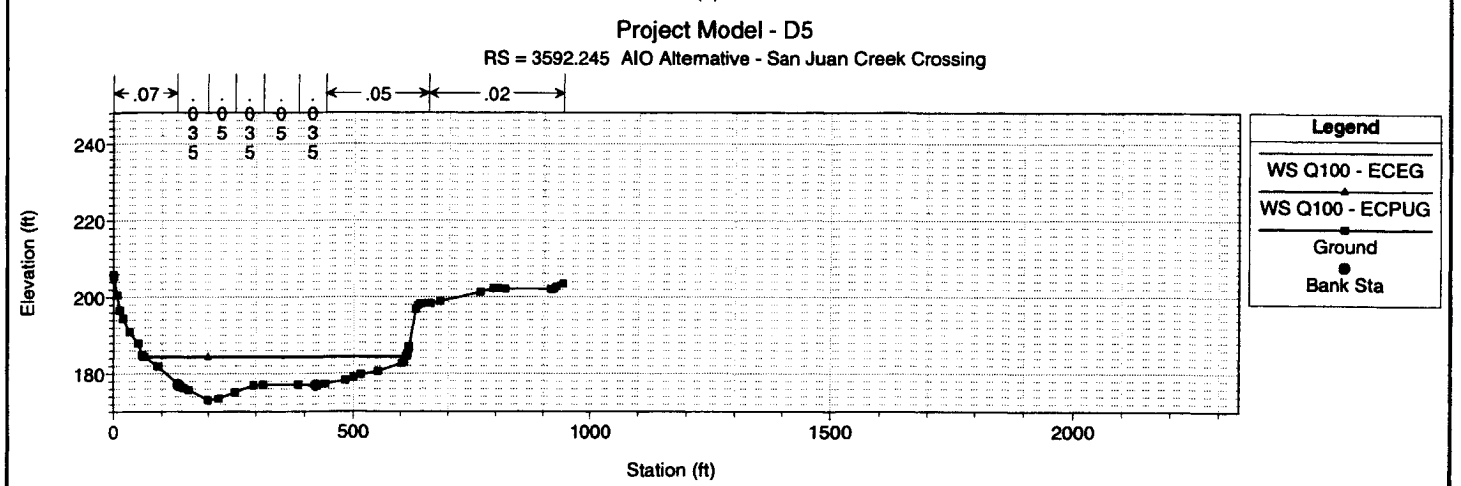
Project Model - D5

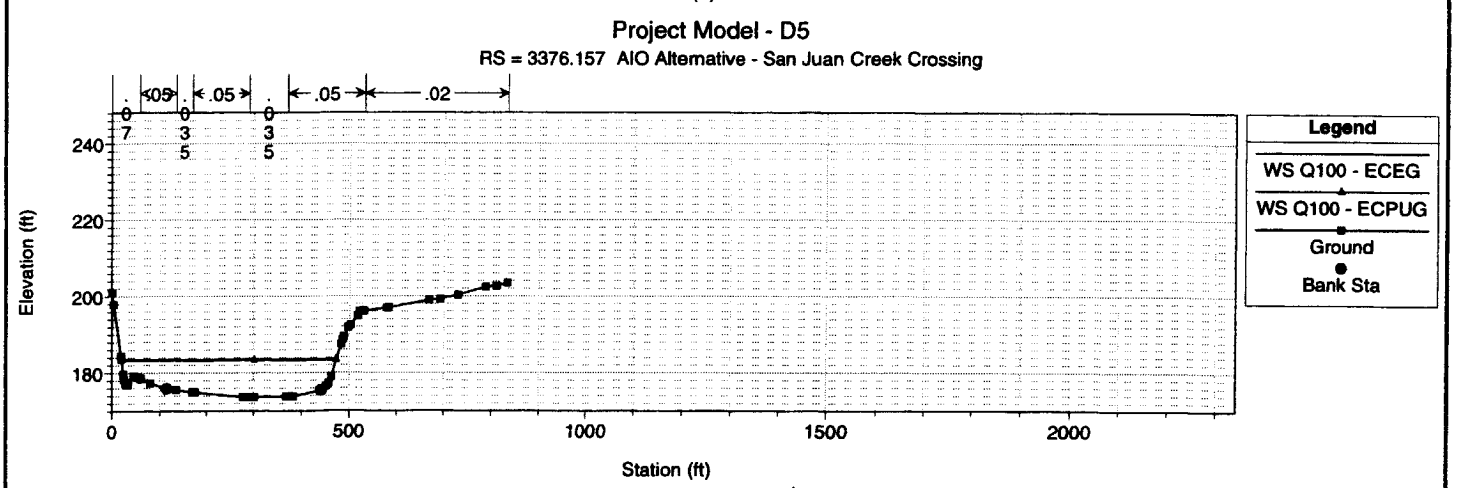
RS = 4008.681 AIO Alternative - San Juan Creek Crossing

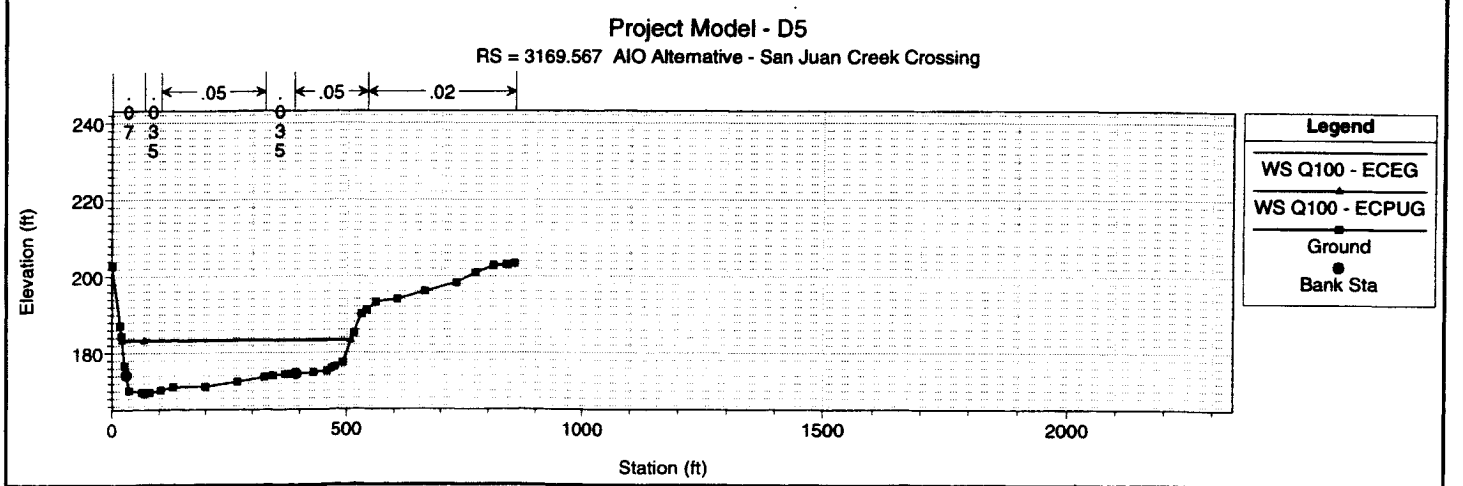


1 in Horiz. = 400 ft 1 in Vert. = 50 ft





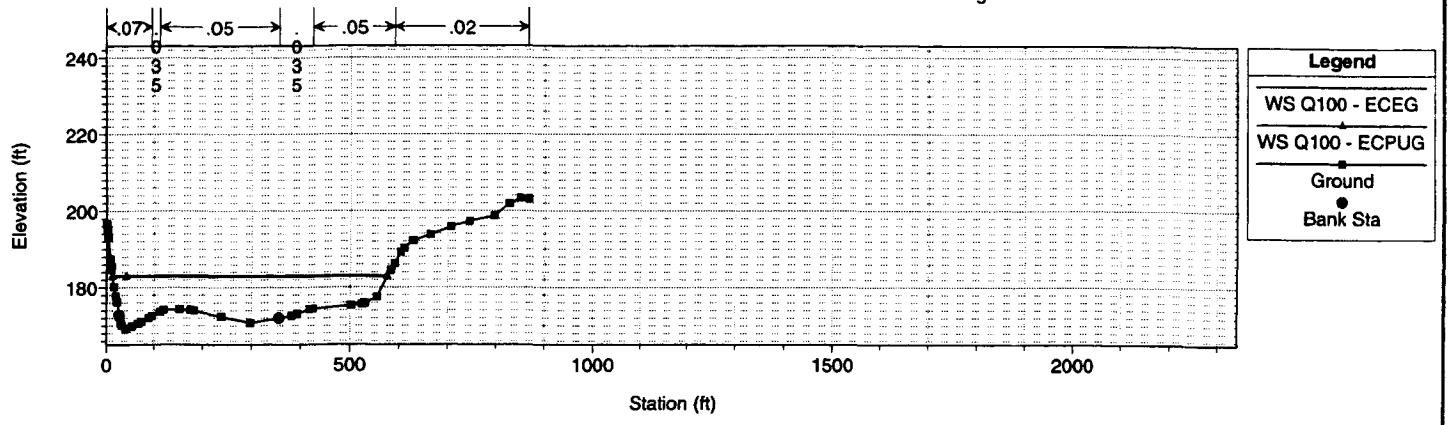




1 in Horiz. = 400 ft 1 in Vert. = 50 ft

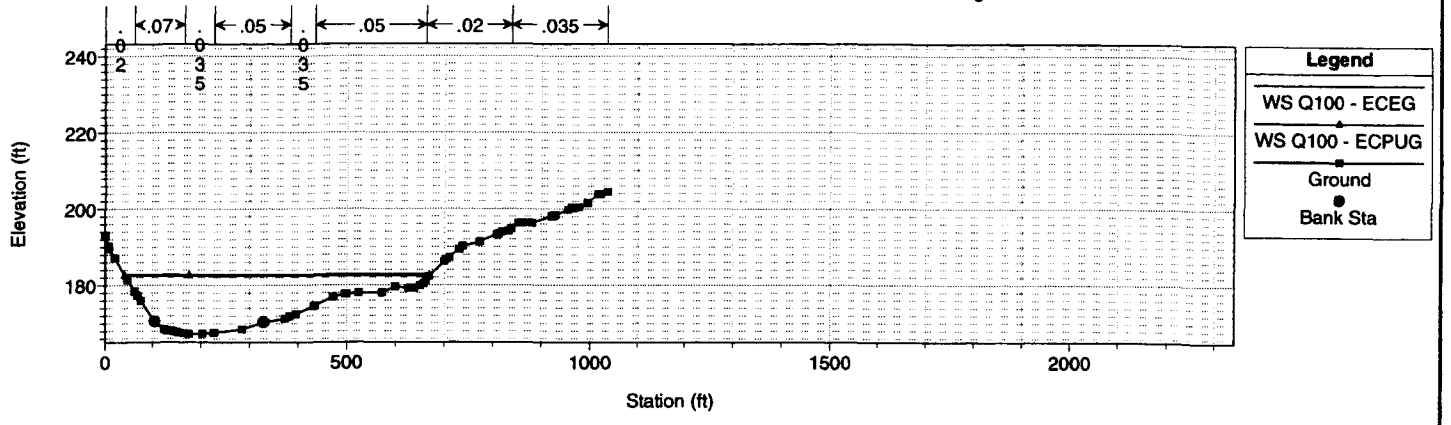
Project Model - D5

RS = 2962.583 AIO Alternative - San Juan Creek Crossing



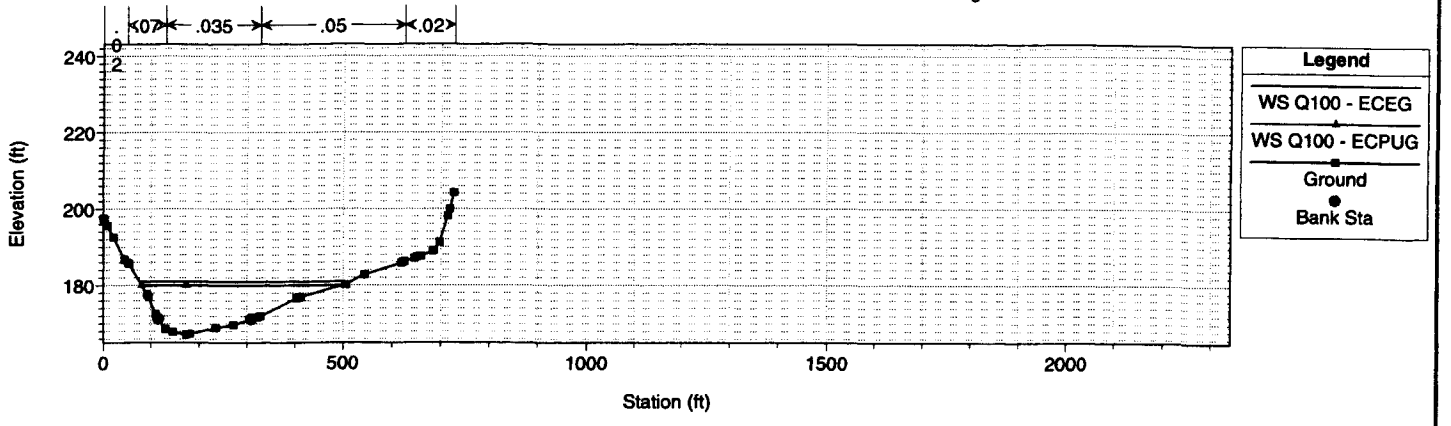
Project Model - D5

RS = 2746.045 AIO Alternative - San Juan Creek Crossing



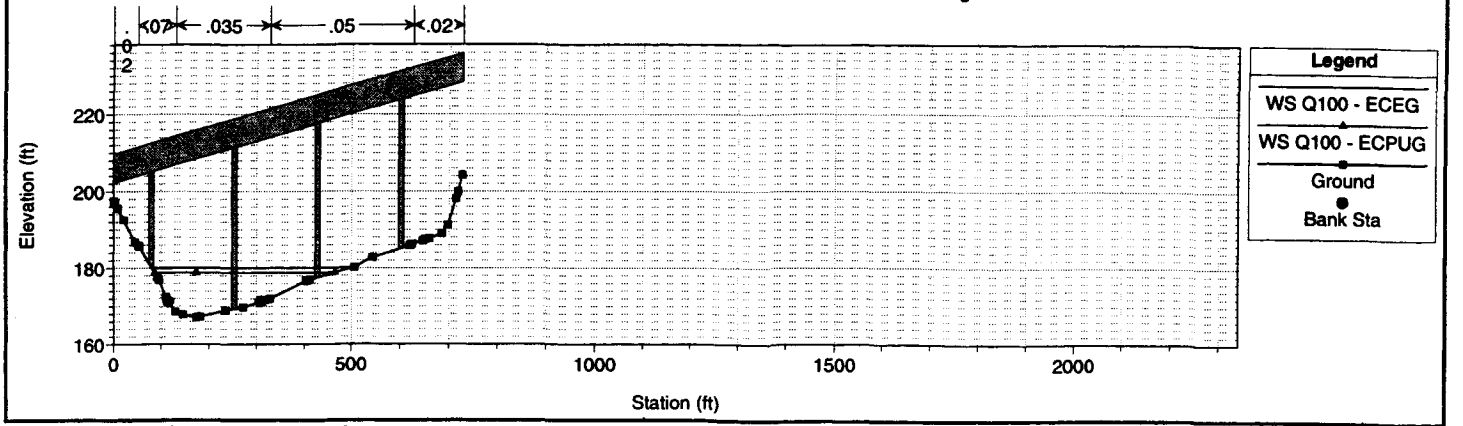
Project Model - D5

RS = 2608.338 AIO Alternative - San Juan Creek Crossing

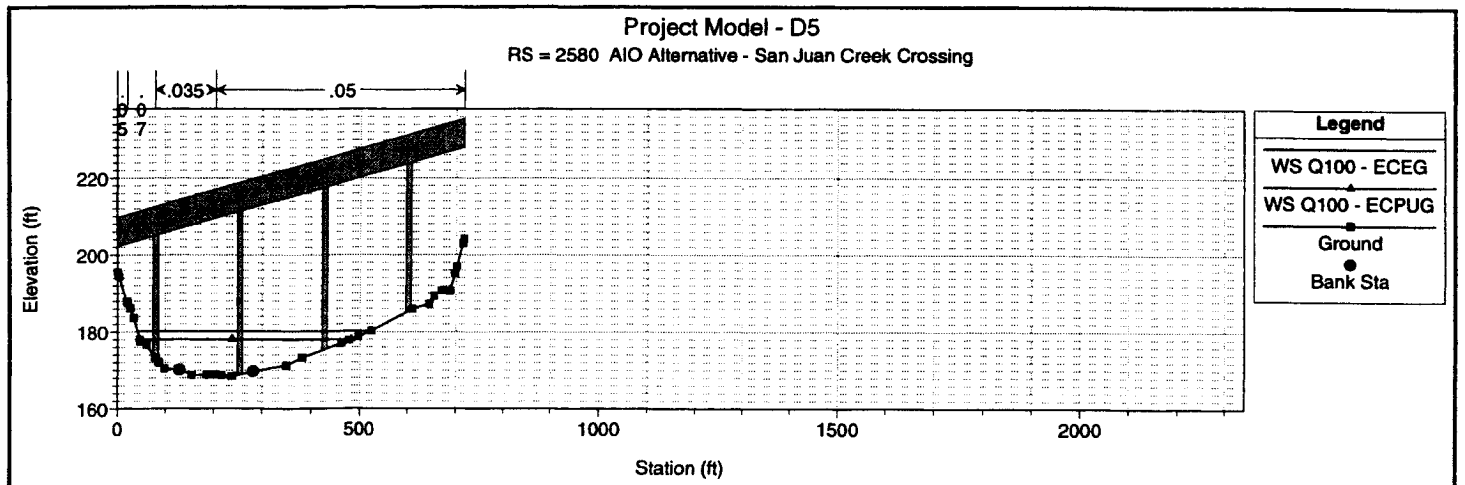


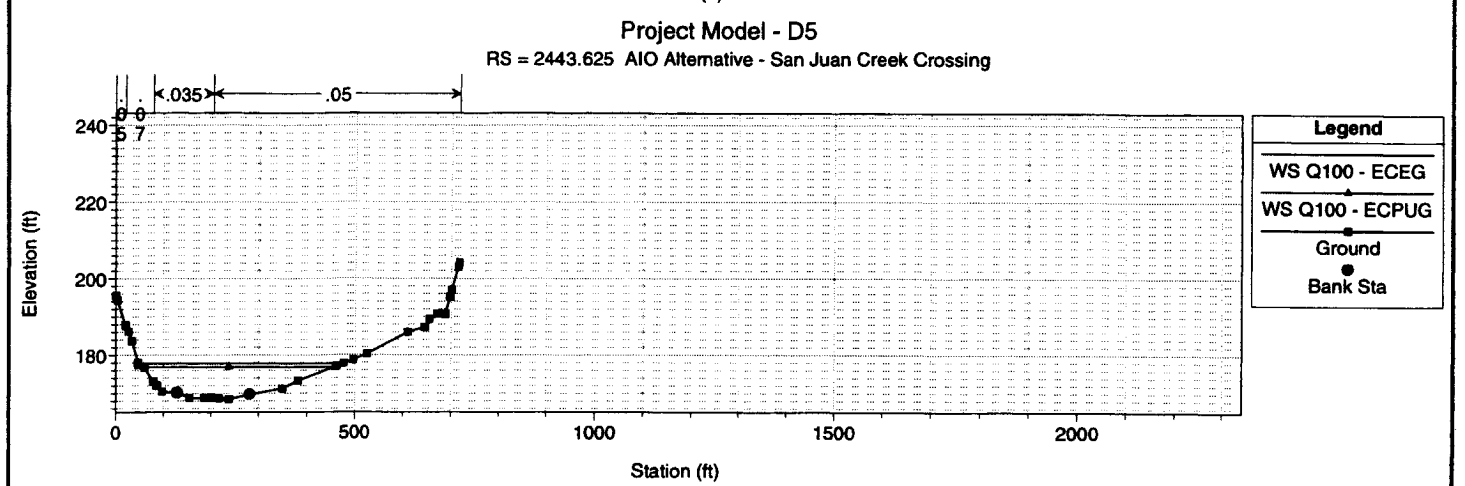
Project Model - D5

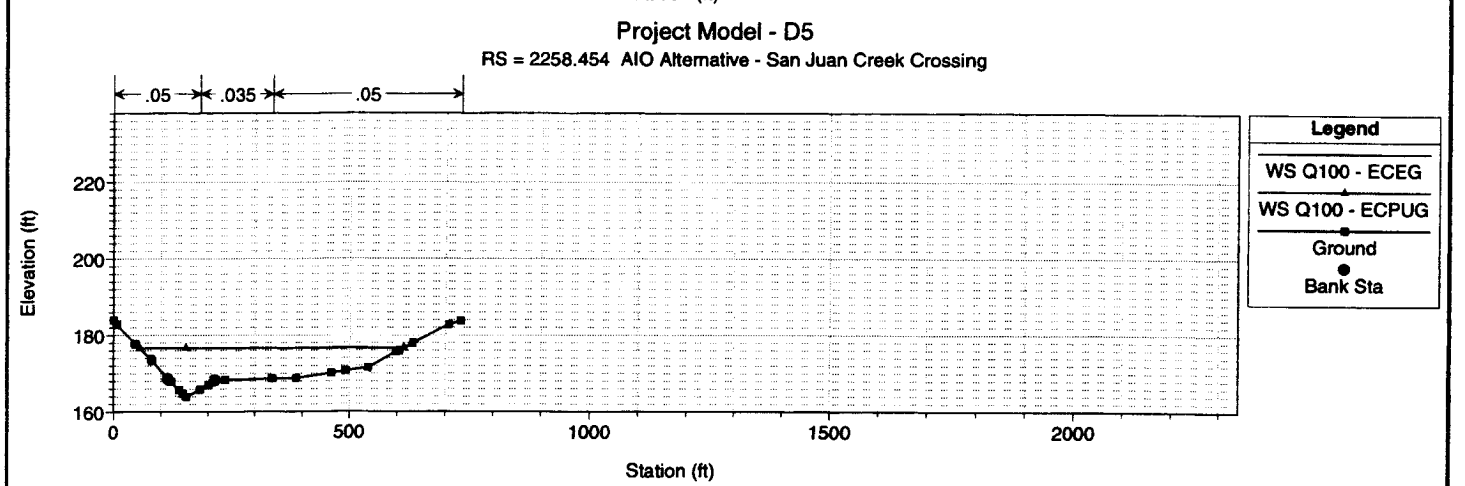
RS = 2580 AIO Alternative - San Juan Creek Crossing

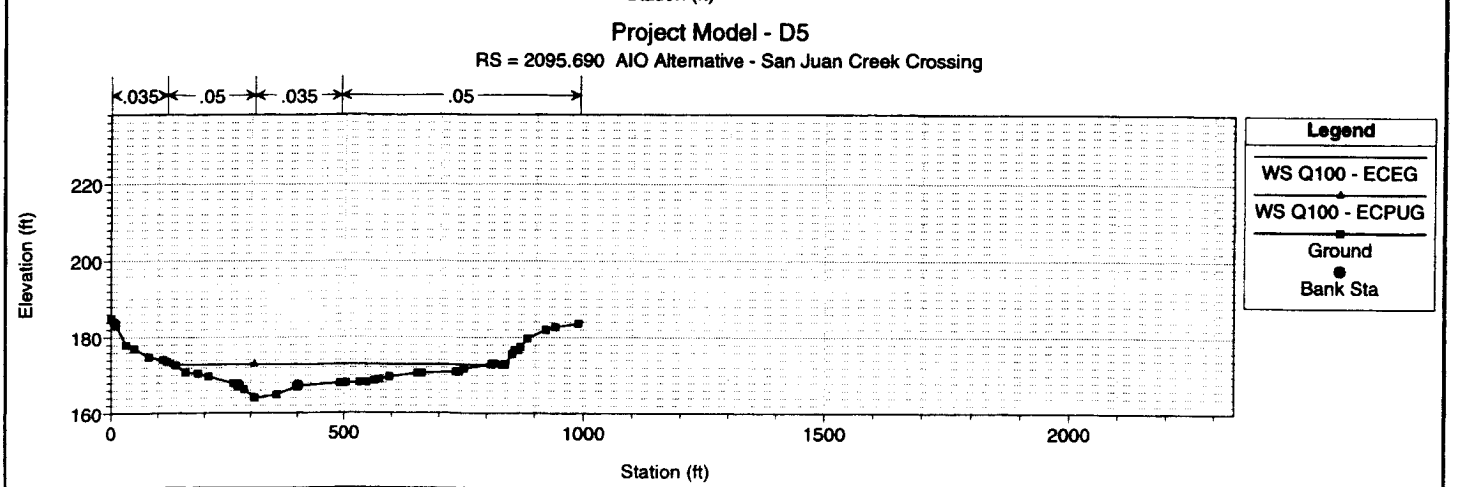


1 in Horiz. = 400 ft 1 in Vert. = 50 ft

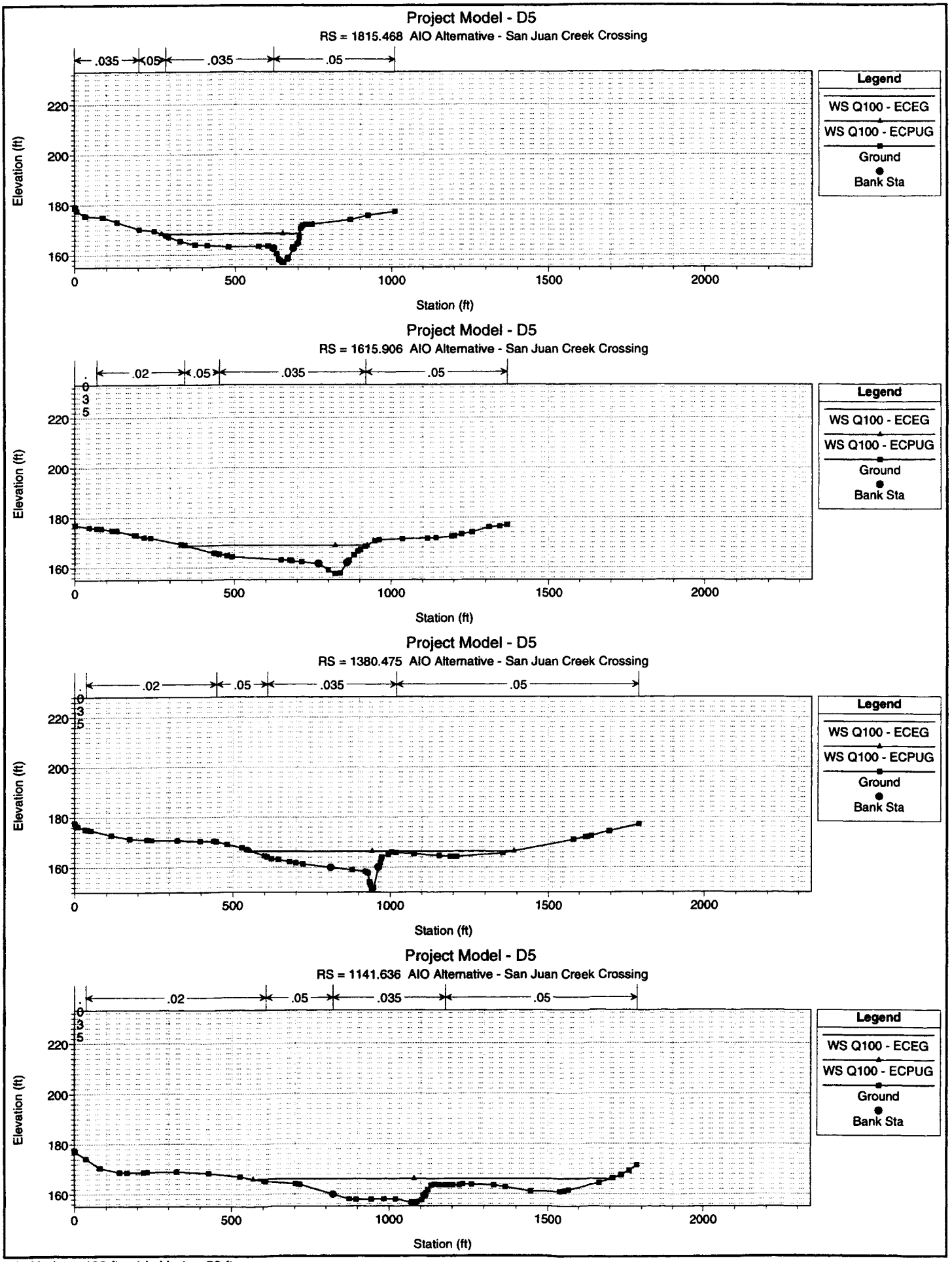




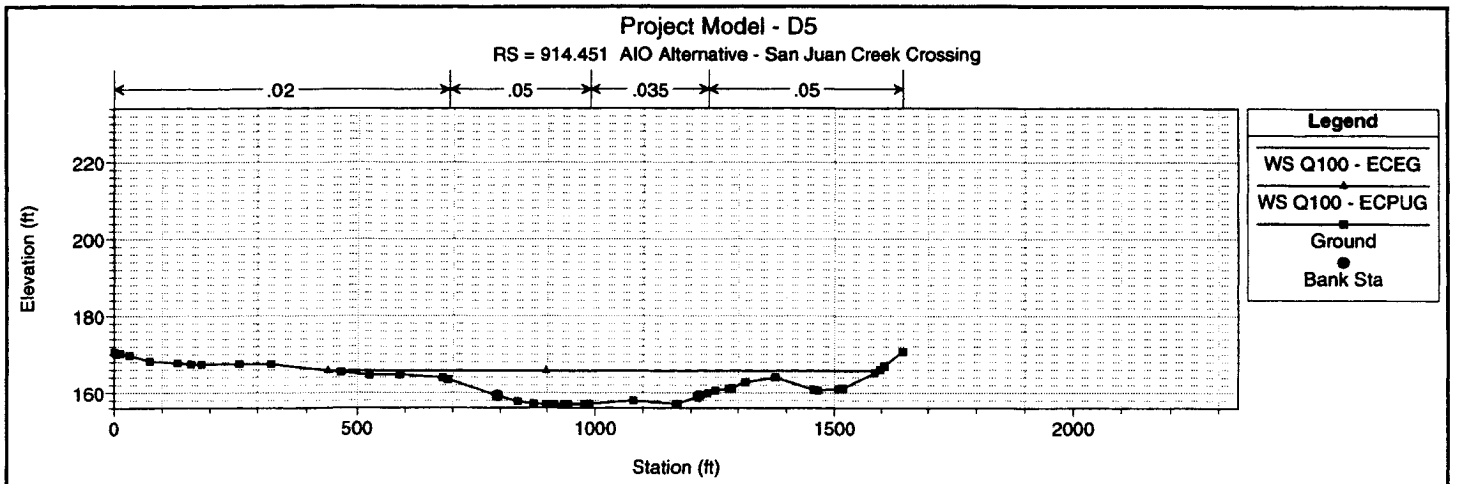


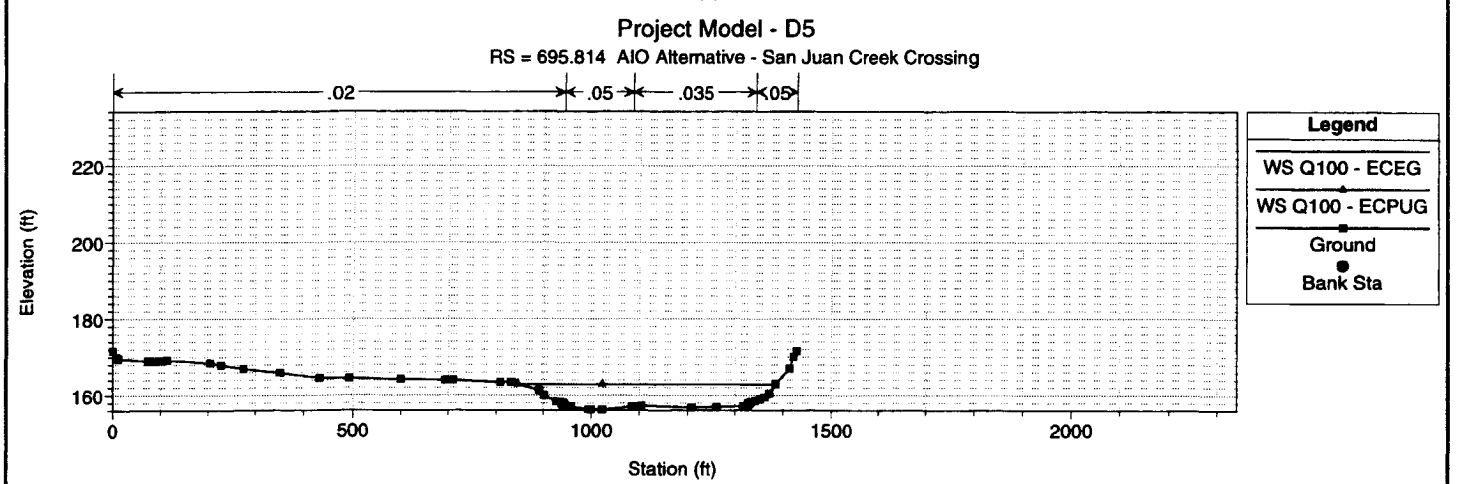


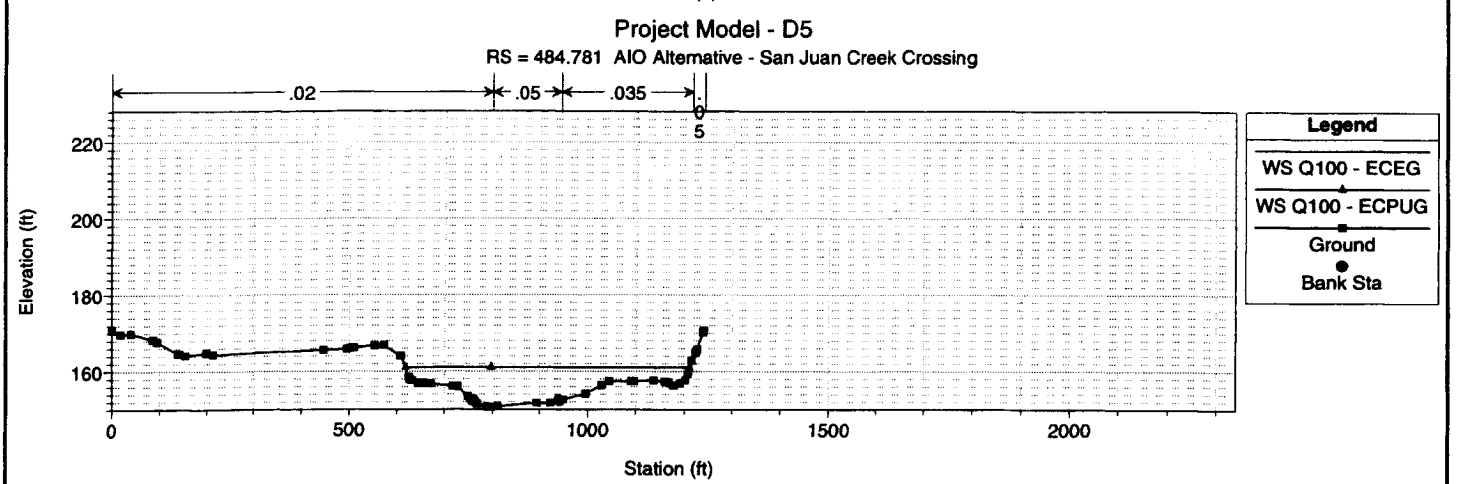
1 in Horiz. = 400 ft 1 in Vert. = 50 ft

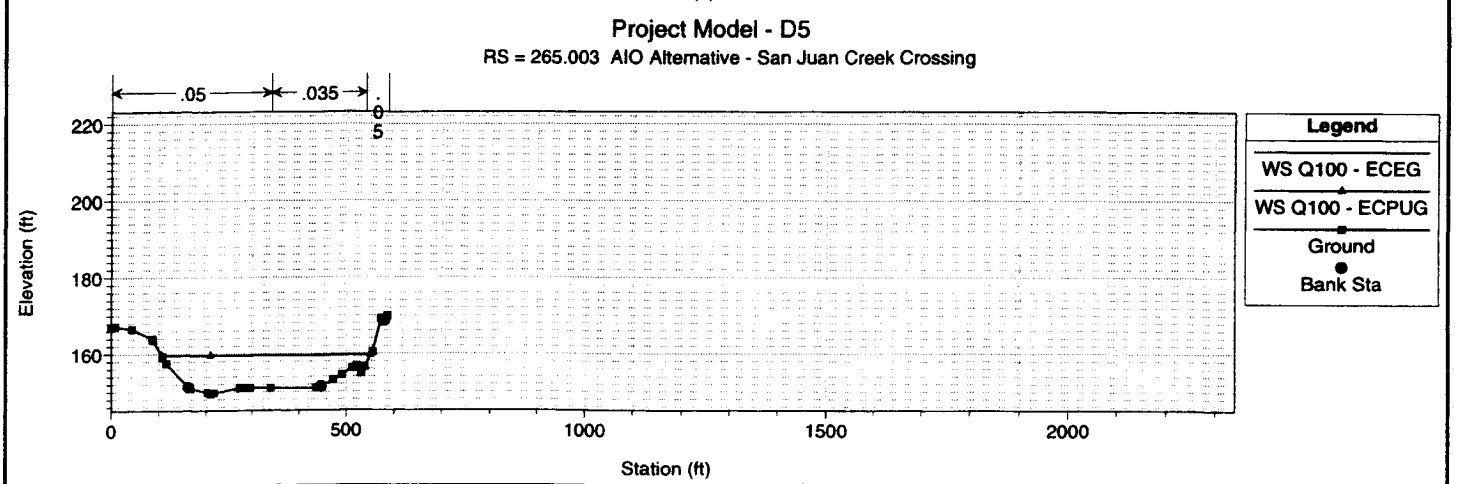


1 in Horiz. = 400 ft 1 in Vert. = 50 ft

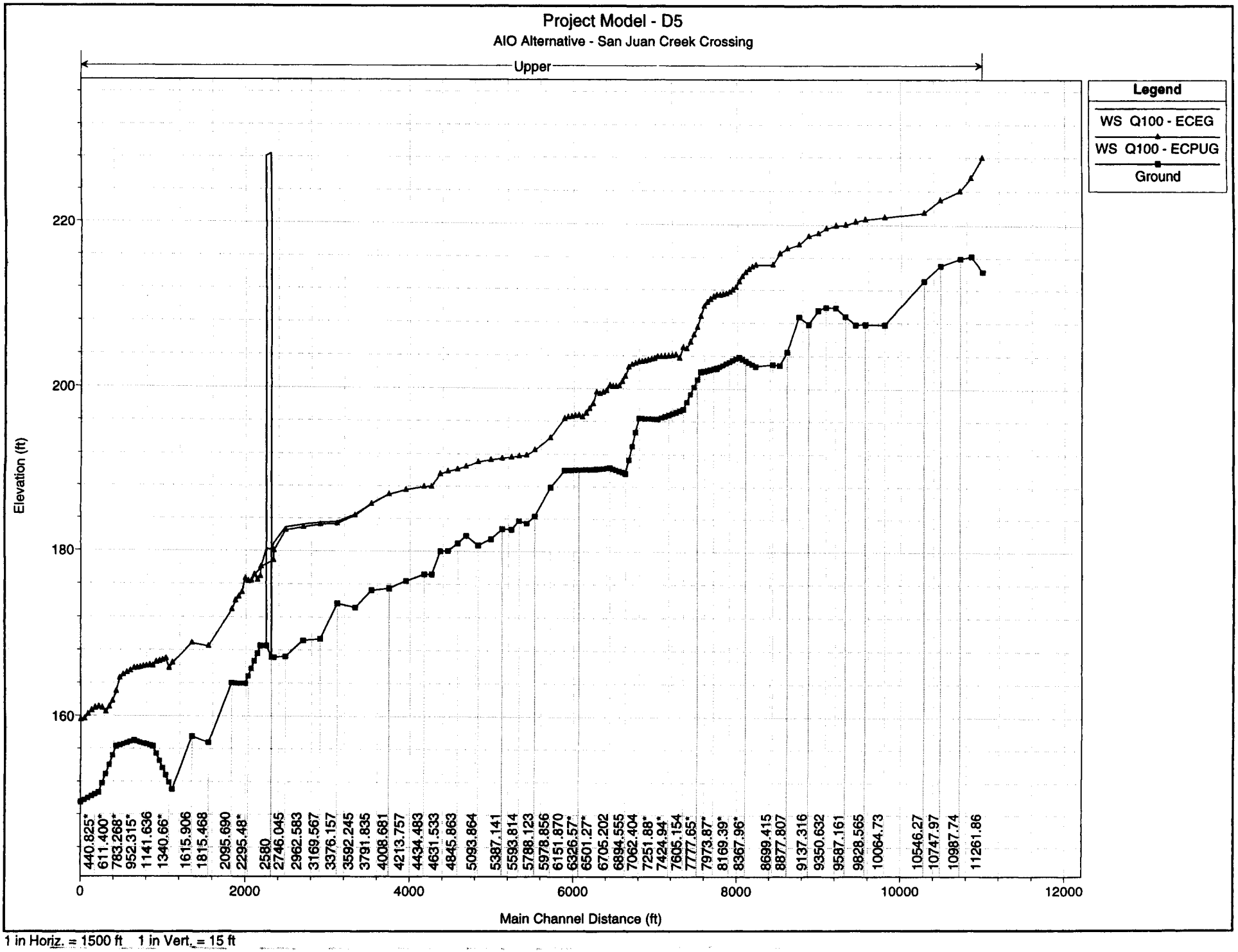








1 in Horiz. = 400 ft 1 in Vert. = 50 ft



1 in Horiz. = 1500 ft 1 in Vert. = 15 ft

APPENDIX O
HYDRAULIC MODEL INPUT & RESULTS
AIO ALTERNATIVE AT SEGUNDA DESHECHA CAÑADA
(MODEL "E1")

Appendix O. **Hydraulic Model Input & Results**

AIO Alternative at Segunda Deschecha Canada (Model E1)

- 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 and widened culvert include:

3893 (12773)

2709 (8887)

HEC-RAS Version 3.0.1 Mar 2001
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 E1
Project File : PME1.prj
Run Date and Time: 12/9/02 6:03:02 PM

Project in English units

Project Description:
A7C/CC/FEC-TV/AIO Alternatives - Segunda Deshecha Canada Crossing

PLAN DATA

Plan Title: Existing Flow/Existing Geometry
Plan File : p:\2PDA0104\Hydr\LHS\Modeling\Model E\HecRas E\PME1.p01

Geometry Title: Existing Conditions
Geometry File : p:\2PDA0104\Hydr\LHS\Modeling\Model E\HecRas E\PME1.g01

Flow Title : Existing Conditions
Flow File : p:\2PDA0104\Hydr\LHS\Modeling\Model E\HecRas E\PME1.f01

Plan Summary Information:
Number of: Cross Sections = 88 Mulitple Openings = 0
Culverts = 1 Inline Weirs = 0
Bridges = 0

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

Computation Options
Critical depth computed 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 : p:\2PDA0104\Hydr\LHS\Modeling\Model E\HecRas E\PME1.f01

Flow Data (cfs)

River	Reach	RS	Q2	Q5	Q10	Q25	Q50	Q100
Segunda	DeshechaMiddle	19097.73	3	35	84	307	638	955
Segunda	DeshechaMiddle	13879.61	4	40	94	335	689	1028
Segunda	DeshechaMiddle	12773.34	8	68	158	553	1062	1619

Boundary Conditions

River	Reach	Profile	Upstream	Downstream
Segunda	DeshechaMiddle	Q2	Normal S = .1	Normal S = .01
Segunda	DeshechaMiddle	Q5	Normal S = .1	Normal S = .01
Segunda	DeshechaMiddle	Q10	Normal S = .1	Normal S = .01
Segunda	DeshechaMiddle	Q25	Normal S = .1	Normal S = .01
Segunda	DeshechaMiddle	Q50	Normal S = .1	Normal S = .01
Segunda	DeshechaMiddle	Q100	Normal S = .1	Normal S = .01
Segunda	DeshechaMiddle	Q100HC	Normal S = .1	Normal S = .01

GEOMETRY DATA

Geometry Title: Existing Conditions
Geometry File : p:\2PDA0104\Hydr\LHS\Modeling\Model E\HecRas E\PME1.g01

CROSS SECTION RIVER: Segunda Deshecha
REACH: Middle RS: 19097.73

INPUT
Description: Manual Modification of Manning's N Values
Station Elevation Data num= 28

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	334.84	15.2	331.65	22.18	329.36	26.11	328.07	31.03	326.33
42.32	319.84	45.5	318.01	49.22	316.08	51.33	315.34	57.93	314.51
59.6	314.29	61.46	314.22	63.41	314.5	71.45	315.65	80.72	316.65
91.91	319.83	106.46	323.85	115.16	326.07	115.85	326.18	117.58	326.92
121.78	327.63	125.66	328.05	129.93	328.54	149.92	330.82	176.76	333.99
178.47	334.19	182.14	334.44	184.82	334.54				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.02	22.18	.05	91.91	.02

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
57.93	63.41	41.72	40.43	34.01	.1	.3

CROSS SECTION RIVER: Segunda Deshecha
REACH: Middle RS: 19057.3*

INPUT
Description:
Station Elevation Data num= 46

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	333.64	3.16	332.82	3.36	332.77	3.9	332.62	13.91	329.9
20.3	327.5	23.9	326.15	28.41	324.36	34.85	320.55	38.74	318.26
41.65	316.54	43.18	315.71	45.06	314.75	46.99	314.04	49.33	313.64
53.03	313.17	54.13	313.02	54.82	312.94	56.81	312.86	59.89	313.16
64.53	313.8	67.13	314.21	74.66	315.16	75.48	315.28	78.75	316.28
83.26	317.64	85.55	318.33	90.41	319.78	97.72	321.99	98.65	322.27
106.48	324.49	107.1	324.61	108.66	325.29	110.92	325.76	112.44	326.04
115.93	326.51	119.78	327.04	120.5	327.14	131.43	328.67	137.77	329.54
138.24	329.6	157.26	332.1	161.93	332.7	163.47	332.89	166.78	333.17
169.19	333.3								

Manning's n Values num= 7

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.026	20.3	.05	53.03	.02	59.89	.02	85.55	.02
97.72	.02	169.19	.02						

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
53.03	59.89	41.72	40.43	34.01	.1	.3

CROSS SECTION RIVER: Segunda Deshecha
REACH: Middle RS: 19016.8*

INPUT
Description:
Station Elevation Data num= 46

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	332.44	2.87	331.53	3.05	331.47	3.54	331.3	12.63	328.15
18.43	325.64	21.69	324.23	25.78	322.39	31.63	318.83	35.16	316.67
37.8	315.06	39.19	314.27	40.89	313.41	42.65	312.74	44.78	312.27
48.13	311.83	49.3	311.67	50.04	311.6	52.17	311.51	56.37	311.82
60.49	312.37	62.81	312.77	69.5	313.76	70.23	313.91	73.14	314.88
77.15	316.16	79.19	316.84	83.51	318.25	90.01	320.42	90.83	320.69
97.8	322.9	98.35	323.04	99.74	323.66	101.75	324.17	103.1	324.45
106.2	324.96	109.62	325.54	110.26	325.65	119.99	327.31	125.62	328.25
126.04	328.33	142.95	330.82	147.11	331.4	148.48	331.59	151.41	331.89
153.56	332.06								

Manning's n Values num= 7

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.032	18.43	.05	48.13	.02	56.37	.02	79.19	.02
90.01	.02	153.56	.02						

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
48.13	56.37	41.72	40.43	34.01	.1	.3

CROSS SECTION RIVER: Segunda Deshecha
REACH: Middle RS: 18976.4*

INPUT
Description:
Station Elevation Data num= 46

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	331.23	2.57	330.24	2.74	330.17	3.18	329.97	11.34	326.4
16.55	323.79	19.48	322.32	23.16	320.43	28.41	317.1	31.58	315.09
33.95	313.59	35.2	312.84	36.73	312.08	38.3	311.44	40.22	310.89
43.23	310.49	44.47	310.31	45.26	310.25	47.52	310.15	52.86	310.48
56.46	310.94	58.49	311.33	64.35	312.37	64.99	312.54	67.54	313.48
71.05	314.69	72.83	315.34	76.61	316.71	82.3	318.84	83.02	319.11
89.12	321.32	89.6	321.47	90.81	322.03	92.58	322.58	93.76	322.86
96.48	323.42	99.47	324.04	100.03	324.15	108.54	325.96	113.47	326.97
113.84	327.05	128.65	329.54	132.28	330.11	133.48	330.29	136.05	330.62
137.93	330.83								

Manning's n Values num= 7

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.038	16.55	.05	43.23	.02	52.86	.02	72.83	.02

82.3 .02 137.93 .02

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
43.23	52.86	41.72	40.43	34.01	.1	.3

CROSS SECTION RIVER: Segunda Deshecha
REACH: Middle RS: 18936.0*

INPUT
Description:
Station Elevation Data num= 46

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	330.03	2.28	328.94	2.43	328.87	2.82	328.65	10.06	324.65
14.68	321.93	17.28	320.4	20.53	318.46	25.19	315.37	28	313.51
30.11	312.12	31.21	311.4	32.57	310.75	33.96	310.14	35.66	309.52
38.33	309.15	39.65	308.96	40.48	308.9	42.88	308.8	49.34	309.14
52.43	309.5	54.17	309.9	59.19	310.97	59.74	311.17	61.93	312.08
64.94	313.22	66.47	313.85	69.71	315.17	74.59	317.27	75.21	317.53
80.44	319.74	80.85	319.9	81.89	320.4	83.4	320.99	84.42	321.27
86.75	321.87	89.31	322.54	89.79	322.66	97.1	324.61	101.33	325.69
101.64	325.77	114.34	328.26	117.46	328.81	118.48	328.99	120.69	329.35
122.3	329.59								

Manning's n Values num= 7

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.044	14.68	.05	38.33	.02	49.34	.02	66.47	.02
74.59	.02	122.3	.02						

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
38.33	49.34	41.72	40.43	34.01	.1	.3

CROSS SECTION RIVER: Segunda Deshecha
REACH: Middle RS: 18895.59

INPUT
Description: Manual Modification of Manning's N Values
Station Elevation Data num= 23

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	328.83	1.99	327.65	2.12	327.57	2.46	327.32	21.97	313.64
27.22	309.97	31.1	308.14	33.43	307.81	34.82	307.6	38.23	307.44
45.82	307.8	48.4	308.07	54.04	309.58	56.32	310.68	58.83	311.75
62.81	313.63	66.88	315.69	74.23	319.4	79.56	321.17	85.65	323.26
89.44	324.49	100.03	326.98	106.67	328.35				

Manning's n Values num= 2

Sta	n Val	Sta	n Val
0	.05	66.88	.02

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
33.43	45.82	37.41	42.63	45.04	.1	.3

CROSS SECTION RIVER: Segunda Deshecha
REACH: Middle RS: 18852.9*

INPUT
Description:
Station Elevation Data num= 42

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	328.58	2.28	327.39	2.43	327.31	2.82	327.07	8.58	323.62
11.24	322.04	11.68	321.77	12.07	321.5	22.28	314.63	23.47	313.76
25.16	312.54	30.05	309.01	31.17	308.2	31.65	307.93	33.4	306.96
35.61	305.92	36.04	305.82	38.28	305.28	39.43	305.09	42.25	304.92
42.57	304.92	49.5	305.26	50.9	305.52	52.24	305.81	57.45	307.59
58.22	307.85	60.64	309.05	63.31	310.26	67.53	312.34	69.06	313.12
71.85	314.51	79.65	318.38	80.8	318.8	80.98	318.86	81.15	318.91
84.31	319.85	85.31	320.14	91.77	322.09	95.79	323.25	107.03	325.74
109.2	326.17	114.08	327.03						

Manning's n Values num= 7

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.044	8.58	.026	38.28	.02	49.5	.02	71.85	.02
80.8	.02	114.08	.02						

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
38.28	49.5	37.41	42.63	45.04	.1	.3

CROSS SECTION RIVER: Segunda Deshecha
REACH: Middle RS: 18810.3*

INPUT
Description:
Station Elevation Data num= 42

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	328.32	2.57	327.13	2.73	327.05	3.17	326.81	9.67	323.46
12.67	321.91	13.16	321.64	13.6	321.35	25.1	313.85	26.44	312.85
28.34	311.44	33.85	307.37	35.11	306.43	35.66	306.09	37.63	304.87
40.12	303.7	40.61	303.54	43.13	302.75	44.04	302.59	46.28	302.41
46.91	302.41	53.18	302.73	54.66	303.09	56.08	303.55	61.59	305.79
62.41	306.11	64.97	307.42	67.78	308.78	72.25	311.04	73.86	311.89
76.82	313.33	85.07	317.36	86.28	317.84	86.47	317.9	86.66	317.95
90	318.84	91.05	319.11	97.89	320.93	102.14	322.02	114.03	324.49
116.33	324.94	121.48	325.7						

Manning's n Values num= 7

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.038	9.67	.032	43.13	.02	53.18	.02	76.82	.02
86.28	.02	121.48	.02						

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
43.13 53.18 37.41 42.63 45.04 .1 .3

CROSS SECTION RIVER: Segunda Deshecha
REACH: Middle RS: 18767.7*

INPUT
Description:
Station Elevation Data num= 42

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	328.07	2.86	326.86	3.04	326.78	3.53	326.56	10.76	323.29
14.09	321.79	14.64	321.51	15.13	321.21	27.92	313.07	29.41	311.94
31.53	310.35	37.66	305.73	39.06	304.67	39.66	304.25	41.86	302.77
44.63	301.48	45.17	301.27	47.97	300.22	48.65	300.08	50.3	299.89
51.25	299.89	56.86	300.19	58.42	300.67	59.91	301.29	65.73	303.99
66.59	304.38	69.29	305.79	72.26	307.29	76.97	309.75	78.67	310.65
81.79	312.15	90.49	316.34	91.77	316.89	91.97	316.94	92.17	316.98
95.69	317.82	96.8	318.08	104.01	319.76	108.49	320.78	121.03	323.25
123.45	323.7	128.89	324.38						

Manning's n Values num= 7

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.032	10.76	.038	47.97	.02	56.86	.02	81.79	.02
91.77	.02	128.89	.02						

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
47.97 56.86 37.41 42.63 45.04 .1 .3

CROSS SECTION RIVER: Segunda Deshecha
REACH: Middle RS: 18725.0*

INPUT
Description:
Station Elevation Data num= 42

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	327.81	3.14	326.6	3.35	326.52	3.89	326.3	11.84	323.13
15.52	321.66	16.12	321.39	16.66	321.06	30.74	312.3	32.39	311.03
34.71	309.25	41.46	304.08	43.01	302.9	43.67	302.41	46.09	300.68
49.14	299.25	49.74	299	52.82	297.69	53.26	297.58	54.33	297.38
55.59	297.38	60.54	297.66	62.18	298.25	63.75	299.02	69.87	302.19
70.77	302.64	73.61	304.16	76.74	305.81	81.69	308.45	83.48	309.42
86.76	310.97	95.91	315.33	97.25	315.93	97.46	315.98	97.67	316.02
101.38	316.81	102.54	317.05	110.13	318.6	114.84	319.54	128.03	322.01
130.58	322.47	136.29	323.05						

Manning's n Values num= 7

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.026	11.84	.044	52.82	.02	60.54	.02	86.76	.02
97.25	.02	136.29	.02						

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
52.82 60.54 37.41 42.63 45.04 .1 .3

CROSS SECTION RIVER: Segunda Deshecha
REACH: Middle RS: 18682.44

INPUT
Description: Manual Modification of Manning's N Values
Station Elevation Data num= 24

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	327.56	12.93	322.96	16.94	321.54	17.6	321.26	18.19	320.91
33.56	311.52	35.36	310.12	45.27	302.44	47.68	300.57	50.32	298.59
54.3	296.73	57.67	295.16	58.35	294.86	59.93	294.86	64.22	295.12
65.94	295.83	74.01	300.39	88.29	308.18	102.74	314.97	102.96	315.02
103.18	315.06	107.07	315.8	137.7	321.24	143.7	321.73		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.02	12.93	.05	102.74	.02

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
57.67 64.22 36.39 38.74 40.88 .1 .3

CROSS SECTION RIVER: Segunda Deshecha
REACH: Middle RS: 18643.7*

INPUT
Description:
Station Elevation Data num= 41

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	325.24	3.44	324.15	9.22	322.3	12.99	321.13	13.41	320.98
17.57	319.49	18.26	319.21	18.87	318.88	28.38	313.6	34.41	310.2
34.82	309.96	35.1	309.75	36.68	308.61	40.6	305.79	46.96	301.2
49.46	299.4	51.53	297.95	52.2	297.48	56.25	295.5	56.33	295.47
59.83	293.96	61.33	293.58	62.6	293.58	67.53	293.9	69.41	294.66
70.69	295.32	78.22	299.19	91.39	305.76	93.82	306.95	95.17	307.54
103.4	311.11	108.47	313.27	109.6	313.68	109.84	313.73	110.08	313.77
111.26	313.96	114.33	314.46	118.42	315.09	141.89	319.01	147.78	319.87
154.34	320.36								

Manning's n Values num= 8

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.02	3.44	.026	13.41	.05	59.83	.02	67.53	.02
70.69	.02	109.6	.02	154.34	.02				

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
59.83 67.53 36.39 38.74 40.88 .1 .3

CROSS SECTION RIVER: Segunda Deshecha
REACH: Middle RS: 18604.9*

INPUT
Description:
Station Elevation Data num= 41

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	322.93	3.57	321.91	9.55	320.2	13.45	319.16	13.9	319
18.21	317.45	18.92	317.16	19.55	316.85	29.41	311.89	35.65	308.64
36.07	308.39	36.36	308.2	38.01	307.1	42.07	304.38	48.66	299.97
51.25	298.23	53.39	296.82	54.09	296.36	58.28	294.24	58.36	294.21
61.99	292.75	64.31	292.3	65.26	292.3	70.84	292.68	72.88	293.48
74.27	294.14	82.44	297.98	96.71	304.56	99.35	305.73	100.81	306.32
109.74	309.92	115.24	312.06	116.46	312.4	116.72	312.44	116.98	312.47
118.26	312.65	121.59	313.12	126.02	313.71	151.48	317.74	157.87	318.49
164.98	318.99								

Manning's n Values num= 8

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.02	3.57	.032	13.9	.05	61.99	.02	70.84	.02
74.27	.02	116.46	.02	164.98	.02				

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
61.99	70.84	36.39	38.74	40.88	.1	.3

CROSS SECTION RIVER: Segunda Deshecha
REACH: Middle RS: 18566.2*

INPUT
Description:
Station Elevation Data num= 41

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	320.61	3.69	319.68	9.88	318.11	13.92	317.18	14.38	317.01
18.84	315.4	19.58	315.11	20.23	314.82	30.43	310.18	36.89	307.08
37.33	306.83	37.63	306.64	39.33	305.58	43.53	302.98	50.35	298.73
53.03	297.06	55.25	295.69	55.97	295.25	60.31	292.98	60.4	292.94
64.14	291.55	67.3	291.03	67.93	291.03	74.15	291.46	76.35	292.31
77.85	292.96	86.65	296.78	102.03	303.36	104.88	304.5	106.45	305.1
116.07	308.72	122.01	310.84	123.32	311.11	123.61	311.15	123.89	311.18
125.26	311.34	128.85	311.78	133.63	312.33	161.07	316.46	167.95	317.12
175.61	317.61								

Manning's n Values num= 8

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.02	3.69	.038	14.38	.05	64.14	.02	74.15	.02
77.85	.02	123.32	.02	175.61	.02				

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
64.14	74.15	36.39	38.74	40.88	.1	.3

CROSS SECTION RIVER: Segunda Deshecha
REACH: Middle RS: 18527.5*

INPUT
Description:
Station Elevation Data num= 41

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	318.3	3.82	317.44	10.22	316.01	14.39	315.21	14.87	315.03
19.48	313.35	20.23	313.07	20.91	312.79	31.46	308.48	38.13	305.52
38.58	305.27	38.89	305.09	40.65	304.07	45	301.57	52.05	297.49
54.82	295.89	57.11	294.57	57.85	294.13	62.34	291.71	62.43	291.68
66.3	290.34	70.28	289.75	70.59	289.75	77.46	290.24	79.81	291.13
81.42	291.78	90.86	295.57	107.36	302.16	110.41	303.28	112.1	303.88
122.41	307.53	128.77	309.63	130.19	309.83	130.49	309.86	130.79	309.89
132.26	310.04	136.11	310.44	141.23	310.96	170.65	315.19	178.04	315.74
186.25	316.24								

Manning's n Values num= 8

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.02	3.82	.044	14.87	.05	66.3	.02	77.46	.02
81.42	.02	130.19	.02	186.25	.02				

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
66.3	77.46	36.39	38.74	40.88	.1	.3

CROSS SECTION RIVER: Segunda Deshecha
REACH: Middle RS: 18488.77

INPUT
Description: Manual Modification of Manning's N Values
Station Elevation Data num= 22

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	315.98	3.94	315.21	10.55	313.91	14.86	313.23	32.48	306.77
39.37	303.96	40.16	303.53	46.46	300.17	58.97	293.44	64.37	290.45
68.46	289.14	73.26	288.47	80.77	289.02	85	290.6	112.68	300.96
117.74	302.66	128.75	306.34	135.54	308.41	139.26	308.73	148.84	309.58
180.24	313.92	196.89	314.87						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.02	3.94	.05	85	.02

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
68.46	80.77	39.47	41.97	40.29	.1	.3

CROSS SECTION RIVER: Segunda Deshecha
REACH: Middle RS: 18446.8*

INPUT
Description:
Station Elevation Data num= 48

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	314.54	3.95	313.82	9.43	312.83	10.59	312.59	11.81	312.38
14.91	311.85	19.09	310.44	26.45	307.73	32.59	305.59	35.32	304.55
39.51	302.75	40.3	302.32	41.88	301.49	44.44	300.18	46.62	299.04
55.09	294.6	56.98	293.61	59.18	292.58	64.59	289.99	65.97	289.58
66.11	289.54	68.7	288.81	69.18	288.75	73.99	288.49	75.14	288.42
77.39	288.27	78.31	288.21	84.76	288.71	88.82	290.07	88.86	290.09
95.16	292.3	100.04	294.36	102.64	295.42	108.48	297.59	111.16	298.5
115.71	300.04	116.35	300.23	120.62	301.55	121.78	301.9	131.3	304.83
137.89	306.69	138.75	306.78	141.5	307.12	146	307.7	150.79	308.14
162.36	309.68	181.25	312.01	197.4	312.93				

Manning's n Values num= 8

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.02	3.95	.044	11.81	.026	68.7	.02	82.19	.02
84.76	.02	88.86	.02	197.4	.02				

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
68.7	84.76	39.47	41.97	40.29	.1	.3

CROSS SECTION RIVER: Segunda Deshecha
REACH: Middle RS: 18404.8*

INPUT
Description:
Station Elevation Data num= 48

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	313.09	3.97	312.43	9.46	311.51	10.62	311.27	11.85	311.05
14.96	310.48	19.15	309.18	26.55	306.45	32.71	304.41	35.44	303.43
39.64	301.54	40.44	301.12	42.02	300.28	44.6	299.03	46.78	297.92
55.28	293.58	57.18	292.6	59.38	291.73	64.82	289.52	66.19	289.16
66.34	289.11	68.94	288.48	69.66	288.4	76.88	288.21	78.6	288.14
81.98	288.01	83.36	287.95	88.75	288.41	92.69	289.56	92.73	289.57
98.83	291.57	103.55	293.81	106.07	294.93	111.74	297.02	114.33	297.79
118.75	299.11	119.36	299.28	123.51	300.44	124.63	300.75	133.86	303.32
140.24	304.97	141.08	305.07	143.74	305.52	148.1	306.26	152.74	306.7
163.95	308.13	182.26	310.11	197.92	310.99				

Manning's n Values num= 8

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.02	3.97	.038	11.85	.032	68.94	.02	85.57	.02
88.75	.02	92.73	.02	197.92	.02				

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
68.94	88.75	39.47	41.97	40.29	.1	.3

CROSS SECTION RIVER: Segunda Deshecha
REACH: Middle RS: 18362.8*

INPUT
Description:
Station Elevation Data num= 48

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	311.65	3.98	311.04	9.49	310.2	10.66	309.96	11.89	309.72
15.01	309.1	19.22	307.92	26.64	305.17	32.82	303.23	35.57	302.32
39.78	300.33	40.58	299.91	42.17	299.08	44.75	297.88	46.94	296.79
55.47	292.55	57.38	291.59	59.59	290.87	65.04	289.06	66.42	288.73
66.57	288.69	69.17	288.16	70.14	288.04	79.77	287.93	82.06	287.87
86.56	287.75	88.4	287.7	92.74	288.1	96.55	289.05	96.59	289.06
102.5	290.83	107.07	293.26	109.51	294.44	114.99	296.44	117.51	297.09
121.78	298.19	122.38	298.34	126.39	299.33	127.47	299.6	136.41	301.81
142.59	303.25	143.4	303.36	145.98	303.91	150.2	304.82	154.7	305.27
165.55	306.58	183.28	308.2	198.43	309.04				

Manning's n Values num= 8

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.02	3.98	.032	11.89	.038	69.17	.02	88.96	.02
92.74	.02	96.59	.02	198.43	.02				

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
69.17	92.74	39.47	41.97	40.29	.1	.3

CROSS SECTION RIVER: Segunda Deshecha
REACH: Middle RS: 18320.8*

INPUT
Description:
Station Elevation Data num= 48

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	310.2	3.99	309.65	9.53	308.89	10.7	308.64	11.93	308.38
15.07	307.72	19.28	306.66	26.73	303.88	32.93	302.04	35.69	301.2
39.92	299.12	40.72	298.7	42.31	297.87	44.91	296.73	47.11	295.66
55.66	291.52	57.57	290.59	59.79	290.02	65.27	288.59	66.65	288.3
66.8	288.26	69.41	287.83	70.62	287.69	82.65	287.65	85.52	287.59
91.15	287.48	93.45	287.44	96.73	287.8	100.42	288.53	100.45	288.54
106.17	290.1	110.59	292.71	112.95	293.95	118.25	295.87	120.68	296.38
124.82	297.27	125.39	297.39	129.27	298.22	130.32	298.44	138.96	300.29
144.94	301.53	145.73	301.66	148.22	302.31	152.3	303.38	156.65	303.83
167.14	305.03	184.29	306.29	198.95	307.1				

Manning's n Values num= 8

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.02	3.99	.026	11.93	.044	69.41	.02	92.35	.02
96.73	.02	100.45	.02	198.95	.02				

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
69.41 96.73 39.47 41.97 40.29 .1 .3

CROSS SECTION RIVER: Segunda Deshecha
REACH: Middle RS: 18278.93

INPUT
Description:
Station Elevation Data num= 31

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	308.76	9.56	307.58	11.97	307.05	19.35	305.4	26.82	302.6
35.81	300.09	42.46	296.67	45.06	295.58	55.85	290.49	57.77	289.58
66.88	287.87	67.03	287.84	69.65	287.5	71.1	287.33	85.54	287.37
88.98	287.32	95.74	287.22	98.5	287.18	100.72	287.49	104.28	288.02
109.84	289.37	114.11	292.16	116.39	293.46	121.51	295.29	123.86	295.68
128.41	296.44	133.17	297.29	148.05	299.95	154.4	301.94	168.74	303.48
199.46	305.16								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.02	11.97	.05	95.74	.02

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
69.65 100.72 43.12 42.39 42.18 .1 .3

CROSS SECTION RIVER: Segunda Deshecha
REACH: Middle RS: 18236.5*

INPUT
Description:
Station Elevation Data num= 52

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	306.78	9.88	305.68	12.37	305.2	20	303.72	20.33	303.61
21.8	303.11	25.45	301.91	27.72	301.15	37.01	298.81	38.71	298.05
41.63	296.74	43.43	295.94	43.88	295.73	46.57	294.74	50.02	293.32
57.72	289.71	59.71	288.78	60.53	288.58	62.4	288.14	64.01	287.84
69.12	286.89	69.28	286.86	70.15	286.74	71.99	286.37	73.29	286.19
86.27	285.95	89.36	285.84	95.44	285.62	97.55	285.55	97.88	285.54
97.92	285.54	101.2	286.34	104.75	286.91	106.91	287.44	110.3	288.17
114.56	290.59	116.83	291.72	121.94	293.33	122.92	293.48	124.28	293.68
128.82	294.37	133.04	295.04	133.57	295.14	146.31	297.46	148.41	297.83
154.75	299.69	167.53	301.17	169.05	301.37	187.23	302.84	193.2	303.34
196.38	303.55	199.69	303.75						

Manning's n Values num= 7

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.02	12.37	.046	38.71	.024	71.99	.022	96.52	.022
101.2	.022	199.69	.022						

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
71.99 101.2 43.12 42.39 42.18 .1 .3

CROSS SECTION RIVER: Segunda Deshecha
REACH: Middle RS: 18194.1*

INPUT
Description:
Station Elevation Data num= 52

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	304.79	10.2	303.77	12.77	303.35	20.65	302.04	20.99	301.95
22.51	301.48	26.27	300.39	28.62	299.71	38.21	297.53	39.97	296.85
42.99	295.69	44.83	294.98	45.31	294.8	48.08	293.91	51.64	292.64
59.6	288.93	61.64	287.97	62.49	287.74	64.43	287.19	66.09	286.89
71.37	285.92	71.53	285.88	72.43	285.75	74.32	285.24	75.48	285.06
86.99	284.53	89.74	284.36	95.13	284.03	97	283.91	97.3	283.89
97.33	283.89	101.68	285.18	105.23	285.81	107.37	286.33	110.76	286.97
115.01	289.02	117.27	289.99	122.37	291.37	123.35	291.5	124.71	291.68
129.23	292.29	133.44	292.89	133.97	292.99	146.68	295.34	148.78	295.71
155.09	297.44	167.85	299.03	169.36	299.25	187.49	301.21	193.45	301.88
196.63	302.12	199.93	302.35						

Manning's n Values num= 7

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.02	12.77	.041	39.97	.029	74.32	.024	97.3	.024
101.68	.024	199.93	.024						

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
74.32 101.68 43.12 42.39 42.18 .1 .3

CROSS SECTION RIVER: Segunda Deshecha
REACH: Middle RS: 18151.7*

INPUT
Description:
Station Elevation Data num= 52

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	302.81	10.52	301.87	13.17	301.5	21.3	300.36	21.65	300.28
23.22	299.85	27.1	298.88	29.52	298.26	39.41	296.25	41.23	295.65
44.34	294.64	46.24	294.02	46.73	293.86	49.59	293.07	53.27	291.96
61.47	288.15	63.58	287.17	64.45	286.89	66.45	286.24	68.16	285.93
73.61	284.94	73.77	284.91	74.71	284.76	76.66	284.11	77.67	283.92
87.72	283.11	90.12	282.88	94.83	282.43	96.46	282.28	96.72	282.25
96.75	282.25	102.16	284.03	105.7	284.7	107.84	285.22	111.22	285.77
115.45	287.46	117.72	288.25	122.8	289.41	123.77	289.52	125.13	289.68
129.65	290.22	133.84	290.74	134.37	290.84	147.05	293.22	149.14	293.59
155.44	295.18	168.16	296.89	169.67	297.14	187.76	299.58	193.7	300.41
196.87	300.7	200.16	300.94						

Manning's n Values num= 7

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.02	13.17	.037	41.23	.033	76.66	.026	98.08	.026
102.16	.026	200.16	.026						

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
76.66	102.16	43.12	42.39	42.18	.1	.3

CROSS SECTION RIVER: Segunda Deshecha
REACH: Middle RS: 18109.3*

INPUT
Description:
Station Elevation Data num= 52

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	300.82	10.84	299.97	13.58	299.65	21.95	298.67	22.31	298.61
23.93	298.22	27.92	297.36	30.42	296.82	40.61	294.96	42.48	294.46
45.69	293.59	47.65	293.06	48.16	292.92	51.1	292.24	54.89	291.28
63.34	287.37	65.52	286.36	66.42	286.04	68.48	285.28	70.24	284.98
75.85	283.96	76.02	283.93	76.98	283.78	78.99	282.97	79.86	282.79
88.45	281.69	90.5	281.4	94.52	280.84	95.92	280.64	96.14	280.61
96.16	280.6	102.65	282.88	106.17	283.59	108.31	284.11	111.67	284.57
115.9	285.89	118.16	286.51	123.23	287.44	124.2	287.54	125.55	287.68
130.06	288.14	134.25	288.59	134.77	288.69	147.42	291.11	149.5	291.47
155.79	292.93	168.48	294.75	169.98	295.03	188.02	297.94	193.95	298.95
197.11	299.27	200.4	299.53						

Manning's n Values num= 7

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.02	13.58	.033	42.48	.037	78.99	.029	98.85	.029
102.65	.029	200.4	.029						

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
78.99	102.65	43.12	42.39	42.18	.1	.3

CROSS SECTION RIVER: Segunda Deshecha
REACH: Middle RS: 18067.0*

INPUT
Description:
Station Elevation Data num= 52

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	298.84	11.16	298.06	13.98	297.8	22.59	296.99	22.97	296.94
24.63	296.59	28.75	295.84	31.32	295.37	41.81	293.68	43.74	293.26
47.04	292.54	49.06	292.1	49.58	291.99	52.62	291.4	56.51	290.59
65.21	286.59	67.46	285.56	68.38	285.19	70.5	284.33	72.32	284.02
78.09	282.98	78.27	282.95	79.26	282.79	81.33	281.84	82.04	281.65
89.18	280.27	90.88	279.92	94.22	279.24	95.38	279	95.56	278.97
95.58	278.96	103.13	281.73	106.64	282.49	108.78	283.01	112.13	283.37
116.35	284.32	118.6	284.77	123.66	285.48	124.63	285.57	125.98	285.68
130.47	286.07	134.65	286.44	135.17	286.54	147.78	288.99	149.86	289.35
156.14	290.68	168.79	292.6	170.3	292.91	188.29	296.31	194.2	297.49
197.35	297.84	200.63	298.12						

Manning's n Values num= 7

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.02	13.98	.029	43.74	.041	81.33	.031	99.63	.031
103.13	.031	200.63	.031						

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
81.33	103.13	43.12	42.39	42.18	.1	.3

CROSS SECTION RIVER: Segunda Deshecha
REACH: Middle RS: 18024.6*

INPUT
Description:
Station Elevation Data num= 52

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	296.85	11.48	296.16	14.38	295.95	23.24	295.31	23.63	295.28
25.34	294.96	29.57	294.33	32.22	293.92	43.02	292.4	44.99	292.07
48.39	291.49	50.47	291.14	51	291.05	54.13	290.56	58.14	289.91
67.09	285.81	69.39	284.75	70.35	284.35	72.53	283.38	74.39	283.07
80.34	282.01	80.52	281.97	81.53	281.8	83.66	280.71	84.23	280.52
89.9	278.85	91.26	278.44	93.91	277.64	94.83	277.37	94.88	277.32
94.99	277.31	103.61	280.57	107.12	281.38	109.24	281.9	112.59	282.16
116.8	282.75	119.04	283.04	124.09	283.52	125.05	283.59	126.4	283.68
130.88	283.99	135.05	284.29	135.57	284.39	148.15	286.88	150.23	287.23
156.48	288.43	169.11	290.46	170.61	290.8	188.55	294.67	194.45	296.02
197.6	296.42	200.87	296.72						

Manning's n Values num= 7

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.02	14.38	.024	44.99	.046	83.66	.033	100.41	.033
103.61	.033	200.87	.033						

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
83.66	103.61	43.12	42.39	42.18	.1	.3

CROSS SECTION RIVER: Segunda Deshecha
REACH: Middle RS: 17982.24

INPUT
Description: Manual Modification of Manning's N Values
Station Elevation Data num= 26

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	294.87	24.29	293.61	26.05	293.33	30.4	292.81	46.25	290.87
49.74	290.44	51.88	290.18	59.76	289.23	72.31	283.5	74.55	282.43

76.47	282.11	83.81	280.81	86	279.58	94.29	275.73	94.4	275.68
94.41	275.67	104.09	279.42	109.71	280.79	125.48	281.61	135.45	282.14
148.52	284.76	169.42	288.32	188.82	293.04	194.7	294.56	197.84	294.99
201.1	295.31								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.02	46.25	.05	104.09	.035

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
86	104.09	122.81	163.37	169.52	.1 .3

CROSS SECTION RIVER: Segunda Deshecha
REACH: Middle RS: 17818.87

INPUT
Description: Manual Modification of Manning's N Values
Station Elevation Data num= 26

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	295.4	19.2	294.16	40.65	292.92	51.11	291.88	87.38	286.4
88.1	286.06	90.71	284.82	100.93	282.87	104.38	281.93	105.41	281.54
114.36	279.03	117.86	277.92	124.88	275.68	126.77	275.4	131.9	274.66
142.29	272.91	142.32	272.91	144.42	273.24	155.68	275.44	159.02	277.14
171.89	283.72	177.55	286.58	180.05	287.82	181.59	288.6	198.33	295.41
199.77	296								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.02	117.86	.05	177.55	.035

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
126.77	155.68	190.93	194.83	198.52	.1 .3

CROSS SECTION RIVER: Segunda Deshecha
REACH: Middle RS: 17624.04

INPUT
Description: Manual Modification of Manning's N Values
Station Elevation Data num= 24

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	295.37	3.88	295.05	5.64	294.96	71.17	293.67	99.68	293.36
130.65	291.73	134.25	291.28	148.62	288.78	151.94	288.29	155.66	286.02
160.78	284.03	177.81	276.38	179.14	275.79	192.63	275.57	201.36	275.42
223.34	275.04	226.48	274.98	229.48	275.41	243.59	277.61	251.72	278.22
261.1	280.53	264.24	281.73	274.02	285.5	309.78	295.67		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.02	201.36	.05	251.72	.035

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
201.36	229.48	25.39	40.1	41.59	.1 .3

CROSS SECTION RIVER: Segunda Deshecha
REACH: Middle RS: 17583.9*

INPUT
Description:
Station Elevation Data num= 44

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	294.25	3.66	293.95	5.32	293.86	10.64	293.72	67.17	292.09
85.08	291.72	94.08	291.5	95.28	291.43	123.31	289.42	126.7	288.96
127.69	288.79	130.18	288.34	133.59	287.73	136.73	287.17	136.79	287.16
140.26	286.51	143.4	285.99	145.79	284.62	146.91	283.99	151.74	282.2
166.93	275.77	167.81	275.41	169.07	274.89	178.43	274.59	181.8	274.51
190.04	274.3	192.28	274.23	207.14	274	212.68	273.91	215.91	273.85
218.77	274.17	219.76	274.29	232.62	276.21	236.78	276.52	240.02	276.83
240.38	276.92	246.01	278.33	247.9	278.81	248.57	279.03	249.42	279.41
251.43	280.29	260.35	284.22	287.15	293.58	292.93	295.68		

Manning's n Values num= 6

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.02	136.73	.025	190.04	.05	219.76	.038	240.02	.038
292.93	.038								

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
190.04	219.76	25.39	40.1	41.59	.1 .3

CROSS SECTION RIVER: Segunda Deshecha
REACH: Middle RS: 17543.8*

INPUT
Description:
Station Elevation Data num= 44

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	293.13	3.44	292.85	5.01	292.75	10	292.58	63.17	290.51
80.01	289.97	88.47	289.64	89.6	289.56	115.96	287.12	119.16	286.65
120.08	286.48	122.43	286.04	125.63	285.45	128.59	284.91	128.64	284.9
131.91	284.24	134.86	283.7	137.11	282.5	138.16	281.96	142.7	280.38
156.98	274.75	157.82	274.43	159	273.99	167.8	273.55	170.97	273.45
178.72	273.18	181.03	273.08	196.31	272.87	202.02	272.77	205.35	272.71
208.83	273.05	210.03	273.17	221.64	274.81	225.4	275.1	228.33	275.44
228.65	275.52	233.73	276.82	235.44	277.28	236.04	277.53	236.81	277.9 3
238.63	278.85	246.67	282.95	270.87	293.3	276.09	295.68		

Manning's n Values num= 6

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.02	128.59	.03	178.72	.05	210.03	.04	228.33	.04

276.09 .04

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
178.72 210.03 25.39 40.1 41.59 .1 .3

CROSS SECTION RIVER: Segunda Deshecha
REACH: Middle RS: 17503.7*

INPUT
Description:
Station Elevation Data num= 44

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	292.01	3.23	291.74	4.69	291.65	9.37	291.45	59.17	288.93
74.94	288.22	82.87	287.78	83.93	287.69	108.62	284.81	111.61	284.33
112.48	284.16	114.67	283.74	117.67	283.18	120.44	282.66	120.49	282.65
123.55	281.97	126.31	281.4	128.42	280.38	129.41	279.93	133.66	278.55
147.04	273.72	147.82	273.46	148.93	273.1	157.18	272.51	160.14	272.38
167.4	272.07	169.77	271.93	185.49	271.74	191.36	271.64	194.79	271.58
198.9	271.92	200.31	272.05	210.67	273.41	214.02	273.67	216.63	274.05
216.92	274.13	221.46	275.31	222.98	275.74	223.52	276.03	224.2	276.45
225.82	277.41	233	281.67	254.59	293.01	259.24	295.69		

Manning's n Values num= 6

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.02	120.44	.035	167.4	.05	200.31	.043	216.63	.043
259.24	.043								

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
167.4 200.31 25.39 40.1 41.59 .1 .3

CROSS SECTION RIVER: Segunda Deshecha
REACH: Middle RS: 17463.6*

INPUT
Description:
Station Elevation Data num= 44

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	290.88	3.01	290.64	4.37	290.55	8.74	290.32	55.17	287.36
69.88	286.47	77.26	285.92	78.25	285.82	101.27	282.5	104.06	282.01
104.87	281.85	106.92	281.45	109.71	280.9	112.3	280.4	112.35	280.39
115.2	279.7	117.77	279.1	119.74	278.26	120.66	277.9	124.63	276.72
137.1	272.69	137.83	272.48	138.86	272.2	146.55	271.48	149.31	271.32
156.08	270.95	158.52	270.77	174.67	270.6	180.7	270.51	184.22	270.45
188.96	270.79	190.59	270.94	199.69	272.01	202.64	272.24	204.94	272.66
205.19	272.73	209.18	273.81	210.51	274.21	210.99	274.53	211.59	274.97
213.02	275.97	219.33	280.4	238.3	292.73	242.4	295.7		

Manning's n Values num= 6

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.02	112.3	.04	156.08	.05	190.59	.045	204.94	.045
242.4	.045								

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
156.08 190.59 25.39 40.1 41.59 .1 .3

CROSS SECTION RIVER: Segunda Deshecha
REACH: Middle RS: 17423.5*

INPUT
Description:
Station Elevation Data num= 44

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	289.76	2.79	289.54	4.05	289.45	8.1	289.18	51.16	285.78
64.81	284.73	71.66	284.06	72.58	283.96	93.93	280.19	96.51	279.7
97.27	279.54	99.16	279.15	101.76	278.62	104.15	278.14	104.2	278.13
106.84	277.43	109.23	276.81	111.05	276.14	111.91	275.87	115.59	274.89
127.15	271.66	127.83	271.51	128.79	271.3	135.92	270.44	138.48	270.26
144.76	269.83	147.26	269.62	163.85	269.47	170.04	269.37	173.65	269.31
179.02	269.67	180.86	269.82	188.72	270.61	191.26	270.81	193.24	271.27
193.46	271.34	196.9	272.3	198.05	272.67	198.46	273.02	198.98	273.49
200.21	274.53	205.65	279.12	222.02	292.44	225.56	295.7		

Manning's n Values num= 6

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.02	104.15	.045	144.76	.05	180.86	.048	193.24	.048
225.56	.048								

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
144.76 180.86 25.39 40.1 41.59 .1 .3

CROSS SECTION RIVER: Segunda Deshecha
REACH: Middle RS: 17383.46

INPUT
Description:
Station Elevation Data num= 25

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	288.64	7.47	288.05	59.74	282.98	66.9	282.09	89.66	277.23
91.41	276.85	93.8	276.34	96.01	275.88	96.05	275.87	102.37	274.02
117.21	270.63	125.29	269.4	133.44	268.71	136.01	268.47	153.03	268.34
163.09	268.18	169.08	268.54	171.14	268.7	179.88	269.38	181.73	269.94
184.62	270.79	185.59	271.14	186.37	272.01	205.74	292.16	208.71	295.71

Manning's n Values num= 2

Sta	n Val	Sta	n Val
0	.02	96.01	.05

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

133.44	171.14		42.97	40.79	32.99	.1	.3

CROSS SECTION RIVER: Segunda Deshecha
REACH: Middle RS: 17342.6*

INPUT
Description:
Station Elevation Data num= 44

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	288.95	7.37	288.35	19.46	287.17	34.21	285.73	39.92	285.1
54.22	283.54	58.97	283.02	62.45	282.56	66.04	282.06	70.41	281.11
77.49	279.53	85.56	277.69	88.51	277.02	90.24	276.63	92.6	276.1
94.78	275.61	94.82	275.6	97.7	274.76	101.06	273.77	101.96	273.55
111.81	271.24	115.71	270.38	119.29	269.82	123.68	269.13	127.5	268.76
131.73	268.27	134.13	268.06	150	267.92	156.26	267.81	159.38	267.76
164.86	268.11	166.74	268.27	171.96	268.74	173.09	268.85	176.22	269.25
178.23	269.85	178.28	269.87	181.36	270.99	182.41	271.43	183.26	272.28
194.41	282.9	203.82	291.94	204.27	292.35	207.49	295.7		

Manning's n Values num= 7

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.02	54.22	.024	94.78	.05	119.29	.048	131.73	.048
166.74	.048	207.49	.048						

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
131.73	166.74	42.97	40.79	32.99	.1	.3

CROSS SECTION RIVER: Segunda Deshecha
REACH: Middle RS: 17301.8*

INPUT
Description:
Station Elevation Data num= 44

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	289.27	7.28	288.65	19.2	287.47	33.77	286.05	39.4	285.34
53.52	283.63	58.21	283.06	61.64	282.57	65.19	282.03	69.5	281.08
76.48	279.44	84.45	277.51	87.36	276.82	89.07	276.41	91.4	275.85
93.55	275.35	93.59	275.34	96.43	274.5	99.75	273.51	100.64	273.29
110.36	270.96	114.21	270.13	117.74	269.56	122.08	268.87	125.85	268.45
130.02	267.83	132.24	267.65	146.97	267.49	152.78	267.4	155.68	267.34
160.64	267.69	162.34	267.84	167.96	268.42	169.18	268.55	172.56	269.11
174.72	269.77	174.78	269.78	178.1	271.19	179.24	271.71	180.15	272.55
192.17	283.1	202.32	292.14	202.8	292.54	206.28	295.7		

Manning's n Values num= 7

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.02	53.52	.029	93.55	.05	117.74	.046	130.02	.046
162.34	.046	206.28	.046						

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
130.02	162.34	42.97	40.79	32.99	.1	.3

CROSS SECTION RIVER: Segunda Deshecha
REACH: Middle RS: 17261.0*

INPUT
Description:
Station Elevation Data num= 44

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	289.58	7.18	288.95	18.95	287.77	33.33	286.36	38.88	285.59
52.82	283.72	57.44	283.1	60.83	282.59	64.33	282	68.59	281.05
75.47	279.36	83.34	277.33	86.21	276.61	87.9	276.19	90.19	275.61
92.32	275.08	92.36	275.07	95.16	274.24	98.43	273.26	99.31	273.03
108.91	270.67	112.7	269.88	116.19	269.3	120.47	268.6	124.19	268.14
128.31	267.39	130.36	267.24	143.94	267.07	149.3	266.98	151.97	266.92
156.41	267.26	157.94	267.41	163.97	268.09	165.28	268.24	168.9	268.98
171.22	269.68	171.28	269.7	174.85	271.38	176.06	272	177.04	272.83
189.93	283.3	200.82	292.35	201.33	292.72	205.06	295.69		

Manning's n Values num= 7

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.02	52.82	.033	92.32	.05	116.19	.044	128.31	.044
157.94	.044	205.06	.044						

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
128.31	157.94	42.97	40.79	32.99	.1	.3

CROSS SECTION RIVER: Segunda Deshecha
REACH: Middle RS: 17220.2*

INPUT
Description:
Station Elevation Data num= 44

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	289.9	7.09	289.24	18.7	288.08	32.88	286.68	38.36	285.83
52.11	283.81	56.68	283.14	60.02	282.6	63.47	281.97	67.67	281.02
74.47	279.27	82.23	277.15	85.06	276.41	86.72	275.97	88.99	275.37
91.09	274.82	91.13	274.81	93.89	273.98	97.12	273.01	97.99	272.77
107.45	270.38	111.2	269.62	114.65	269.04	118.87	268.34	122.54	267.83
126.6	266.94	128.48	266.82	140.92	266.65	145.82	266.56	148.27	266.49
152.19	266.84	153.54	266.97	159.98	267.76	161.37	267.94	165.24	268.84
167.72	269.59	167.79	269.61	171.59	271.58	172.89	272.28	173.93	273.1
187.69	283.51	199.31	292.55	199.86	292.91	203.84	295.69		

Manning's n Values num= 7

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.02	52.11	.037	91.09	.05	114.65	.041	126.6	.041
153.54	.041	203.84	.041						

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
126.6 153.54 42.97 40.79 32.99 .1 .3

CROSS SECTION RIVER: Segunda Deshecha
REACH: Middle RS: 17179.5*

INPUT
Description:
Station Elevation Data num= 44

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	290.21	6.99	289.54	18.45	288.38	32.44	287	37.85	286.08
51.41	283.9	55.91	283.18	59.21	282.62	62.61	281.94	66.76	280.99
73.46	279.19	81.12	276.98	83.92	276.2	85.55	275.74	87.79	275.12
89.86	274.55	89.9	274.54	92.63	273.72	95.81	272.75	96.67	272.51
106	270.09	109.7	269.37	113.1	268.79	117.26	268.07	120.88	267.52
124.89	266.5	126.6	266.41	137.89	266.23	142.34	266.14	144.56	266.07
147.97	266.41	149.14	266.54	155.99	267.43	157.47	267.64	161.58	268.71
164.22	269.51	164.29	269.53	168.33	271.78	169.71	272.57	170.82	273.37
185.45	283.71	197.81	292.76	198.4	293.1	202.62	295.68		

Manning's n Values num= 7

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.02	51.41	.041	89.86	.05	113.1	.039	124.89	.039
149.14	.039	202.62	.039						

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
124.89 149.14 42.97 40.79 32.99 .1 .3

CROSS SECTION RIVER: Segunda Deshecha
REACH: Middle RS: 17138.7*

INPUT
Description:
Station Elevation Data num= 44

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	290.53	6.9	289.84	18.19	288.69	31.99	287.31	37.33	286.32
50.7	283.99	55.15	283.22	58.4	282.63	61.76	281.91	65.84	280.96
72.46	279.1	80.01	276.8	82.77	276	84.38	275.52	86.59	274.88
88.63	274.29	88.66	274.28	91.36	273.46	94.5	272.5	95.34	272.25
104.55	269.81	108.2	269.12	111.55	268.53	115.66	267.8	119.23	267.21
123.18	266.06	124.71	266	134.86	265.8	138.86	265.72	140.86	265.65
143.75	265.99	144.74	266.11	151.99	267.1	153.56	267.33	157.92	268.57
160.71	269.42	160.79	269.44	165.07	271.98	166.54	272.85	167.71	273.64
183.21	283.91	196.3	292.96	196.93	293.29	201.41	295.68		

Manning's n Values num= 7

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.02	50.7	.046	88.63	.05	111.55	.037	123.18	.037
144.74	.037	201.41	.037						

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
123.18 144.74 42.97 40.79 32.99 .1 .3

CROSS SECTION RIVER: Segunda Deshecha
REACH: Middle RS: 17097.92

INPUT
Description: Manual Modification of Manning's N Values
Station Elevation Data num= 24

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	290.84	17.94	288.99	31.55	287.63	36.81	286.57	50	284.08
57.59	282.65	64.93	280.93	71.45	279.02	78.9	276.62	90.09	273.2
94.02	271.99	103.1	269.52	110	268.27	117.57	266.9	121.47	265.62
135.38	265.3	137.15	265.23	140.34	265.68	148	266.77	149.66	267.03
157.29	269.36	180.97	284.11	194.8	293.17	200.19	295.67		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.02	50	.05	110	.035

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
121.47 140.34 40.07 37.62 35.05 .1 .3

CROSS SECTION RIVER: Segunda Deshecha
REACH: Middle RS: 17060.3*

INPUT
Description:
Station Elevation Data num= 47

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	289.18	3.4	288.61	8.73	287.76	17.65	286.55	22.83	285.87
31.03	284.78	31.46	284.69	32.12	284.54	32.35	284.49	36.21	283.62
49.18	280.85	50.48	280.57	53.79	279.87	56.65	279.38	62.42	278.17
63.87	277.85	70.28	276.1	71.32	275.79	75.95	274.49	77.61	274.03
88.62	271.12	92.48	270.1	101.41	267.99	108.2	266.92	109.08	266.78
115.65	265.74	118.22	265.02	119.48	264.66	132.57	264.37	134.24	264.31
137.41	264.71	146.13	265.75	148.03	265.99	148.3	266.06	153.38	267.24
156.72	268.11	157.55	268.53	160.3	269.89	164.29	271.89	183.69	282.18
186.68	283.84	189.85	285.61	190.95	286.22	195.6	288.89	199.45	291.09
201.98	292.18	205.59	293.69						

Manning's n Values num= 8

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.02	22.83	.025	49.18	.05	108.2	.038	109.08	.047
119.48	.035	137.41	.035	205.59	.035				

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

119.48 137.41 40.07 37.62 35.05 .1 .3

CROSS SECTION RIVER: Segunda Deshecha
REACH: Middle RS: 17022.6*

INPUT
Description:
Station Elevation Data num= 47

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	287.52	3.35	286.74	8.58	285.59	17.35	284.12	22.45	283.27
30.52	281.93	30.93	281.83	31.59	281.68	31.81	281.62	35.6	280.68
48.36	277.62	49.64	277.31	52.89	276.54	55.7	276.11	61.39	275.06
62.8	274.76	69.11	273.18	70.14	272.91	74.69	271.81	76.32	271.43
87.14	269.04	90.94	268.2	99.72	266.47	106.4	265.57	107.26	265.45
113.72	264.58	116.25	263.99	117.49	263.7	129.77	263.43	131.33	263.38
134.48	263.74	144.27	264.73	146.39	264.96	146.7	265.01	152.4	266.01
156.14	266.87	157.08	267.24	160.16	268.46	164.64	270.28	186.41	280.25
189.77	281.85	193.32	283.58	194.56	284.15	199.77	286.83	204.09	289
206.94	290.15	210.98	291.71						

Manning's n Values num= 8

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.02	22.45	.03	48.36	.05	106.4	.04	107.26	.045
117.49	.035	134.48	.035	210.98	.035				

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
117.49 134.48 40.07 37.62 35.05 .1 .3

CROSS SECTION RIVER: Segunda Deshecha
REACH: Middle RS: 16985.0*

INPUT
Description:
Station Elevation Data num= 47

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	285.85	3.29	284.87	8.44	283.43	17.06	281.68	22.07	280.67
30	279.08	30.41	278.97	31.05	278.82	31.28	278.75	35	277.73
47.54	274.39	48.8	274.06	52	273.2	54.76	272.83	60.35	271.95
61.74	271.68	67.94	270.26	68.95	270.02	73.42	269.13	75.03	268.84
85.67	266.97	89.4	266.31	98.04	264.94	104.6	264.22	105.45	264.12
111.8	263.43	114.28	262.96	115.51	262.74	126.96	262.5	128.41	262.46
131.54	262.77	142.4	263.7	144.76	263.92	145.1	263.97	151.42	264.79
155.57	265.62	156.61	265.94	160.03	267.03	164.99	268.67	189.14	278.32
192.86	279.85	196.8	281.54	198.16	282.08	203.95	284.76	208.74	286.92
211.89	288.13	216.38	289.73						

Manning's n Values num= 8

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.02	22.07	.035	47.54	.05	104.6	.043	105.45	.043
115.51	.035	131.54	.035	216.38	.035				

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
115.51 131.54 40.07 37.62 35.05 .1 .3

CROSS SECTION RIVER: Segunda Deshecha
REACH: Middle RS: 16947.4*

INPUT
Description:
Station Elevation Data num= 47

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	284.19	3.23	283	8.29	281.26	16.77	279.24	21.69	278.07
29.48	276.22	29.89	276.11	30.52	275.96	30.74	275.88	34.4	274.79
46.73	271.16	47.96	270.8	51.1	269.87	53.82	269.56	59.31	268.84
60.68	268.59	66.77	267.35	67.76	267.13	72.16	266.45	73.73	266.24
84.19	264.89	87.86	264.41	96.35	263.41	102.8	262.87	103.63	262.8
109.87	262.27	112.31	261.93	113.52	261.78	124.15	261.57	125.5	261.53
128.61	261.81	140.54	262.68	143.12	262.88	143.5	262.92	150.44	263.56
155	264.37	156.14	264.65	159.89	265.61	165.35	267.05	191.86	276.4
195.95	277.86	200.27	279.5	201.77	280.01	208.13	282.7	213.39	284.84
216.85	286.1	221.78	287.74						

Manning's n Values num= 8

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.02	21.69	.04	46.73	.05	102.8	.045	103.63	.04
113.52	.035	128.61	.035	221.78	.035				

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
113.52 128.61 40.07 37.62 35.05 .1 .3

CROSS SECTION RIVER: Segunda Deshecha
REACH: Middle RS: 16909.8*

INPUT
Description:
Station Elevation Data num= 47

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	282.53	3.18	281.13	8.15	279.1	16.47	276.81	21.31	275.48
28.97	273.37	29.36	273.26	29.98	273.09	30.2	273.01	33.8	271.84
45.91	267.93	47.12	267.54	50.21	266.54	52.88	266.29	58.27	265.74
59.62	265.51	65.6	264.43	66.58	264.25	70.89	263.78	72.44	263.65
82.72	262.81	86.32	262.52	94.66	261.89	101	261.52	101.82	261.47
107.95	261.11	110.35	260.91	111.53	260.82	121.34	260.63	122.59	260.61
125.68	260.84	138.67	261.66	141.49	261.84	141.9	261.88	149.46	262.34
154.42	263.12	155.67	263.36	159.76	264.18	165.7	265.44	194.58	274.47
199.03	275.87	203.75	277.47	205.38	277.95	212.3	280.63	218.03	282.75
221.8	284.08	227.17	285.76						

Manning's n Values num= 8

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.02	21.31	.045	45.91	.05	101	.047	101.82	.038
111.53	.035	125.68	.035	227.17	.035				

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
111.53	125.68	40.07	37.62	35.05	.1 .3

CROSS SECTION RIVER: Segunda Deshecha
REACH: Middle RS: 16872.22

INPUT
Description: Manual Modification of Manning's N Values
Station Elevation Data num= 28

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	280.87	3.12	279.26	8	276.93	20.93	272.88	28.84	270.4
29.45	270.23	29.66	270.14	46.28	264.28	49.31	263.21	57.23	262.63
65.39	261.36	69.63	261.1	100	260.14	108.38	259.88	109.54	259.86
119.68	259.68	122.75	259.87	140.3	260.83	148.48	261.11	155.2	262.07
159.62	262.75	166.05	263.83	202.12	273.88	207.22	275.43	208.99	275.88
216.48	278.57	226.76	282.05	232.57	283.78				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.02	20.93	.05	100	.035

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
109.54	122.75	29.82	41.19	42.72	.1 .3

CROSS SECTION RIVER: Segunda Deshecha
REACH: Middle RS: 16831.0*

INPUT
Description:
Station Elevation Data num= 58

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	280.94	.77	280.54	3.68	279.07	9.43	276.32	9.78	276.2
10.68	275.92	20.71	272.92	23.73	271.88	24.67	271.57	24.85	271.52
27	270.86	34	268.71	34.3	268.63	34.72	268.53	34.97	268.45
38.4	267.45	39.66	267.11	48.04	264.82	54.56	263.11	58.13	262.18
61.62	261.99	67.14	261.73	67.47	261.71	68.51	261.6	77.09	260.66
81.11	260.51	82.09	260.46	113.4	259.76	117.89	259.65	118.21	259.65
125.23	259.47	127.77	259.37	128.16	259.36	129.14	259.33	134.16	259.18
140.46	258.98	143.37	259.15	144.95	259.29	150	259.7	156.57	260.24
161.72	260.64	162.91	260.71	169.54	261.25	175.96	262.41	180.18	263.21
181.81	263.54	186.04	264.39	186.33	264.44	211.65	271.28	212.69	271.55
213.5	271.78	220.8	273.82	225.67	275.3	227.37	275.74	230.46	276.83
234.52	278.36	244.35	281.87	249.9	283.65				

Manning's n Values num= 9

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.02	24.67	.046	27	.022	113.4	.037	117.89	.037
129.14	.035	133.17	.035	144.95	.035	249.9	.035		

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
129.14	144.95	29.82	41.19	42.72	.1 .3

CROSS SECTION RIVER: Segunda Deshecha
REACH: Middle RS: 16789.8*

INPUT
Description:
Station Elevation Data num= 58

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	281.01	.89	280.55	4.24	278.88	10.86	275.71	11.26	275.56
12.3	275.25	23.85	271.9	27.33	270.64	28.42	270.27	28.62	270.2
31.1	269.45	39.16	267.03	39.5	266.93	39.99	266.83	40.27	266.75
44.23	265.8	45.68	265.48	55.33	263.4	62.84	261.95	66.95	261.15
70.97	260.99	77.33	260.8	77.71	260.79	78.9	260.7	88.79	259.97
93.42	259.87	94.54	259.83	130.61	259.25	135.78	259.17	136.15	259.16
144.24	258.99	147.16	258.86	147.61	258.84	148.74	258.8	154.28	258.57
161.23	258.28	165.07	258.5	167.15	258.7	171.96	259.23	178.23	259.95
183.14	260.46	184.28	260.56	190.6	261.39	196.72	262.74	200.75	263.67
202.3	264.04	206.34	265.01	206.61	265.06	230.75	271.34	231.74	271.59
232.52	271.8	239.48	273.76	244.13	275.17	245.74	275.6	248.69	276.62
252.57	278.16	261.94	281.7	267.23	283.52				

Manning's n Values num= 9

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.02	28.42	.043	31.1	.024	130.61	.039	135.78	.039
148.74	.035	153.43	.035	167.15	.035	267.23	.035		

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
148.74	167.15	29.82	41.19	42.72	.1 .3

CROSS SECTION RIVER: Segunda Deshecha
REACH: Middle RS: 16748.6*

INPUT
Description:
Station Elevation Data num= 58

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	281.07	1	280.57	4.79	278.69	12.29	275.11	12.75	274.92
13.92	274.57	27	270.88	30.93	269.39	32.16	268.96	32.39	268.88
35.19	268.05	44.32	265.34	44.71	265.23	45.26	265.14	45.58	265.06
50.06	264.14	51.7	263.86	62.63	261.99	71.12	260.78	75.78	260.12
80.32	259.98	87.52	259.88	87.95	259.87	89.3	259.8	100.49	259.27
105.73	259.22	107	259.19	147.82	258.75	153.67	258.68	154.09	258.68

163.24	258.51	166.55	258.35	167.06	258.32	168.33	258.27	174.4	257.97
182.01	257.58	186.77	257.85	189.35	258.12	193.93	258.77	199.89	259.66
204.56	260.27	205.64	260.4	211.65	261.53	217.48	263.08	221.31	264.13
222.79	264.54	226.63	265.62	226.89	265.67	249.86	271.4	250.8	271.63
251.54	271.82	258.16	273.71	262.58	275.04	264.12	275.45	266.92	276.41
270.61	277.95	279.52	281.52	284.56	283.39				

Manning's n Values num= 9

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.02	32.16	.039	35.19	.026	147.82	.041	153.67	.041
168.33	.035	173.69	.035	189.35	.035	284.56	.035		

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
168.33	189.35	29.82	41.19	42.72	.1	.3

CROSS SECTION RIVER: Segunda Deshecha
REACH: Middle RS: 16707.4*

INPUT
Description:
Station Elevation Data num= 58

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	281.14	1.12	280.58	5.35	278.5	13.73	274.5	14.23	274.28
15.54	273.9	30.14	269.87	34.53	268.14	35.91	267.65	36.16	267.56
39.29	266.64	49.48	263.66	49.91	263.53	50.53	263.44	50.89	263.37
55.89	262.48	57.72	262.23	69.92	260.58	79.4	259.61	84.6	259.08
89.67	258.98	97.7	258.95	98.19	258.95	99.69	258.91	112.18	258.57
118.04	258.58	119.46	258.56	165.02	258.25	171.56	258.2	172.03	258.2
182.25	258.03	185.94	257.84	186.5	257.81	187.93	257.74	194.52	257.36
202.78	256.89	208.47	257.2	211.54	257.54	215.89	258.3	221.55	259.36
225.98	260.09	227.01	260.24	232.71	261.67	238.24	263.41	241.88	264.58
243.27	265.05	246.92	266.24	247.17	266.28	268.96	271.47	269.85	271.66
270.56	271.85	276.84	273.65	281.04	274.92	282.49	275.31	285.15	276.21
288.65	277.74	297.11	281.35	301.89	283.27				

Manning's n Values num= 9

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.02	35.91	.035	39.29	.027	165.02	.043	171.56	.043
187.93	.035	193.96	.035	211.54	.035	301.89	.035		

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
187.93	211.54	29.82	41.19	42.72	.1	.3

CROSS SECTION RIVER: Segunda Deshecha
REACH: Middle RS: 16666.2*

INPUT
Description:
Station Elevation Data num= 58

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	281.21	1.24	280.59	5.91	278.32	15.16	273.89	15.72	273.64
17.16	273.22	33.28	268.85	38.14	266.89	39.65	266.34	39.93	266.24
43.39	265.24	54.64	261.97	55.12	261.84	55.79	261.74	56.19	261.67
61.72	260.82	63.73	260.61	77.21	259.17	87.68	258.45	93.42	258.05
99.02	257.98	107.89	258.03	108.42	258.03	110.09	258.01	123.88	257.88
130.35	257.94	131.92	257.92	182.23	257.74	189.45	257.71	189.97	257.71
201.25	257.56	205.33	257.32	205.95	257.29	207.53	257.21	214.64	256.76
223.56	256.19	230.16	256.54	233.74	256.95	237.86	257.84	243.21	259.07
247.4	259.9	248.37	260.08	253.77	261.81	259	263.75	262.44	265.04
263.76	265.55	267.21	266.85	267.45	266.89	288.07	271.53	288.91	271.7
289.57	271.87	295.52	273.59	299.49	274.79	300.87	275.17	303.38	276
306.7	277.53	314.7	281.17	319.22	283.14				

Manning's n Values num= 9

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.02	39.65	.031	43.39	.029	182.23	.044	189.45	.044
207.53	.035	214.22	.035	233.74	.035	319.22	.035		

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
207.53	233.74	29.82	41.19	42.72	.1	.3

CROSS SECTION RIVER: Segunda Deshecha
REACH: Middle RS: 16625.0*

INPUT
Description:
Station Elevation Data num= 58

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	281.27	1.36	280.6	6.47	278.13	16.59	273.28	17.2	273
18.78	272.55	36.42	267.83	41.74	265.65	43.4	265.04	43.7	264.93
47.49	263.83	59.8	260.29	60.32	260.14	61.06	260.04	61.5	259.98
67.54	259.17	69.75	258.98	84.5	257.75	95.96	257.28	102.24	257.02
108.37	256.98	118.08	257.1	118.66	257.11	120.49	257.11	135.58	257.18
142.66	257.3	144.37	257.29	199.44	257.24	207.34	257.23	207.91	257.23
220.26	257.08	224.72	256.81	225.4	256.77	227.13	256.68	234.76	256.15
244.33	255.49	251.86	255.89	255.94	256.37	259.82	257.38	264.87	258.78
268.82	259.71	269.74	259.93	274.83	261.94	279.76	264.08	283	265.5
284.25	266.05	287.51	267.47	287.72	267.51	307.17	271.59	307.97	271.74
308.59	271.89	314.2	273.53	317.94	274.66	319.24	275.03	321.62	275.79
324.74	277.33	332.29	280.99	336.55	283.01				

Manning's n Values num= 9

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.02	43.4	.027	47.49	.031	199.44	.046	207.34	.046
227.13	.035	234.48	.035	255.94	.035	336.55	.035		

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
227.13	255.94	29.82	41.19	42.72	.1	.3

CROSS SECTION RIVER: Segunda Deshecha
REACH: Middle RS: 16583.8*

INPUT
Description:
Station Elevation Data num= 58

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	281.34	1.47	280.61	7.03	277.94	18.02	272.67	18.69	272.36
20.4	271.87	39.57	266.82	45.34	264.4	47.14	263.73	47.47	263.61
51.58	262.43	64.96	258.6	65.53	258.44	66.33	258.35	66.8	258.29
73.37	257.51	75.77	257.36	91.79	256.34	104.24	256.12	111.06	255.99
117.72	255.97	128.27	256.18	128.9	256.19	130.88	256.22	147.28	256.49
154.97	256.65	156.83	256.65	216.65	256.73	225.24	256.74	225.85	256.74
239.26	256.6	244.11	256.3	244.85	256.26	246.72	256.15	254.88	255.55
265.11	254.79	273.56	255.24	278.14	255.78	281.79	256.91	286.53	258.48
290.24	259.53	291.1	259.77	295.89	262.08	300.52	264.42	303.57	265.96
304.74	266.56	307.8	268.08	308	268.12	326.28	271.66	327.02	271.77
327.61	271.92	332.88	273.47	336.4	274.53	337.62	274.89	339.85	275.58
342.78	277.12	349.87	280.82	353.88	282.88				

Manning's n Values num= 9

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.02	47.14	.024	51.58	.033	216.65	.048	225.24	.048
246.72	.035	254.74	.035	278.14	.035	353.88	.035		

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
246.72	278.14	29.82	41.19	42.72	.1	.3

CROSS SECTION RIVER: Segunda Deshecha
REACH: Middle RS: 16542.69

INPUT
Description: Manual Modification of Manning's N Values
Station Elevation Data num= 35

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	281.41	1.59	280.62	20.17	271.72	22.02	271.2	42.71	265.8
48.94	263.15	51.24	262.29	55.68	261.02	70.73	256.74	79.2	255.85
81.79	255.73	99.08	254.93	127.07	254.97	138.46	255.25	141.28	255.32
167.28	256.01	233.86	256.23	243.79	256.26	258.27	256.12	264.3	255.74
266.32	255.62	275	254.94	285.88	254.09	295.26	254.59	300.34	255.2
303.75	256.45	308.19	258.19	312.47	259.61	325.23	267.06	328.09	268.7
345.38	271.72	346.08	271.81	346.63	271.94	358.08	275.37	371.21	282.75

Manning's n Values num= 4

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.02	55.68	.035	233.86	.05	275	.035

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
266.32	300.34	31.6	40.08	39.57	.1	.3

CROSS SECTION RIVER: Segunda Deshecha
REACH: Middle RS: 16502.6*

INPUT
Description:
Station Elevation Data num= 72

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	281.67	1.51	280.93	15.5	274.29	19.19	272.55	20.95	272.02
21.49	271.87	24.37	271.09	40.64	266.68	46.57	264.23	48.76	263.42
51.86	262.51	52.98	262.19	54.57	261.73	67.3	258.24	75.36	257.3
77.83	257.14	94.28	256.06	97.22	255.99	103.97	255.82	120.65	255.38
120.91	255.38	131.75	255.49	134.43	255.52	148.66	255.68	159.17	255.7
175.3	255.39	189.89	255.27	202.48	255.16	208.22	255.11	222.52	255.15
231.97	255.17	245.75	255.05	251.49	254.74	253.41	254.63	262.8	254.04
265.48	253.87	274.56	253.28	282.85	253.75	287.35	254.28	291.67	255.49
293.71	256.1	297.31	257.27	299.57	257.92	302.74	258.83	308.38	261.38
309.62	261.92	309.72	261.96	312.72	263.43	317.77	265.83	318.94	266.35
320.01	266.82	322.06	267.67	322.57	267.92	327.18	268.97	330.27	269.67
334.35	270.19	339.5	270.81	343.1	271.54	344.52	271.74	345.41	271.84
346.11	271.97	349.21	272.66	350.22	272.8	355.64	273.96	356.41	274.13
358.79	274.77	360.65	275.16	365.48	277	370.07	278.88	371.51	279.5
372.35	279.91	377.32	282.61						

Manning's n Values num= 10

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.02	52.98	.032	103.97	.022	202.48	.038	222.52	.05
253.41	.035	262.07	.035	270.22	.035	287.35	.035	377.32	.035

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
253.41	287.35	31.6	40.08	39.57	.1	.3

CROSS SECTION RIVER: Segunda Deshecha
REACH: Middle RS: 16462.5*

INPUT
Description:
Station Elevation Data num= 72

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	281.93	1.44	281.24	14.71	275.01	18.21	273.38	19.89	272.84
20.4	272.69	23.12	271.91	38.57	267.57	44.2	265.31	46.27	264.55
49.22	263.67	50.28	263.35	51.79	262.91	63.87	259.74	71.52	258.74
73.86	258.54	89.48	257.19	92.27	257.05	98.67	256.69	114.5	255.8
114.75	255.79	125.04	255.73	127.58	255.71	141.09	255.64	151.06	255.38
166.37	254.72	180.22	254.41	192.17	254.15	197.62	254.03	211.19	254.06
220.16	254.08	233.23	253.98	238.68	253.73	240.5	253.65	250.59	253.14
253.48	252.99	263.23	252.47	270.44	252.9	274.35	253.37	279.6	254.54
282.07	255.11	286.43	256.35	289.17	257.06	293.02	258.05	299.85	260.56

301.35	261.06	301.47	261.11	305.11	262.67	311.23	265.13	312.66	265.64
313.96	266.1	316.44	266.87	317.06	267.14	322.65	268.6	326.39	269.58
331.34	270.05	337.58	270.6	341.95	271.55	343.67	271.76	344.75	271.87
345.59	272	349.35	272.66	350.57	272.69	357.14	273.74	358.07	273.89
360.96	274.61	363.22	274.95	369.07	276.5	374.64	278.21	376.38	278.82
377.4	279.26	383.42	282.47						

Manning's n Values num= 10

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.02	50.28	.03	98.67	.025	192.17	.04	211.19	.05
240.5	.035	249.14	.035	257.27	.035	274.35	.035	383.42	.035

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
240.5	274.35	31.6	40.08	39.57	.1 .3

CROSS SECTION RIVER: Segunda Deshecha
REACH: Middle RS: 16422.4*

INPUT
Description:
Station Elevation Data num= 72

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	282.19	1.36	281.55	13.92	275.72	17.24	274.2	18.82	273.67
19.3	273.51	21.88	272.73	36.5	268.45	41.82	266.38	43.79	265.68
46.57	264.82	47.58	264.52	49.01	264.09	60.45	261.24	67.68	260.19
69.9	259.95	84.67	258.32	87.32	258.1	93.38	257.56	108.36	256.21
108.59	256.21	118.33	255.96	120.74	255.91	133.52	255.6	142.96	255.07
157.44	254.05	170.55	253.56	181.85	253.15	187.01	252.96	199.85	252.98
208.34	252.99	220.72	252.92	225.87	252.73	227.6	252.66	238.39	252.24
241.47	252.11	251.91	251.65	258.04	252.06	261.35	252.45	267.52	253.58
270.42	254.13	275.55	255.43	278.77	256.2	283.29	257.28	291.32	259.75
293.09	260.21	293.23	260.25	297.5	261.91	304.7	264.44	306.37	264.93
307.9	265.38	310.81	266.07	311.54	266.36	318.11	268.24	322.51	269.49
328.32	269.92	335.66	270.38	340.79	271.57	342.81	271.78	344.08	271.9
345.07	272.03	349.48	272.65	350.93	272.58	358.65	273.51	359.74	273.64
363.13	274.45	365.78	274.74	372.67	275.99	379.21	277.55	381.26	278.14
382.45	278.62	389.53	282.33						

Manning's n Values num= 10

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.02	47.58	.027	93.38	.027	181.85	.043	199.85	.05
227.6	.035	236.21	.035	244.31	.035	261.35	.035	389.53	.035

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
227.6	261.35	31.6	40.08	39.57	.1 .3

CROSS SECTION RIVER: Segunda Deshecha
REACH: Middle RS: 16382.3*

INPUT
Description:
Station Elevation Data num= 72

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	282.45	1.28	281.85	13.13	276.43	16.26	275.03	17.75	274.49
18.21	274.32	20.64	273.55	34.43	269.34	39.45	267.46	41.31	266.81
43.93	265.98	44.88	265.68	46.23	265.27	57.02	262.73	63.84	261.64
65.93	261.35	79.87	259.45	82.36	259.16	88.08	258.43	102.21	256.63
102.43	256.62	111.62	256.2	113.89	256.1	125.95	255.57	134.85	254.75
148.51	253.38	160.88	252.71	171.54	252.14	176.4	251.88	188.52	251.89
196.52	251.9	208.2	251.85	213.06	251.72	214.69	251.68	226.18	251.33
229.47	251.24	240.59	250.84	245.63	251.22	248.36	251.53	255.45	252.62
258.78	253.15	264.67	254.52	268.37	255.34	273.57	256.5	282.79	258.93
284.82	259.35	284.98	259.4	289.9	261.15	298.16	263.75	300.08	264.23
301.84	264.66	305.19	265.27	306.03	265.58	313.57	267.87	318.63	269.41
325.31	269.79	333.73	270.17	339.63	271.58	341.96	271.8	343.41	271.93
344.56	272.06	349.62	272.64	351.28	272.47	360.15	273.28	361.41	273.4
365.3	274.28	368.35	274.53	376.26	275.49	383.77	276.89	386.13	277.47
387.51	277.98	395.64	282.19						

Manning's n Values num= 10

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.02	44.88	.025	88.08	.03	171.54	.045	188.52	.05
214.69	.035	223.28	.035	231.36	.035	248.36	.035	395.64	.035

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
214.69	248.36	31.6	40.08	39.57	.1 .3

CROSS SECTION RIVER: Segunda Deshecha
REACH: Middle RS: 16342.2*

INPUT
Description:
Station Elevation Data num= 72

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	282.71	1.2	282.16	12.34	277.15	15.28	275.86	16.68	275.31
17.11	275.14	19.4	274.38	32.36	270.22	37.08	268.54	38.82	267.94
41.29	267.13	42.19	266.85	43.45	266.45	53.59	264.23	60.01	263.08
61.97	262.76	75.07	260.58	77.41	260.21	82.79	259.31	96.07	257.04
96.28	257.03	104.9	256.44	107.04	256.3	118.37	255.53	126.74	254.44
139.58	252.7	151.2	251.86	161.22	251.14	165.8	250.81	177.18	250.81
184.71	250.81	195.68	250.78	200.25	250.72	201.78	250.7	213.98	250.43
217.46	250.36	229.26	250.03	233.22	250.37	235.36	250.62	243.37	251.66
247.13	252.16	253.79	253.6	257.97	254.48	263.84	255.72	274.26	258.11
276.56	258.5	276.74	258.54	282.29	260.38	291.63	263.05	293.8	263.52
295.78	263.94	299.56	264.47	300.51	264.8	309.04	267.51	314.75	269.32
322.29	269.65	331.81	269.95	338.48	271.6	341.1	271.83	342.75	271.96
344.04	272.08	349.76	272.64	351.64	272.36	361.66	273.06	363.07	273.16
367.48	274.12	370.92	274.32	379.86	274.98	388.34	276.22	391.01	276.79

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  392.56  277.33  401.74  282.05

Manning's n Values          num=      10
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
       0     .02   42.19    .022   82.79    .032  161.22    .047  177.18     .05
  201.78    .035  210.35    .035  218.41    .035  235.36    .035  401.74    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        201.78  235.36              31.6   40.08   39.57             .1      .3

CROSS SECTION          RIVER: Segunda Deshecha
REACH: Middle             RS: 16302.18

INPUT
Description: Manual Modification of Manning's N Values
Station Elevation Data     num=      42
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  282.97   11.55  277.86   16.02  275.96   18.16   275.2   38.65  268.29
   40.67  267.63   72.46  261.27   77.49  260.18   89.92  257.46   110.8  255.49
  130.65  252.03  141.53  251.01  150.91  250.13  155.19  249.73  188.87  249.71
  205.46  249.48  217.94  249.22  222.37   249.7  235.49  251.18  247.57  253.62
  265.73  257.29  268.29  257.64  268.49  257.69  274.68  259.62  285.09  262.36
  289.72  263.22  293.94  263.67   304.5  267.14  310.87  269.23  319.28  269.52
  329.89  269.74  337.32  271.61   349.9  272.63  351.99  272.25  363.16  272.83
  364.74  272.92  369.65  273.96  383.45  274.48  392.91  275.56  395.88  276.11
  397.61  276.69  407.85  281.91

Manning's n Values          num=       4
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
       0     .02   77.49    .035  150.91     .05  205.46    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        188.87  222.37            100.14     102      93             .1      .3

CROSS SECTION          RIVER: Segunda Deshecha
REACH: Middle             RS: 16200.16

INPUT
Description: Manual Modification of Manning's N Values
Station Elevation Data     num=      48
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  283.21    3.86  282.11   22.53  274.97   35.08  273.79   36.41  273.62
   50.16  271.83   54.27  270.88   76.03  269.38   76.23  269.37   87.55  266.34
   92.75  264.31  102.57   262.8  108.67  261.09  130.21  256.02  154.54  251.38
  158.64  250.59  160.54  250.03  164.42  249.37  173.71  249.02  197.51  248.19
  227.41  247.14  232.05  247.13  244.24  246.35  262.64  245.94  280.78  244.42
  296.83  243.01  313.56  243.08  316.41  243.09  345.93  242.52     346  242.52
  347.38  242.61  350.08  242.77  353.33  243.03  364.47  243.97  370.41  244.42
  375.23  244.56  384.84  245.98   391.4  246.73  403.55  248.34  404.71  248.49
  405.17  248.57  413.19  251.62  415.24  252.91  418.11  255.27  434.35  270.86
  438.39  274.73  441.61  276.15  455.09  283.78

Manning's n Values          num=       4
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
       0     .02   36.41    .035  197.51     .05  364.47    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        316.41  353.33            221.67  418.95  380.88             .1      .3

CROSS SECTION          RIVER: Segunda Deshecha
REACH: Middle             RS: 15781.23

INPUT
Description: Manual Modification of Manning's N Values
Station Elevation Data     num=      25
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  269.58    4.62  268.99    19.6  265.12   28.89  262.59    32.1  261.61
      40  258.51   45.57  256.33    67.7  246.02    72.3  243.85   73.69  243.64
      80  242.85   84.24  242.31  100.42  240.26  103.73  240.35  104.82  240.34
  126.83  240.12     129  240.83  132.17  241.44  141.51  243.26  144.02  244.75
  149.15   247.1  169.71  259.11  183.99  267.37  186.53  268.22  190.17  269.41

Manning's n Values          num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035      40     .05  141.51    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         73.69  141.51            154.85  143.53  133.68             .1      .3

CROSS SECTION          RIVER: Segunda Deshecha
REACH: Middle             RS: 15637.70

INPUT
Description: Manual Modification of Manning's N Values
Station Elevation Data     num=      26
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  268.81   30.29  265.78   53.06  262.87    65.2  260.36   66.99  260.02
   70.89  258.53   80.78  255.92   95.85  247.49   106.2  243.24  107.94  242.89
  108.93  242.69  109.58   242.6  128.03  240.11   129.4  239.95  131.53  239.98
  159.79   240.7  160.69  240.98  162.15  241.44  169.38  243.14  171.67  244.87
  184.88  254.86  191.19   259.5  198.83  264.49  201.19  266.01  202.42  266.96
  210.33  269.88

Manning's n Values          num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035   80.78     .05  131.53    .035

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

106.2	169.38		198.97	278.52	323.48		.1	.3	

CROSS SECTION RIVER: Segunda Deshecha
REACH: Middle RS: 15359.17

INPUT
Description: Manual Modification of Manning's N Values
Station Elevation Data num= 34

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	269.05	6.68	268.16	89.39	258.67	114.91	256.71	121.65	255.71
126.19	254.82	155.99	248.68	171.28	243.73	173.83	242.84	174.83	242.72
177.89	242.39	179.7	242.21	195.59	240.65	214.45	240.11	251.94	238.4
264.21	238.86	273.34	239.42	294.89	240.72	300.44	241.51	304.85	242.81
305.74	243.5	308.08	243.95	313.71	245.2	318.58	247.08	327.79	250.81
332.92	253.5	345.97	257.12	349.04	257.77	388.98	263.61	393.75	264.07
395.67	264.32	397.64	265.01	402.11	266.07	421.83	269.05		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.035	179.7	.05	264.21	.035

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
173.83	304.85	431.34	415.23	165.81	.1	.3

CROSS SECTION RIVER: Segunda Deshecha
REACH: Middle RS: 14943.94

INPUT
Description: Manual Modification of Manning's N Values
Station Elevation Data num= 39

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	269.54	10.7	265.07	21.23	260.46	24.79	258.62	27.45	257.25
30.74	255.19	36.81	251.4	37.97	250.61	38.63	250.09	45.93	243.92
48.61	243.1	67.2	243.33	75	243.55	84.69	243.83	105.61	243.31
112.67	243.13	187.13	242.24	190.19	243.2	191.88	243.07	194.78	242.88
198.05	243.06	207.76	246.92	210.56	248	211.91	248.02	231.76	249.15
246.15	252.71	247.23	253.07	247.76	253.15	261.97	255.79	263.35	255.86
313.04	256.91	315.33	256.94	321.44	256.97	352.94	256.91	364.8	257.2
427.12	260.6	457.15	263.32	484.94	267.79	495.84	269.6		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.035	24.79	.05	75	.035

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
112.67	190.19	421 92	386.21	221.67	.1	.3

CROSS SECTION RIVER: Segunda Deshecha
REACH: Middle RS: 14557.73

INPUT
Description: Manual Modification of Manning's N Values
Station Elevation Data num= 41

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	268.2	8.44	263.58	12	261.73	18.36	257.45	31.51	248.63
32.63	247.9	35.85	245.79	36.29	245.49	42.68	242.46	43.36	242.44
51.28	242.45	52.82	242.45	54.51	242.45	74.67	244.98	92.06	247.15
94.24	247.39	99.17	247.36	106.15	247.13	126.99	246.45	146.75	244.61
168.51	242.2	171.63	241.92	194.46	241.75	208.82	242.2	212.69	242.68
226.94	247.31	230.85	248.71	236.54	249.4	246.23	250.56	318.74	252.76
329.32	253.24	332.11	253.46	339.39	253.86	405.7	257.27	428.54	260.14
450.63	262.52	472.68	263.88	479.42	264.3	490.55	266.02	509.54	268.64
512.82	269.02								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.035	51.28	.05	92.06	.035

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
168.51	208.82	317.84	306.82	311.99	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
888	F		

CROSS SECTION RIVER: Segunda Deshecha
REACH: Middle RS: 14250.91

INPUT
Description: Manual Modification of Manning's N Values
Station Elevation Data num= 35

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	268.09	4.64	265.15	25.27	250.88	34.53	244.44	37.73	243.28
40.32	242.41	46.84	243.29	60.9	245.17	72.8	246.32	112.45	246.94
115	246.99	119.17	247.08	127.15	246.62	176.11	243.77	180.21	243.52
187.49	243.23	263.76	241.15	267.84	241.17	270.64	241.18	291.32	242.65
299.57	244.6	300.71	244.82	303.62	246.1	310.22	249.13	320.78	251.56
323.17	252.67	340.72	257.72	357.51	261.58	357.6	261.59	358.45	261.7
375.38	263.63	395.46	265.31	405.8	266.53	438.28	268.8	446.13	269.03

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.035	72.8	.05	115	.035

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
187.49	291.32	339.91	371.3	484.49	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
888	F		

CROSS SECTION RIVER: Segunda Deshecha
REACH: Middle RS: 13879.61

INPUT
Description: Manual Modification of Manning's N Values
Station Elevation Data num= 30

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	268.84	5.16	266.99	24.31	260.75	43.11	255.38	44.81	254.85
45.76	254.42	65.04	245.58	75.26	242.96	76.9	242.53	78.15	242.32
79.64	242.27	87.06	241.99	105	241.3	127.57	240.44	151.45	239.98
152.62	239.95	201.12	238.86	266.48	238.38	292.49	237.67	316.52	238.08
346.87	239.09	361.8	240.41	380.31	242.14	381.06	242.22	381.51	242.36
381.56	242.38	434.49	261.94	435	262.23	437.58	262.96	453.45	268.59

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.035	105	.05	151.45	.035

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
127.57	361.8	253.3	221.01 198.85	.1	.3

CROSS SECTION RIVER: Segunda Deshecha
REACH: Middle RS: 13658.61

INPUT
Description: Manual Modification of Manning's N Values
Station Elevation Data num= 47

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	268.44	8.95	264.7	15.19	262.34	32.16	258.13	44.94	254.64
70.44	248.54	80.2	245.41	83.81	244.77	93.56	242.46	110.05	242.07
113.28	241.93	130.26	241.21	143	241.21	194.39	241.57	199.03	241.63
201.86	241.61	211.57	241.91	264.66	243.57	281.53	244.09	305.13	244
313.55	243.65	330.4	243.32	344.25	242.81	351.81	242.53	363.03	241.41
383.97	241.42	385.14	241.34	405.28	240.76	408.94	240.36	417.56	239.38
425.66	238.05	426.51	237.88	426.85	237.86	427.24	237.79	438.09	238.97
444.66	239	531.91	239.14	533.1	239.14	533.26	239.15	545.55	240.36
561.39	242.22	566.46	243.41	583.19	249.87	593.73	255.11	622.6	262.46
645.41	268.55	647.09	269.07						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.035	305.13	.05	344.25	.035

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
408.94	545.55	200.27	233.03 284.94	.1	.3

CROSS SECTION RIVER: Segunda Deshecha
REACH: Middle RS: 13425.58

INPUT
Description: Manual Modification of Manning's N Values
Station Elevation Data num= 35

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	268.83	.64	268.75	4.19	268.21	5.07	267.91	16.07	262.99
27.46	258.68	41.29	253.51	48.3	251.22	69.22	244.97	80.5	243.59
87.72	242.28	96.3	241.83	155.73	242.6	169.79	242.79	214.8	243.42
244.52	243.84	285	242.15	296.62	241.66	325.66	240.42	360.76	238.97
372.35	238.45	376.68	238.46	384.96	238.45	439.63	238.54	440.73	238.57
446.33	238.67	467.69	239.61	468.53	239.67	473.08	240.38	491.01	243.05
494.86	244.52	521.56	257.12	538.2	262.37	566.46	268.78	568.24	269.2

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.035	244.52	.05	285	.035

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
325.66	473.08	218.01	207.85 191.91	.1	.3

CROSS SECTION RIVER: Segunda Deshecha
REACH: Middle RS: 13217.74

INPUT
Description: Manual Modification of Manning's N Values
Station Elevation Data num= 38

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	270.55	5.25	268.74	9.86	266.88	10.98	266.46	33.41	256.64
33.5	256.62	55.5	250.01	70.25	244.43	84.3	242.21	84.41	242.17
84.44	242.17	84.5	242.17	84.72	242.17	173.99	242.88	200	243.09
210.69	243.18	256.24	241.91	267.7	241.59	320.09	240.33	324.99	240.22
371.49	240.32	387.15	240.85	402.15	241.81	404.13	242.26	406.69	243.65
407.02	243.8	415.58	247.72	419.26	249.08	428.28	252.43	437.88	255.01
451.93	258.28	466.17	261.79	477.94	263.81	495.41	265.83	505.87	267.76
518.94	268.83	524.98	269.06	527.24	269.35				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.035	200	.05	267.7	.035

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
320.09	371.49	496.88	444.4 90.46	.1	.3

CROSS SECTION RIVER: Segunda Deshecha
REACH: Middle RS: 12773.34

INPUT
Description:
Station Elevation Data num= 61

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	262.93	1.55	262.82	6.4	260.57	31.12	249.51	50.33	247.39
51.35	247.16	51.83	247.05	53.52	247.17	62.65	246.96	75.04	246.19
81.04	246.13	117.8	246.39	129.67	246.38	130.64	246.26	138.19	246.35
169.06	245.9	183.23	245.74	225.85	245.6	267.79	244.85	287.55	245.29
298.73	245.54	308.67	244.73	314.79	244.23	326.9	244.11	337.18	242.88
348.39	241.86	356.18	240.2	364.8	239.61	374.46	238.22	379.34	237.52
384.52	237.01	406.11	236.84	422.37	236.89	425.58	236.76	430.71	236.45
433.89	236.45	451.4	236.92	478.6	237.6	479.25	237.62	503.57	238.24
558.37	239.79	576.29	239.93	583.27	239.96	613.77	240.06	649.83	240.4
657.6	240.48	673.81	240.63	714.13	240.26	725.42	241.47	738.05	241.6
750.85	242.16	756.56	242.48	762.27	243.87	766.94	244.88	767.54	244.95
768.74	245.38	774.76	248.07	790.94	255.48	797.19	257.37	811.68	262.27
812.28	262.32								

Manning's n Values num= 4

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.02	308.67	.05	479.25	.02	649.83	.035

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
384.52 451.4 3901.58 3886.51 3962.26 .3 .5

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
888	F		
888	F		

CULVERT RIVER: Segunda Deshecha
REACH: Middle RS: 12770

INPUT
Description:
Distance from Upstream XS = 3
Deck/Roadway Width = 3700
Weir Coefficient = 2.6
Upstream Deck/Roadway Coordinates
num= 2

Sta Hi Cord	Lo Cord	Sta Hi Cord	Lo Cord
0	260	850	260

Upstream Bridge Cross Section Data
Station Elevation Data num= 61

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	262.93	1.55	262.82	6.4	260.57	31.12	249.51	50.33	247.39
51.35	247.16	51.83	247.05	53.52	247.17	62.65	246.96	75.04	246.19
81.04	246.13	117.8	246.39	129.67	246.38	130.64	246.26	138.19	246.35
169.06	245.9	183.23	245.74	225.85	245.6	267.79	244.85	287.55	245.29
298.73	245.54	308.67	244.73	314.79	244.23	326.9	244.11	337.18	242.88
348.39	241.86	356.18	240.2	364.8	239.61	374.46	238.22	379.34	237.52
384.52	237.01	406.11	236.84	422.37	236.89	425.58	236.76	430.71	236.45
433.89	236.45	451.4	236.92	478.6	237.6	479.25	237.62	503.57	238.24
558.37	239.79	576.29	239.93	583.27	239.96	613.77	240.06	649.83	240.4
657.6	240.48	673.81	240.63	714.13	240.26	725.42	241.47	738.05	241.6
750.85	242.16	756.56	242.48	762.27	243.87	766.94	244.88	767.54	244.95
768.74	245.38	774.76	248.07	790.94	255.48	797.19	257.37	811.68	262.27
812.28	262.32								

Manning's n Values num= 4

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.02	308.67	.05	479.25	.02	649.83	.035

Bank Sta: Left Right Coeff Contr. Expan.
384.52 451.4 .3 .5

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
888	F		
888	F		

Downstream Deck/Roadway Coordinates
num= 2

Sta Hi Cord	Lo Cord	Sta Hi Cord	Lo Cord
0	160	800	160

Downstream Bridge Cross Section Data
Station Elevation Data num= 33

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	157.58	2.25	156.67	11.7	152.45	12.57	152.04	43.61	138.74
50.83	137.86	56.18	136.89	65.02	137.18	84.53	137.83	113.76	138.8
114.01	138.8	114.3	138.8	160.38	137.63	167.32	137.46	188.89	136.91
199.87	136.99	221.8	137.88	236.72	138.05	316.34	138.2	320.49	138.2
320.76	138.19	331.84	137.78	364.62	136.26	374.55	137.05	380.72	137.62
381.45	138.12	387.67	142.44	397.57	148.83	400.14	149.91	405.94	151.63
423.2	155.26	432.57	157.5	433.46	157.67				

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	65.02	.05	160.38	.02	320.76	.05	381.45	.035

Bank Sta: Left Right Coeff Contr. Expan.
43.61 114.01 .3 .5

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
888	F		
888	F		

Upstream Embankment side slope = 0 horiz. to 1.0 vertical
Downstream Embankment side slope = .0 horiz. to 1.0 vertical
Maximum allowable submergence for weir flow = .95
Elevation at which weir flow begins =

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

Number of Culverts = 1

Culvert Name	Shape	Rise	Span
Culvert #1	Box	14	14

FHWA Chart # 8 - flared wingwalls
FHWA Scale # 1 - Wingwall flared 30 to 75 deg.
Solution Criteria = Highest U.S. EG

Culvert	Upstrm Dist	Length	n Value	Entrance Loss Coef	Exit Loss Coef
	3	3700	.02	.8	1

Upstream Elevation = 236.6
Centerline Station = 434
Downstream Elevation = 137.2
Centerline Station = 60

CULVERT OUTPUT Profile #Q100
Culvert ID : Culvert #1

Culv Q (cfs)	1619.00	Culv Ful Lngh (ft)	
# Barrels	1	Culv Vel US (ft/s)	15.50
Q Barrel (cfs)	1619.00	Culv Vel DS (ft/s)	24.38
E.G. US. (ft)	250.78	Culv Inv El Up (ft)	236.60
W.S. US. (ft)	249.55	Culv Inv El Dn (ft)	137.20
E.G. DS (ft)	148.28	Culv Frctn Ls (ft)	96.62
W.S. DS (ft)	144.55	Culv Ext Lss (ft)	2.89
Delta EG (ft)	102.49	Culv Ent Lss (ft)	2.98
Delta WS (ft)	105.00	Q Weir (cfs)	
E.G. IC (ft)	248.41	Weir Sta Lft (ft)	
E.G. OC (ft)	250.78	Weir Sta Rgt (ft)	
Culvert Control	Outlet	Weir Submerg	
Culv WS Inlet (ft)	244.06	Weir Max Depth (ft)	
Culv WS Outlet (ft)	141.94	Weir Avg Depth (ft)	
Culv Nml Depth (ft)	4.74	Wr Flw Area (sq ft)	
Culv Crt Depth (ft)	7.46	Min El Weir Flow (ft)	260.01

Note: During supercritical analysis, the culvert direct step method went to normal depth. The program then assumed normal depth at the outlet.
Note: The flow in the culvert is entirely supercritical.

CROSS SECTION RIVER: Segunda Deshecha
REACH: Middle RS: 8886.856

INPUT
Description:
Station Elevation Data num= 33

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	157.58	2.25	156.67	11.7	152.45	12.57	152.04	43.61	138.74
50.83	137.86	56.18	136.89	65.02	137.18	84.53	137.83	113.76	138.8
114.01	138.8	114.3	138.8	160.38	137.63	167.32	137.46	188.89	136.91
199.87	136.99	221.8	137.88	236.72	138.05	316.34	138.2	320.49	138.2
320.76	138.19	331.84	137.78	364.62	136.26	374.55	137.05	380.72	137.62
381.45	138.12	387.67	142.44	397.57	148.83	400.14	149.91	405.94	151.63
423.2	155.26	432.57	157.5	433.46	157.67				

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	65.02	.05	160.38	.02	320.76	.05	381.45	.035

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
43.61	114.01	31.73	35.51	36.42	.3	.5

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
888	F		
888	F		

CROSS SECTION RIVER: Segunda Deshecha
REACH: Middle RS: 8851.34*

INPUT
Description:
Station Elevation Data num= 60

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	157.34	1.74	156.63	2.94	156.08	5.36	154.9	8.35	153.62
15.27	151.1	16.4	150.67	19.42	149.6	22.43	148.37	24.62	147.54
27.51	146.36	28.52	145.95	29.86	145.53	30.81	145.26	31.07	145.18
44.55	141.33	53.12	138.88	56.91	137.78	62.91	137.06	67.36	136.27
75.17	136.5	75.55	136.51	93.63	137.03	102.97	137.3	120.71	137.83
120.94	137.83	121.19	137.83	132.74	137.68	160.93	137.32	166.6	137.25
166.92	137.25	170.02	137.21	174.77	137.15	185.52	136.96	194.99	137.09
201.37	137.37	213.91	138.38	218.28	138.62	226.77	139.02	232.25	139.23
257.72	139.89	295.44	140.69	299.02	140.76	299.25	140.75	308.81	140.61
331.63	140.07	337.08	139.94	345.64	140.73	348.31	141	350.97	141.27
351.6	141.68	356.96	145.21	363.23	149.05	365.5	150.43	367.72	151.31
372.72	152.72	380.93	154.39	387.6	155.74	395.68	157.59	396.45	157.73

Manning's n Values num= 10

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	30.81	.038	56.91	.047	76.38	.047	120.94	.023
160.93	.023	170.02	.035	299.25	.047	351.6	.035	396.45	.035

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
56.91	120.94	31.73	35.51	36.42	.1	.3

CROSS SECTION RIVER: Segunda Deshecha

REACH: Middle RS: 8815.83*

INPUT
Description:
Station Elevation Data num= 60

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	157.1	2.15	156.22	3.62	155.48	6.61	153.95	10.3	152.43
18.84	149.75	20.24	149.29	23.96	148.15	27.67	146.67	30.37	145.73
33.94	144.32	35.18	143.83	36.84	143.45	38.02	143.2	38.33	143.14
54.96	139.86	65.53	137.78	70.21	136.82	75	136.26	78.54	135.65
85.73	135.82	86.08	135.83	102.73	136.23	111.33	136.44	127.66	136.86
127.87	136.86	128.08	136.86	137.79	136.9	161.49	137.01	166.25	137.03
166.52	137.03	169.13	137.04	173.12	137.06	182.15	137.01	190.11	137.18
195.48	137.44	206.01	138.88	209.68	139.29	216.83	139.99	221.43	140.41
242.83	141.65	274.54	143.17	277.55	143.31	277.75	143.31	285.78	143.44
304.96	143.59	309.54	143.61	316.74	144.4	318.98	144.67	321.21	144.92
321.74	145.23	326.25	147.98	331.52	150.97	333.43	152.02	335.29	152.71
339.49	153.82	346.4	155.14	352.01	156.22	358.8	157.68	359.44	157.8

Manning's n Values num= 10

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	38.02	.041	70.21	.044	87.75	.044	127.87	.026
161.49	.026	169.13	.035	277.75	.044	321.74	.035	359.44	.035

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
70.21	127.87	31.73	35.51	36.42	.1	.3

CROSS SECTION RIVER: Segunda Deshecha
REACH: Middle RS: 8780.32*

INPUT
Description:
Station Elevation Data num= 60

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	156.86	2.56	155.8	4.31	154.89	7.86	153.01	12.25	151.23
22.4	148.39	24.07	147.92	28.49	146.7	32.91	144.97	36.12	143.92
40.37	142.29	41.85	141.72	43.81	141.36	45.22	141.15	45.59	141.1
65.38	138.4	77.94	136.67	83.51	135.86	87.08	135.46	89.73	135.03
96.29	135.15	96.62	135.16	111.83	135.43	119.68	135.58	134.61	135.88
134.81	135.88	134.98	135.89	142.84	136.13	162.04	136.7	165.9	136.82
166.12	136.82	168.23	136.88	171.47	136.98	178.79	137.06	185.24	137.28
189.58	137.52	198.12	139.38	201.09	139.97	206.88	140.96	210.61	141.58
227.95	143.42	253.65	145.66	256.08	145.87	256.24	145.88	262.75	146.27
278.29	147.11	282	147.29	287.83	148.08	289.65	148.34	291.46	148.56
291.89	148.79	295.54	150.75	299.81	152.89	301.36	153.62	302.87	154.11
306.27	154.91	311.86	155.9	316.41	156.7	321.91	157.78	322.44	157.86

Manning's n Values num= 10

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	45.22	.044	83.51	.041	99.11	.041	134.81	.029
162.04	.029	168.23	.035	256.24	.041	291.89	.035	322.44	.035

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
83.51	134.81	31.73	35.51	36.42	.1	.3

CROSS SECTION RIVER: Segunda Deshecha
REACH: Middle RS: 8744.81*

INPUT
Description:
Station Elevation Data num= 60

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	156.62	2.96	155.39	4.99	154.3	9.12	152.06	14.2	150.04
25.97	147.04	27.9	146.55	33.03	145.25	38.15	143.28	41.88	142.12
46.8	140.25	48.51	139.6	50.79	139.27	52.42	139.1	52.85	139.06
75.79	136.93	90.36	135.57	96.81	134.9	99.16	134.66	100.91	134.41
106.86	134.48	107.15	134.48	120.92	134.64	128.04	134.71	141.56	134.91
141.74	134.91	141.87	134.92	147.89	135.35	162.6	136.39	165.55	136.6
165.72	136.61	167.34	136.72	169.81	136.9	175.42	137.11	180.36	137.37
183.69	137.59	190.22	139.88	192.5	140.65	196.93	141.93	199.79	142.75
213.07	145.19	232.75	148.14	234.61	148.42	234.74	148.44	239.72	149.1
251.62	150.63	254.46	150.97	258.93	151.75	260.32	152	261.71	152.21
262.03	152.35	264.83	153.52	268.1	154.81	269.28	155.22	270.44	155.5
273.05	156	277.33	156.65	280.81	157.18	285.03	157.87	285.43	157.93

Manning's n Values num= 10

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	52.42	.047	96.81	.038	110.47	.038	141.74	.032
162.6	.032	167.34	.035	234.74	.038	262.03	.035	285.43	.035

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
96.81	141.74	31.73	35.51	36.42	.1	.3

CROSS SECTION RIVER: Segunda Deshecha
REACH: Middle RS: 8709.304

INPUT
Description:
Station Elevation Data num= 32

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	156.38	3.37	154.98	10.37	151.12	16.15	148.84	37.57	143.8
43.39	141.58	47.63	140.31	53.23	138.22	55.18	137.49	57.77	137.18
59.62	137.05	60.11	137.02	86.2	135.46	102.77	134.46	110.11	133.94
112.09	133.79	117.42	133.81	136.4	133.85	148.67	133.94	152.94	134.57
165.2	136.38	166.44	136.56	168.16	136.82	177.79	137.67	183.91	141.33
188.97	143.92	198.19	146.96	224.95	154.15	230.99	155.67	236.39	156.73
242.8	157.41	248.42	157.99						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.035	59.62	.05	166.44	.035

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
110.11	148.67	35.44	39.19	42.1	.1	.3

CROSS SECTION RIVER: Segunda Deshecha
REACH: Middle RS: 8670.11*

INPUT
Description:
Station Elevation Data num= 60

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	156.6	3.78	155.29	4.83	154.82	11.63	151.81	18.12	149.7
32.9	146.64	42.15	144.79	48.68	142.77	53.44	141.59	59.72	139.69
61.91	139.03	64.82	138.7	66.89	138.54	67.44	138.5	80.77	137.57
81	137.55	81.11	137.54	81.28	137.53	81.93	137.45	96.71	135.79
97.94	135.65	100.66	135.33	112.44	134	115.3	133.83	117.19	133.7
118.4	133.62	120.1	133.5	123.54	133.28	127.51	133.06	132.24	133.09
132.4	133.09	149.79	133.17	161.04	133.28	165.67	133.82	167.71	134.06
175.1	135.04	177.8	135.44	178.96	135.6	180.3	135.8	182.17	136.07
182.9	136.14	189.55	136.8	192.61	137.16	199.24	140.55	199.98	140.88
204.73	142.92	206.6	143.46	206.91	143.55	211.92	145.18	214.72	146.03
220.51	147.52	226.5	149.02	236.74	151.74	243.73	153.57	250.28	155.2
253.62	155.89	256.13	156.38	263.08	157.27	264.79	157.48	269.17	158.02

Manning's n Values num= 8

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	66.89	.047	118.4	.038	123.54	.035	161.04	.035
177.8	.035	180.3	.035	269.17	.035				

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
123.54	161.04	35.44	39.19	42.1	.1	.3

CROSS SECTION RIVER: Segunda Deshecha
REACH: Middle RS: 8630.92*

INPUT
Description:
Station Elevation Data num= 60

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	156.83	4.19	155.59	5.35	155.17	12.9	152.5	20.09	150.56
36.48	147.54	46.73	145.78	53.97	143.97	59.25	142.88	66.21	141.17
68.64	140.57	71.86	140.22	74.16	140.02	74.77	139.98	89.54	138.83
89.81	138.81	89.92	138.8	90.11	138.77	90.84	138.66	107.22	136.11
108.59	135.9	111.6	135.42	124.66	133.39	127.84	133.19	129.93	133.05
131.27	132.97	133.15	132.84	136.97	132.61	142.93	132.33	147.23	132.37
147.37	132.37	163.19	132.49	173.41	132.61	178.4	133.07	180.59	133.27
188.56	134.23	191.47	134.65	192.72	134.83	194.17	135.03	196.18	135.32
196.97	135.41	204.14	136.18	207.43	136.66	214.57	139.77	215.37	140.08
220.49	141.92	222.51	142.43	222.83	142.52	228.23	144.26	231.26	145.11
237.49	146.65	243.95	148.16	254.98	151.07	262.51	153	269.57	154.73
273.17	155.5	275.88	156.04	283.37	157.13	285.2	157.39	289.93	158.04

Manning's n Values num= 8

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	74.16	.045	131.27	.04	136.97	.035	173.41	.035
191.47	.035	194.17	.035	289.93	.035				

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
136.97	173.41	35.44	39.19	42.1	.1	.3

CROSS SECTION RIVER: Segunda Deshecha
REACH: Middle RS: 8591.73*

INPUT
Description:
Station Elevation Data num= 60

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	157.05	4.6	155.9	5.88	155.52	14.16	153.19	22.06	151.42
40.05	148.44	51.32	146.77	59.26	145.16	65.06	144.16	72.7	142.64
75.37	142.11	78.91	141.73	81.43	141.51	82.1	141.45	98.32	140.08
98.61	140.06	98.74	140.05	98.95	140.02	99.74	139.87	117.74	136.44
119.23	136.16	122.54	135.51	136.88	132.77	140.37	132.56	142.67	132.41
144.14	132.32	146.21	132.18	150.39	131.95	158.35	131.6	162.22	131.64
162.35	131.65	176.58	131.81	185.78	131.95	191.13	132.32	193.48	132.48
202.02	133.42	205.14	133.86	206.48	134.05	208.03	134.27	210.18	134.57
211.03	134.67	218.72	135.56	222.24	136.15	229.91	139	230.76	139.28
236.24	140.91	238.41	141.4	238.76	141.48	244.55	143.33	247.79	144.18
254.48	145.78	261.39	147.3	273.22	150.39	281.3	152.42	288.86	154.26
292.71	155.12	295.62	155.69	303.65	156.99	305.62	157.31	310.68	158.07

Manning's n Values num= 8

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	81.43	.043	144.14	.043	150.39	.035	185.78	.035
205.14	.035	208.03	.035	310.68	.035				

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
150.39	185.78	35.44	39.19	42.1	.1	.3

CROSS SECTION RIVER: Segunda Deshecha
REACH: Middle RS: 8552.54*

INPUT
Description:
Station Elevation Data num= 60

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev

0	157.27	5.01	156.21	6.4	155.87	15.43	153.88	24.03	152.28
43.63	149.34	55.9	147.76	64.56	146.35	70.86	145.45	79.2	144.11
82.1	143.65	85.95	143.25	88.7	143	89.43	142.93	107.1	141.34
107.42	141.32	107.56	141.3	107.78	141.26	108.65	141.08	128.25	136.77
129.88	136.41	133.49	135.6	149.11	132.16	152.9	131.93	155.4	131.77
157.01	131.67	159.26	131.52	163.82	131.29	173.77	130.87	177.21	130.92
177.32	130.93	189.97	131.13	198.15	131.28	203.86	131.56	206.37	131.69
215.48	132.61	218.81	133.07	220.24	133.27	221.9	133.5	224.19	133.82
225.1	133.93	233.3	134.94	237.06	135.65	245.24	138.22	246.15	138.49
252	139.91	254.31	140.37	254.69	140.45	260.86	142.41	264.32	143.26
271.46	144.9	278.84	146.45	291.46	149.72	300.08	151.84	308.15	153.79
312.26	154.73	315.37	155.35	323.93	156.85	326.03	157.22	331.44	158.1

Manning's n Values num= 8

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	88.7	.04	157.01	.045	163.82	.035	198.15	.035
218.81	.035	221.9	.035	331.44	.035				

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
163.82	198.15	35.44	39.19	42.1	.1	.3

CROSS SECTION RIVER: Segunda Deshecha
REACH: Middle RS: 8513.35*

INPUT
Description:
Station Elevation Data num= 60

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	157.5	5.42	156.51	6.93	156.22	16.69	154.56	26	153.14
47.2	150.24	60.48	148.74	69.85	147.55	76.67	146.73	85.69	145.59
88.83	145.19	93	144.77	95.97	144.48	96.76	144.41	115.88	142.6
116.22	142.57	116.37	142.56	116.62	142.51	117.55	142.28	138.76	137.1
140.52	136.67	144.43	135.68	161.33	131.54	165.44	131.29	168.14	131.12
169.88	131.02	172.32	130.86	177.25	130.62	189.19	130.14	192.2	130.2
192.3	130.2	203.37	130.45	210.52	130.62	216.58	130.81	219.25	130.9
228.94	131.8	232.48	132.29	234	132.49	235.76	132.74	238.2	133.07
239.16	133.2	247.88	134.32	251.88	135.14	260.57	137.44	261.54	137.69
267.76	138.91	270.22	139.34	270.61	139.41	277.18	141.48	280.85	142.33
288.44	144.03	296.28	145.59	309.7	149.04	318.86	151.26	327.44	153.32
331.81	154.35	335.11	155	344.21	156.71	346.45	157.13	352.2	158.12

Manning's n Values num= 8

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	95.97	.038	169.88	.047	177.25	.035	210.52	.035
232.48	.035	235.76	.035	352.2	.035				

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
177.25	210.52	35.44	39.19	42.1	.1	.3

CROSS SECTION RIVER: Segunda Deshecha
REACH: Middle RS: 8474.166

INPUT
Description:
Station Elevation Data num= 33

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	157.72	7.45	156.57	50.78	151.14	124.66	143.86	125.03	143.83
125.19	143.81	125.45	143.75	126.46	143.49	151.17	136.92	155.37	135.77
173.55	130.93	180.88	130.48	182.75	130.37	185.37	130.2	190.68	129.96
204.61	129.41	207.19	129.48	222.89	129.95	232.14	130.11	242.4	130.99
246.15	131.5	253.23	132.46	262.46	133.7	276.93	136.89	286.12	138.31
286.54	138.38	293.49	140.56	305.42	143.16	313.73	144.73	327.94	148.37
351.36	153.96	366.86	157.04	372.95	158.15				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.035	182.75	.05	246.15	.035

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
190.68	222.89	112.66	163.55	194.39	.1	.3

CROSS SECTION RIVER: Segunda Deshecha
REACH: Middle RS: 8310.613

INPUT
Description:
Station Elevation Data num= 33

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	157.05	37.7	152.72	49.32	151	54.85	150.64	75.31	147.92
92.37	145.35	109.5	142.19	133.82	137.49	151.52	135.12	159.49	133.41
161.82	132.75	181.92	131.28	184.99	131.04	205.5	129.54	220.17	128.46
228.32	127.87	238.41	127.15	245.71	126.85	263.56	126.96	289.04	126.74
289.7	126.8	293.5	127.16	297.43	127.49	317.24	129.27	324.99	129.67
328.5	130.03	334.1	131.03	346.05	135.89	347.49	136.29	353	139.24
355.12	140.62	375.68	151.24	386.27	158.53				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.035	220.17	.05	297.43	.035

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
238.41	293.5	0	0	0	.1	.3

Profile Output Table - Standard Table 1

Reach	River Sta	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
		(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	

Middle	19097.73	955.00	314.22	317.30	318.42	320.95	0.100040	19.32	66.11	36.16
1.98										
Middle	18895.59	955.00	307.44	310.15	311.67	315.47	0.136958	20.47	54.36	28.25
2.26										
Middle	18682.44	955.00	294.86	298.31	300.63	307.64	0.180540	28.05	42.85	19.40
2.70										
Middle	18488.77	955.00	288.47	291.32	293.24	298.90	0.183359	23.70	45.49	24.14
2.61										
Middle	18278.93	955.00	287.18	289.33	290.03	291.69	0.042040	12.13	81.67	50.54
1.51										
Middle	17982.24	955.00	275.67	281.30	282.30	283.86	0.038573	13.24	79.36	38.35
1.21										
Middle	17818.87	955.00	272.91	279.52	277.39	279.91	0.003343	5.21	201.93	51.09
0.40										
Middle	17624.04	955.00	274.98	277.77	277.77	278.87	0.008108	5.01	142.28	70.93
0.55										
Middle	17383.46	955.00	268.18	271.60	270.76	272.04	0.007845	5.73	187.15	73.04
0.56										
Middle	17097.92	955.00	265.23	268.91	268.91	270.09	0.009982	9.72	116.85	49.39
0.92										
Middle	16872.22	955.00	259.68	261.65	262.12	263.23	0.041381	13.13	103.00	88.68
1.69										
Middle	16542.69	955.00	254.09	256.26	256.51	257.06	0.025822	9.01	154.66	227.99
1.28										
Middle	16302.18	955.00	249.22	251.18	251.37	252.15	0.029746	9.04	126.91	95.78
1.22										
Middle	16200.16	955.00	242.52	250.97	244.78	250.98	0.000052	0.87	1307.06	254.79
0.05										
Middle	15781.23	955.00	240.12	250.93		250.96	0.000095	1.31	775.51	98.56
0.07										
Middle	15637.70	955.00	239.95	250.92		250.95	0.000067	1.41	734.89	89.97
0.08										
Middle	15359.17	955.00	238.40	250.93		250.93	0.000014	0.62	1627.67	182.94
0.03										
Middle	14943.94	955.00	242.24	250.92		250.93	0.000023	0.83	1352.98	201.40
0.05										
Middle	14557.73	955.00	241.75	250.91	244.29	250.92	0.000029	0.99	1315.88	229.71
0.06										
Middle	14250.91	955.00	241.15	250.91	243.45	250.91	0.000011	0.61	1904.13	292.73
0.04										
Middle	13879.61	1028.00	237.67	250.91		250.91	0.000002	0.30	3699.57	351.22
0.02										
Middle	13658.61	1028.00	237.79	250.91		250.91	0.000001	0.26	4740.55	524.74
0.01										
Middle	13425.58	1028.00	238.45	250.91		250.91	0.000002	0.29	4176.51	459.04
0.01										
Middle	13217.74	1028.00	240.22	250.91		250.91	0.000004	0.40	3159.70	371.65
0.02										
Middle	12773.34	1619.00	236.45	249.55	243.97	250.78	0.002917	8.88	182.32	746.97
0.43										
Middle	12770	Culvert								
Middle	8886.856	1619.00	136.89	141.64	144.54	151.67	0.051875	25.41	63.72	349.69
0.43										
Middle	8709.304	1619.00	133.79	137.15	136.86	137.93	0.014796	8.02	244.59	113.77
0.78										
Middle	8474.166	1619.00	129.41	132.63	132.63	133.75	0.022242	9.12	193.79	87.35
0.94										
Middle	8310.613	1619.00	126.74	130.04	129.52	130.59	0.010003	6.38	279.70	129.90
0.63										

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

```
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 E1
Project File : PME1.prj
Run Date and Time: 12/9/02 6:03:19 PM

Project in English units

Project Description:
AIO Alternative - Segunda Deshecha Canada Crossing

PLAN DATA

Plan Title: Existing Flow/Proposed-Ultimate Geometry
Plan File : p:\2PDA0104\Hydr\LHS\Modeling\Model E\HecRas E\PME1.p03

Geometry Title: Proposed Conditions - Ultimate
Geometry File : p:\2PDA0104\Hydr\LHS\Modeling\Model E\HecRas E\PME1.g03

Flow Title : Existing Conditions
Flow File : p:\2PDA0104\Hydr\LHS\Modeling\Model E\HecRas E\PME1.f01

Plan Summary Information:
Number of: Cross Sections = 88 Mulitple Openings = 0
Culverts = 1 Inline Weirs = 0
Bridges = 0

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

Computation Options
Critical depth computed 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 : p:\2PDA0104\Hydr\LHS\Modeling\Model E\HecRas E\PME1.f01

Flow Data (cfs)

River	Reach	RS	Q2	Q5	Q10	Q25	Q50	Q100	Q100HC
Segunda	DeshechaMiddle	19097.73	3	35	84	307	638	955	2538
Segunda	DeshechaMiddle	13879.61	4	40	94	335	689	1028	2717
Segunda	DeshechaMiddle	12773.34	8	68	158	553	1062	1619	4245

Boundary Conditions

River	Reach	Profile	Upstream	Downstream
Segunda	DeshechaMiddle	Q2	Normal S = .1	Normal S = .01
Segunda	DeshechaMiddle	Q5	Normal S = .1	Normal S = .01
Segunda	DeshechaMiddle	Q10	Normal S = .1	Normal S = .01
Segunda	DeshechaMiddle	Q25	Normal S = .1	Normal S = .01
Segunda	DeshechaMiddle	Q50	Normal S = .1	Normal S = .01
Segunda	DeshechaMiddle	Q100	Normal S = .1	Normal S = .01
Segunda	DeshechaMiddle	Q100HC	Normal S = .1	Normal S = .01

GEOMETRY DATA

Geometry Title: Proposed Conditions - Ultimate
Geometry File : p:\2PDA0104\Hydr\LHS\Modeling\Model E\HecRas E\PME1.g03

CROSS SECTION RIVER: Segunda Deshecha
REACH: Middle RS: 19097.73

INPUT
Description: Manual Modification of Manning's N Values
Station Elevation Data num= 28

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	334.84	15.2	331.65	22.18	329.36	26.11	328.07	31.03	326.33
42.32	319.84	45.5	318.01	49.22	316.08	51.33	315.34	57.93	314.51
59.6	314.29	61.46	314.22	63.41	314.5	71.45	315.65	80.72	316.65
91.91	319.83	106.46	323.85	115.16	326.07	115.85	326.18	117.58	326.92
121.78	327.63	125.66	328.05	129.93	328.54	149.92	330.82	176.76	333.99
178.47	334.19	182.14	334.44	184.82	334.54				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.02	22.18	.05	91.91	.02

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
57.93	63.41	41.72	40.43	34.01	.1	.3

CROSS SECTION RIVER: Segunda Deshecha
REACH: Middle RS: 19057.3*

INPUT
Description:
Station Elevation Data num= 46

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	333.64	3.16	332.82	3.36	332.77	3.9	332.62	13.91	329.9
20.3	327.5	23.9	326.15	28.41	324.36	34.85	320.55	38.74	318.26
41.65	316.54	43.18	315.71	45.06	314.75	46.99	314.04	49.33	313.64
53.03	313.17	54.13	313.02	54.82	312.94	56.81	312.86	59.89	313.16
64.53	313.8	67.13	314.21	74.66	315.16	75.48	315.28	78.75	316.28
83.26	317.64	85.55	318.33	90.41	319.78	97.72	321.99	98.65	322.27
106.48	324.49	107.1	324.61	108.66	325.29	110.92	325.76	112.44	326.04
115.93	326.51	119.78	327.04	120.5	327.14	131.43	328.67	137.77	329.54
138.24	329.6	157.26	332.1	161.93	332.7	163.47	332.89	166.78	333.17
169.19	333.3								

Manning's n Values num= 7

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.026	20.3	.05	53.03	.02	59.89	.02	85.55	.02
97.72	.02	169.19	.02						

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
53.03	59.89	41.72	40.43	34.01	.1	.3

CROSS SECTION RIVER: Segunda Deshecha
REACH: Middle RS: 19016.8*

INPUT
Description:
Station Elevation Data num= 46

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	332.44	2.87	331.53	3.05	331.47	3.54	331.3	12.63	328.15
18.43	325.64	21.69	324.23	25.78	322.39	31.63	318.83	35.16	316.67
37.8	315.06	39.19	314.27	40.89	313.41	42.65	312.74	44.78	312.27
48.13	311.83	49.3	311.67	50.04	311.6	52.17	311.51	56.37	311.82
60.49	312.37	62.81	312.77	69.5	313.76	70.23	313.91	73.14	314.88
77.15	316.16	79.19	316.84	83.51	318.25	90.01	320.42	90.83	320.69
97.8	322.9	98.35	323.04	99.74	323.66	101.75	324.17	103.1	324.45
106.2	324.96	109.62	325.54	110.26	325.65	119.99	327.31	125.62	328.25
126.04	328.33	142.95	330.82	147.11	331.4	148.48	331.59	151.41	331.89
153.56	332.06								

Manning's n Values num= 7

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.032	18.43	.05	48.13	.02	56.37	.02	79.19	.02
90.01	.02	153.56	.02						

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
48.13	56.37	41.72	40.43	34.01	.1	.3

CROSS SECTION RIVER: Segunda Deshecha
REACH: Middle RS: 18976.4*

INPUT
Description:
Station Elevation Data num= 46

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	331.23	2.57	330.24	2.74	330.17	3.18	329.97	11.34	326.4
16.55	323.79	19.48	322.32	23.16	320.43	28.41	317.1	31.58	315.09
33.95	313.59	35.2	312.84	36.73	312.08	38.3	311.44	40.22	310.89
43.23	310.49	44.47	310.31	45.26	310.25	47.52	310.15	52.86	310.48
56.46	310.94	58.49	311.33	64.35	312.37	64.99	312.54	67.54	313.48
71.05	314.69	72.83	315.34	76.61	316.71	82.3	318.84	83.02	319.11
89.12	321.32	89.6	321.47	90.81	322.03	92.58	322.58	93.76	322.86
96.48	323.42	99.47	324.04	100.03	324.15	108.54	325.96	113.47	326.97
113.84	327.05	128.65	329.54	132.28	330.11	133.48	330.29	136.05	330.62
137.93	330.83								

Manning's n Values num= 7

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.038	16.55	.05	43.23	.02	52.86	.02	72.83	.02

```
    82.3     .02  137.93     .02

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         43.23   52.86             41.72   40.43   34.01            .1       .3

CROSS SECTION          RIVER: Segunda Deshecha
REACH: Middle             RS: 18936.0*

INPUT
Description:
Station Elevation Data    num=      46
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  330.03    2.28  328.94    2.43  328.87    2.82  328.65   10.06  324.65
   14.68  321.93   17.28   320.4   20.53  318.46   25.19  315.37      28  313.51
   30.11  312.12   31.21   311.4   32.57  310.75   33.96  310.14   35.66  309.52
   38.33  309.15   39.65  308.96   40.48   308.9   42.88   308.8   49.34  309.14
   52.43   309.5   54.17   309.9   59.19  310.97   59.74  311.17   61.93  312.08
   64.94  313.22   66.47  313.85   69.71  315.17   74.59  317.27   75.21  317.53
   80.44  319.74   80.85   319.9   81.89   320.4    83.4  320.99   84.42  321.27
   86.75  321.87   89.31  322.54   89.79  322.66    97.1  324.61  101.33  325.69
  101.64  325.77  114.34  328.26  117.46  328.81  118.48  328.99  120.69  329.35
   122.3  329.59

Manning's n Values        num=       7
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
       0    .044   14.68     .05   38.33    .02   49.34    .02   66.47    .02
   74.59    .02   122.3     .02

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         38.33   49.34             41.72   40.43   34.01            .1       .3

CROSS SECTION          RIVER: Segunda Deshecha
REACH: Middle             RS: 18895.59

INPUT
Description: Manual Modification of Manning's N Values
Station Elevation Data    num=      23
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  328.83    1.99  327.65    2.12  327.57    2.46  327.32   21.97  313.64
   27.22  309.97    31.1  308.14   33.43  307.81   34.82   307.6   38.23  307.44
   45.82   307.8    48.4  308.07   54.04  309.58   56.32  310.68   58.83  311.75
   62.81  313.63   66.88  315.69   74.23   319.4   79.56  321.17   85.65  323.26
   89.44  324.49  100.03  326.98  106.67  328.35

Manning's n Values        num=       2
     Sta   n Val     Sta   n Val
       0    .05   66.88     .02

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         33.43   45.82             37.41   42.63   45.04            .1       .3

CROSS SECTION          RIVER: Segunda Deshecha
REACH: Middle             RS: 18852.9*

INPUT
Description:
Station Elevation Data    num=      42
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  328.58    2.28  327.39    2.43  327.31    2.82  327.07    8.58  323.62
   11.24  322.04   11.68  321.77   12.07   321.5   22.28  314.63   23.47  313.76
   25.16  312.54   30.05  309.01   31.17   308.2   31.65  307.93    33.4  306.96
   35.61  305.92   36.04  305.82   38.28  305.28   39.43  305.09   42.25  304.92
   42.57  304.92    49.5  305.26    50.9  305.52   52.24  305.81   57.45  307.59
   58.22  307.85   60.64  309.05   63.31  310.26   67.53  312.34   69.06  313.12
   71.85  314.51   79.65  318.38    80.8   318.8   80.98  318.86   81.15  318.91
   84.31  319.85   85.31  320.14   91.77  322.09   95.79  323.25  107.03  325.74
   109.2  326.17  114.08  327.03

Manning's n Values        num=       7
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
       0    .044    8.58    .026   38.28    .02    49.5    .02   71.85    .02
    80.8    .02  114.08     .02

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         38.28   49.5              37.41   42.63   45.04            .1       .3

CROSS SECTION          RIVER: Segunda Deshecha
REACH: Middle             RS: 18810.3*

INPUT
Description:
Station Elevation Data    num=      42
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  328.32    2.57  327.13    2.73  327.05    3.17  326.81    9.67  323.46
   12.67  321.91   13.16  321.64    13.6  321.35    25.1  313.85   26.44  312.85
   28.34  311.44   33.85  307.37   35.11  306.43   35.66  306.09   37.63  304.87
   40.12   303.7   40.61  303.54   43.13  302.75   44.04  302.59   46.28  302.41
   46.91  302.41   53.18  302.73   54.66  303.09   56.08  303.55   61.59  305.79
   62.41  306.11   64.97  307.42   67.78  308.78   72.25  311.04   73.86  311.89
   76.82  313.33   85.07  317.36   86.28  317.84   86.47   317.9   86.66  317.95
      90  318.84   91.05  319.11   97.89  320.93  102.14  322.02  114.03  324.49
  116.33  324.94  121.48   325.7

Manning's n Values        num=       7
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
       0    .038    9.67    .032   43.13    .02   53.18    .02   76.82    .02
   86.28    .02  121.48     .02
```

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
43.13 53.18 37.41 42.63 45.04 .1 .3

CROSS SECTION RIVER: Segunda Deshecha
REACH: Middle RS: 18767.7*

INPUT
Description:
Station Elevation Data num= 42

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	328.07	2.86	326.86	3.04	326.78	3.53	326.56	10.76	323.29
14.09	321.79	14.64	321.51	15.13	321.21	27.92	313.07	29.41	311.94
31.53	310.35	37.66	305.73	39.06	304.67	39.66	304.25	41.86	302.77
44.63	301.48	45.17	301.27	47.97	300.22	48.65	300.08	50.3	299.89
51.25	299.89	56.86	300.19	58.42	300.67	59.91	301.29	65.73	303.99
66.59	304.38	69.29	305.79	72.26	307.29	76.97	309.75	78.67	310.65
81.79	312.15	90.49	316.34	91.77	316.89	91.97	316.94	92.17	316.98
95.69	317.82	96.8	318.08	104.01	319.76	108.49	320.78	121.03	323.25
123.45	323.7	128.89	324.38						

Manning's n Values num= 7

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.032	10.76	.038	47.97	.02	56.86	.02	81.79	.02
91.77	.02	128.89	.02						

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
47.97 56.86 37.41 42.63 45.04 .1 .3

CROSS SECTION RIVER: Segunda Deshecha
REACH: Middle RS: 18725.0*

INPUT
Description:
Station Elevation Data num= 42

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	327.81	3.14	326.6	3.35	326.52	3.89	326.3	11.84	323.13
15.52	321.66	16.12	321.39	16.66	321.06	30.74	312.3	32.39	311.03
34.71	309.25	41.46	304.08	43.01	302.9	43.67	302.41	46.09	300.68
49.14	299.25	49.74	299	52.82	297.69	53.26	297.58	54.33	297.38
55.59	297.38	60.54	297.66	62.18	298.25	63.75	299.02	69.87	302.19
70.77	302.64	73.61	304.16	76.74	305.81	81.69	308.45	83.48	309.42
86.76	310.97	95.91	315.33	97.25	315.93	97.46	315.98	97.67	316.02
101.38	316.81	102.54	317.05	110.13	318.6	114.84	319.54	128.03	322.01
130.58	322.47	136.29	323.05						

Manning's n Values num= 7

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.026	11.84	.044	52.82	.02	60.54	.02	86.76	.02
97.25	.02	136.29	.02						

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
52.82 60.54 37.41 42.63 45.04 .1 .3

CROSS SECTION RIVER: Segunda Deshecha
REACH: Middle RS: 18682.44

INPUT
Description: Manual Modification of Manning's N Values
Station Elevation Data num= 24

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	327.56	12.93	322.96	16.94	321.54	17.6	321.26	18.19	320.91
33.56	311.52	35.36	310.12	45.27	302.44	47.68	300.57	50.32	298.59
54.3	296.73	57.67	295.16	58.35	294.86	59.93	294.86	64.22	295.12
65.94	295.83	74.01	300.39	88.29	308.18	102.74	314.97	102.96	315.02
103.18	315.06	107.07	315.8	137.7	321.24	143.7	321.73		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.02	12.93	.05	102.74	.02

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
57.67 64.22 36.39 38.74 40.88 .1 .3

CROSS SECTION RIVER: Segunda Deshecha
REACH: Middle RS: 18643.7*

INPUT
Description:
Station Elevation Data num= 41

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	325.24	3.44	324.15	9.22	322.3	12.99	321.13	13.41	320.98
17.57	319.49	18.26	319.21	18.87	318.88	28.38	313.6	34.41	310.2
34.82	309.96	35.1	309.75	36.68	308.61	40.6	305.79	46.96	301.2
49.46	299.4	51.53	297.95	52.2	297.48	56.25	295.5	56.33	295.47
59.83	293.96	61.33	293.58	62.6	293.58	67.53	293.9	69.41	294.66
70.69	295.32	78.22	299.19	91.39	305.76	93.82	306.95	95.17	307.54
103.4	311.11	108.47	313.27	109.6	313.68	109.84	313.73	110.08	313.77
111.26	313.96	114.33	314.46	118.42	315.09	141.89	319.01	147.78	319.87
154.34	320.36								

Manning's n Values num= 8

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.02	3.44	.026	13.41	.05	59.83	.02	67.53	.02
70.69	.02	109.6	.02	154.34	.02				

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
59.83 67.53 36.39 38.74 40.88 .1 .3

CROSS SECTION RIVER: Segunda Deshecha
REACH: Middle RS: 18604.9*

INPUT
Description:
Station Elevation Data num= 41

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	322.93	3.57	321.91	9.55	320.2	13.45	319.16	13.9	319
18.21	317.45	18.92	317.16	19.55	316.85	29.41	311.89	35.65	308.64
36.07	308.39	36.36	308.2	38.01	307.1	42.07	304.38	48.66	299.97
51.25	298.23	53.39	296.82	54.09	296.36	58.28	294.24	58.36	294.21
61.99	292.75	64.31	292.3	65.26	292.3	70.84	292.68	72.88	293.48
74.27	294.14	82.44	297.98	96.71	304.56	99.35	305.73	100.81	306.32
109.74	309.92	115.24	312.06	116.46	312.4	116.72	312.44	116.98	312.47
118.26	312.65	121.59	313.12	126.02	313.71	151.48	317.74	157.87	318.49
164.98	318.99								

Manning's n Values num= 8

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.02	3.57	.032	13.9	.05	61.99	.02	70.84	.02
74.27	.02	116.46	.02	164.98	.02				

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
61.99	70.84	36.39	38.74	40.88	.1	.3

CROSS SECTION RIVER: Segunda Deshecha
REACH: Middle RS: 18566.2*

INPUT
Description:
Station Elevation Data num= 41

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	320.61	3.69	319.68	9.88	318.11	13.92	317.18	14.38	317.01
18.84	315.4	19.58	315.11	20.23	314.82	30.43	310.18	36.89	307.08
37.33	306.83	37.63	306.64	39.33	305.58	43.53	302.98	50.35	298.73
53.03	297.06	55.25	295.69	55.97	295.25	60.31	292.98	60.4	292.94
64.14	291.55	67.3	291.03	67.93	291.03	74.15	291.46	76.35	292.31
77.85	292.96	86.65	296.78	102.03	303.36	104.88	304.5	106.45	305.1
116.07	308.72	122.01	310.84	123.32	311.11	123.61	311.15	123.89	311.18
125.26	311.34	128.85	311.78	133.63	312.33	161.07	316.46	167.95	317.12
175.61	317.61								

Manning's n Values num= 8

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.02	3.69	.038	14.38	.05	64.14	.02	74.15	.02
77.85	.02	123.32	.02	175.61	.02				

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
64.14	74.15	36.39	38.74	40.88	.1	.3

CROSS SECTION RIVER: Segunda Deshecha
REACH: Middle RS: 18527.5*

INPUT
Description:
Station Elevation Data num= 41

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	318.3	3.82	317.44	10.22	316.01	14.39	315.21	14.87	315.03
19.48	313.35	20.23	313.07	20.91	312.79	31.46	308.48	38.13	305.52
38.58	305.27	38.89	305.09	40.65	304.07	45	301.57	52.05	297.49
54.82	295.89	57.11	294.57	57.85	294.13	62.34	291.71	62.43	291.68
66.3	290.34	70.28	289.75	70.59	289.75	77.46	290.24	79.81	291.13
81.42	291.78	90.86	295.57	107.36	302.16	110.41	303.28	112.1	303.88
122.41	307.53	128.77	309.63	130.19	309.83	130.49	309.86	130.79	309.89
132.26	310.04	136.11	310.44	141.23	310.96	170.65	315.19	178.04	315.74
186.25	316.24								

Manning's n Values num= 8

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.02	3.82	.044	14.87	.05	66.3	.02	77.46	.02
81.42	.02	130.19	.02	186.25	.02				

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
66.3	77.46	36.39	38.74	40.88	.1	.3

CROSS SECTION RIVER: Segunda Deshecha
REACH: Middle RS: 18488.77

INPUT
Description: Manual Modification of Manning's N Values
Station Elevation Data num= 22

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	315.98	3.94	315.21	10.55	313.91	14.86	313.23	32.48	306.77
39.37	303.96	40.16	303.53	46.46	300.17	58.97	293.44	64.37	290.45
68.46	289.14	73.26	288.47	80.77	289.02	85	290.6	112.68	300.96
117.74	302.66	128.75	306.34	135.54	308.41	139.26	308.73	148.84	309.58
180.24	313.92	196.89	314.87						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.02	3.94	.05	85	.02

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
68.46	80.77	39.47	41.97	40.29	.1	.3

CROSS SECTION RIVER: Segunda Deshecha
REACH: Middle RS: 18446.8*

INPUT
Description:
Station Elevation Data num= 48

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	314.54	3.95	313.82	9.43	312.83	10.59	312.59	11.81	312.38
14.91	311.85	19.09	310.44	26.45	307.73	32.59	305.59	35.32	304.55
39.51	302.75	40.3	302.32	41.88	301.49	44.44	300.18	46.62	299.04
55.09	294.6	56.98	293.61	59.18	292.58	64.59	289.99	65.97	289.58
66.11	289.54	68.7	288.81	69.18	288.75	73.99	288.49	75.14	288.42
77.39	288.27	78.31	288.21	84.76	288.71	88.82	290.07	88.86	290.09
95.16	292.3	100.04	294.36	102.64	295.42	108.48	297.59	111.16	298.5
115.71	300.04	116.35	300.23	120.62	301.55	121.78	301.9	131.3	304.83
137.89	306.69	138.75	306.78	141.5	307.12	146	307.7	150.79	308.14
162.36	309.68	181.25	312.01	197.4	312.93				

Manning's n Values num= 8

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.02	3.95	.044	11.81	.026	68.7	.02	82.19	.02
84.76	.02	88.86	.02	197.4	.02				

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
68.7	84.76	39.47	41.97	40.29	.1	.3

CROSS SECTION RIVER: Segunda Deshecha
REACH: Middle RS: 18404.8*

INPUT
Description:
Station Elevation Data num= 48

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	313.09	3.97	312.43	9.46	311.51	10.62	311.27	11.85	311.05
14.96	310.48	19.15	309.18	26.55	306.45	32.71	304.41	35.44	303.43
39.64	301.54	40.44	301.12	42.02	300.28	44.6	299.03	46.78	297.92
55.28	293.58	57.18	292.6	59.38	291.73	64.82	289.52	66.19	289.16
66.34	289.11	68.94	288.48	69.66	288.4	76.88	288.21	78.6	288.14
81.98	288.01	83.36	287.95	88.75	288.41	92.69	289.56	92.73	289.57
98.83	291.57	103.55	293.81	106.07	294.93	111.74	297.02	114.33	297.79
118.75	299.11	119.36	299.28	123.51	300.44	124.63	300.75	133.86	303.32
140.24	304.97	141.08	305.07	143.74	305.52	148.1	306.26	152.74	306.7
163.95	308.13	182.26	310.11	197.92	310.99				

Manning's n Values num= 8

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.02	3.97	.038	11.85	.032	68.94	.02	85.57	.02
88.75	.02	92.73	.02	197.92	.02				

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
68.94	88.75	39.47	41.97	40.29	.1	.3

CROSS SECTION RIVER: Segunda Deshecha
REACH: Middle RS: 18362.8*

INPUT
Description:
Station Elevation Data num= 48

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	311.65	3.98	311.04	9.49	310.2	10.66	309.96	11.89	309.72
15.01	309.1	19.22	307.92	26.64	305.17	32.82	303.23	35.57	302.32
39.78	300.33	40.58	299.91	42.17	299.08	44.75	297.88	46.94	296.79
55.47	292.55	57.38	291.59	59.59	290.87	65.04	289.06	66.42	288.73
66.57	288.69	69.17	288.16	70.14	288.04	79.77	287.93	82.06	287.87
86.56	287.75	88.4	287.7	92.74	288.1	96.55	289.05	96.59	289.06
102.5	290.83	107.07	293.26	109.51	294.44	114.99	296.44	117.51	297.09
121.78	298.19	122.38	298.34	126.39	299.33	127.47	299.6	136.41	301.81
142.59	303.25	143.4	303.36	145.98	303.91	150.2	304.82	154.7	305.27
165.55	306.58	183.28	308.2	198.43	309.04				

Manning's n Values num= 8

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.02	3.98	.032	11.89	.038	69.17	.02	88.96	.02
92.74	.02	96.59	.02	198.43	.02				

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
69.17	92.74	39.47	41.97	40.29	.1	.3

CROSS SECTION RIVER: Segunda Deshecha
REACH: Middle RS: 18320.8*

INPUT
Description:
Station Elevation Data num= 48

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	310.2	3.99	309.65	9.53	308.89	10.7	308.64	11.93	308.38
15.07	307.72	19.28	306.66	26.73	303.88	32.93	302.04	35.69	301.2
39.92	299.12	40.72	298.7	42.31	297.87	44.91	296.73	47.11	295.66
55.66	291.52	57.57	290.59	59.79	290.02	65.27	288.59	66.65	288.3
66.8	288.26	69.41	287.83	70.62	287.69	82.65	287.65	85.52	287.59
91.15	287.48	93.45	287.44	96.73	287.8	100.42	288.53	100.45	288.54
106.17	290.1	110.59	292.71	112.95	293.95	118.25	295.87	120.68	296.38
124.82	297.27	125.39	297.39	129.27	298.22	130.32	298.44	138.96	300.29
144.94	301.53	145.73	301.66	148.22	302.31	152.3	303.38	156.65	303.83
167.14	305.03	184.29	306.29	198.95	307.1				

Manning's n Values num= 8

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.02	3.99	.026	11.93	.044	69.41	.02	92.35	.02
96.73	.02	100.45	.02	198.95	.02				

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
69.41 96.73 39.47 41.97 40.29 .1 .3

CROSS SECTION RIVER: Segunda Deshecha
REACH: Middle RS: 18278.93

INPUT
Description:
Station Elevation Data num= 31

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	308.76	9.56	307.58	11.97	307.05	19.35	305.4	26.82	302.6
35.81	300.09	42.46	296.67	45.06	295.58	55.85	290.49	57.77	289.58
66.88	287.87	67.03	287.84	69.65	287.5	71.1	287.33	85.54	287.37
88.98	287.32	95.74	287.22	98.5	287.18	100.72	287.49	104.28	288.02
109.84	289.37	114.11	292.16	116.39	293.46	121.51	295.29	123.86	295.68
128.41	296.44	133.17	297.29	148.05	299.95	154.4	301.94	168.74	303.48
199.46	305.16								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.02	11.97	.05	95.74	.02

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
69.65 100.72 43.12 42.39 42.18 .1 .3

CROSS SECTION RIVER: Segunda Deshecha
REACH: Middle RS: 18236.5*

INPUT
Description:
Station Elevation Data num= 52

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	306.78	9.88	305.68	12.37	305.2	20	303.72	20.33	303.61
21.8	303.11	25.45	301.91	27.72	301.15	37.01	298.81	38.71	298.05
41.63	296.74	43.43	295.94	43.88	295.73	46.57	294.74	50.02	293.32
57.72	289.71	59.71	288.78	60.53	288.58	62.4	288.14	64.01	287.84
69.12	286.89	69.28	286.86	70.15	286.74	71.99	286.37	73.29	286.19
86.27	285.95	89.36	285.84	95.44	285.62	97.55	285.55	97.88	285.54
97.92	285.54	101.2	286.34	104.75	286.91	106.91	287.44	110.3	288.17
114.56	290.59	116.83	291.72	121.94	293.33	122.92	293.48	124.28	293.68
128.82	294.37	133.04	295.04	133.57	295.14	146.31	297.46	148.41	297.83
154.75	299.69	167.53	301.17	169.05	301.37	187.23	302.84	193.2	303.34
196.38	303.55	199.69	303.75						

Manning's n Values num= 7

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.02	12.37	.046	38.71	.024	71.99	.022	96.52	.022
101.2	.022	199.69	.022						

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
71.99 101.2 43.12 42.39 42.18 .1 .3

CROSS SECTION RIVER: Segunda Deshecha
REACH: Middle RS: 18194.1*

INPUT
Description:
Station Elevation Data num= 52

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	304.79	10.2	303.77	12.77	303.35	20.65	302.04	20.99	301.95
22.51	301.48	26.27	300.39	28.62	299.71	38.21	297.53	39.97	296.85
42.99	295.69	44.83	294.98	45.31	294.8	48.08	293.91	51.64	292.64
59.6	288.93	61.64	287.97	62.49	287.74	64.43	287.19	66.09	286.89
71.37	285.92	71.53	285.88	72.43	285.75	74.32	285.24	75.48	285.06
86.99	284.53	89.74	284.36	95.13	284.03	97	283.91	97.3	283.89
97.33	283.89	101.68	285.18	105.23	285.81	107.37	286.33	110.76	286.97
115.01	289.02	117.27	289.99	122.37	291.37	123.35	291.5	124.71	291.68
129.23	292.29	133.44	292.89	133.97	292.99	146.68	295.34	148.78	295.71
155.09	297.44	167.85	299.03	169.36	299.25	187.49	301.21	193.45	301.88
196.63	302.12	199.93	302.35						

Manning's n Values num= 7

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.02	12.77	.041	39.97	.029	74.32	.024	97.3	.024
101.68	.024	199.93	.024						

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
74.32 101.68 43.12 42.39 42.18 .1 .3

CROSS SECTION RIVER: Segunda Deshecha
REACH: Middle RS: 18151.7*

INPUT
Description:
Station Elevation Data num= 52

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	302.81	10.52	301.87	13.17	301.5	21.3	300.36	21.65	300.28
23.22	299.85	27.1	298.88	29.52	298.26	39.41	296.25	41.23	295.65
44.34	294.64	46.24	294.02	46.73	293.86	49.59	293.07	53.27	291.96
61.47	288.15	63.58	287.17	64.45	286.89	66.45	286.24	68.16	285.93
73.61	284.94	73.77	284.91	74.71	284.76	76.66	284.11	77.67	283.92
87.72	283.11	90.12	282.88	94.83	282.43	96.46	282.28	96.72	282.25
96.75	282.25	102.16	284.03	105.7	284.7	107.84	285.22	111.22	285.77
115.45	287.46	117.72	288.25	122.8	289.41	123.77	289.52	125.13	289.68
129.65	290.22	133.84	290.74	134.37	290.84	147.05	293.22	149.14	293.59
155.44	295.18	168.16	296.89	169.67	297.14	187.76	299.58	193.7	300.41
196.87	300.7	200.16	300.94						

Manning's n Values num= 7

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.02	13.17	.037	41.23	.033	76.66	.026	98.08	.026
102.16	.026	200.16	.026						

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
76.66	102.16	43.12	42.39	42.18	.1	.3

CROSS SECTION RIVER: Segunda Deshecha
REACH: Middle RS: 18109.3*

INPUT
Description:
Station Elevation Data num= 52

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	300.82	10.84	299.97	13.58	299.65	21.95	298.67	22.31	298.61
23.93	298.22	27.92	297.36	30.42	296.82	40.61	294.96	42.48	294.46
45.69	293.59	47.65	293.06	48.16	292.92	51.1	292.24	54.89	291.28
63.34	287.37	65.52	286.36	66.42	286.04	68.48	285.28	70.24	284.98
75.85	283.96	76.02	283.93	76.98	283.78	78.99	282.97	79.86	282.79
88.45	281.69	90.5	281.4	94.52	280.84	95.92	280.64	96.14	280.61
96.16	280.6	102.65	282.88	106.17	283.59	108.31	284.11	111.67	284.57
115.9	285.89	118.16	286.51	123.23	287.44	124.2	287.54	125.55	287.68
130.06	288.14	134.25	288.59	134.77	288.69	147.42	291.11	149.5	291.47
155.79	292.93	168.48	294.75	169.98	295.03	188.02	297.94	193.95	298.95
197.11	299.27	200.4	299.53						

Manning's n Values num= 7

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.02	13.58	.033	42.48	.037	78.99	.029	98.85	.029
102.65	.029	200.4	.029						

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
78.99	102.65	43.12	42.39	42.18	.1	.3

CROSS SECTION RIVER: Segunda Deshecha
REACH: Middle RS: 18067.0*

INPUT
Description:
Station Elevation Data num= 52

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	298.84	11.16	298.06	13.98	297.8	22.59	296.99	22.97	296.94
24.63	296.59	28.75	295.84	31.32	295.37	41.81	293.68	43.74	293.26
47.04	292.54	49.06	292.1	49.58	291.99	52.62	291.4	56.51	290.59
65.21	286.59	67.46	285.56	68.38	285.19	70.5	284.33	72.32	284.02
78.09	282.98	78.27	282.95	79.26	282.79	81.33	281.84	82.04	281.65
89.18	280.27	90.88	279.92	94.22	279.24	95.38	279	95.56	278.97
95.58	278.96	103.13	281.73	106.64	282.49	108.78	283.01	112.13	283.37
116.35	284.32	118.6	284.77	123.66	285.48	124.63	285.57	125.98	285.68
130.47	286.07	134.65	286.44	135.17	286.54	147.78	288.99	149.86	289.35
156.14	290.68	168.79	292.6	170.3	292.91	188.29	296.31	194.2	297.49
197.35	297.84	200.63	298.12						

Manning's n Values num= 7

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.02	13.98	.029	43.74	.041	81.33	.031	99.63	.031
103.13	.031	200.63	.031						

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
81.33	103.13	43.12	42.39	42.18	.1	.3

CROSS SECTION RIVER: Segunda Deshecha
REACH: Middle RS: 18024.6*

INPUT
Description:
Station Elevation Data num= 52

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	296.85	11.48	296.16	14.38	295.95	23.24	295.31	23.63	295.28
25.34	294.96	29.57	294.33	32.22	293.92	43.02	292.4	44.99	292.07
48.39	291.49	50.47	291.14	51	291.05	54.13	290.56	58.14	289.91
67.09	285.81	69.39	284.75	70.35	284.35	72.53	283.38	74.39	283.07
80.34	282.01	80.52	281.97	81.53	281.8	83.66	280.71	84.23	280.52
89.9	278.85	91.26	278.44	93.91	277.64	94.83	277.37	94.98	277.32
94.99	277.31	103.61	280.57	107.12	281.38	109.24	281.9	112.59	282.16
116.8	282.75	119.04	283.04	124.09	283.52	125.05	283.59	126.4	283.68
130.88	283.99	135.05	284.29	135.57	284.39	148.15	286.88	150.23	287.23
156.48	288.43	169.11	290.46	170.61	290.8	188.55	294.67	194.45	296.02
197.6	296.42	200.87	296.72						

Manning's n Values num= 7

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.02	14.38	.024	44.99	.046	83.66	.033	100.41	.033
103.61	.033	200.87	.033						

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
83.66	103.61	43.12	42.39	42.18	.1	.3

CROSS SECTION RIVER: Segunda Deshecha
REACH: Middle RS: 17982.24

INPUT
Description: Manual Modification of Manning's N Values
Station Elevation Data num= 26

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	294.87	24.29	293.61	26.05	293.33	30.4	292.81	46.25	290.87
49.74	290.44	51.88	290.18	59.76	289.23	72.31	283.5	74.55	282.43

```
   76.47  282.11   83.81  280.81      86  279.58   94.29  275.73    94.4  275.68
   94.41  275.67  104.09  279.42  109.71  280.79  125.48  281.61  135.45  282.14
  148.52  284.76  169.42  288.32  188.82  293.04   194.7  294.56  197.84  294.99
   201.1  295.31

Manning's n Values          num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .02   46.25     .05  104.09    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right      Coeff Contr.   Expan.
            86  104.09             122.81  163.37  169.52              .1      .3

CROSS SECTION          RIVER: Segunda Deshecha
REACH: Middle             RS: 17818.87

INPUT
Description: Manual Modification of Manning's N Values
Station Elevation Data     num=      26
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0   295.4    19.2  294.16   40.65  292.92   51.11  291.88   87.38   286.4
    88.1  286.06   90.71  284.82  100.93  282.87  104.38  281.93  105.41  281.54
  114.36  279.03  117.86  277.92  124.88  275.68  126.77   275.4   131.9  274.66
  142.29  272.91  142.32  272.91  144.42  273.24  155.68  275.44  159.02  277.14
  171.89  283.72  177.55  286.58  180.05  287.82  181.59   288.6  198.33  295.41
  199.77     296

Manning's n Values          num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .02  117.86     .05  177.55    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right      Coeff Contr.   Expan.
         126.77  155.68             190.93  194.83  198.52              .1      .3

CROSS SECTION          RIVER: Segunda Deshecha
REACH: Middle             RS: 17624.04

INPUT
Description: Manual Modification of Manning's N Values
Station Elevation Data     num=      24
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  295.37    3.88  295.05    5.64  294.96   71.17  293.67   99.68  293.36
  130.65  291.73  134.25  291.28  148.62  288.78  151.94  288.29  155.66  286.02
  160.78  284.03  177.81  276.38  179.14  275.79  192.63  275.57  201.36  275.42
  223.34  275.04  226.48  274.98  229.48  275.41  243.59  277.61  251.72  278.22
   261.1  280.53  264.24  281.73  274.02   285.5  309.78  295.67

Manning's n Values          num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .02  201.36     .05  251.72    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right      Coeff Contr.   Expan.
         201.36  229.48              25.39    40.1   41.59              .1      .3

CROSS SECTION          RIVER: Segunda Deshecha
REACH: Middle             RS: 17583.9*

INPUT
Description:
Station Elevation Data     num=      44
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  294.25    3.66  293.95    5.32  293.86   10.64  293.72   67.17  292.09
   85.08  291.72   94.08   291.5   95.28  291.43  123.31  289.42   126.7  288.96
  127.69  288.79  130.18  288.34  133.59  287.73  136.73  287.17  136.79  287.16
  140.26  286.51   143.4  285.99  145.79  284.62  146.91  283.99  151.74   282.2
  166.93  275.77  167.81  275.41  169.07  274.89  178.43  274.59   181.8  274.51
  190.04   274.3  192.28  274.23  207.14     274  212.68  273.91  215.91  273.85
  218.77  274.17  219.76  274.29  232.62  276.21  236.78  276.52  240.02  276.83
  240.38  276.92  246.01  278.33   247.9  278.81  248.57  279.03  249.42  279.41
  251.43  280.29  260.35  284.22  287.15  293.58  292.93  295.68

Manning's n Values          num=       6
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
       0     .02  136.73    .025  190.04     .05  219.76    .038  240.02    .038
  292.93    .038

Bank Sta: Left   Right    Lengths: Left Channel   Right      Coeff Contr.   Expan.
         190.04  219.76              25.39    40.1   41.59              .1      .3

CROSS SECTION          RIVER: Segunda Deshecha
REACH: Middle             RS: 17543.8*

INPUT
Description:
Station Elevation Data     num=      44
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  293.13    3.44  292.85    5.01  292.75      10  292.58   63.17  290.51
   80.01  289.97   88.47  289.64    89.6  289.56  115.96  287.12  119.16  286.65
  120.08  286.48  122.43  286.04  125.63  285.45  128.59  284.91  128.64   284.9
  131.91  284.24  134.86   283.7  137.11   282.5  138.16  281.96   142.7  280.38
  156.98  274.75  157.82  274.43     159  273.99   167.8  273.55  170.97  273.45
  178.72  273.18  181.03  273.08  196.31  272.87  202.02  272.77  205.35  272.71
  208.83  273.05  210.03  273.17  221.64  274.81   225.4   275.1  228.33  275.44
  228.65  275.52  233.73  276.82  235.44  277.28  236.04  277.53  236.81  277.93
  238.63  278.85  246.67  282.95  270.87   293.3  276.09  295.68

Manning's n Values          num=       6
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
       0     .02  128.59    .03  178.72     .05  210.03    .04  228.33    .04
```

276.09 .04

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
178.72	210.03	25.39	40.1	41.59	.1 .3

CROSS SECTION RIVER: Segunda Deshecha
REACH: Middle RS: 17503.7*

INPUT
Description:
Station Elevation Data num= 44

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	292.01	3.23	291.74	4.69	291.65	9.37	291.45	59.17	288.93
74.94	288.22	82.87	287.78	83.93	287.69	108.62	284.81	111.61	284.33
112.48	284.16	114.67	283.74	117.67	283.18	120.44	282.66	120.49	282.65
123.55	281.97	126.31	281.4	128.42	280.38	129.41	279.93	133.66	278.55
147.04	273.72	147.82	273.46	148.93	273.1	157.18	272.51	160.14	272.38
167.4	272.07	169.77	271.93	185.49	271.74	191.36	271.64	194.79	271.58
198.9	271.92	200.31	272.05	210.67	273.41	214.02	273.67	216.63	274.05
216.92	274.13	221.46	275.31	222.98	275.74	223.52	276.03	224.2	276.45
225.82	277.41	233	281.67	254.59	293.01	259.24	295.69		

Manning's n Values num= 6

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.02	120.44	.035	167.4	.05	200.31	.043	216.63	.043
259.24	.043								

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
167.4	200.31	25.39	40.1	41.59	.1 .3

CROSS SECTION RIVER: Segunda Deshecha
REACH: Middle RS: 17463.6*

INPUT
Description:
Station Elevation Data num= 44

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	290.88	3.01	290.64	4.37	290.55	8.74	290.32	55.17	287.36
69.88	286.47	77.26	285.92	78.25	285.82	101.27	282.5	104.06	282.01
104.87	281.85	106.92	281.45	109.71	280.9	112.3	280.4	112.35	280.39
115.2	279.7	117.77	279.1	119.74	278.26	120.66	277.9	124.63	276.72
137.1	272.69	137.83	272.48	138.86	272.2	146.55	271.48	149.31	271.32
156.08	270.95	158.52	270.77	174.67	270.6	180.7	270.51	184.22	270.45
188.96	270.79	190.59	270.94	199.69	272.01	202.64	272.24	204.94	272.66
205.19	272.73	209.18	273.81	210.51	274.21	210.99	274.53	211.59	274.97
213.02	275.97	219.33	280.4	238.3	292.73	242.4	295.7		

Manning's n Values num= 6

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.02	112.3	.04	156.08	.05	190.59	.045	204.94	.045
242.4	.045								

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
156.08	190.59	25.39	40.1	41.59	.1 .3

CROSS SECTION RIVER: Segunda Deshecha
REACH: Middle RS: 17423.5*

INPUT
Description:
Station Elevation Data num= 44

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	289.76	2.79	289.54	4.05	289.45	8.1	289.18	51.16	285.78
64.81	284.73	71.66	284.06	72.58	283.96	93.93	280.19	96.51	279.7
97.27	279.54	99.16	279.15	101.76	278.62	104.15	278.14	104.2	278.13
106.84	277.43	109.23	276.81	111.05	276.14	111.91	275.87	115.59	274.89
127.15	271.66	127.83	271.51	128.79	271.3	135.92	270.44	138.48	270.26
144.76	269.83	147.26	269.62	163.85	269.47	170.04	269.37	173.65	269.31
179.02	269.67	180.86	269.82	188.72	270.61	191.26	270.81	193.24	271.27
193.46	271.34	196.9	272.3	198.05	272.67	198.46	273.02	198.98	273.49
200.21	274.53	205.65	279.12	222.02	292.44	225.56	295.7		

Manning's n Values num= 6

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.02	104.15	.045	144.76	.05	180.86	.048	193.24	.048
225.56	.048								

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
144.76	180.86	25.39	40.1	41.59	.1 .3

CROSS SECTION RIVER: Segunda Deshecha
REACH: Middle RS: 17383.46

INPUT
Description:
Station Elevation Data num= 25

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	288.64	7.47	288.05	59.74	282.98	66.9	282.09	89.66	277.23
91.41	276.85	93.8	276.34	96.01	275.88	96.05	275.87	102.37	274.02
117.21	270.63	125.29	269.4	133.44	268.71	136.01	268.47	153.03	268.34
163.09	268.18	169.08	268.54	171.14	268.7	179.88	269.38	181.73	269.94
184.62	270.79	185.59	271.14	186.37	272.01	205.74	292.16	208.71	295.71

Manning's n Values num= 2

Sta	n Val	Sta	n Val
0	.02	96.01	.05

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

133.44	171.14		42.97	40.79	32.99	

						.1		.3	

CROSS SECTION RIVER: Segunda Deshecha
REACH: Middle RS: 17342.6*

INPUT
Description:

Station Elevation Data	num=	44							
Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	288.95	7.37	288.35	19.46	287.17	34.21	285.73	39.92	285.1
54.22	283.54	58.97	283.02	62.45	282.56	66.04	282.06	70.41	281.11
77.49	279.53	85.56	277.69	88.51	277.02	90.24	276.63	92.6	276.1
94.78	275.61	94.82	275.6	97.7	274.76	101.06	273.77	101.96	273.55
111.81	271.24	115.71	270.38	119.29	269.82	123.68	269.13	127.5	268.76
131.73	268.27	134.13	268.06	150	267.92	156.26	267.81	159.38	267.76
164.86	268.11	166.74	268.27	171.96	268.74	173.09	268.85	176.22	269.25
178.23	269.85	178.28	269.87	181.36	270.99	182.41	271.43	183.26	272.28
194.41	282.9	203.82	291.94	204.27	292.35	207.49	295.7		

Manning's n Values	num=	7							
Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.02	54.22	.024	94.78	.05	119.29	.048	131.73	.048
166.74	.048	207.49	.048						

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
131.73	166.74	42.97	40.79	32.99	.1	.3

CROSS SECTION RIVER: Segunda Deshecha
REACH: Middle RS: 17301.8*

INPUT
Description:

Station Elevation Data	num=	44							
Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	289.27	7.28	288.65	19.2	287.47	33.77	286.05	39.4	285.34
53.52	283.63	58.21	283.06	61.64	282.57	65.19	282.03	69.5	281.08
76.48	279.44	84.45	277.51	87.36	276.82	89.07	276.41	91.4	275.85
93.55	275.35	93.59	275.34	96.43	274.5	99.75	273.51	100.64	273.29
110.36	270.96	114.21	270.13	117.74	269.56	122.08	268.87	125.85	268.45
130.02	267.83	132.24	267.65	146.97	267.49	152.78	267.4	155.68	267.34
160.64	267.69	162.34	267.84	167.96	268.42	169.18	268.55	172.56	269.11
174.72	269.77	174.78	269.78	178.1	271.19	179.24	271.71	180.15	272.55
192.17	283.1	202.32	292.14	202.8	292.54	206.28	295.7		

Manning's n Values	num=	7							
Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.02	53.52	.029	93.55	.05	117.74	.046	130.02	.046
162.34	.046	206.28	.046						

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
130.02	162.34	42.97	40.79	32.99	.1	.3

CROSS SECTION RIVER: Segunda Deshecha
REACH: Middle RS: 17261.0*

INPUT
Description:

Station Elevation Data	num=	44							
Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	289.58	7.18	288.95	18.95	287.77	33.33	286.36	38.88	285.59
52.82	283.72	57.44	283.1	60.83	282.59	64.33	282	68.59	281.05
75.47	279.36	83.34	277.33	86.21	276.61	87.9	276.19	90.19	275.61
92.32	275.08	92.36	275.07	95.16	274.24	98.43	273.26	99.31	273.03
108.91	270.67	112.7	269.88	116.19	269.3	120.47	268.6	124.19	268.14
128.31	267.39	130.36	267.24	143.94	267.07	149.3	266.98	151.97	266.92
156.41	267.26	157.94	267.41	163.97	268.09	165.28	268.24	168.9	268.98
171.22	269.68	171.28	269.7	174.85	271.38	176.06	272	177.04	272.83
189.93	283.3	200.82	292.35	201.33	292.72	205.06	295.69		

Manning's n Values	num=	7							
Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.02	52.82	.033	92.32	.05	116.19	.044	128.31	.044
157.94	.044	205.06	.044						

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
128.31	157.94	42.97	40.79	32.99	.1	.3

CROSS SECTION RIVER: Segunda Deshecha
REACH: Middle RS: 17220.2*

INPUT
Description:

Station Elevation Data	num=	44							
Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	289.9	7.09	289.24	18.7	288.08	32.88	286.68	38.36	285.83
52.11	283.81	56.68	283.14	60.02	282.6	63.47	281.97	67.67	281.02
74.47	279.27	82.23	277.15	85.06	276.41	86.72	275.97	88.99	275.37
91.09	274.82	91.13	274.81	93.89	273.98	97.12	273.01	97.99	272.77
107.45	270.38	111.2	269.62	114.65	269.04	118.87	268.34	122.54	267.83
126.6	266.94	128.48	266.82	140.92	266.65	145.82	266.56	148.27	266.49
152.19	266.84	153.54	266.97	159.98	267.76	161.37	267.94	165.24	268.84
167.72	269.59	167.79	269.61	171.59	271.58	172.89	272.28	173.93	273.1
187.69	283.51	199.31	292.55	199.86	292.91	203.84	295.69		

Manning's n Values	num=	7							
Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.02	52.11	.037	91.09	.05	114.65	.041	126.6	.041
153.54	.041	203.84	.041						

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
126.6 153.54 42.97 40.79 32.99 .1 .3

CROSS SECTION RIVER: Segunda Deshecha
REACH: Middle RS: 17179.5*

INPUT
Description:
Station Elevation Data num= 44

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	290.21	6.99	289.54	18.45	288.38	32.44	287	37.85	286.08
51.41	283.9	55.91	283.18	59.21	282.62	62.61	281.94	66.76	280.99
73.46	279.19	81.12	276.98	83.92	276.2	85.55	275.74	87.79	275.12
89.86	274.55	89.9	274.54	92.63	273.72	95.81	272.75	96.67	272.51
106	270.09	109.7	269.37	113.1	268.79	117.26	268.07	120.88	267.52
124.89	266.5	126.6	266.41	137.89	266.23	142.34	266.14	144.56	266.07
147.97	266.41	149.14	266.54	155.99	267.43	157.47	267.64	161.58	268.71
164.22	269.51	164.29	269.53	168.33	271.78	169.71	272.57	170.82	273.37
185.45	283.71	197.81	292.76	198.4	293.1	202.62	295.68		

Manning's n Values num= 7

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.02	51.41	.041	89.86	.05	113.1	.039	124.89	.039
149.14	.039	202.62	.039						

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
124.89 149.14 42.97 40.79 32.99 .1 .3

CROSS SECTION RIVER: Segunda Deshecha
REACH: Middle RS: 17138.7*

INPUT
Description:
Station Elevation Data num= 44

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	290.53	6.9	289.84	18.19	288.69	31.99	287.31	37.33	286.32
50.7	283.99	55.15	283.22	58.4	282.63	61.76	281.91	65.84	280.96
72.46	279.1	80.01	276.8	82.77	276	84.38	275.52	86.59	274.88
88.63	274.29	88.66	274.28	91.36	273.46	94.5	272.5	95.34	272.25
104.55	269.81	108.2	269.12	111.55	268.53	115.66	267.8	119.23	267.21
123.18	266.06	124.71	266	134.86	265.8	138.86	265.72	140.86	265.65
143.75	265.99	144.74	266.11	151.99	267.1	153.56	267.33	157.92	268.57
160.71	269.42	160.79	269.44	165.07	271.98	166.54	272.85	167.71	273.64
183.21	283.91	196.3	292.96	196.93	293.29	201.41	295.68		

Manning's n Values num= 7

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.02	50.7	.046	88.63	.05	111.55	.037	123.18	.037
144.74	.037	201.41	.037						

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
123.18 144.74 42.97 40.79 32.99 .1 .3

CROSS SECTION RIVER: Segunda Deshecha
REACH: Middle RS: 17097.92

INPUT
Description: Manual Modification of Manning's N Values
Station Elevation Data num= 24

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	290.84	17.94	288.99	31.55	287.63	36.81	286.57	50	284.08
57.59	282.65	64.93	280.93	71.45	279.02	78.9	276.62	90.09	273.2
94.02	271.99	103.1	269.52	110	268.27	117.57	266.9	121.47	265.62
135.38	265.3	137.15	265.23	140.34	265.68	148	266.77	149.66	267.03
157.29	269.36	180.97	284.11	194.8	293.17	200.19	295.67		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.02	50	.05	110	.035

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
121.47 140.34 40.07 37.62 35.05 .1 .3

CROSS SECTION RIVER: Segunda Deshecha
REACH: Middle RS: 17060.3*

INPUT
Description:
Station Elevation Data num= 47

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	289.18	3.4	288.61	8.73	287.76	17.65	286.55	22.83	285.87
31.03	284.78	31.46	284.69	32.12	284.54	32.35	284.49	36.21	283.62
49.18	280.85	50.48	280.57	53.79	279.87	56.65	279.38	62.42	278.17
63.87	277.85	70.28	276.1	71.32	275.79	75.95	274.49	77.61	274.03
88.62	271.12	92.48	270.1	101.41	267.99	108.2	266.92	109.08	266.78
115.65	265.74	118.22	265.02	119.48	264.66	132.57	264.37	134.24	264.31
137.41	264.71	146.13	265.75	148.03	265.99	148.3	266.06	153.38	267.24
156.72	268.11	157.55	268.53	160.3	269.89	164.29	271.89	183.69	282.18
186.68	283.84	189.85	285.61	190.95	286.22	195.6	288.89	199.45	291.09
201.98	292.18	205.59	293.69						

Manning's n Values num= 8

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.02	22.83	.025	49.18	.05	108.2	.038	109.08	.047
119.48	.035	137.41	.035	205.59	.035				

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

```
       119.48  137.41            40.07   37.62   35.05            .1       .3

CROSS SECTION          RIVER: Segunda Deshecha
REACH: Middle             RS: 17022.6*

INPUT
Description:
Station Elevation Data    num=      47
     Sta    Elev     Sta     Elev     Sta     Elev     Sta     Elev     Sta     Elev
       0  287.52    3.35   286.74    8.58   285.59   17.35   284.12   22.45   283.27
   30.52  281.93   30.93   281.83   31.59   281.68   31.81   281.62    35.6   280.68
   48.36  277.62   49.64   277.31   52.89   276.54    55.7   276.11   61.39   275.06
    62.8  274.76   69.11   273.18   70.14   272.91   74.69   271.81   76.32   271.43
   87.14  269.04   90.94    268.2   99.72   266.47   106.4   265.57  107.26   265.45
  113.72  264.58  116.25   263.99  117.49    263.7  129.77   263.43  131.33   263.38
  134.48  263.74  144.27   264.73  146.39   264.96   146.7   265.01   152.4   266.01
  156.14  266.87  157.08   267.24  160.16   268.46  164.64   270.28  186.41   280.25
  189.77  281.85  193.32   283.58  194.56   284.15  199.77   286.83  204.09      289
  206.94  290.15  210.98   291.71

Manning's n Values        num=      8
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
       0     .02   22.45     .03   48.36     .05   106.4     .04  107.26    .045
  117.49    .035  134.48    .035  210.98    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        117.49  134.48            40.07   37.62   35.05            .1       .3

CROSS SECTION          RIVER: Segunda Deshecha
REACH: Middle             RS: 16985.0*

INPUT
Description:
Station Elevation Data    num=      47
     Sta    Elev     Sta     Elev     Sta     Elev     Sta     Elev     Sta     Elev
       0  285.85    3.29   284.87    8.44   283.43   17.06   281.68   22.07   280.67
      30  279.08   30.41   278.97   31.05   278.82   31.28   278.75      35   277.73
   47.54  274.39    48.8   274.06      52    273.2   54.76   272.83   60.35   271.95
   61.74  271.68   67.94   270.26   68.95   270.02   73.42   269.13   75.03   268.84
   85.67  266.97    89.4   266.31   98.04   264.94   104.6   264.22  105.45   264.12
   111.8  263.43  114.28   262.96  115.51   262.74  126.96    262.5  128.41   262.46
  131.54  262.77   142.4    263.7  144.76   263.92   145.1   263.97  151.42   264.79
  155.57  265.62  156.61   265.94  160.03   267.03  164.99   268.67  189.14   278.32
  192.86  279.85   196.8   281.54  198.16   282.08  203.95   284.76  208.74   286.92
  211.89  288.13  216.38   289.73

Manning's n Values        num=      8
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
       0     .02   22.07     .035  47.54     .05   104.6    .043  105.45    .043
  115.51    .035  131.54    .035  216.38    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        115.51  131.54            40.07   37.62   35.05            .1       .3

CROSS SECTION          RIVER: Segunda Deshecha
REACH: Middle             RS: 16947.4*

INPUT
Description:
Station Elevation Data    num=      47
     Sta    Elev     Sta     Elev     Sta     Elev     Sta     Elev     Sta     Elev
       0  284.19    3.23      283    8.29   281.26   16.77   279.24   21.69   278.07
   29.48  276.22   29.89   276.11   30.52   275.96   30.74   275.88    34.4   274.79
   46.73  271.16   47.96    270.8    51.1   269.87   53.82   269.56   59.31   268.84
   60.68  268.59   66.77   267.35   67.76   267.13   72.16   266.45   73.73   266.24
   84.19  264.89   87.86   264.41   96.35   263.41   102.8   262.87  103.63    262.8
  109.87  262.27  112.31   261.93  113.52   261.78  124.15   261.57   125.5   261.53
  128.61  261.81  140.54   262.68  143.12   262.88   143.5   262.92  150.44   263.56
     155  264.37  156.14   264.65  159.89   265.61  165.35   267.05  191.86    276.4
  195.95  277.86  200.27    279.5  201.77   280.01  208.13    282.7  213.39   284.84
  216.85   286.1  221.78   287.74

Manning's n Values        num=      8
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
       0     .02   21.69     .04   46.73     .05   102.8    .045  103.63     .04
  113.52    .035  128.61    .035  221.78    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        113.52  128.61            40.07   37.62   35.05            .1       .3

CROSS SECTION          RIVER: Segunda Deshecha
REACH: Middle             RS: 16909.8*

INPUT
Description:
Station Elevation Data    num=      47
     Sta    Elev     Sta     Elev     Sta     Elev     Sta     Elev     Sta     Elev
       0  282.53    3.18   281.13    8.15    279.1   16.47   276.81   21.31   275.48
   28.97  273.37   29.36   273.26   29.98   273.09    30.2   273.01    33.8   271.84
   45.91  267.93   47.12   267.54   50.21   266.54   52.88   266.29   58.27   265.74
   59.62  265.51    65.6   264.43   66.58   264.25   70.89   263.78   72.44   263.65
   82.72  262.81   86.32   262.52   94.66   261.89     101   261.52  101.82   261.47
  107.95  261.11  110.35   260.91  111.53   260.82  121.34   260.63  122.59   260.61
  125.68  260.84  138.67   261.66  141.49   261.84   141.9   261.88  149.46   262.34
  154.42  263.12  155.67   263.36  159.76   264.18   165.7   265.44  194.58   274.47
  199.03  275.87  203.75   277.47  205.38   277.95   212.3   280.63  218.03   282.75
   221.8  284.08  227.17   285.76
```

Manning's n Values num= 8

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.02	21.31	.045	45.91	.05	101	.047	101.82	.038
111.53	.035	125.68	.035	227.17	.035				

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
111.53	125.68	40.07	37.62	35.05	.1 .3

CROSS SECTION RIVER: Segunda Deshecha
REACH: Middle RS: 16872.22

INPUT
Description: Manual Modification of Manning's N Values
Station Elevation Data num= 28

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	280.87	3.12	279.26	8	276.93	20.93	272.88	28.84	270.4
29.45	270.23	29.66	270.14	46.28	264.28	49.31	263.21	57.23	262.63
65.39	261.36	69.63	261.1	100	260.14	108.38	259.88	109.54	259.86
119.68	259.68	122.75	259.87	140.3	260.83	148.48	261.11	155.2	262.07
159.62	262.75	166.05	263.83	202.12	273.88	207.22	275.43	208.99	275.88
216.48	278.57	226.76	282.05	232.57	283.78				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.02	20.93	.05	100	.035

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
109.54	122.75	29.82	41.19	42.72	.1 .3

CROSS SECTION RIVER: Segunda Deshecha
REACH: Middle RS: 16831.0*

INPUT
Description:
Station Elevation Data num= 58

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	280.94	.77	280.54	3.68	279.07	9.43	276.32	9.78	276.2
10.68	275.92	20.71	272.92	23.73	271.88	24.67	271.57	24.85	271.52
27	270.86	34	268.71	34.3	268.63	34.72	268.53	34.97	268.45
38.4	267.45	39.66	267.11	48.04	264.82	54.56	263.11	58.13	262.18
61.62	261.99	67.14	261.73	67.47	261.71	68.51	261.6	77.09	260.66
81.11	260.51	82.09	260.46	113.4	259.76	117.89	259.65	118.21	259.65
125.23	259.47	127.77	259.37	128.16	259.36	129.14	259.33	134.16	259.18
140.46	258.98	143.37	259.15	144.95	259.29	150	259.7	156.57	260.24
161.72	260.64	162.91	260.71	169.54	261.25	175.96	262.41	180.18	263.21
181.81	263.54	186.04	264.39	186.33	264.44	211.65	271.28	212.69	271.55
213.5	271.78	220.8	273.82	225.67	275.3	227.37	275.74	230.46	276.83
234.52	278.36	244.35	281.87	249.9	283.65				

Manning's n Values num= 9

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.02	24.67	.046	27	.022	113.4	.037	117.89	.037
129.14	.035	133.17	.035	144.95	.035	249.9	.035		

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
129.14	144.95	29.82	41.19	42.72	.1 .3

CROSS SECTION RIVER: Segunda Deshecha
REACH: Middle RS: 16789.8*

INPUT
Description:
Station Elevation Data num= 58

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	281.01	.89	280.55	4.24	278.88	10.86	275.71	11.26	275.56
12.3	275.25	23.85	271.9	27.33	270.64	28.42	270.27	28.62	270.2
31.1	269.45	39.16	267.03	39.5	266.93	39.99	266.83	40.27	266.75
44.23	265.8	45.68	265.48	55.33	263.4	62.84	261.95	66.95	261.15
70.97	260.99	77.33	260.8	77.71	260.79	78.9	260.7	88.79	259.97
93.42	259.87	94.54	259.83	130.61	259.25	135.78	259.17	136.15	259.16
144.24	258.99	147.16	258.86	147.61	258.84	148.74	258.8	154.28	258.57
161.23	258.28	165.07	258.5	167.15	258.7	171.96	259.23	178.23	259.95
183.14	260.46	184.28	260.56	190.6	261.39	196.72	262.74	200.75	263.67
202.3	264.04	206.34	265.01	206.61	265.06	230.75	271.34	231.74	271.59
232.52	271.8	239.48	273.76	244.13	275.17	245.74	275.6	248.69	276.62
252.57	278.16	261.94	281.7	267.23	283.52				

Manning's n Values num= 9

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.02	28.42	.043	31.1	.024	130.61	.039	135.78	.039
148.74	.035	153.43	.035	167.15	.035	267.23	.035		

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
148.74	167.15	29.82	41.19	42.72	.1 .3

CROSS SECTION RIVER: Segunda Deshecha
REACH: Middle RS: 16748.6*

INPUT
Description:
Station Elevation Data num= 58

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	281.07	1	280.57	4.79	278.69	12.29	275.11	12.75	274.92
13.92	274.57	27	270.88	30.93	269.39	32.16	268.96	32.39	268.88
35.19	268.05	44.32	265.34	44.71	265.23	45.26	265.14	45.58	265.06
50.06	264.14	51.7	263.86	62.63	261.99	71.12	260.78	75.78	260.12
80.32	259.98	87.52	259.88	87.95	259.87	89.3	259.8	100.49	259.27
105.73	259.22	107	259.19	147.82	258.75	153.67	258.68	154.09	258.68

163.24	258.51	166.55	258.35	167.06	258.32	168.33	258.27	174.4	257.97
182.01	257.58	186.77	257.85	189.35	258.12	193.93	258.77	199.89	259.66
204.56	260.27	205.64	260.4	211.65	261.53	217.48	263.08	221.31	264.13
222.79	264.54	226.63	265.62	226.89	265.67	249.86	271.4	250.8	271.63
251.54	271.82	258.16	273.71	262.58	275.04	264.12	275.45	266.92	276.41
270.61	277.95	279.52	281.52	284.56	283.39				

Manning's n Values num= 9

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.02	32.16	.039	35.19	.026	147.82	.041	153.67	.041
168.33	.035	173.69	.035	189.35	.035	284.56	.035		

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
168.33	189.35	29.82	41.19	42.72	.1	.3

CROSS SECTION RIVER: Segunda Deshecha
REACH: Middle RS: 16707.4*

INPUT
Description:
Station Elevation Data num= 58

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	281.14	1.12	280.58	5.35	278.5	13.73	274.5	14.23	274.28
15.54	273.9	30.14	269.87	34.53	268.14	35.91	267.65	36.16	267.56
39.29	266.64	49.48	263.66	49.91	263.53	50.53	263.44	50.89	263.37
55.89	262.48	57.72	262.23	69.92	260.58	79.4	259.61	84.6	259.08
89.67	258.98	97.7	258.95	98.19	258.95	99.69	258.91	112.18	258.57
118.04	258.58	119.46	258.56	165.02	258.25	171.56	258.2	172.03	258.2
182.25	258.03	185.94	257.84	186.5	257.81	187.93	257.74	194.52	257.36
202.78	256.89	208.47	257.2	211.54	257.54	215.89	258.3	221.55	259.36
225.98	260.09	227.01	260.24	232.71	261.67	238.24	263.41	241.88	264.58
243.27	265.05	246.92	266.24	247.17	266.28	268.96	271.47	269.85	271.66
270.56	271.85	276.84	273.65	281.04	274.92	282.49	275.31	285.15	276.21
288.65	277.74	297.11	281.35	301.89	283.27				

Manning's n Values num= 9

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.02	35.91	.035	39.29	.027	165.02	.043	171.56	.043
187.93	.035	193.96	.035	211.54	.035	301.89	.035		

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
187.93	211.54	29.82	41.19	42.72	.1	.3

CROSS SECTION RIVER: Segunda Deshecha
REACH: Middle RS: 16666.2*

INPUT
Description:
Station Elevation Data num= 58

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	281.21	1.24	280.59	5.91	278.32	15.16	273.89	15.72	273.64
17.16	273.22	33.28	268.85	38.14	266.89	39.65	266.34	39.93	266.24
43.39	265.24	54.64	261.97	55.12	261.84	55.79	261.74	56.19	261.67
61.72	260.82	63.73	260.61	77.21	259.17	87.68	258.45	93.42	258.05
99.02	257.98	107.89	258.03	108.42	258.03	110.09	258.01	123.88	257.88
130.35	257.94	131.92	257.92	182.23	257.74	189.45	257.71	189.97	257.71
201.25	257.56	205.33	257.32	205.95	257.29	207.53	257.21	214.64	256.76
223.56	256.19	230.16	256.54	233.74	256.95	237.86	257.84	243.21	259.07
247.4	259.9	248.37	260.08	253.77	261.81	259	263.75	262.44	265.04
263.76	265.55	267.21	266.85	267.45	266.89	288.07	271.53	288.91	271.7
289.57	271.87	295.52	273.59	299.49	274.79	300.87	275.17	303.38	276
306.7	277.53	314.7	281.17	319.22	283.14				

Manning's n Values num= 9

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.02	39.65	.031	43.39	.029	182.23	.044	189.45	.044
207.53	.035	214.22	.035	233.74	.035	319.22	.035		

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
207.53	233.74	29.82	41.19	42.72	.1	.3

CROSS SECTION RIVER: Segunda Deshecha
REACH: Middle RS: 16625.0*

INPUT
Description:
Station Elevation Data num= 58

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	281.27	1.36	280.6	6.47	278.13	16.59	273.28	17.2	273
18.78	272.55	36.42	267.83	41.74	265.65	43.4	265.04	43.7	264.93
47.49	263.83	59.8	260.29	60.32	260.14	61.06	260.04	61.5	259.98
67.54	259.17	69.75	258.98	84.5	257.75	95.96	257.28	102.24	257.02
108.37	256.98	118.08	257.1	118.66	257.11	120.49	257.11	135.58	257.18
142.66	257.3	144.37	257.29	199.44	257.24	207.34	257.23	207.91	257.23
220.26	257.08	224.72	256.81	225.4	256.77	227.13	256.68	234.76	256.15
244.33	255.49	251.86	255.89	255.94	256.37	259.82	257.38	264.87	258.78
268.82	259.71	269.74	259.93	274.83	261.94	279.76	264.08	283	265.5
284.25	266.05	287.51	267.47	287.72	267.51	307.17	271.59	307.97	271.74
308.59	271.89	314.2	273.53	317.94	274.66	319.24	275.03	321.62	275.79
324.74	277.33	332.29	280.99	336.55	283.01				

Manning's n Values num= 9

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.02	43.4	.027	47.49	.031	199.44	.046	207.34	.046
227.13	.035	234.48	.035	255.94	.035	336.55	.035		

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
227.13	255.94	29.82	41.19	42.72	.1	.3

CROSS SECTION RIVER: Segunda Deshecha
REACH: Middle RS: 16583.8*

INPUT
Description:
Station Elevation Data num= 58

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	281.34	1.47	280.61	7.03	277.94	18.02	272.67	18.69	272.36
20.4	271.87	39.57	266.82	45.34	264.4	47.14	263.73	47.47	263.61
51.58	262.43	64.96	258.6	65.53	258.44	66.33	258.35	66.8	258.29
73.37	257.51	75.77	257.36	91.79	256.34	104.24	256.12	111.06	255.99
117.72	255.97	128.27	256.18	128.9	256.19	130.88	256.22	147.28	256.49
154.97	256.65	156.83	256.65	216.65	256.73	225.24	256.74	225.85	256.74
239.26	256.6	244.11	256.3	244.85	256.26	246.72	256.15	254.88	255.55
265.11	254.79	273.56	255.24	278.14	255.78	281.79	256.91	286.53	258.48
290.24	259.53	291.1	259.77	295.89	262.08	300.52	264.42	303.57	265.96
304.74	266.56	307.8	268.08	308	268.12	326.28	271.66	327.02	271.77
327.61	271.92	332.88	273.47	336.4	274.53	337.62	274.89	339.85	275.58
342.78	277.12	349.87	280.82	353.88	282.88				

Manning's n Values num= 9

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.02	47.14	.024	51.58	.033	216.65	.048	225.24	.048
246.72	.035	254.74	.035	278.14	.035	353.88	.035		

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
246.72	278.14	29.82	41.19	42.72	.1	.3

CROSS SECTION RIVER: Segunda Deshecha
REACH: Middle RS: 16542.69

INPUT
Description: Manual Modification of Manning's N Values
Station Elevation Data num= 35

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	281.41	1.59	280.62	20.17	271.72	22.02	271.2	42.71	265.8
48.94	263.15	51.24	262.29	55.68	261.02	70.73	256.74	79.2	255.85
81.79	255.73	99.08	254.93	127.07	254.97	138.46	255.25	141.28	255.32
167.28	256.01	233.86	256.23	243.79	256.26	258.27	256.12	264.3	255.74
266.32	255.62	275	254.94	285.88	254.09	295.26	254.59	300.34	255.2
303.75	256.45	308.19	258.19	312.47	259.61	325.23	267.06	328.09	268.7
345.38	271.72	346.08	271.81	346.63	271.94	358.08	275.37	371.21	282.75

Manning's n Values num= 4

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.02	55.68	.035	233.86	.05	275	.035

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
266.32	300.34	31.6	40.08	39.57	.1	.3

CROSS SECTION RIVER: Segunda Deshecha
REACH: Middle RS: 16502.6*

INPUT
Description:
Station Elevation Data num= 72

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	281.67	1.51	280.93	15.5	274.29	19.19	272.55	20.95	272.02
21.49	271.87	24.37	271.09	40.64	266.68	46.57	264.23	48.76	263.42
51.86	262.51	52.98	262.19	54.57	261.73	67.3	258.24	75.36	257.3
77.83	257.14	94.28	256.06	97.22	255.99	103.97	255.82	120.65	255.38
120.91	255.38	131.75	255.49	134.43	255.52	148.66	255.68	159.17	255.7
175.3	255.39	189.89	255.27	202.48	255.16	208.22	255.11	222.52	255.15
231.97	255.17	245.75	255.05	251.49	254.74	253.41	254.63	262.8	254.04
265.48	253.87	274.56	253.28	282.85	253.75	287.35	254.28	291.67	255.49
293.71	256.1	297.31	257.27	299.57	257.92	302.74	258.83	308.38	261.38
309.62	261.92	309.72	261.96	312.72	263.43	317.77	265.83	318.94	266.35
320.01	266.82	322.06	267.67	322.57	267.92	327.18	268.97	330.27	269.67
334.35	270.19	339.5	270.81	343.1	271.54	344.52	271.74	345.41	271.84
346.11	271.97	349.21	272.66	350.22	272.8	355.64	273.96	356.41	274.13
358.79	274.77	360.65	275.16	365.48	277	370.07	278.88	371.51	279.5
372.35	279.91	377.32	282.61						

Manning's n Values num= 10

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.02	52.98	.032	103.97	.022	202.48	.038	222.52	.05
253.41	.035	262.07	.035	270.22	.035	287.35	.035	377.32	.035

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
253.41	287.35	31.6	40.08	39.57	.1	.3

CROSS SECTION RIVER: Segunda Deshecha
REACH: Middle RS: 16462.5*

INPUT
Description:
Station Elevation Data num= 72

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	281.93	1.44	281.24	14.71	275.01	18.21	273.38	19.89	272.84
20.4	272.69	23.12	271.91	38.57	267.57	44.2	265.31	46.27	264.55
49.22	263.67	50.28	263.35	51.79	262.91	63.87	259.74	71.52	258.74
73.86	258.54	89.48	257.19	92.27	257.05	98.67	256.69	114.5	255.8
114.75	255.79	125.04	255.73	127.58	255.71	141.09	255.64	151.06	255.38
166.37	254.72	180.22	254.41	192.17	254.15	197.62	254.03	211.19	254.06
220.16	254.08	233.23	253.98	238.68	253.73	240.5	253.65	250.59	253.14
253.48	252.99	263.23	252.47	270.44	252.9	274.35	253.37	279.6	254.54
282.07	255.11	286.43	256.35	289.17	257.06	293.02	258.05	299.85	260.56

301.35	261.06	301.47	261.11	305.11	262.67	311.23	265.13	312.66	265.64
313.96	266.1	316.44	266.87	317.06	267.14	322.65	268.6	326.39	269.58
331.34	270.05	337.58	270.6	341.95	271.55	343.67	271.76	344.75	271.87
345.59	272	349.35	272.66	350.57	272.69	357.14	273.74	358.07	273.89
360.96	274.61	363.22	274.95	369.07	276.5	374.64	278.21	376.38	278.82
377.4	279.26	383.42	282.47						

Manning's n Values num= 10

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.02	50.28	.03	98.67	.025	192.17	.04	211.19	.05
240.5	.035	249.14	.035	257.27	.035	274.35	.035	383.42	.035

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
240.5	274.35	31.6	40.08	39.57	.1	.3

CROSS SECTION RIVER: Segunda Deshecha
REACH: Middle RS: 16422.4*

INPUT
Description:
Station Elevation Data num= 72

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	282.19	1.36	281.55	13.92	275.72	17.24	274.2	18.82	273.67
19.3	273.51	21.88	272.73	36.5	268.45	41.82	266.38	43.79	265.68
46.57	264.82	47.58	264.52	49.01	264.09	60.45	261.24	67.68	260.19
69.9	259.95	84.67	258.32	87.32	258.1	93.38	257.56	108.36	256.21
108.59	256.21	118.33	255.96	120.74	255.91	133.52	255.6	142.96	255.07
157.44	254.05	170.55	253.56	181.85	253.15	187.01	252.96	199.85	252.98
208.34	252.99	220.72	252.92	225.87	252.73	227.6	252.66	238.39	252.24
241.47	252.11	251.91	251.65	258.04	252.06	261.35	252.45	267.52	253.58
270.42	254.13	275.55	255.43	278.77	256.2	283.29	257.28	291.32	259.75
293.09	260.21	293.23	260.25	297.5	261.91	304.7	264.44	306.37	264.93
307.9	265.38	310.81	266.07	311.54	266.36	318.11	268.24	322.51	269.49
328.32	269.92	335.66	270.38	340.79	271.57	342.81	271.78	344.08	271.9
345.07	272.03	349.48	272.65	350.93	272.58	358.65	273.51	359.74	273.64
363.13	274.45	365.78	274.74	372.67	275.99	379.21	277.55	381.26	278.14
382.45	278.62	389.53	282.33						

Manning's n Values num= 10

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.02	47.58	.027	93.38	.027	181.85	.043	199.85	.05
227.6	.035	236.21	.035	244.31	.035	261.35	.035	389.53	.035

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
227.6	261.35	31.6	40.08	39.57	.1	.3

CROSS SECTION RIVER: Segunda Deshecha
REACH: Middle RS: 16382.3*

INPUT
Description:
Station Elevation Data num= 72

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	282.45	1.28	281.85	13.13	276.43	16.26	275.03	17.75	274.49
18.21	274.32	20.64	273.55	34.43	269.34	39.45	267.46	41.31	266.81
43.93	265.98	44.88	265.68	46.23	265.27	57.02	262.73	63.84	261.64
65.93	261.35	79.87	259.45	82.36	259.16	88.08	258.43	102.21	256.63
102.43	256.62	111.62	256.2	113.89	256.1	125.95	255.57	134.85	254.75
148.51	253.38	160.88	252.71	171.54	252.14	176.4	251.88	188.52	251.89
196.52	251.9	208.2	251.85	213.06	251.72	214.69	251.68	226.18	251.33
229.47	251.24	240.59	250.84	245.63	251.22	248.36	251.53	255.45	252.62
258.78	253.15	264.67	254.52	268.37	255.34	273.57	256.5	282.79	258.93
284.82	259.35	284.98	259.4	289.9	261.15	298.16	263.75	300.08	264.23
301.84	264.66	305.19	265.27	306.03	265.58	313.57	267.87	318.63	269.41
325.31	269.79	333.73	270.17	339.63	271.58	341.96	271.8	343.41	271.93
344.56	272.06	349.62	272.64	351.28	272.47	360.15	273.28	361.41	273.4
365.3	274.28	368.35	274.53	376.26	275.49	383.77	276.89	386.13	277.47
387.51	277.98	395.64	282.19						

Manning's n Values num= 10

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.02	44.88	.025	88.08	.03	171.54	.045	188.52	.05
214.69	.035	223.28	.035	231.36	.035	248.36	.035	395.64	.035

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
214.69	248.36	31.6	40.08	39.57	.1	.3

CROSS SECTION RIVER: Segunda Deshecha
REACH: Middle RS: 16342.2*

INPUT
Description:
Station Elevation Data num= 72

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	282.71	1.2	282.16	12.34	277.15	15.28	275.86	16.68	275.31
17.11	275.14	19.4	274.38	32.36	270.22	37.08	268.54	38.82	267.94
41.29	267.13	42.19	266.85	43.45	266.45	53.59	264.23	60.01	263.08
61.97	262.76	75.07	260.58	77.41	260.21	82.79	259.31	96.07	257.04
96.28	257.03	104.9	256.44	107.04	256.3	118.37	255.53	126.74	254.44
139.58	252.7	151.2	251.86	161.22	251.14	165.8	250.81	177.18	250.81
184.71	250.81	195.68	250.78	200.25	250.72	201.78	250.7	213.98	250.43
217.46	250.36	229.26	250.03	233.22	250.37	235.36	250.62	243.37	251.66
247.13	252.16	253.79	253.6	257.97	254.48	263.84	255.72	274.26	258.11
276.56	258.5	276.74	258.54	282.29	260.38	291.63	263.05	293.8	263.52
295.78	263.94	299.56	264.47	300.51	264.8	309.04	267.51	314.75	269.32
322.29	269.65	331.81	269.95	338.48	271.6	341.1	271.83	342.75	271.96
344.04	272.08	349.76	272.64	351.64	272.36	361.66	273.06	363.07	273.16
367.48	274.12	370.92	274.32	379.86	274.98	388.34	276.22	391.01	276.79

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  392.56  277.33  401.74  282.05

Manning's n Values          num=       10
     Sta   n Val      Sta   n Val      Sta   n Val      Sta   n Val      Sta   n Val
       0     .02    42.19    .022    82.79    .032   161.22    .047   177.18     .05
  201.78    .035   210.35    .035   218.41    .035   235.36    .035   401.74    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right      Coeff Contr.   Expan.
        201.78  235.36              31.6   40.08   39.57             .1       .3

CROSS SECTION           RIVER: Segunda Deshecha
REACH: Middle             RS: 16302.18

INPUT
Description: Manual Modification of Manning's N Values
Station Elevation Data     num=       42
     Sta    Elev      Sta    Elev      Sta    Elev      Sta    Elev      Sta    Elev
       0  282.97    11.55  277.86    16.02  275.96    18.16   275.2    38.65  268.29
   40.67  267.63    72.46  261.27    77.49  260.18    89.92  257.46    110.8  255.49
  130.65  252.03   141.53  251.01   150.91  250.13   155.19  249.73   188.87  249.71
  205.46  249.48   217.94  249.22   222.37   249.7   235.49  251.18   247.57  253.62
  265.73  257.29   268.29  257.64   268.49  257.69   274.68  259.62   285.09  262.36
  289.72  263.22   293.94  263.67    304.5  267.14   310.87  269.23   319.28  269.52
  329.89  269.74   337.32  271.61    349.9  272.63   351.99  272.25   363.16  272.83
  364.74  272.92   369.65  273.96   383.45  274.48   392.91  275.56   395.88  276.11
  397.61  276.69   407.85  281.91

Manning's n Values          num=       4
     Sta   n Val      Sta   n Val      Sta   n Val      Sta   n Val
       0     .02    77.49    .035   150.91     .05   205.46    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right      Coeff Contr.   Expan.
        188.87  222.37             100.14     102      93             .1       .3

CROSS SECTION           RIVER: Segunda Deshecha
REACH: Middle             RS: 16200.16

INPUT
Description: Manual Modification of Manning's N Values
Station Elevation Data     num=       48
     Sta    Elev      Sta    Elev      Sta    Elev      Sta    Elev      Sta    Elev
       0  283.21     3.86  282.11    22.53  274.97    35.08  273.79    36.41  273.62
   50.16  271.83    54.27  270.88    76.03  269.38    76.23  269.37    87.55  266.34
   92.75  264.31   102.57   262.8   108.67  261.09   130.21  256.02   154.54  251.38
  158.64  250.59   160.54  250.03   164.42  249.37   173.71  249.02   197.51  248.19
  227.41  247.14   232.05  247.13   244.24  246.35   262.64  245.94   280.78  244.42
  296.83  243.01   313.56  243.08   316.41  243.09   345.93  242.52      346  242.52
  347.38  242.61   350.08  242.77   353.33  243.03   364.47  243.97   370.41  244.42
  375.23  244.56   384.84  245.98    391.4  246.73   403.55  248.34   404.71  248.49
  405.17  248.57   413.19  251.62   415.24  252.91   418.11  255.27   434.35  270.86
  438.39  274.73   441.61  276.15   455.09  283.78

Manning's n Values          num=       4
     Sta   n Val      Sta   n Val      Sta   n Val      Sta   n Val
       0     .02    36.41    .035   197.51     .05   364.47    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right      Coeff Contr.   Expan.
        316.41  353.33             221.67  418.95  380.88             .1       .3

CROSS SECTION           RIVER: Segunda Deshecha
REACH: Middle             RS: 15781.23

INPUT
Description: Manual Modification of Manning's N Values
Station Elevation Data     num=       25
     Sta    Elev      Sta    Elev      Sta    Elev      Sta    Elev      Sta    Elev
       0  269.58     4.62  268.99     19.6  265.12    28.89  262.59     32.1  261.61
      40  258.51    45.57  256.33     67.7  246.02     72.3  243.85    73.69  243.64
      80  242.85    84.24  242.31   100.42  240.26   103.73  240.35   104.82  240.34
  126.83  240.12      129  240.83   132.17  241.44   141.51  243.26   144.02  244.75
  149.15   247.1   169.71  259.11   183.99  267.37   186.53  268.22   190.17  269.41

Manning's n Values          num=       3
     Sta   n Val      Sta   n Val      Sta   n Val
       0    .035       40     .05   141.51    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right      Coeff Contr.   Expan.
         73.69  141.51             154.85  143.53  133.68             .1       .3

CROSS SECTION           RIVER: Segunda Deshecha
REACH: Middle             RS: 15637.70

INPUT
Description: Manual Modification of Manning's N Values
Station Elevation Data     num=       26
     Sta    Elev      Sta    Elev      Sta    Elev      Sta    Elev      Sta    Elev
       0  268.81    30.29  265.78    53.06  262.87     65.2  260.36    66.99  260.02
   70.89  258.53    80.78  255.92    95.85  247.49    106.2  243.24   107.94  242.89
  108.93  242.69   109.58   242.6   128.03  240.11    129.4  239.95   131.53  239.98
  159.79   240.7   160.69  240.98   162.15  241.44   169.38  243.14   171.67  244.87
  184.88  254.86   191.19   259.5   198.83  264.49   201.19  266.01   202.42  266.96
  210.33  269.88

Manning's n Values          num=       3
     Sta   n Val      Sta   n Val      Sta   n Val
       0    .035    80.78     .05   131.53    .035

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

```
        106.2  169.38           198.97  278.52  323.48            .1       .3

CROSS SECTION          RIVER: Segunda Deshecha
REACH: Middle             RS: 15359.17

INPUT
Description: Manual Modification of Manning's N Values
Station Elevation Data     num=      34
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  269.05    6.68  268.16   89.39  258.67  114.91  256.71  121.65  255.71
  126.19  254.82  155.99  248.68  171.28  243.73  173.83  242.84  174.83  242.72
  177.89  242.39   179.7  242.21  195.59  240.65  214.45  240.11  251.94   238.4
  264.21  238.86  273.34  239.42  294.89  240.72  300.44  241.51  304.85  242.81
  305.74   243.5  308.08  243.95  313.71   245.2  318.58  247.08  327.79  250.81
  332.92   253.5  345.97  257.12  349.04  257.77  388.98  263.61  393.75  264.07
  395.67  264.32  397.64  265.01  402.11  266.07  421.83  269.05

Manning's n Values         num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035   179.7     .05  264.21    .035

Bank Sta: Left   Right     Lengths: Left Channel   Right      Coeff Contr.    Expan.
        173.83  304.85           431.34  415.23  165.81              .1       .3

CROSS SECTION          RIVER: Segunda Deshecha
REACH: Middle             RS: 14943.94

INPUT
Description: Manual Modification of Manning's N Values
Station Elevation Data     num=      39
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  269.54    10.7  265.07   21.23  260.46   24.79  258.62   27.45  257.25
   30.74  255.19   36.81   251.4   37.97  250.61   38.63  250.09   45.93  243.92
   48.61   243.1    67.2  243.33      75  243.55   84.69  243.83  105.61  243.31
  112.67  243.13  187.13  242.24  190.19   243.2  191.88  243.07  194.78  242.88
  198.05  243.06  207.76  246.92  210.56     248  211.91  248.02  231.76  249.15
  246.15  252.71  247.23  253.07  247.76  253.15  261.97  255.79  263.35  255.86
  313.04  256.91  315.33  256.94  321.44  256.97  352.94  256.91   364.8   257.2
  427.12   260.6  457.15  263.32  484.94  267.79  495.84   269.6

Manning's n Values         num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035   24.79     .05      75    .035

Bank Sta: Left   Right     Lengths: Left Channel   Right      Coeff Contr.    Expan.
        112.67  190.19           421.92  386.21  221.67              .1       .3

CROSS SECTION          RIVER: Segunda Deshecha
REACH: Middle             RS: 14557.73

INPUT
Description: Manual Modification of Manning's N Values
Station Elevation Data     num=      41
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0   268.2    8.44  263.58      12  261.73   18.36  257.45   31.51  248.63
   32.63   247.9   35.85  245.79   36.29  245.49   42.68  242.46   43.36  242.44
   51.28  242.45   52.82  242.45   54.51  242.45   74.67  244.98   92.06  247.15
   94.24  247.39   99.17  247.36  106.15  247.13  126.99  246.45  146.75  244.61
  168.51   242.2  171.63  241.92  194.46  241.75  208.82   242.2  212.69  242.68
  226.94  247.31  230.85  248.71  236.54   249.4  246.23  250.56  318.74  252.76
  329.32  253.24  332.11  253.46  339.39  253.86   405.7  257.27  428.54  260.14
  450.63  262.52  472.68  263.88  479.42   264.3  490.55  266.02  509.54  268.64
  512.82  269.02

Manning's n Values         num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035   51.28     .05   92.06    .035

Bank Sta: Left   Right     Lengths: Left Channel   Right      Coeff Contr.    Expan.
        168.51  208.82           317.84  306.82  311.99              .1       .3
Ineffective Flow     num=       1
   Sta L   Sta R    Elev  Permanent
888        F

CROSS SECTION          RIVER: Segunda Deshecha
REACH: Middle             RS: 14250.91

INPUT
Description: Manual Modification of Manning's N Values
Station Elevation Data     num=      35
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  268.09    4.64  265.15   25.27  250.88   34.53  244.44   37.73  243.28
   40.32  242.41   46.84  243.29    60.9  245.17    72.8  246.32  112.45  246.94
     115  246.99  119.17  247.08  127.15  246.62  176.11  243.77  180.21  243.52
  187.49  243.23  263.76  241.15  267.84  241.17  270.64  241.18  291.32  242.65
  299.57   244.6  300.71  244.82  303.62   246.1  310.22  249.13  320.78  251.56
  323.17  252.67  340.72  257.72  357.51  261.58   357.6  261.59  358.45   261.7
  375.38  263.63  395.46  265.31   405.8  266.53  438.28   268.8  446.13  269.03

Manning's n Values         num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035    72.8     .05     115    .035

Bank Sta: Left   Right     Lengths: Left Channel   Right      Coeff Contr.    Expan.
        187.49  291.32           339.91   371.3  484.49              .1       .3
Ineffective Flow     num=       1
   Sta L   Sta R    Elev  Permanent
888        F
```

CROSS SECTION RIVER: Segunda Deshecha
REACH: Middle RS: 13879.61

INPUT
Description: Manual Modification of Manning's N Values
Station Elevation Data num= 30

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	268.84	5.16	266.99	24.31	260.75	43.11	255.38	44.81	254.85
45.76	254.42	65.04	245.58	75.26	242.96	76.9	242.53	78.15	242.32
79.64	242.27	87.06	241.99	105	241.3	127.57	240.44	151.45	239.98
152.62	239.95	201.12	238.86	266.48	238.38	292.49	237.67	316.52	238.08
346.87	239.09	361.8	240.41	380.31	242.14	381.06	242.22	381.51	242.36
381.56	242.38	434.49	261.94	435	262.23	437.58	262.96	453.45	268.59

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.035	105	.05	151.45	.035

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
127.57	361.8	253.3	221.01	198.85	.1	.3

CROSS SECTION RIVER: Segunda Deshecha
REACH: Middle RS: 13658.61

INPUT
Description: Manual Modification of Manning's N Values
Station Elevation Data num= 47

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	268.44	8.95	264.7	15.19	262.34	32.16	258.13	44.94	254.64
70.44	248.54	80.2	245.41	83.81	244.77	93.56	242.46	110.05	242.07
113.28	241.93	130.26	241.21	143	241.21	194.39	241.57	199.03	241.63
201.86	241.61	211.57	241.91	264.66	243.57	281.53	244.09	305.13	244
313.55	243.65	330.4	243.32	344.25	242.81	351.81	242.53	363.03	241.41
383.97	241.42	385.14	241.34	405.28	240.76	408.94	240.36	417.56	239.38
425.66	238.05	426.51	237.88	426.85	237.86	427.24	237.79	438.09	238.97
444.66	239	531.91	239.14	533.1	239.14	533.26	239.15	545.55	240.36
561.39	242.22	566.46	243.41	583.19	249.87	593.73	255.11	622.6	262.46
645.41	268.55	647.09	269.07						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.035	305.13	.05	344.25	.035

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
408.94	545.55	200.27	233.03	284.94	.1	.3

CROSS SECTION RIVER: Segunda Deshecha
REACH: Middle RS: 13425.58

INPUT
Description: Manual Modification of Manning's N Values
Station Elevation Data num= 35

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	268.83	.64	268.75	4.19	268.21	5.07	267.91	16.07	262.99
27.46	258.68	41.29	253.51	48.3	251.22	69.22	244.97	80.5	243.59
87.72	242.28	96.3	241.83	155.73	242.6	169.79	242.79	214.8	243.42
244.52	243.84	285	242.15	296.62	241.66	325.66	240.42	360.76	238.97
372.35	238.45	376.68	238.46	384.96	238.45	439.63	238.54	440.73	238.57
446.33	238.67	467.69	239.61	468.53	239.67	473.08	240.38	491.01	243.05
494.86	244.52	521.56	257.12	538.2	262.37	566.46	268.78	568.24	269.2

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.035	244.52	.05	285	.035

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
325.66	473.08	218.01	207.85	191.91	.1	.3

CROSS SECTION RIVER: Segunda Deshecha
REACH: Middle RS: 13217.74

INPUT
Description: Manual Modification of Manning's N Values
Station Elevation Data num= 38

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	270.55	5.25	268.74	9.86	266.88	10.98	266.46	33.41	256.64
33.5	256.62	55.5	250.01	70.25	244.43	84.3	242.21	84.41	242.17
84.44	242.17	84.5	242.17	84.72	242.17	173.99	242.88	200	243.09
210.69	243.18	256.24	241.91	267.7	241.59	320.09	240.33	324.99	240.22
371.49	240.32	387.15	240.85	402.15	241.81	404.13	242.26	406.69	243.65
407.02	243.8	415.58	247.72	419.26	249.08	428.28	252.43	437.88	255.01
451.93	258.28	466.17	261.79	477.94	263.81	495.41	265.83	505.87	267.76
518.94	268.83	524.98	269.06	527.24	269.35				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.035	200	.05	267.7	.035

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
320.09	371.49	496.88	444.4	90.46	.1	.3

CROSS SECTION RIVER: Segunda Deshecha
REACH: Middle RS: 12773.34

INPUT
Description:
Station Elevation Data num= 61

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	262.93	1.55	262.82	6.4	260.57	31.12	249.51	50.33	247.39
51.35	247.16	51.83	247.05	53.52	247.17	62.65	246.96	75.04	246.19
81.04	246.13	117.8	246.39	129.67	246.38	130.64	246.26	138.19	246.35
169.06	245.9	183.23	245.74	225.85	245.6	267.79	244.85	287.55	245.29
298.73	245.54	308.67	244.73	314.79	244.23	326.9	244.11	337.18	242.88
348.39	241.86	356.18	240.2	364.8	239.61	374.46	238.22	379.34	237.52
384.52	237.01	406.11	236.84	422.37	236.89	425.58	236.76	430.71	236.45
433.89	236.45	451.4	236.92	478.6	237.6	479.25	237.62	503.57	238.24
558.37	239.79	576.29	239.93	583.27	239.96	613.77	240.06	649.83	240.4
657.6	240.48	673.81	240.63	714.13	240.26	725.42	241.47	738.05	241.6
750.85	242.16	756.56	242.48	762.27	243.87	766.94	244.88	767.54	244.95
768.74	245.38	774.76	248.07	790.94	255.48	797.19	257.37	811.68	262.27
812.28	262.32								

Manning's n Values num= 4

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.02	308.67	.05	479.25	.02	649.83	.035

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
384.52	451.4	3901.58	3886.51 3962.26	.3	.5

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
888	F		
888	F		

Blocked Obstructions num= 4

Sta L	Sta R	Elev	Sta L	Sta R	Elev	Sta L	Sta R	Elev
194.5	205.5	295	354.5	365.5	295	524.5	535.5	295
694.5	705.5	295						

CULVERT RIVER: Segunda Deshecha
REACH: Middle RS: 12770

INPUT
Description:
Distance from Upstream XS = 3
Deck/Roadway Width = 3700
Weir Coefficient = 2.6
Upstream Deck/Roadway Coordinates
num= 2

Sta Hi Cord	Lo Cord	Sta Hi Cord	Lo Cord
0	260	850	260

Upstream Bridge Cross Section Data
Station Elevation Data num= 61

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	262.93	1.55	262.82	6.4	260.57	31.12	249.51	50.33	247.39
51.35	247.16	51.83	247.05	53.52	247.17	62.65	246.96	75.04	246.19
81.04	246.13	117.8	246.39	129.67	246.38	130.64	246.26	138.19	246.35
169.06	245.9	183.23	245.74	225.85	245.6	267.79	244.85	287.55	245.29
298.73	245.54	308.67	244.73	314.79	244.23	326.9	244.11	337.18	242.88
348.39	241.86	356.18	240.2	364.8	239.61	374.46	238.22	379.34	237.52
384.52	237.01	406.11	236.84	422.37	236.89	425.58	236.76	430.71	236.45
433.89	236.45	451.4	236.92	478.6	237.6	479.25	237.62	503.57	238.24
558.37	239.79	576.29	239.93	583.27	239.96	613.77	240.06	649.83	240.4
657.6	240.48	673.81	240.63	714.13	240.26	725.42	241.47	738.05	241.6
750.85	242.16	756.56	242.48	762.27	243.87	766.94	244.88	767.54	244.95
768.74	245.38	774.76	248.07	790.94	255.48	797.19	257.37	811.68	262.27
812.28	262.32								

Manning's n Values num= 4

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.02	308.67	.05	479.25	.02	649.83	.035

Bank Sta: Left	Right	Coeff Contr.	Expan.
384.52	451.4	.3	.5

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
888	F		
888	F		

Blocked Obstructions num= 4

Sta L	Sta R	Elev	Sta L	Sta R	Elev	Sta L	Sta R	Elev
194.5	205.5	295	354.5	365.5	295	524.5	535.5	295
694.5	705.5	295						

Downstream Deck/Roadway Coordinates
num= 2

Sta Hi Cord	Lo Cord	Sta Hi Cord	Lo Cord
0	160	800	160

Downstream Bridge Cross Section Data
Station Elevation Data num= 33

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	157.58	2.25	156.67	11.7	152.45	12.57	152.04	43.61	138.74
50.83	137.86	56.18	136.89	65.02	137.18	84.53	137.83	113.76	138.8
114.01	138.8	114.3	138.8	160.38	137.63	167.32	137.46	188.89	136.91
199.87	136.99	221.8	137.88	236.72	138.05	316.34	138.2	320.49	138.2
320.76	138.19	331.84	137.78	364.62	136.26	374.55	137.05	380.72	137.62
381.45	138.12	387.67	142.44	397.57	148.83	400.14	149.91	405.94	151.63
423.2	155.26	432.57	157.5	433.46	157.67				

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	65.02	.05	160.38	.02	320.76	.05	381.45	.035

Bank Sta: Left	Right	Coeff Contr.	Expan.
43.61	114.01	.3	.5

Ineffective Flow num= 2

```
   Sta L   Sta R    Elev  Permanent
888        F
888        F

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

Number of Culverts =  1

Culvert Name      Shape      Rise    Span
Culvert #1            Box      14      14
FHWA Chart # 8 - flared wingwalls
FHWA Scale # 1 - Wingwall flared 30 to 75 deg.
Solution Criteria = Highest U.S. EG
Culvert Upstrm Dist  Length    n Value   Entrance Loss Coef   Exit Loss Coef
                  3    3700        .02                  .8                1
Upstream    Elevation =  236.6
            Centerline Station =  434
Downstream  Elevation =  137.2
            Centerline Station =  60

CULVERT OUTPUT    Profile #Q100
Culvert ID : Culvert #1

  Culv Q (cfs)             1619.00    Culv Ful Lngh (ft)
  # Barrels                      1    Culv Vel US (ft/s)        15.50
  Q Barrel (cfs)           1619.00    Culv Vel DS (ft/s)        24.38
  E.G. US. (ft)             250.78    Culv Inv El Up (ft)      236.60
  W.S. US. (ft)             249.55    Culv Inv El Dn (ft)      137.20
  E.G. DS (ft)              148.28    Culv Frctn Ls (ft)        96.62
  W.S. DS (ft)              144.55    Culv Ext Lss (ft)          2.89
  Delta EG (ft)             102.49    Culv Ent Lss (ft)          2.98
  Delta WS (ft)             105.00    Q Weir (cfs)
  E.G. IC (ft)              248.41    Weir Sta Lft (ft)
  E.G. OC (ft)              250.78    Weir Sta Rgt (ft)
  Culvert Control           Outlet    Weir Submerg
  Culv WS Inlet (ft)        244.06    Weir Max Depth (ft)
  Culv WS Outlet (ft)       141.94    Weir Avg Depth (ft)
  Culv Nml Depth (ft)         4.74    Wr Flw Area (sq ft)
  Culv Crt Depth (ft)         7.46    Min El Weir Flow (ft)    260.01


Note:    During supercritical analysis, the culvert direct step method went to normal depth.  The
         program then assumed normal depth at the outlet.
Note:    The flow in the culvert is entirely supercritical.

CROSS SECTION          RIVER: Segunda Deshecha
REACH: Middle             RS: 8886.856

INPUT
Description:
Station Elevation Data    num=      33
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  157.58    2.25  156.67    11.7  152.45   12.57  152.04   43.61  138.74
   50.83  137.86   56.18  136.89   65.02  137.18   84.53  137.83  113.76   138.8
  114.01   138.8   114.3   138.8  160.38  137.63  167.32  137.46  188.89  136.91
  199.87  136.99   221.8  137.88  236.72  138.05  316.34   138.2  320.49   138.2
  320.76  138.19  331.84  137.78  364.62  136.26  374.55  137.05  380.72  137.62
  381.45  138.12  387.67  142.44  397.57  148.83  400.14  149.91  405.94  151.63
   423.2  155.26  432.57   157.5  433.46  157.67

Manning's n Values        num=       5
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035   65.02     .05  160.38     .02  320.76     .05  381.45    .035

Bank Sta: Left   Right    Lengths: Left Channel   Right      Coeff Contr.   Expan.
         43.61  114.01             31.73   35.51   36.42              .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
888        F
888        F

CROSS SECTION          RIVER: Segunda Deshecha
REACH: Middle             RS: 8851.34*

INPUT
Description:
Station Elevation Data    num=      60
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  157.34    1.74  156.63    2.94  156.08    5.36   154.9    8.35  153.62
   15.27   151.1    16.4  150.67   19.42   149.6   22.43  148.37   24.62  147.54
   27.51  146.36   28.52  145.95   29.86  145.53   30.81  145.26   31.07  145.18
   44.55  141.33   53.12  138.88   56.91  137.78   62.91  137.06   67.36  136.27
   75.17   136.5   75.55  136.51   93.63  137.03  102.97   137.3  120.71  137.83
  120.94  137.83  121.19  137.83  132.74  137.68  160.93  137.32   166.6  137.25
  166.92  137.25  170.02  137.21  174.77  137.15  185.52  136.96  194.99  137.09
  201.37  137.37  213.91  138.38  218.28  138.62  226.77  139.02  232.25  139.23
  257.72  139.89  295.44  140.69  299.02  140.76  299.25  140.75  308.81  140.61
  331.63  140.07  337.08  139.94  345.64  140.73  348.31     141  350.97  141.27
   351.6  141.68  356.96  145.21  363.23  149.05   365.5  150.43  367.72  151.31
  372.72  152.72  380.93  154.39   387.6  155.74  395.68  157.59  396.45  157.73

Manning's n Values        num=      10
```

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	30.81	.038	56.91	.047	76.38	.047	120.94	.023
160.93	.023	170.02	.035	299.25	.047	351.6	.035	396.45	.035

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
56.91	120.94	31.73	35.51	36.42	.1	.3

CROSS SECTION RIVER: Segunda Deshecha
REACH: Middle RS: 8815.83*

INPUT
Description:
Station Elevation Data num= 60

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	157.1	2.15	156.22	3.62	155.48	6.61	153.95	10.3	152.43
18.84	149.75	20.24	149.29	23.96	148.15	27.67	146.67	30.37	145.73
33.94	144.32	35.18	143.83	36.84	143.45	38.02	143.2	38.33	143.14
54.96	139.86	65.53	137.78	70.21	136.82	75	136.26	78.54	135.65
85.73	135.82	86.08	135.83	102.73	136.23	111.33	136.44	127.66	136.86
127.87	136.86	128.08	136.86	137.79	136.9	161.49	137.01	166.25	137.03
166.52	137.03	169.13	137.04	173.12	137.06	182.15	137.01	190.11	137.18
195.48	137.44	206.01	138.88	209.68	139.29	216.83	139.99	221.43	140.41
242.83	141.65	274.54	143.17	277.55	143.31	277.75	143.31	285.78	143.44
304.96	143.59	309.54	143.61	316.74	144.4	318.98	144.67	321.21	144.92
321.74	145.23	326.25	147.98	331.52	150.97	333.43	152.02	335.29	152.71
339.49	153.82	346.4	155.14	352.01	156.22	358.8	157.68	359.44	157.8

Manning's n Values num= 10

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	38.02	.041	70.21	.044	87.75	.044	127.87	.026
161.49	.026	169.13	.035	277.75	.044	321.74	.035	359.44	.035

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
70.21	127.87	31.73	35.51	36.42	.1	.3

CROSS SECTION RIVER: Segunda Deshecha
REACH: Middle RS: 8780.32*

INPUT
Description:
Station Elevation Data num= 60

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	156.86	2.56	155.8	4.31	154.89	7.86	153.01	12.25	151.23
22.4	148.39	24.07	147.92	28.49	146.7	32.91	144.97	36.12	143.92
40.37	142.29	41.85	141.72	43.81	141.36	45.22	141.15	45.59	141.1
65.38	138.4	77.94	136.67	83.51	135.86	87.08	135.46	89.73	135.03
96.29	135.15	96.62	135.16	111.83	135.43	119.68	135.58	134.61	135.88
134.81	135.88	134.98	135.89	142.84	136.13	162.04	136.7	165.9	136.82
166.12	136.82	168.23	136.88	171.47	136.98	178.79	137.06	185.24	137.28
189.58	137.52	198.12	139.38	201.09	139.97	206.88	140.96	210.61	141.58
227.95	143.42	253.65	145.66	256.08	145.87	256.24	145.88	262.75	146.27
278.29	147.11	282	147.29	287.83	148.08	289.65	148.34	291.46	148.56
291.89	148.79	295.54	150.75	299.81	152.89	301.36	153.62	302.87	154.11
306.27	154.91	311.86	155.9	316.41	156.7	321.91	157.78	322.44	157.86

Manning's n Values num= 10

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	45.22	.044	83.51	.041	99.11	.041	134.81	.029
162.04	.029	168.23	.035	256.24	.041	291.89	.035	322.44	.035

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
83.51	134.81	31.73	35.51	36.42	.1	.3

CROSS SECTION RIVER: Segunda Deshecha
REACH: Middle RS: 8744.81*

INPUT
Description:
Station Elevation Data num= 60

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	156.62	2.96	155.39	4.99	154.3	9.12	152.06	14.2	150.04
25.97	147.04	27.9	146.55	33.03	145.25	38.15	143.28	41.88	142.12
46.8	140.25	48.51	139.6	50.79	139.27	52.42	139.1	52.85	139.06
75.79	136.93	90.36	135.57	96.81	134.9	99.16	134.66	100.91	134.41
106.86	134.48	107.15	134.48	120.92	134.64	128.04	134.71	141.56	134.91
141.74	134.91	141.87	134.92	147.89	135.35	162.6	136.39	165.55	136.6
165.72	136.61	167.34	136.72	169.81	136.9	175.42	137.11	180.36	137.37
183.69	137.59	190.22	139.88	192.5	140.65	196.93	141.93	199.79	142.75
213.07	145.19	232.75	148.14	234.61	148.42	234.74	148.44	239.72	149.1
251.62	150.63	254.46	150.97	258.93	151.75	260.32	152	261.71	152.21
262.03	152.35	264.83	153.52	268.1	154.81	269.28	155.22	270.44	155.5
273.05	156	277.33	156.65	280.81	157.18	285.03	157.87	285.43	157.93

Manning's n Values num= 10

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	52.42	.047	96.81	.038	110.47	.038	141.74	.032
162.6	.032	167.34	.035	234.74	.038	262.03	.035	285.43	.035

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
96.81	141.74	31.73	35.51	36.42	.1	.3

CROSS SECTION RIVER: Segunda Deshecha
REACH: Middle RS: 8709.304

INPUT
Description:
Station Elevation Data num= 32

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev

0	156.38	3.37	154.98	10.37	151.12	16.15	148.84	37.57	143.8
43.39	141.58	47.63	140.31	53.23	138.22	55.18	137.49	57.77	137.18
59.62	137.05	60.11	137.02	86.2	135.46	102.77	134.46	110.11	133.94
112.09	133.79	117.42	133.81	136.4	133.85	148.67	133.94	152.94	134.57
165.2	136.38	166.44	136.56	168.16	136.82	177.79	137.67	183.91	141.33
188.97	143.92	198.19	146.96	224.95	154.15	230.99	155.67	236.39	156.73
242.8	157.41	248.42	157.99						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.035	59.62	.05	166.44	.035

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
110.11	148.67	35.44	39.19	42.1	.1	.3

CROSS SECTION RIVER: Segunda Deshecha
REACH: Middle RS: 8670.11*

INPUT
Description:
Station Elevation Data num= 60

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	156.6	3.78	155.29	4.83	154.82	11.63	151.81	18.12	149.7
32.9	146.64	42.15	144.79	48.68	142.77	53.44	141.59	59.72	139.69
61.91	139.03	64.82	138.7	66.89	138.54	67.44	138.5	80.77	137.57
81	137.55	81.11	137.54	81.28	137.53	81.93	137.45	96.71	135.79
97.94	135.65	100.66	135.33	112.44	134	115.3	133.83	117.19	133.7
118.4	133.62	120.1	133.5	123.54	133.28	127.51	133.06	132.24	133.09
132.4	133.09	149.79	133.17	161.04	133.28	165.67	133.82	167.71	134.06
175.1	135.04	177.8	135.44	178.96	135.6	180.3	135.8	182.17	136.07
182.9	136.14	189.55	136.8	192.61	137.16	199.24	140.55	199.98	140.88
204.73	142.92	206.6	143.46	206.91	143.55	211.92	145.18	214.72	146.03
220.51	147.52	226.5	149.02	236.74	151.74	243.73	153.57	250.28	155.2
253.62	155.89	256.13	156.38	263.08	157.27	264.79	157.48	269.17	158.02

Manning's n Values num= 8

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	66.89	.047	118.4	.038	123.54	.035	161.04	.035
177.8	.035	180.3	.035	269.17	.035				

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
123.54	161.04	35.44	39.19	42.1	.1	.3

CROSS SECTION RIVER: Segunda Deshecha
REACH: Middle RS: 8630.92*

INPUT
Description:
Station Elevation Data num= 60

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	156.83	4.19	155.59	5.35	155.17	12.9	152.5	20.09	150.56
36.48	147.54	46.73	145.78	53.97	143.97	59.25	142.88	66.21	141.17
68.64	140.57	71.86	140.22	74.16	140.02	74.77	139.98	89.54	138.83
89.81	138.81	89.92	138.8	90.11	138.77	90.84	138.66	107.22	136.11
108.59	135.9	111.6	135.42	124.66	133.39	127.84	133.19	129.93	133.05
131.27	132.97	133.15	132.84	136.97	132.61	142.93	132.33	147.23	132.37
147.37	132.37	163.19	132.49	173.41	132.61	178.4	133.07	180.59	133.27
188.56	134.23	191.47	134.65	192.72	134.83	194.17	135.03	196.18	135.32
196.97	135.41	204.14	136.18	207.43	136.66	214.57	139.77	215.37	140.08
220.49	141.92	222.51	142.43	222.83	142.52	228.23	144.26	231.26	145.11
237.49	146.65	243.95	148.16	254.98	151.07	262.51	153	269.57	154.73
273.17	155.5	275.88	156.04	283.37	157.13	285.2	157.39	289.93	158.04

Manning's n Values num= 8

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	74.16	.045	131.27	.04	136.97	.035	173.41	.035
191.47	.035	194.17	.035	289.93	.035				

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
136.97	173.41	35.44	39.19	42.1	.1	.3

CROSS SECTION RIVER: Segunda Deshecha
REACH: Middle RS: 8591.73*

INPUT
Description:
Station Elevation Data num= 60

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	157.05	4.6	155.9	5.88	155.52	14.16	153.19	22.06	151.42
40.05	148.44	51.32	146.77	59.26	145.16	65.06	144.16	72.7	142.64
75.37	142.11	78.91	141.73	81.43	141.51	82.1	141.45	98.32	140.08
98.61	140.06	98.74	140.05	98.95	140.02	99.74	139.87	117.74	136.44
119.23	136.16	122.54	135.51	136.88	132.77	140.37	132.56	142.67	132.41
144.14	132.32	146.21	132.18	150.39	131.95	158.35	131.6	162.22	131.64
162.35	131.65	176.58	131.81	185.78	131.95	191.13	132.32	193.48	132.48
202.02	133.42	205.14	133.86	206.48	134.05	208.03	134.27	210.18	134.57
211.03	134.67	218.72	135.56	222.24	136.15	229.91	139	230.76	139.28
236.24	140.91	238.41	141.4	238.76	141.48	244.55	143.33	247.79	144.18
254.48	145.78	261.39	147.3	273.22	150.39	281.3	152.42	288.86	154.26
292.71	155.12	295.62	155.69	303.65	156.99	305.62	157.31	310.68	158.07

Manning's n Values num= 8

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	81.43	.043	144.14	.043	150.39	.035	185.78	.035
205.14	.035	208.03	.035	310.68	.035				

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
150.39	185.78	35.44	39.19	42.1	.1	.3

CROSS SECTION RIVER: Segunda Deshecha
REACH: Middle RS: 8552.54*

INPUT
Description:
Station Elevation Data num= 60

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	157.27	5.01	156.21	6.4	155.87	15.43	153.88	24.03	152.28
43.63	149.34	55.9	147.76	64.56	146.35	70.86	145.45	79.2	144.11
82.1	143.65	85.95	143.25	88.7	143	89.43	142.93	107.1	141.34
107.42	141.32	107.56	141.3	107.78	141.26	108.65	141.08	128.25	136.77
129.88	136.41	133.49	135.6	149.11	132.16	152.9	131.93	155.4	131.77
157.01	131.67	159.26	131.52	163.82	131.29	173.77	130.87	177.21	130.92
177.32	130.93	189.97	131.13	198.15	131.28	203.86	131.56	206.37	131.69
215.48	132.61	218.81	133.07	220.24	133.27	221.9	133.5	224.19	133.82
225.1	133.93	233.3	134.94	237.06	135.65	245.24	138.22	246.15	138.49
252	139.91	254.31	140.37	254.69	140.45	260.86	142.41	264.32	143.26
271.46	144.9	278.84	146.45	291.46	149.72	300.08	151.84	308.15	153.79
312.26	154.73	315.37	155.35	323.93	156.85	326.03	157.22	331.44	158.1

Manning's n Values num= 8

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	88.7	.04	157.01	.045	163.82	.035	198.15	.035
218.81	.035	221.9	.035	331.44	.035				

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
163.82	198.15	35.44	39.19	42.1	.1	.3

CROSS SECTION RIVER: Segunda Deshecha
REACH: Middle RS: 8513.35*

INPUT
Description:
Station Elevation Data num= 60

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	157.5	5.42	156.51	6.93	156.22	16.69	154.56	26	153.14
47.2	150.24	60.48	148.74	69.85	147.55	76.67	146.73	85.69	145.59
88.83	145.19	93	144.77	95.97	144.48	96.76	144.41	115.88	142.6
116.22	142.57	116.37	142.56	116.62	142.51	117.55	142.28	138.76	137.1
140.52	136.67	144.43	135.68	161.33	131.54	165.44	131.29	168.14	131.12
169.88	131.02	172.32	130.86	177.25	130.62	189.19	130.14	192.2	130.2
192.3	130.2	203.37	130.45	210.52	130.62	216.58	130.81	219.25	130.9
228.94	131.8	232.48	132.29	234	132.49	235.76	132.74	238.2	133.07
239.16	133.2	247.88	134.32	251.88	135.14	260.57	137.44	261.54	137.69
267.76	138.91	270.22	139.34	270.61	139.41	277.18	141.48	280.85	142.33
288.44	144.03	296.28	145.59	309.7	149.04	318.86	151.26	327.44	153.32
331.81	154.35	335.11	155	344.21	156.71	346.45	157.13	352.2	158.12

Manning's n Values num= 8

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	95.97	.038	169.88	.047	177.25	.035	210.52	.035
232.48	.035	235.76	.035	352.2	.035				

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
177.25	210.52	35.44	39.19	42.1	.1	.3

CROSS SECTION RIVER: Segunda Deshecha
REACH: Middle RS: 8474.166

INPUT
Description:
Station Elevation Data num= 33

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	157.72	7.45	156.57	50.78	151.14	124.66	143.86	125.03	143.83
125.19	143.81	125.45	143.75	126.46	143.49	151.17	136.92	155.37	135.77
173.55	130.93	180.88	130.48	182.75	130.37	185.37	130.2	190.68	129.96
204.61	129.41	207.19	129.48	222.89	129.95	232.14	130.11	242.4	130.99
246.15	131.5	253.23	132.46	262.46	133.7	276.93	136.89	286.12	138.31
286.54	138.38	293.49	140.56	305.42	143.16	313.73	144.73	327.94	148.37
351.36	153.96	366.86	157.04	372.95	158.15				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.035	182.75	.05	246.15	.035

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
190.68	222.89	112.66	163.55	194.39	.1	.3

CROSS SECTION RIVER: Segunda Deshecha
REACH: Middle RS: 8310.613

INPUT
Description:
Station Elevation Data num= 33

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	157.05	37.7	152.72	49.32	151	54.85	150.64	75.31	147.92
92.37	145.35	109.5	142.19	133.82	137.49	151.52	135.12	159.49	133.41
161.82	132.75	181.92	131.28	184.99	131.04	205.5	129.54	220.17	128.46
228.32	127.87	238.41	127.15	245.71	126.85	263.56	126.96	289.04	126.74
289.7	126.8	293.5	127.16	297.43	127.49	317.24	129.27	324.99	129.67
328.5	130.03	334.1	131.03	346.05	135.89	347.49	136.29	353	139.24
355.12	140.62	375.68	151.24	386.27	158.53				

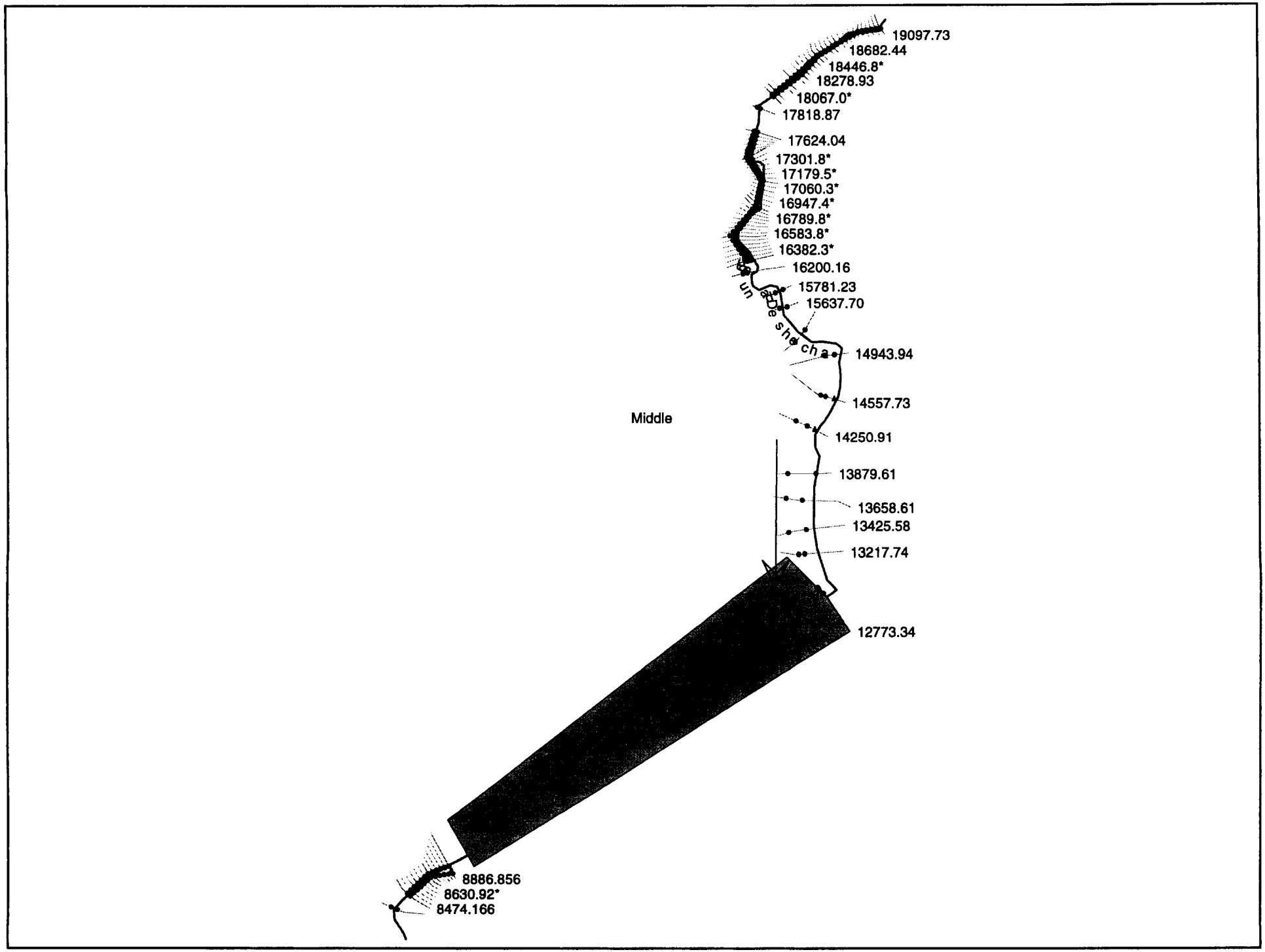
Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.035	220.17	.05	297.43	.035

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
238.41	293.5	0	0	.1	.3

Profile Output Table - Standard Table 1

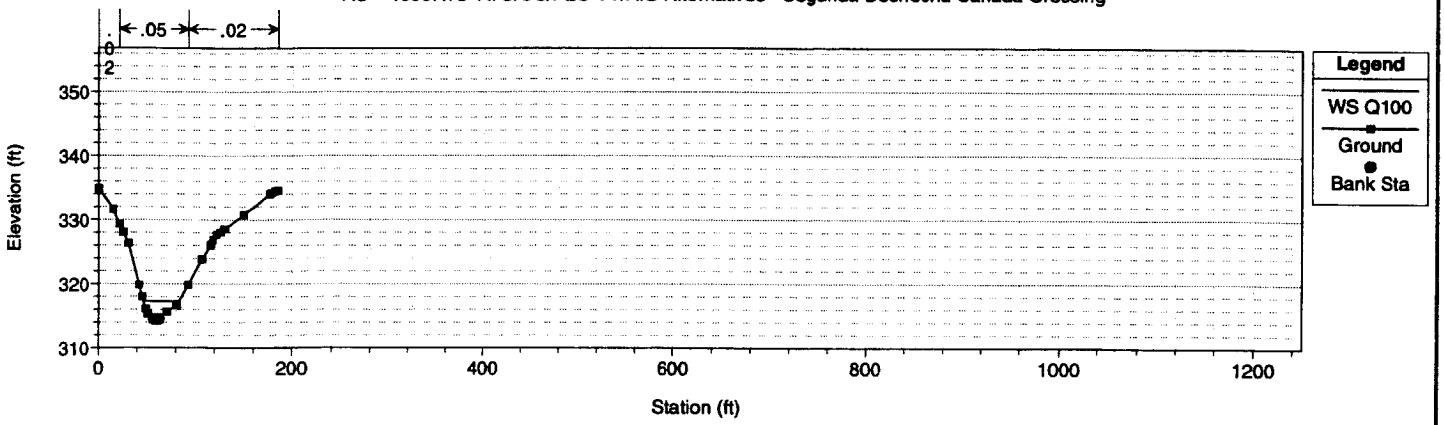
Reach	River Sta	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
		(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Middle	19097.73	955.00	314.22	317.30	318.42	320.95	0.100040	19.32	66.11	36.16	1.98
Middle	18895.59	955.00	307.44	310.15	311.67	315.47	0.136958	20.47	54.36	28.25	2.26
Middle	18682.44	955.00	294.86	298.31	300.63	307.64	0.180540	28.05	42.85	19.40	2.70
Middle	18488.77	955.00	288.47	291.32	293.24	298.90	0.183359	23.70	45.49	24.14	2.61
Middle	18278.93	955.00	287.18	289.33	290.03	291.69	0.042040	12.13	81.67	50.54	1.51
Middle	17982.24	955.00	275.67	281.30	282.30	283.86	0.038573	13.24	79.36	38.35	1.21
Middle	17818.87	955.00	272.91	279.52	277.39	279.91	0.003343	5.21	201.93	51.09	0.40
Middle	17624.04	955.00	274.98	277.77	277.77	278.87	0.008108	5.01	142.28	70.93	0.55
Middle	17383.46	955.00	268.18	271.60	270.76	272.04	0.007845	5.73	187.15	73.04	0.56
Middle	17097.92	955.00	265.23	268.91	268.91	270.09	0.009982	9.72	116.85	49.39	0.92
Middle	16872.22	955.00	259.68	261.65	262.12	263.23	0.041381	13.13	103.00	88.68	1.69
Middle	16542.69	955.00	254.09	256.26	256.51	257.06	0.025822	9.01	154.66	227.99	1.28
Middle	16302.18	955.00	249.22	251.18	251.37	252.15	0.029746	9.04	126.91	95.78	1.22
Middle	16200.16	955.00	242.52	250.97	244.78	250.98	0.000052	0.87	1307.06	254.79	0.05
Middle	15781.23	955.00	240.12	250.93		250.96	0.000095	1.31	775.51	98.56	0.07
Middle	15637.70	955.00	239.95	250.92		250.95	0.000067	1.41	734.89	89.97	0.08
Middle	15359.17	955.00	238.40	250.93		250.93	0.000014	0.62	1627.67	182.94	0.03
Middle	14943.94	955.00	242.24	250.92		250.93	0.000023	0.83	1352.98	201.40	0.05
Middle	14557.73	955.00	241.75	250.91	244.29	250.92	0.000029	0.99	1315.88	229.71	0.06
Middle	14250.91	955.00	241.15	250.91	243.45	250.91	0.000011	0.61	1904.13	292.73	0.04
Middle	13879.61	1028.00	237.67	250.91		250.91	0.000002	0.30	3699.57	351.22	0.02
Middle	13658.61	1028.00	237.79	250.91		250.91	0.000001	0.26	4740.55	524.74	0.01
Middle	13425.58	1028.00	238.45	250.91		250.91	0.000002	0.29	4176.51	459.04	0.01
Middle	13217.74	1028.00	240.22	250.91		250.91	0.000004	0.40	3159.70	371.65	0.02
Middle	12773.34	1619.00	236.45	249.55	243.97	250.78	0.002917	8.88	182.32	702.97	0.43
Middle	12770	Culvert									
Middle	8886.856	1619.00	136.89	141.64	144.54	151.67	0.051875	25.41	63.72	349.69	0.43
Middle	8709.304	1619.00	133.79	137.15	136.86	137.93	0.014796	8.02	244.59	113.77	0.78
Middle	8474.166	1619.00	129.41	132.63	132.63	133.75	0.022242	9.12	193.79	87.35	0.94
Middle	8310.613	1619.00	126.74	130.04	129.52	130.59	0.010003	6.38	279.70	129.90	0.63



1 in Horiz. = 1300 ft 1 in Vert. = 1100 ft

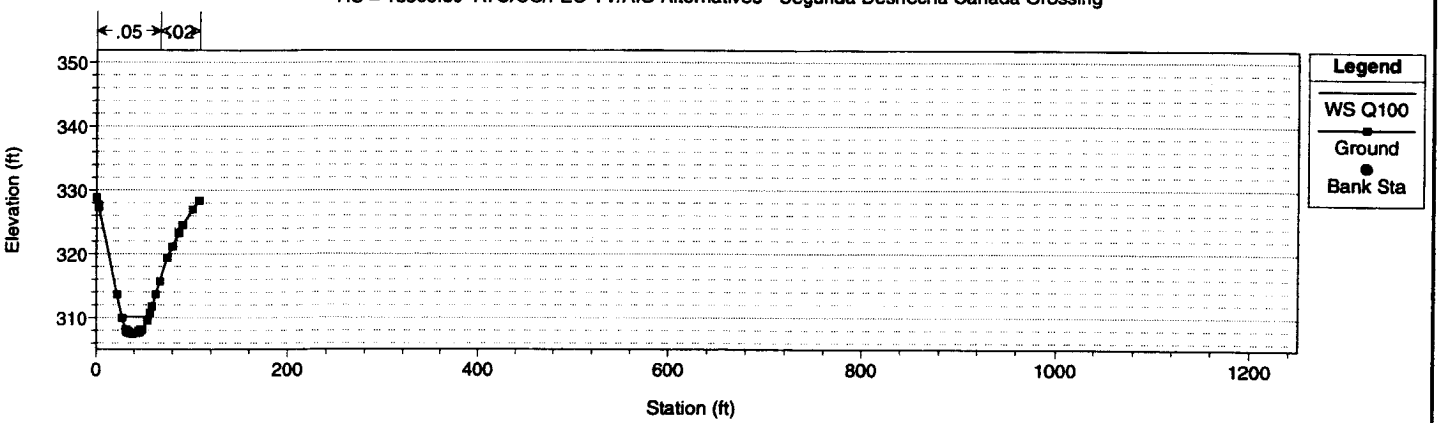
Project Model E1

RS = 19097.73 A7C/CC/FEC-TV/AIO Alternatives - Segunda Deshecha Canada Crossing



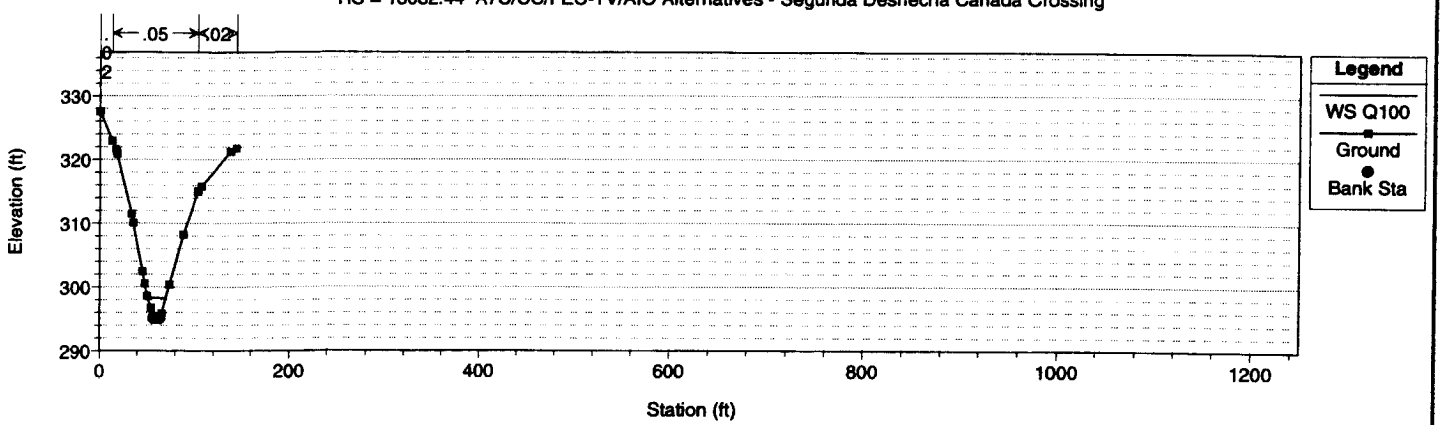
Project Model E1

RS = 18895.59 A7C/CC/FEC-TV/AIO Alternatives - Segunda Deshecha Canada Crossing



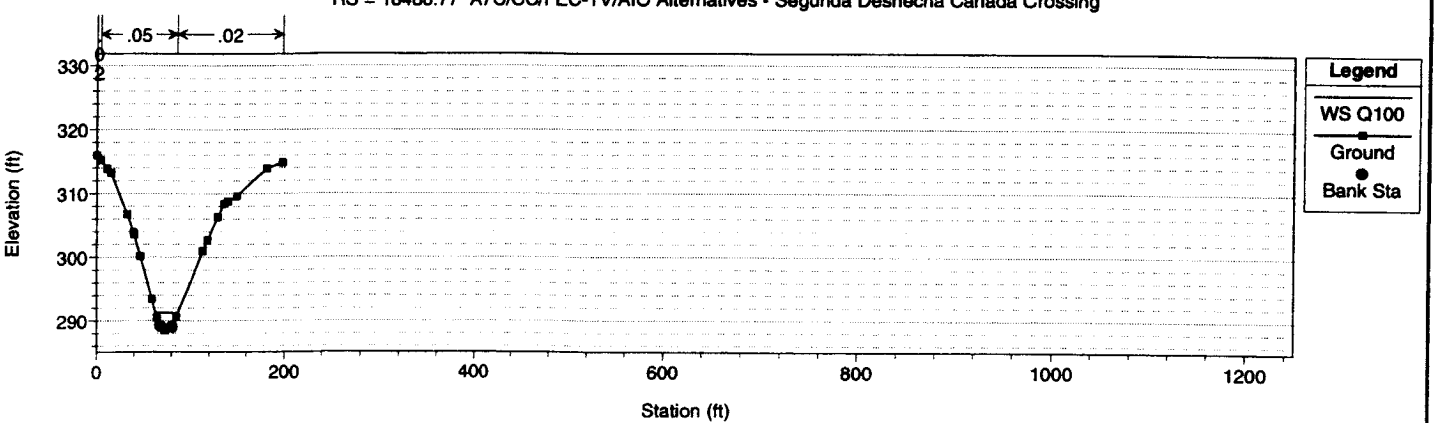
Project Model E1

RS = 18682.44 A7C/CC/FEC-TV/AIO Alternatives - Segunda Deshecha Canada Crossing



Project Model E1

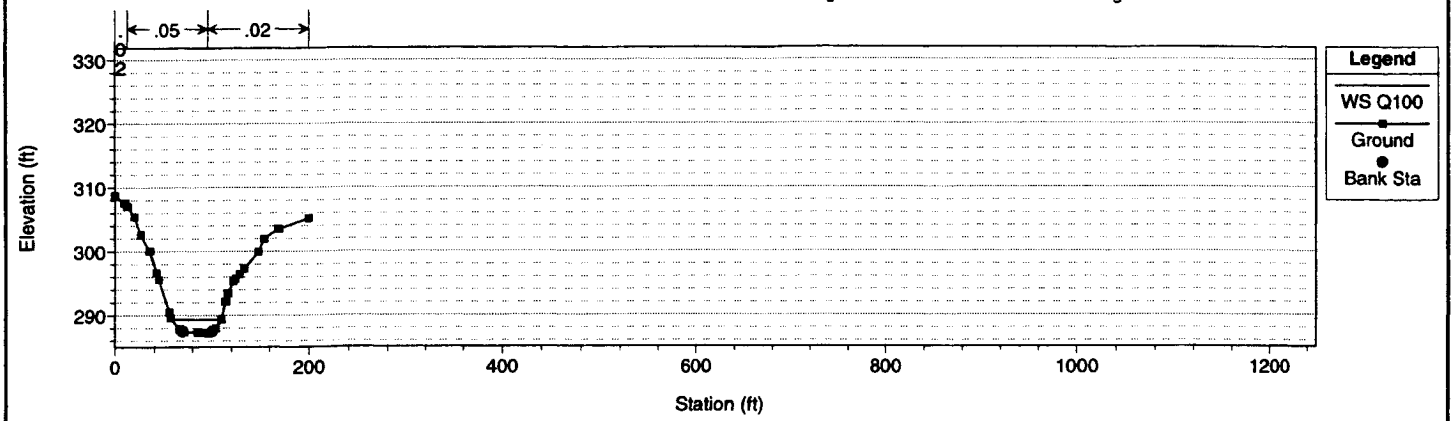
RS = 18488.77 A7C/CC/FEC-TV/AIO Alternatives - Segunda Deshecha Canada Crossing



1 in Horiz. = 200 ft 1 in Vert. = 30 ft

Project Model E1

RS = 18278.93 A7C/CC/FEC-TV/AIO Alternatives - Segunda Deshecha Canada Crossing



Project Model E1

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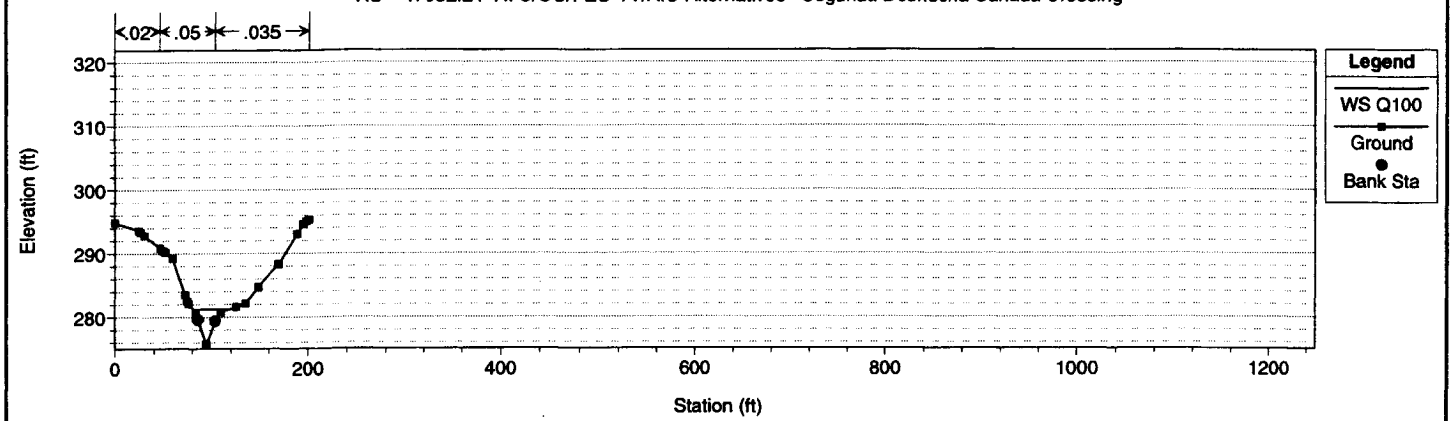
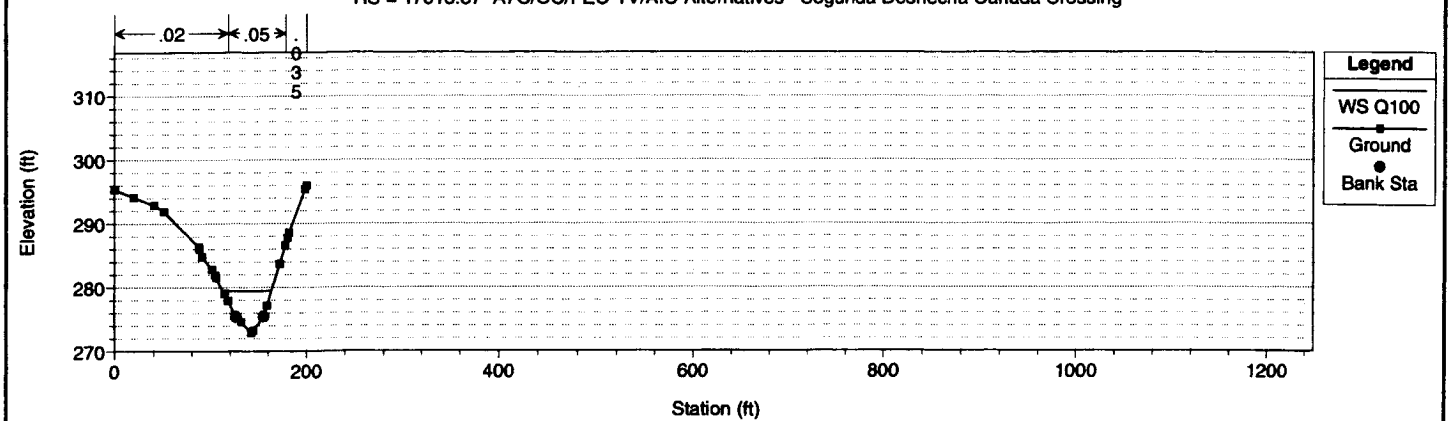


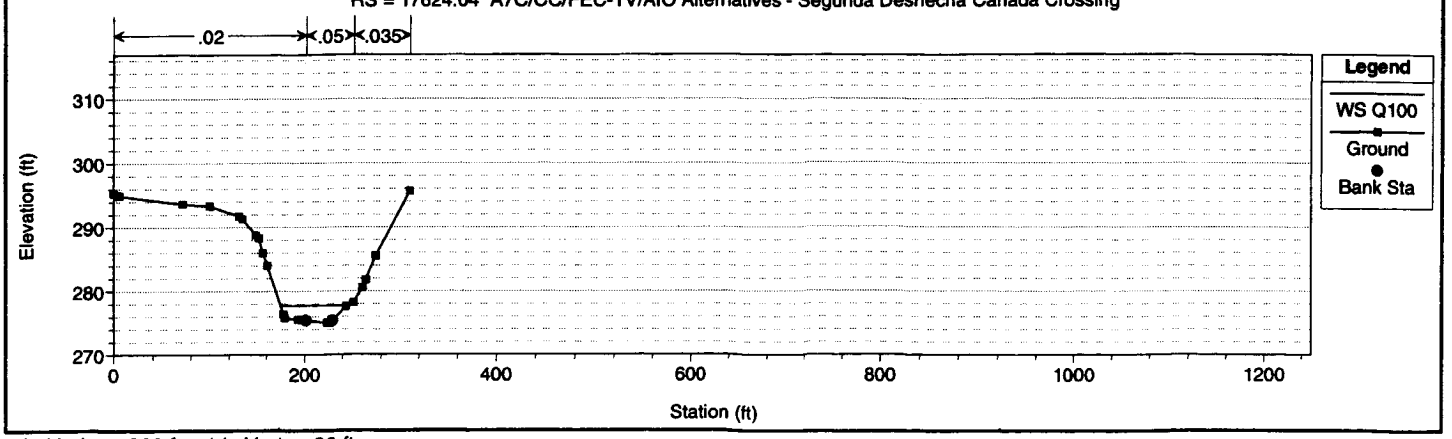
Project Model E1

RS = 17818.87 A7C/CC/FEC-TV/AIO Alternatives - Segunda Deshecha Canada Crossing



Project Model E1

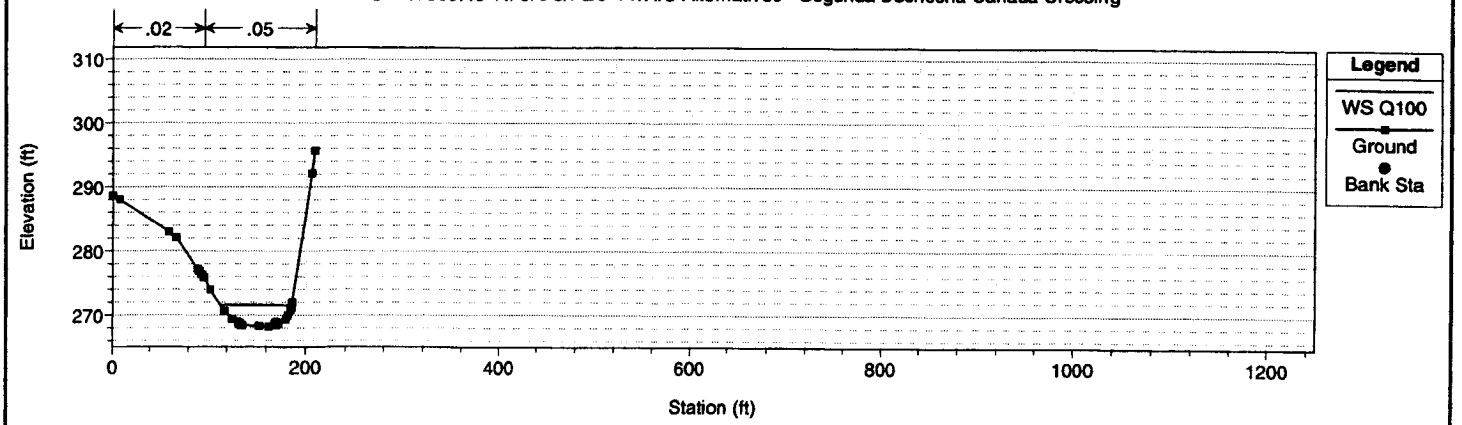
RS = 17624.04 A7C/CC/FEC-TV/AIO Alternatives - Segunda Deshecha Canada Crossing



1 in Horiz. = 200 ft 1 in Vert. = 30 ft

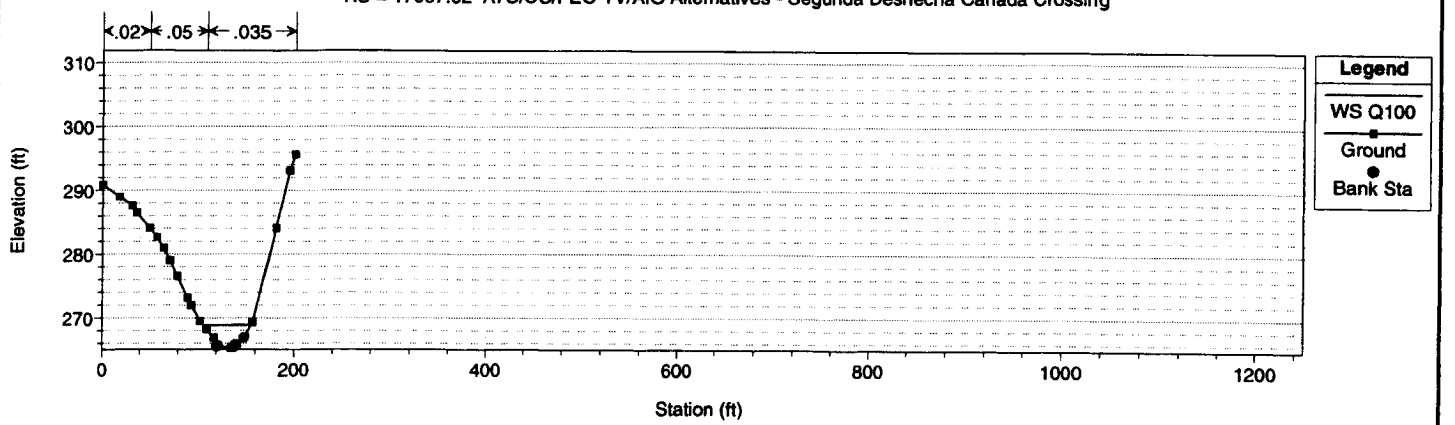
Project Model E1

RS = 17383.46 A7C/CC/FEC-TV/AIO Alternatives - Segunda Deshecha Canada Crossing



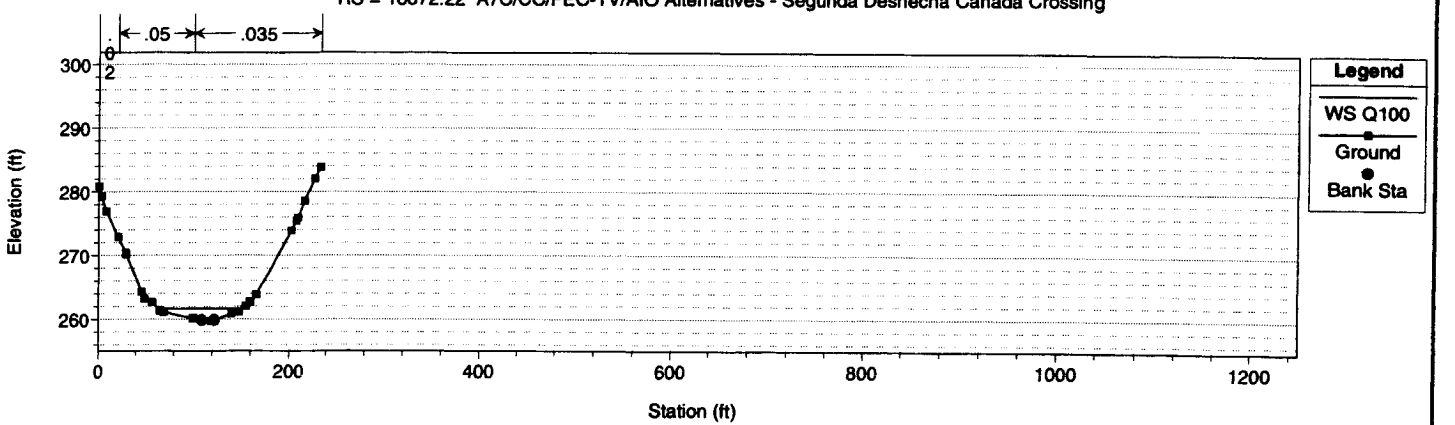
Project Model E1

RS = 17097.92 A7C/CC/FEC-TV/AIO Alternatives - Segunda Deshecha Canada Crossing



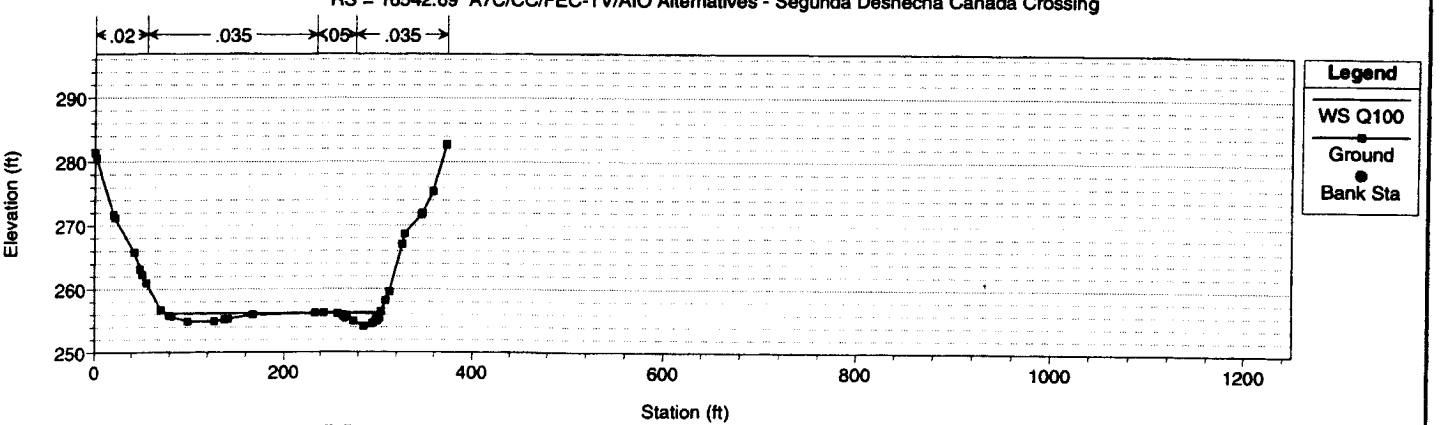
Project Model E1

RS = 16872.22 A7C/CC/FEC-TV/AIO Alternatives - Segunda Deshecha Canada Crossing



Project Model E1

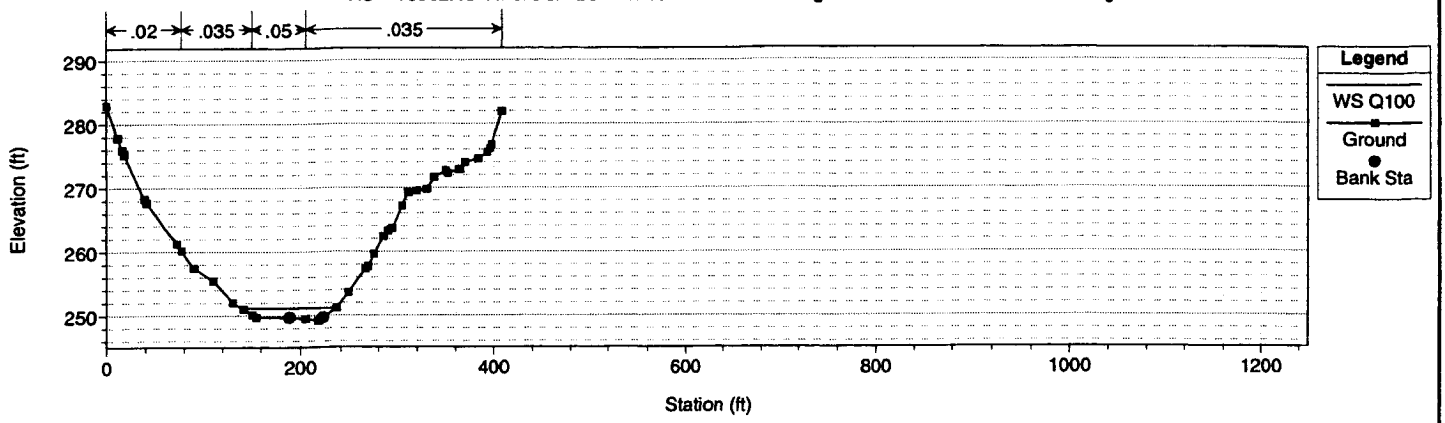
RS = 16542.69 A7C/CC/FEC-TV/AIO Alternatives - Segunda Deshecha Canada Crossing



1 in Horiz. = 200 ft 1 in Vert. = 30 ft

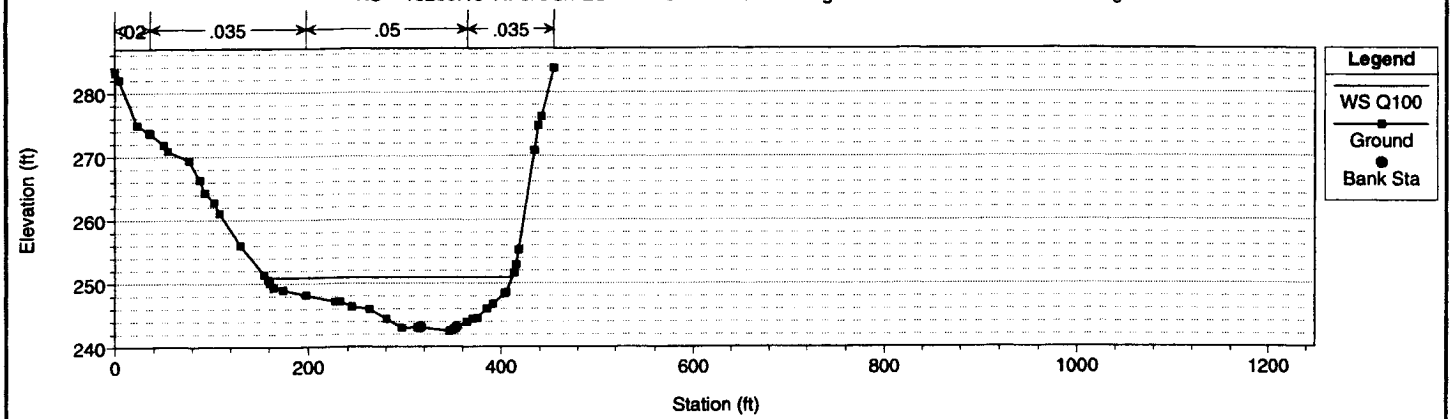
Project Model E1

RS = 16302.18 A7C/CC/FEC-TV/AIO Alternatives - Segunda Deshecha Canada Crossing



Project Model E1

RS = 16200.16 A7C/CC/FEC-TV/AIO Alternatives - Segunda Deshecha Canada Crossing



Project Model E1

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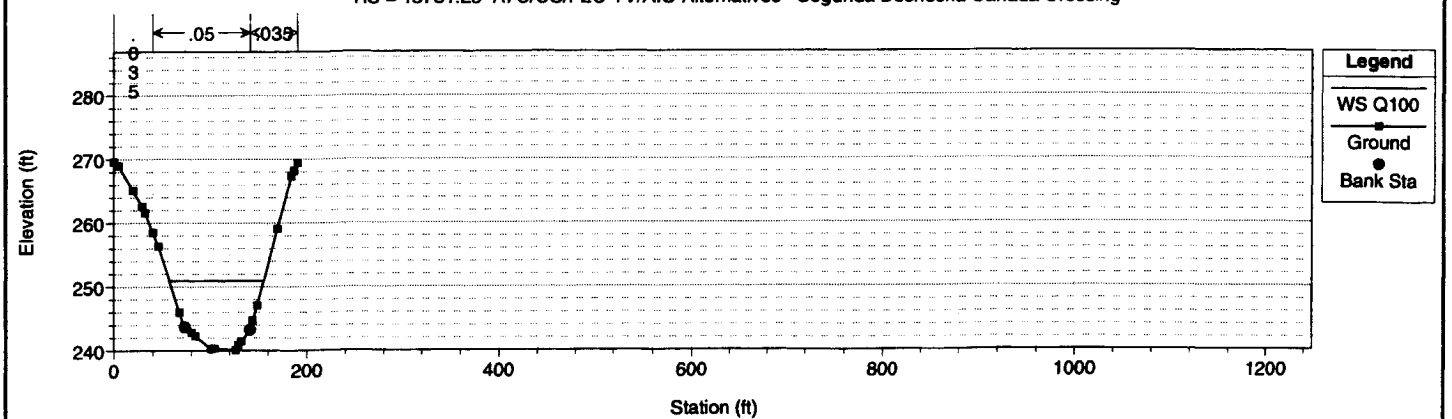
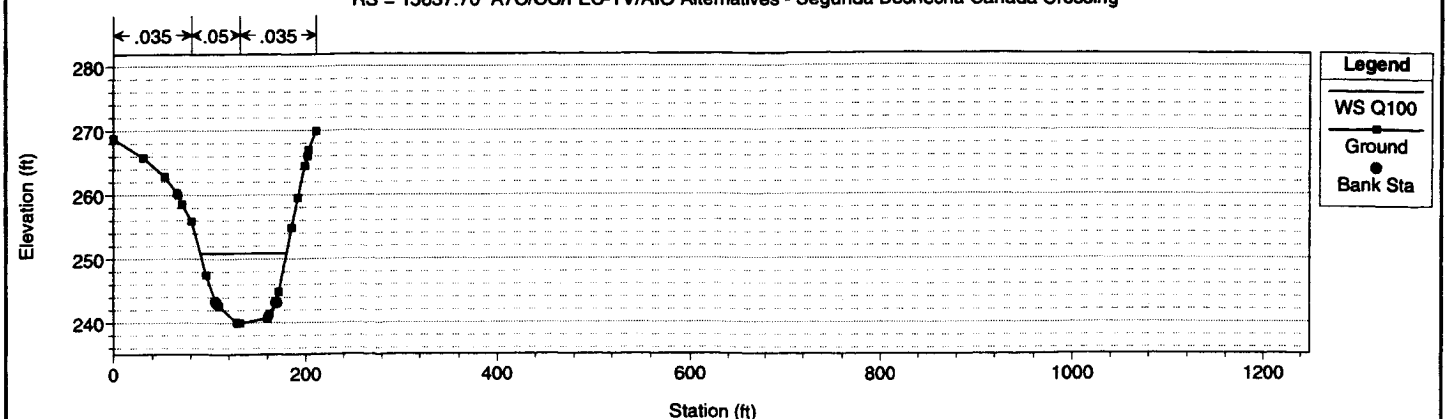
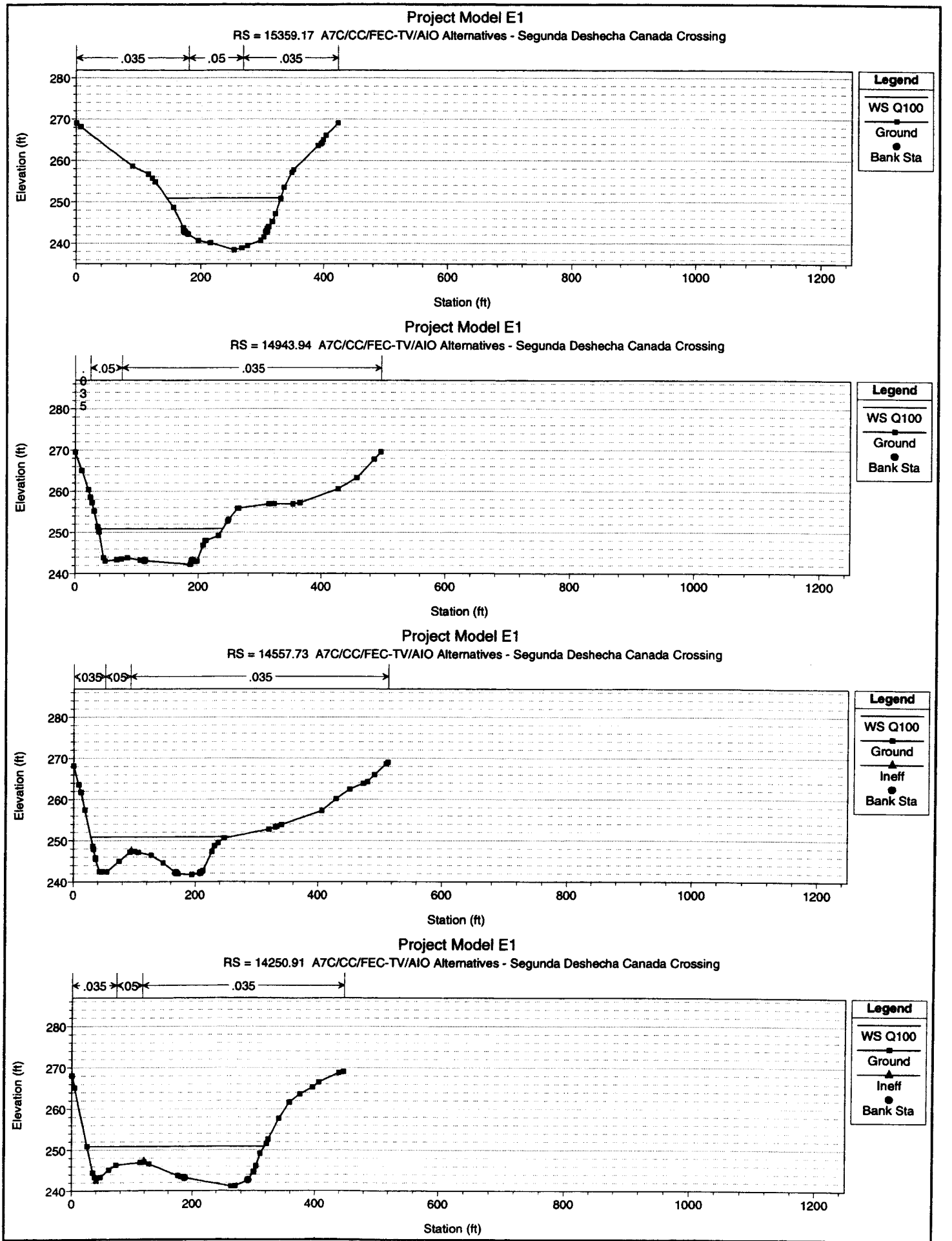


Project Model E1

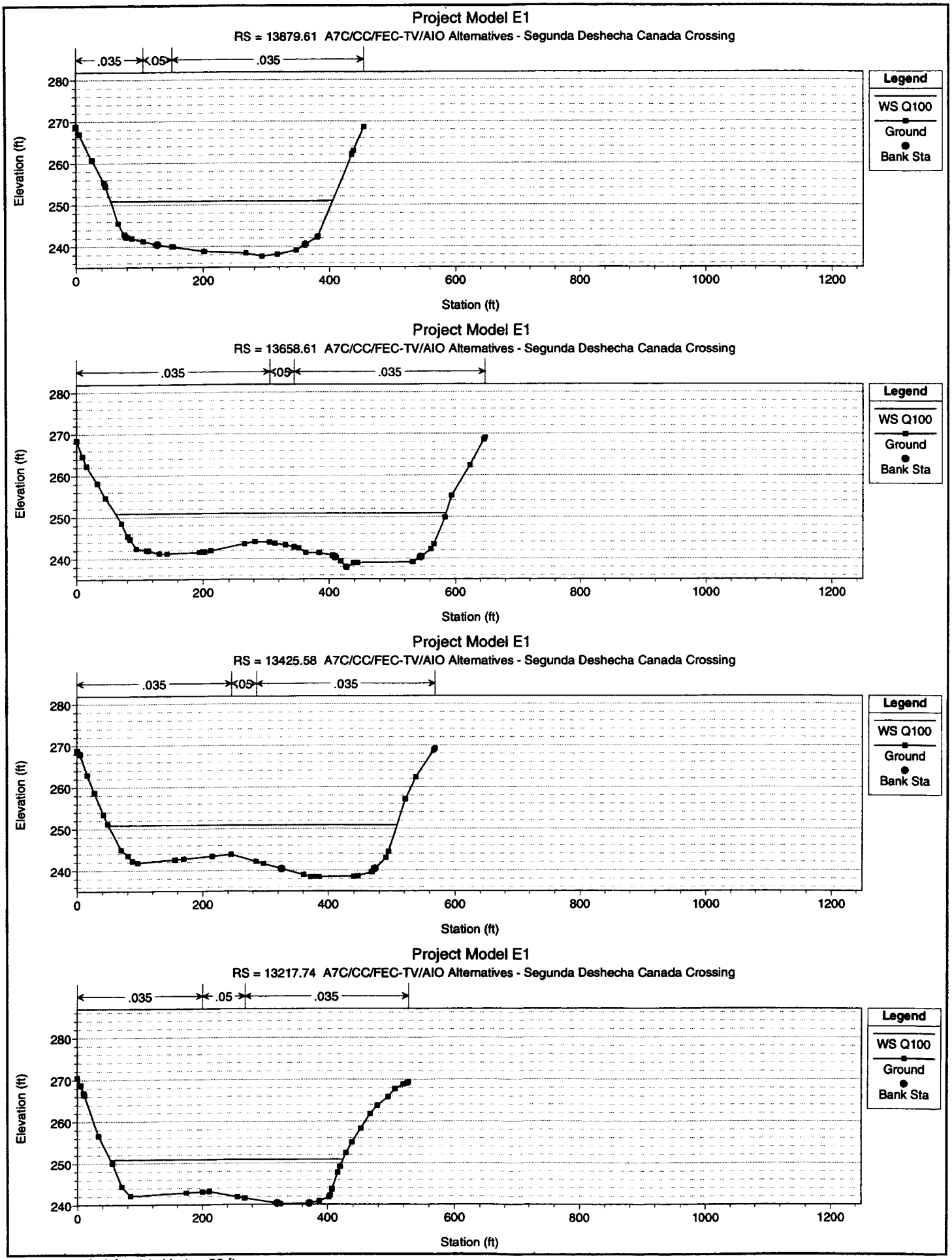
RS = 15637.70 A7C/CC/FEC-TV/AIO Alternatives - Segunda Deshecha Canada Crossing



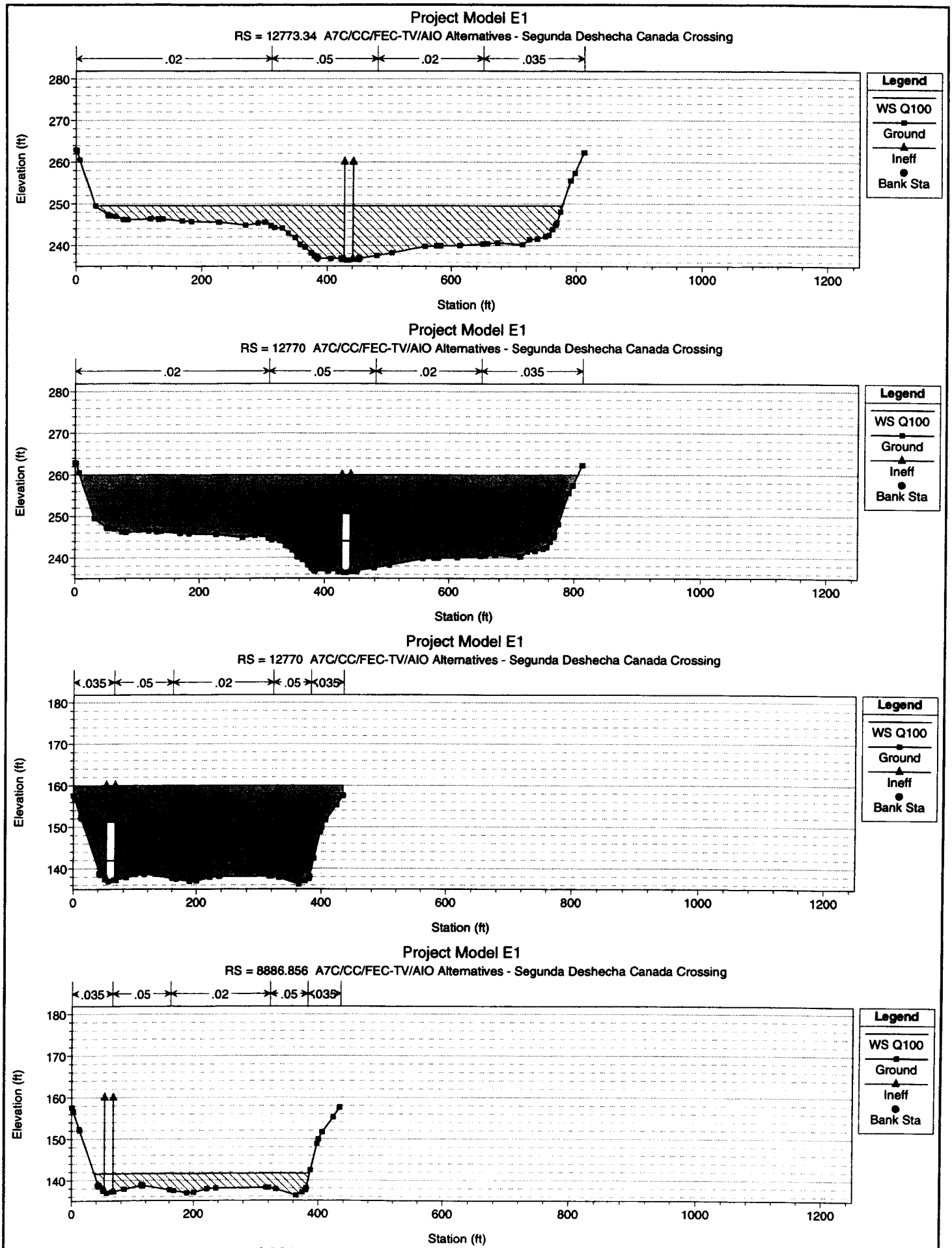
1 in Horiz. = 200 ft 1 in Vert. = 30 ft



1 in Horiz. = 200 ft 1 in Vert. = 30 ft



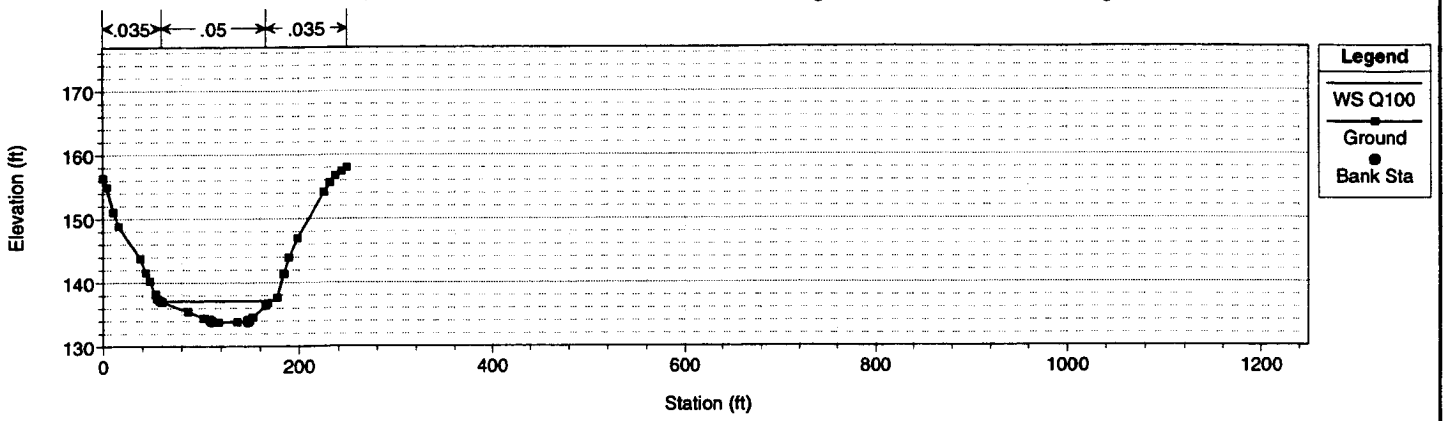
1 in Horiz. = 200 ft 1 in Vert. = 30 ft



1 in Horiz. = 200 ft 1 in Vert. = 30 ft

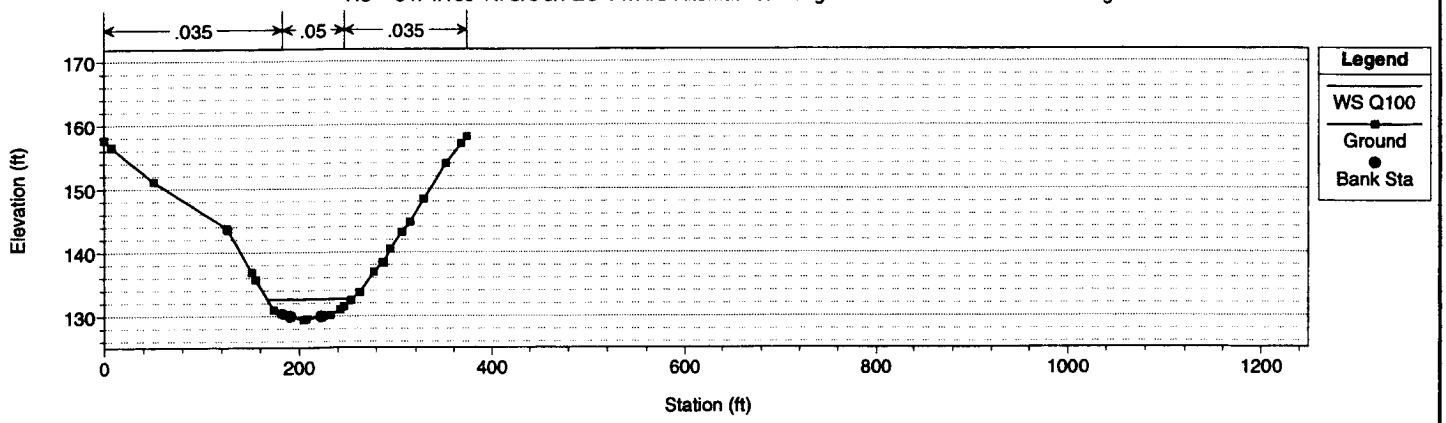
Project Model E1

RS = 8709.304 A7C/CC/FEC-TV/AIO Alternatives - Segunda Deshecha Canada Crossing



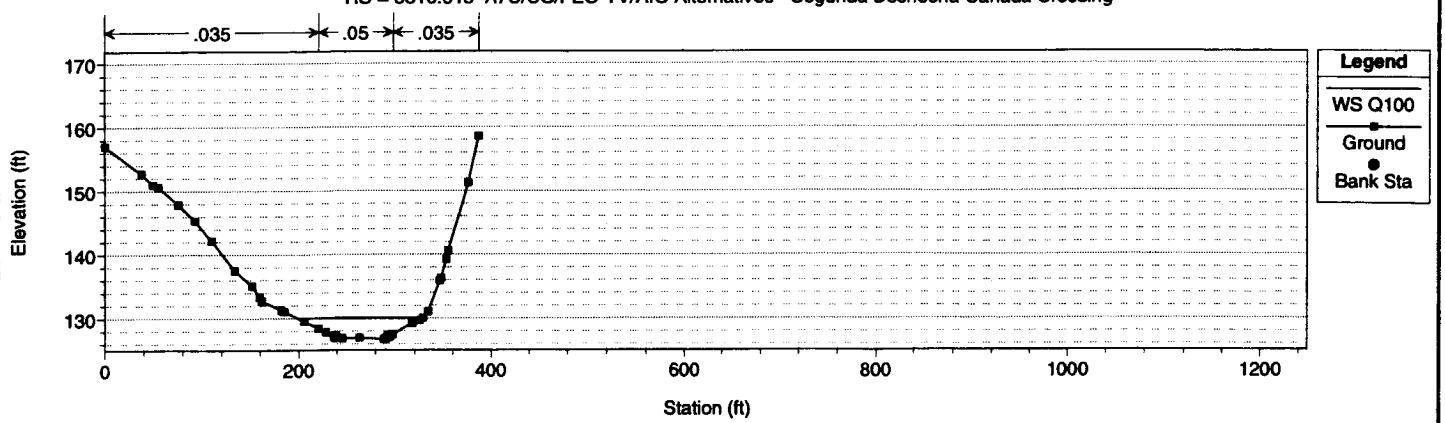
Project Model E1

RS = 8474.166 A7C/CC/FEC-TV/AIO Alternatives - Segunda Deshecha Canada Crossing



Project Model E1

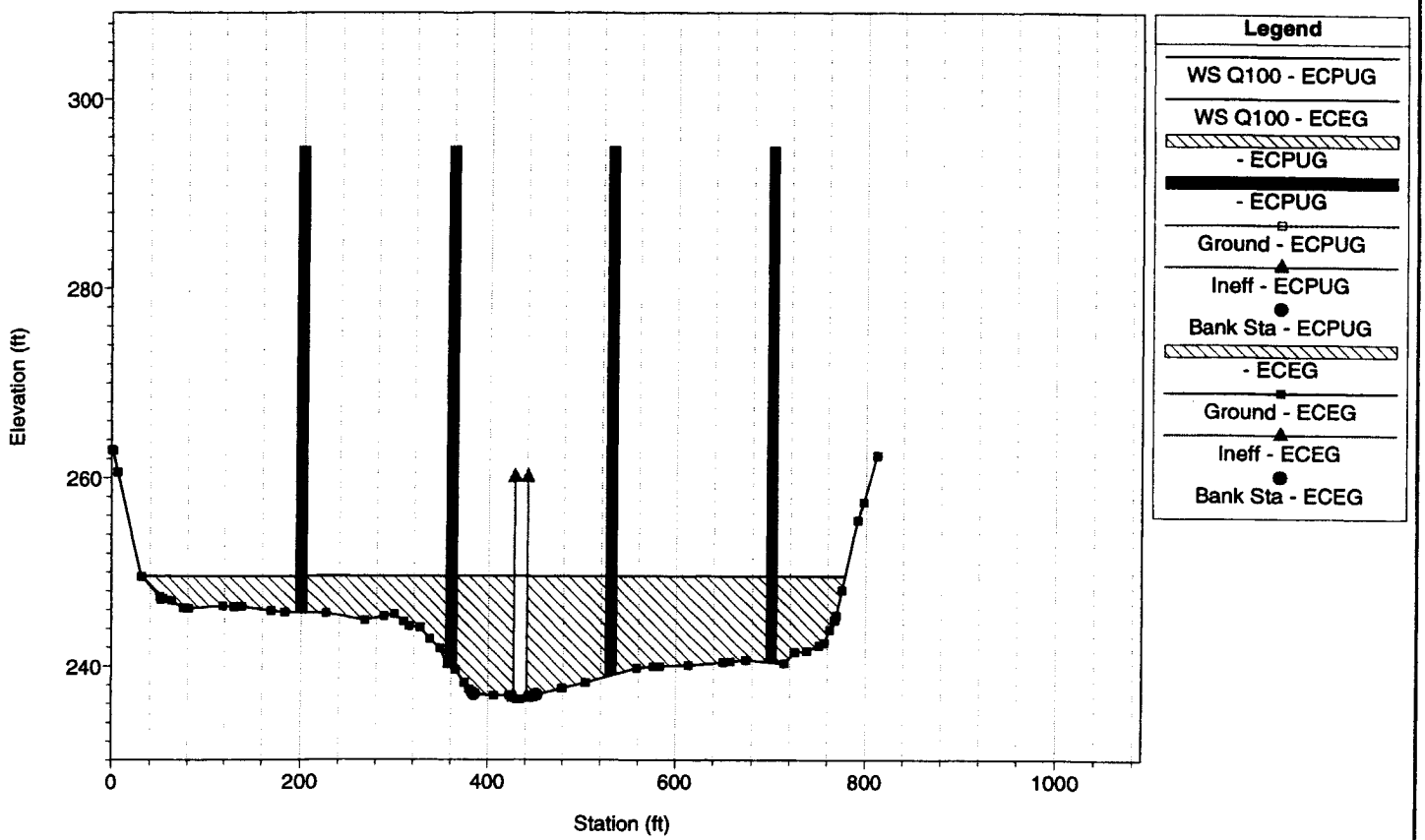
RS = 8310.613 A7C/CC/FEC-TV/AIO Alternatives - Segunda Deshecha Canada Crossing



1 in Horiz. = 200 ft 1 in Vert. = 30 ft

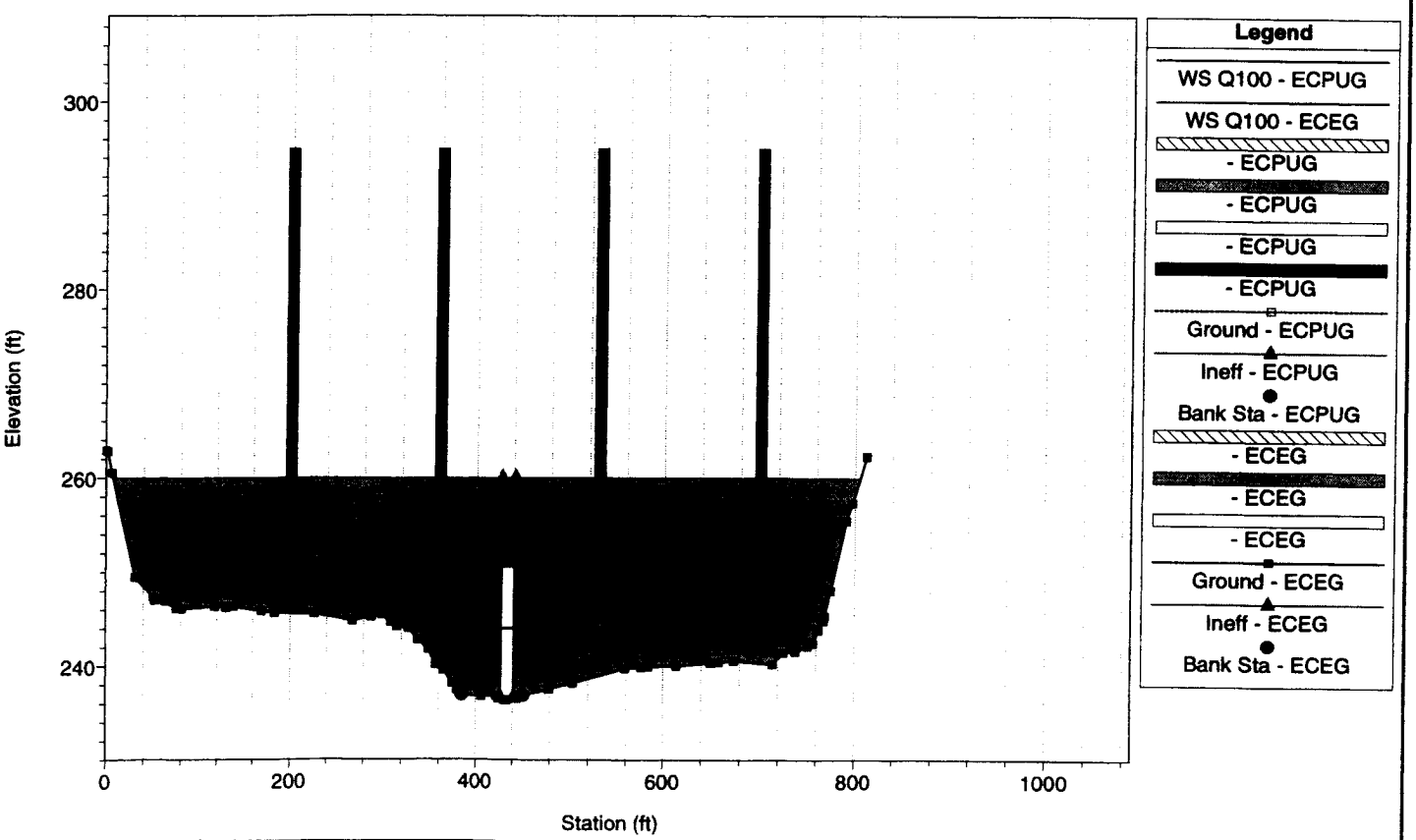
Project Model E1

RS = 12773.34 AIO Alternative - Segunda Deshecha Canada Crossing

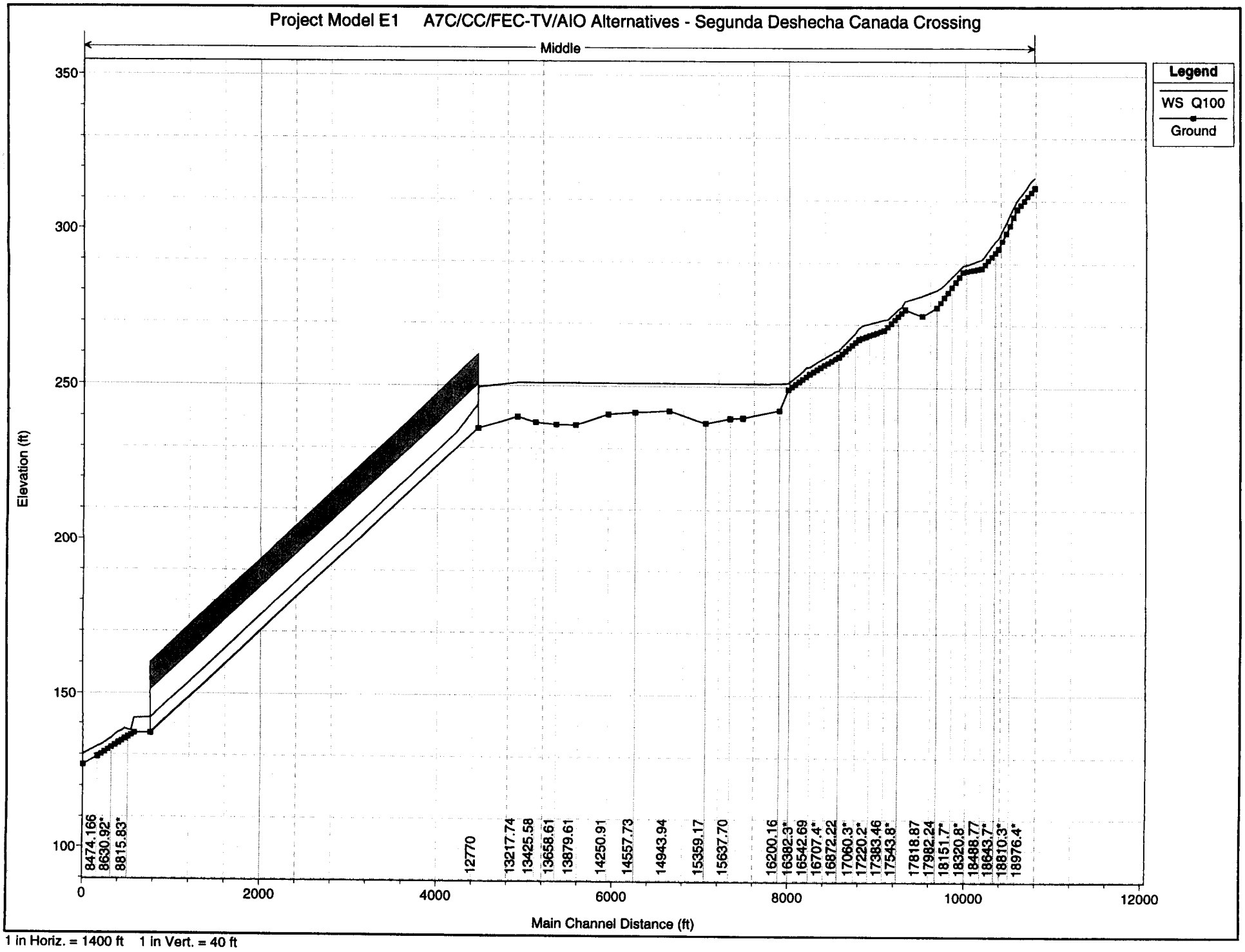


Project Model E1

RS = 12770 AIO Alternative - Segunda Deshecha Canada Crossing



1 in Horiz. = 200 ft 1 in Vert. = 20 ft



1 in Horiz. = 1400 ft 1 in Vert. = 40 ft

APPENDIX P
HYDRAULIC MODEL INPUT & RESULTS
I-5 ALTERNATIVE AT ALISO CREEK

Appendix P. **Hydraulic Model Input & Results**
I5 Alternative at Aliso 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 widened bridge structure include:

645 (2117)

565 (1853)

HEC-RAS Version 3.0.1 Mar 2001
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: aliso creek
Project File : aliso.prj
Run Date and Time: 12/9/02 3:34:20 PM

Project in English units

Project Description:
I-5 Alternative - Aliso Creek Crossing

PLAN DATA

Plan Title: existing
Plan File : p:\2PDA0104\Hydr\LHS\Modeling\Aliso_Ly3\hec-ras\aliso.p03

Geometry Title: existing 2-yr banks
Geometry File : p:\2PDA0104\Hydr\LHS\Modeling\Aliso_Ly3\hec-ras\aliso.g01

Flow Title : existing
Flow File : p:\2PDA0104\Hydr\LHS\Modeling\Aliso_Ly3\hec-ras\aliso.f02

Plan Summary Information:
Number of: Cross Sections = 12 Mulitple Openings = 0
Culverts = 0 Inline Weirs = 0
Bridges = 1

Computational Information
Water surface calculation tolerance = 0.01
Critical depth calculaton tolerance = 0.01
Maximum number of interations = 40
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
Flow File : p:\2PDA0104\Hydr\LHS\Modeling\Aliso_Ly3\hec-ras\aliso.f02

Flow Data (cfs)

River	Reach	RS	100 yr HC	100 yr	50 yr	2 yr
Aliso Creek	1	3164.037	9368	3665	2387	17

Boundary Conditions

River	Reach	Profile	Upstream	Downstream
Aliso Creek	1	100 yr HC	Normal S = .001	Normal S = .001
Aliso Creek	1	100 yr	Normal S = .001	Normal S = .001
Aliso Creek	1	50 yr	Normal S = .001	Normal S = .001

GEOMETRY DATA

Geometry Title: existing 2-yr banks
Geometry File : p:\2PDA0104\Hydr\LHS\Modeling\Aliso_Ly3\hec-ras\aliso.g01

CROSS SECTION RIVER: Aliso Creek
REACH: 1 RS: 3164.037

INPUT
Description:
Station Elevation Data num= 61

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	389.22	20.03	386.77	45	383.34	106.32	377.74	118.49	377
139.31	375.73	151.31	374.64	174.93	372.84	202.85	371.15	231.16	369
304.87	362.29	315.42	361.54	323.47	360.92	346.5	360.22	353.77	360
482.32	358.73	591.64	358.34	776.2	360	798.99	360	840.56	360
851.74	360.17	899.51	360.9	917.48	361.34	940.52	362.05	971.85	362.53
1007.55	363.09	1052	364	1066.21	364.44	1112.61	365	1141.63	365.59
1155.35	365.59	1168.78	365.86	1197.27	365.87	1208.04	366.2	1261.08	367
1267.24	367	1275.37	367.25	1285.37	367.55	1365.71	370	1393.05	370
1403.95	370.17	1409.32	370.16	1427.48	371	1475.28	371.68	1548.62	373.57
1558.01	373.86	1562.64	373.72	1580.66	374.27	1616.19	374.63	1652.84	375
1665.17	375.12	1722.98	376	1730.47	376.11	1788.96	377	1795.78	377.1
1805.73	377.2	1858.03	378.81	1870.04	379.18	1910.06	379.58	1929.06	379.58
1935.78	379.68								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.045	346.5	.045	851.74	.045

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
346.5	851.74	427.66	275.45	137.91	.1	.3

CROSS SECTION RIVER: Aliso Creek
REACH: 1 RS: 2888.588

INPUT
Description:
Station Elevation Data num= 62

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	385.32	18.93	384.77	31.33	384.14	45.83	383.7	75.88	382.35
89.37	381.75	107.99	381.21	134.5	379.55	150.01	377.17	182.96	371.63
200.24	368.45	219.46	366.08	233.1	364.39	254.19	361.79	276.55	360
276.95	360	292.17	360	300.57	360	398.71	355.94	475.88	353.64
533.76	352.48	598.07	352.57	668.81	355.23	792.71	360	798.68	360.35
799.69	360.41	851.65	360.87	861.02	361.13	866.1	361.35	875.72	362
896.3	362.4	966.51	363.33	1010.49	364	1040.84	364.92	1043.31	364.85
1071.09	364.85	1078.67	365.08	1086.33	365.31	1141.77	366.16	1169.22	367
1180.01	367.17	1234.63	368.83	1240.23	368.83	1267.34	368.83	1278.8	369.17
1332.76	370	1344.66	370.18	1374.55	371.09	1383.72	371.37	1437.15	373
1456.74	373	1496.31	373.4	1535.61	374.6	1587.67	375	1601.25	375.1
1615.02	375.42	1666.89	376.21	1681.11	376.43	1732.53	378	1745.28	378
1770.64	378.77	1786.76	379.14						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.045	276.95	.045	798.68	.045

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
276.95	798.68	586.37	233.44	239.97	.1	.3

CROSS SECTION RIVER: Aliso Creek
REACH: 1 RS: 2655.119

INPUT
Description:
Station Elevation Data num= 77

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	404.6	5.49	403.45	29.6	399.71	42.81	397.66	98.5	386.03
110.8	383.82	117.46	382.62	167.4	375.65	179.26	374.52	186.85	374.14
221.33	368.52	225.14	367.95	229.44	367.3	231.85	366.93	236.3	366.27
266.78	362.56	280.27	361.28	297.57	360.35	304.11	360	319.02	360
340.47	360	363.07	360	378.78	360	401.31	360.3	430.75	360.39
449.72	360	490.78	360	514.47	358.78	530.55	357.23	538.59	355.83
562.7	354.43	570.74	352.88	627.01	351.49	723.47	350.24	771.7	348.23
932.48	348.69	1004.82	350.86	1077.17	353.04	1189.71	354.75	1270.1	355.99
1310.29	357.54	1310.59	360	1323.43	360	1337.27	360.34	1337.99	360.35
1386.79	361	1391.06	361	1406.83	361.54	1449.8	363	1461.45	363
1465.83	363.12	1493.42	363.93	1499.81	364	1547.2	364.52	1563.62	365.3
1584.46	365.39	1625.51	366.91	1629.47	366.94	1634.08	367.08	1689.47	368
1729.49	368	1735.44	368.07	1801.09	370	1813.5	370	1824.47	370.69
1853.36	371.54	1899.47	372.9	1936.78	374	1959.35	374	1970.71	374
2016.43	375.35	2049.48	376.32	2058.13	376	2082.88	376.31	2124.48	377.53
2160.08	377	2172.06	377.27						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.045	723.47	.045	1004.82	.045

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
723.47	1004.82	789.38	262.91	245.51	.1	.3

CROSS SECTION RIVER: Aliso Creek
REACH: 1 RS: 2392.439

INPUT
Description:
Station Elevation Data num= 54

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	401.07	7.01	400.36	20.55	399	34.51	396.65	73.64	390.3
94.92	387.25	112.75	384.7	155.34	379.51	160.22	378.92	178.12	377.49
202.47	375.44	207.69	375	215.75	374.32	260.91	371.26	276.16	370.11
278.89	369.91	288.88	369.37	319.74	367.42	323.86	367	336.58	366.14
358.83	364.51	408.65	361.07	421.29	360.2	517.68	345.28	571.7	342.95
621.22	348.23	652.73	350.4	706.1	360	721.72	360.33	729.58	360.49
753.57	361	819.89	362.4	855.5	363	867.02	363.78	872.24	364.07
912.25	364.16	925.63	364.5	958.87	365.35	976.75	365.81	990.91	366.58
1008.72	366.62	1061.95	366.99	1085.84	368	1121.23	368.99	1144.12	370.54
1179.75	371	1191.28	371.3	1242.78	372.81	1257.93	373.25	1285.7	373.71

1297.88 374.02 1299.04 374.05 1305.96 374.23 1385.25 376.26

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.045	408.65	.045	721.72	.045

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
408.65	721.72	298.05	274.91	275.93	.1	.3

CROSS SECTION RIVER: Aliso Creek
REACH: 1 RS: 2117.375

INPUT
Description:
Station Elevation Data num= 57

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	405.98	7.37	405.48	36.99	404.23	46.1	403.41	66.4	400.52
98.79	395.24	114.02	392.26	134.88	389.2	176.64	381.11	201.03	377.21
209.26	376	222.39	373.24	233.07	371	239.77	369.59	268.95	363.46
278.5	361.28	284.19	360.85	298.85	360.71	303.49	360.13	304.5	360
351.13	345.08	418.65	336.74	432.15	335.32	468.17	336.56	594.21	341.88
625.72	352.35	654.98	360	659.8	360.08	664.97	360.16	665.83	360.18
670.79	360.26	745.74	361.47	778.58	362	780.11	362	781.01	362.03
787.83	362.08	859.5	363	875.94	363	902.18	364.1	928.66	365.43
936.97	365.28	958.16	366.55	1025.78	369.06	1053.17	370.89	1087.57	372.89
1120.36	374.27	1202.94	377.73	1206.7	377.93	1208.1	377.98	1211.17	378.08
1256.9	379.26	1285.57	380.6	1304.52	387.36	1324.3	393.17	1328.33	393.83
1334.77	395.16	1348.82	397.16						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.045	303.49	.045	654.98	.045

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
303.49	654.98	327.7	264.02	278.01	.1	.3

BRIDGE RIVER: Aliso Creek
REACH: 1 RS: 1900

INPUT
Description:
Distance from Upstream XS = 150
Deck/Roadway Width = 70
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	362.56	0	418	362.56	0	418	362.56	360.56
540	362.56	360.56	540	362.56	0	1000	362.56	0

Upstream Bridge Cross Section Data
Station Elevation Data num= 57

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	405.98	7.37	405.48	36.99	404.23	46.1	403.41	66.4	400.52
98.79	395.24	114.02	392.26	134.88	389.2	176.64	381.11	201.03	377.21
209.26	376	222.39	373.24	233.07	371	239.77	369.59	268.95	363.46
278.5	361.28	284.19	360.85	298.85	360.71	303.49	360.13	304.5	360
351.13	345.08	418.65	336.74	432.15	335.32	468.17	336.56	594.21	341.88
625.72	352.35	654.98	360	659.8	360.08	664.97	360.16	665.83	360.18
670.79	360.26	745.74	361.47	778.58	362	780.11	362	781.01	362.03
787.83	362.08	859.5	363	875.94	363	902.18	364.1	928.66	365.43
936.97	365.28	958.16	366.55	1025.78	369.06	1053.17	370.89	1087.57	372.89
1120.36	374.27	1202.94	377.73	1206.7	377.93	1208.1	377.98	1211.17	378.08
1256.9	379.26	1285.57	380.6	1304.52	387.36	1324.3	393.17	1328.33	393.83
1334.77	395.16	1348.82	397.16						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.045	303.49	.045	654.98	.045

Bank Sta: Left	Right	Coeff Contr.	Expan.
303.49	654.98	.1	.3

Downstream Deck/Roadway Coordinates
num= 6

Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord
0	362.56	0	252	362.56	0	252	362.56	360.56
382	362.56	360.56	382	362.56	0	630	362.56	0

Downstream Bridge Cross Section Data
Station Elevation Data num= 29

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	362.35	17.5	361.17	34.71	360.57	40.26	360.56	51.07	360.28
79.3	360.51	102.57	360.4	108.54	360.75	191.13	360	193.29	359.64
199.33	359.92	200.64	359.02	206.43	358.33	210.29	357.16	225.72	354.45
258.52	337.84	304.82	332.56	320.26	332.1	333.76	332.79	356.91	339.31
372.35	347.93	389.71	353.82	405.14	356.31	430.23	358.56	445.66	359.72
469.68	360.46	492.41	360.83	522.21	360.65	526.68	360.8		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.045	304.82	.045	333.76	.045

Bank Sta: Left	Right	Coeff Contr.	Expan.
304.82	333.76	.1	.3

Upstream Embankment side slope = 0 horiz. to 1.0 vertical
Downstream Embankment side slope = 0 horiz. to 1.0 vertical

```
Maximum allowable submergence for weir flow =      .95
Elevation at which weir flow begins          =
Energy head used in spillway design          =
Spillway height used in design               =
Weir crest shape                             = Broad Crested

Number of Piers =  3

Pier Data
Pier Station     Upstream=      446    Downstream=      285
Upstream      num=        2
    Width    Elev    Width    Elev
        6     352        6  387.21
Downstream    num=        2
    Width    Elev    Width    Elev
        6     200        6     400

Pier Data
Pier Station     Upstream=      479    Downstream=    350.5
Upstream      num=        2
    Width    Elev    Width    Elev
        6     352        6  387.21
Downstream    num=        2
    Width    Elev    Width    Elev
        6     352        6  387.21

Pier Data
Pier Station     Upstream=      512    Downstream=      318
Upstream      num=        2
    Width    Elev    Width    Elev
        6     352        6  387.21
Downstream    num=        2
    Width    Elev    Width    Elev
        6     352        6  387.21

Number of Bridge Coefficient Sets =  1

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

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 #100 yr
Opening : Single BR
```

			Inside BR US	Inside BR DS
E.G. US. (ft)	344.30	Element		
W.S. US. (ft)	344.16	E.G. Elev (ft)	344.02	343.77
Q Total (cfs)	3665.00	W.S. Elev (ft)	343.53	343.40
Q Bridge (cfs)	3665.00	Crit W.S. (ft)	340.61	338.52
Q Weir (cfs)		Max Chl Dpth (ft)	8.21	11.26
Weir Sta Lft (ft)		Vel Total (ft/s)	5.60	4.85
Weir Sta Rgt (ft)		Flow Area (sq ft)	654.45	754.93
Weir Submerg		Froude # Chl	0.05	0.26
Weir Max Depth (ft)		Specif Force (cu ft)	2782.47	3956.10
Min El Weir Flow (ft)	362.57	Hydr Depth (ft)	6.29	8.01
Min El Prs (ft)	360.56	W.P. Total (ft)	153.52	148.40
Delta EG (ft)	0.62	Conv. Total (cfs)	56816.1	76575.0
Delta WS (ft)	0.76	Top Width (ft)	104.00	94.24
BR Open Area (sq ft)	2425.72	Frctn Loss (ft)	0.21	0.06
BR Open Vel (ft/s)	5.60	C & E Loss (ft)	0.04	0.03
Coef of Q		Shear Total (lb/sq ft)	1.11	0.73
Br Sel Method	Energy only	Power Total (lb/ft s)	6.20	3.53

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

CROSS SECTION          RIVER: Aliso Creek
REACH: 1                  RS: 1852.556

INPUT
Description:
Station Elevation Data    num=      29
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  362.35    17.5  361.17   34.71  360.57   40.26  360.56   51.07  360.28
    79.3  360.51  102.57   360.4  108.54  360.75  191.13     360  193.29  359.64
  199.33  359.92  200.64  359.02  206.43  358.33  210.29  357.16  225.72  354.45
  258.52  337.84  304.82  332.56  320.26   332.1  333.76  332.79  356.91  339.31
  372.35  347.93  389.71  353.82  405.14  356.31  430.23  358.56  445.66  359.72
  469.68  360.46  492.41  360.83  522.21  360.65  526.68   360.8

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .045  304.82    .045  333.76    .045

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       304.82  333.76           308.95  203.66   54.61             .1       .3

CROSS SECTION          RIVER: Aliso Creek
```

REACH: 1 RS: 1651.113

INPUT
Description:
Station Elevation Data num= 21

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	384.96	5.15	384.34	16.18	383	50.32	376.8	73	372.67
92.47	368.82	115.22	364	141.05	355.39	154.01	350.38	181.25	339.83
191	338.71	197.22	338	240.51	330.13	281.67	333.59	302.87	338
309.95	338.71	313.3	339.05	332.64	352.13	346.32	358.62	363.34	360
381.24	360.32								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.045	191	.045	309.95	.045

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
191	309.95	253.31	232.29	223.16	.1 .3

CROSS SECTION RIVER: Aliso Creek
REACH: 1 RS: 1418.849

INPUT
Description:
Station Elevation Data num= 29

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	370.02	5.85	368.89	26.28	365.23	39.07	362.62	55.49	360.51
90.28	357.62	117.06	356.22	158.25	351.59	191.99	346.99	198.1	346.43
223.25	344.91	249.43	342.67	271.61	340.77	278.15	340.41	319.85	338.82
325.23	338.59	331.83	334.37	345.34	327.85	351.13	333.7	356.91	335.83
371.27	339.14	393.67	341.67	404.49	344.1	413.75	345.62	465.76	355
470.93	355.58	475.36	355.8	504.15	359.13	508.97	359.54		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.045	331.83	.045	351.13	.045

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
331.83	351.13	286.12	323.56	355.28	.1 .3

CROSS SECTION RIVER: Aliso Creek
REACH: 1 RS: 1093.832

INPUT
Description:
Station Elevation Data num= 29

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	357.11	77.85	349.62	85.68	348.56	105.33	346.51	148.78	342.18
166.08	341	176.58	340.52	216.13	338.73	241.96	337.65	254.31	336.65
286.5	333.81	292.78	333.51	308.14	332.34	333.76	328.98	362.94	325.75
370.42	324.88	377.68	325.71	401.29	328.09	414.79	329.76	416.72	330.75
422.51	332.75	430.76	338.62	432.22	338.93	433.85	339.77	474.88	358.35
478.7	359.91	493.12	361.24	543.18	365.55	544.73	365.68		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.045	362.94	.045	377.68	.045

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
362.94	377.68	141.57	125.22	108.62	.1 .3

CROSS SECTION RIVER: Aliso Creek
REACH: 1 RS: 969.590

INPUT
Description:
Station Elevation Data num= 28

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	359.78	29.07	354.71	37.88	353.4	52.34	350.54	79.05	345.02
114.39	339.42	120.22	338.75	128.45	338	176.23	334.36	193.94	333.61
215.43	330.72	231.53	329	259.87	327.79	269.79	327.37	279.74	324.88
310.29	323.99	321.54	325.65	332	327.29	345.2	327.77	367.23	328.58
378.52	330.65	408.4	336.65	418.95	339.54	432.88	346.92	449.57	355.15
465.8	360.39	474.85	361	484.82	361.67				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.045	269.79	.045	332	.045

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
269.79	332	259.79	282.6	302.95	.1 .3

CROSS SECTION RIVER: Aliso Creek
REACH: 1 RS: 687.468

INPUT
Description:
Station Elevation Data num= 34

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	355.72	12.17	351.3	26.66	346.77	44.49	341.65	66.2	337.25
71.03	336.51	91.79	333.7	123.28	330.78	145.27	328	152.28	327.03
157.62	325.96	173.96	323.19	204.5	320.71	236.35	322.95	249.69	326.67
258.37	327.27	264.04	327.83	272.12	329.25	303.42	332.42	331.65	333.14
342.96	333.24	347.05	333.59	354.18	333.81	365.31	334.57	422.89	338.47
437.37	340.06	461.57	341.09	483.03	342	501.11	343.84	541.88	345.42
564.79	347.28	580.18	347.55	588.44	348.12	592.19	348.14		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.045	173.96	.045	236.35	.045

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
173.96	236.35	329.22	312.88	297.1	.1	.3

CROSS SECTION RIVER: Aliso Creek
REACH: 1 RS: 375.119

INPUT
Description:
Station Elevation Data num= 37

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	345.37	37.64	334.02	44.33	333.16	83.88	325.52	90.74	323
97.66	322.4	111.15	321.24	113.95	321	141.8	317.95	166.56	319.58
185.99	321	195.71	321.63	227.51	323.68	237.45	324.96	253.19	325.65
284.05	332.31	299.61	333.33	315.05	336.33	330.64	337.35	361.28	339.34
377.24	339.35	407.52	338.7	423.83	338.35	438.85	337.39	453.75	335.79
470.43	334.36	485.27	334.05	517.03	332.68	531.68	333.16	570.87	334
578.1	334.31	592.46	334.93	606.71	335.54	654.78	338.3	670.92	339
681.72	339.46	681.93	339.47						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.045	111.15	.045	195.71	.045

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
111.15	195.71	0	0	0	.1	.3

Profile Output Table - Standard Table 1

Reach	River Sta	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
		(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
1	3164.037	3665.00	358.34	360.71	360.39	361.07	0.012677	4.85	765.47	556.71	0.70
1	2888.588	3665.00	352.48	355.37	355.37	356.31	0.024307	7.76	472.09	254.84	1.01
1	2655.119	3665.00	348.23	351.76	350.67	352.04	0.004403	4.38	895.76	418.36	0.46
1	2392.439	3665.00	342.95	348.14	348.14	349.66	0.020497	9.92	369.57	121.10	1.00
1	2117.375	3665.00	335.32	344.16	340.13	344.30	0.000867	2.91	1260.25	242.54	0.22
1	1900	Bridge									
1	1852.556	3665.00	332.10	343.41		343.68	0.000915	4.94	914.86	116.72	0.26
1	1651.113	3665.00	330.13	343.34		343.50	0.000497	3.22	1184.69	147.46	0.19
1	1418.849	3665.00	327.85	341.27	341.27	343.04	0.008165	12.45	430.99	124.45	0.69
1	1093.832	3665.00	324.88	329.48	331.37	336.25	0.093471	26.08	193.26	82.64	2.25
1	969.590	3665.00	323.99	330.01	329.81	331.23	0.010399	9.64	457.29	152.91	0.77
1	687.468	3665.00	320.71	327.60		328.76	0.007384	9.05	456.09	113.55	0.67
1	375.119	3665.00	317.95	327.58	323.65	327.80	0.001000	4.12	1043.27	188.92	0.26

HEC-RAS Version 3.0.1 Mar 2001
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: aliso creek
Project File : aliso.prj
Run Date and Time: 12/9/02 3:34:13 PM

Project in English units

Project Description:
I-5 Alternative - Aliso Creek Crossing

PLAN DATA

Plan Title: proposed
Plan File : p:\2PDA0104\Hydr\LHS\Modeling\Aliso_Ly3\hec-ras\aliso.p04

Geometry Title: proposed
Geometry File : p:\2PDA0104\Hydr\LHS\Modeling\Aliso_Ly3\hec-ras\aliso.g04

Flow Title : existing
Flow File : p:\2PDA0104\Hydr\LHS\Modeling\Aliso_Ly3\hec-ras\aliso.f02

Plan Summary Information:
Number of: Cross Sections = 12 Mulitple Openings = 0
Culverts = 0 Inline Weirs = 0
Bridges = 1

Computational Information
Water surface calculation tolerance = 0.01
Critical depth calculaton tolerance = 0.01
Maximum number of interations = 40
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
Flow File : p:\2PDA0104\Hydr\LHS\Modeling\Aliso_Ly3\hec-ras\aliso.f02

Flow Data (cfs)

River	Reach	RS	100 yr HC	100 yr	50 yr	2 yr
Aliso Creek	1	3164.037	9368	3665	2387	17

Boundary Conditions

River	Reach	Profile	Upstream	Downstream
Aliso Creek	1	100 yr HC	Normal S = .001	Normal S = .001
Aliso Creek	1	100 yr	Normal S = .001	Normal S = .001
Aliso Creek	1	50 yr	Normal S = .001	Normal S = .001

GEOMETRY DATA

Geometry Title: proposed
Geometry File : p:\2PDA0104\Hydr\LHS\Modeling\Aliso_Ly3\hec-ras\aliso.g04

CROSS SECTION RIVER: Aliso Creek
REACH: 1 RS: 3164.037

INPUT
Description:
Station Elevation Data num= 61

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	389.22	20.03	386.77	45	383.34	106.32	377.74	118.49	377
139.31	375.73	151.31	374.64	174.93	372.84	202.85	371.15	231.16	369
304.87	362.29	315.42	361.54	323.47	360.92	346.5	360.22	353.77	360
482.32	358.73	591.64	358.34	776.2	360	798.99	360	840.56	360
851.74	360.17	899.51	360.9	917.48	361.34	940.52	362.05	971.85	362.53
1007.55	363.09	1052	364	1066.21	364.44	1112.61	365	1141.63	365.59
1155.35	365.59	1168.78	365.86	1197.27	365.87	1208.04	366.2	1261.08	367
1267.24	367	1275.37	367.25	1285.37	367.55	1365.71	370	1393.05	370
1403.95	370.17	1409.32	370.16	1427.48	371	1475.28	371.68	1548.62	373.57
1558.01	373.86	1562.64	373.72	1580.66	374.27	1616.19	374.63	1652.84	375
1665.17	375.12	1722.98	376	1730.47	376.11	1788.96	377	1795.78	377.1
1805.73	377.2	1858.03	378.81	1870.04	379.18	1910.06	379.58	1929.06	379.58
1935.78	379.68								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.045	346.5	.045	851.74	.045

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
346.5	851.74	427.66	275.45	137.91	.1	.3

CROSS SECTION RIVER: Aliso Creek
REACH: 1 RS: 2888.588

INPUT
Description:
Station Elevation Data num= 62

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	385.32	18.93	384.77	31.33	384.14	45.83	383.7	75.88	382.35
89.37	381.75	107.99	381.21	134.5	379.55	150.01	377.17	182.96	371.63
200.24	368.45	219.46	366.08	233.1	364.39	254.19	361.79	276.55	360
276.95	360	292.17	360	300.57	360	398.71	355.94	475.88	353.64
533.76	352.48	598.07	352.57	668.81	355.23	792.71	360	798.68	360.35
799.69	360.41	851.65	360.87	861.02	361.13	866.1	361.35	875.72	362
896.3	362.4	966.51	363.33	1010.49	364	1040.84	364.92	1043.31	364.85
1071.09	364.85	1078.67	365.08	1086.33	365.31	1141.77	366.16	1169.22	367
1180.01	367.17	1234.63	368.83	1240.23	368.83	1267.34	368.83	1278.8	369.17
1332.76	370	1344.66	370.18	1374.55	371.09	1383.72	371.37	1437.15	373
1456.74	373	1496.31	373.4	1535.61	374.6	1587.67	375	1601.25	375.1
1615.02	375.42	1666.89	376.21	1681.11	376.43	1732.53	378	1745.28	378
1770.64	378.77	1786.76	379.14						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.045	398.71	.045	668.81	.045

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
398.71	668.81	586.37	233.44	239.97	.1	.3

CROSS SECTION RIVER: Aliso Creek
REACH: 1 RS: 2655.119

INPUT
Description:
Station Elevation Data num= 77

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	404.6	5.49	403.45	29.6	399.71	42.81	397.66	98.5	386.03
110.8	383.82	117.46	382.62	167.4	375.65	179.26	374.52	186.85	374.14
221.33	368.52	225.14	367.95	229.44	367.3	231.85	366.93	236.3	366.27
266.78	362.56	280.27	361.28	297.57	360.35	304.11	360	319.02	360
340.47	360	363.07	360	378.78	360	401.31	360.3	430.75	360.39
449.72	360	490.78	360	514.47	358.78	530.55	357.23	538.59	355.83
562.7	354.43	570.74	352.88	627.01	351.49	723.47	350.24	771.7	348.23
932.48	348.69	1004.82	350.86	1077.17	353.04	1189.71	354.75	1270.1	355.99
1310.29	357.54	1310.59	360	1323.43	360	1337.27	360.34	1337.99	360.35
1386.79	361	1391.06	361	1406.83	361.54	1449.8	363	1461.45	363
1465.83	363.12	1493.42	363.93	1499.81	364	1547.2	364.52	1563.62	365.3
1584.46	365.39	1625.51	366.91	1629.47	366.94	1634.08	367.08	1689.47	368
1729.49	368	1735.44	368.07	1801.09	370	1813.5	370	1824.47	370.69
1853.36	371.54	1899.47	372.9	1936.78	374	1959.35	374	1970.71	374
2016.43	375.35	2049.48	376.32	2058.13	376	2082.88	376.31	2124.48	377.53
2160.08	377	2172.06	377.27						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.045	723.47	.045	1004.82	.045

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
723.47	1004.82	789.38	262.91	245.51	.1	.3

CROSS SECTION RIVER: Aliso Creek
REACH: 1 RS: 2392.439

INPUT
Description:
Station Elevation Data num= 54

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	401.07	7.01	400.36	20.55	399	34.51	396.65	73.64	390.3
94.92	387.25	112.75	384.7	155.34	379.51	160.22	378.92	178.12	377.49
202.47	375.44	207.69	375	215.75	374.32	260.91	371.26	276.16	370.11
278.89	369.91	288.88	369.37	319.74	367.42	323.86	367	336.58	366.14
358.83	364.51	408.65	361.07	421.29	360.2	517.68	345.28	571.7	342.95
621.22	348.23	652.73	350.4	706.1	360	721.72	360.33	729.58	360.49
753.57	361	819.89	362.4	855.5	363	867.02	363.78	872.24	364.07
912.25	364.16	925.63	364.5	958.87	365.35	976.75	365.81	990.91	366.58
1008.72	366.62	1061.95	366.99	1085.84	368	1121.23	368.99	1144.12	370.54
1179.75	371	1191.28	371.3	1242.78	372.81	1257.93	373.25	1285.7	373.71

```
 1297.88  374.02 1299.04  374.05 1305.96  374.23 1385.25  376.26

Manning's n Values          num=       3
     Sta   n Val     Sta    n Val     Sta   n Val
       0    .045  408.65     .045  721.72    .045

Bank Sta: Left   Right    Lengths: Left Channel   Right      Coeff Contr.   Expan.
        408.65  721.72             298.05  274.91  275.93             .1       .3

CROSS SECTION           RIVER: Aliso Creek
REACH: 1                   RS: 2117.375

INPUT
Description:
Station Elevation Data     num=      57
     Sta    Elev      Sta    Elev      Sta    Elev      Sta    Elev      Sta    Elev
       0  405.98     7.37  405.48    36.99  404.23     46.1  403.41     66.4  400.52
   98.79  395.24   114.02  392.26   134.88   389.2   176.64  381.11   201.03  377.21
  209.26     376   222.39  373.24   233.07     371   239.77  369.59   268.95  363.46
   278.5  361.28   284.19  360.85   298.85  360.71   303.49  360.13    304.5     360
  351.13  345.08   418.65  336.74   432.15  335.32   468.17  336.56   594.21  341.88
  625.72  352.35   654.98     360    659.8  360.08   664.97  360.16   665.83  360.18
  670.79  360.26   745.74  361.47   778.58     362   780.11     362   781.01  362.03
  787.83  362.08    859.5     363   875.94     363   902.18   364.1   928.66  365.43
  936.97  365.28   958.16  366.55 1025.78  369.06 1053.17  370.89 1087.57  372.89
 1120.36  374.27 1202.94  377.73  1206.7  377.93  1208.1  377.98 1211.17  378.08
  1256.9  379.26 1285.57   380.6 1304.52  387.36  1324.3  393.17 1328.33  393.83
 1334.77  395.16 1348.82  397.16

Manning's n Values          num=       3
     Sta   n Val     Sta    n Val     Sta   n Val
       0    .045  303.49     .045  654.98    .045

Bank Sta: Left   Right    Lengths: Left Channel   Right      Coeff Contr.   Expan.
        303.49  654.98             327.7  264.02  278.01             .1       .3

BRIDGE                  RIVER: Aliso Creek
REACH: 1                   RS: 1900

INPUT
Description:
Distance from Upstream XS =      150
Deck/Roadway Width        =      103
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  362.56        0      418  362.56        0      418  362.56  360.56
     540  362.56   360.56      540  362.56        0     1000  362.56       0

Upstream Bridge Cross Section Data
Station Elevation Data     num=      57
     Sta    Elev      Sta    Elev      Sta    Elev      Sta    Elev      Sta    Elev
       0  405.98     7.37  405.48    36.99  404.23     46.1  403.41     66.4  400.52
   98.79  395.24   114.02  392.26   134.88   389.2   176.64  381.11   201.03  377.21
  209.26     376   222.39  373.24   233.07     371   239.77  369.59   268.95  363.46
   278.5  361.28   284.19  360.85   298.85  360.71   303.49  360.13    304.5     360
  351.13  345.08   418.65  336.74   432.15  335.32   468.17  336.56   594.21  341.88
  625.72  352.35   654.98     360    659.8  360.08   664.97  360.16   665.83  360.18
  670.79  360.26   745.74  361.47   778.58     362   780.11     362   781.01  362.03
  787.83  362.08    859.5     363   875.94     363   902.18   364.1   928.66  365.43
  936.97  365.28   958.16  366.55 1025.78  369.06 1053.17  370.89 1087.57  372.89
 1120.36  374.27 1202.94  377.73  1206.7  377.93  1208.1  377.98 1211.17  378.08
  1256.9  379.26 1285.57   380.6 1304.52  387.36  1324.3  393.17 1328.33  393.83
 1334.77  395.16 1348.82  397.16

Manning's n Values          num=       3
     Sta   n Val     Sta    n Val     Sta   n Val
       0    .045  303.49     .045  654.98    .045

Bank Sta: Left   Right    Coeff Contr.   Expan.
        303.49  654.98             .1       .3

Downstream  Deck/Roadway Coordinates
    num=       6
     Sta Hi Cord Lo Cord      Sta Hi Cord Lo Cord      Sta Hi Cord Lo Cord
       0  362.56        0      252  362.56        0      252  362.56  360.56
     382  362.56   360.56      382  362.56        0      630  362.56       0

Downstream Bridge Cross Section Data
Station Elevation Data     num=      29
     Sta    Elev      Sta    Elev      Sta    Elev      Sta    Elev      Sta    Elev
       0  362.35    17.5  361.17    34.71  360.57    40.26  360.56    51.07  360.28
    79.3  360.51  102.57   360.4   108.54  360.75   191.13     360   193.29  359.64
  199.33  359.92  200.64  359.02   206.43  358.33   210.29  357.16   225.72  354.45
  258.52  337.84  304.82  332.56   320.26   332.1   333.76  332.79   356.91  339.31
  372.35  347.93  389.71  353.82   405.14  356.31   430.23  358.56   445.66  359.72
  469.68  360.46  492.41  360.83   522.21  360.65   526.68   360.8

Manning's n Values          num=       3
     Sta   n Val     Sta    n Val     Sta   n Val
       0    .045  304.82     .045  333.76    .045

Bank Sta: Left   Right    Coeff Contr.   Expan.
        304.82  333.76             .1       .3

Upstream Embankment side slope              =       0 horiz. to 1.0 vertical
Downstream Embankment side slope            =       0 horiz. to 1.0 vertical
```

```
Maximum allowable submergence for weir flow =      .95
Elevation at which weir flow begins          =
Energy head used in spillway design          =
Spillway height used in design               =
Weir crest shape                             = Broad Crested

Number of Piers =  3

Pier Data
Pier Station     Upstream=      446    Downstream=      285
Upstream      num=        2
    Width   Elev    Width   Elev
        6    352        6  387.21
Downstream    num=        2
    Width   Elev    Width   Elev
        6    200        6    400

Pier Data
Pier Station     Upstream=      479    Downstream=    350.5
Upstream      num=        2
    Width   Elev    Width   Elev
        6    352        6  387.21
Downstream    num=        2
    Width   Elev    Width   Elev
        6    352        6  387.21

Pier Data
Pier Station     Upstream=      512    Downstream=      318
Upstream      num=        2
    Width   Elev    Width   Elev
        6    352        6  387.21
Downstream    num=        2
    Width   Elev    Width   Elev
        6    352        6  387.21

Number of Bridge Coefficient Sets =  1

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

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 #100 yr
Opening : Single BR

  E.G. US. (ft)                 344.34    Element                Inside BR US  Inside BR DS
  W.S. US. (ft)                 344.21    E.G. Elev (ft)              344.07        343.72
  Q Total (cfs)                3665.00    W.S. Elev (ft)              343.59        343.35
  Q Bridge (cfs)               3665.00    Crit W.S. (ft)              340.61        338.52
  Q Weir (cfs)                            Max Chl Dpth (ft)             8.27         11.21
  Weir Sta Lft (ft)                       Vel Total (ft/s)              5.55          4.88
  Weir Sta Rgt (ft)                       Flow Area (sq ft)           660.75        750.38
  Weir Submerg                            Froude # Chl                  0.05          0.27
  Weir Max Depth (ft)                     Specif Force (cu ft)       2816.21       3923.08
  Min El Weir Flow (ft)         362.57    Hydr Depth (ft)               6.35          7.97
  Min El Prs (ft)               360.56    W.P. Total (ft)             154.00        148.01
  Delta EG (ft)                   0.66    Conv. Total (cfs)          57609.0       75948.2
  Delta WS (ft)                   0.80    Top Width (ft)              104.00         94.15
  BR Open Area (sq ft)         2425.72    Frctn Loss (ft)               0.31          0.02
  BR Open Vel (ft/s)              5.55    C & E Loss (ft)               0.03          0.03
  Coef of Q                               Shear Total (lb/sq ft)        1.08          0.74
  Br Sel Method           Energy only     Power Total (lb/ft s)         6.01          3.60


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

CROSS SECTION          RIVER: Aliso Creek
REACH: 1                  RS: 1852.556

INPUT
Description:
Station Elevation Data    num=      29
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  362.35    17.5  361.17   34.71  360.57   40.26  360.56   51.07  360.28
    79.3  360.51  102.57   360.4  108.54  360.75  191.13     360  193.29  359.64
  199.33  359.92  200.64  359.02  206.43  358.33  210.29  357.16  225.72  354.45
  258.52  337.84  304.82  332.56  320.26   332.1  333.76  332.79  356.91  339.31
  372.35  347.93  389.71  353.82  405.14  356.31  430.23  358.56  445.66  359.72
  469.68  360.46  492.41  360.83  522.21  360.65  526.68   360.8

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .045  304.82    .045  333.76    .045

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       304.82  333.76           308.95  203.66   54.61             .1       .3

CROSS SECTION          RIVER: Aliso Creek
```

REACH: 1 RS: 1651.113

INPUT
Description:
Station Elevation Data num= 21

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	384.96	5.15	384.34	16.18	383	50.32	376.8	73	372.67
92.47	368.82	115.22	364	141.05	355.39	154.01	350.38	181.25	339.83
191	338.71	197.22	338	240.51	330.13	281.67	333.59	302.87	338
309.95	338.71	313.3	339.05	332.64	352.13	346.32	358.62	363.34	360
381.24	360.32								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.045	191	.045	309.95	.045

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
191	309.95	253.31	232.29	223.16	.1	.3

CROSS SECTION RIVER: Aliso Creek
REACH: 1 RS: 1418.849

INPUT
Description:
Station Elevation Data num= 29

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	370.02	5.85	368.89	26.28	365.23	39.07	362.62	55.49	360.51
90.28	357.62	117.06	356.22	158.25	351.59	191.99	346.99	198.1	346.43
223.25	344.91	249.43	342.67	271.61	340.77	278.15	340.41	319.85	338.82
325.23	338.59	331.83	334.37	345.34	327.85	351.13	333.7	356.91	335.83
371.27	339.14	393.67	341.67	404.49	344.1	413.75	345.62	465.76	355
470.93	355.58	475.36	355.8	504.15	359.13	508.97	359.54		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.045	331.83	.045	351.13	.045

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
331.83	351.13	286.12	323.56	355.28	.1	.3

CROSS SECTION RIVER: Aliso Creek
REACH: 1 RS: 1093.832

INPUT
Description:
Station Elevation Data num= 29

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	357.11	77.85	349.62	85.68	348.56	105.33	346.51	148.78	342.18
166.08	341	176.58	340.52	216.13	338.73	241.96	337.65	254.31	336.65
286.5	333.81	292.78	333.51	308.14	332.34	333.76	328.98	362.94	325.75
370.42	324.88	377.68	325.71	401.29	328.09	414.79	329.76	416.72	330.75
422.51	332.75	430.76	338.62	432.22	338.93	433.85	339.77	474.88	358.35
478.7	359.91	493.12	361.24	543.18	365.55	544.73	365.68		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.045	362.94	.045	377.68	.045

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
362.94	377.68	141.57	125.22	108.62	.1	.3

CROSS SECTION RIVER: Aliso Creek
REACH: 1 RS: 969.590

INPUT
Description:
Station Elevation Data num= 28

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	359.78	29.07	354.71	37.88	353.4	52.34	350.54	79.05	345.02
114.39	339.42	120.22	338.75	128.45	338	176.23	334.36	193.94	333.61
215.43	330.72	231.53	329	259.87	327.79	269.79	327.37	279.74	324.88
310.29	323.99	321.54	325.65	332	327.29	345.2	327.77	367.23	328.58
378.52	330.65	408.4	336.65	418.95	339.54	432.88	346.92	449.57	355.15
465.8	360.39	474.85	361	484.82	361.67				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.045	269.79	.045	332	.045

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
269.79	332	259.79	282.6	302.95	.1	.3

CROSS SECTION RIVER: Aliso Creek
REACH: 1 RS: 687.468

INPUT
Description:
Station Elevation Data num= 34

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	355.72	12.17	351.3	26.66	346.77	44.49	341.65	66.2	337.25
71.03	336.51	91.79	333.7	123.28	330.78	145.27	328	152.28	327.03
157.62	325.96	173.96	323.19	204.5	320.71	236.35	322.95	249.69	326.67
258.37	327.27	264.04	327.83	272.12	329.25	303.42	332.42	331.65	333.14
342.96	333.24	347.05	333.59	354.18	333.81	365.31	334.57	422.89	338.47
437.37	340.06	461.57	341.09	483.03	342	501.11	343.84	541.88	345.42
564.79	347.28	580.18	347.55	588.44	348.12	592.19	348.14		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.045	173.96	.045	236.35	.045

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
173.96	236.35	329.22	312.88	297.1	.1	.3

CROSS SECTION RIVER: Aliso Creek
REACH: 1 RS: 375.119

INPUT
Description:
Station Elevation Data num= 37

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	345.37	37.64	334.02	44.33	333.16	83.88	325.52	90.74	323
97.66	322.4	111.15	321.24	113.95	321	141.8	317.95	166.56	319.58
185.99	321	195.71	321.63	227.51	323.68	237.45	324.96	253.19	325.65
284.05	332.31	299.61	333.33	315.05	336.33	330.64	337.35	361.28	339.34
377.24	339.35	407.52	338.7	423.83	338.35	438.85	337.39	453.75	335.79
470.43	334.36	485.27	334.05	517.03	332.68	531.68	333.16	570.87	334
578.1	334.31	592.46	334.93	606.71	335.54	654.78	338.3	670.92	339
681.72	339.46	681.93	339.47						

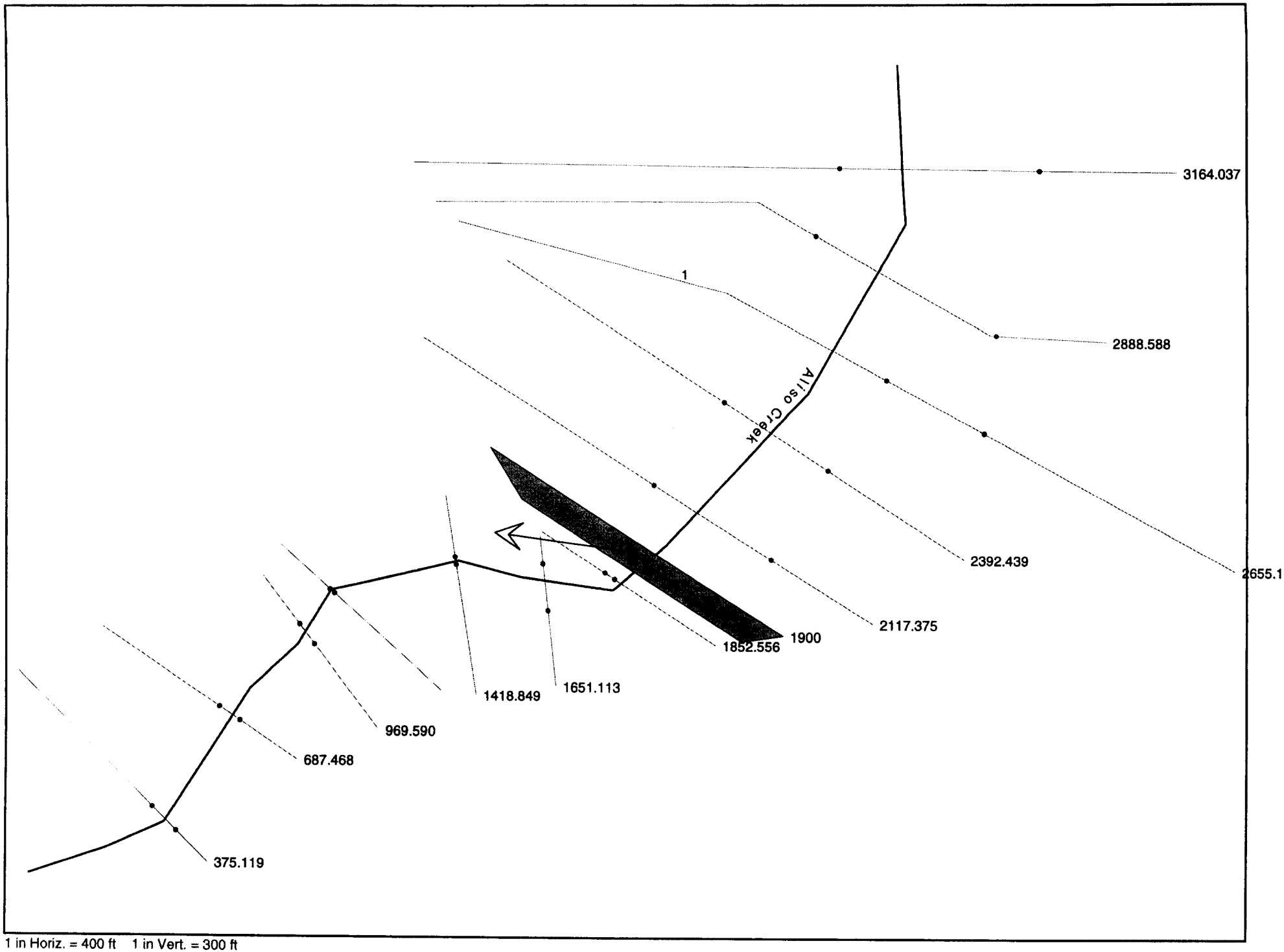
Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.045	111.15	.045	195.71	.045

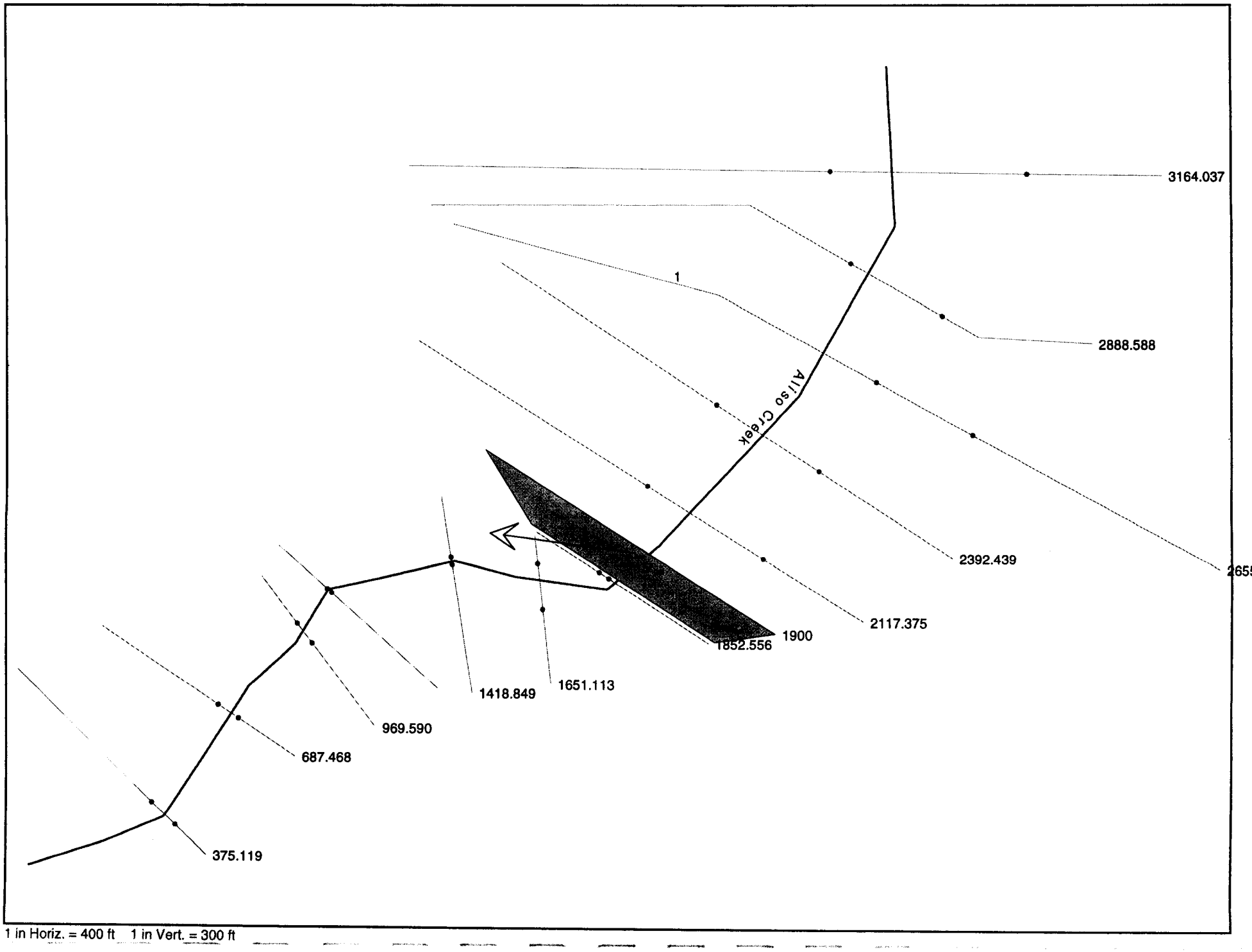
Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
111.15	195.71	0	0	0	.1	.3

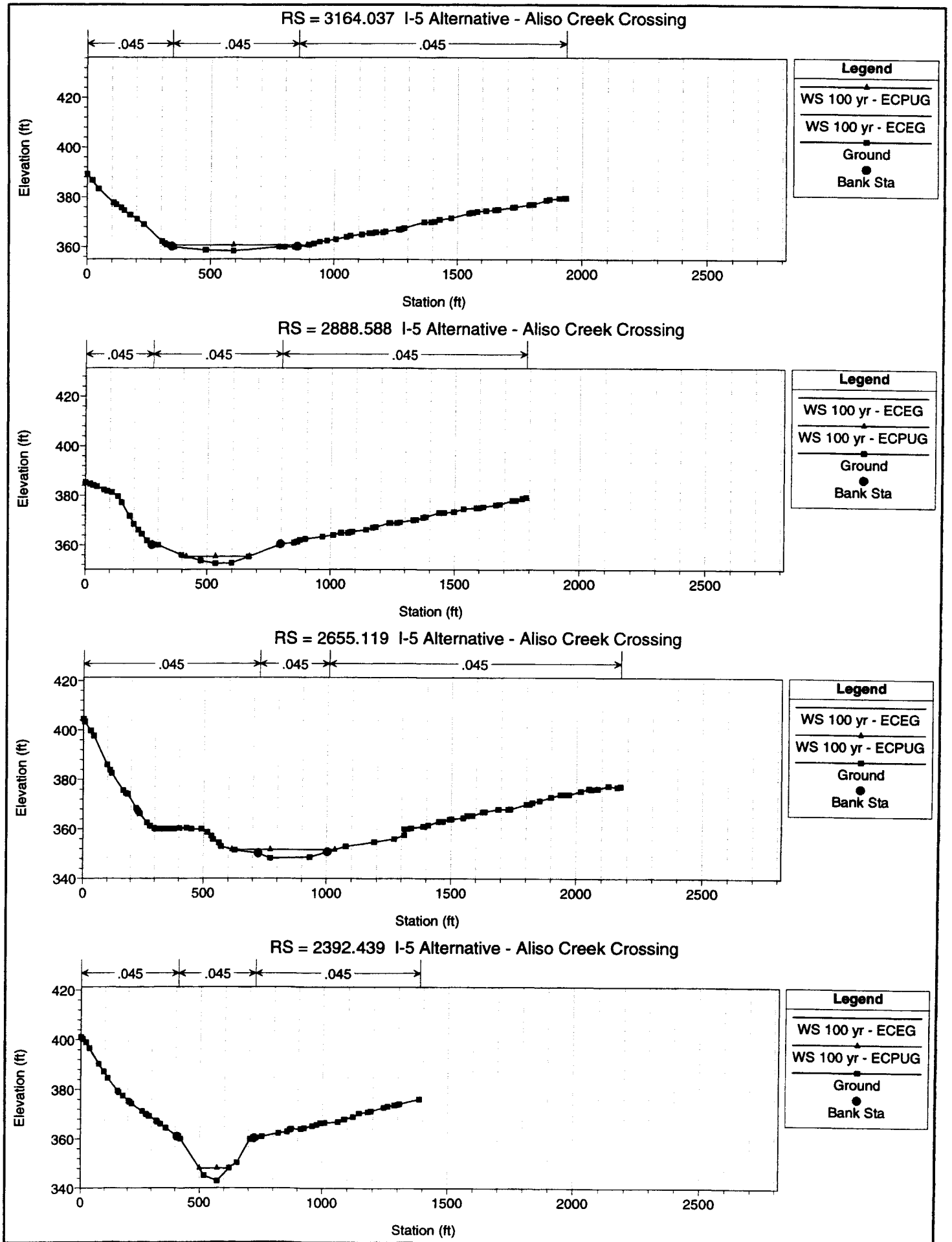
Profile Output Table - Standard Table 1

Reach	River Sta	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
		(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
1	3164.037	3665.00	358.34	360.71	360.39	361.07	0.012645	4.84	766.10	556.82	0.70
1	2888.588	3665.00	352.48	355.36	355.36	356.31	0.024372	7.82	468.81	254.07	1.01
1	2655.119	3665.00	348.23	351.76	350.67	352.04	0.004403	4.38	895.76	418.36	0.46
1	2392.439	3665.00	342.95	348.14	348.14	349.66	0.020497	9.92	369.57	121.10	1.00
1	2117.375	3665.00	335.32	344.21	340.13	344.34	0.000844	2.88	1271.57	243.06	0.22
1	1900	Bridge									
1	1852.556	3665.00	332.10	343.41		343.68	0.000915	4.94	914.86	116.72	0.26
1	1651.113	3665.00	330.13	343.34		343.50	0.000497	3.22	1184.69	147.46	0.19
1	1418.849	3665.00	327.85	341.27	341.27	343.04	0.008165	12.45	430.99	124.45	0.69
1	1093.832	3665.00	324.88	329.48	331.37	336.25	0.093471	26.08	193.26	82.64	2.25
1	969.590	3665.00	323.99	330.01	329.81	331.23	0.010399	9.64	457.29	152.91	0.77
1	687.468	3665.00	320.71	327.60		328.76	0.007384	9.05	456.09	113.55	0.67
1	375.119	3665.00	317.95	327.58	323.65	327.80	0.001000	4.12	1043.27	188.92	0.26



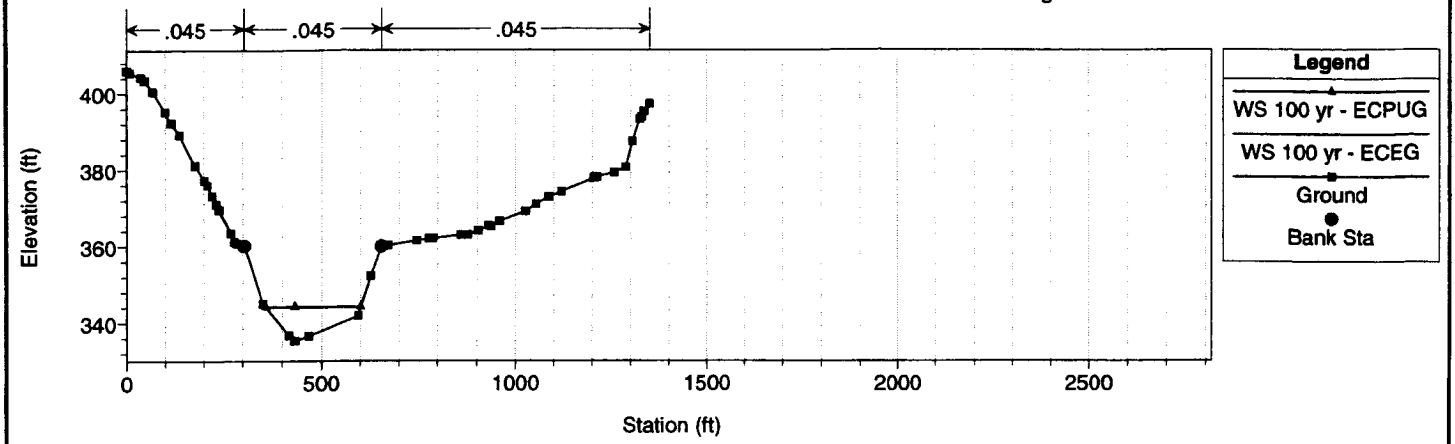
1 in Horiz. = 400 ft 1 in Vert. = 300 ft


3164.037
1
2888.588
Aliso Creek
2392.439
2655.1
2117.375
1900
1852.556
1418.849
1651.113
969.590
687.468
375.119
1 in Horiz. = 400 ft 1 in Vert. = 300 ft

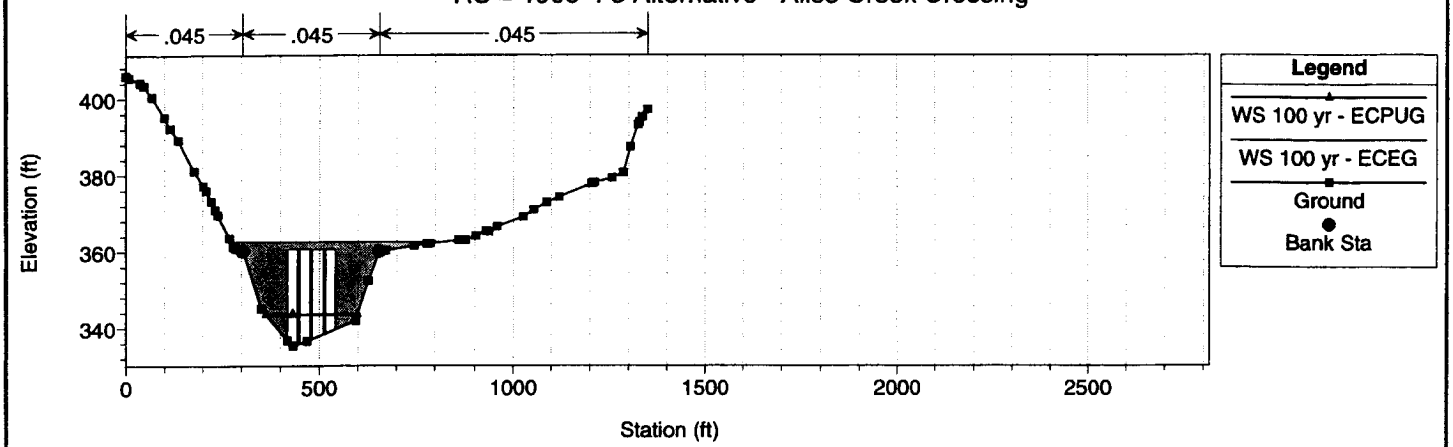


1 in Horiz. = 500 ft 1 in Vert. = 50 ft

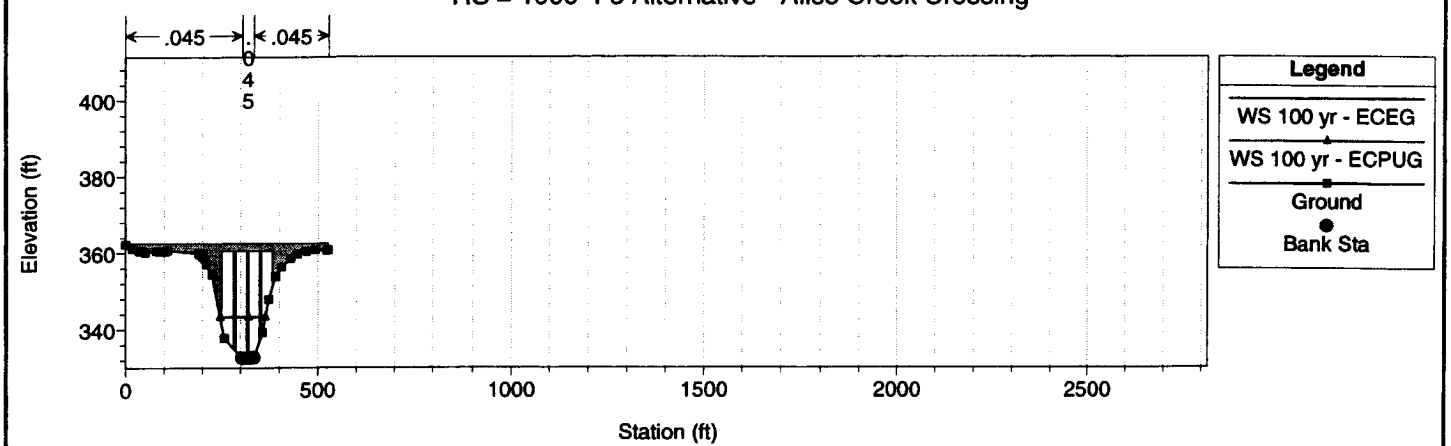
RS = 2117.375 I-5 Alternative - Aliso Creek Crossing



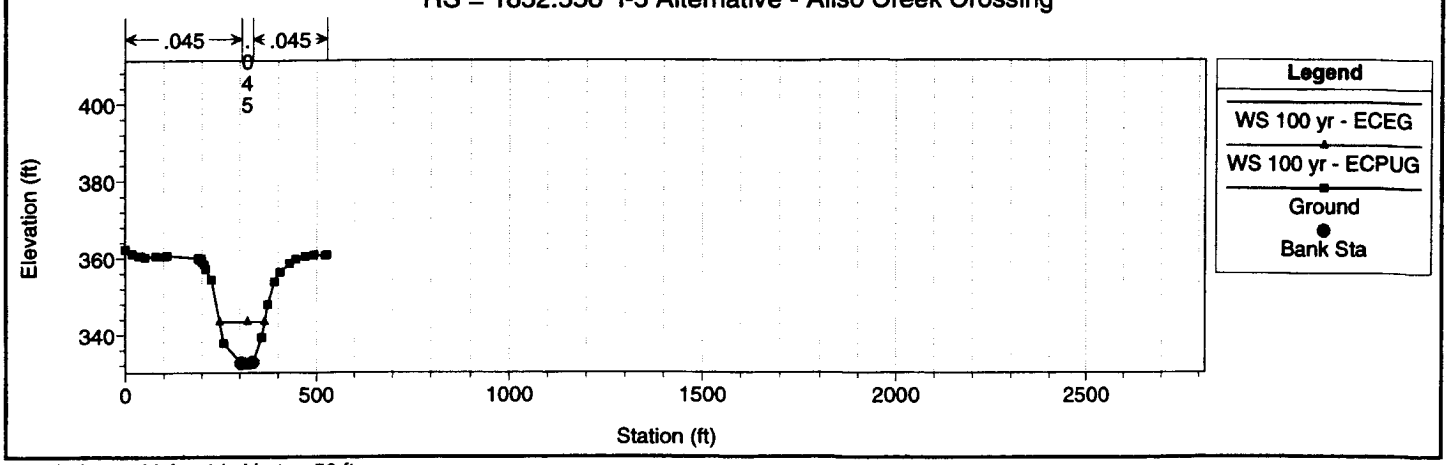
RS = 1900 I-5 Alternative - Aliso Creek Crossing



RS = 1900 I-5 Alternative - Aliso Creek Crossing

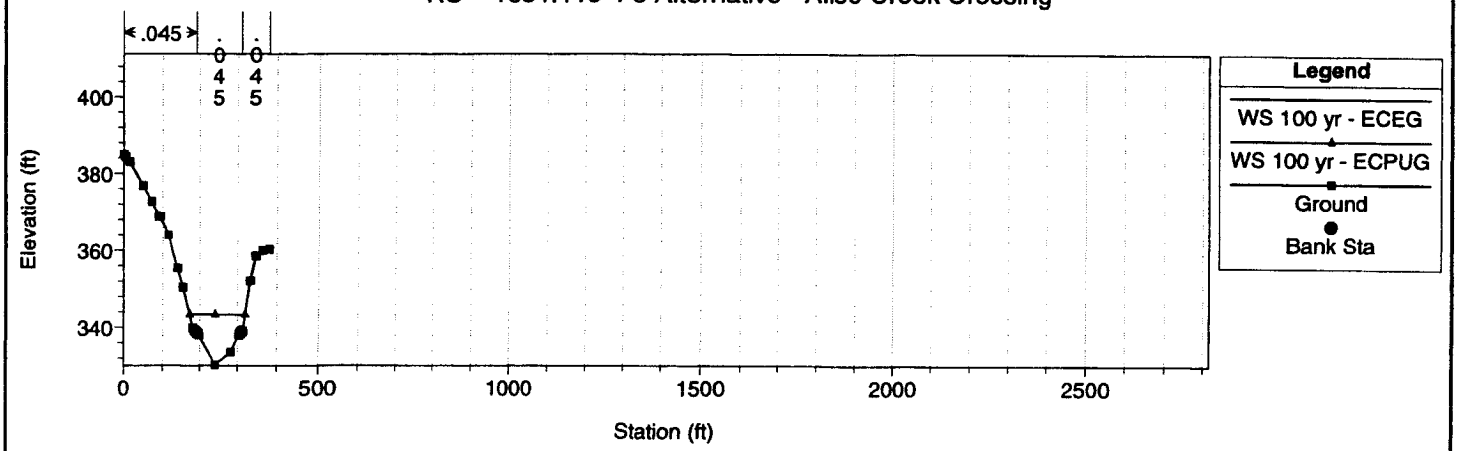


RS = 1852.556 I-5 Alternative - Aliso Creek Crossing

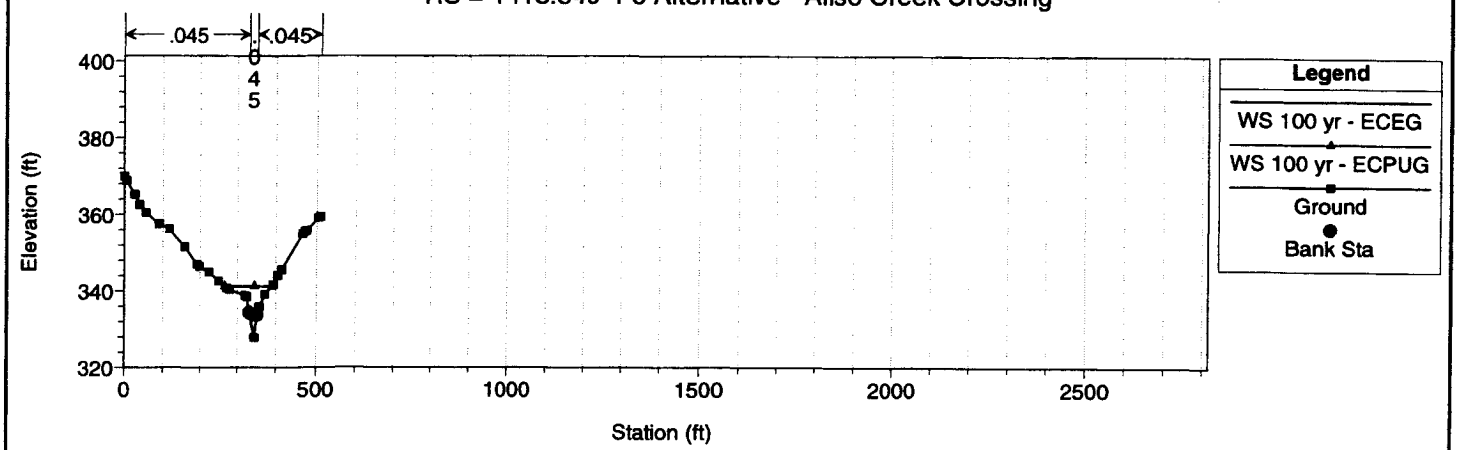


1 in Horiz. = 500 ft 1 in Vert. = 50 ft

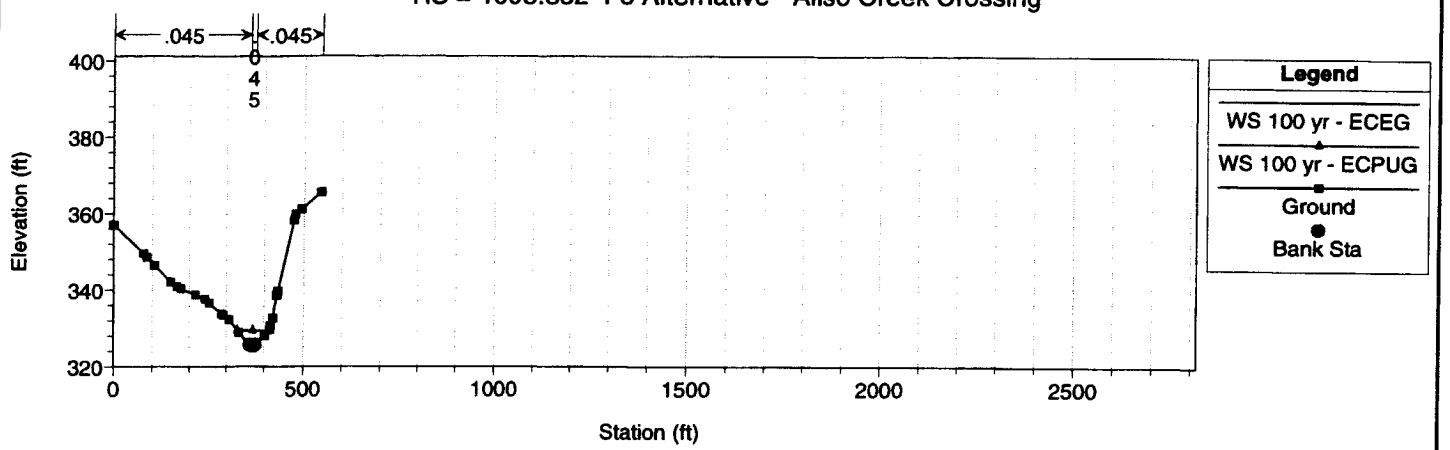
RS = 1651.113 I-5 Alternative - Aliso Creek Crossing



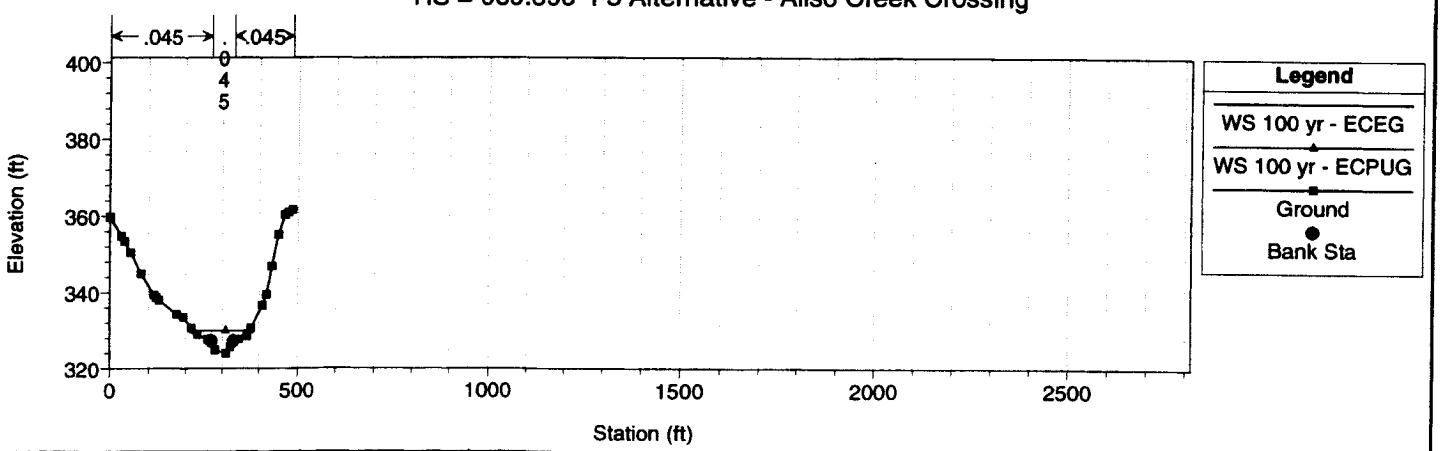
RS = 1418.849 I-5 Alternative - Aliso Creek Crossing



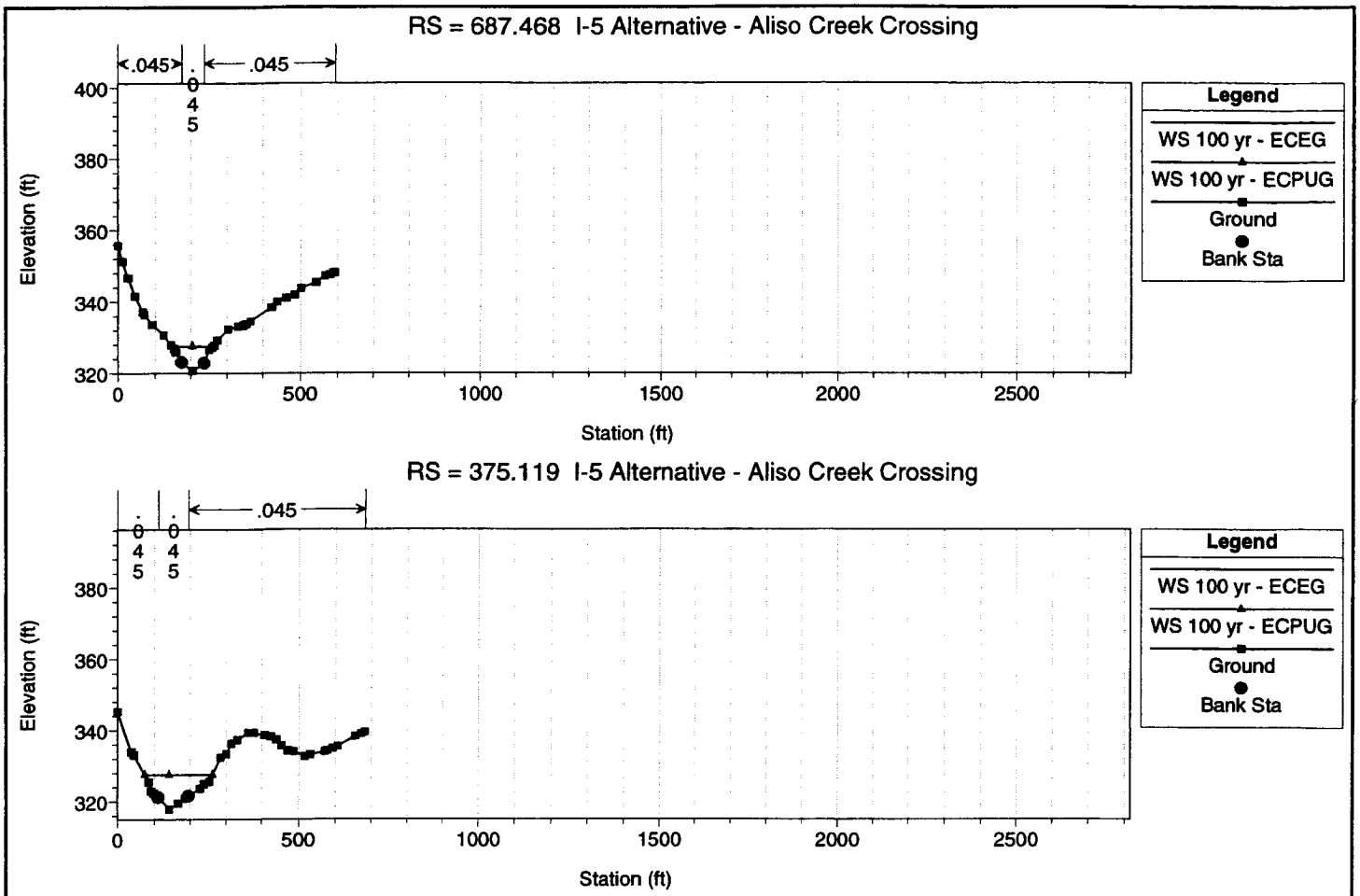
RS = 1093.832 I-5 Alternative - Aliso Creek Crossing



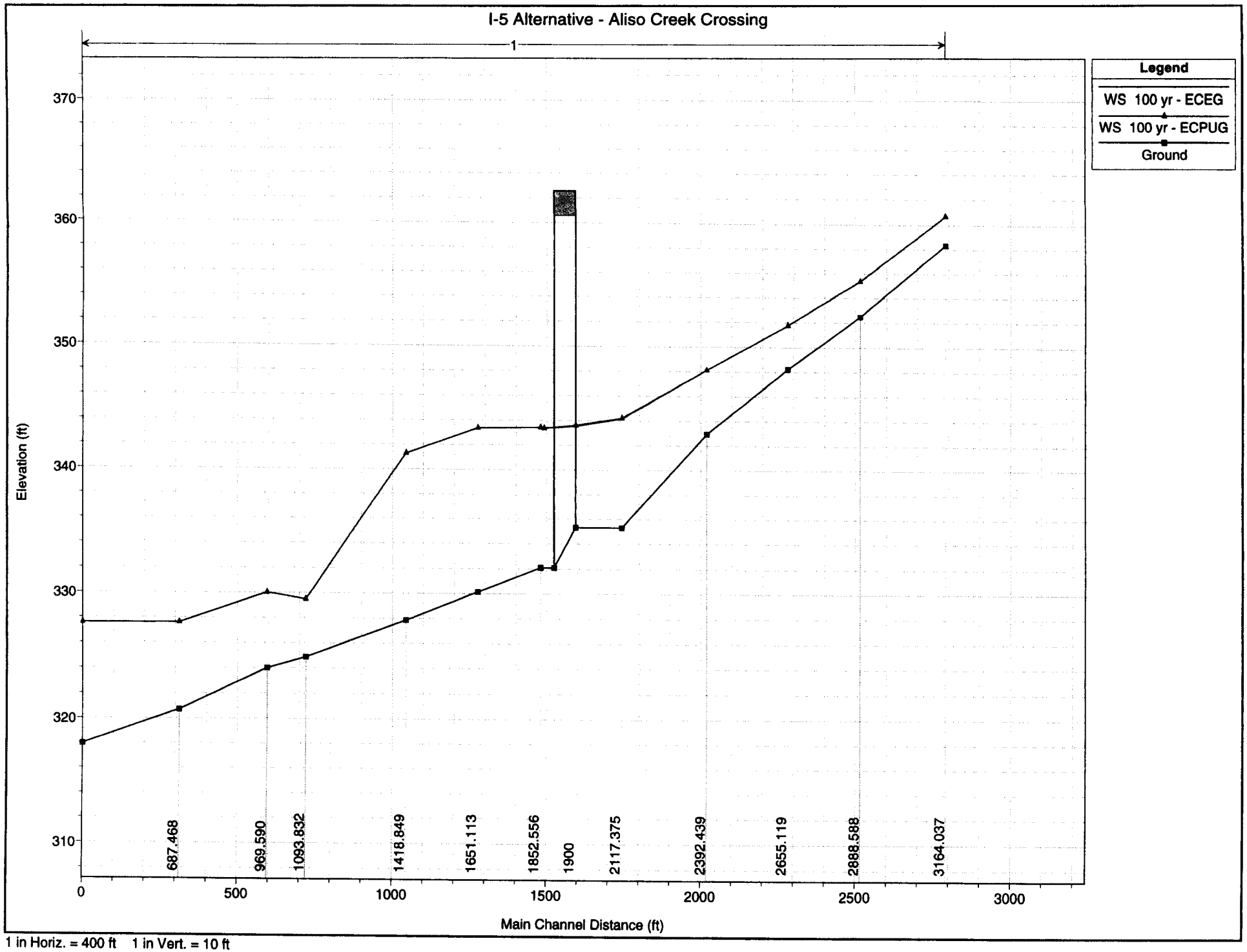
RS = 969.590 I-5 Alternative - Aliso Creek Crossing

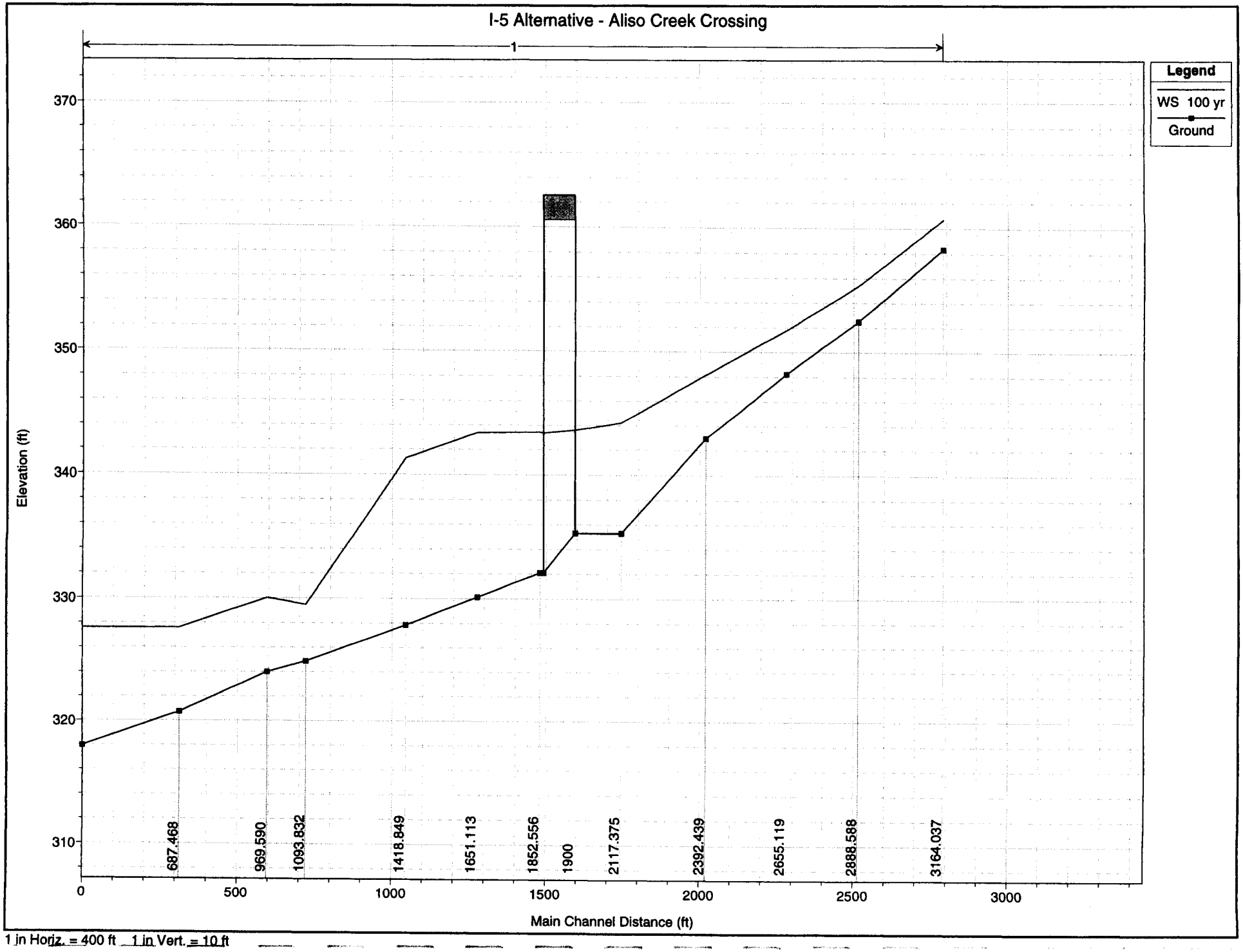


1 in Horiz. = 500 ft 1 in Vert. = 50 ft



1 in Horiz. = 500 ft 1 in Vert. = 50 ft


I-5 Alternative - Aliso Creek Crossing
1
Legend
WS 100 yr - ECEG
WS 100 yr - ECPUG
Ground
Elevation (ft)
370
360
350
340
330
320
310
687.468
969.590
1093.832
1418.849
1651.113
1852.556
1900
2117.375
2392.439
2655.119
2888.588
3164.037
0
500
1000
1500
2000
2500
3000
Main Channel Distance (ft)
1 in Horiz. = 400 ft 1 in Vert. = 10 ft


I-5 Alternative - Aliso Creek Crossing
1
Legend
WS 100 yr
Ground
Elevation (ft)
370
360
350
340
330
320
310
687.468
969.590
1093.832
1418.849
1651.113
1852.556
1900
2117.375
2392.439
2655.119
2888.588
3164.037
0
500
1000
1500
2000
2500
3000
Main Channel Distance (ft)
1 in Horiz. = 400 ft 1 in Vert. = 10 ft

APPENDIX Q
HYDRAULIC MODEL INPUT & RESULTS
I-5 ALTERNATIVE AT LA PAZ CREEK

Appendix Q. **Hydraulic Model Input & Results**
I5 Alternative at La Paz 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 widened culvert structure include:

999 (3279)

828 (2717)

HEC-RAS Version 3.0.1 Mar 2001
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: LaPaz
Project File : lapaz.prj
Run Date and Time: 2/20/03 8:57:13 AM

Project in English units

Project Description:
I-5 Alternative - La Paz Creek Crossing

PLAN DATA

Plan Title: existing
Plan File : p:\2PDA0104\Hydr\LHS\Modeling\lapaz_ly04\hec-ras\lapaz.p03

Geometry Title: existing
Geometry File : p:\2PDA0104\Hydr\LHS\Modeling\lapaz_ly04\hec-ras\lapaz.g01

Flow Title : existing
Flow File : p:\2PDA0104\Hydr\LHS\Modeling\lapaz_ly04\hec-ras\lapaz.f01

Plan Summary Information:
Number of: Cross Sections = 12 Mulitple Openings = 0
Culverts = 1 Inline Weirs = 0
Bridges = 0

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

Computation Options
Critical depth computed 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
Flow File : p:\2PDA0104\Hydr\LHS\Modeling\lapaz_ly04\hec-ras\lapaz.f01

Flow Data (cfs)

River	Reach	RS	2yr	5yr	10yr	25yr	50yr	100yr	100yr HC
La Paz	1	5556.041	12	37	127	387	730	1056	2323

Boundary Conditions

River	Reach	Profile	Upstream	Downstream
La Paz	1	2yr	Normal S = .006	Normal S = .02
La Paz	1	5yr	Normal S = .006	Normal S = .02
La Paz	1	10yr	Normal S = .006	Normal S = .02
La Paz	1	25yr	Normal S = .006	Normal S = .02
La Paz	1	50yr	Normal S = .006	Normal S = .02
La Paz	1	100yr	Normal S = .006	Normal S = .02
La Paz	1	100yr HC	Normal S = .006	Normal S = .02

GEOMETRY DATA

Geometry Title: existing
Geometry File : p:\2PDA0104\Hydr\LHS\Modeling\lapaz_ly04\hec-ras\lapaz.g01

CROSS SECTION RIVER: La Paz
REACH: 1 RS: 5556.041

INPUT
Description:
Station Elevation Data num= 36

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	400.51	33.38	398.49	109.25	393.9	132.69	392.48	140.65	392
173.21	390.03	197.26	387.93	219.38	387.23	258.65	385.43	272.81	385
308.51	383.38	322.76	382.73	351.67	381.23	397.54	379.23	438.02	378
496.06	378	504.1	378	509.71	378.17	537.14	379	549.26	380.1
560.06	381.08	603.22	385	618.06	386.8	636.26	389.61	689.22	393.81
702.35	395.15	734.04	395.04	736.46	395.13	745.65	395.31	768.43	396.16
771.42	396.27	801.47	396.59	808.81	396.89	854.85	400.62	883.59	404.88
891.65	406.4								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.045	397.54	.045	549.26	.045

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
397.54	549.26	344.95	323.4	307.84	.1 .3

CROSS SECTION RIVER: La Paz
REACH: 1 RS: 5232.641

INPUT
Description:
Station Elevation Data num= 42

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	398.53	4.09	398.27	37.27	396.22	84.53	392.92	105.38	391.73
129.49	389.51	145.59	388.51	195.16	386.22	209.1	385.15	248.24	382.77
260.84	382.37	266.6	382.01	283.63	380.96	315.26	379.69	338.17	378.64
359.36	378	395.5	376.23	425.04	378	444.41	378.59	457.88	379
476.7	380.72	505.21	384.65	523.55	388	527.76	388.64	558.42	393.31
589.23	398.97	605.44	405.4	622.07	410.51	638.14	416.92	654.91	423.6
685.44	433.44	687.75	434.22	717.2	440.59	724.21	442.21	780.71	456.15
786.26	457.35	812.47	461.39	819.1	462.21	826.21	462.65	875.98	465.73
884.78	465.72	906.81	466.37						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.045	266.6	.045	505.21	.045

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
266.6	505.21	554.84	482.5	391.79	.1 .3

CROSS SECTION RIVER: La Paz
REACH: 1 RS: 4750.141

INPUT
Description:
Station Elevation Data num= 43

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	385.31	18.37	385	42.9	385	65.2	385	95.37	385.46
109.62	385.05	145.3	384	183.08	383.45	229.77	383	262.8	381.67
304.43	380	315.97	380	333.34	379.49	348.56	379.05	352.88	379
401.65	378.49	408.96	378	485.53	373.02	579.93	378	582.09	378
589.03	378	591.81	378.73	623.16	387	640.58	393.63	687.38	409.7
693.68	411.79	695.11	412.24	737.49	426.85	759.7	433.26	773.32	436.19
793.83	440.23	821.02	443.19	827.09	443.92	830.74	444.08	862.1	445.66
871.89	445.29	896.23	446.82	901.76	446.19	940.48	443.11	959.16	441.7
964.49	441.6	974.1	441	974.68	440.98				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.045	401.65	.045	591.81	.045

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
401.65	591.81	288.55	471.07	654.99	.1 .3

CROSS SECTION RIVER: La Paz
REACH: 1 RS: 4279.071

INPUT
Description:
Station Elevation Data num= 35

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	381.36	.77	381.35	85.34	380.3	97.65	380.14	109.19	380.46
124.92	380.61	144.12	380.56	164.42	380.31	189.36	380	200.39	379.73
244.79	378.62	344.28	375.17	345.27	375.14	346.84	375.07	347.39	375
349.69	375	359.23	375	463.02	370.16	554.83	375	560.11	375.56
565.63	375.92	590.2	377.51	596.09	377.93	600.88	378.27	611.92	379.05
632.06	380.48	643.92	380.66	670.36	382.13	693.59	383.57	704	383.79
763.93	385.5	796.64	386.29	847.9	386.21	867.4	387.54	880.46	387.38

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.045	359.23	.045	554.83	.045

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
359.23	554.83	502.22	398.37	252.41	.1 .3

CROSS SECTION RIVER: La Paz
REACH: 1 RS: 3880.697

INPUT
Description:

Station Elevation Data num= 35

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	393.44	4.38	393.17	25.18	391.68	44.29	389.92	71.61	387.41
119.94	384.45	123.65	384.23	154.13	383.29	158.79	383.07	220.03	379.32
224.18	379.19	234.26	378.26	249.5	376.86	269.65	375	276.86	375
418.01	368.26	529.55	375	546.74	375	550.34	375	551.5	375.07
568.16	376.6	583.16	377.97	584.13	378.09	615.98	381	649.98	382.04
683.2	383.05	747.27	385	763.76	385.5	780.09	385.51	843.54	386.97
844.62	386.97	846.3	387.02	846.87	387.02	850.44	387.07	875.44	387.33

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.045	276.86	.045	529.55	.045

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
276.86	529.55	838.04	602.18	380.76	.1 .3

CROSS SECTION RIVER: La Paz
REACH: 1 RS: 3278.518

INPUT
Description:
Station Elevation Data num= 47

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	387.32	32.22	386.62	61.06	386.93	63.17	386.95	65.8	386.9
110.63	385.93	113.79	385.86	120.12	385.73	180.26	384.86	206.62	384.3
246.72	383	273.08	382.15	299.45	381.3	339.54	380.86	345.87	380.18
358.3	378.58	385.96	375	412.33	375	443.73	374.5	478.46	370.58
482.32	364.12	525	364.12	547.91	370.98	598.07	374.3	658.12	375
664.44	375.41	670.77	375.68	685.77	377.3	710.86	380	717.18	380.27
743.91	381.14	797.36	383.73	805.79	384.14	807.9	384.18	810.01	384.2
853.26	385.14	856.42	385.27	876.47	387	902.84	388.7	929.56	389.14
942.93	389.57	969.3	389.57	989.34	388.7	1029.43	388.27	1038.92	388.14
1042.08	388.07	1063.21	388.52						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.045	478.46	.045	547.91	.045

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
478.46	547.91	639.14	561.22	445.94	.1 .3

CULVERT RIVER: La Paz
REACH: 1 RS: 3000

INPUT
Description:
Distance from Upstream XS = 150
Deck/Roadway Width = 300
Weir Coefficient = 2.6
Upstream Deck/Roadway Coordinates
num= 2

Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord
0	375	350	1000	375	350

Upstream Bridge Cross Section Data
Station Elevation Data num= 47

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	387.32	32.22	386.62	61.06	386.93	63.17	386.95	65.8	386.9
110.63	385.93	113.79	385.86	120.12	385.73	180.26	384.86	206.62	384.3
246.72	383	273.08	382.15	299.45	381.3	339.54	380.86	345.87	380.18
358.3	378.58	385.96	375	412.33	375	443.73	374.5	478.46	370.58
482.32	364.12	525	364.12	547.91	370.98	598.07	374.3	658.12	375
664.44	375.41	670.77	375.68	685.77	377.3	710.86	380	717.18	380.27
743.91	381.14	797.36	383.73	805.79	384.14	807.9	384.18	810.01	384.2
853.26	385.14	856.42	385.27	876.47	387	902.84	388.7	929.56	389.14
942.93	389.57	969.3	389.57	989.34	388.7	1029.43	388.27	1038.92	388.14
1042.08	388.07	1063.21	388.52						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.045	478.46	.045	547.91	.045

Bank Sta: Left	Right	Coeff Contr.	Expan.
478.46	547.91	.1	.3

Downstream Deck/Roadway Coordinates
num= 2

Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord
0	375	350	1200	375	350

Downstream Bridge Cross Section Data
Station Elevation Data num= 65

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	377.61	5.48	377.53	43.5	377.88	57.11	377.73	86.65	377.38
107.61	376.73	137.98	376.74	140.43	376.57	164.61	375.44	187.04	374.27
189.32	374.24	195.6	373.63	240.65	368.9	256.96	367.19	270.52	364.6
273.95	364.24	281.32	363.25	291.99	361.51	313.2	360.52	326.87	360.52
343.32	358.06	388.75	356.11	396.79	356	398.57	356	417.86	356
443.4	356	445.99	357.78	483.93	372	490.01	372.57	497.32	373.26
513.32	375.07	548.66	375.27	559.93	375.56	569.3	374.99	583.98	374.28
629.84	372.26	654.66	369.74	676.45	367.02	702.66	364.88	716.69	363.45
740.03	361.82	745.01	361.52	753.99	361	782.71	362.12	792.98	363
825.39	367.17	834.57	369.21	856.66	370.46	868.07	371.22	886.2	373.27
908	373.4	932.81	375.97	953.44	376.77	959.33	377.14	968.22	377.87
1018.72	382.16	1038.8	385.02	1072.64	390.62	1113.33	395.62	1119.25	396.35
1124.17	396.84	1149.46	399.41	1164.67	400	1181.52	400.66	1192.02	400.85

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.045	343.32	.045	445.99	.045

Bank Sta: Left	Right	Coeff Contr.	Expan.
343.32	445.99	.1	.3

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

Number of Culverts = 1

Culvert Name	Shape	Rise	Span
Culvert #1	Box	5	6

FHWA Chart # 8 - flared wingwalls
FHWA Scale # 1 - Wingwall flared 30 to 75 deg.
Solution Criteria = Highest U.S. EG

Culvert Upstrm Dist	Length	n Value	Entrance Loss Coef	Exit Loss Coef
125	420	.013	.2	1

Number of Barrels = 6
Upstream Elevation = 364.12
Centerline Stations

Sta.	Sta.	Sta.	Sta.	Sta.	Sta.
487	494	501	508	515	522

Downstream Elevation = 356
Centerline Stations

Sta.	Sta.	Sta.	Sta.	Sta.	Sta.
400	407	414	421	428	435

CULVERT OUTPUT Profile #100yr
Culvert ID : Culvert #1

Culv Q (cfs)	1056.00	Culv Ful Lngh (ft)	
# Barrels	6	Culv Vel US (ft/s)	9.81
Q Barrel (cfs)	176.00	Culv Vel DS (ft/s)	16.75
E.G. US. (ft)	368.90	Culv Inv El Up (ft)	364.12
W.S. US. (ft)	368.57	Culv Inv El Dn (ft)	356.00
E.G. DS (ft)	358.74	Culv Frctn Ls (ft)	6.50
W.S. DS (ft)	357.98	Culv Ext Lss (ft)	3.37
Delta EG (ft)	10.17	Culv Ent Lss (ft)	0.30
Delta WS (ft)	10.59	Q Weir (cfs)	
E.G. IC (ft)	368.90	Weir Sta Lft (ft)	
E.G. OC (ft)	368.90	Weir Sta Rgt (ft)	
Culvert Control	Outlet	Weir Submerg	
Culv WS Inlet (ft)	367.11	Weir Max Depth (ft)	
Culv WS Outlet (ft)	357.75	Weir Avg Depth (ft)	
Culv Nml Depth (ft)	1.73	Wr Flw Area (sq ft)	
Culv Crt Depth (ft)	2.99	Min El Weir Flow (ft)	375.01

Note: The flow in the culvert is entirely supercritical.

CROSS SECTION RIVER: La Paz
REACH: 1 RS: 2717.293

INPUT
Description:
Station Elevation Data num= 65

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	377.61	5.48	377.53	43.5	377.88	57.11	377.73	86.65	377.38
107.61	376.73	137.98	376.74	140.43	376.57	164.61	375.44	187.04	374.27
189.32	374.24	195.6	373.63	240.65	368.9	256.96	367.19	270.52	364.6
273.95	364.24	281.32	363.25	291.99	361.51	313.2	360.52	326.87	360.52
343.32	358.06	388.75	356.11	396.79	356	398.57	356	417.86	356
443.4	356	445.99	357.78	483.93	372	490.01	372.57	497.32	373.26
513.32	375.07	548.66	375.27	559.93	375.56	569.3	374.99	583.98	374.28
629.84	372.26	654.66	369.74	676.45	367.02	702.66	364.88	716.69	363.45
740.03	361.82	745.01	361.52	753.99	361	782.71	362.12	792.98	363
825.39	367.17	834.57	369.21	856.66	370.46	868.07	371.22	886.2	373.27
908	373.4	932.81	375.97	953.44	376.77	959.33	377.14	968.22	377.87
1018.72	382.16	1038.8	385.02	1072.64	390.62	1113.33	395.62	1119.25	396.35
1124.17	396.84	1149.46	399.41	1164.67	400	1181.52	400.66	1192.02	400.85

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.045	343.32	.045	445.99	.045

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
343.32	445.99	237.54	488.54	773.83	.1	.3

CROSS SECTION RIVER: La Paz
REACH: 1 RS: 2228.750

INPUT
Description:
Station Elevation Data num= 34

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	367.2	25	365.11	71.49	361.22	91.98	359.67	105.55	359.19
158.96	356.96	161.23	356.8	178.37	355.57	192.44	354.56	205.8	354.6
250.61	353.26	281.56	351.51	292.91	350.86	305.78	350.62	337.5	349.67
356.11	349.11	362.41	349.15	375.17	349.23	418.32	349.49	433.83	349.58
440.85	349.97	492.86	352.85	493.84	352.92	502.55	353.26	533.64	354.19
578.83	354.46	594.31	354	617.66	355.39	634.51	357	661.28	359.56

690.19 367.49 694.77 367.85 713.33 377.31 725.08 383.48

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.045	337.5	.045	440.85	.045

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
337.5	440.85	389.24	457.32	535.3	.1	.3

CROSS SECTION RIVER: La Paz
REACH: 1 RS: 1771.430

INPUT
Description:
Station Elevation Data num= 38

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	365.28	12.48	363.4	22.16	362.55	74.59	357	75.15	356.98
79.87	356.68	140.69	353.44	159.56	352.71	206.78	352	223.83	350.45
239.83	349.43	246.49	349	266.4	348.68	302.59	348.1	311.55	348.17
338.98	347.14	341.1	347	372.03	346.48	403.86	345.79	432.15	344.19
460.45	345.92	495.76	347	495.8	347	504.23	347.24	518.39	347.86
529.85	348.94	598.72	355.44	607.04	356.33	636.42	358.01	636.59	358.03
638.04	358	666.14	357.7	669.47	357.66	673.69	357.62	702.52	358.85
743.61	358.73	768.62	358.66	788.16	357.42				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.045	403.86	.045	460.45	.045

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
403.86	460.45	495.36	522.79	547.94	.1	.3

CROSS SECTION RIVER: La Paz
REACH: 1 RS: 1248.640

INPUT
Description:
Station Elevation Data num= 41

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	357.41	24.75	356.35	35.19	355.89	37.31	355.83	70.01	353.6
83.15	352.63	113.65	351.22	137.29	348.87	156.15	348.12	189.46	346.25
230.54	344.04	241.56	343.45	261.98	342.71	271.85	342.02	353.02	338.39
363.77	338	372.77	338	378.98	338.18	406.41	339	461.01	343.87
483.39	345.86	507.33	348	530.34	350.74	530.6	350.77	540.97	351.45
596.35	356.76	608.25	358	610.92	358.48	622.8	360.59	641.89	364.13
665.85	372.12	675.53	374.65	690.84	377.73	709.17	382.06	728.77	385.95
760.91	391.53	798.37	397.21	810.09	398.48	830.61	400.1	843.73	400.66
844.49	400.69								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.045	271.85	.045	461.01	.045

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
271.85	461.01	354.11	388.79	472.42	.1	.3

CROSS SECTION RIVER: La Paz
REACH: 1 RS: 859.846

INPUT
Description:
Station Elevation Data num= 34

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	366.69	5.68	365.98	32.09	362.86	38.01	362.17	58.98	359.21
67.54	358	72.2	357.34	126.41	351.68	154.28	347.87	207.8	342.2
209.35	342.03	210	341.98	216.42	341.55	280.25	337.21	282.43	337.06
308.68	335.08	335.86	337.78	370.9	338.83	422.57	340.23	451.32	341
469.65	342.32	486.88	343	558.79	345.86	563.87	346	577.73	346
587.57	346.67	645.58	348.3	666.05	348.76	676.55	349.36	705.68	351
738.59	352.86	741.13	353.05	788.93	355.35	789.84	355.39		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.045	282.43	.045	335.86	.045

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
282.43	335.86	744.8	606.03	390.12	.1	.3

CROSS SECTION RIVER: La Paz
REACH: 1 RS: 253.821

INPUT
Description:
Station Elevation Data num= 41

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	360.76	3.2	360.33	18.99	358.81	57.27	356.21	104.47	353.6
127.57	350.34	161.53	346.56	181.41	344.77	197.17	343.46	204.42	342.39
214.62	341.53	238.99	339.48	246.07	338.88	289.85	336.4	330.54	334.52
347.27	330.4	369.77	330.22	375.35	334	397.81	334.32	428.03	335.52
446.62	336.26	475.19	336.6	482.34	336.69	486.85	336.74	494.32	337.17
508.58	338.11	553.53	340	586.49	341.85	624.8	342.76	640.33	343.56
660.44	344.61	677.04	346.4	696.07	348.17	766.01	356.89	767.35	356.93
771.8	357.25	802.98	359	815.62	361.84	838.62	363.79	854.53	369.38
872.23	370.18								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.045	330.54	.045	375.35	.045

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
330.54	375.35	392.31	253.82 582.78	.1	.3

Profile Output Table - Standard Table 1

Reach	River Sta	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
		(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
1	5556.041	1056.00	378.00	380.98	379.51	381.08	0.001707	2.57	432.02	201.67	0.28
1	5232.641	1056.00	376.23	379.98		380.18	0.005084	3.55	297.66	160.73	0.46
1	4750.141	1056.00	373.02	376.67		377.00	0.008794	4.62	228.64	125.30	0.60
1	4279.071	1056.00	370.16	374.17		374.34	0.003814	3.24	325.70	162.25	0.40
1	3880.697	1056.00	368.26	371.78		372.10	0.008892	4.54	232.73	132.10	0.60
1	3278.518	1056.00	364.12	368.57	366.67	368.90	0.003512	4.61	229.12	60.21	0.42
1	3000	Culvert									
1	2717.293	1056.00	356.00	357.76	357.98	358.79	0.040744	8.14	129.80	95.68	0.42
1	2228.750	1056.00	349.11	351.49	350.85	351.71	0.005530	4.03	293.96	186.34	0.49
1	1771.430	1056.00	344.19	347.17	347.17	347.77	0.015339	6.80	193.99	163.75	0.82
1	1248.640	1056.00	338.00	341.38	340.31	341.58	0.004723	3.60	293.65	147.01	0.45
1	859.846	1056.00	335.08	339.60		339.88	0.003976	4.65	282.82	154.32	0.45
1	253.821	1056.00	330.22	333.94	333.82	335.20	0.020035	9.00	117.37	42.37	0.95

HEC-RAS Version 3.0.1 Mar 2001
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: LaPaz
Project File : lapaz.prj
Run Date and Time: 2/20/03 8:57:07 AM

Project in English units

Project Description:
I-5 Alternative - La Paz Creek Crossing

PLAN DATA

Plan Title: proposed
Plan File : p:\2PDA0104\Hydr\LHS\Modeling\lapaz_ly04\hec-ras\lapaz.p02

Geometry Title: proposed
Geometry File : p:\2PDA0104\Hydr\LHS\Modeling\lapaz_ly04\hec-ras\lapaz.g03

Flow Title : existing
Flow File : p:\2PDA0104\Hydr\LHS\Modeling\lapaz_ly04\hec-ras\lapaz.f01

Plan Summary Information:
Number of: Cross Sections = 12 Mulitple Openings = 0
Culverts = 1 Inline Weirs = 0
Bridges = 0

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

Computation Options
Critical depth computed 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
Flow File : p:\2PDA0104\Hydr\LHS\Modeling\lapaz_ly04\hec-ras\lapaz.f01

Flow Data (cfs)

River	Reach	RS	2yr	5yr	10yr	25yr	50yr	100yr	100yr HC
La Paz	1	5556.041	12	37	127	387	730	1056	2323

Boundary Conditions

River	Reach	Profile	Upstream	Downstream
La Paz	1	2yr	Normal S = .006	Normal S = .02
La Paz	1	5yr	Normal S = .006	Normal S = .02
La Paz	1	10yr	Normal S = .006	Normal S = .02
La Paz	1	25yr	Normal S = .006	Normal S = .02
La Paz	1	50yr	Normal S = .006	Normal S = .02
La Paz	1	100yr	Normal S = .006	Normal S = .02
La Paz	1	100yr HC	Normal S = .006	Normal S = .02

GEOMETRY DATA

Geometry Title: proposed
Geometry File : p:\2PDA0104\Hydr\LHS\Modeling\lapaz_ly04\hec-ras\lapaz.g03

CROSS SECTION RIVER: La Paz
REACH: 1 RS: 5556.041

INPUT
Description:
Station Elevation Data num= 36

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	400.51	33.38	398.49	109.25	393.9	132.69	392.48	140.65	392
173.21	390.03	197.26	387.93	219.38	387.23	258.65	385.43	272.81	385
308.51	383.38	322.76	382.73	351.67	381.23	397.54	379.23	438.02	378
496.06	378	504.1	378	509.71	378.17	537.14	379	549.26	380.1
560.06	381.08	603.22	385	618.06	386.8	636.26	389.61	689.22	393.81
702.35	395.15	734.04	395.04	736.46	395.13	745.65	395.31	768.43	396.16
771.42	396.27	801.47	396.59	808.81	396.89	854.85	400.62	883.59	404.88
891.65	406.4								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.045	397.54	.045	549.26	.045

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
397.54	549.26	344.95	323.4	307.84	.1 .3

CROSS SECTION RIVER: La Paz
REACH: 1 RS: 5232.641

INPUT
Description:
Station Elevation Data num= 42

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	398.53	4.09	398.27	37.27	396.22	84.53	392.92	105.38	391.73
129.49	389.51	145.59	388.51	195.16	386.22	209.1	385.15	248.24	382.77
260.84	382.37	266.6	382.01	283.63	380.96	315.26	379.69	338.17	378.64
359.36	378	395.5	376.23	425.04	378	444.41	378.59	457.88	379
476.7	380.72	505.21	384.65	523.55	388	527.76	388.64	558.42	393.31
589.23	398.97	605.44	405.4	622.07	410.51	638.14	416.92	654.91	423.6
685.44	433.44	687.75	434.22	717.2	440.59	724.21	442.21	780.71	456.15
786.26	457.35	812.47	461.39	819.1	462.21	826.21	462.65	875.98	465.73
884.78	465.72	906.81	466.37						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.045	266.6	.045	505.21	.045

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
266.6	505.21	554.84	482.5	391.79	.1 .3

CROSS SECTION RIVER: La Paz
REACH: 1 RS: 4750.141

INPUT
Description:
Station Elevation Data num= 43

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	385.31	18.37	385	42.9	385	65.2	385	95.37	385.46
109.62	385.05	145.3	384	183.08	383.45	229.77	383	262.8	381.67
304.43	380	315.97	380	333.34	379.49	348.56	379.05	352.88	379
401.65	378.49	408.96	378	485.53	373.02	579.93	378	582.09	378
589.03	378	591.81	378.73	623.16	387	640.58	393.63	687.38	409.7
693.68	411.79	695.11	412.24	737.49	426.85	759.7	433.26	773.32	436.19
793.83	440.23	821.02	443.19	827.09	443.92	830.74	444.08	862.1	445.66
871.89	445.29	896.23	446.82	901.76	446.19	940.48	443.11	959.16	441.7
964.49	441.6	974.1	441	974.68	440.98				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.045	401.65	.045	591.81	.045

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
401.65	591.81	288.55	471.07	654.99	.1 .3

CROSS SECTION RIVER: La Paz
REACH: 1 RS: 4279.071

INPUT
Description:
Station Elevation Data num= 35

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	381.36	.77	381.35	85.34	380.3	97.65	380.14	109.19	380.46
124.92	380.61	144.12	380.56	164.42	380.31	189.36	380	200.39	379.73
244.79	378.62	344.28	375.17	345.27	375.14	346.84	375.07	347.39	375
349.69	375	359.23	375	463.02	370.16	554.83	375	560.11	375.56
565.63	375.92	590.2	377.51	596.09	377.93	600.88	378.27	611.92	379.05
632.06	380.48	643.92	380.66	670.36	382.13	693.59	383.57	704	383.79
763.93	385.5	796.64	386.29	847.9	386.21	867.4	387.54	880.46	387.38

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.045	359.23	.045	554.83	.045

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
359.23	554.83	502.22	398.37	252.41	.1 .3

CROSS SECTION RIVER: La Paz
REACH: 1 RS: 3880.697

INPUT
Description:

Station Elevation Data num= 35

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	393.44	4.38	393.17	25.18	391.68	44.29	389.92	71.61	387.41
119.94	384.45	123.65	384.23	154.13	383.29	158.79	383.07	220.03	379.32
224.18	379.19	234.26	378.26	249.5	376.86	269.65	375	276.86	375
418.01	368.26	529.55	375	546.74	375	550.34	375	551.5	375.07
568.16	376.6	583.16	377.97	584.13	378.09	615.98	381	649.98	382.04
683.2	383.05	747.27	385	763.76	385.5	780.09	385.51	843.54	386.97
844.62	386.97	846.3	387.02	846.87	387.02	850.44	387.07	875.44	387.33

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.045	276.86	.045	529.55	.045

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
276.86	529.55	838.04	602.18	380.76	.1	.3

CROSS SECTION RIVER: La Paz
REACH: 1 RS: 3278.518

INPUT
Description:
Station Elevation Data num= 47

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	387.32	32.22	386.62	61.06	386.93	63.17	386.95	65.8	386.9
110.63	385.93	113.79	385.86	120.12	385.73	180.26	384.86	206.62	384.3
246.72	383	273.08	382.15	299.45	381.3	339.54	380.86	345.87	380.18
358.3	378.58	385.96	375	412.33	375	443.73	374.5	478.46	370.58
482.32	364.12	525	364.12	547.91	370.98	598.07	374.3	658.12	375
664.44	375.41	670.77	375.68	685.77	377.3	710.86	380	717.18	380.27
743.91	381.14	797.36	383.73	805.79	384.14	807.9	384.18	810.01	384.2
853.26	385.14	856.42	385.27	876.47	387	902.84	388.7	929.56	389.14
942.93	389.57	969.3	389.57	989.34	388.7	1029.43	388.27	1038.92	388.14
1042.08	388.07	1063.21	388.52						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.045	478.46	.045	547.91	.045

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
478.46	547.91	639.14	561.22	445.94	.1	.3

CULVERT RIVER: La Paz
REACH: 1 RS: 3000

INPUT
Description:
Distance from Upstream XS = 165
Deck/Roadway Width = 330
Weir Coefficient = 2.6
Upstream Deck/Roadway Coordinates
num= 2

Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord
0	375	350	1000	375	350

Upstream Bridge Cross Section Data
Station Elevation Data num= 47

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	387.32	32.22	386.62	61.06	386.93	63.17	386.95	65.8	386.9
110.63	385.93	113.79	385.86	120.12	385.73	180.26	384.86	206.62	384.3
246.72	383	273.08	382.15	299.45	381.3	339.54	380.86	345.87	380.18
358.3	378.58	385.96	375	412.33	375	443.73	374.5	478.46	370.58
482.32	364.12	525	364.12	547.91	370.98	598.07	374.3	658.12	375
664.44	375.41	670.77	375.68	685.77	377.3	710.86	380	717.18	380.27
743.91	381.14	797.36	383.73	805.79	384.14	807.9	384.18	810.01	384.2
853.26	385.14	856.42	385.27	876.47	387	902.84	388.7	929.56	389.14
942.93	389.57	969.3	389.57	989.34	388.7	1029.43	388.27	1038.92	388.14
1042.08	388.07	1063.21	388.52						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.045	478.46	.045	547.91	.045

Bank Sta: Left	Right	Coeff Contr.	Expan.
478.46	547.91	.1	.3

Downstream Deck/Roadway Coordinates
num= 2

Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord
0	375	350	1200	375	350

Downstream Bridge Cross Section Data
Station Elevation Data num= 65

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	377.61	5.48	377.53	43.5	377.88	57.11	377.73	86.65	377.38
107.61	376.73	137.98	376.74	140.43	376.57	164.61	375.44	187.04	374.27
189.32	374.24	195.6	373.63	240.65	368.9	256.96	367.19	270.52	364.6
273.95	364.24	281.32	363.25	291.99	361.51	313.2	360.52	326.87	360.52
343.32	358.06	388.75	356.11	396.79	356	398.57	356	417.86	356
443.4	356	445.99	357.78	483.93	372	490.01	372.57	497.32	373.26
513.32	375.07	548.66	375.27	559.93	375.56	569.3	374.99	583.98	374.28
629.84	372.26	654.66	369.74	676.45	367.02	702.66	364.88	716.69	363.45
740.03	361.82	745.01	361.52	753.99	361	782.71	362.12	792.98	363
825.39	367.17	834.57	369.21	856.66	370.46	868.07	371.22	886.2	373.27
908	373.4	932.81	375.97	953.44	376.77	959.33	377.14	968.22	377.87
1018.72	382.16	1038.8	385.02	1072.64	390.62	1113.33	395.62	1119.25	396.35
1124.17	396.84	1149.46	399.41	1164.67	400	1181.52	400.66	1192.02	400.85

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.045	343.32	.045	445.99	.045

Bank Sta: Left	Right	Coeff Contr.	Expan.
343.32	445.99	.1	.3

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

Number of Culverts = 1

Culvert Name	Shape	Rise	Span
Culvert #1	Box	5	6

FHWA Chart # 8 - flared wingwalls
FHWA Scale # 1 - Wingwall flared 30 to 75 deg.
Solution Criteria = Highest U.S. EG

Culvert Upstrm Dist	Length	n Value	Entrance Loss Coef	Exit Loss Coef
110	450	.013	.2	1

Number of Barrels = 6
Upstream Elevation = 363.85
Centerline Stations

Sta.	Sta.	Sta.	Sta.	Sta.	Sta.
487	494	501	508	515	522

Downstream Elevation = 356.27
Centerline Stations

Sta.	Sta.	Sta.	Sta.	Sta.	Sta.
400	407	414	421	428	435

CULVERT OUTPUT Profile #100yr
Culvert ID : Culvert #1

Culv Q (cfs)	1056.00	Culv Ful Lngh (ft)	
# Barrels	6	Culv Vel US (ft/s)	9.81
Q Barrel (cfs)	176.00	Culv Vel DS (ft/s)	16.00
E.G. US. (ft)	368.63	Culv Inv El Up (ft)	363.85
W.S. US. (ft)	368.24	Culv Inv El Dn (ft)	356.27
E.G. DS (ft)	358.74	Culv Frctn Ls (ft)	6.26
W.S. DS (ft)	357.98	Culv Ext Lss (ft)	3.34
Delta EG (ft)	9.90	Culv Ent Lss (ft)	0.30
Delta WS (ft)	10.25	Q Weir (cfs)	
E.G. IC (ft)	368.63	Weir Sta Lft (ft)	
E.G. OC (ft)	368.63	Weir Sta Rgt (ft)	
Culvert Control	Inlet	Weir Submerg	
Culv WS Inlet (ft)	366.84	Weir Max Depth (ft)	
Culv WS Outlet (ft)	358.10	Weir Avg Depth (ft)	
Culv Nml Depth (ft)	1.82	Wr Flw Area (sq ft)	
Culv Crt Depth (ft)	2.99	Min El Weir Flow (ft)	375.01

Warning: During the supercritical analysis, the program could not converge on a supercritical answer in the downstream cross section. The program used the solution with the least error.
Note: The flow in the culvert is entirely supercritical.

CROSS SECTION RIVER: La Paz
REACH: 1 RS: 2717.293

INPUT
Description:
Station Elevation Data num= 65

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	377.61	5.48	377.53	43.5	377.88	57.11	377.73	86.65	377.38
107.61	376.73	137.98	376.74	140.43	376.57	164.61	375.44	187.04	374.27
189.32	374.24	195.6	373.63	240.65	368.9	256.96	367.19	270.52	364.6
273.95	364.24	281.32	363.25	291.99	361.51	313.2	360.52	326.87	360.52
343.32	358.06	388.75	356.11	396.79	356	398.57	356	417.86	356
443.4	356	445.99	357.78	483.93	372	490.01	372.57	497.32	373.26
513.32	375.07	548.66	375.27	559.93	375.56	569.3	374.99	583.98	374.28
629.84	372.26	654.66	369.74	676.45	367.02	702.66	364.88	716.69	363.45
740.03	361.82	745.01	361.52	753.99	361	782.71	362.12	792.98	363
825.39	367.17	834.57	369.21	856.66	370.46	868.07	371.22	886.2	373.27
908	373.4	932.81	375.97	953.44	376.77	959.33	377.14	968.22	377.87
1018.72	382.16	1038.8	385.02	1072.64	390.62	1113.33	395.62	1119.25	396.35
1124.17	396.84	1149.46	399.41	1164.67	400	1181.52	400.66	1192.02	400.85

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.045	343.32	.045	445.99	.045

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
343.32	445.99	237.54	488.54 773.83	.1	.3

CROSS SECTION RIVER: La Paz
REACH: 1 RS: 2228.750

INPUT
Description:
Station Elevation Data num= 34

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	367.2	25	365.11	71.49	361.22	91.98	359.67	105.55	359.19
158.96	356.96	161.23	356.8	178.37	355.57	192.44	354.56	205.8	354.6
250.61	353.26	281.56	351.51	292.91	350.86	305.78	350.62	337.5	349.67
356.11	349.11	362.41	349.15	375.17	349.23	418.32	349.49	433.83	349.58

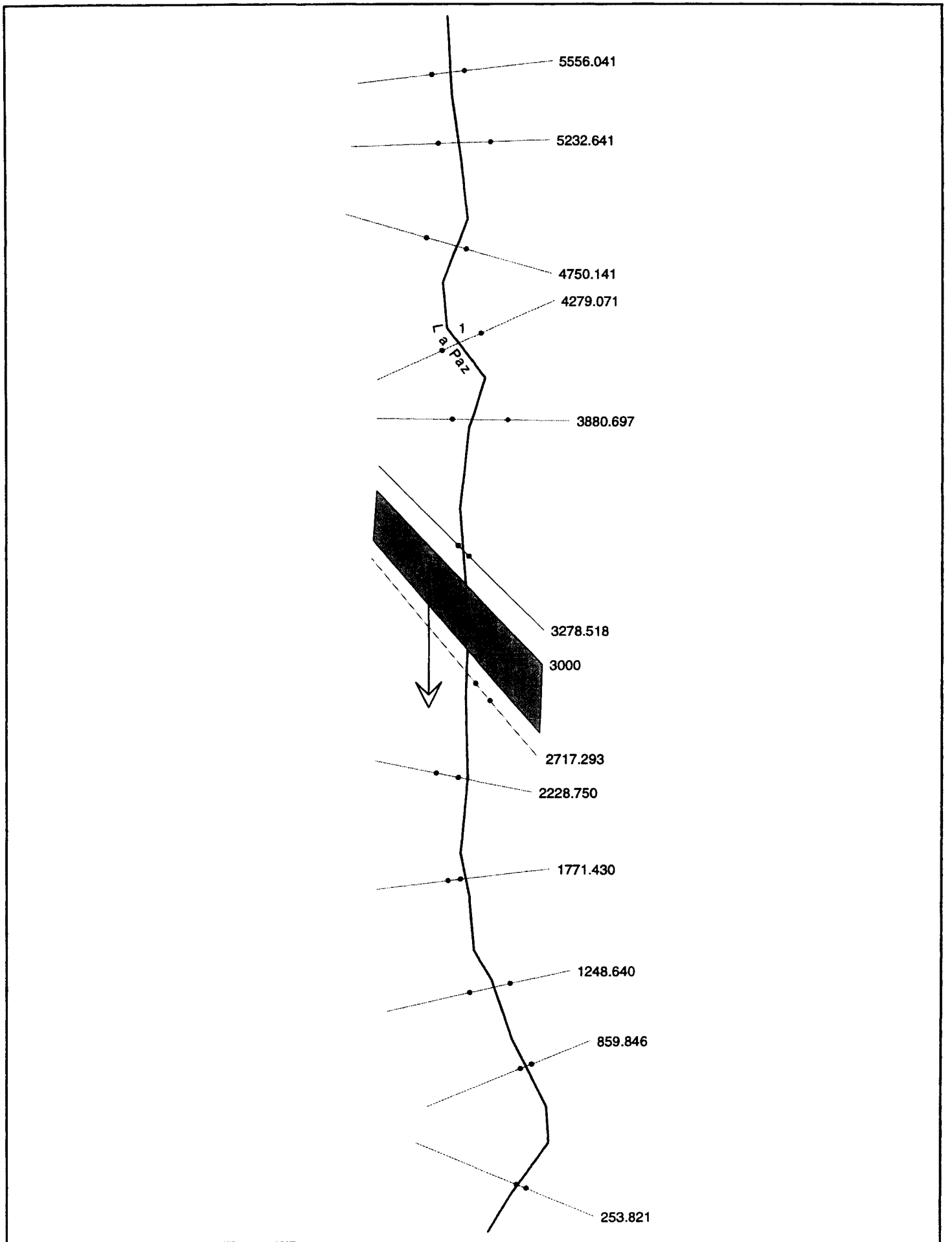
```
  440.85  349.97  492.86  352.85  493.84  352.92  502.55  353.26  533.64  354.19
  578.83  354.46  594.31     354  617.66  355.39  634.51     357  661.28  359.56
  690.19  367.49  694.77  367.85  713.33  377.31  725.08  383.48

Manning's n Values          num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .045   337.5    .045  440.85    .045

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         337.5  440.85            389.24  457.32   535.3             .1       .3

CROSS SECTION          RIVER: La Paz
REACH: 1                  RS: 1771.430

INPUT
Description:
Station Elevation Data     num=      38
     Sta    Elev     Sta     Elev     Sta     Elev     Sta     Elev     Sta     Elev
       0  365.28   12.48   363.4   22.16   362.55   74.59      357   75.15   356.98
   79.87  356.68  140.69  353.44  159.56   352.71  206.78      352  223.83   350.45
  239.83  349.43  246.49     349   266.4   348.68  302.59    348.1  311.55   348.17
  338.98  347.14   341.1     347  372.03   346.48  403.86   345.79  432.15   344.19
  460.45  345.92  495.76     347   495.8      347  504.23   347.24  518.39   347.86
  529.85  348.94  598.72  355.44  607.04   356.33  636.42   358.01  636.59   358.03
  638.04     358  666.14   357.7  669.47   357.66  673.69   357.62  702.52   358.85
  743.61  358.73  768.62  358.66  788.16   357.42

Manning's n Values          num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .045   403.86    .045  460.45    .045

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         403.86  460.45            495.36  522.79  547.94             .1       .3

CROSS SECTION          RIVER: La Paz
REACH: 1                  RS: 1248.640

INPUT
Description:
Station Elevation Data     num=      41
     Sta    Elev     Sta     Elev     Sta     Elev     Sta     Elev     Sta     Elev
       0  357.41   24.75   356.35   35.19   355.89   37.31   355.83   70.01    353.6
   83.15  352.63  113.65   351.22  137.29   348.87  156.15   348.12  189.46   346.25
  230.54  344.04  241.56   343.45  261.98   342.71  271.85   342.02  353.02   338.39
  363.77     338  372.77      338  378.98   338.18  406.41      339  461.01   343.87
  483.39  345.86  507.33      348  530.34   350.74   530.6   350.77  540.97   351.45
  596.35  356.76  608.25      358  610.92   358.48   622.8   360.59  641.89   364.13
  665.85  372.12  675.53   374.65  690.84   377.73  709.17   382.06  728.77   385.95
  760.91  391.53  798.37   397.21  810.09   398.48  830.61    400.1  843.73   400.66
  844.49  400.69

Manning's n Values          num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .045   271.85    .045  461.01    .045

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         271.85  461.01            354.11  388.79  472.42             .1       .3

CROSS SECTION          RIVER: La Paz
REACH: 1                  RS: 859.846

INPUT
Description:
Station Elevation Data     num=      34
     Sta    Elev     Sta     Elev     Sta     Elev     Sta     Elev     Sta     Elev
       0  366.69    5.68   365.98   32.09   362.86   38.01   362.17   58.98   359.21
   67.54     358    72.2   357.34  126.41   351.68  154.28   347.87   207.8    342.2
  209.35  342.03     210   341.98  216.42   341.55  280.25   337.21  282.43   337.06
  308.68  335.08  335.86   337.78   370.9   338.83  422.57   340.23  451.32      341
  469.65  342.32  486.88      343  558.79   345.86  563.87      346  577.73      346
  587.57  346.67  645.58    348.3  666.05   348.76  676.55   349.36  705.68      351
  738.59  352.86  741.13   353.05  788.93   355.35  789.84   355.39

Manning's n Values          num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .045   282.43    .045  335.86    .045

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         282.43  335.86            744.8  606.03  390.12             .1       .3

CROSS SECTION          RIVER: La Paz
REACH: 1                  RS: 253.821

INPUT
Description:
Station Elevation Data     num=      41
     Sta    Elev     Sta     Elev     Sta     Elev     Sta     Elev     Sta     Elev
       0  360.76     3.2   360.33   18.99   358.81   57.27   356.21  104.47    353.6
  127.57  350.34  161.53   346.56  181.41   344.77  197.17   343.46  204.42   342.39
  214.62  341.53  238.99   339.48  246.07   338.88  289.85    336.4  330.54   334.52
  347.27   330.4  369.77   330.22  375.35      334  397.81   334.32  428.03   335.52
  446.62  336.26  475.19    336.6  482.34   336.69  486.85   336.74  494.32   337.17
  508.58  338.11  553.53      340  586.49   341.85   624.8   342.76  640.33   343.56
  660.44  344.61  677.04    346.4  696.07   348.17  766.01   356.89  767.35   356.93
   771.8  357.25  802.98      359  815.62   361.84  838.62   363.79  854.53   369.38
  872.23  370.18

Manning's n Values          num=       3
```

Sta	n Val	Sta	n Val	Sta	n Val
0	.045	330.54	.045	375.35	.045

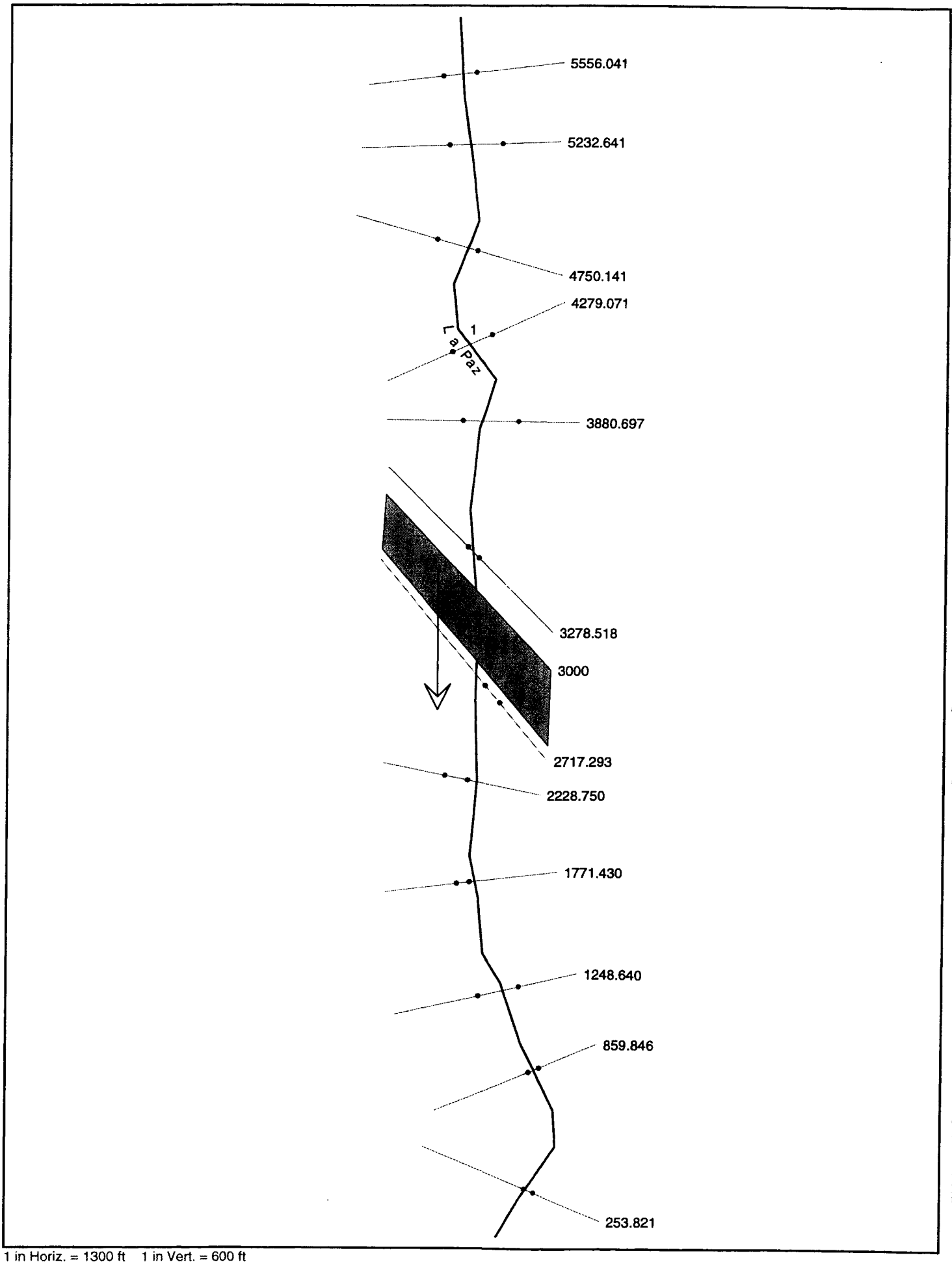
Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
330.54	375.35	392.31	253.82	582.78	.1	.3

Profile Output Table - Standard Table 1

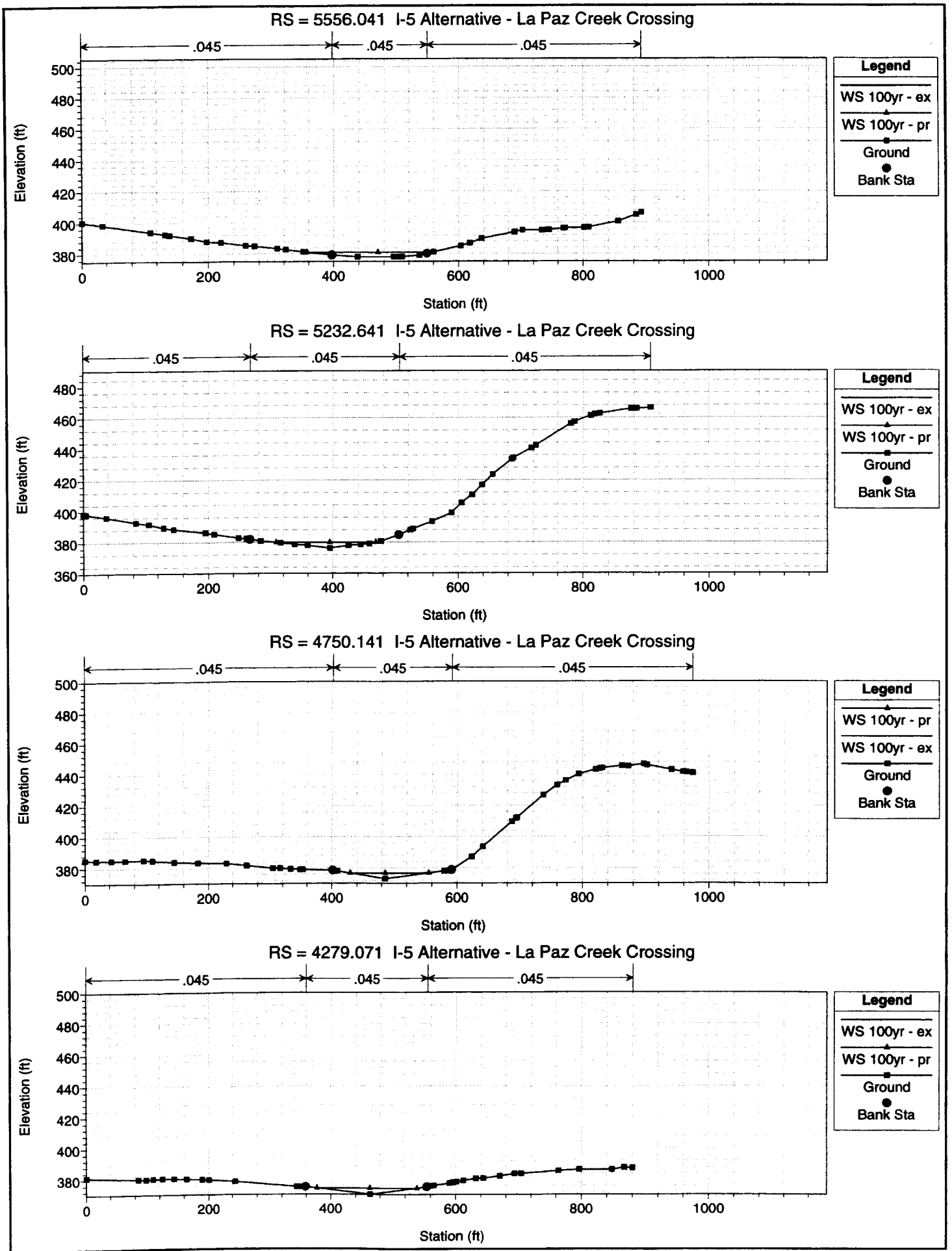
Reach	River Sta	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
		(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
1	5556.041	1056.00	378.00	380.98	379.51	381.08	0.001709	2.57	431.87	201.65	0.28
1	5232.641	1056.00	376.23	379.98		380.18	0.005131	3.56	296.67	160.51	0.46
1	4750.141	1056.00	373.02	376.69		377.01	0.008597	4.58	230.59	125.83	0.60
1	4279.071	1056.00	370.16	374.15		374.31	0.003964	3.29	321.00	161.08	0.41
1	3880.697	1056.00	368.26	371.88		372.17	0.007655	4.29	246.17	135.86	0.56
1	3278.518	1056.00	364.12	368.24	366.67	368.63	0.004609	5.05	209.09	58.89	0.47
1	3000	Culvert									
1	2717.293	1056.00	356.00	357.98	357.98	358.74	0.026188	6.98	151.37	101.34	0.47
1	2228.750	1056.00	349.11	351.49	350.85	351.71	0.005530	4.03	293.96	186.34	0.49
1	1771.430	1056.00	344.19	347.17	347.17	347.77	0.015339	6.80	193.99	163.75	0.82
1	1248.640	1056.00	338.00	341.38	340.31	341.58	0.004723	3.60	293.65	147.01	0.45
1	859.846	1056.00	335.08	339.60		339.88	0.003976	4.65	282.82	154.32	0.45
1	253.821	1056.00	330.22	333.94	333.82	335.20	0.020035	9.00	117.37	42.37	0.95



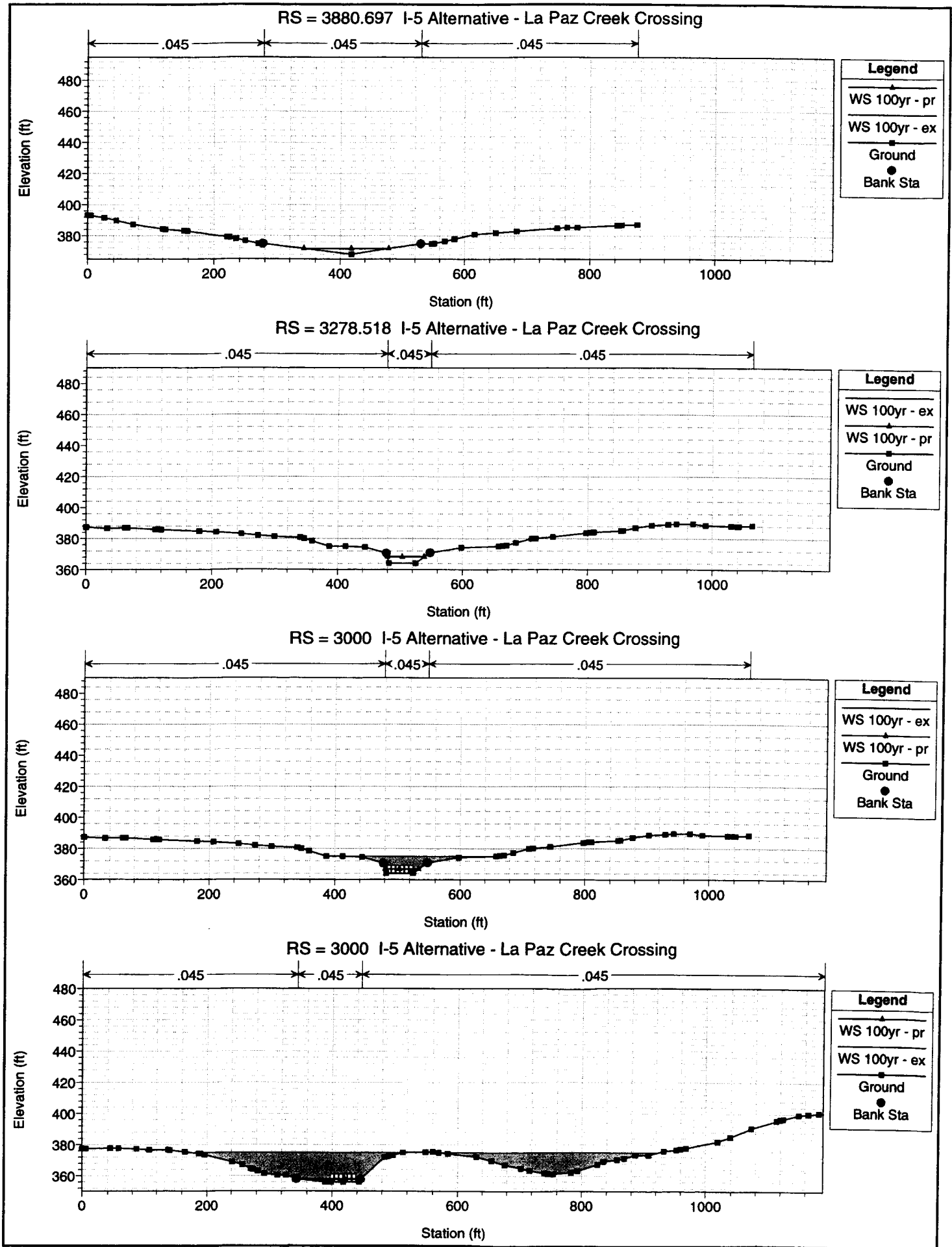
1 in Horiz. = 1300 ft 1 in Vert. = 600 ft



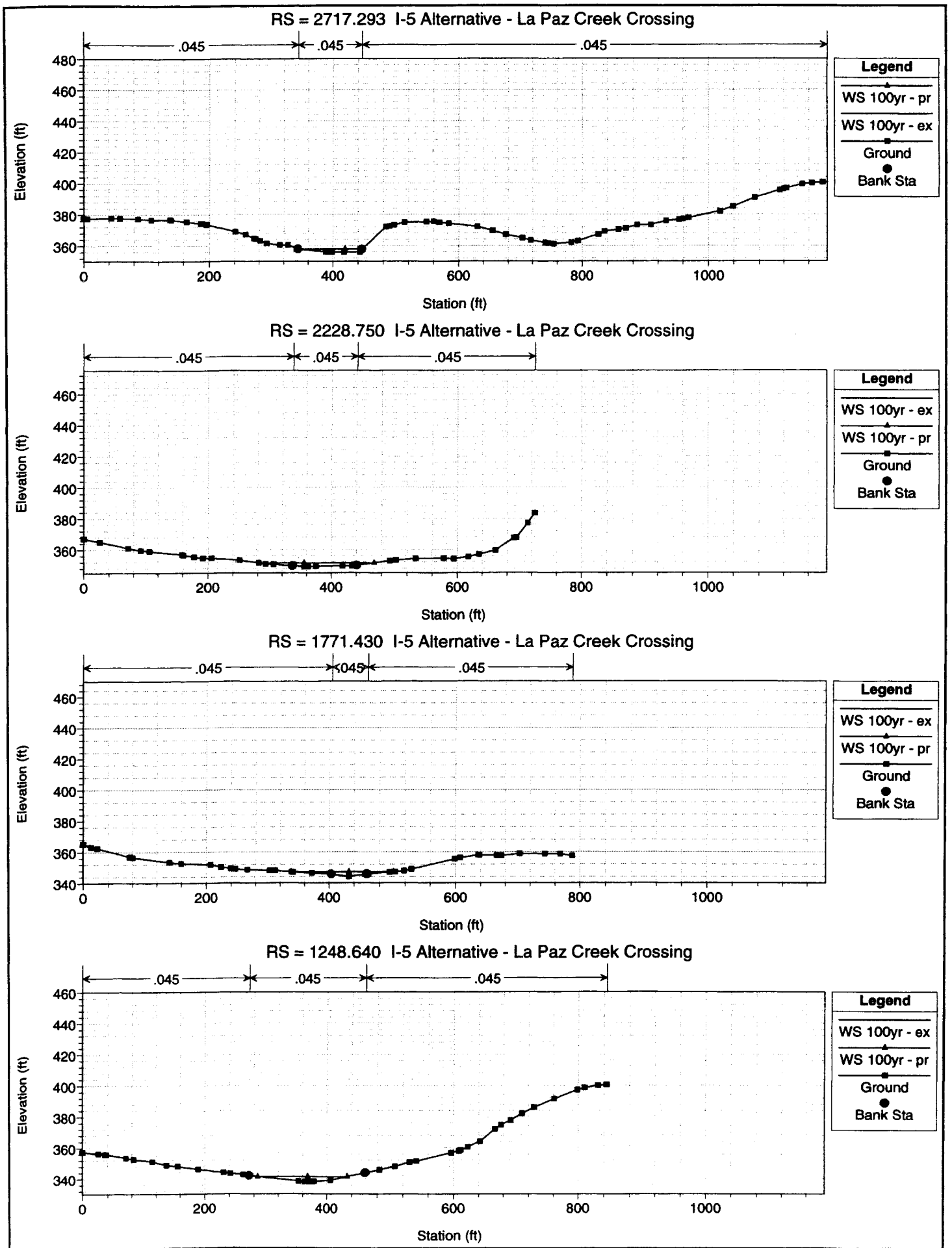
1 in Horiz. = 1300 ft 1 in Vert. = 600 ft



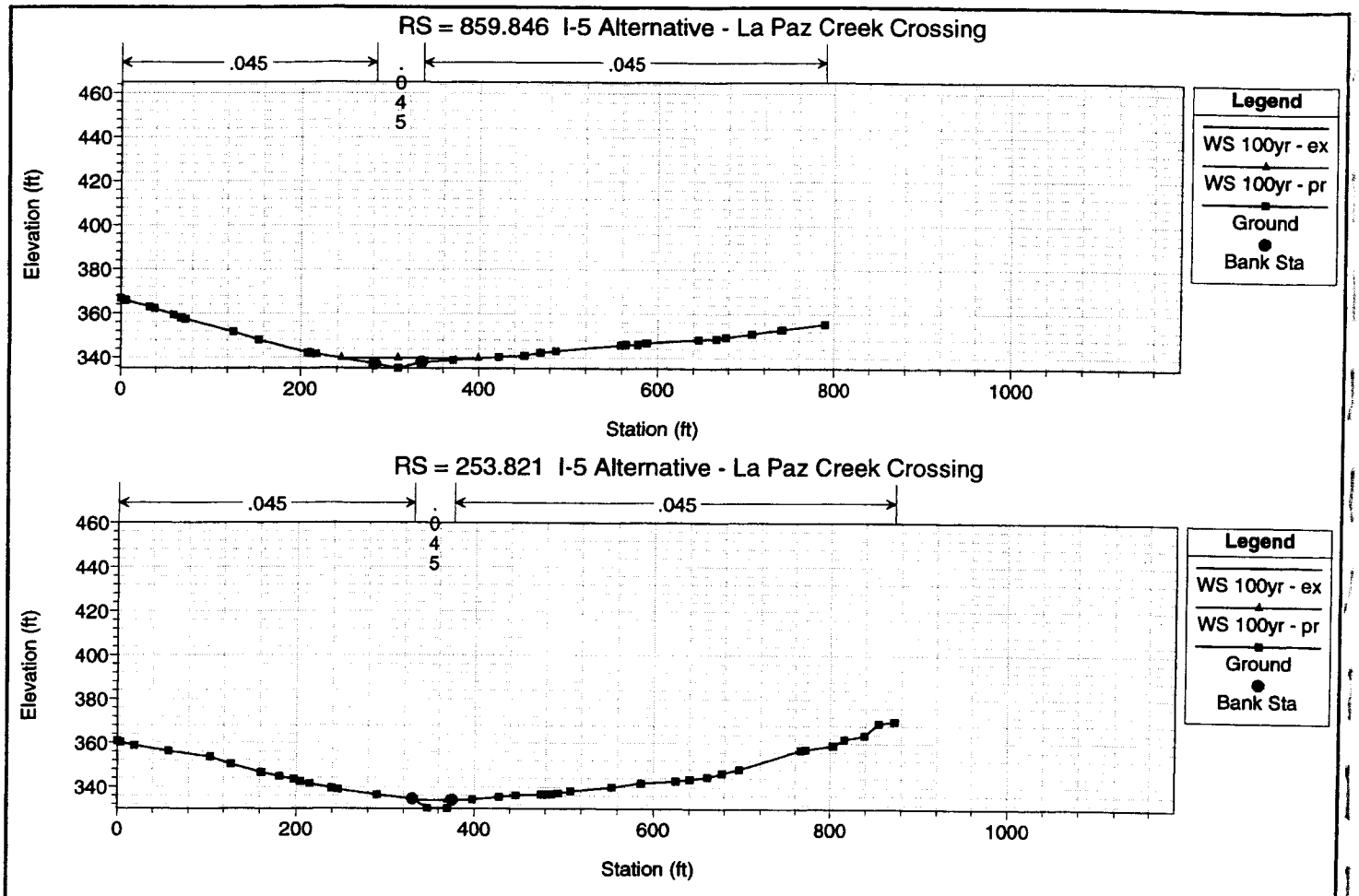
1 in Horiz. = 200 ft 1 in Vert. = 80 ft



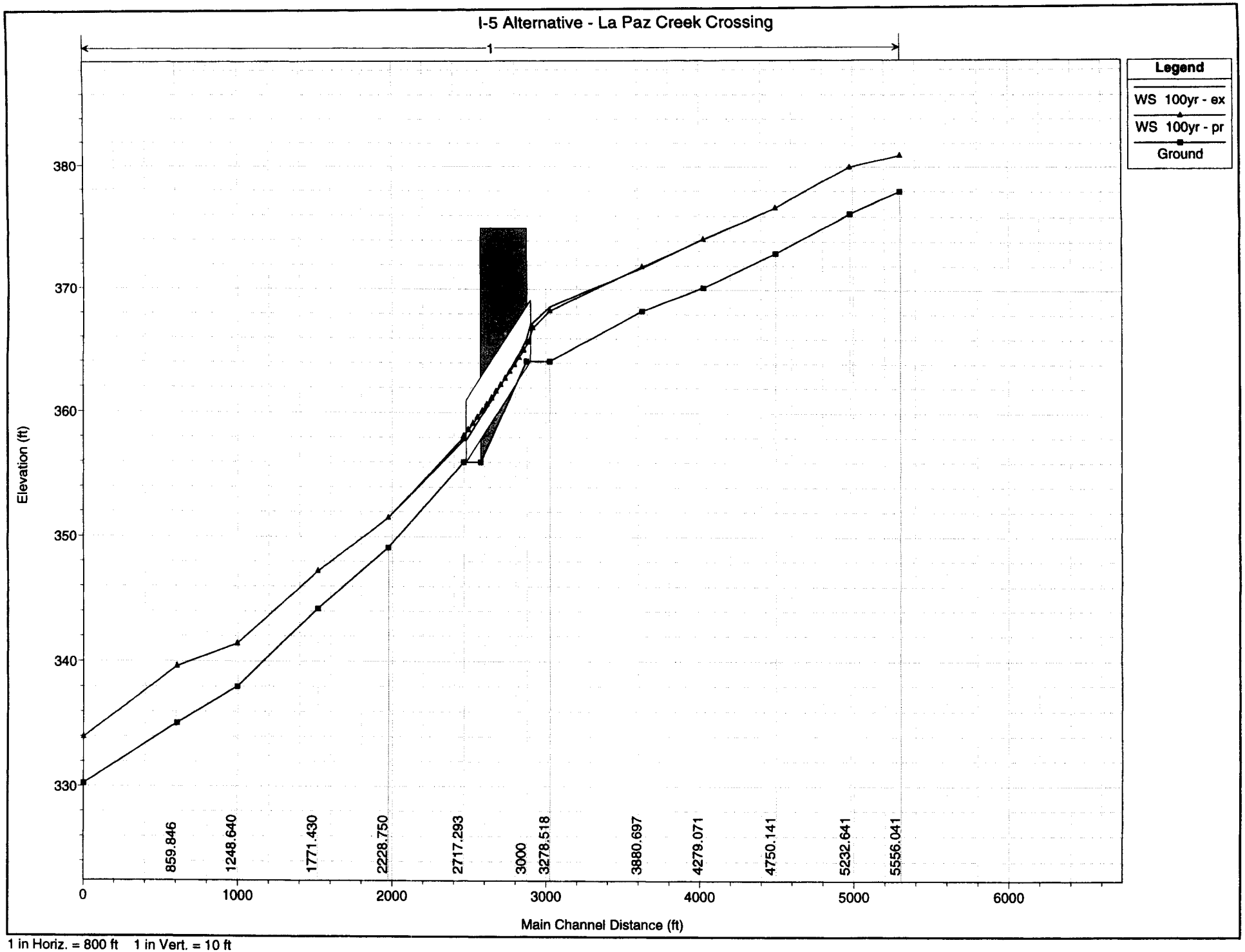
1 in Horiz. = 200 ft 1 in Vert. = 80 ft



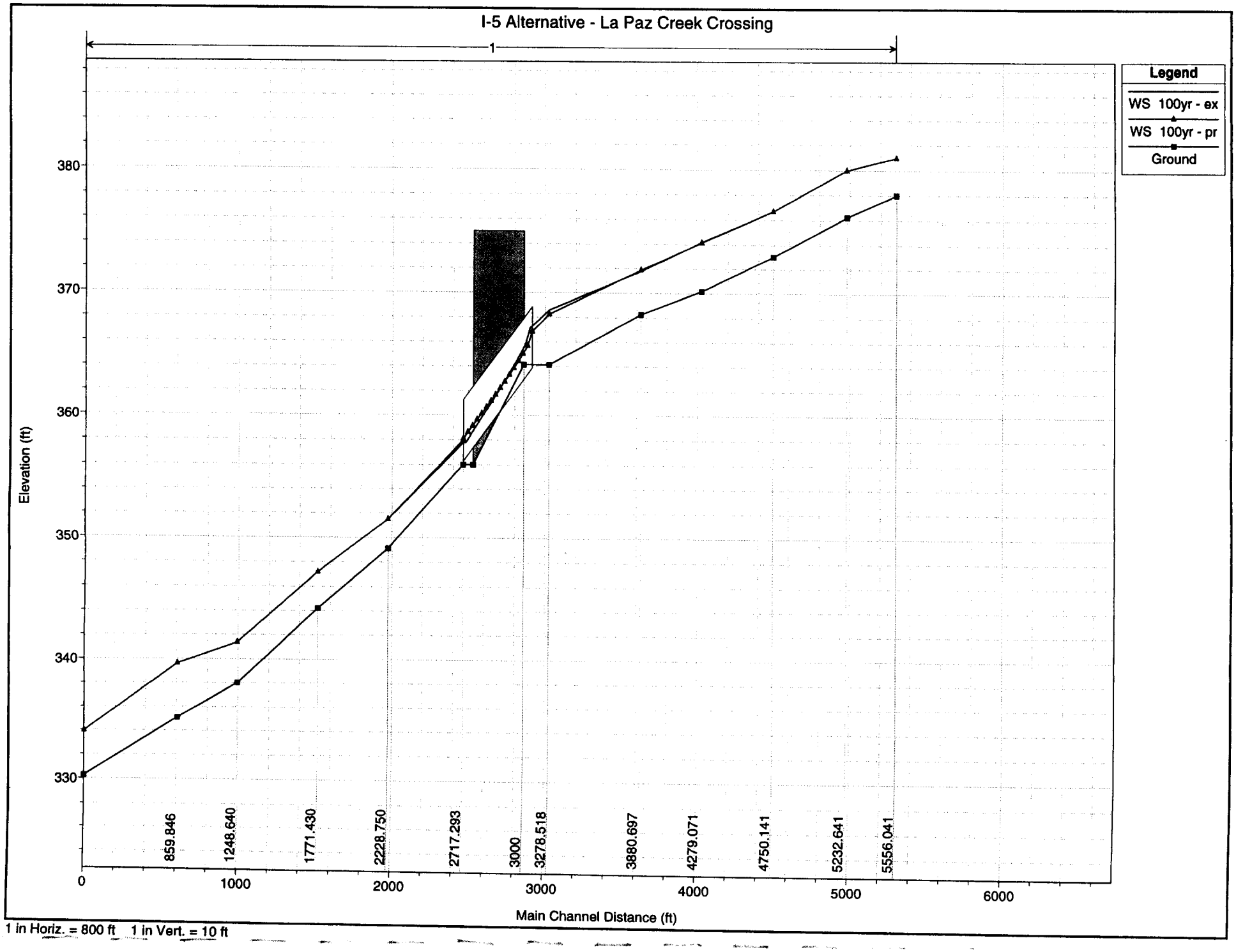
1 in Horiz. = 200 ft 1 in Vert. = 80 ft



1 in Horiz. = 200 ft 1 in Vert. = 80 ft



1 in Horiz. = 800 ft 1 in Vert. = 10 ft


I-5 Alternative - La Paz Creek Crossing
1
Legend
WS 100yr - ex
WS 100yr - pr
Ground
Elevation (ft)
380
370
360
350
340
330
859.846
1248.640
1771.430
2228.750
2717.293
3000
3278.518
3880.697
4279.071
4750.141
5232.641
5556.041
0
1000
2000
3000
4000
5000
6000
Main Channel Distance (ft)
1 in Horiz. = 800 ft 1 in Vert. = 10 ft

APPENDIX R
HYDRAULIC MODEL INPUT & RESULTS
I-5 ALTERNATIVE AT OSO CREEK

Appendix R. **Hydraulic Model Input & Results**

I5 Alternative at Oso 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 widened bridge structure include:

501 (1643)

446 (1464)

HEC-RAS Version 3.0.1 Mar 2001
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: oso
Project File : oso.prj
Run Date and Time: 12/9/02 4:33:11 PM

Project in English units

Project Description:
I-5 Alternative - Oso Creek Crossing

PLAN DATA

Plan Title: existing
Plan File : p:\2PDA0104\Hydr\LHS\Modeling\OSO_LY5\HEC-RAS\oso.p01

Geometry Title: banks@2yr w bridge2
Geometry File : p:\2PDA0104\Hydr\LHS\Modeling\OSO_LY5\HEC-RAS\oso.g01

Flow Title : existing flows
Flow File : p:\2PDA0104\Hydr\LHS\Modeling\OSO_LY5\HEC-RAS\oso.f01

Plan Summary Information:
Number of: Cross Sections = 19 Mulitple Openings = 0
Culverts = 0 Inline Weirs = 0
Bridges = 1

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 flows
Flow File : p:\2PDA0104\Hydr\LHS\Modeling\OSO_LY5\HEC-RAS\oso.f01

Flow Data (cfs)

River	Reach	RS	100yr HC	100yr expected	50yr expected	2yr expected
Oso Creek	1	3986.424	7863	3185	2149	21

Boundary Conditions

River	Reach	Profile	Upstream	Downstream
Oso Creek	1	100yr HC	Normal S = .03	Normal S = .01

GEOMETRY DATA

Geometry Title: banks@2yr w bridge2
Geometry File : p:\2PDA0104\Hydr\LHS\Modeling\OSO_LY5\HEC-RAS\oso.g01

CROSS SECTION RIVER: Oso Creek
REACH: 1 RS: 3986.424

INPUT
Description:
Station Elevation Data num= 54

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	354.67	8.35	353.89	39.65	350.62	91.86	342.21	92.25	342.17

92.74	342.04	115.62	340.12	133.62	337.84	145.83	336.88	167.13	336.4
209.11	336.62	217.13	336.66	232.48	337.1	252	336	279.23	334.46
300.64	332.34	302.6	332.14	312.86	330.68	358.18	324.87	372.72	323.27
384.15	322.02	411.27	319.7	425.9	319	464.36	317.16	489.58	316.42
509.41	315	514.32	314.77	531.46	313.94	583.06	311.71	616.51	311.45
625.38	311.2	631.41	307.14	640.45	307.17	659.55	311.08	671.24	311.9
676.43	311.99	710.66	314.28	723.3	314.88	736.45	315.12	759.94	317.14
793.41	320	883.84	332.57	886.29	332.87	887.56	333.06	889.06	333.28
933.65	339	942.15	341	980.39	348.92	1010.47	354.5	1027.14	357.8
1033.61	358.11	1050.51	359.96	1093.98	362.86	1116.86	363.84		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.045	616.51	.045	671.24	.045

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
616.51	671.24	168.64	170.08	171.68	.1 .3

CROSS SECTION RIVER: Oso Creek
REACH: 1 RS: 3816.345

INPUT
Description:
Station Elevation Data num= 69

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	417.35	13.2	417.14	42.81	415.25	49.62	414.82	95.84	411.87
96.76	411.83	100.17	411.51	138.54	407.95	143.1	407.42	148.88	406.99
180.33	403.48	189.84	401.73	201.91	400.55	222.11	393.24	236.58	386.96
254.94	379.79	259.95	378.96	263.89	378.31	297.15	372.04	347.46	362.43
351.28	361.56	361	359.35	389.24	352.14	414.03	345.22	446.9	338.52
467.06	334.41	485.51	330.65	514.59	326.07	540.38	320.62	556.37	318.95
579.95	315.92	610.49	311.41	626.16	309.99	647.73	307.22	648	307.21
668.87	305.05	673.43	305.07	681.72	306.14	694.2	306.85	703.97	307.4
732.22	308.4	745.06	308.48	765.28	309.25	785.25	310.48	800.9	311.44
821.24	313.04	888.07	318.76	890.93	318.99	891.32	319.03	914.3	321.43
932.41	324.87	950.77	328.36	972.16	332.43	997.38	337.22	1007.78	339
1015.98	341.8	1050.41	347	1054.52	347.54	1057.76	348.11	1085.05	355.49
1099.54	359.63	1101.26	360	1141.32	361.71	1156.48	362.36	1171.37	363.28
1209.51	365.63	1218.11	366	1228.66	366.45	1248.56	367.08		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.045	648	.045	694.2	.045

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
648	694.2	241.68	241.23	239.32	.1 .3

CROSS SECTION RIVER: Oso Creek
REACH: 1 RS: 3575.110

INPUT
Description:
Station Elevation Data num= 73

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	452.52	5.96	451.52	24.61	449.21	52.67	445.19	74.99	442.96
77.33	442.44	99.39	437.6	116.93	434.5	122.74	432.92	130.05	429.37
158.87	417.55	173.55	415.38	182.77	412.58	216.17	405.33	242.74	400.14
262.89	397.64	288.21	392.87	309.6	389.24	326.61	384.54	340.93	381.27
356.32	377.75	368.55	374.69	403.03	366.89	446.38	354.3	449.74	353.38
475.94	342.91	494.36	335.85	496.46	335.1	499.1	333.76	519.82	324.79
536.3	319.77	551.82	316.52	578.23	312.5	594.38	310.61	604.54	309.43
649.05	306.78	659.13	306	662.11	305.82	683.32	303.49	698.02	303.14
704.04	303	715.5	301.48	724.35	301.05	733.21	301.23	741.88	302.61
745.98	302.68	750.74	302.66	756.25	303	762.7	303.4	800.1	305.71
815.42	307.31	829.85	308.82	868.14	310.09	871.79	310.14	885.99	311.69
916.89	314.92	955.66	318.98	963.6	320	973.58	321.71	1010.32	328
1026.3	331.08	1057.03	337.58	1079.02	342.71	1080.39	343.03	1091.01	346.18
1123.41	355.89	1127.1	356.74	1131.74	357.6	1150.46	360.18	1165.35	360.64
1220.53	361.68	1235.65	361	1253.17	359.81				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.045	698.02	.045	741.88	.045

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
698.02	741.88	268.56	267.32	273.87	.1 .3

CROSS SECTION RIVER: Oso Creek
REACH: 1 RS: 3307.795

INPUT
Description:
Station Elevation Data num= 62

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	425.26	5.08	426.35	23.38	428.69	51.76	429.6	74.64	428.86
75.66	428.81	98.44	425.79	116.81	421.79	121.78	420.35	158.97	410.39
165.08	408.97	172.09	407.11	180.22	404.95	215.14	394.35	232.51	389.81
238.48	388.26	243.29	386.59	284.79	368.27	285.26	368.05	285.46	367.97
315.31	353.8	356.56	340.39	369.78	336	375.4	334.4	389.35	329.5
411.94	321.14	425.2	319.06	490.07	311.66	495.22	311.05	496.27	310.91
497.86	310.74	538.43	305.72	565.24	304	598.48	300.44	604.8	299.91
615.78	299	631.68	299	696.53	299	710.13	299.5	717.3	299.76
736.86	301.41	766.01	304	781.19	304.76	793.79	305.85	871.18	313.22
905.22	316.13	931.27	319.05	938.68	319.51	960.05	323.58	1016.73	335.05
1027.31	337.39	1044.38	339.59	1069.01	341.88	1109.19	344.08	1123.46	344.92
1125.39	345.12	1128.7	345.28	1159.59	344.27	1170.87	344.05	1172.54	343.92
1173.57	343.87	1183.55	343.02						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.045	604.8	.045	710.13	.045

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
604.8	710.13	221.76	227.97	242.32	.1	.3

CROSS SECTION RIVER: Oso Creek
REACH: 1 RS: 3079.829

INPUT
Description:
Station Elevation Data num= 50

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	354.05	23.99	349.08	30.95	348.53	36.17	348.33	54.4	347.67
77.18	342.94	78.73	342.85	118.18	343.32	127.36	343.77	133.48	342.58
171.62	338.97	188.23	336.33	195.07	335.12	235.9	326.16	241.2	324.97
241.96	324.89	242.97	324.74	271.51	319.78	307.92	317.12	323.21	315.53
399.27	310.43	405.22	310.04	407.21	309.9	446.22	306.58	452.96	305.84
474.58	304.39	540.42	299.97	569.24	298.04	570.18	298	573.23	298.13
596.05	299.02	663.96	301.65	685.47	303.75	692.25	304.21	699.02	304.49
733.26	305.96	790.44	309.09	800.38	309.82	815.27	310.91	866.04	314.62
897.28	315.95	899.93	316.13	938.28	318.7	961.24	320.8	984.04	322.19
1009.42	323.73	1062.53	328.91	1102.3	331.94	1109.42	332.48	1135.33	332.43

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.045	540.42	.045	596.05	.045

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
540.42	596.05	205.96	213.45	228.18	.1	.3

CROSS SECTION RIVER: Oso Creek
REACH: 1 RS: 2866.377

INPUT
Description:
Station Elevation Data num= 50

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	376.23	29.16	370.76	40.97	368.8	63.14	364.23	108.61	355.64
124.96	352.8	155.46	347.09	172.86	343.37	193.63	339.8	202.19	339.22
231.79	337.7	266.49	330.91	285.53	326.59	308.12	323.41	316.56	321.78
330.8	320.22	364.47	316.52	457.65	304.36	459.41	304.12	460.03	304.04
460.55	303.99	460.78	303.97	516.47	299.41	532.12	298.13	534.9	297.78
538.59	297.51	543.75	297.53	560.34	297.99	611.05	298.68	613.44	298.7
622.33	299	651.6	299.99	651.99	300.01	652.32	300.03	686.89	302.46
727.93	304.18	777.43	306.24	794.16	306.68	811.03	307.47	826.5	308
845.24	309.07	867.42	310.35	880.59	310.83	895.51	311.95	918.75	313.71
939.27	314.46	973.85	316.44	987.17	317	1026.09	319.44	1062.69	321.8

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.045	516.47	.045	611.05	.045

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
516.47	611.05	257.55	260.99	262.2	.1	.3

CROSS SECTION RIVER: Oso Creek
REACH: 1 RS: 2605.383

INPUT
Description:
Station Elevation Data num= 36

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	348.25	2.14	347.78	56.39	335.07	79.14	330.83	115.2	323.63
118.22	323.02	118.48	322.97	142.09	319.32	194.63	315.6	203.14	314.88
213.68	314	244.74	311.4	324.25	306	370.31	302.87	404.6	300.27
412.65	299.66	490.56	296.4	495.87	296.17	500.06	296	513.33	296
541.13	296	547.79	295.83	564.46	296.09	579.62	296.33	637.54	297.26
656.62	297.56	667.11	298	695.12	299.17	727.7	299.69	738.71	299.87
806.12	303.77	810.16	304.01	810.99	304.06	869.35	308.42	922.03	312.36
923.84	312.47								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.045	490.56	.045	564.46	.045

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
490.56	564.46	278.97	256.94	284.22	.1	.3

CROSS SECTION RIVER: Oso Creek
REACH: 1 RS: 2348.439

INPUT
Description:
Station Elevation Data num= 45

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	323.07	2.58	322.14	2.88	322.08	3.12	322.01	26.28	320.77
44.57	317.44	49.68	317	56.31	316.43	96.48	314.49	110.04	313.26
119.88	312.92	127.47	312.32	182.1	307.41	210.37	304	217.5	303.31
236.88	301.44	251.82	300	271.24	299.53	287.14	299.44	340.42	299.15
358.78	299.05	408.32	298.78	417.62	298.72	426.61	298.57	432.43	298.46
459.72	296.97	486.16	295.87	495.6	295.34	496.53	295.29	500.52	295
509.54	295	564.47	295	645.34	295	736.15	295	759.65	295.84
808.56	297.57	817.83	297.83	825.57	298.16	846.93	299.07	882.26	300.16
916.02	301.51	938.86	302.85	956.48	304.26	969.75	305	985.28	306.16

Manning's n Values num= 3

```
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .045   495.6    .045  759.65    .045

 Bank Sta: Left   Right    Lengths: Left Channel   Right      Coeff Contr.   Expan.
          495.6  759.65           278.29     190  136.22              .1       .3

 CROSS SECTION          RIVER: Oso Creek
 REACH: 1                  RS: 2158.436

 INPUT
 Description:
 Station Elevation Data    num=      41
      Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
        0  367.18   15.21  366.37   20.89     366   23.85  365.68   67.32  358.23
    74.65  355.16  113.75  338.36  150.75  326.46  160.19  323.21  195.92  314.76
   202.99  312.94  210.32   311.2  248.99   303.7  265.68  301.37  293.24  298.38
   313.44     296   322.7   295.1  327.14     295  338.13     295  364.38     295
    428.3  294.43   586.5  294.43  648.23  294.43  690.68  294.43   825.2     295
   828.41     295  832.71  295.14  835.19  295.23  894.33  297.46  926.31  298.17
   959.38    298.9 1015.77  300.15 1029.81  300.46 1042.4  300.74  1054.3  302.03
  1088.83  306.53 1099.48  308.15 1119.15  309.18 1144.66  310.51 1158.48  310.47
  1167.89  309.83

 Manning's n Values        num=       3
      Sta   n Val     Sta   n Val     Sta   n Val
        0    .045  364.38    .045  832.71    .045

 Bank Sta: Left   Right    Lengths: Left Channel   Right      Coeff Contr.   Expan.
          364.38  832.71           317.99   255.6     178              .1       .3

 CROSS SECTION          RIVER: Oso Creek
 REACH: 1                  RS: 1902.839

 INPUT
 Description:
 Station Elevation Data    num=      40
      Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
        0  352.86    6.47  354.37   22.09  357.15   42.81  360.84   46.72  361.11
    54.96  360.67   71.35  359.57   79.14  357.47  101.04  347.34  115.48  340.04
   131.43  334.61  151.82  327.93   207.9  310.34   221.3  306.26  224.49  305.46
   229.66  304.58  260.83  297.96  278.68  295.65  280.03  295.47  297.16     295
   303.92     295  389.71  294.26  505.47  293.55  594.21  294.61  644.91  296.43
   649.91  296.47   676.4  296.69  687.15  297.27  743.19     298  769.54  298.69
   793.96  299.33   823.2  299.05  873.07   299.7  884.21  299.84  953.49  300.75
   961.64  300.86  972.59     301 1007.37  301.45 1023.89  303.68 1039.85   305.4

 Manning's n Values        num=       3
      Sta   n Val     Sta   n Val     Sta   n Val
        0    .045  278.68    .045  649.91    .045

 Bank Sta: Left   Right    Lengths: Left Channel   Right      Coeff Contr.   Expan.
          278.68  649.91           326.27  259.48  230.63              .3       .5
 Right Levee      Station=      791       Elevation=   319.8

 CROSS SECTION          RIVER: Oso Creek
 REACH: 1                  RS: 1643.362

 INPUT
 Description:
 Station Elevation Data    num=      35
      Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
        0  317.45   19.01  317.46   59.73  317.49   65.28  317.33   92.83  316.52
   103.29  316.53  159.04  316.57  163.75  316.43  194.37  313.67  196.57  313.53
   200.91  312.55  229.39  304.75  258.36  299.47  262.21     299  265.99  298.54
   290.46  295.56  295.03     295  316.06  293.53  371.89  293.52  426.32     295
   447.46  295.64  464.56  297.33  490.11  299.86  491.96     300  493.78     300
   589.93     300  590.91  300.03  655.85  300.01  656.48  300.02  704.62     300
   754.53     300  754.96     300  803.33  300.49  837.15  300.48  861.89  300.23

 Manning's n Values        num=       3
      Sta   n Val     Sta   n Val     Sta   n Val
        0    .045  290.46    .045  464.56    .045

 Bank Sta: Left   Right    Lengths: Left Channel   Right      Coeff Contr.   Expan.
          290.46  464.56           159.66  179.23  243.38              .3       .5
 Ineffective Flow     num=       1
    Sta L   Sta R    Elev  Permanent
 888        F
 Left Levee       Station=  231.51       Elevation=  303.77
 Right Levee      Station=  636.66       Elevation=  307.16

 BRIDGE                 RIVER: Oso Creek
 REACH: 1                  RS: 1600

 INPUT
 Description:
 Distance from Upstream XS =       4
 Deck/Roadway Width        =     102
 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   306.2        0     230  308.83        0     230  308.83  303.83
      484  311.77   306.77     484  311.77        0    1000  317.74

 Upstream Bridge Cross Section Data
 Station Elevation Data    num=      35
      Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
```

```
      0  317.45   19.01  317.46   59.73  317.49   65.28  317.33   92.83  316.52
 103.29  316.53  159.04  316.57  163.75  316.43  194.37  313.67  196.57  313.53
 200.91  312.55  229.39  304.75  258.36  299.47  262.21     299  265.99  298.54
 290.46  295.56  295.03     295  316.06  293.53  371.89  293.52  426.32     295
 447.46  295.64  464.56  297.33  490.11  299.86  491.96     300  493.78     300
 589.93     300  590.91  300.03  655.85  300.01  656.48  300.02  704.62     300
 754.53     300  754.96     300  803.33  300.49  837.15  300.48  861.89  300.23

Manning's n Values          num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .045  290.46    .045  464.56    .045

Bank Sta: Left   Right    Coeff Contr.   Expan.
       290.46  464.56            .3        .5
Ineffective Flow     num=       1
   Sta L   Sta R    Elev  Permanent
888        F
Left Levee       Station=  231.51      Elevation=  303.77
Right Levee      Station=  636.66      Elevation=  307.16

Downstream  Deck/Roadway Coordinates
    num=       6
     Sta Hi Cord Lo Cord      Sta Hi Cord Lo Cord      Sta Hi Cord Lo Cord
       0  305.13        0      320  308.83        0      320  308.83  303.83
     574  311.77   306.77      574  311.77        0     1000   316.7        0

Downstream Bridge Cross Section Data
Station Elevation Data    num=       65
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  304.28   12.51  304.23   48.67  304.09   59.07  304.04   70.69  303.97
   77.13  303.93   89.38  303.85    89.6  303.85  122.48   303.7   150.8  303.57
  167.13  303.49  168.61  303.49   189.4  302.83  216.15  302.66  221.62  302.48
  237.03  302.08  253.19  301.26  273.55  299.32  296.09  297.94  322.21  296.45
  332.59  295.87  341.67  295.33  347.69  294.93  364.49  293.59  368.94  293.24
  369.47   293.2  374.23  292.73     386  292.33   393.4  293.04  399.74  293.69
  401.39   293.9  413.86  294.44  417.63   294.5  421.73   294.6  422.97  294.64
  462.12  295.77  475.95  296.17  479.76  296.38  501.79  297.62  504.86  297.72
   527.5  298.11  532.47  298.17     566  298.49  582.75  298.77  604.98   299.2
  609.09  299.33   640.9  300.23  646.06  300.24  650.93  300.25  658.99  300.39
   694.1  300.87  705.03  301.13  708.16  301.17  724.73  301.35  729.81  301.41
   752.2  301.51  763.99  301.57  811.47   301.8  822.95  301.84  823.31  301.83
  829.79  301.85  856.22  301.93  886.78  302.17  905.69  302.27  907.14   302.3

Manning's n Values          num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .045  347.69    .045  421.73    .045

Bank Sta: Left   Right    Coeff Contr.   Expan.
       347.69  421.73            .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           =
Energy head used in spillway design           =
Spillway height used in design                =           .
Weir crest shape                              = Broad Crested

Number of Piers =  8

Pier Data
Pier Station     Upstream=     250    Downstream=     350
Upstream     num=       2
    Width   Elev    Width   Elev
        5    286        5    310
Downstream     num=       2
    Width   Elev    Width   Elev
        5    286        5    310

Pier Data
Pier Station     Upstream=     278    Downstream=     378
Upstream     num=       2
    Width   Elev    Width   Elev
        5    286        5    310
Downstream     num=       2
    Width   Elev    Width   Elev
        5    286        5    310

Pier Data
Pier Station     Upstream=     306    Downstream=     406
Upstream     num=       2
    Width   Elev    Width   Elev
        5    286        5    310
Downstream     num=       2
    Width   Elev    Width   Elev
        5    286        5    310

Pier Data
Pier Station     Upstream=     334    Downstream=     434
Upstream     num=       2
    Width   Elev    Width   Elev
        5    286        5    310
Downstream     num=       2
    Width   Elev    Width   Elev
        5    286        5    310

Pier Data
Pier Station     Upstream=     362    Downstream=     462
```

Upstream num= 2

Width	Elev	Width	Elev
5	286	5	310

Downstream num= 2

Width	Elev	Width	Elev
5	286	5	310

Pier Data
Pier Station Upstream= 390 Downstream= 490
Upstream num= 2

Width	Elev	Width	Elev
5	286	5	310

Downstream num= 2

Width	Elev	Width	Elev
5	286	5	310

Pier Data
Pier Station Upstream= 418 Downstream= 518
Upstream num= 2

Width	Elev	Width	Elev
5	286	5	310

Downstream num= 2

Width	Elev	Width	Elev
5	286	5	310

Pier Data
Pier Station Upstream= 446 Downstream= 546
Upstream num= 2

Width	Elev	Width	Elev
5	286	5	310

Downstream num= 2

Width	Elev	Width	Elev
5	286	5	310

Number of Bridge Coefficient Sets = 1

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

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 #100yr expected
Opening : Single BR

			Inside BR US	Inside BR DS
E.G. US. (ft)	299.71	Element		
W.S. US. (ft)	299.54	E.G. Elev (ft)	299.68	299.18
Q Total (cfs)	3185.00	W.S. Elev (ft)	299.41	298.70
Q Bridge (cfs)	3185.00	Crit W.S. (ft)	296.87	297.45
Q Weir (cfs)		Max Chl Dpth (ft)	5.89	6.37
Weir Sta Lft (ft)		Vel Total (ft/s)	4.03	5.30
Weir Sta Rgt (ft)		Flow Area (sq ft)	790.15	600.81
Weir Submerg		Froude # Chl	0.04	0.05
Weir Max Depth (ft)		Specif Force (cu ft)	2349.25	1752.22
Min El Weir Flow (ft)	308.67	Hydr Depth (ft)	4.15	2.81
Min El Prs (ft)	306.77	W.P. Total (ft)	257.05	264.99
Delta EG (ft)	1.41	Conv. Total (cfs)	57948.9	39803.3
Delta WS (ft)	2.37	Top Width (ft)	190.18	214.00
BR Open Area (sq ft)	1988.63	Frctn Loss (ft)	0.43	0.68
BR Open Vel (ft/s)	5.30	C & E Loss (ft)	0.06	0.20
Coef of Q		Shear Total (lb/sq ft)	0.58	0.91
Br Sel Method	Energy only	Power Total (lb/ft s)	2.34	4.80

Warning: Pier drag coefficient of 2.0 assumed for Class B flow.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. 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: Oso Creek
REACH: 1 RS: 1464.12*

INPUT
Description:
Station Elevation Data num= 65

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	304.28	12.51	304.23	48.67	304.09	59.07	304.04	70.69	303.97
77.13	303.93	89.38	303.85	89.6	303.85	122.48	303.7	150.8	303.57
167.13	303.49	168.61	303.49	189.4	302.83	216.15	302.66	221.62	302.48
237.03	302.08	253.19	301.26	273.55	299.32	296.09	297.94	322.21	296.45
332.59	295.87	341.67	295.33	347.69	294.93	364.49	293.59	368.94	293.24
369.47	293.2	374.23	292.73	386	292.33	393.4	293.04	399.74	293.69
401.39	293.9	413.86	294.44	417.63	294.5	421.73	294.6	422.97	294.64
462.12	295.77	475.95	296.17	479.76	296.38	501.79	297.62	504.86	297.72
527.5	298.11	532.47	298.17	566	298.49	582.75	298.77	604.98	299.2
609.09	299.33	640.9	300.23	646.06	300.24	650.93	300.25	658.99	300.39
694.1	300.87	705.03	301.13	708.16	301.17	724.73	301.35	729.81	301.41

```
  752.2  301.51  763.99  301.57  811.47   301.8  822.95  301.84  823.31  301.83
 829.79  301.85  856.22  301.93  886.78  302.17  905.69  302.27  907.14   302.3

Manning's n Values        num=       3
     Sta   n Val      Sta   n Val      Sta   n Val
       0    .045  347.69    .045  421.73    .045

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       347.69  421.73           138.74  214.08  299.29             .3       .5

CROSS SECTION          RIVER: Oso Creek
REACH: 1                  RS: 1250.045

INPUT
Description:
Station Elevation Data    num=      33
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  300.31   38.86  298.79   50.74  298.16   58.94  297.73    99.2     296
  109.94  295.54  145.79  293.65  211.96     293  218.79     293  228.72  292.77
  254.76  292.16  261.66  292.03  262.48  292.02   288.1  290.08  303.86  290.13
  317.36  290.32  347.41     292  355.44     292  364.18  292.19  364.99   292.2
  402.02     293  433.15  293.89  458.26  293.83  486.36     295   518.9  295.51
  541.79  295.47  561.77  296.72  565.08  296.92  579.68  297.21  630.28   298.4
  647.51  298.81  667.44  299.86  680.72  300.38

Manning's n Values        num=       3
     Sta   n Val      Sta   n Val      Sta   n Val
       0    .045  228.72    .045  364.18    .045

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       228.72  364.18           162.03  209.55  254.99              .1       .3

CROSS SECTION          RIVER: Oso Creek
REACH: 1                  RS: 1040.498

INPUT
Description:
Station Elevation Data    num=      29
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0   299.4   10.37  298.87   27.35     298   31.78  297.77   46.13  297.36
  162.01  293.54  218.32  292.09  229.47  291.81  241.22     292  253.23   292.2
  259.02  292.05   270.1  290.37  294.86  288.16  310.61  288.16  312.86  290.71
  328.62  291.09  333.19  291.51   363.3     292  377.67  292.23  402.97     292
   416.6  292.13  420.94  292.11  452.46  292.92  490.92  294.05  492.26  294.06
   510.4  295.23  533.37  296.89  541.94  297.07  608.02  298.19

Manning's n Values        num=       3
     Sta   n Val      Sta   n Val      Sta   n Val
       0    .045  259.02    .045  333.19    .045

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       259.02  333.19           205.37  212.11  235.16              .1       .3

CROSS SECTION          RIVER: Oso Creek
REACH: 1                  RS: 828.390

INPUT
Description:
Station Elevation Data    num=      34
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  299.06    7.65   298.9   60.27  296.76  105.18  294.94  114.34  295.13
  129.57  294.41  165.08  292.97  202.71  291.96  238.84     290  251.48  289.66
  275.72  289.99  275.86     290  281.85  289.83  306.11     286  343.97  289.85
  348.11  289.96  349.47  290.01  350.91     290  397.78  290.31  420.07  290.91
  422.16  290.97  426.56  291.09  460.11  291.56  466.62  291.82  496.99  291.69
  519.69     292   530.9     292  554.69  292.87  597.87  293.47  607.63   293.8
  635.94  294.77   644.5     295  665.99     295   667.9  295.04

Manning's n Values        num=       3
     Sta   n Val      Sta   n Val      Sta   n Val
       0    .045  281.85    .045  343.97    .045

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       281.85  343.97           161.93  175.71  191.19              .1       .3

CROSS SECTION          RIVER: Oso Creek
REACH: 1                  RS: 652.682

INPUT
Description:
Station Elevation Data    num=      31
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0   298.5   34.41  296.46   42.12  296.26   64.59     296   75.82  295.62
   82.81  295.27  112.74  293.26  143.23  291.21  164.78  290.72  176.93     290
   200.4  287.91  240.42  287.88  244.33  287.82  248.42  287.82  311.73  287.07
  321.12  287.44  344.37   284.6  363.31  286.27  379.71  286.63  412.84  287.36
   433.4  288.22  446.54  288.31  465.36  288.72  495.41   289.1  520.01  288.82
  547.64  289.01  606.46  289.42  629.32  289.29  648.75  289.71   668.2  290.42
  686.64  290.18

Manning's n Values        num=       3
     Sta   n Val      Sta   n Val      Sta   n Val
       0    .045  311.73    .045  379.71    .045

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       311.73  379.71           226.89  228.17  239.33              .1       .3

CROSS SECTION          RIVER: Oso Creek
```

REACH: 1 RS: 424.516

INPUT
Description:
Station Elevation Data num= 21

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	301.29	56.06	297.81	64.76	297.34	101.21	294.26	113.94	292.73
174.08	286.08	216.83	283.56	237.02	282.07	252.73	280.94	318.99	281.01
319.29	281.01	320	281.03	328.14	281.38	366.7	283	403.74	283
418.23	283.13	471.42	284.81	484.08	285	509.16	285	525.5	285.26
559.01	286.28								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.045	237.02	.045	328.14	.045

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
237.02	328.14	195.07	192.29	194.62	.1	.3

CROSS SECTION RIVER: Oso Creek
REACH: 1 RS: 232.229

INPUT
Description:
Station Elevation Data num= 31

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	295.45	30.54	295.58	52.54	294.67	73.12	293.23	108.86	288.62
129.15	286.8	157.02	285.15	170.51	284.23	226.5	280.06	227.77	279.97
246.05	279.44	260.64	279	261.51	279	322.11	279	326.38	279.14
331.16	279.14	349.69	279.71	384.35	280.76	392.12	281	420.11	281.85
425	282	452.08	282	470.48	282.77	490.74	283.42	521.71	283.94
556.48	285	571.09	285	609.79	285	622.23	285	644.62	285.68
662.29	285.46								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.045	226.5	.045	349.69	.045

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
226.5	349.69	162.92	153.18	149.43	.1	.3

CROSS SECTION RIVER: Oso Creek
REACH: 1 RS: 79.049

INPUT
Description:
Station Elevation Data num= 33

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	293.87	19.39	292.7	30.84	292	50.73	290.79	63.78	289.82
91.99	289	105.07	288.24	158.94	285.11	162.61	285	168.32	284.74
211.58	283.03	228.5	282	253.48	280.86	279.19	279.69	294.38	279
375.37	279	426.15	279	427.35	279.04	468.84	280.3	505.22	281.4
574.09	283.49	590.87	283.02	620.41	284	623.81	284	673.66	282.49
689.7	282.1	700	281.84	729.05	280.2	736.07	280	771.99	280
849.58	282.56	854.41	283	856.41	283.1				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.045	279.19	.045	427.35	.045

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
279.19	427.35	0	0	0	.1	.3

Right Levee Station= 623.79 Elevation= 283.89

Profile Output Table - Standard Table 1

Reach	River Sta	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
		(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
1	3986.424	3185.00	307.14	313.24	313.95	315.50	0.030012	13.11	296.58	147.45	1.22
1	3816.345	3185.00	305.05	310.18	310.33	311.57	0.016293	10.85	376.78	156.28	0.94
1	3575.110	3185.00	301.05	305.90	306.08	307.40	0.018396	11.30	354.39	141.08	0.99
1	3307.795	3185.00	299.00	304.55	301.98	304.80	0.001782	4.33	853.00	220.28	0.33
1	3079.829	3185.00	298.00	303.69	302.46	304.16	0.004464	6.38	626.27	199.83	0.51
1	2866.377	3185.00	297.51	301.21	301.21	302.36	0.018005	9.18	389.88	174.57	0.94
1	2605.383	3185.00	295.83	300.02	298.67	300.29	0.003535	4.96	833.60	333.51	0.44
1	2348.439	3185.00	295.00	299.90		299.95	0.000471	2.05	1839.02	617.70	0.16
1	2158.436	3185.00	294.43	299.89		299.90	0.000117	1.09	3155.87	724.46	0.08
1	1902.839	3185.00	293.55	299.83	295.70	299.86	0.000206	1.45	2355.06	538.98	0.11
1	1643.362	3185.00	293.52	299.54	296.53	299.71	0.001191	3.39	984.45	228.91	0.26
1	1600	Bridge									
1	1250.045	3185.00	290.08	295.06	293.86	295.32	0.003250	4.52	866.01	371.21	0.41
1	1040.498	3185.00	288.16	294.04		294.45	0.005135	6.12	719.45	343.64	0.52
1	828.390	3185.00	286.00	291.70	291.70	292.70	0.013422	9.23	467.51	258.93	

0.84 1	652.682	3185.00	284.60	289.01	289.06	289.91	0.018686	9.12	475.12	345.54
0.95 1	424.516	3185.00	280.94	283.86	284.12	285.13	0.022941	9.87	390.87	229.64
1.04 1	232.229	3185.00	279.00	282.93	281.86	283.31	0.004592	5.37	705.22	287.51
0.49 1	79.049	3185.00	279.00	281.73	281.28	282.28	0.010001	6.39	564.19	281.68
0.69										

HEC-RAS Version 3.0.1 Mar 2001
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: oso
Project File : oso.prj
Run Date and Time: 12/9/02 3:59:49 PM

Project in English units

Project Description:
I-5 Alternative - Oso Creek Crossing

PLAN DATA

Plan Title: proposed
Plan File : p:\2PDA0104\Hydr\LHS\Modeling\OSO_LY5\HEC-RAS\oso.p07

Geometry Title: proposed
Geometry File : p:\2PDA0104\Hydr\LHS\Modeling\OSO_LY5\HEC-RAS\oso.g02

Flow Title : existing flows
Flow File : p:\2PDA0104\Hydr\LHS\Modeling\OSO_LY5\HEC-RAS\oso.f01

Plan Summary Information:
Number of: Cross Sections = 19 Mulitple Openings = 0
Culverts = 0 Inline Weirs = 0
Bridges = 1

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 flows
Flow File : p:\2PDA0104\Hydr\LHS\Modeling\OSO_LY5\HEC-RAS\oso.f01

Flow Data (cfs)

River	Reach	RS	100yr HC	100yr expected	50yr expected	2yr expected
Oso Creek	1	3986.424	7863	3185	2149	21

Boundary Conditions

River	Reach	Profile	Upstream	Downstream
Oso Creek	1	100yr HC	Normal S = .03	Normal S = .01

GEOMETRY DATA

Geometry Title: proposed
Geometry File : p:\2PDA0104\Hydr\LHS\Modeling\OSO_LY5\HEC-RAS\oso.g02

CROSS SECTION RIVER: Oso Creek
REACH: 1 RS: 3986.424

INPUT
Description:
Station Elevation Data num= 54

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	354.67	8.35	353.89	39.65	350.62	91.86	342.21	92.25	342.17

```
   92.74  342.04  115.62  340.12  133.62  337.84  145.83  336.88  167.13   336.4
  209.11  336.62  217.13  336.66  232.48   337.1     252     336  279.23  334.46
  300.64  332.34   302.6  332.14  312.86  330.68  358.18  324.87  372.72  323.27
  384.15  322.02  411.27   319.7   425.9     319  464.36  317.16  489.58  316.42
  509.41     315  514.32  314.77  531.46  313.94  583.06  311.71  616.51  311.45
  625.38   311.2  631.41  307.14  640.45  307.17  659.55  311.08  671.24   311.9
  676.43  311.99  710.66  314.28   723.3  314.88  736.45  315.12  759.94  317.14
  793.41     320  883.84  332.57  886.29  332.87  887.56  333.06  889.06  333.28
  933.65     339  942.15     341  980.39  348.92 1010.47   354.5 1027.14   357.8
 1033.61  358.11 1050.51  359.96 1093.98  362.86 1116.86  363.84

Manning's n Values          num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .045  616.51    .045  671.24    .045

Bank Sta: Left   Right    Lengths: Left Channel   Right      Coeff Contr.   Expan.
          616.51  671.24           168.64  170.08  171.68             .1       .3

CROSS SECTION           RIVER: Oso Creek
REACH: 1                   RS: 3816.345

INPUT
Description:
Station Elevation Data     num=      69
     Sta     Elev      Sta     Elev      Sta     Elev      Sta     Elev      Sta     Elev
       0   417.35     13.2   417.14    42.81   415.25    49.62   414.82    95.84   411.87
   96.76   411.83   100.17   411.51   138.54   407.95    143.1   407.42   148.88   406.99
  180.33   403.48   189.84   401.73   201.91   400.55   222.11   393.24   236.58   386.96
  254.94   379.79   259.95   378.96   263.89   378.31   297.15   372.04   347.46   362.43
  351.28   361.56      361   359.35   389.24   352.14   414.03   345.22    446.9   338.52
  467.06   334.41   485.51   330.65   514.59   326.07   540.38   320.62   556.37   318.95
  579.95   315.92   610.49   311.41   626.16   309.99   647.73   307.22      648   307.21
  668.87   305.05   673.43   305.07   681.72   306.14    694.2   306.85   703.97    307.4
  732.22    308.4   745.06   308.48   765.28   309.25   785.25   310.48    800.9   311.44
  821.24   313.04   888.07   318.76   890.93   318.99   891.32   319.03    914.3   321.43
  932.41   324.87   950.77   328.36   972.16   332.43   997.38   337.22  1007.78      339
 1015.98    341.8  1050.41      347  1054.52   347.54  1057.76   348.11  1085.05   355.49
 1099.54   359.63  1101.26      360  1141.32   361.71  1156.48   362.36  1171.37   363.28
 1209.51   365.63  1218.11      366  1228.66   366.45  1248.56   367.08

Manning's n Values          num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .045     648    .045   694.2    .045

Bank Sta: Left   Right    Lengths: Left Channel   Right      Coeff Contr.   Expan.
            648   694.2           241.68  241.23  239.32             .1       .3

CROSS SECTION           RIVER: Oso Creek
REACH: 1                   RS: 3575.110

INPUT
Description:
Station Elevation Data     num=      73
     Sta     Elev      Sta     Elev      Sta     Elev      Sta     Elev      Sta     Elev
       0   452.52     5.96   451.52    24.61   449.21    52.67   445.19    74.99   442.96
   77.33   442.44    99.39    437.6   116.93    434.5   122.74   432.92   130.05   429.37
  158.87   417.55   173.55   415.38   182.77   412.58   216.17   405.33   242.74   400.14
  262.89   397.64   288.21   392.87    309.6   389.24   326.61   384.54   340.93   381.27
  356.32   377.75   368.55   374.69   403.03   366.89   446.38    354.3   449.74   353.38
  475.94   342.91   494.36   335.85   496.46    335.1    499.1   333.76   519.82   324.79
   536.3   319.77   551.82   316.52   578.23    312.5   594.38   310.61   604.54   309.43
  649.05   306.78   659.13      306   662.11   305.82   683.32   303.49   698.02   303.14
  704.04      303    715.5   301.48   724.35   301.05   733.21   301.23   741.88   302.61
  745.98   302.68   750.74   302.66   756.25      303    762.7    303.4    800.1   305.71
  815.42   307.31   829.85   308.82   868.14   310.09   871.79   310.14   885.99   311.69
  916.89   314.92   955.66   318.98    963.6      320   973.58   321.71  1010.32      328
  1026.3   331.08  1057.03   337.58  1079.02   342.71  1080.39   343.03  1091.01   346.18
 1123.41   355.89   1127.1   356.74  1131.74    357.6  1150.46   360.18  1165.35   360.64
 1220.53   361.68  1235.65      361  1253.17   359.81

Manning's n Values          num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .045  698.02    .045  741.88    .045

Bank Sta: Left   Right    Lengths: Left Channel   Right      Coeff Contr.   Expan.
          698.02  741.88           268.56  267.32  273.87             .1       .3

CROSS SECTION           RIVER: Oso Creek
REACH: 1                   RS: 3307.795

INPUT
Description:
Station Elevation Data     num=      62
     Sta     Elev      Sta     Elev      Sta     Elev      Sta     Elev      Sta     Elev
       0   425.26     5.08   426.35    23.38   428.69    51.76    429.6    74.64   428.86
   75.66   428.81    98.44   425.79   116.81   421.79   121.78   420.35   158.97   410.39
  165.08   408.97   172.09   407.11   180.22   404.95   215.14   394.35   232.51   389.81
  238.48   388.26   243.29   386.59   284.79   368.27   285.26   368.05   285.46   367.97
  315.31    353.8   356.56   340.39   369.78      336    375.4    334.4   389.35    329.5
  411.94   321.14    425.2   319.06   490.07   311.66   495.22   311.05   496.27   310.91
  497.86   310.74   538.43   305.72   565.24      304   598.48   300.44    604.8   299.91
  615.78      299   631.68      299   696.53      299   710.13    299.5    717.3   299.76
  736.86   301.41   766.01      304   781.19   304.76   793.79   305.85   871.18   313.22
  905.22   316.13   931.27   319.05   938.68   319.51   960.05   323.58  1016.73   335.05
 1027.31   337.39  1044.38   339.59  1069.01   341.88  1109.19   344.08  1123.46   344.92
 1125.39   345.12   1128.7   345.28  1159.59   344.27  1170.87   344.05  1172.54   343.92
 1173.57   343.87  1183.55   343.02
```

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.045	604.8	.045	710.13	.045

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
604.8	710.13	221.76	227.97	242.32	.1	.3

CROSS SECTION RIVER: Oso Creek
REACH: 1 RS: 3079.829

INPUT
Description:
Station Elevation Data num= 50

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	354.05	23.99	349.08	30.95	348.53	36.17	348.33	54.4	347.67
77.18	342.94	78.73	342.85	118.18	343.32	127.36	343.77	133.48	342.58
171.62	338.97	188.23	336.33	195.07	335.12	235.9	326.16	241.2	324.97
241.96	324.89	242.97	324.74	271.51	319.78	307.92	317.12	323.21	315.53
399.27	310.43	405.22	310.04	407.21	309.9	446.22	306.58	452.96	305.84
474.58	304.39	540.42	299.97	569.24	298.04	570.18	298	573.23	298.13
596.05	299.02	663.96	301.65	685.47	303.75	692.25	304.21	699.02	304.49
733.26	305.96	790.44	309.09	800.38	309.82	815.27	310.91	866.04	314.62
897.28	315.95	899.93	316.13	938.28	318.7	961.24	320.8	984.04	322.19
1009.42	323.73	1062.53	328.91	1102.3	331.94	1109.42	332.48	1135.33	332.43

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.045	540.42	.045	596.05	.045

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
540.42	596.05	205.96	213.45	228.18	.1	.3

CROSS SECTION RIVER: Oso Creek
REACH: 1 RS: 2866.377

INPUT
Description:
Station Elevation Data num= 50

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	376.23	29.16	370.76	40.97	368.8	63.14	364.23	108.61	355.64
124.96	352.8	155.46	347.09	172.86	343.37	193.63	339.8	202.19	339.22
231.79	337.7	266.49	330.91	285.53	326.59	308.12	323.41	316.56	321.78
330.8	320.22	364.47	316.52	457.65	304.36	459.41	304.12	460.03	304.04
460.55	303.99	460.78	303.97	516.47	299.41	532.12	298.13	534.9	297.78
538.59	297.51	543.75	297.53	560.34	297.99	611.05	298.68	613.44	298.7
622.33	299	651.6	299.99	651.99	300.01	652.32	300.03	686.89	302.46
727.93	304.18	777.43	306.24	794.16	306.68	811.03	307.47	826.5	308
845.24	309.07	867.42	310.35	880.59	310.83	895.51	311.95	918.75	313.71
939.27	314.46	973.85	316.44	987.17	317	1026.09	319.44	1062.69	321.8

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.045	516.47	.045	611.05	.045

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
516.47	611.05	257.55	260.99	262.2	.1	.3

CROSS SECTION RIVER: Oso Creek
REACH: 1 RS: 2605.383

INPUT
Description:
Station Elevation Data num= 36

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	348.25	2.14	347.78	56.39	335.07	79.14	330.83	115.2	323.63
118.22	323.02	118.48	322.97	142.09	319.32	194.63	315.6	203.14	314.88
213.68	314	244.74	311.4	324.25	306	370.31	302.87	404.6	300.27
412.65	299.66	490.56	296.4	495.87	296.17	500.06	296	513.33	296
541.13	296	547.79	295.83	564.46	296.09	579.62	296.33	637.54	297.26
656.62	297.56	667.11	298	695.12	299.17	727.7	299.69	738.71	299.87
806.12	303.77	810.16	304.01	810.99	304.06	869.35	308.42	922.03	312.36
923.84	312.47								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.045	490.56	.045	564.46	.045

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
490.56	564.46	278.97	256.94	284.22	.1	.3

CROSS SECTION RIVER: Oso Creek
REACH: 1 RS: 2348.439

INPUT
Description:
Station Elevation Data num= 45

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	323.07	2.58	322.14	2.88	322.08	3.12	322.01	26.28	320.77
44.57	317.44	49.68	317	56.31	316.43	96.48	314.49	110.04	313.26
119.88	312.92	127.47	312.32	182.1	307.41	210.37	304	217.5	303.31
236.88	301.44	251.82	300	271.24	299.53	287.14	299.44	340.42	299.15
358.78	299.05	408.32	298.78	417.62	298.72	426.61	298.57	432.43	298.46
459.72	296.97	486.16	295.87	495.6	295.34	496.53	295.29	500.52	295
509.54	295	564.47	295	645.34	295	736.15	295	759.65	295.84
808.56	297.57	817.83	297.83	825.57	298.16	846.93	299.07	882.26	300.16
916.02	301.51	938.86	302.85	956.48	304.26	969.75	305	985.28	306.16

Manning's n Values num= 3

```
      Sta   n Val      Sta   n Val      Sta   n Val
        0    .045    495.6    .045   759.65    .045

 Bank Sta: Left   Right    Lengths: Left Channel   Right      Coeff Contr.   Expan.
          495.6  759.65            278.29     190  136.22              .1      .3

 CROSS SECTION          RIVER: Oso Creek
 REACH: 1                  RS: 2158.436

 INPUT
 Description:
 Station Elevation Data    num=      41
      Sta    Elev      Sta    Elev      Sta    Elev      Sta    Elev      Sta    Elev
        0  367.18    15.21  366.37    20.89     366    23.85  365.68    67.32  358.23
    74.65  355.16   113.75  338.36   150.75  326.46   160.19  323.21   195.92  314.76
   202.99  312.94   210.32   311.2   248.99   303.7   265.68  301.37   293.24  298.38
   313.44     296    322.7   295.1   327.14     295   338.13     295   364.38     295
    428.3  294.43    586.5  294.43   648.23  294.43   690.68  294.43    825.2     295
   828.41     295   832.71  295.14   835.19  295.23   894.33  297.46   926.31  298.17
   959.38    298.9 1015.77  300.15 1029.81  300.46  1042.4  300.74  1054.3  302.03
  1088.83   306.53 1099.48  308.15 1119.15  309.18 1144.66  310.51 1158.48  310.47
  1167.89   309.83

 Manning's n Values        num=       3
      Sta   n Val      Sta   n Val      Sta   n Val
        0    .045   364.38    .045   832.71    .045

 Bank Sta: Left   Right    Lengths: Left Channel   Right      Coeff Contr.   Expan.
          364.38 832.71            317.99   255.6     178              .1      .3

 CROSS SECTION          RIVER: Oso Creek
 REACH: 1                  RS: 1902.839

 INPUT
 Description:
 Station Elevation Data    num=      40
      Sta    Elev      Sta    Elev      Sta    Elev      Sta    Elev      Sta    Elev
        0  352.86     6.47  354.37    22.09  357.15    42.81  360.84    46.72  361.11
    54.96  360.67    71.35  359.57    79.14  357.47   101.04  347.34   115.48  340.04
   131.43  334.61   151.82  327.93    207.9  310.34    221.3  306.26   224.49  305.46
   229.66  304.58   260.83  297.96   278.68  295.65   280.03  295.47   297.16     295
   303.92     295   389.71  294.26   505.47  293.55   594.21  294.61   644.91  296.43
   649.91  296.47    676.4  296.69   687.15  297.27   743.19     298   769.54  298.69
   793.96  299.33    823.2  299.05   873.07   299.7   884.21  299.84   953.49  300.75
   961.64  300.86   972.59     301  1007.37  301.45  1023.89  303.68  1039.85   305.4

 Manning's n Values        num=       3
      Sta   n Val      Sta   n Val      Sta   n Val
        0    .045   278.68    .045   649.91    .045

 Bank Sta: Left   Right    Lengths: Left Channel   Right      Coeff Contr.   Expan.
          278.68 649.91            326.27  259.48  230.63              .3      .5
 Right Levee     Station=      791       Elevation=      310

 CROSS SECTION          RIVER: Oso Creek
 REACH: 1                  RS: 1643.362

 INPUT
 Description:
 Station Elevation Data    num=      35
      Sta    Elev      Sta    Elev      Sta    Elev      Sta    Elev      Sta    Elev
        0  317.45    19.01  317.46    59.73  317.49    65.28  317.33    92.83  316.52
   103.29  316.53   159.04  316.57   163.75  316.43   194.37  313.67   196.57  313.53
   200.91  312.55   229.39  304.75   258.36  299.47   262.21     299   265.99  298.54
   290.46  295.56   295.03     295   316.06  293.53   371.89  293.52   426.32     295
   447.46  295.64   464.56  297.33   490.11  299.86   491.96     300   493.78     300
   589.93     300   590.91  300.03   655.85  300.01   656.48  300.02   704.62     300
   754.53     300   754.96     300   803.33  300.49   837.15  300.48   861.89  300.23

 Manning's n Values        num=       3
      Sta   n Val      Sta   n Val      Sta   n Val
        0    .045   290.46    .045   464.56    .045

 Bank Sta: Left   Right    Lengths: Left Channel   Right      Coeff Contr.   Expan.
          290.46 464.56            159.66  179.23  243.37              .3      .5
 Ineffective Flow     num=       1
    Sta L   Sta R    Elev  Permanent
 888        F
 Left Levee      Station=  231.51      Elevation=  303.77
 Right Levee     Station=  636.66      Elevation=  307.16

 BRIDGE                 RIVER: Oso Creek
 REACH: 1                  RS: 1600

 INPUT
 Description:
 Distance from Upstream XS =       4
 Deck/Roadway Width        =     170
 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   306.2        0      230  308.83        0      230  308.83  303.83
      484  311.77  306.77      484  311.77        0     1000  317.74

 Upstream Bridge Cross Section Data
 Station Elevation Data    num=      35
      Sta     Elev      Sta     Elev      Sta     Elev      Sta     Elev      Sta     Elev
```

```
      0  317.45   19.01  317.46   59.73  317.49   65.28  317.33   92.83  316.52
 103.29  316.53  159.04  316.57  163.75  316.43  194.37  313.67  196.57  313.53
 200.91  312.55  229.39  304.75  258.36  299.47  262.21     299  265.99  298.54
 290.46  295.56  295.03     295  316.06  293.53  371.89  293.52  426.32     295
 447.46  295.64  464.56  297.33  490.11  299.86  491.96     300  493.78     300
 589.93     300  590.91  300.03  655.85  300.01  656.48  300.02  704.62     300
 754.53     300  754.96     300  803.33  300.49  837.15  300.48  861.89  300.23

Manning's n Values         num=       3
     Sta   n Val      Sta   n Val      Sta   n Val
       0    .045  290.46    .045  464.56    .045

Bank Sta: Left   Right    Coeff Contr.   Expan.
       290.46  464.56             .3       .5
Ineffective Flow      num=        1
   Sta L   Sta R    Elev  Permanent
888        F
Left Levee       Station=  231.51      Elevation=  303.77
Right Levee      Station=  636.66      Elevation=  307.16

Downstream  Deck/Roadway Coordinates
    num=        6
     Sta Hi Cord Lo Cord      Sta Hi Cord Lo Cord      Sta Hi Cord Lo Cord
       0  305.13        0      320  308.83        0      320  308.83  303.83
     574  311.77  306.77      574  311.77        0     1000   316.7        0

Downstream Bridge Cross Section Data
Station Elevation Data     num=       65
     Sta     Elev      Sta     Elev      Sta     Elev      Sta     Elev      Sta     Elev
       0  304.28    12.51  304.23    48.67  304.09    59.07  304.05    70.69  303.97
   77.13  303.93    89.38  303.85     89.6  303.85   122.48   303.7    150.8  303.57
  167.13  303.49   168.61  303.49    189.4  302.83   216.15  302.66   221.63  302.48
  237.03  302.08    253.2  301.26   273.56  299.32    296.1  297.94   322.22  296.45
   332.6  295.87   341.68  295.33   347.69  294.93   364.49  293.59   368.94  293.24
  369.47   293.2   374.24  292.73      386  292.33    393.4  293.04   399.74  293.69
   401.4   293.9   413.86  294.44   417.63   294.5   421.73   294.6   422.98  294.64
  462.12  295.77   475.96  296.17   479.76  296.38   501.79  297.62   504.86  297.72
   527.5  298.11   532.48  298.17   566.01  298.49   582.76  298.77   604.98   299.2
   609.1  299.33    640.9  300.23   646.07  300.24   650.93  300.25      659  300.39
   694.1  300.87   705.03  301.13   708.16  301.17   724.74  301.35   729.82  301.41
  752.21  301.51   763.99  301.57   811.47   301.8   822.96  301.84   823.32  301.83
   829.8  301.85   856.22  301.93   886.79  302.17    905.7  302.27   907.15   302.3

Manning's n Values         num=       3
     Sta   n Val      Sta   n Val      Sta   n Val
       0    .045  347.69    .045  421.73    .045

Bank Sta: Left   Right    Coeff Contr.   Expan.
       347.69  421.73             .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           =   306.2
Energy head used in spillway design           =
Spillway height used in design                =
Weir crest shape                              = Broad Crested

Number of Piers =  8

Pier Data
Pier Station     Upstream=     250    Downstream=     350
Upstream     num=        2
    Width   Elev    Width   Elev
        5    286        5    310
Downstream     num=        2
    Width   Elev    Width   Elev
        5    286        5    310

Pier Data
Pier Station     Upstream=     278    Downstream=     378
Upstream     num=        2
    Width   Elev    Width   Elev
        5    286        5    310
Downstream     num=        2
    Width   Elev    Width   Elev
        5    286        5    310

Pier Data
Pier Station     Upstream=     306    Downstream=     406
Upstream     num=        2
    Width   Elev    Width   Elev
        5    286        5    310
Downstream     num=        2
    Width   Elev    Width   Elev
        5    286        5    310

Pier Data
Pier Station     Upstream=     334    Downstream=     434
Upstream     num=        2
    Width   Elev    Width   Elev
        5    286        5    310
Downstream     num=        2
    Width   Elev    Width   Elev
        5    286        5    310

Pier Data
Pier Station     Upstream=     362    Downstream=     462
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Upstream      num=        2
    Width    Elev     Width    Elev
       5     286        5      310
Downstream      num=        2
    Width    Elev     Width    Elev
       5     286        5      310

Pier Data
Pier Station      Upstream=      390     Downstream=      490
Upstream      num=        2
    Width    Elev     Width    Elev
       5     286        5      310
Downstream      num=        2
    Width    Elev     Width    Elev
       5     286        5      310

Pier Data
Pier Station      Upstream=      418     Downstream=      518
Upstream      num=        2
    Width    Elev     Width    Elev
       5     286        5      310
Downstream      num=        2
    Width    Elev     Width    Elev
       5     286        5      310

Pier Data
Pier Station      Upstream=      446     Downstream=      546
Upstream      num=        2
    Width    Elev     Width    Elev
       5     286        5      310
Downstream      num=        2
    Width    Elev     Width    Elev
       5     286        5      310

Number of Bridge Coefficient Sets =  1

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

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 #100yr expected
Opening : Single BR
```

			Inside BR US	Inside BR DS
E.G. US. (ft)	299.48	Element		
W.S. US. (ft)	299.29	E.G. Elev (ft)	299.42	298.66
Q Total (cfs)	3185.00	W.S. Elev (ft)	299.12	297.45
Q Bridge (cfs)	3185.00	Crit W.S. (ft)	296.87	297.45
Q Weir (cfs)		Max Chl Dpth (ft)	5.60	5.12
Weir Sta Lft (ft)		Vel Total (ft/s)	4.34	8.41
Weir Sta Rgt (ft)		Flow Area (sq ft)	734.43	378.70
Weir Submerg		Froude # Chl	0.36	0.86
Weir Max Depth (ft)		Specif Force (cu ft)	2154.48	1467.38
Min El Weir Flow (ft)	308.67	Hydr Depth (ft)	3.94	2.55
Min El Prs (ft)	306.77	W.P. Total (ft)	248.93	180.09
Delta EG (ft)	0.73	Conv. Total (cfs)	52517.7	22258.9
Delta WS (ft)	2.76	Top Width (ft)	186.38	148.72
BR Open Area (sq ft)	1988.63	Frctn Loss (ft)		
BR Open Vel (ft/s)	8.41	C & E Loss (ft)		
Coef of Q		Shear Total (lb/sq ft)	0.68	2.69
Br Sel Method	Momentum	Power Total (lb/ft s)	2.94	22.61

```
Warning: Pier drag coefficient of 2.0 assumed for Class B flow.
Warning: During the class B momentum calculations, the supercritical downstream energy was higher
         than one of the upstream energies.  This is not physically possible.  The supercritical answer
         was backed out from an upstream energy.
Note:    The momentum method has computed a class B profile.
Warning: The velocity head has changed by more than 0.5 ft (0.15 m).  This may indicate the need for
         additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less
         than 0.7 or greater than 1.4.  This may indicate the need for additional cross sections.
Warning: The energy loss was greater 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 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          RIVER: Oso Creek
REACH: 1                  RS: 1464.13*

INPUT
Description:
Station Elevation Data    num=      65
     Sta    Elev      Sta    Elev      Sta    Elev      Sta    Elev      Sta    Elev
       0  304.28    12.51  304.23    48.67  304.09    59.07  304.05    70.69  303.97
```

77.13	303.93	89.38	303.85	89.6	303.85	122.48	303.7	150.8	303.57
167.13	303.49	168.61	303.49	189.4	302.83	216.15	302.66	221.63	302.48
237.03	302.08	253.2	301.26	273.56	299.32	296.1	297.94	322.22	296.45
332.6	295.87	341.68	295.33	347.69	294.93	364.49	293.59	368.94	293.24
369.47	293.2	374.24	292.73	386	292.33	393.4	293.04	399.74	293.69
401.4	293.9	413.86	294.44	417.63	294.5	421.73	294.6	422.98	294.64
462.12	295.77	475.96	296.17	479.76	296.38	501.79	297.62	504.86	297.72
527.5	298.11	532.48	298.17	566.01	298.49	582.76	298.77	604.98	299.2
609.1	299.33	640.9	300.23	646.07	300.24	650.93	300.25	659	300.39
694.1	300.87	705.03	301.13	708.16	301.17	724.74	301.35	729.82	301.41
752.21	301.51	763.99	301.57	811.47	301.8	822.96	301.84	823.32	301.83
829.8	301.85	856.22	301.93	886.79	302.17	905.7	302.27	907.15	302.3

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.045	347.69	.045	421.73	.045

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
347.69	421.73	138.75	214.11	299.31	.3	.5

CROSS SECTION RIVER: Oso Creek
REACH: 1 RS: 1250.045

INPUT
Description:
Station Elevation Data num= 33

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	300.31	38.86	298.79	50.74	298.16	58.94	297.73	99.2	296
109.94	295.54	145.79	293.65	211.96	293	218.79	293	228.72	292.77
254.76	292.16	261.66	292.03	262.48	292.02	288.1	290.08	303.86	290.13
317.36	290.32	347.41	292	355.44	292	364.18	292.19	364.99	292.2
402.02	293	433.15	293.89	458.26	293.83	486.36	295	518.9	295.51
541.79	295.47	561.77	296.72	565.08	296.92	579.68	297.21	630.28	298.4
647.51	298.81	667.44	299.86	680.72	300.38				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.045	228.72	.045	364.18	.045

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
228.72	364.18	162.03	209.55	254.99	.1	.3

CROSS SECTION RIVER: Oso Creek
REACH: 1 RS: 1040.498

INPUT
Description:
Station Elevation Data num= 29

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	299.4	10.37	298.87	27.35	298	31.78	297.77	46.13	297.36
162.01	293.54	218.32	292.09	229.47	291.81	241.22	292	253.23	292.2
259.02	292.05	270.1	290.37	294.86	288.16	310.61	288.16	312.86	290.71
328.62	291.09	333.19	291.51	363.3	292	377.67	292.23	402.97	292
416.6	292.13	420.94	292.11	452.46	292.92	490.92	294.05	492.26	294.06
510.4	295.23	533.37	296.89	541.94	297.07	608.02	298.19		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.045	259.02	.045	333.19	.045

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
259.02	333.19	205.37	212.11	235.16	.1	.3

CROSS SECTION RIVER: Oso Creek
REACH: 1 RS: 828.390

INPUT
Description:
Station Elevation Data num= 34

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	299.06	7.65	298.9	60.27	296.76	105.18	294.94	114.34	295.13
129.57	294.41	165.08	292.97	202.71	291.96	238.84	290	251.48	289.66
275.72	289.99	275.86	290	281.85	289.83	306.11	286	343.97	289.85
348.11	289.96	349.47	290.01	350.91	290	397.78	290.31	420.07	290.91
422.16	290.97	426.56	291.09	460.11	291.56	466.62	291.82	496.99	291.69
519.69	292	530.9	292	554.69	292.87	597.87	293.47	607.63	293.8
635.94	294.77	644.5	295	665.99	295	667.9	295.04		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.045	281.85	.045	343.97	.045

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
281.85	343.97	161.93	175.71	191.19	.1	.3

CROSS SECTION RIVER: Oso Creek
REACH: 1 RS: 652.682

INPUT
Description:
Station Elevation Data num= 31

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	298.5	34.41	296.46	42.12	296.26	64.59	296	75.82	295.62
82.81	295.27	112.74	293.26	143.23	291.21	164.78	290.72	176.93	290
200.4	287.91	240.42	287.88	244.33	287.82	248.42	287.82	311.73	287.07
321.12	287.44	344.37	284.6	363.31	286.27	379.71	286.63	412.84	287.36
433.4	288.22	446.54	288.31	465.36	288.72	495.41	289.1	520.01	288.82
547.64	289.01	606.46	289.42	629.32	289.29	648.75	289.71	668.2	290.42

686.64 290.18

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.045	311.73	.045	379.71	.045

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
311.73	379.71	226.89	228.17	239.33	.1 .3

CROSS SECTION RIVER: Oso Creek
REACH: 1 RS: 424.516

INPUT
Description:
Station Elevation Data num= 21

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	301.29	56.06	297.81	64.76	297.34	101.21	294.26	113.94	292.73
174.08	286.08	216.83	283.56	237.02	282.07	252.73	280.94	318.99	281.01
319.29	281.01	320	281.03	328.14	281.38	366.7	283	403.74	283
418.23	283.13	471.42	284.81	484.08	285	509.16	285	525.5	285.26
559.01	286.28								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.045	237.02	.045	328.14	.045

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
237.02	328.14	195.07	192.29	194.62	.1 .3

CROSS SECTION RIVER: Oso Creek
REACH: 1 RS: 232.229

INPUT
Description:
Station Elevation Data num= 31

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	295.45	30.54	295.58	52.54	294.67	73.12	293.23	108.86	288.62
129.15	286.8	157.02	285.15	170.51	284.23	226.5	280.06	227.77	279.97
246.05	279.44	260.64	279	261.51	279	322.11	279	326.38	279.14
331.16	279.14	349.69	279.71	384.35	280.76	392.12	281	420.11	281.85
425	282	452.08	282	470.48	282.77	490.74	283.42	521.71	283.94
556.48	285	571.09	285	609.79	285	622.23	285	644.62	285.68
662.29	285.46								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.045	226.5	.045	349.69	.045

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
226.5	349.69	162.92	153.18	149.43	.1 .3

CROSS SECTION RIVER: Oso Creek
REACH: 1 RS: 79.049

INPUT
Description:
Station Elevation Data num= 33

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	293.87	19.39	292.7	30.84	292	50.73	290.79	63.78	289.82
91.99	289	105.07	288.24	158.94	285.11	162.61	285	168.32	284.74
211.58	283.03	228.5	282	253.48	280.86	279.19	279.69	294.38	279
375.37	279	426.15	279	427.35	279.04	468.84	280.3	505.22	281.4
574.09	283.49	590.87	283.02	620.41	284	623.81	284	673.66	282.49
689.7	282.1	700	281.84	729.05	280.2	736.07	280	771.99	280
849.58	282.56	854.41	283	856.41	283.1				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.045	279.19	.045	427.35	.045

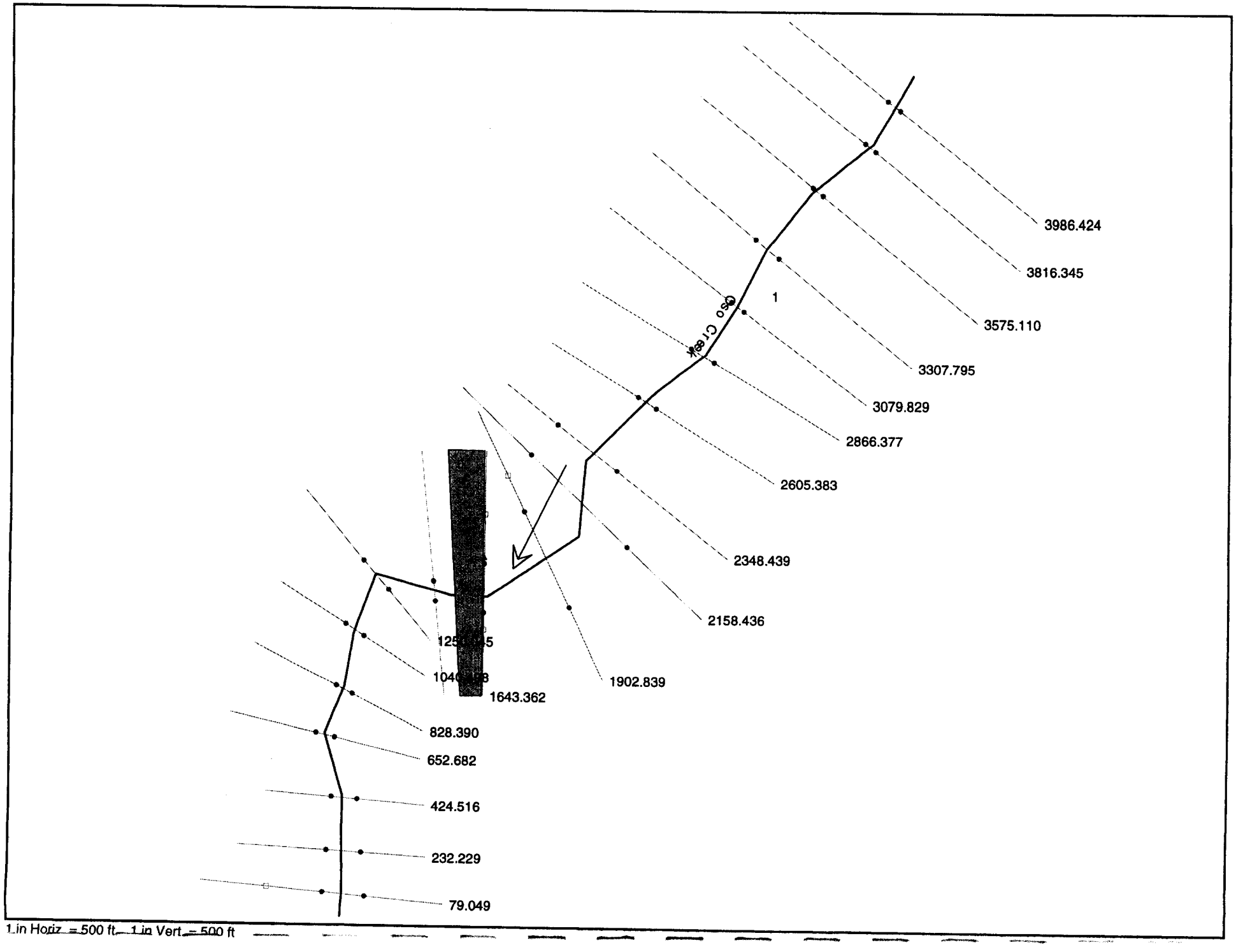
Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
279.19	427.35	0	0	0	.1 .3

Right Levee Station= 620.58 Elevation= 283.96

Profile Output Table - Standard Table 1

Reach	River Sta	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
		(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
1	3986.424	3185.00	307.14	313.24	313.95	315.50	0.030012	13.11	296.58	147.45	1.22
1	3816.345	3185.00	305.05	310.18	310.33	311.57	0.016293	10.85	376.78	156.28	0.94
1	3575.110	3185.00	301.05	305.90	306.08	307.40	0.018396	11.30	354.39	141.08	0.99
1	3307.795	3185.00	299.00	304.53	301.98	304.78	0.001801	4.34	849.61	219.74	0.33
1	3079.829	3185.00	298.00	303.65	302.46	304.13	0.004620	6.46	618.53	198.85	0.51
1	2866.377	3185.00	297.51	301.28	301.21	302.37	0.016427	8.91	402.53	176.48	0.90
1	2605.383	3185.00	295.83	299.85		300.15	0.004337	5.33	776.41	327.39	0.48
1	2348.439	3185.00	295.00	299.69		299.76	0.000564	2.19	1714.29	602.63	0.18
1	2158.436	3185.00	294.43	299.68		299.70	0.000135	1.14	3007.46	713.24	0.09

1	1902.839	3185.00	293.55	299.62	295.70	299.65	0.000240	1.53	2239.59	537.97
0.12										
1	1643.362	3185.00	293.52	299.29	296.53	299.48	0.001425	3.59	927.47	224.47
0.29										
1	1600	Bridge								
1	1250.045	3185.00	290.08	295.06	293.86	295.32	0.003250	4.52	866.01	371.21
0.41										
1	1040.498	3185.00	288.16	294.04		294.45	0.005135	6.12	719.45	343.64
0.52										
1	828.390	3185.00	286.00	291.70	291.70	292.70	0.013422	9.23	467.51	258.93
0.84										
1	652.682	3185.00	284.60	289.01	289.06	289.91	0.018686	9.12	475.12	345.54
0.95										
1	424.516	3185.00	280.94	283.86	284.12	285.13	0.022941	9.87	390.87	229.64
1.04										
1	232.229	3185.00	279.00	282.93	281.86	283.31	0.004592	5.37	705.22	287.51
0.49										
1	79.049	3185.00	279.00	281.73	281.28	282.28	0.010001	6.39	564.19	281.68
0.69										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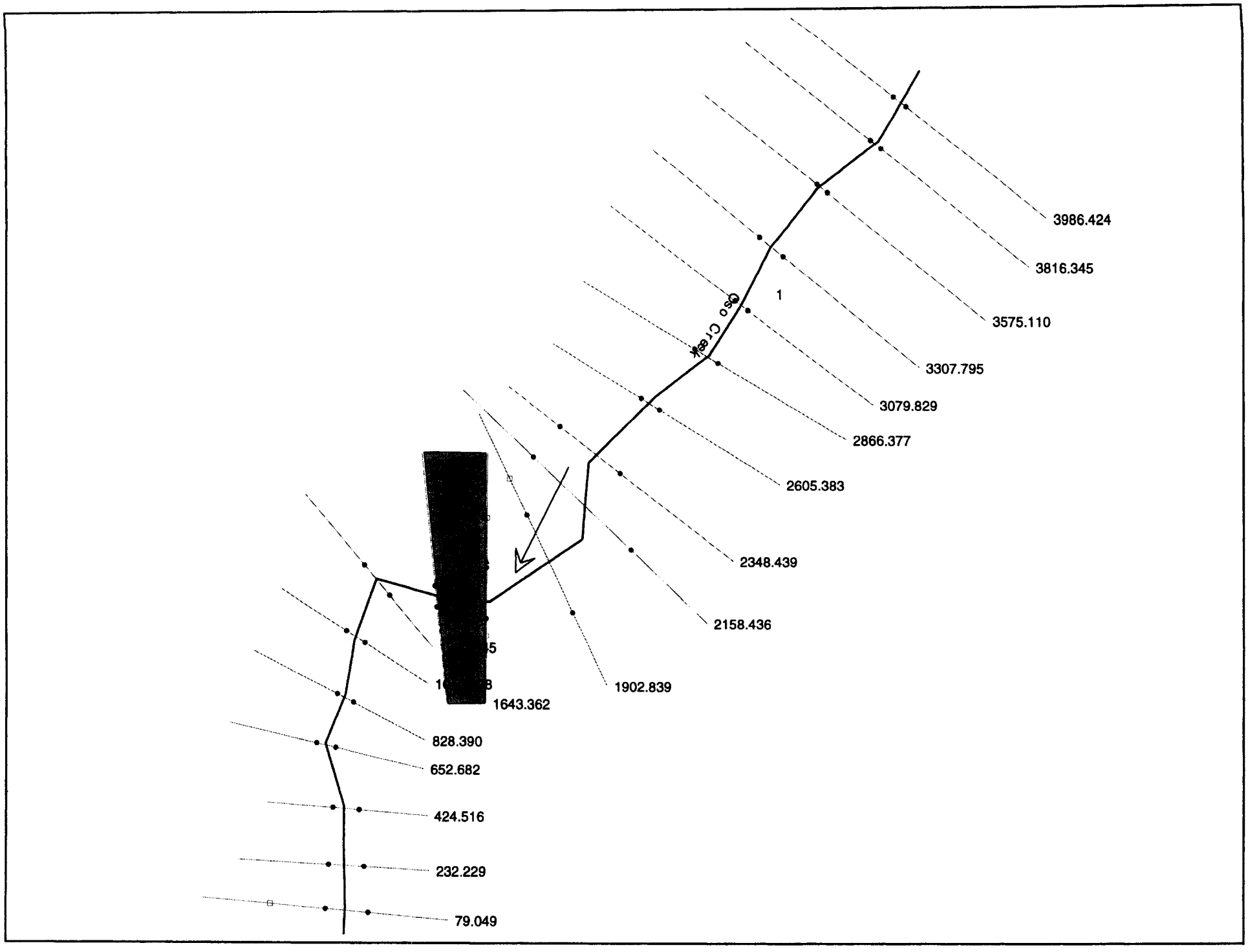
2605.383
2348.439
2158.436
1902.839
1643.362
828.390
652.682
424.516
232.229
79.049
Oso Creek
1
1 in Horiz. = 500 ft 1 in Vert. = 500 ft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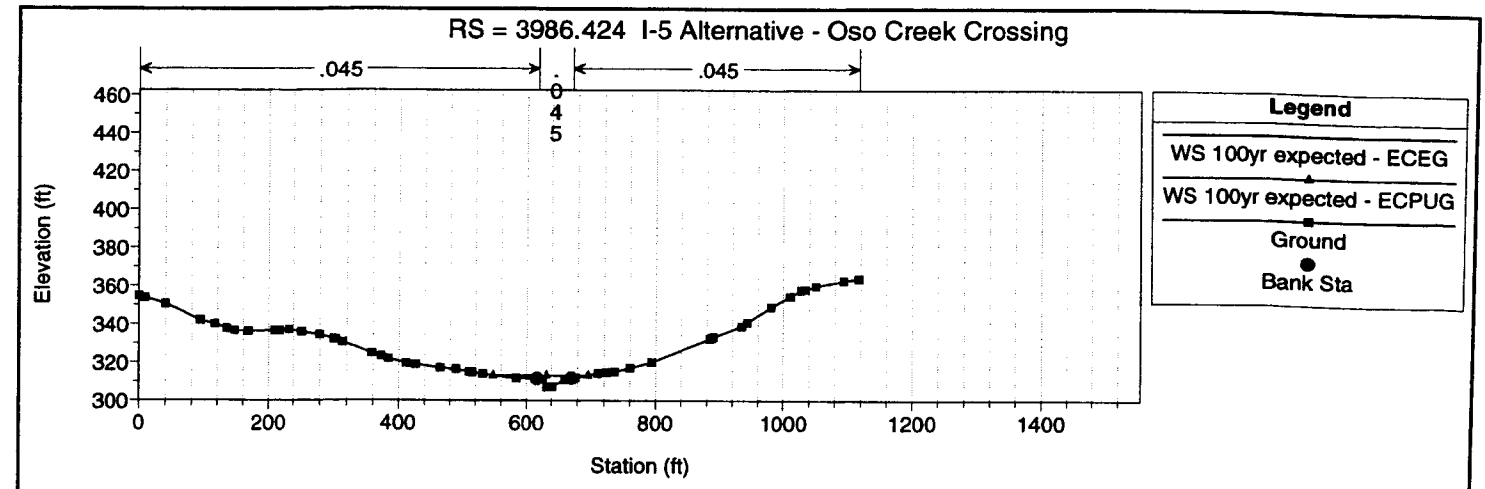
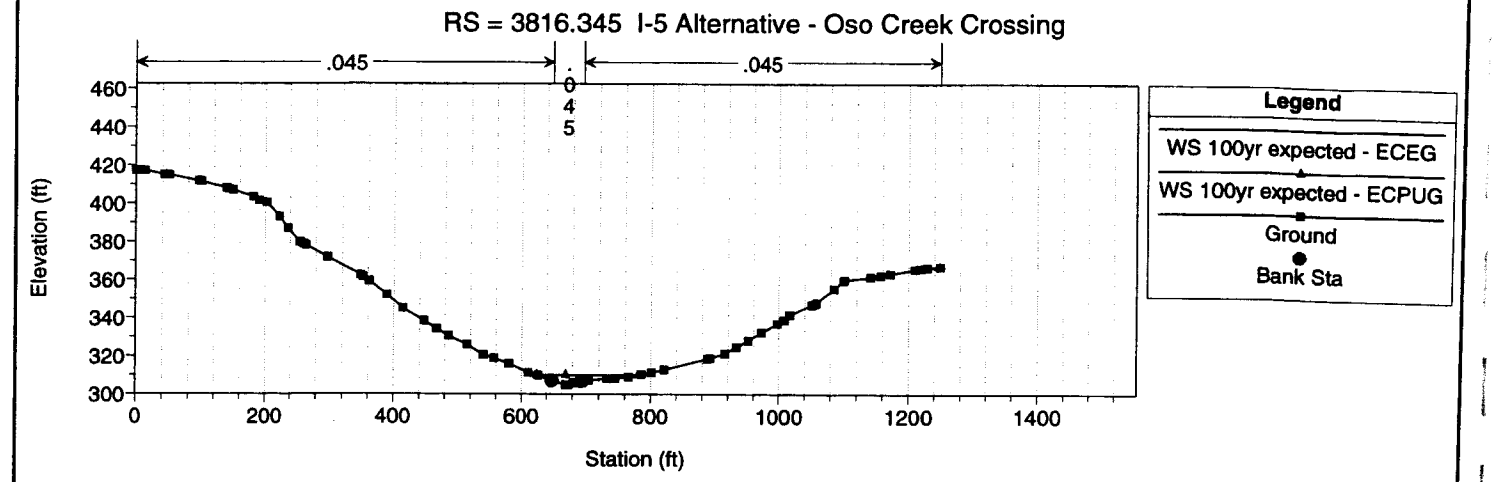
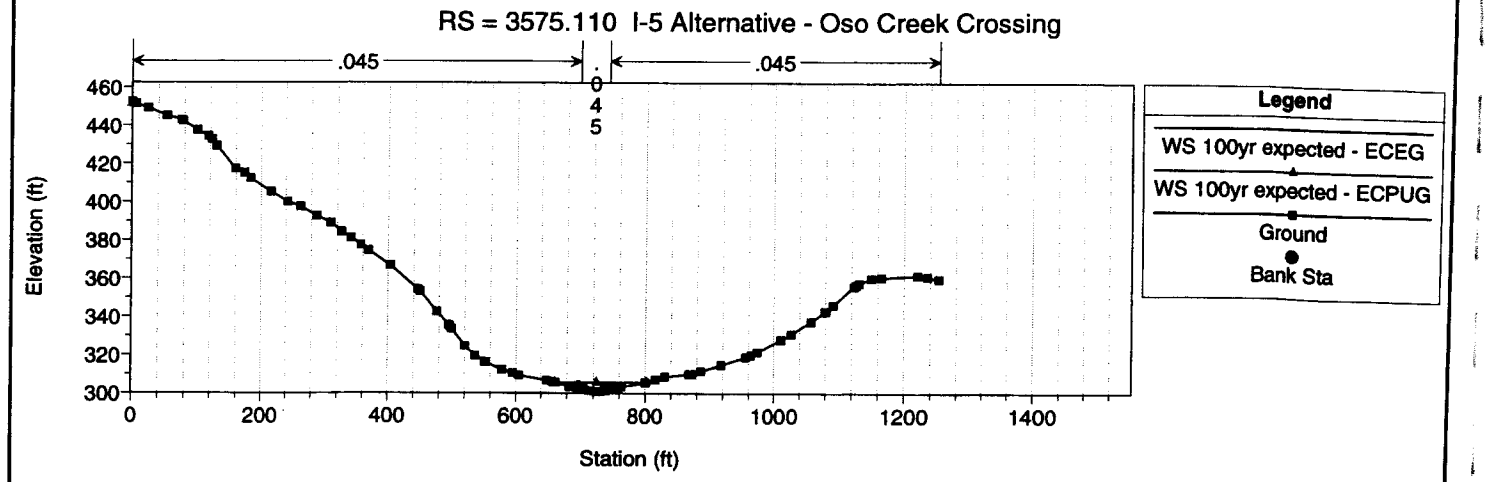
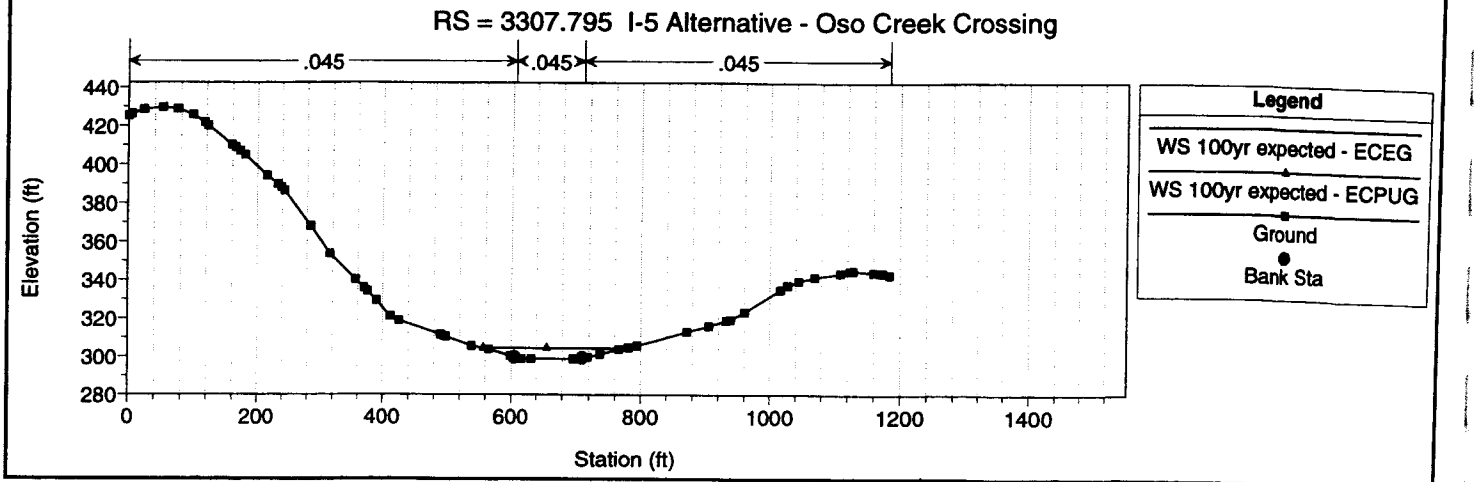
232.229
79.049
Oso Creek
1

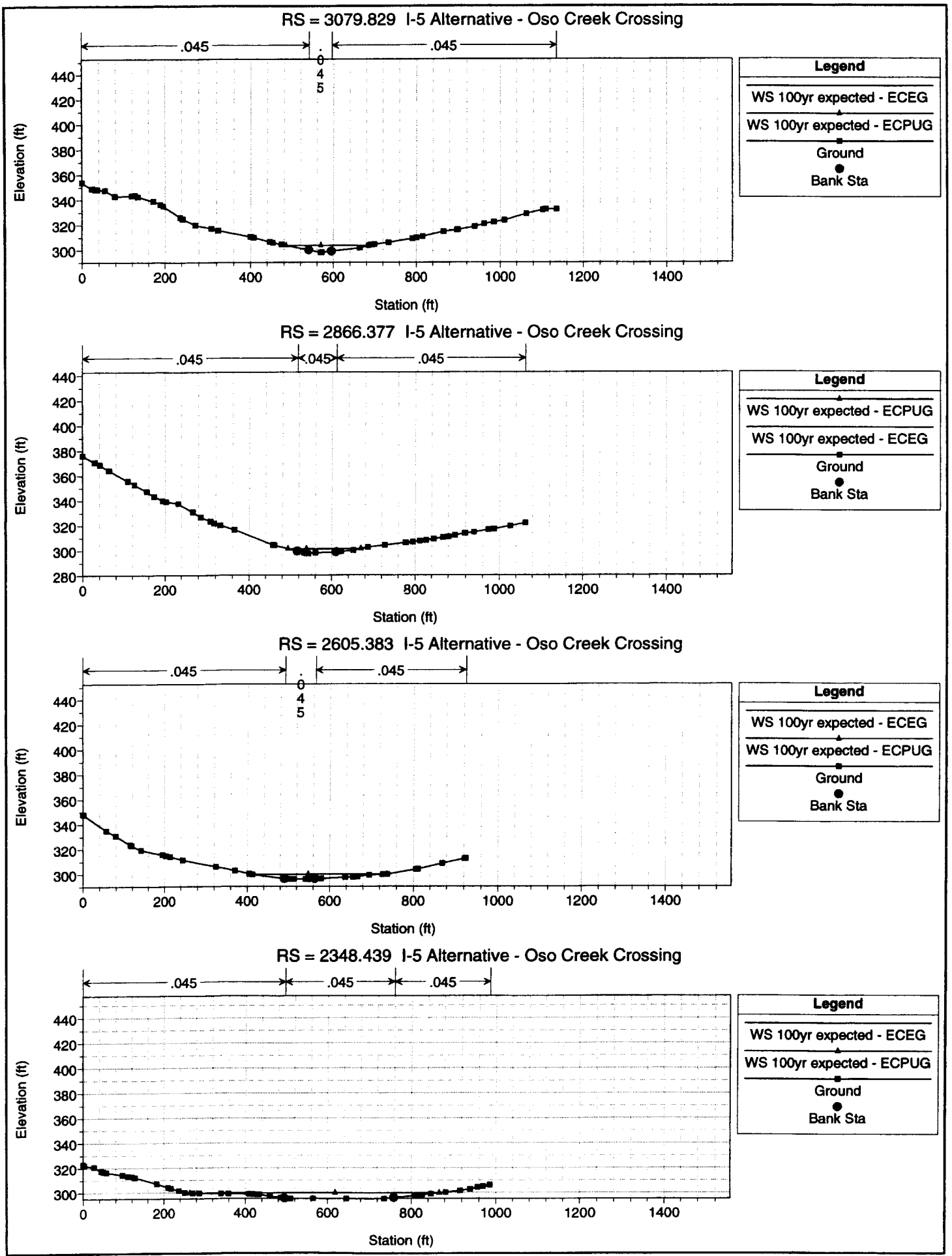




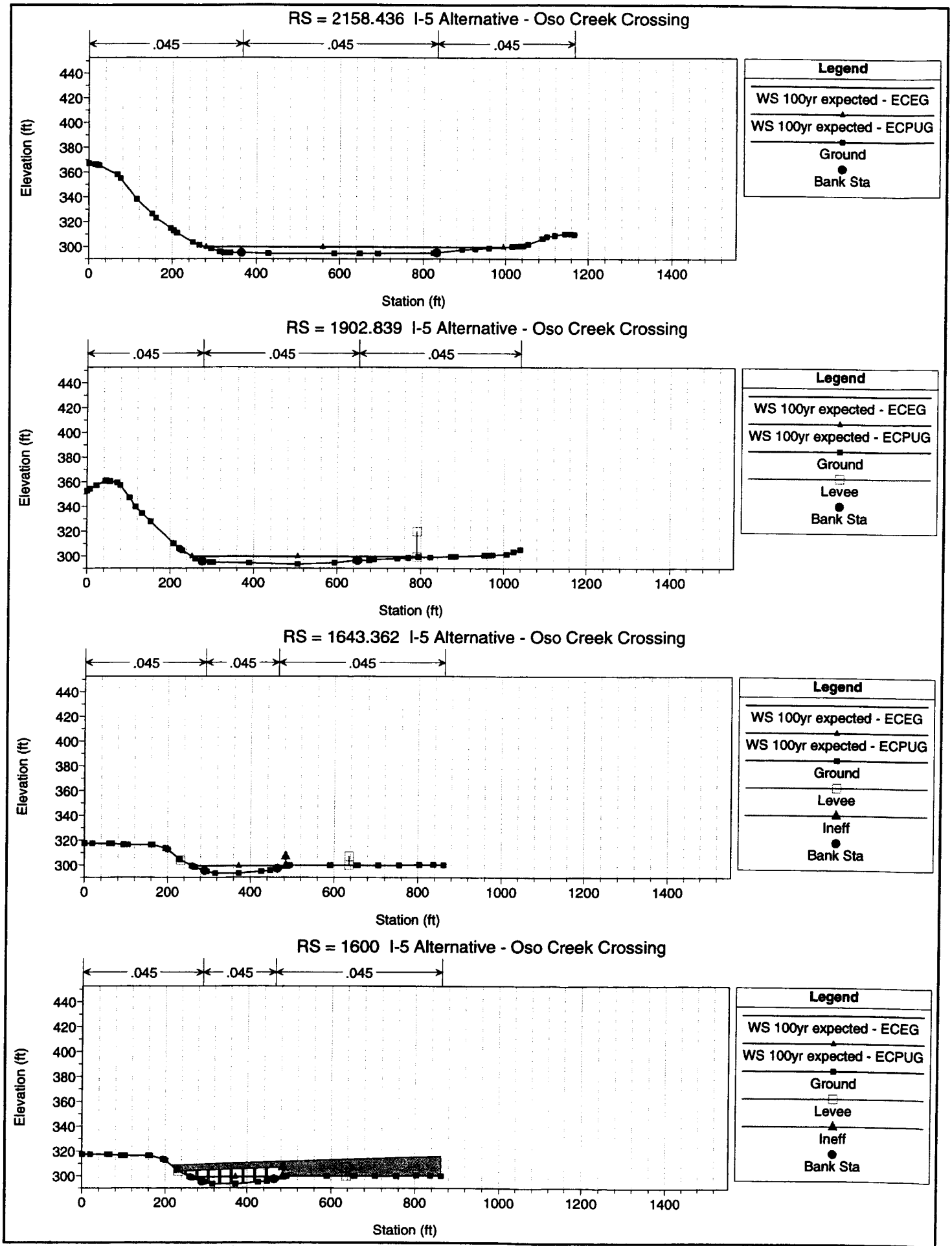




1 in Horiz. = 300 ft 1 in Vert. = 100 ft



1 in Horiz. = 300 ft 1 in Vert. = 100 ft



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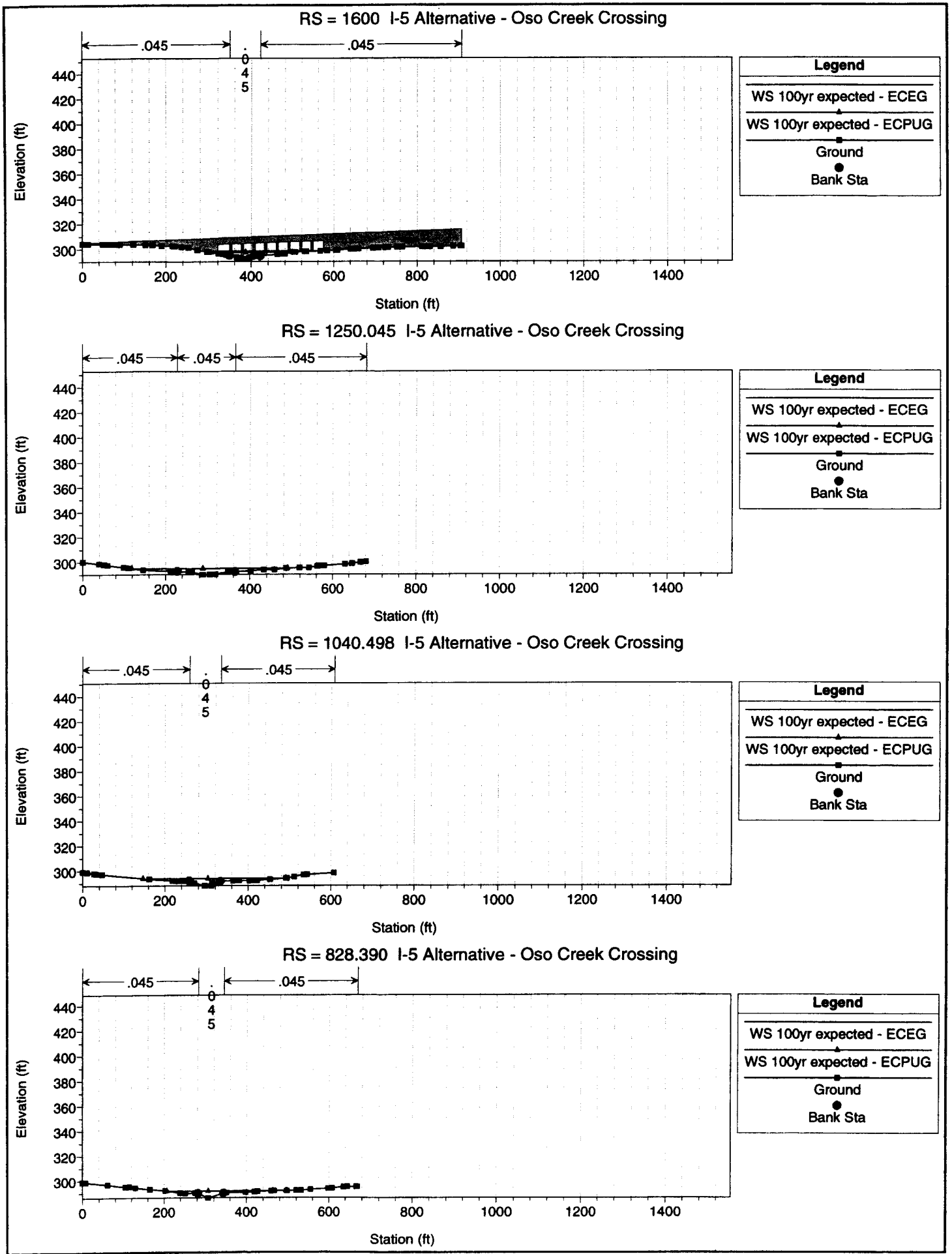
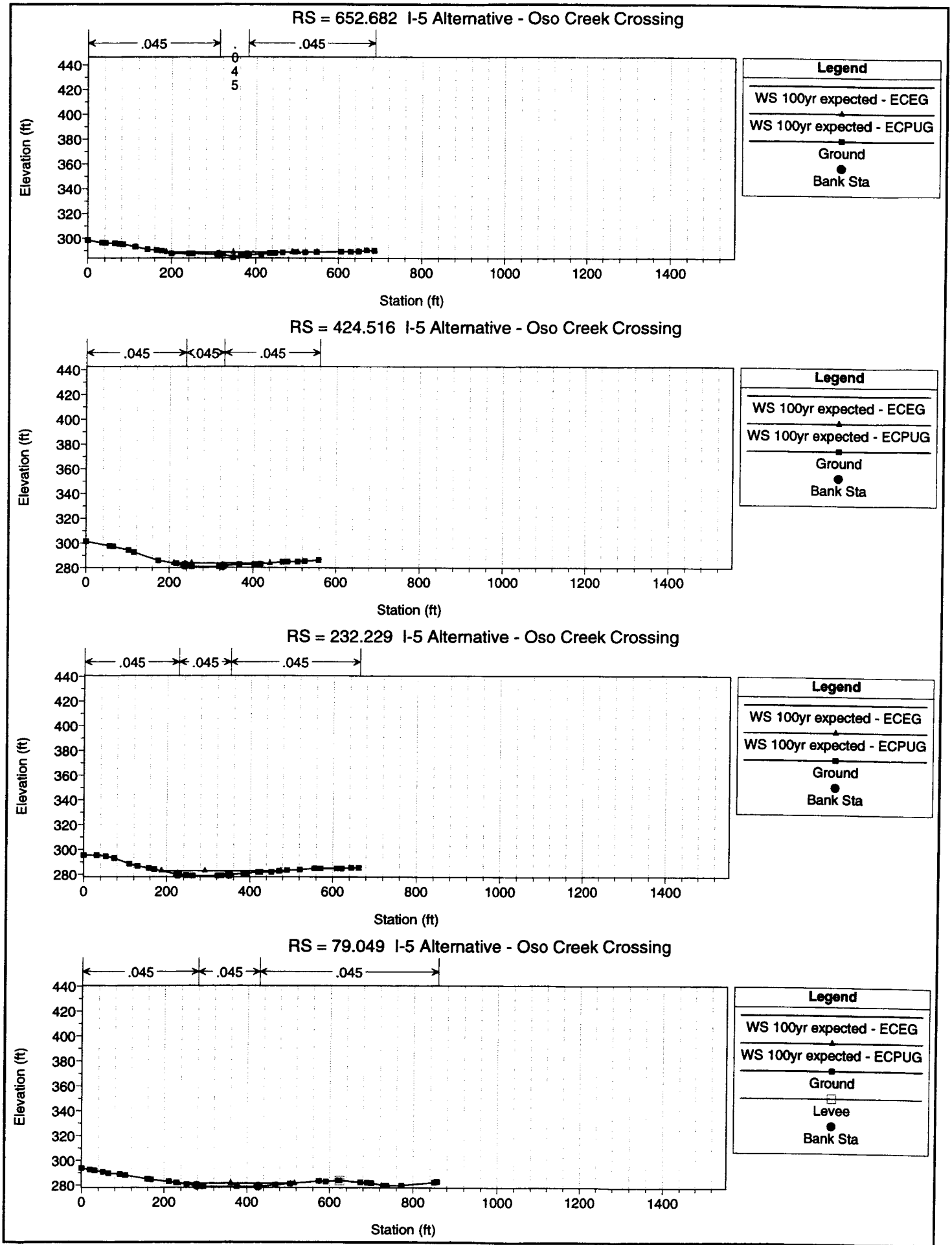
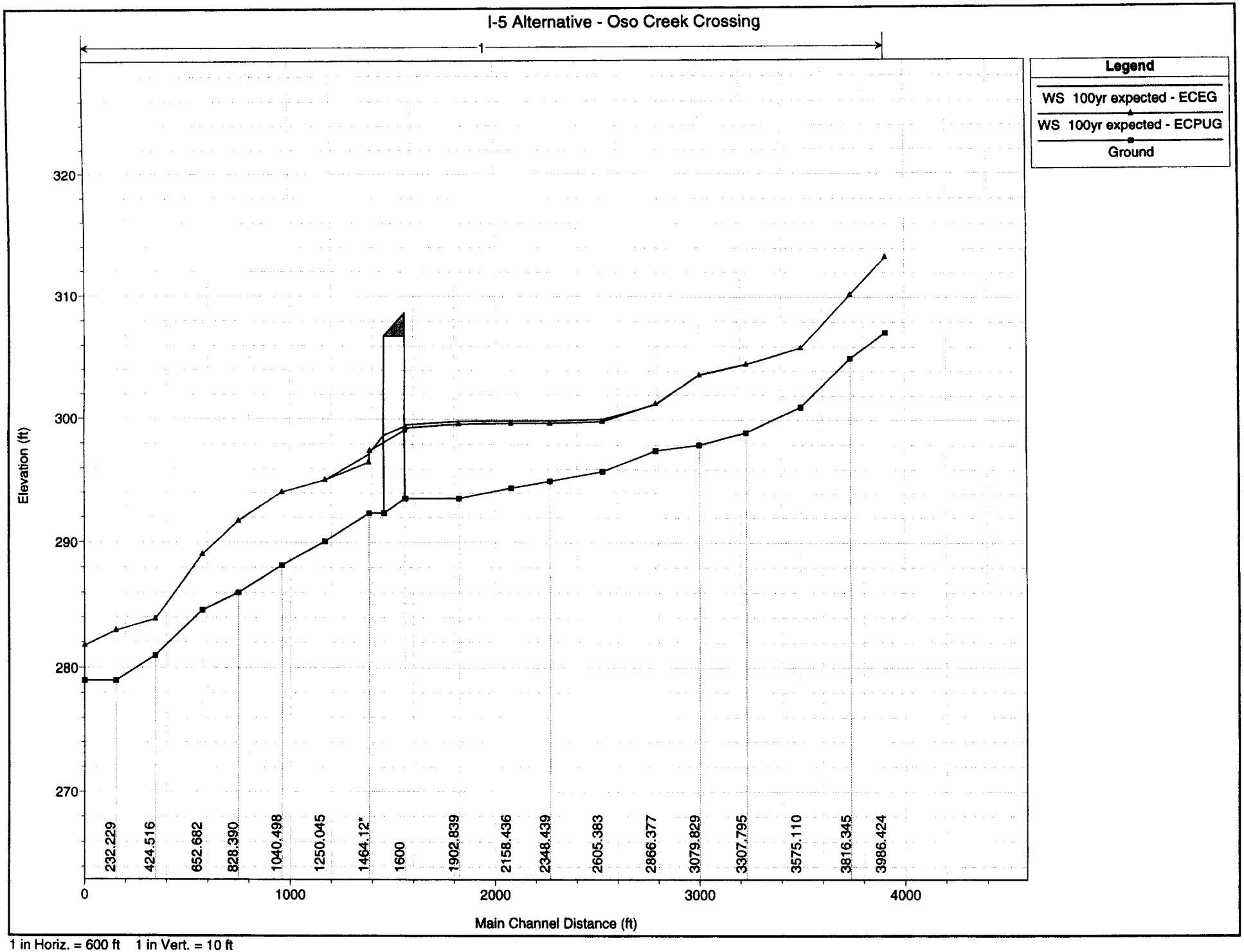


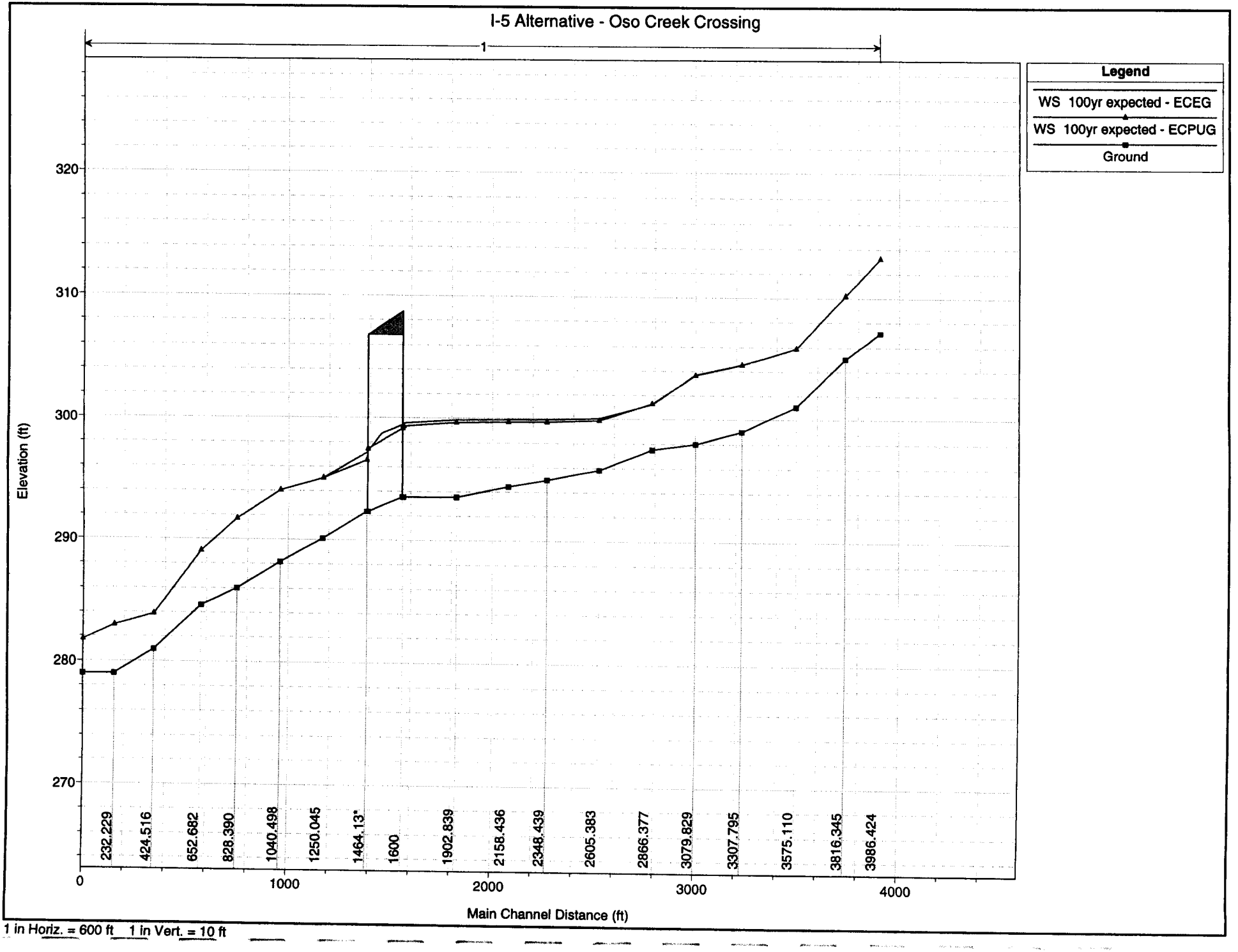
1 in Horiz. = 300 ft 1 in Vert. = 100 ft



1 in Horiz. = 300 ft 1 in Vert. = 100 ft



1 in Horiz. = 600 ft 1 in Vert. = 10 ft


I-5 Alternative - Oso Creek Crossing
1
Legend
WS 100yr expected - ECEG
WS 100yr expected - ECPUG
Ground
Elevation (ft)
320
310
300
290
280
270
232.229
424.516
652.682
828.390
1040.498
1250.045
1464.13*
1600
1902.839
2158.436
2348.439
2605.383
2866.377
3079.829
3307.795
3575.110
3816.345
3986.424
0
1000
2000
3000
4000
Main Channel Distance (ft)
1 in Horiz. = 600 ft 1 in Vert. = 10 ft

APPENDIX S
HYDRAULIC MODEL INPUT & RESULTS
I-5 ALTERNATIVE AT TRABUCO CREEK

Appendix S. **Hydraulic Model Input & Results**
I5 Alternative at Trabuco 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 widened bridge structure include:

824 (2704)

773 (2535)

HEC-RAS Version 3.0.1 Mar 2001
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: trabuco
Project File : oso_trabuco.prj
Run Date and Time: 12/9/02 4:09:22 PM

Project in English units

Project Description:
I-5 Alternative - Trabuco Creek Crossing

PLAN DATA

Plan Title: existing_trabuco
Plan File : p:\2PDA0104\Hydr\LHS\Modeling\Trabuco_LY6&7\hec-ras\oso_trabuco.p05

Geometry Title: trabuco_existing3
Geometry File : p:\2PDA0104\Hydr\LHS\Modeling\Trabuco_LY6&7\hec-ras\oso_trabuco.g05

Flow Title : trabuco
Flow File : p:\2PDA0104\Hydr\LHS\Modeling\Trabuco_LY6&7\hec-ras\oso_trabuco.f02

Plan Summary Information:
Number of: Cross Sections = 13 Mulitple Openings = 0
Culverts = 0 Inline Weirs = 0
Bridges = 1

Computational Information
Water surface calculation tolerance = 0.003
Critical depth calculaton tolerance = 0.003
Maximum number of interations = 20
Maximum difference tolerance = 0.1
Flow tolerance factor = 0.001

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

FLOW DATA

Flow Title: trabuco
Flow File : p:\2PDA0104\Hydr\LHS\Modeling\Trabuco_LY6&7\hec-ras\oso_trabuco.f02

Flow Data (cfs)

River	Reach	RS	100HC	100	50	2
Trabuco	1	4819.280	34220	14238	9683	144

Boundary Conditions

River	Reach	Profile	Upstream	Downstream
Trabuco	1	100HC	Normal S = .007	Normal S = .007
Trabuco	1	100	Normal S = .007	Normal S = .007
Trabuco	1	50	Normal S = .007	Normal S = .007
Trabuco	1	2	Normal S = .007	Normal S = .007

GEOMETRY DATA

Geometry Title: trabuco_existing3
Geometry File : p:\2PDA0104\Hydr\LHS\Modeling\Trabuco_LY6&7\hec-ras\oso_trabuco.g05

CROSS SECTION RIVER: Trabuco
REACH: 1 RS: 4819.280

INPUT
Description:

Station Elevation Data num= 61

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	264.07	38.5	254.66	40.92	254.07	45.35	252.92	73.8	246.92
105.95	240.13	106.68	239.98	107.91	239.68	172.44	223.73	184.76	221.88
191.52	221.26	205.32	220	248.67	220	303.97	220	321.75	220.54
360.69	221	378.05	221.34	386.25	221.5	411.56	222	458	222
468.37	222	489.91	222.65	508.52	222.83	532.34	222.93	537.61	223.15
550.13	224	574.96	224	600.64	224	630.86	224	652.93	224.91
655.07	224.85	689.53	225	751.88	225	761.68	225.4	776.08	226
799.03	225.05	844.19	225	872.9	225.02	873.72	225.03	897.1	226
925.86	226	1020.08	226	1060.45	226	1090.73	226	1097.8	226.29
1108.2	227	1146.5	227	1187.55	227	1196.31	227.36	1233.44	227.63
1284.06	228.99	1302.19	229.74	1316.08	229.85	1376.94	231.47	1387.23	231.88
1392.28	231.88	1426.6	232.8	1508.6	235	1534.09	235.68	1577.33	236.84
1665.43	239.2								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.045	191.52	.045	378.05	.045

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
191.52	378.05	438.29	358.04	292.19	.1 .3

CROSS SECTION RIVER: Trabuco
REACH: 1 RS: 4462.909

INPUT
Description:
Station Elevation Data num= 64

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	252.96	10.39	249.95	24.8	246.09	33.83	243.66	79.5	234.34
80.72	234.04	81.64	233.84	113.17	227.69	134.19	224.24	151.05	221
154.66	220.85	163.69	220.46	170.56	220	225.72	217.48	277.27	220
298.29	220.64	310.09	221	310.93	221	327.79	221	345.48	221
385.47	221	407.69	221.95	408.92	222	411.12	222	424.25	222
448.65	222	496	222.63	523.87	223	544.36	223	577.28	223
585.8	223.35	601.39	224	659.26	224	739.92	224	744.45	224.07
749.52	224.14	807.13	224.23	824.74	224.26	847.14	224	868.68	224
917.06	224	937.57	224	953.13	223.59	975.16	224	1012.79	224
1026.6	223.63	1068.11	223.94	1143.84	224.51	1200.84	225.86	1202.92	225.89
1204.25	225.96	1210.34	226.08	1259.1	227	1313.67	229.31	1344.75	230
1348.94	230	1411.95	232.61	1423.32	233	1426.5	233.22	1444.99	233.74
1517.74	236.43	1562.71	238.24	1576.94	238.46	1611.01	239.87		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.045	154.66	.045	310.93	.045

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
154.66	310.93	417.9	389.73	373.18	.1 .3

CROSS SECTION RIVER: Trabuco
REACH: 1 RS: 4072.342

INPUT
Description:
Station Elevation Data num= 74

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	267.27	.04	267.25	3.27	265.93	44.88	249.76	50.68	247.25
84.8	231.09	91.31	227.43	98.09	225.37	114.52	220.04	115.04	220
130.27	219	150.48	218.51	167.85	213.73	191	213.86	192.92	219
221.23	219.6	221.87	219.62	230.58	220	261.13	220	300.22	220
312.18	220.51	334.7	220.49	372.35	221.11	409.69	221.57	412.42	221.6
435.28	221.81	456.88	221.27	474.34	221.16	497.47	221	557.31	221
589.67	221	604.3	221	630.23	221	643.57	221	659.89	220.63
680.32	221	703.08	221.2	711.34	221	768.79	220.29	792.46	220.5
815.78	220.43	847.91	220.32	862.78	220.13	907.03	220.06	914.13	220.19
933.27	220.06	951.04	220.19	960.14	220.24	1005.13	221	1024.03	221
1030.9	221.07	1040.57	221.18	1072.92	220.91	1098.81	221.34	1127.72	221.83
1151.81	222.24	1169.81	222.54	1308.74	224.89	1310.38	224.94	1315.14	225.28
1335.48	227	1349.04	228.15	1363.48	228.63	1399.73	229.86	1414.19	230.35
1467.37	232.15	1481.81	233	1492.64	233.32	1524.81	235.09	1551.8	236.57
1585.7	237.86	1602.65	239.15	1643.14	240.63	1643.44	240.69		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.045	115.04	.045	221.87	.045

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
115.04	221.87	470.24	523.55	578.76	.1 .3

CROSS SECTION RIVER: Trabuco
REACH: 1 RS: 3550.317

INPUT
Description:
Station Elevation Data num= 78

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	233.75	21.16	232	29.57	231.44	49.65	229.84	81.81	226.98
138.22	225.16	140.13	225.08	144.52	224.82	178.35	222.58	188.65	221.06
207.96	219.82	215.55	218.89	237.17	209.86	252.74	203.36	254.23	203.14
261.43	202.07	277.7	200.32	289.94	199	309.94	199.54	345.11	200
375.46	200	401.53	201.78	406.97	202.15	420.52	203.07	438.72	204.31
471.92	204.79	475.92	204.92	479.75	204.79	548	201.12	550.31	201
553.59	200.91	556.67	200.91	601.04	200.32	612.91	200.04	661.72	199.07
695.26	198	712.85	197.25	725.19	196.17	742.17	194.52	764.74	193.52
817.05	191.61	836	191	850.38	190.39	856.74	190.35	863.06	190.23
875.57	190	907.1	190.97	929.83	190	948	190.77	960.39	190.7

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   988.9     190  1000.2  190.28  1015.4     190 1029.79  190.26  1070.4   191.5
 1111.59  191.25 1140.94  192.15 1152.49  191.77 1187.85  191.03 1234.28  191.04
 1234.59  191.05 1235.42  191.03 1275.18     192 1290.43  196.48 1305.14  202.13
 1316.07   207.5 1331.25  210.31 1356.97   220.6 1375.51  221.91 1400.44  223.13
 1438.76     225 1445.88  225.17 1469.01  226.73 1534.57  231.12 1561.45     232
 1563.16  232.04 1573.69  232.75 1598.94  234.44

Manning's n Values          num=       3
     Sta   n Val      Sta   n Val      Sta   n Val
       0    .045   254.23    .045   420.52    .045

Bank Sta: Left   Right    Lengths: Left Channel   Right      Coeff Contr.   Expan.
        254.23  420.52             329.27   375.9  420.91             .1       .3
Ineffective Flow      num=       1
   Sta L   Sta R    Elev  Permanent
888        F
Right Levee      Station=  468.17       Elevation=  204.63

CROSS SECTION            RIVER: Trabuco
REACH: 1                    RS: 3171.804

INPUT
Description:
Station Elevation Data     num=      42
     Sta    Elev      Sta    Elev      Sta    Elev      Sta    Elev      Sta    Elev
       0  223.89    16.53  222.21    23.55  221.17    36.59  212.87    56.41   202.8
   58.53  202.43    78.29     199    86.82  188.84    99.68  188.37   122.13  199.13
     182     200   190.56     200   220.71  200.94   222.63  201.06   253.57  200.71
  316.58  202.89   317.57  202.92   318.83  202.97   319.77  202.99   321.38  203.03
  385.01  204.87   389.42  204.87   417.87  204.82   423.99  205.19   450.73  205.23
  458.56  205.24   483.59  205.28   505.08  204.65   527.26  205.33   556.79     205
  582.17     205   600.19   206.1   631.41   206.5   647.89  206.95   686.06  208.58
  713.61  209.19   719.66  209.55    736.2  210.38   779.33  211.56      796  212.01
  845.05  214.18   886.77  216.02

Manning's n Values          num=       3
     Sta   n Val      Sta   n Val      Sta   n Val
       0    .045    58.53    .045   316.58    .045

Bank Sta: Left   Right    Lengths: Left Channel   Right      Coeff Contr.   Expan.
         58.53  316.58             552.18  465.69  368.98             .1       .3

CROSS SECTION            RIVER: Trabuco
REACH: 1                    RS: 2703.892

INPUT
Description:
Station Elevation Data     num=      46
     Sta    Elev      Sta    Elev      Sta    Elev      Sta    Elev      Sta    Elev
       0  215.69    17.39  215.03    60.92  212.48    65.52  212.21    68.14  212.11
  127.28  210.65   134.94  210.12   140.04  209.42   143.67  209.38    165.3  208.85
  185.86  208.12   193.64     208   209.92  207.02   219.19  206.85   246.42  205.61
  257.59     205   258.04  204.98   258.71  204.98    270.1   203.5   315.11  194.99
  360.13  194.99   369.77     181   482.32     181   491.96  194.99   501.12     203
  530.53     203      539  203.31   545.38  203.27   585.12     204   609.32  204.89
  627.52  204.78   632.75  205.13   639.71  205.15   663.84  205.88   694.29     207
  709.67  207.28   766.02  208.31   780.08  208.57   815.21     210   832.88  210.27
  854.69  210.47   912.64  212.94   914.38  212.98   915.03  213.02   960.88  214.56
  978.21  214.77

Manning's n Values          num=       3
     Sta   n Val      Sta   n Val      Sta   n Val
       0    .045   360.13    .045   491.96    .045

Bank Sta: Left   Right    Lengths: Left Channel   Right      Coeff Contr.   Expan.
        360.13  491.96             182.5  176.55  162.72             .3       .5

BRIDGE                   RIVER: Trabuco
REACH: 1                    RS: 2600

INPUT
Description:
Distance from Upstream XS =       25
Deck/Roadway Width        =      100
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  205.26        0      280  205.26        0      280  205.26  200.26
     520     205      200      520     205        0     1000     205        0

Upstream Bridge Cross Section Data
Station Elevation Data     num=      46
     Sta    Elev      Sta    Elev      Sta    Elev      Sta    Elev      Sta    Elev
       0  215.69    17.39  215.03    60.92  212.48    65.52  212.21    68.14  212.11
  127.28  210.65   134.94  210.12   140.04  209.42   143.67  209.38    165.3  208.85
  185.86  208.12   193.64     208   209.92  207.02   219.19  206.85   246.42  205.61
  257.59     205   258.04  204.98   258.71  204.98    270.1   203.5   315.11  194.99
  360.13  194.99   369.77     181   482.32     181   491.96  194.99   501.12     203
  530.53     203      539  203.31   545.38  203.27   585.12     204   609.32  204.89
  627.52  204.78   632.75  205.13   639.71  205.15   663.84  205.88   694.29     207
  709.67  207.28   766.02  208.31   780.08  208.57   815.21     210   832.88  210.27
  854.69  210.47   912.64  212.94   914.38  212.98   915.03  213.02   960.88  214.56
  978.21  214.77

Manning's n Values          num=       3
     Sta   n Val      Sta   n Val      Sta   n Val
       0    .045   360.13    .045   491.96    .045
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Bank Sta: Left   Right     Coeff Contr.    Expan.
        360.13  491.96             .3        .5

Downstream  Deck/Roadway Coordinates
    num=        6
      Sta Hi Cord Lo Cord      Sta Hi Cord Lo Cord      Sta Hi Cord Lo Cord
        0   206.8        0      250   206.8        0      250   206.8   201.8
      490  207.15   202.15      490  207.15        0     1000  207.15       0

Downstream Bridge Cross Section Data
Station Elevation Data    num=       35
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  207.46    7.34  207.28   59.94   205.3   82.07  204.73   89.86  204.63
  100.61   204.5  224.09     203  273.95  199.78  293.25  194.99  331.83  194.99
  331.83  180.75  443.73  180.75  443.73  192.86  463.02   200.4  470.96     201
  489.05  201.39  509.05  201.81  517.92  202.22  530.03  202.52  633.79     206
  637.03     206   712.5  208.29  729.25  208.59   753.2  209.02  776.21     210
  807.62     210  823.18  210.28   843.3  210.43  894.69  211.52  915.96  212.95
  974.17     214  987.54  214.24  997.35  214.42  1034.5  215.09 1044.98   215.5

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .045  331.83    .045  443.73    .045

Bank Sta: Left   Right     Coeff Contr.    Expan.
        331.83  443.73             .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         =     205
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=      328    Downstream=      299
Upstream     num=        2
    Width   Elev    Width   Elev
        6    180        6  200.26
Downstream     num=        2
    Width   Elev    Width   Elev
        6    180        6  202.15

Pier Data
Pier Station     Upstream=      370    Downstream=      331
Upstream     num=        2
    Width   Elev    Width   Elev
        6    180        6  200.26
Downstream     num=        2
    Width   Elev    Width   Elev
        6    180        6  202.15

Pier Data
Pier Station     Upstream=      425    Downstream=      387
Upstream     num=        2
    Width   Elev    Width   Elev
        6    180        6  200.26
Downstream     num=        2
    Width   Elev    Width   Elev
        6    180        6  202.15

Pier Data
Pier Station     Upstream=      478    Downstream=      439
Upstream     num=        2
    Width   Elev    Width   Elev
        6    180        6  200.26
Downstream     num=        2
    Width   Elev    Width   Elev
        6    180        6  202.15

Number of Bridge Coefficient Sets =  1

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

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 #100
Opening : Single BR

  E.G. US. (ft)              204.52    Element                Inside BR US  Inside BR DS
  W.S. US. (ft)              204.25    E.G. Elev (ft)              204.40        204.04
  Q Total (cfs)            14238.00    W.S. Elev (ft)              203.77        203.47
  Q Bridge (cfs)           14238.00    Crit W.S. (ft)              189.63        189.43
  Q Weir (cfs)                         Max Chl Dpth (ft)           22.77         22.72
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Weir Sta Lft (ft)		Vel Total (ft/s)	6.10	5.64
Weir Sta Rgt (ft)		Flow Area (sq ft)	2335.47	2525.87
Weir Submerg		Froude # Chl	0.08	0.07
Weir Max Depth (ft)		Specif Force (cu ft)	30927.58	29719.76
Min El Weir Flow (ft)	206.81	Hydr Depth (ft)		
Min El Prs (ft)	200.25	W.P. Total (ft)	508.89	574.42
Delta EG (ft)	0.63	Conv. Total (cfs)	233610.7	264291.5
Delta WS (ft)	0.73	Top Width (ft)		
BR Open Area (sq ft)	2335.48	Frctn Loss (ft)	0.33	0.05
BR Open Vel (ft/s)	6.10	C & E Loss (ft)	0.03	0.10
Coef of Q		Shear Total (lb/sq ft)	1.06	0.80
Br Sel Method	Energy only	Power Total (lb/ft s)	6.49	4.49

Warning: The conveyance ratio (upstream 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: Trabuco
REACH: 1 RS: 2535.014

INPUT
Description:
Station Elevation Data num= 35

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	207.46	7.34	207.28	59.94	205.3	82.07	204.73	89.86	204.63
100.61	204.5	224.09	203	273.95	199.78	293.25	194.99	331.83	194.99
331.83	180.75	443.73	180.75	443.73	192.86	463.02	200.4	470.96	201
489.05	201.39	509.05	201.81	517.92	202.22	530.03	202.52	633.79	206
637.03	206	712.5	208.29	729.25	208.59	753.2	209.02	776.21	210
807.62	210	823.18	210.28	843.3	210.43	894.69	211.52	915.96	212.95
974.17	214	987.54	214.24	997.35	214.42	1034.5	215.09	1044.98	215.5

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.045	331.83	.045	443.73	.045

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
331.83	443.73	207.08	293.31	375.42	.3	.5

CROSS SECTION RIVER: Trabuco
REACH: 1 RS: 2228.293

INPUT
Description:
Station Elevation Data num= 45

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	205.03	1.03	205	60.11	203.21	65.52	202.96	68.29	202.84
95.35	201.28	99.54	201.03	99.95	201.01	102.89	200.93	210.05	198.33
217.48	197.91	231.51	180.27	258.52	180.8	273.95	189.25	293.09	199.71
309.87	199.68	356.19	200.38	377.5	201	396.73	200.63	502.03	200.2
528.63	200	550.25	199.34	575.4	199.42	627.55	200.29	648.47	201.27
665.72	202	670.82	202	690.97	202	695.79	202.02	698	202.1
759.18	204.34	803.29	204.84	809.49	204.76	825.47	204.57	842.37	204.25
847.09	204.21	852.05	204.13	907.09	204.4	959.87	205	959.9	205
959.92	205	959.96	205	1008.16	204.87	1035.1	204.24	1035.64	204.25

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.045	210.05	.045	1035.64	.045

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
210.05	1035.64	295.23	300.28	305.35	.1	.3

Right Levee Station= 381.99 Elevation= 200.87

CROSS SECTION RIVER: Trabuco
REACH: 1 RS: 1928.123

INPUT
Description:
Station Elevation Data num= 27

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	203.96	18.14	203.14	61.7	201.58	74.42	201.21	99.4	200.48
111.45	200	140.12	197.43	150.01	195.19	172.96	188.99	184.22	185.26
197.64	181.99	205.81	180	223.79	179.32	238.65	180	252.65	180.85
267.78	181.77	320.67	184.99	352.06	187.63	360.87	188.44	370.04	188.43
389.51	189.59	402.88	190	415.23	191.13	435.73	193	457.94	193
478.39	193.9	531.3	196.22						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.045	197.64	.045	267.78	.045

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
197.64	267.78	382.86	421.82	464.05	.1	.3

CROSS SECTION RIVER: Trabuco
REACH: 1 RS: 1506.558

INPUT
Description:
Station Elevation Data num= 35

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	210.67	49.02	209.32	88.46	208.24	169.72	206	223.15	204.53
292.96	202.3	315.13	201.6	341.48	201	351.48	200.32	370.84	199
387.84	194.95	408.57	189.72	424.19	184.2	430.97	182.17	433.2	181.5
452.12	179.7	457.82	179	468.2	179.21	496.89	180	526.54	181.63
528.44	181.74	569.6	184.54	604.76	185.48	630.19	185.67	642.3	186.49
676.44	188.82	678.99	189.03	681.09	189.1	691.95	189.48	745.61	191.95

748.56	191.96	753.97	192.09	844.12	193	844.15	193	884.95	194.58		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.045	430.97	.045	526.54	.045

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
430.97	526.54	498	493.67	493.18	.1 .3

CROSS SECTION RIVER: Trabuco
REACH: 1 RS: 1012.803

INPUT
Description:
Station Elevation Data num= 66

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	219.79	2.1	219.73	28.27	218.3	56.91	216.2	75.36	215.06
99.95	214.07	126.64	212.26	135.8	211.63	159.78	209.33	198.1	207.39
203.87	207	273.43	202.27	277.35	202	279.17	201.81	287.08	200.24
315.01	196.19	349.5	180.61	350.71	180.06	350.86	180	351.9	179.99
385.85	177.65	422.54	179	425.54	179.08	465.49	180.2	475.35	180.47
477.22	180.53	530.07	182	538.44	182	595.65	182.91	598.9	182.92
601.76	183	606.53	183	637.6	183.49	677.3	184.11	709.29	184.61
719.86	184.63	744.49	185.04	768.76	185.57	789.04	186	841.66	186
870.32	186.87	882.27	186.76	921.11	186.42	967.58	186.91	973.16	187
974.36	187	1015.75	187.65	1036.51	188	1038.26	188	1039.37	188.03
1041.94	188.05	1104.66	187.31	1110.12	187.17	1161.94	188	1170.41	188.14
1179.92	188.29	1203.28	188.66	1213.98	189.32	1259.66	189.29	1277.88	189.27
1301.91	190.75	1317.32	191	1334.78	191	1379.47	191	1393.25	191.22
1403.59	191.29								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.045	349.5	.045	477.22	.045

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
349.5	477.22	463.57	375.73	260.08	.1 .3

CROSS SECTION RIVER: Trabuco
REACH: 1 RS: 636.582

INPUT
Description:
Station Elevation Data num= 69

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	211.08	17.53	209.17	31.45	207.54	37.15	206.88	50.76	204.74
67.03	202.57	87.31	201.58	102.61	199.61	135.73	199.07	138.19	199
150.9	198.46	209.36	195.93	214.52	195.85	280.52	194.85	338.1	192.76
384.84	190.14	387.67	189.98	388.25	189.96	390.62	189.81	438.41	187.69
458.43	186	488.57	184.31	507.28	183.25	579.08	180	581.53	179.94
601.79	179.49	612.22	175.98	679.1	178.55	730.48	179.91	734.73	179.99
743.08	180.15	746.41	180.09	778.66	181	805.23	181.37	849.82	182
858.58	182	885.4	182.91	888	183	892.24	183	900.41	183.21
924.94	183.41	943.59	183.68	966.02	184	987.03	184	1005.77	184
1019.91	184.46	1036.85	185	1052.78	185	1061.46	185.26	1108.5	185.3
1140.42	185.33	1163	184.71	1184.28	185.37	1196.85	185	1239.45	185.84
1247.62	185.85	1254.45	185.87	1298.39	185.47	1332.19	186.5	1348.65	186.49
1378.79	187.83	1381.52	187.96	1384.59	188	1440.96	188.81	1447.27	189
1503.13	189.85	1513.02	190	1524.11	190	1563.26	188.88		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.045	581.53	.045	734.73	.045

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
581.53	734.73	427.52	400.49	374.85	.1 .3

CROSS SECTION RIVER: Trabuco
REACH: 1 RS: 235.821

INPUT
Description:
Station Elevation Data num= 48

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	188.96	13.86	188.61	76.72	187	110.93	187	115.82	186.96
192.31	184.7	218.01	184.39	233.13	184	291.92	183	333.88	182
418.19	180.18	428.63	179.74	446.15	177.66	467.73	176	473.19	175.02
497.93	172.23	506.84	171.23	517.34	170.85	532.89	172.26	545.94	173.43
564.81	177.55	593.94	179.61	624.14	180.5	636	180.85	702.34	180.93
705.36	181	714.7	181	743.38	181.48	812.08	181.81	819.65	182
828.56	182.11	888.98	183.77	895.83	183.97	897.85	184	956.2	184.75
968.25	185	969.38	185	987.17	185	1016.25	185.21	1030.43	185.32
1071.65	186.85	1076.88	187	1082.5	187.08	1136.08	187.75	1144.68	187.56
1175.03	186.9	1185.27	187	1205.64	187.33				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.045	497.93	.045	532.89	.045

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
497.93	532.89	0	0	0	.1 .3

Profile Output Table - Standard Table 1

Reach	River Sta	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
		(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	

1	4819.280	14238.00	220.00	226.90	224.85	227.37	0.003326	6.67	3018.06	947.14
0.46										
1	4462.909	14238.00	217.48	225.55		226.10	0.004456	7.48	2888.02	1061.65
0.53										
1	4072.342	14238.00	213.73	222.57	222.57	223.47	0.011636	10.29	2216.74	1064.84
0.80										
1	3550.317	14238.00	199.00	204.60	206.62	211.14	0.059201	20.61	708.09	209.16
1.79										
1	3171.804	14238.00	188.37	203.87	203.87	206.06	0.017455	11.88	1213.96	296.28
0.97										
1	2703.892	14238.00	181.00	204.25	188.79	204.52	0.000322	4.37	3700.51	327.63
0.16										
1	2600	Bridge								
1	2535.014	14238.00	180.75	203.53		203.89	0.000482	5.06	3392.85	379.19
0.19										
1	2228.293	14238.00	180.27	196.41	196.41	201.93	0.016393	18.86	755.10	68.38
1.00										
1	1928.123	14238.00	179.32	191.77	189.32	193.03	0.003968	10.53	1755.55	259.63
0.55										
1	1506.558	14238.00	179.00	189.13		190.80	0.006699	11.64	1514.80	271.58
0.69										
1	1012.803	14238.00	177.65	187.16		187.96	0.004183	8.57	2378.56	649.35
0.53										
1	636.582	14238.00	175.98	185.89		186.55	0.003762	7.76	2673.47	851.55
0.50										
1	235.821	14238.00	170.85	182.94	182.93	184.46	0.007003	14.04	1926.42	564.66
0.73										

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

```
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: trabuco
Project File : oso_trabuco.prj
Run Date and Time: 12/9/02 4:09:11 PM

Project in English units

Project Description:
I-5 Alternative - Trabuco Creek Crossing

PLAN DATA

Plan Title: proposed_trabuco
Plan File : p:\2PDA0104\Hydr\LHS\Modeling\Trabuco_LY6&7\hec-ras\oso_trabuco.p03

Geometry Title: trabuco_proposed3
Geometry File : p:\2PDA0104\Hydr\LHS\Modeling\Trabuco_LY6&7\hec-ras\oso_trabuco.g03

Flow Title : trabuco
Flow File : p:\2PDA0104\Hydr\LHS\Modeling\Trabuco_LY6&7\hec-ras\oso_trabuco.f02

Plan Summary Information:
Number of: Cross Sections = 13 Mulitple Openings = 0
Culverts = 0 Inline Weirs = 0
Bridges = 1

Computational Information
Water surface calculation tolerance = 0.003
Critical depth calculaton tolerance = 0.003
Maximum number of interations = 20
Maximum difference tolerance = 0.1
Flow tolerance factor = 0.001

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

FLOW DATA

Flow Title: trabuco
Flow File : p:\2PDA0104\Hydr\LHS\Modeling\Trabuco_LY6&7\hec-ras\oso_trabuco.f02

Flow Data (cfs)

River	Reach	RS	100HC	100	50	2
Trabuco	1	4819.280	34220	14238	9683	144

Boundary Conditions

River	Reach	Profile	Upstream	Downstream
Trabuco	1	100HC	Normal S = .007	Normal S = .007
Trabuco	1	100	Normal S = .007	Normal S = .007
Trabuco	1	50	Normal S = .007	Normal S = .007
Trabuco	1	2	Normal S = .007	Normal S = .007

GEOMETRY DATA

Geometry Title: trabuco_proposed3
Geometry File : p:\2PDA0104\Hydr\LHS\Modeling\Trabuco_LY6&7\hec-ras\oso_trabuco.g03

CROSS SECTION RIVER: Trabuco
REACH: 1 RS: 4819.280

INPUT
Description:

Station Elevation Data num= 61

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	264.07	38.5	254.66	40.92	254.07	45.35	252.92	73.8	246.92
105.95	240.13	106.68	239.98	107.91	239.68	172.44	223.73	184.76	221.88
191.52	221.26	205.32	220	248.67	220	303.97	220	321.75	220.54
360.69	221	378.05	221.34	386.25	221.5	411.56	222	458	222
468.37	222	489.91	222.65	508.52	222.83	532.34	222.93	537.61	223.15
550.13	224	574.96	224	600.64	224	630.86	224	652.93	224.91
655.07	224.85	689.53	225	751.88	225	761.68	225.4	776.08	226
799.03	225.05	844.19	225	872.9	225.02	873.72	225.03	897.1	226
925.86	226	1020.08	226	1060.45	226	1090.73	226	1097.8	226.29
1108.2	227	1146.5	227	1187.55	227	1196.31	227.36	1233.44	227.63
1284.06	228.99	1302.19	229.74	1316.08	229.85	1376.94	231.47	1387.23	231.88
1392.28	231.88	1426.6	232.8	1508.6	235	1534.09	235.68	1577.33	236.84
1665.43	239.2								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.045	191.52	.045	378.05	.045

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
191.52	378.05	438.29	358.04	292.19	.1 .3

CROSS SECTION RIVER: Trabuco
REACH: 1 RS: 4462.909

INPUT
Description:
Station Elevation Data num= 64

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	252.96	10.39	249.95	24.8	246.09	33.83	243.66	79.5	234.34
80.72	234.04	81.64	233.84	113.17	227.69	134.19	224.24	151.05	221
154.66	220.85	163.69	220.46	170.56	220	225.72	217.48	277.27	220
298.29	220.64	310.09	221	310.93	221	327.79	221	345.48	221
385.47	221	407.69	221.95	408.92	222	411.12	222	424.25	222
448.65	222	496	222.63	523.87	223	544.36	223	577.28	223
585.8	223.35	601.39	224	659.26	224	739.92	224	744.45	224.07
749.52	224.14	807.13	224.23	824.74	224.26	847.14	224	868.68	224
917.06	224	937.57	224	953.13	223.59	975.16	224	1012.79	224
1026.6	223.63	1068.11	223.94	1143.84	224.51	1200.84	225.86	1202.92	225.89
1204.25	225.96	1210.34	226.08	1259.1	227	1313.67	229.31	1344.75	230
1348.94	230	1411.95	232.61	1423.32	233	1426.5	233.22	1444.99	233.74
1517.74	236.43	1562.71	238.24	1576.94	238.46	1611.01	239.87		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.045	154.66	.045	310.93	.045

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
154.66	310.93	417.9	389.73	373.18	.1 .3

CROSS SECTION RIVER: Trabuco
REACH: 1 RS: 4072.342

INPUT
Description:
Station Elevation Data num= 74

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	267.27	.04	267.25	3.27	265.93	44.88	249.76	50.68	247.25
84.8	231.09	91.31	227.43	98.09	225.37	114.52	220.04	115.04	220
130.27	219	150.48	218.51	167.85	213.73	191	213.86	192.92	219
221.23	219.6	221.87	219.62	230.58	220	261.13	220	300.22	220
312.18	220.51	334.7	220.49	372.35	221.11	409.69	221.57	412.42	221.6
435.28	221.81	456.88	221.27	474.34	221.16	497.47	221	557.31	221
589.67	221	604.3	221	630.23	221	643.57	221	659.89	220.63
680.32	221	703.08	221.2	711.34	221	768.79	220.29	792.46	220.5
815.78	220.43	847.91	220.32	862.78	220.13	907.03	220.06	914.13	220.19
933.27	220.06	951.04	220.19	960.14	220.24	1005.13	221	1024.03	221
1030.9	221.07	1040.57	221.18	1072.92	220.91	1098.81	221.34	1127.72	221.83
1151.81	222.24	1169.81	222.54	1308.74	224.89	1310.38	224.94	1315.14	225.28
1335.48	227	1349.04	228.15	1363.48	228.63	1399.73	229.86	1414.19	230.35
1467.37	232.15	1481.81	233	1492.64	233.32	1524.81	235.09	1551.8	236.57
1585.7	237.86	1602.65	239.15	1643.14	240.63	1643.44	240.69		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.045	115.04	.045	221.87	.045

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
115.04	221.87	470.24	523.55	578.76	.1 .3

CROSS SECTION RIVER: Trabuco
REACH: 1 RS: 3550.317

INPUT
Description:
Station Elevation Data num= 78

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	233.75	21.16	232	29.57	231.44	49.65	229.84	81.81	226.98
138.22	225.16	140.13	225.08	144.52	224.82	178.35	222.58	188.65	221.06
207.96	219.82	215.55	218.89	237.17	209.86	252.74	203.36	254.23	203.14
261.43	202.07	277.7	200.32	289.94	199	309.94	199.54	345.11	200
375.46	200	401.53	201.78	406.97	202.15	420.52	203.07	438.72	204.31
471.92	204.79	475.92	204.92	479.75	204.79	548	201.12	550.31	201
553.59	200.91	556.67	200.91	601.04	200.32	612.91	200.04	661.72	199.07
695.26	198	712.85	197.25	725.19	196.17	742.17	194.52	764.74	193.52
817.05	191.61	836	191	850.38	190.39	856.74	190.35	863.06	190.23
875.57	190	907.1	190.97	929.83	190	948	190.77	960.39	190.7

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  988.9     190  1000.2  190.28  1015.4     190 1029.79  190.26  1070.4   191.5
1111.59  191.25 1140.94  192.15 1152.49  191.77 1187.85  191.03 1234.28  191.04
1234.59  191.05 1235.42  191.03 1275.18     192 1290.43  196.48 1305.14  202.13
1316.07   207.5 1331.25  210.31 1356.97   220.6 1375.51  221.91 1400.44  223.13
1438.76     225 1445.88  225.17 1469.01  226.73 1534.57  231.12 1561.45     232
1563.16  232.04 1573.69  232.75 1598.94  234.44

Manning's n Values          num=       3
     Sta   n Val      Sta   n Val      Sta   n Val
       0    .045   254.23    .045   420.52    .045

Bank Sta: Left   Right    Lengths: Left Channel   Right      Coeff Contr.    Expan.
        254.23  420.52             329.27   375.9  420.91              .1       .3
Ineffective Flow      num=        1
   Sta L   Sta R    Elev  Permanent
888        F
Right Levee     Station=  468.17      Elevation=  204.63

CROSS SECTION           RIVER: Trabuco
REACH: 1                   RS: 3171.804

INPUT
Description:
Station Elevation Data     num=       42
     Sta    Elev      Sta    Elev      Sta    Elev      Sta    Elev      Sta    Elev
       0  223.89    16.53  222.21    23.55  221.17    36.59  212.87    56.41   202.8
   58.53  202.43    78.29     199    86.82  188.84    99.68  188.37   122.13  199.13
     182     200   190.56     200   220.71  200.94  222.63  201.06   253.57  200.71
  316.58  202.89   317.57  202.92   318.83  202.97  319.77  202.99   321.38  203.03
  385.01  204.87   389.42  204.87   417.87  204.82  423.99  205.19   450.73  205.23
  458.56  205.24   483.59  205.28   505.08  204.65  527.26  205.33   556.79     205
  582.17     205   600.19   206.1   631.41   206.5  647.89  206.95   686.06  208.58
  713.61  209.19   719.66  209.55    736.2  210.38  779.33  211.56      796  212.01
  845.05  214.18   886.77  216.02

Manning's n Values          num=       3
     Sta   n Val      Sta   n Val      Sta   n Val
       0    .045    58.53    .045   316.58    .045

Bank Sta: Left   Right    Lengths: Left Channel   Right      Coeff Contr.    Expan.
         58.53  316.58             552.18  465.69  368.98              .1       .3

CROSS SECTION           RIVER: Trabuco
REACH: 1                   RS: 2703.892

INPUT
Description:
Station Elevation Data     num=       46
     Sta    Elev      Sta    Elev      Sta    Elev      Sta    Elev      Sta    Elev
       0  215.69    17.39  215.03    60.92  212.48    65.52  212.21    68.14  212.11
  127.28  210.65   134.94  210.12   140.04  209.42  143.67  209.38    165.3  208.85
  185.86  208.12   193.64     208   209.92  207.02  219.19  206.85   246.42  205.61
  257.59     205   258.04  204.98   258.71  204.98   270.1   203.5   315.11  194.99
  360.13  194.99   369.77     181   482.32     181  491.96  194.99   501.12     203
  530.53     203      539  203.31   545.38  203.27  585.12     204   609.32  204.89
  627.52  204.78   632.75  205.13   639.71  205.15  663.84  205.88   694.29     207
  709.67  207.28   766.02  208.31   780.08  208.57  815.21     210   832.88  210.27
  854.69  210.47   912.64  212.94   914.38  212.98  915.03  213.02   960.88  214.56
  978.21  214.77

Manning's n Values          num=       3
     Sta   n Val      Sta   n Val      Sta   n Val
       0    .045   360.13    .045   491.96    .045

Bank Sta: Left   Right    Lengths: Left Channel   Right      Coeff Contr.    Expan.
        360.13  491.96              182.5  176.55  162.72              .3       .5

BRIDGE                  RIVER: Trabuco
REACH: 1                   RS: 2600

INPUT
Description:
Distance from Upstream XS =       25
Deck/Roadway Width        =      150
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  205.26        0      280  205.26        0      280  205.26  200.26
     520     205      200      520     205        0     1000     205        0

Upstream Bridge Cross Section Data
Station Elevation Data     num=       46
     Sta    Elev      Sta    Elev      Sta    Elev      Sta    Elev      Sta    Elev
       0  215.69    17.39  215.03    60.92  212.48    65.52  212.21    68.14  212.11
  127.28  210.65   134.94  210.12   140.04  209.42  143.67  209.38    165.3  208.85
  185.86  208.12   193.64     208   209.92  207.02  219.19  206.85   246.42  205.61
  257.59     205   258.04  204.98   258.71  204.98   270.1   203.5   315.11  194.99
  360.13  194.99   369.77     181   482.32     181  491.96  194.99   501.12     203
  530.53     203      539  203.31   545.38  203.27  585.12     204   609.32  204.89
  627.52  204.78   632.75  205.13   639.71  205.15  663.84  205.88   694.29     207
  709.67  207.28   766.02  208.31   780.08  208.57  815.21     210   832.88  210.27
  854.69  210.47   912.64  212.94   914.38  212.98  915.03  213.02   960.88  214.56
  978.21  214.77

Manning's n Values          num=       3
     Sta   n Val      Sta   n Val      Sta   n Val
       0    .045   360.13    .045   491.96    .045
```

```
Bank Sta: Left   Right     Coeff Contr.   Expan.
       360.13  491.96             .3       .5

Downstream  Deck/Roadway Coordinates
    num=       6
     Sta Hi Cord Lo Cord      Sta Hi Cord Lo Cord      Sta Hi Cord Lo Cord
       0   206.8       0      250   206.8       0      250   206.8   201.8
     490  207.15  202.15      490  207.15       0     1000  207.15       0

Downstream Bridge Cross Section Data
Station Elevation Data    num=      35
     Sta     Elev     Sta     Elev     Sta     Elev     Sta     Elev     Sta     Elev
       0   207.46    7.34   207.28   59.94    205.3   82.07   204.73   89.86   204.63
  100.61    204.5  224.09      203  273.95   199.78  293.25   194.99  331.83   194.99
  331.83   180.75  443.73   180.75  443.73   192.86  463.02    200.4  470.96      201
  489.05   201.39  509.05   201.81  517.92   202.22  530.03   202.52  633.79      206
  637.03      206   712.5   208.29  729.25   208.59   753.2   209.02  776.21      210
  807.62      210  823.18   210.28   843.3   210.43  894.69   211.52  915.96   212.95
  974.17      214  987.54   214.24  997.35   214.42  1034.5   215.09 1044.98    215.5

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .045  331.83    .045  443.73    .045

Bank Sta: Left   Right     Coeff Contr.   Expan.
       331.83  443.73             .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           =     205
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=     328    Downstream=     299
Upstream     num=       2
    Width   Elev    Width   Elev
        6    180        6  200.26
Downstream     num=       2
    Width   Elev    Width   Elev
        6    180        6  202.15

Pier Data
Pier Station     Upstream=     370    Downstream=     331
Upstream     num=       2
    Width   Elev    Width   Elev
        6    180        6  200.26
Downstream     num=       2
    Width   Elev    Width   Elev
        6    180        6  202.15

Pier Data
Pier Station     Upstream=     425    Downstream=     387
Upstream     num=       2
    Width   Elev    Width   Elev
        6    180        6  200.26
Downstream     num=       2
    Width   Elev    Width   Elev
        6    180        6  202.15

Pier Data
Pier Station     Upstream=     478    Downstream=     439
Upstream     num=       2
    Width   Elev    Width   Elev
        6    180        6  200.26
Downstream     num=       2
    Width   Elev    Width   Elev
        6    180        6  202.15

Number of Bridge Coefficient Sets =  1

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

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 #100
Opening : Single BR

  E.G. US. (ft)              204.64    Element                Inside BR US  Inside BR DS
  W.S. US. (ft)              204.37    E.G. Elev (ft)              204.51        203.99
  Q Total (cfs)           14238.00    W.S. Elev (ft)              203.89        203.42
  Q Bridge (cfs)          14238.00    Crit W.S. (ft)              189.63        189.43
  Q Weir (cfs)                        Max Chl Dpth (ft)            22.89         22.67
```

Weir Sta Lft (ft)			Vel Total (ft/s)	6.10	5.64
Weir Sta Rgt (ft)			Flow Area (sq ft)	2335.48	2525.87
Weir Submerg			Froude # Chl	0.08	0.07
Weir Max Depth (ft)			Specif Force (cu ft)	31195.89	29596.86
Min El Weir Flow (ft)	206.81		Hydr Depth (ft)		
Min El Prs (ft)	200.25		W.P. Total (ft)	508.89	574.42
Delta EG (ft)	0.75		Conv. Total (cfs)	233610.7	264291.5
Delta WS (ft)	0.85		Top Width (ft)		
BR Open Area (sq ft)	2335.48		Frctn Loss (ft)	0.49	0.00
BR Open Vel (ft/s)	6.10		C & E Loss (ft)	0.03	0.10
Coef of Q			Shear Total (lb/sq ft)	1.06	0.80
Br Sel Method	Energy only		Power Total (lb/ft s)	6.49	4.49

Warning: The conveyance ratio (upstream 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: Trabuco
REACH: 1 RS: 2535.014

INPUT
Description:
Station Elevation Data num= 35

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	207.46	7.34	207.28	59.94	205.3	82.07	204.73	89.86	204.63
100.61	204.5	224.09	203	273.95	199.78	293.25	194.99	331.83	194.99
331.83	180.75	443.73	180.75	443.73	192.86	463.02	200.4	470.96	201
489.05	201.39	509.05	201.81	517.92	202.22	530.03	202.52	633.79	206
637.03	206	712.5	208.29	729.25	208.59	753.2	209.02	776.21	210
807.62	210	823.18	210.28	843.3	210.43	894.69	211.52	915.96	212.95
974.17	214	987.54	214.24	997.35	214.42	1034.5	215.09	1044.98	215.5

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.045	331.83	.045	443.73	.045

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
331.83	443.73	207.08	293.31	375.42	.3	.5

CROSS SECTION RIVER: Trabuco
REACH: 1 RS: 2228.293

INPUT
Description:
Station Elevation Data num= 45

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	205.03	1.03	205	60.11	203.21	65.52	202.96	68.29	202.84
95.35	201.28	99.54	201.03	99.95	201.01	102.89	200.93	210.05	198.33
217.48	197.91	231.51	180.27	258.52	180.8	273.95	189.25	293.09	199.71
309.87	199.68	356.19	200.38	377.5	201	396.73	200.63	502.03	200.2
528.63	200	550.25	199.34	575.4	199.42	627.55	200.29	648.47	201.27
665.72	202	670.82	202	690.97	202	695.79	202.02	698	202.1
759.18	204.34	803.29	204.84	809.49	204.76	825.47	204.57	842.37	204.25
847.09	204.21	852.05	204.13	907.09	204.4	959.87	205	959.9	205
959.92	205	959.96	205	1008.16	204.87	1035.1	204.24	1035.64	204.25

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.045	210.05	.045	1035.64	.045

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
210.05	1035.64	295.23	300.28	305.35	.1	.3

Right Levee Station= 381.99 Elevation= 200.87

CROSS SECTION RIVER: Trabuco
REACH: 1 RS: 1928.123

INPUT
Description:
Station Elevation Data num= 27

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	203.96	18.14	203.14	61.7	201.58	74.42	201.21	99.4	200.48
111.45	200	140.12	197.43	150.01	195.19	172.96	188.99	184.22	185.26
197.64	181.99	205.81	180	223.79	179.32	238.65	180	252.65	180.85
267.78	181.77	320.67	184.99	352.06	187.63	360.87	188.44	370.04	188.43
389.51	189.59	402.88	190	415.23	191.13	435.73	193	457.94	193
478.39	193.9	531.3	196.22						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.045	197.64	.045	267.78	.045

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
197.64	267.78	382.86	421.82	464.05	.1	.3

CROSS SECTION RIVER: Trabuco
REACH: 1 RS: 1506.558

INPUT
Description:
Station Elevation Data num= 35

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	210.67	49.02	209.32	88.46	208.24	169.72	206	223.15	204.53
292.96	202.3	315.13	201.6	341.48	201	351.48	200.32	370.84	199
387.84	194.95	408.57	189.72	424.19	184.2	430.97	182.17	433.2	181.5
452.12	179.7	457.82	179	468.2	179.21	496.89	180	526.54	181.63
528.44	181.74	569.6	184.54	604.76	185.48	630.19	185.67	642.3	186.49
676.44	188.82	678.99	189.03	681.09	189.1	691.95	189.48	745.61	191.95

748.56	191.96	753.97	192.09	844.12	193	844.15	193	884.95	194.58	

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.045	430.97	.045	526.54	.045

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
430.97	526.54	498	493.67	493.18	.1	.3

CROSS SECTION RIVER: Trabuco
REACH: 1 RS: 1012.803

INPUT
Description:
Station Elevation Data num= 66

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	219.79	2.1	219.73	28.27	218.3	56.91	216.2	75.36	215.06
99.95	214.07	126.64	212.26	135.8	211.63	159.78	209.33	198.1	207.39
203.87	207	273.43	202.27	277.35	202	279.17	201.81	287.08	200.24
315.01	196.19	349.5	180.61	350.71	180.06	350.86	180	351.9	179.99
385.85	177.65	422.54	179	425.54	179.08	465.49	180.2	475.35	180.47
477.22	180.53	530.07	182	538.44	182	595.65	182.91	598.9	182.92
601.76	183	606.53	183	637.6	183.49	677.3	184.11	709.29	184.61
719.86	184.63	744.49	185.04	768.76	185.57	789.04	186	841.66	186
870.32	186.87	882.27	186.76	921.11	186.42	967.58	186.91	973.16	187
974.36	187	1015.75	187.65	1036.51	188	1038.26	188	1039.37	188.03
1041.94	188.05	1104.66	187.31	1110.12	187.17	1161.94	188	1170.41	188.14
1179.92	188.29	1203.28	188.66	1213.98	189.32	1259.66	189.29	1277.88	189.27
1301.91	190.75	1317.32	191	1334.78	191	1379.47	191	1393.25	191.22
1403.59	191.29								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.045	349.5	.045	477.22	.045

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
349.5	477.22	463.57	375.73	260.08	.1	.3

CROSS SECTION RIVER: Trabuco
REACH: 1 RS: 636.582

INPUT
Description:
Station Elevation Data num= 69

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	211.08	17.53	209.17	31.45	207.54	37.15	206.88	50.76	204.74
67.03	202.57	87.31	201.58	102.61	199.61	135.73	199.07	138.19	199
150.9	198.46	209.36	195.93	214.52	195.85	280.52	194.85	338.1	192.76
384.84	190.14	387.67	189.98	388.25	189.96	390.62	189.81	438.41	187.69
458.43	186	488.57	184.31	507.28	183.25	579.08	180	581.53	179.94
601.79	179.49	612.22	175.98	679.1	178.55	730.48	179.91	734.73	179.99
743.08	180.15	746.41	180.09	778.66	181	805.23	181.37	849.82	182
858.58	182	885.4	182.91	888	183	892.24	183	900.41	183.21
924.94	183.41	943.59	183.68	966.02	184	987.03	184	1005.77	184
1019.91	184.46	1036.85	185	1052.78	185	1061.46	185.26	1108.5	185.3
1140.42	185.33	1163	184.71	1184.28	185.37	1196.85	185	1239.45	185.84
1247.62	185.85	1254.45	185.87	1298.39	185.47	1332.19	186.5	1348.65	186.49
1378.79	187.83	1381.52	187.96	1384.59	188	1440.96	188.81	1447.27	189
1503.13	189.85	1513.02	190	1524.11	190	1563.26	188.88		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.045	581.53	.045	734.73	.045

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
581.53	734.73	427.52	400.49	374.85	.1	.3

CROSS SECTION RIVER: Trabuco
REACH: 1 RS: 235.821

INPUT
Description:
Station Elevation Data num= 48

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	188.96	13.86	188.61	76.72	187	110.93	187	115.82	186.96
192.31	184.7	218.01	184.39	233.13	184	291.92	183	333.88	182
418.19	180.18	428.63	179.74	446.15	177.66	467.73	176	473.19	175.02
497.93	172.23	506.84	171.23	517.34	170.85	532.89	172.26	545.94	173.43
564.81	177.55	593.94	179.61	624.14	180.5	636	180.85	702.34	180.93
705.36	181	714.7	181	743.38	181.48	812.08	181.81	819.65	182
828.56	182.11	888.98	183.77	895.83	183.97	897.85	184	956.2	184.75
968.25	185	969.38	185	987.17	185	1016.25	185.21	1030.43	185.32
1071.65	186.85	1076.88	187	1082.5	187.08	1136.08	187.75	1144.68	187.56
1175.03	186.9	1185.27	187	1205.64	187.33				

Manning's n Values num= 3

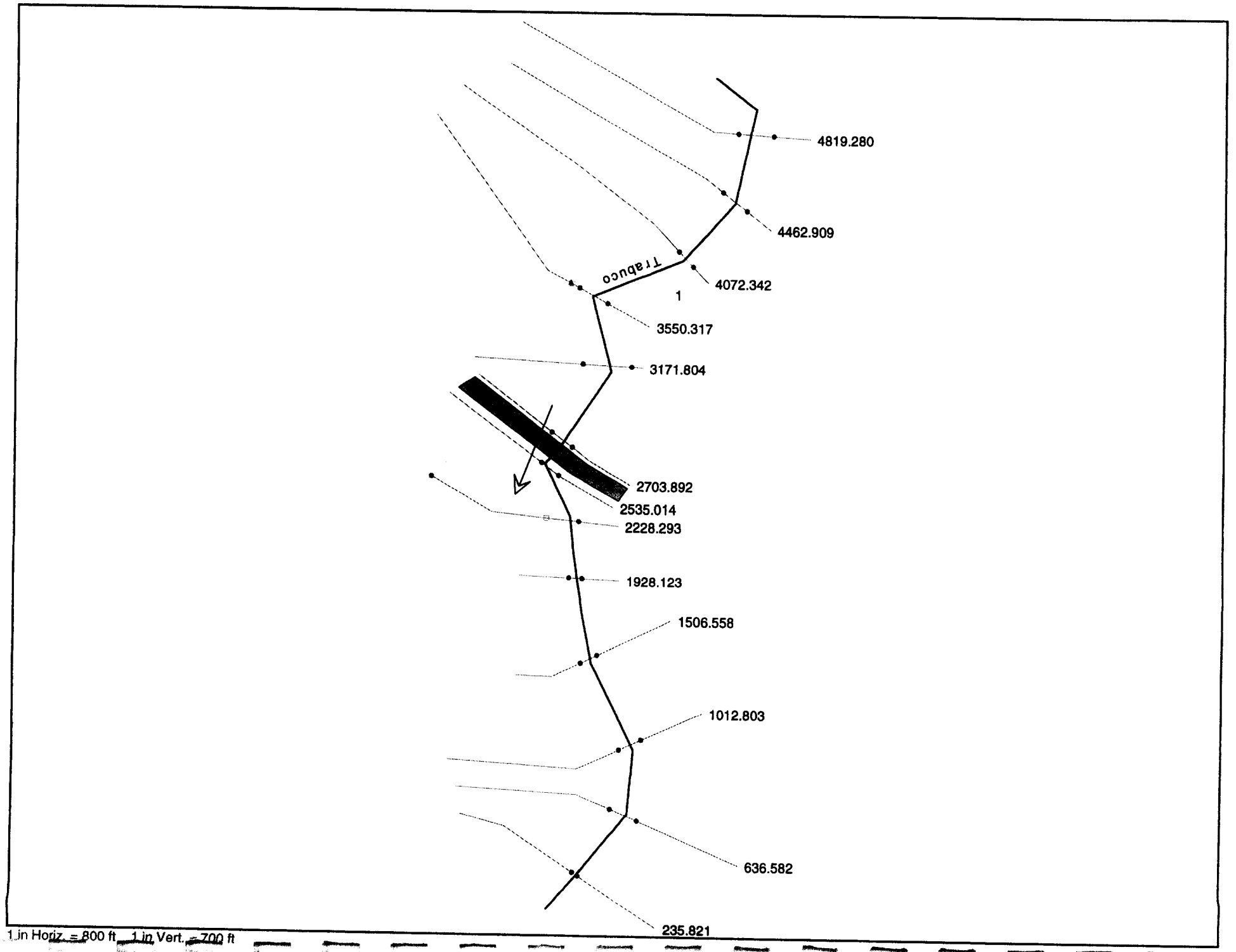
Sta	n Val	Sta	n Val	Sta	n Val
0	.045	497.93	.045	532.89	.045

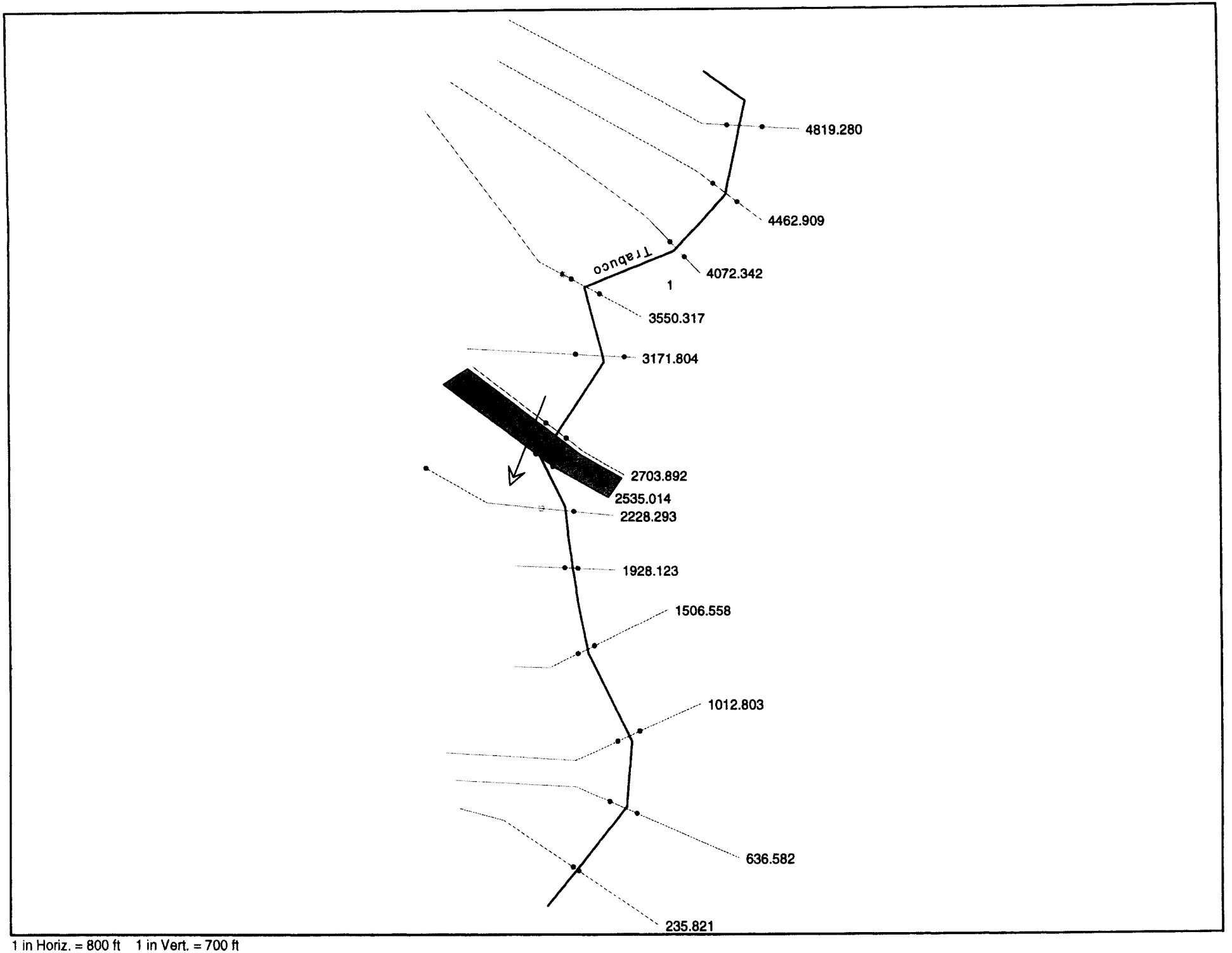
Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
497.93	532.89	0	0	0	.1	.3

Profile Output Table - Standard Table 1

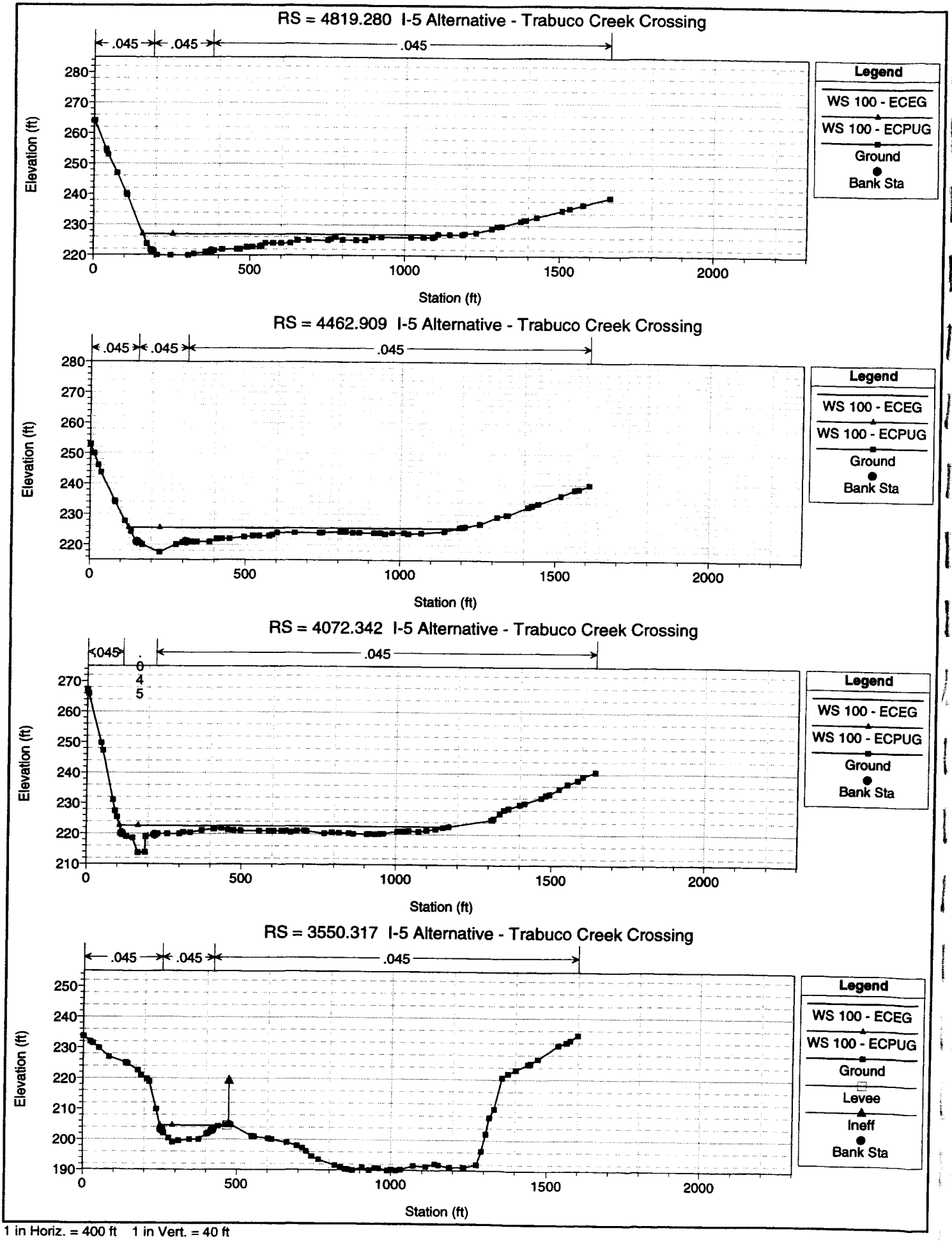
Reach	River Sta	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
		(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	

1	4819.280	14238.00	220.00	226.90	224.85	227.37	0.003326	6.67	3018.06	947.14
0.46										
1	4462.909	14238.00	217.48	225.55		226.10	0.004456	7.48	2888.02	1061.65
0.53										
1	4072.342	14238.00	213.73	222.57	222.57	223.47	0.011636	10.29	2216.74	1064.84
0.80										
1	3550.317	14238.00	199.00	204.60	206.62	211.14	0.059201	20.61	708.09	209.16
1.79										
1	3171.804	14238.00	188.37	203.87	203.87	206.06	0.017455	11.88	1213.96	296.28
0.97										
1	2703.892	14238.00	181.00	204.37	188.79	204.64	0.000315	4.33	3740.22	331.84
0.16										
1	2600	Bridge								
1	2535.014	14238.00	180.75	203.53		203.89	0.000482	5.06	3392.85	379.19
0.19										
1	2228.293	14238.00	180.27	196.41	196.41	201.93	0.016393	18.86	755.10	68.38
1.00										
1	1928.123	14238.00	179.32	191.77	189.32	193.03	0.003968	10.53	1755.55	259.63
0.55										
1	1506.558	14238.00	179.00	189.13		190.80	0.006699	11.64	1514.80	271.58
0.69										
1	1012.803	14238.00	177.65	187.16		187.96	0.004183	8.57	2378.56	649.35
0.53										
1	636.582	14238.00	175.98	185.89		186.55	0.003762	7.76	2673.47	851.55
0.50										
1	235.821	14238.00	170.85	182.94	182.93	184.46	0.007003	14.04	1926.42	564.66
0.73										

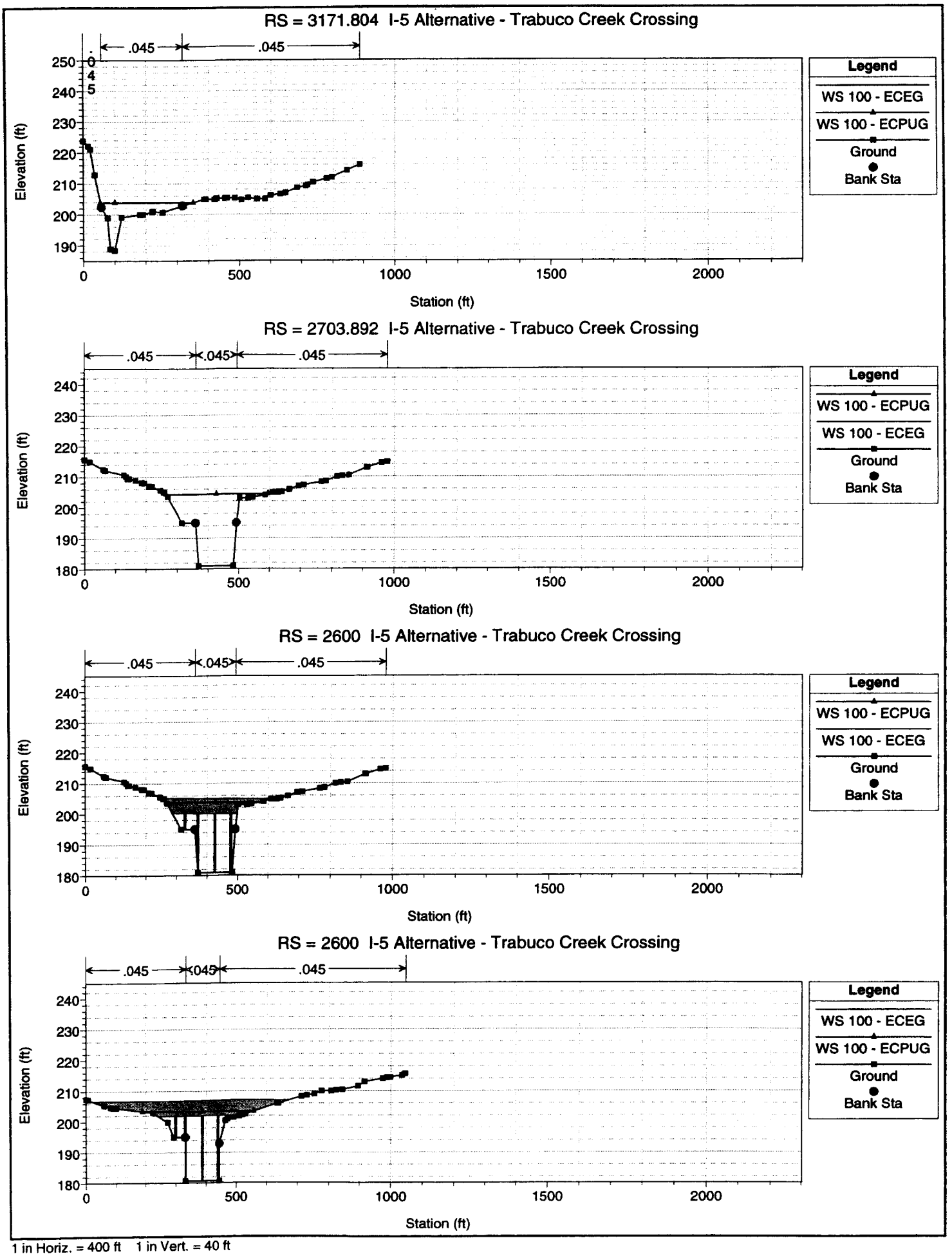

4819.280
4462.909
Trabuco
4072.342
1
3550.317
3171.804
2703.892
2535.014
2228.293
1928.123
1506.558
1012.803
636.582
235.821
1 in Horiz. = 800 ft 1 in Vert. = 700 ft



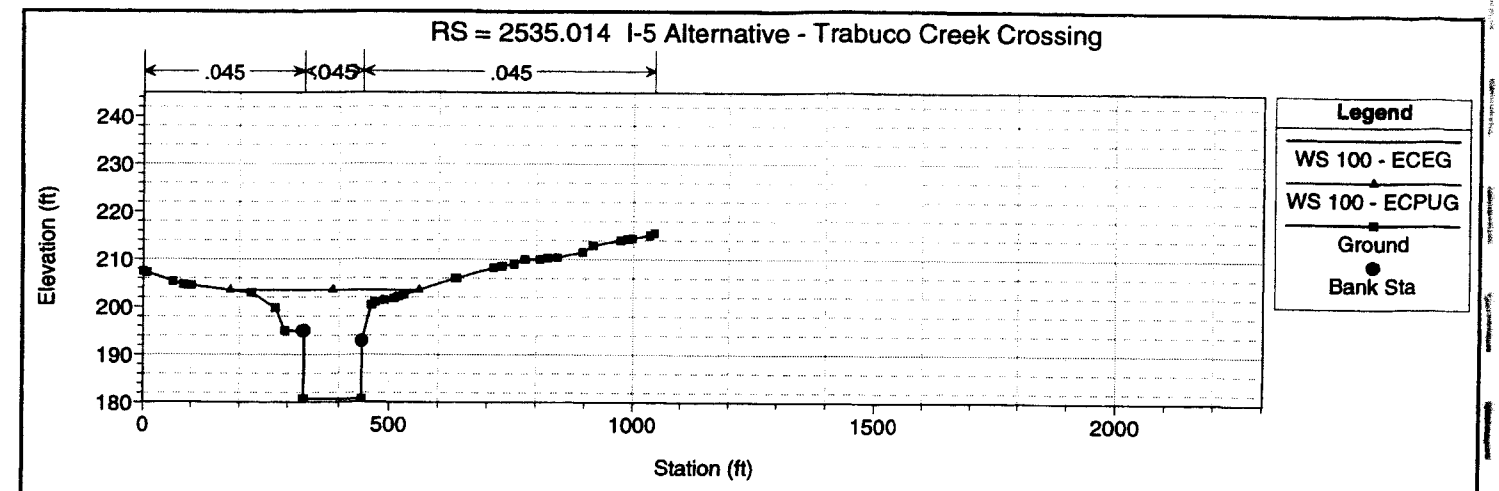
1 in Horiz. = 800 ft 1 in Vert. = 700 ft

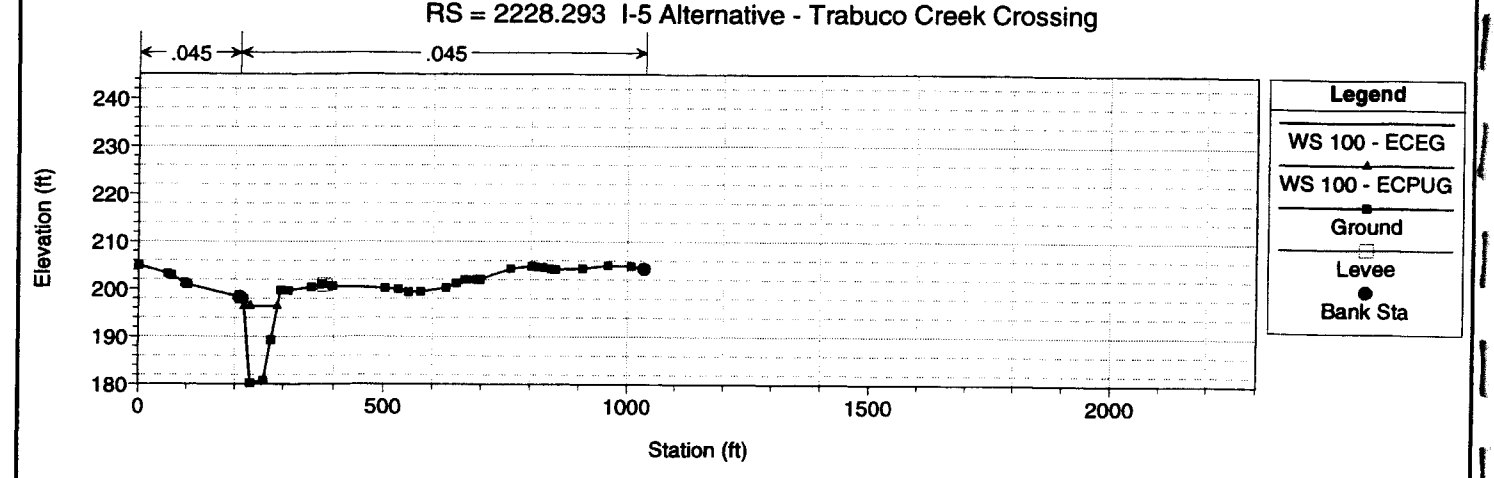


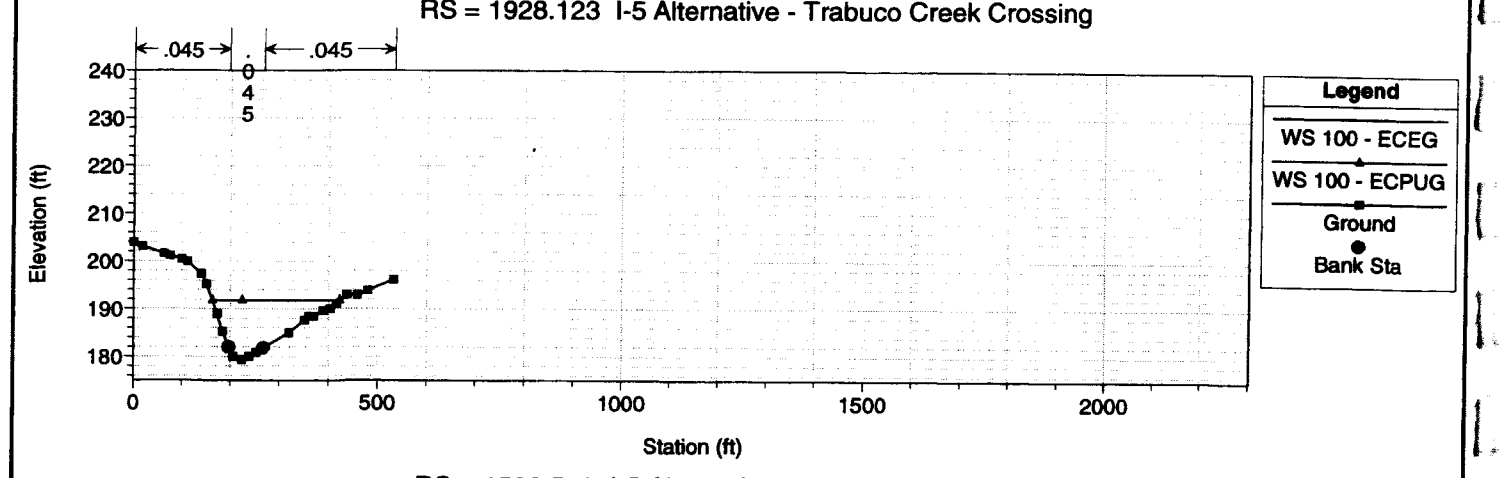
1 in Horiz. = 400 ft 1 in Vert. = 40 ft

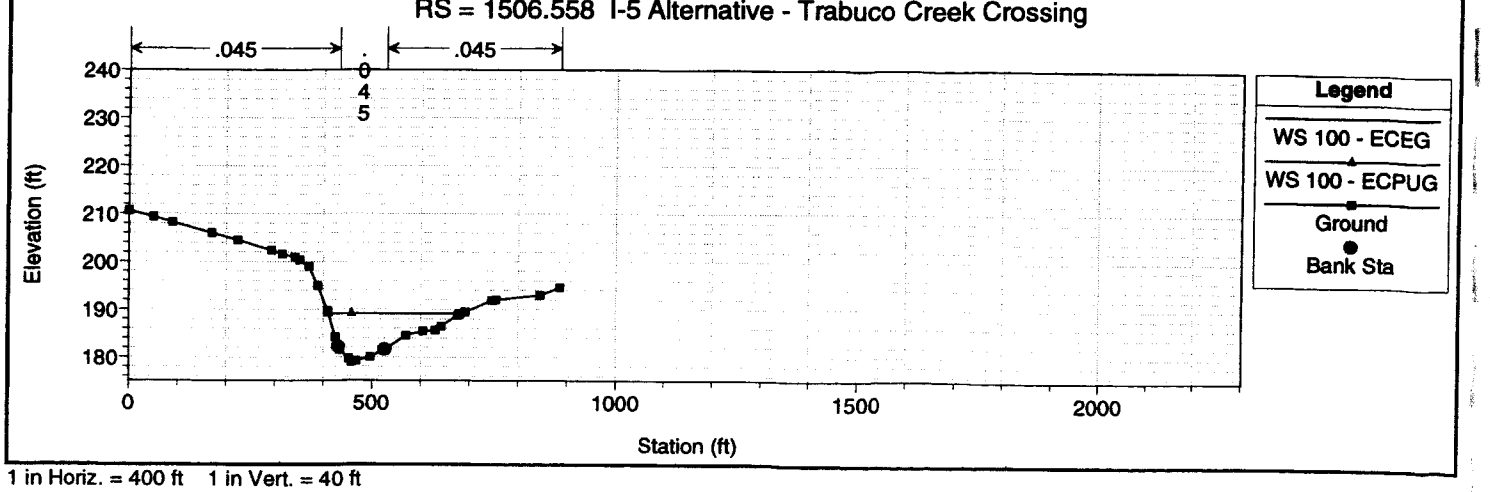


1 in Horiz. = 400 ft 1 in Vert. = 40 ft

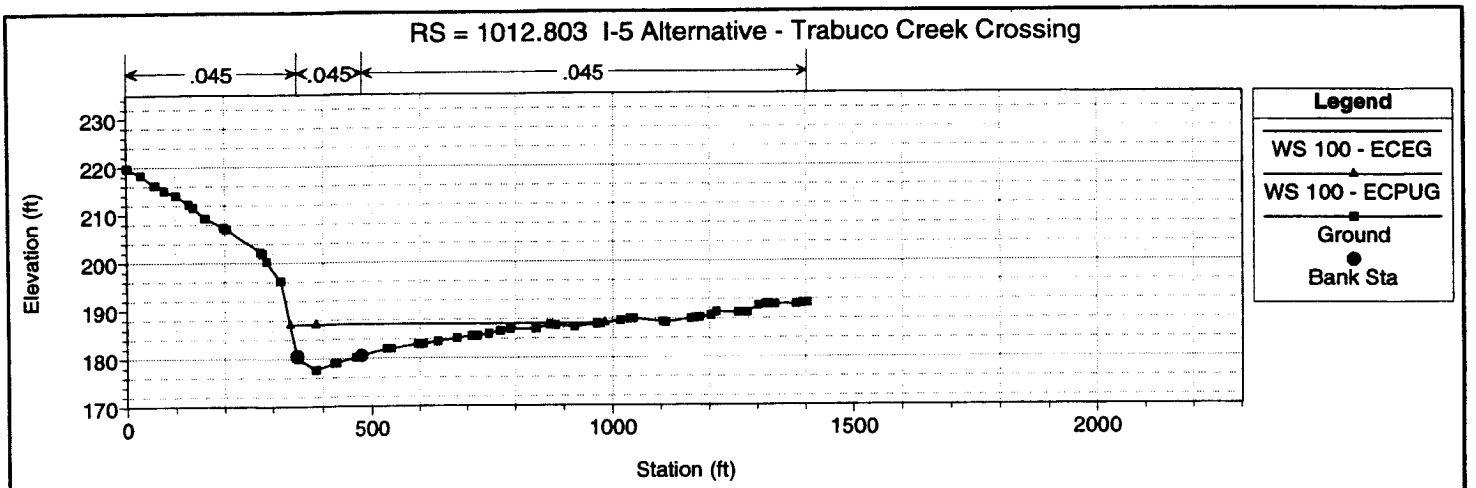


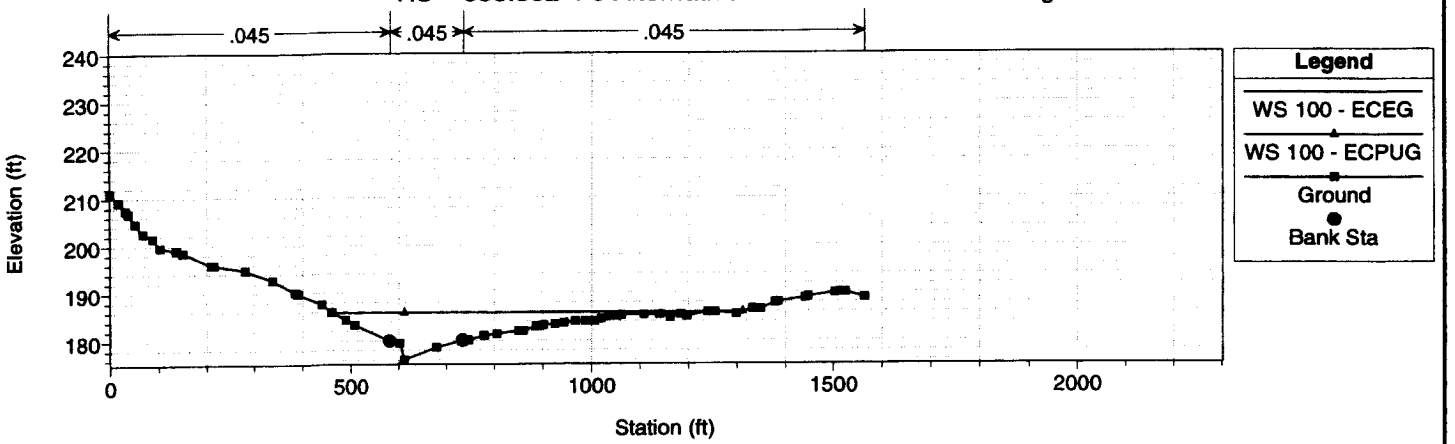


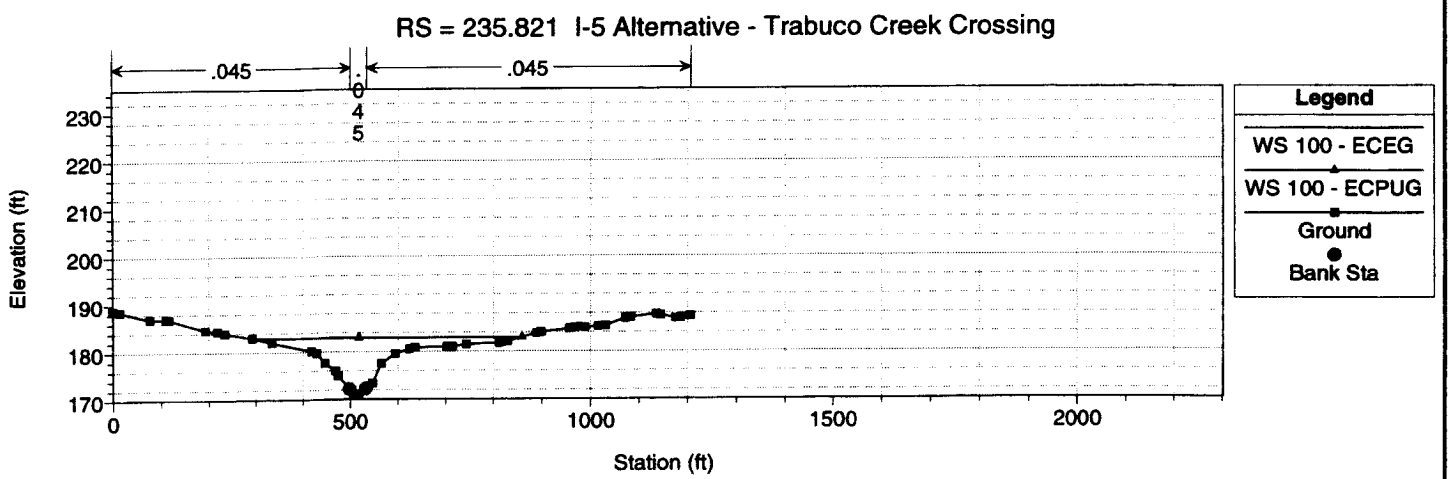




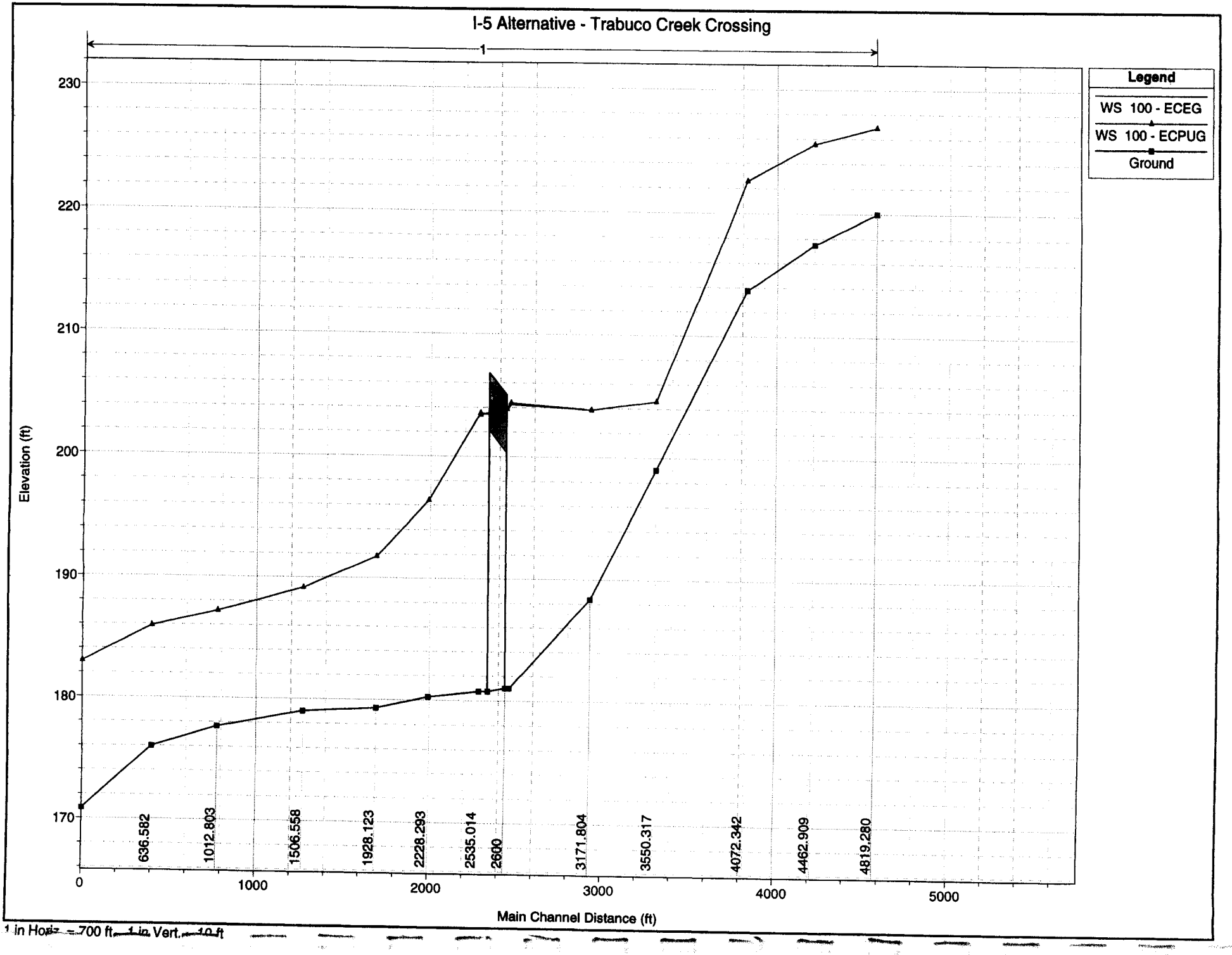
1 in Horiz. = 400 ft 1 in Vert. = 40 ft

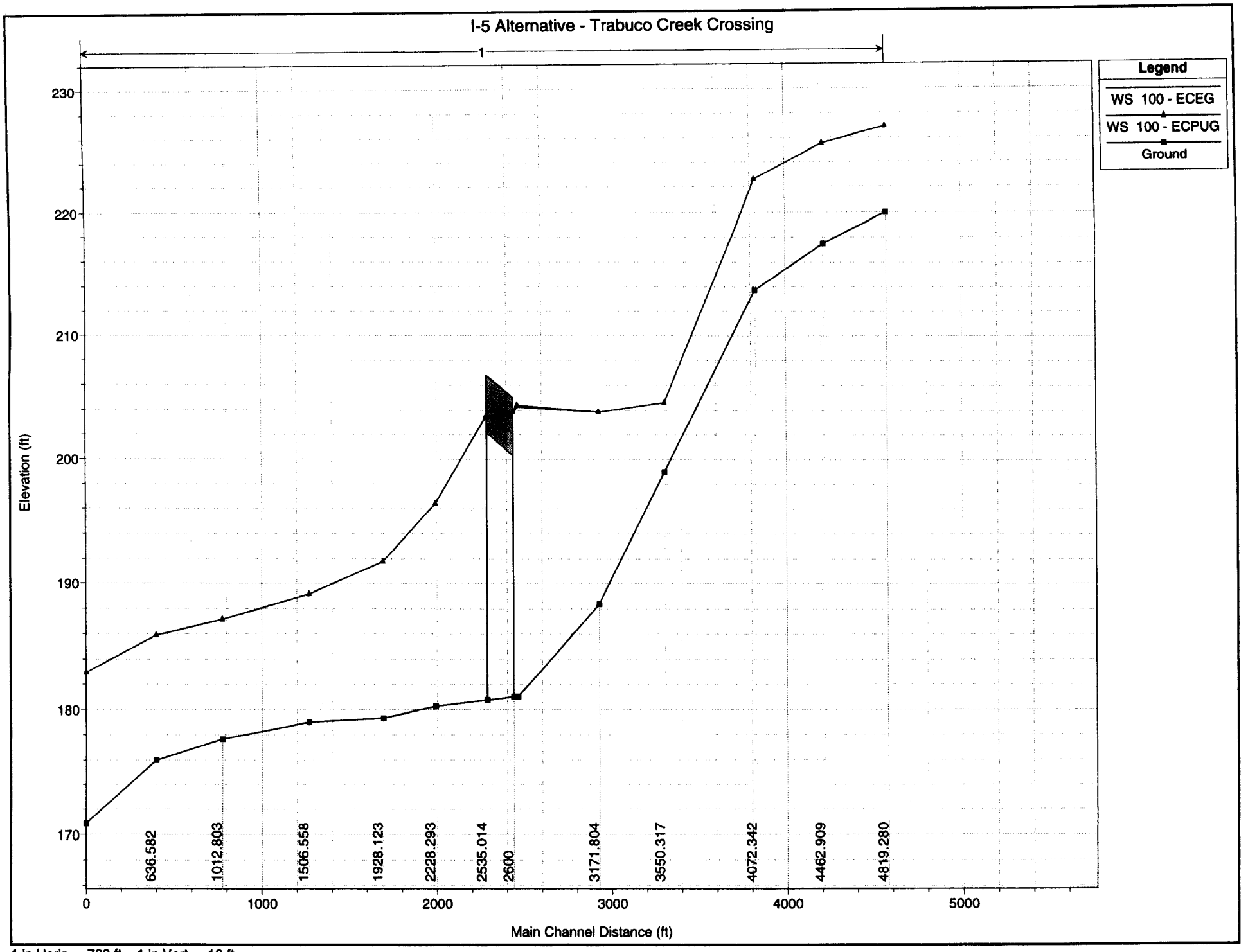






1 in Horiz. = 400 ft 1 in Vert. = 40 ft


I-5 Alternative - Trabuco Creek Crossing
1
Legend
WS 100 - ECEG
WS 100 - ECPUG
Ground
Elevation (ft)
230
220
210
200
190
180
170
0
1000
2000
3000
4000
5000
Main Channel Distance (ft)
636.582
1012.803
1506.558
1928.123
2228.293
2535.014
2600
3171.804
3550.317
4072.342
4462.909
4819.280
1 in Horiz. = 700 ft 1 in Vert. = 10 ft



1 in Horiz. = 700 ft 1 in Vert. = 10 ft

APPENDIX T
HYDRAULIC MODEL INPUT & RESULTS
I-5 ALTERNATIVE AT HORNO CREEK

Appendix T. **Hydraulic Model Input & Results**

I5 Alternative at Horno 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 widened bridge structures include:

1207	(3961)
1107	(3632)
389	(1278)
295	(969)

HEC-RAS Version 3.0.1 Mar 2001
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: horno
Project File : horno.prj
Run Date and Time: 2/24/03 1:24:39 PM

Project in English units

Project Description:
Horno Creek/I5 Crossing (LY89)

****

PLAN DATA

Plan Title: horno existing
Plan File : d:\projects\2PDA010400\hydr\LHS\Modeling\SanJuan_LY8910\hec-ras\horno.p04

Geometry Title: horno existing
Geometry File : d:\projects\2PDA010400\hydr\LHS\Modeling\SanJuan_LY8910\hec-ras\horno.g05

Flow Title : existing
Flow File : d:\projects\2PDA010400\hydr\LHS\Modeling\SanJuan_LY8910\hec-ras\horno.f01

Plan Summary Information:
Number of: Cross Sections = 11 Mulitple Openings = 0
Culverts = 3 Inline Weirs = 0
Bridges = 0

Computational Information
Water surface calculation tolerance = 0.003
Critical depth calculaton tolerance = 0.003
Maximum number of interations = 20
Maximum difference tolerance = 0.1
Flow tolerance factor = 0.001

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

****

FLOW DATA

Flow Title: existing
Flow File : d:\projects\2PDA010400\hydr\LHS\Modeling\SanJuan_LY8910\hec-ras\horno.f01

Flow Data (cfs)

River	Reach	RS	100yr HC	100 yr	50 yr	2yr
Horno Creek	1	6389.204*	3215	1074	709	2
Horno Creek	1	1879.048*	3206	1081	714	2
San Juan Creek	1	4692.380*	90280	36497	23494	446
San Juan Creek	1	3374.671*	90280	36497	23494	446

Boundary Conditions
****

* River	Reach	Profile	*	Upstream	Downstream
* Horno Creek	1	100yr HC	*	Normal S = .03	Normal S = .01
* Horno Creek	1	100 yr	*	Normal S = .03	Normal S = .01
* Horno Creek	1	50 yr	*	Normal S = .03	Normal S = .01
* Horno Creek	1	2yr	*	Normal S = .03	Normal S = .01

GEOMETRY DATA

Geometry Title: horno existing
Geometry File : d:\projects\2PDA010400\hydr\LHS\Modeling\SanJuan_LY8910\hec-ras\horno.g05

CROSS SECTION RIVER: Horno Creek
REACH: 1 RS: 6389.204

INPUT
Description:
Station Elevation Data num= 27

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	216.49	11.31	214.02	40.69	206.81	62.66	200.81	84.86	192.32
99.23	186.83	109.37	183.78	135.81	176.92	161.97	171.56	182.92	167.85
208.97	163.41	231.95	160.12	239.2	159.82	245.55	159.55	247.86	159.62
261.96	160	296.12	160.62	352.98	162.94	355.28	163.01	356.03	163.04
357.51	163.06	452.58	165	501.59	167	501.65	167	526.13	167
538.17	167.49	541.18	167.53						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.045	239.2	.045	247.86	.045

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
239.2	247.86	1025.75	982.2	938.93	.1	.3

CROSS SECTION OUTPUT Profile #100 yr

* E.G. Elev (ft)	* 162.86	* Element	* Left OB	* Channel	* Right OB
* Vel Head (ft)	* 0.44	* Wt. n-Val.	* 0.045	* 0.045	* 0.045
* W.S. Elev (ft)	* 162.42	* Reach Len. (ft)	* 1025.75	* 982.20	* 938.93
* Crit W.S. (ft)	* 162.02	* Flow Area (sq ft)	* 36.26	* 23.93	* 148.69
* E.G. Slope (ft/ft)	*0.011784	* Area (sq ft)	* 36.26	* 23.93	* 148.69
* Q Total (cfs)	* 1074.00	* Flow (cfs)	* 173.62	* 168.77	* 731.61
* Top Width (ft)	* 124.39	* Top Width (ft)	* 23.32	* 8.66	* 92.40
* Vel Total (ft/s)	* 5.14	* Avg. Vel. (ft/s)	* 4.79	* 7.05	* 4.92
* Max Chl Dpth (ft)	* 2.87	* Hydr. Depth (ft)	* 1.55	* 2.76	* 1.61
* Conv. Total (cfs)	* 9893.9	* Conv. (cfs)	* 1599.4	* 1554.8	* 6739.7
* Length Wtd. (ft)	* 978.20	* Wetted Per. (ft)	* 23.49	* 8.67	* 92.45
* Min Ch El (ft)	* 159.55	* Shear (lb/sq ft)	* 1.14	* 2.03	* 1.18
* Alpha	* 1.06	* Stream Power (lb/ft s)	* 5.44	* 14.33	* 5.82
* Frctn Loss (ft)	* 10.20	* Cum Volume (acre-ft)	* 7.18	* 16.04	* 8.17
* C & E Loss (ft)	* 0.07	* Cum SA (acres)	* 8.23	* 4.27	* 10.32

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

CROSS SECTION RIVER: Horno Creek
REACH: 1 RS: 5408.040

INPUT
Description:
Station Elevation Data num= 26

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	167.14	40.46	162.12	46.09	161.59	81.82	159.51	98	158.83
161.31	157.12	162.58	157.09	175.1	156.23	205.88	153.83	209.95	153.71
247.24	151.8	269.19	151.47	280.17	151.41	323.13	151.16	329.95	151.25
377.08	151.86	413.33	151.66	437.99	151.39	454.01	151	467.34	150.68
477.54	150.43	486.57	150.62	505.39	151	522.38	151	536.72	151.48
582.72	155.24								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.045	467.34	.045	486.57	.045

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

```
      467.34  486.57          1120.45 1261.85    1187            .1       .3

CROSS SECTION OUTPUT    Profile #100 yr
*********************************************************************************************
* E.G. Elev (ft)        *  152.59  * Element              *  Left OB *  Channel * Right OB *
* Vel Head (ft)         *    0.19  * Wt. n-Val.           *   0.045  *   0.045  *   0.045  *
* W.S. Elev (ft)        *  152.40  * Reach Len. (ft)      * 1120.45  * 1261.85  * 1187.00  *
* Crit W.S. (ft)        *  152.14  * Flow Area (sq ft)    *  210.57  *   35.67  *   75.25  *
* E.G. Slope (ft/ft)    *0.009285  * Area (sq ft)         *  210.57  *   35.67  *   75.25  *
* Q Total (cfs)         * 1074.00  * Flow (cfs)           *  628.52  *  171.27  *  274.21  *
* Top Width (ft)        *  312.31  * Top Width (ft)       *  231.73  *   19.23  *   61.35  *
* Vel Total (ft/s)      *    3.34  * Avg. Vel. (ft/s)     *    2.98  *    4.80  *    3.64  *
* Max Chl Dpth (ft)     *    1.97  * Hydr. Depth (ft)     *    0.91  *    1.85  *    1.23  *
* Conv. Total (cfs)     * 11145.6  * Conv. (cfs)          *  6522.6  *  1777.4  *  2845.6  *
* Length Wtd. (ft)      * 1194.37  * Wetted Per. (ft)     *  231.76  *   19.24  *   61.40  *
* Min Ch El (ft)        *  150.43  * Shear (lb/sq ft)     *    0.53  *    1.07  *    0.71  *
* Alpha                 *    1.10  * Stream Power (lb/ft s) *  1.57  *    5.16  *    2.59  *
* Frctn Loss (ft)       *   11.29  * Cum Volume (acre-ft) *    4.27  *   15.36  *    5.76  *
* C & E Loss (ft)       *    0.03  * Cum SA (acres)       *    5.22  *    3.96  *    8.66  *
*********************************************************************************************

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

CROSS SECTION          RIVER: Horno Creek
REACH: 1                 RS: 4165.110

INPUT
Description:
Station Elevation Data    num=      34
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*********************************************************************************
       0  169.34    9.96   166.1    57.3  146.92   59.05  146.27   59.72     146
   61.24  145.57    84.6  139.29   90.24  139.24   94.94  139.21  105.47  135.23
  118.89  139.21  159.24  139.79  166.71     140     209     140  278.72  141.68
  297.22  142.27   333.4  142.35  346.16  142.17  408.04  140.41  428.01  140.18
  453.97  140.12  459.29  140.07  502.39     141  502.78  140.98  525.66  143.68
  546.27   143.9  580.34     147  595.45  148.83     602  150.38  633.24  155.88
  652.03  157.89  676.73  162.01   688.5  161.27  716.19  160.72

Manning's n Values        num=       3
     Sta   n Val      Sta   n Val      Sta   n Val
*********************************************
       0    .045    90.24    .045  118.89    .045

Bank Sta: Left   Right    Lengths: Left Channel   Right      Coeff Contr.    Expan.
          90.24  118.89             267.21  282.79  435.59             .1       .3

CROSS SECTION OUTPUT    Profile #100 yr
*********************************************************************************************
* E.G. Elev (ft)        *  141.27  * Element              *  Left OB *  Channel * Right OB *
* Vel Head (ft)         *    0.48  * Wt. n-Val.           *   0.045  *   0.045  *   0.045  *
* W.S. Elev (ft)        *  140.79  * Reach Len. (ft)      *  267.21  *  282.79  *  435.59  *
* Crit W.S. (ft)        *  140.79  * Flow Area (sq ft)    *   12.76  *   92.80  *  149.39  *
* E.G. Slope (ft/ft)    *0.009617  * Area (sq ft)         *   12.76  *   92.80  *  149.39  *
* Q Total (cfs)         * 1074.00  * Flow (cfs)           *   44.53  *  638.59  *  390.88  *
* Top Width (ft)        *  260.48  * Top Width (ft)       *   11.21  *   28.65  *  220.62  *
* Vel Total (ft/s)      *    4.21  * Avg. Vel. (ft/s)     *    3.49  *    6.88  *    2.62  *
* Max Chl Dpth (ft)     *    5.56  * Hydr. Depth (ft)     *    1.14  *    3.24  *    0.68  *
* Conv. Total (cfs)     * 10951.7  * Conv. (cfs)          *   454.1  *  6511.8  *  3985.8  *
* Length Wtd. (ft)      *  310.59  * Wetted Per. (ft)     *   11.41  *   29.95  *  220.65  *
* Min Ch El (ft)        *  135.23  * Shear (lb/sq ft)     *    0.67  *    1.86  *    0.41  *
* Alpha                 *    1.76  * Stream Power (lb/ft s) *  2.34  *   12.80  *    1.06  *
* Frctn Loss (ft)       *    1.90  * Cum Volume (acre-ft) *    1.40  *   13.50  *    2.70  *
* C & E Loss (ft)       *    0.01  * Cum SA (acres)       *    2.10  *    3.26  *    4.82  *
*********************************************************************************************

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 conveyance ratio (upstream conveyance divided by downstream conveyance) is less
         than 0.7 or greater than 1.4.  This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross
         section.  This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to
         critical depth, the calculated water 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: Horno Creek
REACH: 1                 RS: 3961.191
```

INPUT
Description:
Station Elevation Data num= 24

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	182.63	37.2	173.82	39.31	173.04	41.42	172.18	83.62	151.27
85.73	149.96	87.83	149	120.5	137	120.5	128	137	128
137	137	155.35	142.54	176.45	145.73	201.76	147.91	222.86	150.64
227.07	150.27	238.31	148.82	248.17	147.55	264.9	146.83	269.28	146.64
273.49	146.73	294.59	149	315.69	150.82	336.6	152.85		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.045	120.5	.045	137	.045

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
120.5	137	322.94	380.54	744.62	.3	.5

CROSS SECTION OUTPUT Profile #100 yr

E.G. Elev (ft)	138.96	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.60	Wt. n-Val.	0.045	0.045	0.045
W.S. Elev (ft)	138.36	Reach Len. (ft)	322.94	380.54	744.62
Crit W.S. (ft)	133.08	Flow Area (sq ft)	2.51	170.88	3.05
E.G. Slope (ft/ft)	0.004220	Area (sq ft)	2.51	170.88	3.05
Q Total (cfs)	1074.00	Flow (cfs)	3.98	1065.12	4.90
Top Width (ft)	24.69	Top Width (ft)	3.69	16.50	4.49
Vel Total (ft/s)	6.09	Avg. Vel. (ft/s)	1.59	6.23	1.61
Max Chl Dpth (ft)	10.36	Hydr. Depth (ft)	0.68	10.36	0.68
Conv. Total (cfs)	16532.7	Conv. (cfs)	61.2	16396.0	75.5
Length Wtd. (ft)	380.54	Wetted Per. (ft)	3.93	34.50	4.69
Min Ch El (ft)	128.00	Shear (lb/sq ft)	0.17	1.30	0.17
Alpha	1.04	Stream Power (lb/ft s)	0.27	8.13	0.28
Frctn Loss (ft)		Cum Volume (acre-ft)	1.36	12.65	1.94
C & E Loss (ft)		Cum SA (acres)	2.05	3.12	3.70

CULVERT RIVER: Horno Creek
REACH: 1 RS: 3800

INPUT
Description:
Distance from Upstream XS = 130
Deck/Roadway Width = 110
Weir Coefficient = 2.6
Upstream Deck/Roadway Coordinates
num= 2

Sta Hi Cord	Lo Cord	Sta Hi Cord	Lo Cord
0	140	135	1000	140	135

Upstream Bridge Cross Section Data
Station Elevation Data num= 24

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	182.63	37.2	173.82	39.31	173.04	41.42	172.18	83.62	151.27
85.73	149.96	87.83	149	120.5	137	120.5	128	137	128
137	137	155.35	142.54	176.45	145.73	201.76	147.91	222.86	150.64
227.07	150.27	238.31	148.82	248.17	147.55	264.9	146.83	269.28	146.64
273.49	146.73	294.59	149	315.69	150.82	336.6	152.85		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.045	120.5	.045	137	.045

Bank Sta: Left	Right	Coeff Contr.	Expan.
120.5	137	.3	.5

Downstream Deck/Roadway Coordinates
num= 2

Sta Hi Cord	Lo Cord	Sta Hi Cord	Lo Cord
0	138.7	133.7	1000	138.7	133.7

Downstream Bridge Cross Section Data
Station Elevation Data num= 34

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev

```
      0  148.49   53.61  146.42   58.66  146.22   71.03  145.49  110.84  143.36
 121.69  143.09  146.51  142.82  154.12  142.53  179.24  142.03  222.96  140.25
 224.92  140.26  226.99  140.18  248.14  140.67  268.14  140.28  271.35  140.43
 274.75     140  313.31  139.19  317.78   139.3  322.51   138.8  346.94     138
 358.49  137.25  377.61  137.27     396     136     396   126.7   412.5   126.7
  412.5     136  417.24  136.52  450.41  136.68  465.78  136.79   480.3   137.3
 513.54     138  539.21  138.54  549.94  139.24   578.7  141.11

Manning's n Values         num=       3
     Sta   n Val      Sta   n Val      Sta   n Val
*********************************************
       0    .045      396    .045   412.5    .045

Bank Sta: Left   Right     Coeff Contr.   Expan.
           396   412.5              .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         =   138.7
Energy head used in spillway design         =
Spillway height used in design              =
Weir crest shape                            = Broad Crested

Number of Culverts =  1

Culvert Name      Shape      Rise    Span
Culvert #1            Box       7       8
FHWA Chart # 8 - flared wingwalls
FHWA Scale # 1 - Wingwall flared 30 to 75 deg.
Solution Criteria = Highest U.S. EG
Culvert Upstrm Dist  Length    n Value   Entrance Loss Coef   Exit Loss Coef
                 85     210       .013                   .2                1
Number of Barrels =  2
Upstream   Elevation =  128
Centerline Stations
    Sta.     Sta.
   124.5      133
Downstream Elevation =  126.7
Centerline Stations
    Sta.     Sta.
     400    408.5

CULVERT OUTPUT    Profile #100 yr
Culvert ID : Culvert #1
**************************************************************************
* Culv Q (cfs)          * 1074.00  * Culv Ful Lngh (ft)    *  210.00  *
* # Barrels             *       2  * Culv Vel US (ft/s)    *    9.59  *
* Q Barrel (cfs)        *  537.00  * Culv Vel DS (ft/s)    *    9.59  *
* E.G. US. (ft)         *  138.96  * Culv Inv El Up (ft)   *  128.00  *
* W.S. US. (ft)         *  138.36  * Culv Inv El Dn (ft)   *  126.70  *
* E.G. DS (ft)          *  137.26  * Culv Frctn Ls (ft)    *    0.64  *
* W.S. DS (ft)          *  136.60  * Culv Ext Lss (ft)     *    0.76  *
* Delta EG (ft)         *    1.69  * Culv Ent Lss (ft)     *    0.29  *
* Delta WS (ft)         *    1.76  * Q Weir (cfs)          *          *
* E.G. IC (ft)          *  136.62  * Weir Sta Lft (ft)     *          *
* E.G. OC (ft)          *  138.96  * Weir Sta Rgt (ft)     *          *
* Culvert Control       *  Outlet  * Weir Submerg          *          *
* Culv WS Inlet (ft)    *  135.00  * Weir Max Depth (ft)   *          *
* Culv WS Outlet (ft)   *  133.70  * Weir Avg Depth (ft)   *          *
* Culv Nml Depth (ft)   *          * Wr Flw Area (sq ft)   *          *
* Culv Crt Depth (ft)   *    5.19  * Min El Weir Flow (ft) *  140.01  *
**************************************************************************

CROSS SECTION          RIVER: Horno Creek
REACH: 1                  RS: 3632.365

INPUT
Description:
Station Elevation Data    num=      34
     Sta    Elev      Sta    Elev      Sta    Elev      Sta    Elev      Sta    Elev
*********************************************************************************
       0  148.49   53.61  146.42   58.66  146.22   71.03  145.49  110.84  143.36
  121.69  143.09  146.51  142.82  154.12  142.53  179.24  142.03  222.96  140.25
  224.92  140.26  226.99  140.18  248.14  140.67  268.14  140.28  271.35  140.43
  274.75     140  313.31  139.19  317.78   139.3  322.51   138.8  346.94     138
  358.49  137.25  377.61  137.27     396     136     396   126.7   412.5   126.7
   412.5     136  417.24  136.52  450.41  136.68  465.78  136.79   480.3   137.3
  513.54     138  539.21  138.54  549.94  139.24   578.7  141.11

Manning's n Values         num=       3
```

Sta	n Val	Sta	n Val	Sta	n Val
0	.045	396	.045	412.5	.045

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
396	412.5	827.38	811.02	744.62	.3	.5

CROSS SECTION OUTPUT Profile #100 yr

E.G. Elev (ft)	137.26	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.66	Wt. n-Val.	0.045	0.045	0.045
W.S. Elev (ft)	136.60	Reach Len. (ft)	827.38	811.02	744.62
Crit W.S. (ft)	131.77	Flow Area (sq ft)	2.60	163.33	2.25
E.G. Slope (ft/ft)	*0.005068	Area (sq ft)	2.60	163.33	2.25
Q Total (cfs)	1074.00	Flow (cfs)	2.73	1070.09	1.19
Top Width (ft)	46.23	Top Width (ft)	8.67	16.50	21.06
Vel Total (ft/s)	6.39	Avg. Vel. (ft/s)	1.05	6.55	0.53
Max Chl Dpth (ft)	9.90	Hydr. Depth (ft)	0.30	9.90	0.11
Conv. Total (cfs)	15086.9	Conv. (cfs)	38.3	15032.0	16.7
Length Wtd. (ft)	810.96	Wetted Per. (ft)	8.69	35.10	21.09
Min Ch El (ft)	126.70	Shear (lb/sq ft)	0.09	1.47	0.03
Alpha	1.05	Stream Power (lb/ft s)	0.10	9.65	0.02
Frctn Loss (ft)	7.77	Cum Volume (acre-ft)	1.34	11.19	1.89
C & E Loss (ft)	0.04	Cum SA (acres)	2.01	2.97	3.48

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

CROSS SECTION RIVER: Horno Creek
REACH: 1 RS: 2914.789

INPUT
Description:
Station Elevation Data num= 51

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	134.12	2.46	134	2.66	134	63.46	133.82	85.77	133.02
102.89	132.21	168.78	132.01	170.11	132	173.77	131.88	198.4	131
203.19	131	206.36	130.9	221.91	131	270.06	131.22	282.67	130.81
295.7	130.59	321.36	130.35	369.84	130.44	387.41	131.18	399.5	131.4
414.69	131.32	434.37	131.41	467.28	131	541.61	130.07	541.79	130.07
551.77	129.88	567.2	128.22	617.36	125.9	659.81	128.19	671.38	129.53
679.1	130	686.82	130.37	694.53	130.65	771.7	131.03	782.21	131
784	131	786.75	131	801.92	131.38	829.5	131.93	837.64	131.73
854.75	131	895.25	131.86	899.98	131.92	903.64	132	932.08	132.64
986.41	133.58	996.26	133.51	1041.75	133.54	1083.56	134.27	1106.31	134.66
1107.95	134.69								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.045	567.2	.045	659.81	.045

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
567.2	659.81	743.6	1030.03	1145.8	.1	.3

CROSS SECTION OUTPUT Profile #100 yr

E.G. Elev (ft)	129.46	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.79	Wt. n-Val.	0.045	0.045	0.045
W.S. Elev (ft)	128.67	Reach Len. (ft)	743.60	1030.03	1145.80
Crit W.S. (ft)	128.67	Flow Area (sq ft)	0.96	150.18	1.01
E.G. Slope (ft/ft)	*0.024486	Area (sq ft)	0.96	150.18	1.01
Q Total (cfs)	1074.00	Flow (cfs)	1.84	1070.13	2.03
Top Width (ft)	101.02	Top Width (ft)	4.23	92.61	4.19
Vel Total (ft/s)	7.06	Avg. Vel. (ft/s)	1.92	7.13	2.00
Max Chl Dpth (ft)	2.77	Hydr. Depth (ft)	0.23	1.62	0.24
Conv. Total (cfs)	6863.5	Conv. (cfs)	11.8	6838.8	13.0
Length Wtd. (ft)	1026.58	Wetted Per. (ft)	4.25	92.73	4.21
Min Ch El (ft)	125.90	Shear (lb/sq ft)	0.35	2.48	0.37
Alpha	1.02	Stream Power (lb/ft s)	0.66	17.64	0.74
Frctn Loss (ft)	3.69	Cum Volume (acre-ft)	1.30	8.27	1.86
C & E Loss (ft)	0.16	Cum SA (acres)	1.89	1.96	3.26

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

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

CROSS SECTION RIVER: Horno Creek
REACH: 1 RS: 1879.048

INPUT
Description:
Station Elevation Data num= 45

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	132.9	.52	132.84	43.11	127.93	73.85	124.38	76.36	124.09
102.47	121.86	109.6	120.88	128.78	120.25	135	110	145	110
155.14	120.37	159.15	120.49	188.33	121.37	222.62	122.4	242.59	123.55
257.23	123.3	270.88	123.17	276.61	123.22	288.16	123.33	311.24	124
340.36	124.84	350.23	124.87	356.72	124.69	377.07	124.1	418.54	124.3
449.76	124.45	496.97	124	519.02	123.79	529.96	124	572.68	124
599.37	124	655.96	124	659.49	124	665.32	124.22	692.16	125.13
747.49	125	760.05	125	762.4	125	768.19	125.19	789.03	126
871.05	126	888.32	126	897.7	126	949.42	126	1014	126

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.045	128.78	.045	155.14	.045

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
128.78	155.14	40.15	50	64.37	.3	.5

CROSS SECTION OUTPUT Profile #100 yr

E.G. Elev (ft)	122.30	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.25	Wt. n-Val.	0.045	0.045	0.045
W.S. Elev (ft)	122.04	Reach Len. (ft)	40.15	50.00	64.37
Crit W.S. (ft)	116.03	Flow Area (sq ft)	33.35	233.01	46.50
E.G. Slope (ft/ft)	*0.001383	Area (sq ft)	33.35	233.01	46.50
Q Total (cfs)	1081.00	Flow (cfs)	45.44	984.88	50.68
Top Width (ft)	110.42	Top Width (ft)	28.46	26.36	55.61
Vel Total (ft/s)	3.46	Avg. Vel. (ft/s)	1.36	4.23	1.09
Max Chl Dpth (ft)	12.04	Hydr. Depth (ft)	1.17	8.84	0.84
Conv. Total (cfs)	29065.0	Conv. (cfs)	1221.8	26480.6	1362.6
Length Wtd. (ft)	50.00	Wetted Per. (ft)	28.54	36.49	55.63
Min Ch El (ft)	110.00	Shear (lb/sq ft)	0.10	0.55	0.07
Alpha	1.37	Stream Power (lb/ft s)	0.14	2.33	0.08
Frctn Loss (ft)		Cum Volume (acre-ft)	1.01	3.74	1.24
C & E Loss (ft)		Cum SA (acres)	1.61	0.55	2.48

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

CULVERT RIVER: Horno Creek
REACH: 1 RS: 1850

INPUT
Description:
Distance from Upstream XS = 10
Deck/Roadway Width = 36
Weir Coefficient = 2.6
Upstream Deck/Roadway Coordinates
num= 4

Sta Hi Cord	Lo Cord	Sta Hi Cord	Lo Cord	Sta Hi Cord	Lo Cord
0	122	118	135	122	100	145	122	100
400	122	118						

Upstream Bridge Cross Section Data
Station Elevation Data num= 45

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	132.9	.52	132.84	43.11	127.93	73.85	124.38	76.36	124.09
102.47	121.86	109.6	120.88	128.78	120.25	135	110	145	110
155.14	120.37	159.15	120.49	188.33	121.37	222.62	122.4	242.59	123.55
257.23	123.3	270.88	123.17	276.61	123.22	288.16	123.33	311.24	124
340.36	124.84	350.23	124.87	356.72	124.69	377.07	124.1	418.54	124.3
449.76	124.45	496.97	124	519.02	123.79	529.96	124	572.68	124

599.37	124	655.96	124	659.49	124	665.32	124.22	692.16	125.13
747.49	125	760.05	125	762.4	125	768.19	125.19	789.03	126
871.05	126	888.32	126	897.7	126	949.42	126	1014	126

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.045	128.78	.045	155.14	.045

Bank Sta: Left Right Coeff Contr. Expan.
128.78 155.14 .3 .5

Downstream Deck/Roadway Coordinates
num= 4

Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord
0	121	117	104	121	100	114	121	100
400	121	117						

Downstream Bridge Cross Section Data
Station Elevation Data num= 80

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	132.51	.6	132.46	1.83	132.35	13.63	131.09	16.48	130.78
17.5	130.69	19.62	130.48	27.42	129.63	31.14	129.23	41.6	128.09
47.28	127.48	49.8	127.25	72.27	125.19	73.85	125.05	75.72	124.88
77.17	124.76	80.74	124.43	85.31	124.02	88.21	123.75	97.67	123.11
111.43	122.12	118.37	121.59	122.83	121.06	126.6	120.62	128.44	120.5
130.21	120.37	133.16	120.27	137.28	120.07	139.64	119.93	145.53	119.77
150	109	160	109	163.93	119.24	171.46	119.74	182.07	120.09
194.45	120.54	205.29	121.05	237.69	122	256.56	123.05	270.4	122.83
277.97	122.76	283.3	122.71	288.71	122.76	299.63	122.87	321.44	123.5
348.96	124.29	355.4	124.32	358.29	124.32	364.42	124.16	383.65	123.6
422.84	123.76	452.34	123.87	468.6	123.71	485.03	123.55	496.96	123.45
499.95	123.42	517.79	123.28	528.13	123.48	568.5	123.53	593.73	123.56
614.65	123.59	647.2	123.55	650.54	123.54	656.05	123.74	681.41	124.54
692.84	124.5	726.31	124.42	733.7	124.42	745.57	124.44	747.79	124.45
753.26	124.63	772.96	125.42	788.15	125.45	850.47	125.45	866.79	125.46
875.65	125.46	917.8	125.46	924.53	125.46	984.27	125.44	985.56	125.44

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.045	145.53	.045	160	.045

Bank Sta: Left Right Coeff Contr. Expan.
145.53 160 .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 = 121
Energy head used in spillway design =
Spillway height used in design =
Weir crest shape = Broad Crested

Number of Culverts = 1

Culvert Name Shape Rise Span
Culvert #1 Box 8 10
FHWA Chart # 8 - flared wingwalls
FHWA Scale # 1 - Wingwall flared 30 to 75 deg.
Solution Criteria = Highest U.S. EG

Culvert	Upstrm Dist	Length	n Value	Entrance Loss Coef	Exit Loss Coef
	4	44	.013	.2	1

Upstream Elevation = 110
Centerline Station = 140
Downstream Elevation = 109
Centerline Station = 155

CULVERT OUTPUT Profile #100 yr
Culvert ID : Culvert #1

Culv Q (cfs)	1029.84	Culv Ful Lngh (ft)	44.00
# Barrels	1	Culv Vel US (ft/s)	12.87
Q Barrel (cfs)	1029.84	Culv Vel DS (ft/s)	12.87
E.G. US. (ft)	122.31	Culv Inv El Up (ft)	110.00
W.S. US. (ft)	122.04	Culv Inv El Dn (ft)	109.00
E.G. DS (ft)	120.04	Culv Frctn Ls (ft)	0.19
W.S. DS (ft)	119.03	Culv Ext Lss (ft)	1.56
Delta EG (ft)	2.26	Culv Ent Lss (ft)	0.51

* Delta WS (ft)	* 3.02	* Q Weir (cfs)	* 51.16	*
* E.G. IC (ft)	* 122.38	* Weir Sta Lft (ft)	* 97.19	*
* E.G. OC (ft)	* 122.31	* Weir Sta Rgt (ft)	* 219.66	*
* Culvert Control	* Outlet	* Weir Submerg	* 0.00	*
* Culv WS Inlet (ft)	* 118.00	* Weir Max Depth (ft)	* 0.31	*
* Culv WS Outlet (ft)	* 117.00	* Weir Avg Depth (ft)	* 0.29	*
* Culv Nml Depth (ft)	* 3.64	* Wr Flw Area (sq ft)	* 35.92	*
* Culv Crt Depth (ft)	* 6.91	* Min El Weir Flow (ft)	* 122.01	*

Note: During the supercritical calculations a hydraulic jump occurred inside of the culvert.
Note: The culvert inlet is submerged and the culvert flows full over part or all of its length. Therefore, the culvert inlet equations are not valid and the supercritical result has been discarded. The outlet answer will be used.

CROSS SECTION RIVER: Horno Creek
REACH: 1 RS: 1829.04*

INPUT
Description:
Station Elevation Data num= 80

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	132.51	.6	132.46	1.83	132.35	13.63	131.09	16.48	130.78
17.5	130.69	19.62	130.48	27.42	129.63	31.14	129.23	41.6	128.09
47.28	127.48	49.8	127.25	72.27	125.19	73.85	125.05	75.72	124.88
77.17	124.76	80.74	124.43	85.31	124.02	88.21	123.75	97.67	123.11
111.43	122.12	118.37	121.59	122.83	121.06	126.6	120.62	128.44	120.5
130.21	120.37	133.16	120.27	137.28	120.07	139.64	119.93	145.53	119.77
150	109	160	109	163.93	119.24	171.46	119.74	182.07	120.09
194.45	120.54	205.29	121.05	237.69	122	256.56	123.05	270.4	122.83
277.97	122.76	283.3	122.71	288.71	122.76	299.63	122.87	321.44	123.5
348.96	124.29	355.4	124.32	358.29	124.32	364.42	124.16	383.65	123.6
422.84	123.76	452.34	123.87	468.6	123.71	485.03	123.55	496.96	123.45
499.95	123.42	517.79	123.28	528.13	123.48	568.5	123.53	593.73	123.56
614.65	123.59	647.2	123.55	650.54	123.54	656.05	123.74	681.41	124.54
692.84	124.5	726.31	124.42	733.7	124.42	745.57	124.44	747.79	124.45
753.26	124.63	772.96	125.42	788.15	125.45	850.47	125.45	866.79	125.46
875.65	125.46	917.8	125.46	924.53	125.46	984.27	125.44	985.56	125.44

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.045	145.53	.045	160	.045

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
145.53	160	442.67	551.25	709.65	.3	.5

CROSS SECTION OUTPUT Profile #100 yr

* E.G. Elev (ft)	* 120.04	* Element	* Left OB	* Channel	* Right OB *
* Vel Head (ft)	* 1.02	* Wt. n-Val.	*	* 0.045	* 0.045 *
* W.S. Elev (ft)	* 119.03	* Reach Len. (ft)	* 442.67	* 551.25	* 709.65 *
* Crit W.S. (ft)	*	* Flow Area (sq ft)	*	* 121.13	* 19.29 *
* E.G. Slope (ft/ft)	*0.006079	* Area (sq ft)	*	* 121.13	* 19.29 *
* Q Total (cfs)	* 1081.00	* Flow (cfs)	*	* 1007.61	* 73.39 *
* Top Width (ft)	* 18.01	* Top Width (ft)	*	* 14.16	* 3.85 *
* Vel Total (ft/s)	* 7.70	* Avg. Vel. (ft/s)	*	* 8.32	* 3.80 *
* Max Chl Dpth (ft)	* 10.03	* Hydr. Depth (ft)	*	* 8.55	* 5.01 *
* Conv. Total (cfs)	* 13864.5	* Conv. (cfs)	*	* 12923.2	* 941.3 *
* Length Wtd. (ft)	* 558.13	* Wetted Per. (ft)	*	* 20.86	* 10.74 *
* Min Ch El (ft)	* 109.00	* Shear (lb/sq ft)	*	* 2.20	* 0.68 *
* Alpha	* 1.10	* Stream Power (lb/ft s)	*	* 18.34	* 2.59 *
* Frctn Loss (ft)	* 1.54	* Cum Volume (acre-ft)	* 0.99	* 3.54	* 1.19 *
* C & E Loss (ft)	* 0.35	* Cum SA (acres)	* 1.59	* 0.53	* 2.43 *

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

CROSS SECTION RIVER: Horno Creek
REACH: 1 RS: 1277.812

INPUT
Description:
Station Elevation Data num= 40

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev

0	128.21	4.53	128.26	33.81	126.19	40.88	125.59	43.4	125.58
48.67	125.36	68.02	123.76	77.24	123	103.2	120.86	117.27	119.8
179.27	119.74	183.2	119.79	187.82	119.83	191.42	119.96	200.27	120
242.28	120	276.41	119.3	304.69	118.08	320.7	117.59	329.89	117
340.02	117.44	350.78	117.5	359.35	117.16	363.63	115.44	370	105
380	105	386.13	115.45	401.12	117.4	418.3	117.6	446.06	118.34
486.64	117.38	492.53	117.24	497.88	117.35	539	119.07	567.03	117.84
579.03	117.79	601.2	119.35	647.68	119.51	671.51	119.21	671.97	119.21

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.045	363.63	.045	386.13	.045

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
363.63	386.13	368.71	348.3	336.38	.3	.5

CROSS SECTION OUTPUT Profile #100 yr

E.G. Elev (ft)	118.14	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.31	Wt. n-Val.	0.045	0.045	0.045
W.S. Elev (ft)	117.84	Reach Len. (ft)	368.71	348.30	336.38
Crit W.S. (ft)	111.25	Flow Area (sq ft)	27.05	223.53	41.46
E.G. Slope (ft/ft)	0.001576	Area (sq ft)	27.05	223.53	41.46
Q Total (cfs)	1081.00	Flow (cfs)	23.14	1021.49	36.37
Top Width (ft)	168.36	Top Width (ft)	50.97	22.50	94.89
Vel Total (ft/s)	3.70	Avg. Vel. (ft/s)	0.86	4.57	0.88
Max Chl Dpth (ft)	12.84	Hydr. Depth (ft)	0.53	9.93	0.44
Conv. Total (cfs)	27228.8	Conv. (cfs)	582.8	25729.9	916.1
Length Wtd. (ft)	348.30	Wetted Per. (ft)	51.34	34.35	95.04
Min Ch El (ft)	105.00	Shear (lb/sq ft)	0.05	0.64	0.04
Alpha	1.44	Stream Power (lb/ft s)	0.04	2.93	0.04
Frctn Loss (ft)		Cum Volume (acre-ft)	0.86	1.36	0.70
C & E Loss (ft)		Cum SA (acres)	1.33	0.30	1.63

CULVERT RIVER: Horno Creek
REACH: 1 RS: 1000

INPUT
Description:
Distance from Upstream XS = 50
Deck/Roadway Width = 110
Weir Coefficient = 2.6
Upstream Deck/Roadway Coordinates
num= 2

Sta Hi Cord	Lo Cord	Sta Hi Cord	Lo Cord
0	120	113	1000	120	113

Upstream Bridge Cross Section Data
Station Elevation Data num= 40

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	128.21	4.53	128.26	33.81	126.19	40.88	125.59	43.4	125.58
48.67	125.36	68.02	123.76	77.24	123	103.2	120.86	117.27	119.8
179.27	119.74	183.2	119.79	187.82	119.83	191.42	119.96	200.27	120
242.28	120	276.41	119.3	304.69	118.08	320.7	117.59	329.89	117
340.02	117.44	350.78	117.5	359.35	117.16	363.63	115.44	370	105
380	105	386.13	115.45	401.12	117.4	418.3	117.6	446.06	118.34
486.64	117.38	492.53	117.24	497.88	117.35	539	119.07	567.03	117.84
579.03	117.79	601.2	119.35	647.68	119.51	671.51	119.21	671.97	119.21

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.045	363.63	.045	386.13	.045

Bank Sta: Left	Right	Coeff Contr.	Expan.
363.63	386.13	.3	.5

Downstream Deck/Roadway Coordinates
num= 2

Sta Hi Cord	Lo Cord	Sta Hi Cord	Lo Cord
0	108	99	1000	108	99

Downstream Bridge Cross Section Data
Station Elevation Data num= 22

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev

```
*****************************************************************************
      0   106.4   12.55  105.93   44.27  104.92   58.37  104.32    65.7  104.16
   73.21  103.68  120.24  100.82  137.15  100.64  188.34  101.76  191.55  101.78
    200      99     210      99  220.39  101.85  251.37  101.61  269.54  101.22
  322.69  101.23  340.54  101.32  355.39  101.96  367.41  103.51  402.41  106.51
  410.06  106.68  419.69  106.89

Manning's n Values         num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
*********************************************
       0    .045  191.55    .045  220.39    .045

Bank Sta: Left   Right    Coeff Contr.   Expan.
        191.55  220.39             .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         =     109
Energy head used in spillway design         =
Spillway height used in design              =
Weir crest shape                            = Broad Crested

Number of Culverts =  1

Culvert Name     Shape      Rise    Span
Culvert #1           Box       8      10
FHWA Chart # 8 - flared wingwalls
FHWA Scale # 1 - Wingwall flared 30 to 75 deg.
Solution Criteria = Highest U.S. EG
Culvert Upstrm Dist  Length    n Value   Entrance Loss Coef   Exit Loss Coef
                  1     340       .013                  .2                1
Upstream   Elevation =  105
           Centerline Station =  375
Downstream Elevation =  99.67
           Centerline Station =  205

CULVERT OUTPUT    Profile #100 yr
Culvert ID : Culvert #1
************************************************************************
* Culv Q (cfs)          * 1081.00  * Culv Ful Lngh (ft)    *          *
* # Barrels             *       1  * Culv Vel US (ft/s)    *   13.51  *
* Q Barrel (cfs)        * 1081.00  * Culv Vel DS (ft/s)    *   24.13  *
* E.G. US. (ft)         *  118.15  * Culv Inv El Up (ft)   *  105.00  *
* W.S. US. (ft)         *  117.84  * Culv Inv El Dn (ft)   *   99.67  *
* E.G. DS (ft)          *  102.54  * Culv Frctn Ls (ft)    *    4.39  *
* W.S. DS (ft)          *  102.12  * Culv Ext Lss (ft)     *   10.65  *
* Delta EG (ft)         *   15.61  * Culv Ent Lss (ft)     *    0.57  *
* Delta WS (ft)         *   15.72  * Q Weir (cfs)          *          *
* E.G. IC (ft)          *  118.15  * Weir Sta Lft (ft)     *          *
* E.G. OC (ft)          *  116.41  * Weir Sta Rgt (ft)     *          *
* Culvert Control       *   Inlet  * Weir Submerg          *          *
* Culv WS Inlet (ft)    *  113.00  * Weir Max Depth (ft)   *          *
* Culv WS Outlet (ft)   *  104.15  * Weir Avg Depth (ft)   *          *
* Culv Nml Depth (ft)   *    4.31  * Wr Flw Area (sq ft)   *          *
* Culv Crt Depth (ft)   *    7.13  * Min El Weir Flow (ft) *  120.01  *
************************************************************************

Note:    The flow in the culvert is entirely supercritical.

CROSS SECTION          RIVER: Horno Creek
REACH: 1                  RS: 929.327

INPUT
Description:
Station Elevation Data    num=      22
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*****************************************************************************
       0   106.4   12.55  105.93   44.27  104.92   58.37  104.32    65.7  104.16
   73.21  103.68  120.24  100.82  137.15  100.64  188.34  101.76  191.55  101.78
    200      99     210      99  220.39  101.85  251.37  101.61  269.54  101.22
  322.69  101.23  340.54  101.32  355.39  101.96  367.41  103.51  402.41  106.51
  410.06  106.68  419.69  106.89

Manning's n Values         num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
*********************************************
       0    .045  191.55    .045  220.39    .045

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        191.55  220.39           742.77     100  527.89             .3       .5
```

CROSS SECTION OUTPUT Profile #100 yr

E.G. Elev (ft)	102.86	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.04	Wt. n-Val.	0.045	0.045	0.045
W.S. Elev (ft)	101.82	Reach Len. (ft)	742.77	100.00	527.89
Crit W.S. (ft)	102.12	Flow Area (sq ft)	58.19	54.66	53.93
E.G. Slope (ft/ft)	*0.043444	Area (sq ft)	58.19	54.66	53.93
Q Total (cfs)	1081.00	Flow (cfs)	304.59	567.01	209.40
Top Width (ft)	243.65	Top Width (ft)	87.69	28.72	127.25
Vel Total (ft/s)	6.48	Avg. Vel. (ft/s)	5.23	10.37	3.88
Max Chl Dpth (ft)	2.82	Hydr. Depth (ft)	0.66	1.90	0.42
Conv. Total (cfs)	5186.4	Conv. (cfs)	1461.3	2720.4	1004.7
Length Wtd. (ft)	100.00	Wetted Per. (ft)	87.73	29.54	127.26
Min Ch El (ft)	99.00	Shear (lb/sq ft)	1.80	5.02	1.15
Alpha	1.60	Stream Power (lb/ft s)	9.42	52.06	4.46
Frctn Loss (ft)		Cum Volume (acre-ft)	0.50	0.24	0.33
C & E Loss (ft)		Cum SA (acres)	0.75	0.09	0.77

CROSS SECTION RIVER: Horno Creek
REACH: 1 RS: 870

INPUT
Description:
Station Elevation Data num= 22

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	106.4	12.55	105.93	44.27	104.92	58.37	104.32	65.7	104.16
73.21	103.68	120.24	100.82	137.15	100.64	155.95	99.19	175.24	98.25
204.18	89.49	223.47	89.71	258.84	98.91	282.96	100.08	295.82	100.63
322.69	101.23	340.54	101.32	355.39	101.96	367.41	103.51	402.41	106.51
410.06	106.68	419.69	106.89						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.045	175.24	.045	258.84	.045

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
175.24	258.84	0	0	0	.3	.5

CROSS SECTION OUTPUT Profile #100 yr

E.G. Elev (ft)	94.80	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.73	Wt. n-Val.		0.045	
W.S. Elev (ft)	94.07	Reach Len. (ft)			
Crit W.S. (ft)	93.25	Flow Area (sq ft)		157.27	
E.G. Slope (ft/ft)	*0.010009	Area (sq ft)		157.27	
Q Total (cfs)	1081.00	Flow (cfs)		1081.00	
Top Width (ft)	51.16	Top Width (ft)		51.16	
Vel Total (ft/s)	6.87	Avg. Vel. (ft/s)		6.87	
Max Chl Dpth (ft)	4.58	Hydr. Depth (ft)		3.07	
Conv. Total (cfs)	10805.3	Conv. (cfs)		10805.3	
Length Wtd. (ft)		Wetted Per. (ft)		52.40	
Min Ch El (ft)	89.49	Shear (lb/sq ft)		1.88	
Alpha	1.00	Stream Power (lb/ft s)		12.89	
Frctn Loss (ft)		Cum Volume (acre-ft)			
C & E Loss (ft)		Cum SA (acres)			

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

SUMMARY OF MANNING'S N VALUES

River:Horno Creek

Reach	River Sta.	n1	n2	n3
*1	6389.204	.045*	.045*	.045*
*1	5408.040	.045*	.045*	.045*
*1	4165.110	.045*	.045*	.045*
*1	3961.191	.045*	.045*	.045*
*1	3800	*Culvert *		
*1	3632.365	.045*	.045*	.045*
*1	2914.789	.045*	.045*	.045*
*1	1879.048	.045*	.045*	.045*
*1	1850	*Culvert *		
*1	1829.04*	.045*	.045*	.045*

```
*1              *    1277.812    *     .045*     .045*     .045*
*1              *    1000        *Culvert  *        *         *
*1              *    929.327     *     .045*     .045*     .045*
*1              *    870         *     .045*     .045*     .045*
*****************************************************************

*****************************************************************************

SUMMARY OF REACH LENGTHS

River: Horno Creek
*****************************************************************
*     Reach      *   River Sta.   *  Left   * Channel *  Right  *
*****************************************************************
*1              *    6389.204    *  1025.75*    982.2*   938.93*
*1              *    5408.040    *  1120.45*  1261.85*     1187*
*1              *    4165.110    *   267.21*   282.79*   435.59*
*1              *    3961.191    *   322.94*   380.54*   744.62*
*1              *    3800        *Culvert  *        *         *
*1              *    3632.365    *   827.38*   811.02*   744.62*
*1              *    2914.789    *    743.6*  1030.03*   1145.8*
*1              *    1879.048    *    40.15*       50*    64.37*
*1              *    1850        *Culvert  *        *         *
*1              *    1829.04*    *   442.67*   551.25*   709.65*
*1              *    1277.812    *   368.71*    348.3*   336.38*
*1              *    1000        *Culvert  *        *         *
*1              *    929.327     *   742.77*      100*   527.89*
*1              *    870         *        0*        0*        0*
*****************************************************************

Profile Output Table - Standard Table 1
*****************************************************************************************************************************
*************************
* Reach       * River Sta    *     Q Total *Min Ch El *W.S. Elev *Crit W.S. *E.G. Elev *E.G. Slope * Vel Chnl *Flow Area
*Top Width *Froude # Chl *
*             *              *       (cfs) *     (ft) *     (ft) *     (ft) *     (ft) *   (ft/ft) *   (ft/s) *  (sq ft) *
(ft) *          *
*****************************************************************************************************************************
*************************
* 1           * 6389.204     *     1074.00 *   159.55 *   162.42 *   162.02 *   162.86 *  0.011784 *     7.05 *   208.88 *
124.39 *        0.75 *
* 1           * 5408.040     *     1074.00 *   150.43 *   152.40 *   152.14 *   152.59 *  0.009285 *     4.80 *   321.49 *
312.31 *        0.62 *
* 1           * 4165.110     *     1074.00 *   135.23 *   140.79 *   140.79 *   141.27 *  0.009617 *     6.88 *   254.95 *
260.48 *        0.67 *
* 1           * 3961.191     *     1074.00 *   128.00 *   138.36 *   133.08 *   138.96 *  0.004220 *     6.23 *   176.44 *
24.69 *         0.34 *
* 1           * 3800         *     Culvert *          *          *          *          *          *          *          *
*           *
* 1           * 3632.365     *     1074.00 *   126.70 *   136.60 *   131.77 *   137.26 *  0.005068 *     6.55 *   168.17 *
46.23 *         0.37 *
* 1           * 2914.789     *     1074.00 *   125.90 *   128.67 *   128.67 *   129.46 *  0.024486 *     7.13 *   152.15 *
101.02 *        0.99 *
* 1           * 1879.048     *     1081.00 *   110.00 *   122.04 *   116.03 *   122.30 *  0.001383 *     4.23 *   312.86 *
110.42 *        0.25 *
* 1           * 1850         *     Culvert *          *          *          *          *          *          *          *
*           *
* 1           * 1829.04*     *     1081.00 *   109.00 *   119.03 *          *   120.04 *  0.006079 *     8.32 *   140.42 *
18.01 *         0.50 *
* 1           * 1277.812     *     1081.00 *   105.00 *   117.84 *   111.25 *   118.14 *  0.001576 *     4.57 *   292.04 *
168.36 *        0.26 *
* 1           * 1000         *     Culvert *          *          *          *          *          *          *          *
*           *
* 1           * 929.327      *     1081.00 *    99.00 *   101.82 *   102.12 *   102.86 *  0.043444 *    10.37 *   166.78 *
243.65 *        0.26 *
* 1           * 870          *     1081.00 *    89.49 *    94.07 *    93.25 *    94.80 *  0.010009 *     6.87 *   157.27 *
51.16 *         0.69 *
*****************************************************************************************************************************
*************************
```

HEC-RAS Version 3.0.1 Mar 2001
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: horno
Project File : horno.prj
Run Date and Time: 2/24/03 2:19:39 PM

Project in English units

Project Description:
Horno Creek/I5 Crossing (LY89)

****

PLAN DATA

Plan Title: horno proposed
Plan File : d:\projects\2PDA010400\hydr\LHS\Modeling\Horno_L&89\horno.p01

Geometry Title: horno proposed
Geometry File : d:\projects\2PDA010400\hydr\LHS\Modeling\Horno_L&89\horno.g04

Flow Title : existing
Flow File : d:\projects\2PDA010400\hydr\LHS\Modeling\Horno_L&89\horno.f01

Plan Summary Information:
Number of: Cross Sections = 18 Mulitple Openings = 0
Culverts = 3 Inline Weirs = 0
Bridges = 1

Computational Information
Water surface calculation tolerance = 0.003
Critical depth calculaton tolerance = 0.003
Maximum number of interations = 20
Maximum difference tolerance = 0.1
Flow tolerance factor = 0.001

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

****

FLOW DATA

Flow Title: existing
Flow File : d:\projects\2PDA010400\hydr\LHS\Modeling\Horno_L&89\horno.f01

Flow Data (cfs)

River	Reach	RS	100yr HC	100 yr	50 yr	2yr
Horno Creek	1	6389.204*	3215	1074	709	2
Horno Creek	1	1879.048*	3206	1081	714	2
San Juan Creek	1	4692.380*	90280	36497	23494	446
San Juan Creek	1	3374.671*	90280	36497	23494	446

Boundary Conditions

River	Reach	Profile	Upstream	Downstream
Horno Creek	1	100yr HC	Normal S = .03	Normal S = .01
Horno Creek	1	100 yr	Normal S = .03	Normal S = .01
Horno Creek	1	50 yr	Normal S = .03	Normal S = .01
Horno Creek	1	2yr	Normal S = .03	Normal S = .01
San Juan Creek	1	100yr HC	Normal S = .002	Normal S = .002
San Juan Creek	1	100 yr	Normal S = .002	Normal S = .002
San Juan Creek	1	50 yr	Normal S = .002	Normal S = .002
San Juan Creek	1	2yr	Normal S = .002	Normal S = .002

GEOMETRY DATA

Geometry Title: horno proposed
Geometry File : d:\projects\2PDA010400\hydr\LHS\Modeling\Horno_L&89\horno.g04

JUNCTION INFORMATION

CROSS SECTION RIVER: Horno Creek
REACH: 1 RS: 6389.204

INPUT
Description:
Station Elevation Data num= 27

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	216.49	11.31	214.02	40.69	206.81	62.66	200.81	84.86	192.32
99.23	186.83	109.37	183.78	135.81	176.92	161.97	171.56	182.92	167.85
208.97	163.41	231.95	160.12	239.2	159.82	245.55	159.55	247.86	159.62
261.96	160	296.12	160.62	352.98	162.94	355.28	163.01	356.03	163.04
357.51	163.06	452.58	165	501.59	167	501.65	167	526.13	167
538.17	167.49	541.18	167.53						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.045	239.2	.045	247.86	.045

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
239.2	247.86	1025.75	982.2	938.93	.1	.3

CROSS SECTION OUTPUT Profile #100 yr

E.G. Elev (ft)	162.86	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.44	Wt. n-Val.	0.045	0.045	0.045
W.S. Elev (ft)	162.42	Reach Len. (ft)	1025.75	982.20	938.93
Crit W.S. (ft)	162.02	Flow Area (sq ft)	36.26	23.93	148.69
E.G. Slope (ft/ft)	0.011784	Area (sq ft)	36.26	23.93	148.69
Q Total (cfs)	1074.00	Flow (cfs)	173.62	168.77	731.61
Top Width (ft)	124.39	Top Width (ft)	23.32	8.66	92.40
Vel Total (ft/s)	5.14	Avg. Vel. (ft/s)	4.79	7.05	4.92
Max Chl Dpth (ft)	2.87	Hydr. Depth (ft)	1.55	2.76	1.61
Conv. Total (cfs)	9893.9	Conv. (cfs)	1599.4	1554.8	6739.7
Length Wtd. (ft)	978.20	Wetted Per. (ft)	23.49	8.67	92.45
Min Ch El (ft)	159.55	Shear (lb/sq ft)	1.14	2.03	1.18
Alpha	1.06	Stream Power (lb/ft s)	5.44	14.33	5.82
Frctn Loss (ft)	10.20	Cum Volume (acre-ft)	7.18	16.04	8.17
C & E Loss (ft)	0.07	Cum SA (acres)	8.23	4.27	10.32

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

CROSS SECTION RIVER: Horno Creek
REACH: 1 RS: 5408.040

INPUT
Description:
Station Elevation Data num= 26

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	167.14	40.46	162.12	46.09	161.59	81.82	159.51	98	158.83
161.31	157.12	162.58	157.09	175.1	156.23	205.88	153.83	209.95	153.71
247.24	151.8	269.19	151.47	280.17	151.41	323.13	151.16	329.95	151.25
377.08	151.86	413.33	151.66	437.99	151.39	454.01	151	467.34	150.68
477.54	150.43	486.57	150.62	505.39	151	522.38	151	536.72	151.48
582.72	155.24								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.045	467.34	.045	486.57	.045

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
467.34	486.57	1120.45	1261.85	1187	.1	.3

CROSS SECTION OUTPUT Profile #100 yr

E.G. Elev (ft)	152.59	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.19	Wt. n-Val.	0.045	0.045	0.045
W.S. Elev (ft)	152.40	Reach Len. (ft)	1120.45	1261.85	1187.00
Crit W.S. (ft)	152.14	Flow Area (sq ft)	210.57	35.67	75.25
E.G. Slope (ft/ft)	*0.009285	Area (sq ft)	210.57	35.67	75.25
Q Total (cfs)	1074.00	Flow (cfs)	628.52	171.27	274.21
Top Width (ft)	312.31	Top Width (ft)	231.73	19.23	61.35
Vel Total (ft/s)	3.34	Avg. Vel. (ft/s)	2.98	4.80	3.64
Max Chl Dpth (ft)	1.97	Hydr. Depth (ft)	0.91	1.85	1.23
Conv. Total (cfs)	11145.6	Conv. (cfs)	6522.6	1777.4	2845.6
Length Wtd. (ft)	1194.37	Wetted Per. (ft)	231.76	19.24	61.40
Min Ch El (ft)	150.43	Shear (lb/sq ft)	0.53	1.07	0.71
Alpha	1.10	Stream Power (lb/ft s)	1.57	5.16	2.59
Frctn Loss (ft)	11.29	Cum Volume (acre-ft)	4.27	15.36	5.76
C & E Loss (ft)	0.03	Cum SA (acres)	5.22	3.96	8.66

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

CROSS SECTION RIVER: Horno Creek
REACH: 1 RS: 4165.110

INPUT
Description:
Station Elevation Data num= 34

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	169.34	9.96	166.1	57.3	146.92	59.05	146.27	59.72	146
61.24	145.57	84.6	139.29	90.24	139.24	94.94	139.21	105.47	135.23
118.89	139.21	159.24	139.79	166.71	140	209	140	278.72	141.68
297.22	142.27	333.4	142.35	346.16	142.17	408.04	140.41	428.01	140.18
453.97	140.12	459.29	140.07	502.39	141	502.78	140.98	525.66	143.68
546.27	143.9	580.34	147	595.45	148.83	602	150.38	633.24	155.88
652.03	157.89	676.73	162.01	688.5	161.27	716.19	160.72		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.045	90.24	.045	118.89	.045

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
90.24	118.89	267.21	282.79	435.59	.1	.3

CROSS SECTION OUTPUT Profile #100 yr

E.G. Elev (ft)	141.27	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.48	Wt. n-Val.	0.045	0.045	0.045
W.S. Elev (ft)	140.79	Reach Len. (ft)	267.21	282.79	435.59
Crit W.S. (ft)	140.79	Flow Area (sq ft)	12.76	92.80	149.39
E.G. Slope (ft/ft)	*0.009617	Area (sq ft)	12.76	92.80	149.39
Q Total (cfs)	1074.00	Flow (cfs)	44.53	638.59	390.88
Top Width (ft)	260.48	Top Width (ft)	11.21	28.65	220.62
Vel Total (ft/s)	4.21	Avg. Vel. (ft/s)	3.49	6.88	2.62
Max Chl Dpth (ft)	5.56	Hydr. Depth (ft)	1.14	3.24	0.68
Conv. Total (cfs)	10951.7	Conv. (cfs)	454.1	6511.8	3985.8
Length Wtd. (ft)	310.59	Wetted Per. (ft)	11.41	29.95	220.65
Min Ch El (ft)	135.23	Shear (lb/sq ft)	0.67	1.86	0.41
Alpha	1.76	Stream Power (lb/ft s)	2.34	12.80	1.06
Frctn Loss (ft)	1.90	Cum Volume (acre-ft)	1.40	13.50	2.70
C & E Loss (ft)	0.01	Cum SA (acres)	2.10	3.26	4.82

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

Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water 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: Horno Creek
REACH: 1 RS: 3961.191

INPUT
Description:
Station Elevation Data num= 24

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	182.63	37.2	173.82	39.31	173.04	41.42	172.18	83.62	151.27
85.73	149.96	87.83	149	120.5	137	120.5	128	137	128
137	137	155.35	142.54	176.45	145.73	201.76	147.91	222.86	150.64
227.07	150.27	238.31	148.82	248.17	147.55	264.9	146.83	269.28	146.64
273.49	146.73	294.59	149	315.69	150.82	336.6	152.85		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.045	120.5	.045	137	.045

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
120.5	137	322.94	380.54	744.62	.3	.5

CROSS SECTION OUTPUT Profile #100 yr

E.G. Elev (ft)	138.96	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.60	Wt. n-Val.	0.045	0.045	0.045
W.S. Elev (ft)	138.36	Reach Len. (ft)	322.94	380.54	744.62
Crit W.S. (ft)	133.08	Flow Area (sq ft)	2.51	170.88	3.05
E.G. Slope (ft/ft)	*0.004220	Area (sq ft)	2.51	170.88	3.05
Q Total (cfs)	1074.00	Flow (cfs)	3.98	1065.12	4.90
Top Width (ft)	24.69	Top Width (ft)	3.69	16.50	4.49
Vel Total (ft/s)	6.09	Avg. Vel. (ft/s)	1.59	6.23	1.61
Max Chl Dpth (ft)	10.36	Hydr. Depth (ft)	0.68	10.36	0.68
Conv. Total (cfs)	16532.7	Conv. (cfs)	61.2	16396.0	75.5
Length Wtd. (ft)	380.54	Wetted Per. (ft)	3.93	34.50	4.69
Min Ch El (ft)	128.00	Shear (lb/sq ft)	0.17	1.30	0.17
Alpha	1.04	Stream Power (lb/ft s)	0.27	8.13	0.28
Frctn Loss (ft)		Cum Volume (acre-ft)	1.36	12.65	1.94
C & E Loss (ft)		Cum SA (acres)	2.05	3.12	3.70

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

CULVERT RIVER: Horno Creek
REACH: 1 RS: 3800

INPUT
Description:
Distance from Upstream XS = 115
Deck/Roadway Width = 140
Weir Coefficient = 2.6
Upstream Deck/Roadway Coordinates
num= 2

Sta Hi Cord	Lo Cord	Sta Hi Cord	Lo Cord
0	140	135	1000	140	135

Upstream Bridge Cross Section Data
Station Elevation Data num= 24

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	182.63	37.2	173.82	39.31	173.04	41.42	172.18	83.62	151.27
85.73	149.96	87.83	149	120.5	137	120.5	128	137	128
137	137	155.35	142.54	176.45	145.73	201.76	147.91	222.86	150.64
227.07	150.27	238.31	148.82	248.17	147.55	264.9	146.83	269.28	146.64
273.49	146.73	294.59	149	315.69	150.82	336.6	152.85		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.045	120.5	.045	137	.045

Bank Sta: Left	Right	Coeff Contr.	Expan.
120.5	137	.3	.5

Downstream Deck/Roadway Coordinates
num= 2

Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord
0	138.7	133.7	1000	138.7	133.7

Downstream Bridge Cross Section Data
Station Elevation Data num= 34

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	148.49	53.61	146.42	58.66	146.22	71.03	145.49	110.84	143.36
121.69	143.09	146.51	142.82	154.12	142.53	179.24	142.03	222.96	140.25
224.92	140.26	226.99	140.18	248.14	140.67	268.14	140.28	271.35	140.43
274.75	140	313.31	139.19	317.78	139.3	322.51	138.8	346.94	138
358.49	137.25	377.61	137.27	396	136	396	126.7	412.5	126.7
412.5	136	417.24	136.52	450.41	136.68	465.78	136.79	480.3	137.3
513.54	138	539.21	138.54	549.94	139.24	578.7	141.11		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.045	396	.045	412.5	.045

Bank Sta: Left	Right	Coeff Contr.	Expan.
396	412.5	.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 = 138.7
Energy head used in spillway design =
Spillway height used in design =
Weir crest shape = Broad Crested

Number of Culverts = 1

Culvert Name	Shape	Rise	Span
Culvert #1	Box	7	8

FHWA Chart # 8 - flared wingwalls
FHWA Scale # 1 - Wingwall flared 30 to 75 deg.
Solution Criteria = Highest U.S. EG

Culvert Upstrm Dist	Length	n Value	Entrance Loss Coef	Exit Loss Coef
85	210	.013	.2	1

Number of Barrels = 2
Upstream Elevation = 128
Centerline Stations

Sta.	Sta.
124.5	133

Downstream Elevation = 126.7
Centerline Stations

Sta.	Sta.
400	408.5

CULVERT OUTPUT Profile #100 yr
Culvert ID : Culvert #1

* Culv Q (cfs)	* 1074.00	* Culv Ful Lngh (ft)	* 210.00 *
* # Barrels	* 2	* Culv Vel US (ft/s)	* 9.59 *
* Q Barrel (cfs)	* 537.00	* Culv Vel DS (ft/s)	* 9.59 *
* E.G. US. (ft)	* 138.96	* Culv Inv El Up (ft)	* 128.00 *
* W.S. US. (ft)	* 138.36	* Culv Inv El Dn (ft)	* 126.70 *
* E.G. DS (ft)	* 137.26	* Culv Frctn Ls (ft)	* 0.64 *
* W.S. DS (ft)	* 136.60	* Culv Ext Lss (ft)	* 0.76 *
* Delta EG (ft)	* 1.69	* Culv Ent Lss (ft)	* 0.29 *
* Delta WS (ft)	* 1.76	* Q Weir (cfs)	* *
* E.G. IC (ft)	* 136.62	* Weir Sta Lft (ft)	* *
* E.G. OC (ft)	* 138.96	* Weir Sta Rgt (ft)	* *
* Culvert Control	* Outlet	* Weir Submerg	* *
* Culv WS Inlet (ft)	* 135.00	* Weir Max Depth (ft)	* *
* Culv WS Outlet (ft)	* 133.70	* Weir Avg Depth (ft)	* *
* Culv Nml Depth (ft)	*	* Wr Flw Area (sq ft)	* *
* Culv Crt Depth (ft)	* 5.19	* Min El Weir Flow (ft)	* 140.01 *

CROSS SECTION RIVER: Horno Creek
REACH: 1 RS: 3632.365

INPUT
Description:
Station Elevation Data num= 34

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	148.49	53.61	146.42	58.66	146.22	71.03	145.49	110.84	143.36

121.69	143.09	146.51	142.82	154.12	142.53	179.24	142.03	222.96	140.25
224.92	140.26	226.99	140.18	248.14	140.67	268.14	140.28	271.35	140.43
274.75	140	313.31	139.19	317.78	139.3	322.51	138.8	346.94	138
358.49	137.25	377.61	137.27	396	136	396	126.7	412.5	126.7
412.5	136	417.24	136.52	450.41	136.68	465.78	136.79	480.3	137.3
513.54	138	539.21	138.54	549.94	139.24	578.7	141.11		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.045	396	.045	412.5	.045

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
396	412.5	827.38	811.02 744.62	.3	.5

CROSS SECTION OUTPUT Profile #100 yr

E.G. Elev (ft)	137.26	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.66	Wt. n-Val.	0.045	0.045	0.045
W.S. Elev (ft)	136.60	Reach Len. (ft)	827.38	811.02	744.62
Crit W.S. (ft)	131.77	Flow Area (sq ft)	2.60	163.33	2.25
E.G. Slope (ft/ft)	*0.005068	Area (sq ft)	2.60	163.33	2.25
Q Total (cfs)	1074.00	Flow (cfs)	2.73	1070.09	1.19
Top Width (ft)	46.23	Top Width (ft)	8.67	16.50	21.06
Vel Total (ft/s)	6.39	Avg. Vel. (ft/s)	1.05	6.55	0.53
Max Chl Dpth (ft)	9.90	Hydr. Depth (ft)	0.30	9.90	0.11
Conv. Total (cfs)	15086.9	Conv. (cfs)	38.3	15032.0	16.7
Length Wtd. (ft)	810.96	Wetted Per. (ft)	8.69	35.10	21.09
Min Ch El (ft)	126.70	Shear (lb/sq ft)	0.09	1.47	0.03
Alpha	1.05	Stream Power (lb/ft s)	0.10	9.65	0.02
Frctn Loss (ft)	7.77	Cum Volume (acre-ft)	1.34	11.19	1.89
C & E Loss (ft)	0.04	Cum SA (acres)	2.01	2.97	3.48

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

CROSS SECTION RIVER: Horno Creek
REACH: 1 RS: 2914.789

INPUT
Description:
Station Elevation Data num= 51

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	134.12	2.46	134	2.66	134	63.46	133.82	85.77	133.02
102.89	132.21	168.78	132.01	170.11	132	173.77	131.88	198.4	131
203.19	131	206.36	130.9	221.91	131	270.06	131.22	282.67	130.81
295.7	130.59	321.36	130.35	369.84	130.44	387.41	131.18	399.5	131.4
414.69	131.32	434.37	131.41	467.28	131	541.61	130.07	541.79	130.07
551.77	129.88	567.2	128.22	617.36	125.9	659.81	128.19	671.38	129.53
679.1	130	686.82	130.37	694.53	130.65	771.7	131.03	782.21	131
784	131	786.75	131	801.92	131.38	829.5	131.93	837.64	131.73
854.75	131	895.25	131.86	899.98	131.92	903.64	132	932.08	132.64
986.41	133.58	996.26	133.51	1041.75	133.54	1083.56	134.27	1106.31	134.66
1107.95	134.69								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.045	567.2	.045	659.81	.045

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
567.2	659.81	743.6	1030.03 1145.8	.1	.3

CROSS SECTION OUTPUT Profile #100 yr

E.G. Elev (ft)	129.46	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.79	Wt. n-Val.	0.045	0.045	0.045
W.S. Elev (ft)	128.67	Reach Len. (ft)	743.60	1030.03	1145.80
Crit W.S. (ft)	128.67	Flow Area (sq ft)	0.96	150.18	1.01
E.G. Slope (ft/ft)	*0.024486	Area (sq ft)	0.96	150.18	1.01
Q Total (cfs)	1074.00	Flow (cfs)	1.84	1070.13	2.03
Top Width (ft)	101.02	Top Width (ft)	4.23	92.61	4.19
Vel Total (ft/s)	7.06	Avg. Vel. (ft/s)	1.92	7.13	2.00
Max Chl Dpth (ft)	2.77	Hydr. Depth (ft)	0.23	1.62	0.24
Conv. Total (cfs)	6863.5	Conv. (cfs)	11.8	6838.8	13.0
Length Wtd. (ft)	1026.58	Wetted Per. (ft)	4.25	92.73	4.21
Min Ch El (ft)	125.90	Shear (lb/sq ft)	0.35	2.48	0.37

* Alpha	*	1.02	* Stream Power (lb/ft s)	*	0.66	*	17.64	*	0.74	*
* Frctn Loss (ft)	*	3.69	* Cum Volume (acre-ft)	*	1.30	*	8.27	*	1.86	*
* C & E Loss (ft)	*	0.16	* Cum SA (acres)	*	1.89	*	1.96	*	3.26	*

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

CROSS SECTION RIVER: Horno Creek
REACH: 1 RS: 1879.048

INPUT
Description:
Station Elevation Data num= 45

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	132.9	.52	132.84	43.11	127.93	73.85	124.38	76.36	124.09
102.47	121.86	109.6	120.88	128.78	120.25	135	110	145	110
155.14	120.37	159.15	120.49	188.33	121.37	222.62	122.4	242.59	123.55
257.23	123.3	270.88	123.17	276.61	123.22	288.16	123.33	311.24	124
340.36	124.84	350.23	124.87	356.72	124.69	377.07	124.1	418.54	124.3
449.76	124.45	496.97	124	519.02	123.79	529.96	124	572.68	124
599.37	124	655.96	124	659.49	124	665.32	124.22	692.16	125.13
747.49	125	760.05	125	762.4	125	768.19	125.19	789.03	126
871.05	126	888.32	126	897.7	126	949.42	126	1014	126

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.045	128.78	.045	155.14	.045

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
128.78	155.14	40.15	50	64.37	.3	.5

CROSS SECTION OUTPUT Profile #100 yr

* E.G. Elev (ft)	*	122.30	* Element	*	Left OB	*	Channel	*	Right OB	*
* Vel Head (ft)	*	0.25	* Wt. n-Val.	*	0.045	*	0.045	*	0.045	*
* W.S. Elev (ft)	*	122.04	* Reach Len. (ft)	*	40.15	*	50.00	*	64.37	*
* Crit W.S. (ft)	*	116.03	* Flow Area (sq ft)	*	33.35	*	233.01	*	46.50	*
* E.G. Slope (ft/ft)	*	0.001383	* Area (sq ft)	*	33.35	*	233.01	*	46.50	*
* Q Total (cfs)	*	1081.00	* Flow (cfs)	*	45.44	*	984.88	*	50.68	*
* Top Width (ft)	*	110.42	* Top Width (ft)	*	28.46	*	26.36	*	55.61	*
* Vel Total (ft/s)	*	3.46	* Avg. Vel. (ft/s)	*	1.36	*	4.23	*	1.09	*
* Max Chl Dpth (ft)	*	12.04	* Hydr. Depth (ft)	*	1.17	*	8.84	*	0.84	*
* Conv. Total (cfs)	*	29065.0	* Conv. (cfs)	*	1221.8	*	26480.6	*	1362.6	*
* Length Wtd. (ft)	*	50.00	* Wetted Per. (ft)	*	28.54	*	36.49	*	55.63	*
* Min Ch El (ft)	*	110.00	* Shear (lb/sq ft)	*	0.10	*	0.55	*	0.07	*
* Alpha	*	1.37	* Stream Power (lb/ft s)	*	0.14	*	2.33	*	0.08	*
* Frctn Loss (ft)	*		* Cum Volume (acre-ft)	*	1.01	*	3.74	*	1.24	*
* C & E Loss (ft)	*		* Cum SA (acres)	*	1.61	*	0.55	*	2.48	*

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

CULVERT RIVER: Horno Creek
REACH: 1 RS: 1850

INPUT
Description:
Distance from Upstream XS = 10
Deck/Roadway Width = 36
Weir Coefficient = 2.6
Upstream Deck/Roadway Coordinates
num= 4

Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord
0	122	118	135	122	100	145	122	100
400	122	118						

Upstream Bridge Cross Section Data
Station Elevation Data num= 45

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	132.9	.52	132.84	43.11	127.93	73.85	124.38	76.36	124.09
102.47	121.86	109.6	120.88	128.78	120.25	135	110	145	110
155.14	120.37	159.15	120.49	188.33	121.37	222.62	122.4	242.59	123.55
257.23	123.3	270.88	123.17	276.61	123.22	288.16	123.33	311.24	124
340.36	124.84	350.23	124.87	356.72	124.69	377.07	124.1	418.54	124.3
449.76	124.45	496.97	124	519.02	123.79	529.96	124	572.68	124
599.37	124	655.96	124	659.49	124	665.32	124.22	692.16	125.13
747.49	125	760.05	125	762.4	125	768.19	125.19	789.03	126
871.05	126	888.32	126	897.7	126	949.42	126	1014	126

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.045	128.78	.045	155.14	.045

Bank Sta: Left	Right	Coeff Contr.	Expan.
128.78	155.14	.3	.5

Downstream Deck/Roadway Coordinates
num= 4

Sta Hi Cord	Lo Cord	Sta Hi Cord	Lo Cord	Sta Hi Cord	Lo Cord
0	121	117	104	121	100	114	121	100
400	121	117						

Downstream Bridge Cross Section Data
Station Elevation Data num= 80

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	132.51	.6	132.46	1.83	132.35	13.63	131.09	16.48	130.78
17.5	130.69	19.62	130.48	27.42	129.63	31.14	129.23	41.6	128.09
47.28	127.48	49.8	127.25	72.27	125.19	73.85	125.05	75.72	124.88
77.17	124.76	80.74	124.43	85.31	124.02	88.21	123.75	97.67	123.11
111.43	122.12	118.37	121.59	122.83	121.06	126.6	120.62	128.44	120.5
130.21	120.37	133.16	120.27	137.28	120.07	139.64	119.93	145.53	119.77
150	109	160	109	163.93	119.24	171.46	119.74	182.07	120.09
194.45	120.54	205.29	121.05	237.69	122	256.56	123.05	270.4	122.83
277.97	122.76	283.3	122.71	288.71	122.76	299.63	122.87	321.44	123.5
348.96	124.29	355.4	124.32	358.29	124.32	364.42	124.16	383.65	123.6
422.84	123.76	452.34	123.87	468.6	123.71	485.03	123.55	496.96	123.45
499.95	123.42	517.79	123.28	528.13	123.48	568.5	123.53	593.73	123.56
614.65	123.59	647.2	123.55	650.54	123.54	656.05	123.74	681.41	124.54
692.84	124.5	726.31	124.42	733.7	124.42	745.57	124.44	747.79	124.45
753.26	124.63	772.96	125.42	788.15	125.45	850.47	125.45	866.79	125.46
875.65	125.46	917.8	125.46	924.53	125.46	984.27	125.44	985.56	125.44

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.045	145.53	.045	160	.045

Bank Sta: Left	Right	Coeff Contr.	Expan.
145.53	160	.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 = 121
Energy head used in spillway design =
Spillway height used in design =
Weir crest shape = Broad Crested

Number of Culverts = 1

Culvert Name	Shape	Rise	Span
Culvert #1	Box	8	10

FHWA Chart # 8 - flared wingwalls
FHWA Scale # 1 - Wingwall flared 30 to 75 deg.
Solution Criteria = Highest U.S. EG

Culvert Upstrm Dist	Length	n Value	Entrance Loss Coef	Exit Loss Coef
4	44	.013	.2	1

Upstream Elevation = 110
Centerline Station = 140
Downstream Elevation = 109
Centerline Station = 155

CULVERT OUTPUT Profile #100 yr
Culvert ID : Culvert #1

* Culv Q (cfs)	* 1029.84	* Culv Ful Lngh (ft)	*	44.00	*
* # Barrels	* 1	* Culv Vel US (ft/s)	*	12.87	*
* Q Barrel (cfs)	* 1029.84	* Culv Vel DS (ft/s)	*	12.87	*
* E.G. US. (ft)	* 122.31	* Culv Inv El Up (ft)	*	110.00	*
* W.S. US. (ft)	* 122.04	* Culv Inv El Dn (ft)	*	109.00	*
* E.G. DS (ft)	* 120.04	* Culv Frctn Ls (ft)	*	0.19	*
* W.S. DS (ft)	* 119.03	* Culv Ext Lss (ft)	*	1.56	*
* Delta EG (ft)	* 2.26	* Culv Ent Lss (ft)	*	0.51	*
* Delta WS (ft)	* 3.02	* Q Weir (cfs)	*	51.16	*
* E.G. IC (ft)	* 122.38	* Weir Sta Lft (ft)	*	97.19	*
* E.G. OC (ft)	* 122.31	* Weir Sta Rgt (ft)	*	219.66	*
* Culvert Control	* Outlet	* Weir Submerg	*	0.00	*
* Culv WS Inlet (ft)	* 118.00	* Weir Max Depth (ft)	*	0.31	*
* Culv WS Outlet (ft)	* 117.00	* Weir Avg Depth (ft)	*	0.29	*
* Culv Nml Depth (ft)	* 3.64	* Wr Flw Area (sq ft)	*	35.92	*
* Culv Crt Depth (ft)	* 6.91	* Min El Weir Flow (ft)	*	122.01	*

Note: During the supercritical calculations a hydraulic jump occurred inside of the culvert.
Note: The culvert inlet is submerged and the culvert flows full over part or all of its length. Therefore, the culvert inlet equations are not valid and the supercritical result has been discarded. The outlet answer will be used.

CROSS SECTION RIVER: Horno Creek
REACH: 1 RS: 1829.04*

INPUT
Description:
Station Elevation Data num= 80

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	132.51	.6	132.46	1.83	132.35	13.63	131.09	16.48	130.78
17.5	130.69	19.62	130.48	27.42	129.63	31.14	129.23	41.6	128.09
47.28	127.48	49.8	127.25	72.27	125.19	73.85	125.05	75.72	124.88
77.17	124.76	80.74	124.43	85.31	124.02	88.21	123.75	97.67	123.11
111.43	122.12	118.37	121.59	122.83	121.06	126.6	120.62	128.44	120.5
130.21	120.37	133.16	120.27	137.28	120.07	139.64	119.93	145.53	119.77
150	109	160	109	163.93	119.24	171.46	119.74	182.07	120.09
194.45	120.54	205.29	121.05	237.69	122	256.56	123.05	270.4	122.83
277.97	122.76	283.3	122.71	288.71	122.76	299.63	122.87	321.44	123.5
348.96	124.29	355.4	124.32	358.29	124.32	364.42	124.16	383.65	123.6
422.84	123.76	452.34	123.87	468.6	123.71	485.03	123.55	496.96	123.45
499.95	123.42	517.79	123.28	528.13	123.48	568.5	123.53	593.73	123.56
614.65	123.59	647.2	123.55	650.54	123.54	656.05	123.74	681.41	124.54
692.84	124.5	726.31	124.42	733.7	124.42	745.57	124.44	747.79	124.45
753.26	124.63	772.96	125.42	788.15	125.45	850.47	125.45	866.79	125.46
875.65	125.46	917.8	125.46	924.53	125.46	984.27	125.44	985.56	125.44

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.045	145.53	.045	160	.045

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
145.53	160	442.67	551.25	709.65	.3	.5

CROSS SECTION OUTPUT Profile #100 yr

* E.G. Elev (ft)	* 120.04	* Element	* Left OB	* Channel	* Right OB *
* Vel Head (ft)	* 1.02	* Wt. n-Val.	*	* 0.045	* 0.045 *
* W.S. Elev (ft)	* 119.03	* Reach Len. (ft)	* 442.67	* 551.25	* 709.65 *
* Crit W.S. (ft)	*	* Flow Area (sq ft)	*	* 121.13	* 19.29 *
* E.G. Slope (ft/ft)	*0.006079	* Area (sq ft)	*	* 121.13	* 19.29 *
* Q Total (cfs)	* 1081.00	* Flow (cfs)	*	* 1007.61	* 73.39 *
* Top Width (ft)	* 18.01	* Top Width (ft)	*	* 14.16	* 3.85 *
* Vel Total (ft/s)	* 7.70	* Avg. Vel. (ft/s)	*	* 8.32	* 3.80 *
* Max Chl Dpth (ft)	* 10.03	* Hydr. Depth (ft)	*	* 8.55	* 5.01 *
* Conv. Total (cfs)	* 13864.5	* Conv. (cfs)	*	* 12923.2	* 941.3 *
* Length Wtd. (ft)	* 558.13	* Wetted Per. (ft)	*	* 20.86	* 10.74 *
* Min Ch El (ft)	* 109.00	* Shear (lb/sq ft)	*	* 2.20	* 0.68 *
* Alpha	* 1.10	* Stream Power (lb/ft s)	*	* 18.34	* 2.59 *
* Frctn Loss (ft)	* 1.54	* Cum Volume (acre-ft)	* 0.99	* 3.54	* 1.19 *
* C & E Loss (ft)	* 0.35	* Cum SA (acres)	* 1.59	* 0.53	* 2.43 *

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

CROSS SECTION RIVER: Horno Creek
REACH: 1 RS: 1277.812

INPUT
Description:
Station Elevation Data num= 40

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	128.21	4.53	128.26	33.81	126.19	40.88	125.59	43.4	125.58
48.67	125.36	68.02	123.76	77.24	123	103.2	120.86	117.27	119.8
179.27	119.74	183.2	119.79	187.82	119.83	191.42	119.96	200.27	120
242.28	120	276.41	119.3	304.69	118.08	320.7	117.59	329.89	117
340.02	117.44	350.78	117.5	359.35	117.16	363.63	115.44	370	105
380	105	386.13	115.45	401.12	117.4	418.3	117.6	446.06	118.34
486.64	117.38	492.53	117.24	497.88	117.35	539	119.07	567.03	117.84
579.03	117.79	601.2	119.35	647.68	119.51	671.51	119.21	671.97	119.21

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.045	363.63	.045	386.13	.045

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
363.63	386.13	368.71	348.3	336.38	.3	.5

CROSS SECTION OUTPUT Profile #100 yr

E.G. Elev (ft)	118.14	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.31	Wt. n-Val.	0.045	0.045	0.045
W.S. Elev (ft)	117.84	Reach Len. (ft)	368.71	348.30	336.38
Crit W.S. (ft)	111.25	Flow Area (sq ft)	27.05	223.53	41.46
E.G. Slope (ft/ft)	0.001576	Area (sq ft)	27.05	223.53	41.46
Q Total (cfs)	1081.00	Flow (cfs)	23.14	1021.49	36.37
Top Width (ft)	168.36	Top Width (ft)	50.97	22.50	94.89
Vel Total (ft/s)	3.70	Avg. Vel. (ft/s)	0.86	4.57	0.88
Max Chl Dpth (ft)	12.84	Hydr. Depth (ft)	0.53	9.93	0.44
Conv. Total (cfs)	27228.8	Conv. (cfs)	582.8	25729.9	916.1
Length Wtd. (ft)	348.30	Wetted Per. (ft)	51.34	34.35	95.04
Min Ch El (ft)	105.00	Shear (lb/sq ft)	0.05	0.64	0.04
Alpha	1.44	Stream Power (lb/ft s)	0.04	2.93	0.04
Frctn Loss (ft)		Cum Volume (acre-ft)	0.86	1.36	0.70
C & E Loss (ft)		Cum SA (acres)	1.33	0.30	1.63

CULVERT RIVER: Horno Creek
REACH: 1 RS: 1000

INPUT
Description:
Distance from Upstream XS = 35
Deck/Roadway Width = 140
Weir Coefficient = 2.6
Upstream Deck/Roadway Coordinates
num= 2

Sta Hi Cord	Lo Cord	Sta Hi Cord	Lo Cord
0	120	113	1000	120	113

Upstream Bridge Cross Section Data
Station Elevation Data num= 40

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	128.21	4.53	128.26	33.81	126.19	40.88	125.59	43.4	125.58
48.67	125.36	68.02	123.76	77.24	123	103.2	120.86	117.27	119.8
179.27	119.74	183.2	119.79	187.82	119.83	191.42	119.96	200.27	120
242.28	120	276.41	119.3	304.69	118.08	320.7	117.59	329.89	117
340.02	117.44	350.78	117.5	359.35	117.16	363.63	115.44	370	105
380	105	386.13	115.45	401.12	117.4	418.3	117.6	446.06	118.34
486.64	117.38	492.53	117.24	497.88	117.35	539	119.07	567.03	117.84
579.03	117.79	601.2	119.35	647.68	119.51	671.51	119.21	671.97	119.21

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.045	363.63	.045	386.13	.045

Bank Sta: Left	Right	Coeff Contr.	Expan.
363.63	386.13	.3	.5

Downstream Deck/Roadway Coordinates

```
    num=       2
     Sta Hi Cord Lo Cord      Sta Hi Cord Lo Cord
*********************************************
       0     108       99    1000     108       99

Downstream Bridge Cross Section Data
Station Elevation Data     num=       22
     Sta     Elev      Sta     Elev      Sta     Elev      Sta     Elev      Sta     Elev
*********************************************************************************************
       0   106.4   12.55  105.93   44.27  104.92   58.37  104.32    65.7  104.16
   73.21  103.68  120.24  100.82  137.15  100.64  188.34  101.76  191.55  101.78
     200      99     210      99  220.39  101.85  251.37  101.61  269.54  101.22
  322.69  101.23  340.54  101.32  355.39  101.96  367.41  103.51  402.41  106.51
  410.06  106.68  419.69  106.89

Manning's n Values         num=       3
     Sta   n Val      Sta   n Val      Sta   n Val
*********************************************
       0    .045  191.55    .045  220.39    .045

Bank Sta: Left   Right     Coeff Contr.    Expan.
        191.55  220.39              .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         =     109
Energy head used in spillway design         =
Spillway height used in design              =
Weir crest shape                            = Broad Crested

Number of Culverts =  1

Culvert Name      Shape      Rise    Span
Culvert #1          Box         8      10
FHWA Chart # 8 - flared wingwalls
FHWA Scale # 1 - Wingwall flared 30 to 75 deg.
Solution Criteria = Highest U.S. EG
Culvert Upstrm Dist  Length    n Value   Entrance Loss Coef   Exit Loss Coef
                  1     340       .013                   .2                1
Upstream   Elevation =  105
           Centerline Station =  375
Downstream Elevation =  99.67
           Centerline Station =  205

CULVERT OUTPUT    Profile #100 yr
Culvert ID : Culvert #1
************************************************************************
* Culv Q (cfs)          * 1081.00  * Culv Ful Lngh (ft)    *          *
* # Barrels             *       1  * Culv Vel US (ft/s)    *   13.51  *
* Q Barrel (cfs)        * 1081.00  * Culv Vel DS (ft/s)    *   24.13  *
* E.G. US. (ft)         *  118.15  * Culv Inv El Up (ft)   *  105.00  *
* W.S. US. (ft)         *  117.84  * Culv Inv El Dn (ft)   *   99.67  *
* E.G. DS (ft)          *  102.54  * Culv Frctn Ls (ft)    *    4.39  *
* W.S. DS (ft)          *  102.12  * Culv Ext Lss (ft)     *   10.65  *
* Delta EG (ft)         *   15.61  * Culv Ent Lss (ft)     *    0.57  *
* Delta WS (ft)         *   15.72  * Q Weir (cfs)          *          *
* E.G. IC (ft)          *  118.15  * Weir Sta Lft (ft)     *          *
* E.G. OC (ft)          *  116.41  * Weir Sta Rgt (ft)     *          *
* Culvert Control       *   Inlet  * Weir Submerg          *          *
* Culv WS Inlet (ft)    *  113.00  * Weir Max Depth (ft)   *          *
* Culv WS Outlet (ft)   *  104.15  * Weir Avg Depth (ft)   *          *
* Culv Nml Depth (ft)   *    4.31  * Wr Flw Area (sq ft)   *          *
* Culv Crt Depth (ft)   *    7.13  * Min El Weir Flow (ft) *  120.01  *
************************************************************************

Note:    The flow in the culvert is entirely supercritical.

CROSS SECTION          RIVER: Horno Creek
REACH: 1                  RS: 929.327

INPUT
Description:
Station Elevation Data     num=       22
     Sta     Elev      Sta     Elev      Sta     Elev      Sta     Elev      Sta     Elev
*********************************************************************************************
       0   106.4   12.55  105.93   44.27  104.92   58.37  104.32    65.7  104.16
   73.21  103.68  120.24  100.82  137.15  100.64  188.34  101.76  191.55  101.78
     200      99     210      99  220.39  101.85  251.37  101.61  269.54  101.22
  322.69  101.23  340.54  101.32  355.39  101.96  367.41  103.51  402.41  106.51
  410.06  106.68  419.69  106.89
```

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.045	191.55	.045	220.39	.045

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

Left	Right	Left	Channel	Right	Coeff Contr.	Expan.
191.55	220.39		742.77	100 527.89	.3	.5

CROSS SECTION OUTPUT Profile #100 yr

			Left OB	Channel	Right OB
E.G. Elev (ft)	102.86	Element	0.045	0.045	0.045
Vel Head (ft)	1.04	Wt. n-Val.	0.045	0.045	0.045
W.S. Elev (ft)	101.82	Reach Len. (ft)	742.77	100.00	527.89
Crit W.S. (ft)	102.12	Flow Area (sq ft)	58.19	54.66	53.93
E.G. Slope (ft/ft)	*0.043444	Area (sq ft)	58.19	54.66	53.93
Q Total (cfs)	1081.00	Flow (cfs)	304.59	567.01	209.40
Top Width (ft)	243.65	Top Width (ft)	87.69	28.72	127.25
Vel Total (ft/s)	6.48	Avg. Vel. (ft/s)	5.23	10.37	3.88
Max Chl Dpth (ft)	2.82	Hydr. Depth (ft)	0.66	1.90	0.42
Conv. Total (cfs)	5186.4	Conv. (cfs)	1461.3	2720.4	1004.7
Length Wtd. (ft)	100.00	Wetted Per. (ft)	87.73	29.54	127.26
Min Ch El (ft)	99.00	Shear (lb/sq ft)	1.80	5.02	1.15
Alpha	1.60	Stream Power (lb/ft s)	9.42	52.06	4.46
Frctn Loss (ft)		Cum Volume (acre-ft)	0.50	0.24	0.33
C & E Loss (ft)		Cum SA (acres)	0.75	0.09	0.77

CROSS SECTION RIVER: Horno Creek
REACH: 1 RS: 870

INPUT
Description:
Station Elevation Data num= 22

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	106.4	12.55	105.93	44.27	104.92	58.37	104.32	65.7	104.16
73.21	103.68	120.24	100.82	137.15	100.64	155.95	99.19	175.24	98.25
204.18	89.49	223.47	89.71	258.84	98.91	282.96	100.08	295.82	100.63
322.69	101.23	340.54	101.32	355.39	101.96	367.41	103.51	402.41	106.51
410.06	106.68	419.69	106.89						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.045	175.24	.045	258.84	.045

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

Left	Right	Left	Channel	Right	Coeff Contr.	Expan.
175.24	258.84		0	0	.3	.5

CROSS SECTION OUTPUT Profile #100 yr

			Left OB	Channel	Right OB
E.G. Elev (ft)	94.80	Element		0.045	
Vel Head (ft)	0.73	Wt. n-Val.			
W.S. Elev (ft)	94.07	Reach Len. (ft)		157.27	
Crit W.S. (ft)	93.25	Flow Area (sq ft)		157.27	
E.G. Slope (ft/ft)	*0.010009	Area (sq ft)		1081.00	
Q Total (cfs)	1081.00	Flow (cfs)		51.16	
Top Width (ft)	51.16	Top Width (ft)		6.87	
Vel Total (ft/s)	6.87	Avg. Vel. (ft/s)		3.07	
Max Chl Dpth (ft)	4.58	Hydr. Depth (ft)		10805.3	
Conv. Total (cfs)	10805.3	Conv. (cfs)		52.40	
Length Wtd. (ft)		Wetted Per. (ft)		1.88	
Min Ch El (ft)	89.49	Shear (lb/sq ft)		12.89	
Alpha	1.00	Stream Power (lb/ft s)			
Frctn Loss (ft)		Cum Volume (acre-ft)			
C & E Loss (ft)		Cum SA (acres)			

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

CROSS SECTION RIVER: San Juan Creek
REACH: 1 RS: 4692.380

INPUT
Description:
Station Elevation Data num= 61

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	95	48.8	95	114.4	93.59	141.97	92.73	165.2	92
165.25	92	165.27	92	296.93	92	318.15	92	328.3	91.8

336.86	91.63	436.97	89.67	467.53	89.07	470.96	89	594.35	89
623.77	89	666.71	87.31	674.71	87	680.18	86.89	740.68	85.71
776.58	85	840.72	85	980.78	85	1023.51	85	1046.24	85
1065.56	84.35	1120.63	82.74	1138.56	82.11	1146.59	82	1254.5	82
1279.68	82	1284.11	82	1327.76	81.09	1336.89	81	1339.9	81.06
1348.04	81.22	1366.56	80.16	1399.72	79	1489.7	79	1538.49	79
1591.64	80.1	1649.52	81.59	1651.51	81.63	1667.24	82	1702.51	82
1710.15	82	1725.81	83.09	1744.38	83.6	1753.07	84.04	1799.52	86.17
1870.62	89.22	1884.49	89.81	1892.84	90.17	1919.65	91.32	1948.13	92.09
1967.64	93	1987.37	93.46	2022.25	95.73	2035.32	96.29	2067.55	97.67
2077.37	98.09								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.045	1366.56	.045	1591.64	.045

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
1366.56	1591.64	600.91	537.93	611.74	.1	.3

CROSS SECTION OUTPUT Profile #100 yr

E.G. Elev (ft)	111.25	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.01	Wt. n-Val.	0.045	0.045	0.045
W.S. Elev (ft)	111.24	Reach Len. (ft)	600.91	537.93	611.74
Crit W.S. (ft)	84.87	Flow Area (sq ft)	32463.02	7207.55	11303.32
E.G. Slope (ft/ft)	0.000007	Area (sq ft)	32463.02	7207.55	11303.32
Q Total (cfs)	36497.00	Flow (cfs)	22627.11	6178.92	7690.96
Top Width (ft)	2077.37	Top Width (ft)	1366.56	225.08	485.73
Vel Total (ft/s)	0.72	Avg. Vel. (ft/s)	0.70	0.86	0.68
Max Chl Dpth (ft)	32.24	Hydr. Depth (ft)	23.76	32.02	23.27
Conv. Total (cfs)	14174500.0	Conv. (cfs)	8787789.0	2399735.0	2986972.0
Length Wtd. (ft)	589.50	Wetted Per. (ft)	1383.02	225.11	499.28
Min Ch El (ft)	79.00	Shear (lb/sq ft)	0.01	0.01	0.01
Alpha	1.02	Stream Power (lb/ft s)	0.01	0.01	0.01
Frctn Loss (ft)	0.00	Cum Volume (acre-ft)	1158.88	438.80	279.36
C & E Loss (ft)	0.00	Cum SA (acres)	67.08	24.74	37.64

Warning: The cross-section end points had to be extended vertically for the computed water surface.

CROSS SECTION RIVER: San Juan Creek
REACH: 1 RS: 4154.447

INPUT
Description:
Station Elevation Data num= 80

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	96.37	21.51	96	47.22	95.56	80.26	95	104.11	94.59
157.86	93	172.1	92.72	208.43	92	216.51	92	259.01	92
260.02	91.97	262.39	91.9	293.63	90.58	325.05	89.83	349.71	89
417.18	89	420.68	89	425.53	89	432.74	89	467.49	87.82
491.49	87.11	499.82	86.86	543.75	85.56	608.98	85	670.19	85
685.62	85	712.88	83.85	737.24	82.82	772.54	82.22	776.81	82.14
781.64	82.06	785.22	82	855.95	82	898.42	81.46	926.53	80.22
974.28	78.49	1032.15	78.49	1244.37	78.49	1251.66	79.94	1279.7	80.42
1300.37	81.23	1311.76	82	1352.7	82	1370.37	82	1405.42	82
1431.44	82	1449.52	81.69	1474.2	80.96	1486.83	80.59	1514.47	79.19
1524.12	78.49	1581.99	78.57	1900.32	78.57	1935.46	79	1960.16	80.81
1963.94	81	1964.76	81.04	1995.49	82.6	2043.08	83.59	2077.65	84.75
2080.64	84.85	2092.96	85.26	2122.22	86	2127.93	86.14	2136.4	87.07
2161.79	89.43	2174.69	89.98	2201.36	90.66	2222.5	94.14	2240.93	96.78
2259	98	2276.97	98.61	2293.23	98.99	2330.46	100.57	2399.22	102.98
2436.61	104.53	2473.8	105.63	2495.81	106	2517.93	107.49	2528.64	107.95

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.045	1514.47	.045	1935.46	.045

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
1514.47	1935.46	1113.08	780.5	187.81	.1	.3

CROSS SECTION OUTPUT Profile #100 yr

E.G. Elev (ft)	111.24	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.01	Wt. n-Val.	0.045	0.045	0.045
W.S. Elev (ft)	111.24	Reach Len. (ft)	1113.08	780.50	187.81
Crit W.S. (ft)		Flow Area (sq ft)	40028.64	13744.44	10230.57
E.G. Slope (ft/ft)	0.000004	Area (sq ft)	40028.64	13744.44	10230.57

* Q Total (cfs)	*36497.00	* Flow (cfs)	*22945.62	* 9131.16	* 4420.22	*
* Top Width (ft)	* 2528.64	* Top Width (ft)	* 1514.47	* 420.99	* 593.18	*
* Vel Total (ft/s)	* 0.57	* Avg. Vel. (ft/s)	* 0.57	* 0.66	* 0.43	*
* Max Chl Dpth (ft)	* 32.75	* Hydr. Depth (ft)	* 26.43	* 32.65	* 17.25	*
* Conv. Total (cfs)	*18529280.0	* Conv. (cfs)	*11649340.0	*4635830.0	*2244116.0	*
* Length Wtd. (ft)	* 821.75	* Wetted Per. (ft)	* 1529.85	* 421.02	* 597.52	*
* Min Ch El (ft)	* 78.49	* Shear (lb/sq ft)	* 0.01	* 0.01	* 0.00	*
* Alpha	* 1.04	* Stream Power (lb/ft s)	* 0.00	* 0.01	* 0.00	*
* Frctn Loss (ft)	* 0.01	* Cum Volume (acre-ft)	* 658.87	* 309.43	* 128.16	*
* C & E Loss (ft)	* 0.30	* Cum SA (acres)	* 47.21	* 20.76	* 30.07	*

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.

CROSS SECTION RIVER: San Juan Creek
REACH: 1 RS: 3374.671

INPUT
Description:
Station Elevation Data num= 22

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	106.4	12.55	105.93	44.27	104.92	58.37	104.32	65.7	104.16
73.21	103.68	120.24	100.82	137.15	100.64	155.95	99.19	175.24	98.25
204.18	89.49	223.47	89.71	258.84	98.91	282.96	100.08	295.82	100.63
322.69	101.23	340.54	101.32	355.39	101.96	367.41	103.51	402.41	106.51
410.06	106.68	419.69	106.89						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.045	175.24	.045	258.84	.045

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
175.24	258.84	1440.58	871.14	187.81	.3	.5

CROSS SECTION OUTPUT Profile #100 yr

* E.G. Elev (ft)	* 110.93	* Element	* Left OB	* Channel	* Right OB *
* Vel Head (ft)	* 3.04	* Wt. n-Val.	* 0.045	* 0.045	* 0.045 *
* W.S. Elev (ft)	* 107.88	* Reach Len. (ft)	* 1440.58	* 871.14	* 187.81 *
* Crit W.S. (ft)	* 107.88	* Flow Area (sq ft)	* 914.39	* 1238.27	* 879.44 *
* E.G. Slope (ft/ft)	*0.007488	* Area (sq ft)	* 914.39	* 1238.27	* 879.44 *
* Q Total (cfs)	*36497.00	* Flow (cfs)	* 7809.85	*20929.36	* 7757.79 *
* Top Width (ft)	* 419.69	* Top Width (ft)	* 175.24	* 83.60	* 160.85 *
* Vel Total (ft/s)	* 12.04	* Avg. Vel. (ft/s)	* 8.54	* 16.90	* 8.82 *
* Max Chl Dpth (ft)	* 18.39	* Hydr. Depth (ft)	* 5.22	* 14.81	* 5.47 *
* Conv. Total (cfs)	*421754.8	* Conv. (cfs)	* 90249.6	*241857.0	* 89648.1 *
* Length Wtd. (ft)	* 905.01	* Wetted Per. (ft)	* 176.94	* 86.07	* 162.14 *
* Min Ch El (ft)	* 89.49	* Shear (lb/sq ft)	* 2.42	* 6.73	* 2.54 *
* Alpha	* 1.35	* Stream Power (lb/ft s)	* 20.63	* 113.68	* 22.37 *
* Frctn Loss (ft)	* 1.57	* Cum Volume (acre-ft)	* 135.76	* 175.20	* 104.21 *
* C & E Loss (ft)	* 1.34	* Cum SA (acres)	* 25.62	* 16.23	* 28.44 *

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

CROSS SECTION RIVER: San Juan Creek
REACH: 1 RS: 2504.657

INPUT
Description:
Station Elevation Data num= 54

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	95.07	1.18	95.1	7.4	94.86	22.07	94.3	101.4	91.24
159.7	91.53	179.13	92	205.08	92	237.66	89.17	239.64	89
263.65	87.61	295.1	83.97	308.75	82.53	315.63	82.2	336.49	82
361.42	82	386.03	82	412.42	82	445.57	81.04	508.04	75
549.53	79	585.21	80.37	601.5	81	619.77	81.7	624.18	81.62
654.38	80.69	673.47	80.11	757.1	79.03	757.68	79.03	758	79.02
759.13	79	900.32	76.13	945.34	75.93	996.78	75.8	1099.68	75.13
1247.59	75.93	1324.76	76.13	1446.95	76.86	1511.25	78.13	1543.27	79
1567.92	79	1583.08	79.93	1590.3	80.27	1646.78	82.88	1648.73	82.94
1649.66	83	1692.53	85.66	1703.37	86.34	1747.21	90.07	1779.25	91.1
1812.86	92.17	1858.7	93.28	1868.67	93.9	1902.28	94.96		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.045	900.32	.045	1324.76	.045

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
900.32 1324.76 343.64 351.66 565.35 .3 .5
Left Levee Station= 750 Elevation= 101.9
Right Levee Station= 1350 Elevation= 101.9

CROSS SECTION OUTPUT Profile #100 yr

E.G. Elev (ft)	89.18	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.37	Wt. n-Val.	0.045	0.045	0.045
W.S. Elev (ft)	88.81	Reach Len. (ft)	60.00	60.00	60.00
Crit W.S. (ft)	81.16	Flow Area (sq ft)	1676.36	5564.05	318.09
E.G. Slope (ft/ft)	0.000753	Area (sq ft)	1676.36	5564.05	318.09
Q Total (cfs)	36497.00	Flow (cfs)	7272.37	28031.45	1193.19
Top Width (ft)	600.00	Top Width (ft)	150.32	424.44	25.24
Vel Total (ft/s)	4.83	Avg. Vel. (ft/s)	4.34	5.04	3.75
Max Chl Dpth (ft)	13.81	Hydr. Depth (ft)	11.15	13.11	12.60
Conv. Total (cfs)	1329939.0	Conv. (cfs)	265002.8	1021457.0	43479.3
Length Wtd. (ft)	60.00	Wetted Per. (ft)	160.04	424.45	37.77
Min Ch El (ft)	75.13	Shear (lb/sq ft)	0.49	0.62	0.40
Alpha	1.02	Stream Power (lb/ft s)	2.14	3.11	1.49
Frctn Loss (ft)	0.06	Cum Volume (acre-ft)	92.92	107.18	101.62
C & E Loss (ft)	0.06	Cum SA (acres)	20.23	11.15	28.04

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

BRIDGE RIVER: San Juan Creek
REACH: 1 RS: 2200

INPUT
Description:
Distance from Upstream XS = 60
Deck/Roadway Width = 160
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	101.9	0	800	101.9	0	800	101.9	96
1300	101.9	96	1300	101.9	0	2000	101.9	0

Upstream Bridge Cross Section Data
Station Elevation Data num= 54

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	95.07	1.18	95.1	7.4	94.86	22.07	94.3	101.4	91.24
159.7	91.53	179.13	92	205.08	92	237.66	89.17	239.64	89
263.65	87.61	295.1	83.97	308.75	82.53	315.63	82.2	336.49	82
361.42	82	386.03	82	412.42	82	445.57	81.04	508.04	75
549.53	79	585.21	80.37	601.5	81	619.77	81.7	624.18	81.62
654.38	80.69	673.47	80.11	757.1	79.03	757.68	79.03	758	79.02
759.13	79	900.32	76.13	945.34	75.93	996.78	75.8	1099.68	75.13
1247.59	75.93	1324.76	76.13	1446.95	76.86	1511.25	78.13	1543.27	79
1567.92	79	1583.08	79.93	1590.3	80.27	1646.78	82.88	1648.73	82.94
1649.66	83	1692.53	85.66	1703.37	86.34	1747.21	90.07	1779.25	91.1
1812.86	92.17	1858.7	93.28	1868.67	93.9	1902.28	94.96		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.045	900.32	.045	1324.76	.045

```
Bank Sta: Left   Right     Coeff Contr.   Expan.
        900.32 1324.76            .3        .5
Left Levee      Station=      750       Elevation=   101.9
Right Levee     Station=     1350       Elevation=   101.9

Downstream  Deck/Roadway Coordinates
    num=        6
     Sta Hi Cord Lo Cord      Sta Hi Cord Lo Cord      Sta Hi Cord Lo Cord
**********************************************************************
       0   101.9        0      425   101.9        0      425   101.9       96
     925   101.9       96      925   101.9        0     2000   101.9        0

Downstream Bridge Cross Section Data
Station Elevation Data    num=       63
     Sta    Elev      Sta    Elev      Sta    Elev      Sta    Elev      Sta    Elev
**********************************************************************************
       0   98.54    22.14   99.74    32.75   99.69    73.89  100.53    90.63  100.88
  191.42   97.06   192.44   97.01   192.92   96.99   193.36   96.97   194.19    96.9
  227.61   93.68   242.96   92.65   261.85      91   272.07   89.81    296.1   88.82
  298.46   88.79   306.38    88.1   324.84      86   340.51   85.11   365.65   83.94
  389.28   82.56   398.83      82   421.35   81.34   431.56   81.04   438.05   81.07
  501.38    80.7   501.57    80.7   523.08   80.26   549.93   79.71   584.37      79
  606.52      79   637.94   75.98   653.38   74.66   699.68   74.11    725.4   74.04
  761.41   74.19   818.01   74.73   823.15    75.9   852.55      79   897.86   80.72
   912.5   81.27   943.74   80.63   971.98   79.79  1010.86   79.19  1015.24   79.17
 1043.34   79.82  1090.02   80.63  1096.96   80.88  1111.14    81.4  1133.95   82.08
  1148.2    82.3  1154.72   82.79  1164.49   83.39  1203.94   85.79   1217.1   86.19
  1243.4    86.6  1249.92    86.6  1262.95   88.18  1315.56    95.4  1387.71    97.6
 1427.17    98.8   1466.5    98.2  1519.33    98.2

Manning's n Values        num=       3
     Sta   n Val      Sta   n Val      Sta   n Val
***********************************************
       0    .045   637.94    .045   823.15    .045

Bank Sta: Left   Right     Coeff Contr.   Expan.
        637.94  823.15            .3        .5
Left Levee      Station=      400       Elevation=   101.9
Right Levee     Station=      950       Elevation=   101.9

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        =   101.9
Energy head used in spillway design        =
Spillway height used in design             =
Weir crest shape                           = Broad Crested

Number of Piers =  3

Pier Data
Pier Station     Upstream=      925    Downstream=      550
Upstream     num=        2
    Width   Elev    Width   Elev
*********************************
       7      79        7      96
Downstream     num=        2
    Width   Elev    Width   Elev
*********************************
       7      79        7      96

Pier Data
Pier Station     Upstream=     1050    Downstream=      675
Upstream     num=        2
    Width   Elev    Width   Elev
*********************************
       7      79        7      96
Downstream     num=        2
    Width   Elev    Width   Elev
*********************************
       7      79        7      96

Pier Data
Pier Station     Upstream=     1175    Downstream=      800
Upstream     num=        2
    Width   Elev    Width   Elev
*********************************
       7      79        7      96
Downstream     num=        2
    Width   Elev    Width   Elev
```

```
*********************************
      7      79       7      96

Number of Bridge Coefficient Sets =  1

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

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 #100 yr
Opening : Single BR
*************************************************************************************************
* E.G. US. (ft)          *      89.18  * Element                *Inside BR US *Inside BR DS *
* W.S. US. (ft)          *      88.81  * E.G. Elev (ft)         *      89.05  *      88.60  *
* Q Total (cfs)          *   36497.00  * W.S. Elev (ft)         *      88.47  *      87.63  *
* Q Bridge (cfs)         *   36497.00  * Crit W.S. (ft)         *      81.66  *      83.85  *
* Q Weir (cfs)           *             * Max Chl Dpth (ft)      *      13.34  *      13.59  *
* Weir Sta Lft (ft)      *             * Vel Total (ft/s)       *       6.10  *       7.76  *
* Weir Sta Rgt (ft)      *             * Flow Area (sq ft)      *    5982.21  *    4704.13  *
* Weir Submerg           *             * Froude # Chl           *       0.11  *       0.15  *
* Weir Max Depth (ft)    *             * Specif Force (cu ft)   *   44390.26  *   33826.48  *
* Min El Weir Flow (ft)  *     101.91  * Hydr Depth (ft)        *      12.49  *       9.82  *
* Min El Prs (ft)        *      96.00  * W.P. Total (ft)        *     578.55  *     561.01  *
* Delta EG (ft)          *       0.97  * Conv. Total (cfs)      *   937554.2  *   653407.6  *
* Delta WS (ft)          *       1.49  * Top Width (ft)         *     479.00  *     479.00  *
* BR Open Area (sq ft)   *    8714.17  * Frctn Loss (ft)        *       0.34  *       0.35  *
* BR Open Vel (ft/s)     *       7.76  * C & E Loss (ft)        *       0.12  *       0.04  *
* Coef of Q              *             * Shear Total (lb/sq ft) *       0.98  *       1.63  *
* Br Sel Method          *Energy only  * Power Total (lb/ft s)  *       5.97  *      12.67  *
*************************************************************************************************

Warning: The conveyance ratio (upstream 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: 1                  RS: 2153.456

INPUT
Description:
Station Elevation Data    num=      63
    Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*************************************************************************************
      0   98.54   22.14   99.74   32.75   99.69   73.89  100.53   90.63  100.88
 191.42   97.06  192.44   97.01  192.92   96.99  193.36   96.97  194.19    96.9
 227.61   93.68  242.96   92.65  261.85      91  272.07   89.81   296.1   88.82
 298.46   88.79  306.38    88.1  324.84      86  340.51   85.11  365.65   83.94
 389.28   82.56  398.83      82  421.35   81.34  431.56   81.04  438.05   81.07
 501.38    80.7  501.57    80.7  523.08   80.26  549.93   79.71  584.37      79
 606.52      79  637.94   75.98  653.38   74.66  699.68   74.11   725.4   74.04
 761.41   74.19  818.01   74.73  823.15    75.9  852.55      79  897.86   80.72
  912.5   81.27  943.74   80.63  971.98   79.79 1010.86   79.19 1015.24   79.17
1043.34   79.82 1090.02   80.63 1096.96   80.88 1111.14    81.4 1133.95   82.08
 1148.2    82.3 1154.72   82.79 1164.49   83.39 1203.94   85.79  1217.1   86.19
 1243.4    86.6 1249.92    86.6 1262.95   88.18 1315.56    95.4 1387.71    97.6
1427.17    98.8  1466.5    98.2 1519.33    98.2

Manning's n Values        num=       3
    Sta   n Val     Sta   n Val     Sta   n Val
*********************************************
      0    .045  637.94    .045  823.15    .045

Bank Sta: Left   Right    Lengths: Left Channel   Right      Coeff Contr.    Expan.
       637.94  823.15             713.87  932.73 1173.35             .3        .5
Left Levee      Station=     400      Elevation=   101.9
Right Levee     Station=     950      Elevation=   101.9

CROSS SECTION OUTPUT    Profile #100 yr
*************************************************************************************************
* E.G. Elev (ft)         *   88.21  * Element                *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    0.89  * Wt. n-Val.             *   0.045  *   0.045  *   0.045  *
* W.S. Elev (ft)         *   87.32  * Reach Len. (ft)        *  713.87  *  932.73  * 1173.35  *
```

* Crit W.S. (ft)	* 83.78	* Flow Area (sq ft)	* 1744.42	* 2389.81	* 962.17 *
* E.G. Slope (ft/ft)	*0.002269	* Area (sq ft)	* 1744.42	* 2389.81	* 962.17 *
* Q Total (cfs)	*36497.00	* Flow (cfs)	*10197.52	*20664.99	* 5634.49 *
* Top Width (ft)	* 550.00	* Top Width (ft)	* 237.94	* 185.21	* 126.85 *
* Vel Total (ft/s)	* 7.16	* Avg. Vel. (ft/s)	* 5.85	* 8.65	* 5.86 *
* Max Chl Dpth (ft)	* 13.28	* Hydr. Depth (ft)	* 7.33	* 12.90	* 7.59 *
* Conv. Total (cfs)	*766181.8	* Conv. (cfs)	*214076.5	*433820.3	*118284.9 *
* Length Wtd. (ft)	* 933.10	* Wetted Per. (ft)	* 243.47	* 185.40	* 133.94 *
* Min Ch El (ft)	* 74.04	* Shear (lb/sq ft)	* 1.01	* 1.83	* 1.02 *
* Alpha	* 1.11	* Stream Power (lb/ft s)	* 5.93	* 15.79	* 5.96 *
* Frctn Loss (ft)	* 3.76	* Cum Volume (acre-ft)	* 80.87	* 79.92	* 97.17 *
* C & E Loss (ft)	* 0.34	* Cum SA (acres)	* 18.83	* 9.05	* 27.49 *

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

CROSS SECTION RIVER: San Juan Creek
REACH: 1 RS: 1219.539

INPUT
Description:
Station Elevation Data num= 84

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	88.74	9.26	89	30.31	89.6	36.21	90	55.77	91.32
99.56	94.29	114.53	95.31	178.68	97.83	183.75	98.06	188.38	98.31
219.8	100.44	244.83	100.71	279.28	100.78	310.35	101.42	325.07	101.58
357.73	101	360.97	100.97	430.34	98	437.63	97.9	444.46	97.6
535.62	95	564.92	94.17	581.61	94.02	642.38	91.96	666.76	90.87
675.98	90.64	741.4	87.14	743.13	87	746.16	86.88	780.5	86.51
809.33	86.2	818.17	85.95	827.86	85.67	865.78	85	886.52	85
895.88	85	920.6	85	956.7	84.61	978.68	83.75	1061.98	80.48
1154.53	79.48	1198.82	79	1201.63	79	1202.03	79	1203.96	79
1302.25	73.65	1326.37	72.48	1438.91	72.48	1454.98	73.57	1503.22	75.67
1557.78	79	1580.34	79.89	1588.33	80.2	1634.16	80.04	1658.52	79.48
1679.22	79	1693.61	79	1755.26	79	1798.88	79	1812.36	79.38
1818.18	79.55	1821.07	79.64	1864.59	80.95	1899.43	82	1908.75	82.14
1972.74	82	1995.6	82	1997.15	81.95	2048.68	83.5	2081.03	84.47
2111.41	85.39	2131.59	85.3	2196.85	85.02	2197.93	85.01	2198.26	85.03
2200.54	85.16	2229.02	87	2236.3	87.47	2285.11	91.26	2297.42	92
2337.23	92	2363.76	92	2371.96	92	2380.48	92		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.045	1302.25	.045	1454.98	.045

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
1302.25	1454.98	1067.78	1029.32 1160.6	.1	.3

CROSS SECTION OUTPUT Profile #100 yr

* E.G. Elev (ft)	* 84.10	* Element	* Left OB	* Channel	* Right OB *
* Vel Head (ft)	* 2.02	* Wt. n-Val.	* 0.045	* 0.045	* 0.045 *
* W.S. Elev (ft)	* 82.08	* Reach Len. (ft)	* 1067.78	* 1029.32	* 1160.60 *
* Crit W.S. (ft)	* 82.08	* Flow Area (sq ft)	* 934.22	* 1443.33	* 1432.19 *
* E.G. Slope (ft/ft)	*0.009055	* Area (sq ft)	* 934.22	* 1443.33	* 1432.19 *
* Q Total (cfs)	*36497.00	* Flow (cfs)	* 6535.50	*20265.37	* 9696.14 *
* Top Width (ft)	* 948.81	* Top Width (ft)	* 281.03	* 152.73	* 515.05 *
* Vel Total (ft/s)	* 9.58	* Avg. Vel. (ft/s)	* 7.00	* 14.04	* 6.77 *
* Max Chl Dpth (ft)	* 9.60	* Hydr. Depth (ft)	* 3.32	* 9.45	* 2.78 *
* Conv. Total (cfs)	*383550.5	* Conv. (cfs)	* 68682.2	*212970.7	*101897.7 *
* Length Wtd. (ft)	* 1080.49	* Wetted Per. (ft)	* 281.21	* 152.80	* 515.28 *
* Min Ch El (ft)	* 72.48	* Shear (lb/sq ft)	* 1.88	* 5.34	* 1.57 *
* Alpha	* 1.42	* Stream Power (lb/ft s)	* 13.14	* 74.97	* 10.64 *
* Frctn Loss (ft)	* 4.00	* Cum Volume (acre-ft)	* 58.92	* 38.88	* 64.93 *
* C & E Loss (ft)	* 0.53	* Cum SA (acres)	* 14.57	* 5.44	* 18.84 *

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

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

CROSS SECTION RIVER: San Juan Creek
REACH: 1 RS: 189.796

INPUT
Description:
Station Elevation Data num= 64

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	97.42	26.6	96.04	64.28	95	66.27	94.89	67.78	94.58
78.71	92.61	108.95	87.07	113.12	86.3	118.63	85.41	137.43	82.89
178.58	76.79	191.3	75.32	227.34	73.75	248.49	74.39	277.11	75.34
281.69	75.39	314.81	75.17	327.6	74.15	377.27	72.48	392.47	71.96
394.89	71.92	399.44	71.83	418.28	71.49	467.56	70.58	499.11	70.48
507.68	70.68	516.33	71	558.24	71.96	560.16	72	591.63	72
644.2	72	830.42	72	909.22	72	943.3	72	962.13	72
1045.04	72	1051.47	72	1055.93	72	1088.11	71.22	1132.46	70.14
1223.85	70.46	1354.04	70.93	1395.4	71.07	1398.19	71.08	1461.69	71.31
1608.46	71.83	1614.82	71.85	1689.45	72.11	1790.91	72.47	1831.08	72.62
1913.98	72.91	2005.13	73.23	2117.31	73.63	2144.32	73.73	2168.3	73.81
2198.65	74.84	2203.48	75	2252.73	75	2267.44	75	2292.22	76.5
2305.14	77.14	2321.81	77.64	2465.7	82	2518.78	82		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.045	1088.11	.045	1395.4	.045

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
1088.11	1395.4	0	0	.1	.3

CROSS SECTION OUTPUT Profile #100 yr

E.G. Elev (ft)	76.89	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.26	Wt. n-Val.	0.045	0.045	0.045
W.S. Elev (ft)	76.63	Reach Len. (ft)			
Crit W.S. (ft)	74.36	Flow Area (sq ft)	3873.07	1847.80	3441.44
E.G. Slope (ft/ft)	*0.002000	Area (sq ft)	3873.07	1847.80	3441.44
Q Total (cfs)	*36497.00	Flow (cfs)	*15040.23	9023.80	*12432.97
Top Width (ft)	2114.87	Top Width (ft)	908.14	307.29	899.44
Vel Total (ft/s)	3.98	Avg. Vel. (ft/s)	3.88	4.88	3.61
Max Chl Dpth (ft)	6.49	Hydr. Depth (ft)	4.26	6.01	3.83
Conv. Total (cfs)	*816007.1	Conv. (cfs)	*336272.4	*201755.9	*277978.8
Length Wtd. (ft)		Wetted Per. (ft)	908.40	307.30	899.51
Min Ch El (ft)	70.14	Shear (lb/sq ft)	0.53	0.75	0.48
Alpha	1.04	Stream Power (lb/ft s)	2.07	3.67	1.73
Frctn Loss (ft)		Cum Volume (acre-ft)			
C & E Loss (ft)		Cum SA (acres)			

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

SUMMARY OF MANNING'S N VALUES

River:Horno Creek

Reach	River Sta.	n1	n2	n3
1	6389.204	.045	.045	.045
1	5408.040	.045	.045	.045
1	4165.110	.045	.045	.045
1	3961.191	.045	.045	.045
1	3800	Culvert		
1	3632.365	.045	.045	.045
1	2914.789	.045	.045	.045
1	1879.048	.045	.045	.045
1	1850	Culvert		
1	1829.04*	.045	.045	.045
1	1277.812	.045	.045	.045
1	1000	Culvert		
1	929.327	.045	.045	.045
1	870	.045	.045	.045

River:San Juan Creek

Reach	River Sta.	n1	n2	n3
*1	4692.380	.045*	.045*	.045*
*1	4154.447	.045*	.045*	.045*
*1	3374.671	.045*	.045*	.045*
*1	2504.657	.045*	.045*	.045*
*1	2200	*Bridge *	*	*
*1	2153.456	.045*	.045*	.045*
*1	1219.539	.045*	.045*	.045*
*1	189.796	.045*	.045*	.045*

SUMMARY OF REACH LENGTHS

River: Horno Creek

Reach	River Sta.	Left	Channel	Right
*1	6389.204	1025.75*	982.2*	938.93*
*1	5408.040	1120.45*	1261.85*	1187*
*1	4165.110	267.21*	282.79*	435.59*
*1	3961.191	322.94*	380.54*	744.62*
*1	3800	*Culvert *	*	*
*1	3632.365	827.38*	811.02*	744.62*
*1	2914.789	743.6*	1030.03*	1145.8*
*1	1879.048	40.15*	50*	64.37*
*1	1850	*Culvert *	*	*
*1	1829.04*	442.67*	551.25*	709.65*
*1	1277.812	368.71*	348.3*	336.38*
*1	1000	*Culvert *	*	*
*1	929.327	742.77*	100*	527.89*
*1	870	0*	0*	0*

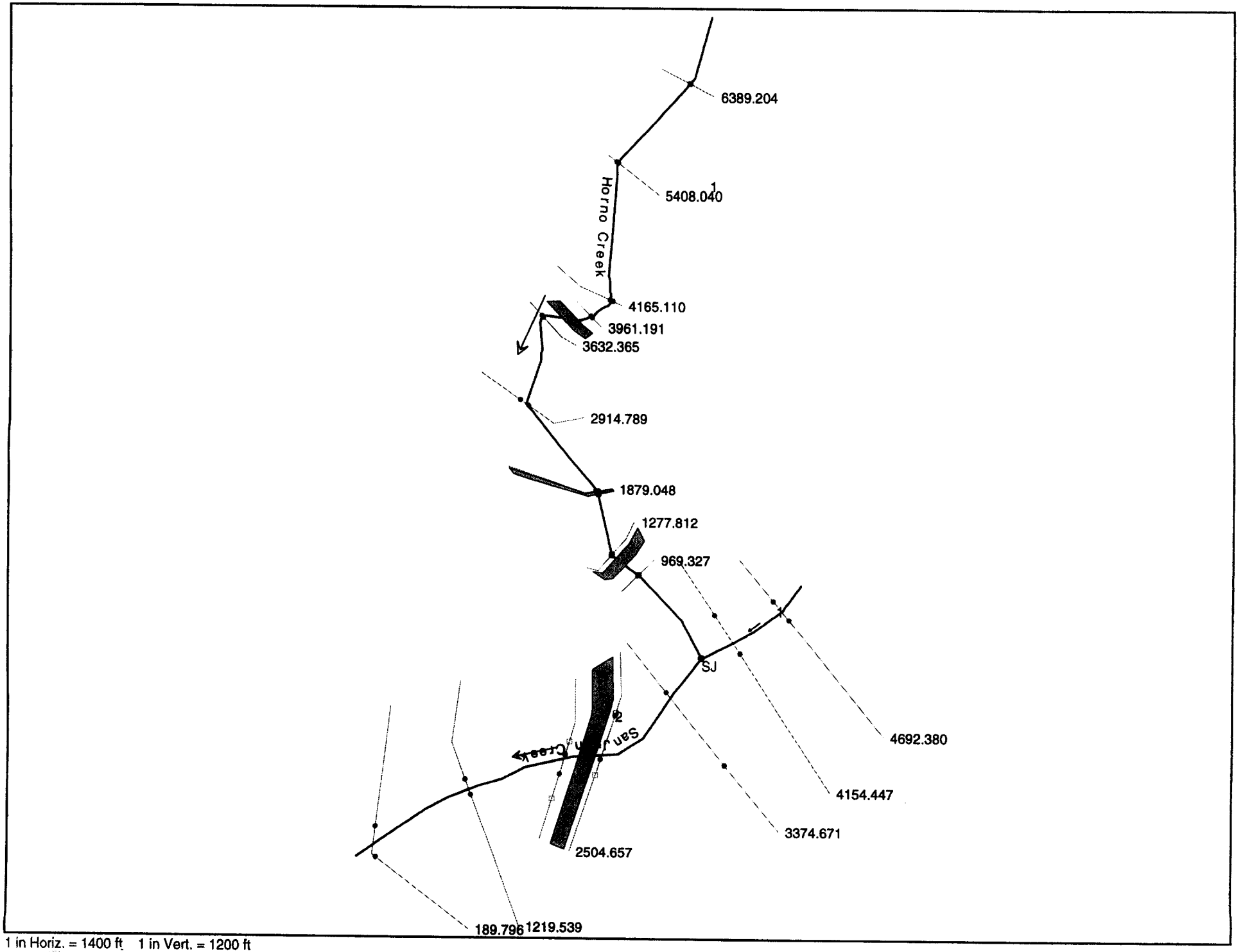
River: San Juan Creek

Reach	River Sta.	Left	Channel	Right
*1	4692.380	600.91*	537.93*	611.74*
*1	4154.447	1113.08*	780.5*	187.81*
*1	3374.671	1440.58*	871.14*	187.81*
*1	2504.657	343.64*	351.66*	565.35*
*1	2200	*Bridge *	*	*
*1	2153.456	713.87*	932.73*	1173.35*
*1	1219.539	1067.78*	1029.32*	1160.6*
*1	189.796	0*	0*	0*

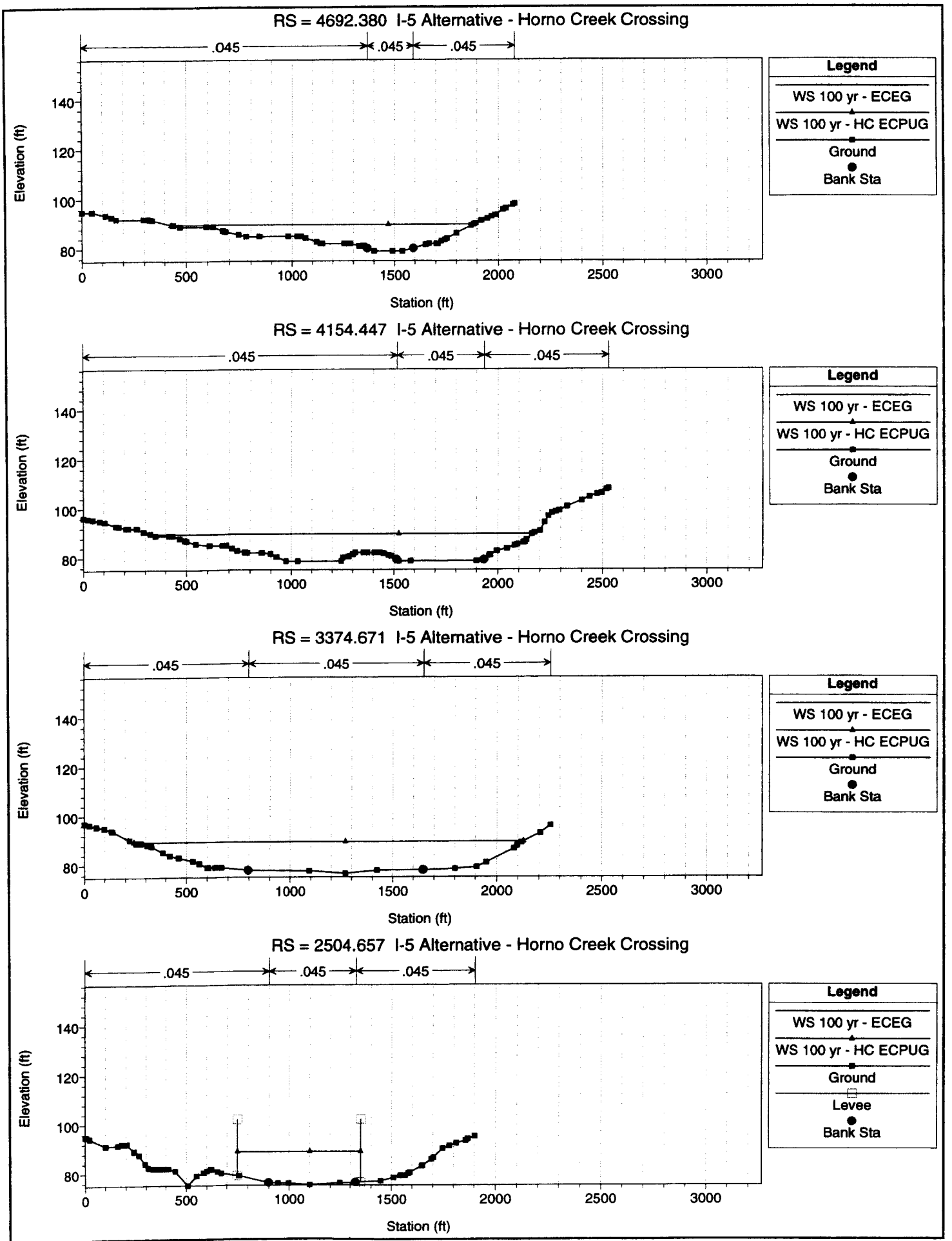
Profile Output Table - Standard Table 1

River	Reach	River Sta	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Horno Creek	1	6389.204	1074.00	159.55	162.42	162.02	162.86	0.011784	7.05	208.88	124.39	0.75
Horno Creek	1	5408.040	1074.00	150.43	152.40	152.14	152.59	0.009285	4.80	321.49	312.31	0.62
Horno Creek	1	4165.110	1074.00	135.23	140.79	140.79	141.27	0.009617	6.88	254.95	260.48	0.67
Horno Creek	1	3961.191	1074.00	128.00	138.36	133.08	138.96	0.004220	6.23	176.44	24.69	0.34
Horno Creek	1	3800	Culvert									
Horno Creek	1	3632.365	1074.00	126.70	136.60	131.77	137.26	0.005068	6.55	168.17	46.23	0.37
Horno Creek	1	2914.789	1074.00	125.90	128.67	128.67	129.46	0.024486	7.13	152.15	101.02	0.99
Horno Creek	1	1879.048	1081.00	110.00	122.04	116.03	122.30	0.001383	4.23	312.86	110.42	0.25
Horno Creek	1	1850	Culvert									
Horno Creek	1	1829.04*	1081.00	109.00	119.03		120.04	0.006079	8.32	140.42	18.01	0.50

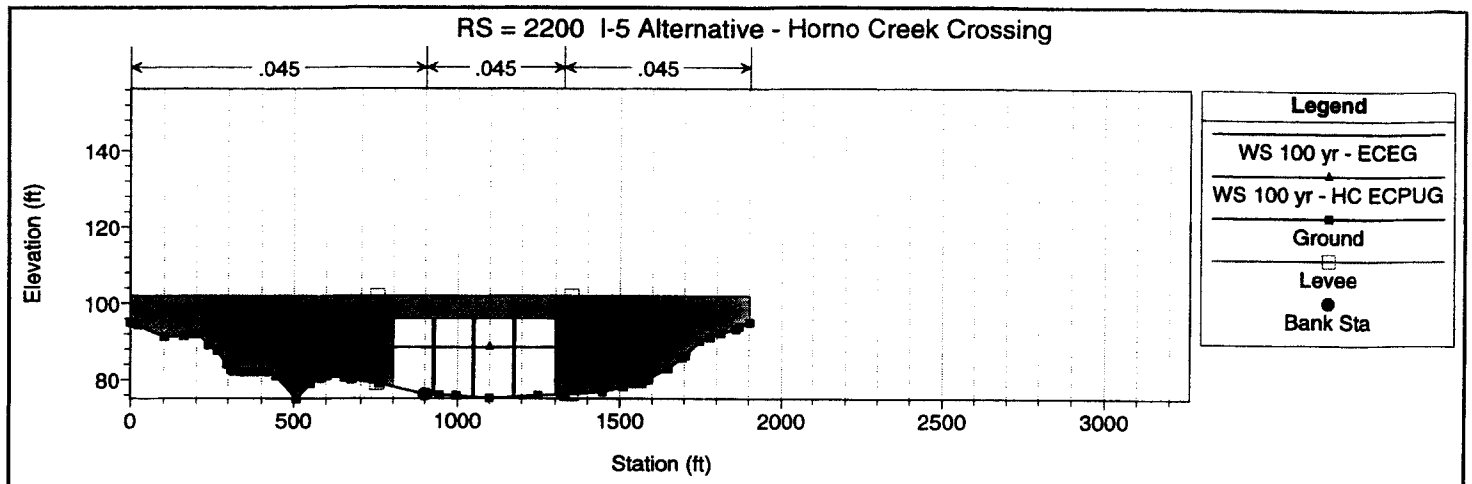
```
* Horno Creek * 1           * 1277.812    *     1081.00 *   105.00 *   117.84 *   111.25 *   118.14 *  0.001576 *     4.57
*   292.04 *   168.36 *        0.26 *
* Horno Creek * 1           * 1000        *     Culvert *          *          *          *          *          *
*          *          *          *
* Horno Creek * 1           * 929.327     *     1081.00 *    99.00 *   101.82 *   102.12 *   102.86 *  0.043444 *    10.37
*   166.78 *   243.65 *        0.26 *
* Horno Creek * 1           * 870         *     1081.00 *    89.49 *    94.07 *    93.25 *    94.80 *  0.010009 *     6.87
*   157.27 *    51.16 *        0.69 *
* San Juan Creek* 1           * 4692.380    *    36497.00 *    79.00 *   111.24 *    84.87 *   111.25 *  0.000007 *
0.86 * 50973.89 *  2077.37 *        0.03 *
* San Juan Creek* 1           * 4154.447    *    36497.00 *    78.49 *   111.24 *          *   111.24 *  0.000004 *
0.66 * 64003.65 *  2528.64 *        0.02 *
* San Juan Creek* 1           * 3374.671    *    36497.00 *    89.49 *   107.88 *   107.88 *   110.93 *  0.007488 *
16.90 *  3032.10 *   419.69 *        0.77 *
* San Juan Creek* 1           * 2504.657    *    36497.00 *    75.13 *    88.81 *    81.16 *    89.18 *  0.000753 *
5.04 *  7558.50 *   600.00 *        0.25 *
* San Juan Creek* 1           * 2200        *      Bridge *          *          *          *          *          *
*          *          *          *
* San Juan Creek* 1           * 2153.456    *    36497.00 *    74.04 *    87.32 *    83.78 *    88.21 *  0.002269 *
8.65 *  5096.41 *   550.00 *        0.42 *
* San Juan Creek* 1           * 1219.539    *    36497.00 *    72.48 *    82.08 *    82.08 *    84.10 *  0.009055 *
14.04 *  3809.75 *   948.81 *        0.80 *
* San Juan Creek* 1           * 189.796     *    36497.00 *    70.14 *    76.63 *    74.36 *    76.89 *  0.002000 *
4.88 *  9162.31 *  2114.87 *        0.35 *
************************************************************************************************************************
************************************
```

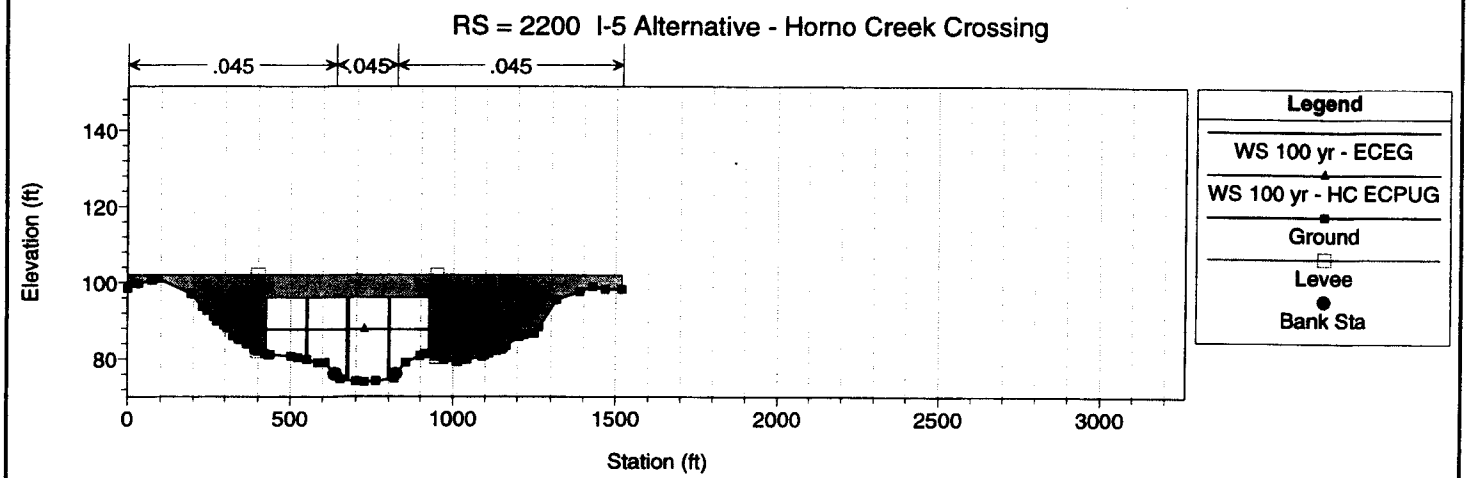


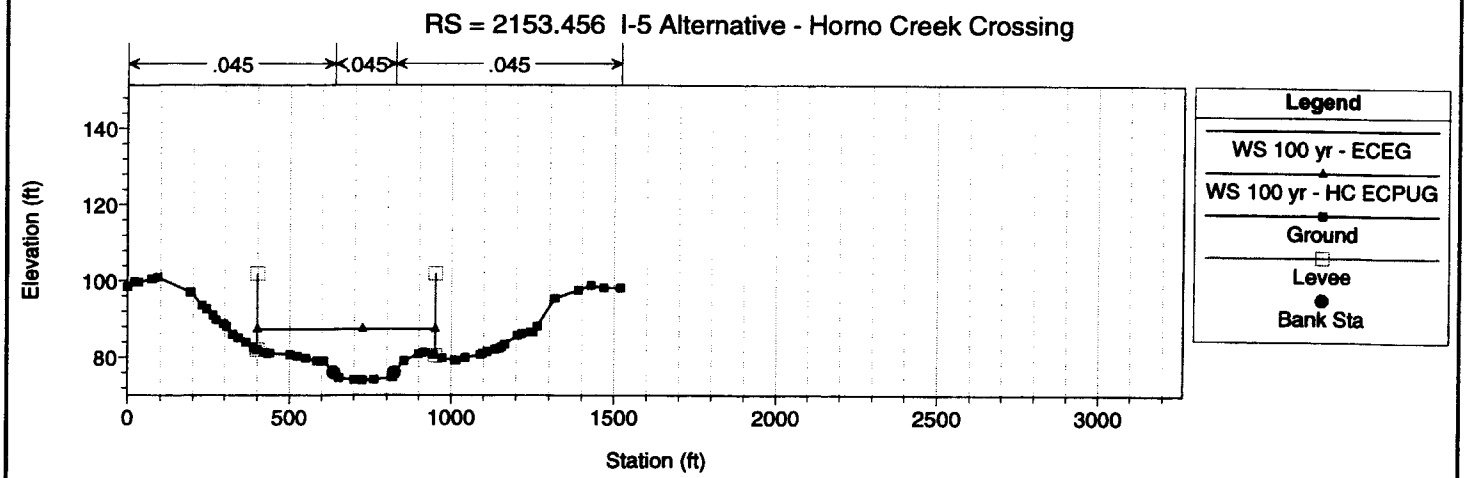
1 in Horiz. = 1400 ft 1 in Vert. = 1200 ft

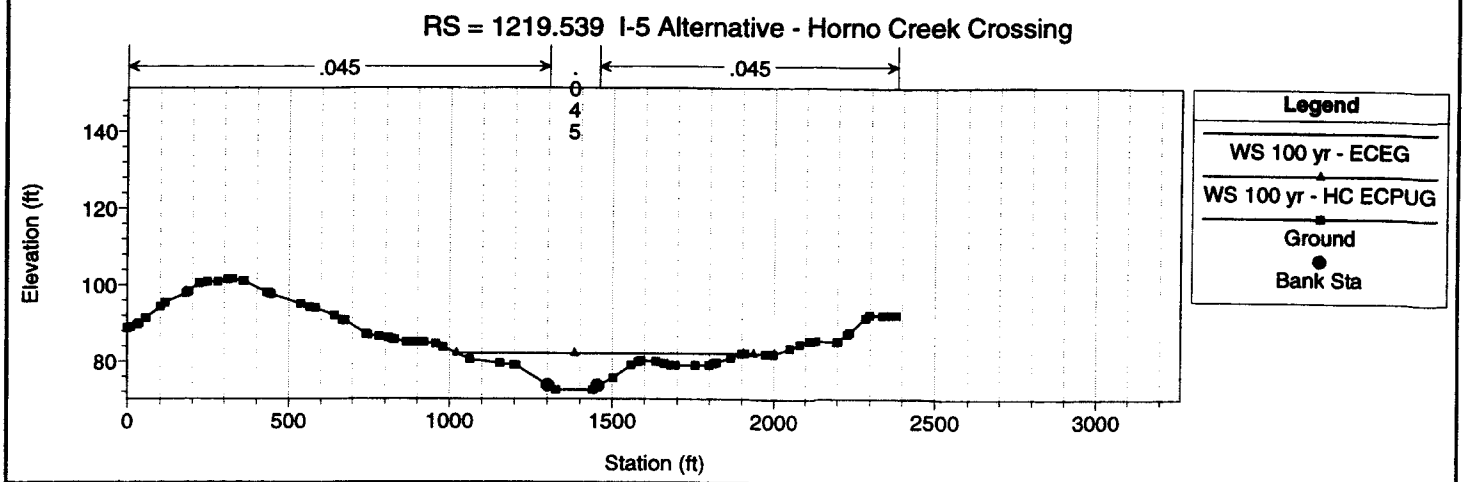


1 in Horiz. = 600 ft 1 in Vert. = 50 ft

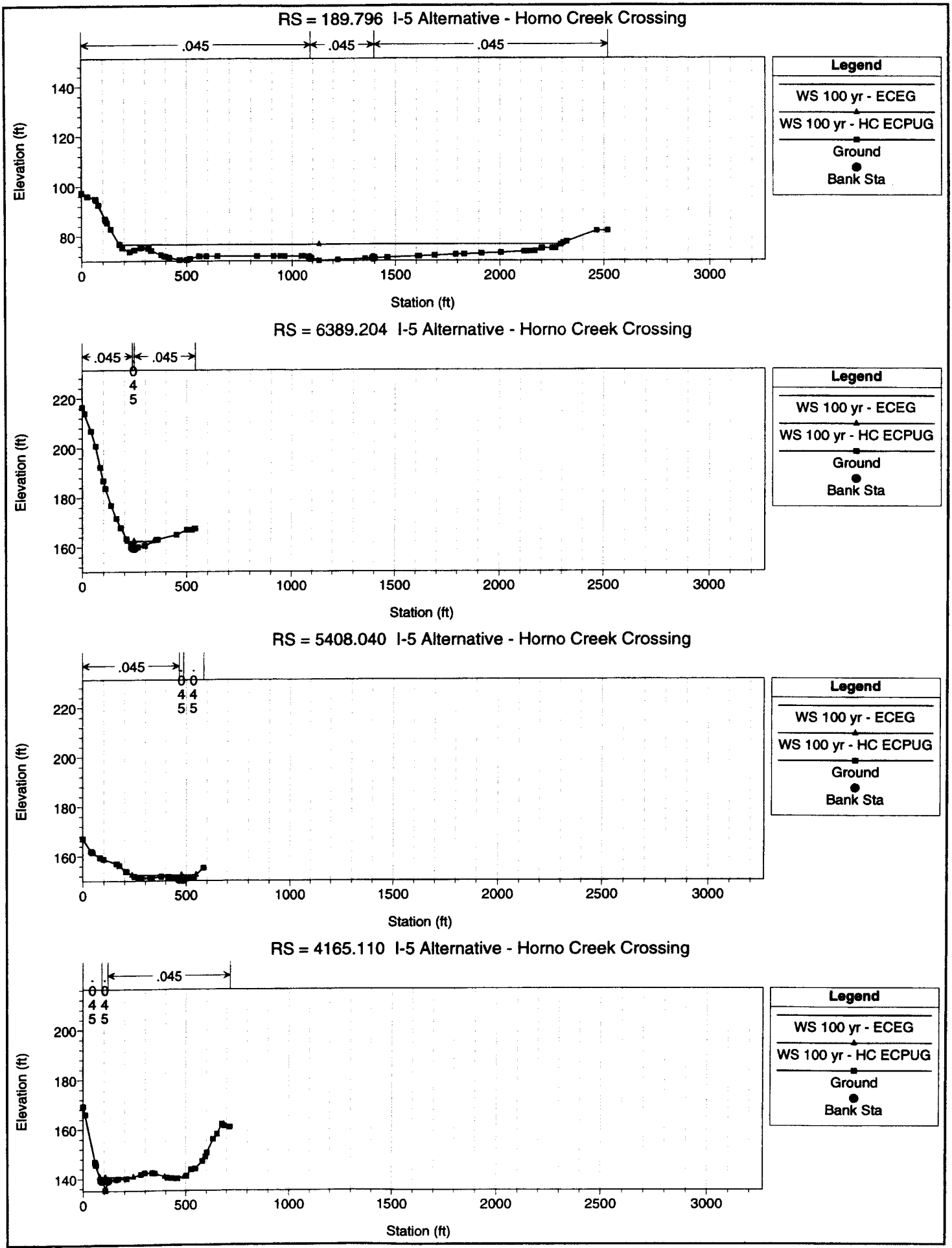




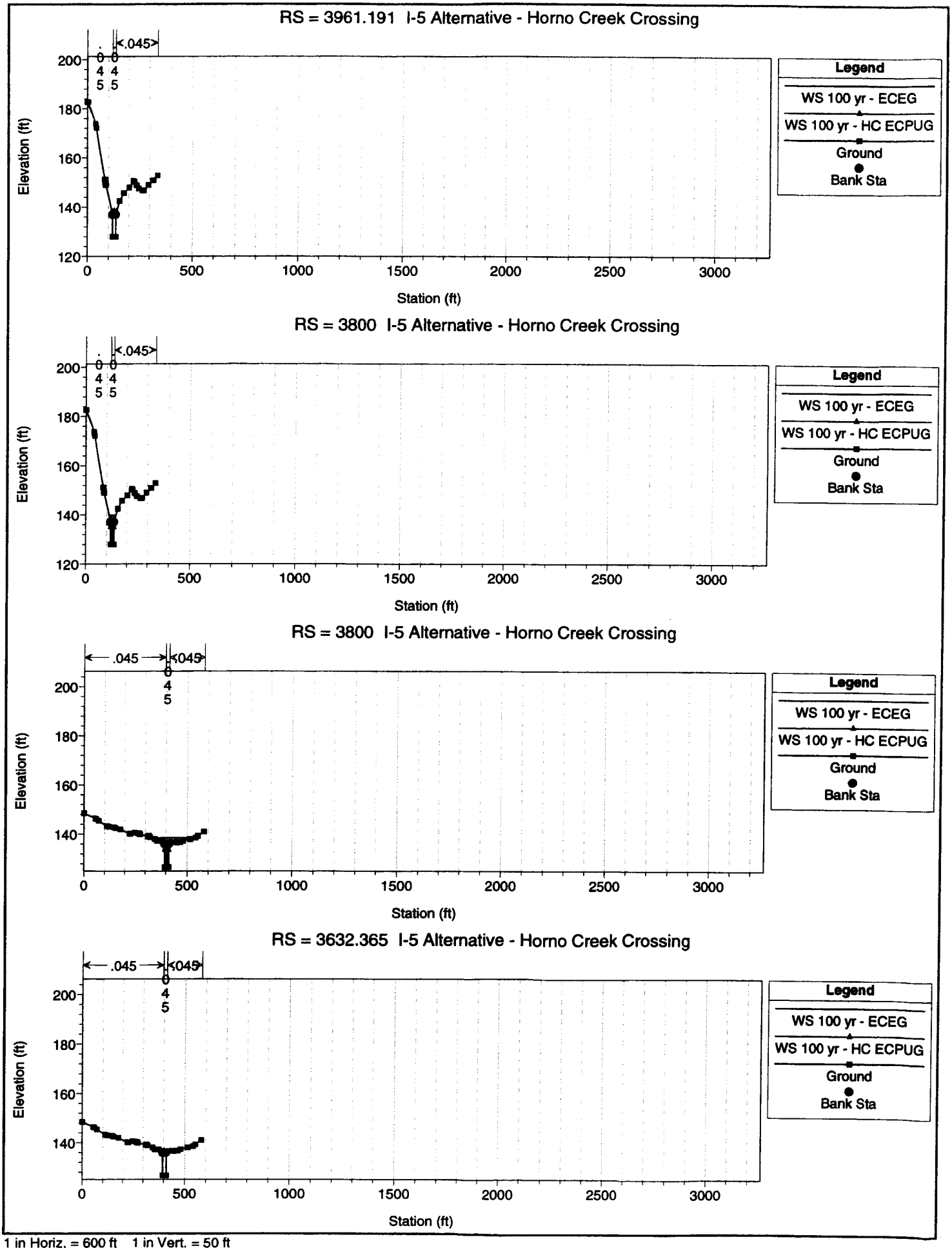




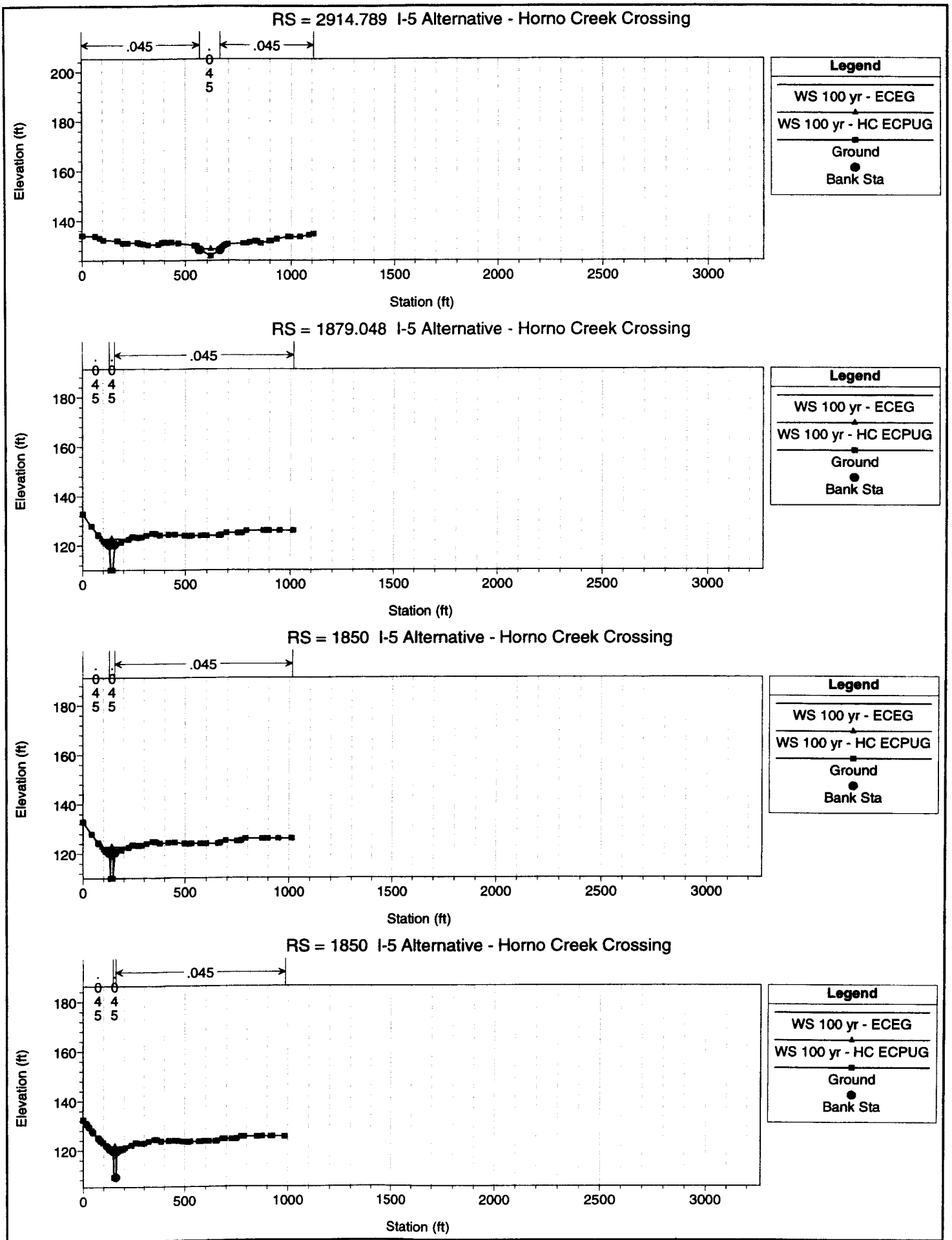
1 in Horiz. = 600 ft 1 in Vert. = 50 ft



1 in Horiz. = 600 ft 1 in Vert. = 50 ft

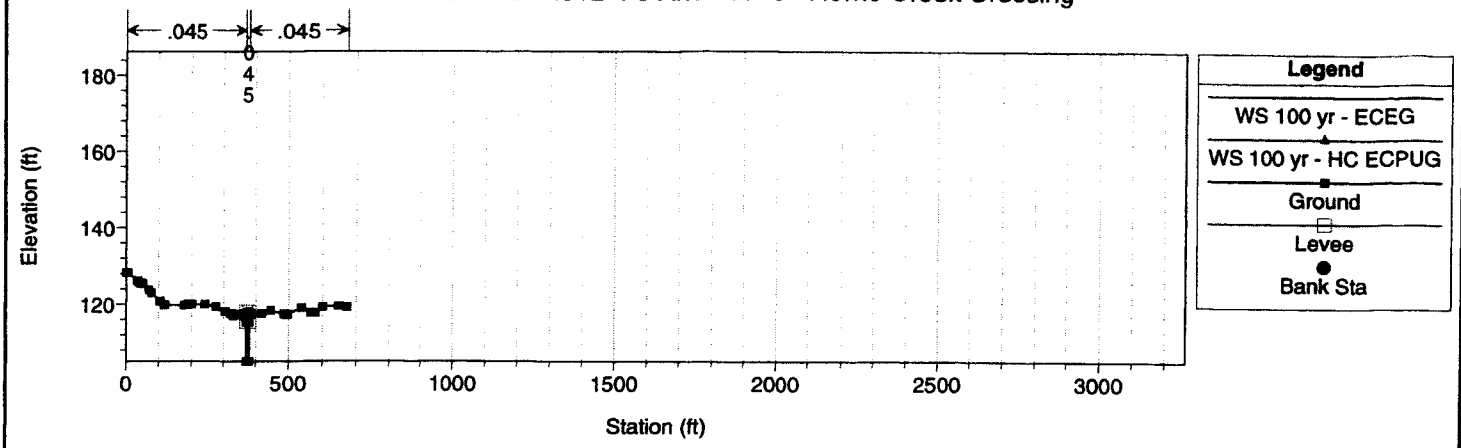


1 in Horiz. = 600 ft 1 in Vert. = 50 ft



1 in Horiz. = 600 ft 1 in Vert. = 50 ft

RS = 1277.812 I-5 Alternative - Horno Creek Crossing



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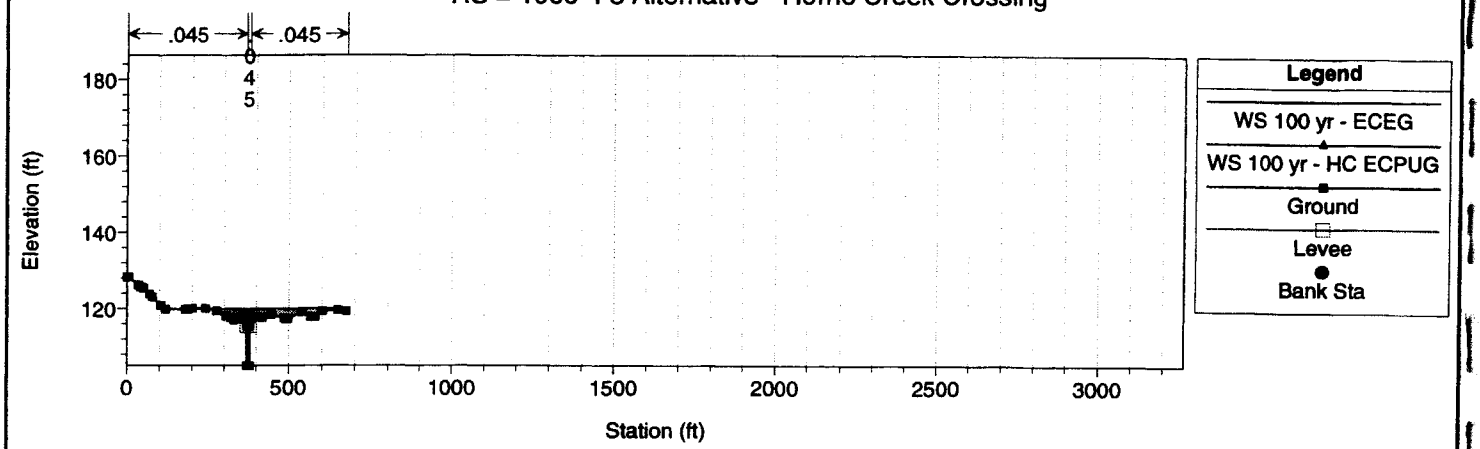

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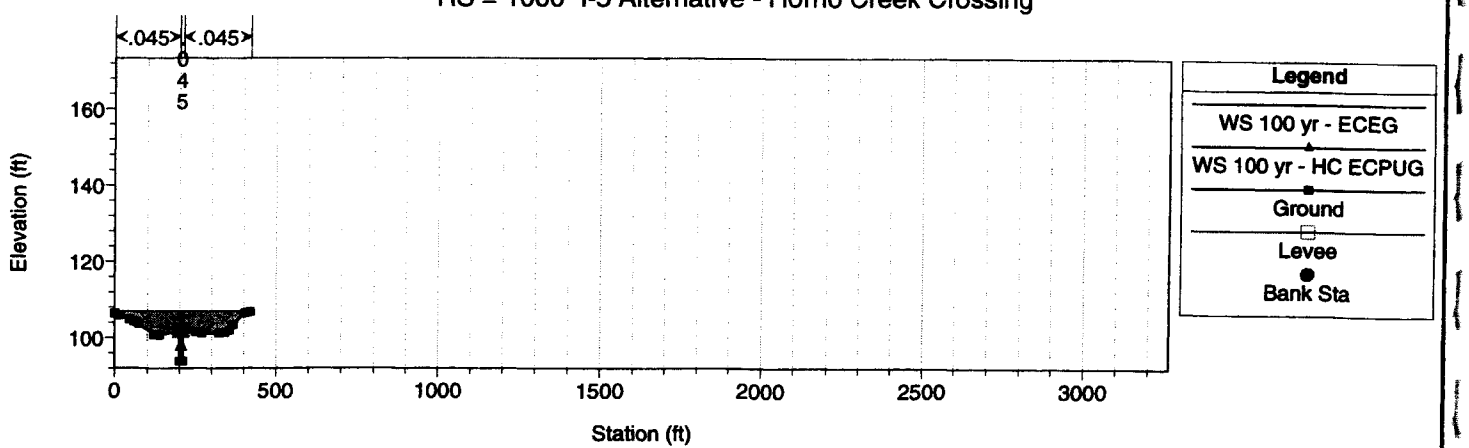
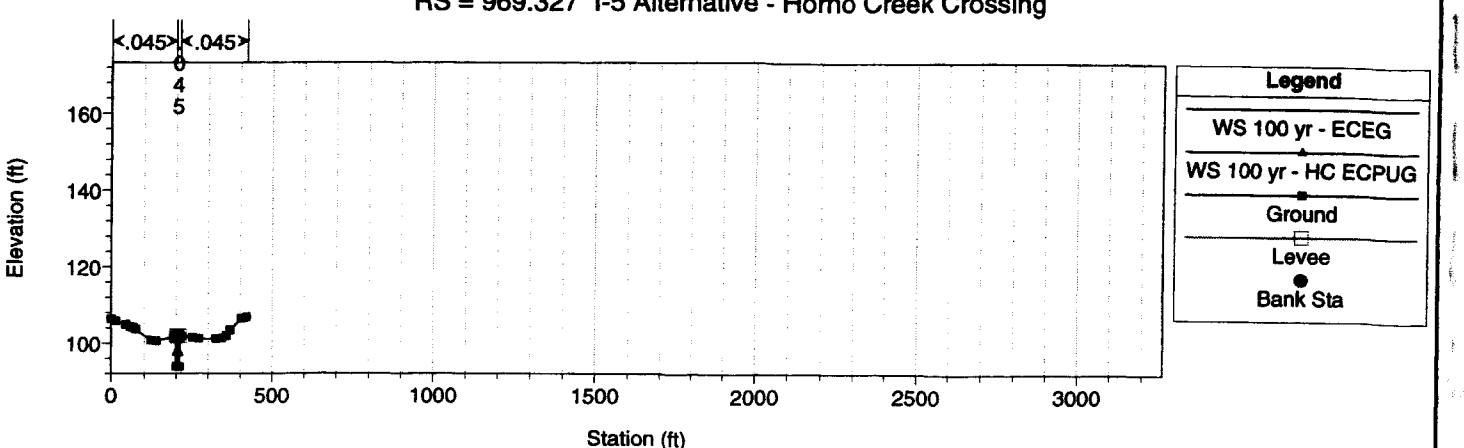
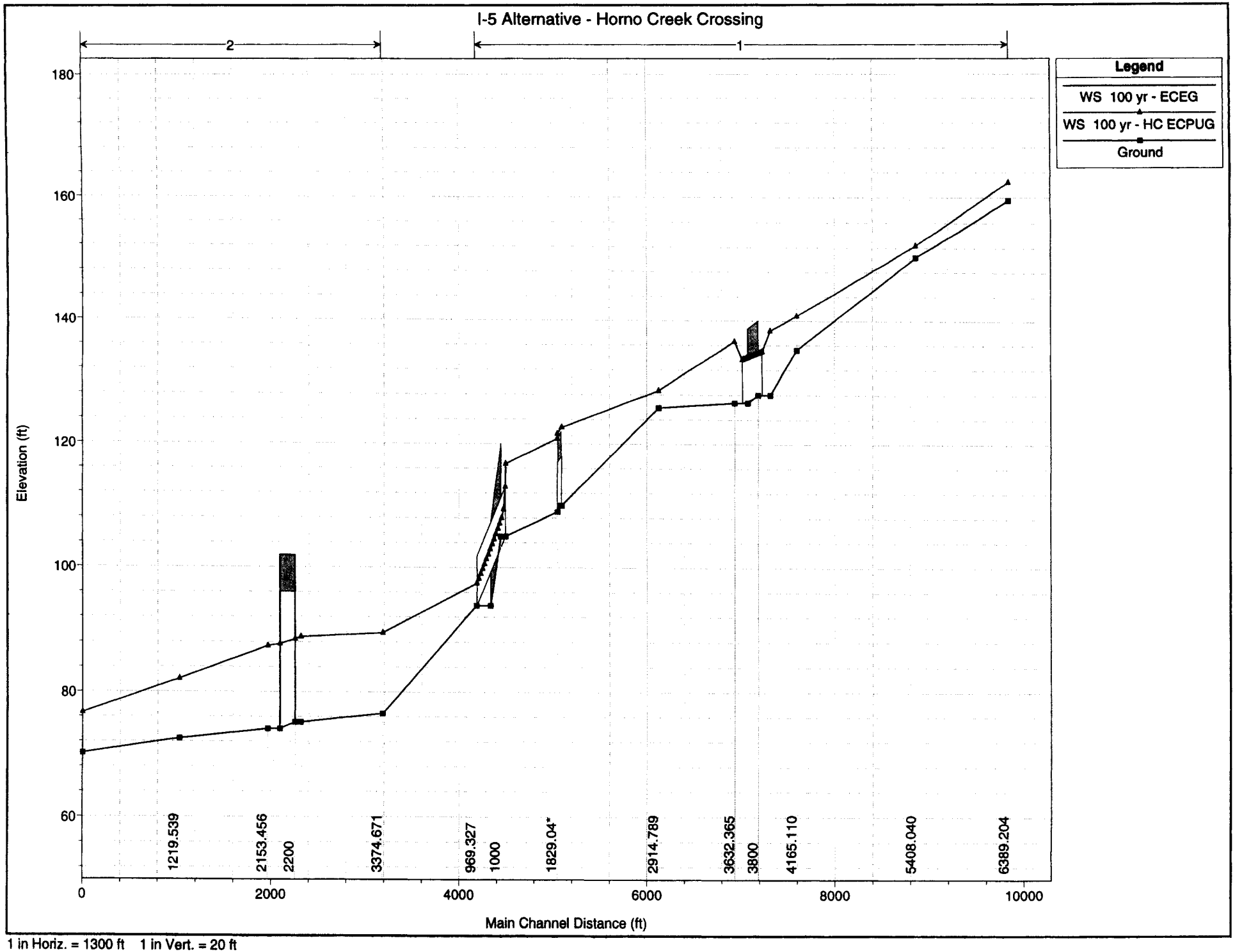


RS = 969.327 I-5 Alternative - Horno Creek Crossing



1 in Horiz. = 600 ft 1 in Vert. = 50 ft



1 in Horiz. = 1300 ft 1 in Vert. = 20 ft

APPENDIX U
HYDRAULIC MODEL INPUT & RESULTS
I-5 ALTERNATIVE AT SAN JUAN CREEK

Appendix U. **Hydraulic Model Input & Results**

I5 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 structures include:

763 (2505)

656 (2153)

HEC-RAS Version 3.0.1 Mar 2001
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: sanjuan
Project File : sanjuan.prj
Run Date and Time: 12/19/02 3:10:57 PM

Project in English units

Project Description:
I-5 Alternative - Horno and San Juan Creek Crossing

PLAN DATA

Plan Title: existing
Plan File : p:\2PDA0104\Hydr\LHS\Modeling\SanJuan_LY8910\hec-ras\sanjuan.p02

Geometry Title: sanjuan/horno existing
Geometry File : p:\2PDA0104\Hydr\LHS\Modeling\SanJuan_LY8910\hec-ras\sanjuan.g02

Flow Title : existing
Flow File : p:\2PDA0104\Hydr\LHS\Modeling\SanJuan_LY8910\hec-ras\sanjuan.f01

Plan Summary Information:
Number of: Cross Sections = 17 Mulitple Openings = 0
Culverts = 3 Inline Weirs = 0
Bridges = 1

Computational Information
Water surface calculation tolerance = 0.003
Critical depth calculaton tolerance = 0.003
Maximum number of interations = 20
Maximum difference tolerance = 0.1
Flow tolerance factor = 0.001

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

FLOW DATA

Flow Title: existing
Flow File : p:\2PDA0104\Hydr\LHS\Modeling\SanJuan_LY8910\hec-ras\sanjuan.f01

Flow Data (cfs)

River	Reach	RS	100yr HC	100 yr	50 yr	2yr
San Juan Creek	1	4692.380	90280	36497	23494	446
San Juan Creek	2	3374.671	90280	36497	23494	446
Horno Creek	1	6389.204	3215	1074	709	2
Horno Creek	1	1879.048	3206	1081	714	2

Boundary Conditions

River	Reach	Profile	Upstream	Downstream
San Juan Creek	1	100yr HC	Normal S = .002	
San Juan Creek	1	100 yr	Normal S = .002	
San Juan Creek	1	50 yr	Normal S = .002	
San Juan Creek	2	100yr HC		Normal S = .002
San Juan Creek	2	100 yr		Normal S = .002
San Juan Creek	2	50 yr		Normal S = .002
Horno Creek	1	100yr HC	Normal S = .03	
Horno Creek	1	100 yr	Normal S = .03	
Horno Creek	1	50 yr	Normal S = .03	

GEOMETRY DATA

Geometry Title: sanjuan/horno existing
Geometry File : p:\2PDA0104\Hydr\LHS\Modeling\SanJuan_LY8910\hec-ras\sanjuan.g02

Reach Connection Table

River	Reach	Upstream Boundary	Downstream Boundary
San Juan Creek	1		SJ
San Juan Creek	2	SJ	
Horno Creek	1		SJ

JUNCTION INFORMATION

Name: SJ
Description:
Energy computation Method

Length across Junction River	Reach	Tributary River	Reach	Length	Angle
San Juan Creek	1	to San Juan Creek	2	780.5	
Horno Creek	1	to San Juan Creek	2	1000	

CROSS SECTION RIVER: San Juan Creek
REACH: 1 RS: 4692.380

INPUT
Description:
Station Elevation Data num= 61

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	95	48.8	95	114.4	93.59	141.97	92.73	165.2	92
165.25	92	165.27	92	296.93	92	318.15	92	328.3	91.8
336.86	91.63	436.97	89.67	467.53	89.07	470.96	89	594.35	89
623.77	89	666.71	87.31	674.71	87	680.18	86.89	740.68	85.71
776.58	85	840.72	85	980.78	85	1023.51	85	1046.24	85
1065.56	84.35	1120.63	82.74	1138.56	82.11	1146.59	82	1254.5	82
1279.68	82	1284.11	82	1327.76	81.09	1336.89	81	1339.9	81.06
1348.04	81.22	1366.56	80.16	1399.72	79	1489.7	79	1538.49	79
1591.64	80.1	1649.52	81.59	1651.51	81.63	1667.24	82	1702.51	82
1710.15	82	1725.81	83.09	1744.38	83.6	1753.07	84.04	1799.52	86.17
1870.62	89.22	1884.49	89.81	1892.84	90.17	1919.65	91.32	1948.13	92.09
1967.64	93	1987.37	93.46	2022.25	95.73	2035.32	96.29	2067.55	97.67
2077.37	98.09								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.045	1366.56	.045	1591.64	.045

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
1366.56	1591.64	600.91	537.93	611.74	.1

CROSS SECTION RIVER: San Juan Creek
REACH: 1 RS: 4154.447

INPUT
Description:
Station Elevation Data num= 80

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	96.37	21.51	96	47.22	95.56	80.26	95	104.11	94.59
157.86	93	172.1	92.72	208.43	92	216.51	92	259.01	92
260.02	91.97	262.39	91.9	293.63	90.58	325.05	89.83	349.71	89
417.18	89	420.68	89	425.53	89	432.74	89	467.49	87.82
491.49	87.11	499.82	86.86	543.75	85.56	608.98	85	670.19	85
685.62	85	712.88	83.85	737.24	82.82	772.54	82.22	776.81	82.14
781.64	82.06	785.22	82	855.95	82	898.42	81.46	926.53	80.22
974.28	78.49	1032.15	78.49	1244.37	78.49	1251.66	79.94	1279.7	80.42
1300.37	81.23	1311.76	82	1352.7	82	1370.37	82	1405.42	82
1431.44	82	1449.52	81.69	1474.2	80.96	1486.83	80.59	1514.47	79.19
1524.12	78.49	1581.99	78.57	1900.32	78.57	1935.46	79	1960.16	80.81
1963.94	81	1964.76	81.04	1995.49	82.6	2043.08	83.59	2077.65	84.75
2080.64	84.85	2092.96	85.26	2122.22	86	2127.93	86.14	2136.4	87.07
2161.79	89.43	2174.69	89.98	2201.36	90.66	2222.5	94.14	2240.93	96.78
2259	98	2276.97	98.61	2293.23	98.99	2330.46	100.57	2399.22	102.98
2436.61	104.53	2473.8	105.63	2495.81	106	2517.93	107.49	2528.64	107.95

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.045	1514.47	.045	1935.46	.045

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
1514.47	1935.46	1113.08	780.5	187.81	.1

CROSS SECTION RIVER: San Juan Creek
REACH: 2 RS: 3374.671

INPUT
Description:
Station Elevation Data num= 38

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	96.97	24.52	96.49	60.41	95.79	98.08	95.06	132.04	94
138.35	93.86	220.37	90.34	251.67	89	277.78	89	306.55	88.21
321.58	88.15	328.1	87.72	385.29	85.27	419.43	83.8	460.59	83
461.42	82.99	463.17	82.97	531.33	81.69	561.48	80.69	563.29	80.63
601.25	79	606.11	79	639.24	79	669.23	79	795.82	77.94
1093.25	77.61	1270.1	76.5	1422.83	77.72	1647.91	77.83	1800.64	78.33
1906.36	79	1949.66	80.86	1950.53	80.9	2081.47	86.51	2096.09	87.71
2116.11	89	2206.39	92.87	2254.95	95.9				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.045	795.82	.045	1647.91	.045

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
795.82	1647.91	1440.58	871.14	187.81	.1	.3

CROSS SECTION RIVER: San Juan Creek
REACH: 2 RS: 2504.657

INPUT
Description:
Station Elevation Data num= 54

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	95.07	1.18	95.1	7.4	94.86	22.07	94.3	101.4	91.24
159.7	91.53	179.13	92	205.08	92	237.66	89.17	239.64	89
263.65	87.61	295.1	83.97	308.75	82.53	315.63	82.2	336.49	82
361.42	82	386.03	82	412.42	82	445.57	81.04	508.04	75
549.53	79	585.21	80.37	601.5	81	619.77	81.7	624.18	81.62
654.38	80.69	673.47	80.11	757.1	79.03	757.68	79.03	758	79.02
759.13	79	900.32	76.13	945.34	75.93	996.78	75.8	1099.68	75.13
1247.59	75.93	1324.76	76.13	1446.95	76.86	1511.25	78.13	1543.27	79
1567.92	79	1583.08	79.93	1590.3	80.27	1646.78	82.88	1648.73	82.94
1649.66	83	1692.53	85.66	1703.37	86.34	1747.21	90.07	1779.25	91.1
1812.86	92.17	1858.7	93.28	1868.67	93.9	1902.28	94.96		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.045	900.32	.045	1324.76	.045

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
900.32	1324.76	343.64	351.66	565.35	.3	.5

Left Levee Station= 750 Elevation= 101.9
Right Levee Station= 1350 Elevation= 101.9

BRIDGE RIVER: San Juan Creek
REACH: 2 RS: 2200

INPUT
Description:
Distance from Upstream XS = 60
Deck/Roadway Width = 160
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	101.9	0	800	101.9	0	800	101.9	96
1300	101.9	96	1300	101.9	0	2000	101.9	0

Upstream Bridge Cross Section Data
Station Elevation Data num= 54

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	95.07	1.18	95.1	7.4	94.86	22.07	94.3	101.4	91.24
159.7	91.53	179.13	92	205.08	92	237.66	89.17	239.64	89
263.65	87.61	295.1	83.97	308.75	82.53	315.63	82.2	336.49	82
361.42	82	386.03	82	412.42	82	445.57	81.04	508.04	75
549.53	79	585.21	80.37	601.5	81	619.77	81.7	624.18	81.62
654.38	80.69	673.47	80.11	757.1	79.03	757.68	79.03	758	79.02
759.13	79	900.32	76.13	945.34	75.93	996.78	75.8	1099.68	75.13
1247.59	75.93	1324.76	76.13	1446.95	76.86	1511.25	78.13	1543.27	79
1567.92	79	1583.08	79.93	1590.3	80.27	1646.78	82.88	1648.73	82.94
1649.66	83	1692.53	85.66	1703.37	86.34	1747.21	90.07	1779.25	91.1
1812.86	92.17	1858.7	93.28	1868.67	93.9	1902.28	94.96		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.045	900.32	.045	1324.76	.045

Bank Sta: Left	Right	Coeff Contr.	Expan.
900.32	1324.76	.3	.5

Left Levee Station= 750 Elevation= 101.9
Right Levee Station= 1350 Elevation= 101.9

Downstream Deck/Roadway Coordinates
num= 6

Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord
0	101.9	0	425	101.9	0	425	101.9	96
925	101.9	96	925	101.9	0	2000	101.9	0

Downstream Bridge Cross Section Data
Station Elevation Data num= 63

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	98.54	22.14	99.74	32.75	99.69	73.89	100.53	90.63	100.88
191.42	97.06	192.44	97.01	192.92	96.99	193.36	96.97	194.19	96.9
227.61	93.68	242.96	92.65	261.85	91	272.07	89.81	296.1	88.82
298.46	88.79	306.38	88.1	324.84	86	340.51	85.11	365.65	83.94
389.28	82.56	398.83	82	421.35	81.34	431.56	81.04	438.05	81.07
501.38	80.7	501.57	80.7	523.08	80.26	549.93	79.71	584.37	79
606.52	79	637.94	75.98	653.38	74.66	699.68	74.11	725.4	74.04
761.41	74.19	818.01	74.73	823.15	75.9	852.55	79	897.86	80.72
912.5	81.27	943.74	80.63	971.98	79.79	1010.86	79.19	1015.24	79.17
1043.34	79.82	1090.02	80.63	1096.96	80.88	1111.14	81.4	1133.95	82.08
1148.2	82.3	1154.72	82.79	1164.49	83.39	1203.94	85.79	1217.1	86.19
1243.4	86.6	1249.92	86.6	1262.95	88.18	1315.56	95.4	1387.71	97.6
1427.17	98.8	1466.5	98.2	1519.33	98.2				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val

```
       0    .045  637.94    .045  823.15    .045

Bank Sta: Left   Right    Coeff Contr.    Expan.
        637.94  823.15            .3        .5
Left Levee      Station=     400      Elevation=   101.9
Right Levee     Station=     950      Elevation=   101.9

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        =   101.9
Energy head used in spillway design        =
Spillway height used in design             =
Weir crest shape                           = Broad Crested

Number of Piers =  3

Pier Data
Pier Station     Upstream=     925    Downstream=     550
Upstream      num=        2
    Width   Elev    Width   Elev
       7      79       7      96
Downstream    num=        2
    Width   Elev    Width   Elev
       7      79       7      96

Pier Data
Pier Station     Upstream=    1050    Downstream=     675
Upstream      num=        2
    Width   Elev    Width   Elev
       7      79       7      96
Downstream    num=        2
    Width   Elev    Width   Elev
       7      79       7      96

Pier Data
Pier Station     Upstream=    1175    Downstream=     800
Upstream      num=        2
    Width   Elev    Width   Elev
       7      79       7      96
Downstream    num=        2
    Width   Elev    Width   Elev
       7      79       7      96

Number of Bridge Coefficient Sets =  1

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

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

CROSS SECTION          RIVER: San Juan Creek
REACH: 2                  RS: 2153.456

INPUT
Description:
Station Elevation Data    num=      63
     Sta     Elev     Sta     Elev     Sta     Elev     Sta     Elev     Sta     Elev
       0    98.54   22.14    99.74   32.75    99.69   73.89   100.53   90.63   100.88
  191.42    97.06  192.44    97.01  192.92    96.99  193.36    96.97  194.19     96.9
  227.61    93.68  242.96    92.65  261.85       91  272.07    89.81   296.1    88.82
  298.46    88.79  306.38     88.1  324.84       86  340.51    85.11  365.65    83.94
  389.28    82.56  398.83       82  421.35    81.34  431.56    81.04  438.05    81.07
  501.38     80.7  501.57     80.7  523.08    80.26  549.93    79.71  584.37       79
  606.52       79  637.94    75.98  653.38    74.66  699.68    74.11   725.4    74.04
  761.41    74.19  818.01    74.73  823.15     75.9  852.55       79  897.86    80.72
   912.5    81.27  943.74    80.63  971.98    79.79 1010.86    79.19 1015.24    79.17
 1043.34    79.82 1090.02    80.63 1096.96    80.88 1111.14     81.4 1133.95    82.08
  1148.2     82.3 1154.72    82.79 1164.49    83.39 1203.94    85.79  1217.1    86.19
  1243.4     86.6 1249.92     86.6 1262.95    88.18 1315.56     95.4 1387.71     97.6
 1427.17     98.8  1466.5     98.2 1519.33     98.2

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .045  637.94    .045  823.15    .045

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.    Expan.
        637.94  823.15           713.87  932.73 1173.35             .3        .5
Left Levee      Station=     400      Elevation=   101.9
Right Levee     Station=     950      Elevation=   101.9

CROSS SECTION          RIVER: San Juan Creek
REACH: 2                  RS: 1219.539

INPUT
Description:
Station Elevation Data    num=      84
     Sta     Elev     Sta     Elev     Sta     Elev     Sta     Elev     Sta     Elev
       0    88.74    9.26       89   30.31     89.6   36.21       90   55.77    91.32
```

99.56	94.29	114.53	95.31	178.68	97.83	183.75	98.06	188.38	98.31
219.8	100.44	244.83	100.71	279.28	100.78	310.35	101.42	325.07	101.58
357.73	101	360.97	100.97	430.34	98	437.63	97.9	444.46	97.6
535.62	95	564.92	94.17	581.61	94.02	642.38	91.96	666.76	90.87
675.98	90.64	741.4	87.14	743.13	87	746.16	86.88	780.5	86.51
809.33	86.2	818.17	85.95	827.86	85.67	865.78	85	886.52	85
895.88	85	920.6	85	956.7	84.61	978.68	83.75	1061.98	80.48
1154.53	79.48	1198.82	79	1201.63	79	1202.03	79	1203.96	79
1302.25	73.65	1326.37	72.48	1438.91	72.48	1454.98	73.57	1503.22	75.67
1557.78	79	1580.34	79.89	1588.33	80.2	1634.16	80.04	1658.52	79.48
1679.22	79	1693.61	79	1755.26	79	1798.88	79	1812.36	79.38
1818.18	79.55	1821.07	79.64	1864.59	80.95	1899.43	82	1908.75	82.14
1972.74	82	1995.6	82	1997.15	81.95	2048.68	83.5	2081.03	84.47
2111.41	85.39	2131.59	85.3	2196.85	85.02	2197.93	85.01	2198.26	85.03
2200.54	85.16	2229.02	87	2236.3	87.47	2285.11	91.26	2297.42	92
2337.23	92	2363.76	92	2371.96	92	2380.48	92		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.045	1302.25	.045	1454.98	.045

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
1302.25	1454.98	1067.78	1029.32	1160.6	.1 .3

CROSS SECTION RIVER: San Juan Creek
REACH: 2 RS: 189.796

INPUT
Description:
Station Elevation Data num= 64

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	97.42	26.6	96.04	64.28	95	66.27	94.89	67.78	94.58
78.71	92.61	108.95	87.07	113.12	86.3	118.63	85.41	137.43	82.89
178.58	76.79	191.3	75.32	227.34	73.75	248.49	74.39	277.11	75.34
281.69	75.39	314.81	75.17	327.6	74.15	377.27	72.48	392.47	71.96
394.89	71.92	399.44	71.83	418.28	71.49	467.56	70.58	499.11	70.48
507.68	70.68	516.33	71	558.24	71.96	560.16	72	591.63	72
644.2	72	830.42	72	909.22	72	943.3	72	962.13	72
1045.04	72	1051.47	72	1055.93	72	1088.11	71.22	1132.46	70.14
1223.85	70.46	1354.04	70.93	1395.4	71.07	1398.19	71.08	1461.69	71.31
1608.46	71.83	1614.82	71.85	1689.45	72.11	1790.91	72.47	1831.08	72.62
1913.98	72.91	2005.13	73.23	2117.31	73.63	2144.32	73.73	2168.3	73.81
2198.65	74.84	2203.48	75	2252.73	75	2267.44	75	2292.22	76.5
2305.14	77.14	2321.81	77.64	2465.7	82	2518.78	82		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.045	1088.11	.045	1395.4	.045

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
1088.11	1395.4	0	0	0	.1 .3

CROSS SECTION RIVER: Horno Creek
REACH: 1 RS: 6389.204

INPUT
Description:
Station Elevation Data num= 27

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	216.49	11.31	214.02	40.69	206.81	62.66	200.81	84.86	192.32
99.23	186.83	109.37	183.78	135.81	176.92	161.97	171.56	182.92	167.85
208.97	163.41	231.95	160.12	239.2	159.82	245.55	159.55	247.86	159.62
261.96	160	296.12	160.62	352.98	162.94	355.28	163.01	356.03	163.04
357.51	163.06	452.58	165	501.59	167	501.65	167	526.13	167
538.17	167.49	541.18	167.53						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.045	239.2	.045	247.86	.045

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
239.2	247.86	1025.75	982.2	938.93	.1 .3

CROSS SECTION RIVER: Horno Creek
REACH: 1 RS: 5408.040

INPUT
Description:
Station Elevation Data num= 26

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	167.14	40.46	162.12	46.09	161.59	81.82	159.51	98	158.83
161.31	157.12	162.58	157.09	175.1	156.23	205.88	153.83	209.95	153.71
247.24	151.8	269.19	151.47	280.17	151.41	323.13	151.16	329.95	151.25
377.08	151.86	413.33	151.66	437.99	151.39	454.01	151	467.34	150.68
477.54	150.43	486.57	150.62	505.39	151	522.38	151	536.72	151.48
582.72	155.24								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.045	467.34	.045	486.57	.045

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
467.34	486.57	1120.45	1261.85	1187	.1 .3

CROSS SECTION RIVER: Horno Creek
REACH: 1 RS: 4165.110

INPUT

Description:
Station Elevation Data num= 34

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	169.34	9.96	166.1	57.3	146.92	59.05	146.27	59.72	146
61.24	145.57	84.6	139.29	90.24	139.24	94.94	139.21	105.47	135.23
118.89	139.21	159.24	139.79	166.71	140	209	140	278.72	141.68
297.22	142.27	333.4	142.35	346.16	142.17	408.04	140.41	428.01	140.18
453.97	140.12	459.29	140.07	502.39	141	502.78	140.98	525.66	143.68
546.27	143.9	580.34	147	595.45	148.83	602	150.38	633.24	155.88
652.03	157.89	676.73	162.01	688.5	161.27	716.19	160.72		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.045	90.24	.045	118.89	.045

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
90.24	118.89	267.21	282.79	435.59	.1	.3

CROSS SECTION RIVER: Horno Creek
REACH: 1 RS: 3961.191

INPUT
Description:
Station Elevation Data num= 24

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	182.63	37.2	173.82	39.31	173.04	41.42	172.18	83.62	151.27
85.73	149.96	87.83	149	120.5	137	120.5	128	137	128
137	137	155.35	142.54	176.45	145.73	201.76	147.91	222.86	150.64
227.07	150.27	238.31	148.82	248.17	147.55	264.9	146.83	269.28	146.64
273.49	146.73	294.59	149	315.69	150.82	336.6	152.85		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.045	120.5	.045	137	.045

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
120.5	137	322.94	380.54	744.62	.3	.5

CULVERT RIVER: Horno Creek
REACH: 1 RS: 3800

INPUT
Description:
Distance from Upstream XS = 130
Deck/Roadway Width = 110
Weir Coefficient = 2.6
Upstream Deck/Roadway Coordinates
num= 2

Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord
0	140	135	1000	140	135

Upstream Bridge Cross Section Data
Station Elevation Data num= 24

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	182.63	37.2	173.82	39.31	173.04	41.42	172.18	83.62	151.27
85.73	149.96	87.83	149	120.5	137	120.5	128	137	128
137	137	155.35	142.54	176.45	145.73	201.76	147.91	222.86	150.64
227.07	150.27	238.31	148.82	248.17	147.55	264.9	146.83	269.28	146.64
273.49	146.73	294.59	149	315.69	150.82	336.6	152.85		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.045	120.5	.045	137	.045

Bank Sta: Left	Right	Coeff Contr.	Expan.
120.5	137	.3	.5

Downstream Deck/Roadway Coordinates
num= 2

Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord
0	138.7	133.7	1000	138.7	133.7

Downstream Bridge Cross Section Data
Station Elevation Data num= 34

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	148.49	53.61	146.42	58.66	146.22	71.03	145.49	110.84	143.36
121.69	143.09	146.51	142.82	154.12	142.53	179.24	142.03	222.96	140.25
224.92	140.26	226.99	140.18	248.14	140.67	268.14	140.28	271.35	140.43
274.75	140	313.31	139.19	317.78	139.3	322.51	138.8	346.94	138
358.49	137.25	377.61	137.27	396	136	396	126.7	412.5	126.7
412.5	136	417.24	136.52	450.41	136.68	465.78	136.79	480.3	137.3
513.54	138	539.21	138.54	549.94	139.24	578.7	141.11		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.045	396	.045	412.5	.045

Bank Sta: Left	Right	Coeff Contr.	Expan.
396	412.5	.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 = 138.7
Energy head used in spillway design =
Spillway height used in design =
Weir crest shape = Broad Crested

Number of Culverts = 1

Culvert Name	Shape	Rise	Span
Culvert #1	Box	7	8

FHWA Chart # 8 - flared wingwalls
FHWA Scale # 1 - Wingwall flared 30 to 75 deg.
Solution Criteria = Highest U.S. EG

Culvert	Upstrm Dist	Length	n Value	Entrance Loss Coef	Exit Loss Coef
	85	210	.013	.2	1

Number of Barrels = 2
Upstream Elevation = 128
Centerline Stations

Sta.	Sta.
124.5	133

Downstream Elevation = 126.7
Centerline Stations

Sta.	Sta.
400	408.5

CROSS SECTION RIVER: Horno Creek
REACH: 1 RS: 3632.365

INPUT
Description:
Station Elevation Data num= 34

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	148.49	53.61	146.42	58.66	146.22	71.03	145.49	110.84	143.36
121.69	143.09	146.51	142.82	154.12	142.53	179.24	142.03	222.96	140.25
224.92	140.26	226.99	140.18	248.14	140.67	268.14	140.28	271.35	140.43
274.75	140	313.31	139.19	317.78	139.3	322.51	138.8	346.94	138
358.49	137.25	377.61	137.27	396	136	396	126.7	412.5	126.7
412.5	136	417.24	136.52	450.41	136.68	465.78	136.79	480.3	137.3
513.54	138	539.21	138.54	549.94	139.24	578.7	141.11		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.045	396	.045	412.5	.045

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
396	412.5	827.38	811.02	744.62	.3 .5

CROSS SECTION RIVER: Horno Creek
REACH: 1 RS: 2914.789

INPUT
Description:
Station Elevation Data num= 51

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	134.12	2.46	134	2.66	134	63.46	133.82	85.77	133.02
102.89	132.21	168.78	132.01	170.11	132	173.77	131.88	198.4	131
203.19	131	206.36	130.9	221.91	131	270.06	131.22	282.67	130.81
295.7	130.59	321.36	130.35	369.84	130.44	387.41	131.18	399.5	131.4
414.69	131.32	434.37	131.41	467.28	131	541.61	130.07	541.79	130.07
551.77	129.88	567.2	128.22	617.36	125.9	659.81	128.19	671.38	129.53
679.1	130	686.82	130.37	694.53	130.65	771.7	131.03	782.21	131
784	131	786.75	131	801.92	131.38	829.5	131.93	837.64	131.73
854.75	131	895.25	131.86	899.98	131.92	903.64	132	932.08	132.64
986.41	133.58	996.26	133.51	1041.75	133.54	1083.56	134.27	1106.31	134.66
1107.95	134.69								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.045	567.2	.045	659.81	.045

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
567.2	659.81	743.6	1030.03	1145.8	.1 .3

CROSS SECTION RIVER: Horno Creek
REACH: 1 RS: 1879.048

INPUT
Description:
Station Elevation Data num= 45

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	132.9	.52	132.84	43.11	127.93	73.85	124.38	76.36	124.09
102.47	121.86	109.6	120.88	128.78	120.25	135	110	145	110
155.14	120.37	159.15	120.49	188.33	121.37	222.62	122.4	242.59	123.55
257.23	123.3	270.88	123.17	276.61	123.22	288.16	123.33	311.24	124
340.36	124.84	350.23	124.87	356.72	124.69	377.07	124.1	418.54	124.3
449.76	124.45	496.97	124	519.02	123.79	529.96	124	572.68	124
599.37	124	655.96	124	659.49	124	665.32	124.22	692.16	125.13
747.49	125	760.05	125	762.4	125	768.19	125.19	789.03	126
871.05	126	888.32	126	897.7	126	949.42	126	1014	126

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.045	128.78	.045	155.14	.045

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
128.78	155.14	40.15	50	64.37	.3 .5

CULVERT RIVER: Horno Creek
REACH: 1 RS: 1850

INPUT
Description:
Distance from Upstream XS = 10
Deck/Roadway Width = 36

Weir Coefficient = 2.6
Upstream Deck/Roadway Coordinates
num= 4

Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord
0	122	118	135	122	100	145	122	100
400	122	118						

Upstream Bridge Cross Section Data
Station Elevation Data num= 45

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	132.9	.52	132.84	43.11	127.93	73.85	124.38	76.36	124.09
102.47	121.86	109.6	120.88	128.78	120.25	135	110	145	110
155.14	120.37	159.15	120.49	188.33	121.37	222.62	122.4	242.59	123.55
257.23	123.3	270.88	123.17	276.61	123.22	288.16	123.33	311.24	124
340.36	124.84	350.23	124.87	356.72	124.69	377.07	124.1	418.54	124.3
449.76	124.45	496.97	124	519.02	123.79	529.96	124	572.68	124
599.37	124	655.96	124	659.49	124	665.32	124.22	692.16	125.13
747.49	125	760.05	125	762.4	125	768.19	125.19	789.03	126
871.05	126	888.32	126	897.7	126	949.42	126	1014	126

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.045	128.78	.045	155.14	.045

Bank Sta: Left Right Coeff Contr. Expan.
128.78 155.14 .3 .5

Downstream Deck/Roadway Coordinates
num= 4

Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord
0	121	117	104	121	100	114	121	100
400	121	117						

Downstream Bridge Cross Section Data
Station Elevation Data num= 80

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	132.51	.6	132.46	1.83	132.35	13.63	131.09	16.48	130.78
17.5	130.69	19.62	130.48	27.42	129.63	31.14	129.23	41.6	128.09
47.28	127.48	49.8	127.25	72.27	125.19	73.85	125.05	75.72	124.88
77.17	124.76	80.74	124.43	85.31	124.02	88.21	123.75	97.67	123.11
111.43	122.12	118.37	121.59	122.83	121.06	126.6	120.62	128.44	120.5
130.21	120.37	133.16	120.27	137.28	120.07	139.64	119.93	145.53	119.77
150	109	160	109	163.93	119.24	171.46	119.74	182.07	120.09
194.45	120.54	205.29	121.05	237.69	122	256.56	123.05	270.4	122.83
277.97	122.76	283.3	122.71	288.71	122.76	299.63	122.87	321.44	123.5
348.96	124.29	355.4	124.32	358.29	124.32	364.42	124.16	383.65	123.6
422.84	123.76	452.34	123.87	468.6	123.71	485.03	123.55	496.96	123.45
499.95	123.42	517.79	123.28	528.13	123.48	568.5	123.53	593.73	123.56
614.65	123.59	647.2	123.55	650.54	123.54	656.05	123.74	681.41	124.54
692.84	124.5	726.31	124.42	733.7	124.42	745.57	124.44	747.79	124.45
753.26	124.63	772.96	125.42	788.15	125.45	850.47	125.45	866.79	125.46
875.65	125.46	917.8	125.46	924.53	125.46	984.27	125.44	985.56	125.44

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.045	145.53	.045	160	.045

Bank Sta: Left Right Coeff Contr. Expan.
145.53 160 .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 = 121
Energy head used in spillway design =
Spillway height used in design =
Weir crest shape = Broad Crested

Number of Culverts = 1

Culvert Name Shape Rise Span
Culvert #1 Box 8 10
FHWA Chart # 8 - flared wingwalls
FHWA Scale # 1 - Wingwall flared 30 to 75 deg.
Solution Criteria = Highest U.S. EG

Culvert	Upstrm Dist	Length	n Value	Entrance Loss Coef	Exit Loss Coef
	4	44	.013	.2	1

Upstream Elevation = 110
Centerline Station = 140
Downstream Elevation = 109
Centerline Station = 155

CULVERT OUTPUT Profile #100 yr
Culvert ID : Culvert #1

Culv Q (cfs)	811.11	Culv Ful Lngh (ft)	44.00
# Barrels	1	Culv Vel US (ft/s)	10.14
Q Barrel (cfs)	811.11	Culv Vel DS (ft/s)	10.14
E.G. US. (ft)	122.89	Culv Inv El Up (ft)	110.00
W.S. US. (ft)	122.71	Culv Inv El Dn (ft)	109.00
E.G. DS (ft)	121.44	Culv Frctn Ls (ft)	0.12
W.S. DS (ft)	120.86	Culv Ext Lss (ft)	1.01
Delta EG (ft)	1.45	Culv Ent Lss (ft)	0.32
Delta WS (ft)	1.86	Q Weir (cfs)	269.89
E.G. IC (ft)	122.37	Weir Sta Lft (ft)	90.35
E.G. OC (ft)	122.89	Weir Sta Rgt (ft)	231.22
Culvert Control	Outlet	Weir Submerg	0.00
Culv WS Inlet (ft)	118.00	Weir Max Depth (ft)	0.90

Culv WS Outlet (ft)	117.00	Weir Avg Depth (ft)	0.80
Culv Nml Depth (ft)		Wr Flw Area (sq ft)	113.19
Culv Crt Depth (ft)	5.89	Min El Weir Flow (ft)	122.01

CROSS SECTION RIVER: Horno Creek
REACH: 1 RS: 1829.04*

INPUT
Description:
Station Elevation Data num= 80

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	132.51	.6	132.46	1.83	132.35	13.63	131.09	16.48	130.78
17.5	130.69	19.62	130.48	27.42	129.63	31.14	129.23	41.6	128.09
47.28	127.48	49.8	127.25	72.27	125.19	73.85	125.05	75.72	124.88
77.17	124.76	80.74	124.43	85.31	124.02	88.21	123.75	97.67	123.11
111.43	122.12	118.37	121.59	122.83	121.06	126.6	120.62	128.44	120.5
130.21	120.37	133.16	120.27	137.28	120.07	139.64	119.93	145.53	119.77
150	109	160	109	163.93	119.24	171.46	119.74	182.07	120.09
194.45	120.54	205.29	121.05	237.69	122	256.56	123.05	270.4	122.83
277.97	122.76	283.3	122.71	288.71	122.76	299.63	122.87	321.44	123.5
348.96	124.29	355.4	124.32	358.29	124.32	364.42	124.16	383.65	123.6
422.84	123.76	452.34	123.87	468.6	123.71	485.03	123.55	496.96	123.45
499.95	123.42	517.79	123.28	528.13	123.48	568.5	123.53	593.73	123.56
614.65	123.59	647.2	123.55	650.54	123.54	656.05	123.74	681.41	124.54
692.84	124.5	726.31	124.42	733.7	124.42	745.57	124.44	747.79	124.45
753.26	124.63	772.96	125.42	788.15	125.45	850.47	125.45	866.79	125.46
875.65	125.46	917.8	125.46	924.53	125.46	984.27	125.44	985.56	125.44

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.045	145.53	.045	160	.045

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
145.53	160	442.67	551.25	709.65	.3	.5

CROSS SECTION RIVER: Horno Creek
REACH: 1 RS: 1277.812

INPUT
Description:
Station Elevation Data num= 40

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	128.21	4.53	128.26	33.81	126.19	40.88	125.59	43.4	125.58
48.67	125.36	68.02	123.76	77.24	123	103.2	120.86	117.27	119.8
179.27	119.74	183.2	119.79	187.82	119.83	191.42	119.96	200.27	120
242.28	120	276.41	119.3	304.69	118.08	320.7	117.59	329.89	117
340.02	117.44	365	117.49	369	117.14	370	115.45	370	105
380	105	380	115.45	381	117.45	418.3	117.6	446.06	118.34
486.64	117.38	492.53	117.24	497.88	117.35	539	119.07	567.03	117.84
579.03	117.79	601.2	119.35	647.68	119.51	671.51	119.21	671.97	119.21

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.045	369	.045	381	.045

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
369	381	328.71	308.3	296.38	.3	.5

Left Levee Station= 370 Elevation= 118
Right Levee Station= 380 Elevation= 118

CULVERT RIVER: Horno Creek
REACH: 1 RS: 1000

INPUT
Description:
Distance from Upstream XS = 50
Deck/Roadway Width = 110
Weir Coefficient = 2.6
Upstream Deck/Roadway Coordinates
num= 2

Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord
0	120	113	1000	120	113

Upstream Bridge Cross Section Data
Station Elevation Data num= 40

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	128.21	4.53	128.26	33.81	126.19	40.88	125.59	43.4	125.58
48.67	125.36	68.02	123.76	77.24	123	103.2	120.86	117.27	119.8
179.27	119.74	183.2	119.79	187.82	119.83	191.42	119.96	200.27	120
242.28	120	276.41	119.3	304.69	118.08	320.7	117.59	329.89	117
340.02	117.44	365	117.49	369	117.14	370	115.45	370	105
380	105	380	115.45	381	117.45	418.3	117.6	446.06	118.34
486.64	117.38	492.53	117.24	497.88	117.35	539	119.07	567.03	117.84
579.03	117.79	601.2	119.35	647.68	119.51	671.51	119.21	671.97	119.21

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.045	369	.045	381	.045

Bank Sta: Left	Right	Coeff Contr.	Expan.
369	381	.3	.5

Left Levee Station= 370 Elevation= 118
Right Levee Station= 380 Elevation= 118

Downstream Deck/Roadway Coordinates
num= 2

Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord

0 107 100 1000 107 100

Downstream Bridge Cross Section Data
Station Elevation Data num= 23

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	106.4	12.55	105.93	44.27	104.92	58.37	104.32	65.7	104.16
73.21	103.68	120.24	100.82	137.15	100.64	199	101.83	200	101.85
200	93.85	210	93.85	210	101.85	211	101.84	251.37	101.61
269.54	101.22	322.69	101.23	340.54	101.32	355.39	101.96	367.41	103.51
402.41	106.51	410.06	106.68	419.69	106.89				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.045	199	.045	211	.045

Bank Sta: Left 199 Right 211 Coeff Contr. .3 Expan. .5
Left Levee Station= 200 Elevation= 102
Right Levee Station= 210 Elevation= 102

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 = 109
Energy head used in spillway design =
Spillway height used in design =
Weir crest shape = Broad Crested

Number of Culverts = 1

Culvert Name	Shape	Rise	Span
Culvert #1	Box	8	10

FHWA Chart # 8 - flared wingwalls
FHWA Scale # 1 - Wingwall flared 30 to 75 deg.
Solution Criteria = Highest U.S. EG

Culvert	Upstrm Dist	Length	n Value	Entrance Loss Coef	Exit Loss Coef
	1	305	.013	.2	1

Upstream Elevation = 105
Centerline Station = 375
Downstream Elevation = 93.85
Centerline Station = 205

CULVERT OUTPUT Profile #100 yr
Culvert ID : Culvert #1

Culv Q (cfs)	1081.00	Culv Ful Lngh (ft)	
# Barrels	1	Culv Vel US (ft/s)	13.51
Q Barrel (cfs)	1081.00	Culv Vel DS (ft/s)	30.15
E.G. US. (ft)	118.07	Culv Inv El Up (ft)	105.00
W.S. US. (ft)	116.75	Culv Inv El Dn (ft)	93.85
E.G. DS (ft)	102.42	Culv Frctn Ls (ft)	5.95
W.S. DS (ft)	102.04	Culv Ext Lss (ft)	9.13
Delta EG (ft)	15.65	Culv Ent Lss (ft)	0.57
Delta WS (ft)	14.70	Q Weir (cfs)	
E.G. IC (ft)	118.07	Weir Sta Lft (ft)	
E.G. OC (ft)	116.41	Weir Sta Rgt (ft)	
Culvert Control	Inlet	Weir Submerg	
Culv WS Inlet (ft)	113.00	Weir Max Depth (ft)	
Culv WS Outlet (ft)	97.44	Weir Avg Depth (ft)	
Culv Nml Depth (ft)	3.18	Wr Flw Area (sq ft)	
Culv Crt Depth (ft)	7.13	Min El Weir Flow (ft)	120.01

Note: The flow in the culvert is entirely supercritical.

CROSS SECTION RIVER: Horno Creek
REACH: 1 RS: 969.327

INPUT
Description:
Station Elevation Data num= 23

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	106.4	12.55	105.93	44.27	104.92	58.37	104.32	65.7	104.16
73.21	103.68	120.24	100.82	137.15	100.64	199	101.83	200	101.85
200	93.85	210	93.85	210	101.85	211	101.84	251.37	101.61
269.54	101.22	322.69	101.23	340.54	101.32	355.39	101.96	367.41	103.51
402.41	106.51	410.06	106.68	419.69	106.89				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.045	199	.045	211	.045

Bank Sta: Left 199 Right 211 Lengths: Left Channel 742.77 969.37 Right 527.89 Coeff Contr. .3 Expan. .5
Left Levee Station= 200 Elevation= 102
Right Levee Station= 210 Elevation= 102

Profile Output Table - Standard Table 1

River	Reach	River Sta	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Horno Creek	1	6389.204	1074.00	159.55	162.42	162.02	162.86	0.011784	7.05	208.88	124.39	0.75
Horno Creek	1	5408.040	1074.00	150.43	152.40	152.14	152.59	0.009285	4.80	321.49	312.31	0.62

Horno Creek 1	4165.110	1074.00	135.23	140.79	140.79	141.27	0.009617	6.88
254.95 260.48	0.67							
Horno Creek 1	3961.191	1074.00	128.00	138.36	133.08	138.96	0.004220	6.23
176.44 24.69	0.34							
Horno Creek 1	3800	Culvert						
Horno Creek 1	3632.365	1074.00	126.70	136.60	131.77	137.26	0.005068	6.55
168.17 46.23	0.37							
Horno Creek 1	2914.789	1074.00	125.90	128.67	128.67	129.46	0.024486	7.13
152.15 101.02	0.99							
Horno Creek 1	1879.048	1081.00	110.00	122.71	116.03	122.89	0.000914	3.61
396.14 135.58	0.21							
Horno Creek 1	1850	Culvert						
Horno Creek 1	1277.812	1081.00	105.00	116.75	112.13	118.06	0.014575	9.20
117.47 10.00	0.47							
Horno Creek 1	1000	Culvert						
Horno Creek 1	969.327	1081.00	93.85	97.45	100.97	111.48	0.309875	30.06
35.96 10.00	0.47							
San Juan Creek 1	4692.380	36497.00	79.00	89.78	86.24	90.14	0.001495	6.15
8333.45 1452.44	0.33							
San Juan Creek 1	4154.447	36497.00	78.49	89.58		89.69	0.000362	3.11
14330.54 1832.94	0.17							
San Juan Creek 2	3374.671	36497.00	76.50	89.42	80.79	89.49	0.000172	2.26
18117.90 1884.15	0.12							
San Juan Creek 2	2504.657	36497.00	75.13	88.81	81.14	89.18	0.000753	5.04
7559.02 600.00	0.25							
San Juan Creek 2	2200	Bridge						
San Juan Creek 2	2153.456	36497.00	74.04	87.32	83.78	88.21	0.002268	8.65
5097.20 550.00	0.42							
San Juan Creek 2	1219.539	36497.00	72.48	82.08	82.08	84.10	0.009066	14.05
3807.70 947.55	0.81							
San Juan Creek 2	189.796	36497.00	70.14	76.63	74.35	76.89	0.002000	4.88
9162.32 2114.87	0.35							

HEC-RAS Version 3.0.1 Mar 2001
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: sanjuan
Project File : sanjuan.prj
Run Date and Time: 12/19/02 3:10:01 PM

Project in English units

Project Description:
I-5 Alternative - San Juan Creek Crossing

PLAN DATA

Plan Title: san juan proposed
Plan File : p:\2PDA0104\Hydr\LHS\Modeling\SanJuan_LY8910\hec-ras\sanjuan.p03

Geometry Title: sanjuan proposed
Geometry File : p:\2PDA0104\Hydr\LHS\Modeling\SanJuan_LY8910\hec-ras\sanjuan.g03

Flow Title : existing
Flow File : p:\2PDA0104\Hydr\LHS\Modeling\SanJuan_LY8910\hec-ras\sanjuan.f01

Plan Summary Information:
Number of: Cross Sections = 16 Mulitple Openings = 0
Culverts = 0 Inline Weirs = 0
Bridges = 1

Computational Information
Water surface calculation tolerance = 0.003
Critical depth calculaton tolerance = 0.003
Maximum number of interations = 20
Maximum difference tolerance = 0.1
Flow tolerance factor = 0.001

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

FLOW DATA

Flow Title: existing
Flow File : p:\2PDA0104\Hydr\LHS\Modeling\SanJuan_LY8910\hec-ras\sanjuan.f01

Flow Data (cfs)

River	Reach	RS	100yr HC	100 yr	50 yr	2yr
San Juan Creek	1	4692.380	90280	36497	23494	446
San Juan Creek	2	3374.671	90280	36497	23494	446
Horno Creek	1	6389.204	3215	1074	709	2
Horno Creek	1	1879.048	3206	1081	714	2

Boundary Conditions

River	Reach	Profile	Upstream	Downstream
San Juan Creek	1	100yr HC	Normal S = .002	
San Juan Creek	1	100 yr	Normal S = .002	
San Juan Creek	1	50 yr	Normal S = .002	
San Juan Creek	2	100yr HC		Normal S = .002
San Juan Creek	2	100 yr		Normal S = .002
San Juan Creek	2	50 yr		Normal S = .002
Horno Creek	1	100yr HC	Normal S = .03	
Horno Creek	1	100 yr	Normal S = .03	
Horno Creek	1	50 yr	Normal S = .03	

GEOMETRY DATA

Geometry Title: sanjuan proposed
Geometry File : p:\2PDA0104\Hydr\LHS\Modeling\SanJuan_LY8910\hec-ras\sanjuan.g03

Reach Connection Table

River	Reach	Upstream Boundary	Downstream Boundary
San Juan Creek	1		SJ
San Juan Creek	2	SJ	
Horno Creek	1		SJ

JUNCTION INFORMATION

Name: SJ
Description:
Energy computation Method

Length across Junction River	Reach	Tributary River	Reach	Length	Angle
San Juan Creek	1	to San Juan Creek	2	780.5	
Horno Creek	1	to San Juan Creek	2	1000	

CROSS SECTION RIVER: San Juan Creek
REACH: 1 RS: 4692.380

INPUT
Description:
Station Elevation Data num= 61

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	95	48.8	95	114.4	93.59	141.97	92.73	165.2	92
165.25	92	165.27	92	296.93	92	318.15	92	328.3	91.8
336.86	91.63	436.97	89.67	467.53	89.07	470.96	89	594.35	89
623.77	89	666.71	87.31	674.71	87	680.18	86.89	740.68	85.71
776.58	85	840.72	85	980.78	85	1023.51	85	1046.24	85
1065.56	84.35	1120.63	82.74	1138.56	82.11	1146.59	82	1254.5	82
1279.68	82	1284.11	82	1327.76	81.09	1336.89	81	1339.9	81.06
1348.04	81.22	1366.56	80.16	1399.72	79	1489.7	79	1538.49	79
1591.64	80.1	1649.52	81.59	1651.51	81.63	1667.24	82	1702.51	82
1710.15	82	1725.81	83.09	1744.38	83.6	1753.07	84.04	1799.52	86.17
1870.62	89.22	1884.49	89.81	1892.84	90.17	1919.65	91.32	1948.13	92.09
1967.64	93	1987.37	93.46	2022.25	95.73	2035.32	96.29	2067.55	97.67
2077.37	98.09								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.045	1366.56	.045	1591.64	.045

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
1366.56	1591.64	600.91	537.93	611.74	.1 .3

CROSS SECTION RIVER: San Juan Creek
REACH: 1 RS: 4154.447

INPUT
Description:
Station Elevation Data num= 80

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	96.37	21.51	96	47.22	95.56	80.26	95	104.11	94.59
157.86	93	172.1	92.72	208.43	92	216.51	92	259.01	92
260.02	91.97	262.39	91.9	293.63	90.58	325.05	89.83	349.71	89
417.18	89	420.68	89	425.53	89	432.74	89	467.49	87.82
491.49	87.11	499.82	86.86	543.75	85.56	608.98	85	670.19	85
685.62	85	712.88	83.85	737.24	82.82	772.54	82.22	776.81	82.14
781.64	82.06	785.22	82	855.95	82	898.42	81.46	926.53	80.22
974.28	78.49	1032.15	78.49	1244.37	78.49	1251.66	79.94	1279.7	80.42
1300.37	81.23	1311.76	82	1352.7	82	1370.37	82	1405.42	82
1431.44	82	1449.52	81.69	1474.2	80.96	1486.83	80.59	1514.47	79.19
1524.12	78.49	1581.99	78.57	1900.32	78.57	1935.46	79	1960.16	80.81
1963.94	81	1964.76	81.04	1995.49	82.6	2043.08	83.59	2077.65	84.75
2080.64	84.85	2092.96	85.26	2122.22	86	2127.93	86.14	2136.4	87.07
2161.79	89.43	2174.69	89.98	2201.36	90.66	2222.5	94.14	2240.93	96.78
2259	98	2276.97	98.61	2293.23	98.99	2330.46	100.57	2399.22	102.98
2436.61	104.53	2473.8	105.63	2495.81	106	2517.93	107.49	2528.64	107.95

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.045	1514.47	.045	1935.46	.045

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
1514.47	1935.46	1113.08	780.5	187.81	.1 .3

CROSS SECTION RIVER: San Juan Creek
REACH: 2 RS: 3374.671

INPUT
Description:
Station Elevation Data num= 38

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	96.97	24.52	96.49	60.41	95.79	98.08	95.06	132.04	94
138.35	93.86	220.37	90.34	251.67	89	277.78	89	306.55	88.21
321.58	88.15	328.1	87.72	385.29	85.27	419.43	83.8	460.59	83
461.42	82.99	463.17	82.97	531.33	81.69	561.48	80.69	563.29	80.63
601.25	79	606.11	79	639.24	79	669.23	79	795.82	77.94
1093.25	77.61	1270.1	76.5	1422.83	77.72	1647.91	77.83	1800.64	78.33
1906.36	79	1949.66	80.86	1950.53	80.9	2081.47	86.51	2096.09	87.71
2116.11	89	2206.39	92.87	2254.95	95.9				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.045	795.82	.045	1647.91	.045

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
795.82	1647.91	1440.58	871.14	187.81	.1	.3

CROSS SECTION RIVER: San Juan Creek
REACH: 2 RS: 2504.657

INPUT
Description:
Station Elevation Data num= 54

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	95.07	1.18	95.1	7.4	94.86	22.07	94.3	101.4	91.24
159.7	91.53	179.13	92	205.08	92	237.66	89.17	239.64	89
263.65	87.61	295.1	83.97	308.75	82.53	315.63	82.2	336.49	82
361.42	82	386.03	82	412.42	82	445.57	81.04	508.04	75
549.53	79	585.21	80.37	601.5	81	619.77	81.7	624.18	81.62
654.38	80.69	673.47	80.11	757.1	79.03	757.68	79.03	758	79.02
759.13	79	900.32	76.13	945.34	75.93	996.78	75.8	1099.68	75.13
1247.59	75.93	1324.76	76.13	1446.95	76.86	1511.25	78.13	1543.27	79
1567.92	79	1583.08	79.93	1590.3	80.27	1646.78	82.88	1648.73	82.94
1649.66	83	1692.53	85.66	1703.37	86.34	1747.21	90.07	1779.25	91.1
1812.86	92.17	1858.7	93.28	1868.67	93.9	1902.28	94.96		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.045	900.32	.045	1324.76	.045

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
900.32	1324.76	343.64	351.66	565.35	.3	.5

Left Levee Station= 750 Elevation= 101.9
Right Levee Station= 1350 Elevation= 101.9

BRIDGE RIVER: San Juan Creek
REACH: 2 RS: 2200

INPUT
Description:
Distance from Upstream XS = 60
Deck/Roadway Width = 215
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	101.9	0	800	101.9	0	800	101.9	96
1300	101.9	96	1300	101.9	0	2000	101.9	0

Upstream Bridge Cross Section Data
Station Elevation Data num= 54

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	95.07	1.18	95.1	7.4	94.86	22.07	94.3	101.4	91.24
159.7	91.53	179.13	92	205.08	92	237.66	89.17	239.64	89
263.65	87.61	295.1	83.97	308.75	82.53	315.63	82.2	336.49	82
361.42	82	386.03	82	412.42	82	445.57	81.04	508.04	75
549.53	79	585.21	80.37	601.5	81	619.77	81.7	624.18	81.62
654.38	80.69	673.47	80.11	757.1	79.03	757.68	79.03	758	79.02
759.13	79	900.32	76.13	945.34	75.93	996.78	75.8	1099.68	75.13
1247.59	75.93	1324.76	76.13	1446.95	76.86	1511.25	78.13	1543.27	79
1567.92	79	1583.08	79.93	1590.3	80.27	1646.78	82.88	1648.73	82.94
1649.66	83	1692.53	85.66	1703.37	86.34	1747.21	90.07	1779.25	91.1
1812.86	92.17	1858.7	93.28	1868.67	93.9	1902.28	94.96		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.045	900.32	.045	1324.76	.045

Bank Sta: Left	Right	Coeff Contr.	Expan.
900.32	1324.76	.3	.5

Left Levee Station= 750 Elevation= 101.9
Right Levee Station= 1350 Elevation= 101.9

Downstream Deck/Roadway Coordinates
num= 6

Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord
0	101.9	0	425	101.9	0	425	101.9	96
925	101.9	96	925	101.9	0	2000	101.9	0

Downstream Bridge Cross Section Data
Station Elevation Data num= 63

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	98.54	22.14	99.74	32.75	99.69	73.89	100.53	90.63	100.88
191.42	97.06	192.44	97.01	192.92	96.99	193.36	96.97	194.19	96.9
227.61	93.68	242.96	92.65	261.85	91	272.07	89.81	296.1	88.82
298.46	88.79	306.38	88.1	324.84	86	340.51	85.11	365.65	83.94
389.28	82.56	398.83	82	421.35	81.34	431.56	81.04	438.05	81.07
501.38	80.7	501.57	80.7	523.08	80.26	549.93	79.71	584.37	79
606.52	79	637.94	75.98	653.38	74.66	699.68	74.11	725.4	74.04
761.41	74.19	818.01	74.73	823.15	75.9	852.55	79	897.86	80.72
912.5	81.27	943.74	80.63	971.98	79.79	1010.86	79.19	1015.24	79.17
1043.34	79.82	1090.02	80.63	1096.96	80.88	1111.14	81.4	1133.95	82.08
1148.2	82.3	1154.72	82.79	1164.49	83.39	1203.94	85.79	1217.1	86.19
1243.4	86.6	1249.92	86.6	1262.95	88.18	1315.56	95.4	1387.71	97.6
1427.17	98.8	1466.5	98.2	1519.33	98.2				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val

```
      0    .045  637.94    .045  823.15    .045

Bank Sta: Left   Right    Coeff Contr.   Expan.
        637.94  823.15            .3       .5
Left Levee      Station=     400      Elevation=   101.9
Right Levee     Station=     950      Elevation=   101.9

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         =   101.9
Energy head used in spillway design         =
Spillway height used in design              =
Weir crest shape                            = Broad Crested

Number of Piers =  3

Pier Data
Pier Station     Upstream=      925    Downstream=      550
Upstream     num=        2
    Width   Elev    Width   Elev
       7     79        7     96
Downstream     num=        2
    Width   Elev    Width   Elev
       7     79        7     96

Pier Data
Pier Station     Upstream=     1050    Downstream=      675
Upstream     num=        2
    Width   Elev    Width   Elev
       7     79        7     96
Downstream     num=        2
    Width   Elev    Width   Elev
       7     79        7     96

Pier Data
Pier Station     Upstream=     1175    Downstream=      800
Upstream     num=        2
    Width   Elev    Width   Elev
       7     79        7     96
Downstream     num=        2
    Width   Elev    Width   Elev
       7     79        7     96

Number of Bridge Coefficient Sets =  1

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

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

CROSS SECTION          RIVER: San Juan Creek
REACH: 2                  RS: 2153.456

INPUT
Description:
Station Elevation Data    num=      63
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0   98.54   22.14   99.74   32.75   99.69   73.89  100.53   90.63  100.88
  191.42   97.06  192.44   97.01  192.92   96.99  193.36   96.97  194.19    96.9
  227.61   93.68  242.96   92.65  261.85      91  272.07   89.81   296.1   88.82
  298.46   88.79  306.38    88.1  324.84      86  340.51   85.11  365.65   83.94
  389.28   82.56  398.83      82  421.35   81.34  431.56   81.04  438.05   81.07
  501.38    80.7  501.57    80.7  523.08   80.26  549.93   79.71  584.37      79
  606.52      79  637.94   75.98  653.38   74.66  699.68   74.11   725.4   74.04
  761.41   74.19  818.01   74.73  823.15    75.9  852.55      79  897.86   80.72
   912.5   81.27  943.74   80.63  971.98   79.79 1010.86   79.19 1015.24   79.17
 1043.34   79.82 1090.02   80.63 1096.96   80.88 1111.14    81.4 1133.95   82.08
  1148.2    82.3 1154.72   82.79 1164.49   83.39 1203.94   85.79  1217.1   86.19
  1243.4    86.6 1249.92    86.6 1262.95   88.18 1315.56    95.4 1387.71    97.6
 1427.17    98.8  1466.5    98.2 1519.33    98.2

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .045  637.94    .045  823.15    .045

Bank Sta: Left   Right    Lengths: Left Channel   Right      Coeff Contr.   Expan.
        637.94  823.15           713.87  932.73 1173.35             .3       .5
Left Levee      Station=     400      Elevation=   101.9
Right Levee     Station=     950      Elevation=   101.9

CROSS SECTION          RIVER: San Juan Creek
REACH: 2                  RS: 1219.539

INPUT
Description:
Station Elevation Data    num=      84
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0   88.74    9.26      89   30.31    89.6   36.21      90   55.77   91.32
```

99.56	94.29	114.53	95.31	178.68	97.83	183.75	98.06	188.38	98.31
219.8	100.44	244.83	100.71	279.28	100.78	310.35	101.42	325.07	101.58
357.73	101	360.97	100.97	430.34	98	437.63	97.9	444.46	97.6
535.62	95	564.92	94.17	581.61	94.02	642.38	91.96	666.76	90.87
675.98	90.64	741.4	87.14	743.13	87	746.16	86.88	780.5	86.51
809.33	86.2	818.17	85.95	827.86	85.67	865.78	85	886.52	85
895.88	85	920.6	85	956.7	84.61	978.68	83.75	1061.98	80.48
1154.53	79.48	1198.82	79	1201.63	79	1202.03	79	1203.96	79
1302.25	73.65	1326.37	72.48	1438.91	72.48	1454.98	73.57	1503.22	75.67
1557.78	79	1580.34	79.89	1588.33	80.2	1634.16	80.04	1658.52	79.48
1679.22	79	1693.61	79	1755.26	79	1798.88	79	1812.36	79.38
1818.18	79.55	1821.07	79.64	1864.59	80.95	1899.43	82	1908.75	82.14
1972.74	82	1995.6	82	1997.15	81.95	2048.68	83.5	2081.03	84.47
2111.41	85.39	2131.59	85.3	2196.85	85.02	2197.93	85.01	2198.26	85.03
2200.54	85.16	2229.02	87	2236.3	87.47	2285.11	91.26	2297.42	92
2337.23	92	2363.76	92	2371.96	92	2380.48	92		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.045	1302.25	.045	1454.98	.045

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
1302.25	1454.98	1067.78	1029.32 1160.6	.1	.3

CROSS SECTION RIVER: San Juan Creek
REACH: 2 RS: 189.796

INPUT
Description:
Station Elevation Data num= 64

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	97.42	26.6	96.04	64.28	95	66.27	94.89	67.78	94.58
78.71	92.61	108.95	87.07	113.12	86.3	118.63	85.41	137.43	82.89
178.58	76.79	191.3	75.32	227.34	73.75	248.49	74.39	277.11	75.34
281.69	75.39	314.81	75.17	327.6	74.15	377.27	72.48	392.47	71.96
394.89	71.92	399.44	71.83	418.28	71.49	467.56	70.58	499.11	70.48
507.68	70.68	516.33	71	558.24	71.96	560.16	72	591.63	72
644.2	72	830.42	72	909.22	72	943.3	72	962.13	72
1045.04	72	1051.47	72	1055.93	72	1088.11	71.22	1132.46	70.14
1223.85	70.46	1354.04	70.93	1395.4	71.07	1398.19	71.08	1461.69	71.31
1608.46	71.83	1614.82	71.85	1689.45	72.11	1790.91	72.47	1831.08	72.62
1913.98	72.91	2005.13	73.23	2117.31	73.63	2144.32	73.73	2168.3	73.81
2198.65	74.84	2203.48	75	2252.73	75	2267.44	75	2292.22	76.5
2305.14	77.14	2321.81	77.64	2465.7	82	2518.78	82		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.045	1088.11	.045	1395.4	.045

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
1088.11	1395.4	0	0 0	.1	.3

CROSS SECTION RIVER: Horno Creek
REACH: 1 RS: 6389.204

INPUT
Description:
Station Elevation Data num= 27

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	216.49	11.31	214.02	40.69	206.81	62.66	200.81	84.86	192.32
99.23	186.83	109.37	183.78	135.81	176.92	161.97	171.56	182.92	167.85
208.97	163.41	231.95	160.12	239.2	159.82	245.55	159.55	247.86	159.62
261.96	160	296.12	160.62	352.98	162.94	355.28	163.01	356.03	163.04
357.51	163.06	452.58	165	501.59	167	501.65	167	526.13	167
538.17	167.49	541.18	167.53						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.045	239.2	.045	247.86	.045

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
239.2	247.86	1025.75	982.2 938.93	.1	.3

CROSS SECTION RIVER: Horno Creek
REACH: 1 RS: 5408.040

INPUT
Description:
Station Elevation Data num= 26

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	167.14	40.46	162.12	46.09	161.59	81.82	159.51	98	158.83
161.31	157.12	162.58	157.09	175.1	156.23	205.88	153.83	209.95	153.71
247.24	151.8	269.19	151.47	280.17	151.41	323.13	151.16	329.95	151.25
377.08	151.86	413.33	151.66	437.99	151.39	454.01	151	467.34	150.68
477.54	150.43	486.57	150.62	505.39	151	522.38	151	536.72	151.48
582.72	155.24								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.045	467.34	.045	486.57	.045

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
467.34	486.57	1120.45	1261.85 1187	.1	.3

CROSS SECTION RIVER: Horno Creek
REACH: 1 RS: 4165.110

INPUT

Description:
Station Elevation Data num= 34

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	169.34	9.96	166.1	57.3	146.92	59.05	146.27	59.72	146
61.24	145.57	84.6	139.29	90.24	139.24	94.94	139.21	105.47	135.23
118.89	139.21	159.24	139.79	166.71	140	209	140	278.72	141.68
297.22	142.27	333.4	142.35	346.16	142.17	408.04	140.41	428.01	140.18
453.97	140.12	459.29	140.07	502.39	141	502.78	140.98	525.66	143.68
546.27	143.9	580.34	147	595.45	148.83	602	150.38	633.24	155.88
652.03	157.89	676.73	162.01	688.5	161.27	716.19	160.72		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.045	90.24	.045	118.89	.045

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
90.24	118.89	267.21	282.79	435.59	.1 .3

CROSS SECTION RIVER: Horno Creek
REACH: 1 RS: 3961.191

INPUT
Description:
Station Elevation Data num= 24

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	182.63	37.2	173.82	39.31	173.04	41.42	172.18	83.62	151.27
85.73	149.96	87.83	149	120	137	120	130	136	130
136	137	155.35	142.54	176.45	145.73	201.76	147.91	222.86	150.64
227.07	150.27	238.31	148.82	248.17	147.55	264.9	146.83	269.28	146.64
273.49	146.73	294.59	149	315.69	150.82	336.6	152.85		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.045	120	.045	136	.045

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
120	136	322.94	380.54	744.62	.1 .3

CROSS SECTION RIVER: Horno Creek
REACH: 1 RS: 3632.365

INPUT
Description:
Station Elevation Data num= 34

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	148.49	53.61	146.42	58.66	146.22	71.03	145.49	110.84	143.36
121.69	143.09	146.51	142.82	154.12	142.53	179.24	142.03	222.96	140.25
224.92	140.26	226.99	140.18	248.14	140.67	268.14	140.28	271.35	140.43
274.75	140	313.31	139.19	317.78	139.3	322.51	138.8	346.94	138
358.49	137.25	377.61	137.27	396	136	396	129	412	129
412	136	417.24	136.52	450.41	136.68	465.78	136.79	480.3	137.3
513.54	138	539.21	138.54	549.94	139.24	578.7	141.11		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.045	396	.045	412	.045

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
396	412	827.38	811.02	744.62	.1 .3

CROSS SECTION RIVER: Horno Creek
REACH: 1 RS: 2914.789

INPUT
Description:
Station Elevation Data num= 51

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	134.12	2.46	134	2.66	134	63.46	133.82	85.77	133.02
102.89	132.21	168.78	132.01	170.11	132	173.77	131.88	198.4	131
203.19	131	206.36	130.9	221.91	131	270.06	131.22	282.67	130.81
295.7	130.59	321.36	130.35	369.84	130.44	387.41	131.18	399.5	131.4
414.69	131.32	434.37	131.41	467.28	131	541.61	130.07	541.79	130.07
551.77	129.88	567.2	128.22	617.36	127.9	659.81	128.19	671.38	129.53
679.1	130	686.82	130.37	694.53	130.65	771.7	131.03	782.21	131
784	131	786.75	131	801.92	131.38	829.5	131.93	837.64	131.73
854.75	131	895.25	131.86	899.98	131.92	903.64	132	932.08	132.64
986.41	133.58	996.26	133.51	1041.75	133.54	1083.56	134.27	1106.31	134.66
1107.95	134.69								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.045	567.2	.045	659.81	.045

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
567.2	659.81	743.6	1030.03	1145.8	.1 .3

CROSS SECTION RIVER: Horno Creek
REACH: 1 RS: 1879.048

INPUT
Description:
Station Elevation Data num= 45

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	132.9	.52	132.84	43.11	127.93	73.85	124.38	76.36	124.09
102.47	121.86	109.6	120.88	128.78	120.25	136.53	120	142.85	120
155.14	120.37	159.15	120.49	188.33	121.37	222.62	122.4	242.59	123.55
257.23	123.3	270.88	123.17	276.61	123.22	288.16	123.33	311.24	124
340.36	124.84	350.23	124.87	356.72	124.69	377.07	124.1	418.54	124.3

449.76	124.45	496.97	124	519.02	123.79	529.96	124	572.68	124
599.37	124	655.96	124	659.49	124	665.32	124.22	692.16	125.13
747.49	125	760.05	125	762.4	125	768.19	125.19	789.03	126
871.05	126	888.32	126	897.7	126	949.42	126	1014	126

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.045	128.78	.045	155.14	.045

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
128.78	155.14	482.81	601.21	774.05	.1	.3

CROSS SECTION RIVER: Horno Creek
REACH: 1 RS: 1277.812

INPUT
Description:
Station Elevation Data num= 40

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	128.21	4.53	128.26	33.81	126.19	40.88	125.59	43.4	125.58
48.67	125.36	68.02	123.76	77.24	123	103.2	120.86	117.27	119.8
179.27	119.74	183.2	119.79	187.82	119.83	191.42	119.96	200.27	120
242.28	120	276.41	119.3	304.69	118.08	320.7	117.59	329.89	117
340.02	117.44	365	117.49	369	117.14	370	117.45	370	109.45
380	109.45	380	117.45	381	117.45	418.3	117.6	446.06	118.34
486.64	117.38	492.53	117.24	497.88	117.35	539	119.07	567.03	117.84
579.03	117.79	601.2	119.35	647.68	119.51	671.51	119.21	671.97	119.21

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.045	369	.045	381	.045

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
369	381	328.71	308.3	296.38	.1	.3

Left Levee Station= 370 Elevation= 118
Right Levee Station= 380 Elevation= 118

CROSS SECTION RIVER: Horno Creek
REACH: 1 RS: 969.327

INPUT
Description:
Station Elevation Data num= 23

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	106.4	12.55	105.93	44.27	104.92	58.37	104.32	65.7	104.16
73.21	103.68	120.24	100.82	137.15	100.64	199	101.83	200	101.85
200	93.85	210	93.85	210	101.85	211	101.84	251.37	101.61
269.54	101.22	322.69	101.23	340.54	101.32	355.39	101.96	367.41	103.51
402.41	106.51	410.06	106.68	419.69	106.89				

Manning's n Values num= 3

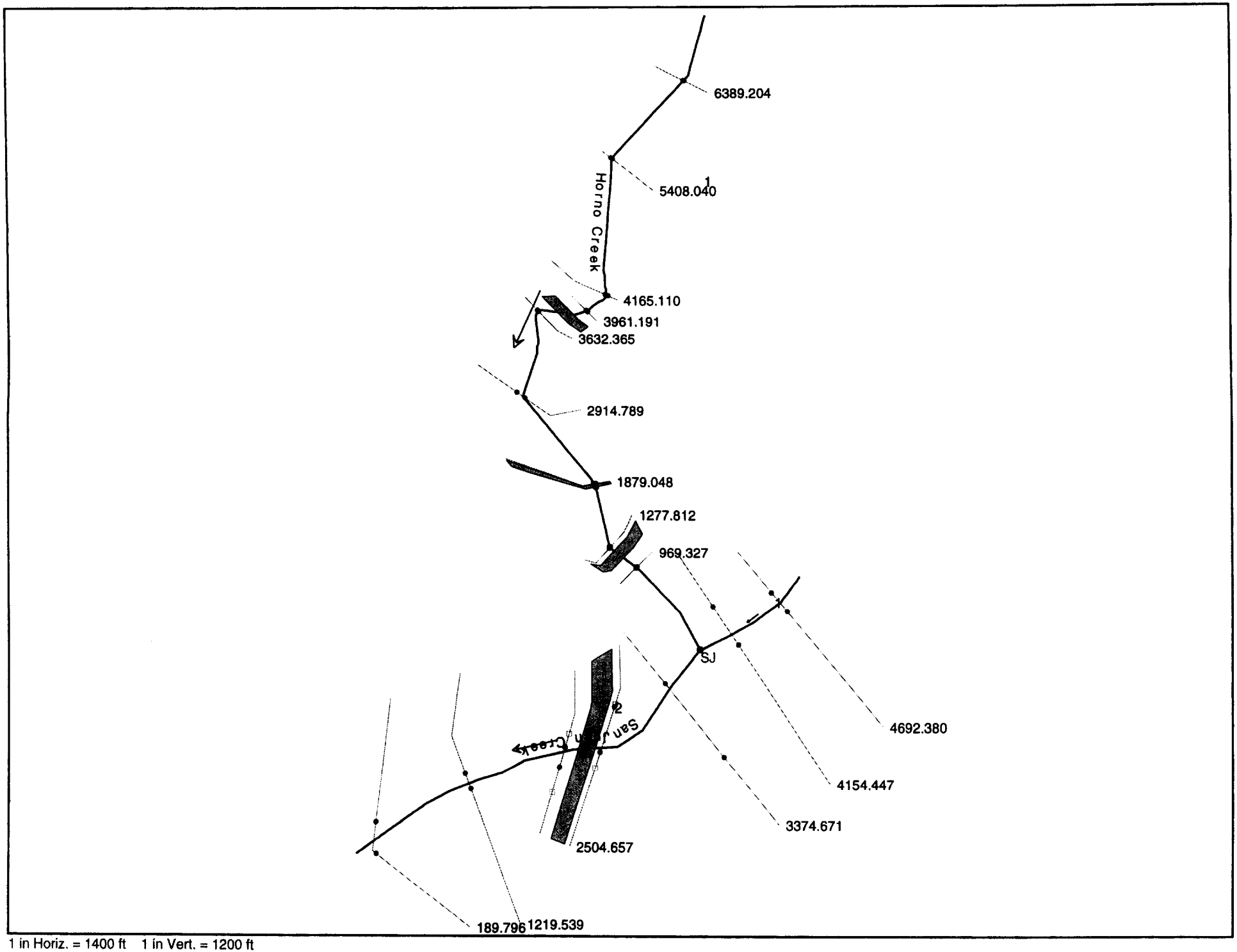
Sta	n Val	Sta	n Val	Sta	n Val
0	.045	199	.045	211	.045

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
199	211	742.77	969.37	527.89	.1	.3

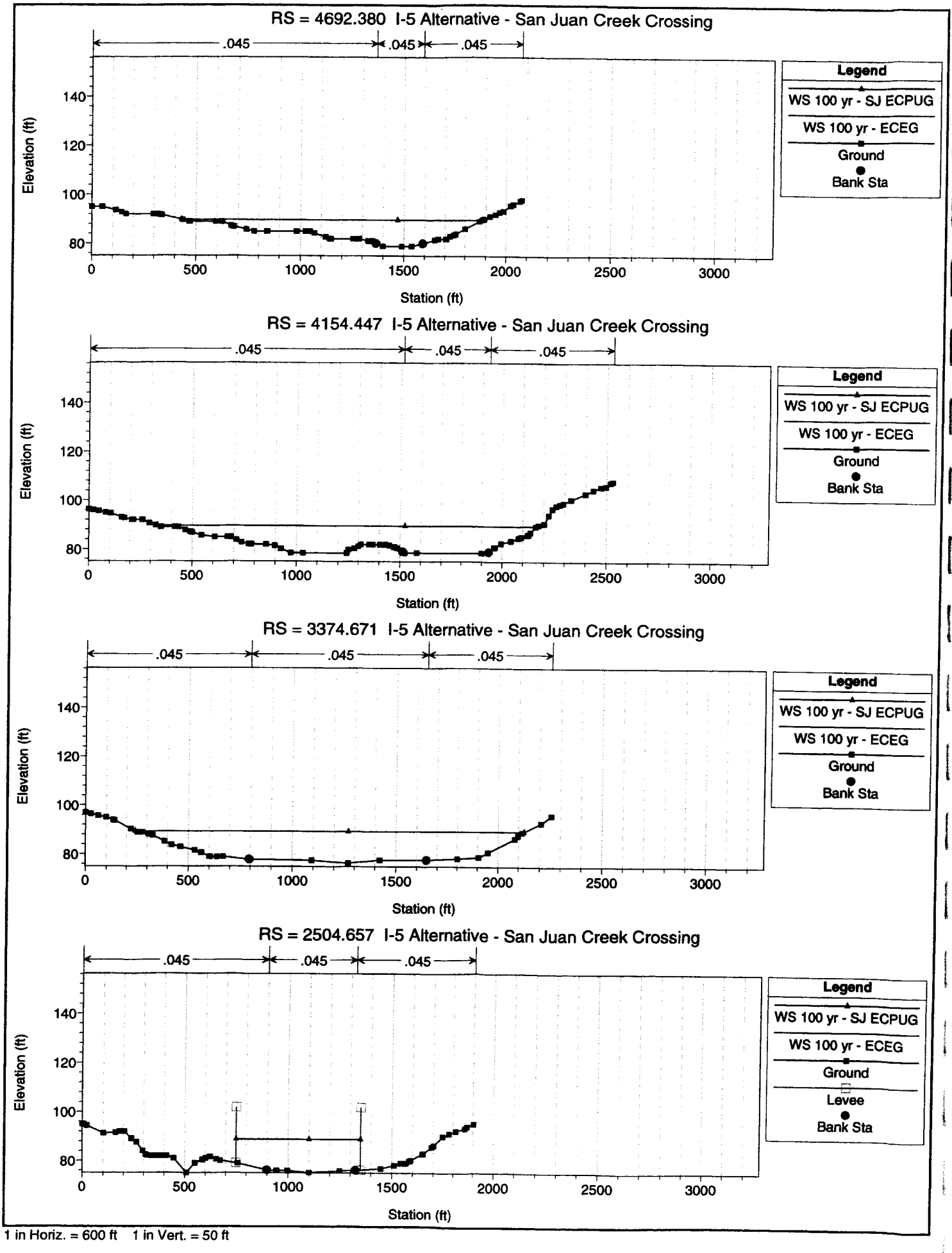
Left Levee Station= 200 Elevation= 102
Right Levee Station= 210 Elevation= 102

Profile Output Table - Standard Table 1

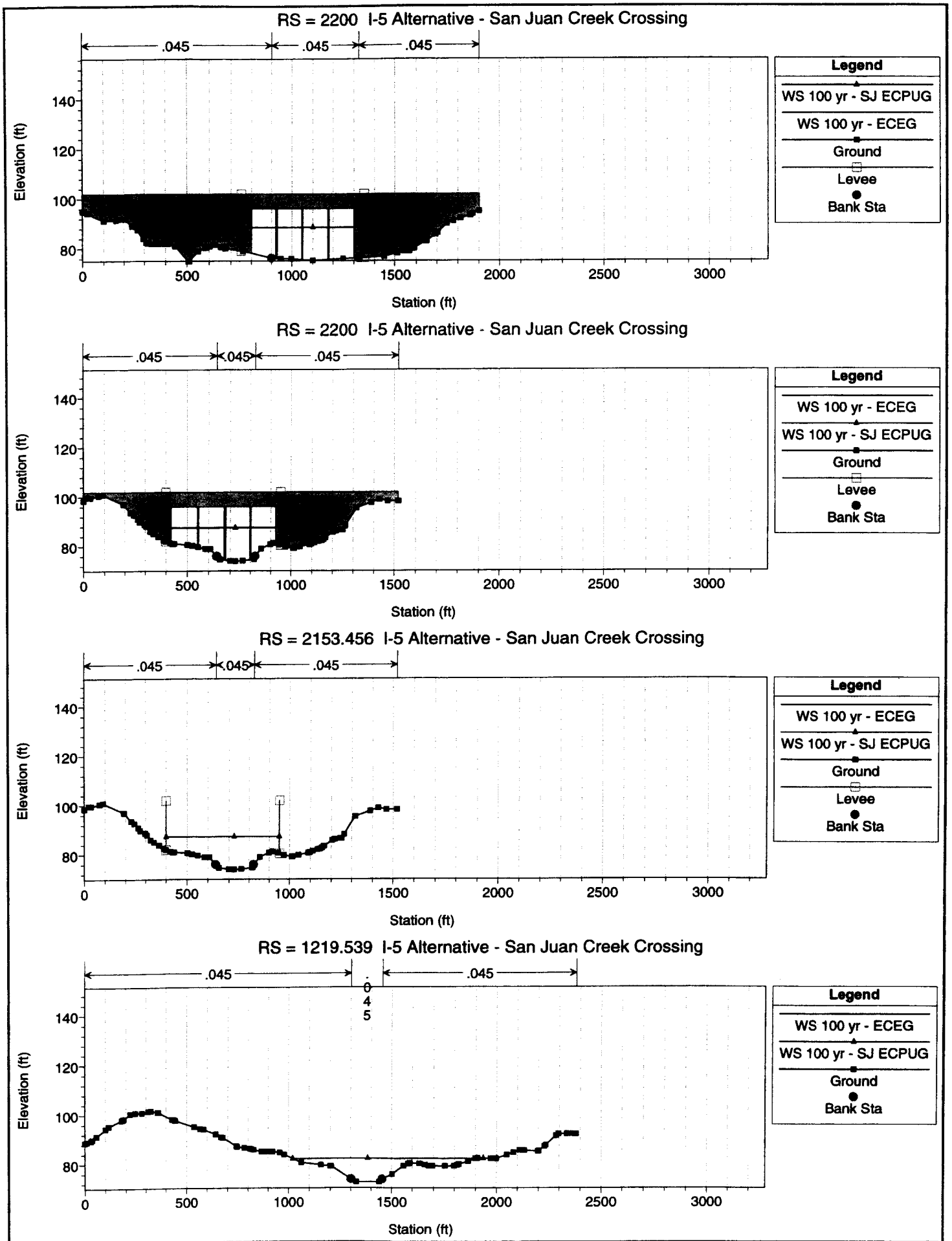
River	Reach	River Sta	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Horno Creek	1	6389.204	1074.00	159.55	162.82	162.02	163.10	0.006426	5.69	260.44	136.82	0.56
Horno Creek	1	5408.040	1074.00	150.43	152.14	152.14	152.50	0.022075	6.70	242.22	304.14	0.93
Horno Creek	1	4165.110	1074.00	135.23	141.33	140.80	141.50	0.003167	4.38	413.06	317.28	0.40
Horno Creek	1	3961.191	1074.00	130.00	139.54		140.21	0.004711	6.70	172.48	31.67	0.38
Horno Creek	1	3632.365	1074.00	129.00	137.60	134.19	138.17	0.005195	6.57	226.61	141.51	0.39
Horno Creek	1	2914.789	1074.00	127.90	129.62	129.62	130.33	0.024250	6.93	162.64	118.58	0.98
Horno Creek	1	1879.048	1081.00	120.00	123.94	122.44	124.06	0.002076	3.67	437.28	254.10	0.33
Horno Creek	1	1277.812	1081.00	109.45	116.58	116.58	120.15	0.050039	15.16	71.32	10.00	1.00
Horno Creek	1	969.327	1081.00	93.85	100.93	100.98	104.55	0.050970	15.27	70.81	10.00	1.01
San Juan Creek	1	4692.380	36497.00	79.00	89.79	86.24	90.15	0.001488	6.14	8346.61	1453.11	0.33
San Juan Creek	1	4154.447	36497.00	78.49	89.59		89.70	0.000361	3.10	14348.65	1833.47	0.16
San Juan Creek	2	3374.671	36497.00	76.50	89.43	80.79	89.50	0.000172	2.26	18137.55	1884.64	0.12
San Juan Creek	2	2504.657	36497.00	75.13	88.82	81.14	89.19	0.000751	5.03	7566.18	600.00	0.24
San Juan Creek	2	2200	Bridge									
San Juan Creek	2	2153.456	36497.00	74.04	87.32	83.78	88.21	0.002268	8.65	5097.20	550.00	0.42
San Juan Creek	2	1219.539	36497.00	72.48	82.08	82.08	84.10	0.009066	14.05	3807.70	947.55	0.81
San Juan Creek	2	189.796	36497.00	70.14	76.63	74.35	76.89	0.002000	4.88			



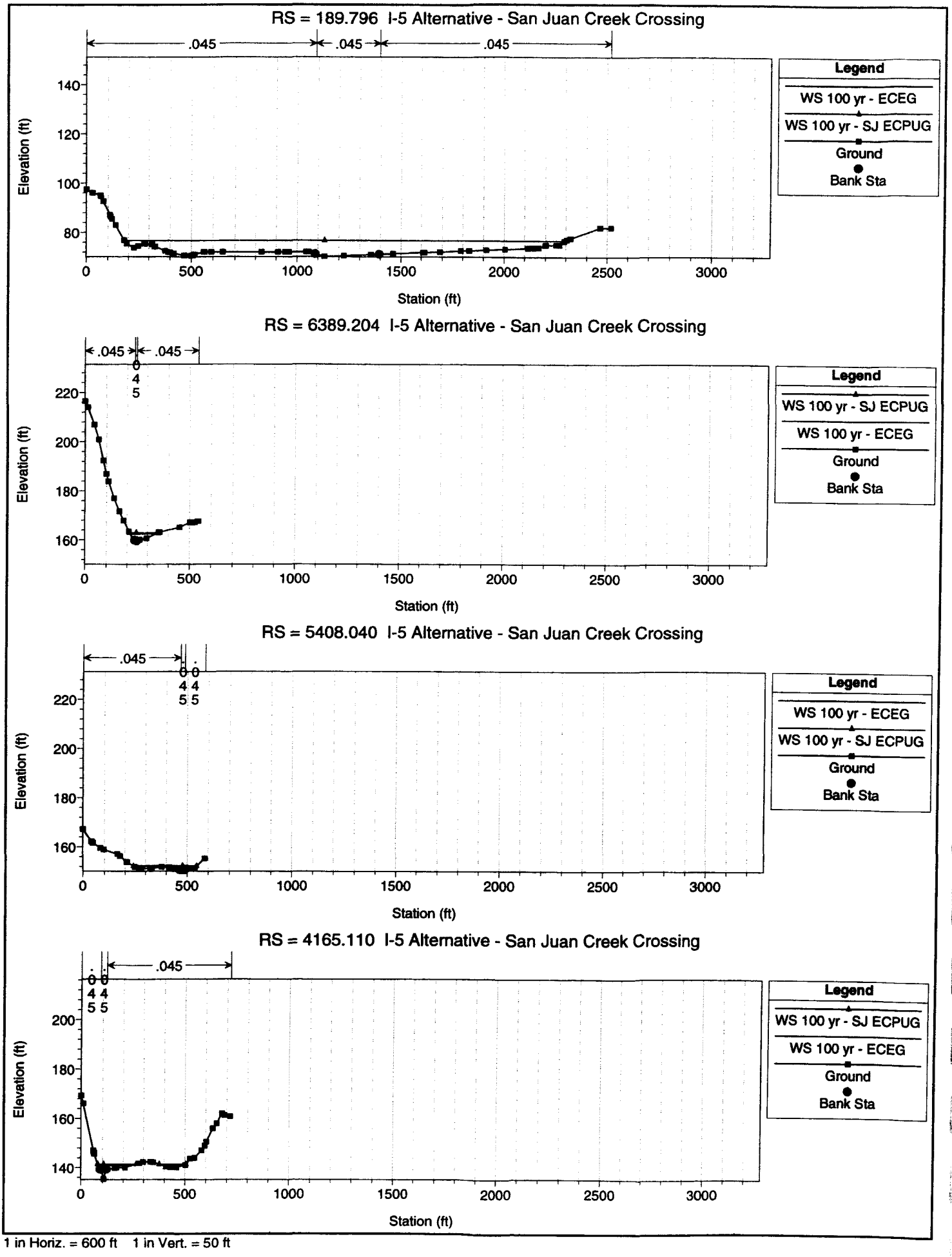
1 in Horiz. = 1400 ft 1 in Vert. = 1200 ft

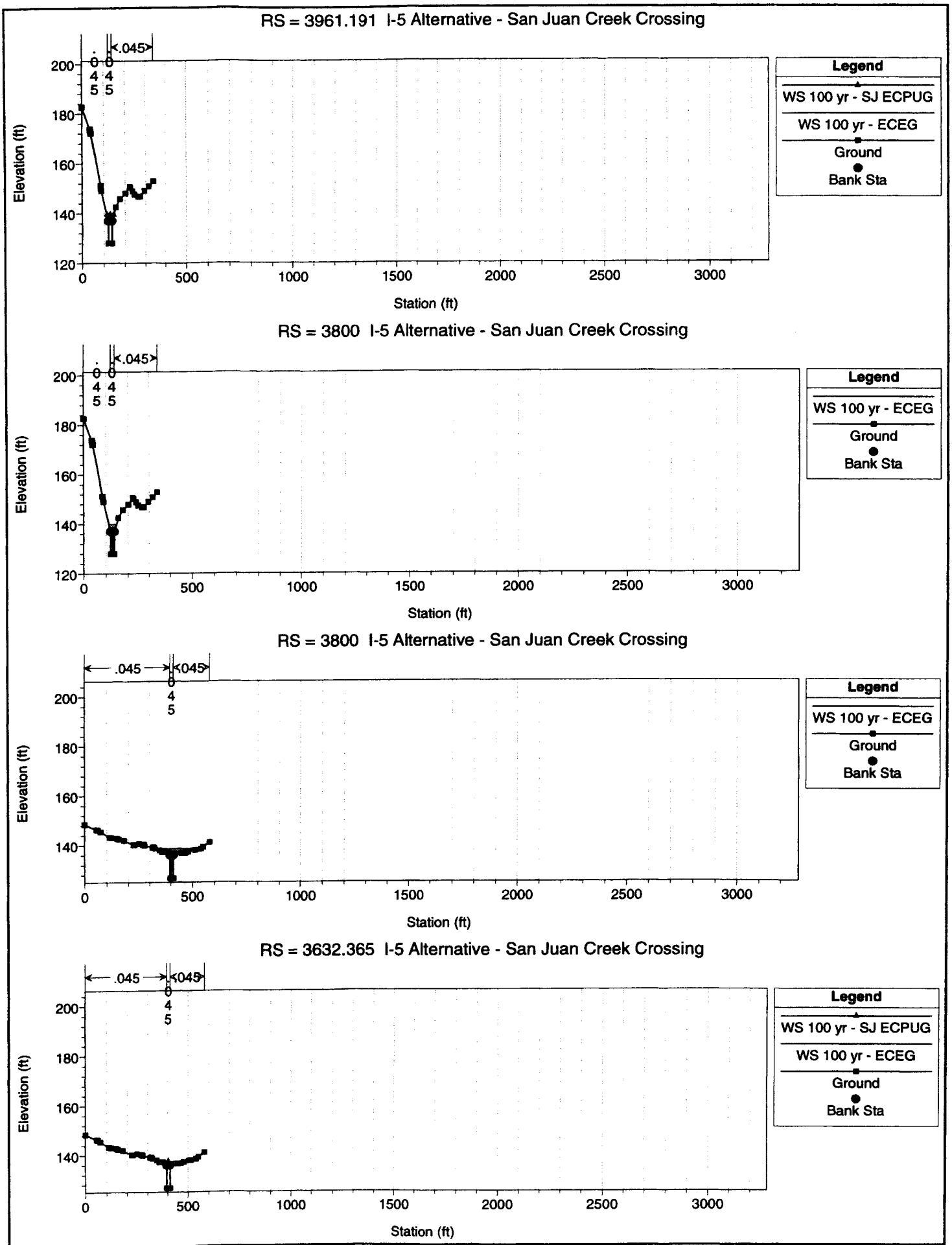


1 in Horiz. = 600 ft 1 in Vert. = 50 ft

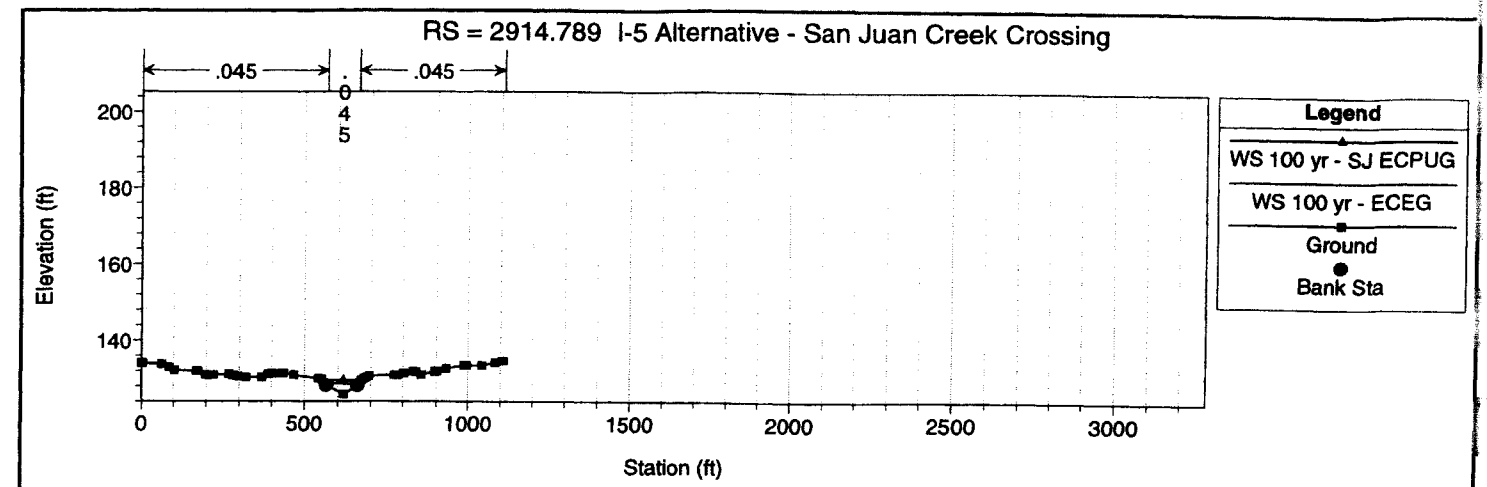


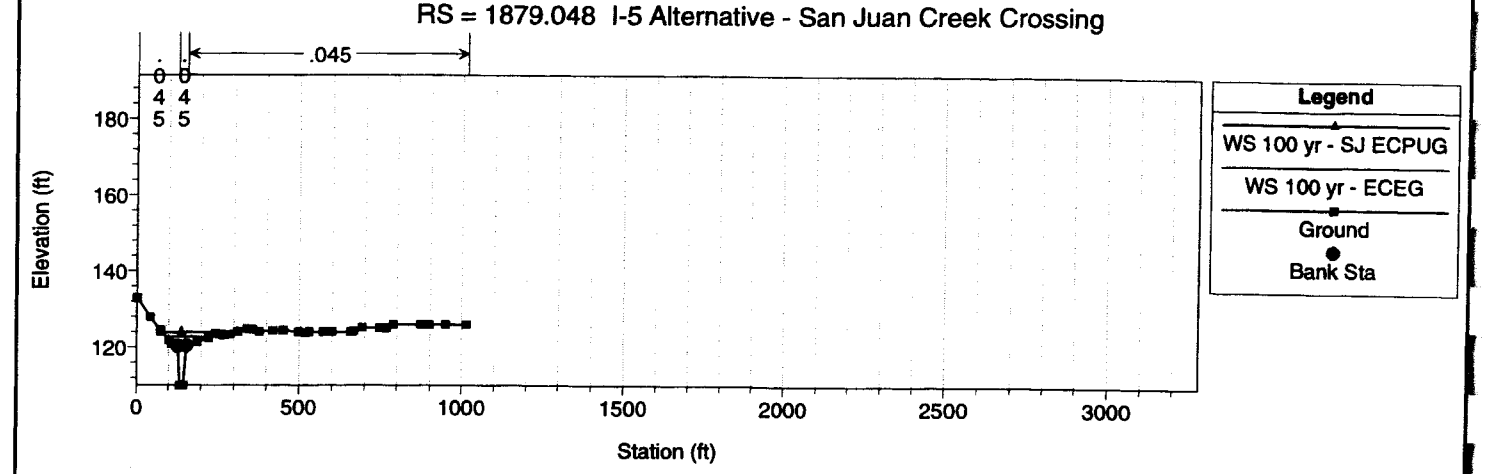
1 in Horiz. = 600 ft 1 in Vert. = 50 ft

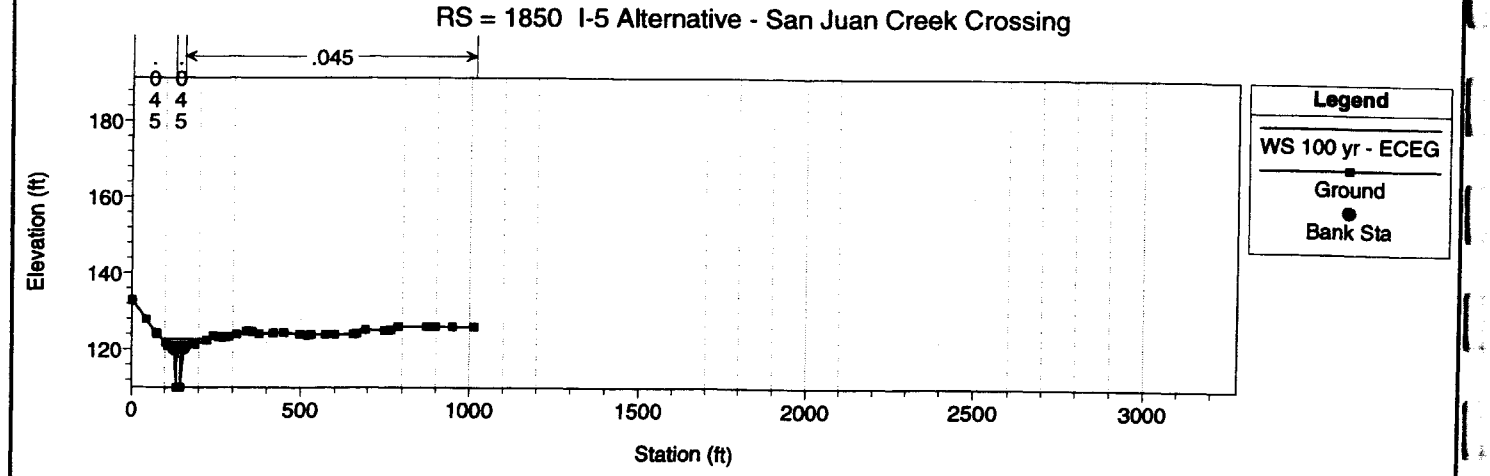

RS = 189.796 I-5 Alternative - San Juan Creek Crossing
.045
.045
.045
Elevation (ft)
140
120
100
80
0
500
1000
1500
2000
2500
3000
Station (ft)
Legend
WS 100 yr - ECEG
WS 100 yr - SJ ECPUG
Ground
Bank Sta
RS = 6389.204 I-5 Alternative - San Juan Creek Crossing
.045
.045
Elevation (ft)
220
200
180
160
Station (ft)
Legend
WS 100 yr - SJ ECPUG
WS 100 yr - ECEG
Ground
Bank Sta
RS = 5408.040 I-5 Alternative - San Juan Creek Crossing
.045
Elevation (ft)
220
200
180
160
Station (ft)
Legend
WS 100 yr - ECEG
WS 100 yr - SJ ECPUG
Ground
Bank Sta
RS = 4165.110 I-5 Alternative - San Juan Creek Crossing
.045
Elevation (ft)
200
180
160
140
Station (ft)
Legend
WS 100 yr - SJ ECPUG
WS 100 yr - ECEG
Ground
Bank Sta
1 in Horiz. = 600 ft 1 in Vert. = 50 ft

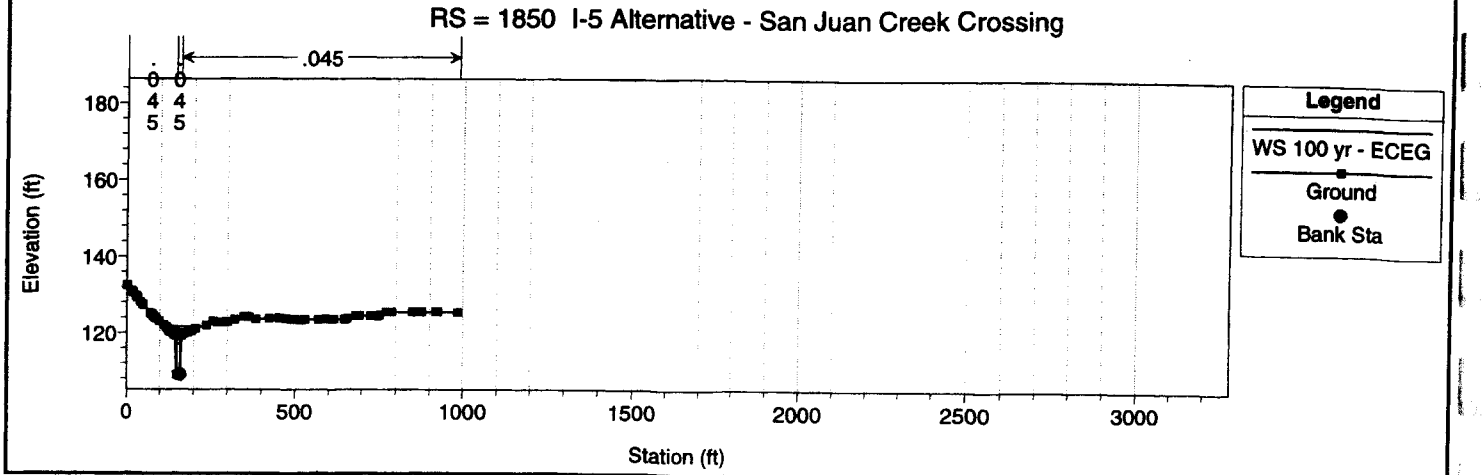


1 in Horiz. = 600 ft 1 in Vert. = 50 ft

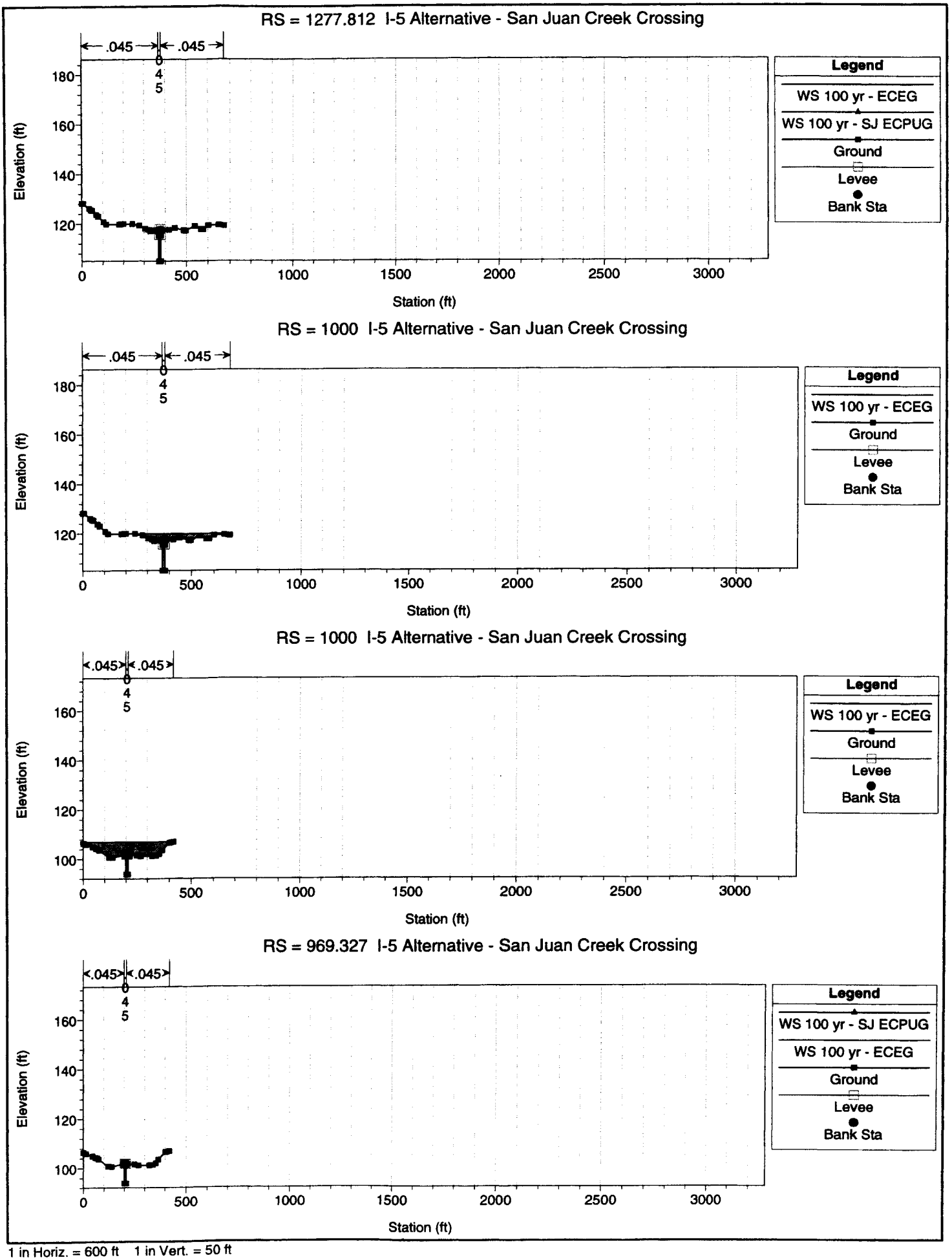


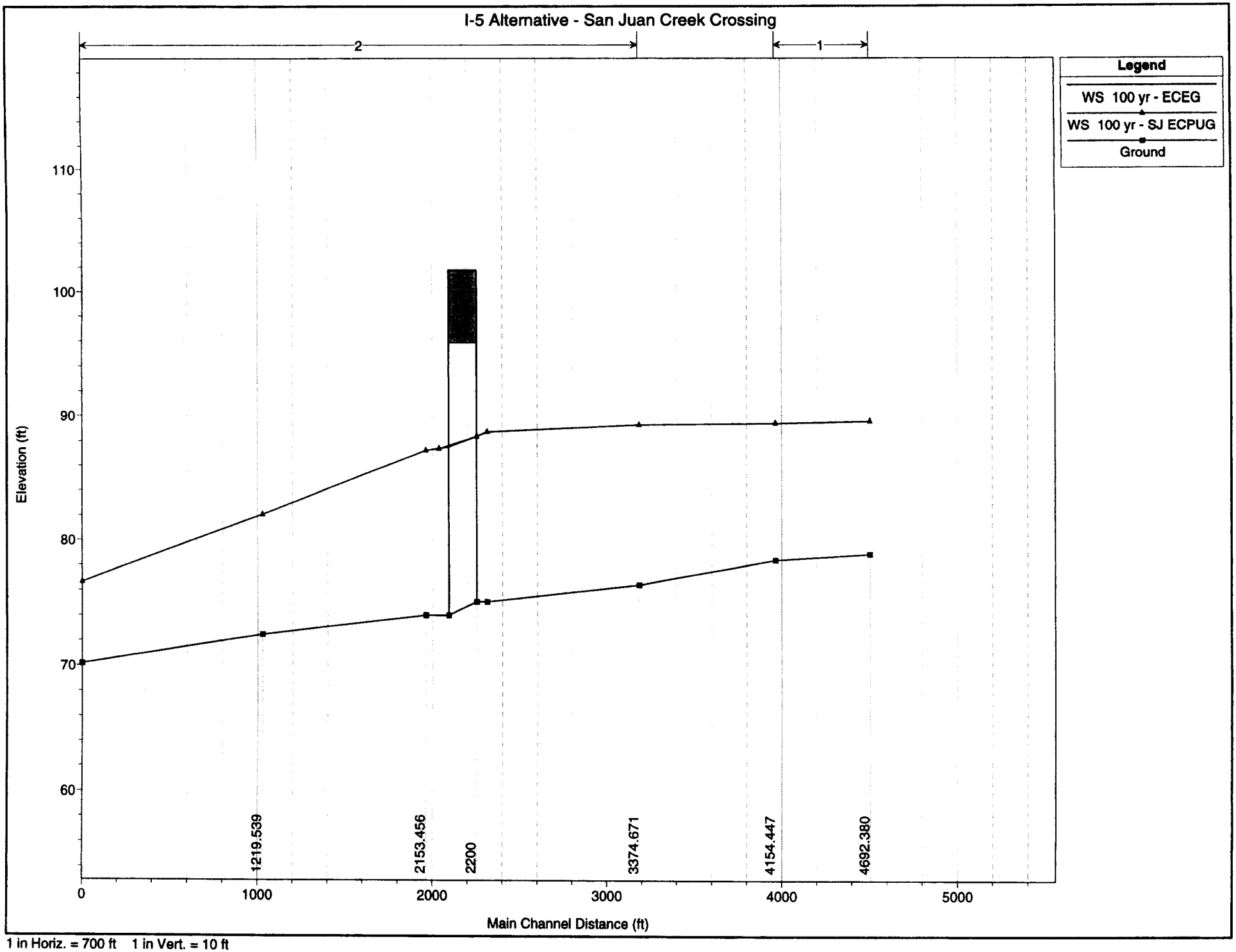






1 in Horiz. = 600 ft 1 in Vert. = 50 ft


RS = 1277.812 I-5 Alternative - San Juan Creek Crossing
.045
.045
4
5
Elevation (ft)
180
160
140
120
0
500
1000
1500
2000
2500
3000
Station (ft)
Legend
WS 100 yr - ECEG
WS 100 yr - SJ ECPUG
Ground
Levee
Bank Sta
RS = 1000 I-5 Alternative - San Juan Creek Crossing
.045
.045
4
5
Elevation (ft)
180
160
140
120
0
500
1000
1500
2000
2500
3000
Station (ft)
Legend
WS 100 yr - ECEG
Ground
Levee
Bank Sta
RS = 1000 I-5 Alternative - San Juan Creek Crossing
.045
.045
4
5
Elevation (ft)
160
140
120
100
0
500
1000
1500
2000
2500
3000
Station (ft)
Legend
WS 100 yr - ECEG
Ground
Levee
Bank Sta
RS = 969.327 I-5 Alternative - San Juan Creek Crossing
.045
.045
4
5
Elevation (ft)
160
140
120
100
0
500
1000
1500
2000
2500
3000
Station (ft)
Legend
WS 100 yr - SJ ECPUG
WS 100 yr - ECEG
Ground
Levee
Bank Sta
1 in Horiz. = 600 ft 1 in Vert. = 50 ft


I-5 Alternative - San Juan Creek Crossing
2
1
Legend
WS 100 yr - ECEG
WS 100 yr - SJ ECPUG
Ground
Elevation (ft)
110
100
90
80
70
60
1219.539
2153.456
2200
3374.671
4154.447
4692.380
0
1000
2000
3000
4000
5000
Main Channel Distance (ft)
1 in Horiz. = 700 ft 1 in Vert. = 10 ft

APPENDIX V
HYDRAULIC MODEL INPUT & RESULTS
I-5 ALTERNATIVE AT PRIMA DESHECHA CAÑADA

Appendix V. **Hydraulic Model Input & Results**

I5 Alternative at Prima Deschecha Canada

- 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 widened culvert structure include:

881 (2889)

816 (2679)

HEC-RAS Version 3.0.1 Mar 2001
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: prima
Project File : prima.prj
Run Date and Time: 12/9/02 4:18:59 PM

Project in English units

Project Description:
I-5 Alternative - Prima Deshecha Canada Crossing

PLAN DATA

Plan Title: existing
Plan File : p:\2PDA0104\Hydr\LHS\Modeling\prima_ly11\hec-ras\prima.p01

Geometry Title: 2yr banks
Geometry File : p:\2PDA0104\Hydr\LHS\Modeling\prima_ly11\hec-ras\prima.g05

Flow Title : existing
Flow File : p:\2PDA0104\Hydr\LHS\Modeling\prima_ly11\hec-ras\prima.f01

Plan Description:
existing scales culvert length of 120 and assumes roadway width of 95, roadway elev of 120

Plan Summary Information:
Number of: Cross Sections = 16 Mulitple Openings = 0
Culverts = 1 Inline Weirs = 0
Bridges = 0

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

Computation Options
Critical depth computed 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
Flow File : p:\2PDA0104\Hydr\LHS\Modeling\prima_ly11\hec-ras\prima.f01

Flow Data (cfs)

River	Reach	RS	100yr HC	100yr	50yr	2yr
Prima Descheca	1	4398.912	5512	2439	1650	19

Boundary Conditions

River	Reach	Profile	Upstream	Downstream
Prima Descheca	1	100yr HC	Normal S = .004	Normal S = .02
Prima Descheca	1	100yr	Normal S = .004	Normal S = .02
Prima Descheca	1	50yr	Normal S = .004	Normal S = .02

GEOMETRY DATA

Geometry Title: 2yr banks
Geometry File : p:\2PDA0104\Hydr\LHS\Modeling\prima_ly11\hec-ras\prima.g05

CROSS SECTION RIVER: Prima Descheca

REACH: 1 RS: 4398.912

INPUT
Description:
Station Elevation Data num= 42

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	132.65	46.88	119.78	52.71	118	80.28	118	85.55	118
92.31	118	151.23	118	159.11	117.04	216.9	111.82	222.65	111.12
249.74	107.85	278.73	106.12	289.56	105.47	348.26	101.95	412.61	100.06
414.66	100	427.65	99.93	443.73	99.78	456.59	99.78	471.39	100.25
479.61	101	535.67	104.41	542.76	104.69	545.29	104.69	550.6	105.16
578.13	106.81	584.58	107.59	623.5	110	658.73	113.64	673.49	115.29
686.53	116.81	730.93	121	754.5	123.97	775.16	127.18	794.46	129.59
807.99	131.07	815.11	131.95	840.83	135.92	865.71	141.27	881.91	144.26
906.51	150.26	917.1	152.53						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.045	414.66	.045	471.39	.045

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
414.66	471.39	250.79	242.65	233.82	.1 .3

CROSS SECTION RIVER: Prima Descheca
REACH: 1 RS: 4156.032

INPUT
Description:
Station Elevation Data num= 47

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	167.47	9.63	169.1	12.4	169.66	42.67	173.98	52.92	168.62
75.71	154.27	108.38	134.18	141.79	118	195.45	114.75	207.87	114.29
212.14	114.13	240.91	113.06	248.88	112.04	273.95	108.91	277.25	108.6
319.41	103.87	340.04	102	360.14	101.39	389.65	100.5	406.12	100
427.65	99.73	440.51	99.07	453.38	98.85	469.45	98.85	488.75	98.85
530.55	99.07	540.19	99.29	549.84	99.29	567.33	98.88	573.69	99.21
576.36	99.38	587.6	99.78	637.4	101.55	685.73	105.46	703.49	107.2
725.91	110.07	740.96	111.6	769.57	113.58	772.18	113.84	778.55	114.27
804.13	115.52	824.36	117.37	835.65	118.13	865.86	121.09	868.69	121.54
875.47	122.44	891.65	124.57						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.045	406.12	.045	587.6	.045

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
406.12	587.6	210.81	176.68	153.81	.1 .3

CROSS SECTION RIVER: Prima Descheca
REACH: 1 RS: 3980.600

INPUT
Description:
Station Elevation Data num= 39

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	221.63	23.04	215.52	55.91	203.96	60.04	202.28	66.66	200.31
102.48	189.12	127.19	182.6	159.05	164.56	161.91	163.05	167.33	159.88
189.11	147.11	212.04	131.9	231.34	120.18	240.74	118.27	268.01	114.83
300.77	111.35	318.19	109	335.49	107.33	371.01	104.42	404.92	101.32
414.4	100.18	430.42	98.71	449.76	98.59	470.85	98.51	636.07	98.51
657.16	98.55	670.72	98.66	683.33	99.14	717.37	100.46	739.42	101
810.99	106.57	834.48	108.25	872.07	113.37	883.24	114.67	888.17	115.08
890.95	115.38	894.88	115.79	932.9	120.44	947.75	122.12		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.045	430.42	.045	683.33	.045

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
430.42	683.33	198.04	173.72	167.23	.1 .3

CROSS SECTION RIVER: Prima Descheca
REACH: 1 RS: 3806.036

INPUT
Description:
Station Elevation Data num= 34

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	183.13	7.96	184.43	26.34	182.8	45.51	179.91	59.42	177.62
88.4	165.58	107.3	158.25	120.59	153.1	197.06	127.52	233.23	115.43
237.75	115	262.16	112.69	270.77	111.75	329.74	105.29	340.11	104.31
345.86	103.76	375.02	101.78	404.05	100.9	436.65	99.16	441.83	98.89
466.58	98.58	630.23	97.03	757.64	98.42	781.37	98.49	798.77	98.58
808.26	98.76	809.23	99.03	835.34	101.11	870.38	106.87	871.09	107
871.48	107.06	900.63	112.45	923.89	115.96	954.28	120.54		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.045	441.83	.045	809.23	.045

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
441.83	809.23	226.54	223.79	218.97	.1 .3

CROSS SECTION RIVER: Prima Descheca
REACH: 1 RS: 3582.069

INPUT
Description:

Station Elevation Data num= 33

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	123.1	9.47	122.77	20.1	121.84	77.44	118.43	89.48	117.45
104.39	117	123.06	116.43	148.28	113.67	170.2	112.1	212.38	108
236.65	105.98	265.91	103.55	274.51	102.83	301.82	101.28	350.24	98.53
351.28	98.48	366.25	98.46	387.34	98.39	409.03	98.26	433.18	98.15
520.9	96.66	618.85	98.28	662.63	98.43	694.53	98.53	711.23	98.68
728.88	99.75	741.16	100	762.5	100.89	789.23	103.22	804.61	106.05
829.61	113.08	861.45	117.52	867.35	119.03				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.045	351.28	.045	711.23	.045

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
351.28	711.23	172.14	193.64	220.91	.1 .3

CROSS SECTION RIVER: Prima Descheca
REACH: 1 RS: 3388.584

INPUT
Description:
Station Elevation Data num= 34

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	156.67	20.07	152.13	55.71	144.06	56.28	143.95	80.8	137
92.48	133.93	124.54	125.49	130.2	123.88	164.89	115.38	191.87	111.76
273.51	102.6	278.4	102.14	288.91	101.57	306.92	101.08	327.84	100.5
345.92	100.13	366.65	98.86	367.5	98.81	379.2	98.16	382.12	98
435.81	98	511.25	94.35	575.85	97.8	604.36	97.91	707.97	98
728.07	99.11	740.79	99.81	747.71	100	755.32	100.31	797.11	103.61
816.58	106.73	821.81	108.14	833.05	110.73	866.75	118.48		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.045	367.5	.045	728.07	.045

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
367.5	728.07	188.65	222.79	239.28	.1 .3

CROSS SECTION RIVER: Prima Descheca
REACH: 1 RS: 3167.429

INPUT
Description:
Station Elevation Data num= 40

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	180.21	47.42	163.04	80.54	153.03	110.49	143.56	116.2	142.26
122.5	140.47	137.36	135.66	147.53	132.61	162.55	126.9	187.51	118.02
193.43	115.83	221.32	110.26	223.16	109.98	260.88	105.3	294.48	101.13
348.47	99.73	365.79	99.14	369.9	98.89	379.86	98.61	389.25	98.34
397.81	98	435.78	97.8	504.82	93.04	561.71	97.65	598.18	97.84
615.39	98	631.68	98.69	665.78	100.12	673.12	100.62	720.32	101.94
722.36	102.03	723.18	102.07	725.11	102	773.23	102.57	793.67	105.27
798.26	105.49	809.08	106.86	823.29	108.34	829.32	109.57	853.62	115.54

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.045	379.86	.045	631.68	.045

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
379.86	631.68	270.67	281.67	202.8	.1 .3

CROSS SECTION RIVER: Prima Descheca
REACH: 1 RS: 2888.886

INPUT
Description:
Station Elevation Data num= 41

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	132.15	4.43	131.38	32.74	129.5	51.04	128.28	72.95	129.17
97.64	129.7	118.25	127.04	135.07	123.29	194.96	108.38	208.73	105.37
223.79	103.95	229.13	102.44	250	87.6	262	87.6	271.28	102.77
280.39	103.55	303.54	103.55	318.97	103.95	336.98	104.48	339.55	105.41
347.39	106.87	374.78	111.42	377.25	111.77	380.2	112	388.28	111.53
447.15	107.31	451.79	107.41	490.27	106.1	497.03	106.15	503.05	106.2
540.35	110.85	545.81	111.06	585.03	112.59	588.56	112.65	591.09	112.53
631.32	112.12	656.86	111.57	687.44	113.53	703.46	114.87	716.83	114.84
722.11	115.14								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.045	229.13	.045	271.28	.045

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
229.13	271.28	213.28	213.68	314.06	.1 .3

CULVERT RIVER: Prima Descheca
REACH: 1 RS: 2700

INPUT
Description:
Distance from Upstream XS = 57.63
Deck/Roadway Width = 95
Weir Coefficient = 2.6
Upstream Deck/Roadway Coordinates
num= 2

Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord
0	120		800	120	

Upstream Bridge Cross Section Data
Station Elevation Data num= 41

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	132.15	4.43	131.38	32.74	129.5	51.04	128.28	72.95	129.17
97.64	129.7	118.25	127.04	135.07	123.29	194.96	108.38	208.73	105.37
223.79	103.95	229.13	102.44	250	87.6	262	87.6	271.28	102.77
280.39	103.55	303.54	103.55	318.97	103.95	336.98	104.48	339.55	105.41
347.39	106.87	374.78	111.42	377.25	111.77	380.2	112	388.28	111.53
447.15	107.31	451.79	107.41	490.27	106.1	497.03	106.15	503.05	106.2
540.35	110.85	545.81	111.06	585.03	112.59	588.56	112.65	591.09	112.53
631.32	112.12	656.86	111.57	687.44	113.53	703.46	114.87	716.83	114.84
722.11	115.14								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.045	229.13	.045	271.28	.045

Bank Sta: Left	Right	Coeff Contr.	Expan.
229.13	271.28	.1	.3

Downstream Deck/Roadway Coordinates
num= 2

Sta Hi Cord	Lo Cord	Sta Hi Cord	Lo Cord
0	120	800	120

Downstream Bridge Cross Section Data
Station Elevation Data num= 41

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	180.06	7.87	179.51	25.47	180.16	54.4	177.48	79.45	173
120.65	154.73	122.86	153.63	125.75	152.5	129.71	151.26	175.9	135.28
194	129.56	209.68	122.92	240.54	110.56	262.38	105.01	267.52	103.41
282.96	102.08	292.57	100.9	305	86	317	86	325.87	100.62
336.98	101.55	352.41	102.35	376.48	103.16	383.31	103.68	426.62	106
426.68	106.01	426.72	106.01	427.36	106.03	470.13	107.6	473.21	107.5
476.77	107.39	485.84	107.64	547.88	108.72	579.87	113.92	608.47	117.64
627.2	117.91	643.77	116.66	665.05	114.81	677.35	114.91	705.88	114.55
715.35	115.05								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.045	292.57	.045	325.87	.045

Bank Sta: Left	Right	Coeff Contr.	Expan.
292.57	325.87	.1	.3

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

Number of Culverts = 1

Culvert Name	Shape	Rise	Span
Culvert #1	Conspan Arch	16	16

FHWA Chart # 60- Span/Rise ratio approximate 2:1
FHWA Scale # 2 - 45 degree wing wall angle
Solution Criteria = Inlet control

Culvert Upstrm Dist	Length	n Value	Entrance Loss Coef	Exit Loss Coef
45.127	120	.013	.2	1

Upstream Elevation = 87.2566
Centerline Station = 256
Downstream Elevation = 86.3319
Centerline Station = 311

CULVERT OUTPUT Profile #100yr
Culvert ID : Culvert #1

Culv Q (cfs)	2439.00	Culv Ful Lngh (ft)	
# Barrels	1	Culv Vel US (ft/s)	16.99
Q Barrel (cfs)	2439.00	Culv Vel DS (ft/s)	20.06
E.G. US. (ft)	101.87	Culv Inv El Up (ft)	87.26
W.S. US. (ft)	101.09	Culv Inv El Dn (ft)	86.33
E.G. DS (ft)	98.34	Culv Frctn Ls (ft)	0.53
W.S. DS (ft)	95.00	Culv Ext Lss (ft)	1.84
Delta EG (ft)	3.53	Culv Ent Lss (ft)	1.15
Delta WS (ft)	6.09	Q Weir (cfs)	
E.G. IC (ft)	101.87	Weir Sta Lft (ft)	
E.G. OC (ft)	101.61	Weir Sta Rgt (ft)	
Culvert Control	Inlet	Weir Submerg	
Culv WS Inlet (ft)	96.23	Weir Max Depth (ft)	
Culv WS Outlet (ft)	93.93	Weir Avg Depth (ft)	
Culv Nml Depth (ft)	6.49	Wr Flw Area (sq ft)	
Culv Crt Depth (ft)	8.97	Min El Weir Flow (ft)	120.01

Note: The flow in the culvert is entirely supercritical.

CROSS SECTION RIVER: Prima Descheca
REACH: 1 RS: 2678.606

INPUT
Description:
Station Elevation Data num= 41

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev

```
      0  180.06    7.87  179.51   25.47  180.16    54.4  177.48   79.45     173
 120.65  154.73  122.86  153.63  125.75   152.5  129.71  151.26   175.9  135.28
    194  129.56  209.68  122.92  240.54  110.56  262.38  105.01  267.52  103.41
 282.96  102.08  292.57   100.9     305      86     317      86  325.87  100.62
 336.98  101.55  352.41  102.35  376.48  103.16  383.31  103.68  426.62     106
 426.68  106.01  426.72  106.01  427.36  106.03  470.13   107.6  473.21   107.5
 476.77  107.39  485.84  107.64  547.88  108.72  579.87  113.92  608.47  117.64
  627.2  117.91  643.77  116.66  665.05  114.81  677.35  114.91  705.88  114.55
 715.35  115.05

Manning's n Values          num=       3
     Sta   n Val      Sta   n Val      Sta   n Val
       0    .045   292.57    .045   325.87    .045

Bank Sta: Left   Right    Lengths: Left Channel   Right      Coeff Contr.    Expan.
       292.57  325.87           381.35  350.77  328.79              .1        .3

CROSS SECTION           RIVER: Prima Descheca
REACH: 1                   RS: 2323.952

INPUT
Description:
Station Elevation Data      num=      33
     Sta    Elev      Sta    Elev      Sta    Elev      Sta    Elev      Sta    Elev
       0  112.62      .61  112.34    24.16  103.65    47.08  101.26    49.35  100.51
   54.94  100.22    74.54   100.1    82.51   99.73    101.4   98.87   117.94   98.39
  124.92    97.2   178.48   91.62   200.48   89.33   224.22   87.17   225.67   87.08
  259.65    86.3   316.37      85   326.42   84.77   334.11   84.59   391.99      85
  401.36   85.05   403.52      85   418.96   84.47   431.17   84.05   436.79   83.86
  446.31    84.6   459.58   85.64   507.65   89.42   539.11   91.89   577.81   95.91
   578.3   95.98   578.76   96.04    621.6  101.98

Manning's n Values          num=       3
     Sta   n Val      Sta   n Val      Sta   n Val
       0    .045   418.96    .045   446.31    .045

Bank Sta: Left   Right    Lengths: Left Channel   Right      Coeff Contr.    Expan.
       418.96  446.31           278.74  329.99  380.68              .1        .3

CROSS SECTION           RIVER: Prima Descheca
REACH: 1                   RS: 1991.245

INPUT
Description:
Station Elevation Data      num=      38
     Sta    Elev      Sta    Elev      Sta    Elev      Sta    Elev      Sta    Elev
       0  114.84     1.84   113.9    20.34  107.98    39.44  103.85    68.58   97.55
   77.04    96.6    86.19    96.3   114.63   92.09      188   86.12   189.17   86.02
  190.54   85.92   199.31   85.33   309.76   77.81   322.55   76.41   340.21   75.53
     358   76.05   369.03   76.15   389.83   76.34   415.41   76.19   425.33   75.74
     453      75   468.59   75.42   470.91   75.48   497.72   76.19   516.23   77.56
  548.81   78.91   586.14   80.46   603.39   81.17    650.3   83.12   678.58   84.29
  686.06    84.8   695.66   85.45   726.22   88.17   739.24   89.03   788.68   91.86
  791.38      92    793.5   92.23   802.23   93.03

Manning's n Values          num=       3
     Sta   n Val      Sta   n Val      Sta   n Val
       0    .045   369.03    .045   470.91    .045

Bank Sta: Left   Right    Lengths: Left Channel   Right      Coeff Contr.    Expan.
       369.03  470.91           239.82  270.74  309.22              .1        .3

CROSS SECTION           RIVER: Prima Descheca
REACH: 1                   RS: 1720.011

INPUT
Description:
Station Elevation Data      num=      46
     Sta    Elev      Sta    Elev      Sta    Elev      Sta    Elev      Sta    Elev
       0  110.91     6.36  109.75    24.83     108    57.45  105.94    75.19  105.02
   96.29  103.61   135.24  101.02   144.03  100.18   163.08   98.62   212.86   94.09
  235.78   91.67    281.7   87.37   295.25   85.61   316.11    83.6   381.05   79.23
  384.27   79.01   385.68   78.92   386.75   78.79   419.37    76.3   446.72    75.4
  471.96   75.17    488.2   75.02   488.64      75   497.04      75   602.26      75
  610.89      75   625.87      75   629.03   75.18   671.88      77   693.14   77.95
   697.9   78.09   729.12      79   789.16    88.6   802.53   90.66   817.01   92.77
  832.37   94.86   835.26   95.25   866.79  101.86   889.77  105.67   896.56   106.6
  901.21  107.68    910.8  109.79   970.04  117.87   985.63  120.34  1004.46  122.24
 1025.99  123.79

Manning's n Values          num=       3
     Sta   n Val      Sta   n Val      Sta   n Val
       0    .045   471.96    .045   602.26    .045

Bank Sta: Left   Right    Lengths: Left Channel   Right      Coeff Contr.    Expan.
       471.96  602.26           337.33  380.39  430.75              .1        .3

CROSS SECTION           RIVER: Prima Descheca
REACH: 1                   RS: 1339.916

INPUT
Description:
Station Elevation Data      num=      45
     Sta    Elev      Sta    Elev      Sta    Elev      Sta    Elev      Sta    Elev
       0   118.9    14.43  118.01     14.5  117.99    20.83  116.64    79.75  104.03
   80.72  103.86    112.9   96.03   144.37   92.21   145.72   92.04   207.31   82.68
  211.36   82.19   213.45   82.06   274.25   80.25    278.4   79.96   309.83      79
  346.18   76.23   360.91   74.44   389.87   71.81   399.86    70.9   408.29   70.13
```

436.59	70.14	441.11	70.28	443.44	70.32	445.73	70.35	506.76	71.32
566.47	76.82	572.4	77.27	578.46	77.74	605.22	80.19	624.91	82.6
651.03	86.98	690.92	91.83	703.69	93.77	716.32	99.54	756.92	109.38
781.61	120.97	802.15	125.89	826.22	130.93	834.97	133.84	858.69	139.56
867.8	142.88	891.16	147.83	900.62	151	928.51	154.4	947.53	156.72

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.045	399.86	.045	443.44	.045

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
399.86	443.44	325.44	354.25	391.89	.1	.3

CROSS SECTION RIVER: Prima Descheca
REACH: 1 RS: 985.746

INPUT
Description:
Station Elevation Data num= 48

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	132.89	12.13	131.77	19.54	130.89	48.79	126.14	53.37	124.78
59.26	123.04	94.61	114.42	121.03	108.56	147.45	99.19	154.04	96.88
154.86	96.73	157.33	96.12	207.51	80.55	222.52	77.56	287.71	73.22
290.18	72.94	291.24	72.84	324.01	69.69	369.89	66.64	407.22	64.16
418	62.89	425.5	62	451.08	62	468.14	62	518.18	62
526.99	62	532.27	62.47	534.22	62.64	553.41	64.34	594.65	68.61
613.46	70.56	628.48	72.11	648.56	77.75	688.73	90.22	729.97	102.91
743.71	105.25	763.8	109.56	775.85	112.49	824.05	119.8	828.99	120.6
831.46	120.89	833.92	121.51	884.1	130.23	924.14	141.62	932.95	143.63
938.23	144.84	959.37	148.12	976.63	150.93				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.045	418	.045	534.22	.045

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
418	534.22	306.46	326.67	351.83	.1	.3

CROSS SECTION RIVER: Prima Descheca
REACH: 1 RS: 658.709

INPUT
Description:
Station Elevation Data num= 47

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	127.05	33.83	123.68	77.4	120.07	96.58	118.27	122.83	116.88
136.63	111.18	194.55	89.22	195.59	88.82	196.75	88.34	220.34	78.3
231.16	75	254.11	73.73	267.27	73	308.85	70.12	339.49	67.19
354.15	66.59	393.61	65	411.71	63.54	418.36	63	447.82	61.81
458.45	61.38	467.86	61	511.55	61	517.37	61	520.04	61
527.23	61	556.15	60.57	562.51	61.18	572.1	62.42	590.25	64.78
591.88	64.98	596.69	65.49	700.59	75.8	715.39	77.82	772.8	83.32
782.8	84.55	808.91	88.67	814.4	89.46	826.35	90.93	854.92	94.46
870.91	96.15	881.13	98.04	913.41	112.51	917.24	113.85	927.58	117.72
962.91	131.5	963.13	131.58						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.045	458.45	.045	572.1	.045

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
458.45	572.1	302.46	263.97	229.51	.1	.3

CROSS SECTION RIVER: Prima Descheca
REACH: 1 RS: 394.906

INPUT
Description:
Station Elevation Data num= 46

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	80.58	9.36	79.46	33.94	76.53	42.25	75.18	69.15	72.46
75.14	71.34	77.85	71.17	140.27	68.1	141.53	68.02	159.97	67.13
203.81	65.09	206.7	64.81	213.8	64.35	272.49	59.77	280.79	59.51
331.06	57.88	358.09	57	375.61	57	388.95	56.54	391.65	56.45
404.67	56	456.49	56	469.83	56	478.06	56.63	481.52	56.89
535.61	58.37	565.43	59.19	568.5	59.36	574.09	60.36	601.4	66.11
666.2	78.79	667.18	78.97	668.45	78.96	732.96	78.28	752.49	78.81
765.85	79.18	790.09	83.89	798.74	86.28	820.94	91.72	843.83	98.82
864.52	104.06	882.66	110.31	914.26	118.12	930.31	123.46	937.56	126.31
939.21	126.7								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.045	391.65	.045	478.06	.045

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
391.65	478.06	0	0	0	.1	.3

Profile Output Table - Standard Table 1

Reach	River Sta	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
		(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
1	4398.912	2439.00	99.78	103.13	102.79	103.81	0.011236	7.64	395.02	185.95	0.75
1	4156.032	2439.00	98.85	102.46		102.62	0.002217	3.44	789.43	313.63	0.33

1	3980.600	2439.00	98.51	102.29		102.37	0.000824	2.29	1142.74	361.80
0.21										
1	3806.036	2439.00	97.03	102.24		102.28	0.000278	1.46	1758.46	474.07
0.12										
1	3582.069	2439.00	96.66	102.19		102.22	0.000275	1.45	1791.92	491.56
0.12										
1	3388.584	2439.00	94.35	102.14		102.17	0.000194	1.32	1969.31	500.11
0.11										
1	3167.429	2439.00	93.04	102.08		102.12	0.000253	1.61	1685.58	444.97
0.12										
1	2888.886	2439.00	87.60	101.09	96.11	101.87	0.003572	7.06	345.59	39.23
0.42										
1	2700	Culvert								
1	2678.606	2439.00	86.00	93.61	95.00	98.83	0.043876	18.34	133.00	22.96
0.42										
1	2323.952	2439.00	83.86	86.73	86.73	87.51	0.021912	9.10	360.72	232.57
1.01										
1	1991.245	2439.00	75.00	78.90	77.63	79.15	0.004005	4.43	624.86	254.67
0.44										
1	1720.011	2439.00	75.00	77.61		77.88	0.005456	4.61	594.45	283.19
0.50										
1	1339.916	2439.00	70.13	73.07	73.07	74.12	0.019878	9.35	309.43	149.80
0.98										
1	985.746	2439.00	62.00	66.10	64.43	66.40	0.002930	4.54	592.75	192.49
0.40										
1	658.709	2439.00	60.57	63.39	63.36	64.35	0.019294	8.14	321.68	165.98
0.93										
1	394.906	2439.00	56.00	58.57	58.57	59.39	0.017527	8.06	369.40	233.11
0.90										

HEC-RAS Version 3.0.1 Mar 2001
U.S. Army Corp of Engineers
Hydrologic Engineering Center
609 Second Street, Suite D
Davis, California 95616-4687
(916) 756-1104

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

PROJECT DATA
Project Title: prima
Project File : prima.prj
Run Date and Time: 12/9/02 4:19:16 PM

Project in English units

Project Description:
I-5 Alternative - Prima Deshecha Canada Crossing

PLAN DATA

Plan Title: proposed
Plan File : p:\2PDA0104\Hydr\LHS\Modeling\prima_ly11\hec-ras\prima.p06

Geometry Title: proposed
Geometry File : p:\2PDA0104\Hydr\LHS\Modeling\prima_ly11\hec-ras\prima.g01

Flow Title : existing
Flow File : p:\2PDA0104\Hydr\LHS\Modeling\prima_ly11\hec-ras\prima.f01

Plan Description:
pr assumes roadway expansion of 30' to 125', assumes culvert length expands similarly to 150'

Plan Summary Information:
Number of: Cross Sections = 16 Mulitple Openings = 0
Culverts = 1 Inline Weirs = 0
Bridges = 0

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

Computation Options
Critical depth computed 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
Flow File : p:\2PDA0104\Hydr\LHS\Modeling\prima_ly11\hec-ras\prima.f01

Flow Data (cfs)

River	Reach	RS	100yr HC	100yr	50yr	2yr
Prima Descheca	1	4398.912	5512	2439	1650	19

Boundary Conditions

River	Reach	Profile	Upstream	Downstream
Prima Descheca	1	100yr HC	Normal S = .004	Normal S = .02
Prima Descheca	1	100yr	Normal S = .004	Normal S = .02
Prima Descheca	1	50yr	Normal S = .004	Normal S = .02

GEOMETRY DATA

Geometry Title: proposed
Geometry File : p:\2PDA0104\Hydr\LHS\Modeling\prima_ly11\hec-ras\prima.g01

CROSS SECTION RIVER: Prima Descheca

REACH: 1 RS: 4398.912

INPUT
Description:
Station Elevation Data num= 42

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	132.65	46.88	119.78	52.71	118	80.28	118	85.55	118
92.31	118	151.23	118	159.11	117.04	216.9	111.82	222.65	111.12
249.74	107.85	278.73	106.12	289.56	105.47	348.26	101.95	412.61	100.06
414.66	100	427.65	99.93	443.73	99.78	456.59	99.78	471.39	100.25
479.61	101	535.67	104.41	542.76	104.69	545.29	104.69	550.6	105.16
578.13	106.81	584.58	107.59	623.5	110	658.73	113.64	673.49	115.29
686.53	116.81	730.93	121	754.5	123.97	775.16	127.18	794.46	129.59
807.99	131.07	815.11	131.95	840.83	135.92	865.71	141.27	881.91	144.26
906.51	150.26	917.1	152.53						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.045	414.66	.045	471.39	.045

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
414.66	471.39	250.79	242.65 233.82	.1	.3

CROSS SECTION RIVER: Prima Descheca
REACH: 1 RS: 4156.032

INPUT
Description:
Station Elevation Data num= 47

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	167.47	9.63	169.1	12.4	169.66	42.67	173.98	52.92	168.62
75.71	154.27	108.38	134.18	141.79	118	195.45	114.75	207.87	114.29
212.14	114.13	240.91	113.06	248.88	112.04	273.95	108.91	277.25	108.6
319.41	103.87	340.04	102	360.14	101.39	389.65	100.5	406.12	100
427.65	99.73	440.51	99.07	453.38	98.85	469.45	98.85	488.75	98.85
530.55	99.07	540.19	99.29	549.84	99.29	567.33	98.88	573.69	99.21
576.36	99.38	587.6	99.78	637.4	101.55	685.73	105.46	703.49	107.2
725.91	110.07	740.96	111.6	769.57	113.58	772.18	113.84	778.55	114.27
804.13	115.52	824.36	117.37	835.65	118.13	865.86	121.09	868.69	121.54
875.47	122.44	891.65	124.57						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.045	406.12	.045	587.6	.045

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
406.12	587.6	210.81	176.68 153.81	.1	.3

CROSS SECTION RIVER: Prima Descheca
REACH: 1 RS: 3980.600

INPUT
Description:
Station Elevation Data num= 39

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	221.63	23.04	215.52	55.91	203.96	60.04	202.28	66.66	200.31
102.48	189.12	127.19	182.6	159.05	164.56	161.91	163.05	167.33	159.88
189.11	147.11	212.04	131.9	231.34	120.18	240.74	118.27	268.01	114.83
300.77	111.35	318.19	109	335.49	107.33	371.01	104.42	404.92	101.32
414.4	100.18	430.42	98.71	449.76	98.59	470.85	98.51	636.07	98.51
657.16	98.55	670.72	98.66	683.33	99.14	717.37	100.46	739.42	101
810.99	106.57	834.48	108.25	872.07	113.37	883.24	114.67	888.17	115.08
890.95	115.38	894.88	115.79	932.9	120.44	947.75	122.12		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.045	430.42	.045	683.33	.045

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
430.42	683.33	198.04	173.72 167.23	.1	.3

CROSS SECTION RIVER: Prima Descheca
REACH: 1 RS: 3806.036

INPUT
Description:
Station Elevation Data num= 34

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	183.13	7.96	184.43	26.34	182.8	45.51	179.91	59.42	177.62
88.4	165.58	107.3	158.25	120.59	153.1	197.06	127.52	233.23	115.43
237.75	115	262.16	112.69	270.77	111.75	329.74	105.29	340.11	104.31
345.86	103.76	375.02	101.78	404.05	100.9	436.65	99.16	441.83	98.89
466.58	98.58	630.23	97.03	757.64	98.42	781.37	98.49	798.77	98.58
808.26	98.76	809.23	99.03	835.34	101.11	870.38	106.87	871.09	107
871.48	107.06	900.63	112.45	923.89	115.96	954.28	120.54		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.045	441.83	.045	809.23	.045

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
441.83	809.23	226.54	223.79 218.97	.1	.3

CROSS SECTION RIVER: Prima Descheca
REACH: 1 RS: 3582.069

INPUT
Description:

Station Elevation Data num= 33

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	123.1	9.47	122.77	20.1	121.84	77.44	118.43	89.48	117.45
104.39	117	123.06	116.43	148.28	113.67	170.2	112.1	212.38	108
236.65	105.98	265.91	103.55	274.51	102.83	301.82	101.28	350.24	98.53
351.28	98.48	366.25	98.46	387.34	98.39	409.03	98.26	433.18	98.15
520.9	96.66	618.85	98.28	662.63	98.43	694.53	98.53	711.23	98.68
728.88	99.75	741.16	100	762.5	100.89	789.23	103.22	804.61	106.05
829.61	113.08	861.45	117.52	867.35	119.03				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.045	351.28	.045	711.23	.045

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
351.28	711.23	172.14	193.64	220.91	.1 .3

CROSS SECTION RIVER: Prima Descheca
REACH: 1 RS: 3388.584

INPUT
Description:
Station Elevation Data num= 34

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	156.67	20.07	152.13	55.71	144.06	56.28	143.95	80.8	137
92.48	133.93	124.54	125.49	130.2	123.88	164.89	115.38	191.87	111.76
273.51	102.6	278.4	102.14	288.91	101.57	306.92	101.08	327.84	100.5
345.92	100.13	366.65	98.86	367.5	98.81	379.2	98.16	382.12	98
435.81	98	511.25	94.35	575.85	97.8	604.36	97.91	707.97	98
728.07	99.11	740.79	99.81	747.71	100	755.32	100.31	797.11	103.61
816.58	106.73	821.81	108.14	833.05	110.73	866.75	118.48		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.045	367.5	.045	728.07	.045

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
367.5	728.07	188.65	222.79	239.28	.1 .3

CROSS SECTION RIVER: Prima Descheca
REACH: 1 RS: 3167.429

INPUT
Description:
Station Elevation Data num= 40

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	180.21	47.42	163.04	80.54	153.03	110.49	143.56	116.2	142.26
122.5	140.47	137.36	135.66	147.53	132.61	162.55	126.9	187.51	118.02
193.43	115.83	221.32	110.26	223.16	109.98	260.88	105.3	294.48	101.13
348.47	99.73	365.79	99.14	369.9	98.89	379.86	98.61	389.25	98.34
397.81	98	435.78	97.8	504.82	93.04	561.71	97.65	598.18	97.84
615.39	98	631.68	98.69	665.78	100.12	673.12	100.62	720.32	101.94
722.36	102.03	723.18	102.07	725.11	102	773.23	102.57	793.67	105.27
798.26	105.49	809.08	106.86	823.29	108.34	829.32	109.57	853.62	115.54

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.045	379.86	.045	631.68	.045

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
379.86	631.68	270.67	281.67	202.8	.1 .3

CROSS SECTION RIVER: Prima Descheca
REACH: 1 RS: 2888.886

INPUT
Description:
Station Elevation Data num= 41

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	132.15	4.43	131.38	32.74	129.5	51.04	128.28	72.95	129.17
97.64	129.7	118.25	127.04	135.07	123.29	194.96	108.38	208.73	105.37
223.79	103.95	229.13	102.44	250	87.6	262	87.6	271.28	102.77
280.39	103.55	303.54	103.55	318.97	103.95	336.98	104.48	339.55	105.41
347.39	106.87	374.78	111.42	377.25	111.77	380.2	112	388.28	111.53
447.15	107.31	451.79	107.41	490.27	106.1	497.03	106.15	503.05	106.2
540.35	110.85	545.81	111.06	585.03	112.59	588.56	112.65	591.09	112.53
631.32	112.12	656.86	111.57	687.44	113.53	703.46	114.87	716.83	114.84
722.11	115.14								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.045	229.13	.045	271.28	.045

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
229.13	271.28	213.28	213.68	314.06	.1 .3

CULVERT RIVER: Prima Descheca
REACH: 1 RS: 2700

INPUT
Description:
Distance from Upstream XS = 42.627
Deck/Roadway Width = 125
Weir Coefficient = 2.6
Upstream Deck/Roadway Coordinates
num= 2

Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord
0	120		800	120	

Upstream Bridge Cross Section Data
Station Elevation Data num= 41

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	132.15	4.43	131.38	32.74	129.5	51.04	128.28	72.95	129.17
97.64	129.7	118.25	127.04	135.07	123.29	194.96	108.38	208.73	105.37
223.79	103.95	229.13	102.44	250	87.6	262	87.6	271.28	102.77
280.39	103.55	303.54	103.55	318.97	103.95	336.98	104.48	339.55	105.41
347.39	106.87	374.78	111.42	377.25	111.77	380.2	112	388.28	111.53
447.15	107.31	451.79	107.41	490.27	106.1	497.03	106.15	503.05	106.2
540.35	110.85	545.81	111.06	585.03	112.59	588.56	112.65	591.09	112.53
631.32	112.12	656.86	111.57	687.44	113.53	703.46	114.87	716.83	114.84
722.11	115.14								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.045	229.13	.045	271.28	.045

Bank Sta: Left	Right	Coeff Contr.	Expan.
229.13	271.28	.1	.3

Downstream Deck/Roadway Coordinates
num= 2

Sta Hi Cord	Lo Cord	Sta Hi Cord	Lo Cord
0	120	800	120

Downstream Bridge Cross Section Data
Station Elevation Data num= 41

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	180.06	7.87	179.51	25.47	180.16	54.4	177.48	79.45	173
120.65	154.73	122.86	153.63	125.75	152.5	129.71	151.26	175.9	135.28
194	129.56	209.68	122.92	240.54	110.56	262.38	105.01	267.52	103.41
282.96	102.08	292.57	100.9	305	86	317	86	325.87	100.62
336.98	101.55	352.41	102.35	376.48	103.16	383.31	103.68	426.62	106
426.68	106.01	426.72	106.01	427.36	106.03	470.13	107.6	473.21	107.5
476.77	107.39	485.84	107.64	547.88	108.72	579.87	113.92	608.47	117.64
627.2	117.91	643.77	116.66	665.05	114.81	677.35	114.91	705.88	114.55
715.35	115.05								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.045	292.57	.045	325.87	.045

Bank Sta: Left	Right	Coeff Contr.	Expan.
292.57	325.87	.1	.3

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

Number of Culverts = 1

Culvert Name Shape Rise Span
Culvert #1 Conspan Arch 16 16
FHWA Chart # 60- Span/Rise ratio approximate 2:1
FHWA Scale # 2 - 45 degree wing wall angle
Solution Criteria = Inlet control

Culvert	Upstrm Dist	Length	n Value	Entrance Loss Coef	Exit Loss Coef
	30.127	150	.013	.2	1

Upstream Elevation = 87.37
Centerline Station = 256
Downstream Elevation = 86.229
Centerline Station = 311

CULVERT OUTPUT Profile #100yr
Culvert ID : Culvert #1

Culv Q (cfs)	2439.00	Culv Ful Lngh (ft)	
# Barrels	1	Culv Vel US (ft/s)	16.99
Q Barrel (cfs)	2439.00	Culv Vel DS (ft/s)	20.32
E.G. US. (ft)	101.98	Culv Inv El Up (ft)	87.37
W.S. US. (ft)	101.23	Culv Inv El Dn (ft)	86.23
E.G. DS (ft)	98.34	Culv Frctn Ls (ft)	0.68
W.S. DS (ft)	95.00	Culv Ext Lss (ft)	1.80
Delta EG (ft)	3.64	Culv Ent Lss (ft)	1.15
Delta WS (ft)	6.23	Q Weir (cfs)	
E.G. IC (ft)	101.98	Weir Sta Lft (ft)	
E.G. OC (ft)	101.72	Weir Sta Rgt (ft)	
Culvert Control	Inlet	Weir Submerg	
Culv WS Inlet (ft)	96.34	Weir Max Depth (ft)	
Culv WS Outlet (ft)	93.73	Weir Avg Depth (ft)	
Culv Nml Depth (ft)	6.52	Wr Flw Area (sq ft)	
Culv Crt Depth (ft)	8.97	Min El Weir Flow (ft)	120.01

Note: The flow in the culvert is entirely supercritical.

CROSS SECTION RIVER: Prima Descheca
REACH: 1 RS: 2678.606

INPUT
Description:
Station Elevation Data num= 41

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev

```
      0  180.06    7.87  179.51   25.47  180.16    54.4  177.48   79.45     173
 120.65  154.73  122.86  153.63  125.75   152.5  129.71  151.26   175.9  135.28
    194  129.56  209.68  122.92  240.54  110.56  262.38  105.01  267.52  103.41
 282.96  102.08  292.57   100.9     305      86     317      86  325.87  100.62
 336.98  101.55  352.41  102.35  376.48  103.16  383.31  103.68  426.62     106
 426.68  106.01  426.72  106.01  427.36  106.03  470.13   107.6  473.21   107.5
 476.77  107.39  485.84  107.64  547.88  108.72  579.87  113.92  608.47  117.64
  627.2  117.91  643.77  116.66  665.05  114.81  677.35  114.91  705.88  114.55
 715.35  115.05

Manning's n Values          num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .045  292.57    .045  325.87    .045

Bank Sta: Left   Right     Lengths: Left Channel   Right      Coeff Contr.   Expan.
        292.57  325.87           381.35  350.77  328.79              .1       .3

CROSS SECTION           RIVER: Prima Descheca
REACH: 1                   RS: 2323.952

INPUT
Description:
Station Elevation Data     num=      33
     Sta    Elev     Sta     Elev     Sta     Elev     Sta     Elev     Sta     Elev
       0  112.62     .61  112.34   24.16  103.65   47.08  101.26   49.35  100.51
   54.94  100.22   74.54   100.1   82.51   99.73   101.4   98.87  117.94   98.39
  124.92    97.2  178.48   91.62  200.48   89.33  224.22   87.17  225.67   87.08
  259.65    86.3  316.37      85  326.42   84.77  334.11   84.59  391.99      85
  401.36   85.05  403.52      85  418.96   84.47  431.17   84.05  436.79   83.86
  446.31    84.6  459.58   85.64  507.65   89.42  539.11   91.89  577.81   95.91
   578.3   95.98  578.76   96.04   621.6  101.98

Manning's n Values          num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .045  418.96    .045  446.31    .045

Bank Sta: Left   Right     Lengths: Left Channel   Right      Coeff Contr.   Expan.
        418.96  446.31           278.74  329.99  380.68              .1       .3

CROSS SECTION           RIVER: Prima Descheca
REACH: 1                   RS: 1991.245

INPUT
Description:
Station Elevation Data     num=      38
     Sta    Elev     Sta     Elev     Sta     Elev     Sta     Elev     Sta     Elev
       0  114.84    1.84   113.9   20.34  107.98   39.44  103.85   68.58   97.55
   77.04    96.6   86.19    96.3  114.63   92.09     188   86.12  189.17   86.02
  190.54   85.92  199.31   85.33  309.76   77.81  322.55   76.41  340.21   75.53
     358   76.05  369.03   76.15  389.83   76.34  415.41   76.19  425.33   75.74
     453      75  468.59   75.42  470.91   75.48  497.72   76.19  516.23   77.56
  548.81   78.91  586.14   80.46  603.39   81.17   650.3   83.12  678.58   84.29
  686.06    84.8  695.66   85.45  726.22   88.17  739.24   89.03  788.68   91.86
  791.38      92   793.5   92.23  802.23   93.03

Manning's n Values          num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .045  369.03    .045  470.91    .045

Bank Sta: Left   Right     Lengths: Left Channel   Right      Coeff Contr.   Expan.
        369.03  470.91           239.82  270.74  309.22              .1       .3

CROSS SECTION           RIVER: Prima Descheca
REACH: 1                   RS: 1720.011

INPUT
Description:
Station Elevation Data     num=      46
     Sta    Elev     Sta     Elev     Sta     Elev     Sta     Elev     Sta     Elev
       0  110.91    6.36  109.75   24.83      108   57.45  105.94   75.19  105.02
   96.29  103.61  135.24  101.02  144.03  100.18  163.08   98.62  212.86   94.09
  235.78   91.67   281.7   87.37  295.25   85.61  316.11    83.6  381.05   79.23
  384.27   79.01  385.68   78.92  386.75   78.79  419.37    76.3  446.72    75.4
  471.96   75.17   488.2   75.02  488.64      75  497.04      75  602.26      75
  610.89      75  625.87      75  629.03   75.18  671.88      77  693.14   77.95
   697.9   78.09  729.12      79  789.16    88.6  802.53   90.66  817.01   92.77
  832.37   94.86  835.26   95.25  866.79  101.86  889.77  105.67  896.56   106.6
  901.21  107.68   910.8  109.79  970.04  117.87  985.63  120.34 1004.46  122.24
 1025.99  123.79

Manning's n Values          num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .045  471.96    .045  602.26    .045

Bank Sta: Left   Right     Lengths: Left Channel   Right      Coeff Contr.   Expan.
        471.96  602.26           337.33  380.39  430.75              .1       .3

CROSS SECTION           RIVER: Prima Descheca
REACH: 1                   RS: 1339.916

INPUT
Description:
Station Elevation Data     num=      45
     Sta    Elev     Sta     Elev     Sta     Elev     Sta     Elev     Sta     Elev
       0   118.9   14.43  118.01    14.5  117.99   20.83  116.64   79.75  104.03
   80.72  103.86   112.9   96.03  144.37   92.21  145.72   92.04  207.31   82.68
  211.36   82.19  213.45   82.06  274.25   80.25   278.4   79.96  309.83      79
  346.18   76.23  360.91   74.44  389.87   71.81  399.86    70.9  408.29   70.13
```

436.59	70.14	441.11	70.28	443.44	70.32	445.73	70.35	506.76	71.32
566.47	76.82	572.4	77.27	578.46	77.74	605.22	80.19	624.91	82.6
651.03	86.98	690.92	91.83	703.69	93.77	716.32	99.54	756.92	109.38
781.61	120.97	802.15	125.89	826.22	130.93	834.97	133.84	858.69	139.56
867.8	142.88	891.16	147.83	900.62	151	928.51	154.4	947.53	156.72

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.045	399.86	.045	443.44	.045

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
399.86	443.44	325.44	354.25	391.89	.1	.3

CROSS SECTION RIVER: Prima Descheca
REACH: 1 RS: 985.746

INPUT
Description:
Station Elevation Data num= 48

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	132.89	12.13	131.77	19.54	130.89	48.79	126.14	53.37	124.78
59.26	123.04	94.61	114.42	121.03	108.56	147.45	99.19	154.04	96.88
154.86	96.73	157.33	96.12	207.51	80.55	222.52	77.56	287.71	73.22
290.18	72.94	291.24	72.84	324.01	69.69	369.89	66.64	407.22	64.16
418	62.89	425.5	62	451.08	62	468.14	62	518.18	62
526.99	62	532.27	62.47	534.22	62.64	553.41	64.34	594.65	68.61
613.46	70.56	628.48	72.11	648.56	77.75	688.73	90.22	729.97	102.91
743.71	105.25	763.8	109.56	775.85	112.49	824.05	119.8	828.99	120.6
831.46	120.89	833.92	121.51	884.1	130.23	924.14	141.62	932.95	143.63
938.23	144.84	959.37	148.12	976.63	150.93				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.045	418	.045	534.22	.045

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
418	534.22	306.46	326.67	351.83	.1	.3

CROSS SECTION RIVER: Prima Descheca
REACH: 1 RS: 658.709

INPUT
Description:
Station Elevation Data num= 47

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	127.05	33.83	123.68	77.4	120.07	96.58	118.27	122.83	116.88
136.63	111.18	194.55	89.22	195.59	88.82	196.75	88.34	220.34	78.3
231.16	75	254.11	73.73	267.27	73	308.85	70.12	339.49	67.19
354.15	66.59	393.61	65	411.71	63.54	418.36	63	447.82	61.81
458.45	61.38	467.86	61	511.55	61	517.37	61	520.04	61
527.23	61	556.15	60.57	562.51	61.18	572.1	62.42	590.25	64.78
591.88	64.98	596.69	65.49	700.59	75.8	715.39	77.82	772.8	83.32
782.8	84.55	808.91	88.67	814.4	89.46	826.35	90.93	854.92	94.46
870.91	96.15	881.13	98.04	913.41	112.51	917.24	113.85	927.58	117.72
962.91	131.5	963.13	131.58						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.045	458.45	.045	572.1	.045

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
458.45	572.1	302.46	263.97	229.51	.1	.3

CROSS SECTION RIVER: Prima Descheca
REACH: 1 RS: 394.906

INPUT
Description:
Station Elevation Data num= 46

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	80.58	9.36	79.46	33.94	76.53	42.25	75.18	69.15	72.46
75.14	71.34	77.85	71.17	140.27	68.1	141.53	68.02	159.97	67.13
203.81	65.09	206.7	64.81	213.8	64.35	272.49	59.77	280.79	59.51
331.06	57.88	358.09	57	375.61	57	388.95	56.54	391.65	56.45
404.67	56	456.49	56	469.83	56	478.06	56.63	481.52	56.89
535.61	58.37	565.43	59.19	568.5	59.36	574.09	60.36	601.4	66.11
666.2	78.79	667.18	78.97	668.45	78.96	732.96	78.28	752.49	78.81
765.85	79.18	790.09	83.89	798.74	86.28	820.94	91.72	843.83	98.82
864.52	104.06	882.66	110.31	914.26	118.12	930.31	123.46	937.56	126.31
939.21	126.7								

Manning's n Values num= 3

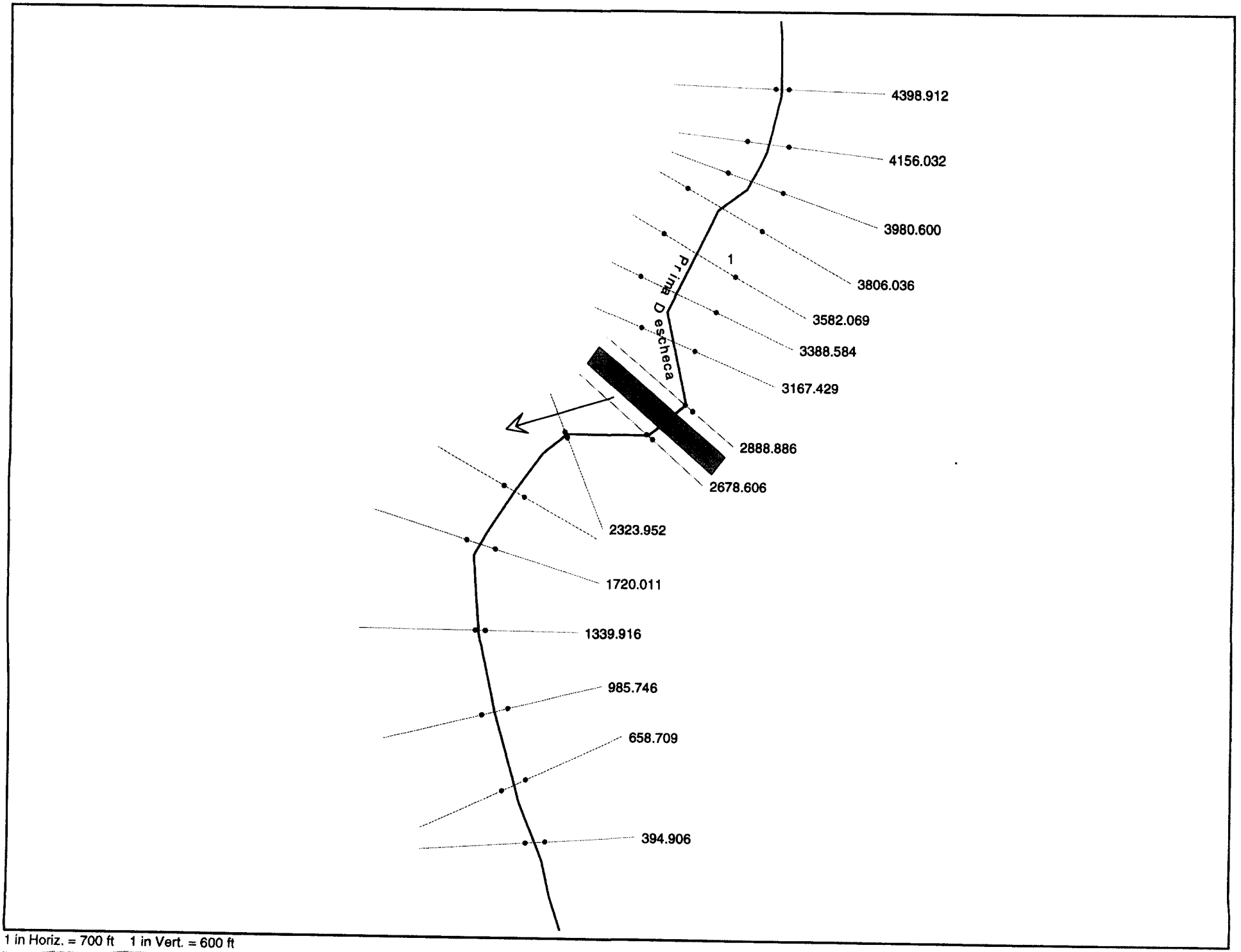
Sta	n Val	Sta	n Val	Sta	n Val
0	.045	391.65	.045	478.06	.045

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
391.65	478.06	0	0	0	.1	.3

Profile Output Table - Standard Table 1

Reach	River Sta	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
		(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
1	4398.912	2439.00	99.78	103.14	102.79	103.81	0.011111	7.61	396.61	186.23	0.75
1	4156.032	2439.00	98.85	102.53		102.69	0.002039	3.35	812.12	315.31	0.32

1	3980.600	2439.00	98.51	102:38		102.45	0.000759	2.23	1174.10	363.86
0.20										
1	3806.036	2439.00	97.03	102.34		102.37	0.000258	1.42	1801.45	475.95
0.12										
1	3582.069	2439.00	96.66	102.28		102.31	0.000255	1.41	1838.62	494.32
0.12										
1	3388.584	2439.00	94.35	102.24		102.26	0.000180	1.29	2018.46	502.40
0.10										
1	3167.429	2439.00	93.04	102.18		102.22	0.000235	1.58	1731.48	454.40
0.12										
1	2888.886	2439.00	87.60	101.23	96.11	101.98	0.003427	6.95	350.99	39.50
0.41										
1	2700	Culvert								
1	2678.606	2439.00	86.00	93.51	95.00	98.91	0.045917	18.65	130.79	22.82
0.41										
1	2323.952	2439.00	83.86	86.73	86.73	87.51	0.021912	9.10	360.72	232.57
1.01										
1	1991.245	2439.00	75.00	78.90	77.63	79.15	0.004005	4.43	624.86	254.67
0.44										
1	1720.011	2439.00	75.00	77.61		77.88	0.005456	4.61	594.45	283.19
0.50										
1	1339.916	2439.00	70.13	73.07	73.07	74.12	0.019878	9.35	309.43	149.80
0.98										
1	985.746	2439.00	62.00	66.10	64.43	66.40	0.002930	4.54	592.75	192.49
0.40										
1	658.709	2439.00	60.57	63.39	63.36	64.35	0.019294	8.14	321.68	165.98
0.93										
1	394.906	2439.00	56.00	58.57	58.57	59.39	0.017527	8.06	369.40	233.11
0.90										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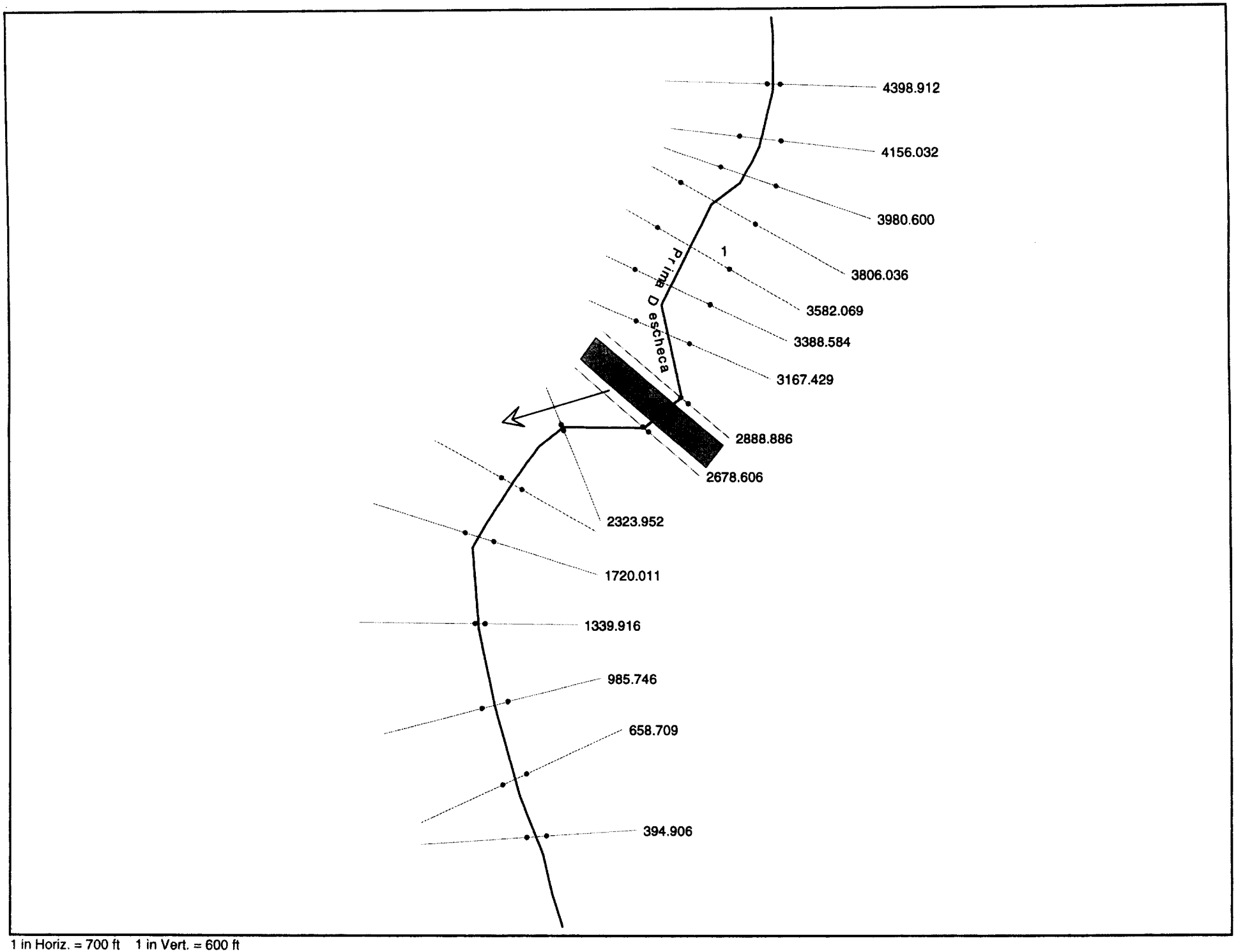
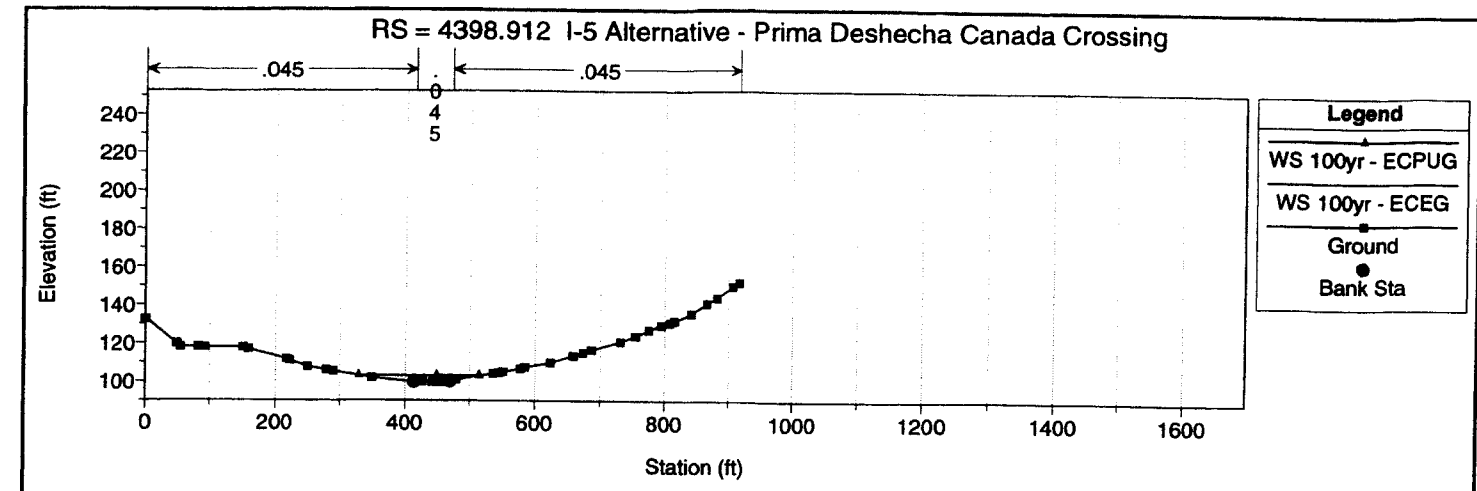
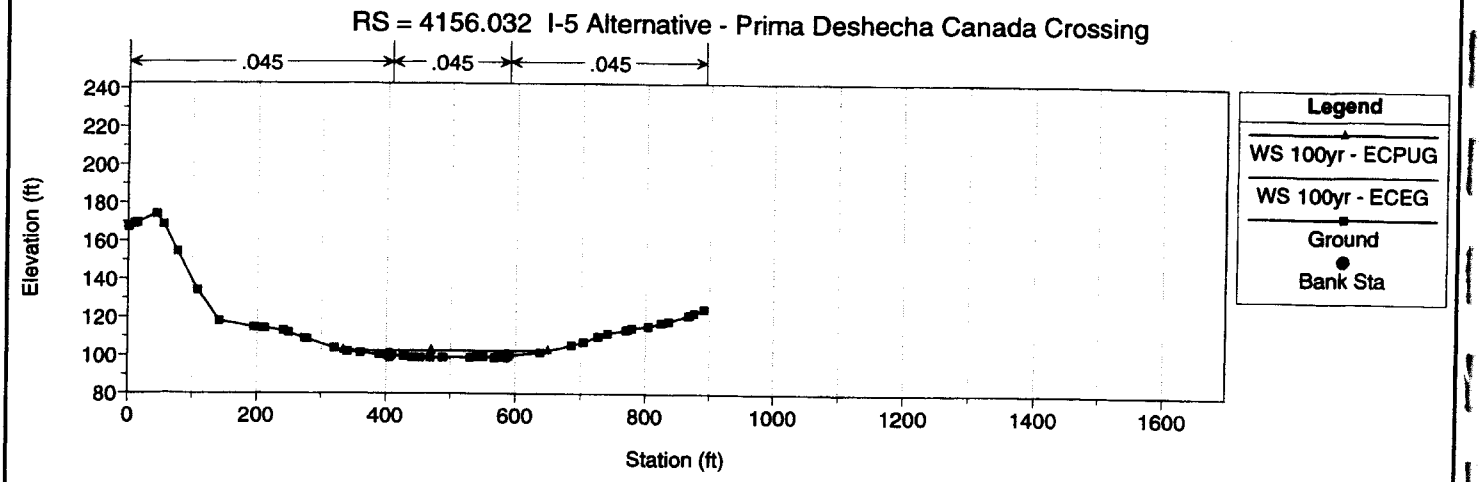
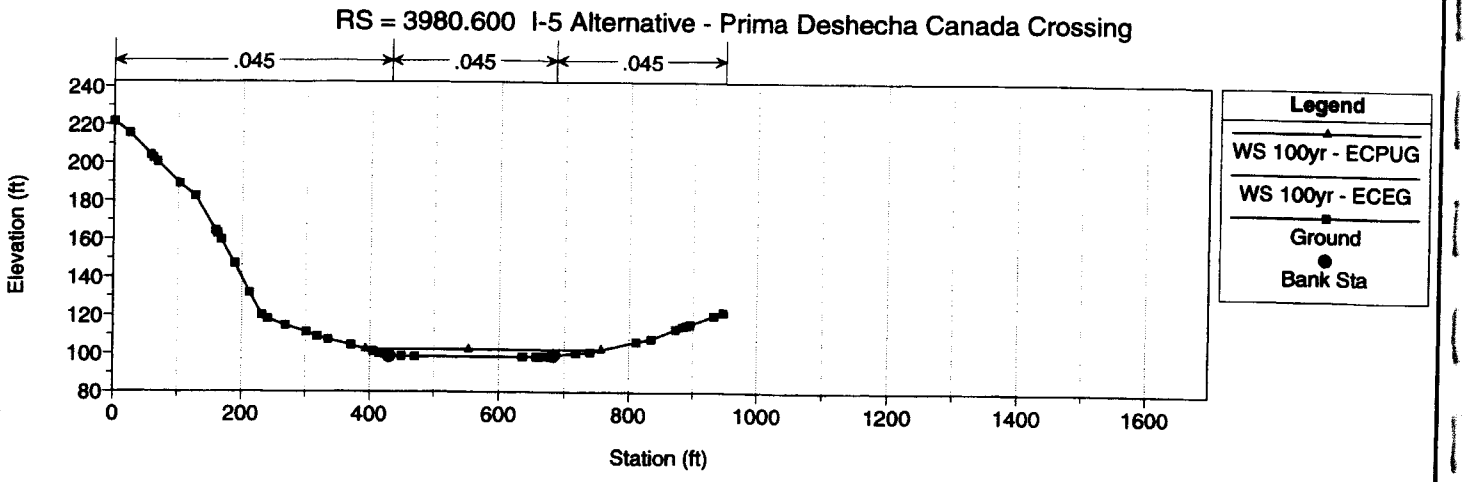
4156.032
3980.600
3806.036
3582.069
3388.584
3167.429
2888.886
2678.606
2323.952
1720.011
1339.916
985.746
658.709
394.906
1
Prima Descheca
1 in Horiz. = 700 ft
1 in Vert. = 600 ft

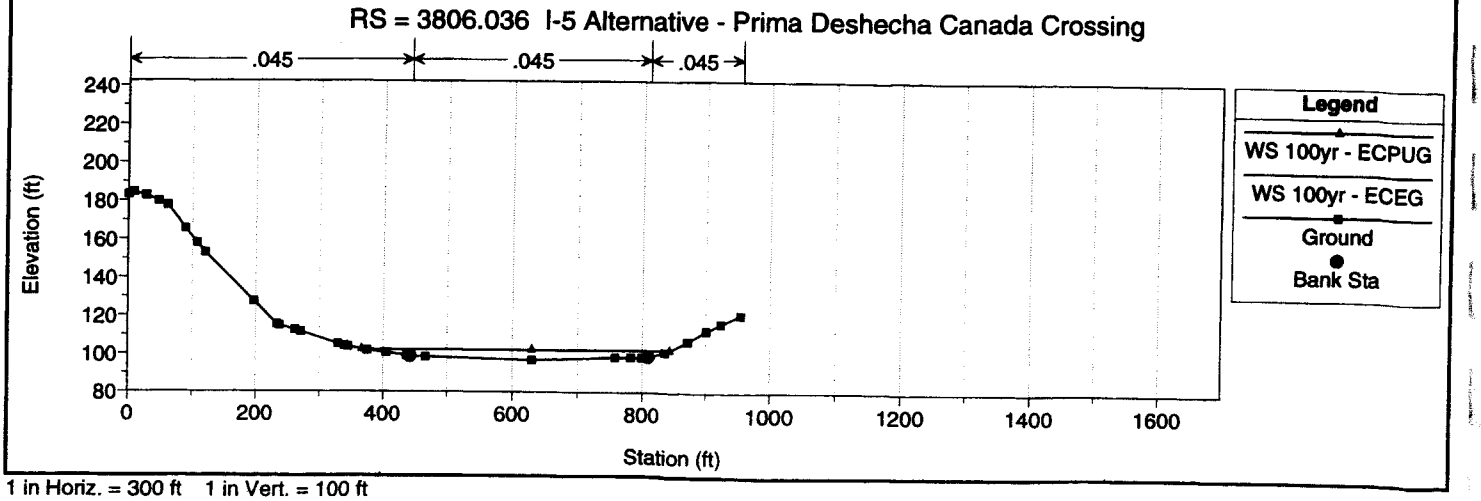


1 in Horiz. = 700 ft 1 in Vert. = 600 ft

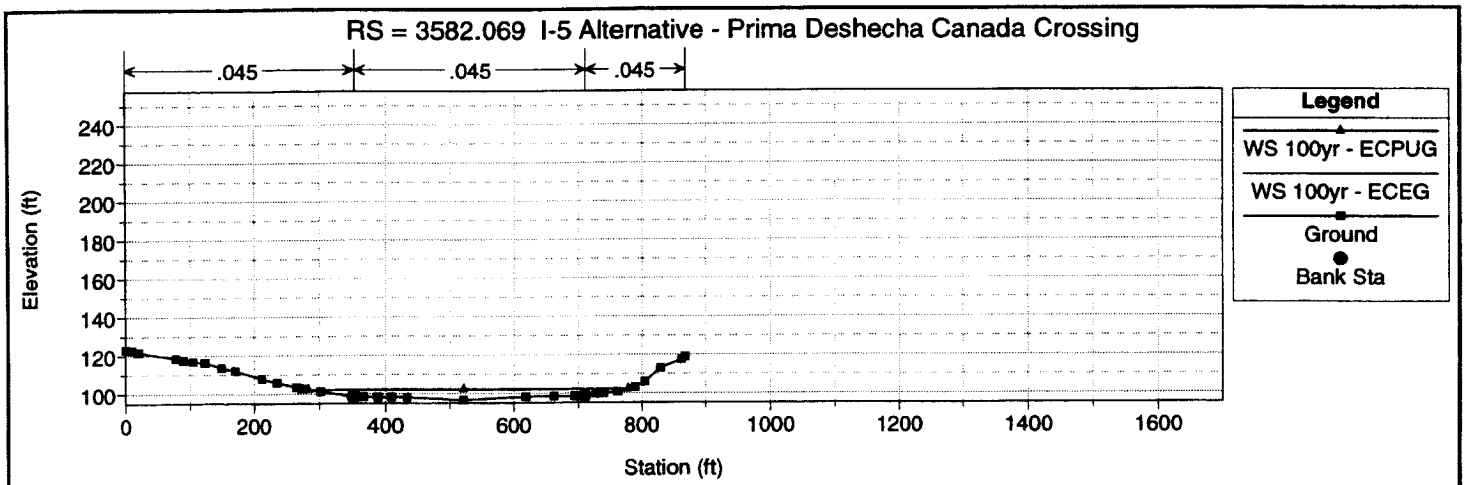


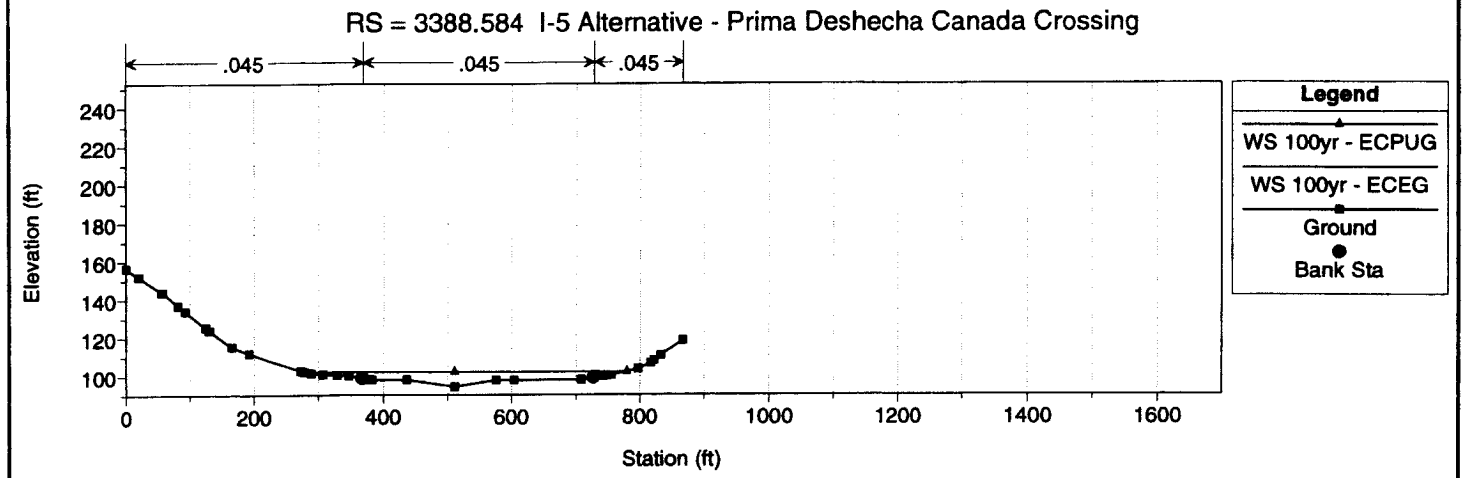


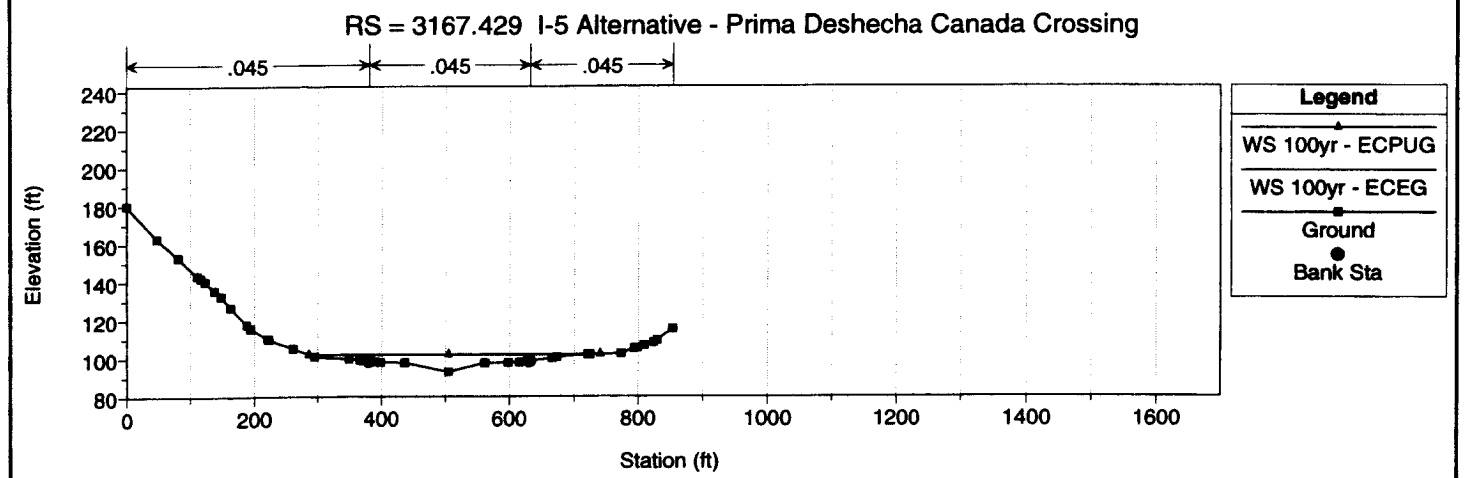


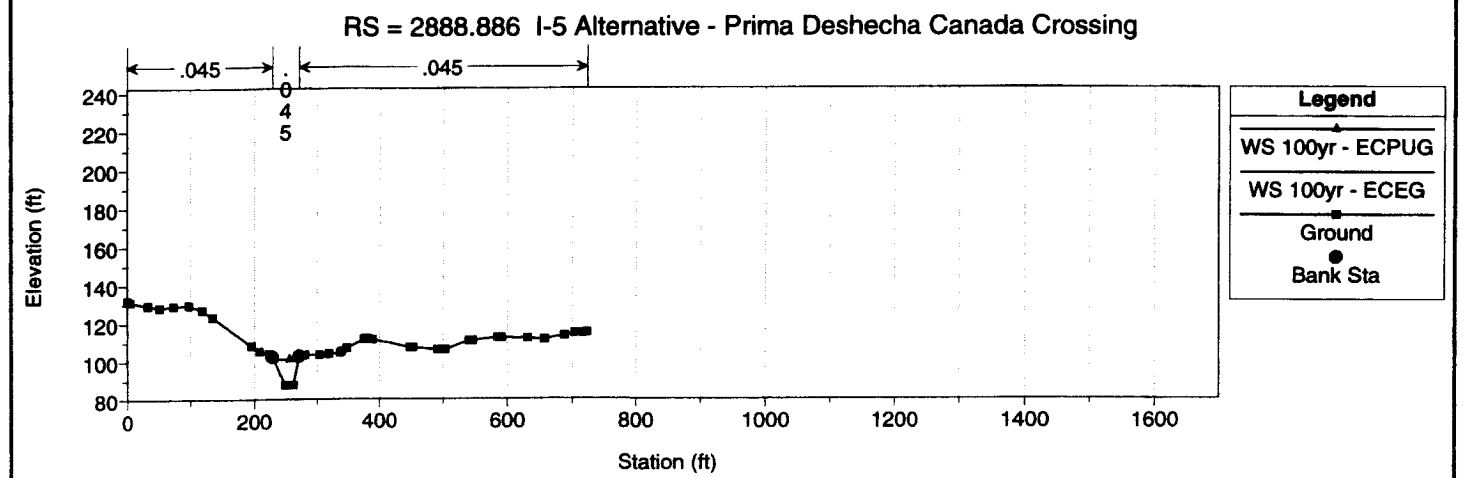


1 in Horiz. = 300 ft 1 in Vert. = 100 ft

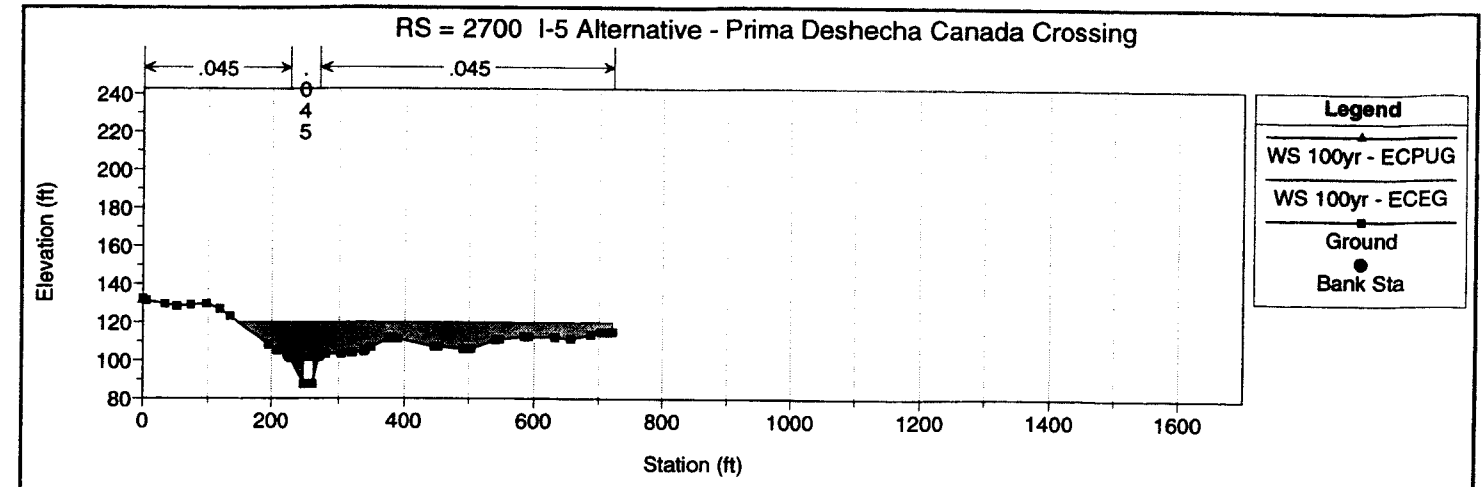


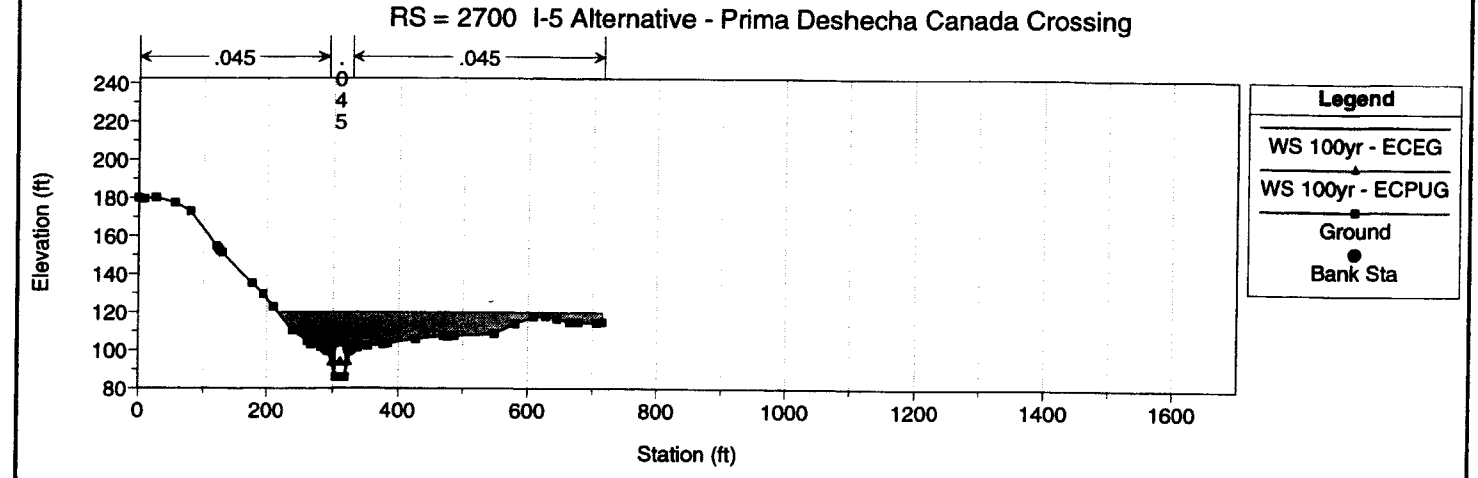


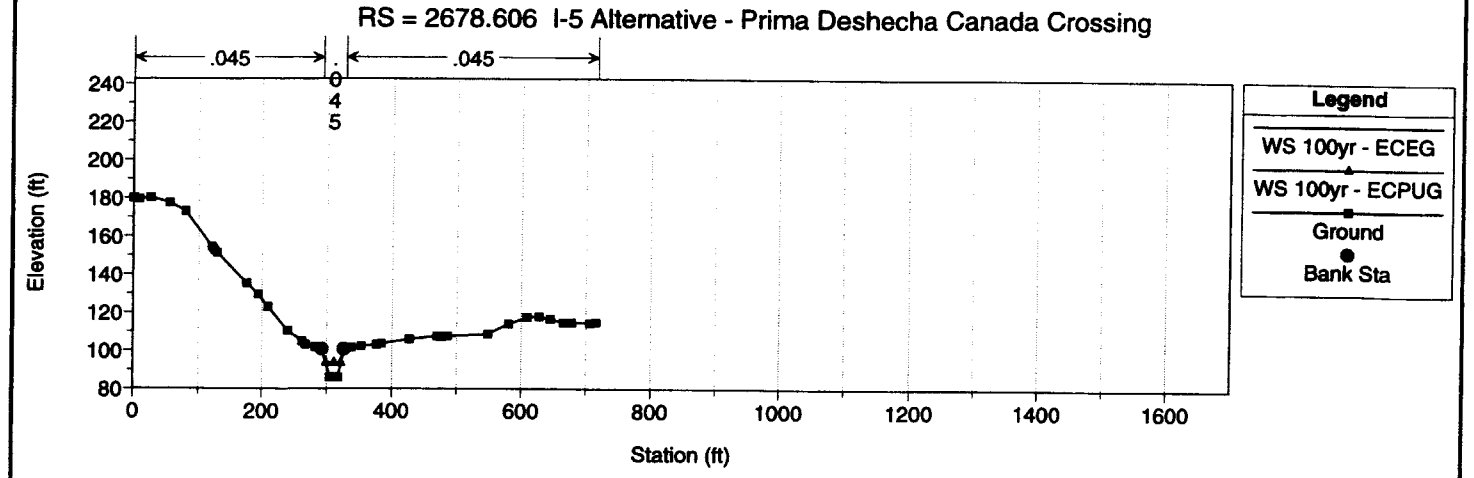


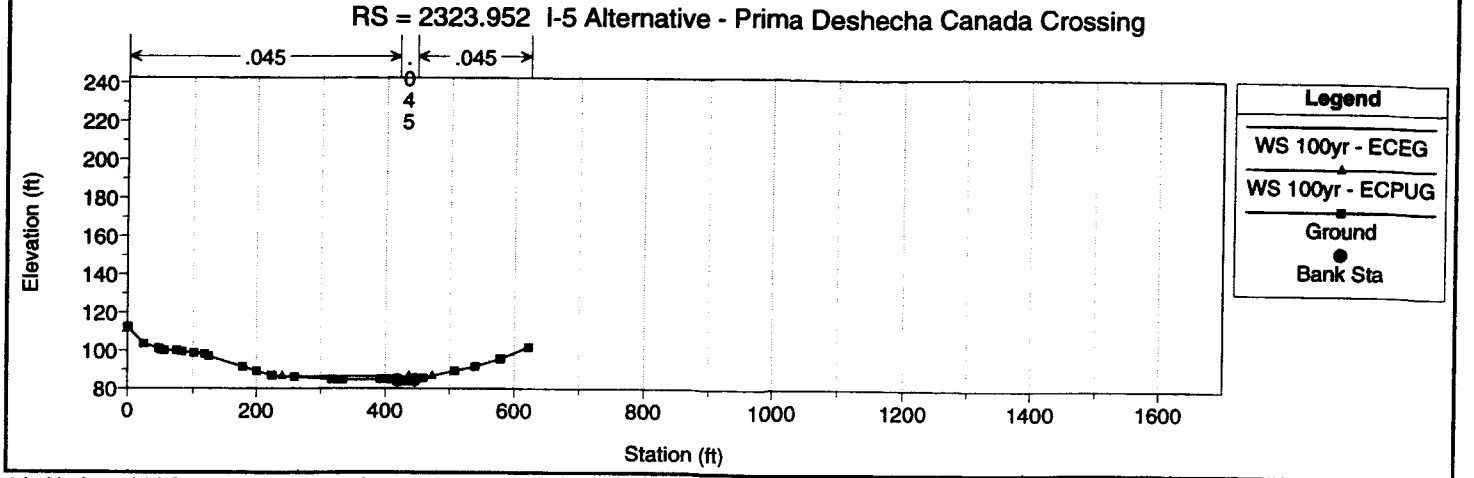


1 in Horiz. = 300 ft 1 in Vert. = 100 ft

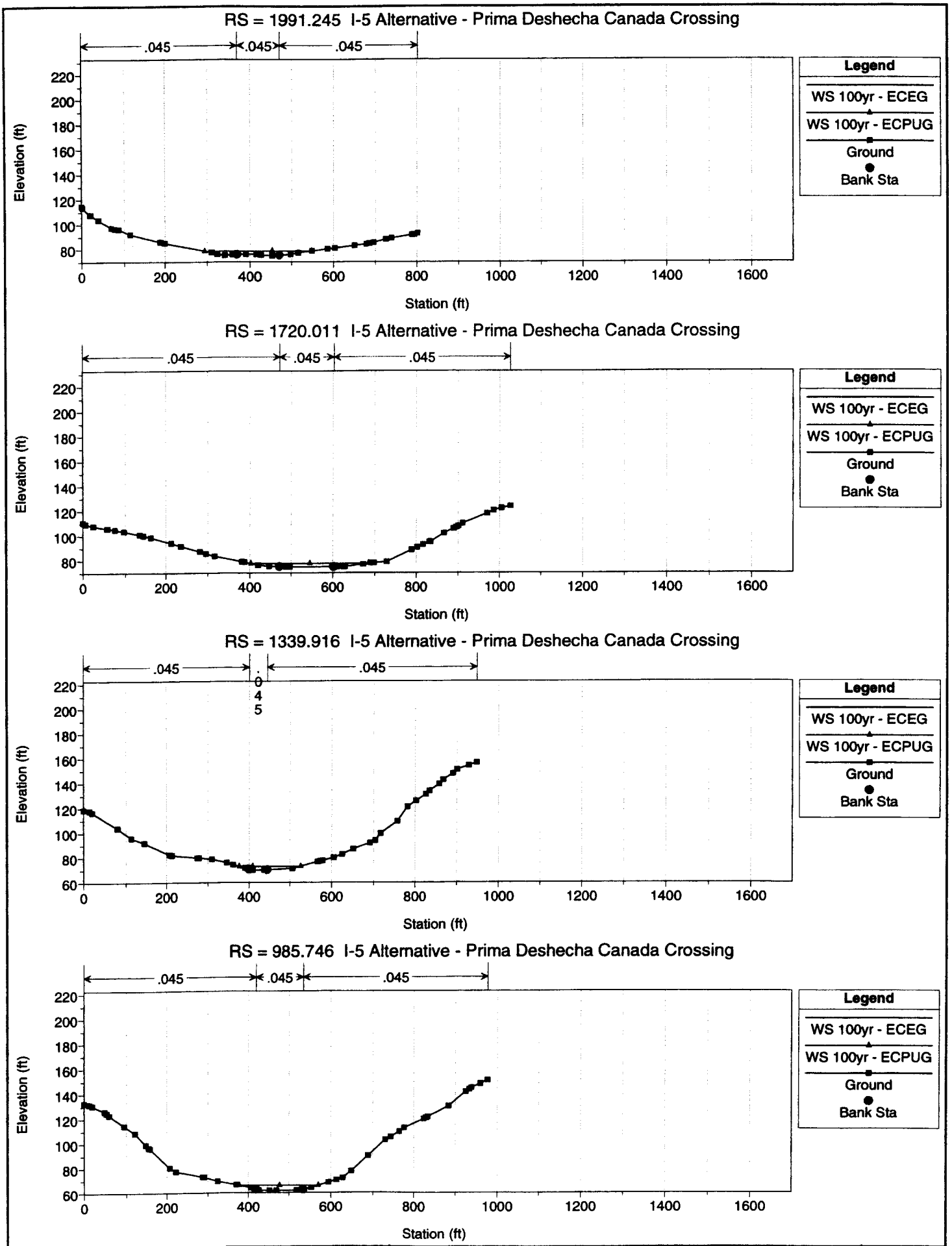




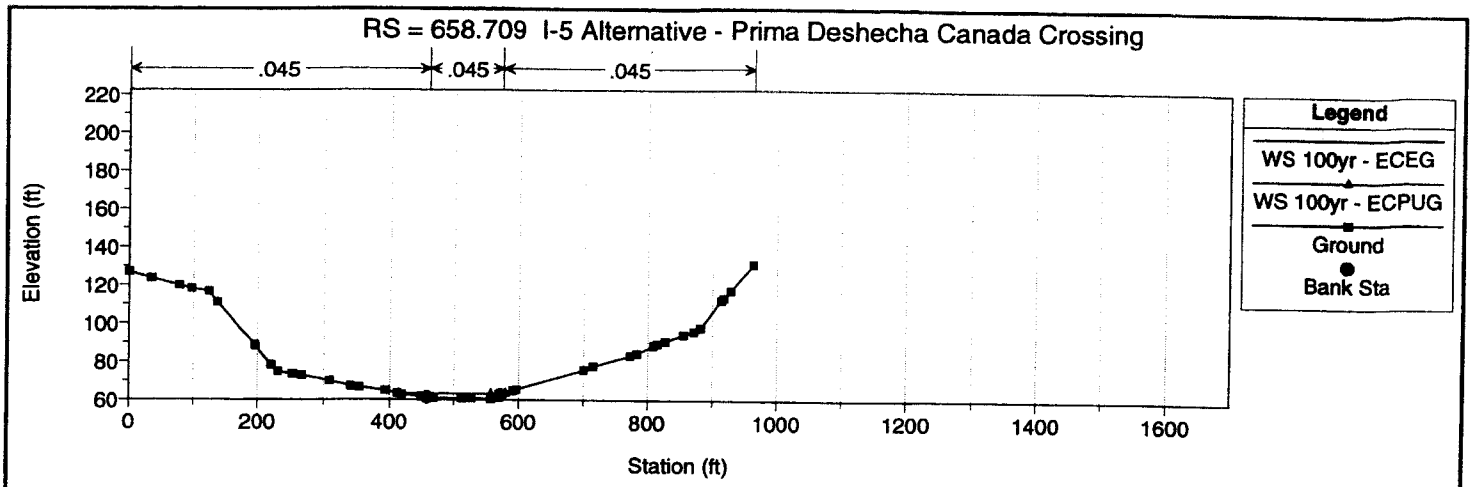


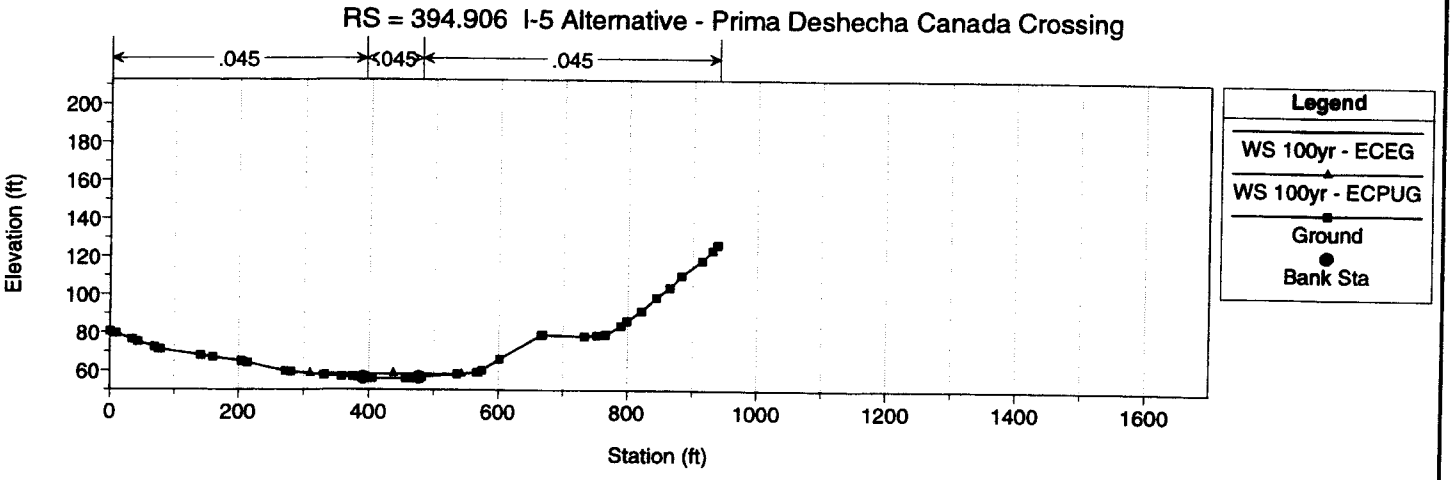


1 in Horiz. = 300 ft 1 in Vert. = 100 ft

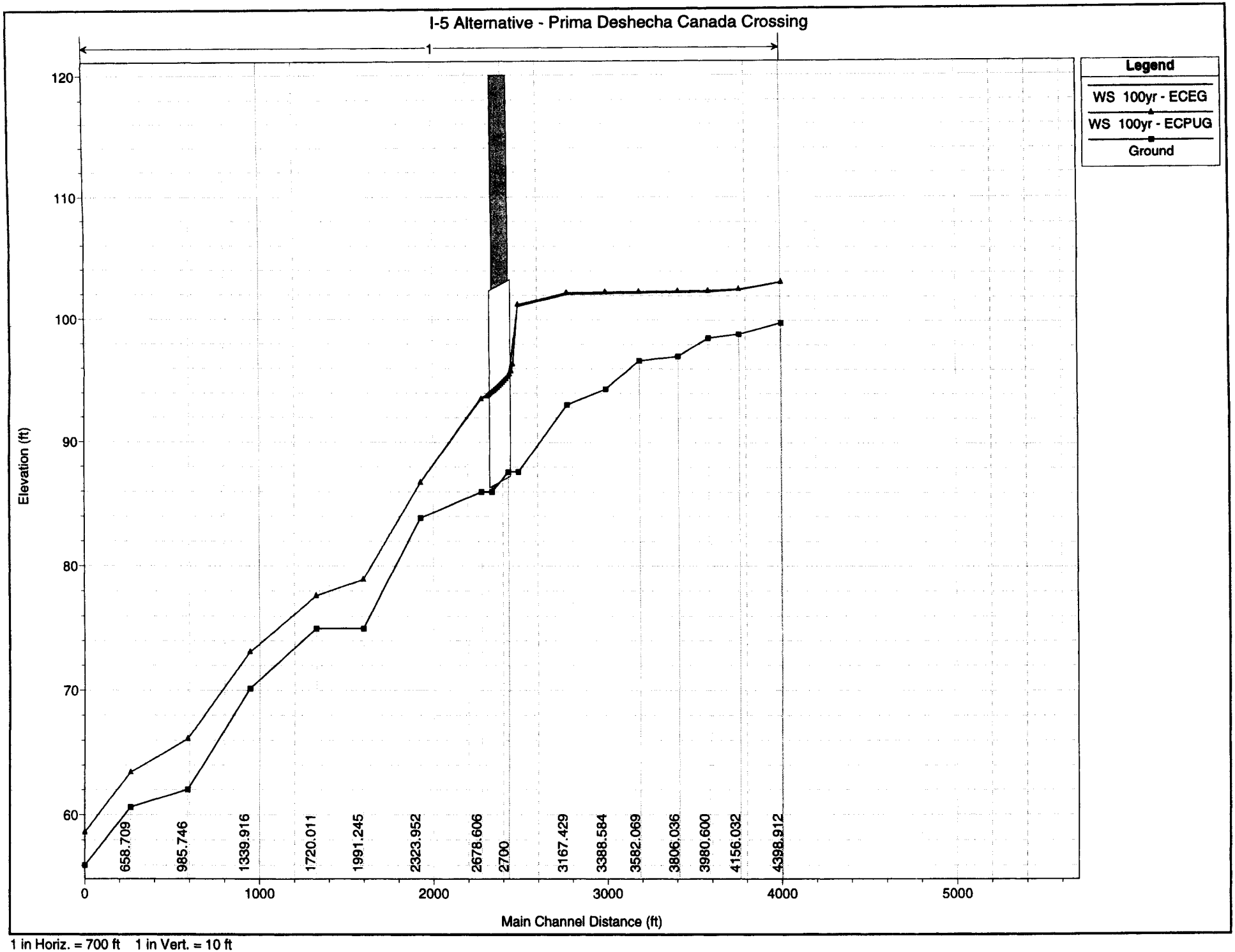


1 in Horiz. = 300 ft 1 in Vert. = 100 ft

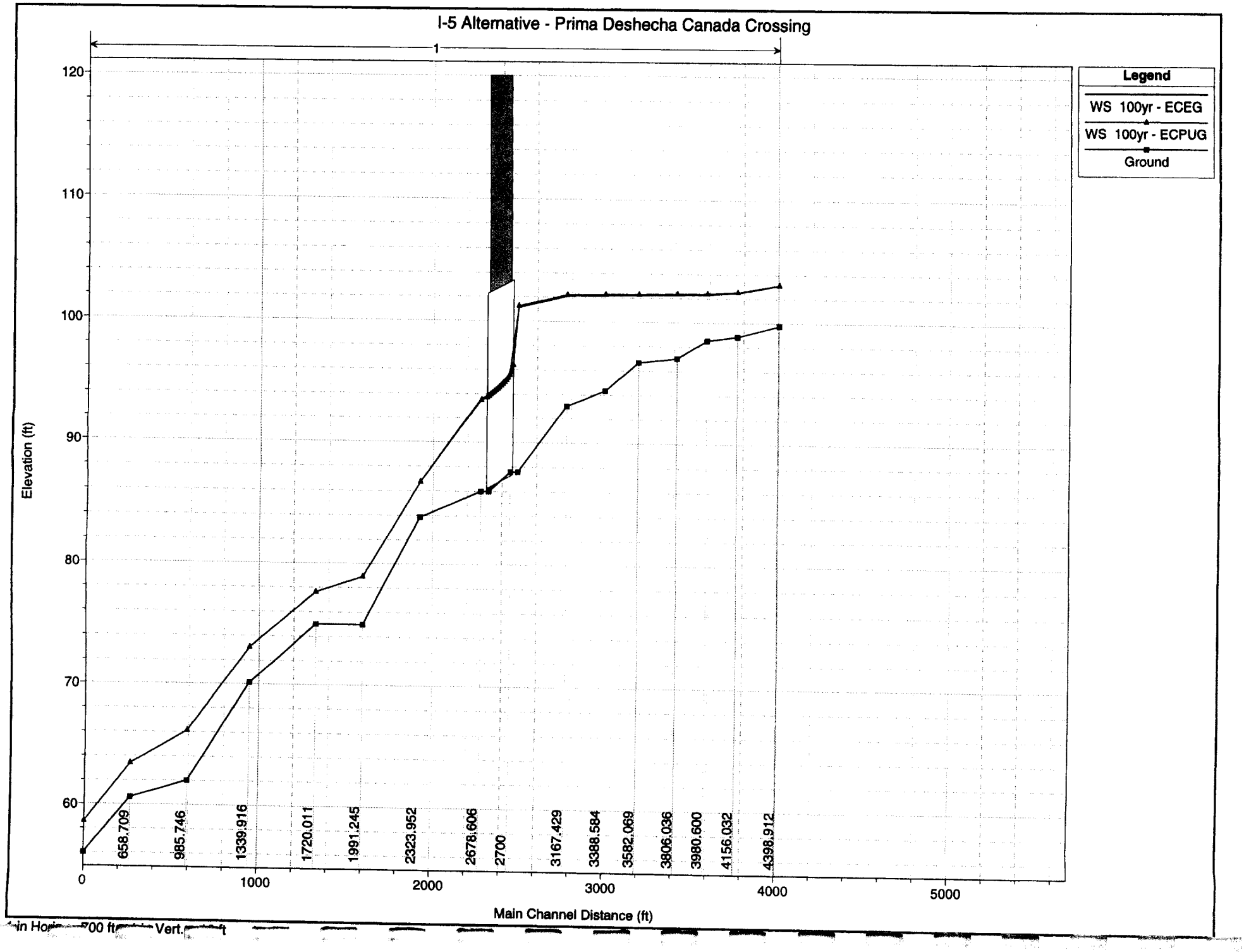




1 in Horiz. = 300 ft 1 in Vert. = 100 ft



1 in Horiz. = 700 ft 1 in Vert. = 10 ft


I-5 Alternative - Prima Deshecha Canada Crossing
1
Legend
WS 100yr - ECEG
WS 100yr - ECPUG
Ground
Elevation (ft)
120
110
100
90
80
70
60
658.709
985.746
1339.916
1720.011
1991.245
2323.952
2678.606
2700
3167.429
3388.584
3582.069
3806.036
3980.600
4156.032
4398.912
0
1000
2000
3000
4000
5000
Main Channel Distance (ft)

APPENDIX W
HYDRAULIC MODEL INPUT & RESULTS
FEC-M ALTERNATIVE AT CAÑADA GOBERNADORA
(MODEL "AX")

Appendix W. **Hydraulic Model Input & Results**

FEC-M Alternative at Cañada Gobernadora

- 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:

818	(2683)
789	(2589)
758	(2487)
731	(2398)
699	(2398)
673	(2292)
644	(2208)
614	(2114)
574	(1883)

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 AX1
Project File : PMAX1.prj
Run Date and Time: 8/28/2003 10:41:14 PM

Project in English units

PLAN DATA

Plan Title: Existing Flow/Existing Geometry
Plan File : m:\2PDA0104\Hydr\LHS\Modeling\Model A\HecRas A\PMAX1.p01

Geometry Title: Existing Conditions
Geometry File : m:\2PDA0104\Hydr\LHS\Modeling\Model A\HecRas A\PMAX1.g01

Flow Title : Existing Conditions
Flow File : m:\2PDA0104\Hydr\LHS\Modeling\Model A\HecRas A\PMAX1.f01

Plan Summary Information:

Number of:	Cross Sections	= 33	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 : m:\2PDA0104\Hydr\LHS\Modeling\Model A\HecRas A\PMAX1.f01

Flow Data (cfs)

River	Reach	RS	Q2	Q5	Q10	Q25	Q50	Q100	Q100HC
Canada Gobernado	Middle	4267.755	1	53	143	491	1109	1736	5825

Boundary Conditions

River	Reach	Profile	Upstream	Downstream
Canada Gobernado	Middle	Q2	Normal S = 0.006	Normal S = 0.002
Canada Gobernado	Middle	Q5	Normal S = 0.006	Normal S = 0.002
Canada Gobernado	Middle	Q10	Normal S = 0.006	Normal S = 0.002
Canada Gobernado	Middle	Q25	Normal S = 0.006	Normal S = 0.002
Canada Gobernado	Middle	Q50	Normal S = 0.006	Normal S = 0.002
Canada Gobernado	Middle	Q100	Normal S = 0.006	Normal S = 0.002
Canada Gobernado	Middle	Q100HC	Normal S = 0.006	Normal S = 0.002

GEOMETRY DATA

Geometry Title: Existing Conditions
Geometry File : m:\2PDA0104\Hydr\LHS\Modeling\Model A\HecRas A\PMAX1.g01

CROSS SECTION

RIVER: Canada Gobernado
REACH: Middle RS: 4267.755

INPUT
Description:
Station Elevation Data num= 39

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	392.11	24.15	387.63	40.15	385.4	60.41	383.69	82.28	382.45
98.84	380.27	149.27	380.69	247.37	380.99	290.66	380.27	327.89	380.16
351.91	379.97	420.14	380.67	428.15	380.61	440.99	380.48	452.83	380.37
464.76	380.28	471.12	380.23	481.21	380.17	484.73	380.15	593.31	379.62
638.93	379.71	639.07	379.71	643.17	379.76	649.63	379.84	706.47	380.42
725.22	380.68	734.29	380.05	754.06	378.68	757.18	378.47	763.2	378.17
768.52	378.89	770.16	379.11	777.03	380.05	783.38	380.9	784.86	381.1
788.47	382.78	811.13	391.67	812.43	392.19	819.32	393.73		

Manning's n Values num= 4

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	639.07	.05	777.03	.035	811.13	.05

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
725.22	783.38	37.27	37.4	39.85	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
0	725.22	380.68	F

CROSS SECTION OUTPUT Profile #Q50

			Left OB	Channel	Right OB
E.G. Elev (ft)	381.49	Element			
Vel Head (ft)	0.03	Wt. n-Val.	0.037	0.049	0.035
W.S. Elev (ft)	381.46	Reach Len. (ft)	37.27	37.40	39.85
Crit W.S. (ft)	380.69	Flow Area (sq ft)	742.71	118.12	0.82
E.G. Slope (ft/ft)	0.000802	Area (sq ft)	742.71	118.12	0.82
Q Total (cfs)	1109.00	Flow (cfs)	944.28	164.23	0.49
Top Width (ft)	695.85	Top Width (ft)	635.43	58.16	2.26
Vel Total (ft/s)	1.29	Avg. Vel. (ft/s)	1.27	1.39	0.60
Max Chl Dpth (ft)	3.29	Hydr. Depth (ft)	1.17	2.03	0.36
Conv. Total (cfs)	39167.4	Conv. (cfs)	33350.0	5800.1	17.4
Length Wtd. (ft)	37.29	Wetted Per. (ft)	635.53	58.43	2.35
Min Ch El (ft)	378.17	Shear (lb/sq ft)	0.06	0.10	0.02
Alpha	1.00	Stream Power (lb/ft s)	0.07	0.14	0.01
Frctn Loss (ft)	0.03	Cum Volume (acre-ft)	55.02	6.51	0.37
C & E Loss (ft)	0.00	Cum SA (acres)	35.67	5.06	0.64

CROSS SECTION OUTPUT Profile #Q100

			Left OB	Channel	Right OB
E.G. Elev (ft)	381.78	Element			
Vel Head (ft)	0.04	Wt. n-Val.	0.037	0.049	0.035
W.S. Elev (ft)	381.73	Reach Len. (ft)	37.27	37.40	39.85
Crit W.S. (ft)	380.77	Flow Area (sq ft)	916.24	133.98	1.52
E.G. Slope (ft/ft)	0.001016	Area (sq ft)	916.24	133.98	1.52
Q Total (cfs)	1736.00	Flow (cfs)	1506.90	227.79	1.31
Top Width (ft)	698.50	Top Width (ft)	637.50	58.16	2.84
Vel Total (ft/s)	1.65	Avg. Vel. (ft/s)	1.64	1.70	0.86
Max Chl Dpth (ft)	3.56	Hydr. Depth (ft)	1.44	2.30	0.53
Conv. Total (cfs)	54456.8	Conv. (cfs)	47270.3	7145.6	41.0
Length Wtd. (ft)	37.29	Wetted Per. (ft)	637.62	58.43	3.00
Min Ch El (ft)	378.17	Shear (lb/sq ft)	0.09	0.15	0.03
Alpha	1.00	Stream Power (lb/ft s)	0.15	0.25	0.03
Frctn Loss (ft)	0.04	Cum Volume (acre-ft)	57.92	6.90	0.46
C & E Loss (ft)	0.00	Cum SA (acres)	38.31	5.10	0.68

CROSS SECTION OUTPUT Profile #Q100HC

			Left OB	Channel	Right OB
E.G. Elev (ft)	383.00	Element			
Vel Head (ft)	0.16	Wt. n-Val.	0.037	0.049	0.035
W.S. Elev (ft)	382.85	Reach Len. (ft)	37.27	37.40	39.85
Crit W.S. (ft)	381.53	Flow Area (sq ft)	1630.09	198.61	6.00
E.G. Slope (ft/ft)	0.001830	Area (sq ft)	1630.09	198.61	6.00
Q Total (cfs)	5825.00	Flow (cfs)	5224.57	589.08	11.35
Top Width (ft)	713.33	Top Width (ft)	649.91	58.16	5.26
Vel Total (ft/s)	3.17	Avg. Vel. (ft/s)	3.21	2.97	1.89
Max Chl Dpth (ft)	4.68	Hydr. Depth (ft)	2.51	3.41	1.14
Conv. Total (cfs)	136184.3	Conv. (cfs)	122146.7	13772.3	265.3
Length Wtd. (ft)	37.29	Wetted Per. (ft)	650.09	58.43	5.65
Min Ch El (ft)	378.17	Shear (lb/sq ft)	0.29	0.39	0.12
Alpha	1.00	Stream Power (lb/ft s)	0.92	1.15	0.23
Frctn Loss (ft)	0.07	Cum Volume (acre-ft)	86.21	10.48	0.86
C & E Loss (ft)	0.00	Cum SA (acres)	44.34	5.25	0.93

CROSS SECTION

RIVER: Canada Gobernado
REACH: Middle RS: 4230.35*

INPUT
Description:
Station Elevation Data num= 66

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	391.58	6.09	390.14	14.4	388.06	21.64	386.32	23.94	385.94
24.5	385.87	33.22	384.7	39.81	384.02	59.89	382.77	64.9	382.57
81.57	381.91	97.99	380.34	136.57	380.73	147.99	380.8	181.42	380.88
245.24	380.82	269.06	380.44	270.53	380.42	288.16	380.22	325.07	380.19
348.89	380.09	373.3	380.31	416.53	380.68	424.47	380.64	437.2	380.55
448.94	380.48	453.27	380.46	460.77	380.4	467.07	380.35	477.08	380.29
480.57	380.27	536.06	379.96	588.21	379.84	593.3	379.86	633.44	379.9
633.58	379.9	637.64	379.94	644.05	380	656.92	380.09	660.17	380.11
700.4	380.41	718.99	380.6	727.7	380.06	729.72	379.94	735.16	379.61
740.27	379.3	746.68	378.92	749.68	378.76	755.46	378.51	760.09	379.12
761.52	379.3	761.61	379.32	764.53	379.7	767.5	380.1	773.03	380.82
774.51	381.16	774.68	381.2	778.69	383.08	782.87	384.83	787.64	386.31
793.47	388.01	794.62	388.35	798.79	389.6	803.85	391.11	805.3	391.54
812.95	392.95								

Manning's n Values num= 10

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	633.58	.046	660.17	.039	718.99	.035	737.35	.035
767.13	.035	773.03	.05	794.62	.05	803.85	.05	812.95	.05

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
718.99	773.03	37.27	37.4	39.85	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
0	718.99	380.595	F

CROSS SECTION OUTPUT Profile #Q50

E.G. Elev (ft)	381.45	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.04	Wt. n-Val.	0.036	0.035	0.050
W.S. Elev (ft)	381.42	Reach Len. (ft)	37.27	37.40	39.85
Crit W.S. (ft)	380.76	Flow Area (sq ft)	669.98	100.70	0.72
E.G. Slope (ft/ft)	0.000968	Area (sq ft)	669.98	100.70	0.72
Q Total (cfs)	1109.00	Flow (cfs)	898.43	210.25	0.32
Top Width (ft)	688.43	Top Width (ft)	632.27	54.04	2.11
Vel Total (ft/s)	1.44	Avg. Vel. (ft/s)	1.34	2.09	0.44
Max Chl Dpth (ft)	2.91	Hydr. Depth (ft)	1.06	1.86	0.34
Conv. Total (cfs)	35637.6	Conv. (cfs)	28870.9	6756.4	10.2
Length Wtd. (ft)	37.30	Wetted Per. (ft)	632.34	54.25	2.21
Min Ch El (ft)	378.51	Shear (lb/sq ft)	0.06	0.11	0.02
Alpha	1.10	Stream Power (lb/ft s)	0.09	0.23	0.01
Frctn Loss (ft)	0.04	Cum Volume (acre-ft)	54.42	6.41	0.37
C & E Loss (ft)	0.00	Cum SA (acres)	35.13	5.02	0.64

CROSS SECTION OUTPUT Profile #Q100

E.G. Elev (ft)	381.73	Element	Left OB	Channel	Right OB

Vel Head (ft)	0.06	Wt. n-Val.	0.036	0.035	0.050
W.S. Elev (ft)	381.68	Reach Len. (ft)	37.27	37.40	39.85
Crit W.S. (ft)	380.98	Flow Area (sq ft)	835.16	114.78	1.35
E.G. Slope (ft/ft)	0.001209	Area (sq ft)	835.16	114.78	1.35
Q Total (cfs)	1736.00	Flow (cfs)	1445.93	289.22	0.85
Top Width (ft)	691.71	Top Width (ft)	635.00	54.04	2.67
Vel Total (ft/s)	1.82	Avg. Vel. (ft/s)	1.73	2.52	0.63
Max Chl Dpth (ft)	3.17	Hydr. Depth (ft)	1.32	2.12	0.50
Conv. Total (cfs)	49925.4	Conv. (cfs)	41583.4	8317.5	24.5
Length Wtd. (ft)	37.29	Wetted Per. (ft)	635.08	54.25	2.82
Min Ch El (ft)	378.51	Shear (lb/sq ft)	0.10	0.16	0.04
Alpha	1.07	Stream Power (lb/ft s)	0.17	0.40	0.02
Frctn Loss (ft)	0.05	Cum Volume (acre-ft)	57.17	6.80	0.46
C & E Loss (ft)	0.00	Cum SA (acres)	37.76	5.05	0.68

CROSS SECTION OUTPUT Profile #Q100HC

E.G. Elev (ft)	382.93	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.19	Wt. n-Val.	0.036	0.035	0.050
W.S. Elev (ft)	382.74	Reach Len. (ft)	37.27	37.40	39.85
Crit W.S. (ft)	381.66	Flow Area (sq ft)	1519.07	172.05	5.38
E.G. Slope (ft/ft)	0.002126	Area (sq ft)	1519.07	172.05	5.38
Q Total (cfs)	5825.00	Flow (cfs)	5079.16	738.42	7.42
Top Width (ft)	717.28	Top Width (ft)	658.31	54.04	4.93
Vel Total (ft/s)	3.43	Avg. Vel. (ft/s)	3.34	4.29	1.38
Max Chl Dpth (ft)	4.23	Hydr. Depth (ft)	2.31	3.18	1.09
Conv. Total (cfs)	126343.5	Conv. (cfs)	110166.4	16016.2	161.0
Length Wtd. (ft)	37.29	Wetted Per. (ft)	658.41	54.25	5.32
Min Ch El (ft)	378.51	Shear (lb/sq ft)	0.31	0.42	0.13
Alpha	1.03	Stream Power (lb/ft s)	1.02	1.81	0.19
Frctn Loss (ft)	0.09	Cum Volume (acre-ft)	84.86	10.32	0.85
C & E Loss (ft)	0.00	Cum SA (acres)	43.78	5.20	0.92

CROSS SECTION

RIVER: Canada Gobernado
REACH: Middle RS: 4192.95*

INPUT
Description:
Station Elevation Data num= 66

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	391.05	6.04	389.31	14.28	386.7	21.46	384.58	23.74	384.26
24.28	384.19	32.94	383.08	39.46	382.64	59.37	381.86	64.33	381.73
80.87	381.38	97.14	380.41	135.39	380.86	146.71	380.91	179.84	380.97
243.12	380.65	266.73	380.3	268.19	380.28	285.67	380.18	322.26	380.23
345.86	380.2	370.07	380.4	412.92	380.69	420.79	380.67	433.41	380.62
445.05	380.59	449.35	380.58	456.77	380.52	463.03	380.47	472.94	380.41
476.4	380.38	531.42	380.04	583.12	380.06	588.16	380.09	627.95	380.09
628.09	380.09	632.12	380.12	638.47	380.15	651.22	380.21	654.45	380.22
694.33	380.39	712.76	380.51	721.11	380.08	723.05	379.98	728.26	379.71
733.16	379.45	739.31	379.17	742.18	379.04	747.72	378.85	751.67	379.34
752.88	379.5	752.95	379.51	755.44	379.82	757.98	380.14	762.68	380.73
764.31	381.23	764.49	381.3	768.9	383.37	773.5	385.4	778.74	386.67
785.16	388.02	786.42	388.3	791.01	389.32	796.58	390.54	798.16	390.9
806.58	392.17								

Manning's n Values num= 10

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	628.09	.043	654.45	.043	712.76	.035	729.72	.035
757.23	.035	762.68	.05	786.42	.05	796.58	.05	806.58	.05

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
712.76	762.68	37.27	37.4	39.85	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
0	712.76	380.51	F

CROSS SECTION OUTPUT Profile #Q50

E.G. Elev (ft)	381.41	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.05	Wt. n-Val.	0.036	0.035	0.050
W.S. Elev (ft)	381.36	Reach Len. (ft)	37.27	37.40	39.85
Crit W.S. (ft)	380.84	Flow Area (sq ft)	591.38	84.12	0.64
E.G. Slope (ft/ft)	0.001506	Area (sq ft)	591.38	84.12	0.64
Q Total (cfs)	1109.00	Flow (cfs)	905.45	203.21	0.34
Top Width (ft)	683.44	Top Width (ft)	631.58	49.92	1.94
Vel Total (ft/s)	1.64	Avg. Vel. (ft/s)	1.53	2.42	0.53
Max Chl Dpth (ft)	2.51	Hydr. Depth (ft)	0.94	1.69	0.33
Conv. Total (cfs)	28580.0	Conv. (cfs)	23334.2	5236.9	8.8
Length Wtd. (ft)	37.29	Wetted Per. (ft)	631.62	50.08	2.04
Min Ch El (ft)	378.85	Shear (lb/sq ft)	0.09	0.16	0.03
Alpha	1.11	Stream Power (lb/ft s)	0.13	0.38	0.02
Frctn Loss (ft)	0.08	Cum Volume (acre-ft)	53.88	6.33	0.37
C & E Loss (ft)	0.00	Cum SA (acres)	34.59	4.97	0.64

CROSS SECTION OUTPUT Profile #Q100

E.G. Elev (ft)	381.68	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.07	Wt. n-Val.	0.036	0.035	0.050
W.S. Elev (ft)	381.61	Reach Len. (ft)	37.27	37.40	39.85
Crit W.S. (ft)	381.04	Flow Area (sq ft)	747.93	96.39	1.18
E.G. Slope (ft/ft)	0.001822	Area (sq ft)	747.93	96.39	1.18
Q Total (cfs)	1736.00	Flow (cfs)	1457.08	278.03	0.88
Top Width (ft)	695.01	Top Width (ft)	642.63	49.92	2.46
Vel Total (ft/s)	2.05	Avg. Vel. (ft/s)	1.95	2.88	0.75
Max Chl Dpth (ft)	2.76	Hydr. Depth (ft)	1.16	1.93	0.48
Conv. Total (cfs)	40671.1	Conv. (cfs)	34136.6	6513.8	20.7
Length Wtd. (ft)	37.29	Wetted Per. (ft)	642.67	50.08	2.62
Min Ch El (ft)	378.85	Shear (lb/sq ft)	0.13	0.22	0.05
Alpha	1.07	Stream Power (lb/ft s)	0.26	0.63	0.04
Frctn Loss (ft)	0.09	Cum Volume (acre-ft)	56.49	6.71	0.46
C & E Loss (ft)	0.00	Cum SA (acres)	37.22	5.01	0.67

CROSS SECTION OUTPUT Profile #Q100HC

E.G. Elev (ft)	382.83	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.22	Wt. n-Val.	0.036	0.035	0.050
W.S. Elev (ft)	382.61	Reach Len. (ft)	37.27	37.40	39.85
Crit W.S. (ft)	381.74	Flow Area (sq ft)	1407.96	146.37	4.72
E.G. Slope (ft/ft)	0.002898	Area (sq ft)	1407.96	146.37	4.72
Q Total (cfs)	5825.00	Flow (cfs)	5125.36	692.35	7.29
Top Width (ft)	727.01	Top Width (ft)	672.49	49.92	4.60

Vel Total (ft/s)	3.74	Avg. Vel. (ft/s)	3.64	4.73	1.54
Max Chl Dpth (ft)	3.76	Hydr. Depth (ft)	2.09	2.93	1.03
Conv. Total (cfs)	108200.2	Conv. (cfs)	95204.3	12860.5	135.4
Length Wtd. (ft)	37.29	Wetted Per. (ft)	672.56	50.08	4.98
Min Ch El (ft)	378.85	Shear (lb/sq ft)	0.38	0.53	0.17
Alpha	1.03	Stream Power (lb/ft s)	1.38	2.50	0.26
Frctn Loss (ft)	0.13	Cum Volume (acre-ft)	83.61	10.19	0.85
C & E Loss (ft)	0.00	Cum SA (acres)	43.21	5.16	0.92

CROSS SECTION

RIVER: Canada Gobernado
REACH: Middle RS: 4155.56*

INPUT
Description:
Station Elevation Data num= 66

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	390.52	5.98	388.48	14.15	385.34	21.27	382.84	23.53	382.57
24.07	382.51	32.65	381.46	39.12	381.26	58.85	380.94	63.77	380.9
80.16	380.84	96.29	380.48	134.2	380.99	145.42	381.02	178.27	381.06
240.99	380.48	264.4	380.15	265.84	380.13	283.17	380.13	319.44	380.26
342.84	380.32	366.83	380.48	409.31	380.7	417.12	380.7	429.63	380.7
441.16	380.7	445.42	380.7	452.78	380.64	458.98	380.6	468.81	380.52
472.24	380.5	526.77	380.12	578.02	380.29	583.02	380.31	622.46	380.29
622.6	380.29	626.59	380.29	632.89	380.31	645.53	380.32	648.73	380.32
688.26	380.38	706.53	380.42	714.52	380.09	716.37	380.01	721.36	379.8
726.05	379.61	731.93	379.41	734.68	379.33	739.98	379.18	743.24	379.57
744.24	379.69	744.3	379.7	746.36	379.94	748.45	380.19	752.34	380.65
754.11	381.31	754.31	381.39	759.12	383.67	764.14	385.98	769.85	387.04
776.85	388.03	778.23	388.24	783.23	389.04	789.3	389.98	791.03	390.25
800.21	391.38								

Manning's n Values num= 10

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	622.6	.039	648.73	.046	706.53	.035	722.09	.035
747.34	.035	752.34	.05	778.23	.05	789.3	.05	800.21	.05

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
706.53	752.34	37.27	37.4	39.85	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
0	706.53	380.425	F

CROSS SECTION OUTPUT Profile #Q50

E.G. Elev (ft)	381.33	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.07	Wt. n-Val.	0.036	0.035	0.050
W.S. Elev (ft)	381.26	Reach Len. (ft)	37.27	37.40	39.85
Crit W.S. (ft)	380.91	Flow Area (sq ft)	500.88	67.20	0.50
E.G. Slope (ft/ft)	0.002836	Area (sq ft)	500.88	67.20	0.50
Q Total (cfs)	1109.00	Flow (cfs)	907.05	201.60	0.35
Top Width (ft)	714.98	Top Width (ft)	667.52	45.81	1.65
Vel Total (ft/s)	1.95	Avg. Vel. (ft/s)	1.81	3.00	0.69
Max Chl Dpth (ft)	2.08	Hydr. Depth (ft)	0.75	1.47	0.31
Conv. Total (cfs)	20823.2	Conv. (cfs)	17031.4	3785.3	6.5
Length Wtd. (ft)	37.29	Wetted Per. (ft)	667.54	45.92	1.76

Min Ch El (ft)	379.18	Shear (lb/sq ft)	0.13	0.26	0.05
Alpha	1.14	Stream Power (lb/ft s)	0.24	0.78	0.04
Frctn Loss (ft)	0.16	Cum Volume (acre-ft)	53.41	6.27	0.37
C & E Loss (ft)	0.00	Cum SA (acres)	34.03	4.93	0.64

Warning: The conveyance ratio (upstream 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)	381.59	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.09	Wt. n-Val.	0.036	0.035	0.050
W.S. Elev (ft)	381.49	Reach Len. (ft)	37.27	37.40	39.85
Crit W.S. (ft)	381.05	Flow Area (sq ft)	656.22	77.80	0.95
E.G. Slope (ft/ft)	0.003062	Area (sq ft)	656.22	77.80	0.95
Q Total (cfs)	1736.00	Flow (cfs)	1469.72	265.42	0.86
Top Width (ft)	722.17	Top Width (ft)	674.17	45.81	2.19
Vel Total (ft/s)	2.36	Avg. Vel. (ft/s)	2.24	3.41	0.90
Max Chl Dpth (ft)	2.31	Hydr. Depth (ft)	0.97	1.70	0.43
Conv. Total (cfs)	31374.5	Conv. (cfs)	26562.0	4797.0	15.5
Length Wtd. (ft)	37.29	Wetted Per. (ft)	674.19	45.92	2.35
Min Ch El (ft)	379.18	Shear (lb/sq ft)	0.19	0.32	0.08
Alpha	1.08	Stream Power (lb/ft s)	0.42	1.10	0.07
Frctn Loss (ft)	0.16	Cum Volume (acre-ft)	55.89	6.63	0.46
C & E Loss (ft)	0.01	Cum SA (acres)	36.65	4.97	0.67

Warning: The conveyance ratio (upstream 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)	382.70	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.27	Wt. n-Val.	0.036	0.035	0.050
W.S. Elev (ft)	382.43	Reach Len. (ft)	37.27	37.40	39.85
Crit W.S. (ft)	381.78	Flow Area (sq ft)	1289.16	120.57	3.92
E.G. Slope (ft/ft)	0.004068	Area (sq ft)	1289.16	120.57	3.92
Q Total (cfs)	5825.00	Flow (cfs)	5191.26	627.00	6.74
Top Width (ft)	731.76	Top Width (ft)	681.79	45.81	4.16
Vel Total (ft/s)	4.12	Avg. Vel. (ft/s)	4.03	5.20	1.72
Max Chl Dpth (ft)	3.25	Hydr. Depth (ft)	1.89	2.63	0.94
Conv. Total (cfs)	91325.6	Conv. (cfs)	81389.6	9830.3	105.7
Length Wtd. (ft)	37.29	Wetted Per. (ft)	681.88	45.92	4.53
Min Ch El (ft)	379.18	Shear (lb/sq ft)	0.48	0.67	0.22
Alpha	1.02	Stream Power (lb/ft s)	1.93	3.47	0.38
Frctn Loss (ft)	0.20	Cum Volume (acre-ft)	82.46	10.07	0.84
C & E Loss (ft)	0.01	Cum SA (acres)	42.63	5.12	0.91

CROSS SECTION

RIVER: Canada Gobernado
REACH: Middle RS: 4118.164

INPUT
Description:
Station Elevation Data num= 32

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	389.99	5.93	387.65	14.03	383.98	21.08	381.1	23.86	380.83
32.36	379.84	63.21	380.06	133.02	381.12	176.7	381.15	262.07	380
263.5	379.99	363.6	380.57	441.49	380.82	522.13	380.2	577.88	380.54
639.84	380.44	643.01	380.43	700.3	380.34	709.7	380.05	714.46	379.9
718.94	379.76	732.24	379.52	735.65	379.89	737.27	380.06	741.99	380.57
743.91	381.39	754.77	386.55	760.96	387.4	768.54	388.04	770.03	388.19
775.45	388.76	793.84	390.6						

Manning's n Values num= 4

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	643.01	.05	714.46	.035	770.03	.05

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
700.3	741.99	38.08	39.08	41.5	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
0	700.3	380.34	F

CROSS SECTION OUTPUT Profile #Q50

E.G. Elev (ft)	381.17	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.11	Wt. n-Val.	0.036	0.038	0.035
W.S. Elev (ft)	381.06	Reach Len. (ft)	38.08	39.08	41.50
Crit W.S. (ft)	380.87	Flow Area (sq ft)	381.82	47.57	0.28
E.G. Slope (ft/ft)	0.006857	Area (sq ft)	381.82	47.57	0.28
Q Total (cfs)	1109.00	Flow (cfs)	938.04	170.60	0.36
Top Width (ft)	667.26	Top Width (ft)	624.42	41.69	1.15
Vel Total (ft/s)	2.58	Avg. Vel. (ft/s)	2.46	3.59	1.30
Max Chl Dpth (ft)	1.54	Hydr. Depth (ft)	0.61	1.14	0.24
Conv. Total (cfs)	13392.8	Conv. (cfs)	11328.2	2060.2	4.4
Length Wtd. (ft)	38.21	Wetted Per. (ft)	624.51	41.76	1.25
Min Ch El (ft)	379.52	Shear (lb/sq ft)	0.26	0.49	0.10
Alpha	1.06	Stream Power (lb/ft s)	0.64	1.75	0.13
Frctn Loss (ft)	0.26	Cum Volume (acre-ft)	53.04	6.22	0.37
C & E Loss (ft)	0.00	Cum SA (acres)	33.48	4.89	0.64

Warning: Divided flow computed for this cross-section.

CROSS SECTION OUTPUT Profile #Q100

E.G. Elev (ft)	381.42	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.14	Wt. n-Val.	0.036	0.038	0.035
W.S. Elev (ft)	381.27	Reach Len. (ft)	38.08	39.08	41.50
Crit W.S. (ft)	381.04	Flow Area (sq ft)	523.85	56.51	0.58
E.G. Slope (ft/ft)	0.006930	Area (sq ft)	523.85	56.51	0.58
Q Total (cfs)	1736.00	Flow (cfs)	1508.15	226.88	0.97
Top Width (ft)	722.98	Top Width (ft)	679.65	41.69	1.65
Vel Total (ft/s)	2.99	Avg. Vel. (ft/s)	2.88	4.01	1.67
Max Chl Dpth (ft)	1.75	Hydr. Depth (ft)	0.77	1.36	0.35
Conv. Total (cfs)	20853.1	Conv. (cfs)	18116.2	2725.3	11.6
Length Wtd. (ft)	38.19	Wetted Per. (ft)	679.77	41.76	1.79
Min Ch El (ft)	379.52	Shear (lb/sq ft)	0.33	0.59	0.14
Alpha	1.04	Stream Power (lb/ft s)	0.96	2.35	0.23
Frctn Loss (ft)	0.28	Cum Volume (acre-ft)	55.39	6.57	0.46
C & E Loss (ft)	0.00	Cum SA (acres)	36.07	4.93	0.67

CROSS SECTION OUTPUT Profile #Q100HC

E.G. Elev (ft)	382.49	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.37	Wt. n-Val.	0.036	0.038	0.035
W.S. Elev (ft)	382.12	Reach Len. (ft)	38.08	39.08	41.50
Crit W.S. (ft)	381.74	Flow Area (sq ft)	1097.24	91.63	2.74
E.G. Slope (ft/ft)	0.007281	Area (sq ft)	1097.24	91.63	2.74
Q Total (cfs)	5825.00	Flow (cfs)	5303.80	513.20	8.00
Top Width (ft)	726.85	Top Width (ft)	681.71	41.69	3.45
Vel Total (ft/s)	4.89	Avg. Vel. (ft/s)	4.83	5.60	2.92
Max Chl Dpth (ft)	2.60	Hydr. Depth (ft)	1.61	2.20	0.79
Conv. Total (cfs)	68264.6	Conv. (cfs)	62156.6	6014.3	93.7
Length Wtd. (ft)	38.17	Wetted Per. (ft)	682.00	41.76	3.78
Min Ch El (ft)	379.52	Shear (lb/sq ft)	0.73	1.00	0.33
Alpha	1.01	Stream Power (lb/ft s)	3.54	5.59	0.96
Frctn Loss (ft)	0.30	Cum Volume (acre-ft)	81.44	9.98	0.84
C & E Loss (ft)	0.00	Cum SA (acres)	42.05	5.08	0.91

CROSS SECTION

RIVER: Canada Gobernado
REACH: Middle RS: 4079.07*

INPUT
Description:
Station Elevation Data num= 60

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	389.98	6.18	387.87	12.24	385.51	14.62	384.6	21.96	382.03
24.86	381.73	33.72	380.7	36.52	380.65	48.64	380.2	51.41	380.07
65.86	380.04	74.82	380.08	97.59	380.24	138.59	380.8	179.6	380.88
184.1	380.87	257.97	379.83	273.05	379.65	274.54	379.64	284.08	379.67
317.22	379.77	336.5	379.88	375.13	380.02	378.84	380.03	459.99	380.18
470.17	380.11	487.32	380.07	524.52	379.96	529.06	379.95	544.01	379.92
592.91	380.35	602.1	380.43	618.17	380.46	620.08	380.47	651.41	380.47
664.2	380.45	666.06	380.45	666.65	380.45	669.95	380.44	671.06	380.44
677.55	380.43	729.64	380.37	739.39	380.09	744.32	379.95	748.97	379.81
762.76	379.56	767.17	379.9	769.27	380.06	775.39	380.52	777.86	381.23
790.98	385.37	791.85	385.65	795.29	385.99	799.83	386.49	809.59	387.23
811.51	387.39	812.06	387.44	818.49	388.06	832.48	389.37	842.19	390.07

Manning's n Values num= 11

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	487.32	.041	524.52	.064	620.08	.038	666.06	.053
669.95	.053	729.64	.041	745.18	.041	775.39	.053	811.51	.053
842.19	.053								

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
729.64	775.39	38.08 39.08	41.5	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
0729.64	17380.3766		F

CROSS SECTION OUTPUT Profile #Q50

E.G. Elev (ft)	380.90	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.09	Wt. n-Val.	0.039	0.041	0.053
W.S. Elev (ft)	380.81	Reach Len. (ft)	38.08	39.08	41.50

Crit W.S. (ft)	380.57	Flow Area (sq ft)	411.78	38.97	0.14
E.G. Slope (ft/ft)	0.006835	Area (sq ft)	411.78	38.97	0.14
Q Total (cfs)	1109.00	Flow (cfs)	1002.52	106.39	0.09
Top Width (ft)	697.66	Top Width (ft)	650.91	45.75	1.00
Vel Total (ft/s)	2.46	Avg. Vel. (ft/s)	2.43	2.73	0.62
Max Chl Dpth (ft)	1.25	Hydr. Depth (ft)	0.63	0.85	0.14
Conv. Total (cfs)	13414.2	Conv. (cfs)	12126.2	1286.9	1.1
Length Wtd. (ft)	38.15	Wetted Per. (ft)	650.94	45.80	1.04
Min Ch El (ft)	379.56	Shear (lb/sq ft)	0.27	0.36	0.06
Alpha	1.00	Stream Power (lb/ft s)	0.66	0.99	0.04
Frctn Loss (ft)	0.18	Cum Volume (acre-ft)	52.69	6.18	0.37
C & E Loss (ft)	0.01	Cum SA (acres)	32.92	4.85	0.64

Warning: Divided flow computed for this cross-section.

CROSS SECTION OUTPUT Profile #Q100

E.G. Elev (ft)	381.13	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.14	Wt. n-Val.	0.039	0.041	0.053
W.S. Elev (ft)	380.99	Reach Len. (ft)	38.08	39.08	41.50
Crit W.S. (ft)	380.73	Flow Area (sq ft)	540.47	47.53	0.39
E.G. Slope (ft/ft)	0.008054	Area (sq ft)	540.47	47.53	0.39
Q Total (cfs)	1736.00	Flow (cfs)	1575.62	160.01	0.37
Top Width (ft)	745.86	Top Width (ft)	698.46	45.75	1.65
Vel Total (ft/s)	2.95	Avg. Vel. (ft/s)	2.92	3.37	0.94
Max Chl Dpth (ft)	1.43	Hydr. Depth (ft)	0.77	1.04	0.24
Conv. Total (cfs)	19344.1	Conv. (cfs)	17557.1	1783.0	4.1
Length Wtd. (ft)	38.15	Wetted Per. (ft)	698.50	45.80	1.72
Min Ch El (ft)	379.56	Shear (lb/sq ft)	0.39	0.52	0.11
Alpha	1.01	Stream Power (lb/ft s)	1.13	1.76	0.11
Frctn Loss (ft)	0.26	Cum Volume (acre-ft)	54.92	6.53	0.46
C & E Loss (ft)	0.01	Cum SA (acres)	35.47	4.89	0.67

CROSS SECTION OUTPUT Profile #Q100HC

E.G. Elev (ft)	382.19	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.36	Wt. n-Val.	0.039	0.041	0.053
W.S. Elev (ft)	381.83	Reach Len. (ft)	38.08	39.08	41.50
Crit W.S. (ft)	381.45	Flow Area (sq ft)	1125.39	85.65	2.92
E.G. Slope (ft/ft)	0.008450	Area (sq ft)	1125.39	85.65	2.92
Q Total (cfs)	5825.00	Flow (cfs)	5385.01	434.39	5.59
Top Width (ft)	755.84	Top Width (ft)	705.73	45.75	4.36
Vel Total (ft/s)	4.80	Avg. Vel. (ft/s)	4.79	5.07	1.92
Max Chl Dpth (ft)	2.27	Hydr. Depth (ft)	1.59	1.87	0.67
Conv. Total (cfs)	63368.9	Conv. (cfs)	58582.4	4725.7	60.9
Length Wtd. (ft)	38.15	Wetted Per. (ft)	705.82	45.80	4.56
Min Ch El (ft)	379.56	Shear (lb/sq ft)	0.84	0.99	0.34
Alpha	1.00	Stream Power (lb/ft s)	4.02	5.00	0.65
Frctn Loss (ft)	0.33	Cum Volume (acre-ft)	80.47	9.90	0.84
C & E Loss (ft)	0.00	Cum SA (acres)	41.44	5.04	0.91

CROSS SECTION

RIVER: Canada Gobernado
REACH: Middle RS: 4039.99*

INPUT
Description:
Station Elevation Data num= 60

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	389.98	6.43	388.09	12.73	386.01	15.21	385.21	22.85	382.95
25.86	382.64	35.07	381.57	37.99	381.45	50.6	380.45	53.48	380.18
68.51	380.02	77.82	379.97	101.51	379.96	144.17	380.48	186.82	380.62
191.51	380.59	268.34	379.46	284.03	379.29	285.58	379.28	295.5	379.3
329.98	379.31	350.04	379.43	390.21	379.48	394.07	379.49	478.49	379.54
489.08	379.48	506.92	379.51	545.62	379.59	550.34	379.59	565.89	379.64
616.76	380.22	626.31	380.32	643.03	380.41	645.02	380.42	677.61	380.47
690.91	380.46	692.85	380.46	693.46	380.46	696.9	380.45	698.05	380.45
704.8	380.45	758.99	380.4	769.08	380.13	774.19	380	779	379.87
793.27	379.6	798.69	379.91	801.27	380.05	808.78	380.48	811.81	381.07
827.86	384.52	828.93	384.75	833.14	385.06	838.69	385.58	850.64	386.41
852.99	386.59	853.66	386.64	861.54	387.36	878.65	388.89	890.53	389.54

Manning's n Values num= 11

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	506.92	.047	545.62	.058	645.02	.04	692.85	.057
696.9	.057	758.99	.047	775.9	.047	808.78	.057	852.99	.057
890.53	.057								

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
758.99	808.78	38.08 39.08	41.5	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
0758.98	33380.41	33	F

CROSS SECTION OUTPUT Profile #Q50

			Left OB	Channel	Right OB
E.G. Elev (ft)	380.71	Element			
Vel Head (ft)	0.06	Wt. n-Val.	0.038	0.047	0.057
W.S. Elev (ft)	380.65	Reach Len. (ft)	38.08	39.08	41.50
Crit W.S. (ft)	380.42	Flow Area (sq ft)	522.42	32.69	0.07
E.G. Slope (ft/ft)	0.003544	Area (sq ft)	522.42	32.69	0.07
Q Total (cfs)	1109.00	Flow (cfs)	1061.45	47.53	0.02
Top Width (ft)	761.52	Top Width (ft)	710.87	49.79	0.86
Vel Total (ft/s)	2.00	Avg. Vel. (ft/s)	2.03	1.45	0.29
Max Chl Dpth (ft)	1.37	Hydr. Depth (ft)	0.73	0.66	0.08
Conv. Total (cfs)	18629.0	Conv. (cfs)	17830.2	798.5	0.4
Length Wtd. (ft)	38.11	Wetted Per. (ft)	710.91	49.82	0.87
Min Ch El (ft)	379.60	Shear (lb/sq ft)	0.16	0.15	0.02
Alpha	1.01	Stream Power (lb/ft s)	0.33	0.21	0.01
Frctn Loss (ft)	0.07	Cum Volume (acre-ft)	52.28	6.15	0.37
C & E Loss (ft)	0.01	Cum SA (acres)	32.33	4.81	0.63

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 OUTPUT Profile #Q100

			Left OB	Channel	Right OB
E.G. Elev (ft)	380.87	Element			
Vel Head (ft)	0.12	Wt. n-Val.	0.038	0.047	0.057
W.S. Elev (ft)	380.75	Reach Len. (ft)	38.08	39.08	41.50
Crit W.S. (ft)	380.42	Flow Area (sq ft)	593.75	37.68	0.18
E.G. Slope (ft/ft)	0.005878	Area (sq ft)	593.75	37.68	0.18

Q Total (cfs)	1736.00	Flow (cfs)	1658.77	77.14	0.09
Top Width (ft)	763.30	Top Width (ft)	712.14	49.79	1.37
Vel Total (ft/s)	2.75	Avg. Vel. (ft/s)	2.79	2.05	0.52
Max Chl Dpth (ft)	1.47	Hydr. Depth (ft)	0.83	0.76	0.13
Conv. Total (cfs)	22642.9	Conv. (cfs)	21635.6	1006.1	1.2
Length Wtd. (ft)	38.11	Wetted Per. (ft)	712.18	49.82	1.40
Min Ch El (ft)	379.60	Shear (lb/sq ft)	0.31	0.28	0.05
Alpha	1.01	Stream Power (lb/ft s)	0.85	0.57	0.02
Frctn Loss (ft)	0.14	Cum Volume (acre-ft)	54.43	6.49	0.46
C & E Loss (ft)	0.01	Cum SA (acres)	34.85	4.85	0.67

Warning: The conveyance ratio (upstream 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)	381.86	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.37	Wt. n-Val.	0.039	0.047	0.057
W.S. Elev (ft)	381.49	Reach Len. (ft)	38.08	39.08	41.50
Crit W.S. (ft)	381.14	Flow Area (sq ft)	1124.56	74.55	2.57
E.G. Slope (ft/ft)	0.008801	Area (sq ft)	1124.56	74.55	2.57
Q Total (cfs)	5825.00	Flow (cfs)	5530.47	290.55	3.98
Top Width (ft)	776.68	Top Width (ft)	721.92	49.79	4.97
Vel Total (ft/s)	4.85	Avg. Vel. (ft/s)	4.92	3.90	1.55
Max Chl Dpth (ft)	2.21	Hydr. Depth (ft)	1.56	1.50	0.52
Conv. Total (cfs)	62091.9	Conv. (cfs)	58952.4	3097.1	42.4
Length Wtd. (ft)	38.12	Wetted Per. (ft)	721.99	49.82	5.07
Min Ch El (ft)	379.60	Shear (lb/sq ft)	0.86	0.82	0.28
Alpha	1.01	Stream Power (lb/ft s)	4.21	3.20	0.43
Frctn Loss (ft)	0.33	Cum Volume (acre-ft)	79.48	9.83	0.84
C & E Loss (ft)	0.00	Cum SA (acres)	40.82	5.00	0.90

CROSS SECTION

RIVER: Canada Gobernado
REACH: Middle RS: 4000.90*

INPUT
Description:
Station Elevation Data num= 60

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	389.97	6.68	388.31	13.22	386.51	15.79	385.83	23.73	383.88
26.86	383.54	36.43	382.43	39.45	382.24	52.55	380.71	55.55	380.29
71.16	380	80.83	379.86	105.44	379.69	149.74	380.17	194.04	380.36
198.91	380.31	278.72	379.09	295.01	378.94	296.62	378.93	306.93	378.92
342.74	378.85	363.57	378.98	405.3	378.95	409.31	378.95	496.99	378.91
507.99	378.85	526.52	378.96	566.71	379.21	571.62	379.24	587.77	379.36
640.6	380.09	650.53	380.21	667.89	380.36	669.95	380.38	703.8	380.48
717.62	380.47	719.64	380.47	720.27	380.46	723.84	380.46	725.03	380.46
732.05	380.46	788.33	380.43	798.77	380.18	804.05	380.04	809.02	379.92
823.78	379.64	830.22	379.92	833.27	380.05	842.17	380.43	845.76	380.91
864.75	383.66	866.01	383.85	870.99	384.14	877.56	384.66	891.69	385.6
894.47	385.79	895.27	385.85	904.58	386.66	924.82	388.41	938.88	389.01

Manning's n Values num= 11

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val

0	.035	526.52	.052	566.71	.053	669.95	.043	719.64	.06
723.84	.06	788.33	.052	806.62	.052	842.17	.06	894.47	.06
938.88	.06								

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
788.33	842.17	38.08	39.08	41.5	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
0	788.325	380.45	F

CROSS SECTION OUTPUT Profile #Q50

		Element	Left OB	Channel	Right OB
E.G. Elev (ft)	380.63	Wt. n-Val.	0.037	0.052	0.060
Vel Head (ft)	0.03	Reach Len. (ft)	38.08	39.08	41.50
W.S. Elev (ft)	380.59	Flow Area (sq ft)	724.38	30.86	0.10
Crit W.S. (ft)	380.46	Area (sq ft)	724.38	30.86	0.10
E.G. Slope (ft/ft)	0.001209	Flow (cfs)	1087.18	21.80	0.02
Q Total (cfs)	1109.00	Top Width (ft)	734.95	53.84	1.22
Top Width (ft)	790.01	Avg. Vel. (ft/s)	1.50	0.71	0.16
Vel Total (ft/s)	1.47	Hydr. Depth (ft)	0.99	0.57	0.08
Max Chl Dpth (ft)	1.74	Conv. (cfs)	31268.9	627.0	0.5
Conv. Total (cfs)	31896.4	Wetted Per. (ft)	735.00	53.87	1.23
Length Wtd. (ft)	38.10	Shear (lb/sq ft)	0.07	0.04	0.01
Min Ch El (ft)	379.64	Stream Power (lb/ft s)	0.11	0.03	0.00
Alpha	1.03	Cum Volume (acre-ft)	51.74	6.12	0.37
Frctn Loss (ft)	0.03	Cum SA (acres)	31.70	4.76	0.63
C & E Loss (ft)	0.00				

Warning: The conveyance ratio (upstream 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)	380.71	Wt. n-Val.	0.038	0.052	0.060
Vel Head (ft)	0.08	Reach Len. (ft)	38.08	39.08	41.50
W.S. Elev (ft)	380.63	Flow Area (sq ft)	751.95	32.88	0.15
Crit W.S. (ft)	380.46	Area (sq ft)	751.95	32.88	0.15
E.G. Slope (ft/ft)	0.002654	Flow (cfs)	1700.19	35.77	0.04
Q Total (cfs)	1736.00	Top Width (ft)	735.22	53.84	1.50
Top Width (ft)	790.56	Avg. Vel. (ft/s)	2.26	1.09	0.27
Vel Total (ft/s)	2.21	Hydr. Depth (ft)	1.02	0.61	0.10
Max Chl Dpth (ft)	1.78	Conv. (cfs)	33002.1	694.4	0.8
Conv. Total (cfs)	33697.3	Wetted Per. (ft)	735.27	53.87	1.52
Length Wtd. (ft)	38.10	Shear (lb/sq ft)	0.17	0.10	0.02
Min Ch El (ft)	379.64	Stream Power (lb/ft s)	0.38	0.11	0.00
Alpha	1.03	Cum Volume (acre-ft)	53.84	6.46	0.46
Frctn Loss (ft)	0.06	Cum SA (acres)	34.22	4.80	0.66
C & E Loss (ft)	0.01				

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

CROSS SECTION OUTPUT Profile #Q100HC

		Element	Left OB	Channel	Right OB
E.G. Elev (ft)	381.52	Wt. n-Val.	0.038	0.052	0.060
Vel Head (ft)	0.38	Reach Len. (ft)	38.08	39.08	41.50
W.S. Elev (ft)	381.14				

Crit W.S. (ft)	380.84	Flow Area (sq ft)	1124.21	60.06	1.85
E.G. Slope (ft/ft)	0.008749	Area (sq ft)	1124.21	60.06	1.85
Q Total (cfs)	5825.00	Flow (cfs)	5648.83	174.02	2.15
Top Width (ft)	798.42	Top Width (ft)	739.43	53.84	5.15
Vel Total (ft/s)	4.91	Avg. Vel. (ft/s)	5.02	2.90	1.16
Max Chl Dpth (ft)	2.29	Hydr. Depth (ft)	1.52	1.12	0.36
Conv. Total (cfs)	62273.7	Conv. (cfs)	60390.3	1860.4	23.0
Length Wtd. (ft)	38.10	Wetted Per. (ft)	739.51	53.87	5.20
Min Ch El (ft)	379.64	Shear (lb/sq ft)	0.83	0.61	0.19
Alpha	1.03	Stream Power (lb/ft s)	4.17	1.76	0.23
Frctn Loss (ft)	0.31	Cum Volume (acre-ft)	78.50	9.77	0.83
C & E Loss (ft)	0.00	Cum SA (acres)	40.18	4.95	0.90

CROSS SECTION

RIVER: Canada Gobernado
REACH: Middle RS: 3961.82*

INPUT
Description:
Station Elevation Data num= 60

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	389.96	6.92	388.53	13.72	387.01	16.38	386.45	24.61	384.8
27.86	384.45	37.78	383.29	40.92	383.04	54.51	380.96	57.61	380.39
73.8	379.98	83.84	379.75	109.36	379.41	155.32	379.85	201.26	380.1
206.32	380.04	289.09	378.72	306	378.58	307.67	378.57	318.35	378.55
355.49	378.39	377.1	378.52	420.39	378.42	424.54	378.41	515.49	378.27
526.9	378.21	546.12	378.41	587.81	378.83	592.89	378.88	609.65	379.08
664.45	379.96	674.74	380.1	692.76	380.31	694.89	380.34	730	380.48
744.33	380.47	746.42	380.47	747.09	380.47	750.79	380.47	752.02	380.47
759.3	380.47	817.68	380.47	828.46	380.22	833.91	380.09	839.05	379.97
854.3	379.68	861.74	379.93	865.27	380.05	875.57	380.39	879.7	380.75
901.63	382.8	903.09	382.95	908.84	383.21	916.42	383.75	932.74	384.78
935.95	384.99	936.87	385.05	947.62	385.96	970.99	387.93	987.23	388.48

Manning's n Values num= 11

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	546.12	.058	587.81	.047	694.89	.045	746.42	.063
750.79	.063	817.68	.058	837.34	.058	875.57	.063	935.95	.063
987.23	.063								

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
817.68	875.57	38.08	39.08	41.5	.1 .3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
0817.6666	380.4867		F

CROSS SECTION OUTPUT Profile #Q50

E.G. Elev (ft)	380.60	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.02	Wt. n-Val.	0.037	0.058	0.063
W.S. Elev (ft)	380.58	Reach Len. (ft)	38.08	39.08	41.50
Crit W.S. (ft)	380.49	Flow Area (sq ft)	970.05	30.55	0.20
E.G. Slope (ft/ft)	0.000469	Area (sq ft)	970.05	30.55	0.20
Q Total (cfs)	1109.00	Flow (cfs)	1097.48	11.50	0.02
Top Width (ft)	821.11	Top Width (ft)	761.08	57.89	2.14
Vel Total (ft/s)	1.11	Avg. Vel. (ft/s)	1.13	0.38	0.10

Max Chl Dpth (ft)	2.37	Hydr. Depth (ft)	1.27	0.53	0.09
Conv. Total (cfs)	51186.3	Conv. (cfs)	50654.6	530.7	1.0
Length Wtd. (ft)	38.09	Wetted Per. (ft)	761.14	57.91	2.15
Min Ch El (ft)	379.68	Shear (lb/sq ft)	0.04	0.02	0.00
Alpha	1.03	Stream Power (lb/ft s)	0.04	0.01	0.00
Frctn Loss (ft)	0.01	Cum Volume (acre-ft)	50.99	6.09	0.37
C & E Loss (ft)	0.00	Cum SA (acres)	31.04	4.71	0.63

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 OUTPUT Profile #Q100

E.G. Elev (ft)	380.64	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.05	Wt. n-Val.	0.037	0.058	0.063
W.S. Elev (ft)	380.59	Reach Len. (ft)	38.08	39.08	41.50
Crit W.S. (ft)	380.49	Flow Area (sq ft)	980.20	31.32	0.23
E.G. Slope (ft/ft)	0.001116	Area (sq ft)	980.20	31.32	0.23
Q Total (cfs)	1736.00	Flow (cfs)	1717.51	18.45	0.04
Top Width (ft)	821.34	Top Width (ft)	761.16	57.89	2.29
Vel Total (ft/s)	1.72	Avg. Vel. (ft/s)	1.75	0.59	0.17
Max Chl Dpth (ft)	2.38	Hydr. Depth (ft)	1.29	0.54	0.10
Conv. Total (cfs)	51960.5	Conv. (cfs)	51407.1	552.3	1.2
Length Wtd. (ft)	38.09	Wetted Per. (ft)	761.22	57.91	2.30
Min Ch El (ft)	379.68	Shear (lb/sq ft)	0.09	0.04	0.01
Alpha	1.03	Stream Power (lb/ft s)	0.16	0.02	0.00
Frctn Loss (ft)	0.03	Cum Volume (acre-ft)	53.08	6.43	0.46
C & E Loss (ft)	0.01	Cum SA (acres)	33.57	4.75	0.66

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 #Q100HC

E.G. Elev (ft)	381.21	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.37	Wt. n-Val.	0.037	0.058	0.063
W.S. Elev (ft)	380.84	Reach Len. (ft)	38.08	39.08	41.50
Crit W.S. (ft)	380.53	Flow Area (sq ft)	1170.61	45.79	1.16
E.G. Slope (ft/ft)	0.007439	Area (sq ft)	1170.61	45.79	1.16
Q Total (cfs)	5825.00	Flow (cfs)	5736.13	87.99	0.87
Top Width (ft)	825.50	Top Width (ft)	762.52	57.89	5.09
Vel Total (ft/s)	4.78	Avg. Vel. (ft/s)	4.90	1.92	0.76
Max Chl Dpth (ft)	2.63	Hydr. Depth (ft)	1.54	0.79	0.23
Conv. Total (cfs)	67536.9	Conv. (cfs)	66506.6	1020.2	10.1
Length Wtd. (ft)	38.09	Wetted Per. (ft)	762.60	57.91	5.11
Min Ch El (ft)	379.68	Shear (lb/sq ft)	0.71	0.37	0.11
Alpha	1.04	Stream Power (lb/ft s)	3.49	0.71	0.08
Frctn Loss (ft)	0.23	Cum Volume (acre-ft)	77.50	9.72	0.83
C & E Loss (ft)	0.02	Cum SA (acres)	39.52	4.90	0.89

CROSS SECTION

RIVER: Canada Gobernado
REACH: Middle RS: 3922.73*

INPUT
Description:
Station Elevation Data num= 60

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	389.96	7.17	388.75	14.21	387.51	16.97	387.06	25.5	385.73
28.86	385.35	39.14	384.16	42.39	383.83	56.46	381.22	59.68	380.5
76.45	379.96	86.85	379.64	113.29	379.13	160.89	379.53	208.49	379.83
213.72	379.76	299.47	378.35	316.98	378.23	318.71	378.22	329.78	378.17
368.25	377.93	390.64	378.07	435.47	377.88	439.78	377.87	533.99	377.63
545.81	377.58	565.72	377.85	608.9	378.45	614.17	378.52	631.53	378.8
688.29	379.82	698.96	379.99	717.62	380.26	719.83	380.29	756.2	380.49
771.05	380.48	773.21	380.48	773.9	380.48	777.73	380.48	779.01	380.48
786.55	380.49	847.02	380.5	858.15	380.26	863.78	380.14	869.08	380.03
884.82	379.72	893.26	379.94	897.27	380.04	908.96	380.35	913.65	380.59
938.52	381.95	940.17	382.05	946.69	382.29	955.29	382.84	973.8	383.97
977.43	384.19	978.48	384.26	990.67	385.27	1017.17	387.45	1035.57	387.95

Manning's n Values num= 11

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	565.72	.064	608.9	.041	719.83	.047	773.21	.067
777.73	.067	847.02	.064	868.06	.064	908.96	.067	977.43	.067
1035.57	.067								

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
847.02	908.96	38.08	39.08	41.5	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
0847.008	3380.5	233	F

CROSS SECTION OUTPUT Profile #Q50

E.G. Elev (ft)	380.58	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.01	Wt. n-Val.	0.037	0.064	0.067
W.S. Elev (ft)	380.57	Reach Len. (ft)	38.08	39.08	41.50
Crit W.S. (ft)	380.53	Flow Area (sq ft)	1240.78	30.68	0.47
E.G. Slope (ft/ft)	0.000212	Area (sq ft)	1240.78	30.68	0.47
Q Total (cfs)	1109.00	Flow (cfs)	1102.16	6.80	0.04
Top Width (ft)	853.90	Top Width (ft)	787.65	61.94	4.30
Vel Total (ft/s)	0.87	Avg. Vel. (ft/s)	0.89	0.22	0.07
Max Chl Dpth (ft)	2.99	Hydr. Depth (ft)	1.58	0.50	0.11
Conv. Total (cfs)	76093.9	Conv. (cfs)	75624.6	466.9	2.4
Length Wtd. (ft)	38.09	Wetted Per. (ft)	787.72	61.96	4.31
Min Ch El (ft)	379.72	Shear (lb/sq ft)	0.02	0.01	0.00
Alpha	1.03	Stream Power (lb/ft s)	0.02	0.00	0.00
Frctn Loss (ft)	0.01	Cum Volume (acre-ft)	50.03	6.06	0.37
C & E Loss (ft)	0.00	Cum SA (acres)	30.37	4.66	0.63

CROSS SECTION OUTPUT Profile #Q100

E.G. Elev (ft)	380.60	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.03	Wt. n-Val.	0.037	0.064	0.067
W.S. Elev (ft)	380.57	Reach Len. (ft)	38.08	39.08	41.50
Crit W.S. (ft)	380.53	Flow Area (sq ft)	1243.96	30.93	0.49
E.G. Slope (ft/ft)	0.000517	Area (sq ft)	1243.96	30.93	0.49
Q Total (cfs)	1736.00	Flow (cfs)	1725.19	10.75	0.06
Top Width (ft)	854.00	Top Width (ft)	787.67	61.94	4.38
Vel Total (ft/s)	1.36	Avg. Vel. (ft/s)	1.39	0.35	0.12
Max Chl Dpth (ft)	2.99	Hydr. Depth (ft)	1.58	0.50	0.11

Conv. Total (cfs)	76372.1	Conv. (cfs)	75896.6	472.9	2.5
Length Wtd. (ft)	38.09	Wetted Per. (ft)	787.74	61.96	4.39
Min Ch El (ft)	379.72	Shear (lb/sq ft)	0.05	0.02	0.00
Alpha	1.03	Stream Power (lb/ft s)	0.07	0.01	0.00
Frctn Loss (ft)	0.01	Cum Volume (acre-ft)	52.11	6.40	0.46
C & E Loss (ft)	0.00	Cum SA (acres)	32.89	4.70	0.66

CROSS SECTION OUTPUT Profile #Q100HC

E.G. Elev (ft)	380.96	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.30	Wt. n-Val.	0.037	0.064	0.067
W.S. Elev (ft)	380.66	Reach Len. (ft)	38.08	39.08	41.50
Crit W.S. (ft)	380.53	Flow Area (sq ft)	1309.52	36.08	0.92
E.G. Slope (ft/ft)	0.005017	Area (sq ft)	1309.52	36.08	0.92
Q Total (cfs)	5825.00	Flow (cfs)	5781.79	42.79	0.42
Top Width (ft)	855.91	Top Width (ft)	788.04	61.94	5.92
Vel Total (ft/s)	4.33	Avg. Vel. (ft/s)	4.42	1.19	0.45
Max Chl Dpth (ft)	3.08	Hydr. Depth (ft)	1.66	0.58	0.16
Conv. Total (cfs)	82239.2	Conv. (cfs)	81629.2	604.1	5.9
Length Wtd. (ft)	38.09	Wetted Per. (ft)	788.12	61.96	5.93
Min Ch El (ft)	379.72	Shear (lb/sq ft)	0.52	0.18	0.05
Alpha	1.03	Stream Power (lb/ft s)	2.30	0.22	0.02
Frctn Loss (ft)	0.14	Cum Volume (acre-ft)	76.41	9.69	0.83
C & E Loss (ft)	0.02	Cum SA (acres)	38.84	4.85	0.89

CROSS SECTION

RIVER: Canada Gobernado
REACH: Middle RS: 3883.652

INPUT
Description: Manual Input for Manning's N Values
Station Elevation Data num= 33

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	389.95	14.7	388.01	43.86	384.63	58.42	381.47	61.75	380.61
89.86	379.53	117.21	378.85	215.71	379.57	309.84	377.98	341.2	377.8
381.01	377.47	404.17	377.62	450.56	377.35	564.72	376.95	585.32	377.3
630	378.07	635.45	378.16	712.14	379.69	742.48	380.21	744.77	380.25
782.4	380.49	797.76	380.49	800	380.49	806	380.49	813.8	380.5
876.37	380.53	915.33	379.76	942.36	380.3	975.4	381.09	984.54	381.36
1020.08	383.46	1063.34	386.97	1083.92	387.42				

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	585.32	.07	630	.035	744.77	.05	800	.07

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
876.37	942.36	178.65	183.85	189	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
0	876.35	380.56	F

CROSS SECTION OUTPUT Profile #Q50

E.G. Elev (ft)	380.58	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.01	Wt. n-Val.	0.037	0.070	0.070

W.S. Elev (ft)	380.57	Reach Len. (ft)	178.65	183.85	189.00
Crit W.S. (ft)	380.57	Flow Area (sq ft)	1529.63	30.99	1.50
E.G. Slope (ft/ft)	0.000108	Area (sq ft)	1529.63	30.99	1.50
Q Total (cfs)	1109.00	Flow (cfs)	1104.78	4.13	0.09
Top Width (ft)	890.69	Top Width (ft)	813.51	65.99	11.19
Vel Total (ft/s)	0.71	Avg. Vel. (ft/s)	0.72	0.13	0.06
Max Chl Dpth (ft)	3.62	Hydr. Depth (ft)	1.88	0.47	0.13
Conv. Total (cfs)	106673.9	Conv. (cfs)	106268.2	397.4	8.3
Length Wtd. (ft)	178.78	Wetted Per. (ft)	813.59	66.00	11.19
Min Ch El (ft)	379.76	Shear (lb/sq ft)	0.01	0.00	0.00
Alpha	1.03	Stream Power (lb/ft s)	0.01	0.00	0.00
Frctn Loss (ft)	0.03	Cum Volume (acre-ft)	48.82	6.04	0.37
C & E Loss (ft)	0.00	Cum SA (acres)	29.67	4.60	0.62

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

CROSS SECTION OUTPUT Profile #Q100

E.G. Elev (ft)	380.59	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.02	Wt. n-Val.	0.037	0.070	0.070
W.S. Elev (ft)	380.57	Reach Len. (ft)	178.65	183.85	189.00
Crit W.S. (ft)	380.57	Flow Area (sq ft)	1529.63	30.99	1.50
E.G. Slope (ft/ft)	0.000265	Area (sq ft)	1529.63	30.99	1.50
Q Total (cfs)	1736.00	Flow (cfs)	1729.40	6.47	0.14
Top Width (ft)	890.69	Top Width (ft)	813.51	65.99	11.19
Vel Total (ft/s)	1.11	Avg. Vel. (ft/s)	1.13	0.21	0.09
Max Chl Dpth (ft)	3.62	Hydr. Depth (ft)	1.88	0.47	0.13
Conv. Total (cfs)	106673.9	Conv. (cfs)	106268.2	397.4	8.3
Length Wtd. (ft)	178.80	Wetted Per. (ft)	813.59	66.00	11.19
Min Ch El (ft)	379.76	Shear (lb/sq ft)	0.03	0.01	0.00
Alpha	1.03	Stream Power (lb/ft s)	0.04	0.00	0.00
Frctn Loss (ft)	0.07	Cum Volume (acre-ft)	50.90	6.37	0.46
C & E Loss (ft)	0.01	Cum SA (acres)	32.19	4.64	0.65

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water 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)	380.79	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.22	Wt. n-Val.	0.037	0.070	0.070
W.S. Elev (ft)	380.57	Reach Len. (ft)	178.65	183.85	189.00

Crit W.S. (ft)	380.57	Flow Area (sq ft)	1529.63	30.99	1.50
E.G. Slope (ft/ft)	0.002982	Area (sq ft)	1529.63	30.99	1.50
Q Total (cfs)	5825.00	Flow (cfs)	5802.85	21.70	0.45
Top Width (ft)	890.69	Top Width (ft)	813.51	65.99	11.19
Vel Total (ft/s)	3.73	Avg. Vel. (ft/s)	3.79	0.70	0.30
Max Chl Dpth (ft)	3.62	Hydr. Depth (ft)	1.88	0.47	0.13
Conv. Total (cfs)	106673.9	Conv. (cfs)	106268.2	397.4	8.3
Length Wtd. (ft)	178.70	Wetted Per. (ft)	813.59	66.00	11.19
Min Ch El (ft)	379.76	Shear (lb/sq ft)	0.35	0.09	0.02
Alpha	1.03	Stream Power (lb/ft s)	1.33	0.06	0.01
Frctn Loss (ft)	0.43	Cum Volume (acre-ft)	75.17	9.66	0.83
C & E Loss (ft)	0.01	Cum SA (acres)	38.14	4.79	0.88

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water 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: Canada Gobernado
REACH: Middle RS: 3699.802

INPUT
Description:
Station Elevation Data num= 33

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	389.81	26.38	384.13	37.24	382.2	53.61	380.37	67.88	378.55
89.66	378.41	105.07	377.89	219.88	374.9	270.09	373.95	356.21	373.46
408.56	372.9	418.84	372.76	421.06	372.78	423.63	372.78	435.72	372.8
454.1	372.87	569.58	373.23	619.13	373.83	673.05	374	674.78	374
701.55	374.09	725.83	373.86	739.29	373.74	741.48	373.76	761.3	374.34
774.18	374.73	819.61	378.38	825.53	378.81	830.87	379.43	833.85	380.42
853.01	387.07	857.35	387.91	865.11	389.37				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.035	674.78	.05	761.3	.07

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
701.55	761.3	198.4	201.4	207.1	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
0	701.55	374.09	F

CROSS SECTION OUTPUT Profile #Q50

E.G. Elev (ft)	374.84	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.04	Wt. n-Val.	0.035	0.050	0.070
W.S. Elev (ft)	374.79	Reach Len. (ft)	198.40	201.40	207.10
Crit W.S. (ft)	374.10	Flow Area (sq ft)	619.63	50.24	3.35
E.G. Slope (ft/ft)	0.001150	Area (sq ft)	619.63	50.24	3.35
Q Total (cfs)	1109.00	Flow (cfs)	1062.95	45.10	0.94
Top Width (ft)	549.44	Top Width (ft)	476.02	59.75	13.67

Vel Total (ft/s)	1.65	Avg. Vel. (ft/s)	1.72	0.90	0.28
Max Chl Dpth (ft)	2.03	Hydr. Depth (ft)	1.30	0.84	0.25
Conv. Total (cfs)	32705.8	Conv. (cfs)	31347.8	1330.2	27.8
Length Wtd. (ft)	199.96	Wetted Per. (ft)	476.04	59.76	13.67
Min Ch El (ft)	373.74	Shear (lb/sq ft)	0.09	0.06	0.02
Alpha	1.05	Stream Power (lb/ft s)	0.16	0.05	0.00
Frctn Loss (ft)	0.63	Cum Volume (acre-ft)	44.41	5.87	0.36
C & E Loss (ft)	0.14	Cum SA (acres)	27.02	4.34	0.57

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.

CROSS SECTION OUTPUT Profile #Q100

E.G. Elev (ft)	375.06	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.08	Wt. n-Val.	0.035	0.050	0.070
W.S. Elev (ft)	374.97	Reach Len. (ft)	198.40	201.40	207.10
Crit W.S. (ft)	374.20	Flow Area (sq ft)	706.66	61.07	6.03
E.G. Slope (ft/ft)	0.001850	Area (sq ft)	706.66	61.07	6.03
Q Total (cfs)	1736.00	Flow (cfs)	1653.93	79.19	2.88
Top Width (ft)	560.19	Top Width (ft)	484.52	59.75	15.92
Vel Total (ft/s)	2.24	Avg. Vel. (ft/s)	2.34	1.30	0.48
Max Chl Dpth (ft)	2.21	Hydr. Depth (ft)	1.46	1.02	0.38
Conv. Total (cfs)	40360.9	Conv. (cfs)	38452.8	1841.1	66.9
Length Wtd. (ft)	199.38	Wetted Per. (ft)	484.54	59.76	15.94
Min Ch El (ft)	373.74	Shear (lb/sq ft)	0.17	0.12	0.04
Alpha	1.05	Stream Power (lb/ft s)	0.39	0.15	0.02
Frctn Loss (ft)	0.69	Cum Volume (acre-ft)	46.31	6.18	0.44
C & E Loss (ft)	0.03	Cum SA (acres)	29.53	4.38	0.59

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 OUTPUT Profile #Q100HC

E.G. Elev (ft)	378.66	Element	Left OB	Channel	Right OB
Vel Head (ft)	4.48	Wt. n-Val.	0.035	0.050	
W.S. Elev (ft)	374.18	Reach Len. (ft)	198.40	201.40	207.10
Crit W.S. (ft)	375.12	Flow Area (sq ft)	336.13	13.86	
E.G. Slope (ft/ft)	0.222670	Area (sq ft)	336.13	13.86	
Q Total (cfs)	5825.00	Flow (cfs)	5746.70	78.30	
Top Width (ft)	497.59	Top Width (ft)	443.43	54.16	
Vel Total (ft/s)	16.64	Avg. Vel. (ft/s)	17.10	5.65	
Max Chl Dpth (ft)	1.42	Hydr. Depth (ft)	0.76	0.26	
Conv. Total (cfs)	12344.3	Conv. (cfs)	12178.3	165.9	
Length Wtd. (ft)	198.83	Wetted Per. (ft)	443.44	54.17	
Min Ch El (ft)	373.74	Shear (lb/sq ft)	10.54	3.56	
Alpha	1.04	Stream Power (lb/ft s)	180.15	20.09	
Frctn Loss (ft)	1.71	Cum Volume (acre-ft)	71.34	9.56	0.83
C & E Loss (ft)	0.43	Cum SA (acres)	35.57	4.54	0.85

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

0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Note: Program found supercritical flow starting at this cross section.

CROSS SECTION

RIVER: Canada Gobernado
REACH: Middle RS: 3498.424

INPUT
Description:
Station Elevation Data num= 35

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	383.13	35.92	376.78	43.75	375.98	58.46	374.48	100.66	373.32
107.26	372.99	129.51	373.14	183.27	374.19	286.82	373.94	445.77	373.32
503.82	373.11	611.74	373.06	685.17	374.12	686.05	374.14	707.14	374.44
718.56	374.87	726.4	374.1	731.52	373.62	744.37	369.39	746.07	368.72
748.52	368.44	758.18	367.5	762.47	368.96	774.08	372.92	776.44	373.73
777.15	373.75	787.74	374.47	804.23	377.11	815.35	379.88	843.87	381.07
845.51	381.25	846.37	381.29	847.17	381.3	847.32	381.3	878.42	383.24

Manning's n Values num= 2

Sta	n Val	Sta	n Val
0	.035	685.17	.05

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
718.56	787.74	211.35 211.45	215.2	.1	.3

CROSS SECTION OUTPUT Profile #Q50

E.G. Elev (ft)	374.06	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.49	Wt. n-Val.		0.050	
W.S. Elev (ft)	372.57	Reach Len. (ft)	211.35	211.45	215.20
Crit W.S. (ft)	372.57	Flow Area (sq ft)		113.26	
E.G. Slope (ft/ft)	0.026994	Area (sq ft)		113.26	
Q Total (cfs)	1109.00	Flow (cfs)		1109.00	
Top Width (ft)	38.34	Top Width (ft)		38.34	
Vel Total (ft/s)	9.79	Avg. Vel. (ft/s)		9.79	
Max Chl Dpth (ft)	5.07	Hydr. Depth (ft)		2.95	
Conv. Total (cfs)	6749.9	Conv. (cfs)		6749.9	
Length Wtd. (ft)	211.42	Wetted Per. (ft)		39.88	
Min Ch El (ft)	367.50	Shear (lb/sq ft)		4.79	
Alpha	1.00	Stream Power (lb/ft s)		46.86	
Frctn Loss (ft)	2.65	Cum Volume (acre-ft)	43.00	5.49	0.35
C & E Loss (ft)	0.34	Cum SA (acres)	25.94	4.11	0.54

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

E.G. Elev (ft)	374.33	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.39	Wt. n-Val.	0.035	0.050	
W.S. Elev (ft)	373.95	Reach Len. (ft)	211.35	211.45	215.20
Crit W.S. (ft)	373.95	Flow Area (sq ft)	261.13	172.41	
E.G. Slope (ft/ft)	0.008807	Area (sq ft)	261.13	172.41	
Q Total (cfs)	1736.00	Flow (cfs)	692.09	1043.91	
Top Width (ft)	533.38	Top Width (ft)	481.40	51.98	
Vel Total (ft/s)	4.00	Avg. Vel. (ft/s)	2.65	6.05	
Max Chl Dpth (ft)	6.45	Hydr. Depth (ft)	0.54	3.32	
Conv. Total (cfs)	18498.4	Conv. (cfs)	7374.8	11123.7	
Length Wtd. (ft)	211.40	Wetted Per. (ft)	481.43	53.90	
Min Ch El (ft)	367.50	Shear (lb/sq ft)	0.30	1.76	
Alpha	1.55	Stream Power (lb/ft s)	0.79	10.65	
Frctn Loss (ft)	1.70	Cum Volume (acre-ft)	44.11	5.64	0.43
C & E Loss (ft)	0.01	Cum SA (acres)	27.33	4.12	0.56

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

CROSS SECTION OUTPUT Profile #Q100HC

E.G. Elev (ft)	375.68	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.24	Wt. n-Val.	0.035	0.050	0.050
W.S. Elev (ft)	375.44	Reach Len. (ft)	211.35	211.45	215.20
Crit W.S. (ft)	374.68	Flow Area (sq ft)	1218.18	269.60	2.95
E.G. Slope (ft/ft)	0.003637	Area (sq ft)	1218.18	269.60	2.95
Q Total (cfs)	5825.00	Flow (cfs)	4647.56	1174.19	3.25
Top Width (ft)	744.79	Top Width (ft)	669.54	69.18	6.07
Vel Total (ft/s)	3.91	Avg. Vel. (ft/s)	3.82	4.36	1.10
Max Chl Dpth (ft)	7.94	Hydr. Depth (ft)	1.82	3.90	0.49
Conv. Total (cfs)	96590.3	Conv. (cfs)	77066.0	19470.5	53.8
Length Wtd. (ft)	211.38	Wetted Per. (ft)	669.64	71.17	6.15
Min Ch El (ft)	367.50	Shear (lb/sq ft)	0.41	0.86	0.11
Alpha	1.01	Stream Power (lb/ft s)	1.58	3.75	0.12
Frctn Loss (ft)	1.36	Cum Volume (acre-ft)	67.81	8.91	0.82
C & E Loss (ft)	0.12	Cum SA (acres)	33.03	4.25	0.84

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

CROSS SECTION

RIVER: Canada Gobernado
REACH: Middle RS: 3286.975

INPUT
Description:
Station Elevation Data num= 41

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	382.23	1.13	382.09	10.39	381.36	65.87	377.16	75.07	376.08
80.45	375.45	90.23	373.98	103.72	370.1	111.41	368.18	138.72	367.73
141.75	367.66	148.64	368.08	190.69	371.39	203.52	372.13	247.98	373.62
391.53	373.41	418.63	373.42	455.63	373.33	524.87	373.97	599.9	373.99
622.93	374.52	691.86	374.06	695.94	374.03	697.16	374.02	697.28	374.02
698.42	373.87	702.55	373.63	741.11	373.11	756.07	368.96	765.07	367.61
784.5	367.08	786.41	366.97	787.22	367.05	789.32	367.59	804.94	372.08
810.1	373.78	821.59	375.99	833.61	378.3	839.94	379.59	851.47	380.87
882.48	384.3								

Manning's n Values num= 2

Sta	n Val	Sta	n Val
0	.035	697.16	.05

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
741.11	810.1	93.39	93.81	91.77	.1	.3

CROSS SECTION OUTPUT Profile #Q50

			Left OB	Channel	Right OB
E.G. Elev (ft)	370.64	Element			
Vel Head (ft)	0.36	Wt. n-Val.	0.035	0.050	
W.S. Elev (ft)	370.28	Reach Len. (ft)	93.39	93.81	91.77
Crit W.S. (ft)	369.63	Flow Area (sq ft)	127.26	105.64	
E.G. Slope (ft/ft)	0.007195	Area (sq ft)	127.26	105.64	
Q Total (cfs)	1109.00	Flow (cfs)	658.98	450.02	
Top Width (ft)	120.78	Top Width (ft)	73.44	47.34	
Vel Total (ft/s)	4.76	Avg. Vel. (ft/s)	5.18	4.26	
Max Chl Dpth (ft)	3.31	Hydr. Depth (ft)	1.73	2.23	
Conv. Total (cfs)	13073.8	Conv. (cfs)	7768.5	5305.2	
Length Wtd. (ft)	93.56	Wetted Per. (ft)	73.81	48.08	
Min Ch El (ft)	366.97	Shear (lb/sq ft)	0.77	0.99	
Alpha	1.03	Stream Power (lb/ft s)	4.01	4.20	
Frctn Loss (ft)	0.75	Cum Volume (acre-ft)	42.69	4.96	0.35
C & E Loss (ft)	0.00	Cum SA (acres)	25.76	3.90	0.54

Warning: Divided flow computed for this cross-section.

CROSS SECTION OUTPUT Profile #Q100

			Left OB	Channel	Right OB
E.G. Elev (ft)	371.41	Element			
Vel Head (ft)	0.49	Wt. n-Val.	0.035	0.050	
W.S. Elev (ft)	370.92	Reach Len. (ft)	93.39	93.81	91.77
Crit W.S. (ft)	370.21	Flow Area (sq ft)	177.95	137.62	
E.G. Slope (ft/ft)	0.007408	Area (sq ft)	177.95	137.62	
Q Total (cfs)	1736.00	Flow (cfs)	1069.57	666.43	
Top Width (ft)	135.78	Top Width (ft)	83.87	51.91	
Vel Total (ft/s)	5.50	Avg. Vel. (ft/s)	6.01	4.84	
Max Chl Dpth (ft)	3.95	Hydr. Depth (ft)	2.12	2.65	
Conv. Total (cfs)	20169.4	Conv. (cfs)	12426.6	7742.8	

Length Wtd. (ft)	93.55	Wetted Per. (ft)	84.35	52.83	
Min Ch El (ft)	366.97	Shear (lb/sq ft)	0.98	1.20	
Alpha	1.03	Stream Power (lb/ft s)	5.86	5.83	
Frctn Loss (ft)	0.88	Cum Volume (acre-ft)	43.04	4.89	0.43
C & E Loss (ft)	0.02	Cum SA (acres)	25.96	3.87	0.56

Warning: Divided flow computed for this cross-section.

CROSS SECTION OUTPUT Profile #Q100HC

E.G. Elev (ft)	374.20	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.46	Wt. n-Val.	0.035	0.050	
W.S. Elev (ft)	372.75	Reach Len. (ft)	93.39	93.81	91.77
Crit W.S. (ft)	372.65	Flow Area (sq ft)	364.48	243.99	
E.G. Slope (ft/ft)	0.014482	Area (sq ft)	364.48	243.99	
Q Total (cfs)	5825.00	Flow (cfs)	3738.17	2086.83	
Top Width (ft)	191.89	Top Width (ft)	127.36	64.53	
Vel Total (ft/s)	9.57	Avg. Vel. (ft/s)	10.26	8.55	
Max Chl Dpth (ft)	5.78	Hydr. Depth (ft)	2.86	3.78	
Conv. Total (cfs)	48404.8	Conv. (cfs)	31063.6	17341.3	
Length Wtd. (ft)	93.52	Wetted Per. (ft)	128.15	65.97	
Min Ch El (ft)	366.97	Shear (lb/sq ft)	2.57	3.34	
Alpha	1.02	Stream Power (lb/ft s)	26.37	28.60	
Frctn Loss (ft)	1.24	Cum Volume (acre-ft)	63.97	7.66	0.81
C & E Loss (ft)	0.17	Cum SA (acres)	31.10	3.93	0.82

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

CROSS SECTION

RIVER: Canada Gobernado
REACH: Middle RS: 3193.163

INPUT
Description:
Station Elevation Data num= 44

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	382.42	11.12	380.92	32.62	379.3	48.95	378.23	80.43	372.63
96.93	369.66	99.94	369.11	107.39	368.47	117.15	367.47	124.2	367.29
157.81	367.74	191.03	369.76	260.65	371.97	291.13	373.06	384.69	371.82
391.63	371.66	468.56	371.05	563.78	371.2	572.23	371.18	586.27	371.7
649.99	373.15	688.3	374.11	692.62	374.22	712.5	374.72	726.38	374.68
733.21	375.05	738.39	374.33	740.8	373.9	756.42	367.21	757.19	366.85
757.39	366.8	758.1	366.75	765.97	366.3	770.7	365.89	772.27	366.03
781.06	367.16	784.35	367.55	804.22	375.02	811.59	377.8	815.92	379.13
817.3	379.55	818.1	379.8	829.49	381.01	865.78	385.79		

Manning's n Values num= 2

Sta	n Val	Sta	n Val
0	.035	692.62	.05

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

733.21 804.22 99.93 100.29 97.53 .1 .3

CROSS SECTION OUTPUT Profile #Q50

E.G. Elev (ft)	369.89	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.40	Wt. n-Val.	0.035	0.050	
W.S. Elev (ft)	369.49	Reach Len. (ft)	99.93	100.29	97.53
Crit W.S. (ft)	369.02	Flow Area (sq ft)	126.90	92.84	
E.G. Slope (ft/ft)	0.008968	Area (sq ft)	126.90	92.84	
Q Total (cfs)	1109.00	Flow (cfs)	646.76	462.24	
Top Width (ft)	127.15	Top Width (ft)	88.73	38.41	
Vel Total (ft/s)	5.05	Avg. Vel. (ft/s)	5.10	4.98	
Max Chl Dpth (ft)	3.60	Hydr. Depth (ft)	1.43	2.42	
Conv. Total (cfs)	11710.7	Conv. (cfs)	6829.5	4881.2	
Length Wtd. (ft)	100.07	Wetted Per. (ft)	88.90	39.45	
Min Ch El (ft)	365.89	Shear (lb/sq ft)	0.80	1.32	
Alpha	1.00	Stream Power (lb/ft s)	4.07	6.56	
Frctn Loss (ft)	0.93	Cum Volume (acre-ft)	42.42	4.74	0.35
C & E Loss (ft)	0.05	Cum SA (acres)	25.59	3.81	0.54

Warning: Divided flow computed for this cross-section.

CROSS SECTION OUTPUT Profile #Q100

E.G. Elev (ft)	370.51	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.64	Wt. n-Val.	0.035	0.050	
W.S. Elev (ft)	369.87	Reach Len. (ft)	99.93	100.29	97.53
Crit W.S. (ft)	369.56	Flow Area (sq ft)	162.53	107.90	
E.G. Slope (ft/ft)	0.012287	Area (sq ft)	162.53	107.90	
Q Total (cfs)	1736.00	Flow (cfs)	1064.10	671.90	
Top Width (ft)	139.15	Top Width (ft)	98.83	40.32	
Vel Total (ft/s)	6.42	Avg. Vel. (ft/s)	6.55	6.23	
Max Chl Dpth (ft)	3.98	Hydr. Depth (ft)	1.64	2.68	
Conv. Total (cfs)	15661.3	Conv. (cfs)	9599.8	6061.5	
Length Wtd. (ft)	100.05	Wetted Per. (ft)	99.04	41.51	
Min Ch El (ft)	365.89	Shear (lb/sq ft)	1.26	1.99	
Alpha	1.00	Stream Power (lb/ft s)	8.24	12.42	
Frctn Loss (ft)	1.13	Cum Volume (acre-ft)	42.68	4.62	0.43
C & E Loss (ft)	0.10	Cum SA (acres)	25.76	3.77	0.56

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)	372.79	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.90	Wt. n-Val.	0.035	0.050	
W.S. Elev (ft)	371.89	Reach Len. (ft)	99.93	100.29	97.53
Crit W.S. (ft)	371.89	Flow Area (sq ft)	567.43	199.65	
E.G. Slope (ft/ft)	0.012180	Area (sq ft)	567.43	199.65	
Q Total (cfs)	5825.00	Flow (cfs)	4227.45	1597.55	
Top Width (ft)	439.97	Top Width (ft)	389.55	50.43	
Vel Total (ft/s)	7.59	Avg. Vel. (ft/s)	7.45	8.00	
Max Chl Dpth (ft)	6.00	Hydr. Depth (ft)	1.46	3.96	
Conv. Total (cfs)	52779.6	Conv. (cfs)	38304.4	14475.2	
Length Wtd. (ft)	100.02	Wetted Per. (ft)	389.99	52.40	

Min Ch El (ft)	365.89	Shear (lb/sq ft)	1.11	2.90	
Alpha	1.00	Stream Power (lb/ft s)	8.24	23.19	
Frctn Loss (ft)	1.16	Cum Volume (acre-ft)	62.97	7.18	0.81
C & E Loss (ft)	0.09	Cum SA (acres)	30.54	3.80	0.82

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

CROSS SECTION

RIVER: Canada Gobernado
REACH: Middle RS: 3092.876

INPUT
Description:
Station Elevation Data num= 45

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	385.61	1.11	385.31	6.76	383.58	34.94	377.14	47.85	374.06
55.69	372.53	66.4	369.56	77.76	367.29	105.7	367.46	201.22	370.51
258.35	371.9	371.01	369.43	444.03	367.78	453.47	367.71	465.36	367.73
541.75	367.58	564.63	368.44	592.29	368.38	600.3	368.78	636.68	369.64
640.84	369.74	647.6	369.9	654.79	370.3	658.87	370.47	684.03	368.68
686.17	368.12	689.17	367.36	705.2	366.53	717.85	365.92	718.97	366.07
729.64	367.34	732.67	367.66	737	369.37	739.48	370.59	746.39	373.45
769.01	379.82	770.61	380.26	771.57	380.55	771.89	380.59	772.41	380.59
802.28	384.14	806.4	384.66	807.27	384.81	809.25	385.32	832.27	389.7

Manning's n Values num= 2

Sta	n Val	Sta	n Val
0	.035	640.84	.05

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
658.87	739.48	100.86 102.03	95.28	.1	.3

CROSS SECTION OUTPUT Profile #Q50

			Left OB	Channel	Right OB
E.G. Elev (ft)	368.90	Element			
Vel Head (ft)	0.22	Wt. n-Val.	0.035	0.050	
W.S. Elev (ft)	368.68	Reach Len. (ft)	100.86	102.03	95.28
Crit W.S. (ft)		Flow Area (sq ft)	205.38	91.38	
E.G. Slope (ft/ft)	0.009615	Area (sq ft)	205.38	91.38	
Q Total (cfs)	1109.00	Flow (cfs)	720.05	388.95	
Top Width (ft)	318.69	Top Width (ft)	267.43	51.26	
Vel Total (ft/s)	3.74	Avg. Vel. (ft/s)	3.51	4.26	
Max Chl Dpth (ft)	2.76	Hydr. Depth (ft)	0.77	1.78	
Conv. Total (cfs)	11310.1	Conv. (cfs)	7343.4	3966.7	
Length Wtd. (ft)	101.08	Wetted Per. (ft)	267.63	51.76	
Min Ch El (ft)	365.92	Shear (lb/sq ft)	0.46	1.06	
Alpha	1.03	Stream Power (lb/ft s)	1.61	4.51	
Frctn Loss (ft)	0.27	Cum Volume (acre-ft)	42.04	4.53	0.35
C & E Loss (ft)	0.05	Cum SA (acres)	25.18	3.71	0.54

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)	369.28	Wt. n-Val.	0.035	0.050	
Vel Head (ft)	0.29	Reach Len. (ft)	100.86	102.03	95.28
W.S. Elev (ft)	368.99	Flow Area (sq ft)	292.03	107.77	
Crit W.S. (ft)		Area (sq ft)	292.03	107.77	
E.G. Slope (ft/ft)	0.010399	Flow (cfs)	1235.94	500.06	
Q Total (cfs)	1736.00	Top Width (ft)	302.70	56.32	
Top Width (ft)	359.02	Avg. Vel. (ft/s)	4.23	4.64	
Vel Total (ft/s)	4.34	Hydr. Depth (ft)	0.96	1.91	
Max Chl Dpth (ft)	3.07	Conv. (cfs)	12119.9	4903.7	
Conv. Total (cfs)	17023.6	Wetted Per. (ft)	302.94	56.89	
Length Wtd. (ft)	101.04	Shear (lb/sq ft)	0.63	1.23	
Min Ch El (ft)	365.92	Stream Power (lb/ft s)	2.65	5.71	
Alpha	1.01	Cum Volume (acre-ft)	42.16	4.37	0.43
Frctn Loss (ft)	0.34	Cum SA (acres)	25.30	3.66	0.56
C & E Loss (ft)	0.07				

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

		Element	Left OB	Channel	Right OB
E.G. Elev (ft)	370.88	Wt. n-Val.	0.035	0.050	
Vel Head (ft)	1.30	Reach Len. (ft)	100.86	102.03	95.28
W.S. Elev (ft)	369.58	Flow Area (sq ft)	493.20	144.08	
Crit W.S. (ft)	369.92	Area (sq ft)	493.20	144.08	
E.G. Slope (ft/ft)	0.032628	Flow (cfs)	4533.36	1291.64	
Q Total (cfs)	5825.00	Top Width (ft)	375.76	66.05	
Top Width (ft)	441.81	Avg. Vel. (ft/s)	9.19	8.96	
Vel Total (ft/s)	9.14	Hydr. Depth (ft)	1.31	2.18	
Max Chl Dpth (ft)	3.66	Conv. (cfs)	25097.1	7150.6	
Conv. Total (cfs)	32247.7	Wetted Per. (ft)	376.08	66.76	
Length Wtd. (ft)	100.97	Shear (lb/sq ft)	2.67	4.40	
Min Ch El (ft)	365.92	Stream Power (lb/ft s)	24.55	39.41	
Alpha	1.00	Cum Volume (acre-ft)	61.75	6.79	0.81
Frctn Loss (ft)	1.88	Cum SA (acres)	29.67	3.67	0.82
C & E Loss (ft)	0.04				

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: Program found supercritical flow starting at this cross section.

CROSS SECTION

RIVER: Canada Gobernado

REACH: Middle RS: 2990.847

INPUT
Description:
Station Elevation Data num= 38

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	384.06	26.78	375.42	30.5	374.11	55.41	369.77	64.45	368.11
68.75	367.92	87.2	367.07	155.41	367.72	159.12	367.81	250.35	370.02
345.66	367.93	440.12	367.25	478.09	366.95	506.42	366.74	632.82	366.95
636.49	366.96	685.33	367.04	705.21	367.18	728.98	367.03	736.02	367.35
741.96	368.05	752.27	369.85	774.48	373.71	774.58	373.73	774.73	373.73
775.33	373.77	778.65	374	798.41	375.37	810.35	375.95	831.22	375.51
837.93	375.64	847.89	376.14	852.56	376.69	873.39	379.58	886.54	380.18
898.19	380.83	904.6	381.92	917.14	383.98				

Manning's n Values num= 2

Sta	n Val	Sta	n Val
0	.035	632.82	.05

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
705.21	736.02	101.13	101.73	108.3	.1 .3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
0	705.21	367.18	F

CROSS SECTION OUTPUT Profile #Q50

			Left OB	Channel	Right OB
E.G. Elev (ft)	368.58	Element			
Vel Head (ft)	0.04	Wt. n-Val.	0.037	0.050	0.050
W.S. Elev (ft)	368.54	Reach Len. (ft)	101.13	101.73	108.30
Crit W.S. (ft)	367.69	Flow Area (sq ft)	640.06	43.70	5.70
E.G. Slope (ft/ft)	0.001213	Area (sq ft)	640.06	43.70	5.70
Q Total (cfs)	1109.00	Flow (cfs)	1047.51	57.09	4.40
Top Width (ft)	554.34	Top Width (ft)	514.77	30.81	8.76
Vel Total (ft/s)	1.61	Avg. Vel. (ft/s)	1.64	1.31	0.77
Max Chl Dpth (ft)	1.80	Hydr. Depth (ft)	1.24	1.42	0.65
Conv. Total (cfs)	31840.1	Conv. (cfs)	30074.5	1639.1	126.4
Length Wtd. (ft)	101.19	Wetted Per. (ft)	514.86	30.82	8.85
Min Ch El (ft)	367.03	Shear (lb/sq ft)	0.09	0.11	0.05
Alpha	1.01	Stream Power (lb/ft s)	0.15	0.14	0.04
Frctn Loss (ft)	0.14	Cum Volume (acre-ft)	41.06	4.37	0.34
C & E Loss (ft)	0.00	Cum SA (acres)	24.27	3.61	0.53

Warning: Divided flow computed for this cross-section.

CROSS SECTION OUTPUT Profile #Q100

			Left OB	Channel	Right OB
E.G. Elev (ft)	368.87	Element			
Vel Head (ft)	0.07	Wt. n-Val.	0.037	0.050	0.050
W.S. Elev (ft)	368.81	Reach Len. (ft)	101.13	101.73	108.30
Crit W.S. (ft)	367.92	Flow Area (sq ft)	779.38	51.84	8.22
E.G. Slope (ft/ft)	0.001637	Area (sq ft)	779.38	51.84	8.22
Q Total (cfs)	1736.00	Flow (cfs)	1639.38	88.17	8.45
Top Width (ft)	580.27	Top Width (ft)	539.18	30.81	10.28
Vel Total (ft/s)	2.07	Avg. Vel. (ft/s)	2.10	1.70	1.03
Max Chl Dpth (ft)	2.07	Hydr. Depth (ft)	1.45	1.68	0.80
Conv. Total (cfs)	42910.2	Conv. (cfs)	40521.8	2179.3	209.0
Length Wtd. (ft)	101.19	Wetted Per. (ft)	539.30	30.82	10.38

Min Ch El (ft)	367.03	Shear (lb/sq ft)	0.15	0.17	0.08
Alpha	1.01	Stream Power (lb/ft s)	0.31	0.29	0.08
Frctn Loss (ft)	0.18	Cum Volume (acre-ft)	40.91	4.19	0.42
C & E Loss (ft)	0.00	Cum SA (acres)	24.33	3.55	0.54

Warning: Divided flow computed for this cross-section.

CROSS SECTION OUTPUT Profile #Q100HC

E.G. Elev (ft)	370.19	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.21	Wt. n-Val.	0.037	0.050	0.050
W.S. Elev (ft)	369.98	Reach Len. (ft)	101.13	101.73	108.30
Crit W.S. (ft)	368.83	Flow Area (sq ft)	1472.40	87.84	24.14
E.G. Slope (ft/ft)	0.002791	Area (sq ft)	1472.40	87.84	24.14
Q Total (cfs)	5825.00	Flow (cfs)	5500.20	277.26	47.53
Top Width (ft)	694.90	Top Width (ft)	647.12	30.81	16.97
Vel Total (ft/s)	3.68	Avg. Vel. (ft/s)	3.74	3.16	1.97
Max Chl Dpth (ft)	3.24	Hydr. Depth (ft)	2.28	2.85	1.42
Conv. Total (cfs)	110257.9	Conv. (cfs)	104110.0	5248.2	899.7
Length Wtd. (ft)	101.21	Wetted Per. (ft)	647.37	30.82	17.18
Min Ch El (ft)	367.03	Shear (lb/sq ft)	0.40	0.50	0.24
Alpha	1.01	Stream Power (lb/ft s)	1.48	1.57	0.48
Frctn Loss (ft)	0.27	Cum Volume (acre-ft)	59.47	6.51	0.79
C & E Loss (ft)	0.01	Cum SA (acres)	28.48	3.56	0.81

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: Canada Gobernado
REACH: Middle RS: 2889.112

INPUT
Description:
Station Elevation Data num= 36

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	384.78	5.51	383.73	11.94	381.98	32.3	377.42	46.1	375.14
65.27	372.07	65.79	372	66.05	371.97	98.26	367.75	118.96	366.92
134.52	366.53	134.9	366.52	219.5	367.44	278.51	368.35	327.2	368.29
469.88	367.27	500.82	367.03	620.66	367.23	688.76	367.25	694.5	367.25
769.02	367.27	798.48	367.04	815.87	367.31	819.37	367.85	829.33	369.08
847.39	370.8	851.38	371.04	854.56	371.23	866.1	371.01	888.5	371.64
898.14	372.05	901.08	372.14	920.13	374.89	924.05	375.93	936.41	380.04
956.61	384.51								

Manning's n Values num= 2

Sta	n Val	Sta	n Val
0	.035	688.76	.05

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
769.02	815.87	99.45 99.45	100.05	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
0	769.02	367.27	F

CROSS SECTION OUTPUT Profile #Q50

E.G. Elev (ft)	368.45	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.04	Wt. n-Val.	0.037	0.050	0.050
W.S. Elev (ft)	368.41	Reach Len. (ft)	99.45	99.45	100.05
Crit W.S. (ft)	367.70	Flow Area (sq ft)	659.75	58.37	4.16
E.G. Slope (ft/ft)	0.001522	Area (sq ft)	659.75	58.37	4.16
Q Total (cfs)	1109.00	Flow (cfs)	1027.55	78.35	3.10
Top Width (ft)	730.66	Top Width (ft)	675.78	46.85	8.02
Vel Total (ft/s)	1.54	Avg. Vel. (ft/s)	1.56	1.34	0.74
Max Chl Dpth (ft)	1.89	Hydr. Depth (ft)	0.98	1.25	0.52
Conv. Total (cfs)	28425.2	Conv. (cfs)	26337.6	2008.3	79.3
Length Wtd. (ft)	99.45	Wetted Per. (ft)	675.87	46.85	8.10
Min Ch El (ft)	367.04	Shear (lb/sq ft)	0.09	0.12	0.05
Alpha	1.01	Stream Power (lb/ft s)	0.14	0.16	0.04
Frctn Loss (ft)	0.13	Cum Volume (acre-ft)	39.55	4.25	0.33
C & E Loss (ft)	0.00	Cum SA (acres)	22.89	3.52	0.51

CROSS SECTION OUTPUT Profile #Q100

E.G. Elev (ft)	368.70	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.06	Wt. n-Val.	0.037	0.050	0.050
W.S. Elev (ft)	368.64	Reach Len. (ft)	99.45	99.45	100.05
Crit W.S. (ft)	367.89	Flow Area (sq ft)	813.34	69.00	6.19
E.G. Slope (ft/ft)	0.001873	Area (sq ft)	813.34	69.00	6.19
Q Total (cfs)	1736.00	Flow (cfs)	1615.31	114.89	5.80
Top Width (ft)	734.23	Top Width (ft)	677.52	46.85	9.86
Vel Total (ft/s)	1.95	Avg. Vel. (ft/s)	1.99	1.67	0.94
Max Chl Dpth (ft)	2.12	Hydr. Depth (ft)	1.20	1.47	0.63
Conv. Total (cfs)	40109.6	Conv. (cfs)	37321.0	2654.5	134.1
Length Wtd. (ft)	99.45	Wetted Per. (ft)	677.61	46.85	9.95
Min Ch El (ft)	367.04	Shear (lb/sq ft)	0.14	0.17	0.07
Alpha	1.01	Stream Power (lb/ft s)	0.28	0.29	0.07
Frctn Loss (ft)	0.18	Cum Volume (acre-ft)	39.07	4.05	0.40
C & E Loss (ft)	0.00	Cum SA (acres)	22.92	3.46	0.52

CROSS SECTION OUTPUT Profile #Q100HC

E.G. Elev (ft)	369.91	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.19	Wt. n-Val.	0.036	0.050	0.050
W.S. Elev (ft)	369.73	Reach Len. (ft)	99.45	99.45	100.05
Crit W.S. (ft)	368.68	Flow Area (sq ft)	1559.38	120.28	22.34
E.G. Slope (ft/ft)	0.002466	Area (sq ft)	1559.38	120.28	22.34
Q Total (cfs)	5825.00	Flow (cfs)	5457.25	332.77	34.98
Top Width (ft)	753.00	Top Width (ft)	685.87	46.85	20.28
Vel Total (ft/s)	3.42	Avg. Vel. (ft/s)	3.50	2.77	1.57
Max Chl Dpth (ft)	3.21	Hydr. Depth (ft)	2.27	2.57	1.10
Conv. Total (cfs)	117303.8	Conv. (cfs)	109898.0	6701.4	704.5
Length Wtd. (ft)	99.45	Wetted Per. (ft)	686.04	46.85	20.43
Min Ch El (ft)	367.04	Shear (lb/sq ft)	0.35	0.40	0.17
Alpha	1.02	Stream Power (lb/ft s)	1.22	1.09	0.26
Frctn Loss (ft)	0.25	Cum Volume (acre-ft)	55.96	6.27	0.73
C & E Loss (ft)	0.00	Cum SA (acres)	26.94	3.46	0.76

CROSS SECTION

RIVER: Canada Gobernado
REACH: Middle RS: 2789.662

INPUT
Description:
Station Elevation Data num= 34

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	383.75	14.96	381.06	17.31	380.55	53.73	376.99	74.27	374.81
81.09	373.75	95.17	370.79	99.11	370.02	99.59	369.89	110.61	368.45
125.86	367.37	160.51	366.19	242.37	367.45	458.48	367.2	485.5	367.29
501.37	367.33	521.79	367.31	735.91	367.37	737.87	367.37	794.69	367.39
828.13	367.05	856.9	367.27	862.55	367.35	865.26	367.47	881.88	370.44
889.38	371.52	905.42	373.82	931.37	374.27	934.55	374.55	941.81	376.03
943.42	376.29	957.67	378.48	967.79	381.36	983.83	384.36		

Manning's n Values num= 2

Sta	n Val	Sta	n Val
0	.035	737.87	.05

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
794.69	865.26	106.35	106.56 108.99	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
0	794.69	367.39	F

CROSS SECTION OUTPUT Profile #Q50

E.G. Elev (ft)	368.31	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.03	Wt. n-Val.	0.036	0.050	0.050
W.S. Elev (ft)	368.28	Reach Len. (ft)	106.35	106.56	108.99
Crit W.S. (ft)	367.65	Flow Area (sq ft)	698.82	75.29	1.82
E.G. Slope (ft/ft)	0.001205	Area (sq ft)	698.82	75.29	1.82
Q Total (cfs)	1109.00	Flow (cfs)	1026.89	81.10	1.02
Top Width (ft)	756.72	Top Width (ft)	681.64	70.57	4.52
Vel Total (ft/s)	1.43	Avg. Vel. (ft/s)	1.47	1.08	0.56
Max Chl Dpth (ft)	2.09	Hydr. Depth (ft)	1.03	1.07	0.40
Conv. Total (cfs)	31948.6	Conv. (cfs)	29583.1	2336.3	29.3
Length Wtd. (ft)	106.38	Wetted Per. (ft)	681.70	70.58	4.59
Min Ch El (ft)	367.05	Shear (lb/sq ft)	0.08	0.08	0.03
Alpha	1.02	Stream Power (lb/ft s)	0.11	0.09	0.02
Frctn Loss (ft)	0.12	Cum Volume (acre-ft)	38.00	4.10	0.33
C & E Loss (ft)	0.00	Cum SA (acres)	21.34	3.39	0.49

CROSS SECTION OUTPUT Profile #Q100

E.G. Elev (ft)	368.52	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.06	Wt. n-Val.	0.036	0.050	0.050
W.S. Elev (ft)	368.46	Reach Len. (ft)	106.35	106.56	108.99
Crit W.S. (ft)	367.80	Flow Area (sq ft)	822.44	88.07	2.73
E.G. Slope (ft/ft)	0.001728	Area (sq ft)	822.44	88.07	2.73
Q Total (cfs)	1736.00	Flow (cfs)	1607.80	126.11	2.09
Top Width (ft)	760.24	Top Width (ft)	684.14	70.57	5.53
Vel Total (ft/s)	1.90	Avg. Vel. (ft/s)	1.95	1.43	0.76
Max Chl Dpth (ft)	2.27	Hydr. Depth (ft)	1.20	1.25	0.49
Conv. Total (cfs)	41759.1	Conv. (cfs)	38675.2	3033.6	50.2
Length Wtd. (ft)	106.38	Wetted Per. (ft)	684.21	70.58	5.62
Min Ch El (ft)	367.05	Shear (lb/sq ft)	0.13	0.13	0.05

Alpha	1.02	Stream Power (lb/ft s)	0.25	0.19	0.04
Frctn Loss (ft)	0.19	Cum Volume (acre-ft)	37.20	3.87	0.39
C & E Loss (ft)	0.00	Cum SA (acres)	21.36	3.33	0.50

CROSS SECTION OUTPUT Profile #Q100HC

E.G. Elev (ft)	369.67	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.19	Wt. n-Val.	0.036	0.050	0.050
W.S. Elev (ft)	369.48	Reach Len. (ft)	106.35	106.56	108.99
Crit W.S. (ft)	368.49	Flow Area (sq ft)	1524.47	160.07	11.29
E.G. Slope (ft/ft)	0.002537	Area (sq ft)	1524.47	160.07	11.29
Q Total (cfs)	5825.00	Flow (cfs)	5394.57	413.67	16.76
Top Width (ft)	773.76	Top Width (ft)	691.95	70.57	11.24
Vel Total (ft/s)	3.43	Avg. Vel. (ft/s)	3.54	2.58	1.49
Max Chl Dpth (ft)	3.29	Hydr. Depth (ft)	2.20	2.27	1.00
Conv. Total (cfs)	115637.3	Conv. (cfs)	107092.4	8212.1	332.8
Length Wtd. (ft)	106.38	Wetted Per. (ft)	692.08	70.58	11.42
Min Ch El (ft)	367.05	Shear (lb/sq ft)	0.35	0.36	0.16
Alpha	1.02	Stream Power (lb/ft s)	1.23	0.93	0.23
Frctn Loss (ft)	0.30	Cum Volume (acre-ft)	52.43	5.95	0.69
C & E Loss (ft)	0.00	Cum SA (acres)	25.36	3.33	0.72

CROSS SECTION

RIVER: Canada Gobernado
REACH: Middle RS: 2683.108

INPUT
Description:
Station Elevation Data num= 35

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	383.73	1.79	383.39	28.24	379.24	66.45	372.74	95.83	367.97
141.16	366.69	151.8	366.32	153.34	366.27	167.9	366.49	206.11	366.45
484.96	367.3	650.26	367.81	758.52	367.67	760.55	367.66	783.87	367.63
821.38	366.5	835.97	366.04	844.77	365.76	849.09	365.63	852.17	365.76
856.23	366.02	871.08	366.47	874.61	366.57	886.76	368.21	902.42	372.56
903.15	372.75	904.06	372.76	930.34	374.02	956.01	374.05	960.09	375.12
974.1	378.9	986.34	380.24	992.17	381.26	998.62	382.51	1014.06	384.93

Manning's n Values num= 2

Sta	n Val	Sta	n Val
0	.035	760.55	.05

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
783.87	886.76	95.66	94.46	94.94	.1 .3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
0	783.87	367.63	F

CROSS SECTION OUTPUT Profile #Q50

E.G. Elev (ft)	368.19	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.03	Wt. n-Val.	0.035	0.050	
W.S. Elev (ft)	368.16	Reach Len. (ft)	95.66	94.46	94.94
Crit W.S. (ft)	367.63	Flow Area (sq ft)	664.56	159.44	
E.G. Slope (ft/ft)	0.001069	Area (sq ft)	664.56	159.44	

Q Total (cfs)	1109.00	Flow (cfs)	901.22	207.78	
Top Width (ft)	791.71	Top Width (ft)	689.20	102.51	
Vel Total (ft/s)	1.35	Avg. Vel. (ft/s)	1.36	1.30	
Max Chl Dpth (ft)	2.53	Hydr. Depth (ft)	0.96	1.56	
Conv. Total (cfs)	33916.4	Conv. (cfs)	27562.0	6354.4	
Length Wtd. (ft)	95.45	Wetted Per. (ft)	689.25	102.67	
Min Ch El (ft)	365.63	Shear (lb/sq ft)	0.06	0.10	
Alpha	1.00	Stream Power (lb/ft s)	0.09	0.14	
Frctn Loss (ft)	0.09	Cum Volume (acre-ft)	36.33	3.81	0.32
C & E Loss (ft)	0.00	Cum SA (acres)	19.67	3.18	0.49

CROSS SECTION OUTPUT Profile #Q100

E.G. Elev (ft)	368.32	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.06	Wt. n-Val.	0.035	0.050	0.050
W.S. Elev (ft)	368.27	Reach Len. (ft)	95.66	94.46	94.94
Crit W.S. (ft)	367.64	Flow Area (sq ft)	738.08	170.40	0.01
E.G. Slope (ft/ft)	0.001898	Area (sq ft)	738.08	170.40	0.01
Q Total (cfs)	1736.00	Flow (cfs)	1427.45	308.54	0.00
Top Width (ft)	792.95	Top Width (ft)	689.86	102.89	0.20
Vel Total (ft/s)	1.91	Avg. Vel. (ft/s)	1.93	1.81	0.12
Max Chl Dpth (ft)	2.64	Hydr. Depth (ft)	1.07	1.66	0.03
Conv. Total (cfs)	39843.0	Conv. (cfs)	32761.6	7081.4	0.0
Length Wtd. (ft)	95.46	Wetted Per. (ft)	689.91	103.05	0.21
Min Ch El (ft)	365.63	Shear (lb/sq ft)	0.13	0.20	0.00
Alpha	1.00	Stream Power (lb/ft s)	0.25	0.35	0.00
Frctn Loss (ft)	0.19	Cum Volume (acre-ft)	35.29	3.55	0.39
C & E Loss (ft)	0.00	Cum SA (acres)	19.68	3.12	0.49

CROSS SECTION OUTPUT Profile #Q100HC

E.G. Elev (ft)	369.37	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.20	Wt. n-Val.	0.035	0.050	0.050
W.S. Elev (ft)	369.17	Reach Len. (ft)	95.66	94.46	94.94
Crit W.S. (ft)	368.31	Flow Area (sq ft)	1361.29	262.98	1.64
E.G. Slope (ft/ft)	0.003104	Area (sq ft)	1361.29	262.98	1.64
Q Total (cfs)	5825.00	Flow (cfs)	5010.19	813.19	1.62
Top Width (ft)	801.73	Top Width (ft)	695.40	102.89	3.44
Vel Total (ft/s)	3.58	Avg. Vel. (ft/s)	3.68	3.09	0.99
Max Chl Dpth (ft)	3.54	Hydr. Depth (ft)	1.96	2.56	0.48
Conv. Total (cfs)	104544.7	Conv. (cfs)	89920.8	14594.9	29.1
Length Wtd. (ft)	95.48	Wetted Per. (ft)	695.53	103.05	3.57
Min Ch El (ft)	365.63	Shear (lb/sq ft)	0.38	0.49	0.09
Alpha	1.01	Stream Power (lb/ft s)	1.40	1.53	0.09
Frctn Loss (ft)	0.60	Cum Volume (acre-ft)	48.91	5.43	0.67
C & E Loss (ft)	0.04	Cum SA (acres)	23.67	3.12	0.71

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.

CROSS SECTION

RIVER: Canada Gobernado
REACH: Middle RS: 2588.648

INPUT
Description:
Station Elevation Data num= 34

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	381.11	22.74	380.03	74.37	375.41	81.87	375.07	133.27	369.78
159.28	368.18	165.16	367.81	191	366.39	251.47	365.91	253.19	365.86
304	366.08	368.9	366.62	578.49	367.29	592.32	367.18	598.83	367.22
865.63	368.01	872.58	368.07	877.34	368.05	880.55	368.03	880.76	368.03
944.49	366.08	955.37	365.53	958.42	365.54	961.78	365.77	962.94	365.84
968.29	366.16	983.69	367.08	989.82	367.21	991.87	367.6	993.49	368.16
1008.53	373.82	1025.32	376.48	1054.16	380.85	1069.93	385.33		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.035	877.34	.05	962.94	.035

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
880.55	993.49	101.5	101.78	103.02	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
0	872.61	368.07	F

CROSS SECTION OUTPUT Profile #Q50

E.G. Elev (ft)	368.09	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.02	Wt. n-Val.	0.035	0.045	
W.S. Elev (ft)	368.07	Reach Len. (ft)	101.50	101.78	103.02
Crit W.S. (ft)	368.07	Flow Area (sq ft)	736.53	148.58	
E.G. Slope (ft/ft)	0.000862	Area (sq ft)	736.53	148.58	
Q Total (cfs)	1109.00	Flow (cfs)	934.81	174.19	
Top Width (ft)	832.20	Top Width (ft)	719.52	112.68	
Vel Total (ft/s)	1.25	Avg. Vel. (ft/s)	1.27	1.17	
Max Chl Dpth (ft)	2.54	Hydr. Depth (ft)	1.02	1.32	
Conv. Total (cfs)	37781.1	Conv. (cfs)	31846.8	5934.3	
Length Wtd. (ft)	101.54	Wetted Per. (ft)	719.58	112.89	
Min Ch El (ft)	365.53	Shear (lb/sq ft)	0.06	0.07	
Alpha	1.00	Stream Power (lb/ft s)	0.07	0.08	
Frctn Loss (ft)	0.08	Cum Volume (acre-ft)	34.80	3.48	0.32
C & E Loss (ft)	0.00	Cum SA (acres)	18.12	2.94	0.49

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

CROSS SECTION OUTPUT Profile #Q100

E.G. Elev (ft)	368.13	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.06	Wt. n-Val.	0.035	0.045	
W.S. Elev (ft)	368.07	Reach Len. (ft)	101.50	101.78	103.02
Crit W.S. (ft)	368.07	Flow Area (sq ft)	736.47	148.57	
E.G. Slope (ft/ft)	0.002112	Area (sq ft)	736.47	148.57	
Q Total (cfs)	1736.00	Flow (cfs)	1463.32	272.68	
Top Width (ft)	832.20	Top Width (ft)	719.52	112.68	
Vel Total (ft/s)	1.96	Avg. Vel. (ft/s)	1.99	1.84	

Max Chl Dpth (ft)	2.54	Hydr. Depth (ft)	1.02	1.32	
Conv. Total (cfs)	37775.8	Conv. (cfs)	31842.1	5933.6	
Length Wtd. (ft)	101.54	Wetted Per. (ft)	719.58	112.89	
Min Ch El (ft)	365.53	Shear (lb/sq ft)	0.13	0.17	
Alpha	1.00	Stream Power (lb/ft s)	0.27	0.32	
Frctn Loss (ft)	0.19	Cum Volume (acre-ft)	33.67	3.21	0.39
C & E Loss (ft)	0.01	Cum SA (acres)	18.14	2.88	0.49

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

CROSS SECTION OUTPUT Profile #Q100HC

E.G. Elev (ft)	368.73	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.58	Wt. n-Val.	0.035	0.045	
W.S. Elev (ft)	368.15	Reach Len. (ft)	101.50	101.78	103.02
Crit W.S. (ft)	368.15	Flow Area (sq ft)	796.27	157.94	
E.G. Slope (ft/ft)	0.018556	Area (sq ft)	796.27	157.94	
Q Total (cfs)	5825.00	Flow (cfs)	4931.93	893.07	
Top Width (ft)	833.76	Top Width (ft)	720.84	112.92	
Vel Total (ft/s)	6.10	Avg. Vel. (ft/s)	6.19	5.65	
Max Chl Dpth (ft)	2.62	Hydr. Depth (ft)	1.10	1.40	
Conv. Total (cfs)	42761.2	Conv. (cfs)	36205.2	6556.0	
Length Wtd. (ft)	101.54	Wetted Per. (ft)	720.90	113.14	
Min Ch El (ft)	365.53	Shear (lb/sq ft)	1.28	1.62	
Alpha	1.00	Stream Power (lb/ft s)	7.93	9.14	
Frctn Loss (ft)	1.02	Cum Volume (acre-ft)	46.54	4.98	0.67
C & E Loss (ft)	0.04	Cum SA (acres)	22.11	2.88	0.70

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water 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: Canada Gobernado
REACH: Middle RS: 2486.871

INPUT
Description:
Station Elevation Data num= 45

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	383.42	29.11	381.05	83.59	377.27	99.29	376.26	109.05	375.07
119.35	374.47	121.88	374.39	172.83	372.82	213.31	369.86	281.76	364.62
322.76	361.82	331.02	361.28	340.87	360.67	371.98	361.23	373.52	361.24

376.3	361.38	416.2	363.77	453.62	365.9	472.59	366.18	571.42	366.99
589.1	366.59	758.13	365.31	856.65	365.82	873.54	365.92	880.11	365.93
899.16	365.68	971.3	364.51	972.47	364.49	1006.62	363.93	1012.91	363.83
1020.6	363.84	1057.4	363.94	1060.2	364.14	1060.24	364.14	1064.92	364.46
1084.41	365.8	1087.66	366.38	1114.18	373.45	1124.25	376.66	1125.5	376.81
1153.53	380.21	1156.56	380.59	1158.08	381.04	1166.69	383.22	1170.24	384.17

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.035	971.3	.05	1064.92	.035

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
971.3	1064.92	89.23	88.52	87.81	.1 .3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
0	971.3	364.51	F

CROSS SECTION OUTPUT Profile #Q50

			Left OB	Channel	Right OB
E.G. Elev (ft)	365.44	Element			
Vel Head (ft)	0.06	Wt. n-Val.	0.035	0.050	0.035
W.S. Elev (ft)	365.38	Reach Len. (ft)	89.23	88.52	87.81
Crit W.S. (ft)	364.52	Flow Area (sq ft)	482.45	126.27	6.20
E.G. Slope (ft/ft)	0.000680	Area (sq ft)	482.45	126.27	6.20
Q Total (cfs)	1109.00	Flow (cfs)	985.49	119.43	4.09
Top Width (ft)	357.37	Top Width (ft)	250.33	93.62	13.43
Vel Total (ft/s)	1.80	Avg. Vel. (ft/s)	2.04	0.95	0.66
Max Chl Dpth (ft)	4.71	Hydr. Depth (ft)	1.93	1.35	0.46
Conv. Total (cfs)	42532.9	Conv. (cfs)	37795.8	4580.3	156.9
Length Wtd. (ft)	89.17	Wetted Per. (ft)	250.62	93.64	13.46
Min Ch El (ft)	363.83	Shear (lb/sq ft)	0.08	0.06	0.02
Alpha	1.17	Stream Power (lb/ft s)	0.17	0.05	0.01
Frctn Loss (ft)	0.04	Cum Volume (acre-ft)	33.38	3.16	0.32
C & E Loss (ft)	0.01	Cum SA (acres)	16.99	2.70	0.47

Warning: Divided flow computed for this cross-section.

CROSS SECTION OUTPUT Profile #Q100

			Left OB	Channel	Right OB
E.G. Elev (ft)	365.56	Element			
Vel Head (ft)	0.14	Wt. n-Val.	0.035	0.050	0.035
W.S. Elev (ft)	365.42	Reach Len. (ft)	89.23	88.52	87.81
Crit W.S. (ft)	364.52	Flow Area (sq ft)	491.60	129.60	6.68
E.G. Slope (ft/ft)	0.001593	Area (sq ft)	491.60	129.60	6.68
Q Total (cfs)	1736.00	Flow (cfs)	1538.21	190.87	6.92
Top Width (ft)	372.71	Top Width (ft)	265.14	93.62	13.94
Vel Total (ft/s)	2.76	Avg. Vel. (ft/s)	3.13	1.47	1.04
Max Chl Dpth (ft)	4.75	Hydr. Depth (ft)	1.85	1.38	0.48
Conv. Total (cfs)	43501.7	Conv. (cfs)	38545.4	4782.9	173.5
Length Wtd. (ft)	89.17	Wetted Per. (ft)	265.44	93.64	13.97
Min Ch El (ft)	363.83	Shear (lb/sq ft)	0.18	0.14	0.05
Alpha	1.17	Stream Power (lb/ft s)	0.58	0.20	0.05
Frctn Loss (ft)	0.11	Cum Volume (acre-ft)	32.24	2.88	0.38
C & E Loss (ft)	0.02	Cum SA (acres)	16.99	2.64	0.48

Warning: Divided flow computed for this cross-section.

CROSS SECTION OUTPUT Profile #Q100HC

E.G. Elev (ft)	366.90	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.40	Wt. n-Val.	0.035	0.050	0.035
W.S. Elev (ft)	365.50	Reach Len. (ft)	89.23	88.52	87.81
Crit W.S. (ft)	366.00	Flow Area (sq ft)	515.11	137.39	7.89
E.G. Slope (ft/ft)	0.016133	Area (sq ft)	515.11	137.39	7.89
Q Total (cfs)	5825.00	Flow (cfs)	5127.92	669.58	27.51
Top Width (ft)	408.66	Top Width (ft)	299.89	93.62	15.15
Vel Total (ft/s)	8.82	Avg. Vel. (ft/s)	9.96	4.87	3.49
Max Chl Dpth (ft)	4.83	Hydr. Depth (ft)	1.72	1.47	0.52
Conv. Total (cfs)	45861.0	Conv. (cfs)	40372.7	5271.7	216.6
Length Wtd. (ft)	89.14	Wetted Per. (ft)	300.19	93.64	15.19
Min Ch El (ft)	363.83	Shear (lb/sq ft)	1.73	1.48	0.52
Alpha	1.16	Stream Power (lb/ft s)	17.20	7.20	1.82
Frctn Loss (ft)	1.75	Cum Volume (acre-ft)	45.02	4.63	0.66
C & E Loss (ft)	0.08	Cum SA (acres)	20.92	2.64	0.68

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: Program found supercritical flow starting at this cross section.

CROSS SECTION

RIVER: Canada Gobernado
REACH: Middle RS: 2398.348

INPUT
Description:
Station Elevation Data num= 38

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	384.56	18.12	382.46	42.64	380.83	83.34	375.18	91.91	374.12
95.85	373.84	141.8	369.6	169.26	367.51	275.88	360.8	289.88	361.05
331.66	361.31	406.06	364.85	426.05	366.02	461.09	366.53	492.43	366.84
536.14	365.64	580.68	364.62	646.39	364.14	685.3	364.34	836.8	365.26
894.61	365.36	921.11	365.01	1000.04	363.99	1006.48	364.18	1010.97	364.32
1012.69	364.37	1021.44	365	1034.9	366.3	1043.04	366.69	1052.6	370.43
1060.09	373.26	1064.07	374.02	1070.7	375.42	1076.89	376.21	1106.94	379.73
1113.38	380.61	1120.24	382.39	1123.3	383.25				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.035	921.11	.05	1010.97	.035

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
894.61	1021.44	105.16	105.95	105.06	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
0	894.61	365.36	F

CROSS SECTION OUTPUT Profile #Q50

E.G. Elev (ft)	365.39	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.03	Wt. n-Val.	0.035	0.048	0.035

W.S. Elev (ft)	365.36	Reach Len. (ft)	105.16	105.95	105.06
Crit W.S. (ft)	365.36	Flow Area (sq ft)	781.46	93.37	0.67
E.G. Slope (ft/ft)	0.000389	Area (sq ft)	781.46	93.37	0.67
Q Total (cfs)	1109.00	Flow (cfs)	1058.04	50.78	0.18
Top Width (ft)	688.15	Top Width (ft)	557.59	126.83	3.73
Vel Total (ft/s)	1.27	Avg. Vel. (ft/s)	1.35	0.54	0.27
Max Chl Dpth (ft)	4.56	Hydr. Depth (ft)	1.40	0.74	0.18
Conv. Total (cfs)	56224.2	Conv. (cfs)	53640.8	2574.4	9.1
Length Wtd. (ft)	105.18	Wetted Per. (ft)	557.85	126.87	3.74
Min Ch El (ft)	363.99	Shear (lb/sq ft)	0.03	0.02	0.00
Alpha	1.10	Stream Power (lb/ft s)	0.05	0.01	0.00
Frctn Loss (ft)	0.04	Cum Volume (acre-ft)	32.08	2.94	0.31
C & E Loss (ft)	0.00	Cum SA (acres)	16.16	2.48	0.45

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: Divided flow computed for this cross-section.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water 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)	365.43	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.07	Wt. n-Val.	0.035	0.048	0.035
W.S. Elev (ft)	365.36	Reach Len. (ft)	105.16	105.95	105.06
Crit W.S. (ft)	365.36	Flow Area (sq ft)	781.46	93.37	0.67
E.G. Slope (ft/ft)	0.000953	Area (sq ft)	781.46	93.37	0.67
Q Total (cfs)	1736.00	Flow (cfs)	1656.23	79.49	0.28
Top Width (ft)	688.15	Top Width (ft)	557.59	126.83	3.73
Vel Total (ft/s)	1.98	Avg. Vel. (ft/s)	2.12	0.85	0.42
Max Chl Dpth (ft)	4.56	Hydr. Depth (ft)	1.40	0.74	0.18
Conv. Total (cfs)	56224.2	Conv. (cfs)	53640.8	2574.4	9.1
Length Wtd. (ft)	105.18	Wetted Per. (ft)	557.85	126.87	3.74
Min Ch El (ft)	363.99	Shear (lb/sq ft)	0.08	0.04	0.01
Alpha	1.10	Stream Power (lb/ft s)	0.18	0.04	0.00
Frctn Loss (ft)	0.09	Cum Volume (acre-ft)	30.94	2.65	0.37
C & E Loss (ft)	0.00	Cum SA (acres)	16.15	2.42	0.46

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: Divided flow computed for this cross-section.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water 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)	366.22	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.39	Wt. n-Val.	0.035	0.047	0.035
W.S. Elev (ft)	365.84	Reach Len. (ft)	105.16	105.95	105.06
Crit W.S. (ft)	365.45	Flow Area (sq ft)	1056.78	154.03	3.64
E.G. Slope (ft/ft)	0.005051	Area (sq ft)	1056.78	154.03	3.64
Q Total (cfs)	5825.00	Flow (cfs)	5411.40	407.47	6.13
Top Width (ft)	728.33	Top Width (ft)	592.82	126.83	8.68
Vel Total (ft/s)	4.80	Avg. Vel. (ft/s)	5.12	2.65	1.68
Max Chl Dpth (ft)	5.04	Hydr. Depth (ft)	1.78	1.21	0.42

Conv. Total (cfs)	81957.9	Conv. (cfs)	76138.5	5733.1	86.2
Length Wtd. (ft)	105.19	Wetted Per. (ft)	593.11	126.87	8.72
Min Ch El (ft)	363.99	Shear (lb/sq ft)	0.56	0.38	0.13
Alpha	1.08	Stream Power (lb/ft s)	2.88	1.01	0.22
Frctn Loss (ft)	0.65	Cum Volume (acre-ft)	43.41	4.34	0.65
C & E Loss (ft)	0.01	Cum SA (acres)	20.01	2.42	0.66

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: Canada Gobernado
REACH: Middle RS: 2292.400

INPUT
Description:
Station Elevation Data num= 43

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	383.99	.8	383.83	19.66	380.38	37.64	377.61	49.29	374.9
97.49	368.87	103.94	368.27	111.23	367.81	117.02	367.35	151.9	364.43
165.13	363.54	174.27	362.54	186.25	361.33	193.86	360.89	226.47	361.1
275.33	361.22	310.02	362.68	378.16	366.22	410.38	366.5	470.3	365.08
530.56	363.42	607.88	363.43	640.21	363.65	785.41	364.5	887.85	364.67
894.31	364.68	902.83	364.69	928.18	364.36	939.32	364.7	953.57	365.61
958.96	365.95	964.16	366.28	997.66	368.05	1007.73	369.32	1022.08	372.01
1027.26	373.67	1032.03	376.53	1039.34	380.03	1060.22	383.36	1060.88	383.47
1066.29	383.99	1071.35	384.66	1077.49	385.05				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.035	894.31	.05	958.96	.035

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
902.83	939.32	84.91	83.99	84.03	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
0	902.83	364.69	F

CROSS SECTION OUTPUT Profile #Q50

E.G. Elev (ft)	364.73	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.03	Wt. n-Val.	0.035	0.050	
W.S. Elev (ft)	364.70	Reach Len. (ft)	84.91	83.99	84.03
Crit W.S. (ft)	364.70	Flow Area (sq ft)	782.07	6.30	
E.G. Slope (ft/ft)	0.000502	Area (sq ft)	782.07	6.30	
Q Total (cfs)	1109.00	Flow (cfs)	1107.70	1.30	
Top Width (ft)	655.37	Top Width (ft)	618.90	36.46	
Vel Total (ft/s)	1.41	Avg. Vel. (ft/s)	1.42	0.21	
Max Chl Dpth (ft)	3.81	Hydr. Depth (ft)	1.26	0.17	
Conv. Total (cfs)	49486.7	Conv. (cfs)	49428.7	58.0	
Length Wtd. (ft)	84.88	Wetted Per. (ft)	619.18	36.47	
Min Ch El (ft)	364.36	Shear (lb/sq ft)	0.04	0.01	
Alpha	1.01	Stream Power (lb/ft s)	0.06	0.00	
Frctn Loss (ft)	0.04	Cum Volume (acre-ft)	30.19	2.81	0.31
C & E Loss (ft)	0.05	Cum SA (acres)	14.74	2.28	0.45

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

CROSS SECTION OUTPUT Profile #Q100

E.G. Elev (ft)	364.78	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.08	Wt. n-Val.	0.035	0.050	
W.S. Elev (ft)	364.70	Reach Len. (ft)	84.91	83.99	84.03
Crit W.S. (ft)	364.70	Flow Area (sq ft)	782.07	6.30	
E.G. Slope (ft/ft)	0.001231	Area (sq ft)	782.07	6.30	
Q Total (cfs)	1736.00	Flow (cfs)	1733.96	2.04	
Top Width (ft)	655.37	Top Width (ft)	618.90	36.46	
Vel Total (ft/s)	2.20	Avg. Vel. (ft/s)	2.22	0.32	
Max Chl Dpth (ft)	3.81	Hydr. Depth (ft)	1.26	0.17	
Conv. Total (cfs)	49486.7	Conv. (cfs)	49428.7	58.0	
Length Wtd. (ft)	84.89	Wetted Per. (ft)	619.18	36.47	
Min Ch El (ft)	364.36	Shear (lb/sq ft)	0.10	0.01	
Alpha	1.01	Stream Power (lb/ft s)	0.22	0.00	
Frctn Loss (ft)	0.09	Cum Volume (acre-ft)	29.05	2.53	0.37
C & E Loss (ft)	0.06	Cum SA (acres)	14.73	2.22	0.46

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: 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: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water 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)	365.56	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.52	Wt. n-Val.	0.035	0.050	0.050
W.S. Elev (ft)	365.04	Reach Len. (ft)	84.91	83.99	84.03
Crit W.S. (ft)	364.85	Flow Area (sq ft)	997.92	18.79	0.91
E.G. Slope (ft/ft)	0.007697	Area (sq ft)	997.92	18.79	0.91
Q Total (cfs)	5825.00	Flow (cfs)	5792.79	31.47	0.73
Top Width (ft)	683.85	Top Width (ft)	642.01	36.49	5.35
Vel Total (ft/s)	5.72	Avg. Vel. (ft/s)	5.80	1.67	0.80
Max Chl Dpth (ft)	4.15	Hydr. Depth (ft)	1.55	0.51	0.17
Conv. Total (cfs)	66394.5	Conv. (cfs)	66027.4	358.8	8.3
Length Wtd. (ft)	84.88	Wetted Per. (ft)	642.32	36.50	5.36
Min Ch El (ft)	364.36	Shear (lb/sq ft)	0.75	0.25	0.08
Alpha	1.02	Stream Power (lb/ft s)	4.33	0.41	0.07
Frctn Loss (ft)	0.50	Cum Volume (acre-ft)	40.93	4.13	0.65
C & E Loss (ft)	0.01	Cum SA (acres)	18.52	2.22	0.64

Warning: Divided flow computed for this cross-section.

CROSS SECTION

RIVER: Canada Gobernado
REACH: Middle RS: 2208.408

INPUT
Description: Manual Input for Manning's N Values
Station Elevation Data num= 44

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	385.35	9.74	382.49	21.77	380.61	45.78	376.71	53.48	376.1
74.11	373.99	77.9	373.43	83.41	372	108.79	367.41	121	365.14
124.21	364.85	137.53	363.37	155.81	360.89	166.71	360.9	243.4	361.36
300.77	364.43	335.6	365.8	357.41	366.33	450.97	364.12	467.94	363.74
480.39	363.34	501.87	363.39	567.56	363.49	701.91	363.5	765.13	363.88
830.42	363.99	862.2	363.33	912.4	362.29	916.24	362.52	932.8	361.64
939.85	361.27	944.49	361.77	947.4	362.5	964.17	367.38	980.88	368.53
994.29	369.51	995.05	369.56	1014.96	372.53	1024.01	373.97	1028.48	374.92
1031.09	375.43	1045.33	379.56	1068.62	385.92	1069.72	386.1		

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	124.21	.02	830.42	.035	862.2	.05	939.85	.035

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
916.24	947.4	95.5	94.25	92.91	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
0	916.24	362.52	F

CROSS SECTION OUTPUT Profile #Q50

E.G. Elev (ft)	363.25	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.48	Wt. n-Val.	0.020	0.045	0.035
W.S. Elev (ft)	362.77	Reach Len. (ft)	95.50	94.25	92.91
Crit W.S. (ft)	362.70	Flow Area (sq ft)	184.71	28.33	0.12
E.G. Slope (ft/ft)	0.004055	Area (sq ft)	184.71	28.33	0.12
Q Total (cfs)	1109.00	Flow (cfs)	1052.47	56.45	0.09
Top Width (ft)	186.86	Top Width (ft)	154.78	31.16	0.93
Vel Total (ft/s)	5.20	Avg. Vel. (ft/s)	5.70	1.99	0.69
Max Chl Dpth (ft)	1.88	Hydr. Depth (ft)	1.19	0.91	0.13
Conv. Total (cfs)	17414.7	Conv. (cfs)	16527.0	886.4	1.4
Length Wtd. (ft)	95.20	Wetted Per. (ft)	154.95	31.31	0.96
Min Ch El (ft)	361.27	Shear (lb/sq ft)	0.30	0.23	0.03
Alpha	1.15	Stream Power (lb/ft s)	1.72	0.46	0.02
Frctn Loss (ft)	0.55	Cum Volume (acre-ft)	29.25	2.78	0.31
C & E Loss (ft)	0.00	Cum SA (acres)	13.99	2.21	0.45

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

CROSS SECTION OUTPUT Profile #Q100

E.G. Elev (ft)	364.35	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.81	Wt. n-Val.	0.020	0.044	0.000
W.S. Elev (ft)	362.54	Reach Len. (ft)	95.50	94.25	92.91
Crit W.S. (ft)	363.13	Flow Area (sq ft)	151.24	21.20	0.00
E.G. Slope (ft/ft)	0.017179	Area (sq ft)	151.24	21.20	0.00
Q Total (cfs)	1736.00	Flow (cfs)	1663.79	72.21	0.00
Top Width (ft)	169.07	Top Width (ft)	137.77	31.16	0.14
Vel Total (ft/s)	10.07	Avg. Vel. (ft/s)	11.00	3.41	0.40
Max Chl Dpth (ft)	1.65	Hydr. Depth (ft)	1.10	0.68	0.02
Conv. Total (cfs)	13245.1	Conv. (cfs)	12694.1	551.0	0.0
Length Wtd. (ft)	95.23	Wetted Per. (ft)	137.92	31.31	0.15
Min Ch El (ft)	361.27	Shear (lb/sq ft)	1.18	0.73	
Alpha	1.15	Stream Power (lb/ft s)	12.94	2.47	
Frctn Loss (ft)	0.26	Cum Volume (acre-ft)	28.14	2.51	0.37
C & E Loss (ft)	0.17	Cum SA (acres)	13.99	2.15	0.46

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.

CROSS SECTION OUTPUT Profile #Q100HC

E.G. Elev (ft)	365.04	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.65	Wt. n-Val.	0.021	0.045	0.035
W.S. Elev (ft)	364.40	Reach Len. (ft)	95.50	94.25	92.91
Crit W.S. (ft)	364.40	Flow Area (sq ft)	832.23	79.00	6.17
E.G. Slope (ft/ft)	0.004701	Area (sq ft)	832.23	79.00	6.17
Q Total (cfs)	5825.00	Flow (cfs)	5476.85	331.28	16.88
Top Width (ft)	686.44	Top Width (ft)	648.77	31.16	6.51
Vel Total (ft/s)	6.35	Avg. Vel. (ft/s)	6.58	4.19	2.73
Max Chl Dpth (ft)	3.51	Hydr. Depth (ft)	1.28	2.54	0.95
Conv. Total (cfs)	84954.2	Conv. (cfs)	79876.5	4831.5	246.2
Length Wtd. (ft)	95.29	Wetted Per. (ft)	649.11	31.31	6.78
Min Ch El (ft)	361.27	Shear (lb/sq ft)	0.38	0.74	0.27
Alpha	1.04	Stream Power (lb/ft s)	2.48	3.11	0.73
Frctn Loss (ft)	0.52	Cum Volume (acre-ft)	39.14	4.03	0.64
C & E Loss (ft)	0.00	Cum SA (acres)	17.26	2.16	0.63

Warning: The energy equation could not be balanced within the specified number of iterations. The program selected the water surface that had the least amount of error between computed and assumed values.
Warning: Divided flow computed for this cross-section.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water 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: Canada Gobernado
REACH: Middle RS: 2114.162

INPUT
Description:

Station Elevation Data num= 49

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	384.39	4.72	383.56	18.69	381.24	34.88	376.27	42.68	373.42
45.16	372.9	61.06	367.62	77.06	364.96	96.24	361.77	98.8	361.38
100.78	361.32	110.37	361.34	183.88	361.1	203.99	362.17	239.89	363.17
310.16	365.01	348.03	364.95	355.4	364.93	426.71	362.64	559.09	362.96
718.55	363.22	779.46	362.72	821.96	362.15	827.1	362.09	869.29	361.52
889.49	360.6	896.69	360.26	899.02	360.14	902.88	359.95	912.16	359.49
919.2	360.58	921.17	360.9	923.78	361.93	932.08	365.64	936.92	367.43
948.55	368.61	956.01	368.78	973.17	368.45	983.15	369.39	1000.79	371.16
1016.35	372.03	1075.64	375.18	1092.24	375.4	1136.66	376.3	1169.31	377.21
1229.05	379.27	1262.4	380.89	1274.66	381.8	1284.32	382.49		

Manning's n Values num= 4

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	77.06	.02	821.96	.05	899.02	.035

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
827.1	923.78	99.92	98.66	97.98	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
0	827.1	362.09	F

CROSS SECTION OUTPUT Profile #Q50

			Left OB	Channel	Right OB
E.G. Elev (ft)	362.70	Element			
Vel Head (ft)	0.48	Wt. n-Val.	0.020	0.039	0.035
W.S. Elev (ft)	362.23	Reach Len. (ft)	99.92	98.66	97.98
Crit W.S. (ft)	362.21	Flow Area (sq ft)	99.57	111.35	0.10
E.G. Slope (ft/ft)	0.008708	Area (sq ft)	99.57	111.35	0.10
Q Total (cfs)	1109.00	Flow (cfs)	627.83	481.07	0.10
Top Width (ft)	220.94	Top Width (ft)	123.59	96.68	0.67
Vel Total (ft/s)	5.26	Avg. Vel. (ft/s)	6.31	4.32	1.05
Max Chl Dpth (ft)	2.74	Hydr. Depth (ft)	0.81	1.15	0.15
Conv. Total (cfs)	11884.3	Conv. (cfs)	6727.9	5155.2	1.1
Length Wtd. (ft)	99.51	Wetted Per. (ft)	123.69	97.04	0.73
Min Ch El (ft)	359.49	Shear (lb/sq ft)	0.44	0.62	0.07
Alpha	1.11	Stream Power (lb/ft s)	2.76	2.70	0.08
Frctn Loss (ft)	0.47	Cum Volume (acre-ft)	28.94	2.63	0.31
C & E Loss (ft)	0.09	Cum SA (acres)	13.68	2.07	0.44

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)	363.26	Element			
Vel Head (ft)	0.91	Wt. n-Val.	0.020	0.040	0.035
W.S. Elev (ft)	362.35	Reach Len. (ft)	99.92	98.66	97.98
Crit W.S. (ft)	362.61	Flow Area (sq ft)	115.94	123.44	0.20
E.G. Slope (ft/ft)	0.015044	Area (sq ft)	115.94	123.44	0.20
Q Total (cfs)	1736.00	Flow (cfs)	1008.33	727.32	0.35
Top Width (ft)	235.79	Top Width (ft)	138.16	96.68	0.95
Vel Total (ft/s)	7.25	Avg. Vel. (ft/s)	8.70	5.89	1.74
Max Chl Dpth (ft)	2.86	Hydr. Depth (ft)	0.84	1.28	0.21
Conv. Total (cfs)	14153.6	Conv. (cfs)	8220.9	5929.8	2.8
Length Wtd. (ft)	99.54	Wetted Per. (ft)	138.27	97.04	1.04

Min Ch El (ft)	359.49	Shear (lb/sq ft)	0.79	1.19	0.18
Alpha	1.11	Stream Power (lb/ft s)	6.85	7.04	0.32
Frctn Loss (ft)	1.06	Cum Volume (acre-ft)	27.85	2.35	0.37
C & E Loss (ft)	0.37	Cum SA (acres)	13.69	2.02	0.45

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: 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)	364.40	Element			
Vel Head (ft)	0.87	Wt. n-Val.	0.020	0.042	0.035
W.S. Elev (ft)	363.53	Reach Len. (ft)	99.92	98.66	97.98
Crit W.S. (ft)	363.71	Flow Area (sq ft)	548.77	237.30	2.87
E.G. Slope (ft/ft)	0.009634	Area (sq ft)	548.77	237.30	2.87
Q Total (cfs)	5825.00	Flow (cfs)	4287.90	1527.41	9.70
Top Width (ft)	696.44	Top Width (ft)	596.18	96.68	3.58
Vel Total (ft/s)	7.38	Avg. Vel. (ft/s)	7.81	6.44	3.38
Max Chl Dpth (ft)	4.04	Hydr. Depth (ft)	0.92	2.45	0.80
Conv. Total (cfs)	59346.2	Conv. (cfs)	43685.9	15561.5	98.8
Length Wtd. (ft)	99.68	Wetted Per. (ft)	596.42	97.04	3.92
Min Ch El (ft)	359.49	Shear (lb/sq ft)	0.55	1.47	0.44
Alpha	1.02	Stream Power (lb/ft s)	4.32	9.47	1.49
Frctn Loss (ft)	0.62	Cum Volume (acre-ft)	37.63	3.69	0.63
C & E Loss (ft)	0.02	Cum SA (acres)	15.90	2.02	0.62

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

CROSS SECTION

RIVER: Canada Gobernado
REACH: Middle RS: 2015.501

INPUT
Description:
Station Elevation Data num= 49

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	384.6	2.82	384.05	24.47	379.64	37.91	376.14	51.67	372.01
59.81	369.07	75.4	366.05	80.56	365.03	83.41	364.64	108.73	361.55
111.75	361.48	122.84	361.2	157.95	360.29	185	360.62	256.9	360.97
326.81	362.8	388.83	362.8	434.58	362.69	459.1	361.91	663.34	362.42
704.26	362.53	732.23	362.58	890.59	361.29	896.73	361.24	898.83	361.22
914.06	361.11	915.64	361.1	916.32	361.07	959.17	359.47	970.44	360.45
974.89	360.84	975.44	360.91	976.67	361.37	991.56	366.44	992.42	366.73
992.57	366.78	993.9	366.83	1046.83	369.32	1054.87	369.28	1110.41	368.85
1115.41	368.84	1116.91	368.89	1120.74	369.06	1162.18	370.96	1177.12	373.22
1191.59	374.51	1193.59	375.1	1216.92	381.27	1228.4	384.11		

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	122.84	.02	663.34	.07	896.73	.05	970.44	.035

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
916.32	974.89	133.64	132.4	133.6	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
0	915.66	361.1	F

CROSS SECTION OUTPUT Profile #Q50

E.G. Elev (ft)	362.14	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.17	Wt. n-Val.	0.022	0.049	0.035
W.S. Elev (ft)	361.98	Reach Len. (ft)	133.64	132.40	133.60
Crit W.S. (ft)	361.63	Flow Area (sq ft)	247.65	101.70	2.17
E.G. Slope (ft/ft)	0.002951	Area (sq ft)	247.65	101.70	2.17
Q Total (cfs)	1109.00	Flow (cfs)	863.01	242.51	3.48
Top Width (ft)	390.24	Top Width (ft)	328.11	58.57	3.56
Vel Total (ft/s)	3.15	Avg. Vel. (ft/s)	3.48	2.38	1.60
Max Chl Dpth (ft)	2.51	Hydr. Depth (ft)	0.75	1.74	0.61
Conv. Total (cfs)	20415.9	Conv. (cfs)	15887.5	4464.4	64.1
Length Wtd. (ft)	133.43	Wetted Per. (ft)	328.17	58.66	3.75
Min Ch El (ft)	359.47	Shear (lb/sq ft)	0.14	0.32	0.11
Alpha	1.08	Stream Power (lb/ft s)	0.48	0.76	0.17
Frctn Loss (ft)	0.20	Cum Volume (acre-ft)	28.54	2.39	0.30
C & E Loss (ft)	0.04	Cum SA (acres)	13.17	1.90	0.44

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

E.G. Elev (ft)	362.42	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.26	Wt. n-Val.	0.023	0.049	0.035
W.S. Elev (ft)	362.16	Reach Len. (ft)	133.64	132.40	133.60
Crit W.S. (ft)	361.94	Flow Area (sq ft)	318.54	112.53	2.88
E.G. Slope (ft/ft)	0.004415	Area (sq ft)	318.54	112.53	2.88
Q Total (cfs)	1736.00	Flow (cfs)	1378.53	351.27	6.19
Top Width (ft)	501.84	Top Width (ft)	439.17	58.57	4.10
Vel Total (ft/s)	4.00	Avg. Vel. (ft/s)	4.33	3.12	2.15
Max Chl Dpth (ft)	2.69	Hydr. Depth (ft)	0.73	1.92	0.70
Conv. Total (cfs)	26127.5	Conv. (cfs)	20747.5	5286.8	93.2
Length Wtd. (ft)	133.44	Wetted Per. (ft)	439.25	58.66	4.32
Min Ch El (ft)	359.47	Shear (lb/sq ft)	0.20	0.53	0.18
Alpha	1.05	Stream Power (lb/ft s)	0.86	1.65	0.40
Frctn Loss (ft)	0.31	Cum Volume (acre-ft)	27.35	2.08	0.37
C & E Loss (ft)	0.05	Cum SA (acres)	13.02	1.84	0.45

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

CROSS SECTION OUTPUT Profile #Q100HC

E.G. Elev (ft)	363.57	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.33	Wt. n-Val.	0.025	0.049	0.035
W.S. Elev (ft)	363.24	Reach Len. (ft)	133.64	132.40	133.60
Crit W.S. (ft)	362.92	Flow Area (sq ft)	1074.11	175.79	9.02
E.G. Slope (ft/ft)	0.004433	Area (sq ft)	1074.11	175.79	9.02
Q Total (cfs)	5825.00	Flow (cfs)	5054.45	742.14	28.41
Top Width (ft)	887.28	Top Width (ft)	821.44	58.57	7.27
Vel Total (ft/s)	4.63	Avg. Vel. (ft/s)	4.71	4.22	3.15
Max Chl Dpth (ft)	3.77	Hydr. Depth (ft)	1.31	3.00	1.24
Conv. Total (cfs)	87483.3	Conv. (cfs)	75910.7	11145.9	426.7
Length Wtd. (ft)	133.50	Wetted Per. (ft)	821.61	58.66	7.67
Min Ch El (ft)	359.47	Shear (lb/sq ft)	0.36	0.83	0.33
Alpha	1.01	Stream Power (lb/ft s)	1.70	3.50	1.03
Frctn Loss (ft)	0.30	Cum Volume (acre-ft)	35.77	3.22	0.62
C & E Loss (ft)	0.05	Cum SA (acres)	14.27	1.84	0.61

Warning: The conveyance ratio (upstream 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: Hydraulic jump has occurred between this cross section and the previous upstream section.

CROSS SECTION

RIVER: Canada Gobernado
REACH: Middle RS: 1883.106

INPUT
Description: Manual Input for Manning's N Values
Station Elevation Data num= 38

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	382.98	27.27	379.08	42.84	376.74	67.67	373.41	84.56	371.17
131.19	363.51	144.59	361.41	163.69	360.68	168.15	360.52	178.74	360.1
202.65	360.53	256.93	360.93	272.2	360.97	387.9	360.88	464.63	361.09
559.95	361.15	652.07	361.38	670	361.4	839.81	361.54	902.88	361.09
925	360.92	933.78	360.85	966.91	360.59	1002.04	360.36	1010.15	360.59
1022.89	360.94	1028.99	361.11	1047	361.91	1050.18	362.05	1071.64	362.57
1072.27	362.6	1072.95	362.61	1099.9	364.21	1105.64	364.93	1119.74	366.73
1128.84	367.62	1159.55	376.31	1188.02	385.07				

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	131.19	.02	670	.07	925	.05	1047	.035

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
902.88	1028.99	116.44 114.74	111.85	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
0	902.88	361.09	F

CROSS SECTION OUTPUT Profile #Q50

E.G. Elev (ft)	361.91	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.04	Wt. n-Val.	0.022	0.052	0.050
W.S. Elev (ft)	361.87	Reach Len. (ft)	116.44	114.74	111.85
Crit W.S. (ft)	361.40	Flow Area (sq ft)	563.96	144.81	6.42
E.G. Slope (ft/ft)	0.000881	Area (sq ft)	563.96	144.81	6.42
Q Total (cfs)	1109.00	Flow (cfs)	969.24	136.81	2.96

Top Width (ft)	904.30	Top Width (ft)	761.19	126.11	17.00
Vel Total (ft/s)	1.55	Avg. Vel. (ft/s)	1.72	0.94	0.46
Max Chl Dpth (ft)	1.77	Hydr. Depth (ft)	0.74	1.15	0.38
Conv. Total (cfs)	37359.1	Conv. (cfs)	32650.9	4608.6	99.6
Length Wtd. (ft)	116.21	Wetted Per. (ft)	761.26	126.12	17.01
Min Ch El (ft)	360.36	Shear (lb/sq ft)	0.04	0.06	0.02
Alpha	1.12	Stream Power (lb/ft s)	0.07	0.06	0.01
Frctn Loss (ft)	0.10	Cum Volume (acre-ft)	27.30	2.01	0.29
C & E Loss (ft)	0.00	Cum SA (acres)	11.49	1.62	0.41

CROSS SECTION OUTPUT Profile #Q100

E.G. Elev (ft)	362.05	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.08	Wt. n-Val.	0.022	0.052	0.050
W.S. Elev (ft)	361.97	Reach Len. (ft)	116.44	114.74	111.85
Crit W.S. (ft)	361.58	Flow Area (sq ft)	647.13	158.58	8.41
E.G. Slope (ft/ft)	0.001457	Area (sq ft)	647.13	158.58	8.41
Q Total (cfs)	1736.00	Flow (cfs)	1526.23	204.08	5.69
Top Width (ft)	907.47	Top Width (ft)	761.89	126.11	19.47
Vel Total (ft/s)	2.13	Avg. Vel. (ft/s)	2.36	1.29	0.68
Max Chl Dpth (ft)	1.87	Hydr. Depth (ft)	0.85	1.26	0.43
Conv. Total (cfs)	45481.4	Conv. (cfs)	39985.5	5346.8	149.1
Length Wtd. (ft)	116.21	Wetted Per. (ft)	761.97	126.12	19.49
Min Ch El (ft)	360.36	Shear (lb/sq ft)	0.08	0.11	0.04
Alpha	1.12	Stream Power (lb/ft s)	0.18	0.15	0.03
Frctn Loss (ft)	0.21	Cum Volume (acre-ft)	25.87	1.67	0.35
C & E Loss (ft)	0.00	Cum SA (acres)	11.18	1.56	0.41

CROSS SECTION OUTPUT Profile #Q100HC

E.G. Elev (ft)	363.23	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.18	Wt. n-Val.	0.024	0.052	0.044
W.S. Elev (ft)	363.05	Reach Len. (ft)	116.44	114.74	111.85
Crit W.S. (ft)	362.21	Flow Area (sq ft)	1466.98	293.68	49.02
E.G. Slope (ft/ft)	0.001367	Area (sq ft)	1466.98	293.68	49.02
Q Total (cfs)	5825.00	Flow (cfs)	5214.61	545.05	65.34
Top Width (ft)	946.13	Top Width (ft)	768.73	126.11	51.30
Vel Total (ft/s)	3.22	Avg. Vel. (ft/s)	3.55	1.86	1.33
Max Chl Dpth (ft)	2.95	Hydr. Depth (ft)	1.91	2.33	0.96
Conv. Total (cfs)	157574.1	Conv. (cfs)	141062.3	14744.2	1767.5
Length Wtd. (ft)	116.23	Wetted Per. (ft)	768.89	126.12	51.34
Min Ch El (ft)	360.36	Shear (lb/sq ft)	0.16	0.20	0.08
Alpha	1.12	Stream Power (lb/ft s)	0.58	0.37	0.11
Frctn Loss (ft)	0.18	Cum Volume (acre-ft)	31.87	2.51	0.53
C & E Loss (ft)	0.00	Cum SA (acres)	11.83	1.56	0.52

CROSS SECTION

RIVER: Canada Gobernado
REACH: Middle RS: 1768.369

INPUT
Description: Manual Input for Manning's N Values
Station Elevation Data num= 38

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev

0	386.52	9.52	383.88	11	383.38	38.24	374.02	45.22	372.44
59.08	367.52	74.19	365.39	90	362.8	101.16	360.97	101.54	360.9
101.78	360.89	102.06	360.89	149.24	359.85	161.39	359.54	191.71	360.42
228.95	361.85	251.74	361.83	370.84	361.72	401.38	361.29	494.39	361.42
590.77	360.32	628	360.36	782.39	360.53	847.61	361.08	876.5	360.69
878.52	360.66	963.06	360.23	964.3	360.19	966.41	360.34	970.66	360.68
973.28	360.86	991.86	362.16	1003.46	364.22	1031.71	368.73	1052.71	373.12
1056.32	373.71	1072.73	375.87	1099.75	382.67				

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	90	.02	628	.07	876.5	.05	991.86	.035

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
847.61	973.28	111.41	108.64	106.97	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
0	847.59	361.08	F

CROSS SECTION OUTPUT Profile #Q50

			Left OB	Channel	Right OB
E.G. Elev (ft)	361.80	Element			
Vel Head (ft)	0.03	Wt. n-Val.	0.030	0.052	0.050
W.S. Elev (ft)	361.77	Reach Len. (ft)	111.41	108.64	106.97
Crit W.S. (ft)	361.09	Flow Area (sq ft)	625.12	152.42	5.87
E.G. Slope (ft/ft)	0.000908	Area (sq ft)	625.12	152.42	5.87
Q Total (cfs)	1109.00	Flow (cfs)	954.75	151.15	3.10
Top Width (ft)	796.06	Top Width (ft)	657.44	125.67	12.95
Vel Total (ft/s)	1.42	Avg. Vel. (ft/s)	1.53	0.99	0.53
Max Chl Dpth (ft)	2.23	Hydr. Depth (ft)	0.95	1.21	0.45
Conv. Total (cfs)	36813.1	Conv. (cfs)	31693.0	5017.4	102.8
Length Wtd. (ft)	111.18	Wetted Per. (ft)	657.57	125.70	12.99
Min Ch El (ft)	360.19	Shear (lb/sq ft)	0.05	0.07	0.03
Alpha	1.07	Stream Power (lb/ft s)	0.08	0.07	0.01
Frctn Loss (ft)	0.10	Cum Volume (acre-ft)	25.71	1.62	0.28
C & E Loss (ft)	0.00	Cum SA (acres)	9.60	1.29	0.37

Warning: Divided flow computed for this cross-section.

CROSS SECTION OUTPUT Profile #Q100

			Left OB	Channel	Right OB
E.G. Elev (ft)	361.84	Element			
Vel Head (ft)	0.08	Wt. n-Val.	0.030	0.052	0.050
W.S. Elev (ft)	361.76	Reach Len. (ft)	111.41	108.64	106.97
Crit W.S. (ft)	361.20	Flow Area (sq ft)	622.66	151.95	5.82
E.G. Slope (ft/ft)	0.002240	Area (sq ft)	622.66	151.95	5.82
Q Total (cfs)	1736.00	Flow (cfs)	1494.89	236.30	4.81
Top Width (ft)	791.82	Top Width (ft)	653.25	125.67	12.90
Vel Total (ft/s)	2.22	Avg. Vel. (ft/s)	2.40	1.56	0.83
Max Chl Dpth (ft)	2.22	Hydr. Depth (ft)	0.95	1.21	0.45
Conv. Total (cfs)	36676.9	Conv. (cfs)	31582.9	4992.4	101.6
Length Wtd. (ft)	111.21	Wetted Per. (ft)	653.39	125.70	12.93
Min Ch El (ft)	360.19	Shear (lb/sq ft)	0.13	0.17	0.06
Alpha	1.07	Stream Power (lb/ft s)	0.32	0.26	0.05
Frctn Loss (ft)	0.40	Cum Volume (acre-ft)	24.17	1.26	0.33
C & E Loss (ft)	0.01	Cum SA (acres)	9.29	1.23	0.37

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)	363.04	Element			
Vel Head (ft)	0.18	Wt. n-Val.	0.028	0.053	0.050
W.S. Elev (ft)	362.86	Reach Len. (ft)	111.41	108.64	106.97
Crit W.S. (ft)	362.00	Flow Area (sq ft)	1444.88	289.60	26.42
E.G. Slope (ft/ft)	0.001862	Area (sq ft)	1444.88	289.60	26.42
Q Total (cfs)	5825.00	Flow (cfs)	5167.51	617.14	40.35
Top Width (ft)	906.14	Top Width (ft)	757.96	125.67	22.51
Vel Total (ft/s)	3.31	Avg. Vel. (ft/s)	3.58	2.13	1.53
Max Chl Dpth (ft)	3.32	Hydr. Depth (ft)	1.91	2.30	1.17
Conv. Total (cfs)	135007.3	Conv. (cfs)	119768.5	14303.5	935.3
Length Wtd. (ft)	111.20	Wetted Per. (ft)	758.19	125.70	22.62
Min Ch El (ft)	360.19	Shear (lb/sq ft)	0.22	0.27	0.14
Alpha	1.08	Stream Power (lb/ft s)	0.79	0.57	0.21
Frctn Loss (ft)	0.44	Cum Volume (acre-ft)	27.98	1.74	0.43
C & E Loss (ft)	0.05	Cum SA (acres)	9.79	1.23	0.42

Warning: The conveyance ratio (upstream 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: Canada Gobernado
REACH: Middle RS: 1659.726

INPUT
Description:
Station Elevation Data num= 38

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	385.61	7.8	380.63	21.99	372.14	25.64	369.73	43.3	363.14
48.61	360.91	52.85	360.72	77.18	359.69	91.91	360.11	186.78	362.86
201.04	363.32	281.1	362.23	283.11	362.17	301.59	361.98	506.03	359.69
531.85	359.39	532.56	359.38	569.31	359.43	601.91	359.72	638.17	360.01
757.97	361.02	759.79	361.03	763.05	361.05	804.89	361.24	847.75	360.9
879.18	361.33	881.33	361.33	911.88	364.65	937.61	367.6	954.78	370.09
999.15	374.89	1027.16	377.3	1030.08	377.73	1063.32	380.61	1065.97	380.84
1071.1	381.5	1076.01	382.21	1085.41	383.5				

Manning's n Values num= 4

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.02	531.85	.07	759.79	.05	879.18	.035

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
804.89	881.33	187.35	183.3 180.95	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
0	804.89	361.24	F

CROSS SECTION OUTPUT Profile #Q50

			Left OB	Channel	Right OB
E.G. Elev (ft)	361.70	Element			
Vel Head (ft)	0.03	Wt. n-Val.	0.034	0.050	0.035

W.S. Elev (ft)	361.67	Reach Len. (ft)	187.35	183.30	180.95
Crit W.S. (ft)	361.25	Flow Area (sq ft)	719.70	43.83	0.53
E.G. Slope (ft/ft)	0.000821	Area (sq ft)	719.70	43.83	0.53
Q Total (cfs)	1109.00	Flow (cfs)	1082.85	25.95	0.20
Top Width (ft)	654.01	Top Width (ft)	574.45	76.44	3.12
Vel Total (ft/s)	1.45	Avg. Vel. (ft/s)	1.50	0.59	0.37
Max Chl Dpth (ft)	2.29	Hydr. Depth (ft)	1.25	0.57	0.17
Conv. Total (cfs)	38711.9	Conv. (cfs)	37799.0	906.0	6.9
Length Wtd. (ft)	187.25	Wetted Per. (ft)	574.68	76.44	3.14
Min Ch El (ft)	360.90	Shear (lb/sq ft)	0.06	0.03	0.01
Alpha	1.05	Stream Power (lb/ft s)	0.10	0.02	0.00
Frctn Loss (ft)	0.02	Cum Volume (acre-ft)	23.99	1.38	0.27
C & E Loss (ft)	0.01	Cum SA (acres)	8.02	1.03	0.35

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

E.G. Elev (ft)	361.44	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.19	Wt. n-Val.	0.034	0.050	
W.S. Elev (ft)	361.25	Reach Len. (ft)	187.35	183.30	180.95
Crit W.S. (ft)	361.25	Flow Area (sq ft)	488.68	12.02	
E.G. Slope (ft/ft)	0.006487	Area (sq ft)	488.68	12.02	
Q Total (cfs)	1736.00	Flow (cfs)	1726.96	9.04	
Top Width (ft)	589.51	Top Width (ft)	521.25	68.26	
Vel Total (ft/s)	3.47	Avg. Vel. (ft/s)	3.53	0.75	
Max Chl Dpth (ft)	1.87	Hydr. Depth (ft)	0.94	0.18	
Conv. Total (cfs)	21553.5	Conv. (cfs)	21441.2	112.2	
Length Wtd. (ft)	187.30	Wetted Per. (ft)	521.39	68.26	
Min Ch El (ft)	360.90	Shear (lb/sq ft)	0.38	0.07	
Alpha	1.03	Stream Power (lb/ft s)	1.34	0.05	
Frctn Loss (ft)	0.08	Cum Volume (acre-ft)	22.75	1.06	0.32
C & E Loss (ft)	0.03	Cum SA (acres)	7.79	0.99	0.36

Warning: The energy equation could not be balanced within the specified number of iterations. The program selected the water surface that had the least amount of error between computed and assumed values.
Warning: 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: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water 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)	362.56	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.66	Wt. n-Val.	0.034	0.050	0.035
W.S. Elev (ft)	361.89	Reach Len. (ft)	187.35	183.30	180.95
Crit W.S. (ft)	361.89	Flow Area (sq ft)	850.99	60.88	1.45
E.G. Slope (ft/ft)	0.013467	Area (sq ft)	850.99	60.88	1.45
Q Total (cfs)	5825.00	Flow (cfs)	5640.06	181.88	3.06
Top Width (ft)	684.21	Top Width (ft)	602.59	76.44	5.17
Vel Total (ft/s)	6.38	Avg. Vel. (ft/s)	6.63	2.99	2.11
Max Chl Dpth (ft)	2.51	Hydr. Depth (ft)	1.41	0.80	0.28

Conv. Total (cfs)	50194.8	Conv. (cfs)	48601.1	1567.3	26.4
Length Wtd. (ft)	187.27	Wetted Per. (ft)	602.87	76.44	5.20
Min Ch El (ft)	360.90	Shear (lb/sq ft)	1.19	0.67	0.23
Alpha	1.05	Stream Power (lb/ft s)	7.87	2.00	0.49
Frctn Loss (ft)	0.80	Cum Volume (acre-ft)	25.04	1.30	0.40
C & E Loss (ft)	0.10	Cum SA (acres)	8.05	0.98	0.39

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

CROSS SECTION

RIVER: Canada Gobernado
REACH: Middle RS: 1476.413

INPUT
Description: Manual Input for Manning's N Values
Station Elevation Data num= 36

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	385.63	10.29	381.25	27.44	373.45	38.89	368.37	45.45	366.01
58.03	363.97	63.95	362.73	70	361.49	73.29	360.81	89.38	360.86
99.66	359.83	117.79	359.91	185.47	362.27	233.62	362.71	350.83	359.24
389.36	358.01	412.38	357.8	522.53	357.57	585	357.44	599.64	357.41
612.57	357.63	777.46	360.61	791.76	360.73	804.57	360.79	819.24	360.83
880.55	360.03	925	360.8	947.33	361.18	972.08	363.28	987.78	365.43
1015.19	368.51	1019.51	368.97	1047.56	373.13	1057.78	374.62	1067.28	377
1098.17	384.68								

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.05	70	.02	585	.07	819.24	.05	925	.035

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
819.24	947.33	184.65	188.8	191.6	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
0	819.24	360.83	F

CROSS SECTION OUTPUT Profile #Q50

E.G. Elev (ft)	361.68	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.01	Wt. n-Val.	0.026	0.049	0.035
W.S. Elev (ft)	361.67	Reach Len. (ft)	184.65	188.80	191.60
Crit W.S. (ft)	360.84	Flow Area (sq ft)	1685.04	147.28	1.43
E.G. Slope (ft/ft)	0.000032	Area (sq ft)	1685.04	147.28	1.43
Q Total (cfs)	1109.00	Flow (cfs)	1080.37	28.50	0.13
Top Width (ft)	783.67	Top Width (ft)	649.78	128.09	5.80
Vel Total (ft/s)	0.60	Avg. Vel. (ft/s)	0.64	0.19	0.09
Max Chl Dpth (ft)	4.26	Hydr. Depth (ft)	2.59	1.15	0.25

Conv. Total (cfs)	196547.3	Conv. (cfs)	191472.8	5050.8	23.7
Length Wtd. (ft)	187.04	Wetted Per. (ft)	650.04	128.11	5.82
Min Ch El (ft)	360.03	Shear (lb/sq ft)	0.01	0.00	0.00
Alpha	1.10	Stream Power (lb/ft s)	0.00	0.00	0.00
Frctn Loss (ft)	0.02	Cum Volume (acre-ft)	18.82	0.98	0.26
C & E Loss (ft)	0.07	Cum SA (acres)	5.39	0.60	0.33

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.

CROSS SECTION OUTPUT Profile #Q100

E.G. Elev (ft)	361.08	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.03	Wt. n-Val.	0.025	0.050	
W.S. Elev (ft)	361.05	Reach Len. (ft)	184.65	188.80	191.60
Crit W.S. (ft)	360.84	Flow Area (sq ft)	1294.58	68.24	
E.G. Slope (ft/ft)	0.000161	Area (sq ft)	1294.58	68.24	
Q Total (cfs)	1736.00	Flow (cfs)	1717.40	18.60	
Top Width (ft)	728.52	Top Width (ft)	607.99	120.53	
Vel Total (ft/s)	1.27	Avg. Vel. (ft/s)	1.33	0.27	
Max Chl Dpth (ft)	3.64	Hydr. Depth (ft)	2.13	0.57	
Conv. Total (cfs)	136773.2	Conv. (cfs)	135307.5	1465.8	
Length Wtd. (ft)	184.73	Wetted Per. (ft)	608.17	120.54	
Min Ch El (ft)	360.03	Shear (lb/sq ft)	0.02	0.01	
Alpha	1.07	Stream Power (lb/ft s)	0.03	0.00	
Frctn Loss (ft)	0.01	Cum Volume (acre-ft)	18.92	0.89	0.32
C & E Loss (ft)	0.01	Cum SA (acres)	5.36	0.59	0.36

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.

CROSS SECTION OUTPUT Profile #Q100HC

E.G. Elev (ft)	361.29	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.34	Wt. n-Val.	0.025	0.050	
W.S. Elev (ft)	360.95	Reach Len. (ft)	184.65	188.80	191.60
Crit W.S. (ft)	360.84	Flow Area (sq ft)	1232.99	56.26	
E.G. Slope (ft/ft)	0.002064	Area (sq ft)	1232.99	56.26	
Q Total (cfs)	5825.00	Flow (cfs)	5775.87	49.13	
Top Width (ft)	715.68	Top Width (ft)	601.14	114.54	
Vel Total (ft/s)	4.52	Avg. Vel. (ft/s)	4.68	0.87	
Max Chl Dpth (ft)	3.54	Hydr. Depth (ft)	2.05	0.49	
Conv. Total (cfs)	128211.3	Conv. (cfs)	127129.9	1081.4	
Length Wtd. (ft)	184.72	Wetted Per. (ft)	601.30	114.56	
Min Ch El (ft)	360.03	Shear (lb/sq ft)	0.26	0.06	
Alpha	1.07	Stream Power (lb/ft s)	1.24	0.06	
Frctn Loss (ft)	0.09	Cum Volume (acre-ft)	20.56	1.06	0.39
C & E Loss (ft)	0.09	Cum SA (acres)	5.46	0.58	0.38

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: Canada Gobernado
REACH: Middle RS: 1287.613

INPUT
Description:
Station Elevation Data num= 47

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	378.72	.42	378.59	2.47	377.82	27.86	368.08	29.66	367.74
47.12	364.46	53.62	362.7	70.96	360.82	92.18	360.51	94.22	360.46
103.33	360.26	177.39	359.78	185.78	359.71	189.18	359.63	210.24	359.08
299.89	357.02	372.19	355.95	504.3	354.22	536.26	353.8	555.56	353.56
600.4	353.78	680.84	354.15	724.1	354.44	745.96	354.34	762.62	358.51
766.34	359.29	767.19	359.47	771.28	360.03	774.81	360.52	782.94	361.06
794.38	359.68	802.76	358.03	808.56	358.26	830.51	358.22	842.91	359.33
880.05	360.09	882.49	360.14	916.37	361.09	923.28	361.11	929.2	361.12
937.42	362.84	958.74	367.7	967.46	370.76	975.44	374.02	984.43	376.55
988.55	377.35	988.82	377.4						

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	29.66	.02	504.3	.07	771.28	.05	880.05	.035

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
794.38	842.91	190.45	198.85	205.15	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
0	782.94	361.06	F

CROSS SECTION OUTPUT Profile #Q50

E.G. Elev (ft)	361.59	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.70	Wt. n-Val.	0.050	0.050	0.048
W.S. Elev (ft)	360.89	Reach Len. (ft)	190.45	198.85	205.15
Crit W.S. (ft)	360.89	Flow Area (sq ft)	6.03	117.19	55.50
E.G. Slope (ft/ft)	0.018749	Area (sq ft)	3222.53	117.19	55.50
Q Total (cfs)	1109.00	Flow (cfs)	17.44	855.80	235.76
Top Width (ft)	834.70	Top Width (ft)	719.98	48.53	66.20
Vel Total (ft/s)	6.21	Avg. Vel. (ft/s)	2.89	7.30	4.25
Max Chl Dpth (ft)	7.33	Hydr. Depth (ft)	0.60	2.41	0.84
Conv. Total (cfs)	8099.2	Conv. (cfs)	127.4	6250.1	1721.8
Length Wtd. (ft)	195.63	Wetted Per. (ft)	10.07	48.75	66.21
Min Ch El (ft)	358.03	Shear (lb/sq ft)	0.70	2.81	0.98
Alpha	1.17	Stream Power (lb/ft s)	2.03	20.55	4.17
Frctn Loss (ft)	0.87	Cum Volume (acre-ft)	8.41	0.40	0.14
C & E Loss (ft)	0.19	Cum SA (acres)	2.49	0.22	0.17

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: 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)	361.06	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.00	Wt. n-Val.	0.037	0.050	0.047
W.S. Elev (ft)	361.06	Reach Len. (ft)	190.45	198.85	205.15
Crit W.S. (ft)	361.06	Flow Area (sq ft)	3348.11	125.62	67.54
E.G. Slope (ft/ft)	0.000018	Area (sq ft)	3348.11	125.62	67.54
Q Total (cfs)	1736.00	Flow (cfs)	1696.61	29.73	9.66
Top Width (ft)	846.56	Top Width (ft)	725.63	48.53	72.39
Vel Total (ft/s)	0.49	Avg. Vel. (ft/s)	0.51	0.24	0.14
Max Chl Dpth (ft)	7.50	Hydr. Depth (ft)	4.61	2.59	0.93
Conv. Total (cfs)	409790.1	Conv. (cfs)	400491.5	7017.4	2281.2
Length Wtd. (ft)	190.95	Wetted Per. (ft)	726.50	48.75	72.41
Min Ch El (ft)	358.03	Shear (lb/sq ft)	0.01	0.00	0.00
Alpha	1.05	Stream Power (lb/ft s)	0.00	0.00	0.00
Frctn Loss (ft)	0.01	Cum Volume (acre-ft)	9.08	0.47	0.18
C & E Loss (ft)	0.01	Cum SA (acres)	2.53	0.22	0.20

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 conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m), between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water 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)	361.11	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.04	Wt. n-Val.	0.037	0.050	0.047
W.S. Elev (ft)	361.07	Reach Len. (ft)	190.45	198.85	205.15
Crit W.S. (ft)	361.07	Flow Area (sq ft)	3353.51	125.98	68.08
E.G. Slope (ft/ft)	0.000201	Area (sq ft)	3353.51	125.98	68.08
Q Total (cfs)	5825.00	Flow (cfs)	5692.37	99.93	32.70
Top Width (ft)	846.89	Top Width (ft)	725.70	48.53	72.66
Vel Total (ft/s)	1.64	Avg. Vel. (ft/s)	1.70	0.79	0.48
Max Chl Dpth (ft)	7.51	Hydr. Depth (ft)	4.62	2.60	0.94
Conv. Total (cfs)	411009.0	Conv. (cfs)	401650.6	7051.0	2307.3
Length Wtd. (ft)	191.00	Wetted Per. (ft)	726.57	48.75	72.68
Min Ch El (ft)	358.03	Shear (lb/sq ft)	0.06	0.03	0.01
Alpha	1.05	Stream Power (lb/ft s)	0.10	0.03	0.01
Frctn Loss (ft)	0.09	Cum Volume (acre-ft)	10.84	0.66	0.24
C & E Loss (ft)	0.01	Cum SA (acres)	2.65	0.22	0.22

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water 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: Canada Gobernado
REACH: Middle RS: 1088.688

INPUT
Description:
Station Elevation Data num= 38

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	376.2	3.04	375.63	15.31	373.29	32.05	368.72	38.2	367.51
48.41	366.93	86.37	364.8	95.96	364.25	124.03	362.83	147.53	361.65
198.12	360.78	247.63	359.73	266.8	359.26	299.83	358.39	393.24	355.36
431.89	354.92	513.14	353.72	559.62	353.03	590.45	352.58	618.27	352.43
649.15	352.99	722.5	354.39	780.77	354.27	784.23	354.28	814.75	354.33
847.74	353.86	863.38	354.39	876.86	356.07	881.05	356.93	891.98	359.17
905.2	361.08	921.97	363.73	927.65	364.37	928.47	364.46	930.89	364.91
945.69	367.45	964.28	376.09	968.19	377.84				

Manning's n Values num= 4

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	48.41	.02	513.14	.07	784.23	.05

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
814.75	863.38	1170.86	1088.69 1068.58	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
0	814.75	354.33	F

CROSS SECTION OUTPUT Profile #Q50

			Left OB	Channel	Right OB
E.G. Elev (ft)	355.36	Element			
Vel Head (ft)	0.04	Wt. n-Val.	0.057	0.050	0.050
W.S. Elev (ft)	355.32	Reach Len. (ft)			
Crit W.S. (ft)	354.34	Flow Area (sq ft)	626.54	59.05	3.46
E.G. Slope (ft/ft)	0.002001	Area (sq ft)	626.54	59.05	3.46
Q Total (cfs)	1109.00	Flow (cfs)	1016.91	89.34	2.75
Top Width (ft)	473.99	Top Width (ft)	417.91	48.63	7.45
Vel Total (ft/s)	1.61	Avg. Vel. (ft/s)	1.62	1.51	0.79
Max Chl Dpth (ft)	2.89	Hydr. Depth (ft)	1.50	1.21	0.46
Conv. Total (cfs)	24790.8	Conv. (cfs)	22732.2	1997.2	61.4
Length Wtd. (ft)		Wetted Per. (ft)	417.95	48.64	7.51
Min Ch El (ft)	353.86	Shear (lb/sq ft)	0.19	0.15	0.06
Alpha	1.00	Stream Power (lb/ft s)	0.30	0.23	0.05
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)	355.79	Element			
Vel Head (ft)	0.06	Wt. n-Val.	0.054	0.050	0.050
W.S. Elev (ft)	355.74	Reach Len. (ft)			

Crit W.S. (ft)	354.52	Flow Area (sq ft)	804.13	79.30	7.26
E.G. Slope (ft/ft)	0.002001	Area (sq ft)	804.13	79.30	7.26
Q Total (cfs)	1736.00	Flow (cfs)	1582.60	146.03	7.37
Top Width (ft)	492.51	Top Width (ft)	433.08	48.63	10.79
Vel Total (ft/s)	1.95	Avg. Vel. (ft/s)	1.97	1.84	1.02
Max Chl Dpth (ft)	3.31	Hydr. Depth (ft)	1.86	1.63	0.67
Conv. Total (cfs)	38807.4	Conv. (cfs)	35378.1	3264.4	164.8
Length Wtd. (ft)		Wetted Per. (ft)	433.13	48.64	10.88
Min Ch El (ft)	353.86	Shear (lb/sq ft)	0.23	0.20	0.08
Alpha	1.01	Stream Power (lb/ft s)	0.46	0.38	0.08
Frctn Loss (ft)		Cum Volume (acre-ft)			
C & E Loss (ft)		Cum SA (acres)			

CROSS SECTION OUTPUT Profile #Q100HC

E.G. Elev (ft)	357.64	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.16	Wt. n-Val.	0.046	0.050	0.050
W.S. Elev (ft)	357.48	Reach Len. (ft)			
Crit W.S. (ft)	355.55	Flow Area (sq ft)	1604.19	163.90	35.07
E.G. Slope (ft/ft)	0.002001	Area (sq ft)	1604.19	163.90	35.07
Q Total (cfs)	5825.00	Flow (cfs)	5268.83	489.65	66.52
Top Width (ft)	555.67	Top Width (ft)	486.71	48.63	20.33
Vel Total (ft/s)	3.23	Avg. Vel. (ft/s)	3.28	2.99	1.90
Max Chl Dpth (ft)	5.04	Hydr. Depth (ft)	3.30	3.37	1.73
Conv. Total (cfs)	130234.0	Conv. (cfs)	117799.4	10947.4	1487.2
Length Wtd. (ft)		Wetted Per. (ft)	486.78	48.64	20.58
Min Ch El (ft)	353.86	Shear (lb/sq ft)	0.41	0.42	0.21
Alpha	1.01	Stream Power (lb/ft s)	1.35	1.26	0.40
Frctn Loss (ft)		Cum Volume (acre-ft)			
C & E Loss (ft)		Cum SA (acres)			

SUMMARY OF MANNING'S N VALUES

River:Canada Gobernado

Reach	River Sta.	n1	n2	n3	n4	n5	n6	n7	n8	n9	n10	n11
Middle	4267.755	.035	.05	.035	.05							
Middle	4230.35*	.035	.046	.039	.035	.035	.035	.05	.05	.05	.05	
Middle	4192.95*	.035	.043	.043	.035	.035	.035	.05	.05	.05	.05	
Middle	4155.56*	.035	.039	.046	.035	.035	.035	.05	.05	.05	.05	
Middle	4118.164	.035	.05	.035	.05							
Middle	4079.07*	.035	.041	.064	.038	.053	.053	.041	.041	.053	.053	.053
Middle	4039.99*	.035	.047	.058	.04	.057	.057	.047	.047	.057	.057	.057
Middle	4000.90*	.035	.052	.053	.043	.06	.06	.052	.052	.06	.06	.06
Middle	3961.82*	.035	.058	.047	.045	.063	.063	.058	.058	.063	.063	.063
Middle	3922.73*	.035	.064	.041	.047	.067	.067	.064	.064	.067	.067	.067
Middle	3883.652	.035	.07	.035	.05	.07						
Middle	3699.802	.035	.05	.07								
Middle	3498.424	.035	.05									
Middle	3286.975	.035	.05									
Middle	3193.163	.035	.05									
Middle	3092.876	.035	.05									
Middle	2990.847	.035	.05									
Middle	2889.112	.035	.05									

Middle	2789.662	.035	.05			
Middle	2683.108	.035	.05			
Middle	2588.648	.035	.05	.035		
Middle	2486.871	.035	.05	.035		
Middle	2398.348	.035	.05	.035		
Middle	2292.400	.035	.05	.035		
Middle	2208.408	.035	.02	.035	.05	.035
Middle	2114.162	.035	.02	.05	.035	
Middle	2015.501	.035	.02	.07	.05	.035
Middle	1883.106	.035	.02	.07	.05	.035
Middle	1768.369	.035	.02	.07	.05	.035
Middle	1659.726	.02	.07	.05	.035	
Middle	1476.413	.05	.02	.07	.05	.035
Middle	1287.613	.035	.02	.07	.05	.035
Middle	1088.688	.035	.02	.07	.05	

SUMMARY OF REACH LENGTHS

River: Canada Gobernado

Reach	River Sta.	Left	Channel	Right
Middle	4267.755	37.27	37.4	39.85
Middle	4230.35*	37.27	37.4	39.85
Middle	4192.95*	37.27	37.4	39.85
Middle	4155.56*	37.27	37.4	39.85
Middle	4118.164	38.08	39.08	41.5
Middle	4079.07*	38.08	39.08	41.5
Middle	4039.99*	38.08	39.08	41.5
Middle	4000.90*	38.08	39.08	41.5
Middle	3961.82*	38.08	39.08	41.5
Middle	3922.73*	38.08	39.08	41.5
Middle	3883.652	178.65	183.85	189
Middle	3699.802	198.4	201.4	207.1
Middle	3498.424	211.35	211.45	215.2
Middle	3286.975	93.39	93.81	91.77
Middle	3193.163	99.93	100.29	97.53
Middle	3092.876	100.86	102.03	95.28
Middle	2990.847	101.13	101.73	108.3
Middle	2889.112	99.45	99.45	100.05
Middle	2789.662	106.35	106.56	108.99
Middle	2683.108	95.66	94.46	94.94
Middle	2588.648	101.5	101.78	103.02
Middle	2486.871	89.23	88.52	87.81
Middle	2398.348	105.16	105.95	105.06
Middle	2292.400	84.91	83.99	84.03
Middle	2208.408	95.5	94.25	92.91
Middle	2114.162	99.92	98.66	97.98
Middle	2015.501	133.64	132.4	133.6
Middle	1883.106	116.44	114.74	111.85
Middle	1768.369	111.41	108.64	106.97
Middle	1659.726	187.35	183.3	180.95
Middle	1476.413	184.65	188.8	191.6
Middle	1287.613	190.45	198.85	205.15
Middle	1088.688	1170.86	1088.69	1068.58

SUMMARY OF CONTRACTION AND EXPANSION COEFFICIENTS
River: Canada Gobernado

Reach	River Sta.	Contr.	Expan.
Middle	4267.755	.1	.3
Middle	4230.35*	.1	.3
Middle	4192.95*	.1	.3
Middle	4155.56*	.1	.3
Middle	4118.164	.1	.3
Middle	4079.07*	.1	.3
Middle	4039.99*	.1	.3
Middle	4000.90*	.1	.3
Middle	3961.82*	.1	.3
Middle	3922.73*	.1	.3
Middle	3883.652	.1	.3
Middle	3699.802	.1	.3
Middle	3498.424	.1	.3
Middle	3286.975	.1	.3
Middle	3193.163	.1	.3
Middle	3092.876	.1	.3
Middle	2990.847	.1	.3
Middle	2889.112	.1	.3
Middle	2789.662	.1	.3
Middle	2683.108	.1	.3
Middle	2588.648	.1	.3
Middle	2486.871	.1	.3
Middle	2398.348	.1	.3
Middle	2292.400	.1	.3
Middle	2208.408	.1	.3
Middle	2114.162	.1	.3
Middle	2015.501	.1	.3
Middle	1883.106	.1	.3
Middle	1768.369	.1	.3
Middle	1659.726	.1	.3
Middle	1476.413	.1	.3
Middle	1287.613	.1	.3
Middle	1088.688	.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	4267.755	Q50	1109.00	378.17	381.46	380.69	381.49	0.000802	1.39	861.66	695.85	0.17
Middle	4267.755	Q100	1736.00	378.17	381.73	380.77	381.78	0.001016	1.70	1051.74	698.50	0.20
Middle	4267.755	Q100HC	5825.00	378.17	382.85	381.53	383.00	0.001830	2.97	1834.70	713.33	0.28
Middle	4230.35*	Q50	1109.00	378.51	381.42	380.76	381.45	0.000968	2.09	771.40	688.43	0.27
Middle	4230.35*	Q100	1736.00	378.51	381.68	380.98	381.73	0.001209	2.52	951.29	691.71	0.30
Middle	4230.35*	Q100HC	5825.00	378.51	382.74	381.66	382.93	0.002126	4.29	1696.50	717.28	0.42
Middle	4192.95*	Q50	1109.00	378.85	381.36	380.84	381.41	0.001506	2.42	676.14	683.44	0.33
Middle	4192.95*	Q100	1736.00	378.85	381.61	381.04	381.68	0.001822	2.88	845.50	695.01	0.37

Middle	4192.95*	Q100HC	5825.00	378.85	382.61	381.74	382.83	0.002898	4.73	1559.04	727.01	0.49
Middle	4155.56*	Q50	1109.00	379.18	381.26	380.91	381.33	0.002836	3.00	568.58	714.98	0.44
Middle	4155.56*	Q100	1736.00	379.18	381.49	381.05	381.59	0.003062	3.41	734.97	722.17	0.46
Middle	4155.56*	Q100HC	5825.00	379.18	382.43	381.78	382.70	0.004068	5.20	1413.64	731.76	0.56
Middle	4118.164	Q50	1109.00	379.52	381.06	380.87	381.17	0.006857	3.59	429.67	667.26	0.59
Middle	4118.164	Q100	1736.00	379.52	381.27	381.04	381.42	0.006930	4.01	580.94	722.98	0.61
Middle	4118.164	Q100HC	5825.00	379.52	382.12	381.74	382.49	0.007281	5.60	1191.60	726.85	0.67
Middle	4079.07*	Q50	1109.00	379.56	380.81	380.57	380.90	0.006835	2.73	450.90	697.66	0.52
Middle	4079.07*	Q100	1736.00	379.56	380.99	380.73	381.13	0.008054	3.37	588.39	745.86	0.58
Middle	4079.07*	Q100HC	5825.00	379.56	381.83	381.45	382.19	0.008450	5.07	1213.96	755.84	0.65
Middle	4039.99*	Q50	1109.00	379.60	380.65	380.42	380.71	0.003544	1.45	555.19	761.52	0.32
Middle	4039.99*	Q100	1736.00	379.60	380.75	380.42	380.87	0.005878	2.05	631.62	763.30	0.41
Middle	4039.99*	Q100HC	5825.00	379.60	381.49	381.14	381.86	0.008801	3.90	1201.68	776.68	0.56
Middle	4000.90*	Q50	1109.00	379.64	380.59	380.46	380.63	0.001209	0.71	755.34	790.01	0.16
Middle	4000.90*	Q100	1736.00	379.64	380.63	380.46	380.71	0.002654	1.09	784.98	790.56	0.25
Middle	4000.90*	Q100HC	5825.00	379.64	381.14	380.84	381.52	0.008749	2.90	1186.12	798.42	0.48
Middle	3961.82*	Q50	1109.00	379.68	380.58	380.49	380.60	0.000469	0.38	1000.80	821.11	0.09
Middle	3961.82*	Q100	1736.00	379.68	380.59	380.49	380.64	0.001116	0.59	1011.75	821.34	0.14
Middle	3961.82*	Q100HC	5825.00	379.68	380.84	380.53	381.21	0.007439	1.92	1217.56	825.50	0.38
Middle	3922.73*	Q50	1109.00	379.72	380.57	380.53	380.58	0.000212	0.22	1271.93	853.90	0.06
Middle	3922.73*	Q100	1736.00	379.72	380.57	380.53	380.60	0.000517	0.35	1275.37	854.00	0.09
Middle	3922.73*	Q100HC	5825.00	379.72	380.66	380.53	380.96	0.005017	1.19	1346.53	855.91	0.27
Middle	3883.652	Q50	1109.00	379.76	380.57	380.57	380.58	0.000108	0.13	1562.12	890.69	0.03
Middle	3883.652	Q100	1736.00	379.76	380.57	380.57	380.59	0.000265	0.21	1562.12	890.69	0.05
Middle	3883.652	Q100HC	5825.00	379.76	380.57	380.57	380.79	0.002982	0.70	1562.12	890.69	0.18
Middle	3699.802	Q50	1109.00	373.74	374.79	374.10	374.84	0.001150	0.90	673.22	549.44	0.17
Middle	3699.802	Q100	1736.00	373.74	374.97	374.20	375.06	0.001850	1.30	773.75	560.19	0.23
Middle	3699.802	Q100HC	5825.00	373.74	374.18	375.12	378.66	0.222670	5.65	349.98	497.59	1.97
Middle	3498.424	Q50	1109.00	367.50	372.57	372.57	374.06	0.026994	9.79	113.26	38.34	1.00
Middle	3498.424	Q100	1736.00	367.50	373.95	373.95	374.33	0.008807	6.05	433.55	533.38	0.59
Middle	3498.424	Q100HC	5825.00	367.50	375.44	374.68	375.68	0.003637	4.36	1490.74	744.79	0.39
Middle	3286.975	Q50	1109.00	366.97	370.28	369.63	370.64	0.007195	4.26	232.89	120.78	0.50
Middle	3286.975	Q100	1736.00	366.97	370.92	370.21	371.41	0.007408	4.84	315.56	135.78	0.52
Middle	3286.975	Q100HC	5825.00	366.97	372.75	372.65	374.20	0.014482	8.55	608.48	191.89	0.78
Middle	3193.163	Q50	1109.00	365.89	369.49	369.02	369.89	0.008968	4.98	219.74	127.15	0.56
Middle	3193.163	Q100	1736.00	365.89	369.87	369.56	370.51	0.012287	6.23	270.42	139.15	0.67
Middle	3193.163	Q100HC	5825.00	365.89	371.89	371.89	372.79	0.012180	8.00	767.08	439.97	0.71
Middle	3092.876	Q50	1109.00	365.92	368.68		368.90	0.009615	4.26	296.76	318.69	0.56
Middle	3092.876	Q100	1736.00	365.92	368.99		369.28	0.010399	4.64	399.80	359.02	0.59
Middle	3092.876	Q100HC	5825.00	365.92	369.58	369.92	370.88	0.032628	8.96	637.28	441.81	1.07
Middle	2990.847	Q50	1109.00	367.03	368.54	367.69	368.58	0.001213	1.31	689.46	554.34	0.19
Middle	2990.847	Q100	1736.00	367.03	368.81	367.92	368.87	0.001637	1.70	839.44	580.27	0.23
Middle	2990.847	Q100HC	5825.00	367.03	369.98	368.83	370.19	0.002791	3.16	1584.38	694.90	0.33
Middle	2889.112	Q50	1109.00	367.04	368.41	367.70	368.45	0.001522	1.34	722.28	730.66	0.21

Middle	2889.112	Q100	1736.00	367.04	368.64	367.89	368.70	0.001873	1.67	888.53	734.23	0.24
Middle	2889.112	Q100HC	5825.00	367.04	369.73	368.68	369.91	0.002466	2.77	1701.99	753.00	0.30
Middle	2789.662	Q50	1109.00	367.05	368.28	367.65	368.31	0.001205	1.08	775.93	756.72	0.18
Middle	2789.662	Q100	1736.00	367.05	368.46	367.80	368.52	0.001728	1.43	913.24	760.24	0.23
Middle	2789.662	Q100HC	5825.00	367.05	369.48	368.49	369.67	0.002537	2.58	1695.83	773.76	0.30
Middle	2683.108	Q50	1109.00	365.63	368.16	367.63	368.19	0.001069	1.30	824.00	791.71	0.18
Middle	2683.108	Q100	1736.00	365.63	368.27	367.64	368.32	0.001898	1.81	908.49	792.95	0.25
Middle	2683.108	Q100HC	5825.00	365.63	369.17	368.31	369.37	0.003104	3.09	1625.92	801.73	0.34
Middle	2588.648	Q50	1109.00	365.53	368.07	368.07	368.09	0.000862	1.17	885.12	832.20	0.18
Middle	2588.648	Q100	1736.00	365.53	368.07	368.07	368.13	0.002112	1.84	885.04	832.20	0.28
Middle	2588.648	Q100HC	5825.00	365.53	368.15	368.15	368.73	0.018556	5.65	954.21	833.76	0.84
Middle	2486.871	Q50	1109.00	363.83	365.38	364.52	365.44	0.000680	0.95	614.92	357.37	0.14
Middle	2486.871	Q100	1736.00	363.83	365.42	364.52	365.56	0.001593	1.47	627.87	372.71	0.22
Middle	2486.871	Q100HC	5825.00	363.83	365.50	366.00	366.90	0.016133	4.87	660.39	408.66	0.71
Middle	2398.348	Q50	1109.00	363.99	365.36	365.36	365.39	0.000389	0.54	875.49	688.15	0.11
Middle	2398.348	Q100	1736.00	363.99	365.36	365.36	365.43	0.000953	0.85	875.49	688.15	0.17
Middle	2398.348	Q100HC	5825.00	363.99	365.84	365.45	366.22	0.005051	2.65	1214.45	728.33	0.42
Middle	2292.400	Q50	1109.00	364.36	364.70	364.70	364.73	0.000502	0.21	788.37	655.37	0.09
Middle	2292.400	Q100	1736.00	364.36	364.70	364.70	364.78	0.001231	0.32	788.37	655.37	0.14
Middle	2292.400	Q100HC	5825.00	364.36	365.04	364.85	365.56	0.007697	1.67	1017.63	683.85	0.41
Middle	2208.408	Q50	1109.00	361.27	362.77	362.70	363.25	0.004055	1.99	213.17	186.86	0.37
Middle	2208.408	Q100	1736.00	361.27	362.54	363.13	364.35	0.017179	3.41	172.44	169.07	0.73
Middle	2208.408	Q100HC	5825.00	361.27	364.40	364.40	365.04	0.004701	4.19	917.41	686.44	0.46
Middle	2114.162	Q50	1109.00	359.49	362.23	362.21	362.70	0.008708	4.32	211.02	220.94	0.71
Middle	2114.162	Q100	1736.00	359.49	362.35	362.61	363.26	0.015044	5.89	239.58	235.79	0.92
Middle	2114.162	Q100HC	5825.00	359.49	363.53	363.71	364.40	0.009634	6.44	788.94	696.44	0.72
Middle	2015.501	Q50	1109.00	359.47	361.98	361.63	362.14	0.002951	2.38	351.53	390.24	0.32
Middle	2015.501	Q100	1736.00	359.47	362.16	361.94	362.42	0.004415	3.12	433.95	501.84	0.40
Middle	2015.501	Q100HC	5825.00	359.47	363.24	362.92	363.57	0.004433	4.22	1258.92	887.28	0.43
Middle	1883.106	Q50	1109.00	360.36	361.87	361.40	361.91	0.000881	0.94	715.18	904.30	0.16
Middle	1883.106	Q100	1736.00	360.36	361.97	361.58	362.05	0.001457	1.29	814.13	907.47	0.20
Middle	1883.106	Q100HC	5825.00	360.36	363.05	362.21	363.23	0.001367	1.86	1809.67	946.13	0.21
Middle	1768.369	Q50	1109.00	360.19	361.77	361.09	361.80	0.000908	0.99	783.41	796.06	0.16
Middle	1768.369	Q100	1736.00	360.19	361.76	361.20	361.84	0.002240	1.56	780.43	791.82	0.25
Middle	1768.369	Q100HC	5825.00	360.19	362.86	362.00	363.04	0.001862	2.13	1760.89	906.14	0.25
Middle	1659.726	Q50	1109.00	360.90	361.67	361.25	361.70	0.000821	0.59	764.06	654.01	0.14
Middle	1659.726	Q100	1736.00	360.90	361.25	361.25	361.44	0.006487	0.75	500.70	589.51	0.32
Middle	1659.726	Q100HC	5825.00	360.90	361.89	361.89	362.56	0.013467	2.99	913.33	684.21	0.59
Middle	1476.413	Q50	1109.00	360.03	361.67	360.84	361.68	0.000032	0.19	1833.75	783.67	0.03
Middle	1476.413	Q100	1736.00	360.03	361.05	360.84	361.08	0.000161	0.27	1362.82	728.52	0.06
Middle	1476.413	Q100HC	5825.00	360.03	360.95	360.84	361.29	0.002064	0.87	1289.26	715.68	0.22
Middle	1287.613	Q50	1109.00	358.03	360.89	360.89	361.59	0.018749	7.30	178.72	834.70	0.83
Middle	1287.613	Q100	1736.00	358.03	361.06	361.06	361.06	0.000018	0.24	3541.27	846.56	0.03
Middle	1287.613	Q100HC	5825.00	358.03	361.07	361.07	361.11	0.000201	0.79	3547.57	846.89	0.09

Middle	1088.688	Q50	1109.00	353.86	355.32	354.34	355.36	0.002001	1.51	689.05	473.99	0.24
Middle	1088.688	Q100	1736.00	353.86	355.74	354.52	355.79	0.002001	1.84	890.69	492.51	0.25
Middle	1088.688	Q100HC	5825.00	353.86	357.48	355.55	357.64	0.002001	2.99	1803.17	555.67	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 AX1
Project File : PMAX1.prj
Run Date and Time: 8/28/2003 10:47:39 PM

Project in English units

PLAN DATA

Plan Title: Existing Flow/Proposed-Ultimate Geometry
Plan File : m:\2PDA0104\Hydr\LHS\Modeling\Model A\HecRas A\PMAX1.p03

Geometry Title: Proposed Conditions - Ultimate
Geometry File : m:\2PDA0104\Hydr\LHS\Modeling\Model A\HecRas A\PMAX1.g03

Flow Title : Existing Conditions
Flow File : m:\2PDA0104\Hydr\LHS\Modeling\Model A\HecRas A\PMAX1.f01

Plan Summary Information:
Number of: Cross Sections = 33 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 : m:\2PDA0104\Hydr\LHS\Modeling\Model A\HecRas A\PMAX1.f01

Flow Data (cfs)

River	Reach	RS	Q2	Q5	Q10	Q25	Q50	Q100	Q100HC
Canada	GobernadoMiddle	4267.755	1	53	143	491	1109	1736	5825

Boundary Conditions

River	Reach	Profile	Upstream	Downstream
Canada	GobernadoMiddle	Q2	Normal S = 0.006	Normal S = 0.002
Canada	GobernadoMiddle	Q5	Normal S = 0.006	Normal S = 0.002
Canada	GobernadoMiddle	Q10	Normal S = 0.006	Normal S = 0.002
Canada	GobernadoMiddle	Q25	Normal S = 0.006	Normal S = 0.002
Canada	GobernadoMiddle	Q50	Normal S = 0.006	Normal S = 0.002
Canada	GobernadoMiddle	Q100	Normal S = 0.006	Normal S = 0.002
Canada	GobernadoMiddle	Q100HC	Normal S = 0.006	Normal S = 0.002

GEOMETRY DATA

Geometry Title: Proposed Conditions - Ultimate
Geometry File : m:\2PDA0104\Hydr\LHS\Modeling\Model A\HecRas A\PMAX1.g03

CROSS SECTION

RIVER: Canada Gobernado
REACH: Middle RS: 4267.755

INPUT
Description:
Station Elevation Data num= 39

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	392.11	24.15	387.63	40.15	385.4	60.41	383.69	82.28	382.45
98.84	380.27	149.27	380.69	247.37	380.99	290.66	380.27	327.89	380.16
351.91	379.97	420.14	380.67	428.15	380.61	440.99	380.48	452.83	380.37
464.76	380.28	471.12	380.23	481.21	380.17	484.73	380.15	593.31	379.62
638.93	379.71	639.07	379.71	643.17	379.76	649.63	379.84	706.47	380.42
725.22	380.68	734.29	380.05	754.06	378.68	757.18	378.47	763.2	378.17
768.52	378.89	770.16	379.11	777.03	380.05	783.38	380.9	784.86	381.1
788.47	382.78	811.13	391.67	812.43	392.19	819.32	393.73		

Manning's n Values num= 4

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	639.07	.05	777.03	.035	811.13	.05

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
725.22 783.38 37.27 37.4 39.85 .1 .3
Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
0	725.22	380.68	F

CROSS SECTION OUTPUT Profile #Q50

E.G. Elev (ft)	381.49	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.03	Wt. n-Val.	0.037	0.049	0.035
W.S. Elev (ft)	381.46	Reach Len. (ft)	37.27	37.40	39.85
Crit W.S. (ft)	380.69	Flow Area (sq ft)	742.71	118.12	0.82
E.G. Slope (ft/ft)	0.000802	Area (sq ft)	742.71	118.12	0.82
Q Total (cfs)	1109.00	Flow (cfs)	944.28	164.23	0.49
Top Width (ft)	695.85	Top Width (ft)	635.43	58.16	2.26
Vel Total (ft/s)	1.29	Avg. Vel. (ft/s)	1.27	1.39	0.60
Max Chl Dpth (ft)	3.29	Hydr. Depth (ft)	1.17	2.03	0.36
Conv. Total (cfs)	39167.4	Conv. (cfs)	33350.0	5800.1	17.4
Length Wtd. (ft)	37.29	Wetted Per. (ft)	635.53	58.43	2.35
Min Ch El (ft)	378.17	Shear (lb/sq ft)	0.06	0.10	0.02
Alpha	1.00	Stream Power (lb/ft s)	0.07	0.14	0.01
Frctn Loss (ft)	0.03	Cum Volume (acre-ft)	53.64	6.56	0.39
C & E Loss (ft)	0.00	Cum SA (acres)	33.97	4.99	0.66

CROSS SECTION OUTPUT Profile #Q100

E.G. Elev (ft)	381.78	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.04	Wt. n-Val.	0.037	0.049	0.035
W.S. Elev (ft)	381.73	Reach Len. (ft)	37.27	37.40	39.85
Crit W.S. (ft)	380.77	Flow Area (sq ft)	916.24	133.98	1.52
E.G. Slope (ft/ft)	0.001016	Area (sq ft)	916.24	133.98	1.52
Q Total (cfs)	1736.00	Flow (cfs)	1506.90	227.79	1.31
Top Width (ft)	698.50	Top Width (ft)	637.50	58.16	2.84
Vel Total (ft/s)	1.65	Avg. Vel. (ft/s)	1.64	1.70	0.86
Max Chl Dpth (ft)	3.56	Hydr. Depth (ft)	1.44	2.30	0.53
Conv. Total (cfs)	54456.8	Conv. (cfs)	47270.3	7145.6	41.0
Length Wtd. (ft)	37.29	Wetted Per. (ft)	637.62	58.43	3.00
Min Ch El (ft)	378.17	Shear (lb/sq ft)	0.09	0.15	0.03
Alpha	1.00	Stream Power (lb/ft s)	0.15	0.25	0.03
Frctn Loss (ft)	0.04	Cum Volume (acre-ft)	57.42	7.07	0.50
C & E Loss (ft)	0.00	Cum SA (acres)	36.81	5.03	0.72

CROSS SECTION OUTPUT Profile #Q100HC

E.G. Elev (ft)	383.00	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.16	Wt. n-Val.	0.037	0.049	0.035
W.S. Elev (ft)	382.85	Reach Len. (ft)	37.27	37.40	39.85
Crit W.S. (ft)	381.53	Flow Area (sq ft)	1630.09	198.61	6.00
E.G. Slope (ft/ft)	0.001830	Area (sq ft)	1630.09	198.61	6.00
Q Total (cfs)	5825.00	Flow (cfs)	5224.57	589.08	11.35
Top Width (ft)	713.33	Top Width (ft)	649.91	58.16	5.26
Vel Total (ft/s)	3.17	Avg. Vel. (ft/s)	3.21	2.97	1.89
Max Chl Dpth (ft)	4.68	Hydr. Depth (ft)	2.51	3.41	1.14
Conv. Total (cfs)	136184.3	Conv. (cfs)	122146.7	13772.3	265.3
Length Wtd. (ft)	37.29	Wetted Per. (ft)	650.09	58.43	5.65
Min Ch El (ft)	378.17	Shear (lb/sq ft)	0.29	0.39	0.12
Alpha	1.00	Stream Power (lb/ft s)	0.92	1.15	0.23
Frctn Loss (ft)	0.07	Cum Volume (acre-ft)	85.53	10.86	1.00
C & E Loss (ft)	0.00	Cum SA (acres)	41.95	5.17	0.97

CROSS SECTION

RIVER: Canada Gobernado
REACH: Middle RS: 4230.35*

INPUT
Description:
Station Elevation Data num= 66

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	391.58	6.09	390.14	14.4	388.06	21.64	386.32	23.94	385.94
24.5	385.87	33.22	384.7	39.81	384.02	59.89	382.77	64.9	382.57
81.57	381.91	97.99	380.34	136.57	380.73	147.99	380.8	181.42	380.88
245.24	380.82	269.06	380.44	270.53	380.42	288.16	380.22	325.07	380.19
348.89	380.09	373.3	380.31	416.53	380.68	424.47	380.64	437.2	380.55
448.94	380.48	453.27	380.46	460.77	380.4	467.07	380.35	477.08	380.29
480.57	380.27	536.06	379.96	588.21	379.84	593.3	379.86	633.44	379.9
633.58	379.9	637.64	379.94	644.05	380	656.92	380.09	660.17	380.11
700.4	380.41	718.99	380.6	727.7	380.06	729.72	379.94	735.16	379.61
740.27	379.3	746.68	378.92	749.68	378.76	755.46	378.51	760.09	379.12
761.52	379.3	761.61	379.32	764.53	379.7	767.5	380.1	773.03	380.82
774.51	381.16	774.68	381.2	778.69	383.08	782.87	384.83	787.64	386.31
793.47	388.01	794.62	388.35	798.79	389.6	803.85	391.11	805.3	391.54
812.95	392.95								

Manning's n Values num= 10

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	633.58	.046	660.17	.039	718.99	.035	737.35	.035
767.13	.035	773.03	.05	794.62	.05	803.85	.05	812.95	.05

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
718.99	773.03	37.27	37.4	39.85	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
0	718.99	380.595	F

CROSS SECTION OUTPUT Profile #Q50

E.G. Elev (ft)	381.45	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.04	Wt. n-Val.	0.036	0.035	0.050
W.S. Elev (ft)	381.42	Reach Len. (ft)	37.27	37.40	39.85
Crit W.S. (ft)	380.76	Flow Area (sq ft)	669.98	100.70	0.72
E.G. Slope (ft/ft)	0.000968	Area (sq ft)	669.98	100.70	0.72
Q Total (cfs)	1109.00	Flow (cfs)	898.43	210.25	0.32
Top Width (ft)	688.43	Top Width (ft)	632.27	54.04	2.11
Vel Total (ft/s)	1.44	Avg. Vel. (ft/s)	1.34	2.09	0.44
Max Chl Dpth (ft)	2.91	Hydr. Depth (ft)	1.06	1.86	0.34
Conv. Total (cfs)	35637.6	Conv. (cfs)	28870.9	6756.4	10.2
Length Wtd. (ft)	37.30	Wetted Per. (ft)	632.34	54.25	2.21
Min Ch El (ft)	378.51	Shear (lb/sq ft)	0.06	0.11	0.02
Alpha	1.10	Stream Power (lb/ft s)	0.09	0.23	0.01
Frctn Loss (ft)	0.04	Cum Volume (acre-ft)	53.03	6.47	0.39
C & E Loss (ft)	0.00	Cum SA (acres)	33.43	4.94	0.66

CROSS SECTION OUTPUT Profile #Q100

E.G. Elev (ft)	381.73	Element	Left OB	Channel	Right OB

Vel Head (ft)	0.06	Wt. n-Val.	0.036	0.035	0.050
W.S. Elev (ft)	381.68	Reach Len. (ft)	37.27	37.40	39.85
Crit W.S. (ft)	380.98	Flow Area (sq ft)	835.16	114.78	1.35
E.G. Slope (ft/ft)	0.001209	Area (sq ft)	835.16	114.78	1.35
Q Total (cfs)	1736.00	Flow (cfs)	1445.93	289.22	0.85
Top Width (ft)	691.71	Top Width (ft)	635.00	54.04	2.67
Vel Total (ft/s)	1.82	Avg. Vel. (ft/s)	1.73	2.52	0.63
Max Chl Dpth (ft)	3.17	Hydr. Depth (ft)	1.32	2.12	0.50
Conv. Total (cfs)	49925.4	Conv. (cfs)	41583.4	8317.5	24.5
Length Wtd. (ft)	37.29	Wetted Per. (ft)	635.08	54.25	2.82
Min Ch El (ft)	378.51	Shear (lb/sq ft)	0.10	0.16	0.04
Alpha	1.07	Stream Power (lb/ft s)	0.17	0.40	0.02
Frctn Loss (ft)	0.05	Cum Volume (acre-ft)	56.67	6.96	0.50
C & E Loss (ft)	0.00	Cum SA (acres)	36.26	4.98	0.72

CROSS SECTION OUTPUT Profile #Q100HC

E.G. Elev (ft)	382.93	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.19	Wt. n-Val.	0.036	0.035	0.050
W.S. Elev (ft)	382.74	Reach Len. (ft)	37.27	37.40	39.85
Crit W.S. (ft)	381.66	Flow Area (sq ft)	1519.07	172.05	5.38
E.G. Slope (ft/ft)	0.002126	Area (sq ft)	1519.07	172.05	5.38
Q Total (cfs)	5825.00	Flow (cfs)	5079.16	738.42	7.42
Top Width (ft)	717.28	Top Width (ft)	658.31	54.04	4.93
Vel Total (ft/s)	3.43	Avg. Vel. (ft/s)	3.34	4.29	1.38
Max Chl Dpth (ft)	4.23	Hydr. Depth (ft)	2.31	3.18	1.09
Conv. Total (cfs)	126343.5	Conv. (cfs)	110166.4	16016.2	161.0
Length Wtd. (ft)	37.29	Wetted Per. (ft)	658.41	54.25	5.32
Min Ch El (ft)	378.51	Shear (lb/sq ft)	0.31	0.42	0.13
Alpha	1.03	Stream Power (lb/ft s)	1.02	1.81	0.19
Frctn Loss (ft)	0.09	Cum Volume (acre-ft)	84.19	10.70	0.99
C & E Loss (ft)	0.00	Cum SA (acres)	41.39	5.12	0.97

CROSS SECTION

RIVER: Canada Gobernado
REACH: Middle RS: 4192.95*

INPUT
Description:
Station Elevation Data num= 66

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	391.05	6.04	389.31	14.28	386.7	21.46	384.58	23.74	384.26
24.28	384.19	32.94	383.08	39.46	382.64	59.37	381.86	64.33	381.73
80.87	381.38	97.14	380.41	135.39	380.86	146.71	380.91	179.84	380.97
243.12	380.65	266.73	380.3	268.19	380.28	285.67	380.18	322.26	380.23
345.86	380.2	370.07	380.4	412.92	380.69	420.79	380.67	433.41	380.62
445.05	380.59	449.35	380.58	456.77	380.52	463.03	380.47	472.94	380.41
476.4	380.38	531.42	380.04	583.12	380.06	588.16	380.09	627.95	380.09
628.09	380.09	632.12	380.12	638.47	380.15	651.22	380.21	654.45	380.22
694.33	380.39	712.76	380.51	721.11	380.08	723.05	379.98	728.26	379.71
733.16	379.45	739.31	379.17	742.18	379.04	747.72	378.85	751.67	379.34
752.88	379.5	752.95	379.51	755.44	379.82	757.98	380.14	762.68	380.73
764.31	381.23	764.49	381.3	768.9	383.37	773.5	385.4	778.74	386.67
785.16	388.02	786.42	388.3	791.01	389.32	796.58	390.54	798.16	390.9
806.58	392.17								

Manning's n Values num= 10

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	628.09	.043	654.45	.043	712.76	.035	729.72	.035
757.23	.035	762.68	.05	786.42	.05	796.58	.05	806.58	.05

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
712.76	762.68	37.27 37.4	39.85	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
0	712.76	380.51	F

CROSS SECTION OUTPUT Profile #Q50

		Element	Left OB	Channel	Right OB
E.G. Elev (ft)	381.41	Wt. n-Val.	0.036	0.035	0.050
Vel Head (ft)	0.05	Reach Len. (ft)	37.27	37.40	39.85
W.S. Elev (ft)	381.36	Flow Area (sq ft)	591.38	84.12	0.64
Crit W.S. (ft)	380.84	Area (sq ft)	591.38	84.12	0.64
E.G. Slope (ft/ft)	0.001506	Flow (cfs)	905.45	203.21	0.34
Q Total (cfs)	1109.00	Top Width (ft)	631.58	49.92	1.94
Top Width (ft)	683.44	Avg. Vel. (ft/s)	1.53	2.42	0.53
Vel Total (ft/s)	1.64	Hydr. Depth (ft)	0.94	1.69	0.33
Max Chl Dpth (ft)	2.51	Conv. (cfs)	23334.2	5236.9	8.8
Conv. Total (cfs)	28580.0	Wetted Per. (ft)	631.62	50.08	2.04
Length Wtd. (ft)	37.29	Shear (lb/sq ft)	0.09	0.16	0.03
Min Ch El (ft)	378.85	Stream Power (lb/ft s)	0.13	0.38	0.02
Alpha	1.11	Cum Volume (acre-ft)	52.49	6.39	0.39
Frctn Loss (ft)	0.08	Cum SA (acres)	32.89	4.90	0.66
C & E Loss (ft)	0.00				

CROSS SECTION OUTPUT Profile #Q100

		Element	Left OB	Channel	Right OB
E.G. Elev (ft)	381.68	Wt. n-Val.	0.036	0.035	0.050
Vel Head (ft)	0.07	Reach Len. (ft)	37.27	37.40	39.85
W.S. Elev (ft)	381.61	Flow Area (sq ft)	747.93	96.39	1.18
Crit W.S. (ft)	381.04	Area (sq ft)	747.93	96.39	1.18
E.G. Slope (ft/ft)	0.001822	Flow (cfs)	1457.08	278.03	0.88
Q Total (cfs)	1736.00	Top Width (ft)	642.63	49.92	2.46
Top Width (ft)	695.01	Avg. Vel. (ft/s)	1.95	2.88	0.75
Vel Total (ft/s)	2.05	Hydr. Depth (ft)	1.16	1.93	0.48
Max Chl Dpth (ft)	2.76	Conv. (cfs)	34136.6	6513.8	20.7
Conv. Total (cfs)	40671.1	Wetted Per. (ft)	642.67	50.08	2.62
Length Wtd. (ft)	37.29	Shear (lb/sq ft)	0.13	0.22	0.05
Min Ch El (ft)	378.85	Stream Power (lb/ft s)	0.26	0.63	0.04
Alpha	1.07	Cum Volume (acre-ft)	56.00	6.87	0.50
Frctn Loss (ft)	0.09	Cum SA (acres)	35.72	4.94	0.72
C & E Loss (ft)	0.00				

CROSS SECTION OUTPUT Profile #Q100HC

		Element	Left OB	Channel	Right OB
E.G. Elev (ft)	382.83	Wt. n-Val.	0.036	0.035	0.050
Vel Head (ft)	0.22	Reach Len. (ft)	37.27	37.40	39.85
W.S. Elev (ft)	382.61	Flow Area (sq ft)	1407.96	146.37	4.72
Crit W.S. (ft)	381.74	Area (sq ft)	1407.96	146.37	4.72
E.G. Slope (ft/ft)	0.002898	Flow (cfs)	5125.36	692.35	7.29
Q Total (cfs)	5825.00	Top Width (ft)	672.49	49.92	4.60
Top Width (ft)	727.01				

Vel Total (ft/s)	3.74	Avg. Vel. (ft/s)	3.64	4.73	1.54
Max Chl Dpth (ft)	3.76	Hydr. Depth (ft)	2.09	2.93	1.03
Conv. Total (cfs)	108200.2	Conv. (cfs)	95204.3	12860.5	135.4
Length Wtd. (ft)	37.29	Wetted Per. (ft)	672.56	50.08	4.98
Min Ch El (ft)	378.85	Shear (lb/sq ft)	0.38	0.53	0.17
Alpha	1.03	Stream Power (lb/ft s)	1.38	2.50	0.26
Frctn Loss (ft)	0.13	Cum Volume (acre-ft)	82.93	10.56	0.99
C & E Loss (ft)	0.00	Cum SA (acres)	40.82	5.08	0.96

CROSS SECTION

RIVER: Canada Gobernado
REACH: Middle RS: 4155.56*

INPUT
Description:
Station Elevation Data num= 66

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	390.52	5.98	388.48	14.15	385.34	21.27	382.84	23.53	382.57
24.07	382.51	32.65	381.46	39.12	381.26	58.85	380.94	63.77	380.9
80.16	380.84	96.29	380.48	134.2	380.99	145.42	381.02	178.27	381.06
240.99	380.48	264.4	380.15	265.84	380.13	283.17	380.13	319.44	380.26
342.84	380.32	366.83	380.48	409.31	380.7	417.12	380.7	429.63	380.7
441.16	380.7	445.42	380.7	452.78	380.64	458.98	380.6	468.81	380.52
472.24	380.5	526.77	380.12	578.02	380.29	583.02	380.31	622.46	380.29
622.6	380.29	626.59	380.29	632.89	380.31	645.53	380.32	648.73	380.32
688.26	380.38	706.53	380.42	714.52	380.09	716.37	380.01	721.36	379.8
726.05	379.61	731.93	379.41	734.68	379.33	739.98	379.18	743.24	379.57
744.24	379.69	744.3	379.7	746.36	379.94	748.45	380.19	752.34	380.65
754.11	381.31	754.31	381.39	759.12	383.67	764.14	385.98	769.85	387.04
776.85	388.03	778.23	388.24	783.23	389.04	789.3	389.98	791.03	390.25
800.21	391.38								

Manning's n Values num= 10

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	622.6	.039	648.73	.046	706.53	.035	722.09	.035
747.34	.035	752.34	.05	778.23	.05	789.3	.05	800.21	.05

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
706.53	752.34	37.27	37.4	39.85	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
0	706.53	380.425	F

CROSS SECTION OUTPUT Profile #Q50

E.G. Elev (ft)	381.33	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.07	Wt. n-Val.	0.036	0.035	0.050
W.S. Elev (ft)	381.26	Reach Len. (ft)	37.27	37.40	39.85
Crit W.S. (ft)	380.91	Flow Area (sq ft)	500.88	67.20	0.50
E.G. Slope (ft/ft)	0.002836	Area (sq ft)	500.88	67.20	0.50
Q Total (cfs)	1109.00	Flow (cfs)	907.05	201.60	0.35
Top Width (ft)	714.98	Top Width (ft)	667.52	45.81	1.65
Vel Total (ft/s)	1.95	Avg. Vel. (ft/s)	1.81	3.00	0.69
Max Chl Dpth (ft)	2.08	Hydr. Depth (ft)	0.75	1.47	0.31
Conv. Total (cfs)	20823.2	Conv. (cfs)	17031.4	3785.3	6.5
Length Wtd. (ft)	37.29	Wetted Per. (ft)	667.54	45.92	1.76

Min Ch El (ft)	379.18	Shear (lb/sq ft)	0.13	0.26	0.05
Alpha	1.14	Stream Power (lb/ft s)	0.24	0.78	0.04
Frctn Loss (ft)	0.16	Cum Volume (acre-ft)	52.03	6.32	0.39
C & E Loss (ft)	0.00	Cum SA (acres)	32.33	4.86	0.65

Warning: The conveyance ratio (upstream 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)	381.59	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.09	Wt. n-Val.	0.036	0.035	0.050
W.S. Elev (ft)	381.49	Reach Len. (ft)	37.27	37.40	39.85
Crit W.S. (ft)	381.05	Flow Area (sq ft)	656.22	77.80	0.95
E.G. Slope (ft/ft)	0.003062	Area (sq ft)	656.22	77.80	0.95
Q Total (cfs)	1736.00	Flow (cfs)	1469.72	265.42	0.86
Top Width (ft)	722.17	Top Width (ft)	674.17	45.81	2.19
Vel Total (ft/s)	2.36	Avg. Vel. (ft/s)	2.24	3.41	0.90
Max Chl Dpth (ft)	2.31	Hydr. Depth (ft)	0.97	1.70	0.43
Conv. Total (cfs)	31374.5	Conv. (cfs)	26562.0	4797.0	15.5
Length Wtd. (ft)	37.29	Wetted Per. (ft)	674.19	45.92	2.35
Min Ch El (ft)	379.18	Shear (lb/sq ft)	0.19	0.32	0.08
Alpha	1.08	Stream Power (lb/ft s)	0.42	1.10	0.07
Frctn Loss (ft)	0.16	Cum Volume (acre-ft)	55.39	6.80	0.50
C & E Loss (ft)	0.01	Cum SA (acres)	35.15	4.89	0.72

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

CROSS SECTION OUTPUT Profile #Q100HC

E.G. Elev (ft)	382.70	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.27	Wt. n-Val.	0.036	0.035	0.050
W.S. Elev (ft)	382.43	Reach Len. (ft)	37.27	37.40	39.85
Crit W.S. (ft)	381.78	Flow Area (sq ft)	1289.16	120.57	3.92
E.G. Slope (ft/ft)	0.004068	Area (sq ft)	1289.16	120.57	3.92
Q Total (cfs)	5825.00	Flow (cfs)	5191.26	627.00	6.74
Top Width (ft)	731.76	Top Width (ft)	681.79	45.81	4.16
Vel Total (ft/s)	4.12	Avg. Vel. (ft/s)	4.03	5.20	1.72
Max Chl Dpth (ft)	3.25	Hydr. Depth (ft)	1.89	2.63	0.94
Conv. Total (cfs)	91325.6	Conv. (cfs)	81389.6	9830.3	105.7
Length Wtd. (ft)	37.29	Wetted Per. (ft)	681.88	45.92	4.53
Min Ch El (ft)	379.18	Shear (lb/sq ft)	0.48	0.67	0.22
Alpha	1.02	Stream Power (lb/ft s)	1.93	3.47	0.38
Frctn Loss (ft)	0.20	Cum Volume (acre-ft)	81.78	10.45	0.99
C & E Loss (ft)	0.01	Cum SA (acres)	40.24	5.04	0.96

CROSS SECTION

RIVER: Canada Gobernado
REACH: Middle RS: 4118.164

INPUT
Description:
Station Elevation Data num= 32

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	389.99	5.93	387.65	14.03	383.98	21.08	381.1	23.86	380.83
32.36	379.84	63.21	380.06	133.02	381.12	176.7	381.15	262.07	380
263.5	379.99	363.6	380.57	441.49	380.82	522.13	380.2	577.88	380.54
639.84	380.44	643.01	380.43	700.3	380.34	709.7	380.05	714.46	379.9
718.94	379.76	732.24	379.52	735.65	379.89	737.27	380.06	741.99	380.57
743.91	381.39	754.77	386.55	760.96	387.4	768.54	388.04	770.03	388.19
775.45	388.76	793.84	390.6						

Manning's n Values num= 4

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	643.01	.05	714.46	.035	770.03	.05

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
700.3	741.99	38.08	39.08	41.5	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
0	700.3	380.34	F

CROSS SECTION OUTPUT Profile #Q50

E.G. Elev (ft)	381.17	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.11	Wt. n-Val.	0.036	0.038	0.035
W.S. Elev (ft)	381.06	Reach Len. (ft)	38.08	39.08	41.50
Crit W.S. (ft)	380.87	Flow Area (sq ft)	381.82	47.57	0.28
E.G. Slope (ft/ft)	0.006857	Area (sq ft)	381.82	47.57	0.28
Q Total (cfs)	1109.00	Flow (cfs)	938.04	170.60	0.36
Top Width (ft)	667.26	Top Width (ft)	624.42	41.69	1.15
Vel Total (ft/s)	2.58	Avg. Vel. (ft/s)	2.46	3.59	1.30
Max Chl Dpth (ft)	1.54	Hydr. Depth (ft)	0.61	1.14	0.24
Conv. Total (cfs)	13392.8	Conv. (cfs)	11328.2	2060.2	4.4
Length Wtd. (ft)	38.21	Wetted Per. (ft)	624.51	41.76	1.25
Min Ch El (ft)	379.52	Shear (lb/sq ft)	0.26	0.49	0.10
Alpha	1.06	Stream Power (lb/ft s)	0.64	1.75	0.13
Frctn Loss (ft)	0.26	Cum Volume (acre-ft)	51.65	6.27	0.39
C & E Loss (ft)	0.00	Cum SA (acres)	31.78	4.82	0.65

Warning: Divided flow computed for this cross-section.

CROSS SECTION OUTPUT Profile #Q100

E.G. Elev (ft)	381.42	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.14	Wt. n-Val.	0.036	0.038	0.035
W.S. Elev (ft)	381.27	Reach Len. (ft)	38.08	39.08	41.50
Crit W.S. (ft)	381.04	Flow Area (sq ft)	523.85	56.51	0.58
E.G. Slope (ft/ft)	0.006930	Area (sq ft)	523.85	56.51	0.58
Q Total (cfs)	1736.00	Flow (cfs)	1508.15	226.88	0.97
Top Width (ft)	722.98	Top Width (ft)	679.65	41.69	1.65
Vel Total (ft/s)	2.99	Avg. Vel. (ft/s)	2.88	4.01	1.67
Max Chl Dpth (ft)	1.75	Hydr. Depth (ft)	0.77	1.36	0.35
Conv. Total (cfs)	20853.1	Conv. (cfs)	18116.2	2725.3	11.6
Length Wtd. (ft)	38.19	Wetted Per. (ft)	679.77	41.76	1.79
Min Ch El (ft)	379.52	Shear (lb/sq ft)	0.33	0.59	0.14
Alpha	1.04	Stream Power (lb/ft s)	0.96	2.35	0.23
Frctn Loss (ft)	0.28	Cum Volume (acre-ft)	54.89	6.74	0.50
C & E Loss (ft)	0.00	Cum SA (acres)	34.57	4.86	0.71

CROSS SECTION OUTPUT Profile #Q100HC

E.G. Elev (ft)	382.49	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.37	Wt. n-Val.	0.036	0.038	0.035
W.S. Elev (ft)	382.12	Reach Len. (ft)	38.08	39.08	41.50
Crit W.S. (ft)	381.74	Flow Area (sq ft)	1097.24	91.63	2.74
E.G. Slope (ft/ft)	0.007281	Area (sq ft)	1097.24	91.63	2.74
Q Total (cfs)	5825.00	Flow (cfs)	5303.80	513.20	8.00
Top Width (ft)	726.85	Top Width (ft)	681.71	41.69	3.45
Vel Total (ft/s)	4.89	Avg. Vel. (ft/s)	4.83	5.60	2.92
Max Chl Dpth (ft)	2.60	Hydr. Depth (ft)	1.61	2.20	0.79
Conv. Total (cfs)	68264.6	Conv. (cfs)	62156.6	6014.3	93.7
Length Wtd. (ft)	38.17	Wetted Per. (ft)	682.00	41.76	3.78
Min Ch El (ft)	379.52	Shear (lb/sq ft)	0.73	1.00	0.33
Alpha	1.01	Stream Power (lb/ft s)	3.54	5.59	0.96
Frctn Loss (ft)	0.30	Cum Volume (acre-ft)	80.76	10.35	0.98
C & E Loss (ft)	0.00	Cum SA (acres)	39.66	5.00	0.96

CROSS SECTION

RIVER: Canada Gobernado
REACH: Middle RS: 4079.07*

INPUT
Description:
Station Elevation Data num= 60

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	389.98	6.18	387.87	12.24	385.51	14.62	384.6	21.96	382.03
24.86	381.73	33.72	380.7	36.52	380.65	48.64	380.2	51.41	380.07
65.86	380.04	74.82	380.08	97.59	380.24	138.59	380.8	179.6	380.88
184.1	380.87	257.97	379.83	273.05	379.65	274.54	379.64	284.08	379.67
317.22	379.77	336.5	379.88	375.13	380.02	378.84	380.03	459.99	380.18
470.17	380.11	487.32	380.07	524.52	379.96	529.06	379.95	544.01	379.92
592.91	380.35	602.1	380.43	618.17	380.46	620.08	380.47	651.41	380.47
664.2	380.45	666.06	380.45	666.65	380.45	669.95	380.44	671.06	380.44
677.55	380.43	729.64	380.37	739.39	380.09	744.32	379.95	748.97	379.81
762.76	379.56	767.17	379.9	769.27	380.06	775.39	380.52	777.86	381.23
790.98	385.37	791.85	385.65	795.29	385.99	799.83	386.49	809.59	387.23
811.51	387.39	812.06	387.44	818.49	388.06	832.48	389.37	842.19	390.07

Manning's n Values num= 11

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	487.32	.041	524.52	.064	620.08	.038	666.06	.053
669.95	.053	729.64	.041	745.18	.041	775.39	.053	811.51	.053
842.19	.053								

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
729.64	775.39	38.08 39.08	41.5	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
0729.64	17380.37	66	F

CROSS SECTION OUTPUT Profile #Q50

E.G. Elev (ft)	380.90	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.09	Wt. n-Val.	0.039	0.041	0.053
W.S. Elev (ft)	380.81	Reach Len. (ft)	38.08	39.08	41.50

Crit W.S. (ft)	380.57	Flow Area (sq ft)	411.78	38.97	0.14
E.G. Slope (ft/ft)	0.006835	Area (sq ft)	411.78	38.97	0.14
Q Total (cfs)	1109.00	Flow (cfs)	1002.52	106.39	0.09
Top Width (ft)	697.66	Top Width (ft)	650.91	45.75	1.00
Vel Total (ft/s)	2.46	Avg. Vel. (ft/s)	2.43	2.73	0.62
Max Chl Dpth (ft)	1.25	Hydr. Depth (ft)	0.63	0.85	0.14
Conv. Total (cfs)	13414.2	Conv. (cfs)	12126.2	1286.9	1.1
Length Wtd. (ft)	38.15	Wetted Per. (ft)	650.94	45.80	1.04
Min Ch El (ft)	379.56	Shear (lb/sq ft)	0.27	0.36	0.06
Alpha	1.00	Stream Power (lb/ft s)	0.66	0.99	0.04
Frctn Loss (ft)	0.18	Cum Volume (acre-ft)	51.30	6.23	0.39
C & E Loss (ft)	0.01	Cum SA (acres)	31.22	4.78	0.65

Warning: Divided flow computed for this cross-section.

CROSS SECTION OUTPUT Profile #Q100

E.G. Elev (ft)	381.13	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.14	Wt. n-Val.	0.039	0.041	0.053
W.S. Elev (ft)	380.99	Reach Len. (ft)	38.08	39.08	41.50
Crit W.S. (ft)	380.73	Flow Area (sq ft)	540.47	47.53	0.39
E.G. Slope (ft/ft)	0.008054	Area (sq ft)	540.47	47.53	0.39
Q Total (cfs)	1736.00	Flow (cfs)	1575.62	160.01	0.37
Top Width (ft)	745.86	Top Width (ft)	698.46	45.75	1.65
Vel Total (ft/s)	2.95	Avg. Vel. (ft/s)	2.92	3.37	0.94
Max Chl Dpth (ft)	1.43	Hydr. Depth (ft)	0.77	1.04	0.24
Conv. Total (cfs)	19344.1	Conv. (cfs)	17557.1	1783.0	4.1
Length Wtd. (ft)	38.15	Wetted Per. (ft)	698.50	45.80	1.72
Min Ch El (ft)	379.56	Shear (lb/sq ft)	0.39	0.52	0.11
Alpha	1.01	Stream Power (lb/ft s)	1.13	1.76	0.11
Frctn Loss (ft)	0.26	Cum Volume (acre-ft)	54.42	6.69	0.50
C & E Loss (ft)	0.01	Cum SA (acres)	33.97	4.82	0.71

CROSS SECTION OUTPUT Profile #Q100HC

E.G. Elev (ft)	382.19	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.36	Wt. n-Val.	0.039	0.041	0.053
W.S. Elev (ft)	381.83	Reach Len. (ft)	38.08	39.08	41.50
Crit W.S. (ft)	381.45	Flow Area (sq ft)	1125.39	85.65	2.92
E.G. Slope (ft/ft)	0.008450	Area (sq ft)	1125.39	85.65	2.92
Q Total (cfs)	5825.00	Flow (cfs)	5385.01	434.39	5.59
Top Width (ft)	755.84	Top Width (ft)	705.73	45.75	4.36
Vel Total (ft/s)	4.80	Avg. Vel. (ft/s)	4.79	5.07	1.92
Max Chl Dpth (ft)	2.27	Hydr. Depth (ft)	1.59	1.87	0.67
Conv. Total (cfs)	63368.9	Conv. (cfs)	58582.4	4725.7	60.9
Length Wtd. (ft)	38.15	Wetted Per. (ft)	705.82	45.80	4.56
Min Ch El (ft)	379.56	Shear (lb/sq ft)	0.84	0.99	0.34
Alpha	1.00	Stream Power (lb/ft s)	4.02	5.00	0.65
Frctn Loss (ft)	0.33	Cum Volume (acre-ft)	79.79	10.28	0.98
C & E Loss (ft)	0.00	Cum SA (acres)	39.05	4.96	0.95

CROSS SECTION

RIVER: Canada Gobernado
REACH: Middle RS: 4039.99*

INPUT
Description:
Station Elevation Data num= 60

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	389.98	6.43	388.09	12.73	386.01	15.21	385.21	22.85	382.95
25.86	382.64	35.07	381.57	37.99	381.45	50.6	380.45	53.48	380.18
68.51	380.02	77.82	379.97	101.51	379.96	144.17	380.48	186.82	380.62
191.51	380.59	268.34	379.46	284.03	379.29	285.58	379.28	295.5	379.3
329.98	379.31	350.04	379.43	390.21	379.48	394.07	379.49	478.49	379.54
489.08	379.48	506.92	379.51	545.62	379.59	550.34	379.59	565.89	379.64
616.76	380.22	626.31	380.32	643.03	380.41	645.02	380.42	677.61	380.47
690.91	380.46	692.85	380.46	693.46	380.46	696.9	380.45	698.05	380.45
704.8	380.45	758.99	380.4	769.08	380.13	774.19	380	779	379.87
793.27	379.6	798.69	379.91	801.27	380.05	808.78	380.48	811.81	381.07
827.86	384.52	828.93	384.75	833.14	385.06	838.69	385.58	850.64	386.41
852.99	386.59	853.66	386.64	861.54	387.36	878.65	388.89	890.53	389.54

Manning's n Values num= 11

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	506.92	.047	545.62	.058	645.02	.04	692.85	.057
696.9	.057	758.99	.047	775.9	.047	808.78	.057	852.99	.057
890.53	.057								

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
758.99	808.78	38.08 39.08	41.5	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
0	758.98	833	80.4133 F

CROSS SECTION OUTPUT Profile #Q50

			Left OB	Channel	Right OB
E.G. Elev (ft)	380.71	Element			
Vel Head (ft)	0.06	Wt. n-Val.	0.038	0.047	0.057
W.S. Elev (ft)	380.65	Reach Len. (ft)	38.08	39.08	41.50
Crit W.S. (ft)	380.42	Flow Area (sq ft)	522.42	32.69	0.07
E.G. Slope (ft/ft)	0.003544	Area (sq ft)	522.42	32.69	0.07
Q Total (cfs)	1109.00	Flow (cfs)	1061.45	47.53	0.02
Top Width (ft)	761.52	Top Width (ft)	710.87	49.79	0.86
Vel Total (ft/s)	2.00	Avg. Vel. (ft/s)	2.03	1.45	0.29
Max Chl Dpth (ft)	1.37	Hydr. Depth (ft)	0.73	0.66	0.08
Conv. Total (cfs)	18629.0	Conv. (cfs)	17830.2	798.5	0.4
Length Wtd. (ft)	38.11	Wetted Per. (ft)	710.91	49.82	0.87
Min Ch El (ft)	379.60	Shear (lb/sq ft)	0.16	0.15	0.02
Alpha	1.01	Stream Power (lb/ft s)	0.33	0.21	0.01
Frctn Loss (ft)	0.07	Cum Volume (acre-ft)	50.89	6.20	0.39
C & E Loss (ft)	0.01	Cum SA (acres)	30.63	4.74	0.65

Warning: The conveyance ratio (upstream 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)	380.87	Element			
Vel Head (ft)	0.12	Wt. n-Val.	0.038	0.047	0.057
W.S. Elev (ft)	380.75	Reach Len. (ft)	38.08	39.08	41.50
Crit W.S. (ft)	380.42	Flow Area (sq ft)	593.75	37.68	0.18
E.G. Slope (ft/ft)	0.005878	Area (sq ft)	593.75	37.68	0.18

Q Total (cfs)	1736.00	Flow (cfs)	1658.77	77.14	0.09
Top Width (ft)	763.30	Top Width (ft)	712.14	49.79	1.37
Vel Total (ft/s)	2.75	Avg. Vel. (ft/s)	2.79	2.05	0.52
Max Chl Dpth (ft)	1.47	Hydr. Depth (ft)	0.83	0.76	0.13
Conv. Total (cfs)	22642.9	Conv. (cfs)	21635.6	1006.1	1.2
Length Wtd. (ft)	38.11	Wetted Per. (ft)	712.18	49.82	1.40
Min Ch El (ft)	379.60	Shear (lb/sq ft)	0.31	0.28	0.05
Alpha	1.01	Stream Power (lb/ft s)	0.85	0.57	0.02
Frctn Loss (ft)	0.14	Cum Volume (acre-ft)	53.93	6.65	0.50
C & E Loss (ft)	0.01	Cum SA (acres)	33.35	4.77	0.71

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.

CROSS SECTION OUTPUT Profile #Q100HC

E.G. Elev (ft)	381.86	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.37	Wt. n-Val.	0.039	0.047	0.057
W.S. Elev (ft)	381.49	Reach Len. (ft)	38.08	39.08	41.50
Crit W.S. (ft)	381.14	Flow Area (sq ft)	1124.56	74.55	2.57
E.G. Slope (ft/ft)	0.008801	Area (sq ft)	1124.56	74.55	2.57
Q Total (cfs)	5825.00	Flow (cfs)	5530.47	290.55	3.98
Top Width (ft)	776.68	Top Width (ft)	721.92	49.79	4.97
Vel Total (ft/s)	4.85	Avg. Vel. (ft/s)	4.92	3.90	1.55
Max Chl Dpth (ft)	2.21	Hydr. Depth (ft)	1.56	1.50	0.52
Conv. Total (cfs)	62091.9	Conv. (cfs)	58952.4	3097.1	42.4
Length Wtd. (ft)	38.12	Wetted Per. (ft)	721.99	49.82	5.07
Min Ch El (ft)	379.60	Shear (lb/sq ft)	0.86	0.82	0.28
Alpha	1.01	Stream Power (lb/ft s)	4.21	3.20	0.43
Frctn Loss (ft)	0.33	Cum Volume (acre-ft)	78.80	10.20	0.98
C & E Loss (ft)	0.00	Cum SA (acres)	38.43	4.92	0.95

CROSS SECTION

RIVER: Canada Gobernado
REACH: Middle RS: 4000.90*

INPUT
Description:
Station Elevation Data num= 60

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	389.97	6.68	388.31	13.22	386.51	15.79	385.83	23.73	383.88
26.86	383.54	36.43	382.43	39.45	382.24	52.55	380.71	55.55	380.29
71.16	380	80.83	379.86	105.44	379.69	149.74	380.17	194.04	380.36
198.91	380.31	278.72	379.09	295.01	378.94	296.62	378.93	306.93	378.92
342.74	378.85	363.57	378.98	405.3	378.95	409.31	378.95	496.99	378.91
507.99	378.85	526.52	378.96	566.71	379.21	571.62	379.24	587.77	379.36
640.6	380.09	650.53	380.21	667.89	380.36	669.95	380.38	703.8	380.48
717.62	380.47	719.64	380.47	720.27	380.46	723.84	380.46	725.03	380.46
732.05	380.46	788.33	380.43	798.77	380.18	804.05	380.04	809.02	379.92
823.78	379.64	830.22	379.92	833.27	380.05	842.17	380.43	845.76	380.91
864.75	383.66	866.01	383.85	870.99	384.14	877.56	384.66	891.69	385.6
894.47	385.79	895.27	385.85	904.58	386.66	924.82	388.41	938.88	389.01

Manning's n Values num= 11

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val

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      0     .035  526.52     .052  566.71     .053  669.95     .043  719.64     .06
  723.84     .06  788.33     .052  806.62     .052  842.17      .06  894.47     .06
  938.88     .06

Bank Sta: Left   Right     Lengths: Left Channel   Right     Coeff Contr.    Expan.
        788.33  842.17              38.08   39.08    41.5              .1        .3
Ineffective Flow      num=        1
   Sta L    Sta R     Elev  Permanent
       0 788.325   380.45         F
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CROSS SECTION OUTPUT Profile #Q50

E.G. Elev (ft)	380.63	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.03	Wt. n-Val.	0.037	0.052	0.060
W.S. Elev (ft)	380.59	Reach Len. (ft)	38.08	39.08	41.50
Crit W.S. (ft)	380.46	Flow Area (sq ft)	724.38	30.86	0.10
E.G. Slope (ft/ft)	0.001209	Area (sq ft)	724.38	30.86	0.10
Q Total (cfs)	1109.00	Flow (cfs)	1087.18	21.80	0.02
Top Width (ft)	790.01	Top Width (ft)	734.95	53.84	1.22
Vel Total (ft/s)	1.47	Avg. Vel. (ft/s)	1.50	0.71	0.16
Max Chl Dpth (ft)	1.74	Hydr. Depth (ft)	0.99	0.57	0.08
Conv. Total (cfs)	31896.4	Conv. (cfs)	31268.9	627.0	0.5
Length Wtd. (ft)	38.10	Wetted Per. (ft)	735.00	53.87	1.23
Min Ch El (ft)	379.64	Shear (lb/sq ft)	0.07	0.04	0.01
Alpha	1.03	Stream Power (lb/ft s)	0.11	0.03	0.00
Frctn Loss (ft)	0.03	Cum Volume (acre-ft)	50.35	6.17	0.39
C & E Loss (ft)	0.00	Cum SA (acres)	30.00	4.69	0.65

Warning: The conveyance ratio (upstream 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)	380.71	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.08	Wt. n-Val.	0.038	0.052	0.060
W.S. Elev (ft)	380.63	Reach Len. (ft)	38.08	39.08	41.50
Crit W.S. (ft)	380.46	Flow Area (sq ft)	751.95	32.88	0.15
E.G. Slope (ft/ft)	0.002654	Area (sq ft)	751.95	32.88	0.15
Q Total (cfs)	1736.00	Flow (cfs)	1700.19	35.77	0.04
Top Width (ft)	790.56	Top Width (ft)	735.22	53.84	1.50
Vel Total (ft/s)	2.21	Avg. Vel. (ft/s)	2.26	1.09	0.27
Max Chl Dpth (ft)	1.78	Hydr. Depth (ft)	1.02	0.61	0.10
Conv. Total (cfs)	33697.3	Conv. (cfs)	33002.1	694.4	0.8
Length Wtd. (ft)	38.10	Wetted Per. (ft)	735.27	53.87	1.52
Min Ch El (ft)	379.64	Shear (lb/sq ft)	0.17	0.10	0.02
Alpha	1.03	Stream Power (lb/ft s)	0.38	0.11	0.00
Frctn Loss (ft)	0.06	Cum Volume (acre-ft)	53.34	6.62	0.50
C & E Loss (ft)	0.01	Cum SA (acres)	32.72	4.73	0.71

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.

CROSS SECTION OUTPUT Profile #Q100HC

E.G. Elev (ft)	381.52	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.38	Wt. n-Val.	0.038	0.052	0.060
W.S. Elev (ft)	381.14	Reach Len. (ft)	38.08	39.08	41.50

Crit W.S. (ft)	380.84	Flow Area (sq ft)	1124.21	60.06	1.85
E.G. Slope (ft/ft)	0.008749	Area (sq ft)	1124.21	60.06	1.85
Q Total (cfs)	5825.00	Flow (cfs)	5648.83	174.02	2.15
Top Width (ft)	798.42	Top Width (ft)	739.43	53.84	5.15
Vel Total (ft/s)	4.91	Avg. Vel. (ft/s)	5.02	2.90	1.16
Max Chl Dpth (ft)	2.29	Hydr. Depth (ft)	1.52	1.12	0.36
Conv. Total (cfs)	62273.7	Conv. (cfs)	60390.3	1860.4	23.0
Length Wtd. (ft)	38.10	Wetted Per. (ft)	739.51	53.87	5.20
Min Ch El (ft)	379.64	Shear (lb/sq ft)	0.83	0.61	0.19
Alpha	1.03	Stream Power (lb/ft s)	4.17	1.76	0.23
Frctn Loss (ft)	0.31	Cum Volume (acre-ft)	77.82	10.14	0.98
C & E Loss (ft)	0.00	Cum SA (acres)	37.79	4.87	0.94

CROSS SECTION

RIVER: Canada Gobernado
REACH: Middle RS: 3961.82*

INPUT
Description:
Station Elevation Data num= 60

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	389.96	6.92	388.53	13.72	387.01	16.38	386.45	24.61	384.8
27.86	384.45	37.78	383.29	40.92	383.04	54.51	380.96	57.61	380.39
73.8	379.98	83.84	379.75	109.36	379.41	155.32	379.85	201.26	380.1
206.32	380.04	289.09	378.72	306	378.58	307.67	378.57	318.35	378.55
355.49	378.39	377.1	378.52	420.39	378.42	424.54	378.41	515.49	378.27
526.9	378.21	546.12	378.41	587.81	378.83	592.89	378.88	609.65	379.08
664.45	379.96	674.74	380.1	692.76	380.31	694.89	380.34	730	380.48
744.33	380.47	746.42	380.47	747.09	380.47	750.79	380.47	752.02	380.47
759.3	380.47	817.68	380.47	828.46	380.22	833.91	380.09	839.05	379.97
854.3	379.68	861.74	379.93	865.27	380.05	875.57	380.39	879.7	380.75
901.63	382.8	903.09	382.95	908.84	383.21	916.42	383.75	932.74	384.78
935.95	384.99	936.87	385.05	947.62	385.96	970.99	387.93	987.23	388.48

Manning's n Values num= 11

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	546.12	.058	587.81	.047	694.89	.045	746.42	.063
750.79	.063	817.68	.058	837.34	.058	875.57	.063	935.95	.063
987.23	.063								

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
817.68	875.57	38.08	39.08	41.5	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
0	817.6666	380.4867	F

CROSS SECTION OUTPUT Profile #Q50

E.G. Elev (ft)	380.60	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.02	Wt. n-Val.	0.037	0.058	0.063
W.S. Elev (ft)	380.58	Reach Len. (ft)	38.08	39.08	41.50
Crit W.S. (ft)	380.49	Flow Area (sq ft)	970.05	30.55	0.20
E.G. Slope (ft/ft)	0.000469	Area (sq ft)	970.05	30.55	0.20
Q Total (cfs)	1109.00	Flow (cfs)	1097.48	11.50	0.02
Top Width (ft)	821.11	Top Width (ft)	761.08	57.89	2.14
Vel Total (ft/s)	1.11	Avg. Vel. (ft/s)	1.13	0.38	0.10

Max Chl Dpth (ft)	2.37	Hydr. Depth (ft)	1.27	0.53	0.09
Conv. Total (cfs)	51186.3	Conv. (cfs)	50654.6	530.7	1.0
Length Wtd. (ft)	38.09	Wetted Per. (ft)	761.14	57.91	2.15
Min Ch El (ft)	379.68	Shear (lb/sq ft)	0.04	0.02	0.00
Alpha	1.03	Stream Power (lb/ft s)	0.04	0.01	0.00
Frctn Loss (ft)	0.01	Cum Volume (acre-ft)	49.61	6.15	0.39
C & E Loss (ft)	0.00	Cum SA (acres)	29.34	4.64	0.65

Warning: The conveyance ratio (upstream 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)	380.64	Element			
Vel Head (ft)	0.05	Wt. n-Val.	0.037	0.058	0.063
W.S. Elev (ft)	380.59	Reach Len. (ft)	38.08	39.08	41.50
Crit W.S. (ft)	380.49	Flow Area (sq ft)	980.20	31.32	0.23
E.G. Slope (ft/ft)	0.001116	Area (sq ft)	980.20	31.32	0.23
Q Total (cfs)	1736.00	Flow (cfs)	1717.51	18.45	0.04
Top Width (ft)	821.34	Top Width (ft)	761.16	57.89	2.29
Vel Total (ft/s)	1.72	Avg. Vel. (ft/s)	1.75	0.59	0.17
Max Chl Dpth (ft)	2.38	Hydr. Depth (ft)	1.29	0.54	0.10
Conv. Total (cfs)	51960.5	Conv. (cfs)	51407.1	552.3	1.2
Length Wtd. (ft)	38.09	Wetted Per. (ft)	761.22	57.91	2.30
Min Ch El (ft)	379.68	Shear (lb/sq ft)	0.09	0.04	0.01
Alpha	1.03	Stream Power (lb/ft s)	0.16	0.02	0.00
Frctn Loss (ft)	0.03	Cum Volume (acre-ft)	52.58	6.59	0.50
C & E Loss (ft)	0.01	Cum SA (acres)	32.07	4.68	0.71

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.

CROSS SECTION OUTPUT Profile #Q100HC

			Left OB	Channel	Right OB
E.G. Elev (ft)	381.21	Element			
Vel Head (ft)	0.37	Wt. n-Val.	0.037	0.058	0.063
W.S. Elev (ft)	380.84	Reach Len. (ft)	38.08	39.08	41.50
Crit W.S. (ft)	380.53	Flow Area (sq ft)	1170.61	45.79	1.16
E.G. Slope (ft/ft)	0.007439	Area (sq ft)	1170.61	45.79	1.16
Q Total (cfs)	5825.00	Flow (cfs)	5736.13	87.99	0.87
Top Width (ft)	825.50	Top Width (ft)	762.52	57.89	5.09
Vel Total (ft/s)	4.78	Avg. Vel. (ft/s)	4.90	1.92	0.76
Max Chl Dpth (ft)	2.63	Hydr. Depth (ft)	1.54	0.79	0.23
Conv. Total (cfs)	67536.9	Conv. (cfs)	66506.6	1020.2	10.1
Length Wtd. (ft)	38.09	Wetted Per. (ft)	762.60	57.91	5.11
Min Ch El (ft)	379.68	Shear (lb/sq ft)	0.71	0.37	0.11
Alpha	1.04	Stream Power (lb/ft s)	3.49	0.71	0.08
Frctn Loss (ft)	0.23	Cum Volume (acre-ft)	76.82	10.10	0.97
C & E Loss (ft)	0.02	Cum SA (acres)	37.13	4.82	0.94

CROSS SECTION

RIVER: Canada Gobernado
REACH: Middle RS: 3922.73*

INPUT
Description:
Station Elevation Data num= 60

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	389.96	7.17	388.75	14.21	387.51	16.97	387.06	25.5	385.73
28.86	385.35	39.14	384.16	42.39	383.83	56.46	381.22	59.68	380.5
76.45	379.96	86.85	379.64	113.29	379.13	160.89	379.53	208.49	379.83
213.72	379.76	299.47	378.35	316.98	378.23	318.71	378.22	329.78	378.17
368.25	377.93	390.64	378.07	435.47	377.88	439.78	377.87	533.99	377.63
545.81	377.58	565.72	377.85	608.9	378.45	614.17	378.52	631.53	378.8
688.29	379.82	698.96	379.99	717.62	380.26	719.83	380.29	756.2	380.49
771.05	380.48	773.21	380.48	773.9	380.48	777.73	380.48	779.01	380.48
786.55	380.49	847.02	380.5	858.15	380.26	863.78	380.14	869.08	380.03
884.82	379.72	893.26	379.94	897.27	380.04	908.96	380.35	913.65	380.59
938.52	381.95	940.17	382.05	946.69	382.29	955.29	382.84	973.8	383.97
977.43	384.19	978.48	384.26	990.67	385.27	1017.17	387.45	1035.57	387.95

Manning's n Values num= 11

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	565.72	.064	608.9	.041	719.83	.047	773.21	.067
777.73	.067	847.02	.064	868.06	.064	908.96	.067	977.43	.067
1035.57	.067								

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
847.02	908.96	38.08	39.08	41.5	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
0847.008	3380.52	33	F

CROSS SECTION OUTPUT Profile #Q50

E.G. Elev (ft)	380.58	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.01	Wt. n-Val.	0.037	0.064	0.067
W.S. Elev (ft)	380.57	Reach Len. (ft)	38.08	39.08	41.50
Crit W.S. (ft)	380.53	Flow Area (sq ft)	1240.78	30.68	0.47
E.G. Slope (ft/ft)	0.000212	Area (sq ft)	1240.78	30.68	0.47
Q Total (cfs)	1109.00	Flow (cfs)	1102.16	6.80	0.04
Top Width (ft)	853.90	Top Width (ft)	787.65	61.94	4.30
Vel Total (ft/s)	0.87	Avg. Vel. (ft/s)	0.89	0.22	0.07
Max Chl Dpth (ft)	2.99	Hydr. Depth (ft)	1.58	0.50	0.11
Conv. Total (cfs)	76093.9	Conv. (cfs)	75624.6	466.9	2.4
Length Wtd. (ft)	38.09	Wetted Per. (ft)	787.72	61.96	4.31
Min Ch El (ft)	379.72	Shear (lb/sq ft)	0.02	0.01	0.00
Alpha	1.03	Stream Power (lb/ft s)	0.02	0.00	0.00
Frctn Loss (ft)	0.01	Cum Volume (acre-ft)	48.64	6.12	0.38
C & E Loss (ft)	0.00	Cum SA (acres)	28.67	4.59	0.65

CROSS SECTION OUTPUT Profile #Q100

E.G. Elev (ft)	380.60	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.03	Wt. n-Val.	0.037	0.064	0.067
W.S. Elev (ft)	380.57	Reach Len. (ft)	38.08	39.08	41.50
Crit W.S. (ft)	380.53	Flow Area (sq ft)	1243.96	30.93	0.49
E.G. Slope (ft/ft)	0.000517	Area (sq ft)	1243.96	30.93	0.49
Q Total (cfs)	1736.00	Flow (cfs)	1725.19	10.75	0.06
Top Width (ft)	854.00	Top Width (ft)	787.67	61.94	4.38
Vel Total (ft/s)	1.36	Avg. Vel. (ft/s)	1.39	0.35	0.12
Max Chl Dpth (ft)	2.99	Hydr. Depth (ft)	1.58	0.50	0.11

Conv. Total (cfs)	76372.1	Conv. (cfs)	75896.6	472.9	2.5
Length Wtd. (ft)	38.09	Wetted Per. (ft)	787.74	61.96	4.39
Min Ch El (ft)	379.72	Shear (lb/sq ft)	0.05	0.02	0.00
Alpha	1.03	Stream Power (lb/ft s)	0.07	0.01	0.00
Frctn Loss (ft)	0.01	Cum Volume (acre-ft)	51.61	6.56	0.50
C & E Loss (ft)	0.00	Cum SA (acres)	31.39	4.62	0.70

CROSS SECTION OUTPUT Profile #Q100HC

E.G. Elev (ft)	380.96	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.30	Wt. n-Val.	0.037	0.064	0.067
W.S. Elev (ft)	380.66	Reach Len. (ft)	38.08	39.08	41.50
Crit W.S. (ft)	380.53	Flow Area (sq ft)	1309.52	36.08	0.92
E.G. Slope (ft/ft)	0.005017	Area (sq ft)	1309.52	36.08	0.92
Q Total (cfs)	5825.00	Flow (cfs)	5781.79	42.79	0.42
Top Width (ft)	855.91	Top Width (ft)	788.04	61.94	5.92
Vel Total (ft/s)	4.33	Avg. Vel. (ft/s)	4.42	1.19	0.45
Max Chl Dpth (ft)	3.08	Hydr. Depth (ft)	1.66	0.58	0.16
Conv. Total (cfs)	82239.2	Conv. (cfs)	81629.2	604.1	5.9
Length Wtd. (ft)	38.09	Wetted Per. (ft)	788.12	61.96	5.93
Min Ch El (ft)	379.72	Shear (lb/sq ft)	0.52	0.18	0.05
Alpha	1.03	Stream Power (lb/ft s)	2.30	0.22	0.02
Frctn Loss (ft)	0.14	Cum Volume (acre-ft)	75.73	10.06	0.97
C & E Loss (ft)	0.02	Cum SA (acres)	36.45	4.77	0.93

CROSS SECTION

RIVER: Canada Gobernado
REACH: Middle RS: 3883.652

INPUT
Description: Manual Input for Manning's N Values
Station Elevation Data num= 33

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	389.95	14.7	388.01	43.86	384.63	58.42	381.47	61.75	380.61
89.86	379.53	117.21	378.85	215.71	379.57	309.84	377.98	341.2	377.8
381.01	377.47	404.17	377.62	450.56	377.35	564.72	376.95	585.32	377.3
630	378.07	635.45	378.16	712.14	379.69	742.48	380.21	744.77	380.25
782.4	380.49	797.76	380.49	800	380.49	806	380.49	813.8	380.5
876.37	380.53	915.33	379.76	942.36	380.3	975.4	381.09	984.54	381.36
1020.08	383.46	1063.34	386.97	1083.92	387.42				

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	585.32	.07	630	.035	744.77	.05	800	.07

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
876.37	942.36	178.65	183.85	189	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
0	876.35	380.56	F

CROSS SECTION OUTPUT Profile #Q50

E.G. Elev (ft)	380.58	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.01	Wt. n-Val.	0.037	0.070	0.070

W.S. Elev (ft)	380.57	Reach Len. (ft)	178.65	183.85	189.00
Crit W.S. (ft)	380.57	Flow Area (sq ft)	1529.63	30.99	1.50
E.G. Slope (ft/ft)	0.000108	Area (sq ft)	1529.63	30.99	1.50
Q Total (cfs)	1109.00	Flow (cfs)	1104.78	4.13	0.09
Top Width (ft)	890.69	Top Width (ft)	813.51	65.99	11.19
Vel Total (ft/s)	0.71	Avg. Vel. (ft/s)	0.72	0.13	0.06
Max Chl Dpth (ft)	3.62	Hydr. Depth (ft)	1.88	0.47	0.13
Conv. Total (cfs)	106673.9	Conv. (cfs)	106268.2	397.4	8.3
Length Wtd. (ft)	178.78	Wetted Per. (ft)	813.59	66.00	11.19
Min Ch El (ft)	379.76	Shear (lb/sq ft)	0.01	0.00	0.00
Alpha	1.03	Stream Power (lb/ft s)	0.01	0.00	0.00
Frctn Loss (ft)	0.03	Cum Volume (acre-ft)	47.43	6.09	0.38
C & E Loss (ft)	0.00	Cum SA (acres)	27.97	4.53	0.64

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water 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)	380.59	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.02	Wt. n-Val.	0.037	0.070	0.070
W.S. Elev (ft)	380.57	Reach Len. (ft)	178.65	183.85	189.00
Crit W.S. (ft)	380.57	Flow Area (sq ft)	1529.63	30.99	1.50
E.G. Slope (ft/ft)	0.000265	Area (sq ft)	1529.63	30.99	1.50
Q Total (cfs)	1736.00	Flow (cfs)	1729.40	6.47	0.14
Top Width (ft)	890.69	Top Width (ft)	813.51	65.99	11.19
Vel Total (ft/s)	1.11	Avg. Vel. (ft/s)	1.13	0.21	0.09
Max Chl Dpth (ft)	3.62	Hydr. Depth (ft)	1.88	0.47	0.13
Conv. Total (cfs)	106673.9	Conv. (cfs)	106268.2	397.4	8.3
Length Wtd. (ft)	178.80	Wetted Per. (ft)	813.59	66.00	11.19
Min Ch El (ft)	379.76	Shear (lb/sq ft)	0.03	0.01	0.00
Alpha	1.03	Stream Power (lb/ft s)	0.04	0.00	0.00
Frctn Loss (ft)	0.07	Cum Volume (acre-ft)	50.40	6.54	0.49
C & E Loss (ft)	0.01	Cum SA (acres)	30.69	4.57	0.70

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water 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)	380.79	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.22	Wt. n-Val.	0.037	0.070	0.070
W.S. Elev (ft)	380.57	Reach Len. (ft)	178.65	183.85	189.00

Crit W.S. (ft)	380.57	Flow Area (sq ft)	1529.63	30.99	1.50
E.G. Slope (ft/ft)	0.002982	Area (sq ft)	1529.63	30.99	1.50
Q Total (cfs)	5825.00	Flow (cfs)	5802.85	21.70	0.45
Top Width (ft)	890.69	Top Width (ft)	813.51	65.99	11.19
Vel Total (ft/s)	3.73	Avg. Vel. (ft/s)	3.79	0.70	0.30
Max Chl Dpth (ft)	3.62	Hydr. Depth (ft)	1.88	0.47	0.13
Conv. Total (cfs)	106673.9	Conv. (cfs)	106268.2	397.4	8.3
Length Wtd. (ft)	178.70	Wetted Per. (ft)	813.59	66.00	11.19
Min Ch El (ft)	379.76	Shear (lb/sq ft)	0.35	0.09	0.02
Alpha	1.03	Stream Power (lb/ft s)	1.33	0.06	0.01
Frctn Loss (ft)	0.43	Cum Volume (acre-ft)	74.49	10.03	0.97
C & E Loss (ft)	0.01	Cum SA (acres)	35.75	4.71	0.93

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

CROSS SECTION

RIVER: Canada Gobernado
REACH: Middle RS: 3699.802

INPUT
Description:
Station Elevation Data num= 33

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	389.81	26.38	384.13	37.24	382.2	53.61	380.37	67.88	378.55
89.66	378.41	105.07	377.89	219.88	374.9	270.09	373.95	356.21	373.46
408.56	372.9	418.84	372.76	421.06	372.78	423.63	372.78	435.72	372.8
454.1	372.87	569.58	373.23	619.13	373.83	673.05	374	674.78	374
701.55	374.09	725.83	373.86	739.29	373.74	741.48	373.76	761.3	374.34
774.18	374.73	819.61	378.38	825.53	378.81	830.87	379.43	833.85	380.42
853.01	387.07	857.35	387.91	865.11	389.37				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.035	674.78	.05	761.3	.07

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
701.55	761.3	198.4	201.4	207.1	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
0	701.55	374.09	F

CROSS SECTION OUTPUT Profile #Q50

E.G. Elev (ft)	374.84	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.04	Wt. n-Val.	0.035	0.050	0.070
W.S. Elev (ft)	374.79	Reach Len. (ft)	198.40	201.40	207.10
Crit W.S. (ft)	374.10	Flow Area (sq ft)	619.63	50.24	3.35
E.G. Slope (ft/ft)	0.001150	Area (sq ft)	619.63	50.24	3.35
Q Total (cfs)	1109.00	Flow (cfs)	1062.95	45.10	0.94
Top Width (ft)	549.44	Top Width (ft)	476.02	59.75	13.67

Vel Total (ft/s)	1.65	Avg. Vel. (ft/s)	1.72	0.90	0.28
Max Chl Dpth (ft)	2.03	Hydr. Depth (ft)	1.30	0.84	0.25
Conv. Total (cfs)	32705.8	Conv. (cfs)	31347.8	1330.2	27.8
Length Wtd. (ft)	199.96	Wetted Per. (ft)	476.04	59.76	13.67
Min Ch El (ft)	373.74	Shear (lb/sq ft)	0.09	0.06	0.02
Alpha	1.05	Stream Power (lb/ft s)	0.16	0.05	0.00
Frctn Loss (ft)	0.63	Cum Volume (acre-ft)	43.02	5.92	0.37
C & E Loss (ft)	0.14	Cum SA (acres)	25.32	4.26	0.58

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

CROSS SECTION OUTPUT Profile #Q100

E.G. Elev (ft)	375.06	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.08	Wt. n-Val.	0.035	0.050	0.070
W.S. Elev (ft)	374.97	Reach Len. (ft)	198.40	201.40	207.10
Crit W.S. (ft)	374.20	Flow Area (sq ft)	706.66	61.07	6.03
E.G. Slope (ft/ft)	0.001850	Area (sq ft)	706.66	61.07	6.03
Q Total (cfs)	1736.00	Flow (cfs)	1653.93	79.19	2.88
Top Width (ft)	560.19	Top Width (ft)	484.52	59.75	15.92
Vel Total (ft/s)	2.24	Avg. Vel. (ft/s)	2.34	1.30	0.48
Max Chl Dpth (ft)	2.21	Hydr. Depth (ft)	1.46	1.02	0.38
Conv. Total (cfs)	40360.9	Conv. (cfs)	38452.8	1841.1	66.9
Length Wtd. (ft)	199.38	Wetted Per. (ft)	484.54	59.76	15.94
Min Ch El (ft)	373.74	Shear (lb/sq ft)	0.17	0.12	0.04
Alpha	1.05	Stream Power (lb/ft s)	0.39	0.15	0.02
Frctn Loss (ft)	0.69	Cum Volume (acre-ft)	45.81	6.34	0.48
C & E Loss (ft)	0.03	Cum SA (acres)	28.03	4.30	0.64

Warning: The conveyance ratio (upstream 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)	378.66	Element	Left OB	Channel	Right OB
Vel Head (ft)	4.48	Wt. n-Val.	0.035	0.050	
W.S. Elev (ft)	374.18	Reach Len. (ft)	198.40	201.40	207.10
Crit W.S. (ft)	375.12	Flow Area (sq ft)	336.13	13.86	
E.G. Slope (ft/ft)	0.222670	Area (sq ft)	336.13	13.86	
Q Total (cfs)	5825.00	Flow (cfs)	5746.70	78.30	
Top Width (ft)	497.59	Top Width (ft)	443.43	54.16	
Vel Total (ft/s)	16.64	Avg. Vel. (ft/s)	17.10	5.65	
Max Chl Dpth (ft)	1.42	Hydr. Depth (ft)	0.76	0.26	
Conv. Total (cfs)	12344.3	Conv. (cfs)	12178.3	165.9	
Length Wtd. (ft)	198.83	Wetted Per. (ft)	443.44	54.17	
Min Ch El (ft)	373.74	Shear (lb/sq ft)	10.54	3.56	
Alpha	1.04	Stream Power (lb/ft s)	180.15	20.09	
Frctn Loss (ft)	1.71	Cum Volume (acre-ft)	70.67	9.93	0.97
C & E Loss (ft)	0.43	Cum SA (acres)	33.18	4.46	0.90

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

CROSS SECTION

RIVER: Canada Gobernado
REACH: Middle RS: 3498.424

INPUT
Description:
Station Elevation Data num= 35

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	383.13	35.92	376.78	43.75	375.98	58.46	374.48	100.66	373.32
107.26	372.99	129.51	373.14	183.27	374.19	286.82	373.94	445.77	373.32
503.82	373.11	611.74	373.06	685.17	374.12	686.05	374.14	707.14	374.44
718.56	374.87	726.4	374.1	731.52	373.62	744.37	369.39	746.07	368.72
748.52	368.44	758.18	367.5	762.47	368.96	774.08	372.92	776.44	373.73
777.15	373.75	787.74	374.47	804.23	377.11	815.35	379.88	843.87	381.07
845.51	381.25	846.37	381.29	847.17	381.3	847.32	381.3	878.42	383.24

Manning's n Values num= 2

Sta	n Val	Sta	n Val
0	.035	685.17	.05

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
718.56	787.74	211.35 211.45	215.2	.1	.3

CROSS SECTION OUTPUT Profile #Q50

			Left OB	Channel	Right OB
E.G. Elev (ft)	374.06	Element			
Vel Head (ft)	1.49	Wt. n-Val.		0.050	
W.S. Elev (ft)	372.57	Reach Len. (ft)	211.35	211.45	215.20
Crit W.S. (ft)	372.57	Flow Area (sq ft)		113.26	
E.G. Slope (ft/ft)	0.026994	Area (sq ft)		113.26	
Q Total (cfs)	1109.00	Flow (cfs)		1109.00	
Top Width (ft)	38.34	Top Width (ft)		38.34	
Vel Total (ft/s)	9.79	Avg. Vel. (ft/s)		9.79	
Max Chl Dpth (ft)	5.07	Hydr. Depth (ft)		2.95	
Conv. Total (cfs)	6749.9	Conv. (cfs)		6749.9	
Length Wtd. (ft)	211.42	Wetted Per. (ft)		39.88	
Min Ch El (ft)	367.50	Shear (lb/sq ft)		4.79	
Alpha	1.00	Stream Power (lb/ft s)		46.86	
Frctn Loss (ft)	2.65	Cum Volume (acre-ft)	41.61	5.54	0.37
C & E Loss (ft)	0.34	Cum SA (acres)	24.24	4.04	0.55

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

depth, the calculated water 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)	374.33	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.39	Wt. n-Val.	0.035	0.050	
W.S. Elev (ft)	373.95	Reach Len. (ft)	211.35	211.45	215.20
Crit W.S. (ft)	373.95	Flow Area (sq ft)	261.13	172.41	
E.G. Slope (ft/ft)	0.008807	Area (sq ft)	261.13	172.41	
Q Total (cfs)	1736.00	Flow (cfs)	692.09	1043.91	
Top Width (ft)	533.38	Top Width (ft)	481.40	51.98	
Vel Total (ft/s)	4.00	Avg. Vel. (ft/s)	2.65	6.05	
Max Chl Dpth (ft)	6.45	Hydr. Depth (ft)	0.54	3.32	
Conv. Total (cfs)	18498.4	Conv. (cfs)	7374.8	11123.7	
Length Wtd. (ft)	211.40	Wetted Per. (ft)	481.43	53.90	
Min Ch El (ft)	367.50	Shear (lb/sq ft)	0.30	1.76	
Alpha	1.55	Stream Power (lb/ft s)	0.79	10.65	
Frctn Loss (ft)	1.70	Cum Volume (acre-ft)	43.61	5.80	0.46
C & E Loss (ft)	0.01	Cum SA (acres)	25.83	4.04	0.60

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

CROSS SECTION OUTPUT Profile #Q100HC

E.G. Elev (ft)	375.68	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.24	Wt. n-Val.	0.035	0.050	0.050
W.S. Elev (ft)	375.44	Reach Len. (ft)	211.35	211.45	215.20
Crit W.S. (ft)	374.68	Flow Area (sq ft)	1218.18	269.60	2.95
E.G. Slope (ft/ft)	0.003637	Area (sq ft)	1218.18	269.60	2.95
Q Total (cfs)	5825.00	Flow (cfs)	4647.56	1174.19	3.25
Top Width (ft)	744.79	Top Width (ft)	669.54	69.18	6.07
Vel Total (ft/s)	3.91	Avg. Vel. (ft/s)	3.82	4.36	1.10
Max Chl Dpth (ft)	7.94	Hydr. Depth (ft)	1.82	3.90	0.49
Conv. Total (cfs)	96590.3	Conv. (cfs)	77066.0	19470.5	53.8
Length Wtd. (ft)	211.38	Wetted Per. (ft)	669.64	71.17	6.15
Min Ch El (ft)	367.50	Shear (lb/sq ft)	0.41	0.86	0.11
Alpha	1.01	Stream Power (lb/ft s)	1.58	3.75	0.12
Frctn Loss (ft)	1.36	Cum Volume (acre-ft)	67.13	9.28	0.96
C & E Loss (ft)	0.12	Cum SA (acres)	30.64	4.17	0.89

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

CROSS SECTION

RIVER: Canada Gobernado
REACH: Middle RS: 3286.975

INPUT
Description:
Station Elevation Data num= 41

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	382.23	1.13	382.09	10.39	381.36	65.87	377.16	75.07	376.08
80.45	375.45	90.23	373.98	103.72	370.1	111.41	368.18	138.72	367.73
141.75	367.66	148.64	368.08	190.69	371.39	203.52	372.13	247.98	373.62
391.53	373.41	418.63	373.42	455.63	373.33	524.87	373.97	599.9	373.99
622.93	374.52	691.86	374.06	695.94	374.03	697.16	374.02	697.28	374.02
698.42	373.87	702.55	373.63	741.11	373.11	756.07	368.96	765.07	367.61
784.5	367.08	786.41	366.97	787.22	367.05	789.32	367.59	804.94	372.08
810.1	373.78	821.59	375.99	833.61	378.3	839.94	379.59	851.47	380.87
882.48	384.3								

Manning's n Values num= 2

Sta	n Val	Sta	n Val
0	.035	697.16	.05

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
741.11	810.1	93.39	93.81	91.77	.1	.3

CROSS SECTION OUTPUT Profile #Q50

			Left OB	Channel	Right OB
E.G. Elev (ft)	370.64	Element			
Vel Head (ft)	0.36	Wt. n-Val.	0.035	0.050	
W.S. Elev (ft)	370.28	Reach Len. (ft)	93.39	93.81	91.77
Crit W.S. (ft)	369.63	Flow Area (sq ft)	127.28	105.65	
E.G. Slope (ft/ft)	0.007192	Area (sq ft)	127.28	105.65	
Q Total (cfs)	1109.00	Flow (cfs)	658.99	450.01	
Top Width (ft)	120.79	Top Width (ft)	73.45	47.35	
Vel Total (ft/s)	4.76	Avg. Vel. (ft/s)	5.18	4.26	
Max Chl Dpth (ft)	3.31	Hydr. Depth (ft)	1.73	2.23	
Conv. Total (cfs)	13076.8	Conv. (cfs)	7770.5	5306.3	
Length Wtd. (ft)	93.56	Wetted Per. (ft)	73.81	48.09	
Min Ch El (ft)	366.97	Shear (lb/sq ft)	0.77	0.99	
Alpha	1.03	Stream Power (lb/ft s)	4.01	4.20	
Frctn Loss (ft)	0.75	Cum Volume (acre-ft)	41.30	5.01	0.37
C & E Loss (ft)	0.00	Cum SA (acres)	24.06	3.83	0.55

Warning: Divided flow computed for this cross-section.

CROSS SECTION OUTPUT Profile #Q100

			Left OB	Channel	Right OB
E.G. Elev (ft)	371.41	Element			
Vel Head (ft)	0.49	Wt. n-Val.	0.035	0.050	
W.S. Elev (ft)	370.92	Reach Len. (ft)	93.39	93.81	91.77
Crit W.S. (ft)	370.21	Flow Area (sq ft)	177.98	137.64	
E.G. Slope (ft/ft)	0.007405	Area (sq ft)	177.98	137.64	
Q Total (cfs)	1736.00	Flow (cfs)	1069.59	666.41	
Top Width (ft)	135.79	Top Width (ft)	83.87	51.91	
Vel Total (ft/s)	5.50	Avg. Vel. (ft/s)	6.01	4.84	
Max Chl Dpth (ft)	3.95	Hydr. Depth (ft)	2.12	2.65	
Conv. Total (cfs)	20173.9	Conv. (cfs)	12429.6	7744.3	

Length Wtd. (ft)	93.55	Wetted Per. (ft)	84.36	52.83	
Min Ch El (ft)	366.97	Shear (lb/sq ft)	0.98	1.20	
Alpha	1.03	Stream Power (lb/ft s)	5.86	5.83	
Frctn Loss (ft)	0.88	Cum Volume (acre-ft)	42.54	5.05	0.46
C & E Loss (ft)	0.02	Cum SA (acres)	24.46	3.79	0.60

Warning: Divided flow computed for this cross-section.

CROSS SECTION OUTPUT Profile #Q100HC

E.G. Elev (ft)	374.20	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.46	Wt. n-Val.	0.035	0.050	
W.S. Elev (ft)	372.75	Reach Len. (ft)	93.39	93.81	91.77
Crit W.S. (ft)	372.65	Flow Area (sq ft)	364.48	243.99	
E.G. Slope (ft/ft)	0.014482	Area (sq ft)	364.48	243.99	
Q Total (cfs)	5825.00	Flow (cfs)	3738.17	2086.84	
Top Width (ft)	191.89	Top Width (ft)	127.36	64.53	
Vel Total (ft/s)	9.57	Avg. Vel. (ft/s)	10.26	8.55	
Max Chl Dpth (ft)	5.78	Hydr. Depth (ft)	2.86	3.78	
Conv. Total (cfs)	48404.2	Conv. (cfs)	31063.2	17341.1	
Length Wtd. (ft)	93.52	Wetted Per. (ft)	128.15	65.97	
Min Ch El (ft)	366.97	Shear (lb/sq ft)	2.57	3.34	
Alpha	1.02	Stream Power (lb/ft s)	26.37	28.60	
Frctn Loss (ft)	1.24	Cum Volume (acre-ft)	63.29	8.03	0.95
C & E Loss (ft)	0.17	Cum SA (acres)	28.71	3.85	0.87

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: Canada Gobernado
REACH: Middle RS: 3193.163

INPUT
Description:
Station Elevation Data num= 44

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	382.42	11.12	380.92	32.62	379.3	48.95	378.23	80.43	372.63
96.93	369.66	99.94	369.11	107.39	368.47	117.15	367.47	124.2	367.29
157.81	367.74	191.03	369.76	260.65	371.97	291.13	373.06	384.69	371.82
391.63	371.66	468.56	371.05	563.78	371.2	572.23	371.18	586.27	371.7
649.99	373.15	688.3	374.11	692.62	374.22	712.5	374.72	726.38	374.68
733.21	375.05	738.39	374.33	740.8	373.9	756.42	367.21	757.19	366.85
757.39	366.8	758.1	366.75	765.97	366.3	770.7	365.89	772.27	366.03
781.06	367.16	784.35	367.55	804.22	375.02	811.59	377.8	815.92	379.13
817.3	379.55	818.1	379.8	829.49	381.01	865.78	385.79		

Manning's n Values num= 2

Sta	n Val	Sta	n Val
0	.035	692.62	.05

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

733.21 804.22 99.93 100.29 97.53 .1 .3

CROSS SECTION OUTPUT Profile #Q50

E.G. Elev (ft)	369.88	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.40	Wt. n-Val.	0.035	0.050	
W.S. Elev (ft)	369.49	Reach Len. (ft)	99.93	100.29	97.53
Crit W.S. (ft)	369.02	Flow Area (sq ft)	126.57	92.70	
E.G. Slope (ft/ft)	0.009023	Area (sq ft)	126.57	92.70	
Q Total (cfs)	1109.00	Flow (cfs)	646.36	462.64	
Top Width (ft)	127.05	Top Width (ft)	88.65	38.40	
Vel Total (ft/s)	5.06	Avg. Vel. (ft/s)	5.11	4.99	
Max Chl Dpth (ft)	3.60	Hydr. Depth (ft)	1.43	2.41	
Conv. Total (cfs)	11674.7	Conv. (cfs)	6804.3	4870.4	
Length Wtd. (ft)	100.07	Wetted Per. (ft)	88.82	39.44	
Min Ch El (ft)	365.89	Shear (lb/sq ft)	0.80	1.32	
Alpha	1.00	Stream Power (lb/ft s)	4.10	6.61	
Frctn Loss (ft)	0.93	Cum Volume (acre-ft)	41.03	4.80	0.37
C & E Loss (ft)	0.05	Cum SA (acres)	23.89	3.74	0.55

Warning: Divided flow computed for this cross-section.

CROSS SECTION OUTPUT Profile #Q100

E.G. Elev (ft)	370.51	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.64	Wt. n-Val.	0.035	0.050	
W.S. Elev (ft)	369.87	Reach Len. (ft)	99.93	100.29	97.53
Crit W.S. (ft)	369.56	Flow Area (sq ft)	162.38	107.84	
E.G. Slope (ft/ft)	0.012312	Area (sq ft)	162.38	107.84	
Q Total (cfs)	1736.00	Flow (cfs)	1063.96	672.04	
Top Width (ft)	139.09	Top Width (ft)	98.77	40.32	
Vel Total (ft/s)	6.42	Avg. Vel. (ft/s)	6.55	6.23	
Max Chl Dpth (ft)	3.98	Hydr. Depth (ft)	1.64	2.67	
Conv. Total (cfs)	15645.5	Conv. (cfs)	9588.8	6056.6	
Length Wtd. (ft)	100.05	Wetted Per. (ft)	98.99	41.51	
Min Ch El (ft)	365.89	Shear (lb/sq ft)	1.26	2.00	
Alpha	1.00	Stream Power (lb/ft s)	8.26	12.45	
Frctn Loss (ft)	1.13	Cum Volume (acre-ft)	42.18	4.79	0.46
C & E Loss (ft)	0.10	Cum SA (acres)	24.26	3.69	0.60

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)	372.79	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.90	Wt. n-Val.	0.035	0.050	
W.S. Elev (ft)	371.89	Reach Len. (ft)	99.93	100.29	97.53
Crit W.S. (ft)	371.89	Flow Area (sq ft)	567.43	199.65	
E.G. Slope (ft/ft)	0.012180	Area (sq ft)	567.43	199.65	
Q Total (cfs)	5825.00	Flow (cfs)	4227.45	1597.55	
Top Width (ft)	439.97	Top Width (ft)	389.55	50.43	
Vel Total (ft/s)	7.59	Avg. Vel. (ft/s)	7.45	8.00	
Max Chl Dpth (ft)	6.00	Hydr. Depth (ft)	1.46	3.96	
Conv. Total (cfs)	52779.6	Conv. (cfs)	38304.4	14475.2	
Length Wtd. (ft)	100.02	Wetted Per. (ft)	389.99	52.40	

Min Ch El (ft)	365.89	Shear (lb/sq ft)	1.11	2.90	
Alpha	1.00	Stream Power (lb/ft s)	8.24	23.19	
Frctn Loss (ft)	1.15	Cum Volume (acre-ft)	62.29	7.55	0.95
C & E Loss (ft)	0.09	Cum SA (acres)	28.15	3.72	0.87

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

CROSS SECTION

RIVER: Canada Gobernado
REACH: Middle RS: 3092.876

INPUT
Description:
Station Elevation Data num= 45

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	385.61	1.11	385.31	6.76	383.58	34.94	377.14	47.85	374.06
55.69	372.53	66.4	369.56	77.76	367.29	105.7	367.46	201.22	370.51
258.35	371.9	371.01	369.43	444.03	367.78	453.47	367.71	465.36	367.73
541.75	367.58	564.63	368.44	592.29	368.38	600.3	368.78	636.68	369.64
640.84	369.74	647.6	369.9	654.79	370.3	658.87	370.47	684.03	368.68
686.17	368.12	689.17	367.36	705.2	366.53	717.85	365.92	718.97	366.07
729.64	367.34	732.67	367.66	737	369.37	739.48	370.59	746.39	373.45
769.01	379.82	770.61	380.26	771.57	380.55	771.89	380.59	772.41	380.59
802.28	384.14	806.4	384.66	807.27	384.81	809.25	385.32	832.27	389.7

Manning's n Values num= 2

Sta	n Val	Sta	n Val
0	.035	640.84	.05

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
658.87	739.48	100.86 102.03	95.28	.1	.3

CROSS SECTION OUTPUT Profile #Q50

E.G. Elev (ft)	368.91	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.22	Wt. n-Val.	0.035	0.050	
W.S. Elev (ft)	368.68	Reach Len. (ft)	100.86	102.03	95.28
Crit W.S. (ft)		Flow Area (sq ft)	205.82	91.46	
E.G. Slope (ft/ft)	0.009568	Area (sq ft)	205.82	91.46	
Q Total (cfs)	1109.00	Flow (cfs)	720.54	388.46	
Top Width (ft)	318.89	Top Width (ft)	267.60	51.29	
Vel Total (ft/s)	3.73	Avg. Vel. (ft/s)	3.50	4.25	
Max Chl Dpth (ft)	2.76	Hydr. Depth (ft)	0.77	1.78	
Conv. Total (cfs)	11337.8	Conv. (cfs)	7366.4	3971.4	
Length Wtd. (ft)	101.08	Wetted Per. (ft)	267.79	51.79	
Min Ch El (ft)	365.92	Shear (lb/sq ft)	0.46	1.05	
Alpha	1.03	Stream Power (lb/ft s)	1.61	4.48	
Frctn Loss (ft)	0.27	Cum Volume (acre-ft)	40.65	4.58	0.37
C & E Loss (ft)	0.05	Cum SA (acres)	23.48	3.63	0.55

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.

CROSS SECTION OUTPUT Profile #Q100

		Element	Left OB	Channel	Right OB
E.G. Elev (ft)	369.28	Wt. n-Val.	0.035	0.050	
Vel Head (ft)	0.29	Reach Len. (ft)	100.86	102.03	95.28
W.S. Elev (ft)	368.99	Flow Area (sq ft)	292.73	107.90	
Crit W.S. (ft)		Area (sq ft)	292.73	107.90	
E.G. Slope (ft/ft)	0.010341	Flow (cfs)	1236.57	499.43	
Q Total (cfs)	1736.00	Top Width (ft)	302.99	56.35	
Top Width (ft)	359.34	Avg. Vel. (ft/s)	4.22	4.63	
Vel Total (ft/s)	4.33	Hydr. Depth (ft)	0.97	1.91	
Max Chl Dpth (ft)	3.07	Conv. (cfs)	12160.2	4911.3	
Conv. Total (cfs)	17071.5	Wetted Per. (ft)	303.22	56.92	
Length Wtd. (ft)	101.04	Shear (lb/sq ft)	0.62	1.22	
Min Ch El (ft)	365.92	Stream Power (lb/ft s)	2.63	5.66	
Alpha	1.01	Cum Volume (acre-ft)	41.66	4.54	0.46
Frctn Loss (ft)	0.34	Cum SA (acres)	23.80	3.58	0.60
C & E Loss (ft)	0.07				

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

		Element	Left OB	Channel	Right OB
E.G. Elev (ft)	370.88	Wt. n-Val.	0.035	0.050	
Vel Head (ft)	1.30	Reach Len. (ft)	100.86	102.03	95.28
W.S. Elev (ft)	369.58	Flow Area (sq ft)	493.20	144.08	
Crit W.S. (ft)	369.92	Area (sq ft)	493.20	144.08	
E.G. Slope (ft/ft)	0.032628	Flow (cfs)	4533.36	1291.64	
Q Total (cfs)	5825.00	Top Width (ft)	375.76	66.05	
Top Width (ft)	441.81	Avg. Vel. (ft/s)	9.19	8.96	
Vel Total (ft/s)	9.14	Hydr. Depth (ft)	1.31	2.18	
Max Chl Dpth (ft)	3.66	Conv. (cfs)	25097.1	7150.6	
Conv. Total (cfs)	32247.7	Wetted Per. (ft)	376.08	66.76	
Length Wtd. (ft)	100.97	Shear (lb/sq ft)	2.67	4.40	
Min Ch El (ft)	365.92	Stream Power (lb/ft s)	24.55	39.41	
Alpha	1.00	Cum Volume (acre-ft)	61.07	7.16	0.95
Frctn Loss (ft)	1.88	Cum SA (acres)	27.28	3.59	0.87
C & E Loss (ft)	0.04				

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: Program found supercritical flow starting at this cross section.

CROSS SECTION

RIVER: Canada Gobernado

REACH: Middle RS: 2990.847

INPUT
Description: Modify XS 2:1 Slope, Sta 775.33
Station Elevation Data num= 27

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	384.06	26.78	375.42	30.5	374.11	55.41	369.77	64.45	368.11
68.75	367.92	87.2	367.07	155.41	367.72	159.12	367.81	250.35	370.02
345.66	367.93	440.12	367.25	478.09	366.95	506.42	366.74	632.82	366.95
636.49	366.96	685.33	367.04	705.21	367.18	728.98	367.03	736.02	367.35
741.96	368.05	752.27	369.85	774.48	373.71	774.58	373.73	774.73	373.73
775.33	373.77	917.14	410						

Manning's n Values num= 2

Sta	n Val	Sta	n Val
0	.035	632.82	.05

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
705.21	736.02	101.13	101.73	108.3	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
0	705.21	367.18	F

CROSS SECTION OUTPUT Profile #Q50

			Left OB	Channel	Right OB
E.G. Elev (ft)	368.59	Element			
Vel Head (ft)	0.04	Wt. n-Val.	0.037	0.050	0.050
W.S. Elev (ft)	368.55	Reach Len. (ft)	101.13	101.73	108.30
Crit W.S. (ft)	367.70	Flow Area (sq ft)	641.63	43.79	5.73
E.G. Slope (ft/ft)	0.001204	Area (sq ft)	641.63	43.79	5.73
Q Total (cfs)	1109.00	Flow (cfs)	1047.50	57.08	4.42
Top Width (ft)	554.64	Top Width (ft)	515.05	30.81	8.78
Vel Total (ft/s)	1.60	Avg. Vel. (ft/s)	1.63	1.30	0.77
Max Chl Dpth (ft)	1.81	Hydr. Depth (ft)	1.25	1.42	0.65
Conv. Total (cfs)	31959.1	Conv. (cfs)	30186.9	1645.0	127.2
Length Wtd. (ft)	101.19	Wetted Per. (ft)	515.14	30.82	8.86
Min Ch El (ft)	367.03	Shear (lb/sq ft)	0.09	0.11	0.05
Alpha	1.01	Stream Power (lb/ft s)	0.15	0.14	0.04
Frctn Loss (ft)	0.14	Cum Volume (acre-ft)	39.67	4.43	0.36
C & E Loss (ft)	0.00	Cum SA (acres)	22.57	3.54	0.54

Warning: Divided flow computed for this cross-section.

CROSS SECTION OUTPUT Profile #Q100

			Left OB	Channel	Right OB
E.G. Elev (ft)	368.88	Element			
Vel Head (ft)	0.07	Wt. n-Val.	0.037	0.050	0.050
W.S. Elev (ft)	368.81	Reach Len. (ft)	101.13	101.73	108.30
Crit W.S. (ft)	367.91	Flow Area (sq ft)	781.88	51.99	8.27
E.G. Slope (ft/ft)	0.001621	Area (sq ft)	781.88	51.99	8.27
Q Total (cfs)	1736.00	Flow (cfs)	1639.37	88.15	8.48
Top Width (ft)	580.72	Top Width (ft)	539.61	30.81	10.30
Vel Total (ft/s)	2.06	Avg. Vel. (ft/s)	2.10	1.70	1.03
Max Chl Dpth (ft)	2.07	Hydr. Depth (ft)	1.45	1.69	0.80
Conv. Total (cfs)	43118.0	Conv. (cfs)	40718.0	2189.4	210.6
Length Wtd. (ft)	101.19	Wetted Per. (ft)	539.73	30.82	10.41
Min Ch El (ft)	367.03	Shear (lb/sq ft)	0.15	0.17	0.08
Alpha	1.01	Stream Power (lb/ft s)	0.31	0.29	0.08

Frctn Loss (ft)	0.17	Cum Volume (acre-ft)	40.41	4.35	0.45
C & E Loss (ft)	0.00	Cum SA (acres)	22.83	3.48	0.59

Warning: Divided flow computed for this cross-section.

CROSS SECTION OUTPUT Profile #Q100HC

E.G. Elev (ft)	370.20	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.21	Wt. n-Val.	0.037	0.050	0.050
W.S. Elev (ft)	369.99	Reach Len. (ft)	101.13	101.73	108.30
Crit W.S. (ft)	368.83	Flow Area (sq ft)	1480.17	88.21	24.34
E.G. Slope (ft/ft)	0.002749	Area (sq ft)	1480.17	88.21	24.34
Q Total (cfs)	5825.00	Flow (cfs)	5500.22	277.08	47.71
Top Width (ft)	696.08	Top Width (ft)	648.23	30.81	17.04
Vel Total (ft/s)	3.66	Avg. Vel. (ft/s)	3.72	3.14	1.96
Max Chl Dpth (ft)	3.25	Hydr. Depth (ft)	2.28	2.86	1.43
Conv. Total (cfs)	111107.3	Conv. (cfs)	104912.4	5285.0	910.0
Length Wtd. (ft)	101.21	Wetted Per. (ft)	648.48	30.82	17.25
Min Ch El (ft)	367.03	Shear (lb/sq ft)	0.39	0.49	0.24
Alpha	1.01	Stream Power (lb/ft s)	1.46	1.54	0.47
Frctn Loss (ft)	0.26	Cum Volume (acre-ft)	58.79	6.89	0.93
C & E Loss (ft)	0.01	Cum SA (acres)	26.09	3.48	0.85

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: Canada Gobernado
REACH: Middle RS: 2889.112

INPUT
Description: Modify Slope 2:1, Sta 888.5
Station Elevation Data num= 31

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	384.78	5.51	383.73	11.94	381.98	32.3	377.42	46.1	375.14
65.27	372.07	65.79	372	66.05	371.97	98.26	367.75	118.96	366.92
134.52	366.53	134.9	366.52	219.5	367.44	278.51	368.35	327.2	368.29
469.88	367.27	500.82	367.03	620.66	367.23	688.76	367.25	694.5	367.25
769.02	367.27	798.48	367.04	815.87	367.31	819.37	367.85	829.33	369.08
847.39	370.8	851.38	371.04	854.56	371.23	866.1	371.01	888.5	371.64
956.61	405.7								

Manning's n Values num= 2

Sta	n Val	Sta	n Val
0	.035	688.76	.05

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
769.02	815.87	99.45	99.45 100.05	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
0	769.02	367.27	F

CROSS SECTION OUTPUT Profile #Q50

E.G. Elev (ft)	368.45	Element	Left OB	Channel	Right OB

Vel Head (ft)	0.04	Wt. n-Val.	0.037	0.050	0.050
W.S. Elev (ft)	368.41	Reach Len. (ft)	99.45	99.45	100.05
Crit W.S. (ft)	367.70	Flow Area (sq ft)	662.95	58.59	4.20
E.G. Slope (ft/ft)	0.001498	Area (sq ft)	662.95	58.59	4.20
Q Total (cfs)	1109.00	Flow (cfs)	1027.67	78.23	3.11
Top Width (ft)	730.73	Top Width (ft)	675.82	46.85	8.06
Vel Total (ft/s)	1.53	Avg. Vel. (ft/s)	1.55	1.34	0.74
Max Chl Dpth (ft)	1.89	Hydr. Depth (ft)	0.98	1.25	0.52
Conv. Total (cfs)	28652.0	Conv. (cfs)	26550.6	2021.1	80.3
Length Wtd. (ft)	99.45	Wetted Per. (ft)	675.90	46.85	8.14
Min Ch El (ft)	367.04	Shear (lb/sq ft)	0.09	0.12	0.05
Alpha	1.01	Stream Power (lb/ft s)	0.14	0.16	0.04
Frctn Loss (ft)	0.13	Cum Volume (acre-ft)	38.15	4.31	0.35
C & E Loss (ft)	0.00	Cum SA (acres)	21.19	3.45	0.52

CROSS SECTION OUTPUT Profile #Q100

E.G. Elev (ft)	368.70	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.06	Wt. n-Val.	0.037	0.050	0.050
W.S. Elev (ft)	368.64	Reach Len. (ft)	99.45	99.45	100.05
Crit W.S. (ft)	367.89	Flow Area (sq ft)	818.41	69.35	6.26
E.G. Slope (ft/ft)	0.001835	Area (sq ft)	818.41	69.35	6.26
Q Total (cfs)	1736.00	Flow (cfs)	1615.48	114.69	5.84
Top Width (ft)	734.34	Top Width (ft)	677.57	46.85	9.92
Vel Total (ft/s)	1.94	Avg. Vel. (ft/s)	1.97	1.65	0.93
Max Chl Dpth (ft)	2.12	Hydr. Depth (ft)	1.21	1.48	0.63
Conv. Total (cfs)	40521.9	Conv. (cfs)	37708.7	2677.0	136.2
Length Wtd. (ft)	99.45	Wetted Per. (ft)	677.67	46.85	10.01
Min Ch El (ft)	367.04	Shear (lb/sq ft)	0.14	0.17	0.07
Alpha	1.01	Stream Power (lb/ft s)	0.27	0.28	0.07
Frctn Loss (ft)	0.17	Cum Volume (acre-ft)	38.56	4.21	0.44
C & E Loss (ft)	0.00	Cum SA (acres)	21.41	3.39	0.56

CROSS SECTION OUTPUT Profile #Q100HC

E.G. Elev (ft)	369.93	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.18	Wt. n-Val.	0.036	0.050	0.050
W.S. Elev (ft)	369.75	Reach Len. (ft)	99.45	99.45	100.05
Crit W.S. (ft)	368.68	Flow Area (sq ft)	1571.54	121.11	22.70
E.G. Slope (ft/ft)	0.002403	Area (sq ft)	1571.54	121.11	22.70
Q Total (cfs)	5825.00	Flow (cfs)	5457.42	332.33	35.26
Top Width (ft)	753.32	Top Width (ft)	686.01	46.85	20.47
Vel Total (ft/s)	3.40	Avg. Vel. (ft/s)	3.47	2.74	1.55
Max Chl Dpth (ft)	3.23	Hydr. Depth (ft)	2.29	2.58	1.11
Conv. Total (cfs)	118816.9	Conv. (cfs)	111319.0	6778.7	719.2
Length Wtd. (ft)	99.45	Wetted Per. (ft)	686.17	46.85	20.62
Min Ch El (ft)	367.04	Shear (lb/sq ft)	0.34	0.39	0.17
Alpha	1.02	Stream Power (lb/ft s)	1.19	1.06	0.26
Frctn Loss (ft)	0.24	Cum Volume (acre-ft)	55.25	6.64	0.87
C & E Loss (ft)	0.00	Cum SA (acres)	24.54	3.39	0.81

CROSS SECTION

RIVER: Canada Gobernado
REACH: Middle RS: 2789.662

INPUT
Description:
Station Elevation Data num= 34

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	383.75	14.96	381.06	17.31	380.55	53.73	376.99	74.27	374.81
81.09	373.75	95.17	370.79	99.11	370.02	99.59	369.89	110.61	368.45
125.86	367.37	160.51	366.19	242.37	367.45	458.48	367.2	485.5	367.29
501.37	367.33	521.79	367.31	735.91	367.37	737.87	367.37	794.69	367.39
828.13	367.05	856.9	367.27	862.55	367.35	865.26	367.47	881.88	370.44
889.38	371.52	905.42	373.82	931.37	374.27	934.55	374.55	941.81	376.03
943.42	376.29	957.67	378.48	967.79	381.36	983.83	384.36		

Manning's n Values num= 2

Sta	n Val	Sta	n Val
0	.035	737.87	.05

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
794.69	865.26	106.35	106.56	108.99	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
0	794.69	367.39	F

Blocked Obstructions num= 1

Sta L	Sta R	Elev
954.5	965.5	409.38

CROSS SECTION OUTPUT Profile #Q50

E.G. Elev (ft)	368.32	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.03	Wt. n-Val.	0.036	0.050	0.050
W.S. Elev (ft)	368.28	Reach Len. (ft)	106.35	106.56	108.99
Crit W.S. (ft)	367.65	Flow Area (sq ft)	703.93	75.82	1.86
E.G. Slope (ft/ft)	0.001176	Area (sq ft)	703.93	75.82	1.86
Q Total (cfs)	1109.00	Flow (cfs)	1026.90	81.07	1.03
Top Width (ft)	756.87	Top Width (ft)	681.74	70.57	4.56
Vel Total (ft/s)	1.42	Avg. Vel. (ft/s)	1.46	1.07	0.55
Max Chl Dpth (ft)	2.09	Hydr. Depth (ft)	1.03	1.07	0.41
Conv. Total (cfs)	32334.1	Conv. (cfs)	29940.4	2363.7	30.0
Length Wtd. (ft)	106.38	Wetted Per. (ft)	681.81	70.58	4.63
Min Ch El (ft)	367.05	Shear (lb/sq ft)	0.08	0.08	0.03
Alpha	1.02	Stream Power (lb/ft s)	0.11	0.08	0.02
Frctn Loss (ft)	0.12	Cum Volume (acre-ft)	36.59	4.15	0.34
C & E Loss (ft)	0.00	Cum SA (acres)	19.64	3.31	0.51

CROSS SECTION OUTPUT Profile #Q100

E.G. Elev (ft)	368.53	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.06	Wt. n-Val.	0.036	0.050	0.050
W.S. Elev (ft)	368.47	Reach Len. (ft)	106.35	106.56	108.99
Crit W.S. (ft)	367.80	Flow Area (sq ft)	831.11	88.96	2.80
E.G. Slope (ft/ft)	0.001669	Area (sq ft)	831.11	88.96	2.80
Q Total (cfs)	1736.00	Flow (cfs)	1607.82	126.05	2.12
Top Width (ft)	760.41	Top Width (ft)	684.24	70.57	5.60
Vel Total (ft/s)	1.88	Avg. Vel. (ft/s)	1.93	1.42	0.76
Max Chl Dpth (ft)	2.28	Hydr. Depth (ft)	1.21	1.26	0.50
Conv. Total (cfs)	42487.8	Conv. (cfs)	39350.7	3085.1	51.9
Length Wtd. (ft)	106.37	Wetted Per. (ft)	684.31	70.58	5.69
Min Ch El (ft)	367.05	Shear (lb/sq ft)	0.13	0.13	0.05

Alpha	1.02	Stream Power (lb/ft s)	0.24	0.19	0.04
Frctn Loss (ft)	0.19	Cum Volume (acre-ft)	36.67	4.03	0.43
C & E Loss (ft)	0.00	Cum SA (acres)	19.86	3.25	0.55

CROSS SECTION OUTPUT Profile #Q100HC

E.G. Elev (ft)	369.69	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.18	Wt. n-Val.	0.036	0.050	0.050
W.S. Elev (ft)	369.51	Reach Len. (ft)	106.35	106.56	108.99
Crit W.S. (ft)	368.49	Flow Area (sq ft)	1543.84	162.05	11.60
E.G. Slope (ft/ft)	0.002434	Area (sq ft)	1543.84	162.05	11.60
Q Total (cfs)	5825.00	Flow (cfs)	5394.45	413.51	17.04
Top Width (ft)	774.13	Top Width (ft)	692.16	70.57	11.40
Vel Total (ft/s)	3.39	Avg. Vel. (ft/s)	3.49	2.55	1.47
Max Chl Dpth (ft)	3.32	Hydr. Depth (ft)	2.23	2.30	1.02
Conv. Total (cfs)	118070.0	Conv. (cfs)	109343.1	8381.7	345.3
Length Wtd. (ft)	106.37	Wetted Per. (ft)	692.30	70.58	11.58
Min Ch El (ft)	367.05	Shear (lb/sq ft)	0.34	0.35	0.15
Alpha	1.02	Stream Power (lb/ft s)	1.18	0.89	0.22
Frctn Loss (ft)	0.29	Cum Volume (acre-ft)	51.69	6.32	0.83
C & E Loss (ft)	0.00	Cum SA (acres)	22.97	3.25	0.77

CROSS SECTION

RIVER: Canada Gobernado
REACH: Middle RS: 2683.108

INPUT
Description:
Station Elevation Data num= 35

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	383.73	1.79	383.39	28.24	379.24	66.45	372.74	95.83	367.97
141.16	366.69	151.8	366.32	153.34	366.27	167.9	366.49	206.11	366.45
484.96	367.3	650.26	367.81	758.52	367.67	760.55	367.66	783.87	367.63
821.38	366.5	835.97	366.04	844.77	365.76	849.09	365.63	852.17	365.76
856.23	366.02	871.08	366.47	874.61	366.57	886.76	368.21	902.42	372.56
903.15	372.75	904.06	372.76	930.34	374.02	956.01	374.05	960.09	375.12
974.1	378.9	986.34	380.24	992.17	381.26	998.62	382.51	1014.06	384.93

Manning's n Values num= 2

Sta	n Val	Sta	n Val
0	.035	760.55	.05

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
783.87	886.76	95.66	94.46	94.94	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
0	783.87	367.63	F

Blocked Obstructions num= 1

Sta L	Sta R	Elev
849.5	860.5	402.78

CROSS SECTION OUTPUT Profile #Q50

E.G. Elev (ft)	368.19	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.03	Wt. n-Val.	0.035	0.050	

W.S. Elev (ft)	368.16	Reach Len. (ft)	95.66	94.46	94.94
Crit W.S. (ft)	367.63	Flow Area (sq ft)	666.72	135.11	
E.G. Slope (ft/ft)	0.001147	Area (sq ft)	666.72	135.11	
Q Total (cfs)	1109.00	Flow (cfs)	938.46	170.54	
Top Width (ft)	780.75	Top Width (ft)	689.22	91.53	
Vel Total (ft/s)	1.38	Avg. Vel. (ft/s)	1.41	1.26	
Max Chl Dpth (ft)	2.53	Hydr. Depth (ft)	0.97	1.48	
Conv. Total (cfs)	32745.5	Conv. (cfs)	27710.0	5035.4	
Length Wtd. (ft)	95.48	Wetted Per. (ft)	689.27	96.20	
Min Ch El (ft)	365.63	Shear (lb/sq ft)	0.07	0.10	
Alpha	1.00	Stream Power (lb/ft s)	0.10	0.13	
Frctn Loss (ft)	0.10	Cum Volume (acre-ft)	34.92	3.90	0.34
C & E Loss (ft)	0.00	Cum SA (acres)	17.96	3.11	0.50

Warning: Divided flow computed for this cross-section.

CROSS SECTION OUTPUT Profile #Q100

E.G. Elev (ft)	368.33	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.06	Wt. n-Val.	0.035	0.050	0.050
W.S. Elev (ft)	368.27	Reach Len. (ft)	95.66	94.46	94.94
Crit W.S. (ft)	367.64	Flow Area (sq ft)	742.73	145.23	0.01
E.G. Slope (ft/ft)	0.002006	Area (sq ft)	742.73	145.23	0.01
Q Total (cfs)	1736.00	Flow (cfs)	1482.63	253.37	0.00
Top Width (ft)	782.01	Top Width (ft)	689.90	91.89	0.22
Vel Total (ft/s)	1.96	Avg. Vel. (ft/s)	2.00	1.74	0.13
Max Chl Dpth (ft)	2.64	Hydr. Depth (ft)	1.08	1.58	0.03
Conv. Total (cfs)	38759.5	Conv. (cfs)	33102.6	5656.9	0.0
Length Wtd. (ft)	95.49	Wetted Per. (ft)	689.95	96.78	0.23
Min Ch El (ft)	365.63	Shear (lb/sq ft)	0.13	0.19	0.00
Alpha	1.01	Stream Power (lb/ft s)	0.27	0.33	0.00
Frctn Loss (ft)	0.20	Cum Volume (acre-ft)	34.75	3.74	0.42
C & E Loss (ft)	0.00	Cum SA (acres)	18.18	3.05	0.54

Warning: Divided flow computed for this cross-section.

CROSS SECTION OUTPUT Profile #Q100HC

E.G. Elev (ft)	369.39	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.21	Wt. n-Val.	0.035	0.050	0.050
W.S. Elev (ft)	369.18	Reach Len. (ft)	95.66	94.46	94.94
Crit W.S. (ft)	368.34	Flow Area (sq ft)	1374.33	229.01	1.71
E.G. Slope (ft/ft)	0.003179	Area (sq ft)	1374.33	229.01	1.71
Q Total (cfs)	5825.00	Flow (cfs)	5150.31	672.97	1.73
Top Width (ft)	790.91	Top Width (ft)	695.52	91.89	3.51
Vel Total (ft/s)	3.63	Avg. Vel. (ft/s)	3.75	2.94	1.01
Max Chl Dpth (ft)	3.55	Hydr. Depth (ft)	1.98	2.49	0.49
Conv. Total (cfs)	103311.4	Conv. (cfs)	91345.1	11935.7	30.6
Length Wtd. (ft)	95.51	Wetted Per. (ft)	695.64	98.61	3.64
Min Ch El (ft)	365.63	Shear (lb/sq ft)	0.39	0.46	0.09
Alpha	1.02	Stream Power (lb/ft s)	1.47	1.35	0.09
Frctn Loss (ft)	0.61	Cum Volume (acre-ft)	48.13	5.84	0.81
C & E Loss (ft)	0.04	Cum SA (acres)	21.27	3.05	0.75

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.

CROSS SECTION

RIVER: Canada Gobernado
REACH: Middle RS: 2588.648

INPUT
Description:
Station Elevation Data num= 34

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	381.11	22.74	380.03	74.37	375.41	81.87	375.07	133.27	369.78
159.28	368.18	165.16	367.81	191	366.39	251.47	365.91	253.19	365.86
304	366.08	368.9	366.62	578.49	367.29	592.32	367.18	598.83	367.22
865.63	368.01	872.58	368.07	877.34	368.05	880.55	368.03	880.76	368.03
944.49	366.08	955.37	365.53	958.42	365.54	961.78	365.77	962.94	365.84
968.29	366.16	983.69	367.08	989.82	367.21	991.87	367.6	993.49	368.16
1008.53	373.82	1025.32	376.48	1054.16	380.85	1069.93	385.33		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.035	877.34	.05	962.94	.035

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
880.55	993.49	101.5	101.78	103.02	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
0	872.61	368.07	F

Blocked Obstructions num= 1

Sta L	Sta R	Elev
979.5	990.5	402.78

CROSS SECTION OUTPUT Profile #Q50

			Left OB	Channel	Right OB
E.G. Elev (ft)	368.10	Element			
Vel Head (ft)	0.03	Wt. n-Val.	0.035	0.046	
W.S. Elev (ft)	368.07	Reach Len. (ft)	101.50	101.78	103.02
Crit W.S. (ft)	368.07	Flow Area (sq ft)	736.51	137.70	
E.G. Slope (ft/ft)	0.000886	Area (sq ft)	736.51	137.70	
Q Total (cfs)	1109.00	Flow (cfs)	947.79	161.21	
Top Width (ft)	821.20	Top Width (ft)	719.52	101.68	
Vel Total (ft/s)	1.27	Avg. Vel. (ft/s)	1.29	1.17	
Max Chl Dpth (ft)	2.54	Hydr. Depth (ft)	1.02	1.35	
Conv. Total (cfs)	37261.8	Conv. (cfs)	31845.3	5416.6	
Length Wtd. (ft)	101.54	Wetted Per. (ft)	719.58	103.84	
Min Ch El (ft)	365.53	Shear (lb/sq ft)	0.06	0.07	
Alpha	1.00	Stream Power (lb/ft s)	0.07	0.09	
Frctn Loss (ft)	0.08	Cum Volume (acre-ft)	33.38	3.60	0.34
C & E Loss (ft)	0.00	Cum SA (acres)	16.42	2.90	0.50

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: Divided flow computed for this cross-section.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water 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)	368.13	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.06	Wt. n-Val.	0.035	0.046	
W.S. Elev (ft)	368.07	Reach Len. (ft)	101.50	101.78	103.02
Crit W.S. (ft)	368.07	Flow Area (sq ft)	736.47	137.69	
E.G. Slope (ft/ft)	0.002171	Area (sq ft)	736.47	137.69	
Q Total (cfs)	1736.00	Flow (cfs)	1483.64	252.36	
Top Width (ft)	821.20	Top Width (ft)	719.52	101.68	
Vel Total (ft/s)	1.99	Avg. Vel. (ft/s)	2.01	1.83	
Max Chl Dpth (ft)	2.54	Hydr. Depth (ft)	1.02	1.35	
Conv. Total (cfs)	37258.3	Conv. (cfs)	31842.1	5416.2	
Length Wtd. (ft)	101.54	Wetted Per. (ft)	719.58	103.84	
Min Ch El (ft)	365.53	Shear (lb/sq ft)	0.14	0.18	
Alpha	1.00	Stream Power (lb/ft s)	0.28	0.33	
Frctn Loss (ft)	0.19	Cum Volume (acre-ft)	33.13	3.44	0.42
C & E Loss (ft)	0.01	Cum SA (acres)	16.63	2.84	0.54

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

CROSS SECTION OUTPUT Profile #Q100HC

E.G. Elev (ft)	368.75	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.59	Wt. n-Val.	0.035	0.046	
W.S. Elev (ft)	368.16	Reach Len. (ft)	101.50	101.78	103.02
Crit W.S. (ft)	368.16	Flow Area (sq ft)	803.09	147.11	
E.G. Slope (ft/ft)	0.018582	Area (sq ft)	803.09	147.11	0.00
Q Total (cfs)	5825.00	Flow (cfs)	5005.00	820.00	
Top Width (ft)	822.94	Top Width (ft)	720.99	101.94	
Vel Total (ft/s)	6.13	Avg. Vel. (ft/s)	6.23	5.57	
Max Chl Dpth (ft)	2.63	Hydr. Depth (ft)	1.11	1.44	
Conv. Total (cfs)	42732.1	Conv. (cfs)	36716.6	6015.5	
Length Wtd. (ft)	101.54	Wetted Per. (ft)	721.05	104.30	
Min Ch El (ft)	365.53	Shear (lb/sq ft)	1.29	1.64	
Alpha	1.00	Stream Power (lb/ft s)	8.05	9.12	
Frctn Loss (ft)	1.03	Cum Volume (acre-ft)	45.74	5.43	0.81
C & E Loss (ft)	0.04	Cum SA (acres)	19.72	2.84	0.75

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

CROSS SECTION

RIVER: Canada Gobernado
REACH: Middle RS: 2486.871

INPUT
Description:
Station Elevation Data num= 45

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	383.42	29.11	381.05	83.59	377.27	99.29	376.26	109.05	375.07
119.35	374.47	121.88	374.39	172.83	372.82	213.31	369.86	281.76	364.62
322.76	361.82	331.02	361.28	340.87	360.67	371.98	361.23	373.52	361.24
376.3	361.38	416.2	363.77	453.62	365.9	472.59	366.18	571.42	366.99
589.1	366.59	758.13	365.31	856.65	365.82	873.54	365.92	880.11	365.93
899.16	365.68	971.3	364.51	972.47	364.49	1006.62	363.93	1012.91	363.83
1020.6	363.84	1057.4	363.94	1060.2	364.14	1060.24	364.14	1064.92	364.46
1084.41	365.8	1087.66	366.38	1114.18	373.45	1124.25	376.66	1125.5	376.81
1153.53	380.21	1156.56	380.59	1158.08	381.04	1166.69	383.22	1170.24	384.17

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.035	971.3	.05	1064.92	.035

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
971.3	1064.92	89.23	88.52	87.81	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
0	971.3	364.51	F

Blocked Obstructions num= 2

Sta L	Sta R	Elev	Sta L	Sta R	Elev
939.5	950.5	395.98	1094.5	1105.5	402.78

CROSS SECTION OUTPUT Profile #Q50

			Left OB	Channel	Right OB
E.G. Elev (ft)	365.44	Element			
Vel Head (ft)	0.06	Wt. n-Val.	0.035	0.050	0.035
W.S. Elev (ft)	365.38	Reach Len. (ft)	89.23	88.52	87.81
Crit W.S. (ft)	364.52	Flow Area (sq ft)	477.34	126.20	6.18
E.G. Slope (ft/ft)	0.000682	Area (sq ft)	477.34	126.20	6.18
Q Total (cfs)	1109.00	Flow (cfs)	985.44	119.47	4.09
Top Width (ft)	346.01	Top Width (ft)	238.98	93.62	13.41
Vel Total (ft/s)	1.82	Avg. Vel. (ft/s)	2.06	0.95	0.66
Max Chl Dpth (ft)	4.71	Hydr. Depth (ft)	2.00	1.35	0.46
Conv. Total (cfs)	42473.4	Conv. (cfs)	37741.3	4575.6	156.5
Length Wtd. (ft)	89.17	Wetted Per. (ft)	240.17	93.64	13.44
Min Ch El (ft)	363.83	Shear (lb/sq ft)	0.08	0.06	0.02
Alpha	1.17	Stream Power (lb/ft s)	0.17	0.05	0.01
Frctn Loss (ft)	0.05	Cum Volume (acre-ft)	31.97	3.29	0.33
C & E Loss (ft)	0.01	Cum SA (acres)	15.30	2.68	0.49

Warning: Divided flow computed for this cross-section.

CROSS SECTION OUTPUT Profile #Q100

			Left OB	Channel	Right OB
E.G. Elev (ft)	365.56	Element			
Vel Head (ft)	0.14	Wt. n-Val.	0.035	0.050	0.035

W.S. Elev (ft)	365.42	Reach Len. (ft)	89.23	88.52	87.81
Crit W.S. (ft)	364.52	Flow Area (sq ft)	485.77	129.40	6.65
E.G. Slope (ft/ft)	0.001600	Area (sq ft)	485.77	129.40	6.65
Q Total (cfs)	1736.00	Flow (cfs)	1538.26	190.84	6.90
Top Width (ft)	360.81	Top Width (ft)	253.28	93.62	13.91
Vel Total (ft/s)	2.79	Avg. Vel. (ft/s)	3.17	1.47	1.04
Max Chl Dpth (ft)	4.75	Hydr. Depth (ft)	1.92	1.38	0.48
Conv. Total (cfs)	43399.0	Conv. (cfs)	38455.6	4770.9	172.5
Length Wtd. (ft)	89.17	Wetted Per. (ft)	254.53	93.64	13.94
Min Ch El (ft)	363.83	Shear (lb/sq ft)	0.19	0.14	0.05
Alpha	1.17	Stream Power (lb/ft s)	0.60	0.20	0.05
Frctn Loss (ft)	0.11	Cum Volume (acre-ft)	31.70	3.12	0.41
C & E Loss (ft)	0.02	Cum SA (acres)	15.50	2.62	0.52

Warning: Divided flow computed for this cross-section.

CROSS SECTION OUTPUT Profile #Q100HC

E.G. Elev (ft)	366.92	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.41	Wt. n-Val.	0.035	0.050	0.035
W.S. Elev (ft)	365.51	Reach Len. (ft)	89.23	88.52	87.81
Crit W.S. (ft)	366.02	Flow Area (sq ft)	512.13	138.43	8.06
E.G. Slope (ft/ft)	0.015955	Area (sq ft)	512.13	138.43	8.06
Q Total (cfs)	5825.00	Flow (cfs)	5122.52	674.34	28.14
Top Width (ft)	402.48	Top Width (ft)	293.54	93.62	15.31
Vel Total (ft/s)	8.84	Avg. Vel. (ft/s)	10.00	4.87	3.49
Max Chl Dpth (ft)	4.84	Hydr. Depth (ft)	1.74	1.48	0.53
Conv. Total (cfs)	46114.9	Conv. (cfs)	40553.6	5338.5	222.8
Length Wtd. (ft)	89.14	Wetted Per. (ft)	295.00	93.64	15.35
Min Ch El (ft)	363.83	Shear (lb/sq ft)	1.73	1.47	0.52
Alpha	1.16	Stream Power (lb/ft s)	17.30	7.17	1.83
Frctn Loss (ft)	1.75	Cum Volume (acre-ft)	44.20	5.10	0.80
C & E Loss (ft)	0.08	Cum SA (acres)	18.54	2.61	0.73

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: Program found supercritical flow starting at this cross section.

CROSS SECTION

RIVER: Canada Gobernado
REACH: Middle RS: 2398.348

INPUT
Description:
Station Elevation Data num= 38

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	384.56	18.12	382.46	42.64	380.83	83.34	375.18	91.91	374.12
95.85	373.84	141.8	369.6	169.26	367.51	275.88	360.8	289.88	361.05
331.66	361.31	406.06	364.85	426.05	366.02	461.09	366.53	492.43	366.84
536.14	365.64	580.68	364.62	646.39	364.14	685.3	364.34	836.8	365.26
894.61	365.36	921.11	365.01	1000.04	363.99	1006.48	364.18	1010.97	364.32
1012.69	364.37	1021.44	365	1034.9	366.3	1043.04	366.69	1052.6	370.43

1060.09	373.26	1064.07	374.02	1070.7	375.42	1076.89	376.21	1106.94	379.73
1113.38	380.61	1120.24	382.39	1123.3	383.25				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.035	921.11	.05	1010.97	.035

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
894.61	1021.44	105.16	105.95	105.06	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
0	894.61	365.36	F

Blocked Obstructions num= 1

Sta L	Sta R	Elev
894.5	905.5	395.98

CROSS SECTION OUTPUT Profile #Q50

E.G. Elev (ft)	365.39	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.03	Wt. n-Val.	0.035	0.048	0.035
W.S. Elev (ft)	365.36	Reach Len. (ft)	105.16	105.95	105.06
Crit W.S. (ft)	365.36	Flow Area (sq ft)	781.46	92.58	0.67
E.G. Slope (ft/ft)	0.000389	Area (sq ft)	781.46	92.58	0.67
Q Total (cfs)	1109.00	Flow (cfs)	1058.00	50.82	0.18
Top Width (ft)	677.15	Top Width (ft)	557.48	115.94	3.73
Vel Total (ft/s)	1.27	Avg. Vel. (ft/s)	1.35	0.55	0.27
Max Chl Dpth (ft)	4.56	Hydr. Depth (ft)	1.40	0.80	0.18
Conv. Total (cfs)	56228.0	Conv. (cfs)	53642.1	2576.8	9.1
Length Wtd. (ft)	105.18	Wetted Per. (ft)	557.74	116.12	3.74
Min Ch El (ft)	363.99	Shear (lb/sq ft)	0.03	0.02	0.00
Alpha	1.10	Stream Power (lb/ft s)	0.05	0.01	0.00
Frctn Loss (ft)	0.04	Cum Volume (acre-ft)	30.68	3.07	0.32
C & E Loss (ft)	0.00	Cum SA (acres)	14.49	2.46	0.47

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: Divided flow computed for this cross-section.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water 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)	365.43	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.07	Wt. n-Val.	0.035	0.048	0.035
W.S. Elev (ft)	365.36	Reach Len. (ft)	105.16	105.95	105.06
Crit W.S. (ft)	365.36	Flow Area (sq ft)	781.46	92.58	0.67
E.G. Slope (ft/ft)	0.000953	Area (sq ft)	781.46	92.58	0.67
Q Total (cfs)	1736.00	Flow (cfs)	1656.16	79.56	0.28
Top Width (ft)	677.15	Top Width (ft)	557.48	115.94	3.73
Vel Total (ft/s)	1.98	Avg. Vel. (ft/s)	2.12	0.86	0.42
Max Chl Dpth (ft)	4.56	Hydr. Depth (ft)	1.40	0.80	0.18
Conv. Total (cfs)	56228.0	Conv. (cfs)	53642.1	2576.8	9.1
Length Wtd. (ft)	105.18	Wetted Per. (ft)	557.74	116.12	3.74
Min Ch El (ft)	363.99	Shear (lb/sq ft)	0.08	0.05	0.01
Alpha	1.10	Stream Power (lb/ft s)	0.18	0.04	0.00
Frctn Loss (ft)	0.09	Cum Volume (acre-ft)	30.41	2.90	0.41
C & E Loss (ft)	0.00	Cum SA (acres)	14.67	2.40	0.50

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: Divided flow computed for this cross-section.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water 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)	366.23	Element			
Vel Head (ft)	0.39	Wt. n-Val.	0.035	0.047	0.035
W.S. Elev (ft)	365.84	Reach Len. (ft)	105.16	105.95	105.06
Crit W.S. (ft)	365.45	Flow Area (sq ft)	1058.59	148.40	3.67
E.G. Slope (ft/ft)	0.005051	Area (sq ft)	1058.59	148.40	3.67
Q Total (cfs)	5825.00	Flow (cfs)	5422.19	396.62	6.19
Top Width (ft)	717.58	Top Width (ft)	592.92	115.94	8.71
Vel Total (ft/s)	4.81	Avg. Vel. (ft/s)	5.12	2.67	1.69
Max Chl Dpth (ft)	5.04	Hydr. Depth (ft)	1.79	1.28	0.42
Conv. Total (cfs)	81957.4	Conv. (cfs)	76289.9	5580.4	87.1
Length Wtd. (ft)	105.19	Wetted Per. (ft)	593.70	116.60	8.75
Min Ch El (ft)	363.99	Shear (lb/sq ft)	0.56	0.40	0.13
Alpha	1.08	Stream Power (lb/ft s)	2.88	1.07	0.22
Frctn Loss (ft)	0.63	Cum Volume (acre-ft)	42.60	4.81	0.79
C & E Loss (ft)	0.01	Cum SA (acres)	17.63	2.40	0.70

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: Canada Gobernado
REACH: Middle RS: 2292.400

INPUT
Description:
Station Elevation Data num= 43

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	383.99	.8	383.83	19.66	380.38	37.64	377.61	49.29	374.9
97.49	368.87	103.94	368.27	111.23	367.81	117.02	367.35	151.9	364.43
165.13	363.54	174.27	362.54	186.25	361.33	193.86	360.89	226.47	361.1
275.33	361.22	310.02	362.68	378.16	366.22	410.38	366.5	470.3	365.08
530.56	363.42	607.88	363.43	640.21	363.65	785.41	364.5	887.85	364.67
894.31	364.68	902.83	364.69	928.18	364.36	939.32	364.7	953.57	365.61
958.96	365.95	964.16	366.28	997.66	368.05	1007.73	369.32	1022.08	372.01
1027.26	373.67	1032.03	376.53	1039.34	380.03	1060.22	383.36	1060.88	383.47
1066.29	383.99	1071.35	384.66	1077.49	385.05				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.035	894.31	.05	958.96	.035

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
902.83	939.32	84.91	83.99	84.03	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent

```
      0  902.83  364.69        F
Blocked Obstructions     num=        1
   Sta L   Sta R    Elev
   689.5   700.5  389.17
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CROSS SECTION OUTPUT Profile #Q50

E.G. Elev (ft)	364.73	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.03	Wt. n-Val.	0.035	0.050	
W.S. Elev (ft)	364.70	Reach Len. (ft)	84.91	83.99	84.03
Crit W.S. (ft)	364.70	Flow Area (sq ft)	774.06	6.30	
E.G. Slope (ft/ft)	0.000476	Area (sq ft)	774.06	6.30	
Q Total (cfs)	1109.00	Flow (cfs)	1107.73	1.27	
Top Width (ft)	644.37	Top Width (ft)	607.90	36.46	
Vel Total (ft/s)	1.42	Avg. Vel. (ft/s)	1.43	0.20	
Max Chl Dpth (ft)	3.81	Hydr. Depth (ft)	1.27	0.17	
Conv. Total (cfs)	50812.4	Conv. (cfs)	50754.3	58.0	
Length Wtd. (ft)	84.88	Wetted Per. (ft)	609.64	36.47	
Min Ch El (ft)	364.36	Shear (lb/sq ft)	0.04	0.01	
Alpha	1.01	Stream Power (lb/ft s)	0.05	0.00	
Frctn Loss (ft)	0.04	Cum Volume (acre-ft)	28.80	2.95	0.32
C & E Loss (ft)	0.05	Cum SA (acres)	13.08	2.28	0.46

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

CROSS SECTION OUTPUT Profile #Q100

E.G. Elev (ft)	364.78	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.08	Wt. n-Val.	0.035	0.050	
W.S. Elev (ft)	364.70	Reach Len. (ft)	84.91	83.99	84.03
Crit W.S. (ft)	364.70	Flow Area (sq ft)	774.06	6.30	
E.G. Slope (ft/ft)	0.001167	Area (sq ft)	774.06	6.30	
Q Total (cfs)	1736.00	Flow (cfs)	1734.02	1.98	
Top Width (ft)	644.37	Top Width (ft)	607.90	36.46	
Vel Total (ft/s)	2.22	Avg. Vel. (ft/s)	2.24	0.31	
Max Chl Dpth (ft)	3.81	Hydr. Depth (ft)	1.27	0.17	
Conv. Total (cfs)	50812.4	Conv. (cfs)	50754.3	58.0	
Length Wtd. (ft)	84.89	Wetted Per. (ft)	609.64	36.47	
Min Ch El (ft)	364.36	Shear (lb/sq ft)	0.09	0.01	
Alpha	1.01	Stream Power (lb/ft s)	0.21	0.00	
Frctn Loss (ft)	0.09	Cum Volume (acre-ft)	28.53	2.78	0.41
C & E Loss (ft)	0.06	Cum SA (acres)	13.26	2.22	0.50

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: Divided flow computed for this cross-section.
Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water 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)	365.58	Element			
Vel Head (ft)	0.52	Wt. n-Val.	0.035	0.050	0.050
W.S. Elev (ft)	365.06	Reach Len. (ft)	84.91	83.99	84.03
Crit W.S. (ft)	364.86	Flow Area (sq ft)	999.23	19.55	1.03
E.G. Slope (ft/ft)	0.007315	Area (sq ft)	999.23	19.55	1.03
Q Total (cfs)	5825.00	Flow (cfs)	5791.40	32.77	0.83
Top Width (ft)	674.57	Top Width (ft)	632.41	36.49	5.67
Vel Total (ft/s)	5.71	Avg. Vel. (ft/s)	5.80	1.68	0.81
Max Chl Dpth (ft)	4.17	Hydr. Depth (ft)	1.58	0.54	0.18
Conv. Total (cfs)	68108.7	Conv. (cfs)	67715.8	383.1	9.8
Length Wtd. (ft)	84.88	Wetted Per. (ft)	634.90	36.50	5.68
Min Ch El (ft)	364.36	Shear (lb/sq ft)	0.72	0.24	0.08
Alpha	1.02	Stream Power (lb/ft s)	4.17	0.41	0.07
Frctn Loss (ft)	0.49	Cum Volume (acre-ft)	40.11	4.60	0.78
C & E Loss (ft)	0.01	Cum SA (acres)	16.15	2.22	0.69

Warning: Divided flow computed for this cross-section.

CROSS SECTION

RIVER: Canada Gobernado
REACH: Middle RS: 2208.408

INPUT
Description: Manual Input for Manning's N Values
Station Elevation Data num= 44

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	385.35	9.74	382.49	21.77	380.61	45.78	376.71	53.48	376.1
74.11	373.99	77.9	373.43	83.41	372	108.79	367.41	121	365.14
124.21	364.85	137.53	363.37	155.81	360.89	166.71	360.9	243.4	361.36
300.77	364.43	335.6	365.8	357.41	366.33	450.97	364.12	467.94	363.74
480.39	363.34	501.87	363.39	567.56	363.49	701.91	363.5	765.13	363.88
830.42	363.99	862.2	363.33	912.4	362.29	916.24	362.52	932.8	361.64
939.85	361.27	944.49	361.77	947.4	362.5	964.17	367.38	980.88	368.53
994.29	369.51	995.05	369.56	1014.96	372.53	1024.01	373.97	1028.48	374.92
1031.09	375.43	1045.33	379.56	1068.62	385.92	1069.72	386.1		

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	124.21	.02	830.42	.035	862.2	.05	939.85	.035

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
916.24	947.4	95.5	94.25	92.91	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
0	916.24	362.52	F

Blocked Obstructions num= 2

Sta L	Sta R	Elev	Sta L	Sta R	Elev
514.5	525.5	382.36	669.5	680.5	389.17

CROSS SECTION OUTPUT Profile #Q50

E.G. Elev (ft)	363.25	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.49	Wt. n-Val.	0.020	0.045	0.035
W.S. Elev (ft)	362.76	Reach Len. (ft)	95.50	94.25	92.91
Crit W.S. (ft)	362.70	Flow Area (sq ft)	182.96	27.98	0.11
E.G. Slope (ft/ft)	0.004160	Area (sq ft)	182.96	27.98	0.11
Q Total (cfs)	1109.00	Flow (cfs)	1052.92	56.00	0.08
Top Width (ft)	185.98	Top Width (ft)	153.93	31.16	0.89
Vel Total (ft/s)	5.25	Avg. Vel. (ft/s)	5.75	2.00	0.68
Max Chl Dpth (ft)	1.87	Hydr. Depth (ft)	1.19	0.90	0.13
Conv. Total (cfs)	17193.8	Conv. (cfs)	16324.4	868.2	1.2
Length Wtd. (ft)	95.20	Wetted Per. (ft)	154.11	31.31	0.92
Min Ch El (ft)	361.27	Shear (lb/sq ft)	0.31	0.23	0.03
Alpha	1.15	Stream Power (lb/ft s)	1.77	0.46	0.02
Frctn Loss (ft)	0.52	Cum Volume (acre-ft)	27.87	2.92	0.32
C & E Loss (ft)	0.02	Cum SA (acres)	12.34	2.21	0.46

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

CROSS SECTION OUTPUT Profile #Q100

E.G. Elev (ft)	364.36	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.82	Wt. n-Val.	0.020	0.044	0.000
W.S. Elev (ft)	362.54	Reach Len. (ft)	95.50	94.25	92.91
Crit W.S. (ft)	363.13	Flow Area (sq ft)	150.70	21.08	0.00
E.G. Slope (ft/ft)	0.017353	Area (sq ft)	150.70	21.08	0.00
Q Total (cfs)	1736.00	Flow (cfs)	1664.11	71.89	0.00
Top Width (ft)	168.76	Top Width (ft)	137.47	31.16	0.13
Vel Total (ft/s)	10.11	Avg. Vel. (ft/s)	11.04	3.41	0.38
Max Chl Dpth (ft)	1.65	Hydr. Depth (ft)	1.10	0.68	0.02
Conv. Total (cfs)	13178.5	Conv. (cfs)	12632.8	545.8	0.0
Length Wtd. (ft)	95.23	Wetted Per. (ft)	137.63	31.31	0.13
Min Ch El (ft)	361.27	Shear (lb/sq ft)	1.19	0.73	
Alpha	1.15	Stream Power (lb/ft s)	13.10	2.49	
Frctn Loss (ft)	0.25	Cum Volume (acre-ft)	27.63	2.75	0.41
C & E Loss (ft)	0.17	Cum SA (acres)	12.54	2.15	0.50

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.
Warning: The conveyance ratio (upstream 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)	365.08	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.66	Wt. n-Val.	0.022	0.045	0.035
W.S. Elev (ft)	364.41	Reach Len. (ft)	95.50	94.25	92.91
Crit W.S. (ft)	364.41	Flow Area (sq ft)	821.13	79.47	6.27
E.G. Slope (ft/ft)	0.004713	Area (sq ft)	821.13	79.47	6.27
Q Total (cfs)	5825.00	Flow (cfs)	5472.75	334.99	17.26
Top Width (ft)	665.56	Top Width (ft)	627.83	31.16	6.57
Vel Total (ft/s)	6.42	Avg. Vel. (ft/s)	6.66	4.22	2.75
Max Chl Dpth (ft)	3.52	Hydr. Depth (ft)	1.31	2.55	0.96

Conv. Total (cfs)	84850.6	Conv. (cfs)	79719.5	4879.6	251.5
Length Wtd. (ft)	95.29	Wetted Per. (ft)	631.99	31.31	6.84
Min Ch El (ft)	361.27	Shear (lb/sq ft)	0.38	0.75	0.27
Alpha	1.04	Stream Power (lb/ft s)	2.55	3.15	0.74
Frctn Loss (ft)	0.47	Cum Volume (acre-ft)	38.34	4.51	0.78
C & E Loss (ft)	0.03	Cum SA (acres)	14.92	2.15	0.68

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: Divided flow computed for this cross-section.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water 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: Canada Gobernado
REACH: Middle RS: 2114.162

INPUT
Description:
Station Elevation Data num= 49

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	384.39	4.72	383.56	18.69	381.24	34.88	376.27	42.68	373.42
45.16	372.9	61.06	367.62	77.06	364.96	96.24	361.77	98.8	361.38
100.78	361.32	110.37	361.34	183.88	361.1	203.99	362.17	239.89	363.17
310.16	365.01	348.03	364.95	355.4	364.93	426.71	362.64	559.09	362.96
718.55	363.22	779.46	362.72	821.96	362.15	827.1	362.09	869.29	361.52
889.49	360.6	896.69	360.26	899.02	360.14	902.88	359.95	912.16	359.49
919.2	360.58	921.17	360.9	923.78	361.93	932.08	365.64	936.92	367.43
948.55	368.61	956.01	368.78	973.17	368.45	983.15	369.39	1000.79	371.16
1016.35	372.03	1075.64	375.18	1092.24	375.4	1136.66	376.3	1169.31	377.21
1229.05	379.27	1262.4	380.89	1274.66	381.8	1284.32	382.49		

Manning's n Values num= 4

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	77.06	.02	821.96	.05	899.02	.035

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
827.1 923.78 99.92 98.66 97.98 .1 .3
Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
0	827.1	362.09	F

Blocked Obstructions num= 1

Sta L	Sta R	Elev
494.5	505.5	382.36

CROSS SECTION OUTPUT Profile #Q50

E.G. Elev (ft)	362.71	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.43	Wt. n-Val.	0.020	0.040	0.035
W.S. Elev (ft)	362.27	Reach Len. (ft)	99.92	98.66	97.98
Crit W.S. (ft)	362.21	Flow Area (sq ft)	105.35	115.77	0.13
E.G. Slope (ft/ft)	0.007640	Area (sq ft)	105.35	115.77	0.13
Q Total (cfs)	1109.00	Flow (cfs)	634.00	474.85	0.14
Top Width (ft)	226.38	Top Width (ft)	128.93	96.68	0.77

Vel Total (ft/s)	5.01	Avg. Vel. (ft/s)	6.02	4.10	1.08
Max Chl Dpth (ft)	2.78	Hydr. Depth (ft)	0.82	1.20	0.17
Conv. Total (cfs)	12687.7	Conv. (cfs)	7253.4	5432.6	1.6
Length Wtd. (ft)	99.52	Wetted Per. (ft)	129.03	97.04	0.84
Min Ch El (ft)	359.49	Shear (lb/sq ft)	0.39	0.57	0.07
Alpha	1.11	Stream Power (lb/ft s)	2.34	2.33	0.08
Frctn Loss (ft)	0.29	Cum Volume (acre-ft)	27.55	2.76	0.32
C & E Loss (ft)	0.10	Cum SA (acres)	12.03	2.07	0.46

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

E.G. Elev (ft)	363.26	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.91	Wt. n-Val.	0.020	0.040	0.035
W.S. Elev (ft)	362.36	Reach Len. (ft)	99.92	98.66	97.98
Crit W.S. (ft)	362.61	Flow Area (sq ft)	116.16	123.59	0.20
E.G. Slope (ft/ft)	0.014981	Area (sq ft)	116.16	123.59	0.20
Q Total (cfs)	1736.00	Flow (cfs)	1008.63	727.02	0.35
Top Width (ft)	235.97	Top Width (ft)	138.34	96.68	0.95
Vel Total (ft/s)	7.23	Avg. Vel. (ft/s)	8.68	5.88	1.74
Max Chl Dpth (ft)	2.87	Hydr. Depth (ft)	0.84	1.28	0.21
Conv. Total (cfs)	14183.3	Conv. (cfs)	8240.6	5939.8	2.9
Length Wtd. (ft)	99.56	Wetted Per. (ft)	138.45	97.04	1.04
Min Ch El (ft)	359.49	Shear (lb/sq ft)	0.78	1.19	0.18
Alpha	1.11	Stream Power (lb/ft s)	6.81	7.01	0.32
Frctn Loss (ft)	1.06	Cum Volume (acre-ft)	27.33	2.59	0.41
C & E Loss (ft)	0.38	Cum SA (acres)	12.23	2.01	0.50

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.

CROSS SECTION OUTPUT Profile #Q100HC

E.G. Elev (ft)	364.42	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.90	Wt. n-Val.	0.020	0.042	0.035
W.S. Elev (ft)	363.52	Reach Len. (ft)	99.92	98.66	97.98
Crit W.S. (ft)	363.72	Flow Area (sq ft)	535.90	236.47	2.84
E.G. Slope (ft/ft)	0.009983	Area (sq ft)	535.90	236.47	2.84
Q Total (cfs)	5825.00	Flow (cfs)	4268.86	1546.41	9.73
Top Width (ft)	684.78	Top Width (ft)	584.53	96.68	3.56
Vel Total (ft/s)	7.51	Avg. Vel. (ft/s)	7.97	6.54	3.43
Max Chl Dpth (ft)	4.03	Hydr. Depth (ft)	0.92	2.45	0.80
Conv. Total (cfs)	58300.1	Conv. (cfs)	42725.4	15477.3	97.4
Length Wtd. (ft)	99.71	Wetted Per. (ft)	586.19	97.04	3.90
Min Ch El (ft)	359.49	Shear (lb/sq ft)	0.57	1.52	0.45
Alpha	1.03	Stream Power (lb/ft s)	4.54	9.93	1.55
Frctn Loss (ft)	0.63	Cum Volume (acre-ft)	36.85	4.17	0.77
C & E Loss (ft)	0.02	Cum SA (acres)	13.59	2.01	0.66

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: Program found supercritical flow starting at this cross section.

CROSS SECTION

RIVER: Canada Gobernado
REACH: Middle RS: 2015.501

INPUT
Description:
Station Elevation Data num= 49

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	384.6	2.82	384.05	24.47	379.64	37.91	376.14	51.67	372.01
59.81	369.07	75.4	366.05	80.56	365.03	83.41	364.64	108.73	361.55
111.75	361.48	122.84	361.2	157.95	360.29	185	360.62	256.9	360.97
326.81	362.8	388.83	362.8	434.58	362.69	459.1	361.91	663.34	362.42
704.26	362.53	732.23	362.58	890.59	361.29	896.73	361.24	898.83	361.22
914.06	361.11	915.64	361.1	916.32	361.07	959.17	359.47	970.44	360.45
974.89	360.84	975.44	360.91	976.67	361.37	991.56	366.44	992.42	366.73
992.57	366.78	993.9	366.83	1046.83	369.32	1054.87	369.28	1110.41	368.85
1115.41	368.84	1116.91	368.89	1120.74	369.06	1162.18	370.96	1177.12	373.22
1191.59	374.51	1193.59	375.1	1216.92	381.27	1228.4	384.11		

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	122.84	.02	663.34	.07	896.73	.05	970.44	.035

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
916.32	974.89	133.64	132.4	133.6	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
0	915.66	361.1	F

Blocked Obstructions num= 2

Sta L	Sta R	Elev	Sta L	Sta R	Elev
379.5	390.5	375.77	559.5	570.5	382.36

CROSS SECTION OUTPUT Profile #Q50

E.G. Elev (ft)	362.31	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.09	Wt. n-Val.	0.023	0.049	0.035
W.S. Elev (ft)	362.22	Reach Len. (ft)	133.64	132.40	133.60
Crit W.S. (ft)	361.63	Flow Area (sq ft)	345.50	116.04	3.13
E.G. Slope (ft/ft)	0.001538	Area (sq ft)	345.50	116.04	3.13
Q Total (cfs)	1109.00	Flow (cfs)	886.63	218.28	4.09
Top Width (ft)	527.12	Top Width (ft)	464.28	58.57	4.28
Vel Total (ft/s)	2.39	Avg. Vel. (ft/s)	2.57	1.88	1.31
Max Chl Dpth (ft)	2.75	Hydr. Depth (ft)	0.74	1.98	0.73
Conv. Total (cfs)	28278.8	Conv. (cfs)	22608.6	5566.0	104.2
Length Wtd. (ft)	133.39	Wetted Per. (ft)	464.45	58.66	4.51
Min Ch El (ft)	359.47	Shear (lb/sq ft)	0.07	0.19	0.07
Alpha	1.05	Stream Power (lb/ft s)	0.18	0.36	0.09
Frctn Loss (ft)	0.20	Cum Volume (acre-ft)	27.03	2.50	0.32
C & E Loss (ft)	0.01	Cum SA (acres)	11.35	1.90	0.46

Warning: Divided flow computed for this cross-section.

CROSS SECTION OUTPUT Profile #Q100

E.G. Elev (ft)	362.62	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.12	Wt. n-Val.	0.023	0.049	0.035
W.S. Elev (ft)	362.50	Reach Len. (ft)	133.64	132.40	133.60
Crit W.S. (ft)	361.94	Flow Area (sq ft)	500.39	132.58	4.45
E.G. Slope (ft/ft)	0.001835	Area (sq ft)	500.39	132.58	4.45
Q Total (cfs)	1736.00	Flow (cfs)	1430.95	297.91	7.14
Top Width (ft)	695.26	Top Width (ft)	631.58	58.57	5.11
Vel Total (ft/s)	2.72	Avg. Vel. (ft/s)	2.86	2.25	1.60
Max Chl Dpth (ft)	3.03	Hydr. Depth (ft)	0.79	2.26	0.87
Conv. Total (cfs)	40525.1	Conv. (cfs)	33404.0	6954.4	166.7
Length Wtd. (ft)	133.42	Wetted Per. (ft)	632.35	58.66	5.38
Min Ch El (ft)	359.47	Shear (lb/sq ft)	0.09	0.26	0.09
Alpha	1.03	Stream Power (lb/ft s)	0.26	0.58	0.15
Frctn Loss (ft)	0.24	Cum Volume (acre-ft)	26.63	2.30	0.40
C & E Loss (ft)	0.01	Cum SA (acres)	11.35	1.84	0.49

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

CROSS SECTION OUTPUT Profile #Q100HC

E.G. Elev (ft)	364.03	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.17	Wt. n-Val.	0.026	0.049	0.035
W.S. Elev (ft)	363.86	Reach Len. (ft)	133.64	132.40	133.60
Crit W.S. (ft)	362.92	Flow Area (sq ft)	1557.49	212.30	14.12
E.G. Slope (ft/ft)	0.001341	Area (sq ft)	1557.49	212.30	14.12
Q Total (cfs)	5825.00	Flow (cfs)	5237.16	559.44	28.40
Top Width (ft)	872.22	Top Width (ft)	804.55	58.57	9.10
Vel Total (ft/s)	3.27	Avg. Vel. (ft/s)	3.36	2.64	2.01
Max Chl Dpth (ft)	4.39	Hydr. Depth (ft)	1.94	3.62	1.55
Conv. Total (cfs)	159083.4	Conv. (cfs)	143029.2	15278.7	775.5
Length Wtd. (ft)	133.49	Wetted Per. (ft)	810.26	58.66	9.60
Min Ch El (ft)	359.47	Shear (lb/sq ft)	0.16	0.30	0.12
Alpha	1.02	Stream Power (lb/ft s)	0.54	0.80	0.25
Frctn Loss (ft)	0.19	Cum Volume (acre-ft)	34.45	3.66	0.75
C & E Loss (ft)	0.00	Cum SA (acres)	12.00	1.84	0.65

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: Canada Gobernado
REACH: Middle RS: 1883.106

INPUT
Description: Manual Input for Manning's N Values, Modify XS Sta 256.93
Station Elevation Data num= 39

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	382.98	27.27	379.08	42.84	376.74	67.67	373.41	84.56	371.17
131.19	363.51	144.59	361.41	163.69	360.68	168.15	360.52	178.74	360.1

202.65	360.53	205	360.55	256.93	380	350	360.91	387.9	360.88
464.63	361.09	559.95	361.15	652.07	361.38	670	361.4	839.81	361.54
902.88	361.09	925	360.92	933.78	360.85	966.91	360.59	1002.04	360.36
1010.15	360.59	1022.89	360.94	1028.99	361.11	1047	361.91	1050.18	362.05
1071.64	362.57	1072.27	362.6	1072.95	362.61	1099.9	364.21	1105.64	364.93
1119.74	366.73	1128.84	367.62	1159.55	376.31	1188.02	385.07		

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	131.19	.02	670	.07	925	.05	1047	.035

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
902.88	1028.99	116.44	114.74 111.85	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
0	902.88	361.09	F

Blocked Obstructions num= 2

Sta L	Sta R	Elev	Sta L	Sta R	Elev
489.5	500.5	375.77	0	256.93	380

CROSS SECTION OUTPUT Profile #Q50

			Left OB	Channel	Right OB
E.G. Elev (ft)	362.10	Element			
Vel Head (ft)	0.06	Wt. n-Val.	0.025	0.052	0.050
W.S. Elev (ft)	362.04	Reach Len. (ft)	116.44	114.74	111.85
Crit W.S. (ft)	361.61	Flow Area (sq ft)	431.92	167.20	9.79
E.G. Slope (ft/ft)	0.001506	Area (sq ft)	431.92	167.20	9.79
Q Total (cfs)	1109.00	Flow (cfs)	875.38	226.30	7.32
Top Width (ft)	694.53	Top Width (ft)	547.40	126.11	21.02
Vel Total (ft/s)	1.82	Avg. Vel. (ft/s)	2.03	1.35	0.75
Max Chl Dpth (ft)	1.68	Hydr. Depth (ft)	0.79	1.33	0.47
Conv. Total (cfs)	28575.0	Conv. (cfs)	22555.3	5831.1	188.6
Length Wtd. (ft)	116.05	Wetted Per. (ft)	549.39	126.12	21.04
Min Ch El (ft)	360.36	Shear (lb/sq ft)	0.07	0.12	0.04
Alpha	1.09	Stream Power (lb/ft s)	0.15	0.17	0.03
Frctn Loss (ft)	0.20	Cum Volume (acre-ft)	25.84	2.07	0.30
C & E Loss (ft)	0.00	Cum SA (acres)	9.79	1.62	0.42

Warning: Divided flow computed for this cross-section.

CROSS SECTION OUTPUT Profile #Q100

			Left OB	Channel	Right OB
E.G. Elev (ft)	362.37	Element			
Vel Head (ft)	0.08	Wt. n-Val.	0.026	0.052	0.049
W.S. Elev (ft)	362.29	Reach Len. (ft)	116.44	114.74	111.85
Crit W.S. (ft)	361.76	Flow Area (sq ft)	568.05	198.53	16.25
E.G. Slope (ft/ft)	0.001699	Area (sq ft)	568.05	198.53	16.25
Q Total (cfs)	1736.00	Flow (cfs)	1401.65	318.59	15.76
Top Width (ft)	705.86	Top Width (ft)	548.61	126.11	31.14
Vel Total (ft/s)	2.22	Avg. Vel. (ft/s)	2.47	1.60	0.97
Max Chl Dpth (ft)	1.93	Hydr. Depth (ft)	1.04	1.57	0.52
Conv. Total (cfs)	42122.6	Conv. (cfs)	34009.8	7730.4	382.4
Length Wtd. (ft)	116.06	Wetted Per. (ft)	551.12	126.12	31.16
Min Ch El (ft)	360.36	Shear (lb/sq ft)	0.11	0.17	0.06
Alpha	1.10	Stream Power (lb/ft s)	0.27	0.27	0.05
Frctn Loss (ft)	0.26	Cum Volume (acre-ft)	24.99	1.80	0.37
C & E Loss (ft)	0.00	Cum SA (acres)	9.54	1.56	0.44

Warning: Divided flow computed for this cross-section.

CROSS SECTION OUTPUT Profile #Q100HC

E.G. Elev (ft)	363.84	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.19	Wt. n-Val.	0.027	0.052	0.042
W.S. Elev (ft)	363.66	Reach Len. (ft)	116.44	114.74	111.85
Crit W.S. (ft)	362.51	Flow Area (sq ft)	1322.56	370.92	83.59
E.G. Slope (ft/ft)	0.001452	Area (sq ft)	1322.56	370.92	83.59
Q Total (cfs)	5825.00	Flow (cfs)	4851.35	826.74	146.92
Top Width (ft)	743.00	Top Width (ft)	555.28	126.11	61.61
Vel Total (ft/s)	3.28	Avg. Vel. (ft/s)	3.67	2.23	1.76
Max Chl Dpth (ft)	3.30	Hydr. Depth (ft)	2.38	2.94	1.36
Conv. Total (cfs)	152883.0	Conv. (cfs)	127328.4	21698.5	3856.0
Length Wtd. (ft)	116.06	Wetted Per. (ft)	560.66	126.12	61.67
Min Ch El (ft)	360.36	Shear (lb/sq ft)	0.21	0.27	0.12
Alpha	1.12	Stream Power (lb/ft s)	0.78	0.59	0.22
Frctn Loss (ft)	0.26	Cum Volume (acre-ft)	30.03	2.77	0.60
C & E Loss (ft)	0.01	Cum SA (acres)	9.91	1.56	0.54

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: Canada Gobernado
REACH: Middle RS: 1768.369

INPUT
Description: Manual Input for Manning's N Values, Modify XS Sta 480
Station Elevation Data num= 28

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	386.52	9.52	383.88	11	383.38	38.24	374.02	45.22	372.44
59.08	367.52	149.24	380	370.84	380	480	361.4	494.39	361.42
590.77	360.32	628	360.36	782.39	360.53	847.61	361.08	876.5	360.69
878.52	360.66	963.06	360.23	964.3	360.19	966.41	360.34	970.66	360.68
973.28	360.86	991.86	362.16	1003.46	364.22	1031.71	368.73	1052.71	373.12
1056.32	373.71	1072.73	375.87	1099.75	382.67				

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	370.84	.02	628	.07	876.5	.05	991.86	.035

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
847.61	973.28	111.41	108.64	106.97	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
0	847.59	361.08	F

Blocked Obstructions num= 1

Sta L	Sta R	Elev
0	149.24	380

CROSS SECTION OUTPUT Profile #Q50

E.G. Elev (ft)	361.90	Element	Left OB	Channel	Right OB

Vel Head (ft)	0.05	Wt. n-Val.	0.039	0.052	0.050
W.S. Elev (ft)	361.84	Reach Len. (ft)	111.41	108.64	106.97
Crit W.S. (ft)	361.13	Flow Area (sq ft)	440.25	162.11	6.91
E.G. Slope (ft/ft)	0.002007	Area (sq ft)	440.25	162.11	6.91
Q Total (cfs)	1109.00	Flow (cfs)	854.91	248.37	5.72
Top Width (ft)	509.94	Top Width (ft)	370.21	125.67	14.06
Vel Total (ft/s)	1.82	Avg. Vel. (ft/s)	1.94	1.53	0.83
Max Chl Dpth (ft)	1.65	Hydr. Depth (ft)	1.19	1.29	0.49
Conv. Total (cfs)	24752.8	Conv. (cfs)	19081.5	5543.5	127.8
Length Wtd. (ft)	111.05	Wetted Per. (ft)	370.26	125.70	14.09
Min Ch El (ft)	360.19	Shear (lb/sq ft)	0.15	0.16	0.06
Alpha	1.04	Stream Power (lb/ft s)	0.29	0.25	0.05
Frctn Loss (ft)	0.18	Cum Volume (acre-ft)	24.67	1.63	0.28
C & E Loss (ft)	0.00	Cum SA (acres)	8.57	1.29	0.37

CROSS SECTION OUTPUT Profile #Q100

E.G. Elev (ft)	362.11	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.10	Wt. n-Val.	0.038	0.052	0.050
W.S. Elev (ft)	362.01	Reach Len. (ft)	111.41	108.64	106.97
Crit W.S. (ft)	361.34	Flow Area (sq ft)	501.27	182.80	9.42
E.G. Slope (ft/ft)	0.003166	Area (sq ft)	501.27	182.80	9.42
Q Total (cfs)	1736.00	Flow (cfs)	1346.06	379.08	10.86
Top Width (ft)	513.26	Top Width (ft)	371.18	125.67	16.41
Vel Total (ft/s)	2.50	Avg. Vel. (ft/s)	2.69	2.07	1.15
Max Chl Dpth (ft)	1.82	Hydr. Depth (ft)	1.35	1.45	0.57
Conv. Total (cfs)	30850.7	Conv. (cfs)	23921.0	6736.7	193.0
Length Wtd. (ft)	111.08	Wetted Per. (ft)	371.24	125.70	16.45
Min Ch El (ft)	360.19	Shear (lb/sq ft)	0.27	0.29	0.11
Alpha	1.04	Stream Power (lb/ft s)	0.72	0.60	0.13
Frctn Loss (ft)	0.59	Cum Volume (acre-ft)	23.56	1.30	0.34
C & E Loss (ft)	0.02	Cum SA (acres)	8.31	1.23	0.38

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

CROSS SECTION OUTPUT Profile #Q100HC

E.G. Elev (ft)	363.58	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.31	Wt. n-Val.	0.037	0.053	0.049
W.S. Elev (ft)	363.27	Reach Len. (ft)	111.41	108.64	106.97
Crit W.S. (ft)	362.27	Flow Area (sq ft)	973.77	341.20	36.13
E.G. Slope (ft/ft)	0.003782	Area (sq ft)	973.77	341.20	36.13
Q Total (cfs)	5825.00	Flow (cfs)	4579.88	1152.24	92.88
Top Width (ft)	529.07	Top Width (ft)	378.58	125.67	24.82
Vel Total (ft/s)	4.31	Avg. Vel. (ft/s)	4.70	3.38	2.57
Max Chl Dpth (ft)	3.08	Hydr. Depth (ft)	2.57	2.72	1.46
Conv. Total (cfs)	94720.3	Conv. (cfs)	74473.3	18736.6	1510.4
Length Wtd. (ft)	111.03	Wetted Per. (ft)	378.74	125.70	24.97
Min Ch El (ft)	360.19	Shear (lb/sq ft)	0.61	0.64	0.34
Alpha	1.06	Stream Power (lb/ft s)	2.86	2.16	0.88
Frctn Loss (ft)	0.76	Cum Volume (acre-ft)	26.96	1.83	0.44
C & E Loss (ft)	0.04	Cum SA (acres)	8.66	1.22	0.43

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

RIVER: Canada Gobernado
REACH: Middle RS: 1659.726

INPUT
Description: Modify XS, Sta 0-170

Station Elevation Data num= 29

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	380	170	380	281.1	362.23	283.11	362.17	301.59	361.98
506.03	359.69	531.85	359.39	532.56	359.38	569.31	359.43	601.91	359.72
638.17	360.01	757.97	361.02	759.79	361.03	763.05	361.05	804.89	361.24
847.75	360.9	879.18	361.33	881.33	361.33	911.88	364.65	937.61	367.6
954.78	370.09	999.15	374.89	1027.16	377.3	1030.08	377.73	1063.32	380.61
1065.97	380.84	1071.1	381.5	1076.01	382.21	1085.41	383.5		

Manning's n Values num= 4

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.02	531.85	.07	759.79	.05	879.18	.035

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
804.89	881.33	187.35	183.3	180.95	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
0	804.89	361.24	F

CROSS SECTION OUTPUT Profile #Q50

			Left OB	Channel	Right OB
E.G. Elev (ft)	361.71	Element			
Vel Head (ft)	0.05	Wt. n-Val.	0.038	0.050	0.035
W.S. Elev (ft)	361.66	Reach Len. (ft)	187.35	183.30	180.95
Crit W.S. (ft)	361.25	Flow Area (sq ft)	609.54	43.47	0.51
E.G. Slope (ft/ft)	0.001362	Area (sq ft)	609.54	43.47	0.51
Q Total (cfs)	1109.00	Flow (cfs)	1075.78	32.98	0.24
Top Width (ft)	554.65	Top Width (ft)	475.13	76.44	3.08
Vel Total (ft/s)	1.70	Avg. Vel. (ft/s)	1.76	0.76	0.47
Max Chl Dpth (ft)	2.28	Hydr. Depth (ft)	1.28	0.57	0.17
Conv. Total (cfs)	30051.4	Conv. (cfs)	29151.1	893.7	6.6
Length Wtd. (ft)	187.23	Wetted Per. (ft)	475.15	76.44	3.10
Min Ch El (ft)	360.90	Shear (lb/sq ft)	0.11	0.05	0.01
Alpha	1.06	Stream Power (lb/ft s)	0.19	0.04	0.01
Frctn Loss (ft)	0.02	Cum Volume (acre-ft)	23.33	1.38	0.27
C & E Loss (ft)	0.01	Cum SA (acres)	7.49	1.03	0.35

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

CROSS SECTION OUTPUT Profile #Q100

			Left OB	Channel	Right OB
E.G. Elev (ft)	361.51	Element			
Vel Head (ft)	0.26	Wt. n-Val.	0.038	0.050	
W.S. Elev (ft)	361.25	Reach Len. (ft)	187.35	183.30	180.95
Crit W.S. (ft)	361.25	Flow Area (sq ft)	419.18	12.02	
E.G. Slope (ft/ft)	0.010449	Area (sq ft)	419.18	12.02	
Q Total (cfs)	1736.00	Flow (cfs)	1724.53	11.47	
Top Width (ft)	506.17	Top Width (ft)	437.91	68.26	

Vel Total (ft/s)	4.03	Avg. Vel. (ft/s)	4.11	0.95	
Max Chl Dpth (ft)	1.87	Hydr. Depth (ft)	0.96	0.18	
Conv. Total (cfs)	16983.0	Conv. (cfs)	16870.8	112.2	
Length Wtd. (ft)	187.31	Wetted Per. (ft)	437.92	68.26	
Min Ch El (ft)	360.90	Shear (lb/sq ft)	0.62	0.11	
Alpha	1.04	Stream Power (lb/ft s)	2.57	0.11	
Frctn Loss (ft)	0.10	Cum Volume (acre-ft)	22.38	1.06	0.32
C & E Loss (ft)	0.07	Cum SA (acres)	7.28	0.98	0.36

Warning: The energy equation could not be balanced within the specified number of iterations. The program selected the water surface that had the least amount of error between computed and assumed values.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water 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)	362.77	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.73	Wt. n-Val.	0.038	0.050	0.035
W.S. Elev (ft)	362.05	Reach Len. (ft)	187.35	183.30	180.95
Crit W.S. (ft)	362.05	Flow Area (sq ft)	798.33	72.78	2.37
E.G. Slope (ft/ft)	0.016021	Area (sq ft)	798.33	72.78	2.37
Q Total (cfs)	5825.00	Flow (cfs)	5551.36	267.23	6.41
Top Width (ft)	592.96	Top Width (ft)	509.91	76.44	6.61
Vel Total (ft/s)	6.67	Avg. Vel. (ft/s)	6.95	3.67	2.70
Max Chl Dpth (ft)	2.67	Hydr. Depth (ft)	1.57	0.95	0.36
Conv. Total (cfs)	46020.6	Conv. (cfs)	43858.6	2111.3	50.7
Length Wtd. (ft)	187.24	Wetted Per. (ft)	509.93	76.44	6.65
Min Ch El (ft)	360.90	Shear (lb/sq ft)	1.57	0.95	0.36
Alpha	1.05	Stream Power (lb/ft s)	10.89	3.50	0.97
Frctn Loss (ft)	0.88	Cum Volume (acre-ft)	24.70	1.32	0.40
C & E Loss (ft)	0.11	Cum SA (acres)	7.53	0.97	0.39

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water 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: Canada Gobernado
REACH: Middle RS: 1476.413

INPUT
Description: Manual Input for Manning's N Values, Modify XS Sta 150
Station Elevation Data num= 26

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	380	150	361.03	185.47	362.27	233.62	362.71	350.83	359.24

389.36	358.01	412.38	357.8	522.53	357.57	585	357.44	599.64	357.41
612.57	357.63	777.46	360.61	791.76	360.73	804.57	360.79	819.24	360.83
880.55	360.03	925	360.8	947.33	361.18	972.08	363.28	987.78	365.43
1015.19	368.51	1019.51	368.97	1047.56	373.13	1057.78	374.62	1067.28	377
1098.17	384.68								

Manning's n Values num= 4

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.02	585	.07	819.24	.05	925	.035

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
819.24	947.33	184.65	188.8	191.6	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
0	819.24	360.83	F

CROSS SECTION OUTPUT Profile #Q50

E.G. Elev (ft)	361.68	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.01	Wt. n-Val.	0.026	0.049	0.035
W.S. Elev (ft)	361.67	Reach Len. (ft)	184.65	188.80	191.60
Crit W.S. (ft)	360.84	Flow Area (sq ft)	1587.00	147.40	1.43
E.G. Slope (ft/ft)	0.000035	Area (sq ft)	1587.00	147.40	1.43
Q Total (cfs)	1109.00	Flow (cfs)	1079.12	29.74	0.14
Top Width (ft)	707.98	Top Width (ft)	574.08	128.09	5.81
Vel Total (ft/s)	0.64	Avg. Vel. (ft/s)	0.68	0.20	0.10
Max Chl Dpth (ft)	4.26	Hydr. Depth (ft)	2.76	1.15	0.25
Conv. Total (cfs)	188624.2	Conv. (cfs)	183542.7	5057.7	23.9
Length Wtd. (ft)	187.05	Wetted Per. (ft)	574.22	128.11	5.83
Min Ch El (ft)	360.03	Shear (lb/sq ft)	0.01	0.00	0.00
Alpha	1.10	Stream Power (lb/ft s)	0.00	0.00	0.00
Frctn Loss (ft)	0.02	Cum Volume (acre-ft)	18.61	0.98	0.26
C & E Loss (ft)	0.07	Cum SA (acres)	5.23	0.60	0.33

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.

CROSS SECTION OUTPUT Profile #Q100

E.G. Elev (ft)	361.08	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.03	Wt. n-Val.	0.025	0.050	
W.S. Elev (ft)	361.05	Reach Len. (ft)	184.65	188.80	191.60
Crit W.S. (ft)	360.84	Flow Area (sq ft)	1242.80	68.05	
E.G. Slope (ft/ft)	0.000168	Area (sq ft)	1242.80	68.05	
Q Total (cfs)	1736.00	Flow (cfs)	1717.06	18.94	
Top Width (ft)	650.71	Top Width (ft)	530.27	120.44	
Vel Total (ft/s)	1.32	Avg. Vel. (ft/s)	1.38	0.28	
Max Chl Dpth (ft)	3.64	Hydr. Depth (ft)	2.34	0.57	
Conv. Total (cfs)	133811.8	Conv. (cfs)	132352.3	1459.6	
Length Wtd. (ft)	184.73	Wetted Per. (ft)	530.34	120.45	
Min Ch El (ft)	360.03	Shear (lb/sq ft)	0.02	0.01	
Alpha	1.08	Stream Power (lb/ft s)	0.03	0.00	
Frctn Loss (ft)	0.01	Cum Volume (acre-ft)	18.81	0.89	0.32
C & E Loss (ft)	0.01	Cum SA (acres)	5.19	0.59	0.36

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.

CROSS SECTION OUTPUT Profile #Q100HC

E.G. Elev (ft)	361.30	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.37	Wt. n-Val.	0.025	0.050	
W.S. Elev (ft)	360.93	Reach Len. (ft)	184.65	188.80	191.60
Crit W.S. (ft)	360.84	Flow Area (sq ft)	1178.69	53.85	
E.G. Slope (ft/ft)	0.002193	Area (sq ft)	1178.69	53.85	
Q Total (cfs)	5825.00	Flow (cfs)	5777.77	47.23	
Top Width (ft)	638.74	Top Width (ft)	525.44	113.30	
Vel Total (ft/s)	4.73	Avg. Vel. (ft/s)	4.90	0.88	
Max Chl Dpth (ft)	3.52	Hydr. Depth (ft)	2.24	0.48	
Conv. Total (cfs)	124377.1	Conv. (cfs)	123368.7	1008.4	
Length Wtd. (ft)	184.72	Wetted Per. (ft)	525.51	113.31	
Min Ch El (ft)	360.03	Shear (lb/sq ft)	0.31	0.07	
Alpha	1.07	Stream Power (lb/ft s)	1.51	0.06	
Frctn Loss (ft)	0.09	Cum Volume (acre-ft)	20.44	1.05	0.39
C & E Loss (ft)	0.10	Cum SA (acres)	5.30	0.57	0.38

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

CROSS SECTION

RIVER: Canada Gobernado
REACH: Middle RS: 1287.613

INPUT
Description:
Station Elevation Data num= 47

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	378.72	.42	378.59	2.47	377.82	27.86	368.08	29.66	367.74
47.12	364.46	53.62	362.7	70.96	360.82	92.18	360.51	94.22	360.46
103.33	360.26	177.39	359.78	185.78	359.71	189.18	359.63	210.24	359.08
299.89	357.02	372.19	355.95	504.3	354.22	536.26	353.8	555.56	353.56
600.4	353.78	680.84	354.15	724.1	354.44	745.96	354.34	762.62	358.51
766.34	359.29	767.19	359.47	771.28	360.03	774.81	360.52	782.94	361.06
794.38	359.68	802.76	358.03	808.56	358.26	830.51	358.22	842.91	359.33
880.05	360.09	882.49	360.14	916.37	361.09	923.28	361.11	929.2	361.12
937.42	362.84	958.74	367.7	967.46	370.76	975.44	374.02	984.43	376.55
988.55	377.35	988.82	377.4						

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	29.66	.02	504.3	.07	771.28	.05	880.05	.035

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
794.38	842.91	190.45	198.85	205.15	.1

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
0	782.94	361.06	F

CROSS SECTION OUTPUT Profile #Q50

E.G. Elev (ft)	361.59	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.70	Wt. n-Val.	0.050	0.050	0.048
W.S. Elev (ft)	360.89	Reach Len. (ft)	190.45	198.85	205.15
Crit W.S. (ft)	360.89	Flow Area (sq ft)	6.03	117.19	55.50
E.G. Slope (ft/ft)	0.018749	Area (sq ft)	3222.53	117.19	55.50
Q Total (cfs)	1109.00	Flow (cfs)	17.44	855.80	235.76
Top Width (ft)	834.70	Top Width (ft)	719.98	48.53	66.20
Vel Total (ft/s)	6.21	Avg. Vel. (ft/s)	2.89	7.30	4.25
Max Chl Dpth (ft)	7.33	Hydr. Depth (ft)	0.60	2.41	0.84
Conv. Total (cfs)	8099.2	Conv. (cfs)	127.4	6250.1	1721.8
Length Wtd. (ft)	195.63	Wetted Per. (ft)	10.07	48.75	66.21
Min Ch El (ft)	358.03	Shear (lb/sq ft)	0.70	2.81	0.98
Alpha	1.17	Stream Power (lb/ft s)	2.03	20.55	4.17
Frctn Loss (ft)	0.87	Cum Volume (acre-ft)	8.41	0.40	0.14
C & E Loss (ft)	0.19	Cum SA (acres)	2.49	0.22	0.17

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: 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)	361.06	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.00	Wt. n-Val.	0.037	0.050	0.047
W.S. Elev (ft)	361.06	Reach Len. (ft)	190.45	198.85	205.15
Crit W.S. (ft)	361.06	Flow Area (sq ft)	3348.11	125.62	67.54
E.G. Slope (ft/ft)	0.000018	Area (sq ft)	3348.11	125.62	67.54
Q Total (cfs)	1736.00	Flow (cfs)	1696.61	29.73	9.66
Top Width (ft)	846.56	Top Width (ft)	725.63	48.53	72.39
Vel Total (ft/s)	0.49	Avg. Vel. (ft/s)	0.51	0.24	0.14
Max Chl Dpth (ft)	7.50	Hydr. Depth (ft)	4.61	2.59	0.93
Conv. Total (cfs)	409790.1	Conv. (cfs)	400491.5	7017.4	2281.2
Length Wtd. (ft)	190.95	Wetted Per. (ft)	726.50	48.75	72.41
Min Ch El (ft)	358.03	Shear (lb/sq ft)	0.01	0.00	0.00
Alpha	1.05	Stream Power (lb/ft s)	0.00	0.00	0.00
Frctn Loss (ft)	0.01	Cum Volume (acre-ft)	9.08	0.47	0.18
C & E Loss (ft)	0.01	Cum SA (acres)	2.53	0.22	0.20

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

depth, the calculated water 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)	361.11	Element			
Vel Head (ft)	0.04	Wt. n-Val.	0.037	0.050	0.047
W.S. Elev (ft)	361.07	Reach Len. (ft)	190.45	198.85	205.15
Crit W.S. (ft)	361.07	Flow Area (sq ft)	3353.51	125.98	68.08
E.G. Slope (ft/ft)	0.000201	Area (sq ft)	3353.51	125.98	68.08
Q Total (cfs)	5825.00	Flow (cfs)	5692.37	99.93	32.70
Top Width (ft)	846.89	Top Width (ft)	725.70	48.53	72.66
Vel Total (ft/s)	1.64	Avg. Vel. (ft/s)	1.70	0.79	0.48
Max Chl Dpth (ft)	7.51	Hydr. Depth (ft)	4.62	2.60	0.94
Conv. Total (cfs)	411009.0	Conv. (cfs)	401650.6	7051.0	2307.3
Length Wtd. (ft)	191.00	Wetted Per. (ft)	726.57	48.75	72.68
Min Ch El (ft)	358.03	Shear (lb/sq ft)	0.06	0.03	0.01
Alpha	1.05	Stream Power (lb/ft s)	0.10	0.03	0.01
Frctn Loss (ft)	0.09	Cum Volume (acre-ft)	10.84	0.66	0.24
C & E Loss (ft)	0.01	Cum SA (acres)	2.65	0.22	0.22

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water 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: Canada Gobernado
REACH: Middle RS: 1088.688

INPUT
Description:
Station Elevation Data num= 38

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	376.2	3.04	375.63	15.31	373.29	32.05	368.72	38.2	367.51
48.41	366.93	86.37	364.8	95.96	364.25	124.03	362.83	147.53	361.65
198.12	360.78	247.63	359.73	266.8	359.26	299.83	358.39	393.24	355.36
431.89	354.92	513.14	353.72	559.62	353.03	590.45	352.58	618.27	352.43
649.15	352.99	722.5	354.39	780.77	354.27	784.23	354.28	814.75	354.33
847.74	353.86	863.38	354.39	876.86	356.07	881.05	356.93	891.98	359.17
905.2	361.08	921.97	363.73	927.65	364.37	928.47	364.46	930.89	364.91
945.69	367.45	964.28	376.09	968.19	377.84				

Manning's n Values num= 4

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	48.41	.02	513.14	.07	784.23	.05

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
814.75 863.38 1170.86 1088.69 1068.58 .1 .3
Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent

0 814.75 354.33 F

CROSS SECTION OUTPUT Profile #Q50

E.G. Elev (ft)	355.36	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.04	Wt. n-Val.	0.057	0.050	0.050
W.S. Elev (ft)	355.32	Reach Len. (ft)			
Crit W.S. (ft)	354.34	Flow Area (sq ft)	626.54	59.05	3.46
E.G. Slope (ft/ft)	0.002001	Area (sq ft)	626.54	59.05	3.46
Q Total (cfs)	1109.00	Flow (cfs)	1016.91	89.34	2.75
Top Width (ft)	473.99	Top Width (ft)	417.91	48.63	7.45
Vel Total (ft/s)	1.61	Avg. Vel. (ft/s)	1.62	1.51	0.79
Max Chl Dpth (ft)	2.89	Hydr. Depth (ft)	1.50	1.21	0.46
Conv. Total (cfs)	24790.8	Conv. (cfs)	22732.2	1997.2	61.4
Length Wtd. (ft)		Wetted Per. (ft)	417.95	48.64	7.51
Min Ch El (ft)	353.86	Shear (lb/sq ft)	0.19	0.15	0.06
Alpha	1.00	Stream Power (lb/ft s)	0.30	0.23	0.05
Frctn Loss (ft)		Cum Volume (acre-ft)			
C & E Loss (ft)		Cum SA (acres)			

CROSS SECTION OUTPUT Profile #Q100

E.G. Elev (ft)	355.79	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.06	Wt. n-Val.	0.054	0.050	0.050
W.S. Elev (ft)	355.74	Reach Len. (ft)			
Crit W.S. (ft)	354.52	Flow Area (sq ft)	804.13	79.30	7.26
E.G. Slope (ft/ft)	0.002001	Area (sq ft)	804.13	79.30	7.26
Q Total (cfs)	1736.00	Flow (cfs)	1582.60	146.03	7.37
Top Width (ft)	492.51	Top Width (ft)	433.08	48.63	10.79
Vel Total (ft/s)	1.95	Avg. Vel. (ft/s)	1.97	1.84	1.02
Max Chl Dpth (ft)	3.31	Hydr. Depth (ft)	1.86	1.63	0.67
Conv. Total (cfs)	38807.4	Conv. (cfs)	35378.1	3264.4	164.8
Length Wtd. (ft)		Wetted Per. (ft)	433.13	48.64	10.88
Min Ch El (ft)	353.86	Shear (lb/sq ft)	0.23	0.20	0.08
Alpha	1.01	Stream Power (lb/ft s)	0.46	0.38	0.08
Frctn Loss (ft)		Cum Volume (acre-ft)			
C & E Loss (ft)		Cum SA (acres)			

CROSS SECTION OUTPUT Profile #Q100HC

E.G. Elev (ft)	357.64	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.16	Wt. n-Val.	0.046	0.050	0.050
W.S. Elev (ft)	357.48	Reach Len. (ft)			
Crit W.S. (ft)	355.55	Flow Area (sq ft)	1604.19	163.90	35.07
E.G. Slope (ft/ft)	0.002001	Area (sq ft)	1604.19	163.90	35.07
Q Total (cfs)	5825.00	Flow (cfs)	5268.83	489.65	66.52
Top Width (ft)	555.67	Top Width (ft)	486.71	48.63	20.33
Vel Total (ft/s)	3.23	Avg. Vel. (ft/s)	3.28	2.99	1.90
Max Chl Dpth (ft)	5.04	Hydr. Depth (ft)	3.30	3.37	1.73
Conv. Total (cfs)	130234.0	Conv. (cfs)	117799.4	10947.4	1487.2
Length Wtd. (ft)		Wetted Per. (ft)	486.78	48.64	20.58
Min Ch El (ft)	353.86	Shear (lb/sq ft)	0.41	0.42	0.21
Alpha	1.01	Stream Power (lb/ft s)	1.35	1.26	0.40
Frctn Loss (ft)		Cum Volume (acre-ft)			
C & E Loss (ft)		Cum SA (acres)			

SUMMARY OF MANNING'S N VALUES

River:Canada Gobernado

Reach	River Sta.	n1	n2	n3	n4	n5	n6	n7	n8	n9	n10	n11
Middle	4267.755	.035	.05	.035	.05							
Middle	4230.35*	.035	.046	.039	.035	.035	.035	.05	.05	.05	.05	
Middle	4192.95*	.035	.043	.043	.035	.035	.035	.05	.05	.05	.05	
Middle	4155.56*	.035	.039	.046	.035	.035	.035	.05	.05	.05	.05	
Middle	4118.164	.035	.05	.035	.05							
Middle	4079.07*	.035	.041	.064	.038	.053	.053	.041	.041	.053	.053	.053
Middle	4039.99*	.035	.047	.058	.04	.057	.057	.047	.047	.057	.057	.057
Middle	4000.90*	.035	.052	.053	.043	.06	.06	.052	.052	.06	.06	.06
Middle	3961.82*	.035	.058	.047	.045	.063	.063	.058	.058	.063	.063	.063
Middle	3922.73*	.035	.064	.041	.047	.067	.067	.064	.064	.067	.067	.067
Middle	3883.652	.035	.07	.035	.05	.07						
Middle	3699.802	.035	.05	.07								
Middle	3498.424	.035	.05									
Middle	3286.975	.035	.05									
Middle	3193.163	.035	.05									
Middle	3092.876	.035	.05									
Middle	2990.847	.035	.05									
Middle	2889.112	.035	.05									
Middle	2789.662	.035	.05									
Middle	2683.108	.035	.05									
Middle	2588.648	.035	.05	.035								
Middle	2486.871	.035	.05	.035								
Middle	2398.348	.035	.05	.035								
Middle	2292.400	.035	.05	.035								
Middle	2208.408	.035	.02	.035	.05	.035						
Middle	2114.162	.035	.02	.05	.035							
Middle	2015.501	.035	.02	.07	.05	.035						
Middle	1883.106	.035	.02	.07	.05	.035						
Middle	1768.369	.035	.02	.07	.05	.035						
Middle	1659.726	.02	.07	.05	.035							
Middle	1476.413	.02	.07	.05	.035							
Middle	1287.613	.035	.02	.07	.05	.035						
Middle	1088.688	.035	.02	.07	.05							

SUMMARY OF REACH LENGTHS

River: Canada Gobernado

Reach	River Sta.	Left	Channel	Right
Middle	4267.755	37.27	37.4	39.85
Middle	4230.35*	37.27	37.4	39.85
Middle	4192.95*	37.27	37.4	39.85
Middle	4155.56*	37.27	37.4	39.85
Middle	4118.164	38.08	39.08	41.5
Middle	4079.07*	38.08	39.08	41.5
Middle	4039.99*	38.08	39.08	41.5
Middle	4000.90*	38.08	39.08	41.5

Middle	3961.82*	38.08	39.08	41.5
Middle	3922.73*	38.08	39.08	41.5
Middle	3883.652	178.65	183.85	189
Middle	3699.802	198.4	201.4	207.1
Middle	3498.424	211.35	211.45	215.2
Middle	3286.975	93.39	93.81	91.77
Middle	3193.163	99.93	100.29	97.53
Middle	3092.876	100.86	102.03	95.28
Middle	2990.847	101.13	101.73	108.3
Middle	2889.112	99.45	99.45	100.05
Middle	2789.662	106.35	106.56	108.99
Middle	2683.108	95.66	94.46	94.94
Middle	2588.648	101.5	101.78	103.02
Middle	2486.871	89.23	88.52	87.81
Middle	2398.348	105.16	105.95	105.06
Middle	2292.400	84.91	83.99	84.03
Middle	2208.408	95.5	94.25	92.91
Middle	2114.162	99.92	98.66	97.98
Middle	2015.501	133.64	132.4	133.6
Middle	1883.106	116.44	114.74	111.85
Middle	1768.369	111.41	108.64	106.97
Middle	1659.726	187.35	183.3	180.95
Middle	1476.413	184.65	188.8	191.6
Middle	1287.613	190.45	198.85	205.15
Middle	1088.688	1170.86	1088.69	1068.58

SUMMARY OF CONTRACTION AND EXPANSION COEFFICIENTS
River: Canada Gobernado

Reach	River Sta.	Contr.	Expan.
Middle	4267.755	.1	.3
Middle	4230.35*	.1	.3
Middle	4192.95*	.1	.3
Middle	4155.56*	.1	.3
Middle	4118.164	.1	.3
Middle	4079.07*	.1	.3
Middle	4039.99*	.1	.3
Middle	4000.90*	.1	.3
Middle	3961.82*	.1	.3
Middle	3922.73*	.1	.3
Middle	3883.652	.1	.3
Middle	3699.802	.1	.3
Middle	3498.424	.1	.3
Middle	3286.975	.1	.3
Middle	3193.163	.1	.3
Middle	3092.876	.1	.3
Middle	2990.847	.1	.3
Middle	2889.112	.1	.3
Middle	2789.662	.1	.3
Middle	2683.108	.1	.3
Middle	2588.648	.1	.3
Middle	2486.871	.1	.3
Middle	2398.348	.1	.3
Middle	2292.400	.1	.3

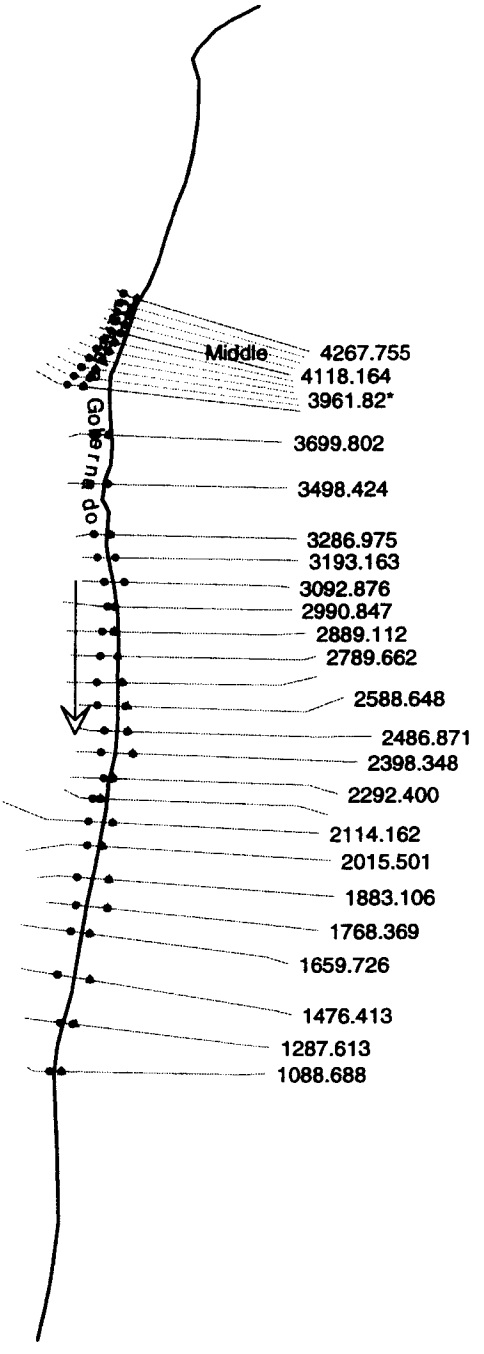
Middle	2208.408	.1	.3
Middle	2114.162	.1	.3
Middle	2015.501	.1	.3
Middle	1883.106	.1	.3
Middle	1768.369	.1	.3
Middle	1659.726	.1	.3
Middle	1476.413	.1	.3
Middle	1287.613	.1	.3
Middle	1088.688	.1	.3

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	4267.755	Q50	1109.00	378.17	381.46	380.69	381.49	0.000802	1.39	861.66	695.85	0.17
Middle	4267.755	Q100	1736.00	378.17	381.73	380.77	381.78	0.001016	1.70	1051.74	698.50	0.20
Middle	4267.755	Q100HC	5825.00	378.17	382.85	381.53	383.00	0.001830	2.97	1834.70	713.33	0.28
Middle	4230.35*	Q50	1109.00	378.51	381.42	380.76	381.45	0.000968	2.09	771.40	688.43	0.27
Middle	4230.35*	Q100	1736.00	378.51	381.68	380.98	381.73	0.001209	2.52	951.29	691.71	0.30
Middle	4230.35*	Q100HC	5825.00	378.51	382.74	381.66	382.93	0.002126	4.29	1696.50	717.28	0.42
Middle	4192.95*	Q50	1109.00	378.85	381.36	380.84	381.41	0.001506	2.42	676.14	683.44	0.33
Middle	4192.95*	Q100	1736.00	378.85	381.61	381.04	381.68	0.001822	2.88	845.50	695.01	0.37
Middle	4192.95*	Q100HC	5825.00	378.85	382.61	381.74	382.83	0.002898	4.73	1559.04	727.01	0.49
Middle	4155.56*	Q50	1109.00	379.18	381.26	380.91	381.33	0.002836	3.00	568.58	714.98	0.44
Middle	4155.56*	Q100	1736.00	379.18	381.49	381.05	381.59	0.003062	3.41	734.97	722.17	0.46
Middle	4155.56*	Q100HC	5825.00	379.18	382.43	381.78	382.70	0.004068	5.20	1413.64	731.76	0.56
Middle	4118.164	Q50	1109.00	379.52	381.06	380.87	381.17	0.006857	3.59	429.67	667.26	0.59
Middle	4118.164	Q100	1736.00	379.52	381.27	381.04	381.42	0.006930	4.01	580.94	722.98	0.61
Middle	4118.164	Q100HC	5825.00	379.52	382.12	381.74	382.49	0.007281	5.60	1191.60	726.85	0.67
Middle	4079.07*	Q50	1109.00	379.56	380.81	380.57	380.90	0.006835	2.73	450.90	697.66	0.52
Middle	4079.07*	Q100	1736.00	379.56	380.99	380.73	381.13	0.008054	3.37	588.39	745.86	0.58
Middle	4079.07*	Q100HC	5825.00	379.56	381.83	381.45	382.19	0.008450	5.07	1213.96	755.84	0.65
Middle	4039.99*	Q50	1109.00	379.60	380.65	380.42	380.71	0.003544	1.45	555.19	761.52	0.32
Middle	4039.99*	Q100	1736.00	379.60	380.75	380.42	380.87	0.005878	2.05	631.62	763.30	0.41
Middle	4039.99*	Q100HC	5825.00	379.60	381.49	381.14	381.86	0.008801	3.90	1201.68	776.68	0.56
Middle	4000.90*	Q50	1109.00	379.64	380.59	380.46	380.63	0.001209	0.71	755.34	790.01	0.16
Middle	4000.90*	Q100	1736.00	379.64	380.63	380.46	380.71	0.002654	1.09	784.98	790.56	0.25
Middle	4000.90*	Q100HC	5825.00	379.64	381.14	380.84	381.52	0.008749	2.90	1186.12	798.42	0.48
Middle	3961.82*	Q50	1109.00	379.68	380.58	380.49	380.60	0.000469	0.38	1000.80	821.11	0.09
Middle	3961.82*	Q100	1736.00	379.68	380.59	380.49	380.64	0.001116	0.59	1011.75	821.34	0.14
Middle	3961.82*	Q100HC	5825.00	379.68	380.84	380.53	381.21	0.007439	1.92	1217.56	825.50	0.38
Middle	3922.73*	Q50	1109.00	379.72	380.57	380.53	380.58	0.000212	0.22	1271.93	853.90	0.06
Middle	3922.73*	Q100	1736.00	379.72	380.57	380.53	380.60	0.000517	0.35	1275.37	854.00	0.09
Middle	3922.73*	Q100HC	5825.00	379.72	380.66	380.53	380.96	0.005017	1.19	1346.53	855.91	0.27
Middle	3883.652	Q50	1109.00	379.76	380.57	380.57	380.58	0.000108	0.13	1562.12	890.69	0.03
Middle	3883.652	Q100	1736.00	379.76	380.57	380.57	380.59	0.000265	0.21	1562.12	890.69	0.05
Middle	3883.652	Q100HC	5825.00	379.76	380.57	380.57	380.79	0.002982	0.70	1562.12	890.69	0.18

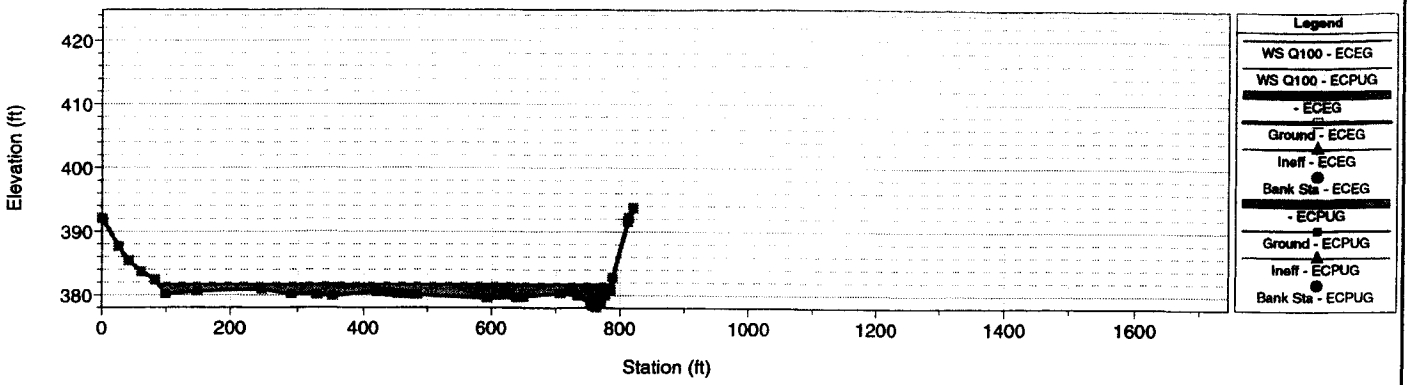
Middle	3699.802	Q50	1109.00	373.74	374.79	374.10	374.84	0.001150	0.90	673.22	549.44	0.17
Middle	3699.802	Q100	1736.00	373.74	374.97	374.20	375.06	0.001850	1.30	773.75	560.19	0.23
Middle	3699.802	Q100HC	5825.00	373.74	374.18	375.12	378.66	0.222670	5.65	349.98	497.59	1.97
Middle	3498.424	Q50	1109.00	367.50	372.57	372.57	374.06	0.026994	9.79	113.26	38.34	1.00
Middle	3498.424	Q100	1736.00	367.50	373.95	373.95	374.33	0.008807	6.05	433.55	533.38	0.59
Middle	3498.424	Q100HC	5825.00	367.50	375.44	374.68	375.68	0.003637	4.36	1490.74	744.79	0.39
Middle	3286.975	Q50	1109.00	366.97	370.28	369.63	370.64	0.007192	4.26	232.93	120.79	0.50
Middle	3286.975	Q100	1736.00	366.97	370.92	370.21	371.41	0.007405	4.84	315.61	135.79	0.52
Middle	3286.975	Q100HC	5825.00	366.97	372.75	372.65	374.20	0.014482	8.55	608.47	191.89	0.78
Middle	3193.163	Q50	1109.00	365.89	369.49	369.02	369.88	0.009023	4.99	219.27	127.05	0.57
Middle	3193.163	Q100	1736.00	365.89	369.87	369.56	370.51	0.012312	6.23	270.22	139.09	0.67
Middle	3193.163	Q100HC	5825.00	365.89	371.89	371.89	372.79	0.012180	8.00	767.08	439.97	0.71
Middle	3092.876	Q50	1109.00	365.92	368.68		368.91	0.009568	4.25	297.29	318.89	0.56
Middle	3092.876	Q100	1736.00	365.92	368.99		369.28	0.010341	4.63	400.63	359.34	0.59
Middle	3092.876	Q100HC	5825.00	365.92	369.58	369.92	370.88	0.032628	8.96	637.28	441.81	1.07
Middle	2990.847	Q50	1109.00	367.03	368.55	367.70	368.59	0.001204	1.30	691.15	554.64	0.19
Middle	2990.847	Q100	1736.00	367.03	368.81	367.91	368.88	0.001621	1.70	842.13	580.72	0.23
Middle	2990.847	Q100HC	5825.00	367.03	369.99	368.83	370.20	0.002749	3.14	1592.72	696.08	0.33
Middle	2889.112	Q50	1109.00	367.04	368.41	367.70	368.45	0.001498	1.34	725.73	730.73	0.21
Middle	2889.112	Q100	1736.00	367.04	368.64	367.89	368.70	0.001835	1.65	894.03	734.34	0.24
Middle	2889.112	Q100HC	5825.00	367.04	369.75	368.68	369.93	0.002403	2.74	1715.35	753.32	0.30
Middle	2789.662	Q50	1109.00	367.05	368.28	367.65	368.32	0.001176	1.07	781.61	756.87	0.18
Middle	2789.662	Q100	1736.00	367.05	368.47	367.80	368.53	0.001669	1.42	922.87	760.41	0.22
Middle	2789.662	Q100HC	5825.00	367.05	369.51	368.49	369.69	0.002434	2.55	1717.49	774.13	0.30
Middle	2683.108	Q50	1109.00	365.63	368.16	367.63	368.19	0.001147	1.26	801.83	780.75	0.18
Middle	2683.108	Q100	1736.00	365.63	368.27	367.64	368.33	0.002006	1.74	887.97	782.01	0.24
Middle	2683.108	Q100HC	5825.00	365.63	369.18	368.34	369.39	0.003179	2.94	1605.04	790.91	0.33
Middle	2588.648	Q50	1109.00	365.53	368.07	368.07	368.10	0.000886	1.17	874.21	821.20	0.18
Middle	2588.648	Q100	1736.00	365.53	368.07	368.07	368.13	0.002171	1.83	874.16	821.20	0.28
Middle	2588.648	Q100HC	5825.00	365.53	368.16	368.16	368.75	0.018582	5.57	950.20	822.94	0.82
Middle	2486.871	Q50	1109.00	363.83	365.38	364.52	365.44	0.000682	0.95	609.72	346.01	0.14
Middle	2486.871	Q100	1736.00	363.83	365.42	364.52	365.56	0.001600	1.47	621.82	360.81	0.22
Middle	2486.871	Q100HC	5825.00	363.83	365.51	366.02	366.92	0.015955	4.87	658.63	402.48	0.71
Middle	2398.348	Q50	1109.00	363.99	365.36	365.36	365.39	0.000389	0.55	874.71	677.15	0.11
Middle	2398.348	Q100	1736.00	363.99	365.36	365.36	365.43	0.000953	0.86	874.71	677.15	0.17
Middle	2398.348	Q100HC	5825.00	363.99	365.84	365.45	366.23	0.005051	2.67	1210.66	717.58	0.42
Middle	2292.400	Q50	1109.00	364.36	364.70	364.70	364.73	0.000476	0.20	780.35	644.37	0.09
Middle	2292.400	Q100	1736.00	364.36	364.70	364.70	364.78	0.001167	0.31	780.35	644.37	0.13
Middle	2292.400	Q100HC	5825.00	364.36	365.06	364.86	365.58	0.007315	1.68	1019.81	674.57	0.40
Middle	2208.408	Q50	1109.00	361.27	362.76	362.70	363.25	0.004160	2.00	211.05	185.98	0.37
Middle	2208.408	Q100	1736.00	361.27	362.54	363.13	364.36	0.017353	3.41	171.78	168.76	0.73
Middle	2208.408	Q100HC	5825.00	361.27	364.41	364.41	365.08	0.004713	4.22	906.88	665.56	0.47
Middle	2114.162	Q50	1109.00	359.49	362.27	362.21	362.71	0.007640	4.10	221.26	226.38	0.66
Middle	2114.162	Q100	1736.00	359.49	362.36	362.61	363.26	0.014981	5.88	239.95	235.97	0.92

Middle	2114.162	Q100HC	5825.00	359.49	363.52	363.72	364.42	0.009983	6.54	775.21	684.78	0.74
Middle	2015.501	Q50	1109.00	359.47	362.22	361.63	362.31	0.001538	1.88	464.67	527.12	0.24
Middle	2015.501	Q100	1736.00	359.47	362.50	361.94	362.62	0.001835	2.25	637.42	695.26	0.26
Middle	2015.501	Q100HC	5825.00	359.47	363.86	362.92	364.03	0.001341	2.64	1783.92	872.22	0.24
Middle	1883.106	Q50	1109.00	360.36	362.04	361.61	362.10	0.001506	1.35	608.92	694.53	0.21
Middle	1883.106	Q100	1736.00	360.36	362.29	361.76	362.37	0.001699	1.60	782.84	705.86	0.23
Middle	1883.106	Q100HC	5825.00	360.36	363.66	362.51	363.84	0.001452	2.23	1777.08	743.00	0.23
Middle	1768.369	Q50	1109.00	360.19	361.84	361.13	361.90	0.002007	1.53	609.28	509.94	0.24
Middle	1768.369	Q100	1736.00	360.19	362.01	361.34	362.11	0.003166	2.07	693.49	513.26	0.30
Middle	1768.369	Q100HC	5825.00	360.19	363.27	362.27	363.58	0.003782	3.38	1351.10	529.07	0.36
Middle	1659.726	Q50	1109.00	360.90	361.66	361.25	361.71	0.001362	0.76	653.53	554.65	0.18
Middle	1659.726	Q100	1736.00	360.90	361.25	361.25	361.51	0.010449	0.95	431.20	506.17	0.40
Middle	1659.726	Q100HC	5825.00	360.90	362.05	362.05	362.77	0.016021	3.67	873.49	592.96	0.66
Middle	1476.413	Q50	1109.00	360.03	361.67	360.84	361.68	0.000035	0.20	1735.83	707.98	0.03
Middle	1476.413	Q100	1736.00	360.03	361.05	360.84	361.08	0.000168	0.28	1310.85	650.71	0.07
Middle	1476.413	Q100HC	5825.00	360.03	360.93	360.84	361.30	0.002193	0.88	1232.54	638.74	0.22
Middle	1287.613	Q50	1109.00	358.03	360.89	360.89	361.59	0.018749	7.30	178.72	834.70	0.83
Middle	1287.613	Q100	1736.00	358.03	361.06	361.06	361.06	0.000018	0.24	3541.27	846.56	0.03
Middle	1287.613	Q100HC	5825.00	358.03	361.07	361.07	361.11	0.000201	0.79	3547.57	846.89	0.09
Middle	1088.688	Q50	1109.00	353.86	355.32	354.34	355.36	0.002001	1.51	689.05	473.99	0.24
Middle	1088.688	Q100	1736.00	353.86	355.74	354.52	355.79	0.002001	1.84	890.69	492.51	0.25
Middle	1088.688	Q100HC	5825.00	353.86	357.48	355.55	357.64	0.002001	2.99	1803.17	555.67	0.29


Middle
4267.755
4118.164
3961.82*
3699.802
3498.424
3286.975
3193.163
3092.876
2990.847
2889.112
2789.662
2588.648
2486.871
2398.348
2292.400
2114.162
2015.501
1883.106
1768.369
1659.726
1476.413
1287.613
1088.688

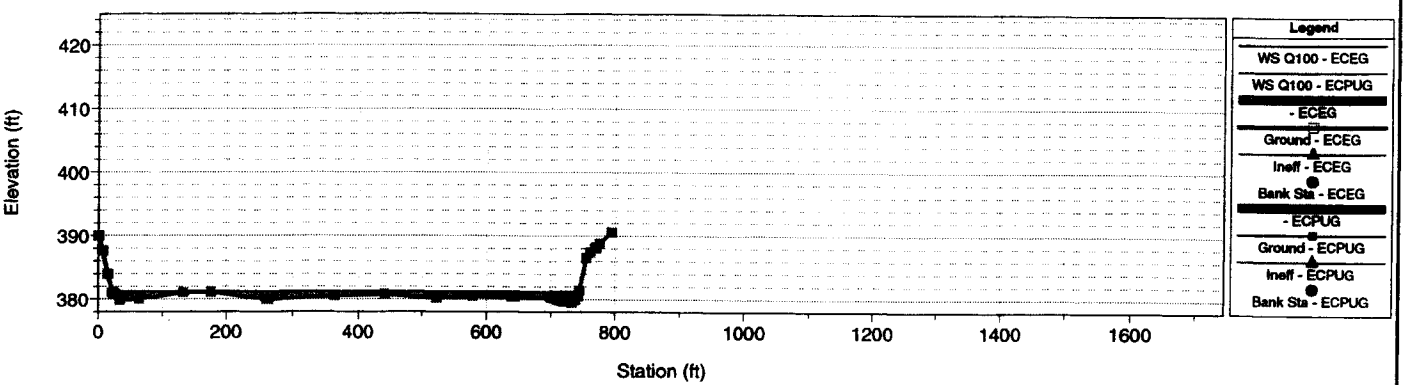
Project Model AX1 Plan: 1) ECPUG 2) ECEG

RS = 4267.755



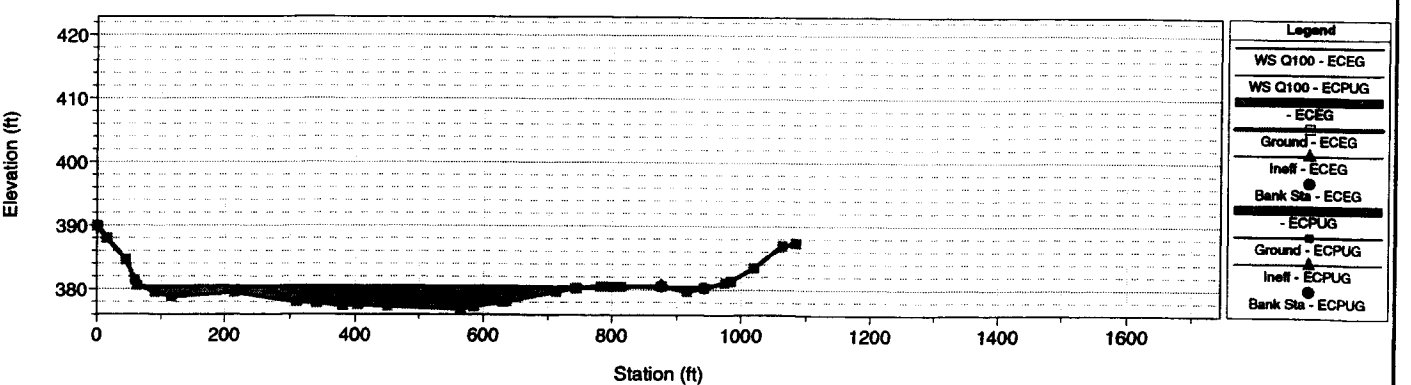
Project Model AX1 Plan: 1) ECPUG 2) ECEG

RS = 4118.164



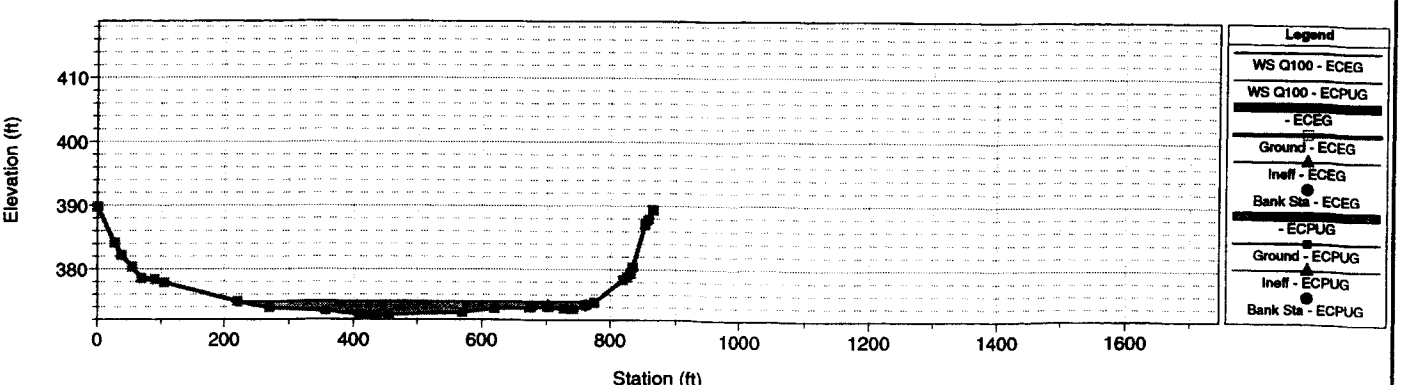
Project Model AX1 Plan: 1) ECPUG 2) ECEG

RS = 3883.652 Manual Input for Manning's N Values



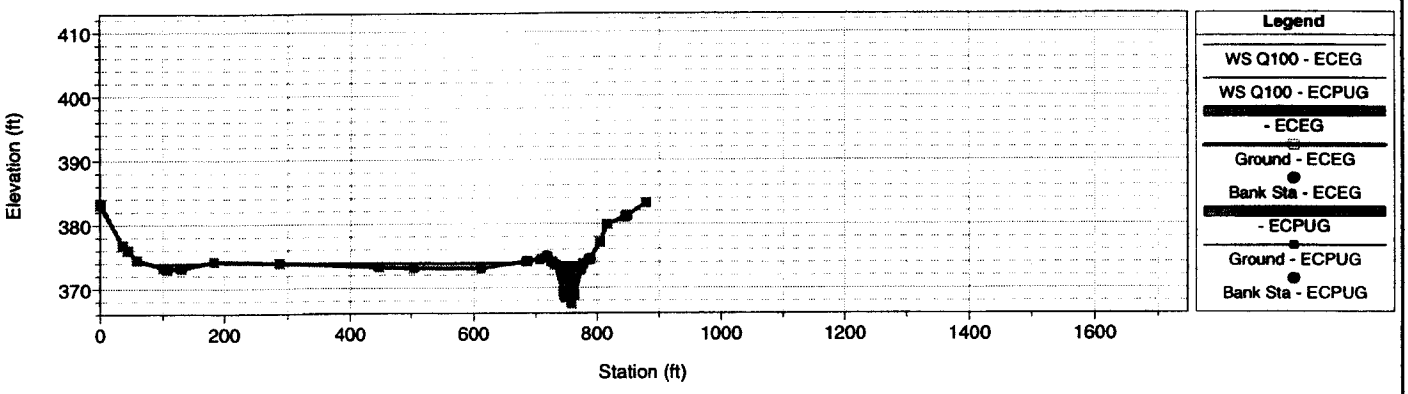
Project Model AX1 Plan: 1) ECPUG 2) ECEG

RS = 3699.802

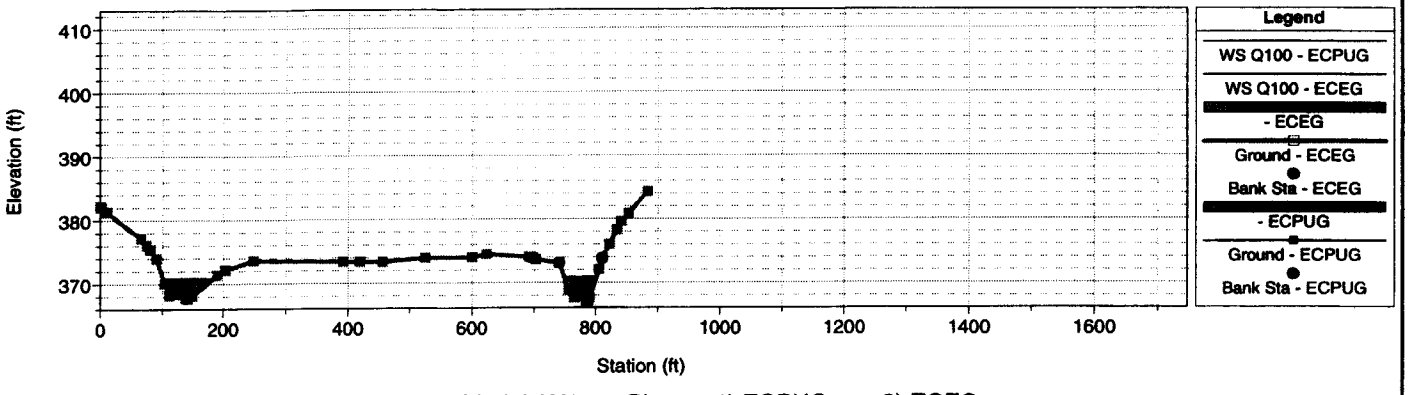


1 in Horiz. = 300 ft 1 in Vert. = 30 ft

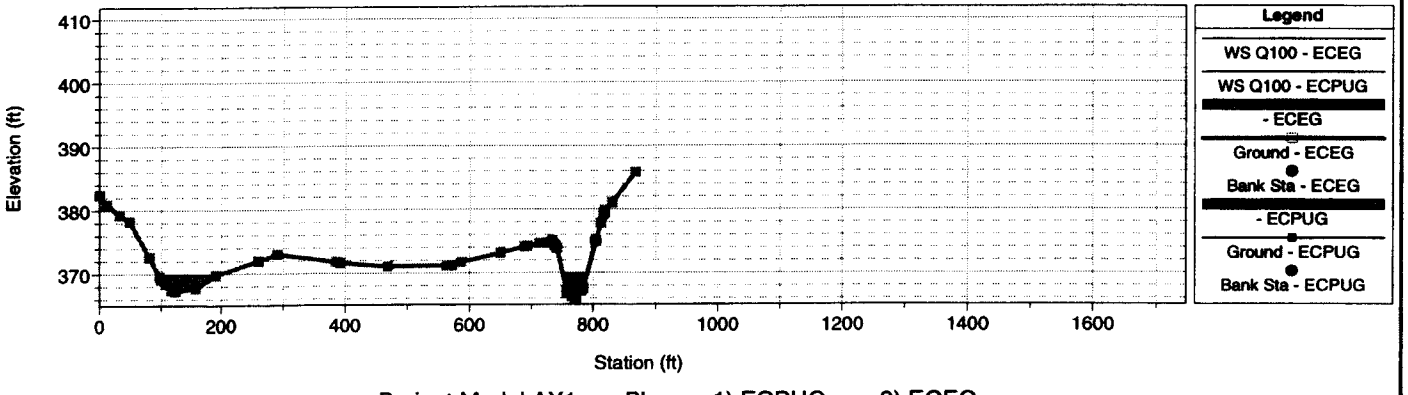
Project Model AX1 Plan: 1) ECPUG 2) ECEG
RS = 3498.424



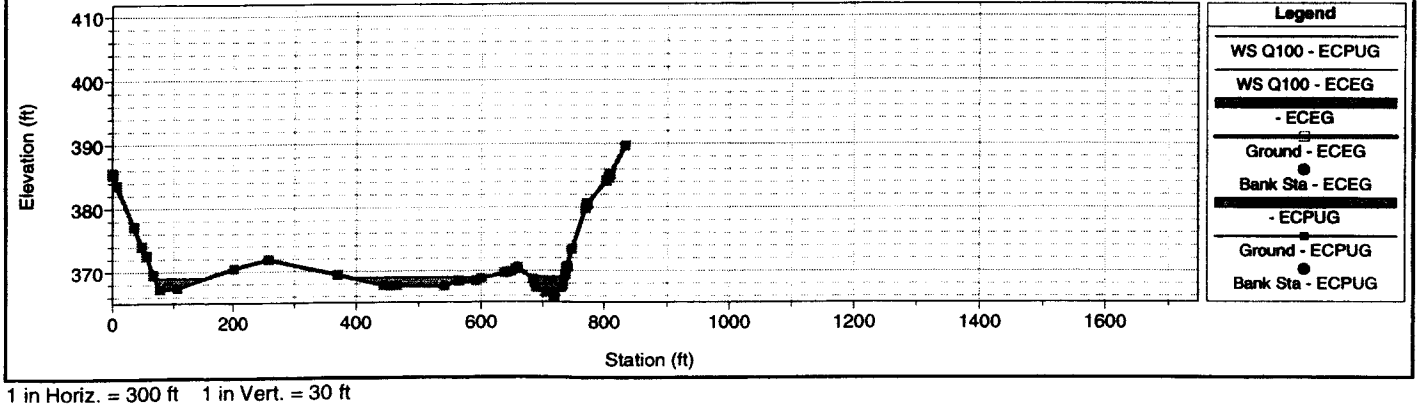
Project Model AX1 Plan: 1) ECPUG 2) ECEG
RS = 3286.975



Project Model AX1 Plan: 1) ECPUG 2) ECEG
RS = 3193.163



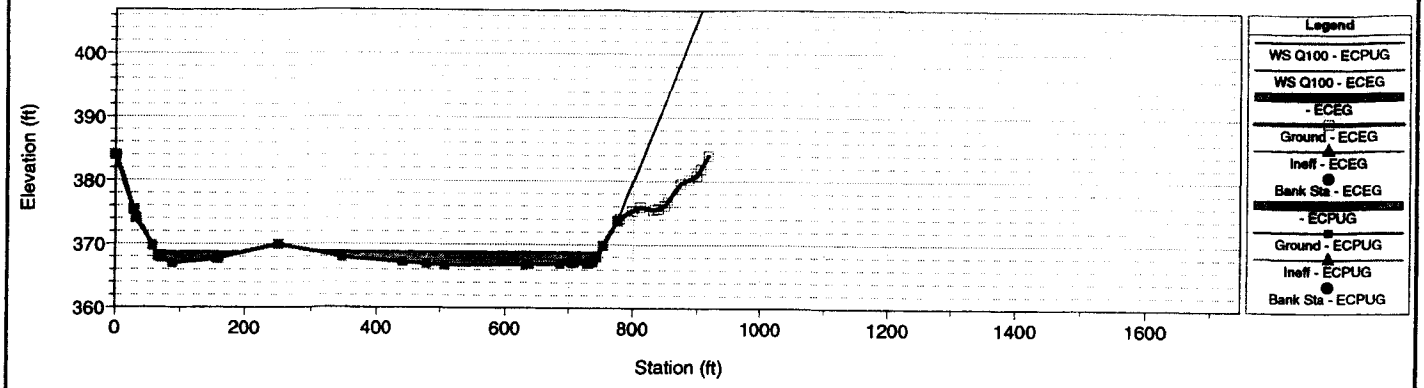
Project Model AX1 Plan: 1) ECPUG 2) ECEG
RS = 3092.876



1 in Horiz. = 300 ft 1 in Vert. = 30 ft

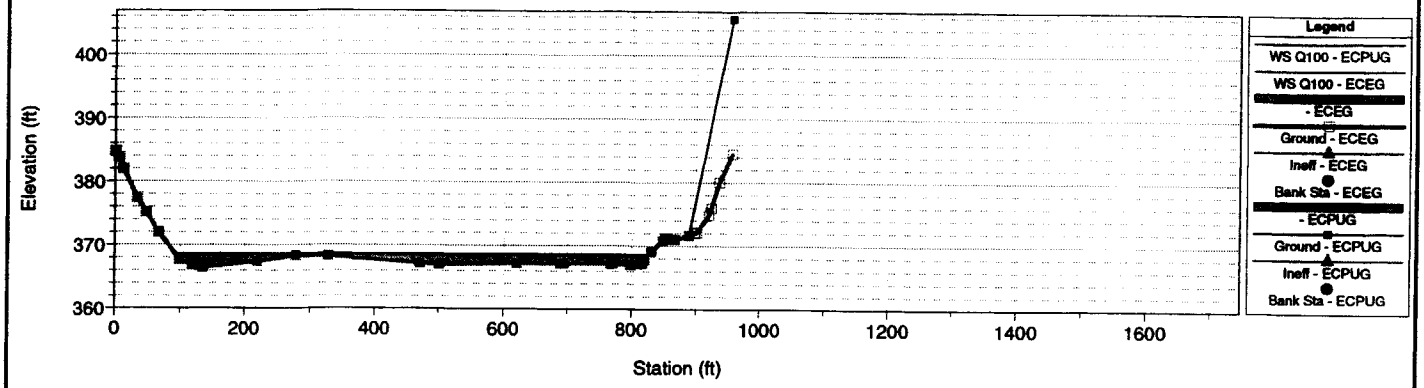
Project Model AX1 Plan: 1) ECPUG 2) ECEG

RS = 2990.847 Modify XS 2:1 Slope, Sta 775.33



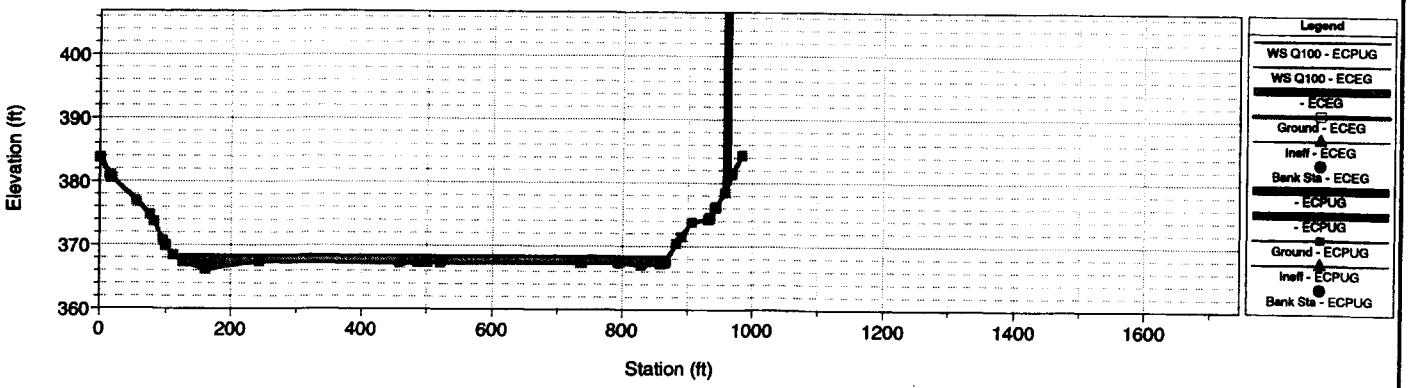
Project Model AX1 Plan: 1) ECPUG 2) ECEG

RS = 2889.112 Modify Slope 2:1, Sta 888.5



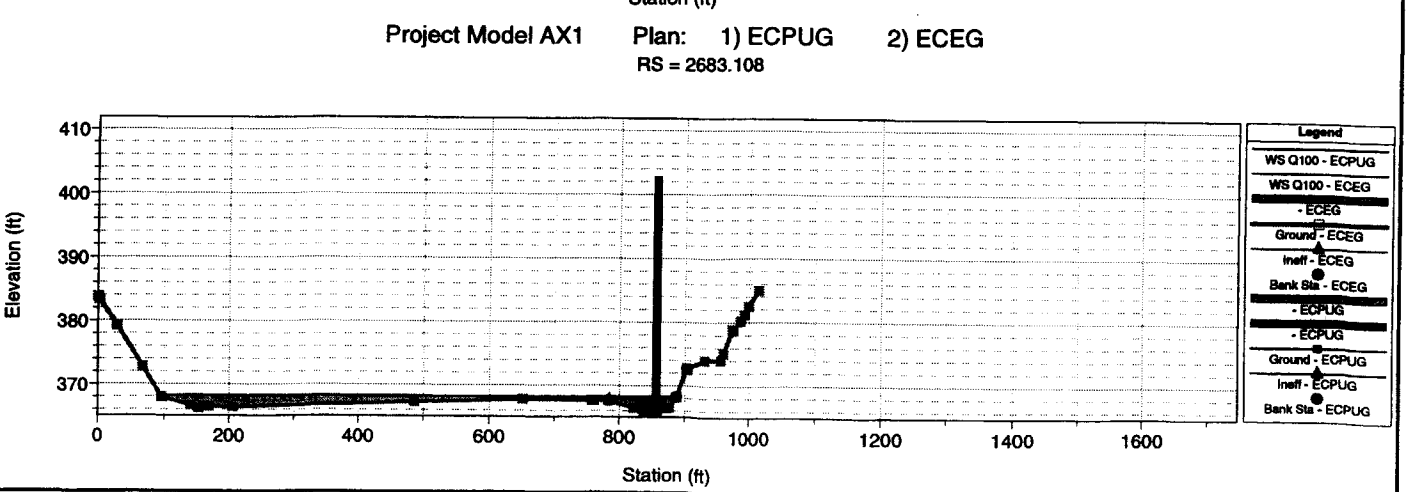
Project Model AX1 Plan: 1) ECPUG 2) ECEG

RS = 2789.662



Project Model AX1 Plan: 1) ECPUG 2) ECEG

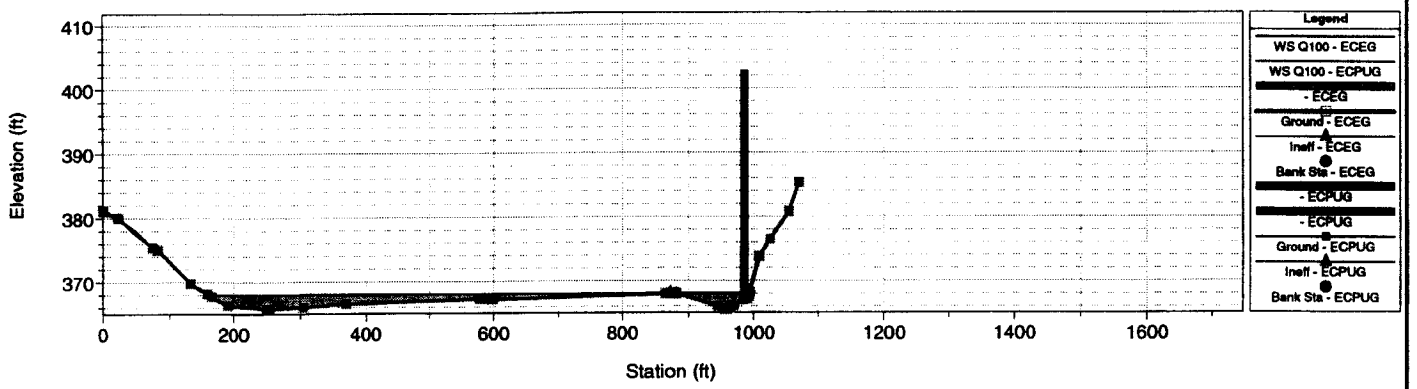
RS = 2683.108



1 in Horiz. = 300 ft 1 in Vert. = 30 ft

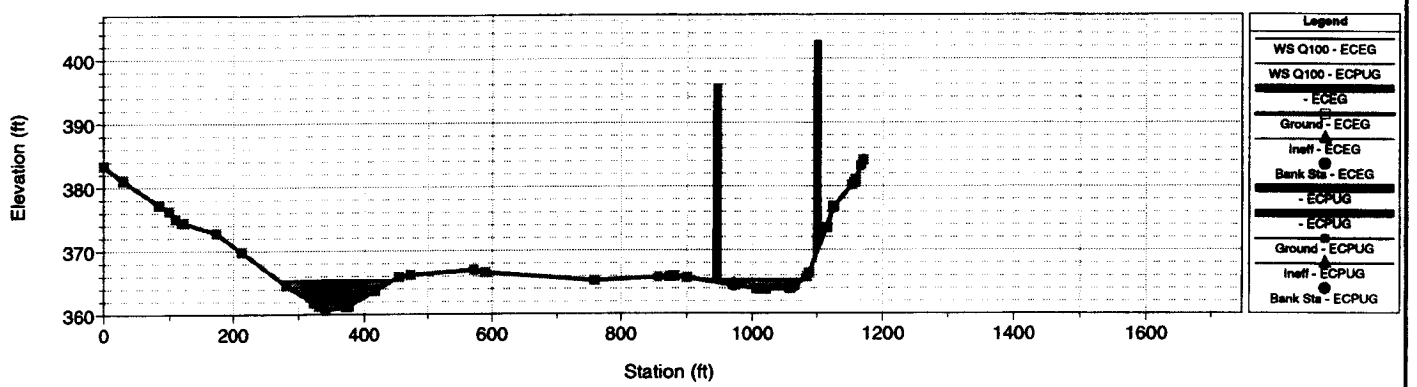
Project Model AX1 Plan: 1) ECPUG 2) ECEG

RS = 2588.648



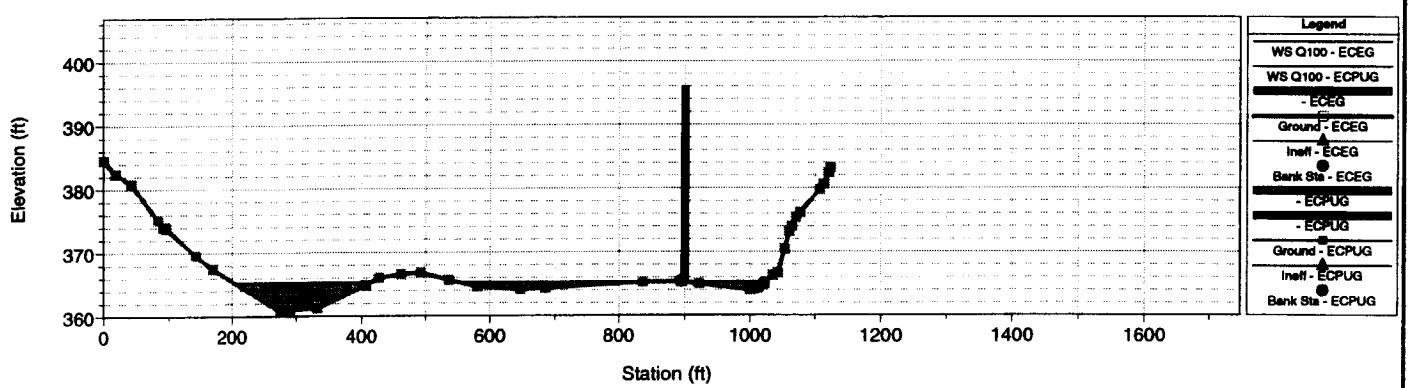
Project Model AX1 Plan: 1) ECPUG 2) ECEG

RS = 2486.871



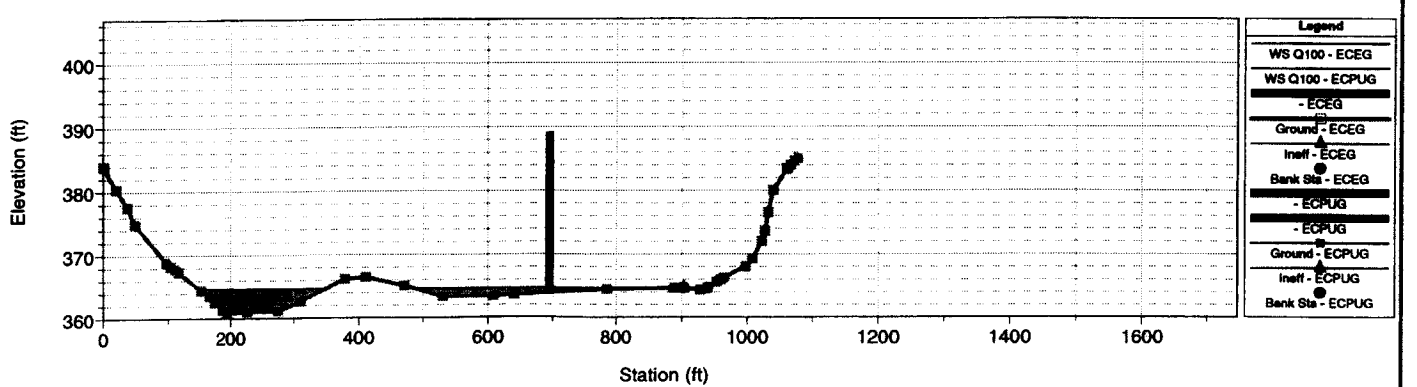
Project Model AX1 Plan: 1) ECPUG 2) ECEG

RS = 2398.348



Project Model AX1 Plan: 1) ECPUG 2) ECEG

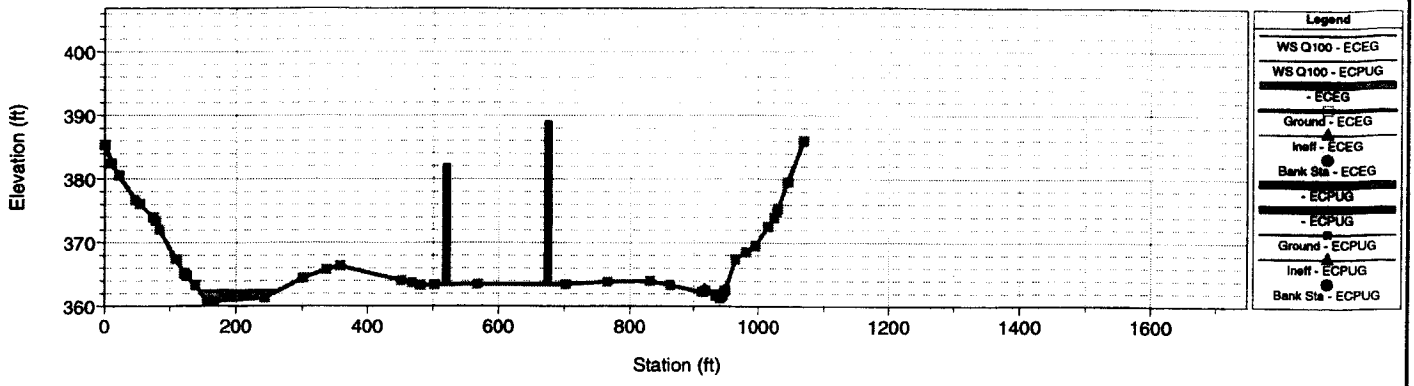
RS = 2292.400



1 in Horiz. = 300 ft 1 in Vert. = 30 ft

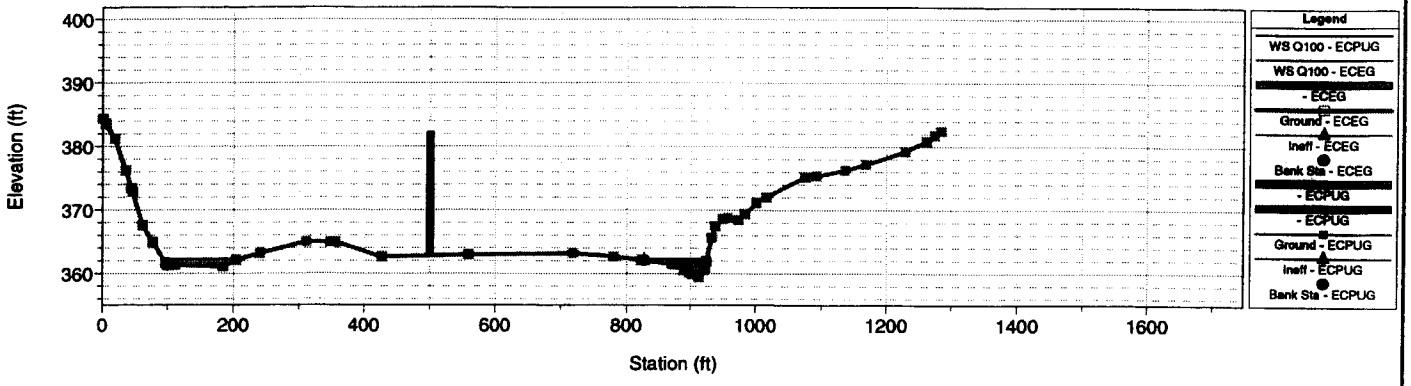
Project Model AX1 Plan: 1) ECPUG 2) ECEG

RS = 2208.408 Manual Input for Manning's N Values



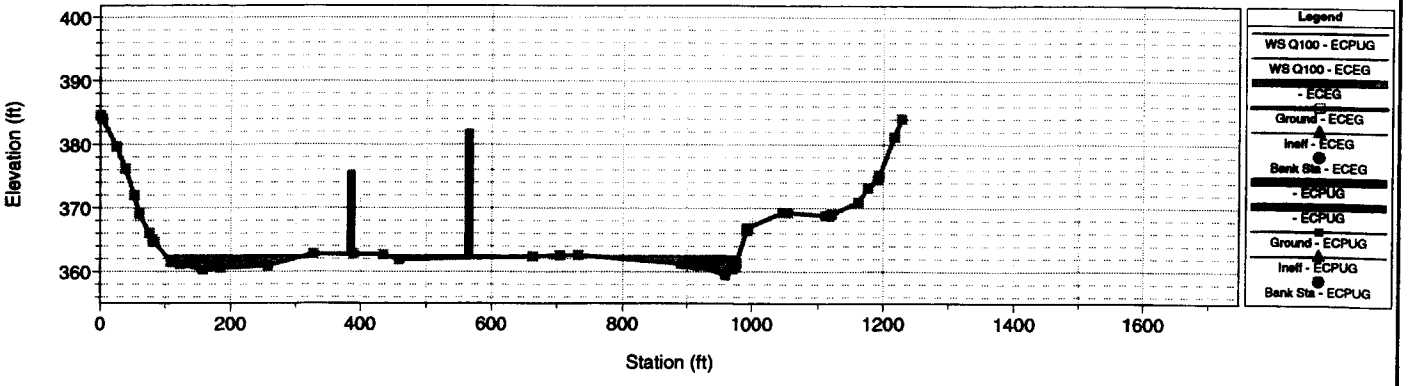
Project Model AX1 Plan: 1) ECPUG 2) ECEG

RS = 2114.162



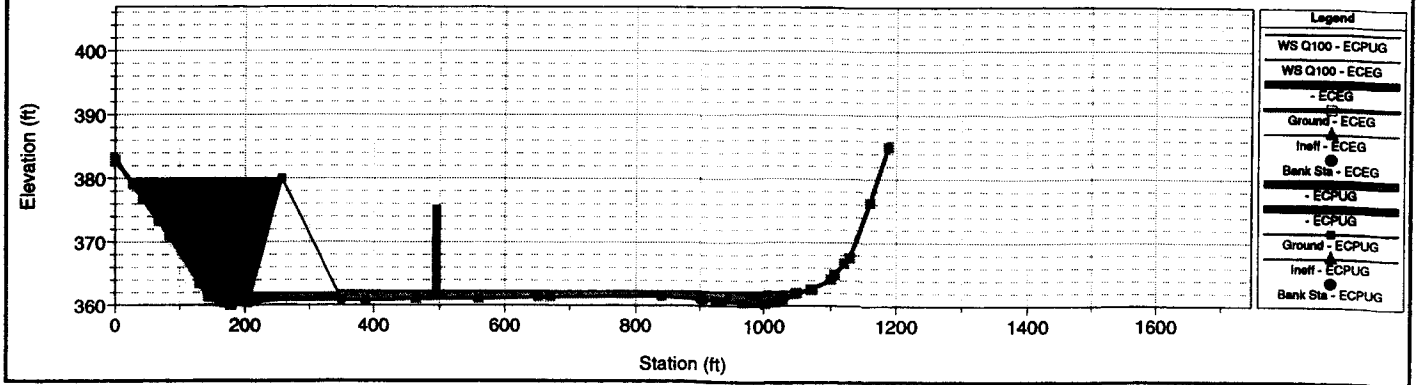
Project Model AX1 Plan: 1) ECPUG 2) ECEG

RS = 2015.501



Project Model AX1 Plan: 1) ECPUG 2) ECEG

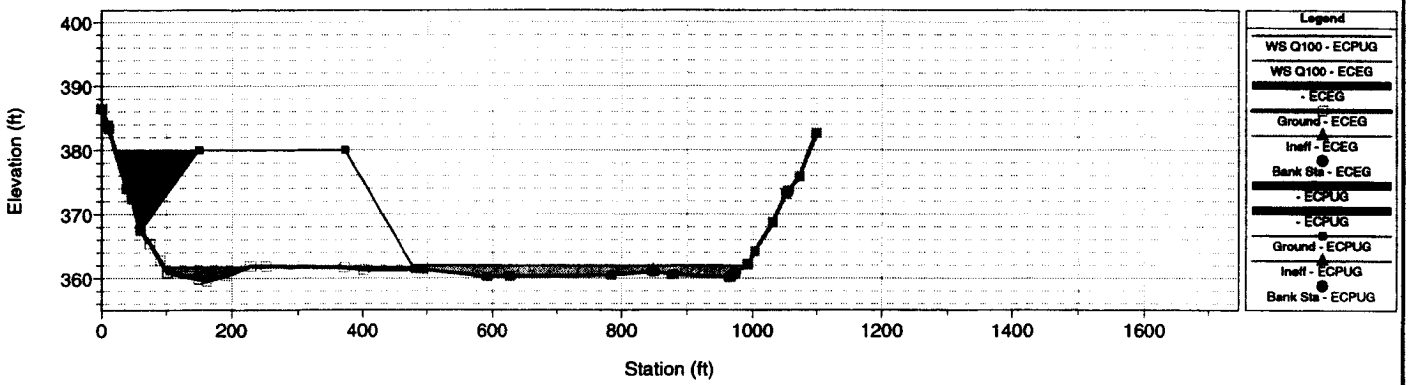
RS = 1883.106 Manual Input for Manning's N Values, Modify XS Sta 256.93



1 in Horiz. = 300 ft 1 in Vert. = 30 ft

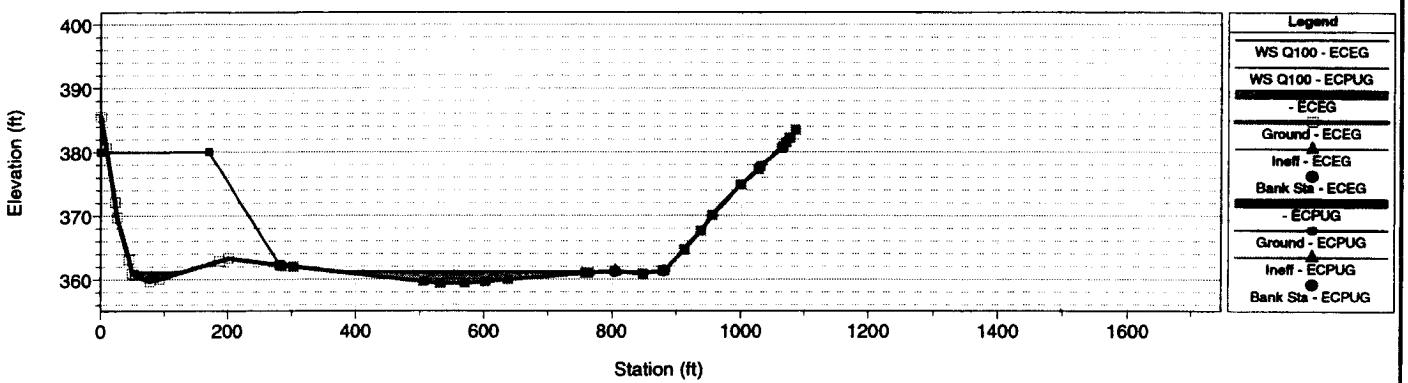
Project Model AX1 Plan: 1) ECPUG 2) ECEG

RS = 1768.369 Manual Input for Manning's N Values, Modify XS Sta 480



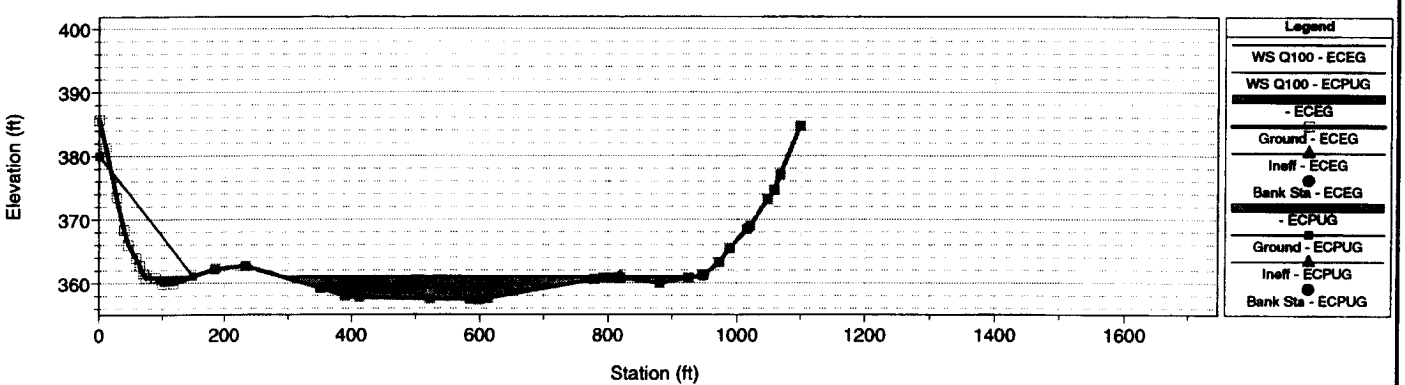
Project Model AX1 Plan: 1) ECPUG 2) ECEG

RS = 1659.726 Modify XS, Sta 0-170



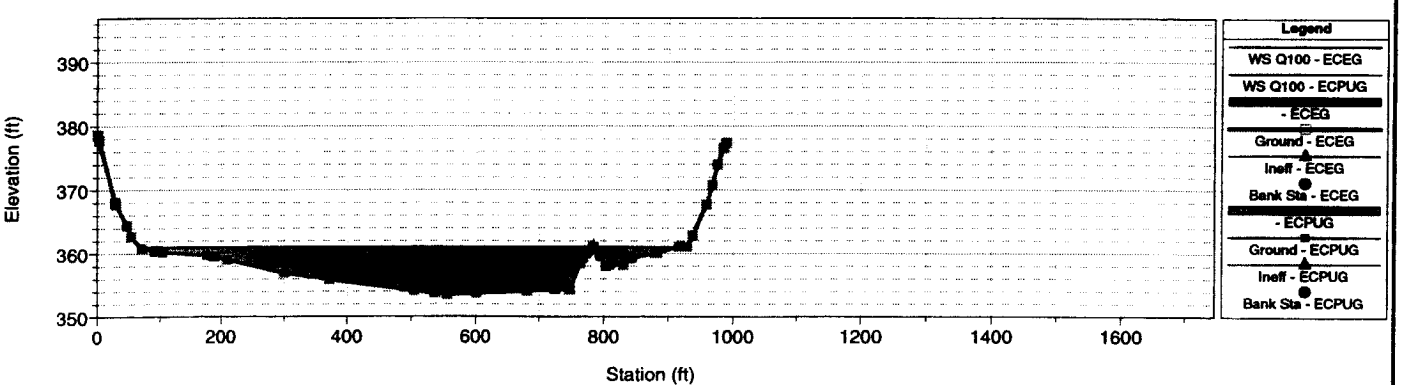
Project Model AX1 Plan: 1) ECPUG 2) ECEG

RS = 1476.413 Manual Input for Manning's N Values, Modify XS Sta 150



Project Model AX1 Plan: 1) ECPUG 2) ECEG

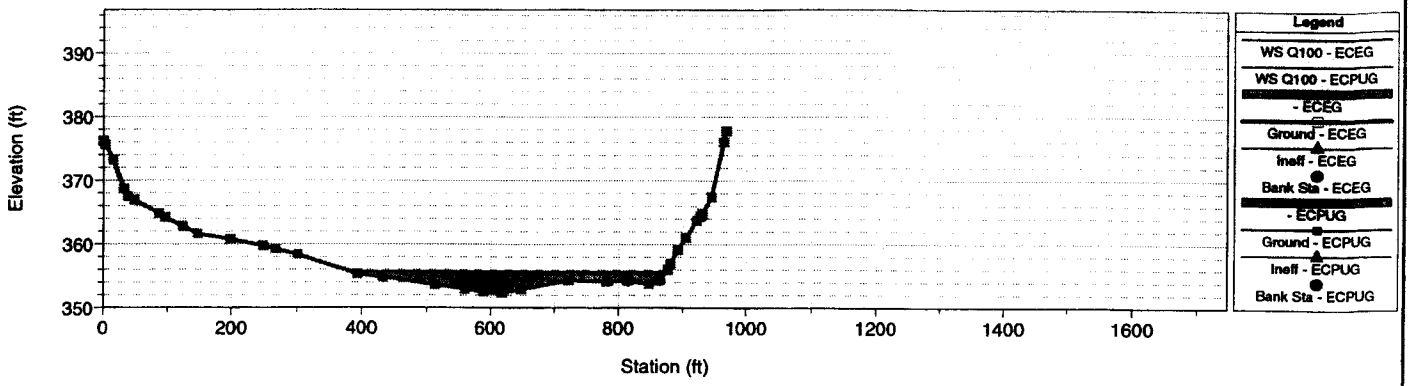
RS = 1287.613



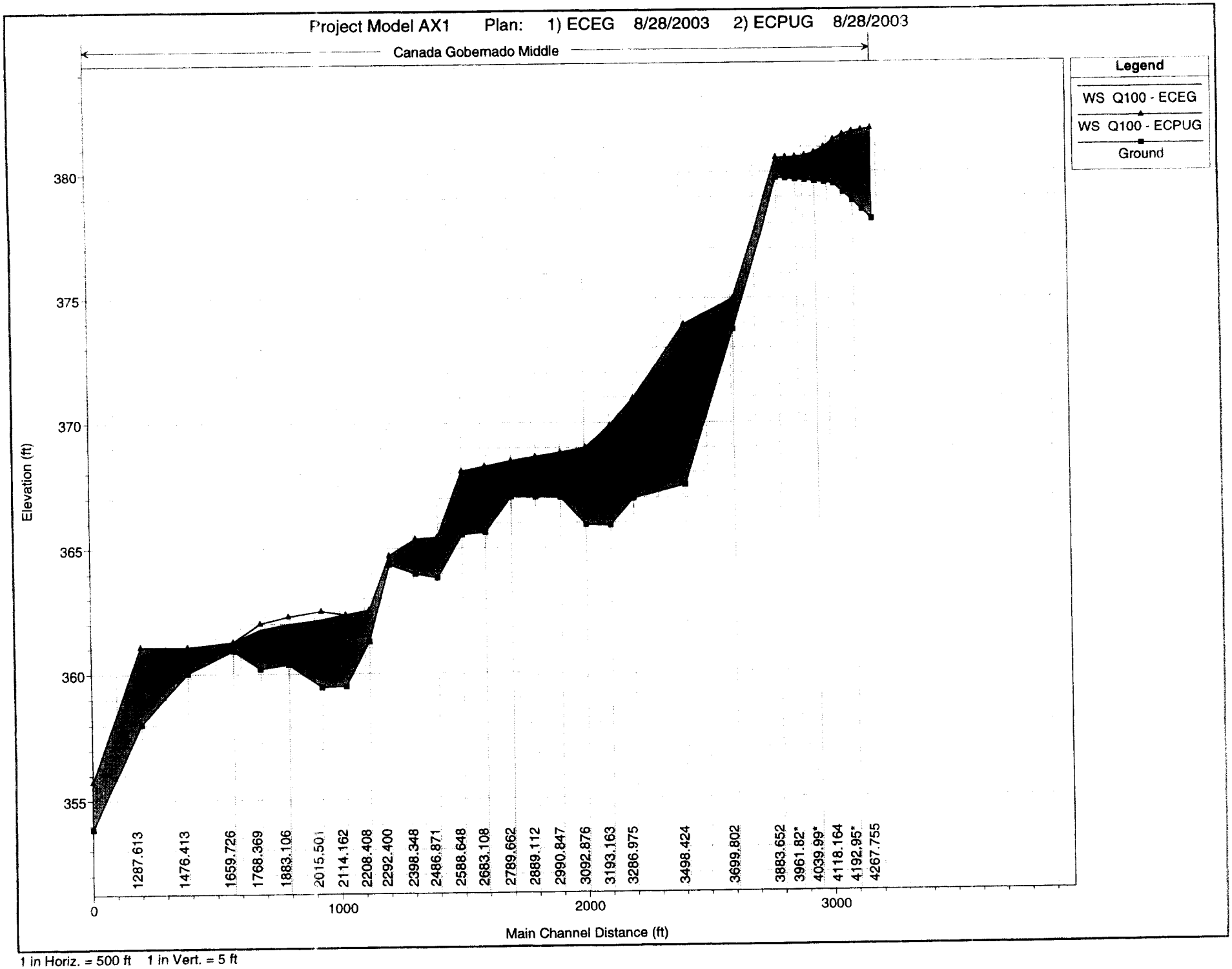
1 in Horiz. = 300 ft 1 in Vert. = 30 ft

Project Model AX1 Plan: 1) ECPUG 2) ECEG

RS = 1088.688



1 in Horiz. = 300 ft 1 in Vert. = 30 ft



1 in Horiz. = 500 ft 1 in Vert. = 5 ft

APPENDIX X
HYDRAULIC MODEL INPUT & RESULTS
FEC-M ALTERNATIVE AT SAN JUAN CREEK
(MODEL "BX")

Appendix X. **Hydraulic Model Input & Results**
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:

330	(1082)
264	(868)

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 BX2
Project File : PMBX2.prj
Run Date and Time: 8/28/2003 10:24:27 PM

Project in English units

PLAN DATA

Plan Title: Existing Flow/Existing Geometry
Plan File : c:\projects\2PDA0104\hydr\LHS\Modeling\Model B\HEC-RAS\PMBX2.p01

Geometry Title: Existing Conditions
Geometry File : c:\projects\2PDA0104\hydr\LHS\Modeling\Model B\HEC-RAS\PMBX2.g01

Flow Title : Existing Conditions
Flow File : c:\projects\2PDA0104\hydr\LHS\Modeling\Model B\HEC-RAS\PMBX2.f01

Plan Summary Information:

Number of:	Cross Sections	= 46	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 B\HEC-RAS\PMBX2.f01

Flow Data (cfs)

River	Reach	RS	Q2	Q5	Q10	Q25	Q50	Q100	Q100HC
San Juan Creek	Upper	4656.846	364	2272	4691	12136	19090	30242	76166

Boundary Conditions

River	Reach	Profile	Upstream	Downstream
San Juan Creek	Upper	Q2	Normal S = 0.001	Normal S = 0.001
San Juan Creek	Upper	Q5	Normal S = 0.001	Normal S = 0.001
San Juan Creek	Upper	Q10	Normal S = 0.001	Normal S = 0.001
San Juan Creek	Upper	Q25	Normal S = 0.001	Normal S = 0.001
San Juan Creek	Upper	Q50	Normal S = 0.001	Normal S = 0.001
San Juan Creek	Upper	Q100	Normal S = 0.001	Normal S = 0.001
San Juan Creek	Upper	Q100HC	Normal S = 0.001	Normal S = 0.001

GEOMETRY DATA

Geometry Title: Existing Conditions
Geometry File : c:\projects\2PDA0104\hydr\LHS\Modeling\Model B\HEC-RAS\PMBX2.g01

CROSS SECTION

RIVER: San Juan Creek
REACH: Upper RS: 4656.846

INPUT
Description:
Station Elevation Data num= 48

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	341.2	93.49	340.05	129.55	339.92	171.61	338.27	184.02	337.8
258.03	334.99	266.83	334.61	285.71	333.81	302.62	332.61	325.36	329.15
331.24	328.04	334.49	327.43	341.67	324.82	357.69	320.99	365.98	318.76
392.38	311.74	400.46	309.58	411.07	308.63	414.85	308.32	487.81	308.93
491.41	308.94	500.99	308.96	507.2	308.86	524.46	308.36	526.3	308.3
539.52	307.91	555.74	307.52	560.57	307.58	575.13	307.62	634.09	307.97
637.99	308.27	643.24	310.97	644.08	311.33	645	311.72	659.94	318.13
666.67	320.18	676.8	321.33	680.07	321.68	682.4	321.98	721.38	322.07
759.02	323.4	785.65	325.38	810.69	328.51	835.59	331.22	837.3	331.5
862.4	335.48	893.64	337.77	920.11	341.24				

Manning's n Values num= 7

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.02	184.02	.035	266.83	.02	331.24	.05	524.46	.035
644.08	.07	837.3	.035						

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
392.38	645	187 200.95	202.2	.1	.3

CROSS SECTION OUTPUT Profile #Q50

E.G. Elev (ft)	326.99	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.21	Wt. n-Val.	0.050	0.043	0.070
W.S. Elev (ft)	326.78	Reach Len. (ft)	187.00	200.95	202.20
Crit W.S. (ft)	314.03	Flow Area (sq ft)	428.80	4641.89	726.79
E.G. Slope (ft/ft)	0.000254	Area (sq ft)	428.80	4641.89	726.79
Q Total (cfs)	19090.00	Flow (cfs)	770.13	17627.01	692.86
Top Width (ft)	460.53	Top Width (ft)	56.09	252.62	151.82
Vel Total (ft/s)	3.29	Avg. Vel. (ft/s)	1.80	3.80	0.95
Max Chl Dpth (ft)	19.26	Hydr. Depth (ft)	7.64	18.38	4.79
Conv. Total (cfs)	1197382.0	Conv. (cfs)	48304.8	1105619.0	43458.5
Length Wtd. (ft)	200.61	Wetted Per. (ft)	58.10	253.80	153.73
Min Ch El (ft)	307.52	Shear (lb/sq ft)	0.12	0.29	0.08
Alpha	1.24	Stream Power (lb/ft s)	0.21	1.10	0.07
Frctn Loss (ft)	0.06	Cum Volume (acre-ft)	149.83	209.60	61.07
C & E Loss (ft)	0.00	Cum SA (acres)	16.00	21.80	12.19

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

CROSS SECTION OUTPUT Profile #Q100

E.G. Elev (ft)	334.05	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.21	Wt. n-Val.	0.047	0.043	0.070
W.S. Elev (ft)	333.84	Reach Len. (ft)	187.00	200.95	202.20
Crit W.S. (ft)	316.06	Flow Area (sq ft)	965.58	6425.83	2005.24
E.G. Slope (ft/ft)	0.000179	Area (sq ft)	965.58	6425.83	2005.24
Q Total (cfs)	30242.00	Flow (cfs)	2125.65	25445.21	2671.15
Top Width (ft)	567.00	Top Width (ft)	107.33	252.62	207.05
Vel Total (ft/s)	3.22	Avg. Vel. (ft/s)	2.20	3.96	1.33
Max Chl Dpth (ft)	26.32	Hydr. Depth (ft)	9.00	25.44	9.69
Conv. Total (cfs)	2259436.0	Conv. (cfs)	158811.1	1901058.0	199566.3
Length Wtd. (ft)	200.27	Wetted Per. (ft)	109.92	253.80	209.42
Min Ch El (ft)	307.52	Shear (lb/sq ft)	0.10	0.28	0.11
Alpha	1.32	Stream Power (lb/ft s)	0.22	1.12	0.14
Frctn Loss (ft)	0.04	Cum Volume (acre-ft)	182.05	281.32	152.86
C & E Loss (ft)	0.00	Cum SA (acres)	19.65	21.80	15.58

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

CROSS SECTION OUTPUT Profile #Q100HC

E.G. Elev (ft)	336.16	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.18	Wt. n-Val.	0.046	0.043	0.070
W.S. Elev (ft)	334.98	Reach Len. (ft)	187.00	200.95	202.20
Crit W.S. (ft)	322.72	Flow Area (sq ft)	1102.99	6713.34	2244.97
E.G. Slope (ft/ft)	0.000948	Area (sq ft)	1102.99	6713.34	2244.97
Q Total (cfs)	76166.00	Flow (cfs)	5847.81	62963.31	7354.87
Top Width (ft)	600.88	Top Width (ft)	134.03	252.62	214.22
Vel Total (ft/s)	7.57	Avg. Vel. (ft/s)	5.30	9.38	3.28
Max Chl Dpth (ft)	27.46	Hydr. Depth (ft)	8.23	26.57	10.48
Conv. Total (cfs)	2473727.0	Conv. (cfs)	189925.8	2044928.0	238872.3
Length Wtd. (ft)	200.19	Wetted Per. (ft)	136.65	253.80	216.68
Min Ch El (ft)	307.52	Shear (lb/sq ft)	0.48	1.57	0.61

Alpha	1.32	Stream Power (lb/ft s)	2.53	14.68	2.01
Frctn Loss (ft)	0.20	Cum Volume (acre-ft)	269.70	447.22	230.60
C & E Loss (ft)	0.02	Cum SA (acres)	22.07	21.80	24.26

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

CROSS SECTION

RIVER: San Juan Creek
REACH: Upper RS: 4455.918

INPUT
Description:
Station Elevation Data num= 59

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	341.21	1.03	341.14	48.11	341.01	125.08	340.81	218.84	340.56
228.14	340.58	250.11	339.9	328.86	337.24	352.02	335.72	365.62	334.76
386.11	333.31	395.22	332.31	423.35	327.46	435.63	325.34	436.82	325.15
437.01	325.13	449.29	323.38	450.85	324.05	457.53	326.89	458.31	326.9
467.3	323.35	474.64	319.26	482.36	315.1	494.22	311.97	503.4	309.61
507.43	308.55	507.55	308.54	508	308.54	509.18	308.54	581.15	308.48
615.76	308.45	615.78	308.45	622.99	308.14	657.16	307.74	663.67	308.41
670.65	310.73	672.55	311.48	680.39	314.54	699.02	316.34	712.79	316.67
721.62	317.31	726.14	317.64	760.11	320.61	763.13	320.88	776.16	320.95
777.7	320.95	786.82	321.01	851.99	321.92	859.51	322.26	899.51	323.26
899.83	323.26	928.2	326.43	928.27	326.46	937.72	329.23	937.88	329.34
942.92	332.39	957.68	341.35	961.49	341.68	962.16	341.68		

Manning's n Values num= 9

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	48.11	.02	125.08	.035	365.62	.02	423.35	.05
615.78	.035	721.62	.02	760.11	.07	942.92	.035		

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
494.22	672.55	223.3	218.1	206	.1	.3

CROSS SECTION OUTPUT Profile #Q50

			Left OB	Channel	Right OB
E.G. Elev (ft)	326.92	Element			
Vel Head (ft)	0.24	Wt. n-Val.	0.050	0.044	0.036
W.S. Elev (ft)	326.68	Reach Len. (ft)	223.30	218.10	206.00
Crit W.S. (ft)		Flow Area (sq ft)	332.43	3229.94	1578.59
E.G. Slope (ft/ft)	0.000346	Area (sq ft)	332.43	3229.94	1578.59
Q Total (cfs)	19090.00	Flow (cfs)	628.48	13971.06	4490.46
Top Width (ft)	499.31	Top Width (ft)	64.51	178.33	256.47
Vel Total (ft/s)	3.71	Avg. Vel. (ft/s)	1.89	4.33	2.84
Max Chl Dpth (ft)	18.94	Hydr. Depth (ft)	5.15	18.11	6.16
Conv. Total (cfs)	1026791.0	Conv. (cfs)	33804.1	751459.4	241527.8
Length Wtd. (ft)	214.10	Wetted Per. (ft)	68.59	179.33	257.55
Min Ch El (ft)	307.74	Shear (lb/sq ft)	0.10	0.39	0.13
Alpha	1.14	Stream Power (lb/ft s)	0.20	1.68	0.38
Frctn Loss (ft)	0.08	Cum Volume (acre-ft)	148.19	191.44	55.72
C & E Loss (ft)	0.01	Cum SA (acres)	15.74	20.80	11.24

Warning: Divided flow computed for this cross-section.

CROSS SECTION OUTPUT Profile #Q100

			Left OB	Channel	Right OB
E.G. Elev (ft)	334.01	Element			
Vel Head (ft)	0.20	Wt. n-Val.	0.046	0.044	0.040
W.S. Elev (ft)	333.81	Reach Len. (ft)	223.30	218.10	206.00
Crit W.S. (ft)		Flow Area (sq ft)	956.96	4501.46	3475.42
E.G. Slope (ft/ft)	0.000194	Area (sq ft)	956.96	4501.46	3475.42
Q Total (cfs)	30242.00	Flow (cfs)	1966.53	18172.24	10103.23
Top Width (ft)	566.21	Top Width (ft)	115.17	178.33	272.71
Vel Total (ft/s)	3.39	Avg. Vel. (ft/s)	2.05	4.04	2.91
Max Chl Dpth (ft)	26.07	Hydr. Depth (ft)	8.31	25.24	12.74
Conv. Total (cfs)	2172764.0	Conv. (cfs)	141287.3	1305601.0	725875.4
Length Wtd. (ft)	213.05	Wetted Per. (ft)	119.89	179.33	275.44
Min Ch El (ft)	307.74	Shear (lb/sq ft)	0.10	0.30	0.15
Alpha	1.12	Stream Power (lb/ft s)	0.20	1.23	0.44
Frctn Loss (ft)	0.04	Cum Volume (acre-ft)	177.92	256.11	140.14
C & E Loss (ft)	0.01	Cum SA (acres)	19.18	20.80	14.46

CROSS SECTION OUTPUT Profile #Q100HC

			Left OB	Channel	Right OB
E.G. Elev (ft)	335.94	Element			
Vel Head (ft)	1.11	Wt. n-Val.	0.045	0.044	0.040
W.S. Elev (ft)	334.82	Reach Len. (ft)	223.30	218.10	206.00
Crit W.S. (ft)		Flow Area (sq ft)	1081.12	4682.45	3753.05
E.G. Slope (ft/ft)	0.001027	Area (sq ft)	1081.12	4682.45	3753.05
Q Total (cfs)	76166.00	Flow (cfs)	5407.33	44680.13	26078.54
Top Width (ft)	582.22	Top Width (ft)	129.51	178.33	274.38
Vel Total (ft/s)	8.00	Avg. Vel. (ft/s)	5.00	9.54	6.95
Max Chl Dpth (ft)	27.08	Hydr. Depth (ft)	8.35	26.26	13.68
Conv. Total (cfs)	2376596.0	Conv. (cfs)	168724.0	1394147.0	813724.5
Length Wtd. (ft)	213.01	Wetted Per. (ft)	134.27	179.33	277.40
Min Ch El (ft)	307.74	Shear (lb/sq ft)	0.52	1.67	0.87
Alpha	1.12	Stream Power (lb/ft s)	2.58	15.98	6.03
Frctn Loss (ft)	0.22	Cum Volume (acre-ft)	265.02	420.93	216.68
C & E Loss (ft)	0.04	Cum SA (acres)	21.51	20.80	23.12

CROSS SECTION

RIVER: San Juan Creek
REACH: Upper RS: 4237.798

INPUT
Description:
Station Elevation Data num= 67

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	341.18	6.08	340.99	12.8	340.87	29.02	340.9	103.31	340.53
156.85	340.26	225.16	339.71	257.67	339.09	271.56	338.71	321.36	336.24
328.72	335.9	334.79	335.63	345.91	333.98	359.73	332.84	372.11	329.75
385.07	328.68	398.94	327.52	407.64	327.84	434.01	325.46	441.36	324.67
447.8	323.17	457.17	320.86	464.77	312.83	465.84	311.65	466.37	311.35
468.66	309.8	470.49	308.56	477.18	308.52	484.65	308.01	544.73	306.69
545.54	306.67	545.64	306.68	546.23	306.8	554.87	308.65	556.94	310.05
561.19	312.93	570.34	319.52	572.15	319.94	576.53	321.57	586.82	321.8
593.8	321.39	600.04	321.49	618.97	321.03	622.5	320.95	635.71	321.77
645.83	321.95	654.56	321.44	661.57	319.97	670.75	317.3	675.4	316.62
685.62	314.77	698.66	314.18	716.64	314.76	753.13	316.34	760.75	316.72

766.25	317.01	807.71	319.73	829.41	321.16	863.4	322.99	888.81	326.62
897.83	328.25	908.34	333.59	910.32	334.51	911.86	334.71	931.04	339.9
938.56	340.86	939.2	340.94						

Manning's n Values num= 7

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.07	103.31	.035	328.72	.02	385.07	.035	760.75	.02
807.71	.07	939.2	.035						

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
468.66	556.94	218.3 207.95	195.2	.1	.3

CROSS SECTION OUTPUT Profile #Q50

			Left OB	Channel	Right OB
E.G. Elev (ft)	326.83	Element			
Vel Head (ft)	0.39	Wt. n-Val.	0.035	0.035	0.032
W.S. Elev (ft)	326.44	Reach Len. (ft)	218.30	207.95	195.20
Crit W.S. (ft)		Flow Area (sq ft)	205.40	1660.54	2396.79
E.G. Slope (ft/ft)	0.000412	Area (sq ft)	205.40	1660.54	2396.79
Q Total (cfs)	19090.00	Flow (cfs)	450.36	10035.31	8604.32
Top Width (ft)	464.36	Top Width (ft)	45.49	88.28	330.60
Vel Total (ft/s)	4.48	Avg. Vel. (ft/s)	2.19	6.04	3.59
Max Chl Dpth (ft)	19.77	Hydr. Depth (ft)	4.52	18.81	7.25
Conv. Total (cfs)	941066.7	Conv. (cfs)	22201.3	494703.8	424161.5
Length Wtd. (ft)	203.63	Wetted Per. (ft)	50.56	89.33	335.27
Min Ch El (ft)	306.67	Shear (lb/sq ft)	0.10	0.48	0.18
Alpha	1.25	Stream Power (lb/ft s)	0.23	2.89	0.66
Frctn Loss (ft)	0.12	Cum Volume (acre-ft)	146.82	179.20	46.32
C & E Loss (ft)	0.03	Cum SA (acres)	15.46	20.14	9.85

Warning: The conveyance ratio (upstream 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)	333.96	Element			
Vel Head (ft)	0.25	Wt. n-Val.	0.034	0.035	0.034
W.S. Elev (ft)	333.71	Reach Len. (ft)	218.30	207.95	195.20
Crit W.S. (ft)		Flow Area (sq ft)	861.72	2302.85	4897.31
E.G. Slope (ft/ft)	0.000178	Area (sq ft)	861.72	2302.85	4897.31
Q Total (cfs)	30242.00	Flow (cfs)	2010.32	11393.59	16838.09
Top Width (ft)	559.47	Top Width (ft)	119.52	88.28	351.67
Vel Total (ft/s)	3.75	Avg. Vel. (ft/s)	2.33	4.95	3.44
Max Chl Dpth (ft)	27.04	Hydr. Depth (ft)	7.21	26.09	13.93
Conv. Total (cfs)	2264579.0	Conv. (cfs)	150536.6	853173.9	1260868.0
Length Wtd. (ft)	201.73	Wetted Per. (ft)	125.17	89.33	357.80
Min Ch El (ft)	306.67	Shear (lb/sq ft)	0.08	0.29	0.15
Alpha	1.15	Stream Power (lb/ft s)	0.18	1.42	0.52
Frctn Loss (ft)	0.04	Cum Volume (acre-ft)	173.26	239.08	120.34
C & E Loss (ft)	0.00	Cum SA (acres)	18.57	20.14	12.99

CROSS SECTION OUTPUT Profile #Q100HC

			Left OB	Channel	Right OB
E.G. Elev (ft)	335.68	Element			
Vel Head (ft)	1.48	Wt. n-Val.	0.034	0.035	0.034
W.S. Elev (ft)	334.20	Reach Len. (ft)	218.30	207.95	195.20
Crit W.S. (ft)		Flow Area (sq ft)	920.98	2345.66	5068.12

E.G. Slope (ft/ft)	0.001028	Area (sq ft)	920.98	2345.66	5068.12
Q Total (cfs)	76166.00	Flow (cfs)	5326.15	28212.31	42627.55
Top Width (ft)	565.22	Top Width (ft)	124.23	88.28	352.71
Vel Total (ft/s)	9.14	Avg. Vel. (ft/s)	5.78	12.03	8.41
Max Chl Dpth (ft)	27.53	Hydr. Depth (ft)	7.41	26.57	14.37
Conv. Total (cfs)	2375165.0	Conv. (cfs)	166090.9	879774.4	1329300.0
Length Wtd. (ft)	201.74	Wetted Per. (ft)	129.90	89.33	358.95
Min Ch El (ft)	306.67	Shear (lb/sq ft)	0.46	1.69	0.91
Alpha	1.14	Stream Power (lb/ft s)	2.63	20.28	7.62
Frctn Loss (ft)	0.26	Cum Volume (acre-ft)	259.88	403.34	195.82
C & E Loss (ft)	0.04	Cum SA (acres)	20.86	20.14	21.64

CROSS SECTION

RIVER: San Juan Creek
REACH: Upper RS: 4029.826

INPUT
Description: Manual Entry for Manning's N Distribution
Station Elevation Data num= 67

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	341.19	6.03	341.17	88.09	340.53	131.38	339.96	176.13	338.4
220.4	337.11	281.94	335.2	341.84	334.45	350	334.3	361.59	334.08
383.24	334.58	411.15	332.92	437.55	331.15	448.22	329.88	450.91	329.62
454.81	328.21	456.36	327.7	460.72	324.74	464.73	321.87	466.25	321.36
473.76	320.64	482.46	319.78	489.63	319.2	504.21	317.96	515.09	316.95
519.42	316.54	523	315.7	539.26	309.4	541.12	308.51	541.54	308.39
541.86	308.34	542.99	308.27	572.53	305.97	577.44	306.43	587.88	307.6
590.08	308.32	594.42	311.16	594.58	311.26	597.26	313.78	603.64	321.07
606.49	321.07	628.97	322.08	690.85	320.68	702.53	320.48	727.95	319.77
733.4	319.6	762.74	321.05	764.12	321.04	769.57	320.87	788.97	320.07
835.41	320.74	860	320.61	882.52	320.49	905	321.37	924.2	322.12
947.79	323.78	960.18	325.47	977.25	327.7	984.39	329.11	991.03	331.16
999.74	334.7	1008.31	335.78	1020	336.69	1031.46	337.58	1048.95	338.17
1056.9	339.2	1086.69	341.18						

Manning's n Values num= 6

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	88.09	.02	350	.035	860	.02	905	.07
1020	.035								

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
542.99	590.08	277.92	252.3	228.6	.1	.3

CROSS SECTION OUTPUT Profile #Q50

E.G. Elev (ft)	326.68	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.67	Wt. n-Val.	0.035	0.035	0.033
W.S. Elev (ft)	326.02	Reach Len. (ft)	277.92	252.30	228.60
Crit W.S. (ft)		Flow Area (sq ft)	714.78	893.68	1924.43
E.G. Slope (ft/ft)	0.000854	Area (sq ft)	714.78	893.68	1924.43
Q Total (cfs)	19090.00	Flow (cfs)	3602.44	7854.46	7633.09
Top Width (ft)	505.54	Top Width (ft)	84.15	47.09	374.30
Vel Total (ft/s)	5.40	Avg. Vel. (ft/s)	5.04	8.79	3.97
Max Chl Dpth (ft)	20.05	Hydr. Depth (ft)	8.49	18.98	5.14
Conv. Total (cfs)	653411.6	Conv. (cfs)	123304.3	268842.2	261265.1
Length Wtd. (ft)	246.53	Wetted Per. (ft)	87.27	47.38	379.83

Min Ch El (ft)	305.97	Shear (lb/sq ft)	0.44	1.01	0.27
Alpha	1.47	Stream Power (lb/ft s)	2.20	8.83	1.07
Frctn Loss (ft)	0.25	Cum Volume (acre-ft)	144.51	173.10	36.64
C & E Loss (ft)	0.05	Cum SA (acres)	15.13	19.81	8.27

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

CROSS SECTION OUTPUT Profile #Q100

			Left OB	Channel	Right OB
E.G. Elev (ft)	333.92	Element			
Vel Head (ft)	0.29	Wt. n-Val.	0.035	0.035	0.034
W.S. Elev (ft)	333.63	Reach Len. (ft)	277.92	252.30	228.60
Crit W.S. (ft)		Flow Area (sq ft)	1489.83	1252.29	4930.12
E.G. Slope (ft/ft)	0.000251	Area (sq ft)	1489.83	1252.29	4930.12
Q Total (cfs)	30242.00	Flow (cfs)	4673.51	7475.39	18093.10
Top Width (ft)	597.96	Top Width (ft)	143.84	47.09	407.04
Vel Total (ft/s)	3.94	Avg. Vel. (ft/s)	3.14	5.97	3.67
Max Chl Dpth (ft)	27.66	Hydr. Depth (ft)	10.36	26.59	12.11
Conv. Total (cfs)	1908426.0	Conv. (cfs)	294922.6	471735.8	1141768.0
Length Wtd. (ft)	241.55	Wetted Per. (ft)	147.97	47.38	413.61
Min Ch El (ft)	305.97	Shear (lb/sq ft)	0.16	0.41	0.19
Alpha	1.18	Stream Power (lb/ft s)	0.50	2.47	0.69
Frctn Loss (ft)	0.06	Cum Volume (acre-ft)	167.37	230.59	98.32
C & E Loss (ft)	0.00	Cum SA (acres)	17.91	19.81	11.29

CROSS SECTION OUTPUT Profile #Q100HC

			Left OB	Channel	Right OB
E.G. Elev (ft)	335.39	Element			
Vel Head (ft)	1.83	Wt. n-Val.	0.035	0.035	0.034
W.S. Elev (ft)	333.56	Reach Len. (ft)	277.92	252.30	228.60
Crit W.S. (ft)		Flow Area (sq ft)	1478.74	1248.65	4898.62
E.G. Slope (ft/ft)	0.001619	Area (sq ft)	1478.74	1248.65	4898.62
Q Total (cfs)	76166.00	Flow (cfs)	11790.42	18890.91	45484.68
Top Width (ft)	596.47	Top Width (ft)	142.54	47.09	406.85
Vel Total (ft/s)	9.99	Avg. Vel. (ft/s)	7.97	15.13	9.29
Max Chl Dpth (ft)	27.59	Hydr. Depth (ft)	10.37	26.52	12.04
Conv. Total (cfs)	1892765.0	Conv. (cfs)	292998.1	469449.0	1130318.0
Length Wtd. (ft)	241.41	Wetted Per. (ft)	146.66	47.38	413.41
Min Ch El (ft)	305.97	Shear (lb/sq ft)	1.02	2.66	1.20
Alpha	1.18	Stream Power (lb/ft s)	8.13	40.31	11.12
Frctn Loss (ft)	0.44	Cum Volume (acre-ft)	253.87	394.76	173.49
C & E Loss (ft)	0.06	Cum SA (acres)	20.19	19.81	19.94

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

CROSS SECTION

RIVER: San Juan Creek
REACH: Upper RS: 3777.506

INPUT
Description:
Station Elevation Data num= 71

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	341.22	104.43	338.57	125.14	338.45	143.06	338.24	166.3	337.88
280.49	337.01	325.3	336.73	463.95	334.52	685.67	334.69	719.29	334.3
730.81	334.07	736.63	333.82	773.88	331.9	820.36	329.51	831.73	328.89
838.37	328.64	852.06	328.11	871.84	328.07	891.99	328.42	915.35	327.66
922.13	326.78	942.32	321.08	946.4	319.91	954.01	317.71	964.72	313.08
971.8	307.18	976.43	303.06	980.59	301.81	983.42	301	998.88	301.31
1000.85	301.4	1001.23	301.56	1008.1	304.95	1012.41	307.64	1018.95	312.06
1031.36	320.45	1035.16	321.45	1037.83	322.29	1057.51	321.66	1071.75	321.48
1078.59	321.22	1093.06	320.9	1149.29	321.23	1193.69	321.77	1218.65	321.74
1263.28	320.51	1301.63	320.16	1305.93	320.18	1328.18	320.3	1354.3	319.9
1356.57	319.86	1365.06	320.31	1368.19	320.68	1378.41	322.06	1379.5	322.36
1386.32	324.92	1394.37	327.84	1397.15	328.55	1404.84	330.54	1413.5	331.9
1424.48	334.28	1437.65	335.06	1451.03	335.5	1457.23	335.7	1466.01	336.32
1494.16	337.28	1531.44	337.78	1565.15	339.6	1585.31	340.65	1607.23	341.09
1612.26	341.26								

Manning's n Values num= 6

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	773.88	.02	838.37	.035	1305.93	.02	1354.3	.07
1451.03	.035								

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
971.8	1012.41	90	88.68	88.38	.1 .3

CROSS SECTION OUTPUT Profile #Q50

			Left OB	Channel	Right OB
E.G. Elev (ft)	326.38	Element			
Vel Head (ft)	1.19	Wt. n-Val.	0.035	0.035	0.032
W.S. Elev (ft)	325.19	Reach Len. (ft)	90.00	88.68	88.38
Crit W.S. (ft)		Flow Area (sq ft)	309.28	914.69	1674.98
E.G. Slope (ft/ft)	0.001218	Area (sq ft)	309.28	914.69	1674.98
Q Total (cfs)	19090.00	Flow (cfs)	1582.77	10235.78	7271.46
Top Width (ft)	459.32	Top Width (ft)	44.05	40.61	374.66
Vel Total (ft/s)	6.59	Avg. Vel. (ft/s)	5.12	11.19	4.34
Max Chl Dpth (ft)	24.19	Hydr. Depth (ft)	7.02	22.52	4.47
Conv. Total (cfs)	546950.1	Conv. (cfs)	45348.0	293266.7	208335.4
Length Wtd. (ft)	88.71	Wetted Per. (ft)	48.19	44.07	379.57
Min Ch El (ft)	301.00	Shear (lb/sq ft)	0.49	1.58	0.34
Alpha	1.76	Stream Power (lb/ft s)	2.50	17.66	1.46
Frctn Loss (ft)	0.13	Cum Volume (acre-ft)	141.24	167.87	27.20
C & E Loss (ft)	0.07	Cum SA (acres)	14.73	19.56	6.30

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

CROSS SECTION OUTPUT Profile #Q100

			Left OB	Channel	Right OB
E.G. Elev (ft)	333.86	Element			
Vel Head (ft)	0.31	Wt. n-Val.	0.033	0.035	0.033
W.S. Elev (ft)	333.55	Reach Len. (ft)	90.00	88.68	88.38
Crit W.S. (ft)		Flow Area (sq ft)	1417.46	1254.12	4930.06
E.G. Slope (ft/ft)	0.000248	Area (sq ft)	1417.46	1254.12	4930.06
Q Total (cfs)	30242.00	Flow (cfs)	3856.75	7809.97	18575.28
Top Width (ft)	679.27	Top Width (ft)	229.96	40.61	408.71
Vel Total (ft/s)	3.98	Avg. Vel. (ft/s)	2.72	6.23	3.77
Max Chl Dpth (ft)	32.55	Hydr. Depth (ft)	6.16	30.88	12.06
Conv. Total (cfs)	1921620.0	Conv. (cfs)	245063.7	496256.6	1180300.0

Length Wtd. (ft)	88.67	Wetted Per. (ft)	234.52	44.07	414.71
Min Ch El (ft)	301.00	Shear (lb/sq ft)	0.09	0.44	0.18
Alpha	1.24	Stream Power (lb/ft s)	0.25	2.74	0.69
Frctn Loss (ft)	0.02	Cum Volume (acre-ft)	158.09	223.34	72.45
C & E Loss (ft)	0.00	Cum SA (acres)	16.72	19.56	9.14

CROSS SECTION OUTPUT Profile #Q100HC

E.G. Elev (ft)	334.88	Element	Left OB	Channel	Right OB
Vel Head (ft)	2.48	Wt. n-Val.	0.034	0.035	0.033
W.S. Elev (ft)	332.40	Reach Len. (ft)	90.00	88.68	88.38
Crit W.S. (ft)		Flow Area (sq ft)	1165.15	1207.29	4461.75
E.G. Slope (ft/ft)	0.002112	Area (sq ft)	1165.15	1207.29	4461.75
Q Total (cfs)	76166.00	Flow (cfs)	8395.80	21406.94	46363.26
Top Width (ft)	651.58	Top Width (ft)	207.58	40.61	403.39
Vel Total (ft/s)	11.14	Avg. Vel. (ft/s)	7.21	17.73	10.39
Max Chl Dpth (ft)	31.40	Hydr. Depth (ft)	5.61	29.73	11.06
Conv. Total (cfs)	1657156.0	Conv. (cfs)	182668.8	465754.2	1008733.0
Length Wtd. (ft)	88.65	Wetted Per. (ft)	212.12	44.07	409.26
Min Ch El (ft)	301.00	Shear (lb/sq ft)	0.72	3.61	1.44
Alpha	1.29	Stream Power (lb/ft s)	5.22	64.06	14.94
Frctn Loss (ft)	0.22	Cum Volume (acre-ft)	245.44	387.65	148.93
C & E Loss (ft)	0.06	Cum SA (acres)	19.07	19.56	17.81

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 Juan Creek
REACH: Upper RS: 3688.827

INPUT
Description:
Station Elevation Data num= 61

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	341.24	4.25	341.2	88.82	338.47	162.13	337.12	238.04	336.54
343.16	335.9	427.23	334.56	621.14	334.71	691.38	335.01	711.54	334.61
749.31	333.89	771.83	333.26	798.75	332.51	802.54	332.21	807.68	331.96
836.15	330.45	884.81	327.86	899.48	325.3	916.88	322.98	931	320.13
931.02	320.12	940.38	318.48	952.89	313.21	954.49	312.46	956.69	310.63
965.48	303.9	967.39	303.74	975.09	301.39	979.29	301.7	990.3	301.58
996.19	304.01	1011.42	311.72	1015.3	313.58	1017.02	314.47	1018.95	315.18
1033.67	317.57	1040.9	320.33	1049.89	320.5	1072.53	321.89	1091.75	321.62
1109.41	321.83	1266.63	321.65	1276.2	321.38	1302.46	320.82	1319.41	320.45
1334.62	320.18	1342.76	320.04	1367.89	322.17	1412.93	333.57	1415.28	334.15
1415.82	334.22	1426.44	334.92	1431.1	335.26	1445.41	336.33	1448.64	336.57
1450.68	336.58	1458.8	336.68	1523.98	337.14	1546.8	337.72	1585.64	340.13
1607.98	341.26								

Manning's n Values num= 6

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	771.83	.02	836.15	.035	1302.46	.02	1334.62	.07
1431.1	.035								

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

965.48 996.19 239.7 244.68 248.16 .1 .3

CROSS SECTION OUTPUT Profile #Q50

E.G. Elev (ft)	326.19	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.84	Wt. n-Val.	0.035	0.035	0.034
W.S. Elev (ft)	324.34	Reach Len. (ft)	239.70	244.68	248.16
Crit W.S. (ft)		Flow Area (sq ft)	396.66	679.54	1462.31
E.G. Slope (ft/ft)	0.001912	Area (sq ft)	396.66	679.54	1462.31
Q Total (cfs)	19090.00	Flow (cfs)	2497.20	9764.25	6828.54
Top Width (ft)	469.83	Top Width (ft)	58.83	30.71	380.29
Vel Total (ft/s)	7.52	Avg. Vel. (ft/s)	6.30	14.37	4.67
Max Chl Dpth (ft)	22.95	Hydr. Depth (ft)	6.74	22.13	3.85
Conv. Total (cfs)	436537.1	Conv. (cfs)	57104.4	223282.3	156150.5
Length Wtd. (ft)	245.00	Wetted Per. (ft)	63.52	31.56	384.02
Min Ch El (ft)	301.39	Shear (lb/sq ft)	0.75	2.57	0.45
Alpha	2.10	Stream Power (lb/ft s)	4.69	36.94	2.12
Frctn Loss (ft)	0.69	Cum Volume (acre-ft)	140.51	166.24	24.01
C & E Loss (ft)	0.34	Cum SA (acres)	14.62	19.49	5.54

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 OUTPUT Profile #Q100

E.G. Elev (ft)	333.83	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.32	Wt. n-Val.	0.034	0.035	0.035
W.S. Elev (ft)	333.51	Reach Len. (ft)	239.70	244.68	248.16
Crit W.S. (ft)		Flow Area (sq ft)	1407.67	961.14	5115.43
E.G. Slope (ft/ft)	0.000271	Area (sq ft)	1407.67	961.14	5115.43
Q Total (cfs)	30242.00	Flow (cfs)	4339.59	6551.90	19350.51
Top Width (ft)	649.93	Top Width (ft)	202.70	30.71	416.52
Vel Total (ft/s)	4.04	Avg. Vel. (ft/s)	3.08	6.82	3.78
Max Chl Dpth (ft)	32.12	Hydr. Depth (ft)	6.94	31.30	12.28
Conv. Total (cfs)	1836727.0	Conv. (cfs)	263562.0	397925.0	1175240.0
Length Wtd. (ft)	245.80	Wetted Per. (ft)	207.82	31.56	421.39
Min Ch El (ft)	301.39	Shear (lb/sq ft)	0.11	0.52	0.21
Alpha	1.26	Stream Power (lb/ft s)	0.35	3.51	0.78
Frctn Loss (ft)	0.06	Cum Volume (acre-ft)	155.17	221.08	62.26
C & E Loss (ft)	0.02	Cum SA (acres)	16.28	19.49	8.31

CROSS SECTION OUTPUT Profile #Q100HC

E.G. Elev (ft)	334.60	Element	Left OB	Channel	Right OB
Vel Head (ft)	3.13	Wt. n-Val.	0.035	0.035	0.034
W.S. Elev (ft)	331.47	Reach Len. (ft)	239.70	244.68	248.16
Crit W.S. (ft)		Flow Area (sq ft)	1058.37	898.52	4274.34
E.G. Slope (ft/ft)	0.002897	Area (sq ft)	1058.37	898.52	4274.34
Q Total (cfs)	76166.00	Flow (cfs)	9450.32	19143.12	47572.56
Top Width (ft)	587.81	Top Width (ft)	148.64	30.71	408.46
Vel Total (ft/s)	12.22	Avg. Vel. (ft/s)	8.93	21.31	11.13
Max Chl Dpth (ft)	30.08	Hydr. Depth (ft)	7.12	29.26	10.46
Conv. Total (cfs)	1415093.0	Conv. (cfs)	175578.1	355661.3	883853.9

Length Wtd. (ft)	245.83	Wetted Per. (ft)	153.71	31.56	413.08
Min Ch El (ft)	301.39	Shear (lb/sq ft)	1.25	5.15	1.87
Alpha	1.35	Stream Power (lb/ft s)	11.12	109.70	20.83
Frctn Loss (ft)	0.61	Cum Volume (acre-ft)	243.14	385.50	140.07
C & E Loss (ft)	0.18	Cum SA (acres)	18.71	19.49	16.99

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

CROSS SECTION

RIVER: San Juan Creek
REACH: Upper RS: 3444.123

INPUT
Description:
Station Elevation Data num= 72

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	341.26	29.63	340.48	70.28	339.46	120.07	338.58	215.55	335.81
360.8	334.73	380.53	334.58	469.87	335.17	621.66	335.79	660.63	335.01
747.53	332	749.95	331.95	779.66	331.3	790.16	330.54	799.94	329.75
813.5	328.65	818.21	328.38	822.66	327.78	840.68	325.94	860.32	322.97
867.94	321.66	871.07	321.43	874.62	321.2	899.5	320.15	920.2	319.16
931.35	318.53	944.93	316.89	945.2	316.86	954.91	315.75	956.12	315.61
957.05	315.21	964.94	309.94	974.43	301.81	980.44	296.33	982.4	295.75
984.7	295.17	987.39	295.62	997.9	298.94	1005.36	302.54	1015.73	308.17
1021.59	311.22	1028.1	314.6	1045.43	320.21	1048.32	320.99	1050.68	321.49
1072.16	321.51	1092.74	321.56	1095.76	321.52	1107.22	321.56	1136.4	321.18
1138.66	321.3	1173.26	321.56	1247.45	321.39	1272.39	321.23	1283.24	321.18
1333.24	320.91	1339.55	320.88	1345.51	320.85	1351.85	321.43	1375.75	327.04
1393.33	331.12	1399.9	332.31	1408.65	333.9	1412.95	334.45	1426.86	335
1466.5	336.42	1479.63	336.6	1587.8	336.97	1601.25	337.3	1641.01	338.8
1651.44	339.77	1666.54	341.58						

Manning's n Values num= 6

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	749.95	.02	799.94	.035	1283.24	.02	1333.24	.07
1399.9	.035								

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
974.43	1005.36	43.8	40.69	36.67	.1 .3

CROSS SECTION OUTPUT Profile #Q50

E.G. Elev (ft)	325.15	Element	Left OB	Channel	Right OB
Vel Head (ft)	5.26	Wt. n-Val.	0.035	0.035	0.035
W.S. Elev (ft)	319.89	Reach Len. (ft)	43.80	40.69	36.67
Crit W.S. (ft)	319.89	Flow Area (sq ft)	282.33	674.40	299.08
E.G. Slope (ft/ft)	0.004552	Area (sq ft)	282.33	674.40	299.08
Q Total (cfs)	19090.00	Flow (cfs)	1968.27	13995.99	3125.75
Top Width (ft)	139.47	Top Width (ft)	69.46	30.93	39.08
Vel Total (ft/s)	15.20	Avg. Vel. (ft/s)	6.97	20.75	10.45
Max Chl Dpth (ft)	24.72	Hydr. Depth (ft)	4.06	21.80	7.65
Conv. Total (cfs)	282939.6	Conv. (cfs)	29172.4	207439.4	46327.8
Length Wtd. (ft)	40.35	Wetted Per. (ft)	74.36	34.58	42.91
Min Ch El (ft)	295.17	Shear (lb/sq ft)	1.08	5.54	1.98
Alpha	1.47	Stream Power (lb/ft s)	7.52	115.02	20.70

Frctn Loss (ft)	0.10	Cum Volume (acre-ft)	138.65	162.44	19.00
C & E Loss (ft)	0.02	Cum SA (acres)	14.27	19.31	4.34

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water 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)	333.76	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.25	Wt. n-Val.	0.035	0.035	0.033
W.S. Elev (ft)	333.50	Reach Len. (ft)	43.80	40.69	36.67
Crit W.S. (ft)	324.96	Flow Area (sq ft)	2342.64	1095.53	4888.98
E.G. Slope (ft/ft)	0.000198	Area (sq ft)	2342.64	1095.53	4888.98
Q Total (cfs)	30242.00	Flow (cfs)	7151.36	6549.26	16541.38
Top Width (ft)	702.37	Top Width (ft)	270.33	30.93	401.11
Vel Total (ft/s)	3.63	Avg. Vel. (ft/s)	3.05	5.98	3.38
Max Chl Dpth (ft)	38.33	Hydr. Depth (ft)	8.67	35.42	12.19
Conv. Total (cfs)	2150253.0	Conv. (cfs)	508473.0	465662.4	1176117.0
Length Wtd. (ft)	39.79	Wetted Per. (ft)	275.88	34.58	406.52
Min Ch El (ft)	295.17	Shear (lb/sq ft)	0.10	0.39	0.15
Alpha	1.23	Stream Power (lb/ft s)	0.32	2.34	0.50
Frctn Loss (ft)	0.02	Cum Volume (acre-ft)	144.85	215.30	33.76
C & E Loss (ft)	1.28	Cum SA (acres)	14.97	19.31	5.98

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 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)	333.81	Element	Left OB	Channel	Right OB
Vel Head (ft)	2.53	Wt. n-Val.	0.035	0.035	0.033
W.S. Elev (ft)	331.27	Reach Len. (ft)	43.80	40.69	36.67
Crit W.S. (ft)		Flow Area (sq ft)	1816.20	1026.57	4008.36
E.G. Slope (ft/ft)	0.002177	Area (sq ft)	1816.20	1026.57	4008.36
Q Total (cfs)	76166.00	Flow (cfs)	16616.52	19495.62	40053.85
Top Width (ft)	614.17	Top Width (ft)	194.42	30.93	388.82
Vel Total (ft/s)	11.12	Avg. Vel. (ft/s)	9.15	18.99	9.99
Max Chl Dpth (ft)	36.10	Hydr. Depth (ft)	9.34	33.19	10.31
Conv. Total (cfs)	1632435.0	Conv. (cfs)	356135.2	417841.8	858458.0
Length Wtd. (ft)	39.27	Wetted Per. (ft)	199.94	34.58	394.03
Min Ch El (ft)	295.17	Shear (lb/sq ft)	1.23	4.03	1.38
Alpha	1.32	Stream Power (lb/ft s)	11.30	76.62	13.82
Frctn Loss (ft)	0.06	Cum Volume (acre-ft)	235.23	380.10	116.47
C & E Loss (ft)	0.16	Cum SA (acres)	17.76	19.31	14.72

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

CROSS SECTION

RIVER: San Juan Creek
REACH: Upper RS: 3403.43*

INPUT
Description:
Station Elevation Data num= 144

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	341.27	29.24	340.4	69.36	339.26	85.19	338.9	118.49	338.14
144.72	337.3	212.72	335.6	251.55	335.31	298.04	334.97	356.06	334.67
375.53	334.57	463.69	335.12	531.25	335.4	571.86	335.48	613.49	335.42
616.25	335.37	646.97	334.73	651.95	334.61	667.7	334.03	684.73	333.36
696.38	332.9	708.94	332.16	723.17	331.37	728.23	330.9	734.68	330.45
737.7	330.22	740.09	330.06	746.62	329.63	769.41	328.92	779.77	328.18
789.42	327.42	795.92	326.9	801.9	326.43	802.81	326.34	803.63	326.27
807.45	325.96	811.85	325.33	816.81	324.75	824.72	323.52	829.63	322.71
833.24	321.98	836.77	321.47	849.01	319.88	852.92	319.31	856.53	318.77
859.62	318.56	863.12	318.34	879.12	317.63	881.34	317.54	887.68	317.28
908.1	316.33	911.82	316.13	919.11	315.71	923.51	315.23	932.51	314.33
932.77	314.31	938.57	313.76	939.78	313.6	942.36	313.27	943.55	313.11
944.47	312.75	944.68	312.63	947.59	310.92	952.25	308.05	961.62	300.85
964.7	298.52	968.59	295.94	969.66	295.68	970.86	295.4	973.53	294.85
975.97	295.26	982.94	297.35	985.49	298.15	992.25	301.27	1002.68	307.32
1008.23	310.44	1008.57	310.64	1011.36	312.2	1013.73	313.54	1015.12	314.23
1016.73	314.78	1021.3	316.35	1022.17	316.64	1025.13	317.39	1032.55	319.29
1035.46	319.91	1037.84	320.3	1059.44	320.27	1080.14	320.26	1083.18	320.22
1085.02	320.23	1094.71	320.49	1099.31	320.56	1124.06	320.87	1126.34	321.01
1128.09	321.06	1138.62	321.38	1149.05	321.43	1161.14	321.51	1175.83	321.5
1229.88	321.22	1235.77	321.19	1250.69	321.06	1260.86	321.01	1271.78	320.97
1293.2	320.88	1309.46	320.82	1313.53	320.87	1322.07	320.95	1324.88	320.98
1327.77	321.01	1328.38	321.04	1328.42	321.04	1334.41	321.25	1336.21	321.45
1340.79	321.97	1361.33	326.63	1364.05	327.26	1364.83	327.42	1366.18	327.7
1372.37	329.02	1382.52	331.17	1389.13	332.3	1397.93	333.82	1399.54	334.03
1402.25	334.34	1416.25	334.97	1420.97	335.17	1456.12	336.47	1458.87	336.52
1469.33	336.76	1493.45	337.1	1521.9	337.18	1536.64	337.2	1578.14	337.24
1591.67	337.49	1617.42	338.22	1626.66	338.73	1631.67	338.92	1642.16	339.77
1644.89	340.05	1652.44	341	1657.17	341.52	1657.35	341.55		

Manning's n Values num= 16

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	616.25	.032	684.73	.023	740.09	.023	789.42	.035
961.62	.02	992.25	.02	1229.88	.02	1271.78	.02	1293.2	.026
1322.07	.066	1324.88	.054	1372.37	.063	1389.13	.035	1657.35	.042
1657.35	.042								

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
961.62	992.25	43.8 40.69	36.67	.1	.3

CROSS SECTION OUTPUT Profile #Q50

			Left OB	Channel	Right OB
E.G. Elev (ft)	324.91	Element			
Vel Head (ft)	7.01	Wt. n-Val.	0.035	0.020	0.020
W.S. Elev (ft)	317.90	Reach Len. (ft)	43.80	40.69	36.67
Crit W.S. (ft)	319.17	Flow Area (sq ft)	320.62	628.36	250.49
E.G. Slope (ft/ft)	0.002013	Area (sq ft)	320.62	628.36	250.49
Q Total (cfs)	19090.00	Flow (cfs)	1397.97	14799.19	2892.84

Top Width (ft)	154.06	Top Width (ft)	88.56	30.63	34.87
Vel Total (ft/s)	15.92	Avg. Vel. (ft/s)	4.36	23.55	11.55
Max Chl Dpth (ft)	23.05	Hydr. Depth (ft)	3.62	20.51	7.18
Conv. Total (cfs)	425481.3	Conv. (cfs)	31158.3	329847.0	64476.0
Length Wtd. (ft)	40.35	Wetted Per. (ft)	92.58	33.46	38.85
Min Ch El (ft)	294.85	Shear (lb/sq ft)	0.44	2.36	0.81
Alpha	1.78	Stream Power (lb/ft s)	1.90	55.59	9.36
Frctn Loss (ft)	0.13	Cum Volume (acre-ft)	138.34	161.83	18.76
C & E Loss (ft)	0.04	Cum SA (acres)	14.19	19.28	4.31

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Note: Program found supercritical flow starting at this cross section.

CROSS SECTION OUTPUT Profile #Q100

E.G. Elev (ft)	332.46	Element	Left OB	Channel	Right OB
Vel Head (ft)	13.04	Wt. n-Val.	0.035	0.020	0.020
W.S. Elev (ft)	319.42	Reach Len. (ft)	43.80	40.69	36.67
Crit W.S. (ft)	319.42	Flow Area (sq ft)	474.93	674.82	307.88
E.G. Slope (ft/ft)	0.003569	Area (sq ft)	474.93	674.82	307.88
Q Total (cfs)	30242.00	Flow (cfs)	3127.65	22193.50	4920.85
Top Width (ft)	180.95	Top Width (ft)	109.43	30.63	40.89
Vel Total (ft/s)	20.75	Avg. Vel. (ft/s)	6.59	32.89	15.98
Max Chl Dpth (ft)	24.57	Hydr. Depth (ft)	4.34	22.03	7.53
Conv. Total (cfs)	506207.6	Conv. (cfs)	52352.3	371487.3	82367.9
Length Wtd. (ft)	40.44	Wetted Per. (ft)	113.51	33.46	45.06
Min Ch El (ft)	294.85	Shear (lb/sq ft)	0.93	4.49	1.52
Alpha	1.95	Stream Power (lb/ft s)	6.14	147.80	24.34
Frctn Loss (ft)	0.06	Cum Volume (acre-ft)	143.44	214.48	31.57
C & E Loss (ft)	3.04	Cum SA (acres)	14.78	19.28	5.79

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

CROSS SECTION OUTPUT Profile #Q100HC

E.G. Elev (ft)	333.58	Element	Left OB	Channel	Right OB
Vel Head (ft)	4.11	Wt. n-Val.	0.035	0.020	0.021
W.S. Elev (ft)	329.47	Reach Len. (ft)	43.80	40.69	36.67
Crit W.S. (ft)	329.47	Flow Area (sq ft)	1960.19	982.83	3463.61
E.G. Slope (ft/ft)	0.001230	Area (sq ft)	1960.19	982.83	3463.61
Q Total (cfs)	76166.00	Flow (cfs)	14192.78	24377.44	37595.78
Top Width (ft)	622.80	Top Width (ft)	209.92	30.63	382.25
Vel Total (ft/s)	11.89	Avg. Vel. (ft/s)	7.24	24.80	10.85
Max Chl Dpth (ft)	34.62	Hydr. Depth (ft)	9.34	32.09	9.06
Conv. Total (cfs)	2172062.0	Conv. (cfs)	404742.4	695183.2	1072137.0
Length Wtd. (ft)	39.55	Wetted Per. (ft)	214.62	33.46	387.39

Min Ch El (ft)	294.85	Shear (lb/sq ft)	0.70	2.26	0.69
Alpha	1.87	Stream Power (lb/ft s)	5.08	55.93	7.45
Frctn Loss (ft)	0.05	Cum Volume (acre-ft)	233.33	379.16	113.33
C & E Loss (ft)	0.02	Cum SA (acres)	17.56	19.28	14.39

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

CROSS SECTION

RIVER: San Juan Creek
REACH: Upper RS: 3362.75*

INPUT
Description:
Station Elevation Data num= 144

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	341.28	28.85	340.33	68.43	339.06	84.05	338.63	116.91	337.7
142.79	336.78	209.88	335.39	248.2	335.11	294.07	334.77	351.31	334.61
370.52	334.56	457.52	335.07	524.17	335.35	564.24	335.33	605.32	335.06
608.04	335	638.36	334.35	643.26	334.2	658.8	333.6	675.6	332.86
687.1	332.35	699.49	331.31	713.54	330.24	718.53	329.47	724.89	328.79
727.88	328.43	730.23	328.18	736.68	327.46	759.16	326.55	769.38	325.82
778.91	325.08	785.32	324.59	791.22	324.13	792.11	324.03	792.93	323.95
796.7	323.55	801.03	322.89	805.93	322.24	813.73	320.59	818.58	319.49
822.14	318.57	825.62	318.09	837.7	316.8	841.56	316.34	845.12	315.89
848.17	315.69	851.62	315.48	867.41	314.74	869.6	314.66	875.85	314.41
896.01	313.5	899.67	313.32	906.86	312.9	911.21	312.47	920.09	311.78
920.35	311.76	926.07	311.33	927.26	311.15	929.8	310.78	930.98	310.61
931.89	310.3	932.09	310.2	934.97	308.75	939.57	306.16	948.81	299.89
952.31	297.64	956.74	295.54	957.96	295.31	959.33	295.04	962.36	294.53
964.54	294.9	970.79	296.65	973.08	297.36	979.13	300	989.63	306.48
995.21	309.85	995.55	310.05	998.35	311.74	1000.74	313.2	1002.14	313.86
1003.76	314.44	1008.36	316.12	1009.23	316.41	1012.21	316.97	1019.68	318.37
1022.6	318.82	1024.99	319.11	1046.72	319.03	1067.55	318.97	1070.6	318.93
1072.45	318.92	1082.2	319.43	1086.83	319.62	1111.73	320.55	1114.01	320.72
1115.78	320.81	1126.37	321.38	1136.86	321.39	1149.02	321.47	1163.8	321.47
1218.17	321.03	1224.1	320.99	1239.1	320.83	1249.33	320.79	1260.31	320.77
1281.87	320.7	1298.22	320.65	1302.32	320.78	1310.9	320.99	1313.72	321.07
1316.63	321.14	1317.25	321.2	1317.29	321.2	1323.32	321.65	1325.12	321.89
1329.73	322.51	1350.39	327.03	1353.13	327.65	1353.92	327.8	1355.27	328.06
1361.49	329.25	1371.71	331.22	1378.36	332.3	1387.21	333.74	1388.83	333.95
1391.56	334.23	1405.64	334.94	1410.38	335.16	1445.75	336.52	1448.51	336.59
1459.03	336.92	1483.29	337.53	1511.91	337.58	1526.74	337.57	1568.49	337.52
1582.09	337.67	1608	338.17	1617.29	338.84	1622.33	339.03	1632.88	339.77
1635.63	340.01	1643.22	341	1647.98	341.49	1648.16	341.52		

Manning's n Values num= 16

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	608.04	.029	675.6	.026	730.23	.026	778.91	.035
948.81	.02	979.13	.02	1218.17	.02	1260.31	.02	1281.87	.032
1310.9	.062	1313.72	.058	1361.49	.056	1378.36	.035	1648.16	.049

1648.16 .049

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
948.81	979.13	43.8 40.69	36.67	.1	.3

CROSS SECTION OUTPUT Profile #Q50

E.G. Elev (ft)	324.55	Element	Left OB	Channel	Right OB
Vel Head (ft)	9.60	Wt. n-Val.	0.035	0.020	0.020
W.S. Elev (ft)	314.95	Reach Len. (ft)	43.80	40.69	36.67
Crit W.S. (ft)	318.37	Flow Area (sq ft)	282.90	553.51	183.47
E.G. Slope (ft/ft)	0.003083	Area (sq ft)	282.90	553.51	183.47
Q Total (cfs)	19090.00	Flow (cfs)	1440.63	15122.93	2526.44
Top Width (ft)	142.26	Top Width (ft)	85.91	30.32	26.03
Vel Total (ft/s)	18.72	Avg. Vel. (ft/s)	5.09	27.32	13.77
Max Chl Dpth (ft)	20.42	Hydr. Depth (ft)	3.29	18.26	7.05
Conv. Total (cfs)	343816.3	Conv. (cfs)	25946.2	272368.3	45501.9
Length Wtd. (ft)	40.44	Wetted Per. (ft)	89.10	32.47	30.08
Min Ch El (ft)	294.53	Shear (lb/sq ft)	0.61	3.28	1.17
Alpha	1.77	Stream Power (lb/ft s)	3.11	89.63	16.16
Frctn Loss (ft)	0.10	Cum Volume (acre-ft)	138.04	161.28	18.58
C & E Loss (ft)	0.26	Cum SA (acres)	14.10	19.26	4.29

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 parabolic search method failed to converge on critical depth. The program will try the cross section slice/secant method to find critical depth.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.

CROSS SECTION OUTPUT Profile #Q100

E.G. Elev (ft)	332.12	Element	Left OB	Channel	Right OB
Vel Head (ft)	14.87	Wt. n-Val.	0.035	0.020	0.020
W.S. Elev (ft)	317.24	Reach Len. (ft)	43.80	40.69	36.67
Crit W.S. (ft)	323.57	Flow Area (sq ft)	520.53	623.05	251.34
E.G. Slope (ft/ft)	0.004403	Area (sq ft)	520.53	623.05	251.34
Q Total (cfs)	30242.00	Flow (cfs)	3931.60	22013.98	4296.42
Top Width (ft)	180.14	Top Width (ft)	115.27	30.32	34.55
Vel Total (ft/s)	21.68	Avg. Vel. (ft/s)	7.55	35.33	17.09
Max Chl Dpth (ft)	22.71	Hydr. Depth (ft)	4.52	20.55	7.28
Conv. Total (cfs)	455749.8	Conv. (cfs)	59249.6	331752.8	64747.4
Length Wtd. (ft)	40.59	Wetted Per. (ft)	118.57	32.47	38.93
Min Ch El (ft)	294.53	Shear (lb/sq ft)	1.21	5.27	1.77
Alpha	2.04	Stream Power (lb/ft s)	9.12	186.35	30.34
Frctn Loss (ft)	0.16	Cum Volume (acre-ft)	142.94	213.87	31.34
C & E Loss (ft)	0.18	Cum SA (acres)	14.67	19.26	5.76

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

CROSS SECTION OUTPUT Profile #Q100HC

E.G. Elev (ft)	333.28	Element	Left OB	Channel	Right OB
Vel Head (ft)	6.53	Wt. n-Val.	0.035	0.020	0.021
W.S. Elev (ft)	326.75	Reach Len. (ft)	43.80	40.69	36.67

Crit W.S. (ft)	328.53	Flow Area (sq ft)	1915.81	911.25	2589.43
E.G. Slope (ft/ft)	0.001999	Area (sq ft)	1915.81	911.25	2589.43
Q Total (cfs)	76166.00	Flow (cfs)	17756.39	27951.19	30458.42
Top Width (ft)	594.88	Top Width (ft)	194.58	30.32	369.98
Vel Total (ft/s)	14.06	Avg. Vel. (ft/s)	9.27	30.67	11.76
Max Chl Dpth (ft)	32.22	Hydr. Depth (ft)	9.85	30.05	7.00
Conv. Total (cfs)	1703578.0	Conv. (cfs)	397150.8	625174.4	681252.8
Length Wtd. (ft)	40.06	Wetted Per. (ft)	198.59	32.47	375.12
Min Ch El (ft)	294.53	Shear (lb/sq ft)	1.20	3.50	0.86
Alpha	2.13	Stream Power (lb/ft s)	11.16	107.41	10.13
Frctn Loss (ft)	0.06	Cum Volume (acre-ft)	231.38	378.27	110.78
C & E Loss (ft)	0.23	Cum SA (acres)	17.35	19.26	14.08

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

CROSS SECTION

RIVER: San Juan Creek
REACH: Upper RS: 3322.06*

INPUT
Description:
Station Elevation Data num= 144

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	341.28	28.46	340.25	67.51	338.85	82.92	338.35	115.33	337.25
140.87	336.27	207.05	335.18	244.85	334.9	290.1	334.57	346.57	334.55
365.52	334.55	451.34	335.01	517.09	335.31	556.63	335.19	597.14	334.69
599.83	334.63	629.74	333.96	634.58	333.8	649.91	333.17	666.48	332.36
677.82	331.8	690.05	330.46	703.91	329.1	708.83	328.04	715.1	327.13
718.05	326.65	720.37	326.29	726.73	325.29	748.91	324.17	759	323.45
768.39	322.75	774.72	322.28	780.53	321.83	781.42	321.72	782.22	321.62
785.94	321.13	790.22	320.44	795.05	319.72	802.74	317.66	807.52	316.26
811.04	315.16	814.47	314.71	826.39	313.71	830.19	313.36	833.71	313
836.72	312.81	840.13	312.62	855.7	311.85	857.86	311.79	864.03	311.53
883.91	310.67	887.52	310.5	894.62	310.08	898.9	309.72	907.66	309.22
907.92	309.2	913.57	308.9	914.74	308.71	917.25	308.3	918.41	308.1
919.31	307.84	919.51	307.76	922.35	306.58	926.88	304.28	936	298.93
939.92	296.77	944.89	295.15	946.26	294.93	947.79	294.69	951.19	294.2
953.12	294.54	958.64	295.95	960.66	296.58	966.02	298.74	976.57	305.63
982.19	309.25	982.54	309.47	985.35	311.28	987.75	312.86	989.16	313.5
990.79	314.1	995.42	315.88	996.29	316.19	999.29	316.54	1006.8	317.45
1009.74	317.74	1012.14	317.92	1034.01	317.79	1054.95	317.67	1058.03	317.63
1059.88	317.62	1069.69	318.36	1074.34	318.69	1099.39	320.24	1101.69	320.44
1103.47	320.56	1114.12	321.37	1124.67	321.36	1136.91	321.42	1151.77	321.44
1206.45	320.85	1212.42	320.78	1227.51	320.6	1237.8	320.57	1248.85	320.56
1270.53	320.52	1286.97	320.49	1291.1	320.69	1299.74	321.04	1302.57	321.15
1305.5	321.27	1306.12	321.35	1306.16	321.36	1312.22	322.05	1314.04	322.33
1318.68	323.05	1339.45	327.44	1342.21	328.05	1343	328.19	1344.37	328.41
1350.62	329.49	1360.9	331.27	1367.58	332.29	1376.49	333.65	1378.12	333.87
1380.86	334.12	1395.02	334.9	1399.8	335.16	1435.37	336.57	1438.15	336.65
1448.73	337.07	1473.13	337.95	1501.92	337.99	1516.83	337.93	1558.83	337.79
1572.52	337.86	1598.57	338.12	1607.92	338.96	1612.99	339.15	1623.6	339.77
1626.37	339.97	1634	341	1638.79	341.45	1638.97	341.5		

Manning's n Values num= 16

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	599.83	.026	666.48	.029	720.37	.029	768.39	.035
936	.02	966.02	.02	1206.45	.02	1248.85	.02	1270.53	.038
1299.74	.058	1302.57	.062	1350.62	.049	1367.58	.035	1638.97	.056
1638.97	.056								

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
936	966.02	43.8	40.69	36.67	.1	.3

CROSS SECTION OUTPUT Profile #Q50

			Left OB	Channel	Right OB
E.G. Elev (ft)	324.22	Element			
Vel Head (ft)	11.56	Wt. n-Val.	0.035	0.020	0.020
W.S. Elev (ft)	312.66	Reach Len. (ft)	43.80	40.69	36.67
Crit W.S. (ft)	316.58	Flow Area (sq ft)	305.03	499.25	148.77
E.G. Slope (ft/ft)	0.004142	Area (sq ft)	305.03	499.25	148.77
Q Total (cfs)	19090.00	Flow (cfs)	1765.16	15022.03	2302.81
Top Width (ft)	147.95	Top Width (ft)	96.51	30.02	21.42
Vel Total (ft/s)	20.03	Avg. Vel. (ft/s)	5.79	30.09	15.48
Max Chl Dpth (ft)	18.46	Hydr. Depth (ft)	3.16	16.63	6.95
Conv. Total (cfs)	296622.3	Conv. (cfs)	27427.2	233413.8	35781.3
Length Wtd. (ft)	40.56	Wetted Per. (ft)	98.96	31.63	25.54
Min Ch El (ft)	294.20	Shear (lb/sq ft)	0.80	4.08	1.51
Alpha	1.86	Stream Power (lb/ft s)	4.61	122.82	23.31
Frctn Loss (ft)	0.14	Cum Volume (acre-ft)	137.74	160.79	18.44
C & E Loss (ft)	0.20	Cum SA (acres)	14.01	19.23	4.27

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

CROSS SECTION OUTPUT Profile #Q100

			Left OB	Channel	Right OB
E.G. Elev (ft)	331.72	Element			
Vel Head (ft)	16.75	Wt. n-Val.	0.035	0.020	0.020
W.S. Elev (ft)	314.97	Reach Len. (ft)	43.80	40.69	36.67
Crit W.S. (ft)	320.76	Flow Area (sq ft)	562.23	568.81	204.53
E.G. Slope (ft/ft)	0.005508	Area (sq ft)	562.23	568.81	204.53
Q Total (cfs)	30242.00	Flow (cfs)	4798.87	21529.28	3913.86
Top Width (ft)	180.59	Top Width (ft)	123.53	30.02	27.04
Vel Total (ft/s)	22.64	Avg. Vel. (ft/s)	8.54	37.85	19.14
Max Chl Dpth (ft)	20.77	Hydr. Depth (ft)	4.55	18.95	7.56
Conv. Total (cfs)	407503.1	Conv. (cfs)	64663.5	290101.4	52738.2
Length Wtd. (ft)	40.75	Wetted Per. (ft)	126.09	31.63	31.63
Min Ch El (ft)	294.20	Shear (lb/sq ft)	1.53	6.18	2.22
Alpha	2.10	Stream Power (lb/ft s)	13.09	234.06	42.54
Frctn Loss (ft)	0.20	Cum Volume (acre-ft)	142.39	213.31	31.15
C & E Loss (ft)	0.19	Cum SA (acres)	14.55	19.23	5.73

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

CROSS SECTION OUTPUT Profile #Q100HC

			Left OB	Channel	Right OB
E.G. Elev (ft)	333.04	Element			
Vel Head (ft)	8.11	Wt. n-Val.	0.035	0.020	0.021
W.S. Elev (ft)	324.93	Reach Len. (ft)	43.80	40.69	36.67
Crit W.S. (ft)	327.44	Flow Area (sq ft)	2051.47	867.82	2075.53

E.G. Slope (ft/ft)	0.002512	Area (sq ft)	2051.47	867.82	2075.53
Q Total (cfs)	76166.00	Flow (cfs)	22327.68	29397.02	24441.31
Top Width (ft)	593.79	Top Width (ft)	202.20	30.02	361.57
Vel Total (ft/s)	15.25	Avg. Vel. (ft/s)	10.88	33.87	11.78
Max Chl Dpth (ft)	30.73	Hydr. Depth (ft)	10.15	28.91	5.74
Conv. Total (cfs)	1519743.0	Conv. (cfs)	445505.0	586559.8	487678.3
Length Wtd. (ft)	40.58	Wetted Per. (ft)	205.67	31.63	366.95
Min Ch El (ft)	294.20	Shear (lb/sq ft)	1.56	4.30	0.89
Alpha	2.25	Stream Power (lb/ft s)	17.02	145.76	10.44
Frctn Loss (ft)	0.09	Cum Volume (acre-ft)	229.39	377.44	108.82
C & E Loss (ft)	0.16	Cum SA (acres)	17.16	19.23	13.77

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

CROSS SECTION

RIVER: San Juan Creek
REACH: Upper RS: 3281.37*

INPUT
Description:
Station Elevation Data num= 144

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	341.29	28.07	340.17	66.58	338.65	81.78	338.08	113.76	336.81
138.94	335.75	204.22	334.97	241.5	334.7	286.13	334.38	341.83	334.49
360.52	334.53	445.16	334.96	510.02	335.26	549.01	335.05	588.97	334.33
591.62	334.27	621.12	333.58	625.89	333.39	641.01	332.75	657.36	331.86
668.55	331.25	680.6	329.61	694.27	327.97	699.13	326.61	705.32	325.47
708.22	324.87	710.51	324.4	716.79	323.12	738.66	321.8	748.61	321.09
757.88	320.42	764.11	319.96	769.85	319.54	770.72	319.4	771.52	319.29
775.18	318.72	779.4	317.99	784.17	317.21	791.76	314.73	796.47	313.04
799.94	311.76	803.33	311.34	815.08	310.63	818.83	310.39	822.3	310.11
825.27	309.94	828.63	309.75	843.99	308.97	846.12	308.91	852.2	308.66
871.81	307.84	875.38	307.69	882.38	307.27	886.6	306.96	895.24	306.66
895.5	306.65	901.06	306.47	902.22	306.26	904.7	305.81	905.84	305.6
906.72	305.39	906.92	305.33	909.72	304.41	914.2	302.39	923.19	297.97
927.54	295.89	933.04	294.75	934.55	294.56	936.25	294.34	940.02	293.88
941.7	294.18	946.5	295.25	948.25	295.79	952.9	297.47	963.52	304.78
969.17	308.65	969.52	308.89	972.35	310.83	974.77	312.52	976.18	313.13
977.82	313.77	982.47	315.65	983.36	315.96	986.37	316.12	993.93	316.53
996.88	316.66	999.3	316.74	1021.29	316.55	1042.36	316.37	1045.45	316.34
1047.32	316.32	1057.18	317.3	1061.86	317.75	1087.05	319.92	1089.37	320.15
1091.15	320.31	1101.87	321.36	1112.48	321.32	1124.79	321.38	1139.74	321.42
1194.74	320.66	1200.74	320.58	1215.92	320.36	1226.27	320.36	1237.38	320.35
1259.19	320.34	1275.73	320.33	1279.88	320.61	1288.57	321.08	1291.42	321.24
1294.36	321.39	1294.99	321.51	1295.03	321.52	1301.13	322.46	1302.95	322.77
1307.62	323.59	1328.52	327.84	1331.29	328.45	1332.09	328.57	1333.46	328.77
1339.75	329.73	1350.08	331.32	1356.81	332.28	1365.77	333.57	1367.41	333.79
1370.17	334	1384.41	334.87	1389.21	335.16	1424.99	336.61	1427.79	336.72
1438.43	337.23	1462.98	338.37	1491.93	338.39	1506.93	338.3	1549.17	338.06
1562.94	338.04	1589.15	338.07	1598.55	339.07	1603.64	339.26	1614.32	339.78
1617.1	339.92	1624.78	341.01	1629.6	341.42	1629.78	341.47		

Manning's n Values num= 16

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	591.62	.023	657.36	.032	710.51	.032	757.88	.035

923.19	.02	952.9	.02	1194.74	.02	1237.38	.02	1259.19	.044
1288.57	.054	1291.42	.066	1339.75	.042	1356.81	.035	1629.78	.063
1629.78	.063								

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
923.19	952.9	43.8	40.69	36.67	.1 .3

CROSS SECTION OUTPUT Profile #Q50

E.G. Elev (ft)	323.84	Element	Left OB	Channel	Right OB
Vel Head (ft)	13.38	Wt. n-Val.	0.035	0.020	0.020
W.S. Elev (ft)	310.46	Reach Len. (ft)	43.80	40.69	36.67
Crit W.S. (ft)	314.86	Flow Area (sq ft)	342.78	448.47	122.68
E.G. Slope (ft/ft)	0.005483	Area (sq ft)	342.78	448.47	122.68
Q Total (cfs)	19090.00	Flow (cfs)	2337.78	14688.38	2063.83
Top Width (ft)	154.07	Top Width (ft)	105.45	29.71	18.91
Vel Total (ft/s)	20.89	Avg. Vel. (ft/s)	6.82	32.75	16.82
Max Chl Dpth (ft)	16.58	Hydr. Depth (ft)	3.25	15.09	6.49
Conv. Total (cfs)	257812.6	Conv. (cfs)	31572.0	198368.3	27872.3
Length Wtd. (ft)	41.58	Wetted Per. (ft)	107.27	30.87	22.94
Min Ch El (ft)	293.88	Shear (lb/sq ft)	1.09	4.97	1.83
Alpha	1.97	Stream Power (lb/ft s)	7.46	162.85	30.79
Frctn Loss (ft)	0.19	Cum Volume (acre-ft)	137.42	160.35	18.33
C & E Loss (ft)	0.18	Cum SA (acres)	13.91	19.20	4.25

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

CROSS SECTION OUTPUT Profile #Q100

E.G. Elev (ft)	331.28	Element	Left OB	Channel	Right OB
Vel Head (ft)	18.68	Wt. n-Val.	0.035	0.020	0.020
W.S. Elev (ft)	312.59	Reach Len. (ft)	43.80	40.69	36.67
Crit W.S. (ft)	319.26	Flow Area (sq ft)	596.65	511.87	166.32
E.G. Slope (ft/ft)	0.007060	Area (sq ft)	596.65	511.87	166.32
Q Total (cfs)	30242.00	Flow (cfs)	5953.38	20776.73	3511.89
Top Width (ft)	177.26	Top Width (ft)	125.51	29.71	22.04
Vel Total (ft/s)	23.72	Avg. Vel. (ft/s)	9.98	40.59	21.12
Max Chl Dpth (ft)	18.71	Hydr. Depth (ft)	4.75	17.23	7.55
Conv. Total (cfs)	359930.7	Conv. (cfs)	70855.2	247278.1	41797.4
Length Wtd. (ft)	41.48	Wetted Per. (ft)	127.54	30.87	26.73
Min Ch El (ft)	293.88	Shear (lb/sq ft)	2.06	7.31	2.74
Alpha	2.14	Stream Power (lb/ft s)	20.57	296.61	57.90
Frctn Loss (ft)	0.25	Cum Volume (acre-ft)	141.81	212.81	30.99
C & E Loss (ft)	0.19	Cum SA (acres)	14.42	19.20	5.71

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 parabolic search method failed to converge on critical depth. The program will try the cross section slice/secant method to find critical depth.

CROSS SECTION OUTPUT Profile #Q100HC

E.G. Elev (ft)	332.78	Element	Left OB	Channel	Right OB
Vel Head (ft)	9.57	Wt. n-Val.	0.035	0.020	0.020
W.S. Elev (ft)	323.21	Reach Len. (ft)	43.80	40.69	36.67
Crit W.S. (ft)	326.21	Flow Area (sq ft)	2204.60	827.23	1613.37

E.G. Slope (ft/ft)	0.003012	Area (sq ft)	2204.60	827.23	1613.37
Q Total (cfs)	76166.00	Flow (cfs)	27505.19	30202.19	18458.61
Top Width (ft)	589.09	Top Width (ft)	206.83	29.71	352.55
Vel Total (ft/s)	16.40	Avg. Vel. (ft/s)	12.48	36.51	11.44
Max Chl Dpth (ft)	29.33	Hydr. Depth (ft)	10.66	27.84	4.58
Conv. Total (cfs)	1387880.0	Conv. (cfs)	501193.6	550337.6	336348.8
Length Wtd. (ft)	40.65	Wetted Per. (ft)	209.95	30.87	358.33
Min Ch El (ft)	293.88	Shear (lb/sq ft)	1.97	5.04	0.85
Alpha	2.29	Stream Power (lb/ft s)	24.63	183.94	9.69
Frctn Loss (ft)	0.11	Cum Volume (acre-ft)	227.25	376.65	107.26
C & E Loss (ft)	0.15	Cum SA (acres)	16.95	19.20	13.47

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

RIVER: San Juan Creek
REACH: Upper RS: 3240.694

INPUT
Description:
Station Elevation Data num= 77

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	341.3	80.65	337.8	137.01	335.24	238.15	334.49	282.16	334.18
502.94	335.21	541.39	334.91	583.41	333.9	612.5	333.2	632.12	332.32
648.24	331.36	659.27	330.7	671.16	328.76	684.64	326.83	689.43	325.18
695.53	323.81	706.84	320.95	753.51	317.65	759.17	317.24	760.81	316.96
773.29	314.69	780.77	311.8	788.84	308.35	792.18	307.96	807.47	307.41
832.28	306.08	834.38	306.03	863.23	304.87	874.3	304.2	888.56	304.04
889.7	303.81	894.34	302.89	897.1	302.24	910.38	297.01	915.15	295.02
922.85	294.18	928.85	293.56	934.35	294.55	939.79	296.2	956.15	308.05
959.35	310.37	961.78	312.18	964.85	313.43	969.53	315.41	970.42	315.73
973.45	315.69	1034.75	315.02	1049.38	316.81	1078.84	320.06	1089.62	321.35
1100.29	321.28	1127.71	321.39	1183.03	320.48	1204.33	320.13	1247.85	320.16
1264.49	320.17	1268.66	320.52	1280.27	321.32	1283.23	321.52	1283.86	321.67
1291.87	323.21	1317.58	328.25	1320.37	328.85	1322.55	329.12	1328.88	329.97
1356.7	333.71	1378.63	335.16	1417.43	336.78	1452.82	338.79	1481.94	338.79
1497.03	338.67	1579.72	338.02	1589.18	339.19	1607.84	339.88	1615.56	341.01
1620.41	341.38	1620.59	341.44						

Manning's n Values num= 8

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	583.41	.02	648.24	.035	1183.03	.02	1247.85	.05
1280.27	.07	1328.88	.035	1620.59	.07				

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
910.38	939.79	42.89	42.56	42.65	.1	.3

CROSS SECTION OUTPUT Profile #Q50

E.G. Elev (ft)	317.58	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.32	Wt. n-Val.	0.035	0.035	0.035
W.S. Elev (ft)	316.26	Reach Len. (ft)	42.89	42.56	42.65
Crit W.S. (ft)	311.57	Flow Area (sq ft)	1442.01	633.36	348.92
E.G. Slope (ft/ft)	0.001374	Area (sq ft)	1442.01	633.36	348.92
Q Total (cfs)	19090.00	Flow (cfs)	10334.71	7577.28	1178.00

Top Width (ft)	280.19	Top Width (ft)	145.71	29.41	105.07
Vel Total (ft/s)	7.87	Avg. Vel. (ft/s)	7.17	11.96	3.38
Max Chl Dpth (ft)	22.70	Hydr. Depth (ft)	9.90	21.54	3.32
Conv. Total (cfs)	514967.3	Conv. (cfs)	278786.8	204402.9	31777.5
Length Wtd. (ft)	42.71	Wetted Per. (ft)	148.39	30.22	111.05
Min Ch El (ft)	293.56	Shear (lb/sq ft)	0.83	1.80	0.27
Alpha	1.38	Stream Power (lb/ft s)	5.98	21.51	0.91
Frctn Loss (ft)	0.06	Cum Volume (acre-ft)	136.52	159.84	18.13
C & E Loss (ft)	0.23	Cum SA (acres)	13.78	19.17	4.20

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

CROSS SECTION OUTPUT Profile #Q100

E.G. Elev (ft)	321.94	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.34	Wt. n-Val.	0.035	0.035	0.035
W.S. Elev (ft)	320.61	Reach Len. (ft)	42.89	42.56	42.65
Crit W.S. (ft)	314.28	Flow Area (sq ft)	2176.51	761.25	924.88
E.G. Slope (ft/ft)	0.001254	Area (sq ft)	2176.51	761.25	924.88
Q Total (cfs)	30242.00	Flow (cfs)	15982.76	9832.96	4426.28
Top Width (ft)	466.24	Top Width (ft)	198.68	29.41	238.16
Vel Total (ft/s)	7.83	Avg. Vel. (ft/s)	7.34	12.92	4.79
Max Chl Dpth (ft)	27.05	Hydr. Depth (ft)	10.96	25.88	3.88
Conv. Total (cfs)	854169.1	Conv. (cfs)	451424.6	277726.7	125017.9
Length Wtd. (ft)	42.72	Wetted Per. (ft)	201.56	30.22	244.40
Min Ch El (ft)	293.56	Shear (lb/sq ft)	0.85	1.97	0.30
Alpha	1.40	Stream Power (lb/ft s)	6.21	25.46	1.42
Frctn Loss (ft)	0.06	Cum Volume (acre-ft)	140.42	212.22	30.53
C & E Loss (ft)	0.41	Cum SA (acres)	14.26	19.17	5.60

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

CROSS SECTION OUTPUT Profile #Q100HC

E.G. Elev (ft)	328.92	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.99	Wt. n-Val.	0.035	0.035	0.033
W.S. Elev (ft)	326.93	Reach Len. (ft)	42.89	42.56	42.65
Crit W.S. (ft)	323.76	Flow Area (sq ft)	3533.78	947.26	3117.01
E.G. Slope (ft/ft)	0.001570	Area (sq ft)	3533.78	947.26	3117.01
Q Total (cfs)	76166.00	Flow (cfs)	36724.70	15841.82	23599.49
Top Width (ft)	626.91	Top Width (ft)	226.44	29.41	371.06
Vel Total (ft/s)	10.02	Avg. Vel. (ft/s)	10.39	16.72	7.57
Max Chl Dpth (ft)	33.37	Hydr. Depth (ft)	15.61	32.21	8.40
Conv. Total (cfs)	1922243.0	Conv. (cfs)	926841.2	399808.7	595593.1
Length Wtd. (ft)	42.73	Wetted Per. (ft)	230.14	30.22	377.91
Min Ch El (ft)	293.56	Shear (lb/sq ft)	1.51	3.07	0.81
Alpha	1.27	Stream Power (lb/ft s)	15.64	51.38	6.12
Frctn Loss (ft)	0.06	Cum Volume (acre-ft)	224.36	375.82	105.27
C & E Loss (ft)	0.23	Cum SA (acres)	16.73	19.17	13.16

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

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

CROSS SECTION

RIVER: San Juan Creek
REACH: Upper RS: 3198.13*

INPUT
Description:
Station Elevation Data num= 148

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	339.64	76.79	336.9	130.46	334.9	144.36	334.8	175.2	334.57
178.25	334.56	191.81	334.45	226.76	334.17	268.66	333.85	310.99	333.91
352.26	333.83	354.14	333.84	390.43	334	409.97	333.92	419.72	333.84
447.01	333.6	466.04	332.64	478.88	331.93	481.17	331.78	500.6	331.15
508.18	331.03	515.49	330.97	532.6	330.6	542.46	330.43	555.5	330.07
562.55	329.88	580.16	329.31	583.2	329.15	584.58	329.05	594.16	328.29
600.9	327.2	601.88	327	604.75	326.38	609.6	325.8	617.23	324.91
627.73	323.68	630.49	323.13	634.08	322.56	639.05	321.79	649.48	320.33
651.89	320.06	652.56	319.87	656.45	318.9	661.52	318.1	662.25	317.99
673.02	316.06	673.89	316.02	675.66	315.95	677.65	316.04	692.01	316.47
695.89	316.54	700.15	316.37	717.46	315.49	722.85	315.21	724.41	315.01
730.94	314.1	736.29	313.32	743.42	311.12	751.1	308.51	754.28	308.21
768.84	307.74	772.99	307.55	775.37	307.41	792.46	306.42	794.46	306.35
818.62	305.2	821.93	305	832.47	304.18	833.2	304.15	843.37	303.73
846.05	303.62	847.13	303.41	851.55	302.58	852.57	302.35	854.18	301.85
858.41	300.01	866.83	296.43	871.57	294.27	876.43	293.2	878.83	293
879.23	292.96	885.2	292.38	889.46	293.59	890.61	293.89	895.95	295.81
910.05	305.67	910.32	305.86	913.13	307.81	915.26	309.33	917.96	310.48
922.07	312.27	922.85	312.57	925.51	312.75	928.13	312.92	939.3	313.39
940.48	313.44	947.48	313.66	979.35	313.85	992.2	315.4	1001.41	316.4
1011.3	317.56	1018.08	318.31	1019.53	318.48	1027.55	319.35	1036.92	319.35
1061	319.58	1109.59	319.18	1127.38	319.04	1128.3	319.03	1166.53	319.13
1181.14	319.17	1184.81	319.44	1185.77	319.49	1195	320.11	1197.6	320.29
1198.16	320.4	1205.19	321.62	1218.16	323.9	1227.09	325.41	1227.77	325.53
1230.23	325.98	1232.14	326.19	1237.7	326.84	1262.14	329.69	1281.4	330.82
1286.94	331.03	1300.94	331.73	1314.06	332.2	1315.48	332.26	1322.39	332.61
1346.56	333.85	1372.14	333.91	1385.39	333.86	1406.76	333.77	1410.34	333.76
1411.16	333.77	1432.96	334.14	1433.03	334.14	1436.74	334.4	1442.64	334.8
1458.02	335.75	1464.37	336.86	1466.33	337.16	1472	337.63	1482.72	338.22
1489.5	339.23	1493.76	339.61	1493.92	339.66				

Manning's n Values num= 16

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	354.14	.031	419.72	.024	555.5	.024	617.23	.035
866.83	.02	895.95	.02	1109.59	.02	1166.53	.043	1195	.058
1227.09	.02	1237.7	.031	1322.39	.027	1436.74	.046	1493.92	.061
1493.92	.061								

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
866.83	895.95	42.89	42.56	42.65	.1	.3

CROSS SECTION OUTPUT Profile #Q50

			Left OB	Channel	Right OB
E.G. Elev (ft)	317.29	Element			
Vel Head (ft)	3.66	Wt. n-Val.	0.035	0.020	0.020
W.S. Elev (ft)	313.63	Reach Len. (ft)	42.89	42.56	42.65

Crit W.S. (ft)		Flow Area (sq ft)	1024.73	577.20	244.98
E.G. Slope (ft/ft)	0.001332	Area (sq ft)	1024.73	577.20	244.98
Q Total (cfs)	19090.00	Flow (cfs)	6135.93	11169.15	1784.93
Top Width (ft)	212.49	Top Width (ft)	132.69	29.12	50.68
Vel Total (ft/s)	10.34	Avg. Vel. (ft/s)	5.99	19.35	7.29
Max Chl Dpth (ft)	21.25	Hydr. Depth (ft)	7.72	19.82	4.83
Conv. Total (cfs)	522970.0	Conv. (cfs)	168093.5	305978.4	48898.0
Length Wtd. (ft)	42.67	Wetted Per. (ft)	134.92	30.29	55.63
Min Ch El (ft)	292.38	Shear (lb/sq ft)	0.63	1.59	0.37
Alpha	2.20	Stream Power (lb/ft s)	3.78	30.68	2.67
Frctn Loss (ft)	0.06	Cum Volume (acre-ft)	135.31	159.25	17.84
C & E Loss (ft)	0.05	Cum SA (acres)	13.64	19.14	4.12

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

CROSS SECTION OUTPUT Profile #Q100

E.G. Elev (ft)	321.47	Element	Left OB	Channel	Right OB
Vel Head (ft)	5.42	Wt. n-Val.	0.035	0.020	0.020
W.S. Elev (ft)	316.05	Reach Len. (ft)	42.89	42.56	42.65
Crit W.S. (ft)	316.05	Flow Area (sq ft)	1371.05	647.64	463.11
E.G. Slope (ft/ft)	0.001852	Area (sq ft)	1371.05	647.64	463.11
Q Total (cfs)	30242.00	Flow (cfs)	10365.61	15952.35	3924.04
Top Width (ft)	296.66	Top Width (ft)	165.29	29.12	102.26
Vel Total (ft/s)	12.19	Avg. Vel. (ft/s)	7.56	24.63	8.47
Max Chl Dpth (ft)	23.67	Hydr. Depth (ft)	8.29	22.24	4.53
Conv. Total (cfs)	702771.9	Conv. (cfs)	240879.0	370705.1	91187.8
Length Wtd. (ft)	42.68	Wetted Per. (ft)	167.66	30.29	107.34
Min Ch El (ft)	292.38	Shear (lb/sq ft)	0.95	2.47	0.50
Alpha	2.35	Stream Power (lb/ft s)	7.15	60.89	4.23
Frctn Loss (ft)	0.07	Cum Volume (acre-ft)	138.67	211.53	29.85
C & E Loss (ft)	0.46	Cum SA (acres)	14.08	19.14	5.44

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: 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: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water 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)	328.62	Element	Left OB	Channel	Right OB
Vel Head (ft)	4.33	Wt. n-Val.	0.035	0.020	0.021
W.S. Elev (ft)	324.29	Reach Len. (ft)	42.89	42.56	42.65
Crit W.S. (ft)	324.29	Flow Area (sq ft)	3158.34	887.60	2392.11
E.G. Slope (ft/ft)	0.001397	Area (sq ft)	3158.34	887.60	2392.11
Q Total (cfs)	76166.00	Flow (cfs)	27373.11	23429.40	25363.48
Top Width (ft)	597.98	Top Width (ft)	244.33	29.12	324.53
Vel Total (ft/s)	11.83	Avg. Vel. (ft/s)	8.67	26.40	10.60
Max Chl Dpth (ft)	31.91	Hydr. Depth (ft)	12.93	30.48	7.37
Conv. Total (cfs)	2037861.0	Conv. (cfs)	732382.0	626866.0	678613.2
Length Wtd. (ft)	42.71	Wetted Per. (ft)	247.42	30.29	330.19
Min Ch El (ft)	292.38	Shear (lb/sq ft)	1.11	2.56	0.63

Alpha	1.99	Stream Power (lb/ft s)	9.65	67.47	6.70
Frctn Loss (ft)	0.06	Cum Volume (acre-ft)	221.07	374.93	102.58
C & E Loss (ft)	0.01	Cum SA (acres)	16.50	19.14	12.82

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

CROSS SECTION

RIVER: San Juan Creek
REACH: Upper RS: 3155.57*

INPUT
Description:
Station Elevation Data num= 148

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	337.98	72.93	336	123.9	334.56	137.11	334.46	166.4	334.25
169.29	334.24	182.18	334.15	215.36	333.86	255.16	333.52	295.36	333.43
334.56	333.07	336.35	333.07	370.82	333.22	389.37	332.96	398.63	332.75
424.55	332.15	442.62	330.13	454.82	328.65	456.99	328.37	475.45	327.26
482.65	327.09	489.59	327.03	505.84	326.72	515.2	326.62	527.59	326.25
534.28	326.04	551.01	325.34	553.89	325.09	555.21	324.97	564.31	323.89
570.71	322.03	571.64	321.68	574.36	320.62	578.97	319.77	586.21	318.46
596.19	316.66	598.81	316.03	602.22	315.51	606.94	314.82	616.85	313.48
619.13	313.28	619.77	313.16	623.46	312.61	628.28	312.22	628.98	312.16
639.21	311.16	640.03	311.16	641.71	311.14	643.6	311.47	657.24	313.4
660.92	313.83	664.97	313.8	681.41	313.33	686.53	313.18	688.01	313.05
694.21	312.49	699.3	311.94	706.06	310.45	713.36	308.67	716.38	308.45
730.21	308.07	734.15	307.93	736.41	307.78	752.64	306.76	754.54	306.67
777.49	305.39	780.63	305.13	790.64	304.15	791.33	304.11	800.99	303.39
803.54	303.2	804.57	303.01	808.76	302.26	809.73	302.07	811.26	301.46
815.27	299.53	823.27	295.84	827.99	293.52	832.82	291.9	835.22	291.77
835.62	291.73	841.56	291.2	845.74	292.84	846.86	293.24	852.1	295.42
864.25	303.52	864.48	303.67	866.91	305.26	868.74	306.49	871.07	307.52
874.61	309.14	875.28	309.42	877.57	309.8	879.83	310.18	889.46	311.26
890.47	311.37	896.5	311.9	923.96	312.69	935.03	313.98	942.96	314.84
951.48	315.91	957.32	316.55	958.57	316.7	965.48	317.34	973.55	317.42
994.3	317.76	1036.16	317.89	1051.48	317.93	1052.28	317.93	1085.21	318.1
1097.8	318.16	1100.95	318.35	1101.78	318.39	1109.74	318.91	1111.98	319.05
1112.45	319.14	1118.52	320.02	1129.69	321.69	1137.38	322.72	1137.97	322.8
1140.08	323.11	1141.73	323.26	1146.52	323.71	1167.57	325.68	1184.16	326.49
1188.94	326.64	1201	327.36	1212.3	327.7	1213.52	327.74	1219.48	328
1240.3	328.91	1262.34	329.04	1273.76	329.05	1292.16	329.06	1295.25	329.07
1295.95	329.1	1314.73	330.04	1314.79	330.04	1317.99	330.58	1323.07	331.44
1336.32	333.48	1341.79	334.8	1343.48	335.14	1348.37	335.83	1357.6	336.57
1363.44	337.45	1367.11	337.84	1367.25	337.88				

Manning's n Values num= 16

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	336.35	.027	398.63	.027	527.59	.027	586.21	.035
823.27	.02	852.1	.02	1036.16	.02	1085.21	.035	1109.74	.045
1137.38	.02	1146.52	.027	1219.48	.035	1317.99	.043	1367.25	.053

1367.25 .053

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
823.27	852.1	42.89	42.56	42.65	.1	.3

CROSS SECTION OUTPUT Profile #Q50

E.G. Elev (ft)	317.18	Element	Left OB	Channel	Right OB
Vel Head (ft)	4.17	Wt. n-Val.	0.035	0.020	0.020
W.S. Elev (ft)	313.01	Reach Len. (ft)	42.89	42.56	42.65
Crit W.S. (ft)	313.01	Flow Area (sq ft)	935.61	579.87	300.34
E.G. Slope (ft/ft)	0.001473	Area (sq ft)	935.61	579.87	300.34
Q Total (cfs)	19090.00	Flow (cfs)	5216.36	11783.52	2090.11
Top Width (ft)	271.98	Top Width (ft)	168.54	28.83	74.61
Vel Total (ft/s)	10.51	Avg. Vel. (ft/s)	5.58	20.32	6.96
Max Chl Dpth (ft)	21.81	Hydr. Depth (ft)	5.55	20.11	4.03
Conv. Total (cfs)	497423.5	Conv. (cfs)	135921.5	307040.4	54461.5
Length Wtd. (ft)	42.65	Wetted Per. (ft)	170.86	30.48	78.77
Min Ch El (ft)	291.20	Shear (lb/sq ft)	0.50	1.75	0.35
Alpha	2.43	Stream Power (lb/ft s)	2.81	35.55	2.44
Frctn Loss (ft)	0.05	Cum Volume (acre-ft)	134.34	158.68	17.57
C & E Loss (ft)	0.35	Cum SA (acres)	13.49	19.12	4.06

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: 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 OUTPUT Profile #Q100

E.G. Elev (ft)	321.31	Element	Left OB	Channel	Right OB
Vel Head (ft)	6.20	Wt. n-Val.	0.035	0.020	0.020
W.S. Elev (ft)	315.11	Reach Len. (ft)	42.89	42.56	42.65
Crit W.S. (ft)	316.68	Flow Area (sq ft)	1360.45	640.30	475.94
E.G. Slope (ft/ft)	0.002111	Area (sq ft)	1360.45	640.30	475.94
Q Total (cfs)	30242.00	Flow (cfs)	8918.11	16641.11	4682.78
Top Width (ft)	340.10	Top Width (ft)	218.29	28.83	92.98
Vel Total (ft/s)	12.21	Avg. Vel. (ft/s)	6.56	25.99	9.84
Max Chl Dpth (ft)	23.91	Hydr. Depth (ft)	6.23	22.21	5.12
Conv. Total (cfs)	658232.3	Conv. (cfs)	194107.1	362202.0	101923.1
Length Wtd. (ft)	42.67	Wetted Per. (ft)	220.82	30.48	97.26
Min Ch El (ft)	291.20	Shear (lb/sq ft)	0.81	2.77	0.64
Alpha	2.68	Stream Power (lb/ft s)	5.32	71.95	6.35
Frctn Loss (ft)	0.08	Cum Volume (acre-ft)	137.32	210.90	29.39
C & E Loss (ft)	0.08	Cum SA (acres)	13.89	19.12	5.34

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

CROSS SECTION OUTPUT Profile #Q100HC

E.G. Elev (ft)	328.26	Element	Left OB	Channel	Right OB
Vel Head (ft)	7.23	Wt. n-Val.	0.035	0.020	0.020
W.S. Elev (ft)	321.03	Reach Len. (ft)	42.89	42.56	42.65
Crit W.S. (ft)	323.05	Flow Area (sq ft)	2753.23	811.21	1593.29
E.G. Slope (ft/ft)	0.002468	Area (sq ft)	2753.23	811.21	1593.29
Q Total (cfs)	76166.00	Flow (cfs)	29283.24	26689.78	20192.98
Top Width (ft)	552.01	Top Width (ft)	249.97	28.83	273.21
Vel Total (ft/s)	14.77	Avg. Vel. (ft/s)	10.64	32.90	12.67
Max Chl Dpth (ft)	29.83	Hydr. Depth (ft)	11.01	28.14	5.83
Conv. Total (cfs)	1533260.0	Conv. (cfs)	589486.4	537278.8	406494.9
Length Wtd. (ft)	42.71	Wetted Per. (ft)	253.08	30.48	277.79
Min Ch El (ft)	291.20	Shear (lb/sq ft)	1.68	4.10	0.88
Alpha	2.13	Stream Power (lb/ft s)	17.83	134.91	11.20
Frctn Loss (ft)	0.08	Cum Volume (acre-ft)	218.16	374.10	100.62
C & E Loss (ft)	0.29	Cum SA (acres)	16.26	19.12	12.53

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

CROSS SECTION

RIVER: San Juan Creek
REACH: Upper RS: 3113.01*

INPUT
Description:
Station Elevation Data num= 148

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	336.33	69.07	335.1	117.35	334.22	129.85	334.13	157.59	333.93
160.34	333.93	172.54	333.84	203.97	333.54	241.66	333.18	279.74	332.96
316.86	332.31	318.55	332.31	351.2	332.44	368.77	332.01	377.54	331.67
402.09	330.7	419.21	327.63	430.75	325.36	432.82	324.95	450.29	323.38
457.11	323.16	463.69	323.08	479.08	322.84	487.95	322.82	499.67	322.42
506.02	322.2	521.86	321.37	524.59	321.04	525.83	320.88	534.45	319.49
540.51	316.87	541.39	316.36	543.98	314.86	548.34	313.73	555.2	312.01
564.65	309.64	567.13	308.94	570.36	308.45	574.83	307.84	584.21	306.62
586.38	306.51	586.98	306.44	590.48	306.33	595.04	306.34	595.7	306.34
605.39	306.27	606.17	306.3	607.76	306.33	609.55	306.9	622.47	310.34
625.96	311.11	629.79	311.24	645.36	311.17	650.21	311.14	651.61	311.1
657.49	310.88	662.3	310.57	668.71	309.77	675.62	308.83	678.48	308.7
691.58	308.41	695.31	308.3	697.45	308.15	712.82	307.1	714.62	306.99
736.35	305.59	739.33	305.25	748.81	304.13	749.47	304.06	758.62	303.04
761.03	302.77	762	302.61	765.98	301.95	766.89	301.78	768.34	301.08
772.14	299.04	779.71	295.26	784.42	292.77	789.22	290.61	791.6	290.55
792	290.51	797.91	290.01	802.01	292.1	803.12	292.58	808.26	295.02
818.46	301.36	818.65	301.48	820.68	302.7	822.23	303.64	824.18	304.57
827.15	306	827.71	306.26	829.64	306.86	831.53	307.45	839.61	309.14
840.46	309.31	845.52	310.15	868.56	311.52	877.85	312.57	884.51	313.28
891.66	314.26	896.56	314.8	897.61	314.92	903.41	315.34	910.18	315.49
927.59	315.95	962.72	316.59	975.58	316.83	976.25	316.83	1003.88	317.07
1014.45	317.16	1017.1	317.27	1017.8	317.29	1024.47	317.7	1026.35	317.82
1026.75	317.87	1031.84	318.43	1041.21	319.48	1047.67	320.04	1048.16	320.08
1049.94	320.25	1051.32	320.32	1055.34	320.57	1073.01	321.66	1086.93	322.15
1090.94	322.25	1101.06	323	1110.55	323.19	1111.57	323.22	1116.57	323.38
1134.04	323.96	1152.54	324.16	1162.12	324.24	1177.57	324.36	1180.15	324.38

1180.75	324.43	1196.51	325.93	1196.56	325.93	1199.24	326.77	1203.51	328.08
1214.63	331.21	1219.22	332.75	1220.63	333.11	1224.73	334.03	1232.48	334.91
1237.39	335.68	1240.47	336.07	1240.58	336.1				

Manning's n Values num= 16

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	318.55	.024	377.54	.031	499.67	.031	555.2	.035
779.71	.02	808.26	.02	962.72	.02	1003.88	.027	1024.47	.032
1047.67	.02	1055.34	.024	1116.57	.043	1199.24	.039	1240.58	.044
1240.58	.044								

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
779.71	808.26	42.89	42.56	42.65	.1	.3

CROSS SECTION OUTPUT Profile #Q50

E.G. Elev (ft)	316.89	Element	Left OB	Channel	Right OB
Vel Head (ft)	6.37	Wt. n-Val.	0.035	0.020	0.020
W.S. Elev (ft)	310.52	Reach Len. (ft)	42.89	42.56	42.65
Crit W.S. (ft)	313.01	Flow Area (sq ft)	737.80	529.20	224.68
E.G. Slope (ft/ft)	0.002387	Area (sq ft)	737.80	529.20	224.68
Q Total (cfs)	19090.00	Flow (cfs)	3986.78	12787.43	2315.79
Top Width (ft)	251.14	Top Width (ft)	179.13	28.55	43.46
Vel Total (ft/s)	12.80	Avg. Vel. (ft/s)	5.40	24.16	10.31
Max Chl Dpth (ft)	20.51	Hydr. Depth (ft)	4.12	18.54	5.17
Conv. Total (cfs)	390771.2	Conv. (cfs)	81609.1	261758.0	47404.0
Length Wtd. (ft)	42.64	Wetted Per. (ft)	182.07	30.81	46.95
Min Ch El (ft)	290.01	Shear (lb/sq ft)	0.60	2.56	0.71
Alpha	2.50	Stream Power (lb/ft s)	3.26	61.85	7.35
Frctn Loss (ft)	0.08	Cum Volume (acre-ft)	133.52	158.14	17.31
C & E Loss (ft)	0.22	Cum SA (acres)	13.32	19.09	4.00

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

CROSS SECTION OUTPUT Profile #Q100

E.G. Elev (ft)	320.99	Element	Left OB	Channel	Right OB
Vel Head (ft)	8.23	Wt. n-Val.	0.035	0.020	0.020
W.S. Elev (ft)	312.76	Reach Len. (ft)	42.89	42.56	42.65
Crit W.S. (ft)	315.33	Flow Area (sq ft)	1215.56	593.13	358.07
E.G. Slope (ft/ft)	0.003030	Area (sq ft)	1215.56	593.13	358.07
Q Total (cfs)	30242.00	Flow (cfs)	8663.97	17424.17	4153.86
Top Width (ft)	327.40	Top Width (ft)	227.49	28.55	71.35
Vel Total (ft/s)	13.96	Avg. Vel. (ft/s)	7.13	29.38	11.60
Max Chl Dpth (ft)	22.75	Hydr. Depth (ft)	5.34	20.78	5.02
Conv. Total (cfs)	549436.7	Conv. (cfs)	157407.0	316562.3	75467.4
Length Wtd. (ft)	42.72	Wetted Per. (ft)	230.80	30.81	74.94
Min Ch El (ft)	290.01	Shear (lb/sq ft)	1.00	3.64	0.90
Alpha	2.72	Stream Power (lb/ft s)	7.10	106.98	10.48
Frctn Loss (ft)	0.11	Cum Volume (acre-ft)	136.06	210.30	28.98
C & E Loss (ft)	0.20	Cum SA (acres)	13.67	19.09	5.26

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 parabolic search method failed to converge on critical depth. The program will try the cross section slice/secant method to find critical depth.

CROSS SECTION OUTPUT Profile #Q100HC

E.G. Elev (ft)	327.94	Element	Left OB	Channel	Right OB
Vel Head (ft)	9.26	Wt. n-Val.	0.035	0.020	0.020
W.S. Elev (ft)	318.68	Reach Len. (ft)	42.89	42.56	42.65
Crit W.S. (ft)	321.58	Flow Area (sq ft)	2616.17	762.16	1155.08
E.G. Slope (ft/ft)	0.003366	Area (sq ft)	2616.17	762.16	1155.08
Q Total (cfs)	76166.00	Flow (cfs)	31778.78	27892.28	16494.94
Top Width (ft)	497.73	Top Width (ft)	243.38	28.55	225.80
Vel Total (ft/s)	16.80	Avg. Vel. (ft/s)	12.15	36.60	14.28
Max Chl Dpth (ft)	28.67	Hydr. Depth (ft)	10.75	26.70	5.12
Conv. Total (cfs)	1312899.0	Conv. (cfs)	547781.6	480788.6	284328.9
Length Wtd. (ft)	42.73	Wetted Per. (ft)	247.87	30.81	229.62
Min Ch El (ft)	290.01	Shear (lb/sq ft)	2.22	5.20	1.06
Alpha	2.11	Stream Power (lb/ft s)	26.94	190.24	15.09
Frctn Loss (ft)	0.12	Cum Volume (acre-ft)	215.52	373.33	99.28
C & E Loss (ft)	0.20	Cum SA (acres)	16.01	19.09	12.29

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 parabolic search method failed to converge on critical depth. The program will try the cross section slice/secant method to find critical depth.

CROSS SECTION

RIVER: San Juan Creek
REACH: Upper RS: 3070.453

INPUT
Description:
Station Elevation Data num= 76

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	334.67	122.6	333.79	148.79	333.61	151.38	333.62	162.9	333.53
264.11	332.48	299.16	331.55	300.76	331.55	331.58	331.66	348.17	331.05
356.45	330.58	379.63	329.25	395.79	325.12	408.64	321.54	425.14	319.49
431.58	319.22	452.32	318.96	460.69	319.02	477.75	318.36	492.71	317.4
496.46	316.8	504.6	315.09	510.32	311.7	513.59	309.1	517.71	307.7
535.45	301.84	538.5	301.4	551.58	299.76	554.19	299.73	561.8	300.46
572.31	301.44	573.81	301.52	575.5	302.33	587.7	307.27	590.99	308.4
594.61	308.67	620.76	309.27	656.47	308.68	658.49	308.52	695.22	305.78
707.6	304.02	716.24	302.7	724.05	301.5	729.01	298.56	736.16	294.67
745.62	289.32	747.99	289.32	754.27	288.83	758.29	291.35	764.42	294.63
772.66	299.21	783.23	304.71	789.76	307.01	790.45	307.24	794.54	308.39
826.06	311.72	831.84	312.61	836.65	313.14	899.68	315.72	933.81	316.19
952.74	317.27	957.96	317.35	992.94	317.86	1001.12	318.64	1008.79	318.68
1013.66	318.77	1062.97	319.65	1065.06	319.69	1065.54	319.76	1078.28	321.83
1078.32	321.83	1080.49	322.95	1083.94	324.72	1096.64	330.69	1101.1	332.23
1113.91	334.32								

Manning's n Values num= 6

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	300.76	.02	356.45	.035	957.96	.02	1013.66	.05
1080.49	.035								

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
736.16	764.42	156.12	150 143.31	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
0	656.47	308.68	F

CROSS SECTION OUTPUT Profile #Q50

E.G. Elev (ft)	317.07	Element	Left OB	Channel	Right OB
Vel Head (ft)	8.68	Wt. n-Val.	0.035	0.035	0.035
W.S. Elev (ft)	308.39	Reach Len. (ft)	156.12	150.00	143.31
Crit W.S. (ft)	308.68	Flow Area (sq ft)	307.14	489.57	182.24
E.G. Slope (ft/ft)	0.010454	Area (sq ft)	725.69	489.57	182.24
Q Total (cfs)	19090.00	Flow (cfs)	3320.54	13310.16	2459.30
Top Width (ft)	209.60	Top Width (ft)	151.22	28.26	30.12
Vel Total (ft/s)	19.50	Avg. Vel. (ft/s)	10.81	27.19	13.50
Max Chl Dpth (ft)	19.56	Hydr. Depth (ft)	4.04	17.32	6.05
Conv. Total (cfs)	186705.6	Conv. (cfs)	32475.9	130177.1	24052.6
Length Wtd. (ft)	153.30	Wetted Per. (ft)	78.14	31.23	33.25
Min Ch El (ft)	288.83	Shear (lb/sq ft)	2.57	10.23	3.58
Alpha	1.47	Stream Power (lb/ft s)	27.73	278.13	48.28
Frctn Loss (ft)	0.18	Cum Volume (acre-ft)	132.80	157.64	17.11
C & E Loss (ft)	0.18	Cum SA (acres)	13.16	19.06	3.97

Warning: The energy equation could not be balanced within the specified number of iterations. The program selected the water surface that had the least amount of error between computed and assumed values.
Warning: 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: During the supercritical standard step calculations, the final energy answer that was computed is greater than the upstream energy. This is not physically possible. Please check your data.

CROSS SECTION OUTPUT Profile #Q100

E.G. Elev (ft)	315.51	Element	Left OB	Channel	Right OB
Vel Head (ft)	3.22	Wt. n-Val.	0.035	0.035	0.035
W.S. Elev (ft)	312.29	Reach Len. (ft)	156.12	150.00	143.31
Crit W.S. (ft)	312.29	Flow Area (sq ft)	1562.52	599.81	371.27
E.G. Slope (ft/ft)	0.004191	Area (sq ft)	1562.52	599.81	371.27
Q Total (cfs)	30242.00	Flow (cfs)	15277.40	11821.89	3142.71
Top Width (ft)	320.45	Top Width (ft)	226.84	28.26	65.35
Vel Total (ft/s)	11.94	Avg. Vel. (ft/s)	9.78	19.71	8.46
Max Chl Dpth (ft)	23.46	Hydr. Depth (ft)	6.89	21.22	5.68
Conv. Total (cfs)	467141.7	Conv. (cfs)	235986.7	182610.2	48544.8
Length Wtd. (ft)	153.69	Wetted Per. (ft)	232.88	31.23	68.69
Min Ch El (ft)	288.83	Shear (lb/sq ft)	1.76	5.02	1.41
Alpha	1.46	Stream Power (lb/ft s)	17.16	99.03	11.97
Frctn Loss (ft)	0.24	Cum Volume (acre-ft)	134.69	209.71	28.63
C & E Loss (ft)	0.80	Cum SA (acres)	13.45	19.06	5.20

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

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

CROSS SECTION OUTPUT Profile #Q100HC

E.G. Elev (ft)	327.25	Element	Left OB	Channel	Right OB
Vel Head (ft)	13.40	Wt. n-Val.	0.035	0.035	0.035
W.S. Elev (ft)	313.85	Reach Len. (ft)	156.12	150.00	143.31
Crit W.S. (ft)	318.55	Flow Area (sq ft)	1917.87	643.82	486.76
E.G. Slope (ft/ft)	0.016278	Area (sq ft)	1917.87	643.82	486.76
Q Total (cfs)	76166.00	Flow (cfs)	41998.39	26216.72	7950.88
Top Width (ft)	347.27	Top Width (ft)	229.47	28.26	89.54
Vel Total (ft/s)	24.99	Avg. Vel. (ft/s)	21.90	40.72	16.33
Max Chl Dpth (ft)	25.02	Hydr. Depth (ft)	8.36	22.78	5.44
Conv. Total (cfs)	596988.3	Conv. (cfs)	329182.9	205486.4	62318.9
Length Wtd. (ft)	153.76	Wetted Per. (ft)	235.93	31.23	92.95
Min Ch El (ft)	288.83	Shear (lb/sq ft)	8.26	20.95	5.32
Alpha	1.38	Stream Power (lb/ft s)	180.90	852.97	86.92
Frctn Loss (ft)	0.27	Cum Volume (acre-ft)	213.28	372.64	98.47
C & E Loss (ft)	0.41	Cum SA (acres)	15.78	19.06	12.13

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

CROSS SECTION

RIVER: San Juan Creek
REACH: Upper RS: 2920.457

INPUT
Description:
Station Elevation Data num= 79

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	327.99	22.04	327.45	31.08	326.82	39.79	325.96	41.94	325.8
62.15	324.34	80.18	320.87	81.99	320.42	87.85	318.1	115.27	306.48
125.88	302.49	145.43	293.3	151	291.45	157.56	289.28	164.84	287.78
177.91	286.38	197.61	284.62	238.1	282.92	245.82	282.9	260.91	282.57
287.69	282.31	305.82	283.13	309.71	283.32	326.14	285.96	350.13	289.26
360.72	292.54	366.94	294.46	368.84	294.99	369.61	295.18	371.29	295.69
389.48	300.05	392.2	300.68	392.54	300.77	392.99	300.87	409.51	302.9
418.52	303.62	434.19	304.38	452.73	303.96	486.91	303.32	523.77	302.98
553.15	303.51	567.67	302.06	571.84	301.93	572.64	301.68	575.47	300.49
582.12	297.7	584.45	295.5	590.42	291.13	593.19	288.95	598.25	287.62
608.06	287.38	611.82	286.89	618.94	287.3	626	287.77	631.11	288.34
633.23	290.08	635.17	291.16	639.8	296.81	642.69	300.03	646.34	303.08
646.77	303.44	651.05	306.88	667.37	311.6	676.78	313.48	690.88	314.7
690.93	314.71	691	314.71	720.46	315.24	771.77	315.14	777.28	315.13
787.35	315.65	803.73	316.28	813.71	317.99	820.38	319.14	823.26	319.78
825.08	320.43	831.8	324.36	838.02	328.22	838.88	328.47		

Manning's n Values num= 6

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.02	41.94	.035	151	.05	360.72	.035	771.77	.02
813.71	.05								

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
590.42	635.17	160.12	168.28	173.88	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
0	553.15	303.51	F

CROSS SECTION OUTPUT Profile #Q50

			Left OB	Channel	Right OB
E.G. Elev (ft)	307.66	Element			
Vel Head (ft)	0.11	Wt. n-Val.	0.048	0.035	0.035
W.S. Elev (ft)	307.55	Reach Len. (ft)	160.12	168.28	173.88
Crit W.S. (ft)	303.52	Flow Area (sq ft)	6332.84	877.65	123.89
E.G. Slope (ft/ft)	0.000139	Area (sq ft)	6332.84	877.65	123.89
Q Total (cfs)	19090.00	Flow (cfs)	15796.96	3111.73	181.31
Top Width (ft)	540.61	Top Width (ft)	477.67	44.75	18.19
Vel Total (ft/s)	2.60	Avg. Vel. (ft/s)	2.49	3.55	1.46
Max Chl Dpth (ft)	25.24	Hydr. Depth (ft)	13.26	19.61	6.81
Conv. Total (cfs)	1616415.0	Conv. (cfs)	1337582.0	263480.4	15352.4
Length Wtd. (ft)	161.35	Wetted Per. (ft)	487.09	46.67	24.85
Min Ch El (ft)	286.89	Shear (lb/sq ft)	0.11	0.16	0.04
Alpha	1.07	Stream Power (lb/ft s)	0.28	0.58	0.06
Frctn Loss (ft)	0.01	Cum Volume (acre-ft)	120.15	155.29	16.61
C & E Loss (ft)	0.02	Cum SA (acres)	12.03	18.93	3.89

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.
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)	304.06	Element			
Vel Head (ft)	0.55	Wt. n-Val.	0.049	0.035	0.035
W.S. Elev (ft)	303.52	Reach Len. (ft)	160.12	168.28	173.88
Crit W.S. (ft)	303.52	Flow Area (sq ft)	4452.87	697.27	66.15
E.G. Slope (ft/ft)	0.000833	Area (sq ft)	4452.87	697.27	66.15
Q Total (cfs)	30242.00	Flow (cfs)	24860.82	5181.30	199.89
Top Width (ft)	464.59	Top Width (ft)	408.15	44.75	11.70
Vel Total (ft/s)	5.80	Avg. Vel. (ft/s)	5.58	7.43	3.02
Max Chl Dpth (ft)	21.21	Hydr. Depth (ft)	10.91	15.58	5.66
Conv. Total (cfs)	1048063.0	Conv. (cfs)	861573.3	179562.3	6927.2
Length Wtd. (ft)	161.32	Wetted Per. (ft)	416.78	46.67	17.07
Min Ch El (ft)	286.89	Shear (lb/sq ft)	0.56	0.78	0.20
Alpha	1.05	Stream Power (lb/ft s)	3.10	5.77	0.61
Frctn Loss (ft)	0.07	Cum Volume (acre-ft)	123.91	207.48	27.91
C & E Loss (ft)	0.10	Cum SA (acres)	12.31	18.93	5.07

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: 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: During the standard step iterations, when the assumed water surface was set equal to critical

depth, the calculated water 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)	306.98	Element	Left OB	Channel	Right OB
Vel Head (ft)	3.46	Wt. n-Val.	0.049	0.035	0.035
W.S. Elev (ft)	303.52	Reach Len. (ft)	160.12	168.28	173.88
Crit W.S. (ft)	303.52	Flow Area (sq ft)	4452.87	697.27	66.15
E.G. Slope (ft/ft)	0.005281	Area (sq ft)	4452.87	697.27	66.15
Q Total (cfs)	76166.00	Flow (cfs)	62613.22	13049.35	503.42
Top Width (ft)	464.59	Top Width (ft)	408.15	44.75	11.70
Vel Total (ft/s)	14.60	Avg. Vel. (ft/s)	14.06	18.71	7.61
Max Chl Dpth (ft)	21.21	Hydr. Depth (ft)	10.91	15.58	5.66
Conv. Total (cfs)	1048063.0	Conv. (cfs)	861573.3	179562.3	6927.2
Length Wtd. (ft)	161.32	Wetted Per. (ft)	416.78	46.67	17.07
Min Ch El (ft)	286.89	Shear (lb/sq ft)	3.52	4.93	1.28
Alpha	1.05	Stream Power (lb/ft s)	49.53	92.18	9.72
Frctn Loss (ft)	0.47	Cum Volume (acre-ft)	201.87	370.33	97.57
C & E Loss (ft)	0.64	Cum SA (acres)	14.64	18.93	11.97

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

CROSS SECTION

RIVER: San Juan Creek
REACH: Upper RS: 2752.174

INPUT
Description:
Station Elevation Data num= 73

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	321.29	6.27	320.33	26.21	311.56	30.16	309.95	35.67	307.78
67.31	296.08	68.93	295.3	76.45	291.42	81.01	289.06	85.34	287.61
100.15	282.18	111.25	281.77	128.58	281.15	129.09	281.14	137.56	281.15
142.83	280.91	204.86	280.87	214.99	280.78	235.05	281.71	283.02	282.41
292.29	282.62	296.39	282.7	334.19	284.26	382.23	286.8	385.35	286.96
394.87	287.4	415.97	288.85	439.53	292.84	460.86	297.96	470.85	301.23
478.7	301.69	500.76	303.72	555.59	303.24	573.16	303.08	583.43	302.96
584.28	302.9	586.68	302.87	594.58	302.53	600.59	302.27	602.06	301.95
609.68	297.98	615.16	292.87	617.86	291.06	619.4	289.27	621.23	288.45
624.1	287.6	641.11	287.44	653.42	287.46	657.96	287.85	661.04	288.65
665.76	290.82	671.13	295.21	677.16	301.15	682.07	303.4	689.76	306.93
693.98	308.22	698.57	310.19	712.77	315.04	723.07	315.4	730.49	315.22
735.28	315.1	749.12	315	772.96	317.4	786.78	318.8	789.27	319.06
792.13	319.71	810.25	321.22	817.52	321.82	821.71	322.36	835.92	325.48

846.64 328.07 847.52 328.15 849.4 328.28

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	76.45	.05	382.23	.035	730.49	.02	772.96	.05

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
617.86	665.76	29.22	41.66	51.58	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
0	583.43	302.96	F

CROSS SECTION OUTPUT Profile #Q50

E.G. Elev (ft)	307.63	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.05	Wt. n-Val.	0.047	0.035	0.035
W.S. Elev (ft)	307.58	Reach Len. (ft)	29.22	41.66	51.58
Crit W.S. (ft)	302.97	Flow Area (sq ft)	10070.05	940.52	180.24
E.G. Slope (ft/ft)	0.000051	Area (sq ft)	10070.05	940.52	180.24
Q Total (cfs)	19090.00	Flow (cfs)	16883.94	2030.89	175.17
Top Width (ft)	655.68	Top Width (ft)	581.65	47.90	26.13
Vel Total (ft/s)	1.71	Avg. Vel. (ft/s)	1.68	2.16	0.97
Max Chl Dpth (ft)	26.80	Hydr. Depth (ft)	17.31	19.63	6.90
Conv. Total (cfs)	2668402.0	Conv. (cfs)	2360039.0	283878.1	24485.2
Length Wtd. (ft)	30.86	Wetted Per. (ft)	591.98	49.61	31.49
Min Ch El (ft)	287.44	Shear (lb/sq ft)	0.05	0.06	0.02
Alpha	1.03	Stream Power (lb/ft s)	0.09	0.13	0.02
Frctn Loss (ft)	0.00	Cum Volume (acre-ft)	90.00	151.78	16.00
C & E Loss (ft)	0.00	Cum SA (acres)	10.09	18.76	3.80

CROSS SECTION OUTPUT Profile #Q100

E.G. Elev (ft)	303.33	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.21	Wt. n-Val.	0.048	0.035	0.035
W.S. Elev (ft)	303.12	Reach Len. (ft)	29.22	41.66	51.58
Crit W.S. (ft)	302.97	Flow Area (sq ft)	7524.78	726.85	88.30
E.G. Slope (ft/ft)	0.000286	Area (sq ft)	7524.78	726.85	88.30
Q Total (cfs)	30242.00	Flow (cfs)	26947.54	3124.59	169.88
Top Width (ft)	558.75	Top Width (ft)	495.15	47.90	15.70
Vel Total (ft/s)	3.63	Avg. Vel. (ft/s)	3.58	4.30	1.92
Max Chl Dpth (ft)	22.34	Hydr. Depth (ft)	15.20	15.17	5.62
Conv. Total (cfs)	1788176.0	Conv. (cfs)	1593378.0	184753.3	10044.6
Length Wtd. (ft)	30.72	Wetted Per. (ft)	504.65	49.61	20.13
Min Ch El (ft)	287.44	Shear (lb/sq ft)	0.27	0.26	0.08
Alpha	1.02	Stream Power (lb/ft s)	0.95	1.12	0.15
Frctn Loss (ft)	0.01	Cum Volume (acre-ft)	101.89	204.73	27.60
C & E Loss (ft)	0.01	Cum SA (acres)	10.65	18.76	5.01

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

CROSS SECTION OUTPUT Profile #Q100HC

E.G. Elev (ft)	304.31	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.34	Wt. n-Val.	0.048	0.035	0.035
W.S. Elev (ft)	302.97	Reach Len. (ft)	29.22	41.66	51.58
Crit W.S. (ft)	302.97	Flow Area (sq ft)	7450.20	719.51	85.92

E.G. Slope (ft/ft)	0.001864	Area (sq ft)	7450.20	719.51	85.92
Q Total (cfs)	76166.00	Flow (cfs)	67904.31	7842.23	419.46
Top Width (ft)	542.24	Top Width (ft)	478.97	47.90	15.37
Vel Total (ft/s)	9.23	Avg. Vel. (ft/s)	9.11	10.90	4.88
Max Chl Dpth (ft)	22.19	Hydr. Depth (ft)	15.55	15.02	5.59
Conv. Total (cfs)	1764279.0	Conv. (cfs)	1572909.0	181654.3	9716.1
Length Wtd. (ft)		Wetted Per. (ft)	488.44	49.61	19.76
Min Ch El (ft)	287.44	Shear (lb/sq ft)	1.77	1.69	0.51
Alpha	1.02	Stream Power (lb/ft s)	16.18	18.39	2.47
Frctn Loss (ft)		Cum Volume (acre-ft)	179.99	367.59	97.26
C & E Loss (ft)		Cum SA (acres)	13.01	18.76	11.91

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: Divided flow computed for this cross-section.

CROSS SECTION

RIVER: San Juan Creek
REACH: Upper RS: 2710.51*

INPUT
Description:
Station Elevation Data num= 155

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	321.29	6.46	320.35	7.13	320.1	21.89	314.07	27.02	311.95
27.99	311.57	31.1	310.21	31.48	310.05	36.78	307.86	59.22	299.01
61.54	298.14	69.4	295.2	71.07	294.42	72.59	293.67	72.75	293.6
76.5	291.84	78.83	290.72	83.53	288.46	87.25	287.22	87.99	287
96.35	284.26	103.26	282.18	104.29	282.15	109.27	281.95	114.71	281.78
119.7	281.63	132.58	281.2	133.1	281.19	141.84	281.15	147.27	280.93
154.32	280.89	197.78	280.88	211.23	280.88	221.67	280.82	242.36	281.61
247.47	281.67	289.78	282.38	291.82	282.42	301.37	282.63	305.6	282.72
344.58	284.19	352.71	284.57	352.91	284.58	372.85	285.58	394.11	286.63
397.33	286.79	407.14	287.23	418.96	287.96	428.9	288.55	436.02	289.55
452.04	291.94	453.19	292.09	462.37	293.83	466.09	294.65	471.07	295.65
471.65	295.8	475.18	296.75	479.68	298.28	485.48	299.99	488.37	300.21
493.58	300.58	496.68	300.88	500.17	301.2	516.32	302.67	544.48	302.93
549.92	302.95	552.44	303.01	554.73	303.03	569.55	303.14	572.71	303.2
572.86	303.19	580.23	303.05	590.1	302.94	590.97	302.94	601.56	302.93
602.44	302.89	604.91	302.88	609.07	302.77	609.79	302.74	610.24	302.72
613.06	302.55	617.41	302.3	618.57	302.18	619.26	302.11	620.77	301.74
621.12	301.57	621.46	301.41	626.04	299.06	628.63	297.73	632.01	294.87
633.9	293.2	634.28	292.86	634.83	292.49	637.06	290.87	638.55	289.27
640.32	288.44	640.44	288.4	643.1	287.69	645.51	287.63	659.55	287.3
673.42	287.35	674.03	287.39	675.32	287.47	678.54	287.69	679.79	287.94
680.73	288.16	682.01	288.46	682.7	288.73	686.74	290.29	687.32	290.61
692.23	294.65	697.75	300.02	702.24	302.24	709.26	305.72	709.27	305.72
713.13	307.1	717.33	309.06	719.83	310.03	722.56	311.14	729.92	313.79
730.31	313.93	730.34	313.94	741.77	314.44	743.04	314.44	744.67	314.44
750.02	314.35	752.82	314.3	755.34	314.24	766.62	314.14	770.73	314.09
770.88	314.1	797.24	315.94	812.61	317.01	815.38	317.21	818.3	317.69
818.56	317.74	819.29	317.78	828.25	318.32	832.6	318.57	838.07	319.01
838.71	319.05	843.46	319.35	846.79	319.6	850.01	319.95	851.45	320.12
857.11	321.19	862.65	322.32	865.99	323.08	867.25	323.41	868.49	323.74
872.2	324.88	878.18	326.65	879.17	326.87	880.15	326.97	882.24	327.16

Manning's n Values num= 16

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	72.75	.038	78.83	.05	372.85	.047	394.11	.035
500.17	.038	554.73	.047	637.06	.025	673.42	.05	679.79	.047
687.32	.02	722.56	.02	752.82	.025	766.62	.025	812.61	.05
882.24	.05								

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
637.06	687.32	29.22	41.66	51.58	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
0603.0033	302.99		F

CROSS SECTION OUTPUT Profile #Q50

			Left OB	Channel	Right OB
E.G. Elev (ft)	307.63	Element			
Vel Head (ft)	0.04	Wt. n-Val.	0.047	0.032	0.020
W.S. Elev (ft)	307.58	Reach Len. (ft)	29.22	41.66	51.58
Crit W.S. (ft)	303.00	Flow Area (sq ft)	10555.53	991.49	189.05
E.G. Slope (ft/ft)	0.000043	Area (sq ft)	10555.53	991.49	189.05
Q Total (cfs)	19090.00	Flow (cfs)	16654.09	2136.30	299.61
Top Width (ft)	676.68	Top Width (ft)	599.58	50.26	26.84
Vel Total (ft/s)	1.63	Avg. Vel. (ft/s)	1.58	2.15	1.58
Max Chl Dpth (ft)	26.76	Hydr. Depth (ft)	17.60	19.73	7.04
Conv. Total (cfs)	2915197.0	Conv. (cfs)	2543214.0	326229.4	45753.2
Length Wtd. (ft)	30.91	Wetted Per. (ft)	609.45	51.77	32.15
Min Ch El (ft)	287.30	Shear (lb/sq ft)	0.05	0.05	0.02
Alpha	1.03	Stream Power (lb/ft s)	0.07	0.11	0.02
Frctn Loss (ft)	0.00	Cum Volume (acre-ft)	83.08	150.85	15.79
C & E Loss (ft)	0.00	Cum SA (acres)	9.69	18.71	3.77

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

CROSS SECTION OUTPUT Profile #Q100

			Left OB	Channel	Right OB
E.G. Elev (ft)	303.31	Element			
Vel Head (ft)	0.19	Wt. n-Val.	0.048	0.032	0.020
W.S. Elev (ft)	303.13	Reach Len. (ft)	29.22	41.66	51.58
Crit W.S. (ft)	303.00	Flow Area (sq ft)	7908.56	767.47	93.25
E.G. Slope (ft/ft)	0.000246	Area (sq ft)	7908.56	767.47	93.25
Q Total (cfs)	30242.00	Flow (cfs)	26611.45	3337.68	292.87
Top Width (ft)	646.61	Top Width (ft)	579.65	50.26	16.71
Vel Total (ft/s)	3.45	Avg. Vel. (ft/s)	3.36	4.35	3.14
Max Chl Dpth (ft)	22.31	Hydr. Depth (ft)	13.64	15.27	5.58
Conv. Total (cfs)	1928909.0	Conv. (cfs)	1697344.0	212885.5	18679.8
Length Wtd. (ft)	30.76	Wetted Per. (ft)	588.67	51.77	21.06
Min Ch El (ft)	287.30	Shear (lb/sq ft)	0.21	0.23	0.07
Alpha	1.02	Stream Power (lb/ft s)	0.69	0.99	0.21
Frctn Loss (ft)	0.01	Cum Volume (acre-ft)	96.72	204.01	27.49
C & E Loss (ft)	0.01	Cum SA (acres)	10.29	18.71	4.99

Warning: Divided flow computed for this cross-section.
Note: Manning's n values were composited to a single value in the main channel.

CROSS SECTION OUTPUT Profile #Q100HC

			Left OB	Channel	Right OB
E.G. Elev (ft)	304.22	Element			

Vel Head (ft)	1.22	Wt. n-Val.	0.048	0.032	0.020
W.S. Elev (ft)	303.00	Reach Len. (ft)	29.22	41.66	51.58
Crit W.S. (ft)	303.00	Flow Area (sq ft)	7835.86	761.03	91.13
E.G. Slope (ft/ft)	0.001599	Area (sq ft)	7835.86	761.03	91.13
Q Total (cfs)	76166.00	Flow (cfs)	67046.96	8393.63	725.42
Top Width (ft)	621.63	Top Width (ft)	554.92	50.26	16.45
Vel Total (ft/s)	8.77	Avg. Vel. (ft/s)	8.56	11.03	7.96
Max Chl Dpth (ft)	22.18	Hydr. Depth (ft)	14.12	15.14	5.54
Conv. Total (cfs)	1904830.0	Conv. (cfs)	1676773.0	209915.6	18141.9
Length Wtd. (ft)		Wetted Per. (ft)	563.92	51.77	20.77
Min Ch El (ft)	287.30	Shear (lb/sq ft)	1.39	1.47	0.44
Alpha	1.02	Stream Power (lb/ft s)	11.87	16.18	3.49
Frctn Loss (ft)		Cum Volume (acre-ft)	174.86	366.89	97.16
C & E Loss (ft)		Cum SA (acres)	12.66	18.71	11.89

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: Divided flow computed for this cross-section.
Note: Manning's n values were composited to a single value in the main channel.

CROSS SECTION

RIVER: San Juan Creek
REACH: Upper RS: 2668.85*

INPUT
Description:
Station Elevation Data num= 155

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	321.29	6.66	320.37	7.34	320.16	22.55	314.39	27.84	312.34
28.83	311.97	32.03	310.47	32.43	310.29	37.89	307.93	61.01	298.28
63.39	297.38	71.49	294.31	73.21	293.54	74.78	292.81	74.95	292.74
78.81	291.1	81.2	290.03	86.05	287.86	89.88	286.59	90.64	286.38
99.25	283.88	106.38	282.18	107.44	282.15	112.56	281.94	118.17	281.8
123.31	281.67	136.57	281.25	137.11	281.24	146.11	281.16	151.71	280.94
158.97	280.87	203.74	280.88	217.59	280.89	228.35	280.85	249.66	281.5
254.93	281.56	298.51	282.39	300.61	282.42	310.46	282.65	314.81	282.74
354.96	284.12	363.34	284.47	363.55	284.48	384.09	285.44	405.99	286.47
409.3	286.62	419.42	287.05	431.59	287.74	441.83	288.25	449.17	289.08
465.67	291.22	466.85	291.34	476.31	292.68	480.14	293.46	485.27	294.3
485.87	294.45	489.51	295.54	494.14	297.17	500.12	298.75	503.09	299.03
508.46	299.47	511.65	299.8	515.24	300.12	531.89	301.62	560.89	302.38
566.49	302.47	569.09	302.61	571.45	302.67	586.72	303.01	589.98	303.15
590.13	303.15	597.72	302.93	607.89	302.8	608.79	302.8	619.7	302.9
620.6	302.87	623.15	302.89	627.43	302.84	628.17	302.81	628.63	302.79
631.54	302.57	636.03	302.25	637.22	302.06	637.92	301.95	639.48	301.53
639.84	301.37	640.19	301.21	644.92	298.83	647.58	297.48	651.06	294.8
653.01	293.18	653.4	292.85	653.97	292.46	656.27	290.69	657.71	289.26
659.42	288.44	659.53	288.4	662.1	287.77	664.43	287.69	678	287.17
693.42	287.24	694.1	287.27	695.54	287.34	699.11	287.53	700.51	287.74
701.55	287.96	702.97	288.27	703.74	288.52	708.24	290	708.89	290.41
713.34	294.09	718.34	298.89	722.41	301.08	728.77	304.51	728.78	304.52
732.28	305.97	736.09	307.93	738.36	308.94	740.83	310.13	747.5	312.69
747.86	312.83	747.89	312.83	760.46	313.48	761.86	313.5	763.66	313.54
769.54	313.48	772.63	313.45	775.41	313.39	787.82	313.25	792.35	313.19
792.51	313.19	821.53	314.47	838.44	315.22	841.49	315.36	844.71	315.73
844.99	315.76	845.79	315.79	855.65	316.2	860.45	316.37	866.46	316.84

867.17	316.87	872.39	317.13	876.06	317.38	879.61	317.71	881.19	317.89
887.42	318.9	893.52	320.06	897.2	320.93	898.58	321.33	899.94	321.74
904.03	323.21	910.62	325.44	911.71	325.66	912.78	325.79	915.08	326.04

Manning's n Values num= 15

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	74.95	.04	81.2	.05	384.09	.045	405.99	.035
515.24	.04	571.45	.045	656.27	.03	693.42	.05	700.51	.045
708.89	.02	747.5	.02	787.82	.03	838.44	.05	915.08	.05

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
656.27	708.89	29.22	41.66	51.58	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
0622.5767		303.02	F

CROSS SECTION OUTPUT Profile #Q50

E.G. Elev (ft)	307.62	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.04	Wt. n-Val.	0.047	0.036	0.020
W.S. Elev (ft)	307.58	Reach Len. (ft)	29.22	41.66	51.58
Crit W.S. (ft)	303.02	Flow Area (sq ft)	11052.20	1043.23	195.86
E.G. Slope (ft/ft)	0.000039	Area (sq ft)	11052.20	1043.23	195.86
Q Total (cfs)	19090.00	Flow (cfs)	16817.04	1967.42	305.54
Top Width (ft)	696.70	Top Width (ft)	617.55	52.62	26.53
Vel Total (ft/s)	1.55	Avg. Vel. (ft/s)	1.52	1.89	1.56
Max Chl Dpth (ft)	26.73	Hydr. Depth (ft)	17.90	19.83	7.38
Conv. Total (cfs)	3049404.0	Conv. (cfs)	2686325.0	314272.7	48806.3
Length Wtd. (ft)	30.81	Wetted Per. (ft)	627.11	53.97	31.89
Min Ch El (ft)	287.17	Shear (lb/sq ft)	0.04	0.05	0.02
Alpha	1.01	Stream Power (lb/ft s)	0.07	0.09	0.02
Frctn Loss (ft)	0.00	Cum Volume (acre-ft)	75.83	149.88	15.56
C & E Loss (ft)	0.00	Cum SA (acres)	9.28	18.66	3.74

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

CROSS SECTION OUTPUT Profile #Q100

E.G. Elev (ft)	303.30	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.17	Wt. n-Val.	0.047	0.036	0.020
W.S. Elev (ft)	303.13	Reach Len. (ft)	29.22	41.66	51.58
Crit W.S. (ft)	303.03	Flow Area (sq ft)	8326.72	808.97	98.36
E.G. Slope (ft/ft)	0.000224	Area (sq ft)	8326.72	808.97	98.36
Q Total (cfs)	30242.00	Flow (cfs)	26865.60	3076.59	299.81
Top Width (ft)	675.69	Top Width (ft)	605.75	52.62	17.33
Vel Total (ft/s)	3.28	Avg. Vel. (ft/s)	3.23	3.80	3.05
Max Chl Dpth (ft)	22.28	Hydr. Depth (ft)	13.75	15.37	5.68
Conv. Total (cfs)	2021960.0	Conv. (cfs)	1796216.0	205698.8	20045.2
Length Wtd. (ft)	30.66	Wetted Per. (ft)	614.41	53.97	21.65
Min Ch El (ft)	287.17	Shear (lb/sq ft)	0.19	0.21	0.06
Alpha	1.01	Stream Power (lb/ft s)	0.61	0.80	0.19
Frctn Loss (ft)	0.01	Cum Volume (acre-ft)	91.27	203.26	27.38
C & E Loss (ft)	0.01	Cum SA (acres)	9.89	18.66	4.97

Warning: Divided flow computed for this cross-section.
Note: Manning's n values were composited to a single value in the main channel.

CROSS SECTION OUTPUT Profile #Q100HC

			Left OB	Channel	Right OB
E.G. Elev (ft)	304.12	Element			
Vel Head (ft)	1.08	Wt. n-Val.	0.047	0.036	0.020
W.S. Elev (ft)	303.04	Reach Len. (ft)	29.22	41.66	51.58
Crit W.S. (ft)	303.03	Flow Area (sq ft)	8273.09	804.29	96.83
E.G. Slope (ft/ft)	0.001444	Area (sq ft)	8273.09	804.29	96.83
Q Total (cfs)	76166.00	Flow (cfs)	67677.44	7742.14	746.42
Top Width (ft)	670.18	Top Width (ft)	600.40	52.62	17.16
Vel Total (ft/s)	8.30	Avg. Vel. (ft/s)	8.18	9.63	7.71
Max Chl Dpth (ft)	22.19	Hydr. Depth (ft)	13.78	15.28	5.64
Conv. Total (cfs)	2004162.0	Conv. (cfs)	1780802.0	203719.6	19640.6
Length Wtd. (ft)	30.66	Wetted Per. (ft)	609.04	53.97	21.46
Min Ch El (ft)	287.17	Shear (lb/sq ft)	1.22	1.34	0.41
Alpha	1.01	Stream Power (lb/ft s)	10.02	12.94	3.14
Frctn Loss (ft)	0.04	Cum Volume (acre-ft)	169.46	366.14	97.05
C & E Loss (ft)	0.03	Cum SA (acres)	12.27	18.66	11.87

Warning: Divided flow computed for this cross-section.
Note: Manning's n values were composited to a single value in the main channel.
Note: Hydraulic jump has occurred between this cross section and the previous upstream section.

CROSS SECTION

RIVER: San Juan Creek
REACH: Upper RS: 2627.20*

INPUT
Description:
Station Elevation Data num= 154

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	321.29	6.85	320.39	7.56	320.21	23.21	314.71	28.65	312.72
29.68	312.36	32.97	310.74	33.38	310.54	39	308.01	62.79	297.56
65.25	296.62	73.59	293.43	75.36	292.66	76.97	291.94	77.14	291.87
81.11	290.36	83.58	289.33	88.56	287.26	92.51	285.96	93.3	285.77
102.16	283.49	109.49	282.19	110.58	282.16	115.86	281.93	121.62	281.81
126.92	281.71	140.57	281.3	141.13	281.28	150.39	281.16	156.15	280.96
163.62	280.85	209.7	280.87	223.96	280.9	235.04	280.89	256.97	281.4
262.39	281.45	307.25	282.39	309.41	282.43	319.54	282.66	324.03	282.76
365.35	284.05	373.97	284.37	374.19	284.37	395.33	285.3	417.87	286.3
421.28	286.45	431.69	286.88	444.22	287.52	454.76	287.95	462.31	288.61
479.29	290.51	480.51	290.59	490.25	291.54	494.19	292.26	499.47	292.94
500.09	293.11	503.83	294.32	508.6	296.06	514.75	297.51	517.82	297.85
523.33	298.36	526.62	298.72	530.32	299.04	547.45	300.56	577.3	301.84
583.07	301.98	585.74	302.21	588.18	302.3	603.89	302.88	607.24	303.11
607.39	303.1	615.21	302.81	625.68	302.65	626.6	302.67	637.83	302.87
638.76	302.86	641.38	302.9	645.79	302.92	646.56	302.89	647.03	302.85
650.02	302.6	654.64	302.2	655.86	301.94	656.59	301.79	658.2	301.32
658.56	301.17	658.92	301.01	663.79	298.61	666.53	297.22	670.11	294.74
672.12	293.17	672.52	292.84	673.1	292.43	675.47	290.5	676.86	289.26
678.51	288.43	678.62	288.39	681.1	287.86	683.35	287.74	696.44	287.04
713.42	287.13	714.17	287.15	715.75	287.21	719.69	287.38	721.23	287.54
722.37	287.77	723.94	288.08	724.79	288.32	729.74	289.71	730.45	290.2
734.44	293.53	738.93	297.77	742.58	299.93	748.28	303.31	751.43	304.85
754.84	306.8	756.88	307.84	759.09	309.12	765.08	311.59	765.4	311.73
765.43	311.73	779.16	312.52	780.69	312.57	782.65	312.64	789.07	312.61
792.44	312.59	795.47	312.53	809.02	312.36	813.96	312.28	814.14	312.28

845.81	313.01	864.27	313.44	867.6	313.52	871.11	313.76	871.42	313.79
872.29	313.8	883.06	314.08	888.29	314.18	894.86	314.67	895.62	314.7
901.33	314.91	905.34	315.16	909.2	315.47	910.93	315.65	917.74	316.6
924.39	317.8	928.4	318.78	929.92	319.26	931.4	319.73	935.86	321.54
943.05	324.24	944.24	324.46	945.41	324.61	947.92	324.91		

Manning's n Values num= 15

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	77.14	.043	83.58	.05	395.33	.043	417.87	.035
530.32	.043	588.18	.043	675.47	.035	713.42	.05	722.37	.043
730.45	.02	779.16	.02	809.02	.035	864.27	.05	947.92	.05

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
675.47	730.45	29.22	41.66	51.58	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
0	642.15	303.05	F

CROSS SECTION OUTPUT Profile #Q50

			Left OB	Channel	Right OB
E.G. Elev (ft)	307.62	Element			
Vel Head (ft)	0.03	Wt. n-Val.	0.046	0.039	0.020
W.S. Elev (ft)	307.59	Reach Len. (ft)	29.22	41.66	51.58
Crit W.S. (ft)	302.20	Flow Area (sq ft)	11559.09	1095.93	199.87
E.G. Slope (ft/ft)	0.000036	Area (sq ft)	11559.09	1095.93	199.87
Q Total (cfs)	19090.00	Flow (cfs)	16964.52	1820.19	305.29
Top Width (ft)	716.42	Top Width (ft)	635.50	54.98	25.93
Vel Total (ft/s)	1.49	Avg. Vel. (ft/s)	1.47	1.66	1.53
Max Chl Dpth (ft)	26.74	Hydr. Depth (ft)	18.19	19.93	7.71
Conv. Total (cfs)	3188748.0	Conv. (cfs)	2833713.0	304039.8	50995.3
Length Wtd. (ft)	30.72	Wetted Per. (ft)	644.92	56.18	31.41
Min Ch El (ft)	287.04	Shear (lb/sq ft)	0.04	0.04	0.01
Alpha	1.00	Stream Power (lb/ft s)	0.06	0.07	0.02
Frctn Loss (ft)	0.00	Cum Volume (acre-ft)	68.25	148.86	15.32
C & E Loss (ft)	0.00	Cum SA (acres)	8.86	18.61	3.71

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

			Left OB	Channel	Right OB
E.G. Elev (ft)	303.29	Element			
Vel Head (ft)	0.15	Wt. n-Val.	0.047	0.039	0.020
W.S. Elev (ft)	303.14	Reach Len. (ft)	29.22	41.66	51.58
Crit W.S. (ft)	303.06	Flow Area (sq ft)	8754.96	851.38	102.93
E.G. Slope (ft/ft)	0.000203	Area (sq ft)	8754.96	851.38	102.93
Q Total (cfs)	30242.00	Flow (cfs)	27089.70	2846.35	305.95
Top Width (ft)	697.90	Top Width (ft)	625.38	54.98	17.54
Vel Total (ft/s)	3.11	Avg. Vel. (ft/s)	3.09	3.34	2.97
Max Chl Dpth (ft)	22.29	Hydr. Depth (ft)	14.00	15.49	5.87
Conv. Total (cfs)	2120762.0	Conv. (cfs)	1899703.0	199604.0	21455.4
Length Wtd. (ft)	30.58	Wetted Per. (ft)	633.86	56.18	21.90
Min Ch El (ft)	287.04	Shear (lb/sq ft)	0.18	0.19	0.06
Alpha	1.00	Stream Power (lb/ft s)	0.54	0.64	0.18
Frctn Loss (ft)	0.01	Cum Volume (acre-ft)	85.54	202.47	27.26
C & E Loss (ft)	0.00	Cum SA (acres)	9.48	18.61	4.95

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

CROSS SECTION OUTPUT Profile #Q100HC

E.G. Elev (ft)	304.05	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.96	Wt. n-Val.	0.047	0.039	0.020
W.S. Elev (ft)	303.08	Reach Len. (ft)	29.22	41.66	51.58
Crit W.S. (ft)	303.06	Flow Area (sq ft)	8719.54	848.27	101.94
E.G. Slope (ft/ft)	0.001304	Area (sq ft)	8719.54	848.27	101.94
Q Total (cfs)	76166.00	Flow (cfs)	68237.51	7163.57	764.92
Top Width (ft)	696.61	Top Width (ft)	624.19	54.98	17.44
Vel Total (ft/s)	7.88	Avg. Vel. (ft/s)	7.83	8.44	7.50
Max Chl Dpth (ft)	22.23	Hydr. Depth (ft)	13.97	15.43	5.84
Conv. Total (cfs)	2109343.0	Conv. (cfs)	1889771.0	198388.0	21183.8
Length Wtd. (ft)	30.58	Wetted Per. (ft)	632.65	56.18	21.79
Min Ch El (ft)	287.04	Shear (lb/sq ft)	1.12	1.23	0.38
Alpha	1.00	Stream Power (lb/ft s)	8.78	10.38	2.86
Frctn Loss (ft)	0.04	Cum Volume (acre-ft)	163.76	365.35	96.93
C & E Loss (ft)	0.03	Cum SA (acres)	11.86	18.61	11.85

Warning: Divided flow computed for this cross-section.
Note: Manning's n values were composited to a single value in the main channel.

CROSS SECTION

RIVER: San Juan Creek
REACH: Upper RS: 2585.54*

INPUT
Description:
Station Elevation Data num= 154

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	321.29	7.05	320.41	7.77	320.26	23.87	315.03	29.47	313.11
30.52	312.76	33.91	311	34.33	310.78	40.1	308.08	64.58	296.83
67.1	295.86	75.68	292.55	77.5	291.78	79.15	291.07	79.33	291.01
83.42	289.61	85.95	288.64	91.08	286.67	95.14	285.32	95.95	285.15
105.06	283.11	112.6	282.19	113.72	282.16	119.15	281.91	125.08	281.83
130.52	281.75	144.57	281.34	145.14	281.33	154.66	281.16	160.59	280.98
168.28	280.84	215.67	280.87	230.33	280.92	241.72	280.92	264.27	281.3
269.85	281.34	315.98	282.39	318.21	282.44	328.63	282.68	333.24	282.78
375.74	283.98	384.61	284.27	384.82	284.27	406.57	285.17	429.75	286.13
433.26	286.28	443.96	286.7	456.85	287.3	467.68	287.65	475.45	288.14
492.92	289.8	494.17	289.84	504.18	290.39	508.24	291.07	513.67	291.59
514.31	291.77	518.15	293.11	523.06	294.96	529.39	296.27	532.54	296.67
538.21	297.25	541.6	297.64	545.4	297.97	563.02	299.51	593.72	301.29
599.65	301.5	602.4	301.81	604.9	301.94	621.05	302.76	624.5	303.06
624.66	303.05	632.7	302.69	643.46	302.5	644.42	302.53	655.96	302.83
656.92	302.84	659.62	302.91	664.15	302.99	664.94	302.96	665.42	302.92
668.5	302.62	673.25	302.15	674.51	301.83	675.26	301.63	676.91	301.12
677.28	300.97	677.65	300.81	682.66	298.38	685.48	296.97	689.16	294.68
691.22	293.15	691.64	292.83	692.24	292.4	694.67	290.31	696.01	289.25
697.6	288.43	697.71	288.38	700.1	287.95	702.26	287.8	714.88	286.9
733.43	287.02	734.24	287.04	735.97	287.08	740.26	287.22	741.95	287.34
743.2	287.57	744.9	287.89	745.83	288.11	751.23	289.41	752.01	289.99
755.55	292.97	759.51	296.64	762.74	298.77	767.8	302.1	770.58	303.72
773.6	305.67	775.4	306.75	777.36	308.11	782.66	310.48	782.94	310.62

782.98	310.63	797.86	311.56	799.51	311.64	801.64	311.74	808.6	311.74
812.25	311.74	815.54	311.68	830.22	311.48	835.57	311.37	835.76	311.37
870.09	311.54	890.1	311.65	893.71	311.67	897.51	311.8	897.85	311.81
898.79	311.81	910.46	311.96	916.13	311.98	923.25	312.5	924.08	312.53
930.27	312.68	934.61	312.94	938.8	313.23	940.67	313.42	948.05	314.31
955.26	315.54	959.61	316.63	961.25	317.18	962.86	317.73	967.69	319.86
975.48	323.03	976.77	323.25	978.04	323.43	980.77	323.79		

Manning's n Values num= 14

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	79.33	.045	85.95	.05	406.57	.04	429.75	.035
545.4	.045	604.9	.04	694.67	.04	733.43	.05	743.2	.04
752.01	.02	797.86	.02	830.22	.04	890.1	.05		

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
694.67	752.01	29.22	41.66	51.58	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
0661.7233		303.08	F

CROSS SECTION OUTPUT Profile #Q50

			Left OB	Channel	Right OB
E.G. Elev (ft)	307.62	Element			
Vel Head (ft)	0.03	Wt. n-Val.	0.046	0.042	0.020
W.S. Elev (ft)	307.59	Reach Len. (ft)	29.22	41.66	51.58
Crit W.S. (ft)	302.10	Flow Area (sq ft)	12075.43	1149.71	200.46
E.G. Slope (ft/ft)	0.000033	Area (sq ft)	12075.43	1149.71	200.46
Q Total (cfs)	19090.00	Flow (cfs)	17088.42	1702.18	299.40
Top Width (ft)	735.43	Top Width (ft)	653.50	57.34	24.60
Vel Total (ft/s)	1.42	Avg. Vel. (ft/s)	1.42	1.48	1.49
Max Chl Dpth (ft)	26.75	Hydr. Depth (ft)	18.48	20.05	8.15
Conv. Total (cfs)	3344268.0	Conv. (cfs)	2993622.0	298195.7	52450.7
Length Wtd. (ft)	30.64	Wetted Per. (ft)	662.90	58.42	30.33
Min Ch El (ft)	286.90	Shear (lb/sq ft)	0.04	0.04	0.01
Alpha	1.00	Stream Power (lb/ft s)	0.05	0.06	0.02
Frctn Loss (ft)	0.00	Cum Volume (acre-ft)	60.32	147.78	15.09
C & E Loss (ft)	0.00	Cum SA (acres)	8.43	18.55	3.68

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

			Left OB	Channel	Right OB
E.G. Elev (ft)	303.28	Element			
Vel Head (ft)	0.14	Wt. n-Val.	0.047	0.042	0.020
W.S. Elev (ft)	303.14	Reach Len. (ft)	29.22	41.66	51.58
Crit W.S. (ft)	303.09	Flow Area (sq ft)	9192.17	894.84	106.49
E.G. Slope (ft/ft)	0.000184	Area (sq ft)	9192.17	894.84	106.49
Q Total (cfs)	30242.00	Flow (cfs)	27273.34	2661.99	306.68
Top Width (ft)	718.74	Top Width (ft)	643.83	57.34	17.58
Vel Total (ft/s)	2.97	Avg. Vel. (ft/s)	2.97	2.97	2.88
Max Chl Dpth (ft)	22.30	Hydr. Depth (ft)	14.28	15.61	6.06
Conv. Total (cfs)	2230997.0	Conv. (cfs)	2011994.0	196378.8	22624.0
Length Wtd. (ft)	30.51	Wetted Per. (ft)	652.26	58.42	22.02
Min Ch El (ft)	286.90	Shear (lb/sq ft)	0.16	0.18	0.06
Alpha	1.00	Stream Power (lb/ft s)	0.48	0.52	0.16
Frctn Loss (ft)	0.01	Cum Volume (acre-ft)	79.52	201.63	27.14

C & E Loss (ft)	0.00	Cum SA (acres)	9.06	18.55	4.93

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

CROSS SECTION OUTPUT Profile #Q100HC

E.G. Elev (ft)	303.98	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.87	Wt. n-Val.	0.047	0.042	0.020
W.S. Elev (ft)	303.11	Reach Len. (ft)	29.22	41.66	51.58
Crit W.S. (ft)	303.09	Flow Area (sq ft)	9171.15	892.97	105.92
E.G. Slope (ft/ft)	0.001173	Area (sq ft)	9171.15	892.97	105.92
Q Total (cfs)	76166.00	Flow (cfs)	68693.77	6702.77	769.47
Top Width (ft)	718.62	Top Width (ft)	643.75	57.34	17.52
Vel Total (ft/s)	7.49	Avg. Vel. (ft/s)	7.49	7.51	7.26
Max Chl Dpth (ft)	22.27	Hydr. Depth (ft)	14.25	15.57	6.04
Conv. Total (cfs)	2223747.0	Conv. (cfs)	2005587.0	195694.4	22465.5
Length Wtd. (ft)	30.51	Wetted Per. (ft)	652.18	58.42	21.96
Min Ch El (ft)	286.90	Shear (lb/sq ft)	1.03	1.12	0.35
Alpha	1.00	Stream Power (lb/ft s)	7.71	8.40	2.57
Frctn Loss (ft)	0.03	Cum Volume (acre-ft)	157.76	364.52	96.80
C & E Loss (ft)	0.02	Cum SA (acres)	11.44	18.55	11.83

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

CROSS SECTION

RIVER: San Juan Creek
REACH: Upper RS: 2543.88*

INPUT
Description:
Station Elevation Data num= 154

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	321.29	7.24	320.43	7.99	320.32	24.53	315.35	30.28	313.5
31.37	313.15	34.85	311.26	35.28	311.03	41.21	308.16	66.36	296.11
68.96	295.1	77.77	291.66	79.64	290.91	81.34	290.21	81.53	290.15
85.72	288.87	88.33	287.94	93.6	286.07	97.77	284.69	98.6	284.54
107.97	282.73	115.71	282.19	116.87	282.17	122.45	281.9	128.54	281.84
134.13	281.78	148.56	281.39	149.15	281.38	158.94	281.16	165.03	280.99
172.93	280.82	221.63	280.87	236.7	280.93	248.4	280.96	271.58	281.2
277.31	281.23	324.72	282.4	327	282.45	337.71	282.69	342.45	282.8
386.12	283.91	395.24	284.16	395.46	284.16	417.81	285.04	441.63	285.97
445.23	286.11	456.23	286.53	469.48	287.07	480.61	287.35	488.6	287.67
506.54	289.08	507.83	289.09	518.12	289.25	522.29	289.87	527.87	290.23
528.52	290.42	532.48	291.9	537.52	293.85	544.02	295.03	547.26	295.49
553.09	296.15	556.57	296.55	560.47	296.89	578.58	298.46	610.13	300.74
616.22	301.01	619.05	301.41	621.62	301.57	638.22	302.63	641.77	303.02
641.93	303.01	650.19	302.57	661.25	302.36	662.23	302.39	674.1	302.8
675.08	302.83	677.85	302.93	682.51	303.07	683.32	303.04	683.82	302.99
686.98	302.64	691.86	302.1	693.15	301.71	693.92	301.47	695.62	300.91
696.01	300.76	696.39	300.62	701.53	298.16	704.43	296.72	708.21	294.62
710.33	293.14	710.76	292.82	711.37	292.38	713.88	290.13	715.16	289.25
716.7	288.42	716.8	288.37	719.1	288.04	721.18	287.85	733.33	286.77
753.43	286.9	754.31	286.92	756.18	286.94	760.84	287.06	762.66	287.14
764.02	287.38	765.87	287.71	766.88	287.91	772.73	289.12	773.58	289.79
776.65	292.4	780.1	295.51	782.91	297.61	787.31	300.9	789.73	302.6

792.36	304.54	793.93	305.65	795.63	307.11	800.24	309.38	800.49	309.52
800.52	309.52	816.55	310.6	818.34	310.7	820.63	310.84	828.13	310.87
832.06	310.88	835.6	310.82	851.42	310.59	857.19	310.46	857.39	310.46
894.37	310.08	915.93	309.86	919.81	309.82	923.92	309.83	924.28	309.84
925.3	309.83	937.87	309.84	943.98	309.79	951.65	310.34	952.54	310.35
959.2	310.46	963.88	310.72	968.39	310.99	970.42	311.18	978.36	312.02
986.13	313.29	990.81	314.48	992.58	315.11	994.31	315.72	999.52	318.19
1007.92	321.83	1009.3	322.05	1010.68	322.25	1013.61	322.67		

Manning's n Values num= 16

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	81.53	.047	88.33	.05	417.81	.038	441.63	.035
560.47	.047	621.62	.038	713.88	.045	754.31	.05	764.02	.038
773.58	.02	816.55	.02	857.19	.045	894.37	.045	915.93	.05
1013.61	.05								

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
713.88	773.58	29.22 41.66	51.58	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
0681.2966		303.11	F

CROSS SECTION OUTPUT Profile #Q50

E.G. Elev (ft)	307.62	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.03	Wt. n-Val.	0.046	0.045	0.020
W.S. Elev (ft)	307.59	Reach Len. (ft)	29.22	41.66	51.58
Crit W.S. (ft)	301.61	Flow Area (sq ft)	12602.18	1204.40	196.21
E.G. Slope (ft/ft)	0.000030	Area (sq ft)	12602.18	1204.40	196.21
Q Total (cfs)	19090.00	Flow (cfs)	17207.34	1599.26	283.40
Top Width (ft)	754.20	Top Width (ft)	671.48	59.70	23.02
Vel Total (ft/s)	1.36	Avg. Vel. (ft/s)	1.37	1.33	1.44
Max Chl Dpth (ft)	26.77	Hydr. Depth (ft)	18.77	20.17	8.52
Conv. Total (cfs)	3500929.0	Conv. (cfs)	3155666.0	293289.2	51973.2
Length Wtd. (ft)	36.02	Wetted Per. (ft)	681.00	60.70	29.15
Min Ch El (ft)	286.77	Shear (lb/sq ft)	0.03	0.04	0.01
Alpha	1.00	Stream Power (lb/ft s)	0.05	0.05	0.02
Frctn Loss (ft)	0.00	Cum Volume (acre-ft)	52.05	146.66	14.85
C & E Loss (ft)	0.57	Cum SA (acres)	7.98	18.50	3.65

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

Warning: The conveyance ratio (upstream 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)	303.27	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.12	Wt. n-Val.	0.046	0.045	0.020
W.S. Elev (ft)	303.15	Reach Len. (ft)	29.22	41.66	51.58
Crit W.S. (ft)	303.12	Flow Area (sq ft)	9639.64	939.17	107.90
E.G. Slope (ft/ft)	0.000166	Area (sq ft)	9639.64	939.17	107.90

Q Total (cfs)	30242.00	Flow (cfs)	27440.57	2498.86	302.57
Top Width (ft)	738.79	Top Width (ft)	662.20	59.70	16.89
Vel Total (ft/s)	2.83	Avg. Vel. (ft/s)	2.85	2.66	2.80
Max Chl Dpth (ft)	22.33	Hydr. Depth (ft)	14.56	15.73	6.39
Conv. Total (cfs)	2344896.0	Conv. (cfs)	2127679.0	193755.7	23460.5
Length Wtd. (ft)	30.51	Wetted Per. (ft)	670.72	60.70	21.55
Min Ch El (ft)	286.77	Shear (lb/sq ft)	0.15	0.16	0.05
Alpha	1.00	Stream Power (lb/ft s)	0.42	0.43	0.15
Frctn Loss (ft)	0.00	Cum Volume (acre-ft)	73.21	200.75	27.01
C & E Loss (ft)	0.00	Cum SA (acres)	8.62	18.50	4.91

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

CROSS SECTION OUTPUT Profile #Q100HC

E.G. Elev (ft)	303.92	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.79	Wt. n-Val.	0.046	0.045	0.020
W.S. Elev (ft)	303.13	Reach Len. (ft)	29.22	41.66	51.58
Crit W.S. (ft)	303.12	Flow Area (sq ft)	9630.48	938.35	107.67
E.G. Slope (ft/ft)	0.001058	Area (sq ft)	9630.48	938.35	107.67
Q Total (cfs)	76166.00	Flow (cfs)	69112.24	6292.88	760.88
Top Width (ft)	738.75	Top Width (ft)	662.17	59.70	16.87
Vel Total (ft/s)	7.13	Avg. Vel. (ft/s)	7.18	6.71	7.07
Max Chl Dpth (ft)	22.31	Hydr. Depth (ft)	14.54	15.72	6.38
Conv. Total (cfs)	2341691.0	Conv. (cfs)	2124827.0	193472.0	23392.9
Length Wtd. (ft)	30.51	Wetted Per. (ft)	670.69	60.70	21.53
Min Ch El (ft)	286.77	Shear (lb/sq ft)	0.95	1.02	0.33
Alpha	1.00	Stream Power (lb/ft s)	6.81	6.85	2.33
Frctn Loss (ft)	0.03	Cum Volume (acre-ft)	151.45	363.64	96.68
C & E Loss (ft)	0.02	Cum SA (acres)	11.00	18.50	11.81

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

CROSS SECTION

RIVER: San Juan Creek
REACH: Upper RS: 2502.231

INPUT
Description:
Station Elevation Data num= 88

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	321.29	8.2	320.37	25.19	315.67	32.21	313.55	36.23	311.27
68.15	295.38	70.81	294.34	83.53	289.34	83.72	289.29	88.03	288.13
100.4	284.06	110.87	282.35	120.01	282.17	125.74	281.89	137.74	281.82
177.58	280.8	227.59	280.87	284.77	281.12	333.45	282.4	405.87	284.06
406.1	284.06	429.05	284.9	482.11	286.85	501.74	287.2	520.17	288.37
532.06	288.1	536.34	288.68	542.07	288.88	542.74	289.08	551.98	292.74
561.98	294.31	571.54	295.47	575.55	295.81	626.54	300.19	632.8	300.53
635.7	301.01	638.34	301.21	655.39	302.5	659.03	302.97	667.68	302.45
679.04	302.21	700.87	303.14	701.7	303.11	702.21	303.06	710.47	302.05
711.8	301.59	714.73	300.56	715.12	300.42	720.4	297.93	727.26	294.56
729.44	293.12	730.51	292.35	733.08	289.94	735.89	288.36	740.1	287.91
751.77	286.63	774.38	286.8	776.4	286.81	783.38	286.94	784.84	287.18
787.92	287.7	794.23	288.83	795.14	289.58	806.82	299.69	812.45	304.56
813.9	306.1	817.82	308.28	818.03	308.41	818.07	308.42	837.16	309.77

839.62	309.94	851.87	310.03	872.62	309.7	879.02	309.55	950.32	307.87
951.8	307.84	965.27	307.72	971.82	307.59	980.04	308.17	988.14	308.24
997.99	308.75	1008.67	309.73	1017	311.03	1022.02	312.33	1025.77	313.72
1031.35	316.52	1040.35	320.62	1046.45	321.55				

Manning's n Values num= 9

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	83.72	.05	429.05	.035	575.55	.05	638.34	.035
774.38	.05	784.84	.035	837.16	.02	879.02	.05		

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
733.08	795.14	45.42	45.32	47.38	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
0	700.87	303.14	F

CROSS SECTION OUTPUT Profile #Q50

E.G. Elev (ft)	307.04	Element	Left OB	Channel	Right OB
Vel Head (ft)	5.73	Wt. n-Val.	0.035	0.038	0.035
W.S. Elev (ft)	301.31	Reach Len. (ft)	45.42	45.32	47.38
Crit W.S. (ft)	301.31	Flow Area (sq ft)	98.71	870.36	79.48
E.G. Slope (ft/ft)	0.007702	Area (sq ft)	8931.85	870.36	79.48
Q Total (cfs)	19090.00	Flow (cfs)	954.58	17336.17	799.25
Top Width (ft)	679.51	Top Width (ft)	603.90	62.06	13.55
Vel Total (ft/s)	18.21	Avg. Vel. (ft/s)	9.67	19.92	10.06
Max Chl Dpth (ft)	20.51	Hydr. Depth (ft)	4.82	14.02	5.86
Conv. Total (cfs)	217516.4	Conv. (cfs)	10876.8	197532.8	9106.8
Length Wtd. (ft)	45.41	Wetted Per. (ft)	23.61	63.00	17.92
Min Ch El (ft)	286.63	Shear (lb/sq ft)	2.01	6.64	2.13
Alpha	1.11	Stream Power (lb/ft s)	19.44	132.32	21.44
Frctn Loss (ft)	0.36	Cum Volume (acre-ft)	44.82	145.67	14.69
C & E Loss (ft)	1.46	Cum SA (acres)	7.56	18.44	3.63

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: Divided flow computed for this cross-section.
Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.
Note: 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)	303.26	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.11	Wt. n-Val.	0.046	0.038	0.035
W.S. Elev (ft)	303.15	Reach Len. (ft)	45.42	45.32	47.38
Crit W.S. (ft)	303.15	Flow Area (sq ft)	10097.69	984.42	106.34
E.G. Slope (ft/ft)	0.000146	Area (sq ft)	10097.69	984.42	106.34
Q Total (cfs)	30242.00	Flow (cfs)	27150.08	2929.73	162.18
Top Width (ft)	758.27	Top Width (ft)	680.53	62.06	15.68
Vel Total (ft/s)	2.70	Avg. Vel. (ft/s)	2.69	2.98	1.53

Max Chl Dpth (ft)	22.35	Hydr. Depth (ft)	14.84	15.86	6.78
Conv. Total (cfs)	2503572.0	Conv. (cfs)	2247609.0	242536.7	13426.4
Length Wtd. (ft)	45.43	Wetted Per. (ft)	689.26	63.00	20.73
Min Ch El (ft)	286.63	Shear (lb/sq ft)	0.13	0.14	0.05
Alpha	1.01	Stream Power (lb/ft s)	0.36	0.42	0.07
Frctn Loss (ft)	0.02	Cum Volume (acre-ft)	66.59	199.83	26.88
C & E Loss (ft)	0.07	Cum SA (acres)	8.17	18.44	4.89

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

CROSS SECTION OUTPUT Profile #Q100HC

E.G. Elev (ft)	303.87	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.72	Wt. n-Val.	0.046	0.038	0.035
W.S. Elev (ft)	303.15	Reach Len. (ft)	45.42	45.32	47.38
Crit W.S. (ft)	303.15	Flow Area (sq ft)	10097.69	984.42	106.34
E.G. Slope (ft/ft)	0.000926	Area (sq ft)	10097.69	984.42	106.34
Q Total (cfs)	76166.00	Flow (cfs)	68378.85	7378.68	408.47
Top Width (ft)	758.27	Top Width (ft)	680.53	62.06	15.68
Vel Total (ft/s)	6.81	Avg. Vel. (ft/s)	6.77	7.50	3.84
Max Chl Dpth (ft)	22.35	Hydr. Depth (ft)	14.84	15.86	6.78
Conv. Total (cfs)	2503572.0	Conv. (cfs)	2247609.0	242536.7	13426.4
Length Wtd. (ft)	45.46	Wetted Per. (ft)	689.26	63.00	20.73
Min Ch El (ft)	286.63	Shear (lb/sq ft)	0.85	0.90	0.30
Alpha	1.01	Stream Power (lb/ft s)	5.73	6.77	1.14
Frctn Loss (ft)	0.06	Cum Volume (acre-ft)	144.84	362.72	96.55
C & E Loss (ft)	0.02	Cum SA (acres)	10.55	18.44	11.79

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

CROSS SECTION

RIVER: San Juan Creek
REACH: Upper RS: 2456.91*

INPUT
Description:
Station Elevation Data num= 129

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	321.37	1.88	321.16	4.37	320.9	12.99	319.99	23.36	317.16
27.09	316.11	29.78	315.17	36.71	312.6	40.68	310.24	45.09	307.88
52.95	303.61	55.93	302	66.13	297.12	70.89	294.97	72.23	294.35
74.86	293.38	87.43	288.68	87.61	288.63	91.76	287.51	91.87	287.49
98.35	285.53	103.93	283.84	104.1	283.79	114.44	282.16	122.62	281.99
124.87	281.88	127.74	281.75	138.47	281.66	161.06	281.08	166.63	280.92
174.1	280.75	217.3	280.82	266.68	281.05	308.73	282.13	376.84	283.66
377.05	283.66	398.64	284.4	442.86	286.03	459.21	286.32	473.49	286.91
488.05	287.55	510.5	287.97	534.44	288.16	588.85	288.39	617.15	288.5
651.97	288.28	666.29	287.19	675.44	286.79	689.48	286.39	695.36	286.21
708	285.77	719.08	285.84	729.22	285.91	731.88	285.93	741.07	286.11
742.99	286.32	747.05	286.78	755.35	287.79	756.55	288.42	759.34	288.4
764.42	288.41	776.57	288.43	776.7	288.48	776.71	288.48	776.76	288.51
780.06	289.92	784.98	292.04	798.27	297.87	798.72	298.07	804.59	300.62
805.14	300.89	805.73	301.18	806.32	301.45	808.73	302.52	811.42	303.96
811.79	304.08	815.19	305.12	818.7	306.09	818.89	306.14	819.09	306.2
819.17	306.21	828.23	306.74	831.08	307.11	833.05	307.38	834.83	307.64
836.41	307.87	838.19	307.99	843.96	308.45	845.59	308.73	847.37	309.04
849.86	309.28	851.89	309.55	853.19	309.68	854.63	309.81	857.02	309.9
861.91	309.84	868.91	309.87	885.77	309.59	889.04	309.54	895.26	309.4
929.69	308.62	964.46	307.82	965.89	307.8	966.3	307.79	978.97	307.66
985.32	307.54	993.3	308	1001.16	308.04	1010.72	308.44	1015.89	308.95
1020.63	309.43	1020.91	309.45	1024.33	309.99	1028.85	310.88	1031.27	311.57
1033.64	312.25	1037.21	313.63	1042.54	316.28	1049.27	319.38	1051.12	320.14
1056.93	321.02	1058.27	321.08	1060.29	321.16	1061.82	321.13	1064.42	321.02
1064.48	321.03	1064.51	321.03	1068.62	321.18	1078.96	321.55		

Manning's n Values num= 16

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	36.71	.041	74.86	.053	217.3	.064	376.84	.038
534.44	.05	588.85	.038	666.29	.047	741.07	.035	756.55	.025
819.17	.05	861.91	.047	964.46	.032	978.97	.025	1020.63	.053
1051.12	.067								

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
651.97	756.55	45.42	45.32	47.38	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
0	651.97	288.28	F

CROSS SECTION OUTPUT Profile #Q50

E.G. Elev (ft)	289.53	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.87	Wt. n-Val.	0.056	0.045	0.025
W.S. Elev (ft)	288.66	Reach Len. (ft)	45.42	45.32	47.38
Crit W.S. (ft)	288.29	Flow Area (sq ft)	2354.41	222.08	4.99
E.G. Slope (ft/ft)	0.007939	Area (sq ft)	2354.41	222.08	4.99
Q Total (cfs)	19090.00	Flow (cfs)	17964.24	1115.49	10.27
Top Width (ft)	689.61	Top Width (ft)	564.47	104.58	20.56
Vel Total (ft/s)	7.39	Avg. Vel. (ft/s)	7.63	5.02	2.06
Max Chl Dpth (ft)	7.91	Hydr. Depth (ft)	4.17	2.12	0.24
Conv. Total (cfs)	214257.6	Conv. (cfs)	201622.6	12519.8	115.3
Length Wtd. (ft)	45.42	Wetted Per. (ft)	565.43	104.90	20.61
Min Ch El (ft)	285.77	Shear (lb/sq ft)	2.06	1.05	0.12
Alpha	1.03	Stream Power (lb/ft s)	15.75	5.27	0.25
Frctn Loss (ft)	0.37	Cum Volume (acre-ft)	38.94	145.10	14.64
C & E Loss (ft)	0.01	Cum SA (acres)	6.95	18.35	3.61

CROSS SECTION OUTPUT Profile #Q100

E.G. Elev (ft)	291.72	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.84	Wt. n-Val.	0.054	0.044	0.025
W.S. Elev (ft)	290.88	Reach Len. (ft)	45.42	45.32	47.38
Crit W.S. (ft)	288.90	Flow Area (sq ft)	3610.76	453.62	56.25
E.G. Slope (ft/ft)	0.005137	Area (sq ft)	3610.76	453.62	56.25
Q Total (cfs)	30242.00	Flow (cfs)	26924.61	2918.95	398.44
Top Width (ft)	700.72	Top Width (ft)	570.41	104.58	25.73
Vel Total (ft/s)	7.34	Avg. Vel. (ft/s)	7.46	6.43	7.08
Max Chl Dpth (ft)	10.13	Hydr. Depth (ft)	6.33	4.34	2.19
Conv. Total (cfs)	421960.3	Conv. (cfs)	375673.5	40727.4	5559.4
Length Wtd. (ft)	45.46	Wetted Per. (ft)	571.77	104.90	26.23
Min Ch El (ft)	285.77	Shear (lb/sq ft)	2.03	1.39	0.69
Alpha	1.01	Stream Power (lb/ft s)	15.10	8.92	4.87
Frctn Loss (ft)	0.22	Cum Volume (acre-ft)	59.44	199.09	26.79
C & E Loss (ft)	0.01	Cum SA (acres)	7.52	18.35	4.87

CROSS SECTION OUTPUT Profile #Q100HC

E.G. Elev (ft)	300.05	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.89	Wt. n-Val.	0.050	0.044	0.025
W.S. Elev (ft)	299.16	Reach Len. (ft)	45.42	45.32	47.38
Crit W.S. (ft)	292.19	Flow Area (sq ft)	8424.46	1320.35	348.12
E.G. Slope (ft/ft)	0.001748	Area (sq ft)	8424.46	1320.35	348.12
Q Total (cfs)	76166.00	Flow (cfs)	62713.89	10160.85	3291.26
Top Width (ft)	739.38	Top Width (ft)	590.11	104.58	44.69
Vel Total (ft/s)	7.55	Avg. Vel. (ft/s)	7.44	7.70	9.45
Max Chl Dpth (ft)	18.41	Hydr. Depth (ft)	14.28	12.63	7.79
Conv. Total (cfs)	1821509.0	Conv. (cfs)	1499802.0	242996.7	78710.4
Length Wtd. (ft)	45.52	Wetted Per. (ft)	593.16	104.90	46.92
Min Ch El (ft)	285.77	Shear (lb/sq ft)	1.55	1.37	0.81
Alpha	1.01	Stream Power (lb/ft s)	11.54	10.57	7.66
Frctn Loss (ft)	0.08	Cum Volume (acre-ft)	135.18	361.52	96.30
C & E Loss (ft)	0.01	Cum SA (acres)	9.89	18.35	11.76

CROSS SECTION

RIVER: San Juan Creek
REACH: Upper RS: 2411.59*

INPUT
Description:
Station Elevation Data num= 127

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	321.45	2.58	321.16	5.98	320.81	17.77	319.61	28.02	316.86
31.71	315.8	34.36	314.67	41.22	311.65	45.14	309.21	49.49	306.71
57.26	302.14	60.2	300.41	70.28	295.79	74.99	293.89	76.3	293.33
78.9	292.41	91.32	288.02	91.51	287.97	95.61	286.87	95.71	286.84
102.11	285.09	107.63	283.57	107.79	283.53	118.01	281.96	125.22	281.81
127.21	281.72	129.74	281.6	139.21	281.51	159.12	280.98	164.03	280.83
170.63	280.7	207	280.78	248.59	280.97	284	281.85	347.81	283.25
348.01	283.25	368.23	283.9	403.6	285.2	416.69	285.44	428.98	286.22
436.9	286.04	439.76	286.42	443.58	286.56	570.92	287.26	596.69	286.01
610.78	285.67	633.83	285.43	643.48	285.29	664.23	284.91	674.59	284.97

684.06	285.01	687.36	285.06	698.76	285.28	701.14	285.46	706.17	285.87
716.47	286.74	717.96	287.26	723.54	287.21	733.7	287.23	758	287.28
758.19	287.32	758.21	287.32	758.28	287.34	763.1	288.64	770.29	290.58
789.72	296.05	790.38	296.24	798.96	298.61	799.75	298.89	800.62	299.2
801.49	299.45	805	300.48	808.94	301.83	809.48	301.95	814.45	303.02
819.58	303.89	819.87	303.94	820.15	304	820.26	304.01	833.52	304.71
837.68	305.35	840.56	305.81	843.15	306.25	845.47	306.65	848.06	306.84
856.5	307.54	858.88	308.03	861.49	308.6	865.13	308.96	868.1	309.43
869.99	309.65	872.1	309.85	874.41	309.87	879.16	309.7	885.94	309.7
902.3	309.43	905.47	309.38	911.49	309.25	944.88	308.52	978.59	307.78
979.98	307.75	980.38	307.75	992.66	307.61	998.82	307.49	1006.56	307.83
1014.18	307.84	1023.45	308.13	1028.37	308.66	1032.88	309.15	1033.14	309.18
1036.4	309.69	1040.7	310.73	1043	311.45	1045.26	312.17	1048.66	313.53
1053.72	316.05	1060.13	319.02	1061.89	319.67	1067.42	320.5	1070.09	320.61
1074.13	320.77	1077.2	320.71	1082.38	320.5	1082.52	320.51	1082.57	320.51
1090.78	320.81	1111.48	321.56						

Manning's n Values num= 13

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	31.71	.047	70.28	.057	207	.058	347.81	.04
570.92	.045	687.36	.035	717.96	.03	798.96	.05	845.47	.045
978.59	.03	1040.7	.057	1077.2	.063				

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
570.92	717.96	45.42	45.32	47.38	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
0	570.92	287.26	F

CROSS SECTION OUTPUT Profile #Q50

			Left OB	Channel	Right OB
E.G. Elev (ft)	289.16	Element			
Vel Head (ft)	0.85	Wt. n-Val.	0.054	0.043	0.030
W.S. Elev (ft)	288.31	Reach Len. (ft)	45.42	45.32	47.38
Crit W.S. (ft)	287.40	Flow Area (sq ft)	2169.29	392.37	44.69
E.G. Slope (ft/ft)	0.008293	Area (sq ft)	2169.29	392.37	44.69
Q Total (cfs)	19090.00	Flow (cfs)	16491.52	2394.95	203.53
Top Width (ft)	671.37	Top Width (ft)	480.42	147.04	43.91
Vel Total (ft/s)	7.32	Avg. Vel. (ft/s)	7.60	6.10	4.55
Max Chl Dpth (ft)	7.61	Hydr. Depth (ft)	4.52	2.67	1.02
Conv. Total (cfs)	209626.8	Conv. (cfs)	181093.0	26298.9	2234.9
Length Wtd. (ft)	45.45	Wetted Per. (ft)	481.33	147.23	44.05
Min Ch El (ft)	284.91	Shear (lb/sq ft)	2.33	1.38	0.53
Alpha	1.02	Stream Power (lb/ft s)	17.74	8.42	2.39
Frctn Loss (ft)	0.35	Cum Volume (acre-ft)	36.58	144.78	14.62
C & E Loss (ft)	0.02	Cum SA (acres)	6.40	18.22	3.57

CROSS SECTION OUTPUT Profile #Q100

			Left OB	Channel	Right OB
E.G. Elev (ft)	291.48	Element			
Vel Head (ft)	0.80	Wt. n-Val.	0.052	0.043	0.030
W.S. Elev (ft)	290.69	Reach Len. (ft)	45.42	45.32	47.38
Crit W.S. (ft)	288.48	Flow Area (sq ft)	3318.79	741.75	159.49
E.G. Slope (ft/ft)	0.004571	Area (sq ft)	3318.79	741.75	159.49
Q Total (cfs)	30242.00	Flow (cfs)	23984.76	5146.18	1111.07
Top Width (ft)	686.88	Top Width (ft)	487.14	147.04	52.70
Vel Total (ft/s)	7.17	Avg. Vel. (ft/s)	7.23	6.94	6.97
Max Chl Dpth (ft)	9.99	Hydr. Depth (ft)	6.81	5.04	3.03

Conv. Total (cfs)	447322.0	Conv. (cfs)	354768.6	76119.2	16434.2
Length Wtd. (ft)	45.50	Wetted Per. (ft)	488.46	147.23	53.15
Min Ch El (ft)	284.91	Shear (lb/sq ft)	1.94	1.44	0.86
Alpha	1.00	Stream Power (lb/ft s)	14.01	9.97	5.96
Frctn Loss (ft)	0.19	Cum Volume (acre-ft)	55.83	198.46	26.68
C & E Loss (ft)	0.02	Cum SA (acres)	6.96	18.22	4.83

CROSS SECTION OUTPUT Profile #Q100HC

E.G. Elev (ft)	299.97	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.87	Wt. n-Val.	0.050	0.043	0.030
W.S. Elev (ft)	299.10	Reach Len. (ft)	45.42	45.32	47.38
Crit W.S. (ft)	291.82	Flow Area (sq ft)	7511.24	1979.36	729.04
E.G. Slope (ft/ft)	0.001587	Area (sq ft)	7511.24	1979.36	729.04
Q Total (cfs)	76166.00	Flow (cfs)	54436.45	15586.58	6142.97
Top Width (ft)	737.29	Top Width (ft)	507.87	147.04	82.38
Vel Total (ft/s)	7.45	Avg. Vel. (ft/s)	7.25	7.87	8.43
Max Chl Dpth (ft)	18.40	Hydr. Depth (ft)	14.79	13.46	8.85
Conv. Total (cfs)	1911642.0	Conv. (cfs)	1366266.0	391197.7	154178.6
Length Wtd. (ft)	45.60	Wetted Per. (ft)	510.84	147.23	84.01
Min Ch El (ft)	284.91	Shear (lb/sq ft)	1.46	1.33	0.86
Alpha	1.01	Stream Power (lb/ft s)	10.56	10.49	7.25
Frctn Loss (ft)	0.07	Cum Volume (acre-ft)	126.87	359.80	95.72
C & E Loss (ft)	0.01	Cum SA (acres)	9.31	18.22	11.69

CROSS SECTION

RIVER: San Juan Creek
REACH: Upper RS: 2366.27*

INPUT
Description:
Station Elevation Data num= 128

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	321.53	3.27	321.16	7.59	320.73	22.56	319.23	32.68	316.55
36.33	315.49	38.95	314.18	45.72	310.71	49.59	308.19	53.89	305.55
61.57	300.66	64.47	298.82	74.43	294.46	79.08	292.81	80.38	292.3
82.95	291.45	95.22	287.36	95.4	287.31	99.45	286.22	99.56	286.2
105.88	284.65	111.33	283.3	111.49	283.26	121.59	281.77	127.83	281.63
129.55	281.55	131.74	281.46	139.94	281.35	157.19	280.89	161.44	280.74
167.15	280.65	196.71	280.73	230.5	280.9	259.28	281.58	318.78	282.85
318.96	282.85	337.82	283.4	364.35	284.38	374.16	284.55	383.38	285.14
389.33	285.01	391.47	285.29	394.33	285.4	394.66	285.49	489.84	285.92
527.09	284.84	546.12	284.55	578.18	284.46	591.6	284.37	620.47	284.05
630.09	284.09	638.91	284.12	642.84	284.18	656.45	284.45	659.29	284.61
665.3	284.95	677.6	285.7	679.37	286.1	687.74	286.03	702.98	286.06
739.43	286.12	739.68	286.16	739.7	286.16	739.8	286.18	746.14	287.36
755.6	289.13	781.17	294.24	782.04	294.41	793.33	296.6	794.37	296.89
795.52	297.22	796.66	297.46	801.28	298.45	806.46	299.69	807.17	299.82
813.71	300.91	820.47	301.7	820.84	301.74	821.22	301.79	821.36	301.8
838.8	302.69	844.28	303.58	848.06	304.23	851.48	304.87	854.53	305.44
857.94	305.69	869.04	306.63	872.18	307.34	875.61	308.15	880.4	308.65
884.3	309.31	886.79	309.62	889.56	309.89	891.81	309.83	896.41	309.56
902.98	309.54	918.82	309.27	921.89	309.22	927.73	309.1	960.07	308.42
992.73	307.73	994.08	307.71	994.46	307.7	1006.36	307.55	1012.33	307.44
1019.82	307.67	1027.21	307.64	1036.19	307.83	1040.85	308.37	1045.13	308.87

1045.38	308.9	1048.47	309.39	1052.55	310.57	1054.73	311.34	1056.87	312.09
1060.1	313.44	1064.91	315.81	1070.99	318.65	1072.65	319.19	1077.91	319.97
1081.92	320.14	1087.97	320.38	1092.57	320.28	1100.35	319.97	1100.55	319.99
1100.63	319.99	1112.95	320.44	1143.99	321.57				

Manning's n Values num= 14

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	32.68	.053	61.57	.06	157.19	.053	318.78	.043
389.33	.05	489.84	.043	642.84	.035	781.17	.05	838.8	.043
960.07	.027	992.73	.035	1060.1	.06	1112.95	.06		

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
489.84	679.37	45.42	45.32	47.38	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
0	489.84	285.92	F

CROSS SECTION OUTPUT Profile #Q50

E.G. Elev (ft)	288.80	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.80	Wt. n-Val.	0.052	0.041	0.035
W.S. Elev (ft)	288.00	Reach Len. (ft)	45.42	45.32	47.38
Crit W.S. (ft)	286.96	Flow Area (sq ft)	1922.73	632.95	125.04
E.G. Slope (ft/ft)	0.007119	Area (sq ft)	1922.73	632.95	125.04
Q Total (cfs)	19090.00	Flow (cfs)	14143.25	4289.54	657.21
Top Width (ft)	656.24	Top Width (ft)	396.53	189.53	70.18
Vel Total (ft/s)	7.12	Avg. Vel. (ft/s)	7.36	6.78	5.26
Max Chl Dpth (ft)	7.35	Hydr. Depth (ft)	4.85	3.34	1.78
Conv. Total (cfs)	226260.7	Conv. (cfs)	167630.2	50841.0	7789.5
Length Wtd. (ft)	45.49	Wetted Per. (ft)	397.38	189.63	70.35
Min Ch El (ft)	284.05	Shear (lb/sq ft)	2.15	1.48	0.79
Alpha	1.01	Stream Power (lb/ft s)	15.82	10.05	4.15
Frctn Loss (ft)	0.27	Cum Volume (acre-ft)	34.45	144.25	14.52
C & E Loss (ft)	0.03	Cum SA (acres)	5.95	18.05	3.51

CROSS SECTION OUTPUT Profile #Q100

E.G. Elev (ft)	291.28	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.75	Wt. n-Val.	0.052	0.041	0.035
W.S. Elev (ft)	290.53	Reach Len. (ft)	45.42	45.32	47.38
Crit W.S. (ft)	288.01	Flow Area (sq ft)	2937.18	1113.22	319.70
E.G. Slope (ft/ft)	0.003833	Area (sq ft)	2937.18	1113.22	319.70
Q Total (cfs)	30242.00	Flow (cfs)	20112.35	8075.83	2053.83
Top Width (ft)	676.91	Top Width (ft)	404.14	189.53	83.25
Vel Total (ft/s)	6.92	Avg. Vel. (ft/s)	6.85	7.25	6.42
Max Chl Dpth (ft)	9.88	Hydr. Depth (ft)	7.27	5.87	3.84
Conv. Total (cfs)	488501.1	Conv. (cfs)	324876.1	130449.4	33175.6
Length Wtd. (ft)	45.55	Wetted Per. (ft)	405.39	189.63	83.66
Min Ch El (ft)	284.05	Shear (lb/sq ft)	1.73	1.40	0.91
Alpha	1.00	Stream Power (lb/ft s)	11.87	10.19	5.87
Frctn Loss (ft)	0.15	Cum Volume (acre-ft)	52.57	197.50	26.42
C & E Loss (ft)	0.02	Cum SA (acres)	6.50	18.05	4.75

CROSS SECTION OUTPUT Profile #Q100HC

E.G. Elev (ft)	299.89	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.85	Wt. n-Val.	0.051	0.041	0.035

W.S. Elev (ft)	299.05	Reach Len. (ft)	45.42	45.32	47.38
Crit W.S. (ft)	291.42	Flow Area (sq ft)	6476.21	2726.88	1208.52
E.G. Slope (ft/ft)	0.001473	Area (sq ft)	6476.21	2726.88	1208.52
Q Total (cfs)	76166.00	Flow (cfs)	44329.35	22307.20	9529.46
Top Width (ft)	739.66	Top Width (ft)	425.73	189.53	124.40
Vel Total (ft/s)	7.32	Avg. Vel. (ft/s)	6.84	8.18	7.89
Max Chl Dpth (ft)	18.40	Hydr. Depth (ft)	15.21	14.39	9.71
Conv. Total (cfs)	1984722.0	Conv. (cfs)	1155127.0	581277.6	248317.1
Length Wtd. (ft)	45.67	Wetted Per. (ft)	428.62	189.63	125.70
Min Ch El (ft)	284.05	Shear (lb/sq ft)	1.39	1.32	0.88
Alpha	1.02	Stream Power (lb/ft s)	9.51	10.82	6.97
Frctn Loss (ft)	0.06	Cum Volume (acre-ft)	119.58	357.36	94.66
C & E Loss (ft)	0.02	Cum SA (acres)	8.83	18.05	11.58

CROSS SECTION

RIVER: San Juan Creek
REACH: Upper RS: 2320.95*

INPUT
Description:
Station Elevation Data num= 128

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	321.61	3.96	321.16	9.2	320.65	27.35	318.85	37.35	316.25
40.94	315.17	43.53	313.68	50.22	309.76	54.05	307.16	58.3	304.38
65.87	299.18	68.75	297.22	78.58	293.12	83.17	291.72	84.46	291.28
86.99	290.49	99.11	286.7	99.29	286.65	103.29	285.57	103.4	285.55
109.64	284.2	115.02	283.02	115.18	282.99	125.16	281.58	130.43	281.45
131.89	281.39	133.74	281.31	140.67	281.2	155.25	280.79	158.85	280.64
163.67	280.61	186.41	280.68	212.41	280.83	234.55	281.31	289.74	282.44
289.92	282.44	307.41	282.91	325.1	283.56	331.64	283.67	337.78	284.06
341.75	283.97	343.17	284.17	345.08	284.23	345.31	284.3	408.75	284.59
457.48	283.67	481.47	283.44	522.52	283.5	539.72	283.45	576.7	283.2
585.6	283.21	593.75	283.23	598.32	283.31	614.14	283.61	617.44	283.75
624.42	284.04	638.72	284.66	640.78	284.94	651.94	284.85	672.27	284.89
720.87	284.97	721.17	285	721.2	285	721.32	285.02	729.18	286.08
740.92	287.67	772.61	292.42	773.7	292.58	787.7	294.59	788.99	294.89
790.41	295.23	791.83	295.47	797.56	296.41	803.98	297.56	804.86	297.68
812.97	298.8	821.35	299.5	821.81	299.54	822.28	299.58	822.46	299.6
844.08	300.66	850.87	301.82	855.57	302.66	859.81	303.49	863.59	304.23
867.82	304.54	881.59	305.71	885.47	306.64	889.72	307.7	895.67	308.34
900.51	309.2	903.59	309.59	907.03	309.93	909.2	309.8	913.66	309.43
920.01	309.37	935.34	309.11	938.32	309.06	943.96	308.95	975.26	308.32
1006.86	307.69	1008.17	307.66	1008.54	307.66	1020.05	307.49	1025.83	307.39
1033.08	307.5	1040.23	307.44	1048.92	307.52	1053.33	308.08	1057.38	308.59
1057.62	308.63	1060.54	309.08	1064.4	310.42	1066.46	311.22	1068.49	312.01
1071.55	313.35	1076.09	315.58	1081.84	318.29	1083.42	318.72	1088.39	319.45
1093.74	319.66	1101.81	319.99	1107.94	319.86	1118.32	319.45	1118.59	319.47
1118.69	319.47	1135.12	320.07	1176.5	321.57				

Manning's n Values num= 15

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	27.35	.058	50.22	.063	125.16	.047	234.55	.045
325.1	.05	408.75	.045	593.75	.035	640.78	.04	772.61	.05
821.35	.04	975.26	.025	1006.86	.04	1081.84	.063	1135.12	.057

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

```
       408.75  640.78            45.42   45.32   47.38            .1       .3
Ineffective Flow     num=       1
   Sta L   Sta R    Elev  Permanent
       0  408.75  284.59       F
```

CROSS SECTION OUTPUT Profile #Q50

E.G. Elev (ft)	288.50	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.70	Wt. n-Val.	0.047	0.043	0.040
W.S. Elev (ft)	287.79	Reach Len. (ft)	45.42	45.32	47.38
Crit W.S. (ft)	286.42	Flow Area (sq ft)	1647.52	960.11	260.40
E.G. Slope (ft/ft)	0.005106	Area (sq ft)	1647.52	960.11	260.40
Q Total (cfs)	19090.00	Flow (cfs)	11640.21	6151.29	1298.50
Top Width (ft)	646.10	Top Width (ft)	313.13	232.03	100.95
Vel Total (ft/s)	6.66	Avg. Vel. (ft/s)	7.07	6.41	4.99
Max Chl Dpth (ft)	7.18	Hydr. Depth (ft)	5.26	4.14	2.58
Conv. Total (cfs)	267159.0	Conv. (cfs)	162901.4	86085.5	18172.2
Length Wtd. (ft)	45.55	Wetted Per. (ft)	313.91	232.09	101.14
Min Ch El (ft)	283.20	Shear (lb/sq ft)	1.67	1.32	0.82
Alpha	1.02	Stream Power (lb/ft s)	11.82	8.45	4.09
Frctn Loss (ft)	0.18	Cum Volume (acre-ft)	32.59	143.42	14.31
C & E Loss (ft)	0.04	Cum SA (acres)	5.58	17.83	3.42

CROSS SECTION OUTPUT Profile #Q100

E.G. Elev (ft)	291.11	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.68	Wt. n-Val.	0.048	0.043	0.040
W.S. Elev (ft)	290.43	Reach Len. (ft)	45.42	45.32	47.38
Crit W.S. (ft)	287.51	Flow Area (sq ft)	2485.20	1572.59	550.10
E.G. Slope (ft/ft)	0.002880	Area (sq ft)	2485.20	1572.59	550.10
Q Total (cfs)	30242.00	Flow (cfs)	16668.99	10528.97	3044.04
Top Width (ft)	672.16	Top Width (ft)	321.57	232.03	118.56
Vel Total (ft/s)	6.56	Avg. Vel. (ft/s)	6.71	6.70	5.53
Max Chl Dpth (ft)	9.82	Hydr. Depth (ft)	7.73	6.78	4.64
Conv. Total (cfs)	563562.1	Conv. (cfs)	310627.9	196208.3	56726.0
Length Wtd. (ft)	45.61	Wetted Per. (ft)	322.76	232.09	118.94
Min Ch El (ft)	283.20	Shear (lb/sq ft)	1.38	1.22	0.83
Alpha	1.01	Stream Power (lb/ft s)	9.28	8.16	4.60
Frctn Loss (ft)	0.11	Cum Volume (acre-ft)	49.74	196.10	25.94
C & E Loss (ft)	0.02	Cum SA (acres)	6.12	17.83	4.64

CROSS SECTION OUTPUT Profile #Q100HC

E.G. Elev (ft)	299.81	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.79	Wt. n-Val.	0.048	0.043	0.040
W.S. Elev (ft)	299.03	Reach Len. (ft)	45.42	45.32	47.38
Crit W.S. (ft)	290.98	Flow Area (sq ft)	5351.62	3566.88	1808.32
E.G. Slope (ft/ft)	0.001241	Area (sq ft)	5351.62	3566.88	1808.32
Q Total (cfs)	76166.00	Flow (cfs)	36905.88	27102.90	12157.22
Top Width (ft)	749.57	Top Width (ft)	342.65	232.03	174.89
Vel Total (ft/s)	7.10	Avg. Vel. (ft/s)	6.90	7.60	6.72
Max Chl Dpth (ft)	18.42	Hydr. Depth (ft)	15.62	15.37	10.34
Conv. Total (cfs)	2161971.0	Conv. (cfs)	1047573.0	769315.4	345082.6
Length Wtd. (ft)	45.72	Wetted Per. (ft)	345.63	232.09	175.95
Min Ch El (ft)	283.20	Shear (lb/sq ft)	1.20	1.19	0.80
Alpha	1.01	Stream Power (lb/ft s)	8.27	9.05	5.35
Frctn Loss (ft)	0.05	Cum Volume (acre-ft)	113.41	354.08	93.02

C & E Loss (ft)	0.01	Cum SA (acres)	8.43	17.83	11.42

CROSS SECTION

RIVER: San Juan Creek
REACH: Upper RS: 2275.63*

INPUT
Description:
Station Elevation Data num= 128

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	321.69	4.66	321.16	10.81	320.56	32.13	318.47	42.01	315.94
45.56	314.86	48.12	313.18	54.72	308.81	58.5	306.13	62.7	303.21
70.18	297.71	73.02	295.63	82.73	291.79	87.27	290.64	88.54	290.25
91.04	289.52	103.01	286.04	103.18	285.99	107.14	284.93	107.24	284.91
113.41	283.76	118.72	282.75	118.88	282.73	128.73	281.38	133.04	281.27
134.23	281.22	135.74	281.17	141.4	281.04	153.32	280.7	156.25	280.55
160.2	280.56	176.12	280.64	194.33	280.75	209.82	281.03	260.71	282.04
260.87	282.04	277	282.41	285.84	282.73	289.11	282.79	292.19	282.99
294.17	282.94	294.88	283.04	295.84	283.07	295.95	283.11	327.67	283.25
387.88	282.49	416.81	282.32	466.87	282.53	487.84	282.53	532.93	282.34
541.1	282.34	548.59	282.33	553.8	282.43	571.83	282.78	575.6	282.89
583.55	283.12	599.84	283.61	602.19	283.78	616.14	283.66	641.55	283.71
702.3	283.82	702.66	283.84	702.69	283.84	702.84	283.85	712.22	284.8
726.23	286.22	764.06	290.6	765.36	290.75	782.07	292.58	783.61	292.89
785.31	293.25	786.99	293.47	793.83	294.37	801.5	295.42	802.55	295.55
812.23	296.7	822.23	297.31	822.78	297.34	823.34	297.38	823.55	297.39
849.37	298.64	857.47	300.05	863.07	301.09	868.13	302.11	872.65	303.02
877.69	303.39	894.13	304.8	898.77	305.95	903.84	307.25	910.94	308.02
916.71	309.08	920.4	309.56	924.5	309.97	926.6	309.76	930.9	309.29
937.05	309.21	951.87	308.95	954.74	308.9	960.2	308.8	990.45	308.22
1021	307.64	1022.26	307.62	1022.62	307.61	1033.75	307.44	1039.33	307.33
1046.34	307.33	1053.25	307.24	1061.65	307.21	1065.81	307.78	1069.63	308.32
1069.85	308.35	1072.61	308.78	1076.25	310.27	1078.2	311.11	1080.11	311.94
1082.99	313.26	1087.28	315.34	1092.7	317.93	1094.19	318.24	1098.88	318.92
1105.56	319.19	1115.65	319.6	1123.32	319.44	1136.28	318.92	1136.62	318.95
1136.75	318.95	1157.28	319.7	1209.02	321.57				

Manning's n Values num= 15

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	32.13	.064	103.01	.041	194.33	.047	260.71	.05
285.84	.047	327.67	.038	548.59	.035	602.19	.045	726.23	.05
801.5	.038	990.45	.022	1021	.045	1098.88	.067	1157.28	.053

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
327.67	602.19	45.42	45.32	47.38	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
0	327.67	283.25	F

CROSS SECTION OUTPUT Profile #Q50

E.G. Elev (ft)	288.28	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.58	Wt. n-Val.	0.044	0.037	0.045
W.S. Elev (ft)	287.70	Reach Len. (ft)	45.42	45.32	47.38
Crit W.S. (ft)	285.75	Flow Area (sq ft)	1313.12	1392.06	469.95
E.G. Slope (ft/ft)	0.003106	Area (sq ft)	1313.12	1392.06	469.95

Q Total (cfs)	19090.00	Flow (cfs)	7952.69	9093.68	2043.63
Top Width (ft)	641.67	Top Width (ft)	230.36	274.52	136.79
Vel Total (ft/s)	6.01	Avg. Vel. (ft/s)	6.06	6.53	4.35
Max Chl Dpth (ft)	7.15	Hydr. Depth (ft)	5.70	5.07	3.44
Conv. Total (cfs)	342508.6	Conv. (cfs)	142685.5	163156.8	36666.3
Length Wtd. (ft)	45.70	Wetted Per. (ft)	231.09	274.55	137.00
Min Ch El (ft)	282.32	Shear (lb/sq ft)	1.10	0.98	0.67
Alpha	1.04	Stream Power (lb/ft s)	6.67	6.42	2.89
Frctn Loss (ft)	0.12	Cum Volume (acre-ft)	31.04	142.19	13.92
C & E Loss (ft)	0.04	Cum SA (acres)	5.29	17.56	3.29

CROSS SECTION OUTPUT Profile #Q100

E.G. Elev (ft)	290.98	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.61	Wt. n-Val.	0.045	0.037	0.045
W.S. Elev (ft)	290.37	Reach Len. (ft)	45.42	45.32	47.38
Crit W.S. (ft)	286.90	Flow Area (sq ft)	1941.58	2126.35	866.73
E.G. Slope (ft/ft)	0.001912	Area (sq ft)	1941.58	2126.35	866.73
Q Total (cfs)	30242.00	Flow (cfs)	11693.33	14456.50	4092.17
Top Width (ft)	673.94	Top Width (ft)	239.52	274.52	159.89
Vel Total (ft/s)	6.13	Avg. Vel. (ft/s)	6.02	6.80	4.72
Max Chl Dpth (ft)	9.82	Hydr. Depth (ft)	8.11	7.75	5.42
Conv. Total (cfs)	691668.1	Conv. (cfs)	267439.4	330636.3	93592.4
Length Wtd. (ft)	45.75	Wetted Per. (ft)	240.64	274.55	160.25
Min Ch El (ft)	282.32	Shear (lb/sq ft)	0.96	0.92	0.65
Alpha	1.04	Stream Power (lb/ft s)	5.80	6.28	3.05
Frctn Loss (ft)	0.08	Cum Volume (acre-ft)	47.43	194.18	25.17
C & E Loss (ft)	0.03	Cum SA (acres)	5.83	17.56	4.49

CROSS SECTION OUTPUT Profile #Q100HC

E.G. Elev (ft)	299.76	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.76	Wt. n-Val.	0.045	0.037	0.046
W.S. Elev (ft)	298.99	Reach Len. (ft)	45.42	45.32	47.38
Crit W.S. (ft)	290.50	Flow Area (sq ft)	4108.51	4493.25	2569.80
E.G. Slope (ft/ft)	0.000944	Area (sq ft)	4108.51	4493.25	2569.80
Q Total (cfs)	76166.00	Flow (cfs)	26845.00	35356.45	13964.55
Top Width (ft)	782.96	Top Width (ft)	259.23	274.52	249.21
Vel Total (ft/s)	6.82	Avg. Vel. (ft/s)	6.53	7.87	5.43
Max Chl Dpth (ft)	18.44	Hydr. Depth (ft)	15.85	16.37	10.31
Conv. Total (cfs)	2479486.0	Conv. (cfs)	873904.4	1150984.0	454598.0
Length Wtd. (ft)	45.85	Wetted Per. (ft)	262.37	274.55	250.06
Min Ch El (ft)	282.32	Shear (lb/sq ft)	0.92	0.96	0.61
Alpha	1.06	Stream Power (lb/ft s)	6.03	7.59	3.29
Frctn Loss (ft)	0.04	Cum Volume (acre-ft)	108.48	349.89	90.64
C & E Loss (ft)	0.04	Cum SA (acres)	8.11	17.56	11.18

CROSS SECTION

RIVER: San Juan Creek
REACH: Upper RS: 2230.316

INPUT
Description:
Station Elevation Data num= 77

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	321.77	5.35	321.16	12.42	320.48	36.92	318.09	46.67	315.64
50.18	314.55	67.1	302.04	74.49	296.23	77.29	294.04	86.88	290.46
91.36	289.56	110.98	284.28	117.17	283.32	122.42	282.48	132.3	281.19
136.57	281.06	151.38	280.6	153.66	280.46	156.72	280.51	185.1	280.76
246.59	281.91	318.28	281.32	352.15	281.2	411.22	281.57	435.96	281.61
489.16	281.48	496.61	281.46	503.43	281.44	563.6	282.62	580.34	282.48
610.83	282.54	683.73	282.67	684.15	282.68	684.19	282.68	684.36	282.69
695.26	283.52	711.54	284.76	757.02	288.92	776.44	290.57	778.23	290.89
780.2	291.27	782.16	291.48	800.24	293.42	811.49	294.59	823.75	295.14
854.65	296.61	864.07	298.29	870.58	299.52	876.46	300.73	881.71	301.81
887.57	302.24	906.67	303.89	912.06	305.25	917.96	306.8	926.21	307.71
932.92	308.96	937.2	309.53	941.97	310.01	948.15	309.15	968.39	308.79
1005.64	308.12	1036.7	307.57	1074.38	306.9	1078.29	307.49	1081.88	308.04
1084.68	308.48	1089.93	310.99	1103.56	317.57	1109.36	318.4	1117.38	318.72
1129.49	319.21	1138.69	319.02	1154.25	318.4	1154.66	318.43	1154.81	318.43
1179.45	319.33	1241.53	321.58						

Manning's n Values num= 11

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	12.42	.07	74.49	.035	136.57	.05	496.61	.035
695.26	.05	782.16	.035	968.39	.02	1005.64	.05	1117.38	.07
1179.45	.05								

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
246.59	563.6	42.6	40.1	40.87	.1 .3

CROSS SECTION OUTPUT Profile #Q50

E.G. Elev (ft)	288.11	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.44	Wt. n-Val.	0.047	0.046	0.036
W.S. Elev (ft)	287.67	Reach Len. (ft)	42.60	40.10	40.87
Crit W.S. (ft)		Flow Area (sq ft)	884.74	1926.76	768.98
E.G. Slope (ft/ft)	0.002424	Area (sq ft)	884.74	1926.76	768.98
Q Total (cfs)	19090.00	Flow (cfs)	4584.19	10159.08	4346.74
Top Width (ft)	644.97	Top Width (ft)	148.21	317.01	179.76
Vel Total (ft/s)	5.33	Avg. Vel. (ft/s)	5.18	5.27	5.65
Max Chl Dpth (ft)	7.21	Hydr. Depth (ft)	5.97	6.08	4.28
Conv. Total (cfs)	387700.0	Conv. (cfs)	93100.6	206321.3	88278.1
Length Wtd. (ft)	40.76	Wetted Per. (ft)	148.91	317.03	179.97
Min Ch El (ft)	281.20	Shear (lb/sq ft)	0.90	0.92	0.65
Alpha	1.00	Stream Power (lb/ft s)	4.66	4.85	3.66
Frctn Loss (ft)	0.09	Cum Volume (acre-ft)	29.90	140.47	13.24
C & E Loss (ft)	0.01	Cum SA (acres)	5.10	17.26	3.12

CROSS SECTION OUTPUT Profile #Q100

E.G. Elev (ft)	290.86	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.49	Wt. n-Val.	0.047	0.046	0.036
W.S. Elev (ft)	290.37	Reach Len. (ft)	42.60	40.10	40.87
Crit W.S. (ft)		Flow Area (sq ft)	1298.74	2782.44	1294.89
E.G. Slope (ft/ft)	0.001667	Area (sq ft)	1298.74	2782.44	1294.89
Q Total (cfs)	30242.00	Flow (cfs)	6974.71	15577.18	7690.10
Top Width (ft)	686.75	Top Width (ft)	159.26	317.01	210.48
Vel Total (ft/s)	5.63	Avg. Vel. (ft/s)	5.37	5.60	5.94
Max Chl Dpth (ft)	9.91	Hydr. Depth (ft)	8.15	8.78	6.15
Conv. Total (cfs)	740727.8	Conv. (cfs)	170834.1	381537.3	188356.3
Length Wtd. (ft)	40.77	Wetted Per. (ft)	160.29	317.03	210.81

Min Ch El (ft)	281.20	Shear (lb/sq ft)	0.84	0.91	0.64
Alpha	1.00	Stream Power (lb/ft s)	4.53	5.11	3.80
Frctn Loss (ft)	0.06	Cum Volume (acre-ft)	45.74	191.62	24.00
C & E Loss (ft)	0.01	Cum SA (acres)	5.62	17.26	4.29

CROSS SECTION OUTPUT Profile #Q100HC

E.G. Elev (ft)	299.68	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.65	Wt. n-Val.	0.045	0.046	0.038
W.S. Elev (ft)	299.03	Reach Len. (ft)	42.60	40.10	40.87
Crit W.S. (ft)		Flow Area (sq ft)	2763.45	5529.08	3524.98
E.G. Slope (ft/ft)	0.000882	Area (sq ft)	2763.45	5529.08	3524.98
Q Total (cfs)	76166.00	Flow (cfs)	17163.94	35677.23	23324.82
Top Width (ft)	797.08	Top Width (ft)	175.67	317.01	304.41
Vel Total (ft/s)	6.45	Avg. Vel. (ft/s)	6.21	6.45	6.62
Max Chl Dpth (ft)	18.57	Hydr. Depth (ft)	15.73	17.44	11.58
Conv. Total (cfs)	2565269.0	Conv. (cfs)	578081.1	1201608.0	785579.3
Length Wtd. (ft)	40.81	Wetted Per. (ft)	179.08	317.03	305.25
Min Ch El (ft)	281.20	Shear (lb/sq ft)	0.85	0.96	0.64
Alpha	1.00	Stream Power (lb/ft s)	5.28	6.19	4.21
Frctn Loss (ft)	0.03	Cum Volume (acre-ft)	104.90	344.68	87.33
C & E Loss (ft)	0.01	Cum SA (acres)	7.89	17.26	10.88

CROSS SECTION

RIVER: San Juan Creek
REACH: Upper RS: 2190.21*

INPUT
Description:
Station Elevation Data num= 162

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	321.75	5.66	321.1	9.7	320.69	10.8	320.58	13.14	320.4
18.48	319.98	19.92	319.8	29.09	318.88	33.96	318.39	35.21	318.29
39.07	317.93	41.78	317.33	47.45	316.08	49.39	315.64	52.91	314.49
54.81	313.19	58.44	310.46	66.36	304.65	69.93	301.93	71.05	301.04
75.45	297.48	76.53	296.66	77.36	296.09	77.94	295.69	80.17	294.14
88.98	291.09	89.82	290.8	94.32	289.91	96.05	289.47	100.92	288.08
106.98	286.57	114.05	284.81	118.99	284.06	120.27	283.88	121.34	283.72
124.38	283.32	125.55	283.14	129.64	282.62	131.18	282.45	135.49	281.86
135.95	281.84	139.78	281.63	148.13	281.17	150.31	281.05	154.67	280.82
156.96	280.64	159.17	280.61	160.04	280.62	161.38	280.61	188.58	280.85
223.06	281.43	229.25	281.53	250.4	281.83	262.53	281.7	269.96	281.62
270.96	281.6	285.31	281.63	288.34	281.64	290.82	281.63	309.19	281.53
311.46	281.53	323.15	281.48	328.12	281.41	329.25	281.4	334.34	281.34
353.1	281.17	387.47	280.95	401.62	280.92	454.09	281.31	476.07	281.38
500.44	281.35	523.33	281.34	529.95	281.33	536	281.33	550.98	281.64
580.86	282.25	589.45	282.45	603.96	282.36	605.09	282.37	630.38	282.51
693.55	282.85	693.91	282.86	693.94	282.86	694.09	282.87	703.39	283.6
703.54	283.61	717.64	284.77	757.05	288.6	776.4	290.49	776.99	290.59
778.18	290.79	780.15	291.15	782.1	291.35	784.2	291.58	800.1	293.2
804.47	293.63	811.3	294.35	823.51	295	826.94	295.19	833.44	295.56
837.94	295.79	845.83	296.2	854.28	296.58	860.5	297.56	863.66	298.06
870.14	299.13	875.99	300.19	877.53	300.47	881.22	301.14	887.06	301.55
906.07	303.09	911.44	304.29	917.32	305.66	925.53	306.49	932.21	307.61
933.09	307.71	936.47	308.12	941.22	308.57	947.38	307.87	967.53	307.7

978.03	307.61	993.83	307.41	1003.99	307.38	1004.62	307.37	1014.65	307.26
1035.55	307.35	1036.65	307.35	1050.08	307.36	1052	307.35	1053.96	307.35
1066.35	307.3	1069.85	307.28	1071.77	307.33	1073.07	307.36	1076.96	308.01
1080.53	308.62	1083.32	309.1	1088.55	311.45	1091.06	312.59	1091.31	312.7
1091.72	312.87	1102.12	317.34	1107.9	318.14	1109.81	318.24	1110.23	318.25
1111.69	318.3	1116.42	318.46	1129.3	318.92	1135.32	318.84	1139.08	318.79
1155.62	318.35	1156.06	318.38	1156.22	318.38	1162.84	318.61	1182.41	319.29
1194.97	319.72	1199.62	319.85	1203.38	319.97	1210.38	320.22	1247.42	321.54
1247.59	321.55	1248.41	321.57						

Manning's n Values num= 17

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.033	13.14	.065	39.07	.04	139.78	.053	154.67	.065
229.25	.037	334.34	.035	589.45	.048	693.55	.035	717.64	.048
804.47	.035	967.53	.033	993.83	.02	1035.55	.05	1109.81	.053
1129.3	.07	1194.97	.05						

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
250.4	589.45	42.6	40.1	40.87	.1	.3

CROSS SECTION OUTPUT Profile #Q50

			Left OB	Channel	Right OB
E.G. Elev (ft)	288.02	Element			
Vel Head (ft)	0.51	Wt. n-Val.	0.054	0.035	0.046
W.S. Elev (ft)	287.51	Reach Len. (ft)	42.60	40.10	40.87
Crit W.S. (ft)		Flow Area (sq ft)	833.61	2068.85	640.92
E.G. Slope (ft/ft)	0.002055	Area (sq ft)	833.61	2068.85	640.92
Q Total (cfs)	19090.00	Flow (cfs)	3397.89	13129.10	2563.00
Top Width (ft)	642.57	Top Width (ft)	147.18	339.05	156.34
Vel Total (ft/s)	5.39	Avg. Vel. (ft/s)	4.08	6.35	4.00
Max Chl Dpth (ft)	6.90	Hydr. Depth (ft)	5.66	6.10	4.10
Conv. Total (cfs)	421085.3	Conv. (cfs)	74950.4	289600.4	56534.5
Length Wtd. (ft)	40.62	Wetted Per. (ft)	147.76	339.07	156.56
Min Ch El (ft)	280.92	Shear (lb/sq ft)	0.72	0.78	0.53
Alpha	1.13	Stream Power (lb/ft s)	2.95	4.97	2.10
Frctn Loss (ft)	0.08	Cum Volume (acre-ft)	29.06	138.63	12.58
C & E Loss (ft)	0.00	Cum SA (acres)	4.95	16.95	2.96

CROSS SECTION OUTPUT Profile #Q100

			Left OB	Channel	Right OB
E.G. Elev (ft)	290.79	Element			
Vel Head (ft)	0.56	Wt. n-Val.	0.053	0.035	0.046
W.S. Elev (ft)	290.23	Reach Len. (ft)	42.60	40.10	40.87
Crit W.S. (ft)		Flow Area (sq ft)	1248.66	2992.93	1105.19
E.G. Slope (ft/ft)	0.001406	Area (sq ft)	1248.66	2992.93	1105.19
Q Total (cfs)	30242.00	Flow (cfs)	5358.46	20091.54	4792.00
Top Width (ft)	681.06	Top Width (ft)	157.71	339.05	184.31
Vel Total (ft/s)	5.66	Avg. Vel. (ft/s)	4.29	6.71	4.34
Max Chl Dpth (ft)	9.62	Hydr. Depth (ft)	7.92	8.83	6.00
Conv. Total (cfs)	806398.9	Conv. (cfs)	142882.6	535738.2	127778.1
Length Wtd. (ft)	40.64	Wetted Per. (ft)	158.64	339.07	184.65
Min Ch El (ft)	280.92	Shear (lb/sq ft)	0.69	0.78	0.53
Alpha	1.13	Stream Power (lb/ft s)	2.97	5.20	2.28
Frctn Loss (ft)	0.05	Cum Volume (acre-ft)	44.50	188.97	22.87
C & E Loss (ft)	0.00	Cum SA (acres)	5.47	16.95	4.11

CROSS SECTION OUTPUT Profile #Q100HC

E.G. Elev (ft)	299.64	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.74	Wt. n-Val.	0.051	0.035	0.045
W.S. Elev (ft)	298.90	Reach Len. (ft)	42.60	40.10	40.87
Crit W.S. (ft)		Flow Area (sq ft)	2716.99	5930.37	3109.14
E.G. Slope (ft/ft)	0.000774	Area (sq ft)	2716.99	5930.37	3109.14
Q Total (cfs)	76166.00	Flow (cfs)	13745.35	46565.78	15854.87
Top Width (ft)	795.02	Top Width (ft)	176.70	339.05	279.27
Vel Total (ft/s)	6.48	Avg. Vel. (ft/s)	5.06	7.85	5.10
Max Chl Dpth (ft)	18.29	Hydr. Depth (ft)	15.38	17.49	11.13
Conv. Total (cfs)	2738386.0	Conv. (cfs)	494184.8	1674173.0	570027.9
Length Wtd. (ft)	40.69	Wetted Per. (ft)	179.81	339.07	280.09
Min Ch El (ft)	280.92	Shear (lb/sq ft)	0.73	0.84	0.54
Alpha	1.14	Stream Power (lb/ft s)	3.69	6.63	2.73
Frctn Loss (ft)	0.03	Cum Volume (acre-ft)	102.22	339.40	84.22
C & E Loss (ft)	0.00	Cum SA (acres)	7.71	16.95	10.61

CROSS SECTION

RIVER: San Juan Creek
REACH: Upper RS: 2150.11*

INPUT
Description:
Station Elevation Data num= 162

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	321.72	5.97	321.04	10.23	320.59	11.39	320.48	13.87	320.32
19.5	319.96	21.01	319.75	30.69	318.75	35.82	318.22	37.15	318.13
41.22	317.76	44.07	317.22	50.05	316.07	52.1	315.64	55.65	314.43
57.55	313.21	61.2	310.44	69.17	304.63	72.76	301.82	73.88	300.91
78.31	297.25	79.39	296.44	80.23	295.95	80.81	295.6	83.06	294.24
91.91	291.41	92.75	291.15	97.28	290.27	99.02	289.84	103.92	288.36
110.01	286.97	117.12	285.34	122.08	284.6	123.38	284.43	124.45	284.28
127.5	283.97	128.68	283.8	132.79	283.29	134.34	283.15	138.67	282.54
139.14	282.51	142.99	282.2	151.39	281.54	153.58	281.36	157.96	281.04
160.27	280.82	162.49	280.73	163.36	280.72	164.71	280.71	192.05	280.93
226.72	281.46	232.94	281.55	254.22	281.75	270.01	281.56	279.68	281.44
280.98	281.41	299.66	281.55	303.61	281.58	306.83	281.57	330.75	281.5
333.71	281.49	348.92	281.46	355.4	281.35	356.88	281.34	363.5	281.26
387.92	281.02	432.66	280.67	451.09	280.63	496.97	281.05	516.18	281.14
537.49	281.16	557.5	281.2	563.28	281.21	568.58	281.21	581.67	281.5
607.8	282.07	615.31	282.28	627.58	282.25	628.53	282.25	649.93	282.48
703.36	283.02	703.67	283.03	703.7	283.03	703.82	283.04	711.69	283.69
711.81	283.7	723.74	284.78	757.08	288.27	776.36	290.4	776.95	290.51
778.14	290.69	780.09	291.02	782.04	291.23	784.13	291.44	799.96	292.98
804.31	293.39	811.12	294.1	823.27	294.86	826.68	295.08	833.16	295.5
837.64	295.75	845.5	296.18	853.91	296.55	860.1	297.4	863.24	297.82
869.7	298.75	875.53	299.65	877.06	299.89	880.73	300.48	886.54	300.86
905.48	302.29	910.82	303.33	916.67	304.51	924.85	305.27	931.5	306.25
932.38	306.35	935.75	306.72	940.48	307.12	946.6	306.59	966.67	306.61
977.13	306.62	992.86	306.51	1002.97	306.62	1003.6	306.62	1013.58	306.57
1034.39	307.13	1035.5	307.16	1048.87	307.4	1050.78	307.43	1052.73	307.46
1065.07	307.58	1068.55	307.61	1070.46	307.74	1071.75	307.82	1075.63	308.54
1079.19	309.2	1081.96	309.72	1087.17	311.91	1089.67	312.97	1089.91	313.07
1090.32	313.22	1100.68	317.12	1106.43	317.87	1108.45	318.01	1108.91	318.01
1110.45	318.06	1115.46	318.21	1129.1	318.63	1135.49	318.58	1139.47	318.57
1156.99	318.3	1157.45	318.32	1157.62	318.32	1164.64	318.56	1185.37	319.24

1198.68	319.68	1203.6	319.79	1207.59	319.9	1215	320.16	1254.25	321.54
1254.42	321.54	1255.29	321.56						

Manning's n Values num= 17

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.031	13.87	.06	37.15	.045	142.99	.056	157.96	.06
232.94	.039	254.22	.035	615.31	.046	711.69	.035	757.08	.046
823.27	.035	977.13	.031	1002.97	.02	1034.39	.05	1129.1	.056
1139.47	.07	1198.68	.05						

Bank Sta: Left	Right	Lengths: Left Channel		Right	Coeff Contr.	Expan.
254.22	615.31		42.6	40.1	40.87	.1	.3

CROSS SECTION OUTPUT Profile #Q50

E.G. Elev (ft)	287.93	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.50	Wt. n-Val.	0.054	0.035	0.045
W.S. Elev (ft)	287.43	Reach Len. (ft)	42.60	40.10	40.87
Crit W.S. (ft)		Flow Area (sq ft)	795.78	2238.82	532.80
E.G. Slope (ft/ft)	0.001896	Area (sq ft)	795.78	2238.82	532.80
Q Total (cfs)	19090.00	Flow (cfs)	3079.12	13966.62	2044.26
Top Width (ft)	641.06	Top Width (ft)	146.23	361.09	133.75
Vel Total (ft/s)	5.35	Avg. Vel. (ft/s)	3.87	6.24	3.84
Max Chl Dpth (ft)	6.80	Hydr. Depth (ft)	5.44	6.20	3.98
Conv. Total (cfs)	438442.9	Conv. (cfs)	70718.6	320773.5	46950.8
Length Wtd. (ft)	40.56	Wetted Per. (ft)	146.72	361.11	133.96
Min Ch El (ft)	280.63	Shear (lb/sq ft)	0.64	0.73	0.47
Alpha	1.13	Stream Power (lb/ft s)	2.48	4.58	1.81
Frctn Loss (ft)	0.07	Cum Volume (acre-ft)	28.26	136.64	12.03
C & E Loss (ft)	0.00	Cum SA (acres)	4.81	16.63	2.82

CROSS SECTION OUTPUT Profile #Q100

E.G. Elev (ft)	290.74	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.55	Wt. n-Val.	0.053	0.035	0.044
W.S. Elev (ft)	290.18	Reach Len. (ft)	42.60	40.10	40.87
Crit W.S. (ft)		Flow Area (sq ft)	1213.20	3232.89	936.28
E.G. Slope (ft/ft)	0.001292	Area (sq ft)	1213.20	3232.89	936.28
Q Total (cfs)	30242.00	Flow (cfs)	4943.30	21267.06	4031.65
Top Width (ft)	676.76	Top Width (ft)	156.59	361.09	159.09
Vel Total (ft/s)	5.62	Avg. Vel. (ft/s)	4.07	6.58	4.31
Max Chl Dpth (ft)	9.55	Hydr. Depth (ft)	7.75	8.95	5.89
Conv. Total (cfs)	841499.0	Conv. (cfs)	137549.8	591766.6	112182.6
Length Wtd. (ft)	40.59	Wetted Per. (ft)	157.45	361.11	159.45
Min Ch El (ft)	280.63	Shear (lb/sq ft)	0.62	0.72	0.47
Alpha	1.13	Stream Power (lb/ft s)	2.53	4.75	2.04
Frctn Loss (ft)	0.05	Cum Volume (acre-ft)	43.29	186.10	21.91
C & E Loss (ft)	0.00	Cum SA (acres)	5.31	16.63	3.95

CROSS SECTION OUTPUT Profile #Q100HC

E.G. Elev (ft)	299.60	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.74	Wt. n-Val.	0.052	0.035	0.043
W.S. Elev (ft)	298.87	Reach Len. (ft)	42.60	40.10	40.87
Crit W.S. (ft)		Flow Area (sq ft)	2689.88	6369.32	2728.98
E.G. Slope (ft/ft)	0.000721	Area (sq ft)	2689.88	6369.32	2728.98
Q Total (cfs)	76166.00	Flow (cfs)	12886.88	49206.38	14072.74

Top Width (ft)	794.12	Top Width (ft)	177.87	361.09	255.16
Vel Total (ft/s)	6.46	Avg. Vel. (ft/s)	4.79	7.73	5.16
Max Chl Dpth (ft)	18.24	Hydr. Depth (ft)	15.12	17.64	10.70
Conv. Total (cfs)	2836138.0	Conv. (cfs)	479859.4	1832262.0	524016.4
Length Wtd. (ft)	40.65	Wetted Per. (ft)	180.77	361.11	255.98
Min Ch El (ft)	280.63	Shear (lb/sq ft)	0.67	0.79	0.48
Alpha	1.13	Stream Power (lb/ft s)	3.21	6.14	2.48
Frctn Loss (ft)	0.03	Cum Volume (acre-ft)	99.58	333.74	81.48
C & E Loss (ft)	0.00	Cum SA (acres)	7.54	16.63	10.36

CROSS SECTION

RIVER: San Juan Creek
REACH: Upper RS: 2110.00*

INPUT
Description:
Station Elevation Data num= 162

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	321.7	6.28	320.98	10.77	320.5	11.98	320.37	14.59	320.24
20.51	319.95	22.11	319.69	32.29	318.62	37.69	318.05	39.08	317.97
43.37	317.6	46.37	317.11	52.66	316.05	54.82	315.64	58.38	314.38
60.3	313.24	63.97	310.41	71.98	304.62	75.58	301.72	76.71	300.78
81.17	297.01	82.25	296.22	83.1	295.8	83.68	295.51	85.94	294.33
94.84	291.73	95.69	291.49	100.24	290.62	101.99	290.22	106.91	288.65
113.04	287.38	120.19	285.87	125.18	285.14	126.48	284.99	127.56	284.85
130.63	284.62	131.81	284.46	135.95	283.96	137.5	283.85	141.86	283.21
142.33	283.17	146.2	282.77	154.64	281.9	156.84	281.68	161.25	281.26
163.57	281	165.8	280.85	166.68	280.83	168.03	280.8	195.53	281.02
230.39	281.49	236.64	281.57	258.03	281.67	277.48	281.42	289.4	281.26
290.99	281.22	314.02	281.47	318.88	281.53	322.85	281.52	352.32	281.46
355.96	281.46	374.7	281.45	382.68	281.3	384.5	281.28	392.65	281.18
422.74	280.87	477.86	280.38	500.56	280.35	539.84	280.79	556.29	280.91
574.54	280.98	591.67	281.06	596.62	281.08	601.15	281.1	612.36	281.37
634.73	281.89	641.16	282.11	651.2	282.13	651.98	282.14	669.48	282.44
713.18	283.2	713.43	283.21	713.45	283.21	713.55	283.22	719.99	283.78
720.09	283.79	729.85	284.78	757.11	287.95	776.32	290.32	776.91	290.42
778.09	290.6	780.04	290.9	781.98	291.1	784.06	291.31	799.82	292.76
804.15	293.14	810.93	293.86	823.03	294.72	826.43	294.97	832.88	295.44
837.34	295.71	845.16	296.17	853.53	296.52	859.71	297.24	862.83	297.59
869.26	298.36	875.06	299.11	876.59	299.3	880.25	299.81	886.03	300.17
904.88	301.49	910.21	302.37	916.03	303.37	924.17	304.05	930.8	304.9
931.67	304.98	935.02	305.31	939.73	305.68	945.83	305.32	965.81	305.53
976.22	305.63	991.88	305.61	1001.96	305.86	1002.58	305.86	1012.52	305.88
1033.24	306.9	1034.34	306.96	1047.65	307.45	1049.55	307.5	1051.5	307.56
1063.78	307.86	1067.25	307.94	1069.15	308.15	1070.44	308.28	1074.3	309.06
1077.84	309.78	1080.6	310.34	1085.79	312.37	1088.28	313.34	1088.52	313.44
1088.93	313.57	1099.24	316.89	1104.97	317.61	1107.1	317.77	1107.58	317.77
1109.21	317.81	1114.51	317.95	1128.91	318.34	1135.65	318.32	1139.85	318.34
1158.36	318.24	1158.85	318.27	1159.03	318.27	1166.43	318.5	1188.33	319.2
1202.39	319.64	1207.59	319.72	1211.79	319.82	1219.62	320.09	1261.07	321.54
1261.25	321.54	1262.17	321.55						

Manning's n Values num= 18

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.029	14.59	.055	37.69	.05	146.2	.059	161.25	.055
236.64	.041	258.03	.035	634.73	.041	641.16	.044	757.11	.035

776.32	.044	845.16	.035	991.88	.029	1033.24	.033	1047.65	.05
1135.65	.059	1158.36	.07	1207.59	.05				

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
258.03	641.16	42.6	40.1	40.87	.1	.3

CROSS SECTION OUTPUT Profile #Q50

		Element	Left OB	Channel	Right OB
E.G. Elev (ft)	287.86	Wt. n-Val.	0.052	0.035	0.044
Vel Head (ft)	0.49	Reach Len. (ft)	42.60	40.10	40.87
W.S. Elev (ft)	287.36	Flow Area (sq ft)	759.48	2410.91	429.57
Crit W.S. (ft)		Area (sq ft)	759.48	2410.91	429.57
E.G. Slope (ft/ft)	0.001781	Flow (cfs)	2882.50	14699.51	1507.99
Q Total (cfs)	19090.00	Top Width (ft)	144.91	383.13	110.91
Top Width (ft)	638.95	Avg. Vel. (ft/s)	3.80	6.10	3.51
Vel Total (ft/s)	5.30	Hydr. Depth (ft)	5.24	6.29	3.87
Max Chl Dpth (ft)	7.01	Conv. (cfs)	68294.2	348271.3	35728.3
Conv. Total (cfs)	452293.8	Wetted Per. (ft)	145.36	383.16	111.14
Length Wtd. (ft)	40.52	Shear (lb/sq ft)	0.58	0.70	0.43
Min Ch El (ft)	280.35	Stream Power (lb/ft s)	2.21	4.27	1.51
Alpha	1.13	Cum Volume (acre-ft)	27.50	134.50	11.58
Frctn Loss (ft)	0.07	Cum SA (acres)	4.66	16.29	2.71
C & E Loss (ft)	0.01				

CROSS SECTION OUTPUT Profile #Q100

		Element	Left OB	Channel	Right OB
E.G. Elev (ft)	290.68	Wt. n-Val.	0.052	0.035	0.044
Vel Head (ft)	0.54	Reach Len. (ft)	42.60	40.10	40.87
W.S. Elev (ft)	290.14	Flow Area (sq ft)	1178.33	3474.13	769.27
Crit W.S. (ft)		Area (sq ft)	1178.33	3474.13	769.27
E.G. Slope (ft/ft)	0.001226	Flow (cfs)	4721.97	22415.97	3104.06
Q Total (cfs)	30242.00	Top Width (ft)	155.78	383.13	133.69
Top Width (ft)	672.60	Avg. Vel. (ft/s)	4.01	6.45	4.04
Vel Total (ft/s)	5.58	Hydr. Depth (ft)	7.56	9.07	5.75
Max Chl Dpth (ft)	9.79	Conv. (cfs)	134835.2	640085.4	88636.1
Conv. Total (cfs)	863556.7	Wetted Per. (ft)	156.60	383.16	134.09
Length Wtd. (ft)	40.55	Shear (lb/sq ft)	0.58	0.69	0.44
Min Ch El (ft)	280.35	Stream Power (lb/ft s)	2.31	4.48	1.77
Alpha	1.13	Cum Volume (acre-ft)	42.12	183.01	21.11
Frctn Loss (ft)	0.05	Cum SA (acres)	5.16	16.29	3.81
C & E Loss (ft)	0.01				

CROSS SECTION OUTPUT Profile #Q100HC

		Element	Left OB	Channel	Right OB
E.G. Elev (ft)	299.57	Wt. n-Val.	0.052	0.035	0.043
Vel Head (ft)	0.73	Reach Len. (ft)	42.60	40.10	40.87
W.S. Elev (ft)	298.84	Flow Area (sq ft)	2661.87	6808.50	2349.43
Crit W.S. (ft)		Area (sq ft)	2661.87	6808.50	2349.43
E.G. Slope (ft/ft)	0.000701	Flow (cfs)	12545.60	52011.17	11609.22
Q Total (cfs)	76166.00	Top Width (ft)	179.03	383.13	231.82
Top Width (ft)	793.98	Avg. Vel. (ft/s)	4.71	7.64	4.94
Vel Total (ft/s)	6.44	Hydr. Depth (ft)	14.87	17.77	10.13
Max Chl Dpth (ft)	18.49	Conv. (cfs)	473723.5	1963948.0	438365.7
Conv. Total (cfs)	2876037.0	Wetted Per. (ft)	181.77	383.16	232.65
Length Wtd. (ft)	40.61	Shear (lb/sq ft)	0.64	0.78	0.44
Min Ch El (ft)	280.35	Stream Power (lb/ft s)	3.02	5.94	2.18
Alpha	1.14				

Frctn Loss (ft)	0.03	Cum Volume (acre-ft)	96.96	327.67	79.10
C & E Loss (ft)	0.01	Cum SA (acres)	7.37	16.29	10.13

CROSS SECTION

RIVER: San Juan Creek
REACH: Upper RS: 2069.90*

INPUT
Description:
Station Elevation Data num= 162

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	321.68	6.6	320.91	11.3	320.4	12.58	320.26	15.31	320.16
21.53	319.94	23.2	319.64	33.89	318.49	39.56	317.89	41.02	317.81
45.51	317.43	48.67	317	55.27	316.04	57.53	315.63	61.12	314.32
63.04	313.27	66.73	310.39	74.78	304.6	78.41	301.61	79.55	300.65
84.03	296.78	85.12	296	85.96	295.66	86.56	295.42	88.83	294.43
97.77	292.06	98.63	291.83	103.2	290.97	104.96	290.59	109.91	288.93
116.07	287.78	123.25	286.4	128.27	285.69	129.58	285.54	130.66	285.42
133.75	285.27	134.95	285.12	139.1	284.64	140.66	284.55	145.04	283.89
145.52	283.84	149.41	283.34	157.9	282.27	160.11	281.99	164.54	281.48
166.87	281.18	169.12	280.97	170	280.94	171.36	280.89	199	281.1
234.05	281.51	240.34	281.59	261.84	281.59	284.96	281.28	299.12	281.08
301.01	281.03	328.37	281.4	334.15	281.47	338.86	281.47	373.88	281.42
378.21	281.42	400.48	281.43	409.96	281.24	412.12	281.22	421.81	281.09
457.57	280.72	523.06	280.1	550.04	280.07	582.72	280.53	596.4	280.67
611.58	280.79	625.83	280.92	629.96	280.95	633.73	280.99	643.05	281.23
661.67	281.72	667.02	281.94	674.82	282.01	675.42	282.02	689.02	282.41
722.99	283.37	723.19	283.38	723.21	283.38	723.28	283.39	728.29	283.87
728.36	283.88	735.95	284.79	757.14	287.62	776.28	290.23	776.86	290.34
778.05	290.5	779.99	290.78	781.91	290.97	783.99	291.18	799.68	292.54
803.99	292.9	810.74	293.62	822.79	294.58	826.17	294.86	832.6	295.38
837.04	295.66	844.83	296.16	853.16	296.49	859.31	297.08	862.42	297.36
868.82	297.97	874.6	298.57	876.12	298.72	879.76	299.15	885.52	299.48
904.29	300.69	909.59	301.41	915.39	302.23	923.49	302.83	930.09	303.54
930.95	303.62	934.3	303.9	938.98	304.24	945.06	304.04	964.95	304.44
975.32	304.65	990.91	304.71	1000.94	305.11	1001.56	305.11	1011.46	305.2
1032.09	306.68	1033.18	306.76	1046.44	307.5	1048.33	307.58	1050.27	307.67
1062.5	308.13	1065.95	308.26	1067.85	308.56	1069.12	308.75	1072.97	309.58
1076.49	310.36	1079.25	310.96	1084.41	312.82	1086.89	313.72	1087.13	313.81
1087.53	313.92	1097.8	316.67	1103.5	317.35	1105.75	317.54	1106.26	317.53
1107.97	317.57	1113.55	317.7	1128.72	318.05	1135.82	318.06	1140.24	318.11
1159.73	318.19	1160.24	318.21	1160.43	318.22	1168.23	318.45	1191.3	319.15
1206.1	319.6	1211.57	319.66	1216	319.75	1224.24	320.03	1267.89	321.53
1268.08	321.53	1269.06	321.55						

Manning's n Values num= 19

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.026	12.58	.029	15.31	.05	39.56	.055	145.04	.061
164.54	.05	240.34	.044	261.84	.035	661.67	.044	667.02	.041
757.14	.035	783.99	.041	862.42	.035	1000.94	.026	1032.09	.02
1046.44	.037	1062.5	.05	1159.73	.07	1216	.05		

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
261.84	667.02	42.6	40.1	40.87	.1	.3

CROSS SECTION OUTPUT Profile #Q50

E.G. Elev (ft)	287.78	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.47	Wt. n-Val.	0.050	0.035	0.041
W.S. Elev (ft)	287.31	Reach Len. (ft)	42.60	40.10	40.87
Crit W.S. (ft)		Flow Area (sq ft)	726.39	2589.26	330.54
E.G. Slope (ft/ft)	0.001621	Area (sq ft)	726.39	2589.26	330.54
Q Total (cfs)	19090.00	Flow (cfs)	2715.80	15209.53	1164.67
Top Width (ft)	636.32	Top Width (ft)	143.33	405.18	87.81
Vel Total (ft/s)	5.24	Avg. Vel. (ft/s)	3.74	5.87	3.52
Max Chl Dpth (ft)	7.24	Hydr. Depth (ft)	5.07	6.39	3.76
Conv. Total (cfs)	474182.0	Conv. (cfs)	67458.6	377793.9	28929.5
Length Wtd. (ft)	40.49	Wetted Per. (ft)	143.76	405.21	88.08
Min Ch El (ft)	280.07	Shear (lb/sq ft)	0.51	0.65	0.38
Alpha	1.10	Stream Power (lb/ft s)	1.91	3.80	1.34
Frctn Loss (ft)	0.06	Cum Volume (acre-ft)	26.77	132.20	11.22
C & E Loss (ft)	0.01	Cum SA (acres)	4.52	15.93	2.61

CROSS SECTION OUTPUT Profile #Q100

E.G. Elev (ft)	290.63	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.52	Wt. n-Val.	0.050	0.035	0.041
W.S. Elev (ft)	290.11	Reach Len. (ft)	42.60	40.10	40.87
Crit W.S. (ft)		Flow Area (sq ft)	1146.00	3721.48	604.67
E.G. Slope (ft/ft)	0.001129	Area (sq ft)	1146.00	3721.48	604.67
Q Total (cfs)	30242.00	Flow (cfs)	4520.21	23231.81	2489.98
Top Width (ft)	668.97	Top Width (ft)	155.44	405.18	108.35
Vel Total (ft/s)	5.53	Avg. Vel. (ft/s)	3.94	6.24	4.12
Max Chl Dpth (ft)	10.04	Hydr. Depth (ft)	7.37	9.18	5.58
Conv. Total (cfs)	899989.4	Conv. (cfs)	134519.5	691369.2	74100.8
Length Wtd. (ft)	40.53	Wetted Per. (ft)	156.21	405.21	108.81
Min Ch El (ft)	280.07	Shear (lb/sq ft)	0.52	0.65	0.39
Alpha	1.10	Stream Power (lb/ft s)	2.04	4.04	1.61
Frctn Loss (ft)	0.04	Cum Volume (acre-ft)	40.99	179.70	20.47
C & E Loss (ft)	0.01	Cum SA (acres)	5.01	15.93	3.69

CROSS SECTION OUTPUT Profile #Q100HC

E.G. Elev (ft)	299.54	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.72	Wt. n-Val.	0.051	0.035	0.040
W.S. Elev (ft)	298.83	Reach Len. (ft)	42.60	40.10	40.87
Crit W.S. (ft)		Flow Area (sq ft)	2635.94	7254.58	1974.12
E.G. Slope (ft/ft)	0.000661	Area (sq ft)	2635.94	7254.58	1974.12
Q Total (cfs)	76166.00	Flow (cfs)	12209.73	54076.60	9879.67
Top Width (ft)	795.35	Top Width (ft)	180.18	405.18	210.00
Vel Total (ft/s)	6.42	Avg. Vel. (ft/s)	4.63	7.45	5.00
Max Chl Dpth (ft)	18.76	Hydr. Depth (ft)	14.63	17.90	9.40
Conv. Total (cfs)	2961478.0	Conv. (cfs)	474737.3	2102600.0	384140.2
Length Wtd. (ft)	40.59	Wetted Per. (ft)	182.82	405.21	210.85
Min Ch El (ft)	280.07	Shear (lb/sq ft)	0.60	0.74	0.39
Alpha	1.12	Stream Power (lb/ft s)	2.76	5.51	1.93
Frctn Loss (ft)	0.03	Cum Volume (acre-ft)	94.37	321.20	77.07
C & E Loss (ft)	0.00	Cum SA (acres)	7.19	15.93	9.92

CROSS SECTION

RIVER: San Juan Creek
REACH: Upper RS: 2029.80*

INPUT
Description:
Station Elevation Data num= 162

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	321.66	6.91	320.85	11.83	320.3	13.17	320.15	16.03	320.08
22.55	319.93	24.3	319.58	35.49	318.36	41.43	317.72	42.96	317.65
47.66	317.27	50.97	316.88	57.88	316.02	60.25	315.63	63.85	314.26
65.79	313.3	69.5	310.36	77.59	304.59	81.24	301.5	82.38	300.52
86.88	296.54	87.98	295.78	88.83	295.52	89.43	295.34	91.71	294.53
100.71	292.38	101.56	292.18	106.16	291.32	107.93	290.96	112.91	289.22
119.1	288.18	126.32	286.93	131.37	286.23	132.68	286.1	133.77	285.99
136.88	285.93	138.08	285.78	142.25	285.31	143.83	285.25	148.23	284.56
148.7	284.5	152.62	283.91	161.15	282.64	163.38	282.3	167.83	281.7
170.17	281.36	172.43	281.08	173.32	281.05	174.69	280.98	202.48	281.19
237.71	281.54	244.04	281.6	265.65	281.51	292.43	281.14	308.84	280.9
311.03	280.84	342.72	281.32	349.41	281.42	354.88	281.42	395.44	281.38
400.45	281.39	426.26	281.42	437.24	281.19	439.74	281.16	450.97	281.01
492.39	280.58	568.26	279.82	599.51	279.79	625.59	280.27	636.51	280.44
648.63	280.6	660	280.78	663.29	280.83	666.3	280.88	673.75	281.1
688.6	281.54	692.87	281.77	698.44	281.9	698.87	281.91	708.57	282.38
732.81	283.55	732.95	283.56	732.96	283.56	733.02	283.57	736.58	283.97
736.64	283.97	742.05	284.8	757.17	287.3	776.24	290.15	776.82	290.25
778	290.4	779.94	290.66	781.85	290.85	783.92	291.05	799.55	292.31
803.84	292.66	810.55	293.37	822.55	294.44	825.92	294.74	832.31	295.32
836.73	295.62	844.49	296.15	852.79	296.46	858.91	296.91	862.01	297.13
868.38	297.58	874.13	298.03	875.64	298.14	879.27	298.48	885	298.79
903.69	299.89	908.97	300.45	914.74	301.08	922.82	301.61	929.38	302.19
930.24	302.25	933.57	302.5	938.24	302.8	944.28	302.76	964.09	303.35
974.41	303.66	989.94	303.8	999.92	304.35	1000.54	304.36	1010.4	304.51
1030.94	306.46	1032.02	306.56	1045.22	307.55	1047.11	307.66	1049.03	307.78
1061.21	308.41	1064.65	308.59	1066.54	308.97	1067.81	309.21	1071.63	310.11
1075.15	310.93	1077.89	311.58	1083.03	313.28	1085.49	314.1	1085.74	314.18
1086.14	314.26	1096.36	316.44	1102.04	317.09	1104.4	317.31	1104.93	317.3
1106.73	317.33	1112.59	317.44	1128.52	317.76	1135.98	317.81	1140.63	317.88
1161.1	318.14	1161.64	318.16	1161.84	318.16	1170.03	318.4	1194.26	319.11
1209.8	319.56	1215.55	319.59	1220.21	319.68	1228.87	319.97	1274.71	321.53
1274.92	321.53	1275.94	321.54						

Manning's n Values num= 20

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.024	13.17	.031	16.03	.045	41.43	.06	148.23	.064
163.38	.045	244.04	.046	265.65	.035	688.6	.046	692.87	.039
779.94	.035	810.55	.039	885	.035	1030.94	.024	1045.22	.02
1061.21	.041	1075.15	.05	1161.1	.064	1170.03	.07	1228.87	.05

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
265.65	692.87	42.6	40.1	40.87	.1

CROSS SECTION OUTPUT Profile #Q50

E.G. Elev (ft)	287.71	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.44	Wt. n-Val.	0.046	0.035	0.039
W.S. Elev (ft)	287.27	Reach Len. (ft)	42.60	40.10	40.87
Crit W.S. (ft)		Flow Area (sq ft)	694.92	2769.79	233.95
E.G. Slope (ft/ft)	0.001468	Area (sq ft)	694.92	2769.79	233.95
Q Total (cfs)	19090.00	Flow (cfs)	2647.82	15635.44	806.74

Top Width (ft)	632.60	Top Width (ft)	141.28	427.22	64.10
Vel Total (ft/s)	5.16	Avg. Vel. (ft/s)	3.81	5.64	3.45
Max Chl Dpth (ft)	7.48	Hydr. Depth (ft)	4.92	6.48	3.65
Conv. Total (cfs)	498270.9	Conv. (cfs)	69111.0	408103.1	21056.9
Length Wtd. (ft)	40.47	Wetted Per. (ft)	141.71	427.26	64.43
Min Ch El (ft)	279.79	Shear (lb/sq ft)	0.45	0.59	0.33
Alpha	1.07	Stream Power (lb/ft s)	1.71	3.35	1.15
Frctn Loss (ft)	0.06	Cum Volume (acre-ft)	26.08	129.74	10.96
C & E Loss (ft)	0.01	Cum SA (acres)	4.38	15.54	2.54

CROSS SECTION OUTPUT Profile #Q100

E.G. Elev (ft)	290.58	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.51	Wt. n-Val.	0.047	0.035	0.039
W.S. Elev (ft)	290.07	Reach Len. (ft)	42.60	40.10	40.87
Crit W.S. (ft)		Flow Area (sq ft)	1113.42	3968.99	440.18
E.G. Slope (ft/ft)	0.001051	Area (sq ft)	1113.42	3968.99	440.18
Q Total (cfs)	30242.00	Flow (cfs)	4496.29	24097.21	1648.51
Top Width (ft)	665.27	Top Width (ft)	155.18	427.22	82.86
Vel Total (ft/s)	5.48	Avg. Vel. (ft/s)	4.04	6.07	3.75
Max Chl Dpth (ft)	10.28	Hydr. Depth (ft)	7.17	9.29	5.31
Conv. Total (cfs)	932639.1	Conv. (cfs)	138661.8	743138.8	50838.6
Length Wtd. (ft)	40.51	Wetted Per. (ft)	155.93	427.26	83.40
Min Ch El (ft)	279.79	Shear (lb/sq ft)	0.47	0.61	0.35
Alpha	1.09	Stream Power (lb/ft s)	1.89	3.70	1.30
Frctn Loss (ft)	0.04	Cum Volume (acre-ft)	39.88	176.16	19.98
C & E Loss (ft)	0.01	Cum SA (acres)	4.86	15.54	3.60

CROSS SECTION OUTPUT Profile #Q100HC

E.G. Elev (ft)	299.51	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.70	Wt. n-Val.	0.048	0.035	0.039
W.S. Elev (ft)	298.81	Reach Len. (ft)	42.60	40.10	40.87
Crit W.S. (ft)		Flow Area (sq ft)	2609.38	7701.35	1601.74
E.G. Slope (ft/ft)	0.000627	Area (sq ft)	2609.38	7701.35	1601.74
Q Total (cfs)	76166.00	Flow (cfs)	12291.21	56178.91	7695.89
Top Width (ft)	801.03	Top Width (ft)	181.34	427.22	192.48
Vel Total (ft/s)	6.39	Avg. Vel. (ft/s)	4.71	7.29	4.80
Max Chl Dpth (ft)	19.02	Hydr. Depth (ft)	14.39	18.03	8.32
Conv. Total (cfs)	3040734.0	Conv. (cfs)	490695.3	2242800.0	307238.8
Length Wtd. (ft)	40.57	Wetted Per. (ft)	183.93	427.26	193.39
Min Ch El (ft)	279.79	Shear (lb/sq ft)	0.56	0.71	0.32
Alpha	1.10	Stream Power (lb/ft s)	2.62	5.15	1.56
Frctn Loss (ft)	0.02	Cum Volume (acre-ft)	91.80	314.32	75.39
C & E Loss (ft)	0.00	Cum SA (acres)	7.01	15.54	9.73

CROSS SECTION

RIVER: San Juan Creek
REACH: Upper RS: 1989.70*

INPUT
Description:
Station Elevation Data num= 161

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev

0	321.63	7.22	320.79	12.37	320.2	13.77	320.04	16.76	320
23.56	319.91	25.39	319.53	37.09	318.23	43.29	317.55	44.89	317.49
49.81	317.1	53.26	316.77	60.49	316.01	62.96	315.63	66.59	314.2
68.53	313.32	72.26	310.34	80.4	304.57	84.07	301.39	85.22	300.39
89.74	296.31	90.85	295.56	91.7	295.38	92.3	295.25	94.59	294.63
103.64	292.7	104.5	292.52	109.13	291.68	110.9	291.34	115.9	289.5
122.13	288.58	129.39	287.47	134.46	286.77	135.79	286.65	136.88	286.55
140	286.58	141.21	286.44	145.41	285.98	146.99	285.95	151.41	285.24
151.89	285.17	155.82	284.49	164.41	283	166.64	282.62	171.12	281.92
173.48	281.54	175.75	281.2	176.64	281.15	178.01	281.08	205.95	281.27
241.38	281.57	247.73	281.62	269.47	281.43	299.91	281	318.56	280.72
321.05	280.65	357.08	281.24	364.68	281.36	370.89	281.36	417.01	281.35
422.7	281.35	452.03	281.4	464.52	281.13	467.36	281.1	480.12	280.92
527.21	280.43	613.45	279.53	648.98	279.5	668.46	280.01	676.62	280.21
685.67	280.41	694.17	280.64	696.63	280.7	698.88	280.76	704.44	280.96
715.54	281.36	718.73	281.6	722.06	281.78	722.31	281.79	728.12	282.35
742.62	283.73	742.71	283.74	742.75	283.74	744.88	284.06	744.91	284.07
748.15	284.81	757.2	286.97	776.2	290.06	776.78	290.17	777.96	290.3
779.88	290.53	781.79	290.72	783.85	290.92	799.41	292.09	803.68	292.41
810.37	293.13	822.31	294.3	825.66	294.63	832.03	295.26	836.43	295.58
844.16	296.14	852.42	296.43	858.51	296.75	861.6	296.89	867.94	297.2
873.67	297.49	875.17	297.56	878.78	297.81	884.49	298.1	903.1	299.09
908.35	299.49	914.1	299.94	922.14	300.39	928.67	300.83	929.53	300.89
932.84	301.09	937.49	301.35	943.51	301.48	963.23	302.26	973.51	302.67
988.96	302.9	998.91	303.6	999.52	303.61	1009.33	303.83	1029.78	306.24
1030.87	306.37	1044.01	307.59	1045.88	307.73	1047.8	307.88	1059.93	308.69
1063.35	308.91	1065.23	309.38	1066.49	309.67	1070.3	310.63	1073.8	311.51
1076.53	312.2	1081.64	313.74	1084.1	314.48	1084.34	314.55	1084.74	314.61
1094.92	316.21	1100.57	316.82	1103.05	317.07	1103.61	317.06	1105.49	317.08
1111.63	317.19	1128.33	317.47	1136.15	317.55	1141.02	317.66	1162.47	318.09
1163.04	318.11	1163.24	318.11	1171.83	318.35	1197.22	319.06	1213.51	319.52
1219.54	319.53	1224.41	319.6	1233.49	319.9	1281.54	321.52	1281.75	321.52
1282.82	321.53								

Manning's n Values num= 19

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.022	13.77	.04	43.29	.065	151.41	.067	166.64	.04
247.73	.048	269.47	.035	715.54	.048	718.73	.037	803.68	.035
832.03	.037	903.1	.035	1029.78	.022	1059.93	.02	1070.3	.046
1094.92	.05	1163.04	.067	1197.22	.07	1233.49	.05		

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
269.47	718.73	42.6	40.1	40.87	.1	.3

CROSS SECTION OUTPUT Profile #Q50

E.G. Elev (ft)	287.65	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.42	Wt. n-Val.	0.042	0.035	0.037
W.S. Elev (ft)	287.23	Reach Len. (ft)	42.60	40.10	40.87
Crit W.S. (ft)		Flow Area (sq ft)	665.70	2956.16	139.50
E.G. Slope (ft/ft)	0.001323	Area (sq ft)	665.70	2956.16	139.50
Q Total (cfs)	19090.00	Flow (cfs)	2618.10	16007.37	464.53
Top Width (ft)	627.65	Top Width (ft)	138.33	449.26	40.06
Vel Total (ft/s)	5.08	Avg. Vel. (ft/s)	3.93	5.41	3.33
Max Chl Dpth (ft)	7.73	Hydr. Depth (ft)	4.81	6.58	3.48
Conv. Total (cfs)	524750.1	Conv. (cfs)	71966.9	440014.0	12769.2
Length Wtd. (ft)	40.46	Wetted Per. (ft)	138.80	449.32	40.54
Min Ch El (ft)	279.50	Shear (lb/sq ft)	0.40	0.54	0.28
Alpha	1.05	Stream Power (lb/ft s)	1.56	2.94	0.95

Frctn Loss (ft)	0.05	Cum Volume (acre-ft)	25.41	127.10	10.78
C & E Loss (ft)	0.01	Cum SA (acres)	4.25	15.14	2.49

CROSS SECTION OUTPUT Profile #Q100

E.G. Elev (ft)	290.53	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.48	Wt. n-Val.	0.043	0.035	0.037
W.S. Elev (ft)	290.05	Reach Len. (ft)	42.60	40.10	40.87
Crit W.S. (ft)		Flow Area (sq ft)	1081.96	4223.23	276.94
E.G. Slope (ft/ft)	0.000964	Area (sq ft)	1081.96	4223.23	276.94
Q Total (cfs)	30242.00	Flow (cfs)	4505.22	24758.66	978.12
Top Width (ft)	661.72	Top Width (ft)	155.06	449.26	57.40
Vel Total (ft/s)	5.42	Avg. Vel. (ft/s)	4.16	5.86	3.53
Max Chl Dpth (ft)	10.55	Hydr. Depth (ft)	6.98	9.40	4.82
Conv. Total (cfs)	973824.4	Conv. (cfs)	145072.9	797254.9	31496.6
Length Wtd. (ft)	40.50	Wetted Per. (ft)	155.80	449.32	58.11
Min Ch El (ft)	279.50	Shear (lb/sq ft)	0.42	0.57	0.29
Alpha	1.06	Stream Power (lb/ft s)	1.74	3.32	1.01
Frctn Loss (ft)	0.04	Cum Volume (acre-ft)	38.81	172.39	19.64
C & E Loss (ft)	0.01	Cum SA (acres)	4.70	15.14	3.54

CROSS SECTION OUTPUT Profile #Q100HC

E.G. Elev (ft)	299.48	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.69	Wt. n-Val.	0.045	0.035	0.037
W.S. Elev (ft)	298.80	Reach Len. (ft)	42.60	40.10	40.87
Crit W.S. (ft)		Flow Area (sq ft)	2582.87	8153.32	1236.99
E.G. Slope (ft/ft)	0.000594	Area (sq ft)	2582.87	8153.32	1236.99
Q Total (cfs)	76166.00	Flow (cfs)	12525.05	58161.11	5479.85
Top Width (ft)	810.60	Top Width (ft)	182.49	449.26	178.86
Vel Total (ft/s)	6.36	Avg. Vel. (ft/s)	4.85	7.13	4.43
Max Chl Dpth (ft)	19.30	Hydr. Depth (ft)	14.15	18.15	6.92
Conv. Total (cfs)	3124703.0	Conv. (cfs)	513838.9	2386054.0	224810.1
Length Wtd. (ft)	40.57	Wetted Per. (ft)	185.08	449.32	179.92
Min Ch El (ft)	279.50	Shear (lb/sq ft)	0.52	0.67	0.26
Alpha	1.09	Stream Power (lb/ft s)	2.51	4.80	1.13
Frctn Loss (ft)	0.03	Cum Volume (acre-ft)	89.26	307.02	74.06
C & E Loss (ft)	0.00	Cum SA (acres)	6.84	15.14	9.56

CROSS SECTION

RIVER: San Juan Creek
REACH: Upper RS: 1949.598

INPUT
Description:
Station Elevation Data num= 94

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	321.61	12.9	320.1	14.36	319.93	24.58	319.9	26.49	319.47
38.69	318.1	45.16	317.38	46.83	317.33	55.56	316.66	63.1	315.99
65.68	315.63	71.28	313.35	75.03	310.31	83.21	304.56	88.05	300.26
92.6	296.07	93.71	295.34	95.17	295.16	106.57	293.02	113.87	291.71
118.9	289.79	125.16	288.98	137.56	287.31	139.99	287.12	143.13	287.23
148.56	286.65	150.15	286.65	155.08	285.83	167.66	283.37	169.91	282.93
179.06	281.32	181.34	281.17	245.04	281.6	251.43	281.64	273.28	281.35

307.38	280.86	328.28	280.54	331.07	280.46	371.43	281.16	379.95	281.31
386.91	281.31	438.57	281.31	444.95	281.32	477.81	281.39	491.8	281.08
494.98	281.04	509.28	280.84	658.65	279.25	698.45	279.22	722.72	280.22
735.13	280.83	742.47	281.18	744.58	281.43	745.76	281.68	753.18	284.15
757.23	286.65	776.74	290.08	779.83	290.41	783.78	290.79	803.52	292.17
825.41	294.52	831.75	295.2	836.13	295.54	843.82	296.13	858.11	296.59
874.7	296.98	928.82	299.52	972.6	301.68	987.99	302	997.89	302.84
1008.27	303.14	1029.71	306.17	1042.79	307.64	1044.66	307.81	1046.57	307.99
1058.64	308.97	1062.05	309.24	1063.92	309.79	1082.71	314.86	1082.95	314.92
1083.35	314.96	1099.11	316.56	1101.7	316.84	1102.28	316.82	1104.25	316.84
1136.31	317.29	1173.63	318.3	1217.22	319.48	1223.52	319.46	1228.62	319.53
1238.11	319.84	1288.36	321.52	1288.58	321.52	1289.7	321.52		

Manning's n Values num= 12

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.02	12.9	.035	38.69	.07	167.66	.035	245.04	.05
386.91	.035	735.13	.05	825.41	.035	1044.66	.02	1083.35	.05
1173.63	.07	1238.11	.05						

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
273.28	744.58	407.52	330.72	271.52	.1 .3

CROSS SECTION OUTPUT Profile #Q50

E.G. Elev (ft)	287.59	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.39	Wt. n-Val.	0.039	0.038	0.050
W.S. Elev (ft)	287.19	Reach Len. (ft)	407.52	330.72	271.52
Crit W.S. (ft)		Flow Area (sq ft)	638.63	3142.67	46.48
E.G. Slope (ft/ft)	0.001359	Area (sq ft)	638.63	3142.67	46.48
Q Total (cfs)	19090.00	Flow (cfs)	2780.86	16209.27	99.87
Top Width (ft)	619.79	Top Width (ft)	132.76	471.30	15.73
Vel Total (ft/s)	4.99	Avg. Vel. (ft/s)	4.35	5.16	2.15
Max Chl Dpth (ft)	7.97	Hydr. Depth (ft)	4.81	6.67	2.95
Conv. Total (cfs)	517924.9	Conv. (cfs)	75446.6	439768.7	2709.6
Length Wtd. (ft)	341.23	Wetted Per. (ft)	133.29	471.39	16.92
Min Ch El (ft)	279.22	Shear (lb/sq ft)	0.41	0.57	0.23
Alpha	1.02	Stream Power (lb/ft s)	1.77	2.92	0.50
Frctn Loss (ft)	0.55	Cum Volume (acre-ft)	24.78	124.29	10.69
C & E Loss (ft)	0.00	Cum SA (acres)	4.12	14.72	2.47

Warning: Divided flow computed for this cross-section.

CROSS SECTION OUTPUT Profile #Q100

E.G. Elev (ft)	290.49	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.46	Wt. n-Val.	0.039	0.038	0.050
W.S. Elev (ft)	290.02	Reach Len. (ft)	407.52	330.72	271.52
Crit W.S. (ft)		Flow Area (sq ft)	1050.38	4477.81	113.87
E.G. Slope (ft/ft)	0.001010	Area (sq ft)	1050.38	4477.81	113.87
Q Total (cfs)	30242.00	Flow (cfs)	4854.57	25143.19	244.24
Top Width (ft)	658.14	Top Width (ft)	154.99	471.30	31.85
Vel Total (ft/s)	5.36	Avg. Vel. (ft/s)	4.62	5.62	2.14
Max Chl Dpth (ft)	10.80	Hydr. Depth (ft)	6.78	9.50	3.58
Conv. Total (cfs)	951481.1	Conv. (cfs)	152735.5	791061.2	7684.4
Length Wtd. (ft)	342.93	Wetted Per. (ft)	155.74	471.39	33.28
Min Ch El (ft)	279.22	Shear (lb/sq ft)	0.43	0.60	0.22
Alpha	1.03	Stream Power (lb/ft s)	1.97	3.36	0.46
Frctn Loss (ft)	0.40	Cum Volume (acre-ft)	37.77	168.39	19.46

C & E Loss (ft)	0.00	Cum SA (acres)	4.55	14.72	3.50

CROSS SECTION OUTPUT Profile #Q100HC

E.G. Elev (ft)	299.45	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.67	Wt. n-Val.	0.042	0.038	0.048
W.S. Elev (ft)	298.78	Reach Len. (ft)	407.52	330.72	271.52
Crit W.S. (ft)		Flow Area (sq ft)	2555.03	8603.77	881.68
E.G. Slope (ft/ft)	0.000651	Area (sq ft)	2555.03	8603.77	881.68
Q Total (cfs)	76166.00	Flow (cfs)	13843.27	59752.13	2570.60
Top Width (ft)	823.38	Top Width (ft)	183.62	471.30	168.45
Vel Total (ft/s)	6.33	Avg. Vel. (ft/s)	5.42	6.94	2.92
Max Chl Dpth (ft)	19.56	Hydr. Depth (ft)	13.91	18.26	5.23
Conv. Total (cfs)	2984844.0	Conv. (cfs)	542499.3	2341606.0	100738.5
Length Wtd. (ft)	343.81	Wetted Per. (ft)	186.28	471.39	170.23
Min Ch El (ft)	279.22	Shear (lb/sq ft)	0.56	0.74	0.21
Alpha	1.09	Stream Power (lb/ft s)	3.02	5.15	0.61
Frctn Loss (ft)	0.26	Cum Volume (acre-ft)	86.75	299.31	73.06
C & E Loss (ft)	0.00	Cum SA (acres)	6.66	14.72	9.40

CROSS SECTION

RIVER: San Juan Creek
REACH: Upper RS: 1618.909

INPUT
Description:
Station Elevation Data num= 86

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	321.04	.66	320.75	7.54	318.4	14.42	314.48	17.17	313.8
33.66	310.51	42.75	308.65	43.83	308.43	44.62	308.37	70.23	306.67
82.45	304.38	89.2	302.85	91.61	301.86	93.7	300.7	99.63	295.7
116.2	283.54	123.16	281.68	129.53	281.08	151.09	281.79	156.45	281.97
179.13	282.58	183.94	282.7	200.58	283.12	220.01	283.31	262.77	281.96
273.28	281.63	275.57	281.55	305.53	280.42	315.16	280.07	324.3	279.94
327.24	279.9	354.73	279.68	544.18	278.19	551.17	278.23	640.67	280.06
660.49	279.9	672.68	279.82	684.64	280.62	694.53	281.22	704.72	282.18
720.37	285.94	722.61	286.49	731.94	288.76	745.06	290.8	756.2	294.13
763.1	295.07	764.12	295.21	831.9	298.72	873.2	301.14	895.61	301.84
910.94	301.33	914.93	301.35	918.57	302.06	923.48	303.12	932.82	306.36
934.83	307.06	939.29	308.13	981.53	307.99	995.11	308.03	1001.3	308.42
1011.97	307.87	1023.33	308.01	1028.2	310.03	1030.09	310.27	1032.5	310.11
1035.41	309.26	1040.7	307.4	1051.22	307.03	1066.31	305.93	1069.53	305.75
1081.12	306.98	1089.11	306.94	1096.98	306.42	1101.88	306.77	1110.59	308.04
1114.78	309.29	1116.76	310.22	1125.51	314.3	1135.22	315.24	1137.04	315.57
1137.99	315.58	1172.94	316.44	1187.42	316.74	1199.49	316.96	1238.7	318.47
1313.83	321.49								

Manning's n Values num= 7

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	183.94	.05	262.77	.035	354.73	.05	722.61	.035
932.82	.02	1116.76	.05						

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
262.77	704.72	167.05 177.35	174.2	.1	.3

CROSS SECTION OUTPUT Profile #Q50

E.G. Elev (ft)	287.03	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.40	Wt. n-Val.	0.041	0.047	0.050
W.S. Elev (ft)	286.63	Reach Len. (ft)	167.05	177.35	174.20
Crit W.S. (ft)		Flow Area (sq ft)	623.13	3147.60	41.28
E.G. Slope (ft/ft)	0.001954	Area (sq ft)	623.13	3147.60	41.28
Q Total (cfs)	19090.00	Flow (cfs)	2592.86	16404.38	92.76
Top Width (ft)	611.22	Top Width (ft)	150.79	441.95	18.48
Vel Total (ft/s)	5.01	Avg. Vel. (ft/s)	4.16	5.21	2.25
Max Chl Dpth (ft)	8.44	Hydr. Depth (ft)	4.13	7.12	2.23
Conv. Total (cfs)	431880.8	Conv. (cfs)	58659.3	371123.0	2098.5
Length Wtd. (ft)	176.50	Wetted Per. (ft)	152.12	442.10	19.01
Min Ch El (ft)	278.19	Shear (lb/sq ft)	0.50	0.87	0.26
Alpha	1.03	Stream Power (lb/ft s)	2.08	4.53	0.60
Frctn Loss (ft)	0.25	Cum Volume (acre-ft)	18.87	100.41	10.42
C & E Loss (ft)	0.04	Cum SA (acres)	2.79	11.25	2.36

CROSS SECTION OUTPUT Profile #Q100

E.G. Elev (ft)	290.08	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.45	Wt. n-Val.	0.041	0.047	0.048
W.S. Elev (ft)	289.63	Reach Len. (ft)	167.05	177.35	174.20
Crit W.S. (ft)		Flow Area (sq ft)	1081.38	4472.75	116.06
E.G. Slope (ft/ft)	0.001359	Area (sq ft)	1081.38	4472.75	116.06
Q Total (cfs)	30242.00	Flow (cfs)	5219.98	24670.58	351.43
Top Width (ft)	629.66	Top Width (ft)	154.87	441.95	32.83
Vel Total (ft/s)	5.33	Avg. Vel. (ft/s)	4.83	5.52	3.03
Max Chl Dpth (ft)	11.44	Hydr. Depth (ft)	6.98	10.12	3.53
Conv. Total (cfs)	820323.6	Conv. (cfs)	141593.6	669197.3	9532.7
Length Wtd. (ft)	176.25	Wetted Per. (ft)	157.19	442.10	33.69
Min Ch El (ft)	278.19	Shear (lb/sq ft)	0.58	0.86	0.29
Alpha	1.02	Stream Power (lb/ft s)	2.82	4.73	0.89
Frctn Loss (ft)	0.19	Cum Volume (acre-ft)	27.79	134.41	18.74
C & E Loss (ft)	0.03	Cum SA (acres)	3.10	11.25	3.30

CROSS SECTION OUTPUT Profile #Q100HC

E.G. Elev (ft)	299.19	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.69	Wt. n-Val.	0.041	0.046	0.042
W.S. Elev (ft)	298.50	Reach Len. (ft)	167.05	177.35	174.20
Crit W.S. (ft)		Flow Area (sq ft)	2507.34	8391.08	671.33
E.G. Slope (ft/ft)	0.000895	Area (sq ft)	2507.34	8391.08	671.33
Q Total (cfs)	76166.00	Flow (cfs)	16122.48	57424.95	2618.58
Top Width (ft)	731.32	Top Width (ft)	166.46	441.95	122.91
Vel Total (ft/s)	6.58	Avg. Vel. (ft/s)	6.43	6.84	3.90
Max Chl Dpth (ft)	20.31	Hydr. Depth (ft)	15.06	18.99	5.46
Conv. Total (cfs)	2545930.0	Conv. (cfs)	538911.0	1919490.0	87528.8
Length Wtd. (ft)	175.89	Wetted Per. (ft)	171.79	442.10	124.50
Min Ch El (ft)	278.19	Shear (lb/sq ft)	0.82	1.06	0.30
Alpha	1.03	Stream Power (lb/ft s)	5.24	7.26	1.18
Frctn Loss (ft)	0.14	Cum Volume (acre-ft)	63.07	234.79	68.22
C & E Loss (ft)	0.03	Cum SA (acres)	5.02	11.25	8.49

CROSS SECTION

RIVER: San Juan Creek
REACH: Upper RS: 1441.576

INPUT
Description:
Station Elevation Data num= 74

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	324.38	14.09	317.02	18.82	314.55	22.15	314.07	26.08	313.83
38.83	312.06	60.72	309.38	70.47	308.18	85.71	306.3	96.35	305.32
112.33	303.89	122.95	302.17	152.14	294.69	159.4	292.85	169.8	289.69
188.96	282.77	208.58	280.28	220.97	279.64	260.55	279.22	267.78	279.07
303.15	278.34	335.43	278.08	366.43	277.83	369.58	277.8	451	278.57
484.31	278.88	519.87	279.22	521.49	279.24	547.95	279.04	586.18	278.67
715.66	277.92	744.79	279.05	759.05	279.4	773.6	281.02	782.68	282.35
788.64	284.67	789.24	284.83	806.35	289.42	821.85	293.28	830.23	295.57
836.86	296.22	859.71	296.95	869.19	297.25	873.8	297.4	883.91	297.74
909.58	298.15	935.32	299.42	958.37	300.35	980.5	301.24	1000.65	301.48
1013.61	301.64	1021.12	301.75	1042.93	302.07	1074.07	302.53	1112.21	303.95
1165.45	305.73	1192.5	307.74	1198.66	308.07	1203.02	308.3	1212.14	308.55
1217.22	308.97	1218.07	309.13	1225.95	311.28	1230.74	311.09	1234.56	311.73
1238.05	313.71	1240.05	314.14	1248.32	314.49	1254.85	315.16	1268.43	315.61
1319.97	317.33	1320.58	317.35	1321.28	317.4	1409.36	321.52		

Manning's n Values num= 13

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.02	14.09	.07	70.47	.035	267.78	.05	366.43	.035
451	.05	789.24	.035	859.71	.07	873.8	.035	958.37	.07
1000.65	.035	1042.93	.02	1268.43	.05				

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
208.58	759.05	225.37	242.4	257.8	.1	.3

CROSS SECTION OUTPUT Profile #Q50

			Left OB	Channel	Right OB
E.G. Elev (ft)	286.75	Element			
Vel Head (ft)	0.27	Wt. n-Val.	0.035	0.045	0.050
W.S. Elev (ft)	286.48	Reach Len. (ft)	225.37	242.40	257.80
Crit W.S. (ft)		Flow Area (sq ft)	116.28	4337.99	158.59
E.G. Slope (ft/ft)	0.001038	Area (sq ft)	116.28	4337.99	158.59
Q Total (cfs)	19090.00	Flow (cfs)	386.48	18268.96	434.56
Top Width (ft)	616.70	Top Width (ft)	29.89	550.47	36.34
Vel Total (ft/s)	4.14	Avg. Vel. (ft/s)	3.32	4.21	2.74
Max Chl Dpth (ft)	8.68	Hydr. Depth (ft)	3.89	7.88	4.36
Conv. Total (cfs)	592480.3	Conv. (cfs)	11994.9	566998.4	13487.1
Length Wtd. (ft)	242.53	Wetted Per. (ft)	30.70	550.54	37.20
Min Ch El (ft)	277.80	Shear (lb/sq ft)	0.25	0.51	0.28
Alpha	1.01	Stream Power (lb/ft s)	0.82	2.15	0.76
Frctn Loss (ft)	0.19	Cum Volume (acre-ft)	17.46	85.18	10.02
C & E Loss (ft)	0.01	Cum SA (acres)	2.44	9.23	2.25

CROSS SECTION OUTPUT Profile #Q100

			Left OB	Channel	Right OB
E.G. Elev (ft)	289.86	Element			
Vel Head (ft)	0.34	Wt. n-Val.	0.035	0.045	0.049
W.S. Elev (ft)	289.52	Reach Len. (ft)	225.37	242.40	257.80
Crit W.S. (ft)		Flow Area (sq ft)	220.09	6013.47	286.47
E.G. Slope (ft/ft)	0.000848	Area (sq ft)	220.09	6013.47	286.47

Q Total (cfs)	30242.00	Flow (cfs)	852.84	28455.09	934.07
Top Width (ft)	636.51	Top Width (ft)	38.32	550.47	47.72
Vel Total (ft/s)	4.64	Avg. Vel. (ft/s)	3.88	4.73	3.26
Max Chl Dpth (ft)	11.72	Hydr. Depth (ft)	5.74	10.92	6.00
Conv. Total (cfs)	1038556.0	Conv. (cfs)	29287.8	977190.8	32077.3
Length Wtd. (ft)	242.57	Wetted Per. (ft)	39.66	550.54	48.98
Min Ch El (ft)	277.80	Shear (lb/sq ft)	0.29	0.58	0.31
Alpha	1.01	Stream Power (lb/ft s)	1.14	2.74	1.01
Frctn Loss (ft)	0.17	Cum Volume (acre-ft)	25.30	113.06	17.94
C & E Loss (ft)	0.00	Cum SA (acres)	2.73	9.23	3.13

CROSS SECTION OUTPUT Profile #Q100HC

E.G. Elev (ft)	299.02	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.59	Wt. n-Val.	0.035	0.045	0.045
W.S. Elev (ft)	298.44	Reach Len. (ft)	225.37	242.40	257.80
Crit W.S. (ft)		Flow Area (sq ft)	701.53	10920.01	950.75
E.G. Slope (ft/ft)	0.000676	Area (sq ft)	701.53	10920.01	950.75
Q Total (cfs)	76166.00	Flow (cfs)	3481.26	68696.55	3988.19
Top Width (ft)	777.89	Top Width (ft)	71.06	550.47	156.35
Vel Total (ft/s)	6.06	Avg. Vel. (ft/s)	4.96	6.29	4.19
Max Chl Dpth (ft)	20.64	Hydr. Depth (ft)	9.87	19.84	6.08
Conv. Total (cfs)	2929309.0	Conv. (cfs)	133887.6	2642038.0	153384.1
Length Wtd. (ft)	242.63	Wetted Per. (ft)	73.60	550.54	158.45
Min Ch El (ft)	277.80	Shear (lb/sq ft)	0.40	0.84	0.25
Alpha	1.03	Stream Power (lb/ft s)	2.00	5.27	1.06
Frctn Loss (ft)	0.15	Cum Volume (acre-ft)	56.92	195.48	64.98
C & E Loss (ft)	0.00	Cum SA (acres)	4.56	9.23	7.93

CROSS SECTION

RIVER: San Juan Creek
REACH: Upper RS: 1199.171

INPUT
Description:
Station Elevation Data num= 66

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	326.84	17.19	316.66	18.02	316.2	18.95	315.99	31.12	312.93
43.76	310.73	58.69	308.55	88.94	305.48	118.44	302.53	124.02	300.95
133.49	298.28	134.95	297.88	162.06	291.2	168.04	288.91	173.24	286.9
187.66	282.22	196.41	281.57	249.13	277.68	250.07	277.66	250.94	277.6
321.71	275.68	327.97	275.59	344.51	275.36	348.96	275.29	377.58	275.31
392.13	275.33	418.21	275.82	454.75	275.74	468.39	275.72	502.08	276.07
523.65	276.3	642.87	277.58	669.09	278.29	675.23	279.21	677.95	279.62
690.07	280	719.51	282.41	726.48	284.11	740.17	287.05	746.33	288.19
770.36	292.17	796.22	295.36	849.56	295.79	879.6	295.74	909.91	296.32
946.93	297.01	979.13	298.64	995.58	299.87	1062.19	301.62	1083.98	301.92
1105.34	301.84	1116.97	302.35	1143.77	303.58	1153.43	304.02	1176.52	305.19
1179.36	305.34	1184.77	305.25	1231.35	306.99	1236.23	307.6	1272.88	308.58
1293.78	308.85	1307.01	309.92	1366.73	314.47	1373.98	314.77	1376.04	314.96
1378.03	314.96								

Manning's n Values num= 7

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.07	124.02	.035	344.51	.05	454.75	.035	523.65	.05

675.23 .035 1143.77 .02

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
196.41	690.07	111.64	117.05 117.88	.1	.3

CROSS SECTION OUTPUT Profile #Q50

			Left OB	Channel	Right OB
E.G. Elev (ft)	286.55	Element			
Vel Head (ft)	0.24	Wt. n-Val.	0.035	0.042	0.035
W.S. Elev (ft)	286.31	Reach Len. (ft)	111.64	117.05	117.88
Crit W.S. (ft)		Flow Area (sq ft)	64.45	4682.53	182.93
E.G. Slope (ft/ft)	0.000615	Area (sq ft)	64.45	4682.53	182.93
Q Total (cfs)	19090.00	Flow (cfs)	138.85	18475.81	475.34
Top Width (ft)	561.69	Top Width (ft)	21.36	493.66	46.67
Vel Total (ft/s)	3.87	Avg. Vel. (ft/s)	2.15	3.95	2.60
Max Chl Dpth (ft)	11.02	Hydr. Depth (ft)	3.02	9.49	3.92
Conv. Total (cfs)	769546.0	Conv. (cfs)	5597.4	744787.1	19161.6
Length Wtd. (ft)	116.54	Wetted Per. (ft)	22.03	493.96	47.20
Min Ch El (ft)	275.29	Shear (lb/sq ft)	0.11	0.36	0.15
Alpha	1.02	Stream Power (lb/ft s)	0.24	1.44	0.39
Frctn Loss (ft)	0.09	Cum Volume (acre-ft)	16.99	60.08	9.01
C & E Loss (ft)	0.01	Cum SA (acres)	2.31	6.32	2.01

CROSS SECTION OUTPUT Profile #Q100

			Left OB	Channel	Right OB
E.G. Elev (ft)	289.69	Element			
Vel Head (ft)	0.33	Wt. n-Val.	0.035	0.042	0.035
W.S. Elev (ft)	289.36	Reach Len. (ft)	111.64	117.05	117.88
Crit W.S. (ft)		Flow Area (sq ft)	142.47	6188.84	349.43
E.G. Slope (ft/ft)	0.000587	Area (sq ft)	142.47	6188.84	349.43
Q Total (cfs)	30242.00	Flow (cfs)	406.97	28722.65	1112.38
Top Width (ft)	586.56	Top Width (ft)	29.55	493.66	63.35
Vel Total (ft/s)	4.53	Avg. Vel. (ft/s)	2.86	4.64	3.18
Max Chl Dpth (ft)	14.07	Hydr. Depth (ft)	4.82	12.54	5.52
Conv. Total (cfs)	1248460.0	Conv. (cfs)	16800.7	1185738.0	45921.4
Length Wtd. (ft)	116.45	Wetted Per. (ft)	30.78	493.96	64.16
Min Ch El (ft)	275.29	Shear (lb/sq ft)	0.17	0.46	0.20
Alpha	1.02	Stream Power (lb/ft s)	0.48	2.13	0.64
Frctn Loss (ft)	0.08	Cum Volume (acre-ft)	24.36	79.11	16.05
C & E Loss (ft)	0.01	Cum SA (acres)	2.56	6.32	2.81

CROSS SECTION OUTPUT Profile #Q100HC

			Left OB	Channel	Right OB
E.G. Elev (ft)	298.87	Element			
Vel Head (ft)	0.62	Wt. n-Val.	0.035	0.042	0.035
W.S. Elev (ft)	298.25	Reach Len. (ft)	111.64	117.05	117.88
Crit W.S. (ft)		Flow Area (sq ft)	543.98	10574.33	1512.86
E.G. Slope (ft/ft)	0.000570	Area (sq ft)	543.98	10574.33	1512.86
Q Total (cfs)	76166.00	Flow (cfs)	2267.18	69206.92	4691.90
Top Width (ft)	837.76	Top Width (ft)	62.80	493.66	281.30
Vel Total (ft/s)	6.03	Avg. Vel. (ft/s)	4.17	6.54	3.10
Max Chl Dpth (ft)	22.96	Hydr. Depth (ft)	8.66	21.42	5.38
Conv. Total (cfs)	3190792.0	Conv. (cfs)	94978.0	2899258.0	196556.1
Length Wtd. (ft)	116.28	Wetted Per. (ft)	65.22	493.96	282.59
Min Ch El (ft)	275.29	Shear (lb/sq ft)	0.30	0.76	0.19
Alpha	1.10	Stream Power (lb/ft s)	1.24	4.98	0.59
Frctn Loss (ft)	0.07	Cum Volume (acre-ft)	53.70	135.68	57.69

C & E Loss (ft)	0.00	Cum SA (acres)	4.22	6.32	6.64

CROSS SECTION

RIVER: San Juan Creek
REACH: Upper RS: 1082.126

INPUT
Description:
Station Elevation Data num= 124

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	385.42	10.58	383.86	30.95	380.3	51.15	377.16	52.5	376.97
78.44	373.33	90.2	371.12	102.22	369.73	120.76	368.35	128	367.82
137.57	367.91	139.61	367.41	140.01	367.13	144.07	364.32	145.23	363.39
152.08	355.3	157.51	348.79	162.47	342.83	164.73	342.1	172.28	337.71
181.41	334.56	201.51	333.43	209.33	333.32	212.06	333	227.51	330.43
235.62	329.08	235.83	329.03	237.49	328.58	256.38	323.74	262.35	321.86
288.61	313.64	299.42	309.19	321.3	305.8	342.19	303.85	355.53	302.52
367.59	301.64	371.07	301.03	402.52	294.48	415	291.88	429.2	288.94
430.72	288.66	431.93	288.32	452.21	283.16	488.45	279.71	493.8	278.91
504.83	278.49	535.3	277.44	546.64	278.91	558.28	279.78	562.63	280.11
570.01	281.68	572.86	282.27	586.41	287.64	590.07	288.96	597.67	289.39
598.82	289.49	599.75	289.31	605.53	287.83	613.19	281.07	616.51	278.17
619.02	276.8	621.22	275.59	629.4	274.48	629.94	274.39	630.03	274.39
635.54	274.54	647.53	274.98	673.21	275.94	676.59	275.91	680.48	275.99
694.17	275.96	735.04	275.79	780.85	275.61	805.04	275.64	834.44	275.68
863.69	276.53	885.61	277.16	908.43	278.24	927.55	279.66	939.65	280.56
965.01	283.31	966.89	283.46	982.41	287.01	989.87	288.65	990.76	288.73
1030.76	290.52	1035.63	290.69	1076.01	291.48	1078.82	291.6	1121.79	294.52
1126.6	294.61	1182.24	295.85	1202.92	296.32	1245.22	299.78	1282.62	301.03
1295.07	301.31	1333.11	302.16	1371.65	304.71	1373.87	304.85	1418.69	306.42
1421.73	306.87	1427.08	307.82	1432.87	308.7	1441.12	312.66	1447.34	315.62
1452.81	316.94	1462.58	319.49	1470.15	320.49	1481.28	321.78	1488.72	321.51
1504.25	321.69	1506.94	319.83	1513.19	315.31	1514.91	314.89	1521.53	314.26
1529.75	313.86	1537.33	313.58	1563.92	312.61	1576.62	312.23	1625.11	311.46
1686.41	314.63	1697.72	314.81	1704.95	315.11	1750.09	316.11		

Manning's n Values num= 11

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	52.5	.07	140.01	.035	157.51	.02	227.51	.07
402.52	.035	630.03	.05	735.04	.035	805.04	.05	927.55	.035
1295.07	.02								

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
613.19	966.89	207.38	214.57	222.4	.1	.3

CROSS SECTION OUTPUT Profile #Q50

			Left OB	Channel	Right OB
E.G. Elev (ft)	286.45	Element			
Vel Head (ft)	0.33	Wt. n-Val.	0.035	0.045	0.035
W.S. Elev (ft)	286.12	Reach Len. (ft)	207.38	214.57	222.40
Crit W.S. (ft)		Flow Area (sq ft)	833.30	3317.60	15.48
E.G. Slope (ft/ft)	0.001016	Area (sq ft)	833.30	3317.60	15.48
Q Total (cfs)	19090.00	Flow (cfs)	3563.73	15501.36	24.91
Top Width (ft)	513.07	Top Width (ft)	147.73	353.70	11.63
Vel Total (ft/s)	4.58	Avg. Vel. (ft/s)	4.28	4.67	1.61
Max Chl Dpth (ft)	11.73	Hydr. Depth (ft)	5.64	9.38	1.33

Conv. Total (cfs)	599050.9	Conv. (cfs)	111831.1	486438.1	781.8
Length Wtd. (ft)	212.28	Wetted Per. (ft)	151.36	355.85	11.94
Min Ch El (ft)	274.39	Shear (lb/sq ft)	0.35	0.59	0.08
Alpha	1.01	Stream Power (lb/ft s)	1.49	2.76	0.13
Frctn Loss (ft)	0.19	Cum Volume (acre-ft)	15.84	49.33	8.74
C & E Loss (ft)	0.00	Cum SA (acres)	2.09	5.19	1.93

Warning: Divided flow computed for this cross-section.
Note: Manning's n values were composited to a single value in the main channel.

CROSS SECTION OUTPUT Profile #Q100

E.G. Elev (ft)	289.59	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.43	Wt. n-Val.	0.035	0.045	0.035
W.S. Elev (ft)	289.16	Reach Len. (ft)	207.38	214.57	222.40
Crit W.S. (ft)		Flow Area (sq ft)	1320.99	4393.65	73.44
E.G. Slope (ft/ft)	0.000922	Area (sq ft)	1320.99	4393.65	73.44
Q Total (cfs)	30242.00	Flow (cfs)	6492.12	23592.13	157.75
Top Width (ft)	565.67	Top Width (ft)	178.42	353.70	33.56
Vel Total (ft/s)	5.22	Avg. Vel. (ft/s)	4.91	5.37	2.15
Max Chl Dpth (ft)	14.77	Hydr. Depth (ft)	7.40	12.42	2.19
Conv. Total (cfs)	995879.4	Conv. (cfs)	213787.9	776896.9	5194.7
Length Wtd. (ft)	212.30	Wetted Per. (ft)	183.76	355.85	34.15
Min Ch El (ft)	274.39	Shear (lb/sq ft)	0.41	0.71	0.12
Alpha	1.01	Stream Power (lb/ft s)	2.03	3.82	0.27
Frctn Loss (ft)	0.17	Cum Volume (acre-ft)	22.49	64.89	15.48
C & E Loss (ft)	0.01	Cum SA (acres)	2.29	5.19	2.67

Warning: Divided flow computed for this cross-section.
Note: Manning's n values were composited to a single value in the main channel.

CROSS SECTION OUTPUT Profile #Q100HC

E.G. Elev (ft)	298.79	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.65	Wt. n-Val.	0.035	0.045	0.035
W.S. Elev (ft)	298.14	Reach Len. (ft)	207.38	214.57	222.40
Crit W.S. (ft)		Flow Area (sq ft)	3176.06	7569.88	1427.40
E.G. Slope (ft/ft)	0.000686	Area (sq ft)	3176.06	7569.88	1427.40
Q Total (cfs)	76166.00	Flow (cfs)	20828.17	50387.32	4950.50
Top Width (ft)	840.28	Top Width (ft)	228.26	353.70	258.32
Vel Total (ft/s)	6.26	Avg. Vel. (ft/s)	6.56	6.66	3.47
Max Chl Dpth (ft)	23.75	Hydr. Depth (ft)	13.91	21.40	5.53
Conv. Total (cfs)	2907875.0	Conv. (cfs)	795180.6	1923694.0	189001.0
Length Wtd. (ft)	212.93	Wetted Per. (ft)	234.57	355.85	259.15
Min Ch El (ft)	274.39	Shear (lb/sq ft)	0.58	0.91	0.24
Alpha	1.07	Stream Power (lb/ft s)	3.80	6.06	0.82
Frctn Loss (ft)	0.13	Cum Volume (acre-ft)	48.93	111.30	53.71
C & E Loss (ft)	0.02	Cum SA (acres)	3.84	5.19	5.91

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

CROSS SECTION

RIVER: San Juan Creek
REACH: Upper RS: 867.557

INPUT
Description:
Station Elevation Data num= 103

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	343.67	15.86	342.34	25.35	341.32	42.56	340.84	53.18	340.66
56.38	340.45	64.27	339.93	107.12	337.52	110.49	337.32	141.99	335.42
159.98	333.92	165.73	333.14	172.74	332.19	219.14	327.87	236.84	324.95
255.37	322.84	260.58	321.66	273.02	316.39	276.86	315.17	279.72	314.74
298.99	310.13	304.36	309.05	327.26	306.68	348.41	304.55	349.87	304.37
364.16	302.59	421.74	298.5	433.77	297.28	445.95	295.46	461.98	291.44
474.49	287.32	480.73	285.85	510.38	278.79	520.99	275.7	523.08	275.44
535.58	274.65	556.04	272.96	567.26	272.8	606.2	274.25	608.65	274.27
612.5	274.4	626.08	276.15	655.29	279.93	677.42	282.28	680.52	282.47
686.34	283.09	692.93	283.07	699.74	282.57	700.91	282.48	705.95	280.94
711.75	279.74	717.75	276.7	731.42	274.99	736.19	274.72	736.57	274.72
785.05	275.05	791.81	275.1	810.75	275.23	847.05	275.69	853.74	275.77
884.42	277.4	939.12	280.36	953.24	281.12	1013.65	285.77	1015.82	285.98
1084.48	289.41	1086.44	289.48	1090.79	289.65	1099.16	290.11	1163.66	293.99
1196.92	293.79	1215.53	293.67	1223.07	293.88	1243.99	294.46	1252.17	294.94
1252.56	294.97	1271.64	296.03	1283.68	300.06	1300.71	301.28	1301.98	301.44
1325.82	301.16	1327.19	301.15	1337.01	301.67	1374.58	303.15	1381.06	303.46
1429.82	305.82	1438.92	306.03	1507.26	307.56	1535.29	308.45	1540.08	308.46
1543.29	308.49	1659.36	306.75	1712.42	308.83	1746.37	310.05	1756.88	310.56
1777.22	312.02	1790.14	312.58	1811.31	313.52	1818.52	314.08	1823.15	314.37
1830.59	314.6	1837.4	315.36	1841.42	316				

Manning's n Values num= 13

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	110.49	.02	165.73	.07	349.87	.035	699.74	.05
791.81	.035	847.05	.05	939.12	.035	1086.44	.05	1196.92	.035
1252.17	.07	1325.82	.035	1381.06	.02				

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
705.95	939.12	194.86	178.02	165.62	.1	.3

CROSS SECTION OUTPUT Profile #Q50

			Left OB	Channel	Right OB
E.G. Elev (ft)	286.26	Element			
Vel Head (ft)	0.32	Wt. n-Val.	0.035	0.045	0.035
W.S. Elev (ft)	285.94	Reach Len. (ft)	194.86	178.02	165.62
Crit W.S. (ft)		Flow Area (sq ft)	1886.44	2209.31	224.29
E.G. Slope (ft/ft)	0.000790	Area (sq ft)	1886.44	2209.31	224.29
Q Total (cfs)	19090.00	Flow (cfs)	9232.73	9309.15	548.12
Top Width (ft)	535.06	Top Width (ft)	225.60	233.17	76.29
Vel Total (ft/s)	4.42	Avg. Vel. (ft/s)	4.89	4.21	2.44
Max Chl Dpth (ft)	13.14	Hydr. Depth (ft)	8.36	9.48	2.94
Conv. Total (cfs)	679397.0	Conv. (cfs)	328585.1	331304.7	19507.3
Length Wtd. (ft)	181.69	Wetted Per. (ft)	227.79	234.26	76.49
Min Ch El (ft)	274.72	Shear (lb/sq ft)	0.41	0.46	0.14
Alpha	1.05	Stream Power (lb/ft s)	2.00	1.96	0.35
Frctn Loss (ft)	0.16	Cum Volume (acre-ft)	9.36	35.72	8.13
C & E Loss (ft)	0.02	Cum SA (acres)	1.20	3.74	1.70

CROSS SECTION OUTPUT Profile #Q100

			Left OB	Channel	Right OB
E.G. Elev (ft)	289.41	Element			
Vel Head (ft)	0.41	Wt. n-Val.	0.035	0.045	0.035

W.S. Elev (ft)	289.01	Reach Len. (ft)	194.86	178.02	165.62
Crit W.S. (ft)		Flow Area (sq ft)	2596.17	2924.01	550.97
E.G. Slope (ft/ft)	0.000725	Area (sq ft)	2596.17	2924.01	550.97
Q Total (cfs)	30242.00	Flow (cfs)	14527.32	14125.74	1588.94
Top Width (ft)	607.00	Top Width (ft)	236.58	233.17	137.25
Vel Total (ft/s)	4.98	Avg. Vel. (ft/s)	5.60	4.83	2.88
Max Chl Dpth (ft)	16.21	Hydr. Depth (ft)	10.97	12.54	4.01
Conv. Total (cfs)	1122942.0	Conv. (cfs)	539426.4	524514.9	59000.5
Length Wtd. (ft)	181.41	Wetted Per. (ft)	239.20	234.26	137.54
Min Ch El (ft)	274.72	Shear (lb/sq ft)	0.49	0.57	0.18
Alpha	1.06	Stream Power (lb/ft s)	2.75	2.73	0.52
Frctn Loss (ft)	0.15	Cum Volume (acre-ft)	13.16	46.87	13.89
C & E Loss (ft)	0.02	Cum SA (acres)	1.30	3.74	2.24

CROSS SECTION OUTPUT Profile #Q100HC

E.G. Elev (ft)	298.64	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.59	Wt. n-Val.	0.035	0.045	0.037
W.S. Elev (ft)	298.05	Reach Len. (ft)	194.86	178.02	165.62
Crit W.S. (ft)		Flow Area (sq ft)	4891.88	5033.77	2789.87
E.G. Slope (ft/ft)	0.000571	Area (sq ft)	4891.88	5033.77	2789.87
Q Total (cfs)	76166.00	Flow (cfs)	32963.99	30738.53	12463.48
Top Width (ft)	851.54	Top Width (ft)	279.80	233.17	338.56
Vel Total (ft/s)	5.99	Avg. Vel. (ft/s)	6.74	6.11	4.47
Max Chl Dpth (ft)	25.25	Hydr. Depth (ft)	17.48	21.59	8.24
Conv. Total (cfs)	3186344.0	Conv. (cfs)	1379022.0	1285922.0	521399.7
Length Wtd. (ft)	179.76	Wetted Per. (ft)	283.49	234.26	339.38
Min Ch El (ft)	274.72	Shear (lb/sq ft)	0.62	0.77	0.29
Alpha	1.06	Stream Power (lb/ft s)	4.15	4.68	1.31
Frctn Loss (ft)	0.12	Cum Volume (acre-ft)	29.72	80.26	42.95
C & E Loss (ft)	0.03	Cum SA (acres)	2.64	3.74	4.38

CROSS SECTION

RIVER: San Juan Creek
REACH: Upper RS: 689.540

INPUT
Description:
Station Elevation Data num= 83

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	315.68	1.78	314.9	8.04	313.36	22.84	310.17	71.19	310.67
77.22	310.64	79.68	310.53	110.23	310.23	118.7	309.97	136.03	308.67
142.26	308.2	155.63	305.95	164.43	303.91	172.11	302.65	207.79	296.45
210.35	295.96	210.79	295.85	211.67	295.76	241.52	292.88	268.52	289.5
274.55	287.66	275.2	287.47	278.24	285.5	289.41	279.7	292.9	277.64
298.31	276.24	304.9	274.81	309.73	274.88	322.99	274.62	334.02	274.66
335.56	274.66	347.63	274.62	368.55	274.55	376.04	274.5	394.48	275.14
408.08	275.24	436.8	275.47	460.94	275.66	519.36	275.64	543.38	275.7
624.92	279.86	658.41	281.61	675.57	282.52	699.63	284.96	730.62	287.94
731.07	287.95	753.37	288.27	785.94	289.61	794.73	289.97	800.43	290.48
869	294.37	872.21	294.44	876.2	294.54	906.85	295.16	921.14	295.45
926.81	295.72	957.23	296.27	962.64	296.5	986.23	298.95	990.16	299.55
1012.49	301.77	1021.76	302.06	1043.82	302.77	1054.29	303.06	1093.14	305.93
1100.81	306.41	1102.19	306.7	1112.49	306.83	1151.54	307.67	1163.49	307.91
1184.33	307.64	1235.13	306.94	1284.7	305.79	1288.24	305.71	1352.07	305.58

1385.84	306.03	1419.92	308.25	1454.43	309.95	1472.07	312.07	1489.74	313.22
1501.6	314.38	1509.43	314.86	1511.42	315.14				

Manning's n Values num= 7

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.07	136.03	.035	347.63	.05	408.08	.035	785.94	.05
906.85	.035	1284.7	.02						

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
289.41	624.92	173.41	174.32 168.46	.1	.3

CROSS SECTION OUTPUT Profile #Q50

			Left OB	Channel	Right OB
E.G. Elev (ft)	286.08	Element			
Vel Head (ft)	0.47	Wt. n-Val.	0.035	0.037	0.035
W.S. Elev (ft)	285.61	Reach Len. (ft)	173.41	174.32	168.46
Crit W.S. (ft)		Flow Area (sq ft)	33.68	3255.86	271.67
E.G. Slope (ft/ft)	0.000958	Area (sq ft)	33.68	3255.86	271.67
Q Total (cfs)	19090.00	Flow (cfs)	84.37	18210.68	794.95
Top Width (ft)	428.38	Top Width (ft)	11.35	335.51	81.52
Vel Total (ft/s)	5.36	Avg. Vel. (ft/s)	2.50	5.59	2.93
Max Chl Dpth (ft)	11.11	Hydr. Depth (ft)	2.97	9.70	3.33
Conv. Total (cfs)	616819.7	Conv. (cfs)	2726.2	588407.8	25685.7
Length Wtd. (ft)	173.57	Wetted Per. (ft)	12.80	336.53	81.74
Min Ch El (ft)	274.50	Shear (lb/sq ft)	0.16	0.58	0.20
Alpha	1.05	Stream Power (lb/ft s)	0.39	3.24	0.58
Frctn Loss (ft)	0.32	Cum Volume (acre-ft)	5.07	24.55	7.19
C & E Loss (ft)	0.08	Cum SA (acres)	0.67	2.58	1.40

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

CROSS SECTION OUTPUT Profile #Q100

			Left OB	Channel	Right OB
E.G. Elev (ft)	289.24	Element			
Vel Head (ft)	0.64	Wt. n-Val.	0.035	0.037	0.035
W.S. Elev (ft)	288.60	Reach Len. (ft)	173.41	174.32	168.46
Crit W.S. (ft)		Flow Area (sq ft)	75.64	4258.80	572.19
E.G. Slope (ft/ft)	0.000928	Area (sq ft)	75.64	4258.80	572.19
Q Total (cfs)	30242.00	Flow (cfs)	236.50	28085.71	1919.79
Top Width (ft)	490.03	Top Width (ft)	17.95	335.51	136.57
Vel Total (ft/s)	6.16	Avg. Vel. (ft/s)	3.13	6.59	3.36
Max Chl Dpth (ft)	14.10	Hydr. Depth (ft)	4.21	12.69	4.19
Conv. Total (cfs)	992856.3	Conv. (cfs)	7764.4	922064.6	63027.3
Length Wtd. (ft)	173.37	Wetted Per. (ft)	20.12	336.53	136.91
Min Ch El (ft)	274.50	Shear (lb/sq ft)	0.22	0.73	0.24
Alpha	1.08	Stream Power (lb/ft s)	0.68	4.83	0.81
Frctn Loss (ft)	0.29	Cum Volume (acre-ft)	7.19	32.19	11.75
C & E Loss (ft)	0.10	Cum SA (acres)	0.73	2.58	1.72

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 OUTPUT Profile #Q100HC

E.G. Elev (ft)	298.49	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.93	Wt. n-Val.	0.035	0.037	0.036
W.S. Elev (ft)	297.56	Reach Len. (ft)	173.41	174.32	168.46
Crit W.S. (ft)		Flow Area (sq ft)	539.38	7263.53	2672.33
E.G. Slope (ft/ft)	0.000722	Area (sq ft)	539.38	7263.53	2672.33
Q Total (cfs)	76166.00	Flow (cfs)	2018.06	60482.36	13665.58
Top Width (ft)	771.44	Top Width (ft)	88.01	335.51	347.92
Vel Total (ft/s)	7.27	Avg. Vel. (ft/s)	3.74	8.33	5.11
Max Chl Dpth (ft)	23.06	Hydr. Depth (ft)	6.13	21.65	7.68
Conv. Total (cfs)	2834474.0	Conv. (cfs)	75100.8	2250816.0	508556.7
Length Wtd. (ft)	172.78	Wetted Per. (ft)	90.82	336.53	348.51
Min Ch El (ft)	274.50	Shear (lb/sq ft)	0.27	0.97	0.35
Alpha	1.14	Stream Power (lb/ft s)	1.00	8.10	1.77
Frctn Loss (ft)	0.21	Cum Volume (acre-ft)	17.58	55.13	32.56
C & E Loss (ft)	0.11	Cum SA (acres)	1.81	2.58	3.08

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 Creek
REACH: Upper RS: 515.223

INPUT
Description:
Station Elevation Data num= 71

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	308.61	1.86	308.42	7.51	305.55	11.43	303.33	12.51	303.14
21.17	300.52	25.5	300.34	94.16	297.4	121.97	296.27	125.13	295.93
128.55	295.33	131.34	293.6	135.27	291.87	141.81	288.38	147.46	287.95
178.3	289.63	180.65	289.73	181.38	289.76	182.38	289.63	193.41	288.2
205.54	278.48	207.86	276.8	208.82	276.11	212.72	275.2	216.78	274.86
221.71	274.45	239.6	274.21	268.91	275.74	290.75	275.92	318.8	276.15
382.56	276.66	394.57	276.76	401.96	276.57	414.44	277.03	443.9	279.23
471.83	281.04	494.28	282.49	505.19	284.43	535.57	288.71	612.06	293.45
630.22	294.27	636.83	294.8	675.79	296.3	692.85	296.53	701.04	297.66
730.55	300.42	735.65	301.14	738.66	302.21	739.62	302.36	754.33	304.67
775.5	307.29	780.69	308.39	799.98	308.86	811.2	309.06	843.22	310.05
854.39	310.26	867.43	310.5	873.3	310.84	882.91	310.61	962.37	307.94
962.46	307.94	962.55	307.93	962.96	307.92	1023.28	304.39	1083.92	303.92
1085.49	303.91	1142.91	303.12	1229.01	304.73	1243.34	305.16	1252.01	305.87
1275.2	308.26								

Manning's n Values num= 9

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.07	25.5	.035	216.78	.05	318.8	.035	382.56	.05
471.83	.035	739.62	.05	854.39	.035	1083.92	.02		

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
207.86	382.56	204.8	207.7	197.7	.1	.3

CROSS SECTION OUTPUT Profile #Q50

E.G. Elev (ft)	285.68	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.30	Wt. n-Val.	0.035	0.044	0.049
W.S. Elev (ft)	284.38	Reach Len. (ft)	204.80	207.70	197.70
Crit W.S. (ft)		Flow Area (sq ft)	37.37	1512.52	615.32
E.G. Slope (ft/ft)	0.004746	Area (sq ft)	37.37	1512.52	615.32
Q Total (cfs)	19090.00	Flow (cfs)	229.25	14793.96	4066.79
Top Width (ft)	306.74	Top Width (ft)	9.68	174.70	122.36
Vel Total (ft/s)	8.82	Avg. Vel. (ft/s)	6.13	9.78	6.61
Max Chl Dpth (ft)	10.17	Hydr. Depth (ft)	3.86	8.66	5.03
Conv. Total (cfs)	277102.2	Conv. (cfs)	3327.8	214742.8	59031.7
Length Wtd. (ft)	205.69	Wetted Per. (ft)	12.30	175.10	122.72
Min Ch El (ft)	274.21	Shear (lb/sq ft)	0.90	2.56	1.49
Alpha	1.08	Stream Power (lb/ft s)	5.52	25.03	9.82
Frctn Loss (ft)	0.66	Cum Volume (acre-ft)	4.93	15.01	5.47
C & E Loss (ft)	0.12	Cum SA (acres)	0.63	1.56	1.01

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Note: Manning's n values were composited to a single value in the main channel.

CROSS SECTION OUTPUT Profile #Q100

E.G. Elev (ft)	288.85	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.60	Wt. n-Val.	0.035	0.044	0.048
W.S. Elev (ft)	287.25	Reach Len. (ft)	204.80	207.70	197.70
Crit W.S. (ft)		Flow Area (sq ft)	70.34	2014.43	995.95
E.G. Slope (ft/ft)	0.004033	Area (sq ft)	70.34	2014.43	995.95
Q Total (cfs)	30242.00	Flow (cfs)	490.81	21985.57	7765.62
Top Width (ft)	330.65	Top Width (ft)	13.27	174.70	142.68
Vel Total (ft/s)	9.82	Avg. Vel. (ft/s)	6.98	10.91	7.80
Max Chl Dpth (ft)	13.04	Hydr. Depth (ft)	5.30	11.53	6.98
Conv. Total (cfs)	476225.1	Conv. (cfs)	7728.8	346209.9	122286.4
Length Wtd. (ft)	205.28	Wetted Per. (ft)	16.90	175.10	143.25
Min Ch El (ft)	274.21	Shear (lb/sq ft)	1.05	2.90	1.75
Alpha	1.07	Stream Power (lb/ft s)	7.31	31.61	13.65
Frctn Loss (ft)	0.58	Cum Volume (acre-ft)	6.90	19.64	8.72
C & E Loss (ft)	0.14	Cum SA (acres)	0.67	1.56	1.18

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

CROSS SECTION OUTPUT Profile #Q100HC

E.G. Elev (ft)	298.17	Element	Left OB	Channel	Right OB
Vel Head (ft)	2.02	Wt. n-Val.	0.035	0.044	0.045
W.S. Elev (ft)	296.15	Reach Len. (ft)	204.80	207.70	197.70
Crit W.S. (ft)		Flow Area (sq ft)	635.82	3567.96	2812.38
E.G. Slope (ft/ft)	0.002605	Area (sq ft)	635.82	3567.96	2812.38
Q Total (cfs)	76166.00	Flow (cfs)	5048.04	45818.28	25299.68
Top Width (ft)	548.70	Top Width (ft)	84.75	174.70	289.25
Vel Total (ft/s)	10.86	Avg. Vel. (ft/s)	7.94	12.84	9.00
Max Chl Dpth (ft)	21.94	Hydr. Depth (ft)	7.50	20.42	9.72
Conv. Total (cfs)	1492248.0	Conv. (cfs)	98901.5	897673.8	495672.5
Length Wtd. (ft)	204.47	Wetted Per. (ft)	90.66	175.10	290.13
Min Ch El (ft)	274.21	Shear (lb/sq ft)	1.14	3.31	1.58
Alpha	1.11	Stream Power (lb/ft s)	9.06	42.56	14.18
Frctn Loss (ft)	0.44	Cum Volume (acre-ft)	15.24	33.45	21.96

C & E Loss (ft)	0.05	Cum SA (acres)	1.47	1.56	1.85

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

CROSS SECTION

RIVER: San Juan Creek
REACH: Upper RS: 307.535

INPUT
Description:
Station Elevation Data num= 63

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	301.23	.4	300.92	6.76	298.99	7.8	298.81	30.4	294.27
35.42	294.17	57.94	293.8	62.96	293.82	123.1	296.69	126.05	296.94
129.2	296.94	154.2	295.64	156.67	295.46	157.94	294.76	163.27	290.83
175.14	282.24	190.07	277.01	190.43	276.89	190.81	276.74	191.13	276.69
200.87	275.64	202.13	275.5	207.45	274.93	221.92	275.55	288.75	274.43
291.26	274.39	299.97	274.24	305.32	274.05	323.18	274.04	364.03	273.76
378.63	274.33	401.74	275.15	429.12	276.12	475.21	279.53	502.18	281.64
512.3	282.44	571.65	293.06	580.27	294.69	590.6	296.96	602.61	298.95
621.05	302	624.86	302.69	640.92	305.26	662.59	308.31	675.2	308.36
695.63	308.2	703.05	307.04	714.63	305.24	729.6	302.07	736.12	301.46
753.26	301.08	770.57	300.7	810.78	300.4	910.67	300.61	980.25	300.98
1067.12	301.4	1122.81	301.67	1158.28	301.89	1166.38	302.14	1210.81	304.47
1211.71	304.55	1214.72	304.86	1255.44	308.62				

Manning's n Values num= 9

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	200.87	.05	288.75	.035	401.74	.05	502.18	.035
602.61	.05	703.05	.035	753.26	.05	1067.12	.02		

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
221.92	401.74	205.4	195.45	188.3	.1	.3

CROSS SECTION OUTPUT Profile #Q50

E.G. Elev (ft)	284.90	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.89	Wt. n-Val.	0.043	0.039	0.050
W.S. Elev (ft)	284.01	Reach Len. (ft)	205.40	195.45	188.30
Crit W.S. (ft)		Flow Area (sq ft)	336.06	1715.13	633.78
E.G. Slope (ft/ft)	0.002301	Area (sq ft)	336.06	1715.13	633.78
Q Total (cfs)	19090.00	Flow (cfs)	2030.09	14125.25	2934.67
Top Width (ft)	348.39	Top Width (ft)	49.23	179.82	119.34
Vel Total (ft/s)	7.11	Avg. Vel. (ft/s)	6.04	8.24	4.63
Max Chl Dpth (ft)	10.25	Hydr. Depth (ft)	6.83	9.54	5.31
Conv. Total (cfs)	397980.2	Conv. (cfs)	42322.4	294477.1	61180.7
Length Wtd. (ft)	196.69	Wetted Per. (ft)	50.85	179.86	119.74
Min Ch El (ft)	273.76	Shear (lb/sq ft)	0.95	1.37	0.76
Alpha	1.13	Stream Power (lb/ft s)	5.73	11.28	3.52
Frctn Loss (ft)	0.29	Cum Volume (acre-ft)	4.05	7.31	2.64
C & E Loss (ft)	0.11	Cum SA (acres)	0.49	0.71	0.46

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

CROSS SECTION OUTPUT Profile #Q100

E.G. Elev (ft)	288.13	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.12	Wt. n-Val.	0.043	0.039	0.049
W.S. Elev (ft)	287.01	Reach Len. (ft)	205.40	195.45	188.30
Crit W.S. (ft)		Flow Area (sq ft)	489.89	2254.31	1016.75
E.G. Slope (ft/ft)	0.002068	Area (sq ft)	489.89	2254.31	1016.75
Q Total (cfs)	30242.00	Flow (cfs)	3431.28	21055.29	5755.43
Top Width (ft)	369.29	Top Width (ft)	53.37	179.82	136.10
Vel Total (ft/s)	8.04	Avg. Vel. (ft/s)	7.00	9.34	5.66
Max Chl Dpth (ft)	13.25	Hydr. Depth (ft)	9.18	12.54	7.47
Conv. Total (cfs)	665030.0	Conv. (cfs)	75454.7	463011.8	126563.6
Length Wtd. (ft)	196.57	Wetted Per. (ft)	55.97	179.86	136.76
Min Ch El (ft)	273.76	Shear (lb/sq ft)	1.13	1.62	0.96
Alpha	1.12	Stream Power (lb/ft s)	7.92	15.11	5.43
Frctn Loss (ft)	0.27	Cum Volume (acre-ft)	5.58	9.46	4.15
C & E Loss (ft)	0.12	Cum SA (acres)	0.51	0.71	0.55

Warning: The conveyance ratio (upstream 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)	297.68	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.84	Wt. n-Val.	0.042	0.039	0.047
W.S. Elev (ft)	295.84	Reach Len. (ft)	205.40	195.45	188.30
Crit W.S. (ft)		Flow Area (sq ft)	1124.55	3841.65	2434.26
E.G. Slope (ft/ft)	0.001770	Area (sq ft)	1124.55	3841.65	2434.26
Q Total (cfs)	76166.00	Flow (cfs)	9268.85	47180.94	19716.21
Top Width (ft)	517.73	Top Width (ft)	154.16	179.82	183.75
Vel Total (ft/s)	10.29	Avg. Vel. (ft/s)	8.24	12.28	8.10
Max Chl Dpth (ft)	22.08	Hydr. Depth (ft)	7.29	21.36	13.25
Conv. Total (cfs)	1810293.0	Conv. (cfs)	220299.4	1121384.0	468609.5
Length Wtd. (ft)	196.15	Wetted Per. (ft)	159.69	179.86	185.23
Min Ch El (ft)	273.76	Shear (lb/sq ft)	0.78	2.36	1.45
Alpha	1.12	Stream Power (lb/ft s)	6.41	28.99	11.76
Frctn Loss (ft)	0.26	Cum Volume (acre-ft)	11.10	15.79	10.05
C & E Loss (ft)	0.17	Cum SA (acres)	0.91	0.71	0.77

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 Juan Creek
REACH: Upper RS: 112.108

INPUT
Description:
Station Elevation Data num= 61

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	310.44	5.01	306.36	15.74	299.18	21.57	296.52	24.15	295.85
41.27	293.91	47.61	293.42	51.87	292.92	81.25	290.37	81.37	290.34
81.64	290.23	89.03	287.58	93.4	284.32	103.59	277.32	108.59	275.34
117.11	274.59	128.15	273.94	132.75	274.14	136.48	274.3	144.9	274.67

188.79	275.65	220.69	275.66	223.32	275.51	254.34	273.76	266.22	273.09
275.33	272.7	304.53	272.37	336.46	271.93	349.86	272.54	392.03	274.14
409.43	274.84	433.42	275.79	438.04	275.81	462.01	280.55	470.36	282.04
483.87	283.82	522.85	288.95	533.5	290.6	540.97	291.75	597.04	301.48
612.31	304.63	629.61	308.29	636.48	308.14	645.16	307.04	658.22	305.39
664.69	304.37	672.72	303.05	681.09	302.66	710.69	300.89	726.06	300.37
732.01	300.39	771.69	300.57	781.63	300.61	966.04	301.54	1029.77	301.82
1081	302.05	1132.6	302.92	1166.38	303.63	1223.5	306.58	1225	306.66
1240.69	308.03								

Manning's n Values num= 10

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	136.48	.05	223.32	.035	409.43	.05	483.87	.035
533.5	.05	645.16	.035	732.01	.05	781.63	.035	1029.77	.02

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
254.34	392.03	35.14 112.11	87.83	.1	.3

CROSS SECTION OUTPUT Profile #Q50

E.G. Elev (ft)	284.51	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.52	Wt. n-Val.	0.042	0.035	0.043
W.S. Elev (ft)	283.98	Reach Len. (ft)			
Crit W.S. (ft)	279.06	Flow Area (sq ft)	1381.75	1544.75	586.77
E.G. Slope (ft/ft)	0.001000	Area (sq ft)	1381.75	1544.75	586.77
Q Total (cfs)	19090.00	Flow (cfs)	6454.06	10391.61	2244.32
Top Width (ft)	391.22	Top Width (ft)	160.45	137.69	93.08
Vel Total (ft/s)	5.43	Avg. Vel. (ft/s)	4.67	6.73	3.82
Max Chl Dpth (ft)	12.05	Hydr. Depth (ft)	8.61	11.22	6.30
Conv. Total (cfs)	603557.3	Conv. (cfs)	204054.3	328545.6	70957.5
Length Wtd. (ft)		Wetted Per. (ft)	163.03	137.77	93.83
Min Ch El (ft)	271.93	Shear (lb/sq ft)	0.53	0.70	0.39
Alpha	1.14	Stream Power (lb/ft s)	2.47	4.71	1.49
Frctn Loss (ft)		Cum Volume (acre-ft)			
C & E Loss (ft)		Cum SA (acres)			

CROSS SECTION OUTPUT Profile #Q100

E.G. Elev (ft)	287.74	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.71	Wt. n-Val.	0.042	0.035	0.044
W.S. Elev (ft)	287.02	Reach Len. (ft)			
Crit W.S. (ft)	280.76	Flow Area (sq ft)	1876.11	1963.57	905.04
E.G. Slope (ft/ft)	0.001000	Area (sq ft)	1876.11	1963.57	905.04
Q Total (cfs)	30242.00	Flow (cfs)	10534.30	15497.35	4210.36
Top Width (ft)	418.44	Top Width (ft)	164.57	137.69	116.19
Vel Total (ft/s)	6.37	Avg. Vel. (ft/s)	5.61	7.89	4.65
Max Chl Dpth (ft)	15.09	Hydr. Depth (ft)	11.40	14.26	7.79
Conv. Total (cfs)	956305.4	Conv. (cfs)	333113.0	490053.4	133138.9
Length Wtd. (ft)		Wetted Per. (ft)	168.15	137.77	117.14
Min Ch El (ft)	271.93	Shear (lb/sq ft)	0.70	0.89	0.48
Alpha	1.13	Stream Power (lb/ft s)	3.91	7.02	2.24
Frctn Loss (ft)		Cum Volume (acre-ft)			
C & E Loss (ft)		Cum SA (acres)			

CROSS SECTION OUTPUT Profile #Q100HC

E.G. Elev (ft)	297.26	Element	Left OB	Channel	Right OB

Vel Head (ft)	1.28	Wt. n-Val.	0.042	0.035	0.044
W.S. Elev (ft)	295.98	Reach Len. (ft)			
Crit W.S. (ft)	286.15	Flow Area (sq ft)	3583.16	3196.33	2215.64
E.G. Slope (ft/ft)	0.001000	Area (sq ft)	3583.16	3196.33	2215.64
Q Total (cfs)	76166.00	Flow (cfs)	26373.47	34915.88	14876.66
Top Width (ft)	541.67	Top Width (ft)	230.68	137.69	173.30
Vel Total (ft/s)	8.47	Avg. Vel. (ft/s)	7.36	10.92	6.71
Max Chl Dpth (ft)	24.05	Hydr. Depth (ft)	15.53	23.21	12.78
Conv. Total (cfs)	2407995.0	Conv. (cfs)	833799.6	1103869.0	470327.1
Length Wtd. (ft)		Wetted Per. (ft)	235.22	137.77	174.96
Min Ch El (ft)	271.93	Shear (lb/sq ft)	0.95	1.45	0.79
Alpha	1.15	Stream Power (lb/ft s)	7.00	15.83	5.31
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	n8	n9	n10	n11	n12	n13	n14	n15	n16	n17	n18	n19	n20
Upper	4656.846	.02	.035	.02	.05	.035	.07	.035													
Upper	4455.918	.035	.02	.035	.02	.05	.035	.02	.07	.035											
Upper	4237.798	.07	.035	.02	.035	.02	.07	.035													
Upper	4029.826	.035	.02	.035	.02	.07	.035														
Upper	3777.506	.035	.02	.035	.02	.07	.035														
Upper	3688.827	.035	.02	.035	.02	.07	.035														
Upper	3444.123	.035	.02	.035	.02	.07	.035														
Upper	3403.43*	.035	.032	.023	.023	.035	.02	.02	.02	.02	.026	.066	.054	.063	.035	.042	.042				
Upper	3362.75*	.035	.029	.026	.026	.035	.02	.02	.02	.02	.032	.062	.058	.056	.035	.049	.049				
Upper	3322.06*	.035	.026	.029	.029	.035	.02	.02	.02	.02	.038	.058	.062	.049	.035	.056	.056				
Upper	3281.37*	.035	.023	.032	.032	.035	.02	.02	.02	.02	.044	.054	.066	.042	.035	.063	.063				
Upper	3240.694	.035	.02	.035	.02	.05	.07	.035	.07												
Upper	3198.13*	.035	.031	.024	.024	.035	.02	.02	.02	.043	.058	.02	.031	.027	.046	.061	.061				
Upper	3155.57*	.035	.027	.027	.027	.035	.02	.02	.02	.035	.045	.02	.027	.035	.043	.053	.053				
Upper	3113.01*	.035	.024	.031	.031	.035	.02	.02	.02	.027	.032	.02	.024	.043	.039	.044	.044				
Upper	3070.453	.035	.02	.035	.02	.05	.035														
Upper	2920.457	.02	.035	.05	.035	.02	.05														
Upper	2752.174	.035	.05	.035	.02	.05															
Upper	2710.51*	.035	.038	.05	.047	.035	.038	.047	.025	.05	.047	.02	.02	.025	.025	.05	.05				
Upper	2668.85*	.035	.04	.05	.045	.035	.04	.045	.03	.05	.045	.02	.02	.03	.05	.05					
Upper	2627.20*	.035	.043	.05	.043	.035	.043	.043	.035	.05	.043	.02	.02	.035	.05	.05					
Upper	2585.54*	.035	.045	.05	.04	.035	.045	.04	.04	.05	.04	.02	.02	.04	.05						

Upper		2543.88*		.035	.047	.05	.038	.035	.047	.038	.045	.05	.038	.02	.02
.045	.045	.05	.05												
Upper		2502.231		.035	.05	.035	.05	.035	.05	.035	.02	.05			
Upper		2456.91*		.035	.041	.053	.064	.038	.05	.038	.047	.035	.025	.05	.047
.032	.025	.053	.067												
Upper		2411.59*		.035	.047	.057	.058	.04	.045	.035	.03	.05	.045	.03	.057
.063															
Upper		2366.27*		.035	.053	.06	.053	.043	.05	.043	.035	.05	.043	.027	.035
.06	.06														
Upper		2320.95*		.035	.058	.063	.047	.045	.05	.045	.035	.04	.05	.04	.025
.04	.063	.057													
Upper		2275.63*		.035	.064	.041	.047	.05	.047	.038	.035	.045	.05	.038	.022
.045	.067	.053													
Upper		2230.316		.035	.07	.035	.05	.035	.05	.035	.02	.05	.07	.05	
Upper		2190.21*		.033	.065	.04	.053	.065	.037	.035	.048	.035	.048	.035	.033
.02	.05	.053	.07	.05											
Upper		2150.11*		.031	.06	.045	.056	.06	.039	.035	.046	.035	.046	.035	.031
.02	.05	.056	.07	.05											
Upper		2110.00*		.029	.055	.05	.059	.055	.041	.035	.041	.044	.035	.044	.035
.029	.033	.05	.059	.07	.05										
Upper		2069.90*		.026	.029	.05	.055	.061	.05	.044	.035	.044	.041	.035	.041
.035	.026	.02	.037	.05	.07	.05									
Upper		2029.80*		.024	.031	.045	.06	.064	.045	.046	.035	.046	.039	.035	.039
.035	.024	.02	.041	.05	.064	.07	.05								
Upper		1989.70*		.022	.04	.065	.067	.04	.048	.035	.048	.037	.035	.037	.035
.022	.02	.046	.05	.067	.07	.05									
Upper		1949.598		.02	.035	.07	.035	.05	.035	.05	.035	.02	.05	.07	.05
Upper		1618.909		.035	.05	.035	.05	.035	.02	.05					
Upper		1441.576		.02	.07	.035	.05	.035	.05	.035	.07	.035	.07	.035	.02
.05															
Upper		1199.171		.07	.035	.05	.035	.05	.035	.02					
Upper		1082.126		.035	.07	.035	.02	.07	.035	.05	.035	.05	.035	.02	
Upper		867.557		.035	.02	.07	.035	.05	.035	.05	.035	.05	.035	.07	.035
.02															
Upper		689.540		.07	.035	.05	.035	.05	.035	.02					
Upper		515.223		.07	.035	.05	.035	.05	.035	.05	.035	.02			
Upper		307.535		.035	.05	.035	.05	.035	.05	.035	.05	.02			
Upper		112.108		.035	.05	.035	.05	.035	.05	.035	.05	.035	.02		

SUMMARY OF REACH LENGTHS

River: San Juan Creek

Reach	River Sta.	Left	Channel	Right
Upper	4656.846	187	200.95	202.2
Upper	4455.918	223.3	218.1	206
Upper	4237.798	218.3	207.95	195.2
Upper	4029.826	277.92	252.3	228.6
Upper	3777.506	90	88.68	88.38
Upper	3688.827	239.7	244.68	248.16
Upper	3444.123	43.8	40.69	36.67
Upper	3403.43*	43.8	40.69	36.67
Upper	3362.75*	43.8	40.69	36.67
Upper	3322.06*	43.8	40.69	36.67
Upper	3281.37*	43.8	40.69	36.67

Upper	3240.694	42.89	42.56	42.65
Upper	3198.13*	42.89	42.56	42.65
Upper	3155.57*	42.89	42.56	42.65
Upper	3113.01*	42.89	42.56	42.65
Upper	3070.453	156.12	150	143.31
Upper	2920.457	160.12	168.28	173.88
Upper	2752.174	29.22	41.66	51.58
Upper	2710.51*	29.22	41.66	51.58
Upper	2668.85*	29.22	41.66	51.58
Upper	2627.20*	29.22	41.66	51.58
Upper	2585.54*	29.22	41.66	51.58
Upper	2543.88*	29.22	41.66	51.58
Upper	2502.231	45.42	45.32	47.38
Upper	2456.91*	45.42	45.32	47.38
Upper	2411.59*	45.42	45.32	47.38
Upper	2366.27*	45.42	45.32	47.38
Upper	2320.95*	45.42	45.32	47.38
Upper	2275.63*	45.42	45.32	47.38
Upper	2230.316	42.6	40.1	40.87
Upper	2190.21*	42.6	40.1	40.87
Upper	2150.11*	42.6	40.1	40.87
Upper	2110.00*	42.6	40.1	40.87
Upper	2069.90*	42.6	40.1	40.87
Upper	2029.80*	42.6	40.1	40.87
Upper	1989.70*	42.6	40.1	40.87
Upper	1949.598	407.52	330.72	271.52
Upper	1618.909	167.05	177.35	174.2
Upper	1441.576	225.37	242.4	257.8
Upper	1199.171	111.64	117.05	117.88
Upper	1082.126	207.38	214.57	222.4
Upper	867.557	194.86	178.02	165.62
Upper	689.540	173.41	174.32	168.46
Upper	515.223	204.8	207.7	197.7
Upper	307.535	205.4	195.45	188.3
Upper	112.108	35.14	112.11	87.83

SUMMARY OF CONTRACTION AND EXPANSION COEFFICIENTS
River: San Juan Creek

Reach	River Sta.	Contr.	Expan.
Upper	4656.846	.1	.3
Upper	4455.918	.1	.3
Upper	4237.798	.1	.3
Upper	4029.826	.1	.3
Upper	3777.506	.1	.3
Upper	3688.827	.1	.3
Upper	3444.123	.1	.3
Upper	3403.43*	.1	.3
Upper	3362.75*	.1	.3
Upper	3322.06*	.1	.3
Upper	3281.37*	.1	.3
Upper	3240.694	.1	.3
Upper	3198.13*	.1	.3
Upper	3155.57*	.1	.3

Upper	3113.01*	.1	.3
Upper	3070.453	.1	.3
Upper	2920.457	.1	.3
Upper	2752.174	.1	.3
Upper	2710.51*	.1	.3
Upper	2668.85*	.1	.3
Upper	2627.20*	.1	.3
Upper	2585.54*	.1	.3
Upper	2543.88*	.1	.3
Upper	2502.231	.1	.3
Upper	2456.91*	.1	.3
Upper	2411.59*	.1	.3
Upper	2366.27*	.1	.3
Upper	2320.95*	.1	.3
Upper	2275.63*	.1	.3
Upper	2230.316	.1	.3
Upper	2190.21*	.1	.3
Upper	2150.11*	.1	.3
Upper	2110.00*	.1	.3
Upper	2069.90*	.1	.3
Upper	2029.80*	.1	.3
Upper	1989.70*	.1	.3
Upper	1949.598	.1	.3
Upper	1618.909	.1	.3
Upper	1441.576	.1	.3
Upper	1199.171	.1	.3
Upper	1082.126	.1	.3
Upper	867.557	.1	.3
Upper	689.540	.1	.3
Upper	515.223	.1	.3
Upper	307.535	.1	.3
Upper	112.108	.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
Upper	4656.846	Q50	19090.00	307.52	326.78	314.03	326.99	0.000254	3.80	5797.48	460.53	0.16
Upper	4656.846	Q100	30242.00	307.52	333.84	316.06	334.05	0.000179	3.96	9396.65	567.00	0.14
Upper	4656.846	Q100HC	76166.00	307.52	334.98	322.72	336.16	0.000948	9.38	10061.30	600.88	0.32
Upper	4455.918	Q50	19090.00	307.74	326.68		326.92	0.000346	4.33	5140.96	499.31	0.18
Upper	4455.918	Q100	30242.00	307.74	333.81		334.01	0.000194	4.04	8933.84	566.21	0.14
Upper	4455.918	Q100HC	76166.00	307.74	334.82		335.94	0.001027	9.54	9516.62	582.22	0.33
Upper	4237.798	Q50	19090.00	306.67	326.44		326.83	0.000412	6.04	4262.73	464.36	0.25
Upper	4237.798	Q100	30242.00	306.67	333.71		333.96	0.000178	4.95	8061.88	559.47	0.17
Upper	4237.798	Q100HC	76166.00	306.67	334.20		335.68	0.001028	12.03	8334.76	565.22	0.41
Upper	4029.826	Q50	19090.00	305.97	326.02		326.68	0.000854	8.79	3532.90	505.54	0.36
Upper	4029.826	Q100	30242.00	305.97	333.63		333.92	0.000251	5.97	7672.24	597.96	0.20
Upper	4029.826	Q100HC	76166.00	305.97	333.56		335.39	0.001619	15.13	7626.00	596.47	0.52
Upper	3777.506	Q50	19090.00	301.00	325.19		326.38	0.001218	11.19	2898.95	459.32	0.42
Upper	3777.506	Q100	30242.00	301.00	333.55		333.86	0.000248	6.23	7601.64	679.27	0.20
Upper	3777.506	Q100HC	76166.00	301.00	332.40		334.88	0.002112	17.73	6834.19	651.58	0.57

Upper	3688.827	Q50	19090.00	301.39	324.34		326.19	0.001912	14.37	2538.51	469.83	0.54
Upper	3688.827	Q100	30242.00	301.39	333.51		333.83	0.000271	6.82	7484.24	649.93	0.21
Upper	3688.827	Q100HC	76166.00	301.39	331.47		334.60	0.002897	21.31	6231.23	587.81	0.69
Upper	3444.123	Q50	19090.00	295.17	319.89	319.89	325.15	0.004552	20.75	1255.81	139.47	0.78
Upper	3444.123	Q100	30242.00	295.17	333.50	324.96	333.76	0.000198	5.98	8327.15	702.37	0.18
Upper	3444.123	Q100HC	76166.00	295.17	331.27		333.81	0.002177	18.99	6851.13	614.17	0.58
Upper	3403.43*	Q50	19090.00	294.85	317.90	319.17	324.91	0.002013	23.55	1199.47	154.06	0.92
Upper	3403.43*	Q100	30242.00	294.85	319.42	319.42	332.46	0.003569	32.89	1457.62	180.95	1.23
Upper	3403.43*	Q100HC	76166.00	294.85	329.47	329.47	333.58	0.001230	24.80	6406.63	622.80	0.77
Upper	3362.75*	Q50	19090.00	294.53	314.95	318.37	324.55	0.003083	27.32	1019.88	142.26	1.13
Upper	3362.75*	Q100	30242.00	294.53	317.24	323.57	332.12	0.004403	35.33	1394.92	180.14	1.37
Upper	3362.75*	Q100HC	76166.00	294.53	326.75	328.53	333.28	0.001999	30.67	5416.49	594.88	0.99
Upper	3322.06*	Q50	19090.00	294.20	312.66	316.58	324.22	0.004142	30.09	953.05	147.95	1.30
Upper	3322.06*	Q100	30242.00	294.20	314.97	320.76	331.72	0.005508	37.85	1335.57	180.59	1.53
Upper	3322.06*	Q100HC	76166.00	294.20	324.93	327.44	333.04	0.002512	33.87	4994.81	593.79	1.11
Upper	3281.37*	Q50	19090.00	293.88	310.46	314.86	323.84	0.005483	32.75	913.93	154.07	1.49
Upper	3281.37*	Q100	30242.00	293.88	312.59	319.26	331.28	0.007060	40.59	1274.84	177.26	1.72
Upper	3281.37*	Q100HC	76166.00	293.88	323.21	326.21	332.78	0.003012	36.51	4645.20	589.09	1.22
Upper	3240.694	Q50	19090.00	293.56	316.26	311.57	317.58	0.001374	11.96	2424.28	280.19	0.45
Upper	3240.694	Q100	30242.00	293.56	320.61	314.28	321.94	0.001254	12.92	3862.64	466.24	0.45
Upper	3240.694	Q100HC	76166.00	293.56	326.93	323.76	328.92	0.001570	16.72	7598.05	626.91	0.52
Upper	3198.13*	Q50	19090.00	292.38	313.63		317.29	0.001332	19.35	1846.91	212.49	0.77
Upper	3198.13*	Q100	30242.00	292.38	316.05	316.05	321.47	0.001852	24.63	2481.79	296.66	0.92
Upper	3198.13*	Q100HC	76166.00	292.38	324.29	324.29	328.62	0.001397	26.40	6438.05	597.98	0.84
Upper	3155.57*	Q50	19090.00	291.20	313.01	313.01	317.18	0.001473	20.32	1815.82	271.98	0.80
Upper	3155.57*	Q100	30242.00	291.20	315.11	316.68	321.31	0.002111	25.99	2476.70	340.10	0.97
Upper	3155.57*	Q100HC	76166.00	291.20	321.03	323.05	328.26	0.002468	32.90	5157.73	552.01	1.09
Upper	3113.01*	Q50	19090.00	290.01	310.52	313.01	316.89	0.002387	24.16	1491.67	251.14	0.99
Upper	3113.01*	Q100	30242.00	290.01	312.76	315.33	320.99	0.003030	29.38	2166.77	327.40	1.14
Upper	3113.01*	Q100HC	76166.00	290.01	318.68	321.58	327.94	0.003366	36.60	4533.42	497.73	1.25
Upper	3070.453	Q50	19090.00	288.83	308.39	308.68	317.07	0.010454	27.19	978.95	209.60	1.15
Upper	3070.453	Q100	30242.00	288.83	312.29	312.29	315.51	0.004191	19.71	2533.59	320.45	0.75
Upper	3070.453	Q100HC	76166.00	288.83	313.85	318.55	327.25	0.016278	40.72	3048.46	347.27	1.50
Upper	2920.457	Q50	19090.00	286.89	307.55	303.52	307.66	0.000139	3.55	7334.38	540.61	0.14
Upper	2920.457	Q100	30242.00	286.89	303.52	303.52	304.06	0.000833	7.43	5216.28	464.59	0.33
Upper	2920.457	Q100HC	76166.00	286.89	303.52	303.52	306.98	0.005281	18.71	5216.28	464.59	0.84
Upper	2752.174	Q50	19090.00	287.44	307.58	302.97	307.63	0.000051	2.16	11190.81	655.68	0.09
Upper	2752.174	Q100	30242.00	287.44	303.12	302.97	303.33	0.000286	4.30	8339.92	558.75	0.19
Upper	2752.174	Q100HC	76166.00	287.44	302.97	302.97	304.31	0.001864	10.90	8255.63	542.24	0.50
Upper	2710.51*	Q50	19090.00	287.30	307.58	303.00	307.63	0.000043	2.15	11736.07	676.68	0.09
Upper	2710.51*	Q100	30242.00	287.30	303.13	303.00	303.31	0.000246	4.35	8769.28	646.61	0.20
Upper	2710.51*	Q100HC	76166.00	287.30	303.00	303.00	304.22	0.001599	11.03	8688.01	621.63	0.50
Upper	2668.85*	Q50	19090.00	287.17	307.58	303.02	307.62	0.000039	1.89	12291.28	696.70	0.07
Upper	2668.85*	Q100	30242.00	287.17	303.13	303.03	303.30	0.000224	3.80	9234.05	675.69	0.17
Upper	2668.85*	Q100HC	76166.00	287.17	303.04	303.03	304.12	0.001444	9.63	9174.21	670.18	0.43

Upper	2627.20*	Q50	19090.00	287.04	307.59	302.20	307.62	0.000036	1.66	12854.88	716.42	0.07
Upper	2627.20*	Q100	30242.00	287.04	303.14	303.06	303.29	0.000203	3.34	9709.28	697.90	0.15
Upper	2627.20*	Q100HC	76166.00	287.04	303.08	303.06	304.05	0.001304	8.44	9669.75	696.61	0.38
Upper	2585.54*	Q50	19090.00	286.90	307.59	302.10	307.62	0.000033	1.48	13425.61	735.43	0.06
Upper	2585.54*	Q100	30242.00	286.90	303.14	303.09	303.28	0.000184	2.97	10193.50	718.74	0.13
Upper	2585.54*	Q100HC	76166.00	286.90	303.11	303.09	303.98	0.001173	7.51	10170.03	718.62	0.34
Upper	2543.88*	Q50	19090.00	286.77	307.59	301.61	307.62	0.000030	1.33	14002.79	754.20	0.05
Upper	2543.88*	Q100	30242.00	286.77	303.15	303.12	303.27	0.000166	2.66	10686.71	738.79	0.12
Upper	2543.88*	Q100HC	76166.00	286.77	303.13	303.12	303.92	0.001058	6.71	10676.50	738.75	0.30
Upper	2502.231	Q50	19090.00	286.63	301.31	301.31	307.04	0.007702	19.92	1048.55	679.51	0.94
Upper	2502.231	Q100	30242.00	286.63	303.15	303.15	303.26	0.000146	2.98	11188.45	758.27	0.13
Upper	2502.231	Q100HC	76166.00	286.63	303.15	303.15	303.87	0.000926	7.50	11188.45	758.27	0.33
Upper	2456.91*	Q50	19090.00	285.77	288.66	288.29	289.53	0.007939	5.02	2581.49	689.61	0.61
Upper	2456.91*	Q100	30242.00	285.77	290.88	288.90	291.72	0.005137	6.43	4120.63	700.72	0.54
Upper	2456.91*	Q100HC	76166.00	285.77	299.16	292.19	300.05	0.001748	7.70	10092.93	739.38	0.38
Upper	2411.59*	Q50	19090.00	284.91	288.31	287.40	289.16	0.008293	6.10	2606.35	671.37	0.66
Upper	2411.59*	Q100	30242.00	284.91	290.69	288.48	291.48	0.004571	6.94	4220.04	686.88	0.54
Upper	2411.59*	Q100HC	76166.00	284.91	299.10	291.82	299.97	0.001587	7.87	10219.64	737.29	0.38
Upper	2366.27*	Q50	19090.00	284.05	288.00	286.96	288.80	0.007119	6.78	2680.73	656.24	0.65
Upper	2366.27*	Q100	30242.00	284.05	290.53	288.01	291.28	0.003833	7.25	4370.10	676.91	0.53
Upper	2366.27*	Q100HC	76166.00	284.05	299.05	291.42	299.89	0.001473	8.18	10411.61	739.66	0.38
Upper	2320.95*	Q50	19090.00	283.20	287.79	286.42	288.50	0.005106	6.41	2868.03	646.10	0.56
Upper	2320.95*	Q100	30242.00	283.20	290.43	287.51	291.11	0.002880	6.70	4607.89	672.16	0.45
Upper	2320.95*	Q100HC	76166.00	283.20	299.03	290.98	299.81	0.001241	7.60	10726.82	749.57	0.34
Upper	2275.63*	Q50	19090.00	282.32	287.70	285.75	288.28	0.003106	6.53	3175.13	641.67	0.51
Upper	2275.63*	Q100	30242.00	282.32	290.37	286.90	290.98	0.001912	6.80	4934.66	673.94	0.43
Upper	2275.63*	Q100HC	76166.00	282.32	298.99	290.50	299.76	0.000944	7.87	11171.57	782.96	0.34
Upper	2230.316	Q50	19090.00	281.20	287.67		288.11	0.002424	5.27	3580.49	644.97	0.38
Upper	2230.316	Q100	30242.00	281.20	290.37		290.86	0.001667	5.60	5376.07	686.75	0.33
Upper	2230.316	Q100HC	76166.00	281.20	299.03		299.68	0.000882	6.45	11817.50	797.08	0.27
Upper	2190.21*	Q50	19090.00	280.92	287.51		288.02	0.002055	6.35	3543.37	642.57	0.45
Upper	2190.21*	Q100	30242.00	280.92	290.23		290.79	0.001406	6.71	5346.78	681.06	0.40
Upper	2190.21*	Q100HC	76166.00	280.92	298.90		299.64	0.000774	7.85	11756.50	795.02	0.33
Upper	2150.11*	Q50	19090.00	280.63	287.43		287.93	0.001896	6.24	3567.40	641.06	0.44
Upper	2150.11*	Q100	30242.00	280.63	290.18		290.74	0.001292	6.58	5382.36	676.76	0.39
Upper	2150.11*	Q100HC	76166.00	280.63	298.87		299.60	0.000721	7.73	11788.18	794.12	0.32
Upper	2110.00*	Q50	19090.00	280.35	287.36		287.86	0.001781	6.10	3599.95	638.95	0.43
Upper	2110.00*	Q100	30242.00	280.35	290.14		290.68	0.001226	6.45	5421.72	672.60	0.38
Upper	2110.00*	Q100HC	76166.00	280.35	298.84		299.57	0.000701	7.64	11819.80	793.98	0.32
Upper	2069.90*	Q50	19090.00	280.07	287.31		287.78	0.001621	5.87	3646.19	636.32	0.41
Upper	2069.90*	Q100	30242.00	280.07	290.11		290.63	0.001129	6.24	5472.16	668.97	0.36
Upper	2069.90*	Q100HC	76166.00	280.07	298.83		299.54	0.000661	7.45	11864.64	795.35	0.31
Upper	2029.80*	Q50	19090.00	279.79	287.27		287.71	0.001468	5.64	3698.65	632.60	0.39
Upper	2029.80*	Q100	30242.00	279.79	290.07		290.58	0.001051	6.07	5522.58	665.27	0.35

Upper	2029.80*	Q100HC	76166.00	279.79	298.81		299.51	0.000627	7.29	11912.46	801.03	0.30
Upper	1989.70*	Q50	19090.00	279.50	287.23		287.65	0.001323	5.41	3761.37	627.65	0.37
Upper	1989.70*	Q100	30242.00	279.50	290.05		290.53	0.000964	5.86	5582.12	661.72	0.34
Upper	1989.70*	Q100HC	76166.00	279.50	298.80		299.48	0.000594	7.13	11973.18	810.60	0.30
Upper	1949.598	Q50	19090.00	279.22	287.19		287.59	0.001359	5.16	3827.78	619.79	0.35
Upper	1949.598	Q100	30242.00	279.22	290.02		290.49	0.001010	5.62	5642.05	658.14	0.32
Upper	1949.598	Q100HC	76166.00	279.22	298.78		299.45	0.000651	6.94	12040.47	823.38	0.29
Upper	1618.909	Q50	19090.00	278.19	286.63		287.03	0.001954	5.21	3812.01	611.22	0.34
Upper	1618.909	Q100	30242.00	278.19	289.63		290.08	0.001359	5.52	5670.19	629.66	0.31
Upper	1618.909	Q100HC	76166.00	278.19	298.50		299.19	0.000895	6.84	11569.75	731.32	0.28
Upper	1441.576	Q50	19090.00	277.80	286.48		286.75	0.001038	4.21	4612.85	616.70	0.26
Upper	1441.576	Q100	30242.00	277.80	289.52		289.86	0.000848	4.73	6520.03	636.51	0.25
Upper	1441.576	Q100HC	76166.00	277.80	298.44		299.02	0.000676	6.29	12572.29	777.89	0.25
Upper	1199.171	Q50	19090.00	275.29	286.31		286.55	0.000615	3.95	4929.92	561.69	0.23
Upper	1199.171	Q100	30242.00	275.29	289.36		289.69	0.000587	4.64	6680.75	586.56	0.23
Upper	1199.171	Q100HC	76166.00	275.29	298.25		298.87	0.000570	6.54	12631.17	837.76	0.25
Upper	1082.126	Q50	19090.00	274.39	286.12		286.45	0.001016	4.67	4166.38	513.07	0.27
Upper	1082.126	Q100	30242.00	274.39	289.16		289.59	0.000922	5.37	5788.08	565.67	0.27
Upper	1082.126	Q100HC	76166.00	274.39	298.14		298.79	0.000686	6.66	12173.33	840.28	0.25
Upper	867.557	Q50	19090.00	274.72	285.94		286.26	0.000790	4.21	4320.04	535.06	0.24
Upper	867.557	Q100	30242.00	274.72	289.01		289.41	0.000725	4.83	6071.15	607.00	0.24
Upper	867.557	Q100HC	76166.00	274.72	298.05		298.64	0.000571	6.11	12715.52	851.54	0.23
Upper	689.540	Q50	19090.00	274.50	285.61		286.08	0.000958	5.59	3561.22	428.38	0.32
Upper	689.540	Q100	30242.00	274.50	288.60		289.24	0.000928	6.59	4906.63	490.03	0.33
Upper	689.540	Q100HC	76166.00	274.50	297.56		298.49	0.000722	8.33	10475.24	771.44	0.32
Upper	515.223	Q50	19090.00	274.21	284.38		285.68	0.004746	9.78	2165.21	306.74	0.59
Upper	515.223	Q100	30242.00	274.21	287.25		288.85	0.004033	10.91	3080.72	330.65	0.57
Upper	515.223	Q100HC	76166.00	274.21	296.15		298.17	0.002605	12.84	7016.16	548.70	0.50
Upper	307.535	Q50	19090.00	273.76	284.01		284.90	0.002301	8.24	2684.97	348.39	0.47
Upper	307.535	Q100	30242.00	273.76	287.01		288.13	0.002068	9.34	3760.95	369.29	0.46
Upper	307.535	Q100HC	76166.00	273.76	295.84		297.68	0.001770	12.28	7400.46	517.73	0.47
Upper	112.108	Q50	19090.00	271.93	283.98	279.06	284.51	0.001000	6.73	3513.27	391.22	0.35
Upper	112.108	Q100	30242.00	271.93	287.02	280.76	287.74	0.001000	7.89	4744.73	418.44	0.37
Upper	112.108	Q100HC	76166.00	271.93	295.98	286.15	297.26	0.001000	10.92	8995.13	541.67	0.40

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 BX2
Project File : PMBX2.prj
Run Date and Time: 8/28/2003 10:30:11 PM

Project in English units

PLAN DATA

Plan Title: Existing Flow/Proposed-Ultimate Geometry
Plan File : c:\projects\2PDA0104\hydr\LHS\Modeling\Model B\HEC-RAS\PMBX2.p03

Geometry Title: Proposed Conditions - Ultimate
Geometry File : c:\projects\2PDA0104\hydr\LHS\Modeling\Model B\HEC-RAS\PMBX2.g03

Flow Title : Existing Conditions
Flow File : c:\projects\2PDA0104\hydr\LHS\Modeling\Model B\HEC-RAS\PMBX2.f01

Plan Summary Information:

Number of:	Cross Sections	= 46	Mulitple Openings	=	0
	Culverts	= 0	Inline Structures	=	0
	Bridges	= 1	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 B\HEC-RAS\PMBX2.f01

Flow Data (cfs)

River	Reach	RS	Q2	Q5	Q10	Q25	Q50	Q100	Q100HC
San Juan Creek	Upper	4656.846	364	2272	4691	12136	19090	30242	76166

Boundary Conditions

River	Reach	Profile	Upstream	Downstream
San Juan Creek	Upper	Q2	Normal S = 0.001	Normal S = 0.001
San Juan Creek	Upper	Q5	Normal S = 0.001	Normal S = 0.001
San Juan Creek	Upper	Q10	Normal S = 0.001	Normal S = 0.001
San Juan Creek	Upper	Q25	Normal S = 0.001	Normal S = 0.001
San Juan Creek	Upper	Q50	Normal S = 0.001	Normal S = 0.001
San Juan Creek	Upper	Q100	Normal S = 0.001	Normal S = 0.001
San Juan Creek	Upper	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 B\HEC-RAS\PMBX2.g03

CROSS SECTION

RIVER: San Juan Creek
REACH: Upper RS: 4656.846

INPUT
Description:
Station Elevation Data num= 48

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	341.2	93.49	340.05	129.55	339.92	171.61	338.27	184.02	337.8
258.03	334.99	266.83	334.61	285.71	333.81	302.62	332.61	325.36	329.15
331.24	328.04	334.49	327.43	341.67	324.82	357.69	320.99	365.98	318.76
392.38	311.74	400.46	309.58	411.07	308.63	414.85	308.32	487.81	308.93
491.41	308.94	500.99	308.96	507.2	308.86	524.46	308.36	526.3	308.3
539.52	307.91	555.74	307.52	560.57	307.58	575.13	307.62	634.09	307.97
637.99	308.27	643.24	310.97	644.08	311.33	645	311.72	659.94	318.13
666.67	320.18	676.8	321.33	680.07	321.68	682.4	321.98	721.38	322.07
759.02	323.4	785.65	325.38	810.69	328.51	835.59	331.22	837.3	331.5
862.4	335.48	893.64	337.77	920.11	341.24				

Manning's n Values num= 7

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.02	184.02	.035	266.83	.02	331.24	.05	524.46	.035
644.08	.07	837.3	.035						

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
392.38	645	187 200.95	202.2	.1	.3

CROSS SECTION OUTPUT Profile #Q50

E.G. Elev (ft)	326.99	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.21	Wt. n-Val.	0.050	0.043	0.070
W.S. Elev (ft)	326.78	Reach Len. (ft)	187.00	200.95	202.20
Crit W.S. (ft)	314.03	Flow Area (sq ft)	428.80	4641.89	726.79
E.G. Slope (ft/ft)	0.000254	Area (sq ft)	428.80	4641.89	726.79
Q Total (cfs)	19090.00	Flow (cfs)	770.13	17627.01	692.86
Top Width (ft)	460.53	Top Width (ft)	56.09	252.62	151.82
Vel Total (ft/s)	3.29	Avg. Vel. (ft/s)	1.80	3.80	0.95
Max Chl Dpth (ft)	19.26	Hydr. Depth (ft)	7.64	18.38	4.79
Conv. Total (cfs)	1197382.0	Conv. (cfs)	48304.8	1105619.0	43458.5
Length Wtd. (ft)	200.61	Wetted Per. (ft)	58.10	253.80	153.73
Min Ch El (ft)	307.52	Shear (lb/sq ft)	0.12	0.29	0.08
Alpha	1.24	Stream Power (lb/ft s)	0.21	1.10	0.07
Frctn Loss (ft)	0.06	Cum Volume (acre-ft)	150.27	210.17	61.18
C & E Loss (ft)	0.00	Cum SA (acres)	16.04	21.74	12.18

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

CROSS SECTION OUTPUT Profile #Q100

E.G. Elev (ft)	334.05	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.21	Wt. n-Val.	0.047	0.043	0.070
W.S. Elev (ft)	333.84	Reach Len. (ft)	187.00	200.95	202.20
Crit W.S. (ft)	316.06	Flow Area (sq ft)	965.58	6425.83	2005.24
E.G. Slope (ft/ft)	0.000179	Area (sq ft)	965.58	6425.83	2005.24
Q Total (cfs)	30242.00	Flow (cfs)	2125.65	25445.21	2671.15
Top Width (ft)	567.00	Top Width (ft)	107.33	252.62	207.05
Vel Total (ft/s)	3.22	Avg. Vel. (ft/s)	2.20	3.96	1.33
Max Chl Dpth (ft)	26.32	Hydr. Depth (ft)	9.00	25.44	9.69
Conv. Total (cfs)	2259436.0	Conv. (cfs)	158811.1	1901058.0	199566.3
Length Wtd. (ft)	200.27	Wetted Per. (ft)	109.92	253.80	209.42
Min Ch El (ft)	307.52	Shear (lb/sq ft)	0.10	0.28	0.11
Alpha	1.32	Stream Power (lb/ft s)	0.22	1.12	0.14
Frctn Loss (ft)	0.04	Cum Volume (acre-ft)	182.75	282.02	153.01
C & E Loss (ft)	0.00	Cum SA (acres)	19.67	21.74	15.54

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

CROSS SECTION OUTPUT Profile #Q100HC

E.G. Elev (ft)	336.16	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.18	Wt. n-Val.	0.046	0.043	0.070
W.S. Elev (ft)	334.98	Reach Len. (ft)	187.00	200.95	202.20
Crit W.S. (ft)	322.72	Flow Area (sq ft)	1102.99	6713.34	2244.97
E.G. Slope (ft/ft)	0.000948	Area (sq ft)	1102.99	6713.34	2244.97
Q Total (cfs)	76166.00	Flow (cfs)	5847.81	62963.31	7354.87
Top Width (ft)	600.88	Top Width (ft)	134.03	252.62	214.22
Vel Total (ft/s)	7.57	Avg. Vel. (ft/s)	5.30	9.38	3.28
Max Chl Dpth (ft)	27.46	Hydr. Depth (ft)	8.23	26.57	10.48
Conv. Total (cfs)	2473727.0	Conv. (cfs)	189925.8	2044928.0	238872.3
Length Wtd. (ft)	200.19	Wetted Per. (ft)	136.65	253.80	216.68
Min Ch El (ft)	307.52	Shear (lb/sq ft)	0.48	1.57	0.61

Alpha	1.32	Stream Power (lb/ft s)	2.53	14.68	2.01
Frctn Loss (ft)	0.20	Cum Volume (acre-ft)	271.21	449.01	228.02
C & E Loss (ft)	0.02	Cum SA (acres)	22.07	21.74	23.55

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

CROSS SECTION

RIVER: San Juan Creek
REACH: Upper RS: 4455.918

INPUT
Description:
Station Elevation Data num= 59

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	341.21	1.03	341.14	48.11	341.01	125.08	340.81	218.84	340.56
228.14	340.58	250.11	339.9	328.86	337.24	352.02	335.72	365.62	334.76
386.11	333.31	395.22	332.31	423.35	327.46	435.63	325.34	436.82	325.15
437.01	325.13	449.29	323.38	450.85	324.05	457.53	326.89	458.31	326.9
467.3	323.35	474.64	319.26	482.36	315.1	494.22	311.97	503.4	309.61
507.43	308.55	507.55	308.54	508	308.54	509.18	308.54	581.15	308.48
615.76	308.45	615.78	308.45	622.99	308.14	657.16	307.74	663.67	308.41
670.65	310.73	672.55	311.48	680.39	314.54	699.02	316.34	712.79	316.67
721.62	317.31	726.14	317.64	760.11	320.61	763.13	320.88	776.16	320.95
777.7	320.95	786.82	321.01	851.99	321.92	859.51	322.26	899.51	323.26
899.83	323.26	928.2	326.43	928.27	326.46	937.72	329.23	937.88	329.34
942.92	332.39	957.68	341.35	961.49	341.68	962.16	341.68		

Manning's n Values num= 9

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	48.11	.02	125.08	.035	365.62	.02	423.35	.05
615.78	.035	721.62	.02	760.11	.07	942.92	.035		

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
494.22	672.55	223.3 218.1	206	.1	.3

CROSS SECTION OUTPUT Profile #Q50

E.G. Elev (ft)	326.92	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.24	Wt. n-Val.	0.050	0.044	0.036
W.S. Elev (ft)	326.68	Reach Len. (ft)	223.30	218.10	206.00
Crit W.S. (ft)		Flow Area (sq ft)	332.43	3229.94	1578.59
E.G. Slope (ft/ft)	0.000346	Area (sq ft)	332.43	3229.94	1578.59
Q Total (cfs)	19090.00	Flow (cfs)	628.48	13971.06	4490.46
Top Width (ft)	499.31	Top Width (ft)	64.51	178.33	256.47
Vel Total (ft/s)	3.71	Avg. Vel. (ft/s)	1.89	4.33	2.84
Max Chl Dpth (ft)	18.94	Hydr. Depth (ft)	5.15	18.11	6.16
Conv. Total (cfs)	1026791.0	Conv. (cfs)	33804.1	751459.4	241527.8
Length Wtd. (ft)	214.10	Wetted Per. (ft)	68.59	179.33	257.55
Min Ch El (ft)	307.74	Shear (lb/sq ft)	0.10	0.39	0.13
Alpha	1.14	Stream Power (lb/ft s)	0.20	1.68	0.38
Frctn Loss (ft)	0.08	Cum Volume (acre-ft)	148.64	192.02	55.83
C & E Loss (ft)	0.01	Cum SA (acres)	15.78	20.74	11.23

Warning: Divided flow computed for this cross-section.

CROSS SECTION OUTPUT Profile #Q100

			Left OB	Channel	Right OB
E.G. Elev (ft)	334.01	Element			
Vel Head (ft)	0.20	Wt. n-Val.	0.046	0.044	0.040
W.S. Elev (ft)	333.81	Reach Len. (ft)	223.30	218.10	206.00
Crit W.S. (ft)		Flow Area (sq ft)	956.96	4501.46	3475.42
E.G. Slope (ft/ft)	0.000194	Area (sq ft)	956.96	4501.46	3475.42
Q Total (cfs)	30242.00	Flow (cfs)	1966.53	18172.24	10103.23
Top Width (ft)	566.21	Top Width (ft)	115.17	178.33	272.71
Vel Total (ft/s)	3.39	Avg. Vel. (ft/s)	2.05	4.04	2.91
Max Chl Dpth (ft)	26.07	Hydr. Depth (ft)	8.31	25.24	12.74
Conv. Total (cfs)	2172764.0	Conv. (cfs)	141287.3	1305601.0	725875.4
Length Wtd. (ft)	213.05	Wetted Per. (ft)	119.89	179.33	275.44
Min Ch El (ft)	307.74	Shear (lb/sq ft)	0.10	0.30	0.15
Alpha	1.12	Stream Power (lb/ft s)	0.20	1.23	0.44
Frctn Loss (ft)	0.04	Cum Volume (acre-ft)	178.62	256.81	140.29
C & E Loss (ft)	0.01	Cum SA (acres)	19.19	20.74	14.43

CROSS SECTION OUTPUT Profile #Q100HC

			Left OB	Channel	Right OB
E.G. Elev (ft)	335.94	Element			
Vel Head (ft)	1.11	Wt. n-Val.	0.045	0.044	0.040
W.S. Elev (ft)	334.82	Reach Len. (ft)	223.30	218.10	206.00
Crit W.S. (ft)		Flow Area (sq ft)	1081.12	4682.45	3753.05
E.G. Slope (ft/ft)	0.001027	Area (sq ft)	1081.12	4682.45	3753.05
Q Total (cfs)	76166.00	Flow (cfs)	5407.33	44680.13	26078.54
Top Width (ft)	582.22	Top Width (ft)	129.51	178.33	274.38
Vel Total (ft/s)	8.00	Avg. Vel. (ft/s)	5.00	9.54	6.95
Max Chl Dpth (ft)	27.08	Hydr. Depth (ft)	8.35	26.26	13.68
Conv. Total (cfs)	2376596.0	Conv. (cfs)	168724.0	1394147.0	813724.5
Length Wtd. (ft)	213.01	Wetted Per. (ft)	134.27	179.33	277.40
Min Ch El (ft)	307.74	Shear (lb/sq ft)	0.52	1.67	0.87
Alpha	1.12	Stream Power (lb/ft s)	2.58	15.98	6.03
Frctn Loss (ft)	0.22	Cum Volume (acre-ft)	266.52	422.72	214.10
C & E Loss (ft)	0.04	Cum SA (acres)	21.51	20.74	22.41

CROSS SECTION

RIVER: San Juan Creek
REACH: Upper RS: 4237.798

INPUT
Description:
Station Elevation Data num= 67

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	341.18	6.08	340.99	12.8	340.87	29.02	340.9	103.31	340.53
156.85	340.26	225.16	339.71	257.67	339.09	271.56	338.71	321.36	336.24
328.72	335.9	334.79	335.63	345.91	333.98	359.73	332.84	372.11	329.75
385.07	328.68	398.94	327.52	407.64	327.84	434.01	325.46	441.36	324.67
447.8	323.17	457.17	320.86	464.77	312.83	465.84	311.65	466.37	311.35
468.66	309.8	470.49	308.56	477.18	308.52	484.65	308.01	544.73	306.69
545.54	306.67	545.64	306.68	546.23	306.8	554.87	308.65	556.94	310.05
561.19	312.93	570.34	319.52	572.15	319.94	576.53	321.57	586.82	321.8
593.8	321.39	600.04	321.49	618.97	321.03	622.5	320.95	635.71	321.77
645.83	321.95	654.56	321.44	661.57	319.97	670.75	317.3	675.4	316.62
685.62	314.77	698.66	314.18	716.64	314.76	753.13	316.34	760.75	316.72

766.25	317.01	807.71	319.73	829.41	321.16	863.4	322.99	888.81	326.62
897.83	328.25	908.34	333.59	910.32	334.51	911.86	334.71	931.04	339.9
938.56	340.86	939.2	340.94						

Manning's n Values num= 7

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.07	103.31	.035	328.72	.02	385.07	.035	760.75	.02
807.71	.07	939.2	.035						

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
468.66	556.94	218.3 207.95	195.2	.1	.3

CROSS SECTION OUTPUT Profile #Q50

E.G. Elev (ft)	326.83	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.39	Wt. n-Val.	0.035	0.035	0.032
W.S. Elev (ft)	326.44	Reach Len. (ft)	218.30	207.95	195.20
Crit W.S. (ft)		Flow Area (sq ft)	205.40	1660.54	2396.79
E.G. Slope (ft/ft)	0.000412	Area (sq ft)	205.40	1660.54	2396.79
Q Total (cfs)	19090.00	Flow (cfs)	450.36	10035.31	8604.32
Top Width (ft)	464.36	Top Width (ft)	45.49	88.28	330.60
Vel Total (ft/s)	4.48	Avg. Vel. (ft/s)	2.19	6.04	3.59
Max Chl Dpth (ft)	19.77	Hydr. Depth (ft)	4.52	18.81	7.25
Conv. Total (cfs)	941066.7	Conv. (cfs)	22201.3	494703.8	424161.5
Length Wtd. (ft)	203.63	Wetted Per. (ft)	50.56	89.33	335.27
Min Ch El (ft)	306.67	Shear (lb/sq ft)	0.10	0.48	0.18
Alpha	1.25	Stream Power (lb/ft s)	0.23	2.89	0.66
Frctn Loss (ft)	0.12	Cum Volume (acre-ft)	147.26	179.77	46.43
C & E Loss (ft)	0.03	Cum SA (acres)	15.49	20.07	9.84

Warning: The conveyance ratio (upstream 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)	333.96	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.25	Wt. n-Val.	0.034	0.035	0.034
W.S. Elev (ft)	333.71	Reach Len. (ft)	218.30	207.95	195.20
Crit W.S. (ft)		Flow Area (sq ft)	861.72	2302.85	4897.31
E.G. Slope (ft/ft)	0.000178	Area (sq ft)	861.72	2302.85	4897.31
Q Total (cfs)	30242.00	Flow (cfs)	2010.32	11393.59	16838.09
Top Width (ft)	559.47	Top Width (ft)	119.52	88.28	351.67
Vel Total (ft/s)	3.75	Avg. Vel. (ft/s)	2.33	4.95	3.44
Max Chl Dpth (ft)	27.04	Hydr. Depth (ft)	7.21	26.09	13.93
Conv. Total (cfs)	2264579.0	Conv. (cfs)	150536.6	853173.9	1260868.0
Length Wtd. (ft)	201.73	Wetted Per. (ft)	125.17	89.33	357.80
Min Ch El (ft)	306.67	Shear (lb/sq ft)	0.08	0.29	0.15
Alpha	1.15	Stream Power (lb/ft s)	0.18	1.42	0.52
Frctn Loss (ft)	0.04	Cum Volume (acre-ft)	173.96	239.78	120.49
C & E Loss (ft)	0.00	Cum SA (acres)	18.59	20.07	12.95

CROSS SECTION OUTPUT Profile #Q100HC

E.G. Elev (ft)	335.68	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.48	Wt. n-Val.	0.034	0.035	0.034
W.S. Elev (ft)	334.20	Reach Len. (ft)	218.30	207.95	195.20
Crit W.S. (ft)		Flow Area (sq ft)	920.98	2345.66	5068.12

E.G. Slope (ft/ft)	0.001028	Area (sq ft)	920.98	2345.66	5068.12
Q Total (cfs)	76166.00	Flow (cfs)	5326.15	28212.31	42627.55
Top Width (ft)	565.22	Top Width (ft)	124.23	88.28	352.71
Vel Total (ft/s)	9.14	Avg. Vel. (ft/s)	5.78	12.03	8.41
Max Chl Dpth (ft)	27.53	Hydr. Depth (ft)	7.41	26.57	14.37
Conv. Total (cfs)	2375165.0	Conv. (cfs)	166090.9	879774.4	1329300.0
Length Wtd. (ft)	201.74	Wetted Per. (ft)	129.90	89.33	358.95
Min Ch El (ft)	306.67	Shear (lb/sq ft)	0.46	1.69	0.91
Alpha	1.14	Stream Power (lb/ft s)	2.63	20.28	7.62
Frctn Loss (ft)	0.26	Cum Volume (acre-ft)	261.39	405.13	193.25
C & E Loss (ft)	0.04	Cum SA (acres)	20.86	20.07	20.93

CROSS SECTION

RIVER: San Juan Creek
REACH: Upper RS: 4029.826

INPUT
Description: Manual Entry for Manning's N Distribution
Station Elevation Data num= 67

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	341.19	6.03	341.17	88.09	340.53	131.38	339.96	176.13	338.4
220.4	337.11	281.94	335.2	341.84	334.45	350	334.3	361.59	334.08
383.24	334.58	411.15	332.92	437.55	331.15	448.22	329.88	450.91	329.62
454.81	328.21	456.36	327.7	460.72	324.74	464.73	321.87	466.25	321.36
473.76	320.64	482.46	319.78	489.63	319.2	504.21	317.96	515.09	316.95
519.42	316.54	523	315.7	539.26	309.4	541.12	308.51	541.54	308.39
541.86	308.34	542.99	308.27	572.53	305.97	577.44	306.43	587.88	307.6
590.08	308.32	594.42	311.16	594.58	311.26	597.26	313.78	603.64	321.07
606.49	321.07	628.97	322.08	690.85	320.68	702.53	320.48	727.95	319.77
733.4	319.6	762.74	321.05	764.12	321.04	769.57	320.87	788.97	320.07
835.41	320.74	860	320.61	882.52	320.49	905	321.37	924.2	322.12
947.79	323.78	960.18	325.47	977.25	327.7	984.39	329.11	991.03	331.16
999.74	334.7	1008.31	335.78	1020	336.69	1031.46	337.58	1048.95	338.17
1056.9	339.2	1086.69	341.18						

Manning's n Values num= 6

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	88.09	.02	350	.035	860	.02	905	.07
1020	.035								

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
542.99	590.08	277.92	252.3	228.6	.1	.3

CROSS SECTION OUTPUT Profile #Q50

E.G. Elev (ft)	326.68	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.67	Wt. n-Val.	0.035	0.035	0.033
W.S. Elev (ft)	326.02	Reach Len. (ft)	277.92	252.30	228.60
Crit W.S. (ft)		Flow Area (sq ft)	714.78	893.68	1924.43
E.G. Slope (ft/ft)	0.000854	Area (sq ft)	714.78	893.68	1924.43
Q Total (cfs)	19090.00	Flow (cfs)	3602.44	7854.46	7633.09
Top Width (ft)	505.54	Top Width (ft)	84.15	47.09	374.30
Vel Total (ft/s)	5.40	Avg. Vel. (ft/s)	5.04	8.79	3.97
Max Chl Dpth (ft)	20.05	Hydr. Depth (ft)	8.49	18.98	5.14
Conv. Total (cfs)	653411.6	Conv. (cfs)	123304.3	268842.2	261265.1
Length Wtd. (ft)	246.53	Wetted Per. (ft)	87.27	47.38	379.83

Min Ch El (ft)	305.97	Shear (lb/sq ft)	0.44	1.01	0.27
Alpha	1.47	Stream Power (lb/ft s)	2.20	8.83	1.07
Frctn Loss (ft)	0.25	Cum Volume (acre-ft)	144.96	173.68	36.75
C & E Loss (ft)	0.05	Cum SA (acres)	15.17	19.75	8.26

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

CROSS SECTION OUTPUT Profile #Q100

E.G. Elev (ft)	333.92	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.29	Wt. n-Val.	0.035	0.035	0.034
W.S. Elev (ft)	333.63	Reach Len. (ft)	277.92	252.30	228.60
Crit W.S. (ft)		Flow Area (sq ft)	1489.83	1252.29	4930.12
E.G. Slope (ft/ft)	0.000251	Area (sq ft)	1489.83	1252.29	4930.12
Q Total (cfs)	30242.00	Flow (cfs)	4673.51	7475.39	18093.10
Top Width (ft)	597.96	Top Width (ft)	143.84	47.09	407.04
Vel Total (ft/s)	3.94	Avg. Vel. (ft/s)	3.14	5.97	3.67
Max Chl Dpth (ft)	27.66	Hydr. Depth (ft)	10.36	26.59	12.11
Conv. Total (cfs)	1908426.0	Conv. (cfs)	294922.6	471735.8	1141768.0
Length Wtd. (ft)	241.55	Wetted Per. (ft)	147.97	47.38	413.61
Min Ch El (ft)	305.97	Shear (lb/sq ft)	0.16	0.41	0.19
Alpha	1.18	Stream Power (lb/ft s)	0.50	2.47	0.69
Frctn Loss (ft)	0.06	Cum Volume (acre-ft)	168.06	231.29	98.47
C & E Loss (ft)	0.00	Cum SA (acres)	17.93	19.75	11.25

CROSS SECTION OUTPUT Profile #Q100HC

E.G. Elev (ft)	335.39	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.83	Wt. n-Val.	0.035	0.035	0.034
W.S. Elev (ft)	333.56	Reach Len. (ft)	277.92	252.30	228.60
Crit W.S. (ft)		Flow Area (sq ft)	1478.74	1248.65	4898.62
E.G. Slope (ft/ft)	0.001619	Area (sq ft)	1478.74	1248.65	4898.62
Q Total (cfs)	76166.00	Flow (cfs)	11790.42	18890.91	45484.68
Top Width (ft)	596.47	Top Width (ft)	142.54	47.09	406.85
Vel Total (ft/s)	9.99	Avg. Vel. (ft/s)	7.97	15.13	9.29
Max Chl Dpth (ft)	27.59	Hydr. Depth (ft)	10.37	26.52	12.04
Conv. Total (cfs)	1892765.0	Conv. (cfs)	292998.1	469449.0	1130318.0
Length Wtd. (ft)	241.41	Wetted Per. (ft)	146.66	47.38	413.41
Min Ch El (ft)	305.97	Shear (lb/sq ft)	1.02	2.66	1.20
Alpha	1.18	Stream Power (lb/ft s)	8.13	40.31	11.12
Frctn Loss (ft)	0.44	Cum Volume (acre-ft)	255.38	396.55	170.91
C & E Loss (ft)	0.06	Cum SA (acres)	20.19	19.75	19.23

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

CROSS SECTION

RIVER: San Juan Creek
REACH: Upper RS: 3777.506

INPUT
Description:
Station Elevation Data num= 71

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	341.22	104.43	338.57	125.14	338.45	143.06	338.24	166.3	337.88
280.49	337.01	325.3	336.73	463.95	334.52	685.67	334.69	719.29	334.3
730.81	334.07	736.63	333.82	773.88	331.9	820.36	329.51	831.73	328.89
838.37	328.64	852.06	328.11	871.84	328.07	891.99	328.42	915.35	327.66
922.13	326.78	942.32	321.08	946.4	319.91	954.01	317.71	964.72	313.08
971.8	307.18	976.43	303.06	980.59	301.81	983.42	301	998.88	301.31
1000.85	301.4	1001.23	301.56	1008.1	304.95	1012.41	307.64	1018.95	312.06
1031.36	320.45	1035.16	321.45	1037.83	322.29	1057.51	321.66	1071.75	321.48
1078.59	321.22	1093.06	320.9	1149.29	321.23	1193.69	321.77	1218.65	321.74
1263.28	320.51	1301.63	320.16	1305.93	320.18	1328.18	320.3	1354.3	319.9
1356.57	319.86	1365.06	320.31	1368.19	320.68	1378.41	322.06	1379.5	322.36
1386.32	324.92	1394.37	327.84	1397.15	328.55	1404.84	330.54	1413.5	331.9
1424.48	334.28	1437.65	335.06	1451.03	335.5	1457.23	335.7	1466.01	336.32
1494.16	337.28	1531.44	337.78	1565.15	339.6	1585.31	340.65	1607.23	341.09
1612.26	341.26								

Manning's n Values num= 6

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	773.88	.02	838.37	.035	1305.93	.02	1354.3	.07
1451.03	.035								

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
971.8	1012.41	90	88.68	88.38	.1 .3

CROSS SECTION OUTPUT Profile #Q50

			Left OB	Channel	Right OB
E.G. Elev (ft)	326.38	Element			
Vel Head (ft)	1.19	Wt. n-Val.	0.035	0.035	0.032
W.S. Elev (ft)	325.19	Reach Len. (ft)	90.00	88.68	88.38
Crit W.S. (ft)		Flow Area (sq ft)	309.28	914.69	1674.98
E.G. Slope (ft/ft)	0.001218	Area (sq ft)	309.28	914.69	1674.98
Q Total (cfs)	19090.00	Flow (cfs)	1582.77	10235.78	7271.46
Top Width (ft)	459.32	Top Width (ft)	44.05	40.61	374.66
Vel Total (ft/s)	6.59	Avg. Vel. (ft/s)	5.12	11.19	4.34
Max Chl Dpth (ft)	24.19	Hydr. Depth (ft)	7.02	22.52	4.47
Conv. Total (cfs)	546950.1	Conv. (cfs)	45348.0	293266.7	208335.4
Length Wtd. (ft)	88.71	Wetted Per. (ft)	48.19	44.07	379.57
Min Ch El (ft)	301.00	Shear (lb/sq ft)	0.49	1.58	0.34
Alpha	1.76	Stream Power (lb/ft s)	2.50	17.66	1.46
Frctn Loss (ft)	0.13	Cum Volume (acre-ft)	141.69	168.44	27.31
C & E Loss (ft)	0.07	Cum SA (acres)	14.76	19.50	6.30

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

CROSS SECTION OUTPUT Profile #Q100

			Left OB	Channel	Right OB
E.G. Elev (ft)	333.86	Element			
Vel Head (ft)	0.31	Wt. n-Val.	0.033	0.035	0.033
W.S. Elev (ft)	333.55	Reach Len. (ft)	90.00	88.68	88.38
Crit W.S. (ft)		Flow Area (sq ft)	1417.46	1254.12	4930.06
E.G. Slope (ft/ft)	0.000248	Area (sq ft)	1417.46	1254.12	4930.06
Q Total (cfs)	30242.00	Flow (cfs)	3856.75	7809.97	18575.28
Top Width (ft)	679.27	Top Width (ft)	229.96	40.61	408.71
Vel Total (ft/s)	3.98	Avg. Vel. (ft/s)	2.72	6.23	3.77
Max Chl Dpth (ft)	32.55	Hydr. Depth (ft)	6.16	30.88	12.06
Conv. Total (cfs)	1921620.0	Conv. (cfs)	245063.7	496256.6	1180300.0

Length Wtd. (ft)	88.67	Wetted Per. (ft)	234.52	44.07	414.71
Min Ch El (ft)	301.00	Shear (lb/sq ft)	0.09	0.44	0.18
Alpha	1.24	Stream Power (lb/ft s)	0.25	2.74	0.69
Frctn Loss (ft)	0.02	Cum Volume (acre-ft)	158.79	224.03	72.60
C & E Loss (ft)	0.00	Cum SA (acres)	16.74	19.50	9.11

CROSS SECTION OUTPUT Profile #Q100HC

E.G. Elev (ft)	334.88	Element	Left OB	Channel	Right OB
Vel Head (ft)	2.48	Wt. n-Val.	0.034	0.035	0.033
W.S. Elev (ft)	332.40	Reach Len. (ft)	90.00	88.68	88.38
Crit W.S. (ft)		Flow Area (sq ft)	1165.15	1207.29	4461.75
E.G. Slope (ft/ft)	0.002112	Area (sq ft)	1165.15	1207.29	4461.75
Q Total (cfs)	76166.00	Flow (cfs)	8395.80	21406.94	46363.26
Top Width (ft)	651.58	Top Width (ft)	207.58	40.61	403.39
Vel Total (ft/s)	11.14	Avg. Vel. (ft/s)	7.21	17.73	10.39
Max Chl Dpth (ft)	31.40	Hydr. Depth (ft)	5.61	29.73	11.06
Conv. Total (cfs)	1657156.0	Conv. (cfs)	182668.8	465754.2	1008733.0
Length Wtd. (ft)	88.65	Wetted Per. (ft)	212.12	44.07	409.26
Min Ch El (ft)	301.00	Shear (lb/sq ft)	0.72	3.61	1.44
Alpha	1.29	Stream Power (lb/ft s)	5.22	64.06	14.94
Frctn Loss (ft)	0.22	Cum Volume (acre-ft)	246.95	389.43	146.35
C & E Loss (ft)	0.06	Cum SA (acres)	19.07	19.50	17.10

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

CROSS SECTION

RIVER: San Juan Creek
REACH: Upper RS: 3688.827

INPUT
Description:
Station Elevation Data num= 61

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	341.24	4.25	341.2	88.82	338.47	162.13	337.12	238.04	336.54
343.16	335.9	427.23	334.56	621.14	334.71	691.38	335.01	711.54	334.61
749.31	333.89	771.83	333.26	798.75	332.51	802.54	332.21	807.68	331.96
836.15	330.45	884.81	327.86	899.48	325.3	916.88	322.98	931	320.13
931.02	320.12	940.38	318.48	952.89	313.21	954.49	312.46	956.69	310.63
965.48	303.9	967.39	303.74	975.09	301.39	979.29	301.7	990.3	301.58
996.19	304.01	1011.42	311.72	1015.3	313.58	1017.02	314.47	1018.95	315.18
1033.67	317.57	1040.9	320.33	1049.89	320.5	1072.53	321.89	1091.75	321.62
1109.41	321.83	1266.63	321.65	1276.2	321.38	1302.46	320.82	1319.41	320.45
1334.62	320.18	1342.76	320.04	1367.89	322.17	1412.93	333.57	1415.28	334.15
1415.82	334.22	1426.44	334.92	1431.1	335.26	1445.41	336.33	1448.64	336.57
1450.68	336.58	1458.8	336.68	1523.98	337.14	1546.8	337.72	1585.64	340.13
1607.98	341.26								

Manning's n Values num= 6

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	771.83	.02	836.15	.035	1302.46	.02	1334.62	.07
1431.1	.035								

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

965.48 996.19 239.7 244.68 248.16 .1 .3

CROSS SECTION OUTPUT Profile #Q50

E.G. Elev (ft)	326.19	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.84	Wt. n-Val.	0.035	0.035	0.034
W.S. Elev (ft)	324.34	Reach Len. (ft)	239.70	244.68	248.16
Crit W.S. (ft)		Flow Area (sq ft)	396.66	679.54	1462.31
E.G. Slope (ft/ft)	0.001912	Area (sq ft)	396.66	679.54	1462.31
Q Total (cfs)	19090.00	Flow (cfs)	2497.20	9764.25	6828.54
Top Width (ft)	469.83	Top Width (ft)	58.83	30.71	380.29
Vel Total (ft/s)	7.52	Avg. Vel. (ft/s)	6.30	14.37	4.67
Max Chl Dpth (ft)	22.95	Hydr. Depth (ft)	6.74	22.13	3.85
Conv. Total (cfs)	436537.1	Conv. (cfs)	57104.4	223282.3	156150.5
Length Wtd. (ft)	245.00	Wetted Per. (ft)	63.52	31.56	384.02
Min Ch El (ft)	301.39	Shear (lb/sq ft)	0.75	2.57	0.45
Alpha	2.10	Stream Power (lb/ft s)	4.69	36.94	2.12
Frctn Loss (ft)	0.69	Cum Volume (acre-ft)	140.96	166.82	24.12
C & E Loss (ft)	0.34	Cum SA (acres)	14.65	19.42	5.53

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)	333.83	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.32	Wt. n-Val.	0.034	0.035	0.035
W.S. Elev (ft)	333.51	Reach Len. (ft)	239.70	244.68	248.16
Crit W.S. (ft)		Flow Area (sq ft)	1407.67	961.14	5115.43
E.G. Slope (ft/ft)	0.000271	Area (sq ft)	1407.67	961.14	5115.43
Q Total (cfs)	30242.00	Flow (cfs)	4339.59	6551.90	19350.51
Top Width (ft)	649.93	Top Width (ft)	202.70	30.71	416.52
Vel Total (ft/s)	4.04	Avg. Vel. (ft/s)	3.08	6.82	3.78
Max Chl Dpth (ft)	32.12	Hydr. Depth (ft)	6.94	31.30	12.28
Conv. Total (cfs)	1836727.0	Conv. (cfs)	263562.0	397925.0	1175240.0
Length Wtd. (ft)	245.80	Wetted Per. (ft)	207.82	31.56	421.39
Min Ch El (ft)	301.39	Shear (lb/sq ft)	0.11	0.52	0.21
Alpha	1.26	Stream Power (lb/ft s)	0.35	3.51	0.78
Frctn Loss (ft)	0.06	Cum Volume (acre-ft)	155.87	221.78	62.41
C & E Loss (ft)	0.02	Cum SA (acres)	16.29	19.42	8.27

CROSS SECTION OUTPUT Profile #Q100HC

E.G. Elev (ft)	334.60	Element	Left OB	Channel	Right OB
Vel Head (ft)	3.13	Wt. n-Val.	0.035	0.035	0.034
W.S. Elev (ft)	331.47	Reach Len. (ft)	239.70	244.68	248.16
Crit W.S. (ft)		Flow Area (sq ft)	1058.37	898.52	4274.34
E.G. Slope (ft/ft)	0.002897	Area (sq ft)	1058.37	898.52	4274.34
Q Total (cfs)	76166.00	Flow (cfs)	9450.32	19143.12	47572.56
Top Width (ft)	587.81	Top Width (ft)	148.64	30.71	408.46
Vel Total (ft/s)	12.22	Avg. Vel. (ft/s)	8.93	21.31	11.13
Max Chl Dpth (ft)	30.08	Hydr. Depth (ft)	7.12	29.26	10.46
Conv. Total (cfs)	1415093.0	Conv. (cfs)	175578.1	355661.3	883853.9

Length Wtd. (ft)	245.83	Wetted Per. (ft)	153.71	31.56	413.08
Min Ch El (ft)	301.39	Shear (lb/sq ft)	1.25	5.15	1.87
Alpha	1.35	Stream Power (lb/ft s)	11.12	109.70	20.83
Frctn Loss (ft)	0.61	Cum Volume (acre-ft)	244.65	387.29	137.49
C & E Loss (ft)	0.18	Cum SA (acres)	18.70	19.42	16.28

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

CROSS SECTION

RIVER: San Juan Creek
REACH: Upper RS: 3444.123

INPUT
Description:
Station Elevation Data num= 72

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	341.26	29.63	340.48	70.28	339.46	120.07	338.58	215.55	335.81
360.8	334.73	380.53	334.58	469.87	335.17	621.66	335.79	660.63	335.01
747.53	332	749.95	331.95	779.66	331.3	790.16	330.54	799.94	329.75
813.5	328.65	818.21	328.38	822.66	327.78	840.68	325.94	860.32	322.97
867.94	321.66	871.07	321.43	874.62	321.2	899.5	320.15	920.2	319.16
931.35	318.53	944.93	316.89	945.2	316.86	954.91	315.75	956.12	315.61
957.05	315.21	964.94	309.94	974.43	301.81	980.44	296.33	982.4	295.75
984.7	295.17	987.39	295.62	997.9	298.94	1005.36	302.54	1015.73	308.17
1021.59	311.22	1028.1	314.6	1045.43	320.21	1048.32	320.99	1050.68	321.49
1072.16	321.51	1092.74	321.56	1095.76	321.52	1107.22	321.56	1136.4	321.18
1138.66	321.3	1173.26	321.56	1247.45	321.39	1272.39	321.23	1283.24	321.18
1333.24	320.91	1339.55	320.88	1345.51	320.85	1351.85	321.43	1375.75	327.04
1393.33	331.12	1399.9	332.31	1408.65	333.9	1412.95	334.45	1426.86	335
1466.5	336.42	1479.63	336.6	1587.8	336.97	1601.25	337.3	1641.01	338.8
1651.44	339.77	1666.54	341.58						

Manning's n Values num= 6

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	749.95	.02	799.94	.035	1283.24	.02	1333.24	.07
1399.9	.035								

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
974.43	1005.36	43.8	40.69	36.67	.1	.3

CROSS SECTION OUTPUT Profile #Q50

E.G. Elev (ft)	325.15	Element	Left OB	Channel	Right OB
Vel Head (ft)	5.26	Wt. n-Val.	0.035	0.035	0.035
W.S. Elev (ft)	319.89	Reach Len. (ft)	43.80	40.69	36.67
Crit W.S. (ft)	319.89	Flow Area (sq ft)	282.33	674.40	299.08
E.G. Slope (ft/ft)	0.004552	Area (sq ft)	282.33	674.40	299.08
Q Total (cfs)	19090.00	Flow (cfs)	1968.27	13995.99	3125.75
Top Width (ft)	139.47	Top Width (ft)	69.46	30.93	39.08
Vel Total (ft/s)	15.20	Avg. Vel. (ft/s)	6.97	20.75	10.45
Max Chl Dpth (ft)	24.72	Hydr. Depth (ft)	4.06	21.80	7.65
Conv. Total (cfs)	282939.6	Conv. (cfs)	29172.4	207439.4	46327.8
Length Wtd. (ft)	40.35	Wetted Per. (ft)	74.36	34.58	42.91
Min Ch El (ft)	295.17	Shear (lb/sq ft)	1.08	5.54	1.98
Alpha	1.47	Stream Power (lb/ft s)	7.52	115.02	20.70

Frctn Loss (ft)	0.10	Cum Volume (acre-ft)	139.09	163.01	19.11
C & E Loss (ft)	0.02	Cum SA (acres)	14.30	19.25	4.34

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water 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)	333.76	Element			
Vel Head (ft)	0.25	Wt. n-Val.	0.035	0.035	0.033
W.S. Elev (ft)	333.50	Reach Len. (ft)	43.80	40.69	36.67
Crit W.S. (ft)	324.96	Flow Area (sq ft)	2342.64	1095.53	4888.98
E.G. Slope (ft/ft)	0.000198	Area (sq ft)	2342.64	1095.53	4888.98
Q Total (cfs)	30242.00	Flow (cfs)	7151.36	6549.26	16541.38
Top Width (ft)	702.37	Top Width (ft)	270.33	30.93	401.11
Vel Total (ft/s)	3.63	Avg. Vel. (ft/s)	3.05	5.98	3.38
Max Chl Dpth (ft)	38.33	Hydr. Depth (ft)	8.67	35.42	12.19
Conv. Total (cfs)	2150253.0	Conv. (cfs)	508473.0	465662.4	1176117.0
Length Wtd. (ft)	39.79	Wetted Per. (ft)	275.88	34.58	406.52
Min Ch El (ft)	295.17	Shear (lb/sq ft)	0.10	0.39	0.15
Alpha	1.23	Stream Power (lb/ft s)	0.32	2.34	0.50
Frctn Loss (ft)	0.02	Cum Volume (acre-ft)	145.55	216.00	33.91
C & E Loss (ft)	1.28	Cum SA (acres)	14.99	19.25	5.94

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

CROSS SECTION OUTPUT Profile #Q100HC

			Left OB	Channel	Right OB
E.G. Elev (ft)	333.81	Element			
Vel Head (ft)	2.53	Wt. n-Val.	0.035	0.035	0.033
W.S. Elev (ft)	331.27	Reach Len. (ft)	43.80	40.69	36.67
Crit W.S. (ft)		Flow Area (sq ft)	1816.20	1026.57	4008.36
E.G. Slope (ft/ft)	0.002177	Area (sq ft)	1816.20	1026.57	4008.36
Q Total (cfs)	76166.00	Flow (cfs)	16616.52	19495.62	40053.85
Top Width (ft)	614.17	Top Width (ft)	194.42	30.93	388.82
Vel Total (ft/s)	11.12	Avg. Vel. (ft/s)	9.15	18.99	9.99
Max Chl Dpth (ft)	36.10	Hydr. Depth (ft)	9.34	33.19	10.31
Conv. Total (cfs)	1632435.0	Conv. (cfs)	356135.2	417841.8	858458.0
Length Wtd. (ft)	39.27	Wetted Per. (ft)	199.94	34.58	394.03
Min Ch El (ft)	295.17	Shear (lb/sq ft)	1.23	4.03	1.38
Alpha	1.32	Stream Power (lb/ft s)	11.30	76.62	13.82
Frctn Loss (ft)	0.06	Cum Volume (acre-ft)	236.74	381.88	113.90
C & E Loss (ft)	0.16	Cum SA (acres)	17.76	19.25	14.01

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

CROSS SECTION

RIVER: San Juan Creek
REACH: Upper RS: 3403.43*

INPUT
Description:
Station Elevation Data num= 144

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	341.27	29.24	340.4	69.36	339.26	85.19	338.9	118.49	338.14
144.72	337.3	212.72	335.6	251.55	335.31	298.04	334.97	356.06	334.67
375.53	334.57	463.69	335.12	531.25	335.4	571.86	335.48	613.49	335.42
616.25	335.37	646.97	334.73	651.95	334.61	667.7	334.03	684.73	333.36
696.38	332.9	708.94	332.16	723.17	331.37	728.23	330.9	734.68	330.45
737.7	330.22	740.09	330.06	746.62	329.63	769.41	328.92	779.77	328.18
789.42	327.42	795.92	326.9	801.9	326.43	802.81	326.34	803.63	326.27
807.45	325.96	811.85	325.33	816.81	324.75	824.72	323.52	829.63	322.71
833.24	321.98	836.77	321.47	849.01	319.88	852.92	319.31	856.53	318.77
859.62	318.56	863.12	318.34	879.12	317.63	881.34	317.54	887.68	317.28
908.1	316.33	911.82	316.13	919.11	315.71	923.51	315.23	932.51	314.33
932.77	314.31	938.57	313.76	939.78	313.6	942.36	313.27	943.55	313.11
944.47	312.75	944.68	312.63	947.59	310.92	952.25	308.05	961.62	300.85
964.7	298.52	968.59	295.94	969.66	295.68	970.86	295.4	973.53	294.85
975.97	295.26	982.94	297.35	985.49	298.15	992.25	301.27	1002.68	307.32
1008.23	310.44	1008.57	310.64	1011.36	312.2	1013.73	313.54	1015.12	314.23
1016.73	314.78	1021.3	316.35	1022.17	316.64	1025.13	317.39	1032.55	319.29
1035.46	319.91	1037.84	320.3	1059.44	320.27	1080.14	320.26	1083.18	320.22
1085.02	320.23	1094.71	320.49	1099.31	320.56	1124.06	320.87	1126.34	321.01
1128.09	321.06	1138.62	321.38	1149.05	321.43	1161.14	321.51	1175.83	321.5
1229.88	321.22	1235.77	321.19	1250.69	321.06	1260.86	321.01	1271.78	320.97
1293.2	320.88	1309.46	320.82	1313.53	320.87	1322.07	320.95	1324.88	320.98
1327.77	321.01	1328.38	321.04	1328.42	321.04	1334.41	321.25	1336.21	321.45
1340.79	321.97	1361.33	326.63	1364.05	327.26	1364.83	327.42	1366.18	327.7
1372.37	329.02	1382.52	331.17	1389.13	332.3	1397.93	333.82	1399.54	334.03
1402.25	334.34	1416.25	334.97	1420.97	335.17	1456.12	336.47	1458.87	336.52
1469.33	336.76	1493.45	337.1	1521.9	337.18	1536.64	337.2	1578.14	337.24
1591.67	337.49	1617.42	338.22	1626.66	338.73	1631.67	338.92	1642.16	339.77
1644.89	340.05	1652.44	341	1657.17	341.52	1657.35	341.55		

Manning's n Values num= 16

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	616.25	.032	684.73	.023	740.09	.023	789.42	.035
961.62	.02	992.25	.02	1229.88	.02	1271.78	.02	1293.2	.026
1322.07	.066	1324.88	.054	1372.37	.063	1389.13	.035	1657.35	.042
1657.35	.042								

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
961.62	992.25	43.8	40.69	36.67	.1	.3

CROSS SECTION OUTPUT Profile #Q50

E.G. Elev (ft)	324.91	Element	Left OB	Channel	Right OB
Vel Head (ft)	7.01	Wt. n-Val.	0.035	0.020	0.020
W.S. Elev (ft)	317.90	Reach Len. (ft)	43.80	40.69	36.67
Crit W.S. (ft)	319.17	Flow Area (sq ft)	320.62	628.36	250.49
E.G. Slope (ft/ft)	0.002013	Area (sq ft)	320.62	628.36	250.49
Q Total (cfs)	19090.00	Flow (cfs)	1397.97	14799.19	2892.84

Top Width (ft)	154.06	Top Width (ft)	88.56	30.63	34.87
Vel Total (ft/s)	15.92	Avg. Vel. (ft/s)	4.36	23.55	11.55
Max Chl Dpth (ft)	23.05	Hydr. Depth (ft)	3.62	20.51	7.18
Conv. Total (cfs)	425481.3	Conv. (cfs)	31158.3	329847.0	64476.0
Length Wtd. (ft)	40.35	Wetted Per. (ft)	92.58	33.46	38.85
Min Ch El (ft)	294.85	Shear (lb/sq ft)	0.44	2.36	0.81
Alpha	1.78	Stream Power (lb/ft s)	1.90	55.59	9.36
Frctn Loss (ft)	0.13	Cum Volume (acre-ft)	138.79	162.40	18.87
C & E Loss (ft)	0.04	Cum SA (acres)	14.22	19.22	4.30

Warning: The conveyance ratio (upstream 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: Program found supercritical flow starting at this cross section.

CROSS SECTION OUTPUT Profile #Q100

E.G. Elev (ft)	332.46	Element	Left OB	Channel	Right OB
Vel Head (ft)	13.04	Wt. n-Val.	0.035	0.020	0.020
W.S. Elev (ft)	319.42	Reach Len. (ft)	43.80	40.69	36.67
Crit W.S. (ft)	319.42	Flow Area (sq ft)	474.93	674.82	307.88
E.G. Slope (ft/ft)	0.003569	Area (sq ft)	474.93	674.82	307.88
Q Total (cfs)	30242.00	Flow (cfs)	3127.65	22193.50	4920.85
Top Width (ft)	180.95	Top Width (ft)	109.43	30.63	40.89
Vel Total (ft/s)	20.75	Avg. Vel. (ft/s)	6.59	32.89	15.98
Max Chl Dpth (ft)	24.57	Hydr. Depth (ft)	4.34	22.03	7.53
Conv. Total (cfs)	506207.6	Conv. (cfs)	52352.3	371487.3	82367.9
Length Wtd. (ft)	40.44	Wetted Per. (ft)	113.51	33.46	45.06
Min Ch El (ft)	294.85	Shear (lb/sq ft)	0.93	4.49	1.52
Alpha	1.95	Stream Power (lb/ft s)	6.14	147.80	24.34
Frctn Loss (ft)	0.06	Cum Volume (acre-ft)	144.14	215.17	31.72
C & E Loss (ft)	3.04	Cum SA (acres)	14.80	19.22	5.76

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

CROSS SECTION OUTPUT Profile #Q100HC

E.G. Elev (ft)	333.58	Element	Left OB	Channel	Right OB
Vel Head (ft)	4.11	Wt. n-Val.	0.035	0.020	0.021
W.S. Elev (ft)	329.47	Reach Len. (ft)	43.80	40.69	36.67
Crit W.S. (ft)	329.47	Flow Area (sq ft)	1960.19	982.83	3463.61
E.G. Slope (ft/ft)	0.001230	Area (sq ft)	1960.19	982.83	3463.61
Q Total (cfs)	76166.00	Flow (cfs)	14192.78	24377.44	37595.78
Top Width (ft)	622.80	Top Width (ft)	209.92	30.63	382.25
Vel Total (ft/s)	11.89	Avg. Vel. (ft/s)	7.24	24.80	10.85
Max Chl Dpth (ft)	34.62	Hydr. Depth (ft)	9.34	32.09	9.06
Conv. Total (cfs)	2172062.0	Conv. (cfs)	404742.4	695183.2	1072137.0
Length Wtd. (ft)	39.55	Wetted Per. (ft)	214.62	33.46	387.39

Min Ch El (ft)	294.85	Shear (lb/sq ft)	0.70	2.26	0.69
Alpha	1.87	Stream Power (lb/ft s)	5.08	55.93	7.45
Frctn Loss (ft)	0.05	Cum Volume (acre-ft)	234.84	380.94	110.75
C & E Loss (ft)	0.02	Cum SA (acres)	17.56	19.22	13.68

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

CROSS SECTION

RIVER: San Juan Creek
REACH: Upper RS: 3362.75*

INPUT
Description:
Station Elevation Data num= 144

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	341.28	28.85	340.33	68.43	339.06	84.05	338.63	116.91	337.7
142.79	336.78	209.88	335.39	248.2	335.11	294.07	334.77	351.31	334.61
370.52	334.56	457.52	335.07	524.17	335.35	564.24	335.33	605.32	335.06
608.04	335	638.36	334.35	643.26	334.2	658.8	333.6	675.6	332.86
687.1	332.35	699.49	331.31	713.54	330.24	718.53	329.47	724.89	328.79
727.88	328.43	730.23	328.18	736.68	327.46	759.16	326.55	769.38	325.82
778.91	325.08	785.32	324.59	791.22	324.13	792.11	324.03	792.93	323.95
796.7	323.55	801.03	322.89	805.93	322.24	813.73	320.59	818.58	319.49
822.14	318.57	825.62	318.09	837.7	316.8	841.56	316.34	845.12	315.89
848.17	315.69	851.62	315.48	867.41	314.74	869.6	314.66	875.85	314.41
896.01	313.5	899.67	313.32	906.86	312.9	911.21	312.47	920.09	311.78
920.35	311.76	926.07	311.33	927.26	311.15	929.8	310.78	930.98	310.61
931.89	310.3	932.09	310.2	934.97	308.75	939.57	306.16	948.81	299.89
952.31	297.64	956.74	295.54	957.96	295.31	959.33	295.04	962.36	294.53
964.54	294.9	970.79	296.65	973.08	297.36	979.13	300	989.63	306.48
995.21	309.85	995.55	310.05	998.35	311.74	1000.74	313.2	1002.14	313.86
1003.76	314.44	1008.36	316.12	1009.23	316.41	1012.21	316.97	1019.68	318.37
1022.6	318.82	1024.99	319.11	1046.72	319.03	1067.55	318.97	1070.6	318.93
1072.45	318.92	1082.2	319.43	1086.83	319.62	1111.73	320.55	1114.01	320.72
1115.78	320.81	1126.37	321.38	1136.86	321.39	1149.02	321.47	1163.8	321.47
1218.17	321.03	1224.1	320.99	1239.1	320.83	1249.33	320.79	1260.31	320.77
1281.87	320.7	1298.22	320.65	1302.32	320.78	1310.9	320.99	1313.72	321.07
1316.63	321.14	1317.25	321.2	1317.29	321.2	1323.32	321.65	1325.12	321.89
1329.73	322.51	1350.39	327.03	1353.13	327.65	1353.92	327.8	1355.27	328.06
1361.49	329.25	1371.71	331.22	1378.36	332.3	1387.21	333.74	1388.83	333.95
1391.56	334.23	1405.64	334.94	1410.38	335.16	1445.75	336.52	1448.51	336.59
1459.03	336.92	1483.29	337.53	1511.91	337.58	1526.74	337.57	1568.49	337.52
1582.09	337.67	1608	338.17	1617.29	338.84	1622.33	339.03	1632.88	339.77
1635.63	340.01	1643.22	341	1647.98	341.49	1648.16	341.52		

Manning's n Values num= 16

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	608.04	.029	675.6	.026	730.23	.026	778.91	.035
948.81	.02	979.13	.02	1218.17	.02	1260.31	.02	1281.87	.032
1310.9	.062	1313.72	.058	1361.49	.056	1378.36	.035	1648.16	.049

1648.16 .049

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
948.81	979.13	43.8 40.69	36.67	.1	.3

CROSS SECTION OUTPUT Profile #Q50

E.G. Elev (ft)	324.55	Element	Left OB	Channel	Right OB
Vel Head (ft)	9.60	Wt. n-Val.	0.035	0.020	0.020
W.S. Elev (ft)	314.95	Reach Len. (ft)	43.80	40.69	36.67
Crit W.S. (ft)	318.37	Flow Area (sq ft)	282.90	553.51	183.47
E.G. Slope (ft/ft)	0.003083	Area (sq ft)	282.90	553.51	183.47
Q Total (cfs)	19090.00	Flow (cfs)	1440.63	15122.93	2526.44
Top Width (ft)	142.26	Top Width (ft)	85.91	30.32	26.03
Vel Total (ft/s)	18.72	Avg. Vel. (ft/s)	5.09	27.32	13.77
Max Chl Dpth (ft)	20.42	Hydr. Depth (ft)	3.29	18.26	7.05
Conv. Total (cfs)	343816.3	Conv. (cfs)	25946.2	272368.3	45501.9
Length Wtd. (ft)	40.44	Wetted Per. (ft)	89.10	32.47	30.08
Min Ch El (ft)	294.53	Shear (lb/sq ft)	0.61	3.28	1.17
Alpha	1.77	Stream Power (lb/ft s)	3.11	89.63	16.16
Frctn Loss (ft)	0.10	Cum Volume (acre-ft)	138.48	161.85	18.69
C & E Loss (ft)	0.26	Cum SA (acres)	14.13	19.19	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 parabolic search method failed to converge on critical depth. The program will try the cross section slice/secant method to find critical depth.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.

CROSS SECTION OUTPUT Profile #Q100

E.G. Elev (ft)	332.12	Element	Left OB	Channel	Right OB
Vel Head (ft)	14.87	Wt. n-Val.	0.035	0.020	0.020
W.S. Elev (ft)	317.24	Reach Len. (ft)	43.80	40.69	36.67
Crit W.S. (ft)	323.57	Flow Area (sq ft)	520.53	623.05	251.34
E.G. Slope (ft/ft)	0.004403	Area (sq ft)	520.53	623.05	251.34
Q Total (cfs)	30242.00	Flow (cfs)	3931.60	22013.98	4296.42
Top Width (ft)	180.14	Top Width (ft)	115.27	30.32	34.55
Vel Total (ft/s)	21.68	Avg. Vel. (ft/s)	7.55	35.33	17.09
Max Chl Dpth (ft)	22.71	Hydr. Depth (ft)	4.52	20.55	7.28
Conv. Total (cfs)	455749.8	Conv. (cfs)	59249.6	331752.8	64747.4
Length Wtd. (ft)	40.59	Wetted Per. (ft)	118.57	32.47	38.93
Min Ch El (ft)	294.53	Shear (lb/sq ft)	1.21	5.27	1.77
Alpha	2.04	Stream Power (lb/ft s)	9.12	186.35	30.34
Frctn Loss (ft)	0.16	Cum Volume (acre-ft)	143.64	214.57	31.49
C & E Loss (ft)	0.18	Cum SA (acres)	14.69	19.19	5.73

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

CROSS SECTION OUTPUT Profile #Q100HC

E.G. Elev (ft)	333.28	Element	Left OB	Channel	Right OB
Vel Head (ft)	6.53	Wt. n-Val.	0.035	0.020	0.021
W.S. Elev (ft)	326.75	Reach Len. (ft)	43.80	40.69	36.67

Crit W.S. (ft)	328.53	Flow Area (sq ft)	1915.81	911.25	2589.43
E.G. Slope (ft/ft)	0.001999	Area (sq ft)	1915.81	911.25	2589.43
Q Total (cfs)	76166.00	Flow (cfs)	17756.39	27951.19	30458.42
Top Width (ft)	594.88	Top Width (ft)	194.58	30.32	369.98
Vel Total (ft/s)	14.06	Avg. Vel. (ft/s)	9.27	30.67	11.76
Max Chl Dpth (ft)	32.22	Hydr. Depth (ft)	9.85	30.05	7.00
Conv. Total (cfs)	1703578.0	Conv. (cfs)	397150.8	625174.4	681252.8
Length Wtd. (ft)	40.06	Wetted Per. (ft)	198.59	32.47	375.12
Min Ch El (ft)	294.53	Shear (lb/sq ft)	1.20	3.50	0.86
Alpha	2.13	Stream Power (lb/ft s)	11.16	107.41	10.13
Frctn Loss (ft)	0.06	Cum Volume (acre-ft)	232.89	380.06	108.20
C & E Loss (ft)	0.23	Cum SA (acres)	17.35	19.19	13.37

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

CROSS SECTION

RIVER: San Juan Creek
REACH: Upper RS: 3322.06*

INPUT
Description:
Station Elevation Data num= 144

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	341.28	28.46	340.25	67.51	338.85	82.92	338.35	115.33	337.25
140.87	336.27	207.05	335.18	244.85	334.9	290.1	334.57	346.57	334.55
365.52	334.55	451.34	335.01	517.09	335.31	556.63	335.19	597.14	334.69
599.83	334.63	629.74	333.96	634.58	333.8	649.91	333.17	666.48	332.36
677.82	331.8	690.05	330.46	703.91	329.1	708.83	328.04	715.1	327.13
718.05	326.65	720.37	326.29	726.73	325.29	748.91	324.17	759	323.45
768.39	322.75	774.72	322.28	780.53	321.83	781.42	321.72	782.22	321.62
785.94	321.13	790.22	320.44	795.05	319.72	802.74	317.66	807.52	316.26
811.04	315.16	814.47	314.71	826.39	313.71	830.19	313.36	833.71	313
836.72	312.81	840.13	312.62	855.7	311.85	857.86	311.79	864.03	311.53
883.91	310.67	887.52	310.5	894.62	310.08	898.9	309.72	907.66	309.22
907.92	309.2	913.57	308.9	914.74	308.71	917.25	308.3	918.41	308.1
919.31	307.84	919.51	307.76	922.35	306.58	926.88	304.28	936	298.93
939.92	296.77	944.89	295.15	946.26	294.93	947.79	294.69	951.19	294.2
953.12	294.54	958.64	295.95	960.66	296.58	966.02	298.74	976.57	305.63
982.19	309.25	982.54	309.47	985.35	311.28	987.75	312.86	989.16	313.5
990.79	314.1	995.42	315.88	996.29	316.19	999.29	316.54	1006.8	317.45
1009.74	317.74	1012.14	317.92	1034.01	317.79	1054.95	317.67	1058.03	317.63
1059.88	317.62	1069.69	318.36	1074.34	318.69	1099.39	320.24	1101.69	320.44
1103.47	320.56	1114.12	321.37	1124.67	321.36	1136.91	321.42	1151.77	321.44
1206.45	320.85	1212.42	320.78	1227.51	320.6	1237.8	320.57	1248.85	320.56
1270.53	320.52	1286.97	320.49	1291.1	320.69	1299.74	321.04	1302.57	321.15
1305.5	321.27	1306.12	321.35	1306.16	321.36	1312.22	322.05	1314.04	322.33
1318.68	323.05	1339.45	327.44	1342.21	328.05	1343	328.19	1344.37	328.41
1350.62	329.49	1360.9	331.27	1367.58	332.29	1376.49	333.65	1378.12	333.87
1380.86	334.12	1395.02	334.9	1399.8	335.16	1435.37	336.57	1438.15	336.65
1448.73	337.07	1473.13	337.95	1501.92	337.99	1516.83	337.93	1558.83	337.79
1572.52	337.86	1598.57	338.12	1607.92	338.96	1612.99	339.15	1623.6	339.77
1626.37	339.97	1634	341	1638.79	341.45	1638.97	341.5		

Manning's n Values num= 16

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	599.83	.026	666.48	.029	720.37	.029	768.39	.035
936	.02	966.02	.02	1206.45	.02	1248.85	.02	1270.53	.038
1299.74	.058	1302.57	.062	1350.62	.049	1367.58	.035	1638.97	.056
1638.97	.056								

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
936	966.02	43.8	40.69	36.67	.1	.3

CROSS SECTION OUTPUT Profile #Q50

			Left OB	Channel	Right OB
E.G. Elev (ft)	324.22	Element			
Vel Head (ft)	11.56	Wt. n-Val.	0.035	0.020	0.020
W.S. Elev (ft)	312.66	Reach Len. (ft)	43.80	40.69	36.67
Crit W.S. (ft)	316.58	Flow Area (sq ft)	305.03	499.25	148.77
E.G. Slope (ft/ft)	0.004142	Area (sq ft)	305.03	499.25	148.77
Q Total (cfs)	19090.00	Flow (cfs)	1765.16	15022.03	2302.81
Top Width (ft)	147.95	Top Width (ft)	96.51	30.02	21.42
Vel Total (ft/s)	20.03	Avg. Vel. (ft/s)	5.79	30.09	15.48
Max Chl Dpth (ft)	18.46	Hydr. Depth (ft)	3.16	16.63	6.95
Conv. Total (cfs)	296622.3	Conv. (cfs)	27427.2	233413.8	35781.3
Length Wtd. (ft)	40.56	Wetted Per. (ft)	98.96	31.63	25.54
Min Ch El (ft)	294.20	Shear (lb/sq ft)	0.80	4.08	1.51
Alpha	1.86	Stream Power (lb/ft s)	4.61	122.82	23.31
Frctn Loss (ft)	0.14	Cum Volume (acre-ft)	138.19	161.36	18.55
C & E Loss (ft)	0.20	Cum SA (acres)	14.04	19.17	4.26

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

CROSS SECTION OUTPUT Profile #Q100

			Left OB	Channel	Right OB
E.G. Elev (ft)	331.72	Element			
Vel Head (ft)	16.75	Wt. n-Val.	0.035	0.020	0.020
W.S. Elev (ft)	314.97	Reach Len. (ft)	43.80	40.69	36.67
Crit W.S. (ft)	320.76	Flow Area (sq ft)	562.23	568.81	204.53
E.G. Slope (ft/ft)	0.005508	Area (sq ft)	562.23	568.81	204.53
Q Total (cfs)	30242.00	Flow (cfs)	4798.87	21529.28	3913.86
Top Width (ft)	180.59	Top Width (ft)	123.53	30.02	27.04
Vel Total (ft/s)	22.64	Avg. Vel. (ft/s)	8.54	37.85	19.14
Max Chl Dpth (ft)	20.77	Hydr. Depth (ft)	4.55	18.95	7.56
Conv. Total (cfs)	407503.1	Conv. (cfs)	64663.5	290101.4	52738.2
Length Wtd. (ft)	40.75	Wetted Per. (ft)	126.09	31.63	31.63
Min Ch El (ft)	294.20	Shear (lb/sq ft)	1.53	6.18	2.22
Alpha	2.10	Stream Power (lb/ft s)	13.09	234.06	42.54
Frctn Loss (ft)	0.20	Cum Volume (acre-ft)	143.09	214.01	31.29
C & E Loss (ft)	0.19	Cum SA (acres)	14.57	19.17	5.70

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

CROSS SECTION OUTPUT Profile #Q100HC

			Left OB	Channel	Right OB
E.G. Elev (ft)	333.04	Element			
Vel Head (ft)	8.11	Wt. n-Val.	0.035	0.020	0.021
W.S. Elev (ft)	324.93	Reach Len. (ft)	43.80	40.69	36.67
Crit W.S. (ft)	327.44	Flow Area (sq ft)	2051.47	867.82	2075.53

E.G. Slope (ft/ft)	0.002512	Area (sq ft)	2051.47	867.82	2075.53
Q Total (cfs)	76166.00	Flow (cfs)	22327.68	29397.02	24441.31
Top Width (ft)	593.79	Top Width (ft)	202.20	30.02	361.57
Vel Total (ft/s)	15.25	Avg. Vel. (ft/s)	10.88	33.87	11.78
Max Chl Dpth (ft)	30.73	Hydr. Depth (ft)	10.15	28.91	5.74
Conv. Total (cfs)	1519743.0	Conv. (cfs)	445505.0	586559.8	487678.3
Length Wtd. (ft)	40.58	Wetted Per. (ft)	205.67	31.63	366.95
Min Ch El (ft)	294.20	Shear (lb/sq ft)	1.56	4.30	0.89
Alpha	2.25	Stream Power (lb/ft s)	17.02	145.76	10.44
Frctn Loss (ft)	0.09	Cum Volume (acre-ft)	230.90	379.23	106.24
C & E Loss (ft)	0.16	Cum SA (acres)	17.15	19.17	13.06

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

CROSS SECTION

RIVER: San Juan Creek
REACH: Upper RS: 3281.37*

INPUT
Description:
Station Elevation Data num= 144

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	341.29	28.07	340.17	66.58	338.65	81.78	338.08	113.76	336.81
138.94	335.75	204.22	334.97	241.5	334.7	286.13	334.38	341.83	334.49
360.52	334.53	445.16	334.96	510.02	335.26	549.01	335.05	588.97	334.33
591.62	334.27	621.12	333.58	625.89	333.39	641.01	332.75	657.36	331.86
668.55	331.25	680.6	329.61	694.27	327.97	699.13	326.61	705.32	325.47
708.22	324.87	710.51	324.4	716.79	323.12	738.66	321.8	748.61	321.09
757.88	320.42	764.11	319.96	769.85	319.54	770.72	319.4	771.52	319.29
775.18	318.72	779.4	317.99	784.17	317.21	791.76	314.73	796.47	313.04
799.94	311.76	803.33	311.34	815.08	310.63	818.83	310.39	822.3	310.11
825.27	309.94	828.63	309.75	843.99	308.97	846.12	308.91	852.2	308.66
871.81	307.84	875.38	307.69	882.38	307.27	886.6	306.96	895.24	306.66
895.5	306.65	901.06	306.47	902.22	306.26	904.7	305.81	905.84	305.6
906.72	305.39	906.92	305.33	909.72	304.41	914.2	302.39	923.19	297.97
927.54	295.89	933.04	294.75	934.55	294.56	936.25	294.34	940.02	293.88
941.7	294.18	946.5	295.25	948.25	295.79	952.9	297.47	963.52	304.78
969.17	308.65	969.52	308.89	972.35	310.83	974.77	312.52	976.18	313.13
977.82	313.77	982.47	315.65	983.36	315.96	986.37	316.12	993.93	316.53
996.88	316.66	999.3	316.74	1021.29	316.55	1042.36	316.37	1045.45	316.34
1047.32	316.32	1057.18	317.3	1061.86	317.75	1087.05	319.92	1089.37	320.15
1091.15	320.31	1101.87	321.36	1112.48	321.32	1124.79	321.38	1139.74	321.42
1194.74	320.66	1200.74	320.58	1215.92	320.36	1226.27	320.36	1237.38	320.35
1259.19	320.34	1275.73	320.33	1279.88	320.61	1288.57	321.08	1291.42	321.24
1294.36	321.39	1294.99	321.51	1295.03	321.52	1301.13	322.46	1302.95	322.77
1307.62	323.59	1328.52	327.84	1331.29	328.45	1332.09	328.57	1333.46	328.77
1339.75	329.73	1350.08	331.32	1356.81	332.28	1365.77	333.57	1367.41	333.79
1370.17	334	1384.41	334.87	1389.21	335.16	1424.99	336.61	1427.79	336.72
1438.43	337.23	1462.98	338.37	1491.93	338.39	1506.93	338.3	1549.17	338.06
1562.94	338.04	1589.15	338.07	1598.55	339.07	1603.64	339.26	1614.32	339.78
1617.1	339.92	1624.78	341.01	1629.6	341.42	1629.78	341.47		

Manning's n Values num= 16

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	591.62	.023	657.36	.032	710.51	.032	757.88	.035

923.19	.02	952.9	.02	1194.74	.02	1237.38	.02	1259.19	.044
1288.57	.054	1291.42	.066	1339.75	.042	1356.81	.035	1629.78	.063
1629.78	.063								

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
923.19	952.9	43.8	40.69	36.67	.1	.3

CROSS SECTION OUTPUT Profile #Q50

E.G. Elev (ft)	323.84	Element	Left OB	Channel	Right OB
Vel Head (ft)	13.38	Wt. n-Val.	0.035	0.020	0.020
W.S. Elev (ft)	310.46	Reach Len. (ft)	43.80	40.69	36.67
Crit W.S. (ft)	314.86	Flow Area (sq ft)	342.78	448.47	122.68
E.G. Slope (ft/ft)	0.005483	Area (sq ft)	342.78	448.47	122.68
Q Total (cfs)	19090.00	Flow (cfs)	2337.78	14688.38	2063.83
Top Width (ft)	154.07	Top Width (ft)	105.45	29.71	18.91
Vel Total (ft/s)	20.89	Avg. Vel. (ft/s)	6.82	32.75	16.82
Max Chl Dpth (ft)	16.58	Hydr. Depth (ft)	3.25	15.09	6.49
Conv. Total (cfs)	257812.6	Conv. (cfs)	31572.0	198368.3	27872.3
Length Wtd. (ft)	41.58	Wetted Per. (ft)	107.27	30.87	22.94
Min Ch El (ft)	293.88	Shear (lb/sq ft)	1.09	4.97	1.83
Alpha	1.97	Stream Power (lb/ft s)	7.46	162.85	30.79
Frctn Loss (ft)	0.19	Cum Volume (acre-ft)	137.86	160.92	18.44
C & E Loss (ft)	0.18	Cum SA (acres)	13.94	19.14	4.24

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

CROSS SECTION OUTPUT Profile #Q100

E.G. Elev (ft)	331.28	Element	Left OB	Channel	Right OB
Vel Head (ft)	18.68	Wt. n-Val.	0.035	0.020	0.020
W.S. Elev (ft)	312.59	Reach Len. (ft)	43.80	40.69	36.67
Crit W.S. (ft)	319.26	Flow Area (sq ft)	596.65	511.87	166.32
E.G. Slope (ft/ft)	0.007060	Area (sq ft)	596.65	511.87	166.32
Q Total (cfs)	30242.00	Flow (cfs)	5953.38	20776.73	3511.89
Top Width (ft)	177.26	Top Width (ft)	125.51	29.71	22.04
Vel Total (ft/s)	23.72	Avg. Vel. (ft/s)	9.98	40.59	21.12
Max Chl Dpth (ft)	18.71	Hydr. Depth (ft)	4.75	17.23	7.55
Conv. Total (cfs)	359930.7	Conv. (cfs)	70855.2	247278.1	41797.4
Length Wtd. (ft)	41.48	Wetted Per. (ft)	127.54	30.87	26.73
Min Ch El (ft)	293.88	Shear (lb/sq ft)	2.06	7.31	2.74
Alpha	2.14	Stream Power (lb/ft s)	20.57	296.61	57.90
Frctn Loss (ft)	0.25	Cum Volume (acre-ft)	142.51	213.51	31.14
C & E Loss (ft)	0.19	Cum SA (acres)	14.44	19.14	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 parabolic search method failed to converge on critical depth. The program will try the cross section slice/secant method to find critical depth.

CROSS SECTION OUTPUT Profile #Q100HC

E.G. Elev (ft)	332.78	Element	Left OB	Channel	Right OB
Vel Head (ft)	9.57	Wt. n-Val.	0.035	0.020	0.020
W.S. Elev (ft)	323.21	Reach Len. (ft)	43.80	40.69	36.67
Crit W.S. (ft)	326.21	Flow Area (sq ft)	2204.60	827.23	1613.37

E.G. Slope (ft/ft)	0.003012	Area (sq ft)	2204.60	827.23	1613.37
Q Total (cfs)	76166.00	Flow (cfs)	27505.19	30202.19	18458.61
Top Width (ft)	589.09	Top Width (ft)	206.83	29.71	352.55
Vel Total (ft/s)	16.40	Avg. Vel. (ft/s)	12.48	36.51	11.44
Max Chl Dpth (ft)	29.33	Hydr. Depth (ft)	10.66	27.84	4.58
Conv. Total (cfs)	1387880.0	Conv. (cfs)	501193.6	550337.6	336348.8
Length Wtd. (ft)	40.65	Wetted Per. (ft)	209.95	30.87	358.33
Min Ch El (ft)	293.88	Shear (lb/sq ft)	1.97	5.04	0.85
Alpha	2.29	Stream Power (lb/ft s)	24.63	183.94	9.69
Frctn Loss (ft)	0.11	Cum Volume (acre-ft)	228.76	378.44	104.69
C & E Loss (ft)	0.15	Cum SA (acres)	16.95	19.14	12.76

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

CROSS SECTION

RIVER: San Juan Creek
REACH: Upper RS: 3240.694

INPUT
Description:
Station Elevation Data num= 77

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	341.3	80.65	337.8	137.01	335.24	238.15	334.49	282.16	334.18
502.94	335.21	541.39	334.91	583.41	333.9	612.5	333.2	632.12	332.32
648.24	331.36	659.27	330.7	671.16	328.76	684.64	326.83	689.43	325.18
695.53	323.81	706.84	320.95	753.51	317.65	759.17	317.24	760.81	316.96
773.29	314.69	780.77	311.8	788.84	308.35	792.18	307.96	807.47	307.41
832.28	306.08	834.38	306.03	863.23	304.87	874.3	304.2	888.56	304.04
889.7	303.81	894.34	302.89	897.1	302.24	910.38	297.01	915.15	295.02
922.85	294.18	928.85	293.56	934.35	294.55	939.79	296.2	956.15	308.05
959.35	310.37	961.78	312.18	964.85	313.43	969.53	315.41	970.42	315.73
973.45	315.69	1034.75	315.02	1049.38	316.81	1078.84	320.06	1089.62	321.35
1100.29	321.28	1127.71	321.39	1183.03	320.48	1204.33	320.13	1247.85	320.16
1264.49	320.17	1268.66	320.52	1280.27	321.32	1283.23	321.52	1283.86	321.67
1291.87	323.21	1317.58	328.25	1320.37	328.85	1322.55	329.12	1328.88	329.97
1356.7	333.71	1378.63	335.16	1417.43	336.78	1452.82	338.79	1481.94	338.79
1497.03	338.67	1579.72	338.02	1589.18	339.19	1607.84	339.88	1615.56	341.01
1620.41	341.38	1620.59	341.44						

Manning's n Values num= 8

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	583.41	.02	648.24	.035	1183.03	.02	1247.85	.05
1280.27	.07	1328.88	.035	1620.59	.07				

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
910.38	939.79	42.89	42.56	42.65	.1	.3

CROSS SECTION OUTPUT Profile #Q50

E.G. Elev (ft)	317.58	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.32	Wt. n-Val.	0.035	0.035	0.035
W.S. Elev (ft)	316.26	Reach Len. (ft)	42.89	42.56	42.65
Crit W.S. (ft)	311.57	Flow Area (sq ft)	1442.01	633.36	348.92
E.G. Slope (ft/ft)	0.001374	Area (sq ft)	1442.01	633.36	348.92
Q Total (cfs)	19090.00	Flow (cfs)	10334.71	7577.28	1178.00

Top Width (ft)	280.19	Top Width (ft)	145.71	29.41	105.07
Vel Total (ft/s)	7.87	Avg. Vel. (ft/s)	7.17	11.96	3.38
Max Chl Dpth (ft)	22.70	Hydr. Depth (ft)	9.90	21.54	3.32
Conv. Total (cfs)	514967.3	Conv. (cfs)	278786.8	204402.9	31777.5
Length Wtd. (ft)	42.71	Wetted Per. (ft)	148.39	30.22	111.05
Min Ch El (ft)	293.56	Shear (lb/sq ft)	0.83	1.80	0.27
Alpha	1.38	Stream Power (lb/ft s)	5.98	21.51	0.91
Frctn Loss (ft)	0.06	Cum Volume (acre-ft)	136.97	160.41	18.24
C & E Loss (ft)	0.23	Cum SA (acres)	13.81	19.11	4.19

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

CROSS SECTION OUTPUT Profile #Q100

E.G. Elev (ft)	321.94	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.34	Wt. n-Val.	0.035	0.035	0.035
W.S. Elev (ft)	320.61	Reach Len. (ft)	42.89	42.56	42.65
Crit W.S. (ft)	314.28	Flow Area (sq ft)	2176.51	761.25	924.88
E.G. Slope (ft/ft)	0.001254	Area (sq ft)	2176.51	761.25	924.88
Q Total (cfs)	30242.00	Flow (cfs)	15982.76	9832.96	4426.28
Top Width (ft)	466.24	Top Width (ft)	198.68	29.41	238.16
Vel Total (ft/s)	7.83	Avg. Vel. (ft/s)	7.34	12.92	4.79
Max Chl Dpth (ft)	27.05	Hydr. Depth (ft)	10.96	25.88	3.88
Conv. Total (cfs)	854169.1	Conv. (cfs)	451424.6	277726.7	125017.9
Length Wtd. (ft)	42.72	Wetted Per. (ft)	201.56	30.22	244.40
Min Ch El (ft)	293.56	Shear (lb/sq ft)	0.85	1.97	0.30
Alpha	1.40	Stream Power (lb/ft s)	6.21	25.46	1.42
Frctn Loss (ft)	0.06	Cum Volume (acre-ft)	141.11	212.91	30.68
C & E Loss (ft)	0.41	Cum SA (acres)	14.28	19.11	5.57

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

CROSS SECTION OUTPUT Profile #Q100HC

E.G. Elev (ft)	328.92	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.99	Wt. n-Val.	0.035	0.035	0.033
W.S. Elev (ft)	326.93	Reach Len. (ft)	42.89	42.56	42.65
Crit W.S. (ft)	323.76	Flow Area (sq ft)	3533.78	947.26	3117.01
E.G. Slope (ft/ft)	0.001570	Area (sq ft)	3533.78	947.26	3117.01
Q Total (cfs)	76166.00	Flow (cfs)	36724.70	15841.82	23599.49
Top Width (ft)	626.91	Top Width (ft)	226.44	29.41	371.06
Vel Total (ft/s)	10.02	Avg. Vel. (ft/s)	10.39	16.72	7.57
Max Chl Dpth (ft)	33.37	Hydr. Depth (ft)	15.61	32.21	8.40
Conv. Total (cfs)	1922243.0	Conv. (cfs)	926841.2	399808.7	595593.1
Length Wtd. (ft)	42.73	Wetted Per. (ft)	230.14	30.22	377.91
Min Ch El (ft)	293.56	Shear (lb/sq ft)	1.51	3.07	0.81
Alpha	1.27	Stream Power (lb/ft s)	15.64	51.38	6.12
Frctn Loss (ft)	0.06	Cum Volume (acre-ft)	225.87	377.61	102.70
C & E Loss (ft)	0.23	Cum SA (acres)	16.73	19.11	12.45

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

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

CROSS SECTION

RIVER: San Juan Creek
REACH: Upper RS: 3198.13*

INPUT
Description:
Station Elevation Data num= 148

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	339.64	76.79	336.9	130.46	334.9	144.36	334.8	175.2	334.57
178.25	334.56	191.81	334.45	226.76	334.17	268.66	333.85	310.99	333.91
352.26	333.83	354.14	333.84	390.43	334	409.97	333.92	419.72	333.84
447.01	333.6	466.04	332.64	478.88	331.93	481.17	331.78	500.6	331.15
508.18	331.03	515.49	330.97	532.6	330.6	542.46	330.43	555.5	330.07
562.55	329.88	580.16	329.31	583.2	329.15	584.58	329.05	594.16	328.29
600.9	327.2	601.88	327	604.75	326.38	609.6	325.8	617.23	324.91
627.73	323.68	630.49	323.13	634.08	322.56	639.05	321.79	649.48	320.33
651.89	320.06	652.56	319.87	656.45	318.9	661.52	318.1	662.25	317.99
673.02	316.06	673.89	316.02	675.66	315.95	677.65	316.04	692.01	316.47
695.89	316.54	700.15	316.37	717.46	315.49	722.85	315.21	724.41	315.01
730.94	314.1	736.29	313.32	743.42	311.12	751.1	308.51	754.28	308.21
768.84	307.74	772.99	307.55	775.37	307.41	792.46	306.42	794.46	306.35
818.62	305.2	821.93	305	832.47	304.18	833.2	304.15	843.37	303.73
846.05	303.62	847.13	303.41	851.55	302.58	852.57	302.35	854.18	301.85
858.41	300.01	866.83	296.43	871.57	294.27	876.43	293.2	878.83	293
879.23	292.96	885.2	292.38	889.46	293.59	890.61	293.89	895.95	295.81
910.05	305.67	910.32	305.86	913.13	307.81	915.26	309.33	917.96	310.48
922.07	312.27	922.85	312.57	925.51	312.75	928.13	312.92	939.3	313.39
940.48	313.44	947.48	313.66	979.35	313.85	992.2	315.4	1001.41	316.4
1011.3	317.56	1018.08	318.31	1019.53	318.48	1027.55	319.35	1036.92	319.35
1061	319.58	1109.59	319.18	1127.38	319.04	1128.3	319.03	1166.53	319.13
1181.14	319.17	1184.81	319.44	1185.77	319.49	1195	320.11	1197.6	320.29
1198.16	320.4	1205.19	321.62	1218.16	323.9	1227.09	325.41	1227.77	325.53
1230.23	325.98	1232.14	326.19	1237.7	326.84	1262.14	329.69	1281.4	330.82
1286.94	331.03	1300.94	331.73	1314.06	332.2	1315.48	332.26	1322.39	332.61
1346.56	333.85	1372.14	333.91	1385.39	333.86	1406.76	333.77	1410.34	333.76
1411.16	333.77	1432.96	334.14	1433.03	334.14	1436.74	334.4	1442.64	334.8
1458.02	335.75	1464.37	336.86	1466.33	337.16	1472	337.63	1482.72	338.22
1489.5	339.23	1493.76	339.61	1493.92	339.66				

Manning's n Values num= 16

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	354.14	.031	419.72	.024	555.5	.024	617.23	.035
866.83	.02	895.95	.02	1109.59	.02	1166.53	.043	1195	.058
1227.09	.02	1237.7	.031	1322.39	.027	1436.74	.046	1493.92	.061
1493.92	.061								

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
866.83	895.95	42.89	42.56	42.65	.1	.3

CROSS SECTION OUTPUT Profile #Q50

E.G. Elev (ft)	317.29	Element	Left OB	Channel	Right OB
Vel Head (ft)	3.66	Wt. n-Val.	0.035	0.020	0.020
W.S. Elev (ft)	313.63	Reach Len. (ft)	42.89	42.56	42.65

Crit W.S. (ft)		Flow Area (sq ft)	1024.73	577.20	244.98
E.G. Slope (ft/ft)	0.001332	Area (sq ft)	1024.73	577.20	244.98
Q Total (cfs)	19090.00	Flow (cfs)	6135.93	11169.15	1784.93
Top Width (ft)	212.49	Top Width (ft)	132.69	29.12	50.68
Vel Total (ft/s)	10.34	Avg. Vel. (ft/s)	5.99	19.35	7.29
Max Chl Dpth (ft)	21.25	Hydr. Depth (ft)	7.72	19.82	4.83
Conv. Total (cfs)	522970.0	Conv. (cfs)	168093.5	305978.4	48898.0
Length Wtd. (ft)	42.67	Wetted Per. (ft)	134.92	30.29	55.63
Min Ch El (ft)	292.38	Shear (lb/sq ft)	0.63	1.59	0.37
Alpha	2.20	Stream Power (lb/ft s)	3.78	30.68	2.67
Frctn Loss (ft)	0.06	Cum Volume (acre-ft)	135.75	159.82	17.95
C & E Loss (ft)	0.05	Cum SA (acres)	13.68	19.08	4.11

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 #Q100

E.G. Elev (ft)	321.47	Element	Left OB	Channel	Right OB
Vel Head (ft)	5.42	Wt. n-Val.	0.035	0.020	0.020
W.S. Elev (ft)	316.05	Reach Len. (ft)	42.89	42.56	42.65
Crit W.S. (ft)	316.05	Flow Area (sq ft)	1371.05	647.64	463.11
E.G. Slope (ft/ft)	0.001852	Area (sq ft)	1371.05	647.64	463.11
Q Total (cfs)	30242.00	Flow (cfs)	10365.61	15952.35	3924.04
Top Width (ft)	296.66	Top Width (ft)	165.29	29.12	102.26
Vel Total (ft/s)	12.19	Avg. Vel. (ft/s)	7.56	24.63	8.47
Max Chl Dpth (ft)	23.67	Hydr. Depth (ft)	8.29	22.24	4.53
Conv. Total (cfs)	702771.9	Conv. (cfs)	240879.0	370705.1	91187.8
Length Wtd. (ft)	42.68	Wetted Per. (ft)	167.66	30.29	107.34
Min Ch El (ft)	292.38	Shear (lb/sq ft)	0.95	2.47	0.50
Alpha	2.35	Stream Power (lb/ft s)	7.15	60.89	4.23
Frctn Loss (ft)	0.07	Cum Volume (acre-ft)	139.37	212.22	30.00
C & E Loss (ft)	0.46	Cum SA (acres)	14.10	19.08	5.40

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: 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: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water 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)	328.62	Element	Left OB	Channel	Right OB
Vel Head (ft)	4.33	Wt. n-Val.	0.035	0.020	0.021
W.S. Elev (ft)	324.29	Reach Len. (ft)	42.89	42.56	42.65
Crit W.S. (ft)	324.29	Flow Area (sq ft)	3158.34	887.60	2392.11
E.G. Slope (ft/ft)	0.001397	Area (sq ft)	3158.34	887.60	2392.11
Q Total (cfs)	76166.00	Flow (cfs)	27373.11	23429.40	25363.48
Top Width (ft)	597.98	Top Width (ft)	244.33	29.12	324.53
Vel Total (ft/s)	11.83	Avg. Vel. (ft/s)	8.67	26.40	10.60
Max Chl Dpth (ft)	31.91	Hydr. Depth (ft)	12.93	30.48	7.37
Conv. Total (cfs)	2037861.0	Conv. (cfs)	732382.0	626866.0	678613.2
Length Wtd. (ft)	42.71	Wetted Per. (ft)	247.42	30.29	330.19
Min Ch El (ft)	292.38	Shear (lb/sq ft)	1.11	2.56	0.63

Alpha	1.99	Stream Power (lb/ft s)	9.65	67.47	6.70
Frctn Loss (ft)	0.06	Cum Volume (acre-ft)	222.58	376.71	100.00
C & E Loss (ft)	0.01	Cum SA (acres)	16.50	19.08	12.11

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

CROSS SECTION

RIVER: San Juan Creek
REACH: Upper RS: 3155.57*

INPUT
Description:
Station Elevation Data num= 148

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	337.98	72.93	336	123.9	334.56	137.11	334.46	166.4	334.25
169.29	334.24	182.18	334.15	215.36	333.86	255.16	333.52	295.36	333.43
334.56	333.07	336.35	333.07	370.82	333.22	389.37	332.96	398.63	332.75
424.55	332.15	442.62	330.13	454.82	328.65	456.99	328.37	475.45	327.26
482.65	327.09	489.59	327.03	505.84	326.72	515.2	326.62	527.59	326.25
534.28	326.04	551.01	325.34	553.89	325.09	555.21	324.97	564.31	323.89
570.71	322.03	571.64	321.68	574.36	320.62	578.97	319.77	586.21	318.46
596.19	316.66	598.81	316.03	602.22	315.51	606.94	314.82	616.85	313.48
619.13	313.28	619.77	313.16	623.46	312.61	628.28	312.22	628.98	312.16
639.21	311.16	640.03	311.16	641.71	311.14	643.6	311.47	657.24	313.4
660.92	313.83	664.97	313.8	681.41	313.33	686.53	313.18	688.01	313.05
694.21	312.49	699.3	311.94	706.06	310.45	713.36	308.67	716.38	308.45
730.21	308.07	734.15	307.93	736.41	307.78	752.64	306.76	754.54	306.67
777.49	305.39	780.63	305.13	790.64	304.15	791.33	304.11	800.99	303.39
803.54	303.2	804.57	303.01	808.76	302.26	809.73	302.07	811.26	301.46
815.27	299.53	823.27	295.84	827.99	293.52	832.82	291.9	835.22	291.77
835.62	291.73	841.56	291.2	845.74	292.84	846.86	293.24	852.1	295.42
864.25	303.52	864.48	303.67	866.91	305.26	868.74	306.49	871.07	307.52
874.61	309.14	875.28	309.42	877.57	309.8	879.83	310.18	889.46	311.26
890.47	311.37	896.5	311.9	923.96	312.69	935.03	313.98	942.96	314.84
951.48	315.91	957.32	316.55	958.57	316.7	965.48	317.34	973.55	317.42
994.3	317.76	1036.16	317.89	1051.48	317.93	1052.28	317.93	1085.21	318.1
1097.8	318.16	1100.95	318.35	1101.78	318.39	1109.74	318.91	1111.98	319.05
1112.45	319.14	1118.52	320.02	1129.69	321.69	1137.38	322.72	1137.97	322.8
1140.08	323.11	1141.73	323.26	1146.52	323.71	1167.57	325.68	1184.16	326.49
1188.94	326.64	1201	327.36	1212.3	327.7	1213.52	327.74	1219.48	328
1240.3	328.91	1262.34	329.04	1273.76	329.05	1292.16	329.06	1295.25	329.07
1295.95	329.1	1314.73	330.04	1314.79	330.04	1317.99	330.58	1323.07	331.44
1336.32	333.48	1341.79	334.8	1343.48	335.14	1348.37	335.83	1357.6	336.57
1363.44	337.45	1367.11	337.84	1367.25	337.88				

Manning's n Values num= 16

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	336.35	.027	398.63	.027	527.59	.027	586.21	.035
823.27	.02	852.1	.02	1036.16	.02	1085.21	.035	1109.74	.045
1137.38	.02	1146.52	.027	1219.48	.035	1317.99	.043	1367.25	.053

1367.25 .053

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
823.27	852.1	42.89	42.56	42.65	.1	.3

CROSS SECTION OUTPUT Profile #Q50

E.G. Elev (ft)	317.18	Element	Left OB	Channel	Right OB
Vel Head (ft)	4.17	Wt. n-Val.	0.035	0.020	0.020
W.S. Elev (ft)	313.01	Reach Len. (ft)	42.89	42.56	42.65
Crit W.S. (ft)	313.01	Flow Area (sq ft)	935.61	579.87	300.34
E.G. Slope (ft/ft)	0.001473	Area (sq ft)	935.61	579.87	300.34
Q Total (cfs)	19090.00	Flow (cfs)	5216.36	11783.52	2090.11
Top Width (ft)	271.98	Top Width (ft)	168.54	28.83	74.61
Vel Total (ft/s)	10.51	Avg. Vel. (ft/s)	5.58	20.32	6.96
Max Chl Dpth (ft)	21.81	Hydr. Depth (ft)	5.55	20.11	4.03
Conv. Total (cfs)	497423.5	Conv. (cfs)	135921.5	307040.4	54461.5
Length Wtd. (ft)	42.65	Wetted Per. (ft)	170.86	30.48	78.77
Min Ch El (ft)	291.20	Shear (lb/sq ft)	0.50	1.75	0.35
Alpha	2.43	Stream Power (lb/ft s)	2.81	35.55	2.44
Frctn Loss (ft)	0.05	Cum Volume (acre-ft)	134.79	159.26	17.68
C & E Loss (ft)	0.35	Cum SA (acres)	13.53	19.05	4.05

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: 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 OUTPUT Profile #Q100

E.G. Elev (ft)	321.31	Element	Left OB	Channel	Right OB
Vel Head (ft)	6.20	Wt. n-Val.	0.035	0.020	0.020
W.S. Elev (ft)	315.11	Reach Len. (ft)	42.89	42.56	42.65
Crit W.S. (ft)	316.68	Flow Area (sq ft)	1360.45	640.30	475.94
E.G. Slope (ft/ft)	0.002111	Area (sq ft)	1360.45	640.30	475.94
Q Total (cfs)	30242.00	Flow (cfs)	8918.11	16641.11	4682.78
Top Width (ft)	340.10	Top Width (ft)	218.29	28.83	92.98
Vel Total (ft/s)	12.21	Avg. Vel. (ft/s)	6.56	25.99	9.84
Max Chl Dpth (ft)	23.91	Hydr. Depth (ft)	6.23	22.21	5.12
Conv. Total (cfs)	658232.3	Conv. (cfs)	194107.1	362202.0	101923.1
Length Wtd. (ft)	42.67	Wetted Per. (ft)	220.82	30.48	97.26
Min Ch El (ft)	291.20	Shear (lb/sq ft)	0.81	2.77	0.64
Alpha	2.68	Stream Power (lb/ft s)	5.32	71.95	6.35
Frctn Loss (ft)	0.08	Cum Volume (acre-ft)	138.02	211.59	29.54
C & E Loss (ft)	0.08	Cum SA (acres)	13.91	19.05	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: Program found supercritical flow starting at this cross section.

CROSS SECTION OUTPUT Profile #Q100HC

E.G. Elev (ft)	328.26	Element	Left OB	Channel	Right OB
Vel Head (ft)	7.23	Wt. n-Val.	0.035	0.020	0.020
W.S. Elev (ft)	321.03	Reach Len. (ft)	42.89	42.56	42.65
Crit W.S. (ft)	323.05	Flow Area (sq ft)	2753.23	811.21	1593.29
E.G. Slope (ft/ft)	0.002468	Area (sq ft)	2753.23	811.21	1593.29
Q Total (cfs)	76166.00	Flow (cfs)	29283.24	26689.78	20192.98
Top Width (ft)	552.01	Top Width (ft)	249.97	28.83	273.21
Vel Total (ft/s)	14.77	Avg. Vel. (ft/s)	10.64	32.90	12.67
Max Chl Dpth (ft)	29.83	Hydr. Depth (ft)	11.01	28.14	5.83
Conv. Total (cfs)	1533260.0	Conv. (cfs)	589486.4	537278.8	406494.9
Length Wtd. (ft)	42.71	Wetted Per. (ft)	253.08	30.48	277.79
Min Ch El (ft)	291.20	Shear (lb/sq ft)	1.68	4.10	0.88
Alpha	2.13	Stream Power (lb/ft s)	17.83	134.91	11.20
Frctn Loss (ft)	0.08	Cum Volume (acre-ft)	219.67	375.88	98.05
C & E Loss (ft)	0.29	Cum SA (acres)	16.25	19.05	11.82

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

CROSS SECTION

RIVER: San Juan Creek
REACH: Upper RS: 3113.01*

INPUT
Description:
Station Elevation Data num= 148

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	336.33	69.07	335.1	117.35	334.22	129.85	334.13	157.59	333.93
160.34	333.93	172.54	333.84	203.97	333.54	241.66	333.18	279.74	332.96
316.86	332.31	318.55	332.31	351.2	332.44	368.77	332.01	377.54	331.67
402.09	330.7	419.21	327.63	430.75	325.36	432.82	324.95	450.29	323.38
457.11	323.16	463.69	323.08	479.08	322.84	487.95	322.82	499.67	322.42
506.02	322.2	521.86	321.37	524.59	321.04	525.83	320.88	534.45	319.49
540.51	316.87	541.39	316.36	543.98	314.86	548.34	313.73	555.2	312.01
564.65	309.64	567.13	308.94	570.36	308.45	574.83	307.84	584.21	306.62
586.38	306.51	586.98	306.44	590.48	306.33	595.04	306.34	595.7	306.34
605.39	306.27	606.17	306.3	607.76	306.33	609.55	306.9	622.47	310.34
625.96	311.11	629.79	311.24	645.36	311.17	650.21	311.14	651.61	311.1
657.49	310.88	662.3	310.57	668.71	309.77	675.62	308.83	678.48	308.7
691.58	308.41	695.31	308.3	697.45	308.15	712.82	307.1	714.62	306.99
736.35	305.59	739.33	305.25	748.81	304.13	749.47	304.06	758.62	303.04
761.03	302.77	762	302.61	765.98	301.95	766.89	301.78	768.34	301.08
772.14	299.04	779.71	295.26	784.42	292.77	789.22	290.61	791.6	290.55
792	290.51	797.91	290.01	802.01	292.1	803.12	292.58	808.26	295.02
818.46	301.36	818.65	301.48	820.68	302.7	822.23	303.64	824.18	304.57
827.15	306	827.71	306.26	829.64	306.86	831.53	307.45	839.61	309.14
840.46	309.31	845.52	310.15	868.56	311.52	877.85	312.57	884.51	313.28
891.66	314.26	896.56	314.8	897.61	314.92	903.41	315.34	910.18	315.49
927.59	315.95	962.72	316.59	975.58	316.83	976.25	316.83	1003.88	317.07
1014.45	317.16	1017.1	317.27	1017.8	317.29	1024.47	317.7	1026.35	317.82
1026.75	317.87	1031.84	318.43	1041.21	319.48	1047.67	320.04	1048.16	320.08
1049.94	320.25	1051.32	320.32	1055.34	320.57	1073.01	321.66	1086.93	322.15
1090.94	322.25	1101.06	323	1110.55	323.19	1111.57	323.22	1116.57	323.38
1134.04	323.96	1152.54	324.16	1162.12	324.24	1177.57	324.36	1180.15	324.38

1180.75	324.43	1196.51	325.93	1196.56	325.93	1199.24	326.77	1203.51	328.08
1214.63	331.21	1219.22	332.75	1220.63	333.11	1224.73	334.03	1232.48	334.91
1237.39	335.68	1240.47	336.07	1240.58	336.1				

Manning's n Values num= 16

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	318.55	.024	377.54	.031	499.67	.031	555.2	.035
779.71	.02	808.26	.02	962.72	.02	1003.88	.027	1024.47	.032
1047.67	.02	1055.34	.024	1116.57	.043	1199.24	.039	1240.58	.044
1240.58	.044								

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
779.71	808.26	42.89	42.56	42.65	.1 .3

CROSS SECTION OUTPUT Profile #Q50

E.G. Elev (ft)	316.89	Element	Left OB	Channel	Right OB
Vel Head (ft)	6.37	Wt. n-Val.	0.035	0.020	0.020
W.S. Elev (ft)	310.52	Reach Len. (ft)	42.89	42.56	42.65
Crit W.S. (ft)	313.01	Flow Area (sq ft)	737.80	529.20	224.68
E.G. Slope (ft/ft)	0.002387	Area (sq ft)	737.80	529.20	224.68
Q Total (cfs)	19090.00	Flow (cfs)	3986.78	12787.43	2315.79
Top Width (ft)	251.14	Top Width (ft)	179.13	28.55	43.46
Vel Total (ft/s)	12.80	Avg. Vel. (ft/s)	5.40	24.16	10.31
Max Chl Dpth (ft)	20.51	Hydr. Depth (ft)	4.12	18.54	5.17
Conv. Total (cfs)	390771.2	Conv. (cfs)	81609.1	261758.0	47404.0
Length Wtd. (ft)	42.64	Wetted Per. (ft)	182.07	30.81	46.95
Min Ch El (ft)	290.01	Shear (lb/sq ft)	0.60	2.56	0.71
Alpha	2.50	Stream Power (lb/ft s)	3.26	61.85	7.35
Frctn Loss (ft)	0.08	Cum Volume (acre-ft)	133.96	158.71	17.42
C & E Loss (ft)	0.22	Cum SA (acres)	13.36	19.03	3.99

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: Program found supercritical flow starting at this cross section.

CROSS SECTION OUTPUT Profile #Q100

E.G. Elev (ft)	320.99	Element	Left OB	Channel	Right OB
Vel Head (ft)	8.23	Wt. n-Val.	0.035	0.020	0.020
W.S. Elev (ft)	312.76	Reach Len. (ft)	42.89	42.56	42.65
Crit W.S. (ft)	315.33	Flow Area (sq ft)	1215.56	593.13	358.07
E.G. Slope (ft/ft)	0.003030	Area (sq ft)	1215.56	593.13	358.07
Q Total (cfs)	30242.00	Flow (cfs)	8663.97	17424.17	4153.86
Top Width (ft)	327.40	Top Width (ft)	227.49	28.55	71.35
Vel Total (ft/s)	13.96	Avg. Vel. (ft/s)	7.13	29.38	11.60
Max Chl Dpth (ft)	22.75	Hydr. Depth (ft)	5.34	20.78	5.02
Conv. Total (cfs)	549436.7	Conv. (cfs)	157407.0	316562.3	75467.4
Length Wtd. (ft)	42.72	Wetted Per. (ft)	230.80	30.81	74.94
Min Ch El (ft)	290.01	Shear (lb/sq ft)	1.00	3.64	0.90
Alpha	2.72	Stream Power (lb/ft s)	7.10	106.98	10.48
Frctn Loss (ft)	0.11	Cum Volume (acre-ft)	136.76	210.99	29.13
C & E Loss (ft)	0.20	Cum SA (acres)	13.69	19.03	5.23

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 parabolic search method failed to converge on critical depth. The program will try the cross section slice/secant method to find critical depth.

CROSS SECTION OUTPUT Profile #Q100HC

E.G. Elev (ft)	327.94	Element	Left OB	Channel	Right OB
Vel Head (ft)	9.26	Wt. n-Val.	0.035	0.020	0.020
W.S. Elev (ft)	318.68	Reach Len. (ft)	42.89	42.56	42.65
Crit W.S. (ft)	321.58	Flow Area (sq ft)	2616.17	762.16	1155.08
E.G. Slope (ft/ft)	0.003366	Area (sq ft)	2616.17	762.16	1155.08
Q Total (cfs)	76166.00	Flow (cfs)	31778.78	27892.28	16494.94
Top Width (ft)	497.73	Top Width (ft)	243.38	28.55	225.80
Vel Total (ft/s)	16.80	Avg. Vel. (ft/s)	12.15	36.60	14.28
Max Chl Dpth (ft)	28.67	Hydr. Depth (ft)	10.75	26.70	5.12
Conv. Total (cfs)	1312899.0	Conv. (cfs)	547781.6	480788.6	284328.9
Length Wtd. (ft)	42.73	Wetted Per. (ft)	247.87	30.81	229.62
Min Ch El (ft)	290.01	Shear (lb/sq ft)	2.22	5.20	1.06
Alpha	2.11	Stream Power (lb/ft s)	26.94	190.24	15.09
Frctn Loss (ft)	0.12	Cum Volume (acre-ft)	217.02	375.11	96.70
C & E Loss (ft)	0.20	Cum SA (acres)	16.01	19.03	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 parabolic search method failed to converge on critical depth. The program will try the cross section slice/secant method to find critical depth.

CROSS SECTION

RIVER: San Juan Creek
REACH: Upper RS: 3070.453

INPUT
Description:
Station Elevation Data num= 76

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	334.67	122.6	333.79	148.79	333.61	151.38	333.62	162.9	333.53
264.11	332.48	299.16	331.55	300.76	331.55	331.58	331.66	348.17	331.05
356.45	330.58	379.63	329.25	395.79	325.12	408.64	321.54	425.14	319.49
431.58	319.22	452.32	318.96	460.69	319.02	477.75	318.36	492.71	317.4
496.46	316.8	504.6	315.09	510.32	311.7	513.59	309.1	517.71	307.7
535.45	301.84	538.5	301.4	551.58	299.76	554.19	299.73	561.8	300.46
572.31	301.44	573.81	301.52	575.5	302.33	587.7	307.27	590.99	308.4
594.61	308.67	620.76	309.27	656.47	308.68	658.49	308.52	695.22	305.78
707.6	304.02	716.24	302.7	724.05	301.5	729.01	298.56	736.16	294.67
745.62	289.32	747.99	289.32	754.27	288.83	758.29	291.35	764.42	294.63
772.66	299.21	783.23	304.71	789.76	307.01	790.45	307.24	794.54	308.39
826.06	311.72	831.84	312.61	836.65	313.14	899.68	315.72	933.81	316.19
952.74	317.27	957.96	317.35	992.94	317.86	1001.12	318.64	1008.79	318.68
1013.66	318.77	1062.97	319.65	1065.06	319.69	1065.54	319.76	1078.28	321.83
1078.32	321.83	1080.49	322.95	1083.94	324.72	1096.64	330.69	1101.1	332.23
1113.91	334.32								

Manning's n Values num= 6

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	300.76	.02	356.45	.035	957.96	.02	1013.66	.05
1080.49	.035								

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
736.16	764.42	156.12	150 143.31	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
0	656.47	308.68	F

CROSS SECTION OUTPUT Profile #Q50

E.G. Elev (ft)	317.07	Element	Left OB	Channel	Right OB
Vel Head (ft)	8.68	Wt. n-Val.	0.035	0.035	0.035
W.S. Elev (ft)	308.39	Reach Len. (ft)	156.12	150.00	143.31
Crit W.S. (ft)	308.68	Flow Area (sq ft)	307.14	489.57	182.24
E.G. Slope (ft/ft)	0.010454	Area (sq ft)	725.69	489.57	182.24
Q Total (cfs)	19090.00	Flow (cfs)	3320.54	13310.16	2459.30
Top Width (ft)	209.60	Top Width (ft)	151.22	28.26	30.12
Vel Total (ft/s)	19.50	Avg. Vel. (ft/s)	10.81	27.19	13.50
Max Chl Dpth (ft)	19.56	Hydr. Depth (ft)	4.04	17.32	6.05
Conv. Total (cfs)	186705.6	Conv. (cfs)	32475.9	130177.1	24052.6
Length Wtd. (ft)	153.30	Wetted Per. (ft)	78.14	31.23	33.25
Min Ch El (ft)	288.83	Shear (lb/sq ft)	2.57	10.23	3.58
Alpha	1.47	Stream Power (lb/ft s)	27.73	278.13	48.28
Frctn Loss (ft)	0.18	Cum Volume (acre-ft)	133.24	158.22	17.22
C & E Loss (ft)	0.18	Cum SA (acres)	13.20	19.00	3.96

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: During the supercritical standard step calculations, the final energy answer that was computed is greater than the upstream energy. This is not physically possible. Please check your data.

CROSS SECTION OUTPUT Profile #Q100

E.G. Elev (ft)	315.51	Element	Left OB	Channel	Right OB
Vel Head (ft)	3.22	Wt. n-Val.	0.035	0.035	0.035
W.S. Elev (ft)	312.29	Reach Len. (ft)	156.12	150.00	143.31
Crit W.S. (ft)	312.29	Flow Area (sq ft)	1562.52	599.81	371.27
E.G. Slope (ft/ft)	0.004191	Area (sq ft)	1562.52	599.81	371.27
Q Total (cfs)	30242.00	Flow (cfs)	15277.40	11821.89	3142.71
Top Width (ft)	320.45	Top Width (ft)	226.84	28.26	65.35
Vel Total (ft/s)	11.94	Avg. Vel. (ft/s)	9.78	19.71	8.46
Max Chl Dpth (ft)	23.46	Hydr. Depth (ft)	6.89	21.22	5.68
Conv. Total (cfs)	467141.7	Conv. (cfs)	235986.7	182610.2	48544.8
Length Wtd. (ft)	153.69	Wetted Per. (ft)	232.88	31.23	68.69
Min Ch El (ft)	288.83	Shear (lb/sq ft)	1.76	5.02	1.41
Alpha	1.46	Stream Power (lb/ft s)	17.16	99.03	11.97
Frctn Loss (ft)	0.24	Cum Volume (acre-ft)	135.39	210.41	28.77
C & E Loss (ft)	0.80	Cum SA (acres)	13.47	19.00	5.16

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

Manning's n Values num= 6

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.02	41.94	.035	151	.05	360.72	.035	771.77	.02
813.71	.05								

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
590.42	635.17	160.12	168.28	173.88	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
0	553.15	303.51	F

CROSS SECTION OUTPUT Profile #Q50

E.G. Elev (ft)	307.66	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.11	Wt. n-Val.	0.048	0.035	0.035
W.S. Elev (ft)	307.55	Reach Len. (ft)	160.12	168.28	173.88
Crit W.S. (ft)	303.52	Flow Area (sq ft)	6332.84	877.65	123.89
E.G. Slope (ft/ft)	0.000139	Area (sq ft)	6332.84	877.65	123.89
Q Total (cfs)	19090.00	Flow (cfs)	15796.96	3111.73	181.31
Top Width (ft)	540.61	Top Width (ft)	477.67	44.75	18.19
Vel Total (ft/s)	2.60	Avg. Vel. (ft/s)	2.49	3.55	1.46
Max Chl Dpth (ft)	25.24	Hydr. Depth (ft)	13.26	19.61	6.81
Conv. Total (cfs)	1616415.0	Conv. (cfs)	1337582.0	263480.4	15352.4
Length Wtd. (ft)	161.35	Wetted Per. (ft)	487.09	46.67	24.85
Min Ch El (ft)	286.89	Shear (lb/sq ft)	0.11	0.16	0.04
Alpha	1.07	Stream Power (lb/ft s)	0.28	0.58	0.06
Frctn Loss (ft)	0.01	Cum Volume (acre-ft)	120.59	155.86	16.72
C & E Loss (ft)	0.02	Cum SA (acres)	12.07	18.87	3.88

Warning: The conveyance ratio (upstream 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: Hydraulic jump has occurred between this cross section and the previous upstream section.

CROSS SECTION OUTPUT Profile #Q100

E.G. Elev (ft)	304.06	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.55	Wt. n-Val.	0.049	0.035	0.035
W.S. Elev (ft)	303.52	Reach Len. (ft)	160.12	168.28	173.88
Crit W.S. (ft)	303.52	Flow Area (sq ft)	4452.87	697.27	66.15
E.G. Slope (ft/ft)	0.000833	Area (sq ft)	4452.87	697.27	66.15
Q Total (cfs)	30242.00	Flow (cfs)	24860.82	5181.30	199.89
Top Width (ft)	464.59	Top Width (ft)	408.15	44.75	11.70
Vel Total (ft/s)	5.80	Avg. Vel. (ft/s)	5.58	7.43	3.02
Max Chl Dpth (ft)	21.21	Hydr. Depth (ft)	10.91	15.58	5.66
Conv. Total (cfs)	1048063.0	Conv. (cfs)	861573.3	179562.3	6927.2
Length Wtd. (ft)	161.32	Wetted Per. (ft)	416.78	46.67	17.07
Min Ch El (ft)	286.89	Shear (lb/sq ft)	0.56	0.78	0.20
Alpha	1.05	Stream Power (lb/ft s)	3.10	5.77	0.61
Frctn Loss (ft)	0.07	Cum Volume (acre-ft)	124.61	208.18	28.05
C & E Loss (ft)	0.10	Cum SA (acres)	12.33	18.87	5.03

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: 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: During the standard step iterations, when the assumed water surface was set equal to critical

depth, the calculated water 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)	306.98	Element	Left OB	Channel	Right OB
Vel Head (ft)	3.46	Wt. n-Val.	0.049	0.035	0.035
W.S. Elev (ft)	303.52	Reach Len. (ft)	160.12	168.28	173.88
Crit W.S. (ft)	303.52	Flow Area (sq ft)	4452.87	697.27	66.15
E.G. Slope (ft/ft)	0.005281	Area (sq ft)	4452.87	697.27	66.15
Q Total (cfs)	76166.00	Flow (cfs)	62613.22	13049.35	503.42
Top Width (ft)	464.59	Top Width (ft)	408.15	44.75	11.70
Vel Total (ft/s)	14.60	Avg. Vel. (ft/s)	14.06	18.71	7.61
Max Chl Dpth (ft)	21.21	Hydr. Depth (ft)	10.91	15.58	5.66
Conv. Total (cfs)	1048063.0	Conv. (cfs)	861573.3	179562.3	6927.2
Length Wtd. (ft)	161.32	Wetted Per. (ft)	416.78	46.67	17.07
Min Ch El (ft)	286.89	Shear (lb/sq ft)	3.52	4.93	1.28
Alpha	1.05	Stream Power (lb/ft s)	49.53	92.18	9.72
Frctn Loss (ft)	0.47	Cum Volume (acre-ft)	203.38	372.12	94.99
C & E Loss (ft)	0.64	Cum SA (acres)	14.64	18.87	11.25

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

CROSS SECTION

RIVER: San Juan Creek
REACH: Upper RS: 2752.174

INPUT
Description:
Station Elevation Data num= 73

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	321.29	6.27	320.33	26.21	311.56	30.16	309.95	35.67	307.78
67.31	296.08	68.93	295.3	76.45	291.42	81.01	289.06	85.34	287.61
100.15	282.18	111.25	281.77	128.58	281.15	129.09	281.14	137.56	281.15
142.83	280.91	204.86	280.87	214.99	280.78	235.05	281.71	283.02	282.41
292.29	282.62	296.39	282.7	334.19	284.26	382.23	286.8	385.35	286.96
394.87	287.4	415.97	288.85	439.53	292.84	460.86	297.96	470.85	301.23
478.7	301.69	500.76	303.72	555.59	303.24	573.16	303.08	583.43	302.96
584.28	302.9	586.68	302.87	594.58	302.53	600.59	302.27	602.06	301.95
609.68	297.98	615.16	292.87	617.86	291.06	619.4	289.27	621.23	288.45
624.1	287.6	641.11	287.44	653.42	287.46	657.96	287.85	661.04	288.65
665.76	290.82	671.13	295.21	677.16	301.15	682.07	303.4	689.76	306.93
693.98	308.22	698.57	310.19	712.77	315.04	723.07	315.4	730.49	315.22
735.28	315.1	749.12	315	772.96	317.4	786.78	318.8	789.27	319.06
792.13	319.71	810.25	321.22	817.52	321.82	821.71	322.36	835.92	325.48

846.64 328.07 847.52 328.15 849.4 328.28

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	76.45	.05	382.23	.035	730.49	.02	772.96	.05

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
617.86	665.76	29.22	41.66	51.58	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
0	583.43	302.96	F

CROSS SECTION OUTPUT Profile #Q50

			Left OB	Channel	Right OB
E.G. Elev (ft)	307.63	Element			
Vel Head (ft)	0.05	Wt. n-Val.	0.047	0.035	0.035
W.S. Elev (ft)	307.58	Reach Len. (ft)	29.22	41.66	51.58
Crit W.S. (ft)	302.97	Flow Area (sq ft)	10070.05	940.52	180.24
E.G. Slope (ft/ft)	0.000051	Area (sq ft)	10070.05	940.52	180.24
Q Total (cfs)	19090.00	Flow (cfs)	16883.94	2030.89	175.17
Top Width (ft)	655.68	Top Width (ft)	581.65	47.90	26.13
Vel Total (ft/s)	1.71	Avg. Vel. (ft/s)	1.68	2.16	0.97
Max Chl Dpth (ft)	26.80	Hydr. Depth (ft)	17.31	19.63	6.90
Conv. Total (cfs)	2668402.0	Conv. (cfs)	2360039.0	283878.1	24485.2
Length Wtd. (ft)	30.86	Wetted Per. (ft)	591.98	49.61	31.49
Min Ch El (ft)	287.44	Shear (lb/sq ft)	0.05	0.06	0.02
Alpha	1.03	Stream Power (lb/ft s)	0.09	0.13	0.02
Frctn Loss (ft)	0.00	Cum Volume (acre-ft)	90.45	152.35	16.11
C & E Loss (ft)	0.00	Cum SA (acres)	10.12	18.69	3.79

CROSS SECTION OUTPUT Profile #Q100

			Left OB	Channel	Right OB
E.G. Elev (ft)	303.33	Element			
Vel Head (ft)	0.21	Wt. n-Val.	0.048	0.035	0.035
W.S. Elev (ft)	303.12	Reach Len. (ft)	29.22	41.66	51.58
Crit W.S. (ft)	302.97	Flow Area (sq ft)	7524.78	726.85	88.30
E.G. Slope (ft/ft)	0.000286	Area (sq ft)	7524.78	726.85	88.30
Q Total (cfs)	30242.00	Flow (cfs)	26947.54	3124.59	169.88
Top Width (ft)	558.75	Top Width (ft)	495.15	47.90	15.70
Vel Total (ft/s)	3.63	Avg. Vel. (ft/s)	3.58	4.30	1.92
Max Chl Dpth (ft)	22.34	Hydr. Depth (ft)	15.20	15.17	5.62
Conv. Total (cfs)	1788176.0	Conv. (cfs)	1593378.0	184753.3	10044.6
Length Wtd. (ft)	30.72	Wetted Per. (ft)	504.65	49.61	20.13
Min Ch El (ft)	287.44	Shear (lb/sq ft)	0.27	0.26	0.08
Alpha	1.02	Stream Power (lb/ft s)	0.95	1.12	0.15
Frctn Loss (ft)	0.01	Cum Volume (acre-ft)	102.59	205.43	27.75
C & E Loss (ft)	0.01	Cum SA (acres)	10.67	18.69	4.98

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

CROSS SECTION OUTPUT Profile #Q100HC

			Left OB	Channel	Right OB
E.G. Elev (ft)	304.31	Element			
Vel Head (ft)	1.34	Wt. n-Val.	0.048	0.035	0.035
W.S. Elev (ft)	302.97	Reach Len. (ft)	29.22	41.66	51.58
Crit W.S. (ft)	302.97	Flow Area (sq ft)	7450.20	719.51	85.92

E.G. Slope (ft/ft)	0.001864	Area (sq ft)	7450.20	719.51	85.92
Q Total (cfs)	76166.00	Flow (cfs)	67904.31	7842.23	419.46
Top Width (ft)	542.24	Top Width (ft)	478.97	47.90	15.37
Vel Total (ft/s)	9.23	Avg. Vel. (ft/s)	9.11	10.90	4.88
Max Chl Dpth (ft)	22.19	Hydr. Depth (ft)	15.55	15.02	5.59
Conv. Total (cfs)	1764279.0	Conv. (cfs)	1572909.0	181654.3	9716.1
Length Wtd. (ft)		Wetted Per. (ft)	488.44	49.61	19.76
Min Ch El (ft)	287.44	Shear (lb/sq ft)	1.77	1.69	0.51
Alpha	1.02	Stream Power (lb/ft s)	16.18	18.39	2.47
Frctn Loss (ft)		Cum Volume (acre-ft)	181.50	369.38	94.69
C & E Loss (ft)		Cum SA (acres)	13.01	18.69	11.20

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

CROSS SECTION

RIVER: San Juan Creek
REACH: Upper RS: 2710.51*

INPUT
Description:
Station Elevation Data num= 155

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	321.29	6.46	320.35	7.13	320.1	21.89	314.07	27.02	311.95
27.99	311.57	31.1	310.21	31.48	310.05	36.78	307.86	59.22	299.01
61.54	298.14	69.4	295.2	71.07	294.42	72.59	293.67	72.75	293.6
76.5	291.84	78.83	290.72	83.53	288.46	87.25	287.22	87.99	287
96.35	284.26	103.26	282.18	104.29	282.15	109.27	281.95	114.71	281.78
119.7	281.63	132.58	281.2	133.1	281.19	141.84	281.15	147.27	280.93
154.32	280.89	197.78	280.88	211.23	280.88	221.67	280.82	242.36	281.61
247.47	281.67	289.78	282.38	291.82	282.42	301.37	282.63	305.6	282.72
344.58	284.19	352.71	284.57	352.91	284.58	372.85	285.58	394.11	286.63
397.33	286.79	407.14	287.23	418.96	287.96	428.9	288.55	436.02	289.55
452.04	291.94	453.19	292.09	462.37	293.83	466.09	294.65	471.07	295.65
471.65	295.8	475.18	296.75	479.68	298.28	485.48	299.99	488.37	300.21
493.58	300.58	496.68	300.88	500.17	301.2	516.32	302.67	544.48	302.93
549.92	302.95	552.44	303.01	554.73	303.03	569.55	303.14	572.71	303.2
572.86	303.19	580.23	303.05	590.1	302.94	590.97	302.94	601.56	302.93
602.44	302.89	604.91	302.88	609.07	302.77	609.79	302.74	610.24	302.72
613.06	302.55	617.41	302.3	618.57	302.18	619.26	302.11	620.77	301.74
621.12	301.57	621.46	301.41	626.04	299.06	628.63	297.73	632.01	294.87
633.9	293.2	634.28	292.86	634.83	292.49	637.06	290.87	638.55	289.27
640.32	288.44	640.44	288.4	643.1	287.69	645.51	287.63	659.55	287.3
673.42	287.35	674.03	287.39	675.32	287.47	678.54	287.69	679.79	287.94
680.73	288.16	682.01	288.46	682.7	288.73	686.74	290.29	687.32	290.61
692.23	294.65	697.75	300.02	702.24	302.24	709.26	305.72	709.27	305.72
713.13	307.1	717.33	309.06	719.83	310.03	722.56	311.14	729.92	313.79
730.31	313.93	730.34	313.94	741.77	314.44	743.04	314.44	744.67	314.44
750.02	314.35	752.82	314.3	755.34	314.24	766.62	314.14	770.73	314.09
770.88	314.1	797.24	315.94	812.61	317.01	815.38	317.21	818.3	317.69
818.56	317.74	819.29	317.78	828.25	318.32	832.6	318.57	838.07	319.01
838.71	319.05	843.46	319.35	846.79	319.6	850.01	319.95	851.45	320.12
857.11	321.19	862.65	322.32	865.99	323.08	867.25	323.41	868.49	323.74
872.2	324.88	878.18	326.65	879.17	326.87	880.15	326.97	882.24	327.16

Manning's n Values num= 16

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	72.75	.038	78.83	.05	372.85	.047	394.11	.035
500.17	.038	554.73	.047	637.06	.025	673.42	.05	679.79	.047
687.32	.02	722.56	.02	752.82	.025	766.62	.025	812.61	.05
882.24	.05								

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
637.06	687.32	29.22 41.66	51.58	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
0603.0033		302.99	F

CROSS SECTION OUTPUT Profile #Q50

			Left OB	Channel	Right OB
E.G. Elev (ft)	307.63	Element			
Vel Head (ft)	0.04	Wt. n-Val.	0.047	0.032	0.020
W.S. Elev (ft)	307.58	Reach Len. (ft)	29.22	41.66	51.58
Crit W.S. (ft)	303.00	Flow Area (sq ft)	10555.53	991.49	189.05
E.G. Slope (ft/ft)	0.000043	Area (sq ft)	10555.53	991.49	189.05
Q Total (cfs)	19090.00	Flow (cfs)	16654.09	2136.30	299.61
Top Width (ft)	676.68	Top Width (ft)	599.58	50.26	26.84
Vel Total (ft/s)	1.63	Avg. Vel. (ft/s)	1.58	2.15	1.58
Max Chl Dpth (ft)	26.76	Hydr. Depth (ft)	17.60	19.73	7.04
Conv. Total (cfs)	2915197.0	Conv. (cfs)	2543214.0	326229.4	45753.2
Length Wtd. (ft)	30.91	Wetted Per. (ft)	609.45	51.77	32.15
Min Ch El (ft)	287.30	Shear (lb/sq ft)	0.05	0.05	0.02
Alpha	1.03	Stream Power (lb/ft s)	0.07	0.11	0.02
Frctn Loss (ft)	0.00	Cum Volume (acre-ft)	83.53	151.43	15.90
C & E Loss (ft)	0.00	Cum SA (acres)	9.73	18.65	3.76

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

CROSS SECTION OUTPUT Profile #Q100

			Left OB	Channel	Right OB
E.G. Elev (ft)	303.31	Element			
Vel Head (ft)	0.19	Wt. n-Val.	0.048	0.032	0.020
W.S. Elev (ft)	303.13	Reach Len. (ft)	29.22	41.66	51.58
Crit W.S. (ft)	303.00	Flow Area (sq ft)	7908.56	767.47	93.25
E.G. Slope (ft/ft)	0.000246	Area (sq ft)	7908.56	767.47	93.25
Q Total (cfs)	30242.00	Flow (cfs)	26611.45	3337.68	292.87
Top Width (ft)	646.61	Top Width (ft)	579.65	50.26	16.71
Vel Total (ft/s)	3.45	Avg. Vel. (ft/s)	3.36	4.35	3.14
Max Chl Dpth (ft)	22.31	Hydr. Depth (ft)	13.64	15.27	5.58
Conv. Total (cfs)	1928909.0	Conv. (cfs)	1697344.0	212885.5	18679.8
Length Wtd. (ft)	30.76	Wetted Per. (ft)	588.67	51.77	21.06
Min Ch El (ft)	287.30	Shear (lb/sq ft)	0.21	0.23	0.07
Alpha	1.02	Stream Power (lb/ft s)	0.69	0.99	0.21
Frctn Loss (ft)	0.01	Cum Volume (acre-ft)	97.42	204.71	27.64
C & E Loss (ft)	0.01	Cum SA (acres)	10.31	18.65	4.96

Warning: Divided flow computed for this cross-section.
Note: Manning's n values were composited to a single value in the main channel.

CROSS SECTION OUTPUT Profile #Q100HC

			Left OB	Channel	Right OB
E.G. Elev (ft)	304.22	Element			

Vel Head (ft)	1.22	Wt. n-Val.	0.048	0.032	0.020
W.S. Elev (ft)	303.00	Reach Len. (ft)	29.22	41.66	51.58
Crit W.S. (ft)	303.00	Flow Area (sq ft)	7835.86	761.03	91.13
E.G. Slope (ft/ft)	0.001599	Area (sq ft)	7835.86	761.03	91.13
Q Total (cfs)	76166.00	Flow (cfs)	67046.96	8393.63	725.42
Top Width (ft)	621.63	Top Width (ft)	554.92	50.26	16.45
Vel Total (ft/s)	8.77	Avg. Vel. (ft/s)	8.56	11.03	7.96
Max Chl Dpth (ft)	22.18	Hydr. Depth (ft)	14.12	15.14	5.54
Conv. Total (cfs)	1904830.0	Conv. (cfs)	1676773.0	209915.6	18141.9
Length Wtd. (ft)		Wetted Per. (ft)	563.92	51.77	20.77
Min Ch El (ft)	287.30	Shear (lb/sq ft)	1.39	1.47	0.44
Alpha	1.02	Stream Power (lb/ft s)	11.87	16.18	3.49
Frctn Loss (ft)		Cum Volume (acre-ft)	176.37	368.67	94.58
C & E Loss (ft)		Cum SA (acres)	12.66	18.65	11.18

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: Divided flow computed for this cross-section.
Note: Manning's n values were composited to a single value in the main channel.

CROSS SECTION

RIVER: San Juan Creek
REACH: Upper RS: 2668.85*

INPUT
Description:
Station Elevation Data num= 155

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	321.29	6.66	320.37	7.34	320.16	22.55	314.39	27.84	312.34
28.83	311.97	32.03	310.47	32.43	310.29	37.89	307.93	61.01	298.28
63.39	297.38	71.49	294.31	73.21	293.54	74.78	292.81	74.95	292.74
78.81	291.1	81.2	290.03	86.05	287.86	89.88	286.59	90.64	286.38
99.25	283.88	106.38	282.18	107.44	282.15	112.56	281.94	118.17	281.8
123.31	281.67	136.57	281.25	137.11	281.24	146.11	281.16	151.71	280.94
158.97	280.87	203.74	280.88	217.59	280.89	228.35	280.85	249.66	281.5
254.93	281.56	298.51	282.39	300.61	282.42	310.46	282.65	314.81	282.74
354.96	284.12	363.34	284.47	363.55	284.48	384.09	285.44	405.99	286.47
409.3	286.62	419.42	287.05	431.59	287.74	441.83	288.25	449.17	289.08
465.67	291.22	466.85	291.34	476.31	292.68	480.14	293.46	485.27	294.3
485.87	294.45	489.51	295.54	494.14	297.17	500.12	298.75	503.09	299.03
508.46	299.47	511.65	299.8	515.24	300.12	531.89	301.62	560.89	302.38
566.49	302.47	569.09	302.61	571.45	302.67	586.72	303.01	589.98	303.15
590.13	303.15	597.72	302.93	607.89	302.8	608.79	302.8	619.7	302.9
620.6	302.87	623.15	302.89	627.43	302.84	628.17	302.81	628.63	302.79
631.54	302.57	636.03	302.25	637.22	302.06	637.92	301.95	639.48	301.53
639.84	301.37	640.19	301.21	644.92	298.83	647.58	297.48	651.06	294.8
653.01	293.18	653.4	292.85	653.97	292.46	656.27	290.69	657.71	289.26
659.42	288.44	659.53	288.4	662.1	287.77	664.43	287.69	678	287.17
693.42	287.24	694.1	287.27	695.54	287.34	699.11	287.53	700.51	287.74
701.55	287.96	702.97	288.27	703.74	288.52	708.24	290	708.89	290.41
713.34	294.09	718.34	298.89	722.41	301.08	728.77	304.51	728.78	304.52
732.28	305.97	736.09	307.93	738.36	308.94	740.83	310.13	747.5	312.69
747.86	312.83	747.89	312.83	760.46	313.48	761.86	313.5	763.66	313.54
769.54	313.48	772.63	313.45	775.41	313.39	787.82	313.25	792.35	313.19
792.51	313.19	821.53	314.47	838.44	315.22	841.49	315.36	844.71	315.73
844.99	315.76	845.79	315.79	855.65	316.2	860.45	316.37	866.46	316.84

867.17	316.87	872.39	317.13	876.06	317.38	879.61	317.71	881.19	317.89
887.42	318.9	893.52	320.06	897.2	320.93	898.58	321.33	899.94	321.74
904.03	323.21	910.62	325.44	911.71	325.66	912.78	325.79	915.08	326.04

Manning's n Values num= 15

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	74.95	.04	81.2	.05	384.09	.045	405.99	.035
515.24	.04	571.45	.045	656.27	.03	693.42	.05	700.51	.045
708.89	.02	747.5	.02	787.82	.03	838.44	.05	915.08	.05

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
656.27	708.89	29.22	41.66	51.58	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
0622.5767	303.02	F	

CROSS SECTION OUTPUT Profile #Q50

E.G. Elev (ft)	307.62	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.04	Wt. n-Val.	0.047	0.036	0.020
W.S. Elev (ft)	307.58	Reach Len. (ft)	29.22	41.66	51.58
Crit W.S. (ft)	303.02	Flow Area (sq ft)	11052.20	1043.23	195.86
E.G. Slope (ft/ft)	0.000039	Area (sq ft)	11052.20	1043.23	195.86
Q Total (cfs)	19090.00	Flow (cfs)	16817.04	1967.42	305.54
Top Width (ft)	696.70	Top Width (ft)	617.55	52.62	26.53
Vel Total (ft/s)	1.55	Avg. Vel. (ft/s)	1.52	1.89	1.56
Max Chl Dpth (ft)	26.73	Hydr. Depth (ft)	17.90	19.83	7.38
Conv. Total (cfs)	3049404.0	Conv. (cfs)	2686325.0	314272.7	48806.3
Length Wtd. (ft)	30.81	Wetted Per. (ft)	627.11	53.97	31.89
Min Ch El (ft)	287.17	Shear (lb/sq ft)	0.04	0.05	0.02
Alpha	1.01	Stream Power (lb/ft s)	0.07	0.09	0.02
Frctn Loss (ft)	0.00	Cum Volume (acre-ft)	76.28	150.45	15.67
C & E Loss (ft)	0.00	Cum SA (acres)	9.32	18.60	3.73

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

CROSS SECTION OUTPUT Profile #Q100

E.G. Elev (ft)	303.30	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.17	Wt. n-Val.	0.047	0.036	0.020
W.S. Elev (ft)	303.13	Reach Len. (ft)	29.22	41.66	51.58
Crit W.S. (ft)	303.03	Flow Area (sq ft)	8326.72	808.97	98.36
E.G. Slope (ft/ft)	0.000224	Area (sq ft)	8326.72	808.97	98.36
Q Total (cfs)	30242.00	Flow (cfs)	26865.60	3076.59	299.81
Top Width (ft)	675.69	Top Width (ft)	605.75	52.62	17.33
Vel Total (ft/s)	3.28	Avg. Vel. (ft/s)	3.23	3.80	3.05
Max Chl Dpth (ft)	22.28	Hydr. Depth (ft)	13.75	15.37	5.68
Conv. Total (cfs)	2021960.0	Conv. (cfs)	1796216.0	205698.8	20045.2
Length Wtd. (ft)	30.66	Wetted Per. (ft)	614.41	53.97	21.65
Min Ch El (ft)	287.17	Shear (lb/sq ft)	0.19	0.21	0.06
Alpha	1.01	Stream Power (lb/ft s)	0.61	0.80	0.19
Frctn Loss (ft)	0.01	Cum Volume (acre-ft)	91.97	203.96	27.53
C & E Loss (ft)	0.01	Cum SA (acres)	9.91	18.60	4.94

Warning: Divided flow computed for this cross-section.
Note: Manning's n values were composited to a single value in the main channel.

CROSS SECTION OUTPUT Profile #Q100HC

E.G. Elev (ft)	304.12	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.08	Wt. n-Val.	0.047	0.036	0.020
W.S. Elev (ft)	303.04	Reach Len. (ft)	29.22	41.66	51.58
Crit W.S. (ft)	303.03	Flow Area (sq ft)	8273.09	804.29	96.83
E.G. Slope (ft/ft)	0.001444	Area (sq ft)	8273.09	804.29	96.83
Q Total (cfs)	76166.00	Flow (cfs)	67677.44	7742.14	746.42
Top Width (ft)	670.18	Top Width (ft)	600.40	52.62	17.16
Vel Total (ft/s)	8.30	Avg. Vel. (ft/s)	8.18	9.63	7.71
Max Chl Dpth (ft)	22.19	Hydr. Depth (ft)	13.78	15.28	5.64
Conv. Total (cfs)	2004162.0	Conv. (cfs)	1780802.0	203719.6	19640.6
Length Wtd. (ft)	30.66	Wetted Per. (ft)	609.04	53.97	21.46
Min Ch El (ft)	287.17	Shear (lb/sq ft)	1.22	1.34	0.41
Alpha	1.01	Stream Power (lb/ft s)	10.02	12.94	3.14
Frctn Loss (ft)	0.04	Cum Volume (acre-ft)	170.97	367.92	94.47
C & E Loss (ft)	0.03	Cum SA (acres)	12.27	18.60	11.16

Warning: Divided flow computed for this cross-section.
Note: Manning's n values were composited to a single value in the main channel.
Note: Hydraulic jump has occurred between this cross section and the previous upstream section.

CROSS SECTION

RIVER: San Juan Creek
REACH: Upper RS: 2627.20*

INPUT
Description:
Station Elevation Data num= 154

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	321.29	6.85	320.39	7.56	320.21	23.21	314.71	28.65	312.72
29.68	312.36	32.97	310.74	33.38	310.54	39	308.01	62.79	297.56
65.25	296.62	73.59	293.43	75.36	292.66	76.97	291.94	77.14	291.87
81.11	290.36	83.58	289.33	88.56	287.26	92.51	285.96	93.3	285.77
102.16	283.49	109.49	282.19	110.58	282.16	115.86	281.93	121.62	281.81
126.92	281.71	140.57	281.3	141.13	281.28	150.39	281.16	156.15	280.96
163.62	280.85	209.7	280.87	223.96	280.9	235.04	280.89	256.97	281.4
262.39	281.45	307.25	282.39	309.41	282.43	319.54	282.66	324.03	282.76
365.35	284.05	373.97	284.37	374.19	284.37	395.33	285.3	417.87	286.3
421.28	286.45	431.69	286.88	444.22	287.52	454.76	287.95	462.31	288.61
479.29	290.51	480.51	290.59	490.25	291.54	494.19	292.26	499.47	292.94
500.09	293.11	503.83	294.32	508.6	296.06	514.75	297.51	517.82	297.85
523.33	298.36	526.62	298.72	530.32	299.04	547.45	300.56	577.3	301.84
583.07	301.98	585.74	302.21	588.18	302.3	603.89	302.88	607.24	303.11
607.39	303.1	615.21	302.81	625.68	302.65	626.6	302.67	637.83	302.87
638.76	302.86	641.38	302.9	645.79	302.92	646.56	302.89	647.03	302.85
650.02	302.6	654.64	302.2	655.86	301.94	656.59	301.79	658.2	301.32
658.56	301.17	658.92	301.01	663.79	298.61	666.53	297.22	670.11	294.74
672.12	293.17	672.52	292.84	673.1	292.43	675.47	290.5	676.86	289.26
678.51	288.43	678.62	288.39	681.1	287.86	683.35	287.74	696.44	287.04
713.42	287.13	714.17	287.15	715.75	287.21	719.69	287.38	721.23	287.54
722.37	287.77	723.94	288.08	724.79	288.32	729.74	289.71	730.45	290.2
734.44	293.53	738.93	297.77	742.58	299.93	748.28	303.31	751.43	304.85
754.84	306.8	756.88	307.84	759.09	309.12	765.08	311.59	765.4	311.73
765.43	311.73	779.16	312.52	780.69	312.57	782.65	312.64	789.07	312.61
792.44	312.59	795.47	312.53	809.02	312.36	813.96	312.28	814.14	312.28

845.81	313.01	864.27	313.44	867.6	313.52	871.11	313.76	871.42	313.79
872.29	313.8	883.06	314.08	888.29	314.18	894.86	314.67	895.62	314.7
901.33	314.91	905.34	315.16	909.2	315.47	910.93	315.65	917.74	316.6
924.39	317.8	928.4	318.78	929.92	319.26	931.4	319.73	935.86	321.54
943.05	324.24	944.24	324.46	945.41	324.61	947.92	324.91		

Manning's n Values num= 15

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	77.14	.043	83.58	.05	395.33	.043	417.87	.035
530.32	.043	588.18	.043	675.47	.035	713.42	.05	722.37	.043
730.45	.02	779.16	.02	809.02	.035	864.27	.05	947.92	.05

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
675.47	730.45	29.22	41.66	51.58	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
0	642.15	303.05	F

CROSS SECTION OUTPUT Profile #Q50

			Left OB	Channel	Right OB
E.G. Elev (ft)	307.62	Element			
Vel Head (ft)	0.03	Wt. n-Val.	0.046	0.039	0.020
W.S. Elev (ft)	307.59	Reach Len. (ft)	29.22	41.66	51.58
Crit W.S. (ft)	302.20	Flow Area (sq ft)	11559.09	1095.93	199.87
E.G. Slope (ft/ft)	0.000036	Area (sq ft)	11559.09	1095.93	199.87
Q Total (cfs)	19090.00	Flow (cfs)	16964.52	1820.19	305.29
Top Width (ft)	716.42	Top Width (ft)	635.50	54.98	25.93
Vel Total (ft/s)	1.49	Avg. Vel. (ft/s)	1.47	1.66	1.53
Max Chl Dpth (ft)	26.74	Hydr. Depth (ft)	18.19	19.93	7.71
Conv. Total (cfs)	3188748.0	Conv. (cfs)	2833713.0	304039.8	50995.3
Length Wtd. (ft)	30.72	Wetted Per. (ft)	644.92	56.18	31.41
Min Ch El (ft)	287.04	Shear (lb/sq ft)	0.04	0.04	0.01
Alpha	1.00	Stream Power (lb/ft s)	0.06	0.07	0.02
Frctn Loss (ft)	0.00	Cum Volume (acre-ft)	68.70	149.43	15.43
C & E Loss (ft)	0.00	Cum SA (acres)	8.90	18.55	3.70

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

			Left OB	Channel	Right OB
E.G. Elev (ft)	303.29	Element			
Vel Head (ft)	0.15	Wt. n-Val.	0.047	0.039	0.020
W.S. Elev (ft)	303.14	Reach Len. (ft)	29.22	41.66	51.58
Crit W.S. (ft)	303.06	Flow Area (sq ft)	8754.96	851.38	102.93
E.G. Slope (ft/ft)	0.000203	Area (sq ft)	8754.96	851.38	102.93
Q Total (cfs)	30242.00	Flow (cfs)	27089.70	2846.35	305.95
Top Width (ft)	697.90	Top Width (ft)	625.38	54.98	17.54
Vel Total (ft/s)	3.11	Avg. Vel. (ft/s)	3.09	3.34	2.97
Max Chl Dpth (ft)	22.29	Hydr. Depth (ft)	14.00	15.49	5.87
Conv. Total (cfs)	2120762.0	Conv. (cfs)	1899703.0	199604.0	21455.4
Length Wtd. (ft)	30.58	Wetted Per. (ft)	633.86	56.18	21.90
Min Ch El (ft)	287.04	Shear (lb/sq ft)	0.18	0.19	0.06
Alpha	1.00	Stream Power (lb/ft s)	0.54	0.64	0.18
Frctn Loss (ft)	0.01	Cum Volume (acre-ft)	86.24	203.16	27.41
C & E Loss (ft)	0.00	Cum SA (acres)	9.50	18.55	4.92

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

CROSS SECTION OUTPUT Profile #Q100HC

E.G. Elev (ft)	304.05	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.96	Wt. n-Val.	0.047	0.039	0.020
W.S. Elev (ft)	303.08	Reach Len. (ft)	29.22	41.66	51.58
Crit W.S. (ft)	303.06	Flow Area (sq ft)	8719.54	848.27	101.94
E.G. Slope (ft/ft)	0.001304	Area (sq ft)	8719.54	848.27	101.94
Q Total (cfs)	76166.00	Flow (cfs)	68237.51	7163.57	764.92
Top Width (ft)	696.61	Top Width (ft)	624.19	54.98	17.44
Vel Total (ft/s)	7.88	Avg. Vel. (ft/s)	7.83	8.44	7.50
Max Chl Dpth (ft)	22.23	Hydr. Depth (ft)	13.97	15.43	5.84
Conv. Total (cfs)	2109343.0	Conv. (cfs)	1889771.0	198388.0	21183.8
Length Wtd. (ft)	30.58	Wetted Per. (ft)	632.65	56.18	21.79
Min Ch El (ft)	287.04	Shear (lb/sq ft)	1.12	1.23	0.38
Alpha	1.00	Stream Power (lb/ft s)	8.78	10.38	2.86
Frctn Loss (ft)	0.04	Cum Volume (acre-ft)	165.27	367.13	94.35
C & E Loss (ft)	0.03	Cum SA (acres)	11.86	18.55	11.14

Warning: Divided flow computed for this cross-section.
Note: Manning's n values were composited to a single value in the main channel.

CROSS SECTION

RIVER: San Juan Creek
REACH: Upper RS: 2585.54*

INPUT
Description:
Station Elevation Data num= 154

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	321.29	7.05	320.41	7.77	320.26	23.87	315.03	29.47	313.11
30.52	312.76	33.91	311	34.33	310.78	40.1	308.08	64.58	296.83
67.1	295.86	75.68	292.55	77.5	291.78	79.15	291.07	79.33	291.01
83.42	289.61	85.95	288.64	91.08	286.67	95.14	285.32	95.95	285.15
105.06	283.11	112.6	282.19	113.72	282.16	119.15	281.91	125.08	281.83
130.52	281.75	144.57	281.34	145.14	281.33	154.66	281.16	160.59	280.98
168.28	280.84	215.67	280.87	230.33	280.92	241.72	280.92	264.27	281.3
269.85	281.34	315.98	282.39	318.21	282.44	328.63	282.68	333.24	282.78
375.74	283.98	384.61	284.27	384.82	284.27	406.57	285.17	429.75	286.13
433.26	286.28	443.96	286.7	456.85	287.3	467.68	287.65	475.45	288.14
492.92	289.8	494.17	289.84	504.18	290.39	508.24	291.07	513.67	291.59
514.31	291.77	518.15	293.11	523.06	294.96	529.39	296.27	532.54	296.67
538.21	297.25	541.6	297.64	545.4	297.97	563.02	299.51	593.72	301.29
599.65	301.5	602.4	301.81	604.9	301.94	621.05	302.76	624.5	303.06
624.66	303.05	632.7	302.69	643.46	302.5	644.42	302.53	655.96	302.83
656.92	302.84	659.62	302.91	664.15	302.99	664.94	302.96	665.42	302.92
668.5	302.62	673.25	302.15	674.51	301.83	675.26	301.63	676.91	301.12
677.28	300.97	677.65	300.81	682.66	298.38	685.48	296.97	689.16	294.68
691.22	293.15	691.64	292.83	692.24	292.4	694.67	290.31	696.01	289.25
697.6	288.43	697.71	288.38	700.1	287.95	702.26	287.8	714.88	286.9
733.43	287.02	734.24	287.04	735.97	287.08	740.26	287.22	741.95	287.34
743.2	287.57	744.9	287.89	745.83	288.11	751.23	289.41	752.01	289.99
755.55	292.97	759.51	296.64	762.74	298.77	767.8	302.1	770.58	303.72
773.6	305.67	775.4	306.75	777.36	308.11	782.66	310.48	782.94	310.62

792.36	304.54	793.93	305.65	795.63	307.11	800.24	309.38	800.49	309.52
800.52	309.52	816.55	310.6	818.34	310.7	820.63	310.84	828.13	310.87
832.06	310.88	835.6	310.82	851.42	310.59	857.19	310.46	857.39	310.46
894.37	310.08	915.93	309.86	919.81	309.82	923.92	309.83	924.28	309.84
925.3	309.83	937.87	309.84	943.98	309.79	951.65	310.34	952.54	310.35
959.2	310.46	963.88	310.72	968.39	310.99	970.42	311.18	978.36	312.02
986.13	313.29	990.81	314.48	992.58	315.11	994.31	315.72	999.52	318.19
1007.92	321.83	1009.3	322.05	1010.68	322.25	1013.61	322.67		

Manning's n Values num= 16

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	81.53	.047	88.33	.05	417.81	.038	441.63	.035
560.47	.047	621.62	.038	713.88	.045	754.31	.05	764.02	.038
773.58	.02	816.55	.02	857.19	.045	894.37	.045	915.93	.05
1013.61	.05								

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
713.88	773.58	29.22	41.66	51.58	.1 .3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
0681.2966		303.11	F

CROSS SECTION OUTPUT Profile #Q50

E.G. Elev (ft)	307.62	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.03	Wt. n-Val.	0.046	0.045	0.020
W.S. Elev (ft)	307.59	Reach Len. (ft)	29.22	41.66	51.58
Crit W.S. (ft)	301.61	Flow Area (sq ft)	12602.18	1204.40	196.21
E.G. Slope (ft/ft)	0.000030	Area (sq ft)	12602.18	1204.40	196.21
Q Total (cfs)	19090.00	Flow (cfs)	17207.34	1599.26	283.40
Top Width (ft)	754.20	Top Width (ft)	671.48	59.70	23.02
Vel Total (ft/s)	1.36	Avg. Vel. (ft/s)	1.37	1.33	1.44
Max Chl Dpth (ft)	26.77	Hydr. Depth (ft)	18.77	20.17	8.52
Conv. Total (cfs)	3500929.0	Conv. (cfs)	3155666.0	293289.2	51973.2
Length Wtd. (ft)	36.02	Wetted Per. (ft)	681.00	60.70	29.15
Min Ch El (ft)	286.77	Shear (lb/sq ft)	0.03	0.04	0.01
Alpha	1.00	Stream Power (lb/ft s)	0.05	0.05	0.02
Frctn Loss (ft)	0.00	Cum Volume (acre-ft)	52.49	147.23	14.96
C & E Loss (ft)	0.57	Cum SA (acres)	8.02	18.44	3.64

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

Warning: The conveyance ratio (upstream 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)	303.27	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.12	Wt. n-Val.	0.046	0.045	0.020
W.S. Elev (ft)	303.15	Reach Len. (ft)	29.22	41.66	51.58
Crit W.S. (ft)	303.12	Flow Area (sq ft)	9639.64	939.17	107.90
E.G. Slope (ft/ft)	0.000166	Area (sq ft)	9639.64	939.17	107.90

Q Total (cfs)	30242.00	Flow (cfs)	27440.57	2498.86	302.57
Top Width (ft)	738.79	Top Width (ft)	662.20	59.70	16.89
Vel Total (ft/s)	2.83	Avg. Vel. (ft/s)	2.85	2.66	2.80
Max Chl Dpth (ft)	22.33	Hydr. Depth (ft)	14.56	15.73	6.39
Conv. Total (cfs)	2344896.0	Conv. (cfs)	2127679.0	193755.7	23460.5
Length Wtd. (ft)	30.51	Wetted Per. (ft)	670.72	60.70	21.55
Min Ch El (ft)	286.77	Shear (lb/sq ft)	0.15	0.16	0.05
Alpha	1.00	Stream Power (lb/ft s)	0.42	0.43	0.15
Frctn Loss (ft)	0.00	Cum Volume (acre-ft)	73.91	201.45	27.16
C & E Loss (ft)	0.00	Cum SA (acres)	8.64	18.44	4.88

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

CROSS SECTION OUTPUT Profile #Q100HC

E.G. Elev (ft)	303.92	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.79	Wt. n-Val.	0.046	0.045	0.020
W.S. Elev (ft)	303.13	Reach Len. (ft)	29.22	41.66	51.58
Crit W.S. (ft)	303.12	Flow Area (sq ft)	9630.48	938.35	107.67
E.G. Slope (ft/ft)	0.001058	Area (sq ft)	9630.48	938.35	107.67
Q Total (cfs)	76166.00	Flow (cfs)	69112.24	6292.88	760.88
Top Width (ft)	738.75	Top Width (ft)	662.17	59.70	16.87
Vel Total (ft/s)	7.13	Avg. Vel. (ft/s)	7.18	6.71	7.07
Max Chl Dpth (ft)	22.31	Hydr. Depth (ft)	14.54	15.72	6.38
Conv. Total (cfs)	2341691.0	Conv. (cfs)	2124827.0	193472.0	23392.9
Length Wtd. (ft)	30.51	Wetted Per. (ft)	670.69	60.70	21.53
Min Ch El (ft)	286.77	Shear (lb/sq ft)	0.95	1.02	0.33
Alpha	1.00	Stream Power (lb/ft s)	6.81	6.85	2.33
Frctn Loss (ft)	0.03	Cum Volume (acre-ft)	152.96	365.43	94.10
C & E Loss (ft)	0.02	Cum SA (acres)	11.00	18.44	11.10

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

CROSS SECTION

RIVER: San Juan Creek
REACH: Upper RS: 2502.231

INPUT
Description:
Station Elevation Data num= 88

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	321.29	8.2	320.37	25.19	315.67	32.21	313.55	36.23	311.27
68.15	295.38	70.81	294.34	83.53	289.34	83.72	289.29	88.03	288.13
100.4	284.06	110.87	282.35	120.01	282.17	125.74	281.89	137.74	281.82
177.58	280.8	227.59	280.87	284.77	281.12	333.45	282.4	405.87	284.06
406.1	284.06	429.05	284.9	482.11	286.85	501.74	287.2	520.17	288.37
532.06	288.1	536.34	288.68	542.07	288.88	542.74	289.08	551.98	292.74
561.98	294.31	571.54	295.47	575.55	295.81	626.54	300.19	632.8	300.53
635.7	301.01	638.34	301.21	655.39	302.5	659.03	302.97	667.68	302.45
679.04	302.21	700.87	303.14	701.7	303.11	702.21	303.06	710.47	302.05
711.8	301.59	714.73	300.56	715.12	300.42	720.4	297.93	727.26	294.56
729.44	293.12	730.51	292.35	733.08	289.94	735.89	288.36	740.1	287.91
751.77	286.63	774.38	286.8	776.4	286.81	783.38	286.94	784.84	287.18
787.92	287.7	794.23	288.83	795.14	289.58	806.82	299.69	812.45	304.56
813.9	306.1	817.82	308.28	818.03	308.41	818.07	308.42	837.16	309.77

782.98	310.63	797.86	311.56	799.51	311.64	801.64	311.74	808.6	311.74
812.25	311.74	815.54	311.68	830.22	311.48	835.57	311.37	835.76	311.37
870.09	311.54	890.1	311.65	893.71	311.67	897.51	311.8	897.85	311.81
898.79	311.81	910.46	311.96	916.13	311.98	923.25	312.5	924.08	312.53
930.27	312.68	934.61	312.94	938.8	313.23	940.67	313.42	948.05	314.31
955.26	315.54	959.61	316.63	961.25	317.18	962.86	317.73	967.69	319.86
975.48	323.03	976.77	323.25	978.04	323.43	980.77	323.79		

Manning's n Values num= 14

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	79.33	.045	85.95	.05	406.57	.04	429.75	.035
545.4	.045	604.9	.04	694.67	.04	733.43	.05	743.2	.04
752.01	.02	797.86	.02	830.22	.04	890.1	.05		

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
694.67	752.01	29.22	41.66	51.58	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
0661.7233	303.08		F

CROSS SECTION OUTPUT Profile #Q50

E.G. Elev (ft)	307.62	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.03	Wt. n-Val.	0.046	0.042	0.020
W.S. Elev (ft)	307.59	Reach Len. (ft)	29.22	41.66	51.58
Crit W.S. (ft)	302.10	Flow Area (sq ft)	12075.43	1149.71	200.46
E.G. Slope (ft/ft)	0.000033	Area (sq ft)	12075.43	1149.71	200.46
Q Total (cfs)	19090.00	Flow (cfs)	17088.42	1702.18	299.40
Top Width (ft)	735.43	Top Width (ft)	653.50	57.34	24.60
Vel Total (ft/s)	1.42	Avg. Vel. (ft/s)	1.42	1.48	1.49
Max Chl Dpth (ft)	26.75	Hydr. Depth (ft)	18.48	20.05	8.15
Conv. Total (cfs)	3344268.0	Conv. (cfs)	2993622.0	298195.7	52450.7
Length Wtd. (ft)	30.64	Wetted Per. (ft)	662.90	58.42	30.33
Min Ch El (ft)	286.90	Shear (lb/sq ft)	0.04	0.04	0.01
Alpha	1.00	Stream Power (lb/ft s)	0.05	0.06	0.02
Frctn Loss (ft)	0.00	Cum Volume (acre-ft)	60.77	148.36	15.20
C & E Loss (ft)	0.00	Cum SA (acres)	8.46	18.49	3.67

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)	303.28	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.14	Wt. n-Val.	0.047	0.042	0.020
W.S. Elev (ft)	303.14	Reach Len. (ft)	29.22	41.66	51.58
Crit W.S. (ft)	303.09	Flow Area (sq ft)	9192.17	894.84	106.49
E.G. Slope (ft/ft)	0.000184	Area (sq ft)	9192.17	894.84	106.49
Q Total (cfs)	30242.00	Flow (cfs)	27273.34	2661.99	306.68
Top Width (ft)	718.74	Top Width (ft)	643.83	57.34	17.58
Vel Total (ft/s)	2.97	Avg. Vel. (ft/s)	2.97	2.97	2.88
Max Chl Dpth (ft)	22.30	Hydr. Depth (ft)	14.28	15.61	6.06
Conv. Total (cfs)	2230997.0	Conv. (cfs)	2011994.0	196378.8	22624.0
Length Wtd. (ft)	30.51	Wetted Per. (ft)	652.26	58.42	22.02
Min Ch El (ft)	286.90	Shear (lb/sq ft)	0.16	0.18	0.06
Alpha	1.00	Stream Power (lb/ft s)	0.48	0.52	0.16
Frctn Loss (ft)	0.01	Cum Volume (acre-ft)	80.22	202.33	27.28

C & E Loss (ft)	0.00	Cum SA (acres)	9.07	18.49	4.90

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

CROSS SECTION OUTPUT Profile #Q100HC

E.G. Elev (ft)	303.98	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.87	Wt. n-Val.	0.047	0.042	0.020
W.S. Elev (ft)	303.11	Reach Len. (ft)	29.22	41.66	51.58
Crit W.S. (ft)	303.09	Flow Area (sq ft)	9171.15	892.97	105.92
E.G. Slope (ft/ft)	0.001173	Area (sq ft)	9171.15	892.97	105.92
Q Total (cfs)	76166.00	Flow (cfs)	68693.77	6702.77	769.47
Top Width (ft)	718.62	Top Width (ft)	643.75	57.34	17.52
Vel Total (ft/s)	7.49	Avg. Vel. (ft/s)	7.49	7.51	7.26
Max Chl Dpth (ft)	22.27	Hydr. Depth (ft)	14.25	15.57	6.04
Conv. Total (cfs)	2223747.0	Conv. (cfs)	2005587.0	195694.4	22465.5
Length Wtd. (ft)	30.51	Wetted Per. (ft)	652.18	58.42	21.96
Min Ch El (ft)	286.90	Shear (lb/sq ft)	1.03	1.12	0.35
Alpha	1.00	Stream Power (lb/ft s)	7.71	8.40	2.57
Frctn Loss (ft)	0.03	Cum Volume (acre-ft)	159.27	366.30	94.23
C & E Loss (ft)	0.02	Cum SA (acres)	11.44	18.49	11.12

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

CROSS SECTION

RIVER: San Juan Creek
REACH: Upper RS: 2543.88*

INPUT
Description:
Station Elevation Data num= 154

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	321.29	7.24	320.43	7.99	320.32	24.53	315.35	30.28	313.5
31.37	313.15	34.85	311.26	35.28	311.03	41.21	308.16	66.36	296.11
68.96	295.1	77.77	291.66	79.64	290.91	81.34	290.21	81.53	290.15
85.72	288.87	88.33	287.94	93.6	286.07	97.77	284.69	98.6	284.54
107.97	282.73	115.71	282.19	116.87	282.17	122.45	281.9	128.54	281.84
134.13	281.78	148.56	281.39	149.15	281.38	158.94	281.16	165.03	280.99
172.93	280.82	221.63	280.87	236.7	280.93	248.4	280.96	271.58	281.2
277.31	281.23	324.72	282.4	327	282.45	337.71	282.69	342.45	282.8
386.12	283.91	395.24	284.16	395.46	284.16	417.81	285.04	441.63	285.97
445.23	286.11	456.23	286.53	469.48	287.07	480.61	287.35	488.6	287.67
506.54	289.08	507.83	289.09	518.12	289.25	522.29	289.87	527.87	290.23
528.52	290.42	532.48	291.9	537.52	293.85	544.02	295.03	547.26	295.49
553.09	296.15	556.57	296.55	560.47	296.89	578.58	298.46	610.13	300.74
616.22	301.01	619.05	301.41	621.62	301.57	638.22	302.63	641.77	303.02
641.93	303.01	650.19	302.57	661.25	302.36	662.23	302.39	674.1	302.8
675.08	302.83	677.85	302.93	682.51	303.07	683.32	303.04	683.82	302.99
686.98	302.64	691.86	302.1	693.15	301.71	693.92	301.47	695.62	300.91
696.01	300.76	696.39	300.62	701.53	298.16	704.43	296.72	708.21	294.62
710.33	293.14	710.76	292.82	711.37	292.38	713.88	290.13	715.16	289.25
716.7	288.42	716.8	288.37	719.1	288.04	721.18	287.85	733.33	286.77
753.43	286.9	754.31	286.92	756.18	286.94	760.84	287.06	762.66	287.14
764.02	287.38	765.87	287.71	766.88	287.91	772.73	289.12	773.58	289.79
776.65	292.4	780.1	295.51	782.91	297.61	787.31	300.9	789.73	302.6

839.62	309.94	851.87	310.03	872.62	309.7	879.02	309.55	950.32	307.87
951.8	307.84	965.27	307.72	971.82	307.59	980.04	308.17	988.14	308.24
997.99	308.75	1008.67	309.73	1017	311.03	1022.02	312.33	1025.77	313.72
1031.35	316.52	1040.35	320.62	1046.45	321.55				

Manning's n Values num= 9

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	83.72	.05	429.05	.035	575.55	.05	638.34	.035
774.38	.05	784.84	.035	837.16	.02	879.02	.05		

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
733.08	795.14	45.42	45.32	47.38	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
0	700.87	303.14	F

CROSS SECTION OUTPUT Profile #Q50

E.G. Elev (ft)	307.04	Element	Left OB	Channel	Right OB
Vel Head (ft)	5.73	Wt. n-Val.	0.035	0.038	0.035
W.S. Elev (ft)	301.31	Reach Len. (ft)	45.42	45.32	47.38
Crit W.S. (ft)	301.31	Flow Area (sq ft)	98.71	870.36	79.48
E.G. Slope (ft/ft)	0.007702	Area (sq ft)	8931.85	870.36	79.48
Q Total (cfs)	19090.00	Flow (cfs)	954.58	17336.17	799.25
Top Width (ft)	679.51	Top Width (ft)	603.90	62.06	13.55
Vel Total (ft/s)	18.21	Avg. Vel. (ft/s)	9.67	19.92	10.06
Max Chl Dpth (ft)	20.51	Hydr. Depth (ft)	4.82	14.02	5.86
Conv. Total (cfs)	217516.4	Conv. (cfs)	10876.8	197532.8	9106.8
Length Wtd. (ft)	45.41	Wetted Per. (ft)	23.61	63.00	17.92
Min Ch El (ft)	286.63	Shear (lb/sq ft)	2.01	6.64	2.13
Alpha	1.11	Stream Power (lb/ft s)	19.44	132.32	21.44
Frctn Loss (ft)	0.35	Cum Volume (acre-ft)	45.27	146.24	14.80
C & E Loss (ft)	1.46	Cum SA (acres)	7.59	18.38	3.62

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

CROSS SECTION OUTPUT Profile #Q100

E.G. Elev (ft)	303.26	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.11	Wt. n-Val.	0.046	0.038	0.035
W.S. Elev (ft)	303.15	Reach Len. (ft)	45.42	45.32	47.38
Crit W.S. (ft)	303.15	Flow Area (sq ft)	10097.69	984.42	106.34
E.G. Slope (ft/ft)	0.000146	Area (sq ft)	10097.69	984.42	106.34
Q Total (cfs)	30242.00	Flow (cfs)	27150.08	2929.73	162.18
Top Width (ft)	758.27	Top Width (ft)	680.53	62.06	15.68
Vel Total (ft/s)	2.70	Avg. Vel. (ft/s)	2.69	2.98	1.53

Max Chl Dpth (ft)	22.35	Hydr. Depth (ft)	14.84	15.86	6.78
Conv. Total (cfs)	2503572.0	Conv. (cfs)	2247609.0	242536.7	13426.4
Length Wtd. (ft)	45.43	Wetted Per. (ft)	689.26	63.00	20.73
Min Ch El (ft)	286.63	Shear (lb/sq ft)	0.13	0.14	0.05
Alpha	1.01	Stream Power (lb/ft s)	0.36	0.42	0.07
Frctn Loss (ft)	0.02	Cum Volume (acre-ft)	67.29	200.53	27.03
C & E Loss (ft)	0.07	Cum SA (acres)	8.19	18.38	4.86

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

CROSS SECTION OUTPUT Profile #Q100HC

E.G. Elev (ft)	303.87	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.72	Wt. n-Val.	0.046	0.038	0.035
W.S. Elev (ft)	303.15	Reach Len. (ft)	45.42	45.32	47.38
Crit W.S. (ft)	303.15	Flow Area (sq ft)	10097.69	984.42	106.34
E.G. Slope (ft/ft)	0.000926	Area (sq ft)	10097.69	984.42	106.34
Q Total (cfs)	76166.00	Flow (cfs)	68378.85	7378.68	408.47
Top Width (ft)	758.27	Top Width (ft)	680.53	62.06	15.68
Vel Total (ft/s)	6.81	Avg. Vel. (ft/s)	6.77	7.50	3.84
Max Chl Dpth (ft)	22.35	Hydr. Depth (ft)	14.84	15.86	6.78
Conv. Total (cfs)	2503572.0	Conv. (cfs)	2247609.0	242536.7	13426.4
Length Wtd. (ft)	45.46	Wetted Per. (ft)	689.26	63.00	20.73
Min Ch El (ft)	286.63	Shear (lb/sq ft)	0.85	0.90	0.30
Alpha	1.01	Stream Power (lb/ft s)	5.73	6.77	1.14
Frctn Loss (ft)	0.06	Cum Volume (acre-ft)	146.35	364.51	93.98
C & E Loss (ft)	0.01	Cum SA (acres)	10.55	18.38	11.08

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

CROSS SECTION

RIVER: San Juan Creek
REACH: Upper RS: 2456.91*

INPUT
Description:
Station Elevation Data num= 129

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	321.37	1.88	321.16	4.37	320.9	12.99	319.99	23.36	317.16
27.09	316.11	29.78	315.17	36.71	312.6	40.68	310.24	45.09	307.88
52.95	303.61	55.93	302	66.13	297.12	70.89	294.97	72.23	294.35
74.86	293.38	87.43	288.68	87.61	288.63	91.76	287.51	91.87	287.49
98.35	285.53	103.93	283.84	104.1	283.79	114.44	282.16	122.62	281.99
124.87	281.88	127.74	281.75	138.47	281.66	161.06	281.08	166.63	280.92
174.1	280.75	217.3	280.82	266.68	281.05	308.73	282.13	376.84	283.66
377.05	283.66	398.64	284.4	442.86	286.03	459.21	286.32	473.49	286.91
488.05	287.55	510.5	287.97	534.44	288.16	588.85	288.39	617.15	288.5
651.97	288.28	666.29	287.19	675.44	286.79	689.48	286.39	695.36	286.21
708	285.77	719.08	285.84	729.22	285.91	731.88	285.93	741.07	286.11
742.99	286.32	747.05	286.78	755.35	287.79	756.55	288.42	759.34	288.4
764.42	288.41	776.57	288.43	776.7	288.48	776.71	288.48	776.76	288.51
780.06	289.92	784.98	292.04	798.27	297.87	798.72	298.07	804.59	300.62
805.14	300.89	805.73	301.18	806.32	301.45	808.73	302.52	811.42	303.96
811.79	304.08	815.19	305.12	818.7	306.09	818.89	306.14	819.09	306.2
819.17	306.21	828.23	306.74	831.08	307.11	833.05	307.38	834.83	307.64
836.41	307.87	838.19	307.99	843.96	308.45	845.59	308.73	847.37	309.04
849.86	309.28	851.89	309.55	853.19	309.68	854.63	309.81	857.02	309.9
861.91	309.84	868.91	309.87	885.77	309.59	889.04	309.54	895.26	309.4
929.69	308.62	964.46	307.82	965.89	307.8	966.3	307.79	978.97	307.66
985.32	307.54	993.3	308	1001.16	308.04	1010.72	308.44	1015.89	308.95
1020.63	309.43	1020.91	309.45	1024.33	309.99	1028.85	310.88	1031.27	311.57
1033.64	312.25	1037.21	313.63	1042.54	316.28	1049.27	319.38	1051.12	320.14
1056.93	321.02	1058.27	321.08	1060.29	321.16	1061.82	321.13	1064.42	321.02
1064.48	321.03	1064.51	321.03	1068.62	321.18	1078.96	321.55		

Manning's n Values num= 16

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	36.71	.041	74.86	.053	217.3	.064	376.84	.038
534.44	.05	588.85	.038	666.29	.047	741.07	.035	756.55	.025
819.17	.05	861.91	.047	964.46	.032	978.97	.025	1020.63	.053
1051.12	.067								

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
651.97	756.55	45.42	45.32	47.38	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
0	651.97	288.28	F

CROSS SECTION OUTPUT Profile #Q50

E.G. Elev (ft)	289.54	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.86	Wt. n-Val.	0.056	0.045	0.025
W.S. Elev (ft)	288.68	Reach Len. (ft)	45.42	45.32	47.38
Crit W.S. (ft)	288.29	Flow Area (sq ft)	2365.11	224.06	5.38
E.G. Slope (ft/ft)	0.007836	Area (sq ft)	2365.11	224.06	5.38
Q Total (cfs)	19090.00	Flow (cfs)	17954.11	1124.34	11.55
Top Width (ft)	689.73	Top Width (ft)	564.54	104.58	20.61
Vel Total (ft/s)	7.36	Avg. Vel. (ft/s)	7.59	5.02	2.15
Max Chl Dpth (ft)	7.93	Hydr. Depth (ft)	4.19	2.14	0.26
Conv. Total (cfs)	215655.6	Conv. (cfs)	202823.7	12701.4	130.5
Length Wtd. (ft)	45.42	Wetted Per. (ft)	565.50	104.90	20.66
Min Ch El (ft)	285.77	Shear (lb/sq ft)	2.05	1.04	0.13
Alpha	1.03	Stream Power (lb/ft s)	15.53	5.24	0.27
Frctn Loss (ft)	0.36	Cum Volume (acre-ft)	39.38	145.67	14.75
C & E Loss (ft)	0.01	Cum SA (acres)	6.98	18.29	3.60

CROSS SECTION OUTPUT Profile #Q100

E.G. Elev (ft)	291.76	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.82	Wt. n-Val.	0.053	0.044	0.025
W.S. Elev (ft)	290.94	Reach Len. (ft)	45.42	45.32	47.38
Crit W.S. (ft)	288.90	Flow Area (sq ft)	3646.92	460.25	57.88
E.G. Slope (ft/ft)	0.004968	Area (sq ft)	3646.92	460.25	57.88
Q Total (cfs)	30242.00	Flow (cfs)	26891.75	2940.91	409.35
Top Width (ft)	701.03	Top Width (ft)	570.58	104.58	25.87
Vel Total (ft/s)	7.26	Avg. Vel. (ft/s)	7.37	6.39	7.07
Max Chl Dpth (ft)	10.19	Hydr. Depth (ft)	6.39	4.40	2.24
Conv. Total (cfs)	429068.4	Conv. (cfs)	381535.6	41725.1	5807.8
Length Wtd. (ft)	45.46	Wetted Per. (ft)	571.95	104.90	26.39
Min Ch El (ft)	285.77	Shear (lb/sq ft)	1.98	1.36	0.68
Alpha	1.01	Stream Power (lb/ft s)	14.58	8.69	4.81
Frctn Loss (ft)	0.21	Cum Volume (acre-ft)	60.12	199.78	26.94
C & E Loss (ft)	0.01	Cum SA (acres)	7.53	18.29	4.84

CROSS SECTION OUTPUT Profile #Q100HC

E.G. Elev (ft)	300.23	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.87	Wt. n-Val.	0.050	0.044	0.025
W.S. Elev (ft)	299.36	Reach Len. (ft)	45.42	45.32	47.38
Crit W.S. (ft)	292.19	Flow Area (sq ft)	8543.74	1341.48	357.20
E.G. Slope (ft/ft)	0.001665	Area (sq ft)	8543.74	1341.48	357.20
Q Total (cfs)	76166.00	Flow (cfs)	62653.81	10183.24	3328.95
Top Width (ft)	740.26	Top Width (ft)	590.53	104.58	45.15
Vel Total (ft/s)	7.44	Avg. Vel. (ft/s)	7.33	7.59	9.32
Max Chl Dpth (ft)	18.61	Hydr. Depth (ft)	14.47	12.83	7.91
Conv. Total (cfs)	1866396.0	Conv. (cfs)	1535289.0	249533.4	81573.5
Length Wtd. (ft)	45.53	Wetted Per. (ft)	593.62	104.90	47.43
Min Ch El (ft)	285.77	Shear (lb/sq ft)	1.50	1.33	0.78
Alpha	1.01	Stream Power (lb/ft s)	10.97	10.09	7.30
Frctn Loss (ft)	0.07	Cum Volume (acre-ft)	136.63	363.30	93.72
C & E Loss (ft)	0.01	Cum SA (acres)	9.88	18.29	11.05

CROSS SECTION

RIVER: San Juan Creek
REACH: Upper RS: 2411.59*

INPUT
Description:
Station Elevation Data num= 127

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	321.45	2.58	321.16	5.98	320.81	17.77	319.61	28.02	316.86
31.71	315.8	34.36	314.67	41.22	311.65	45.14	309.21	49.49	306.71
57.26	302.14	60.2	300.41	70.28	295.79	74.99	293.89	76.3	293.33
78.9	292.41	91.32	288.02	91.51	287.97	95.61	286.87	95.71	286.84
102.11	285.09	107.63	283.57	107.79	283.53	118.01	281.96	125.22	281.81
127.21	281.72	129.74	281.6	139.21	281.51	159.12	280.98	164.03	280.83
170.63	280.7	207	280.78	248.59	280.97	284	281.85	347.81	283.25
348.01	283.25	368.23	283.9	403.6	285.2	416.69	285.44	428.98	286.22
436.9	286.04	439.76	286.42	443.58	286.56	570.92	287.26	596.69	286.01
610.78	285.67	633.83	285.43	643.48	285.29	664.23	284.91	674.59	284.97

684.06	285.01	687.36	285.06	698.76	285.28	701.14	285.46	706.17	285.87
716.47	286.74	717.96	287.26	723.54	287.21	733.7	287.23	758	287.28
758.19	287.32	758.21	287.32	758.28	287.34	763.1	288.64	770.29	290.58
789.72	296.05	790.38	296.24	798.96	298.61	799.75	298.89	800.62	299.2
801.49	299.45	805	300.48	808.94	301.83	809.48	301.95	814.45	303.02
819.58	303.89	819.87	303.94	820.15	304	820.26	304.01	833.52	304.71
837.68	305.35	840.56	305.81	843.15	306.25	845.47	306.65	848.06	306.84
856.5	307.54	858.88	308.03	861.49	308.6	865.13	308.96	868.1	309.43
869.99	309.65	872.1	309.85	874.41	309.87	879.16	309.7	885.94	309.7
902.3	309.43	905.47	309.38	911.49	309.25	944.88	308.52	978.59	307.78
979.98	307.75	980.38	307.75	992.66	307.61	998.82	307.49	1006.56	307.83
1014.18	307.84	1023.45	308.13	1028.37	308.66	1032.88	309.15	1033.14	309.18
1036.4	309.69	1040.7	310.73	1043	311.45	1045.26	312.17	1048.66	313.53
1053.72	316.05	1060.13	319.02	1061.89	319.67	1067.42	320.5	1070.09	320.61
1074.13	320.77	1077.2	320.71	1082.38	320.5	1082.52	320.51	1082.57	320.51
1090.78	320.81	1111.48	321.56						

Manning's n Values num= 13

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	31.71	.047	70.28	.057	207	.058	347.81	.04
570.92	.045	687.36	.035	717.96	.03	798.96	.05	845.47	.045
978.59	.03	1040.7	.057	1077.2	.063				

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
570.92	717.96	45.42	45.32	47.38	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
0	570.92	287.26	F

CROSS SECTION OUTPUT Profile #Q50

E.G. Elev (ft)	289.18	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.84	Wt. n-Val.	0.054	0.043	0.030
W.S. Elev (ft)	288.34	Reach Len. (ft)	45.42	45.32	47.38
Crit W.S. (ft)	287.40	Flow Area (sq ft)	2182.54	396.43	45.90
E.G. Slope (ft/ft)	0.008118	Area (sq ft)	2182.54	396.43	45.90
Q Total (cfs)	19090.00	Flow (cfs)	16469.13	2410.64	210.23
Top Width (ft)	671.55	Top Width (ft)	480.50	147.04	44.01
Vel Total (ft/s)	7.27	Avg. Vel. (ft/s)	7.55	6.08	4.58
Max Chl Dpth (ft)	7.64	Hydr. Depth (ft)	4.54	2.70	1.04
Conv. Total (cfs)	211869.8	Conv. (cfs)	182782.2	26754.4	2333.2
Length Wtd. (ft)	45.45	Wetted Per. (ft)	481.41	147.23	44.15
Min Ch El (ft)	284.91	Shear (lb/sq ft)	2.30	1.36	0.53
Alpha	1.02	Stream Power (lb/ft s)	17.34	8.30	2.41
Frctn Loss (ft)	0.34	Cum Volume (acre-ft)	37.01	145.35	14.72
C & E Loss (ft)	0.02	Cum SA (acres)	6.44	18.16	3.56

CROSS SECTION OUTPUT Profile #Q100

E.G. Elev (ft)	291.54	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.78	Wt. n-Val.	0.052	0.043	0.030
W.S. Elev (ft)	290.76	Reach Len. (ft)	45.42	45.32	47.38
Crit W.S. (ft)	288.48	Flow Area (sq ft)	3353.41	752.20	163.25
E.G. Slope (ft/ft)	0.004404	Area (sq ft)	3353.41	752.20	163.25
Q Total (cfs)	30242.00	Flow (cfs)	23941.61	5170.44	1129.96
Top Width (ft)	687.34	Top Width (ft)	487.34	147.04	52.96
Vel Total (ft/s)	7.08	Avg. Vel. (ft/s)	7.14	6.87	6.92
Max Chl Dpth (ft)	10.06	Hydr. Depth (ft)	6.88	5.12	3.08

Conv. Total (cfs)	455733.0	Conv. (cfs)	360789.0	77916.1	17027.9
Length Wtd. (ft)	45.50	Wetted Per. (ft)	488.67	147.23	53.42
Min Ch El (ft)	284.91	Shear (lb/sq ft)	1.89	1.40	0.84
Alpha	1.00	Stream Power (lb/ft s)	13.47	9.65	5.82
Frctn Loss (ft)	0.18	Cum Volume (acre-ft)	56.47	199.15	26.82
C & E Loss (ft)	0.02	Cum SA (acres)	6.98	18.16	4.79

CROSS SECTION OUTPUT Profile #Q100HC

E.G. Elev (ft)	300.15	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.84	Wt. n-Val.	0.050	0.043	0.030
W.S. Elev (ft)	299.31	Reach Len. (ft)	45.42	45.32	47.38
Crit W.S. (ft)	291.82	Flow Area (sq ft)	7615.44	2009.51	746.00
E.G. Slope (ft/ft)	0.001511	Area (sq ft)	7615.44	2009.51	746.00
Q Total (cfs)	76166.00	Flow (cfs)	54347.01	15595.76	6223.23
Top Width (ft)	738.39	Top Width (ft)	508.31	147.04	83.03
Vel Total (ft/s)	7.34	Avg. Vel. (ft/s)	7.14	7.76	8.34
Max Chl Dpth (ft)	18.61	Hydr. Depth (ft)	14.98	13.67	8.98
Conv. Total (cfs)	1959292.0	Conv. (cfs)	1398021.0	401184.8	160086.3
Length Wtd. (ft)	45.60	Wetted Per. (ft)	511.33	147.23	84.69
Min Ch El (ft)	284.91	Shear (lb/sq ft)	1.41	1.29	0.83
Alpha	1.01	Stream Power (lb/ft s)	10.03	9.99	6.93
Frctn Loss (ft)	0.07	Cum Volume (acre-ft)	128.20	361.55	93.12
C & E Loss (ft)	0.01	Cum SA (acres)	9.31	18.16	10.98

CROSS SECTION

RIVER: San Juan Creek
REACH: Upper RS: 2366.27*

INPUT
Description:
Station Elevation Data num= 128

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	321.53	3.27	321.16	7.59	320.73	22.56	319.23	32.68	316.55
36.33	315.49	38.95	314.18	45.72	310.71	49.59	308.19	53.89	305.55
61.57	300.66	64.47	298.82	74.43	294.46	79.08	292.81	80.38	292.3
82.95	291.45	95.22	287.36	95.4	287.31	99.45	286.22	99.56	286.2
105.88	284.65	111.33	283.3	111.49	283.26	121.59	281.77	127.83	281.63
129.55	281.55	131.74	281.46	139.94	281.35	157.19	280.89	161.44	280.74
167.15	280.65	196.71	280.73	230.5	280.9	259.28	281.58	318.78	282.85
318.96	282.85	337.82	283.4	364.35	284.38	374.16	284.55	383.38	285.14
389.33	285.01	391.47	285.29	394.33	285.4	394.66	285.49	489.84	285.92
527.09	284.84	546.12	284.55	578.18	284.46	591.6	284.37	620.47	284.05
630.09	284.09	638.91	284.12	642.84	284.18	656.45	284.45	659.29	284.61
665.3	284.95	677.6	285.7	679.37	286.1	687.74	286.03	702.98	286.06
739.43	286.12	739.68	286.16	739.7	286.16	739.8	286.18	746.14	287.36
755.6	289.13	781.17	294.24	782.04	294.41	793.33	296.6	794.37	296.89
795.52	297.22	796.66	297.46	801.28	298.45	806.46	299.69	807.17	299.82
813.71	300.91	820.47	301.7	820.84	301.74	821.22	301.79	821.36	301.8
838.8	302.69	844.28	303.58	848.06	304.23	851.48	304.87	854.53	305.44
857.94	305.69	869.04	306.63	872.18	307.34	875.61	308.15	880.4	308.65
884.3	309.31	886.79	309.62	889.56	309.89	891.81	309.83	896.41	309.56
902.98	309.54	918.82	309.27	921.89	309.22	927.73	309.1	960.07	308.42
992.73	307.73	994.08	307.71	994.46	307.7	1006.36	307.55	1012.33	307.44
1019.82	307.67	1027.21	307.64	1036.19	307.83	1040.85	308.37	1045.13	308.87

1045.38	308.9	1048.47	309.39	1052.55	310.57	1054.73	311.34	1056.87	312.09
1060.1	313.44	1064.91	315.81	1070.99	318.65	1072.65	319.19	1077.91	319.97
1081.92	320.14	1087.97	320.38	1092.57	320.28	1100.35	319.97	1100.55	319.99
1100.63	319.99	1112.95	320.44	1143.99	321.57				

Manning's n Values num= 14

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	32.68	.053	61.57	.06	157.19	.053	318.78	.043
389.33	.05	489.84	.043	642.84	.035	781.17	.05	838.8	.043
960.07	.027	992.73	.035	1060.1	.06	1112.95	.06		

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
489.84	679.37	45.42	45.32	47.38	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
0	489.84	285.92	F

CROSS SECTION OUTPUT Profile #Q50

			Left OB	Channel	Right OB
E.G. Elev (ft)	288.82	Element			
Vel Head (ft)	0.78	Wt. n-Val.	0.052	0.041	0.035
W.S. Elev (ft)	288.04	Reach Len. (ft)	45.42	45.32	47.38
Crit W.S. (ft)	286.96	Flow Area (sq ft)	1937.82	640.16	127.72
E.G. Slope (ft/ft)	0.006919	Area (sq ft)	1937.82	640.16	127.72
Q Total (cfs)	19090.00	Flow (cfs)	14110.50	4309.63	669.87
Top Width (ft)	656.56	Top Width (ft)	396.65	189.53	70.38
Vel Total (ft/s)	7.06	Avg. Vel. (ft/s)	7.28	6.73	5.24
Max Chl Dpth (ft)	7.39	Hydr. Depth (ft)	4.89	3.38	1.81
Conv. Total (cfs)	229506.5	Conv. (cfs)	169641.3	51811.8	8053.4
Length Wtd. (ft)	45.49	Wetted Per. (ft)	397.50	189.63	70.56
Min Ch El (ft)	284.05	Shear (lb/sq ft)	2.11	1.46	0.78
Alpha	1.01	Stream Power (lb/ft s)	15.33	9.82	4.10
Frctn Loss (ft)	0.26	Cum Volume (acre-ft)	34.86	144.81	14.63
C & E Loss (ft)	0.03	Cum SA (acres)	5.98	17.98	3.50

CROSS SECTION OUTPUT Profile #Q100

			Left OB	Channel	Right OB
E.G. Elev (ft)	291.34	Element			
Vel Head (ft)	0.73	Wt. n-Val.	0.052	0.041	0.035
W.S. Elev (ft)	290.61	Reach Len. (ft)	45.42	45.32	47.38
Crit W.S. (ft)	288.01	Flow Area (sq ft)	2968.49	1127.90	326.17
E.G. Slope (ft/ft)	0.003689	Area (sq ft)	2968.49	1127.90	326.17
Q Total (cfs)	30242.00	Flow (cfs)	20067.04	8098.17	2076.79
Top Width (ft)	677.53	Top Width (ft)	404.37	189.53	83.63
Vel Total (ft/s)	6.84	Avg. Vel. (ft/s)	6.76	7.18	6.37
Max Chl Dpth (ft)	9.96	Hydr. Depth (ft)	7.34	5.95	3.90
Conv. Total (cfs)	497918.5	Conv. (cfs)	330393.3	133332.1	34193.2
Length Wtd. (ft)	45.56	Wetted Per. (ft)	405.63	189.63	84.06
Min Ch El (ft)	284.05	Shear (lb/sq ft)	1.69	1.37	0.89
Alpha	1.00	Stream Power (lb/ft s)	11.39	9.83	5.69
Frctn Loss (ft)	0.14	Cum Volume (acre-ft)	53.18	198.17	26.55
C & E Loss (ft)	0.02	Cum SA (acres)	6.52	17.98	4.72

CROSS SECTION OUTPUT Profile #Q100HC

			Left OB	Channel	Right OB
E.G. Elev (ft)	300.08	Element			
Vel Head (ft)	0.82	Wt. n-Val.	0.051	0.041	0.035

W.S. Elev (ft)	299.25	Reach Len. (ft)	45.42	45.32	47.38
Crit W.S. (ft)	291.42	Flow Area (sq ft)	6564.81	2766.31	1234.49
E.G. Slope (ft/ft)	0.001404	Area (sq ft)	6564.81	2766.31	1234.49
Q Total (cfs)	76166.00	Flow (cfs)	44251.45	22311.88	9602.68
Top Width (ft)	740.85	Top Width (ft)	426.05	189.53	125.27
Vel Total (ft/s)	7.21	Avg. Vel. (ft/s)	6.74	8.07	7.78
Max Chl Dpth (ft)	18.60	Hydr. Depth (ft)	15.41	14.60	9.85
Conv. Total (cfs)	2032379.0	Conv. (cfs)	1180785.0	595359.9	256233.5
Length Wtd. (ft)	45.67	Wetted Per. (ft)	429.01	189.63	126.59
Min Ch El (ft)	284.05	Shear (lb/sq ft)	1.34	1.28	0.86
Alpha	1.02	Stream Power (lb/ft s)	9.04	10.32	6.65
Frctn Loss (ft)	0.06	Cum Volume (acre-ft)	120.81	359.07	92.05
C & E Loss (ft)	0.02	Cum SA (acres)	8.82	17.98	10.86

CROSS SECTION

RIVER: San Juan Creek
REACH: Upper RS: 2320.95*

INPUT
Description:
Station Elevation Data num= 128

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	321.61	3.96	321.16	9.2	320.65	27.35	318.85	37.35	316.25
40.94	315.17	43.53	313.68	50.22	309.76	54.05	307.16	58.3	304.38
65.87	299.18	68.75	297.22	78.58	293.12	83.17	291.72	84.46	291.28
86.99	290.49	99.11	286.7	99.29	286.65	103.29	285.57	103.4	285.55
109.64	284.2	115.02	283.02	115.18	282.99	125.16	281.58	130.43	281.45
131.89	281.39	133.74	281.31	140.67	281.2	155.25	280.79	158.85	280.64
163.67	280.61	186.41	280.68	212.41	280.83	234.55	281.31	289.74	282.44
289.92	282.44	307.41	282.91	325.1	283.56	331.64	283.67	337.78	284.06
341.75	283.97	343.17	284.17	345.08	284.23	345.31	284.3	408.75	284.59
457.48	283.67	481.47	283.44	522.52	283.5	539.72	283.45	576.7	283.2
585.6	283.21	593.75	283.23	598.32	283.31	614.14	283.61	617.44	283.75
624.42	284.04	638.72	284.66	640.78	284.94	651.94	284.85	672.27	284.89
720.87	284.97	721.17	285	721.2	285	721.32	285.02	729.18	286.08
740.92	287.67	772.61	292.42	773.7	292.58	787.7	294.59	788.99	294.89
790.41	295.23	791.83	295.47	797.56	296.41	803.98	297.56	804.86	297.68
812.97	298.8	821.35	299.5	821.81	299.54	822.28	299.58	822.46	299.6
844.08	300.66	850.87	301.82	855.57	302.66	859.81	303.49	863.59	304.23
867.82	304.54	881.59	305.71	885.47	306.64	889.72	307.7	895.67	308.34
900.51	309.2	903.59	309.59	907.03	309.93	909.2	309.8	913.66	309.43
920.01	309.37	935.34	309.11	938.32	309.06	943.96	308.95	975.26	308.32
1006.86	307.69	1008.17	307.66	1008.54	307.66	1020.05	307.49	1025.83	307.39
1033.08	307.5	1040.23	307.44	1048.92	307.52	1053.33	308.08	1057.38	308.59
1057.62	308.63	1060.54	309.08	1064.4	310.42	1066.46	311.22	1068.49	312.01
1071.55	313.35	1076.09	315.58	1081.84	318.29	1083.42	318.72	1088.39	319.45
1093.74	319.66	1101.81	319.99	1107.94	319.86	1118.32	319.45	1118.59	319.47
1118.69	319.47	1135.12	320.07	1176.5	321.57				

Manning's n Values num= 15

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	27.35	.058	50.22	.063	125.16	.047	234.55	.045
325.1	.05	408.75	.045	593.75	.035	640.78	.04	772.61	.05
821.35	.04	975.26	.025	1006.86	.04	1081.84	.063	1135.12	.057

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

```
       408.75  640.78            45.42   45.32   47.38            .1       .3
Ineffective Flow     num=       1
   Sta L   Sta R    Elev  Permanent
       0  408.75  284.59       F
```

CROSS SECTION OUTPUT Profile #Q50

E.G. Elev (ft)	288.53	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.69	Wt. n-Val.	0.047	0.043	0.040
W.S. Elev (ft)	287.84	Reach Len. (ft)	45.42	45.32	47.38
Crit W.S. (ft)	286.42	Flow Area (sq ft)	1662.73	971.39	265.32
E.G. Slope (ft/ft)	0.004935	Area (sq ft)	1662.73	971.39	265.32
Q Total (cfs)	19090.00	Flow (cfs)	11609.03	6166.78	1314.19
Top Width (ft)	646.58	Top Width (ft)	313.28	232.03	101.27
Vel Total (ft/s)	6.58	Avg. Vel. (ft/s)	6.98	6.35	4.95
Max Chl Dpth (ft)	7.23	Hydr. Depth (ft)	5.31	4.19	2.62
Conv. Total (cfs)	271734.4	Conv. (cfs)	165247.4	87780.3	18706.7
Length Wtd. (ft)	45.55	Wetted Per. (ft)	314.07	232.09	101.46
Min Ch El (ft)	283.20	Shear (lb/sq ft)	1.63	1.29	0.81
Alpha	1.02	Stream Power (lb/ft s)	11.39	8.19	3.99
Frctn Loss (ft)	0.17	Cum Volume (acre-ft)	32.98	143.97	14.42
C & E Loss (ft)	0.03	Cum SA (acres)	5.61	17.77	3.41

CROSS SECTION OUTPUT Profile #Q100

E.G. Elev (ft)	291.17	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.66	Wt. n-Val.	0.048	0.043	0.040
W.S. Elev (ft)	290.51	Reach Len. (ft)	45.42	45.32	47.38
Crit W.S. (ft)	287.51	Flow Area (sq ft)	2511.53	1591.58	559.83
E.G. Slope (ft/ft)	0.002773	Area (sq ft)	2511.53	1591.58	559.83
Q Total (cfs)	30242.00	Flow (cfs)	16633.43	10542.12	3066.45
Top Width (ft)	672.96	Top Width (ft)	321.83	232.03	119.10
Vel Total (ft/s)	6.49	Avg. Vel. (ft/s)	6.62	6.62	5.48
Max Chl Dpth (ft)	9.90	Hydr. Depth (ft)	7.80	6.86	4.70
Conv. Total (cfs)	574249.9	Conv. (cfs)	315843.6	200179.0	58227.3
Length Wtd. (ft)	45.61	Wetted Per. (ft)	323.03	232.09	119.50
Min Ch El (ft)	283.20	Shear (lb/sq ft)	1.35	1.19	0.81
Alpha	1.01	Stream Power (lb/ft s)	8.92	7.86	4.44
Frctn Loss (ft)	0.10	Cum Volume (acre-ft)	50.32	196.76	26.07
C & E Loss (ft)	0.02	Cum SA (acres)	6.14	17.77	4.61

CROSS SECTION OUTPUT Profile #Q100HC

E.G. Elev (ft)	300.00	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.77	Wt. n-Val.	0.048	0.043	0.040
W.S. Elev (ft)	299.24	Reach Len. (ft)	45.42	45.32	47.38
Crit W.S. (ft)	290.98	Flow Area (sq ft)	5423.49	3615.52	1845.25
E.G. Slope (ft/ft)	0.001186	Area (sq ft)	5423.49	3615.52	1845.25
Q Total (cfs)	76166.00	Flow (cfs)	36845.07	27095.14	12225.79
Top Width (ft)	752.39	Top Width (ft)	342.96	232.03	177.40
Vel Total (ft/s)	7.00	Avg. Vel. (ft/s)	6.79	7.49	6.63
Max Chl Dpth (ft)	18.63	Hydr. Depth (ft)	15.81	15.58	10.40
Conv. Total (cfs)	2212003.0	Conv. (cfs)	1070050.0	786893.6	355059.8
Length Wtd. (ft)	45.72	Wetted Per. (ft)	346.00	232.09	178.47
Min Ch El (ft)	283.20	Shear (lb/sq ft)	1.16	1.15	0.77
Alpha	1.01	Stream Power (lb/ft s)	7.88	8.64	5.07
Frctn Loss (ft)	0.05	Cum Volume (acre-ft)	114.56	355.75	90.37

C & E Loss (ft)	0.01	Cum SA (acres)	8.42	17.77	10.70

CROSS SECTION

RIVER: San Juan Creek
REACH: Upper RS: 2275.63*

INPUT
Description:
Station Elevation Data num= 128

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	321.69	4.66	321.16	10.81	320.56	32.13	318.47	42.01	315.94
45.56	314.86	48.12	313.18	54.72	308.81	58.5	306.13	62.7	303.21
70.18	297.71	73.02	295.63	82.73	291.79	87.27	290.64	88.54	290.25
91.04	289.52	103.01	286.04	103.18	285.99	107.14	284.93	107.24	284.91
113.41	283.76	118.72	282.75	118.88	282.73	128.73	281.38	133.04	281.27
134.23	281.22	135.74	281.17	141.4	281.04	153.32	280.7	156.25	280.55
160.2	280.56	176.12	280.64	194.33	280.75	209.82	281.03	260.71	282.04
260.87	282.04	277	282.41	285.84	282.73	289.11	282.79	292.19	282.99
294.17	282.94	294.88	283.04	295.84	283.07	295.95	283.11	327.67	283.25
387.88	282.49	416.81	282.32	466.87	282.53	487.84	282.53	532.93	282.34
541.1	282.34	548.59	282.33	553.8	282.43	571.83	282.78	575.6	282.89
583.55	283.12	599.84	283.61	602.19	283.78	616.14	283.66	641.55	283.71
702.3	283.82	702.66	283.84	702.69	283.84	702.84	283.85	712.22	284.8
726.23	286.22	764.06	290.6	765.36	290.75	782.07	292.58	783.61	292.89
785.31	293.25	786.99	293.47	793.83	294.37	801.5	295.42	802.55	295.55
812.23	296.7	822.23	297.31	822.78	297.34	823.34	297.38	823.55	297.39
849.37	298.64	857.47	300.05	863.07	301.09	868.13	302.11	872.65	303.02
877.69	303.39	894.13	304.8	898.77	305.95	903.84	307.25	910.94	308.02
916.71	309.08	920.4	309.56	924.5	309.97	926.6	309.76	930.9	309.29
937.05	309.21	951.87	308.95	954.74	308.9	960.2	308.8	990.45	308.22
1021	307.64	1022.26	307.62	1022.62	307.61	1033.75	307.44	1039.33	307.33
1046.34	307.33	1053.25	307.24	1061.65	307.21	1065.81	307.78	1069.63	308.32
1069.85	308.35	1072.61	308.78	1076.25	310.27	1078.2	311.11	1080.11	311.94
1082.99	313.26	1087.28	315.34	1092.7	317.93	1094.19	318.24	1098.88	318.92
1105.56	319.19	1115.65	319.6	1123.32	319.44	1136.28	318.92	1136.62	318.95
1136.75	318.95	1157.28	319.7	1209.02	321.57				

Manning's n Values num= 15

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	32.13	.064	103.01	.041	194.33	.047	260.71	.05
285.84	.047	327.67	.038	548.59	.035	602.19	.045	726.23	.05
801.5	.038	990.45	.022	1021	.045	1098.88	.067	1157.28	.053

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
327.67	602.19	45.42	45.32	47.38	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
0	327.67	283.25	F

CROSS SECTION OUTPUT Profile #Q50

E.G. Elev (ft)	288.32	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.57	Wt. n-Val.	0.044	0.037	0.045
W.S. Elev (ft)	287.75	Reach Len. (ft)	45.42	45.32	47.38
Crit W.S. (ft)	285.75	Flow Area (sq ft)	1324.64	1405.78	476.79
E.G. Slope (ft/ft)	0.003008	Area (sq ft)	1324.64	1405.78	476.79

Q Total (cfs)	19090.00	Flow (cfs)	7936.91	9095.92	2057.17
Top Width (ft)	642.27	Top Width (ft)	230.53	274.52	137.22
Vel Total (ft/s)	5.95	Avg. Vel. (ft/s)	5.99	6.47	4.31
Max Chl Dpth (ft)	7.20	Hydr. Depth (ft)	5.75	5.12	3.47
Conv. Total (cfs)	348067.0	Conv. (cfs)	144713.3	165845.5	37508.3
Length Wtd. (ft)	45.70	Wetted Per. (ft)	231.27	274.55	137.43
Min Ch El (ft)	282.32	Shear (lb/sq ft)	1.08	0.96	0.65
Alpha	1.04	Stream Power (lb/ft s)	6.44	6.22	2.81
Frctn Loss (ft)	0.12	Cum Volume (acre-ft)	31.43	142.73	14.01
C & E Loss (ft)	0.04	Cum SA (acres)	5.33	17.50	3.28

CROSS SECTION OUTPUT Profile #Q100

E.G. Elev (ft)	291.05	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.59	Wt. n-Val.	0.045	0.037	0.045
W.S. Elev (ft)	290.46	Reach Len. (ft)	45.42	45.32	47.38
Crit W.S. (ft)	286.90	Flow Area (sq ft)	1961.75	2149.45	880.21
E.G. Slope (ft/ft)	0.001844	Area (sq ft)	1961.75	2149.45	880.21
Q Total (cfs)	30242.00	Flow (cfs)	11674.36	14455.21	4112.43
Top Width (ft)	674.94	Top Width (ft)	239.80	274.52	160.62
Vel Total (ft/s)	6.06	Avg. Vel. (ft/s)	5.95	6.73	4.67
Max Chl Dpth (ft)	9.91	Hydr. Depth (ft)	8.18	7.83	5.48
Conv. Total (cfs)	704303.2	Conv. (cfs)	271883.2	336646.1	95774.0
Length Wtd. (ft)	45.75	Wetted Per. (ft)	240.93	274.55	160.98
Min Ch El (ft)	282.32	Shear (lb/sq ft)	0.94	0.90	0.63
Alpha	1.04	Stream Power (lb/ft s)	5.58	6.06	2.94
Frctn Loss (ft)	0.08	Cum Volume (acre-ft)	47.99	194.81	25.29
C & E Loss (ft)	0.03	Cum SA (acres)	5.85	17.50	4.46

CROSS SECTION OUTPUT Profile #Q100HC

E.G. Elev (ft)	299.95	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.74	Wt. n-Val.	0.045	0.037	0.046
W.S. Elev (ft)	299.20	Reach Len. (ft)	45.42	45.32	47.38
Crit W.S. (ft)	290.50	Flow Area (sq ft)	4163.32	4551.26	2622.59
E.G. Slope (ft/ft)	0.000902	Area (sq ft)	4163.32	4551.26	2622.59
Q Total (cfs)	76166.00	Flow (cfs)	26803.26	35318.70	14044.05
Top Width (ft)	784.46	Top Width (ft)	259.52	274.52	250.42
Vel Total (ft/s)	6.72	Avg. Vel. (ft/s)	6.44	7.76	5.36
Max Chl Dpth (ft)	18.65	Hydr. Depth (ft)	16.04	16.58	10.47
Conv. Total (cfs)	2535786.0	Conv. (cfs)	892357.8	1175861.0	467566.8
Length Wtd. (ft)	45.86	Wetted Per. (ft)	262.73	274.55	251.29
Min Ch El (ft)	282.32	Shear (lb/sq ft)	0.89	0.93	0.59
Alpha	1.06	Stream Power (lb/ft s)	5.75	7.25	3.15
Frctn Loss (ft)	0.04	Cum Volume (acre-ft)	109.56	351.50	87.94
C & E Loss (ft)	0.03	Cum SA (acres)	8.11	17.50	10.47

CROSS SECTION

RIVER: San Juan Creek
REACH: Upper RS: 2230.316

INPUT
Description:
Station Elevation Data num= 77

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	321.77	5.35	321.16	12.42	320.48	36.92	318.09	46.67	315.64
50.18	314.55	67.1	302.04	74.49	296.23	77.29	294.04	86.88	290.46
91.36	289.56	110.98	284.28	117.17	283.32	122.42	282.48	132.3	281.19
136.57	281.06	151.38	280.6	153.66	280.46	156.72	280.51	185.1	280.76
246.59	281.91	318.28	281.32	352.15	281.2	411.22	281.57	435.96	281.61
489.16	281.48	496.61	281.46	503.43	281.44	563.6	282.62	580.34	282.48
610.83	282.54	683.73	282.67	684.15	282.68	684.19	282.68	684.36	282.69
695.26	283.52	711.54	284.76	757.02	288.92	776.44	290.57	778.23	290.89
780.2	291.27	782.16	291.48	800.24	293.42	811.49	294.59	823.75	295.14
854.65	296.61	864.07	298.29	870.58	299.52	876.46	300.73	881.71	301.81
887.57	302.24	906.67	303.89	912.06	305.25	917.96	306.8	926.21	307.71
932.92	308.96	937.2	309.53	941.97	310.01	948.15	309.15	968.39	308.79
1005.64	308.12	1036.7	307.57	1074.38	306.9	1078.29	307.49	1081.88	308.04
1084.68	308.48	1089.93	310.99	1103.56	317.57	1109.36	318.4	1117.38	318.72
1129.49	319.21	1138.69	319.02	1154.25	318.4	1154.66	318.43	1154.81	318.43
1179.45	319.33	1241.53	321.58						

Manning's n Values num= 11

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	12.42	.07	74.49	.035	136.57	.05	496.61	.035
695.26	.05	782.16	.035	968.39	.02	1005.64	.05	1117.38	.07
1179.45	.05								

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
246.59	563.6	42.6	40.1	40.87	.1	.3

CROSS SECTION OUTPUT Profile #Q50

E.G. Elev (ft)	288.16	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.43	Wt. n-Val.	0.047	0.046	0.036
W.S. Elev (ft)	287.72	Reach Len. (ft)	42.60	40.10	40.87
Crit W.S. (ft)		Flow Area (sq ft)	892.33	1942.99	778.20
E.G. Slope (ft/ft)	0.002354	Area (sq ft)	892.33	1942.99	778.20
Q Total (cfs)	19090.00	Flow (cfs)	4579.08	10151.60	4359.32
Top Width (ft)	645.72	Top Width (ft)	148.40	317.01	180.32
Vel Total (ft/s)	5.28	Avg. Vel. (ft/s)	5.13	5.22	5.60
Max Chl Dpth (ft)	7.26	Hydr. Depth (ft)	6.01	6.13	4.32
Conv. Total (cfs)	393469.6	Conv. (cfs)	94380.8	209237.6	89851.3
Length Wtd. (ft)	40.76	Wetted Per. (ft)	149.10	317.03	180.53
Min Ch El (ft)	281.20	Shear (lb/sq ft)	0.88	0.90	0.63
Alpha	1.00	Stream Power (lb/ft s)	4.51	4.71	3.55
Frctn Loss (ft)	0.09	Cum Volume (acre-ft)	30.27	140.99	13.33
C & E Loss (ft)	0.01	Cum SA (acres)	5.13	17.19	3.10

CROSS SECTION OUTPUT Profile #Q100

E.G. Elev (ft)	290.94	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.48	Wt. n-Val.	0.047	0.046	0.037
W.S. Elev (ft)	290.45	Reach Len. (ft)	42.60	40.10	40.87
Crit W.S. (ft)		Flow Area (sq ft)	1312.25	2809.31	1312.77
E.G. Slope (ft/ft)	0.001611	Area (sq ft)	1312.25	2809.31	1312.77
Q Total (cfs)	30242.00	Flow (cfs)	6968.54	15563.60	7709.86
Top Width (ft)	688.17	Top Width (ft)	159.68	317.01	211.48
Vel Total (ft/s)	5.56	Avg. Vel. (ft/s)	5.31	5.54	5.87
Max Chl Dpth (ft)	9.99	Hydr. Depth (ft)	8.22	8.86	6.21
Conv. Total (cfs)	753381.3	Conv. (cfs)	173598.6	387716.7	192066.0
Length Wtd. (ft)	40.77	Wetted Per. (ft)	160.72	317.03	211.81

Min Ch El (ft)	281.20	Shear (lb/sq ft)	0.82	0.89	0.62
Alpha	1.00	Stream Power (lb/ft s)	4.36	4.94	3.66
Frctn Loss (ft)	0.06	Cum Volume (acre-ft)	46.28	192.23	24.10
C & E Loss (ft)	0.01	Cum SA (acres)	5.64	17.19	4.25

CROSS SECTION OUTPUT Profile #Q100HC

E.G. Elev (ft)	299.87	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.63	Wt. n-Val.	0.045	0.046	0.038
W.S. Elev (ft)	299.24	Reach Len. (ft)	42.60	40.10	40.87
Crit W.S. (ft)		Flow Area (sq ft)	2800.44	5595.79	3589.16
E.G. Slope (ft/ft)	0.000843	Area (sq ft)	2800.44	5595.79	3589.16
Q Total (cfs)	76166.00	Flow (cfs)	17160.19	35601.22	23404.58
Top Width (ft)	798.46	Top Width (ft)	175.93	317.01	305.52
Vel Total (ft/s)	6.35	Avg. Vel. (ft/s)	6.13	6.36	6.52
Max Chl Dpth (ft)	18.78	Hydr. Depth (ft)	15.92	17.65	11.75
Conv. Total (cfs)	2622741.0	Conv. (cfs)	590903.3	1225912.0	805925.9
Length Wtd. (ft)	40.81	Wetted Per. (ft)	179.42	317.03	306.39
Min Ch El (ft)	281.20	Shear (lb/sq ft)	0.82	0.93	0.62
Alpha	1.00	Stream Power (lb/ft s)	5.04	5.91	4.02
Frctn Loss (ft)	0.03	Cum Volume (acre-ft)	105.93	346.22	84.56
C & E Loss (ft)	0.01	Cum SA (acres)	7.88	17.19	10.17

CROSS SECTION

RIVER: San Juan Creek
REACH: Upper RS: 2190.21*

INPUT
Description:
Station Elevation Data num= 162

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	321.75	5.66	321.1	9.7	320.69	10.8	320.58	13.14	320.4
18.48	319.98	19.92	319.8	29.09	318.88	33.96	318.39	35.21	318.29
39.07	317.93	41.78	317.33	47.45	316.08	49.39	315.64	52.91	314.49
54.81	313.19	58.44	310.46	66.36	304.65	69.93	301.93	71.05	301.04
75.45	297.48	76.53	296.66	77.36	296.09	77.94	295.69	80.17	294.14
88.98	291.09	89.82	290.8	94.32	289.91	96.05	289.47	100.92	288.08
106.98	286.57	114.05	284.81	118.99	284.06	120.27	283.88	121.34	283.72
124.38	283.32	125.55	283.14	129.64	282.62	131.18	282.45	135.49	281.86
135.95	281.84	139.78	281.63	148.13	281.17	150.31	281.05	154.67	280.82
156.96	280.64	159.17	280.61	160.04	280.62	161.38	280.61	188.58	280.85
223.06	281.43	229.25	281.53	250.4	281.83	262.53	281.7	269.96	281.62
270.96	281.6	285.31	281.63	288.34	281.64	290.82	281.63	309.19	281.53
311.46	281.53	323.15	281.48	328.12	281.41	329.25	281.4	334.34	281.34
353.1	281.17	387.47	280.95	401.62	280.92	454.09	281.31	476.07	281.38
500.44	281.35	523.33	281.34	529.95	281.33	536	281.33	550.98	281.64
580.86	282.25	589.45	282.45	603.96	282.36	605.09	282.37	630.38	282.51
693.55	282.85	693.91	282.86	693.94	282.86	694.09	282.87	703.39	283.6
703.54	283.61	717.64	284.77	757.05	288.6	776.4	290.49	776.99	290.59
778.18	290.79	780.15	291.15	782.1	291.35	784.2	291.58	800.1	293.2
804.47	293.63	811.3	294.35	823.51	295	826.94	295.19	833.44	295.56
837.94	295.79	845.83	296.2	854.28	296.58	860.5	297.56	863.66	298.06
870.14	299.13	875.99	300.19	877.53	300.47	881.22	301.14	887.06	301.55
906.07	303.09	911.44	304.29	917.32	305.66	925.53	306.49	932.21	307.61
933.09	307.71	936.47	308.12	941.22	308.57	947.38	307.87	967.53	307.7

978.03	307.61	993.83	307.41	1003.99	307.38	1004.62	307.37	1014.65	307.26
1035.55	307.35	1036.65	307.35	1050.08	307.36	1052	307.35	1053.96	307.35
1066.35	307.3	1069.85	307.28	1071.77	307.33	1073.07	307.36	1076.96	308.01
1080.53	308.62	1083.32	309.1	1088.55	311.45	1091.06	312.59	1091.31	312.7
1091.72	312.87	1102.12	317.34	1107.9	318.14	1109.81	318.24	1110.23	318.25
1111.69	318.3	1116.42	318.46	1129.3	318.92	1135.32	318.84	1139.08	318.79
1155.62	318.35	1156.06	318.38	1156.22	318.38	1162.84	318.61	1182.41	319.29
1194.97	319.72	1199.62	319.85	1203.38	319.97	1210.38	320.22	1247.42	321.54
1247.59	321.55	1248.41	321.57						

Manning's n Values num= 17

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.033	13.14	.065	39.07	.04	139.78	.053	154.67	.065
229.25	.037	334.34	.035	589.45	.048	693.55	.035	717.64	.048
804.47	.035	967.53	.033	993.83	.02	1035.55	.05	1109.81	.053
1129.3	.07	1194.97	.05						

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
250.4	589.45	42.6	40.1	40.87	.1 .3

CROSS SECTION OUTPUT Profile #Q50

			Left OB	Channel	Right OB
E.G. Elev (ft)	288.06	Element			
Vel Head (ft)	0.50	Wt. n-Val.	0.054	0.035	0.046
W.S. Elev (ft)	287.56	Reach Len. (ft)	42.60	40.10	40.87
Crit W.S. (ft)		Flow Area (sq ft)	841.93	2087.99	649.76
E.G. Slope (ft/ft)	0.001990	Area (sq ft)	841.93	2087.99	649.76
Q Total (cfs)	19090.00	Flow (cfs)	3397.05	13117.83	2575.12
Top Width (ft)	643.38	Top Width (ft)	147.40	339.05	156.93
Vel Total (ft/s)	5.33	Avg. Vel. (ft/s)	4.03	6.28	3.96
Max Chl Dpth (ft)	6.95	Hydr. Depth (ft)	5.71	6.16	4.14
Conv. Total (cfs)	427962.0	Conv. (cfs)	76155.4	294077.3	57729.4
Length Wtd. (ft)	40.62	Wetted Per. (ft)	147.99	339.07	157.14
Min Ch El (ft)	280.92	Shear (lb/sq ft)	0.71	0.76	0.51
Alpha	1.13	Stream Power (lb/ft s)	2.85	4.81	2.04
Frctn Loss (ft)	0.08	Cum Volume (acre-ft)	29.42	139.14	12.66
C & E Loss (ft)	0.00	Cum SA (acres)	4.99	16.89	2.95

CROSS SECTION OUTPUT Profile #Q100

			Left OB	Channel	Right OB
E.G. Elev (ft)	290.87	Element			
Vel Head (ft)	0.55	Wt. n-Val.	0.053	0.035	0.046
W.S. Elev (ft)	290.32	Reach Len. (ft)	42.60	40.10	40.87
Crit W.S. (ft)		Flow Area (sq ft)	1262.70	3023.10	1121.63
E.G. Slope (ft/ft)	0.001358	Area (sq ft)	1262.70	3023.10	1121.63
Q Total (cfs)	30242.00	Flow (cfs)	5357.53	20073.14	4811.33
Top Width (ft)	682.42	Top Width (ft)	158.16	339.05	185.22
Vel Total (ft/s)	5.59	Avg. Vel. (ft/s)	4.24	6.64	4.29
Max Chl Dpth (ft)	9.71	Hydr. Depth (ft)	7.98	8.92	6.06
Conv. Total (cfs)	820735.0	Conv. (cfs)	145397.5	544763.2	130574.3
Length Wtd. (ft)	40.64	Wetted Per. (ft)	159.10	339.07	185.56
Min Ch El (ft)	280.92	Shear (lb/sq ft)	0.67	0.76	0.51
Alpha	1.13	Stream Power (lb/ft s)	2.85	5.02	2.20
Frctn Loss (ft)	0.05	Cum Volume (acre-ft)	45.02	189.55	22.95
C & E Loss (ft)	0.00	Cum SA (acres)	5.48	16.89	4.07

CROSS SECTION OUTPUT Profile #Q100HC

E.G. Elev (ft)	299.83	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.72	Wt. n-Val.	0.051	0.035	0.045
W.S. Elev (ft)	299.11	Reach Len. (ft)	42.60	40.10	40.87
Crit W.S. (ft)		Flow Area (sq ft)	2755.07	6003.39	3169.42
E.G. Slope (ft/ft)	0.000740	Area (sq ft)	2755.07	6003.39	3169.42
Q Total (cfs)	76166.00	Flow (cfs)	13746.35	46478.30	15941.36
Top Width (ft)	796.59	Top Width (ft)	176.97	339.05	280.57
Vel Total (ft/s)	6.39	Avg. Vel. (ft/s)	4.99	7.74	5.03
Max Chl Dpth (ft)	18.50	Hydr. Depth (ft)	15.57	17.71	11.30
Conv. Total (cfs)	2800061.0	Conv. (cfs)	505351.6	1708664.0	586045.9
Length Wtd. (ft)	40.69	Wetted Per. (ft)	180.15	339.07	281.41
Min Ch El (ft)	280.92	Shear (lb/sq ft)	0.71	0.82	0.52
Alpha	1.14	Stream Power (lb/ft s)	3.52	6.33	2.62
Frctn Loss (ft)	0.03	Cum Volume (acre-ft)	103.21	340.88	81.39
C & E Loss (ft)	0.00	Cum SA (acres)	7.71	16.89	9.89

CROSS SECTION

RIVER: San Juan Creek
REACH: Upper RS: 2150.11*

INPUT
Description:
Station Elevation Data num= 162

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	321.72	5.97	321.04	10.23	320.59	11.39	320.48	13.87	320.32
19.5	319.96	21.01	319.75	30.69	318.75	35.82	318.22	37.15	318.13
41.22	317.76	44.07	317.22	50.05	316.07	52.1	315.64	55.65	314.43
57.55	313.21	61.2	310.44	69.17	304.63	72.76	301.82	73.88	300.91
78.31	297.25	79.39	296.44	80.23	295.95	80.81	295.6	83.06	294.24
91.91	291.41	92.75	291.15	97.28	290.27	99.02	289.84	103.92	288.36
110.01	286.97	117.12	285.34	122.08	284.6	123.38	284.43	124.45	284.28
127.5	283.97	128.68	283.8	132.79	283.29	134.34	283.15	138.67	282.54
139.14	282.51	142.99	282.2	151.39	281.54	153.58	281.36	157.96	281.04
160.27	280.82	162.49	280.73	163.36	280.72	164.71	280.71	192.05	280.93
226.72	281.46	232.94	281.55	254.22	281.75	270.01	281.56	279.68	281.44
280.98	281.41	299.66	281.55	303.61	281.58	306.83	281.57	330.75	281.5
333.71	281.49	348.92	281.46	355.4	281.35	356.88	281.34	363.5	281.26
387.92	281.02	432.66	280.67	451.09	280.63	496.97	281.05	516.18	281.14
537.49	281.16	557.5	281.2	563.28	281.21	568.58	281.21	581.67	281.5
607.8	282.07	615.31	282.28	627.58	282.25	628.53	282.25	649.93	282.48
703.36	283.02	703.67	283.03	703.7	283.03	703.82	283.04	711.69	283.69
711.81	283.7	723.74	284.78	757.08	288.27	776.36	290.4	776.95	290.51
778.14	290.69	780.09	291.02	782.04	291.23	784.13	291.44	799.96	292.98
804.31	293.39	811.12	294.1	823.27	294.86	826.68	295.08	833.16	295.5
837.64	295.75	845.5	296.18	853.91	296.55	860.1	297.4	863.24	297.82
869.7	298.75	875.53	299.65	877.06	299.89	880.73	300.48	886.54	300.86
905.48	302.29	910.82	303.33	916.67	304.51	924.85	305.27	931.5	306.25
932.38	306.35	935.75	306.72	940.48	307.12	946.6	306.59	966.67	306.61
977.13	306.62	992.86	306.51	1002.97	306.62	1003.6	306.62	1013.58	306.57
1034.39	307.13	1035.5	307.16	1048.87	307.4	1050.78	307.43	1052.73	307.46
1065.07	307.58	1068.55	307.61	1070.46	307.74	1071.75	307.82	1075.63	308.54
1079.19	309.2	1081.96	309.72	1087.17	311.91	1089.67	312.97	1089.91	313.07
1090.32	313.22	1100.68	317.12	1106.43	317.87	1108.45	318.01	1108.91	318.01
1110.45	318.06	1115.46	318.21	1129.1	318.63	1135.49	318.58	1139.47	318.57
1156.99	318.3	1157.45	318.32	1157.62	318.32	1164.64	318.56	1185.37	319.24

1198.68	319.68	1203.6	319.79	1207.59	319.9	1215	320.16	1254.25	321.54
1254.42	321.54	1255.29	321.56						

Manning's n Values num= 17

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.031	13.87	.06	37.15	.045	142.99	.056	157.96	.06
232.94	.039	254.22	.035	615.31	.046	711.69	.035	757.08	.046
823.27	.035	977.13	.031	1002.97	.02	1034.39	.05	1129.1	.056
1139.47	.07	1198.68	.05						

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
254.22	615.31	42.6	40.1	40.87	.1	.3

CROSS SECTION OUTPUT Profile #Q50

E.G. Elev (ft)	287.98	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.49	Wt. n-Val.	0.054	0.035	0.045
W.S. Elev (ft)	287.49	Reach Len. (ft)	42.60	40.10	40.87
Crit W.S. (ft)		Flow Area (sq ft)	804.44	2260.21	540.74
E.G. Slope (ft/ft)	0.001833	Area (sq ft)	804.44	2260.21	540.74
Q Total (cfs)	19090.00	Flow (cfs)	3080.18	13953.65	2056.16
Top Width (ft)	641.89	Top Width (ft)	146.48	361.09	134.31
Vel Total (ft/s)	5.29	Avg. Vel. (ft/s)	3.83	6.17	3.80
Max Chl Dpth (ft)	6.86	Hydr. Depth (ft)	5.49	6.26	4.03
Conv. Total (cfs)	445860.3	Conv. (cfs)	71939.9	325897.3	48023.1
Length Wtd. (ft)	40.56	Wetted Per. (ft)	146.99	361.11	134.53
Min Ch El (ft)	280.63	Shear (lb/sq ft)	0.63	0.72	0.46
Alpha	1.13	Stream Power (lb/ft s)	2.40	4.42	1.75
Frctn Loss (ft)	0.07	Cum Volume (acre-ft)	28.62	137.13	12.10
C & E Loss (ft)	0.00	Cum SA (acres)	4.84	16.57	2.81

CROSS SECTION OUTPUT Profile #Q100

E.G. Elev (ft)	290.81	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.54	Wt. n-Val.	0.053	0.035	0.044
W.S. Elev (ft)	290.27	Reach Len. (ft)	42.60	40.10	40.87
Crit W.S. (ft)		Flow Area (sq ft)	1227.44	3265.70	950.78
E.G. Slope (ft/ft)	0.001246	Area (sq ft)	1227.44	3265.70	950.78
Q Total (cfs)	30242.00	Flow (cfs)	4944.73	21243.49	4053.78
Top Width (ft)	677.96	Top Width (ft)	156.96	361.09	159.91
Vel Total (ft/s)	5.56	Avg. Vel. (ft/s)	4.03	6.51	4.26
Max Chl Dpth (ft)	9.64	Hydr. Depth (ft)	7.82	9.04	5.95
Conv. Total (cfs)	856732.9	Conv. (cfs)	140080.5	601811.9	114840.4
Length Wtd. (ft)	40.59	Wetted Per. (ft)	157.83	361.11	160.28
Min Ch El (ft)	280.63	Shear (lb/sq ft)	0.60	0.70	0.46
Alpha	1.13	Stream Power (lb/ft s)	2.44	4.58	1.97
Frctn Loss (ft)	0.05	Cum Volume (acre-ft)	43.80	186.65	21.98
C & E Loss (ft)	0.00	Cum SA (acres)	5.33	16.57	3.91

CROSS SECTION OUTPUT Profile #Q100HC

E.G. Elev (ft)	299.80	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.71	Wt. n-Val.	0.052	0.035	0.043
W.S. Elev (ft)	299.09	Reach Len. (ft)	42.60	40.10	40.87
Crit W.S. (ft)		Flow Area (sq ft)	2728.43	6447.51	2784.39
E.G. Slope (ft/ft)	0.000690	Area (sq ft)	2728.43	6447.51	2784.39
Q Total (cfs)	76166.00	Flow (cfs)	12891.75	49114.45	14159.80

Top Width (ft)	795.79	Top Width (ft)	178.13	361.09	256.56
Vel Total (ft/s)	6.37	Avg. Vel. (ft/s)	4.72	7.62	5.09
Max Chl Dpth (ft)	18.46	Hydr. Depth (ft)	15.32	17.86	10.85
Conv. Total (cfs)	2899824.0	Conv. (cfs)	490820.1	1869906.0	539097.9
Length Wtd. (ft)	40.65	Wetted Per. (ft)	181.11	361.11	257.40
Min Ch El (ft)	280.63	Shear (lb/sq ft)	0.65	0.77	0.47
Alpha	1.13	Stream Power (lb/ft s)	3.07	5.86	2.37
Frctn Loss (ft)	0.03	Cum Volume (acre-ft)	100.53	335.15	78.60
C & E Loss (ft)	0.00	Cum SA (acres)	7.54	16.57	9.64

CROSS SECTION

RIVER: San Juan Creek
REACH: Upper RS: 2110.00*

INPUT
Description:
Station Elevation Data num= 162

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	321.7	6.28	320.98	10.77	320.5	11.98	320.37	14.59	320.24
20.51	319.95	22.11	319.69	32.29	318.62	37.69	318.05	39.08	317.97
43.37	317.6	46.37	317.11	52.66	316.05	54.82	315.64	58.38	314.38
60.3	313.24	63.97	310.41	71.98	304.62	75.58	301.72	76.71	300.78
81.17	297.01	82.25	296.22	83.1	295.8	83.68	295.51	85.94	294.33
94.84	291.73	95.69	291.49	100.24	290.62	101.99	290.22	106.91	288.65
113.04	287.38	120.19	285.87	125.18	285.14	126.48	284.99	127.56	284.85
130.63	284.62	131.81	284.46	135.95	283.96	137.5	283.85	141.86	283.21
142.33	283.17	146.2	282.77	154.64	281.9	156.84	281.68	161.25	281.26
163.57	281	165.8	280.85	166.68	280.83	168.03	280.8	195.53	281.02
230.39	281.49	236.64	281.57	258.03	281.67	277.48	281.42	289.4	281.26
290.99	281.22	314.02	281.47	318.88	281.53	322.85	281.52	352.32	281.46
355.96	281.46	374.7	281.45	382.68	281.3	384.5	281.28	392.65	281.18
422.74	280.87	477.86	280.38	500.56	280.35	539.84	280.79	556.29	280.91
574.54	280.98	591.67	281.06	596.62	281.08	601.15	281.1	612.36	281.37
634.73	281.89	641.16	282.11	651.2	282.13	651.98	282.14	669.48	282.44
713.18	283.2	713.43	283.21	713.45	283.21	713.55	283.22	719.99	283.78
720.09	283.79	729.85	284.78	757.11	287.95	776.32	290.32	776.91	290.42
778.09	290.6	780.04	290.9	781.98	291.1	784.06	291.31	799.82	292.76
804.15	293.14	810.93	293.86	823.03	294.72	826.43	294.97	832.88	295.44
837.34	295.71	845.16	296.17	853.53	296.52	859.71	297.24	862.83	297.59
869.26	298.36	875.06	299.11	876.59	299.3	880.25	299.81	886.03	300.17
904.88	301.49	910.21	302.37	916.03	303.37	924.17	304.05	930.8	304.9
931.67	304.98	935.02	305.31	939.73	305.68	945.83	305.32	965.81	305.53
976.22	305.63	991.88	305.61	1001.96	305.86	1002.58	305.86	1012.52	305.88
1033.24	306.9	1034.34	306.96	1047.65	307.45	1049.55	307.5	1051.5	307.56
1063.78	307.86	1067.25	307.94	1069.15	308.15	1070.44	308.28	1074.3	309.06
1077.84	309.78	1080.6	310.34	1085.79	312.37	1088.28	313.34	1088.52	313.44
1088.93	313.57	1099.24	316.89	1104.97	317.61	1107.1	317.77	1107.58	317.77
1109.21	317.81	1114.51	317.95	1128.91	318.34	1135.65	318.32	1139.85	318.34
1158.36	318.24	1158.85	318.27	1159.03	318.27	1166.43	318.5	1188.33	319.2
1202.39	319.64	1207.59	319.72	1211.79	319.82	1219.62	320.09	1261.07	321.54
1261.25	321.54	1262.17	321.55						

Manning's n Values num= 18

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.029	14.59	.055	37.69	.05	146.2	.059	161.25	.055
236.64	.041	258.03	.035	634.73	.041	641.16	.044	757.11	.035

776.32	.044	845.16	.035	991.88	.029	1033.24	.033	1047.65	.05
1135.65	.059	1158.36	.07	1207.59	.05				

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
258.03	641.16	42.6	40.1	40.87	.1	.3

CROSS SECTION OUTPUT Profile #Q50

			Left OB	Channel	Right OB
E.G. Elev (ft)	287.91	Element			
Vel Head (ft)	0.48	Wt. n-Val.	0.052	0.035	0.044
W.S. Elev (ft)	287.43	Reach Len. (ft)	42.60	40.10	40.87
Crit W.S. (ft)		Flow Area (sq ft)	768.43	2434.54	436.42
E.G. Slope (ft/ft)	0.001722	Area (sq ft)	768.43	2434.54	436.42
Q Total (cfs)	19090.00	Flow (cfs)	2885.52	14687.24	1517.24
Top Width (ft)	639.77	Top Width (ft)	145.21	383.13	111.44
Vel Total (ft/s)	5.25	Avg. Vel. (ft/s)	3.76	6.03	3.48
Max Chl Dpth (ft)	7.08	Hydr. Depth (ft)	5.29	6.35	3.92
Conv. Total (cfs)	460086.1	Conv. (cfs)	69543.6	353975.7	36566.8
Length Wtd. (ft)	40.52	Wetted Per. (ft)	145.66	383.16	111.67
Min Ch El (ft)	280.35	Shear (lb/sq ft)	0.57	0.68	0.42
Alpha	1.13	Stream Power (lb/ft s)	2.13	4.12	1.46
Frctn Loss (ft)	0.07	Cum Volume (acre-ft)	27.85	134.97	11.64
C & E Loss (ft)	0.01	Cum SA (acres)	4.70	16.23	2.69

CROSS SECTION OUTPUT Profile #Q100

			Left OB	Channel	Right OB
E.G. Elev (ft)	290.76	Element			
Vel Head (ft)	0.53	Wt. n-Val.	0.052	0.035	0.044
W.S. Elev (ft)	290.23	Reach Len. (ft)	42.60	40.10	40.87
Crit W.S. (ft)		Flow Area (sq ft)	1192.76	3509.60	781.68
E.G. Slope (ft/ft)	0.001183	Area (sq ft)	1192.76	3509.60	781.68
Q Total (cfs)	30242.00	Flow (cfs)	4726.05	22391.45	3124.50
Top Width (ft)	673.66	Top Width (ft)	156.09	383.13	134.44
Vel Total (ft/s)	5.51	Avg. Vel. (ft/s)	3.96	6.38	4.00
Max Chl Dpth (ft)	9.88	Hydr. Depth (ft)	7.64	9.16	5.81
Conv. Total (cfs)	879259.5	Conv. (cfs)	137405.8	651011.7	90842.0
Length Wtd. (ft)	40.55	Wetted Per. (ft)	156.92	383.16	134.85
Min Ch El (ft)	280.35	Shear (lb/sq ft)	0.56	0.68	0.43
Alpha	1.13	Stream Power (lb/ft s)	2.22	4.32	1.71
Frctn Loss (ft)	0.05	Cum Volume (acre-ft)	42.62	183.53	21.17
C & E Loss (ft)	0.01	Cum SA (acres)	5.18	16.23	3.77

CROSS SECTION OUTPUT Profile #Q100HC

			Left OB	Channel	Right OB
E.G. Elev (ft)	299.77	Element			
Vel Head (ft)	0.71	Wt. n-Val.	0.052	0.035	0.043
W.S. Elev (ft)	299.06	Reach Len. (ft)	42.60	40.10	40.87
Crit W.S. (ft)		Flow Area (sq ft)	2700.88	6891.92	2400.09
E.G. Slope (ft/ft)	0.000671	Area (sq ft)	2700.88	6891.92	2400.09
Q Total (cfs)	76166.00	Flow (cfs)	12553.94	51915.98	11696.08
Top Width (ft)	795.92	Top Width (ft)	179.28	383.13	233.51
Vel Total (ft/s)	6.35	Avg. Vel. (ft/s)	4.65	7.53	4.87
Max Chl Dpth (ft)	18.71	Hydr. Depth (ft)	15.06	17.99	10.28
Conv. Total (cfs)	2940381.0	Conv. (cfs)	484643.6	2004212.0	451526.1
Length Wtd. (ft)	40.62	Wetted Per. (ft)	182.11	383.16	234.35
Min Ch El (ft)	280.35	Shear (lb/sq ft)	0.62	0.75	0.43
Alpha	1.14	Stream Power (lb/ft s)	2.89	5.68	2.09

Frctn Loss (ft)	0.03	Cum Volume (acre-ft)	97.88	329.01	76.17
C & E Loss (ft)	0.00	Cum SA (acres)	7.36	16.23	9.41

CROSS SECTION

RIVER: San Juan Creek
REACH: Upper RS: 2069.90*

INPUT
Description:
Station Elevation Data num= 162

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	321.68	6.6	320.91	11.3	320.4	12.58	320.26	15.31	320.16
21.53	319.94	23.2	319.64	33.89	318.49	39.56	317.89	41.02	317.81
45.51	317.43	48.67	317	55.27	316.04	57.53	315.63	61.12	314.32
63.04	313.27	66.73	310.39	74.78	304.6	78.41	301.61	79.55	300.65
84.03	296.78	85.12	296	85.96	295.66	86.56	295.42	88.83	294.43
97.77	292.06	98.63	291.83	103.2	290.97	104.96	290.59	109.91	288.93
116.07	287.78	123.25	286.4	128.27	285.69	129.58	285.54	130.66	285.42
133.75	285.27	134.95	285.12	139.1	284.64	140.66	284.55	145.04	283.89
145.52	283.84	149.41	283.34	157.9	282.27	160.11	281.99	164.54	281.48
166.87	281.18	169.12	280.97	170	280.94	171.36	280.89	199	281.1
234.05	281.51	240.34	281.59	261.84	281.59	284.96	281.28	299.12	281.08
301.01	281.03	328.37	281.4	334.15	281.47	338.86	281.47	373.88	281.42
378.21	281.42	400.48	281.43	409.96	281.24	412.12	281.22	421.81	281.09
457.57	280.72	523.06	280.1	550.04	280.07	582.72	280.53	596.4	280.67
611.58	280.79	625.83	280.92	629.96	280.95	633.73	280.99	643.05	281.23
661.67	281.72	667.02	281.94	674.82	282.01	675.42	282.02	689.02	282.41
722.99	283.37	723.19	283.38	723.21	283.38	723.28	283.39	728.29	283.87
728.36	283.88	735.95	284.79	757.14	287.62	776.28	290.23	776.86	290.34
778.05	290.5	779.99	290.78	781.91	290.97	783.99	291.18	799.68	292.54
803.99	292.9	810.74	293.62	822.79	294.58	826.17	294.86	832.6	295.38
837.04	295.66	844.83	296.16	853.16	296.49	859.31	297.08	862.42	297.36
868.82	297.97	874.6	298.57	876.12	298.72	879.76	299.15	885.52	299.48
904.29	300.69	909.59	301.41	915.39	302.23	923.49	302.83	930.09	303.54
930.95	303.62	934.3	303.9	938.98	304.24	945.06	304.04	964.95	304.44
975.32	304.65	990.91	304.71	1000.94	305.11	1001.56	305.11	1011.46	305.2
1032.09	306.68	1033.18	306.76	1046.44	307.5	1048.33	307.58	1050.27	307.67
1062.5	308.13	1065.95	308.26	1067.85	308.56	1069.12	308.75	1072.97	309.58
1076.49	310.36	1079.25	310.96	1084.41	312.82	1086.89	313.72	1087.13	313.81
1087.53	313.92	1097.8	316.67	1103.5	317.35	1105.75	317.54	1106.26	317.53
1107.97	317.57	1113.55	317.7	1128.72	318.05	1135.82	318.06	1140.24	318.11
1159.73	318.19	1160.24	318.21	1160.43	318.22	1168.23	318.45	1191.3	319.15
1206.1	319.6	1211.57	319.66	1216	319.75	1224.24	320.03	1267.89	321.53
1268.08	321.53	1269.06	321.55						

Manning's n Values num= 19

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.026	12.58	.029	15.31	.05	39.56	.055	145.04	.061
164.54	.05	240.34	.044	261.84	.035	661.67	.044	667.02	.041
757.14	.035	783.99	.041	862.42	.035	1000.94	.026	1032.09	.02
1046.44	.037	1062.5	.05	1159.73	.07	1216	.05		

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
261.84	667.02	42.6	40.1	40.87	.1	.3

CROSS SECTION OUTPUT Profile #Q50

E.G. Elev (ft)	287.83	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.46	Wt. n-Val.	0.050	0.035	0.041
W.S. Elev (ft)	287.38	Reach Len. (ft)	42.60	40.10	40.87
Crit W.S. (ft)		Flow Area (sq ft)	735.53	2615.08	336.15
E.G. Slope (ft/ft)	0.001565	Area (sq ft)	735.53	2615.08	336.15
Q Total (cfs)	19090.00	Flow (cfs)	2720.09	15196.98	1172.92
Top Width (ft)	637.13	Top Width (ft)	143.66	405.18	88.29
Vel Total (ft/s)	5.18	Avg. Vel. (ft/s)	3.70	5.81	3.49
Max Chl Dpth (ft)	7.31	Hydr. Depth (ft)	5.12	6.45	3.81
Conv. Total (cfs)	482482.4	Conv. (cfs)	68747.9	384089.9	29644.6
Length Wtd. (ft)	40.49	Wetted Per. (ft)	144.10	405.21	88.56
Min Ch El (ft)	280.07	Shear (lb/sq ft)	0.50	0.63	0.37
Alpha	1.10	Stream Power (lb/ft s)	1.84	3.67	1.29
Frctn Loss (ft)	0.06	Cum Volume (acre-ft)	27.11	132.65	11.28
C & E Loss (ft)	0.01	Cum SA (acres)	4.56	15.86	2.60

CROSS SECTION OUTPUT Profile #Q100

E.G. Elev (ft)	290.71	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.51	Wt. n-Val.	0.050	0.035	0.041
W.S. Elev (ft)	290.20	Reach Len. (ft)	42.60	40.10	40.87
Crit W.S. (ft)		Flow Area (sq ft)	1160.61	3759.52	614.87
E.G. Slope (ft/ft)	0.001089	Area (sq ft)	1160.61	3759.52	614.87
Q Total (cfs)	30242.00	Flow (cfs)	4526.18	23207.77	2508.05
Top Width (ft)	669.93	Top Width (ft)	155.72	405.18	109.04
Vel Total (ft/s)	5.46	Avg. Vel. (ft/s)	3.90	6.17	4.08
Max Chl Dpth (ft)	10.13	Hydr. Depth (ft)	7.45	9.28	5.64
Conv. Total (cfs)	916315.4	Conv. (cfs)	137140.7	703182.1	75992.6
Length Wtd. (ft)	40.53	Wetted Per. (ft)	156.50	405.21	109.50
Min Ch El (ft)	280.07	Shear (lb/sq ft)	0.50	0.63	0.38
Alpha	1.10	Stream Power (lb/ft s)	1.97	3.89	1.56
Frctn Loss (ft)	0.04	Cum Volume (acre-ft)	41.47	180.19	20.51
C & E Loss (ft)	0.00	Cum SA (acres)	5.02	15.86	3.65

CROSS SECTION OUTPUT Profile #Q100HC

E.G. Elev (ft)	299.74	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.70	Wt. n-Val.	0.051	0.035	0.040
W.S. Elev (ft)	299.04	Reach Len. (ft)	42.60	40.10	40.87
Crit W.S. (ft)		Flow Area (sq ft)	2675.36	7343.15	2020.23
E.G. Slope (ft/ft)	0.000633	Area (sq ft)	2675.36	7343.15	2020.23
Q Total (cfs)	76166.00	Flow (cfs)	12219.71	53976.68	9969.60
Top Width (ft)	797.46	Top Width (ft)	180.43	405.18	211.85
Vel Total (ft/s)	6.33	Avg. Vel. (ft/s)	4.57	7.35	4.93
Max Chl Dpth (ft)	18.97	Hydr. Depth (ft)	14.83	18.12	9.54
Conv. Total (cfs)	3027569.0	Conv. (cfs)	485728.9	2145553.0	396288.0
Length Wtd. (ft)	40.59	Wetted Per. (ft)	183.15	405.21	212.71
Min Ch El (ft)	280.07	Shear (lb/sq ft)	0.58	0.72	0.38
Alpha	1.12	Stream Power (lb/ft s)	2.64	5.26	1.85
Frctn Loss (ft)	0.03	Cum Volume (acre-ft)	95.25	322.46	74.10
C & E Loss (ft)	0.00	Cum SA (acres)	7.19	15.86	9.20

CROSS SECTION

RIVER: San Juan Creek
REACH: Upper RS: 2029.80*

INPUT
Description:
Station Elevation Data num= 162

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	321.66	6.91	320.85	11.83	320.3	13.17	320.15	16.03	320.08
22.55	319.93	24.3	319.58	35.49	318.36	41.43	317.72	42.96	317.65
47.66	317.27	50.97	316.88	57.88	316.02	60.25	315.63	63.85	314.26
65.79	313.3	69.5	310.36	77.59	304.59	81.24	301.5	82.38	300.52
86.88	296.54	87.98	295.78	88.83	295.52	89.43	295.34	91.71	294.53
100.71	292.38	101.56	292.18	106.16	291.32	107.93	290.96	112.91	289.22
119.1	288.18	126.32	286.93	131.37	286.23	132.68	286.1	133.77	285.99
136.88	285.93	138.08	285.78	142.25	285.31	143.83	285.25	148.23	284.56
148.7	284.5	152.62	283.91	161.15	282.64	163.38	282.3	167.83	281.7
170.17	281.36	172.43	281.08	173.32	281.05	174.69	280.98	202.48	281.19
237.71	281.54	244.04	281.6	265.65	281.51	292.43	281.14	308.84	280.9
311.03	280.84	342.72	281.32	349.41	281.42	354.88	281.42	395.44	281.38
400.45	281.39	426.26	281.42	437.24	281.19	439.74	281.16	450.97	281.01
492.39	280.58	568.26	279.82	599.51	279.79	625.59	280.27	636.51	280.44
648.63	280.6	660	280.78	663.29	280.83	666.3	280.88	673.75	281.1
688.6	281.54	692.87	281.77	698.44	281.9	698.87	281.91	708.57	282.38
732.81	283.55	732.95	283.56	732.96	283.56	733.02	283.57	736.58	283.97
736.64	283.97	742.05	284.8	757.17	287.3	776.24	290.15	776.82	290.25
778	290.4	779.94	290.66	781.85	290.85	783.92	291.05	799.55	292.31
803.84	292.66	810.55	293.37	822.55	294.44	825.92	294.74	832.31	295.32
836.73	295.62	844.49	296.15	852.79	296.46	858.91	296.91	862.01	297.13
868.38	297.58	874.13	298.03	875.64	298.14	879.27	298.48	885	298.79
903.69	299.89	908.97	300.45	914.74	301.08	922.82	301.61	929.38	302.19
930.24	302.25	933.57	302.5	938.24	302.8	944.28	302.76	964.09	303.35
974.41	303.66	989.94	303.8	999.92	304.35	1000.54	304.36	1010.4	304.51
1030.94	306.46	1032.02	306.56	1045.22	307.55	1047.11	307.66	1049.03	307.78
1061.21	308.41	1064.65	308.59	1066.54	308.97	1067.81	309.21	1071.63	310.11
1075.15	310.93	1077.89	311.58	1083.03	313.28	1085.49	314.1	1085.74	314.18
1086.14	314.26	1096.36	316.44	1102.04	317.09	1104.4	317.31	1104.93	317.3
1106.73	317.33	1112.59	317.44	1128.52	317.76	1135.98	317.81	1140.63	317.88
1161.1	318.14	1161.64	318.16	1161.84	318.16	1170.03	318.4	1194.26	319.11
1209.8	319.56	1215.55	319.59	1220.21	319.68	1228.87	319.97	1274.71	321.53
1274.92	321.53	1275.94	321.54						

Manning's n Values num= 20

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.024	13.17	.031	16.03	.045	41.43	.06	148.23	.064
163.38	.045	244.04	.046	265.65	.035	688.6	.046	692.87	.039
779.94	.035	810.55	.039	885	.035	1030.94	.024	1045.22	.02
1061.21	.041	1075.15	.05	1161.1	.064	1170.03	.07	1228.87	.05

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
265.65	692.87	42.6	40.87	.1	.3

CROSS SECTION OUTPUT Profile #Q50

			Left OB	Channel	Right OB
E.G. Elev (ft)	287.77	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.43	Wt. n-Val.	0.046	0.035	0.039
W.S. Elev (ft)	287.33	Reach Len. (ft)	42.60	40.10	40.87
Crit W.S. (ft)		Flow Area (sq ft)	704.18	2797.77	238.16
E.G. Slope (ft/ft)	0.001417	Area (sq ft)	704.18	2797.77	238.16
Q Total (cfs)	19090.00	Flow (cfs)	2653.31	15623.57	813.12

Top Width (ft)	633.39	Top Width (ft)	141.65	427.22	64.52
Vel Total (ft/s)	5.10	Avg. Vel. (ft/s)	3.77	5.58	3.41
Max Chl Dpth (ft)	7.54	Hydr. Depth (ft)	4.97	6.55	3.69
Conv. Total (cfs)	507069.7	Conv. (cfs)	70477.4	414994.1	21598.1
Length Wtd. (ft)	40.47	Wetted Per. (ft)	142.10	427.26	64.85
Min Ch El (ft)	279.79	Shear (lb/sq ft)	0.44	0.58	0.32
Alpha	1.07	Stream Power (lb/ft s)	1.65	3.24	1.11
Frctn Loss (ft)	0.05	Cum Volume (acre-ft)	26.41	130.16	11.01
C & E Loss (ft)	0.01	Cum SA (acres)	4.42	15.48	2.53

CROSS SECTION OUTPUT Profile #Q100

E.G. Elev (ft)	290.66	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.49	Wt. n-Val.	0.047	0.035	0.039
W.S. Elev (ft)	290.17	Reach Len. (ft)	42.60	40.10	40.87
Crit W.S. (ft)		Flow Area (sq ft)	1128.18	4009.59	448.08
E.G. Slope (ft/ft)	0.001015	Area (sq ft)	1128.18	4009.59	448.08
Q Total (cfs)	30242.00	Flow (cfs)	4504.61	24077.47	1659.92
Top Width (ft)	666.16	Top Width (ft)	155.46	427.22	83.48
Vel Total (ft/s)	5.41	Avg. Vel. (ft/s)	3.99	6.00	3.70
Max Chl Dpth (ft)	10.38	Hydr. Depth (ft)	7.26	9.39	5.37
Conv. Total (cfs)	949366.8	Conv. (cfs)	141410.1	755848.0	52108.7
Length Wtd. (ft)	40.51	Wetted Per. (ft)	156.22	427.26	84.03
Min Ch El (ft)	279.79	Shear (lb/sq ft)	0.46	0.59	0.34
Alpha	1.09	Stream Power (lb/ft s)	1.83	3.57	1.25
Frctn Loss (ft)	0.04	Cum Volume (acre-ft)	40.35	176.61	20.01
C & E Loss (ft)	0.01	Cum SA (acres)	4.87	15.48	3.56

CROSS SECTION OUTPUT Profile #Q100HC

E.G. Elev (ft)	299.71	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.68	Wt. n-Val.	0.048	0.035	0.039
W.S. Elev (ft)	299.03	Reach Len. (ft)	42.60	40.10	40.87
Crit W.S. (ft)		Flow Area (sq ft)	2649.20	7795.10	1644.38
E.G. Slope (ft/ft)	0.000600	Area (sq ft)	2649.20	7795.10	1644.38
Q Total (cfs)	76166.00	Flow (cfs)	12302.32	56073.02	7790.66
Top Width (ft)	805.01	Top Width (ft)	181.59	427.22	196.20
Vel Total (ft/s)	6.30	Avg. Vel. (ft/s)	4.64	7.19	4.74
Max Chl Dpth (ft)	19.24	Hydr. Depth (ft)	14.59	18.25	8.38
Conv. Total (cfs)	3108530.0	Conv. (cfs)	502089.3	2288484.0	317957.0
Length Wtd. (ft)	40.58	Wetted Per. (ft)	184.26	427.26	197.12
Min Ch El (ft)	279.79	Shear (lb/sq ft)	0.54	0.68	0.31
Alpha	1.11	Stream Power (lb/ft s)	2.50	4.92	1.48
Frctn Loss (ft)	0.02	Cum Volume (acre-ft)	92.65	315.49	72.38
C & E Loss (ft)	0.00	Cum SA (acres)	7.01	15.48	9.01

CROSS SECTION

RIVER: San Juan Creek
REACH: Upper RS: 1989.70*

INPUT
Description:
Station Elevation Data num= 161

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev

0	321.63	7.22	320.79	12.37	320.2	13.77	320.04	16.76	320
23.56	319.91	25.39	319.53	37.09	318.23	43.29	317.55	44.89	317.49
49.81	317.1	53.26	316.77	60.49	316.01	62.96	315.63	66.59	314.2
68.53	313.32	72.26	310.34	80.4	304.57	84.07	301.39	85.22	300.39
89.74	296.31	90.85	295.56	91.7	295.38	92.3	295.25	94.59	294.63
103.64	292.7	104.5	292.52	109.13	291.68	110.9	291.34	115.9	289.5
122.13	288.58	129.39	287.47	134.46	286.77	135.79	286.65	136.88	286.55
140	286.58	141.21	286.44	145.41	285.98	146.99	285.95	151.41	285.24
151.89	285.17	155.82	284.49	164.41	283	166.64	282.62	171.12	281.92
173.48	281.54	175.75	281.2	176.64	281.15	178.01	281.08	205.95	281.27
241.38	281.57	247.73	281.62	269.47	281.43	299.91	281	318.56	280.72
321.05	280.65	357.08	281.24	364.68	281.36	370.89	281.36	417.01	281.35
422.7	281.35	452.03	281.4	464.52	281.13	467.36	281.1	480.12	280.92
527.21	280.43	613.45	279.53	648.98	279.5	668.46	280.01	676.62	280.21
685.67	280.41	694.17	280.64	696.63	280.7	698.88	280.76	704.44	280.96
715.54	281.36	718.73	281.6	722.06	281.78	722.31	281.79	728.12	282.35
742.62	283.73	742.71	283.74	742.75	283.74	744.88	284.06	744.91	284.07
748.15	284.81	757.2	286.97	776.2	290.06	776.78	290.17	777.96	290.3
779.88	290.53	781.79	290.72	783.85	290.92	799.41	292.09	803.68	292.41
810.37	293.13	822.31	294.3	825.66	294.63	832.03	295.26	836.43	295.58
844.16	296.14	852.42	296.43	858.51	296.75	861.6	296.89	867.94	297.2
873.67	297.49	875.17	297.56	878.78	297.81	884.49	298.1	903.1	299.09
908.35	299.49	914.1	299.94	922.14	300.39	928.67	300.83	929.53	300.89
932.84	301.09	937.49	301.35	943.51	301.48	963.23	302.26	973.51	302.67
988.96	302.9	998.91	303.6	999.52	303.61	1009.33	303.83	1029.78	306.24
1030.87	306.37	1044.01	307.59	1045.88	307.73	1047.8	307.88	1059.93	308.69
1063.35	308.91	1065.23	309.38	1066.49	309.67	1070.3	310.63	1073.8	311.51
1076.53	312.2	1081.64	313.74	1084.1	314.48	1084.34	314.55	1084.74	314.61
1094.92	316.21	1100.57	316.82	1103.05	317.07	1103.61	317.06	1105.49	317.08
1111.63	317.19	1128.33	317.47	1136.15	317.55	1141.02	317.66	1162.47	318.09
1163.04	318.11	1163.24	318.11	1171.83	318.35	1197.22	319.06	1213.51	319.52
1219.54	319.53	1224.41	319.6	1233.49	319.9	1281.54	321.52	1281.75	321.52
1282.82	321.53								

Manning's n Values num= 19

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.022	13.77	.04	43.29	.065	151.41	.067	166.64	.04
247.73	.048	269.47	.035	715.54	.048	718.73	.037	803.68	.035
832.03	.037	903.1	.035	1029.78	.022	1059.93	.02	1070.3	.046
1094.92	.05	1163.04	.067	1197.22	.07	1233.49	.05		

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
269.47	718.73	42.6	40.1	40.87	.1	.3

CROSS SECTION OUTPUT Profile #Q50

			Left OB	Channel	Right OB
E.G. Elev (ft)	287.71	Element	0.042	0.035	0.037
Vel Head (ft)	0.41	Wt. n-Val.	42.60	40.10	40.87
W.S. Elev (ft)	287.30	Reach Len. (ft)	674.99	2986.25	142.20
Crit W.S. (ft)		Flow Area (sq ft)	674.99	2986.25	142.20
E.G. Slope (ft/ft)	0.001278	Area (sq ft)	2624.83	15997.10	468.07
Q Total (cfs)	19090.00	Flow (cfs)	138.82	449.26	40.47
Top Width (ft)	628.55	Top Width (ft)	3.89	5.36	3.29
Vel Total (ft/s)	5.02	Avg. Vel. (ft/s)	4.86	6.65	3.51
Max Chl Dpth (ft)	7.80	Hydr. Depth (ft)	73427.1	447502.8	13093.7
Conv. Total (cfs)	534023.6	Conv. (cfs)	139.29	449.32	40.96
Length Wtd. (ft)	40.47	Wetted Per. (ft)	0.39	0.53	0.28
Min Ch El (ft)	279.50	Shear (lb/sq ft)	1.50	2.84	0.91
Alpha	1.05	Stream Power (lb/ft s)			

Frctn Loss (ft)	0.05	Cum Volume (acre-ft)	25.74	127.50	10.83
C & E Loss (ft)	0.01	Cum SA (acres)	4.28	15.08	2.48

CROSS SECTION OUTPUT Profile #Q100

E.G. Elev (ft)	290.62	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.47	Wt. n-Val.	0.043	0.035	0.037
W.S. Elev (ft)	290.15	Reach Len. (ft)	42.60	40.10	40.87
Crit W.S. (ft)		Flow Area (sq ft)	1096.86	4266.37	282.48
E.G. Slope (ft/ft)	0.000931	Area (sq ft)	1096.86	4266.37	282.48
Q Total (cfs)	30242.00	Flow (cfs)	4515.05	24739.69	987.26
Top Width (ft)	662.50	Top Width (ft)	155.32	449.26	57.92
Vel Total (ft/s)	5.36	Avg. Vel. (ft/s)	4.12	5.80	3.49
Max Chl Dpth (ft)	10.64	Hydr. Depth (ft)	7.06	9.50	4.88
Conv. Total (cfs)	991218.4	Conv. (cfs)	147986.2	810873.5	32358.7
Length Wtd. (ft)	40.50	Wetted Per. (ft)	156.08	449.32	58.64
Min Ch El (ft)	279.50	Shear (lb/sq ft)	0.41	0.55	0.28
Alpha	1.06	Stream Power (lb/ft s)	1.68	3.20	0.98
Frctn Loss (ft)	0.04	Cum Volume (acre-ft)	39.26	172.80	19.67
C & E Loss (ft)	0.01	Cum SA (acres)	4.72	15.08	3.50

CROSS SECTION OUTPUT Profile #Q100HC

E.G. Elev (ft)	299.68	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.67	Wt. n-Val.	0.045	0.035	0.037
W.S. Elev (ft)	299.02	Reach Len. (ft)	42.60	40.10	40.87
Crit W.S. (ft)		Flow Area (sq ft)	2623.07	8252.23	1276.82
E.G. Slope (ft/ft)	0.000569	Area (sq ft)	2623.07	8252.23	1276.82
Q Total (cfs)	76166.00	Flow (cfs)	12538.33	58054.97	5572.70
Top Width (ft)	814.99	Top Width (ft)	182.73	449.26	183.00
Vel Total (ft/s)	6.27	Avg. Vel. (ft/s)	4.78	7.04	4.36
Max Chl Dpth (ft)	19.52	Hydr. Depth (ft)	14.35	18.37	6.98
Conv. Total (cfs)	3193956.0	Conv. (cfs)	525784.2	2434485.0	233686.3
Length Wtd. (ft)	40.57	Wetted Per. (ft)	185.41	449.32	184.06
Min Ch El (ft)	279.50	Shear (lb/sq ft)	0.50	0.65	0.25
Alpha	1.09	Stream Power (lb/ft s)	2.40	4.59	1.07
Frctn Loss (ft)	0.02	Cum Volume (acre-ft)	90.07	308.11	71.01
C & E Loss (ft)	0.00	Cum SA (acres)	6.83	15.08	8.83

CROSS SECTION

RIVER: San Juan Creek
REACH: Upper RS: 1949.598

INPUT
Description:
Station Elevation Data num= 94

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	321.61	12.9	320.1	14.36	319.93	24.58	319.9	26.49	319.47
38.69	318.1	45.16	317.38	46.83	317.33	55.56	316.66	63.1	315.99
65.68	315.63	71.28	313.35	75.03	310.31	83.21	304.56	88.05	300.26
92.6	296.07	93.71	295.34	95.17	295.16	106.57	293.02	113.87	291.71
118.9	289.79	125.16	288.98	137.56	287.31	139.99	287.12	143.13	287.23
148.56	286.65	150.15	286.65	155.08	285.83	167.66	283.37	169.91	282.93
179.06	281.32	181.34	281.17	245.04	281.6	251.43	281.64	273.28	281.35

307.38	280.86	328.28	280.54	331.07	280.46	371.43	281.16	379.95	281.31
386.91	281.31	438.57	281.31	444.95	281.32	477.81	281.39	491.8	281.08
494.98	281.04	509.28	280.84	658.65	279.25	698.45	279.22	722.72	280.22
735.13	280.83	742.47	281.18	744.58	281.43	745.76	281.68	753.18	284.15
757.23	286.65	776.74	290.08	779.83	290.41	783.78	290.79	803.52	292.17
825.41	294.52	831.75	295.2	836.13	295.54	843.82	296.13	858.11	296.59
874.7	296.98	928.82	299.52	972.6	301.68	987.99	302	997.89	302.84
1008.27	303.14	1029.71	306.17	1042.79	307.64	1044.66	307.81	1046.57	307.99
1058.64	308.97	1062.05	309.24	1063.92	309.79	1082.71	314.86	1082.95	314.92
1083.35	314.96	1099.11	316.56	1101.7	316.84	1102.28	316.82	1104.25	316.84
1136.31	317.29	1173.63	318.3	1217.22	319.48	1223.52	319.46	1228.62	319.53
1238.11	319.84	1288.36	321.52	1288.58	321.52	1289.7	321.52		

Manning's n Values num= 12

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.02	12.9	.035	38.69	.07	167.66	.035	245.04	.05
386.91	.035	735.13	.05	825.41	.035	1044.66	.02	1083.35	.05
1173.63	.07	1238.11	.05						

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
273.28	744.58	407.52	330.72	271.52	.1 .3

CROSS SECTION OUTPUT Profile #Q50

			Left OB	Channel	Right OB
E.G. Elev (ft)	287.65	Element			
Vel Head (ft)	0.39	Wt. n-Val.	0.039	0.038	0.050
W.S. Elev (ft)	287.26	Reach Len. (ft)	407.52	330.72	271.52
Crit W.S. (ft)		Flow Area (sq ft)	647.81	3174.89	47.57
E.G. Slope (ft/ft)	0.001313	Area (sq ft)	647.81	3174.89	47.57
Q Total (cfs)	19090.00	Flow (cfs)	2785.75	16203.78	100.47
Top Width (ft)	622.50	Top Width (ft)	135.08	471.30	16.12
Vel Total (ft/s)	4.93	Avg. Vel. (ft/s)	4.30	5.10	2.11
Max Chl Dpth (ft)	8.04	Hydr. Depth (ft)	4.80	6.74	2.95
Conv. Total (cfs)	526928.8	Conv. (cfs)	76893.2	447262.3	2773.3
Length Wtd. (ft)	341.30	Wetted Per. (ft)	135.62	471.39	17.31
Min Ch El (ft)	279.22	Shear (lb/sq ft)	0.39	0.55	0.23
Alpha	1.02	Stream Power (lb/ft s)	1.68	2.82	0.48
Frctn Loss (ft)	0.53	Cum Volume (acre-ft)	25.09	124.66	10.74
C & E Loss (ft)	0.00	Cum SA (acres)	4.15	14.65	2.45

CROSS SECTION OUTPUT Profile #Q100

			Left OB	Channel	Right OB
E.G. Elev (ft)	290.57	Element			
Vel Head (ft)	0.45	Wt. n-Val.	0.040	0.038	0.050
W.S. Elev (ft)	290.12	Reach Len. (ft)	407.52	330.72	271.52
Crit W.S. (ft)		Flow Area (sq ft)	1065.42	4523.50	116.99
E.G. Slope (ft/ft)	0.000975	Area (sq ft)	1065.42	4523.50	116.99
Q Total (cfs)	30242.00	Flow (cfs)	4867.72	25126.75	247.54
Top Width (ft)	659.10	Top Width (ft)	155.25	471.30	32.55
Vel Total (ft/s)	5.30	Avg. Vel. (ft/s)	4.57	5.55	2.12
Max Chl Dpth (ft)	10.90	Hydr. Depth (ft)	6.86	9.60	3.59
Conv. Total (cfs)	968285.0	Conv. (cfs)	155854.0	804505.4	7925.6
Length Wtd. (ft)	342.97	Wetted Per. (ft)	156.01	471.39	33.99
Min Ch El (ft)	279.22	Shear (lb/sq ft)	0.42	0.58	0.21
Alpha	1.03	Stream Power (lb/ft s)	1.90	3.25	0.44
Frctn Loss (ft)	0.39	Cum Volume (acre-ft)	38.20	168.76	19.48
C & E Loss (ft)	0.00	Cum SA (acres)	4.57	14.65	3.45

CROSS SECTION OUTPUT Profile #Q100HC

E.G. Elev (ft)	299.66	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.66	Wt. n-Val.	0.042	0.038	0.048
W.S. Elev (ft)	299.00	Reach Len. (ft)	407.52	330.72	271.52
Crit W.S. (ft)		Flow Area (sq ft)	2595.62	8707.89	919.41
E.G. Slope (ft/ft)	0.000623	Area (sq ft)	2595.62	8707.89	919.41
Q Total (cfs)	76166.00	Flow (cfs)	13862.05	59649.88	2654.06
Top Width (ft)	828.32	Top Width (ft)	183.86	471.30	173.16
Vel Total (ft/s)	6.23	Avg. Vel. (ft/s)	5.34	6.85	2.89
Max Chl Dpth (ft)	19.78	Hydr. Depth (ft)	14.12	18.48	5.31
Conv. Total (cfs)	3050383.0	Conv. (cfs)	555163.3	2388927.0	106292.9
Length Wtd. (ft)	343.78	Wetted Per. (ft)	186.61	471.39	174.94
Min Ch El (ft)	279.22	Shear (lb/sq ft)	0.54	0.72	0.20
Alpha	1.09	Stream Power (lb/ft s)	2.89	4.93	0.59
Frctn Loss (ft)	0.25	Cum Volume (acre-ft)	87.52	300.30	69.98
C & E Loss (ft)	0.00	Cum SA (acres)	6.65	14.65	8.66

CROSS SECTION

RIVER: San Juan Creek
REACH: Upper RS: 1618.909

INPUT
Description:
Station Elevation Data num= 86

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	321.04	.66	320.75	7.54	318.4	14.42	314.48	17.17	313.8
33.66	310.51	42.75	308.65	43.83	308.43	44.62	308.37	70.23	306.67
82.45	304.38	89.2	302.85	91.61	301.86	93.7	300.7	99.63	295.7
116.2	283.54	123.16	281.68	129.53	281.08	151.09	281.79	156.45	281.97
179.13	282.58	183.94	282.7	200.58	283.12	220.01	283.31	262.77	281.96
273.28	281.63	275.57	281.55	305.53	280.42	315.16	280.07	324.3	279.94
327.24	279.9	354.73	279.68	544.18	278.19	551.17	278.23	640.67	280.06
660.49	279.9	672.68	279.82	684.64	280.62	694.53	281.22	704.72	282.18
720.37	285.94	722.61	286.49	731.94	288.76	745.06	290.8	756.2	294.13
763.1	295.07	764.12	295.21	831.9	298.72	873.2	301.14	895.61	301.84
910.94	301.33	914.93	301.35	918.57	302.06	923.48	303.12	932.82	306.36
934.83	307.06	939.29	308.13	981.53	307.99	995.11	308.03	1001.3	308.42
1011.97	307.87	1023.33	308.01	1028.2	310.03	1030.09	310.27	1032.5	310.11
1035.41	309.26	1040.7	307.4	1051.22	307.03	1066.31	305.93	1069.53	305.75
1081.12	306.98	1089.11	306.94	1096.98	306.42	1101.88	306.77	1110.59	308.04
1114.78	309.29	1116.76	310.22	1125.51	314.3	1135.22	315.24	1137.04	315.57
1137.99	315.58	1172.94	316.44	1187.42	316.74	1199.49	316.96	1238.7	318.47
1313.83	321.49								

Manning's n Values num= 7

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	183.94	.05	262.77	.035	354.73	.05	722.61	.035
932.82	.02	1116.76	.05						

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
262.77	704.72	167.05	177.35	174.2	.1	.3

CROSS SECTION OUTPUT Profile #Q50

E.G. Elev (ft)	287.12	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.39	Wt. n-Val.	0.041	0.047	0.050
W.S. Elev (ft)	286.73	Reach Len. (ft)	167.05	177.35	174.20
Crit W.S. (ft)		Flow Area (sq ft)	637.34	3189.24	43.04
E.G. Slope (ft/ft)	0.001862	Area (sq ft)	637.34	3189.24	43.04
Q Total (cfs)	19090.00	Flow (cfs)	2623.62	16369.55	96.83
Top Width (ft)	611.74	Top Width (ft)	150.92	441.95	18.87
Vel Total (ft/s)	4.93	Avg. Vel. (ft/s)	4.12	5.13	2.25
Max Chl Dpth (ft)	8.54	Hydr. Depth (ft)	4.22	7.22	2.28
Conv. Total (cfs)	442453.9	Conv. (cfs)	60808.2	379401.4	2244.3
Length Wtd. (ft)	176.49	Wetted Per. (ft)	152.28	442.10	19.41
Min Ch El (ft)	278.19	Shear (lb/sq ft)	0.49	0.84	0.26
Alpha	1.02	Stream Power (lb/ft s)	2.00	4.30	0.58
Frctn Loss (ft)	0.23	Cum Volume (acre-ft)	19.08	100.50	10.46
C & E Loss (ft)	0.04	Cum SA (acres)	2.81	11.19	2.34

CROSS SECTION OUTPUT Profile #Q100

E.G. Elev (ft)	290.18	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.44	Wt. n-Val.	0.041	0.047	0.048
W.S. Elev (ft)	289.75	Reach Len. (ft)	167.05	177.35	174.20
Crit W.S. (ft)		Flow Area (sq ft)	1098.78	4522.37	119.79
E.G. Slope (ft/ft)	0.001306	Area (sq ft)	1098.78	4522.37	119.79
Q Total (cfs)	30242.00	Flow (cfs)	5248.84	24633.68	359.48
Top Width (ft)	630.53	Top Width (ft)	155.03	441.95	33.56
Vel Total (ft/s)	5.27	Avg. Vel. (ft/s)	4.78	5.45	3.00
Max Chl Dpth (ft)	11.56	Hydr. Depth (ft)	7.09	10.23	3.57
Conv. Total (cfs)	836891.9	Conv. (cfs)	145252.0	681691.9	9947.9
Length Wtd. (ft)	176.24	Wetted Per. (ft)	157.38	442.10	34.42
Min Ch El (ft)	278.19	Shear (lb/sq ft)	0.57	0.83	0.28
Alpha	1.02	Stream Power (lb/ft s)	2.72	4.54	0.85
Frctn Loss (ft)	0.18	Cum Volume (acre-ft)	28.08	134.42	18.75
C & E Loss (ft)	0.03	Cum SA (acres)	3.12	11.19	3.25

CROSS SECTION OUTPUT Profile #Q100HC

E.G. Elev (ft)	299.40	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.67	Wt. n-Val.	0.041	0.046	0.042
W.S. Elev (ft)	298.73	Reach Len. (ft)	167.05	177.35	174.20
Crit W.S. (ft)		Flow Area (sq ft)	2546.07	8493.81	700.42
E.G. Slope (ft/ft)	0.000856	Area (sq ft)	2546.07	8493.81	700.42
Q Total (cfs)	76166.00	Flow (cfs)	16155.41	57321.96	2688.64
Top Width (ft)	736.06	Top Width (ft)	166.74	441.95	127.38
Vel Total (ft/s)	6.49	Avg. Vel. (ft/s)	6.35	6.75	3.84
Max Chl Dpth (ft)	20.54	Hydr. Depth (ft)	15.27	19.22	5.50
Conv. Total (cfs)	2602957.0	Conv. (cfs)	552107.6	1958966.0	91883.7
Length Wtd. (ft)	175.88	Wetted Per. (ft)	172.15	442.10	128.97
Min Ch El (ft)	278.19	Shear (lb/sq ft)	0.79	1.03	0.29
Alpha	1.03	Stream Power (lb/ft s)	5.02	6.93	1.11
Frctn Loss (ft)	0.13	Cum Volume (acre-ft)	63.46	235.00	64.93
C & E Loss (ft)	0.03	Cum SA (acres)	5.01	11.19	7.73

CROSS SECTION

RIVER: San Juan Creek

REACH: Upper RS: 1441.576

INPUT
Description:
Station Elevation Data num= 74

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	324.38	14.09	317.02	18.82	314.55	22.15	314.07	26.08	313.83
38.83	312.06	60.72	309.38	70.47	308.18	85.71	306.3	96.35	305.32
112.33	303.89	122.95	302.17	152.14	294.69	159.4	292.85	169.8	289.69
188.96	282.77	208.58	280.28	220.97	279.64	260.55	279.22	267.78	279.07
303.15	278.34	335.43	278.08	366.43	277.83	369.58	277.8	451	278.57
484.31	278.88	519.87	279.22	521.49	279.24	547.95	279.04	586.18	278.67
715.66	277.92	744.79	279.05	759.05	279.4	773.6	281.02	782.68	282.35
788.64	284.67	789.24	284.83	806.35	289.42	821.85	293.28	830.23	295.57
836.86	296.22	859.71	296.95	869.19	297.25	873.8	297.4	883.91	297.74
909.58	298.15	935.32	299.42	958.37	300.35	980.5	301.24	1000.65	301.48
1013.61	301.64	1021.12	301.75	1042.93	302.07	1074.07	302.53	1112.21	303.95
1165.45	305.73	1192.5	307.74	1198.66	308.07	1203.02	308.3	1212.14	308.55
1217.22	308.97	1218.07	309.13	1225.95	311.28	1230.74	311.09	1234.56	311.73
1238.05	313.71	1240.05	314.14	1248.32	314.49	1254.85	315.16	1268.43	315.61
1319.97	317.33	1320.58	317.35	1321.28	317.4	1409.36	321.52		

Manning's n Values num= 13

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.02	14.09	.07	70.47	.035	267.78	.05	366.43	.035
451	.05	789.24	.035	859.71	.07	873.8	.035	958.37	.07
1000.65	.035	1042.93	.02	1268.43	.05				

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
208.58	759.05	225.37	242.4	257.8	.1	.3

CROSS SECTION OUTPUT Profile #Q50

			Left OB	Channel	Right OB
E.G. Elev (ft)	286.84	Element			
Vel Head (ft)	0.26	Wt. n-Val.	0.035	0.045	0.050
W.S. Elev (ft)	286.58	Reach Len. (ft)	225.37	242.40	257.80
Crit W.S. (ft)		Flow Area (sq ft)	119.34	4394.06	162.31
E.G. Slope (ft/ft)	0.000993	Area (sq ft)	119.34	4394.06	162.31
Q Total (cfs)	19090.00	Flow (cfs)	392.24	18257.57	440.20
Top Width (ft)	617.37	Top Width (ft)	30.17	550.47	36.72
Vel Total (ft/s)	4.08	Avg. Vel. (ft/s)	3.29	4.16	2.71
Max Chl Dpth (ft)	8.78	Hydr. Depth (ft)	3.95	7.98	4.42
Conv. Total (cfs)	605674.4	Conv. (cfs)	12444.6	579263.6	13966.2
Length Wtd. (ft)	242.53	Wetted Per. (ft)	31.00	550.54	37.60
Min Ch El (ft)	277.80	Shear (lb/sq ft)	0.24	0.50	0.27
Alpha	1.01	Stream Power (lb/ft s)	0.78	2.06	0.73
Frctn Loss (ft)	0.18	Cum Volume (acre-ft)	17.63	85.06	10.05
C & E Loss (ft)	0.01	Cum SA (acres)	2.46	9.17	2.23

CROSS SECTION OUTPUT Profile #Q100

			Left OB	Channel	Right OB
E.G. Elev (ft)	289.97	Element			
Vel Head (ft)	0.33	Wt. n-Val.	0.035	0.045	0.049
W.S. Elev (ft)	289.64	Reach Len. (ft)	225.37	242.40	257.80
Crit W.S. (ft)		Flow Area (sq ft)	224.58	6077.79	292.07
E.G. Slope (ft/ft)	0.000817	Area (sq ft)	224.58	6077.79	292.07
Q Total (cfs)	30242.00	Flow (cfs)	861.08	28438.07	942.85
Top Width (ft)	637.30	Top Width (ft)	38.64	550.47	48.19

Vel Total (ft/s)	4.59	Avg. Vel. (ft/s)	3.83	4.68	3.23
Max Chl Dpth (ft)	11.84	Hydr. Depth (ft)	5.81	11.04	6.06
Conv. Total (cfs)	1057773.0	Conv. (cfs)	30118.0	994677.3	32977.9
Length Wtd. (ft)	242.57	Wetted Per. (ft)	40.00	550.54	49.46
Min Ch El (ft)	277.80	Shear (lb/sq ft)	0.29	0.56	0.30
Alpha	1.01	Stream Power (lb/ft s)	1.10	2.64	0.97
Frctn Loss (ft)	0.16	Cum Volume (acre-ft)	25.54	112.84	17.92
C & E Loss (ft)	0.00	Cum SA (acres)	2.74	9.17	3.08

CROSS SECTION OUTPUT Profile #Q100HC

E.G. Elev (ft)	299.24	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.57	Wt. n-Val.	0.035	0.045	0.045
W.S. Elev (ft)	298.67	Reach Len. (ft)	225.37	242.40	257.80
Crit W.S. (ft)		Flow Area (sq ft)	718.42	11049.96	988.23
E.G. Slope (ft/ft)	0.000648	Area (sq ft)	718.42	11049.96	988.23
Q Total (cfs)	76166.00	Flow (cfs)	3514.95	68578.03	4073.02
Top Width (ft)	783.59	Top Width (ft)	71.98	550.47	161.14
Vel Total (ft/s)	5.97	Avg. Vel. (ft/s)	4.89	6.21	4.12
Max Chl Dpth (ft)	20.87	Hydr. Depth (ft)	9.98	20.07	6.13
Conv. Total (cfs)	2992825.0	Conv. (cfs)	138114.4	2694667.0	160043.0
Length Wtd. (ft)	242.66	Wetted Per. (ft)	74.55	550.54	163.24
Min Ch El (ft)	277.80	Shear (lb/sq ft)	0.39	0.81	0.24
Alpha	1.03	Stream Power (lb/ft s)	1.91	5.04	1.01
Frctn Loss (ft)	0.14	Cum Volume (acre-ft)	57.21	195.21	61.55
C & E Loss (ft)	0.00	Cum SA (acres)	4.55	9.17	7.15

CROSS SECTION

RIVER: San Juan Creek
REACH: Upper RS: 1199.171

INPUT
Description:
Station Elevation Data num= 66

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	326.84	17.19	316.66	18.02	316.2	18.95	315.99	31.12	312.93
43.76	310.73	58.69	308.55	88.94	305.48	118.44	302.53	124.02	300.95
133.49	298.28	134.95	297.88	162.06	291.2	168.04	288.91	173.24	286.9
187.66	282.22	196.41	281.57	249.13	277.68	250.07	277.66	250.94	277.6
321.71	275.68	327.97	275.59	344.51	275.36	348.96	275.29	377.58	275.31
392.13	275.33	418.21	275.82	454.75	275.74	468.39	275.72	502.08	276.07
523.65	276.3	642.87	277.58	669.09	278.29	675.23	279.21	677.95	279.62
690.07	280	719.51	282.41	726.48	284.11	740.17	287.05	746.33	288.19
770.36	292.17	796.22	295.36	849.56	295.79	879.6	295.74	909.91	296.32
946.93	297.01	979.13	298.64	995.58	299.87	1062.19	301.62	1083.98	301.92
1105.34	301.84	1116.97	302.35	1143.77	303.58	1153.43	304.02	1176.52	305.19
1179.36	305.34	1184.77	305.25	1231.35	306.99	1236.23	307.6	1272.88	308.58
1293.78	308.85	1307.01	309.92	1366.73	314.47	1373.98	314.77	1376.04	314.96
1378.03	314.96								

Manning's n Values num= 7

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.07	124.02	.035	344.51	.05	454.75	.035	523.65	.05
675.23	.035	1143.77	.02						

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
196.41	690.07	111.64	117.05 117.88	.1	.3

CROSS SECTION OUTPUT Profile #Q50

		Element	Left OB	Channel	Right OB
E.G. Elev (ft)	286.65	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.23	Wt. n-Val.	0.035	0.042	0.035
W.S. Elev (ft)	286.42	Reach Len. (ft)	111.64	117.05	117.88
Crit W.S. (ft)		Flow Area (sq ft)	66.79	4736.12	188.02
E.G. Slope (ft/ft)	0.000592	Area (sq ft)	66.79	4736.12	188.02
Q Total (cfs)	19090.00	Flow (cfs)	142.96	18462.67	484.38
Top Width (ft)	562.53	Top Width (ft)	21.69	493.66	47.17
Vel Total (ft/s)	3.82	Avg. Vel. (ft/s)	2.14	3.90	2.58
Max Chl Dpth (ft)	11.13	Hydr. Depth (ft)	3.08	9.59	3.99
Conv. Total (cfs)	784831.9	Conv. (cfs)	5877.3	759040.8	19913.8
Length Wtd. (ft)	116.53	Wetted Per. (ft)	22.38	493.96	47.72
Min Ch El (ft)	275.29	Shear (lb/sq ft)	0.11	0.35	0.15
Alpha	1.02	Stream Power (lb/ft s)	0.24	1.38	0.37
Frctn Loss (ft)	0.09	Cum Volume (acre-ft)	17.14	59.66	9.01
C & E Loss (ft)	0.01	Cum SA (acres)	2.33	6.26	1.98

CROSS SECTION OUTPUT Profile #Q100

		Element	Left OB	Channel	Right OB
E.G. Elev (ft)	289.80	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.32	Wt. n-Val.	0.035	0.042	0.035
W.S. Elev (ft)	289.49	Reach Len. (ft)	111.64	117.05	117.88
Crit W.S. (ft)		Flow Area (sq ft)	146.10	6249.15	357.22
E.G. Slope (ft/ft)	0.000567	Area (sq ft)	146.10	6249.15	357.22
Q Total (cfs)	30242.00	Flow (cfs)	414.23	28701.87	1125.91
Top Width (ft)	587.62	Top Width (ft)	29.87	493.66	64.08
Vel Total (ft/s)	4.48	Avg. Vel. (ft/s)	2.84	4.59	3.15
Max Chl Dpth (ft)	14.20	Hydr. Depth (ft)	4.89	12.66	5.57
Conv. Total (cfs)	1269742.0	Conv. (cfs)	17391.7	1205078.0	47272.4
Length Wtd. (ft)	116.45	Wetted Per. (ft)	31.12	493.96	64.91
Min Ch El (ft)	275.29	Shear (lb/sq ft)	0.17	0.45	0.19
Alpha	1.02	Stream Power (lb/ft s)	0.47	2.06	0.61
Frctn Loss (ft)	0.08	Cum Volume (acre-ft)	24.59	78.54	16.00
C & E Loss (ft)	0.01	Cum SA (acres)	2.57	6.26	2.75

CROSS SECTION OUTPUT Profile #Q100HC

		Element	Left OB	Channel	Right OB
E.G. Elev (ft)	299.10	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.60	Wt. n-Val.	0.035	0.042	0.035
W.S. Elev (ft)	298.49	Reach Len. (ft)	111.64	117.05	117.88
Crit W.S. (ft)		Flow Area (sq ft)	559.53	10695.75	1582.64
E.G. Slope (ft/ft)	0.000545	Area (sq ft)	559.53	10695.75	1582.64
Q Total (cfs)	76166.00	Flow (cfs)	2302.18	68973.85	4889.96
Top Width (ft)	843.50	Top Width (ft)	63.68	493.66	286.16
Vel Total (ft/s)	5.93	Avg. Vel. (ft/s)	4.11	6.45	3.09
Max Chl Dpth (ft)	23.20	Hydr. Depth (ft)	8.79	21.67	5.53
Conv. Total (cfs)	3263173.0	Conv. (cfs)	98632.2	2955040.0	209500.2
Length Wtd. (ft)	116.28	Wetted Per. (ft)	66.13	493.96	287.46
Min Ch El (ft)	275.29	Shear (lb/sq ft)	0.29	0.74	0.19
Alpha	1.10	Stream Power (lb/ft s)	1.18	4.75	0.58
Frctn Loss (ft)	0.07	Cum Volume (acre-ft)	53.90	134.71	53.94
C & E Loss (ft)	0.00	Cum SA (acres)	4.20	6.26	5.83

CROSS SECTION

RIVER: San Juan Creek
REACH: Upper RS: 1082.126

INPUT
Description:
Station Elevation Data num= 124

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	385.42	10.58	383.86	30.95	380.3	51.15	377.16	52.5	376.97
78.44	373.33	90.2	371.12	102.22	369.73	120.76	368.35	128	367.82
137.57	367.91	139.61	367.41	140.01	367.13	144.07	364.32	145.23	363.39
152.08	355.3	157.51	348.79	162.47	342.83	164.73	342.1	172.28	337.71
181.41	334.56	201.51	333.43	209.33	333.32	212.06	333	227.51	330.43
235.62	329.08	235.83	329.03	237.49	328.58	256.38	323.74	262.35	321.86
288.61	313.64	299.42	309.19	321.3	305.8	342.19	303.85	355.53	302.52
367.59	301.64	371.07	301.03	402.52	294.48	415	291.88	429.2	288.94
430.72	288.66	431.93	288.32	452.21	283.16	488.45	279.71	493.8	278.91
504.83	278.49	535.3	277.44	546.64	278.91	558.28	279.78	562.63	280.11
570.01	281.68	572.86	282.27	586.41	287.64	590.07	288.96	597.67	289.39
598.82	289.49	599.75	289.31	605.53	287.83	613.19	281.07	616.51	278.17
619.02	276.8	621.22	275.59	629.4	274.48	629.94	274.39	630.03	274.39
635.54	274.54	647.53	274.98	673.21	275.94	676.59	275.91	680.48	275.99
694.17	275.96	735.04	275.79	780.85	275.61	805.04	275.64	834.44	275.68
863.69	276.53	885.61	277.16	908.43	278.24	927.55	279.66	939.65	280.56
965.01	283.31	966.89	283.46	982.41	287.01	989.87	288.65	990.76	288.73
1030.76	290.52	1035.63	290.69	1076.01	291.48	1078.82	291.6	1121.79	294.52
1126.6	294.61	1182.24	295.85	1202.92	296.32	1245.22	299.78	1282.62	301.03
1295.07	301.31	1333.11	302.16	1371.65	304.71	1373.87	304.85	1418.69	306.42
1421.73	306.87	1427.08	307.82	1432.87	308.7	1441.12	312.66	1447.34	315.62
1452.81	316.94	1462.58	319.49	1470.15	320.49	1481.28	321.78	1488.72	321.51
1504.25	321.69	1506.94	319.83	1513.19	315.31	1514.91	314.89	1521.53	314.26
1529.75	313.86	1537.33	313.58	1563.92	312.61	1576.62	312.23	1625.11	311.46
1686.41	314.63	1697.72	314.81	1704.95	315.11	1750.09	316.11		

Manning's n Values num= 11

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	52.5	.07	140.01	.035	157.51	.02	227.51	.07
402.52	.035	630.03	.05	735.04	.035	805.04	.05	927.55	.035
1295.07	.02								

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
613.19	966.89	207.38	214.57 222.4	.3	.5

CROSS SECTION OUTPUT Profile #Q50

E.G. Elev (ft)	286.56	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.32	Wt. n-Val.	0.035	0.045	0.035
W.S. Elev (ft)	286.24	Reach Len. (ft)	22.00	22.00	22.00
Crit W.S. (ft)	280.91	Flow Area (sq ft)	850.49	3358.64	16.86
E.G. Slope (ft/ft)	0.000971	Area (sq ft)	850.49	3358.64	16.86
Q Total (cfs)	19090.00	Flow (cfs)	3590.68	15472.02	27.30
Top Width (ft)	514.45	Top Width (ft)	148.61	353.70	12.14
Vel Total (ft/s)	4.52	Avg. Vel. (ft/s)	4.22	4.61	1.62
Max Chl Dpth (ft)	11.85	Hydr. Depth (ft)	5.72	9.50	1.39
Conv. Total (cfs)	612611.9	Conv. (cfs)	115227.6	496508.2	876.0
Length Wtd. (ft)	22.00	Wetted Per. (ft)	152.32	355.85	12.46

Min Ch El (ft)	274.39	Shear (lb/sq ft)	0.34	0.57	0.08
Alpha	1.01	Stream Power (lb/ft s)	1.43	2.64	0.13
Frctn Loss (ft)	0.02	Cum Volume (acre-ft)	15.97	48.78	8.74
C & E Loss (ft)	0.01	Cum SA (acres)	2.11	5.12	1.90

Warning: Divided flow computed for this cross-section.
Note: Manning's n values were composited to a single value in the main channel.

CROSS SECTION OUTPUT Profile #Q100

E.G. Elev (ft)	289.71	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.42	Wt. n-Val.	0.035	0.045	0.035
W.S. Elev (ft)	289.29	Reach Len. (ft)	22.00	22.00	22.00
Crit W.S. (ft)	282.42	Flow Area (sq ft)	1344.15	4439.13	77.94
E.G. Slope (ft/ft)	0.000891	Area (sq ft)	1344.15	4439.13	77.94
Q Total (cfs)	30242.00	Flow (cfs)	6488.93	23590.84	162.23
Top Width (ft)	571.94	Top Width (ft)	181.81	353.70	36.43
Vel Total (ft/s)	5.16	Avg. Vel. (ft/s)	4.83	5.31	2.08
Max Chl Dpth (ft)	14.90	Hydr. Depth (ft)	7.39	12.55	2.14
Conv. Total (cfs)	1013173.0	Conv. (cfs)	217393.4	790344.9	5434.9
Length Wtd. (ft)	22.00	Wetted Per. (ft)	187.19	355.85	37.03
Min Ch El (ft)	274.39	Shear (lb/sq ft)	0.40	0.69	0.12
Alpha	1.02	Stream Power (lb/ft s)	1.93	3.69	0.24
Frctn Loss (ft)	0.02	Cum Volume (acre-ft)	22.68	64.18	15.41
C & E Loss (ft)	0.01	Cum SA (acres)	2.30	5.12	2.62

Warning: Divided flow computed for this cross-section.
Note: Manning's n values were composited to a single value in the main channel.

CROSS SECTION OUTPUT Profile #Q100HC

E.G. Elev (ft)	299.02	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.63	Wt. n-Val.	0.035	0.045	0.035
W.S. Elev (ft)	298.40	Reach Len. (ft)	22.00	22.00	22.00
Crit W.S. (ft)	286.82	Flow Area (sq ft)	3233.83	7659.16	1492.99
E.G. Slope (ft/ft)	0.000653	Area (sq ft)	3233.83	7659.16	1492.99
Q Total (cfs)	76166.00	Flow (cfs)	20893.05	50110.55	5162.41
Top Width (ft)	844.58	Top Width (ft)	229.47	353.70	261.41
Vel Total (ft/s)	6.15	Avg. Vel. (ft/s)	6.46	6.54	3.46
Max Chl Dpth (ft)	24.01	Hydr. Depth (ft)	14.09	21.65	5.71
Conv. Total (cfs)	2981637.0	Conv. (cfs)	817890.9	1961655.0	202090.4
Length Wtd. (ft)	22.00	Wetted Per. (ft)	235.81	355.85	262.25
Min Ch El (ft)	274.39	Shear (lb/sq ft)	0.56	0.88	0.23
Alpha	1.07	Stream Power (lb/ft s)	3.61	5.74	0.80
Frctn Loss (ft)	0.02	Cum Volume (acre-ft)	49.04	110.05	49.78
C & E Loss (ft)	0.03	Cum SA (acres)	3.83	5.12	5.08

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

BRIDGE

RIVER: San Juan Creek
REACH: Upper RS: 1060

INPUT

Description:
Distance from Upstream XS = 22
Deck/Roadway Width = 159.68
Weir Coefficient = 2.6
Upstream Deck/Roadway Coordinates
num= 6

Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord
0	400	0	49.21	394.19	0	49.21	394.19	386.18
1151.56	342.7	334.7	1151.56	342.7	0	2394.98	351.05	0

Upstream Bridge Cross Section Data
Station Elevation Data num= 124

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	385.42	10.58	383.86	30.95	380.3	51.15	377.16	52.5	376.97
78.44	373.33	90.2	371.12	102.22	369.73	120.76	368.35	128	367.82
137.57	367.91	139.61	367.41	140.01	367.13	144.07	364.32	145.23	363.39
152.08	355.3	157.51	348.79	162.47	342.83	164.73	342.1	172.28	337.71
181.41	334.56	201.51	333.43	209.33	333.32	212.06	333	227.51	330.43
235.62	329.08	235.83	329.03	237.49	328.58	256.38	323.74	262.35	321.86
288.61	313.64	299.42	309.19	321.3	305.8	342.19	303.85	355.53	302.52
367.59	301.64	371.07	301.03	402.52	294.48	415	291.88	429.2	288.94
430.72	288.66	431.93	288.32	452.21	283.16	488.45	279.71	493.8	278.91
504.83	278.49	535.3	277.44	546.64	278.91	558.28	279.78	562.63	280.11
570.01	281.68	572.86	282.27	586.41	287.64	590.07	288.96	597.67	289.39
598.82	289.49	599.75	289.31	605.53	287.83	613.19	281.07	616.51	278.17
619.02	276.8	621.22	275.59	629.4	274.48	629.94	274.39	630.03	274.39
635.54	274.54	647.53	274.98	673.21	275.94	676.59	275.91	680.48	275.99
694.17	275.96	735.04	275.79	780.85	275.61	805.04	275.64	834.44	275.68
863.69	276.53	885.61	277.16	908.43	278.24	927.55	279.66	939.65	280.56
965.01	283.31	966.89	283.46	982.41	287.01	989.87	288.65	990.76	288.73
1030.76	290.52	1035.63	290.69	1076.01	291.48	1078.82	291.6	1121.79	294.52
1126.6	294.61	1182.24	295.85	1202.92	296.32	1245.22	299.78	1282.62	301.03
1295.07	301.31	1333.11	302.16	1371.65	304.71	1373.87	304.85	1418.69	306.42
1421.73	306.87	1427.08	307.82	1432.87	308.7	1441.12	312.66	1447.34	315.62
1452.81	316.94	1462.58	319.49	1470.15	320.49	1481.28	321.78	1488.72	321.51
1504.25	321.69	1506.94	319.83	1513.19	315.31	1514.91	314.89	1521.53	314.26
1529.75	313.86	1537.33	313.58	1563.92	312.61	1576.62	312.23	1625.11	311.46
1686.41	314.63	1697.72	314.81	1704.95	315.11	1750.09	316.11		

Manning's n Values num= 11

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	52.5	.07	140.01	.035	157.51	.02	227.51	.07
402.52	.035	630.03	.05	735.04	.035	805.04	.05	927.55	.035
1295.07	.02								

Bank Sta: Left	Right	Coeff Contr.	Expan.
613.19	966.89	.3	.5

Downstream Deck/Roadway Coordinates
num= 6

Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord
0	400	0	49.21	394.19	0	49.21	394.19	386.18
1151.56	342.7	334.7	1151.56	342.7	0	2394.98	351.05	0

Downstream Bridge Cross Section Data
Station Elevation Data num= 103

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	343.67	15.86	342.34	25.35	341.32	42.56	340.84	53.18	340.66
56.38	340.45	64.27	339.93	107.12	337.52	110.49	337.32	141.99	335.42

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  159.98  333.92  165.73  333.14  172.74  332.19  219.14  327.87  236.84  324.95
  255.37  322.84  260.58  321.66  273.02  316.39  276.86  315.17  279.72  314.74
  298.99  310.13  304.36  309.05  327.26  306.68  348.41  304.55  349.87  304.37
  364.16  302.59  421.74   298.5  433.77  297.28  445.95  295.46  461.98  291.44
  474.49  287.32  480.73  285.85  510.38  278.79  520.99   275.7  523.08  275.44
  535.58  274.65  556.04  272.96  567.26   272.8   606.2  274.25  608.65  274.27
   612.5   274.4  626.08  276.15  655.29  279.93  677.42  282.28  680.52  282.47
  686.34  283.09  692.93  283.07  699.74  282.57  700.91  282.48  705.95  280.94
  711.75  279.74  717.75   276.7  731.42  274.99  736.19  274.72  736.57  274.72
  785.05  275.05  791.81   275.1  810.75  275.23  847.05  275.69  853.74  275.77
  884.42   277.4  939.12  280.36  953.24  281.12 1013.65  285.77 1015.82  285.98
 1084.48  289.41 1086.44  289.48 1090.79  289.65 1099.16  290.11 1163.66  293.99
 1196.92  293.79 1215.53  293.67 1223.07  293.88 1243.99  294.46 1252.17  294.94
 1252.56  294.97 1271.64  296.03 1283.68  300.06 1300.71  301.28 1301.98  301.44
 1325.82  301.16 1327.19  301.15 1337.01  301.67 1374.58  303.15 1381.06  303.46
 1429.82  305.82 1438.92  306.03 1507.26  307.56 1535.29  308.45 1540.08  308.46
 1543.29  308.49 1659.36  306.75 1712.42  308.83 1746.37  310.05 1756.88  310.56
 1777.22  312.02 1790.14  312.58 1811.31  313.52 1818.52  314.08 1823.15  314.37
 1830.59   314.6  1837.4  315.36 1841.42     316

Manning's n Values        num=      13
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035  110.49     .02  165.73     .07  349.87    .035  699.74     .05
  791.81    .035  847.05     .05  939.12    .035 1086.44     .05 1196.92    .035
 1252.17     .07 1325.82    .035 1381.06     .02

Bank Sta: Left   Right    Coeff Contr.   Expan.
        705.95  939.12             .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           =     340
Energy head used in spillway design           =
Spillway height used in design                =
Weir crest shape                              = Broad Crested

Number of Abutments =  1

Abutment Data
Upstream     num=       2
     Sta    Elev     Sta    Elev
 1062.98  288.71 1171.25   342.7
Downstream     num=       2
     Sta    Elev     Sta    Elev
 1062.98  288.71 1171.25   342.7

Number of Piers =  5

Pier Data
Pier Station     Upstream=   202.4    Downstream=   202.4
Upstream     num=       2
    Width   Elev    Width   Elev
       11      0       11    400
Downstream     num=       2
    Width   Elev    Width   Elev
       11      0       11    400

Pier Data
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Pier Station     Upstream=   402.5    Downstream=   402.5
Upstream     num=       2
    Width   Elev    Width   Elev
      11       0       11     400
Downstream     num=       2
    Width   Elev    Width   Elev
      11       0       11     400

Pier Data
Pier Station     Upstream=   602.7    Downstream=   602.7
Upstream     num=       2
    Width   Elev    Width   Elev
   11.001      0   11.001     400
Downstream     num=       2
    Width   Elev    Width   Elev
   11.001      0   11.001     400

Pier Data
Pier Station     Upstream=   802.8    Downstream=   802.8
Upstream     num=       2
    Width   Elev    Width   Elev
   11.001      0   11.001     400
Downstream     num=       2
    Width   Elev    Width   Elev
   11.001      0   11.001     400

Pier Data
Pier Station     Upstream=  1002.9    Downstream=  1002.9
Upstream     num=       2
    Width   Elev    Width   Elev
   11.001      0   11.001     400
Downstream     num=       2
    Width   Elev    Width   Elev
   11.001      0   11.001     400

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)              286.56    Element               Inside BR US  Inside BR DS
  W.S. US. (ft)              286.24    E.G. Elev (ft)             286.53        286.34
  Q Total (cfs)            19090.00    W.S. Elev (ft)             286.18        285.98
  Q Bridge (cfs)           19090.00    Crit W.S. (ft)             281.03        280.72
  Q Weir (cfs)                         Max Chl Dpth (ft)           11.79         13.18
  Weir Sta Lft (ft)                    Vel Total (ft/s)             4.68          4.68
```

Weir Sta Rgt (ft)		Flow Area (sq ft)	4082.51	4082.03
Weir Submerg		Froude # Chl	0.27	0.25
Weir Max Depth (ft)		Specif Force (cu ft)	21460.11	22367.10
Min El Weir Flow (ft)	342.71	Hydr Depth (ft)	8.13	8.12
Min El Prs (ft)	386.18	W.P. Total (ft)	529.68	553.64
Delta EG (ft)	0.27	Conv. Total (cfs)	523195.3	596793.8
Delta WS (ft)	0.26	Top Width (ft)	502.01	502.70
BR Open Area (sq ft)	63159.48	Frctn Loss (ft)	0.19	0.03
BR Open Vel (ft/s)	4.68	C & E Loss (ft)	0.00	0.02
Coef of Q		Shear Total (lb/sq ft)	0.64	0.47
Br Sel Method	Energy only	Power Total (lb/ft s)	3.00	2.20

Warning: The composite Mannings n value for the channel was larger than the largest entered n value or smaller than the smallest entered n value.
Note: Manning's n values were composited to a single value in the main channel.

BRIDGE OUTPUT Profile #Q100

E.G. US. (ft)	289.71	Element	Inside BR US	Inside BR DS
W.S. US. (ft)	289.29	E.G. Elev (ft)	289.68	289.51
Q Total (cfs)	30242.00	W.S. Elev (ft)	289.23	289.06
Q Bridge (cfs)	30242.00	Crit W.S. (ft)	282.56	282.46
Q Weir (cfs)		Max Chl Dpth (ft)	14.84	16.26
Weir Sta Lft (ft)		Vel Total (ft/s)	5.34	5.27
Weir Sta Rgt (ft)		Flow Area (sq ft)	5667.26	5737.60
Weir Submerg		Froude # Chl	0.26	0.25
Weir Max Depth (ft)		Specif Force (cu ft)	38551.92	39635.05
Min El Weir Flow (ft)	342.71	Hydr Depth (ft)	10.39	10.22
Min El Prs (ft)	386.18	W.P. Total (ft)	583.52	631.84
Delta EG (ft)	0.25	Conv. Total (cfs)	866251.0	980449.8
Delta WS (ft)	0.24	Top Width (ft)	545.33	561.48
BR Open Area (sq ft)	63159.48	Frctn Loss (ft)	0.17	0.03
BR Open Vel (ft/s)	5.34	C & E Loss (ft)	0.00	0.02
Coef of Q		Shear Total (lb/sq ft)	0.74	0.54
Br Sel Method	Energy only	Power Total (lb/ft s)	3.94	2.84

Warning: The composite Mannings n value for the channel was larger than the largest entered n value or smaller than the smallest entered n value.
Note: Manning's n values were composited to a single value in the main channel.

BRIDGE OUTPUT Profile #Q100HC

E.G. US. (ft)	299.02	Element	Inside BR US	Inside BR DS
W.S. US. (ft)	298.40	E.G. Elev (ft)	298.97	298.82
Q Total (cfs)	76166.00	W.S. Elev (ft)	298.24	298.07
Q Bridge (cfs)	76166.00	Crit W.S. (ft)	287.04	287.05
Q Weir (cfs)		Max Chl Dpth (ft)	23.85	25.27
Weir Sta Lft (ft)		Vel Total (ft/s)	6.77	6.91
Weir Sta Rgt (ft)		Flow Area (sq ft)	11257.32	11030.25
Weir Submerg		Froude # Chl	0.25	0.25
Weir Max Depth (ft)		Specif Force (cu ft)	125315.30	126157.70
Min El Weir Flow (ft)	342.71	Hydr Depth (ft)	17.22	17.71
Min El Prs (ft)	386.18	W.P. Total (ft)	755.29	750.32
Delta EG (ft)	0.31	Conv. Total (cfs)	2431427.0	2560635.0
Delta WS (ft)	0.27	Top Width (ft)	653.62	622.74
BR Open Area (sq ft)	63159.48	Frctn Loss (ft)	0.15	0.02
BR Open Vel (ft/s)	6.91	C & E Loss (ft)	0.01	0.08

Coef of Q		Shear Total (lb/sq ft)	0.91	0.81
Br Sel Method	Energy only	Power Total (lb/ft s)	6.18	5.61

Warning: The composite Mannings n value for the channel was larger than the largest entered n value or smaller than the smallest entered n value.
Note: Manning's n values were composited to a single value in the main channel.

CROSS SECTION

RIVER: San Juan Creek
REACH: Upper RS: 867.557

INPUT
Description:
Station Elevation Data num= 103

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	343.67	15.86	342.34	25.35	341.32	42.56	340.84	53.18	340.66
56.38	340.45	64.27	339.93	107.12	337.52	110.49	337.32	141.99	335.42
159.98	333.92	165.73	333.14	172.74	332.19	219.14	327.87	236.84	324.95
255.37	322.84	260.58	321.66	273.02	316.39	276.86	315.17	279.72	314.74
298.99	310.13	304.36	309.05	327.26	306.68	348.41	304.55	349.87	304.37
364.16	302.59	421.74	298.5	433.77	297.28	445.95	295.46	461.98	291.44
474.49	287.32	480.73	285.85	510.38	278.79	520.99	275.7	523.08	275.44
535.58	274.65	556.04	272.96	567.26	272.8	606.2	274.25	608.65	274.27
612.5	274.4	626.08	276.15	655.29	279.93	677.42	282.28	680.52	282.47
686.34	283.09	692.93	283.07	699.74	282.57	700.91	282.48	705.95	280.94
711.75	279.74	717.75	276.7	731.42	274.99	736.19	274.72	736.57	274.72
785.05	275.05	791.81	275.1	810.75	275.23	847.05	275.69	853.74	275.77
884.42	277.4	939.12	280.36	953.24	281.12	1013.65	285.77	1015.82	285.98
1084.48	289.41	1086.44	289.48	1090.79	289.65	1099.16	290.11	1163.66	293.99
1196.92	293.79	1215.53	293.67	1223.07	293.88	1243.99	294.46	1252.17	294.94
1252.56	294.97	1271.64	296.03	1283.68	300.06	1300.71	301.28	1301.98	301.44
1325.82	301.16	1327.19	301.15	1337.01	301.67	1374.58	303.15	1381.06	303.46
1429.82	305.82	1438.92	306.03	1507.26	307.56	1535.29	308.45	1540.08	308.46
1543.29	308.49	1659.36	306.75	1712.42	308.83	1746.37	310.05	1756.88	310.56
1777.22	312.02	1790.14	312.58	1811.31	313.52	1818.52	314.08	1823.15	314.37
1830.59	314.6	1837.4	315.36	1841.42	316				

Manning's n Values num= 13

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	110.49	.02	165.73	.07	349.87	.035	699.74	.05
791.81	.035	847.05	.05	939.12	.035	1086.44	.05	1196.92	.035
1252.17	.07	1325.82	.035	1381.06	.02				

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
705.95	939.12	194.86	178.02	165.62	.3	.5

CROSS SECTION OUTPUT Profile #Q50

			Left OB	Channel	Right OB
E.G. Elev (ft)	286.29	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.31	Wt. n-Val.	0.035	0.045	0.035
W.S. Elev (ft)	285.97	Reach Len. (ft)	194.86	178.02	165.62
Crit W.S. (ft)		Flow Area (sq ft)	1893.84	2216.96	226.80
E.G. Slope (ft/ft)	0.000780	Area (sq ft)	1893.84	2216.96	226.80
Q Total (cfs)	19090.00	Flow (cfs)	9232.00	9304.68	553.33
Top Width (ft)	535.54	Top Width (ft)	225.74	233.17	76.62
Vel Total (ft/s)	4.40	Avg. Vel. (ft/s)	4.87	4.20	2.44

Max Chl Dpth (ft)	13.17	Hydr. Depth (ft)	8.39	9.51	2.96
Conv. Total (cfs)	683571.6	Conv. (cfs)	330577.8	333180.4	19813.4
Length Wtd. (ft)	181.69	Wetted Per. (ft)	227.94	234.26	76.83
Min Ch El (ft)	274.72	Shear (lb/sq ft)	0.40	0.46	0.14
Alpha	1.05	Stream Power (lb/ft s)	1.97	1.93	0.35
Frctn Loss (ft)	0.16	Cum Volume (acre-ft)	9.38	35.73	8.14
C & E Loss (ft)	0.05	Cum SA (acres)	1.20	3.74	1.70

CROSS SECTION OUTPUT Profile #Q100

E.G. Elev (ft)	289.46	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.41	Wt. n-Val.	0.035	0.045	0.035
W.S. Elev (ft)	289.06	Reach Len. (ft)	194.86	178.02	165.62
Crit W.S. (ft)		Flow Area (sq ft)	2608.00	2935.67	557.86
E.G. Slope (ft/ft)	0.000715	Area (sq ft)	2608.00	2935.67	557.86
Q Total (cfs)	30242.00	Flow (cfs)	14524.31	14115.08	1602.61
Top Width (ft)	608.15	Top Width (ft)	236.73	233.17	138.25
Vel Total (ft/s)	4.96	Avg. Vel. (ft/s)	5.57	4.81	2.87
Max Chl Dpth (ft)	16.26	Hydr. Depth (ft)	11.02	12.59	4.03
Conv. Total (cfs)	1131166.0	Conv. (cfs)	543264.3	527957.4	59943.8
Length Wtd. (ft)	181.41	Wetted Per. (ft)	239.36	234.26	138.54
Min Ch El (ft)	274.72	Shear (lb/sq ft)	0.49	0.56	0.18
Alpha	1.06	Stream Power (lb/ft s)	2.71	2.69	0.52
Frctn Loss (ft)	0.15	Cum Volume (acre-ft)	13.19	46.89	13.90
C & E Loss (ft)	0.07	Cum SA (acres)	1.30	3.74	2.24

CROSS SECTION OUTPUT Profile #Q100HC

E.G. Elev (ft)	298.71	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.58	Wt. n-Val.	0.035	0.045	0.037
W.S. Elev (ft)	298.13	Reach Len. (ft)	194.86	178.02	165.62
Crit W.S. (ft)		Flow Area (sq ft)	4913.17	5051.49	2815.61
E.G. Slope (ft/ft)	0.000564	Area (sq ft)	4913.17	5051.49	2815.61
Q Total (cfs)	76166.00	Flow (cfs)	32921.33	30710.10	12534.56
Top Width (ft)	852.52	Top Width (ft)	280.55	233.17	338.79
Vel Total (ft/s)	5.96	Avg. Vel. (ft/s)	6.70	6.08	4.45
Max Chl Dpth (ft)	25.33	Hydr. Depth (ft)	17.51	21.66	8.31
Conv. Total (cfs)	3207903.0	Conv. (cfs)	1386556.0	1293425.0	527921.4
Length Wtd. (ft)	179.75	Wetted Per. (ft)	284.24	234.26	339.62
Min Ch El (ft)	274.72	Shear (lb/sq ft)	0.61	0.76	0.29
Alpha	1.06	Stream Power (lb/ft s)	4.08	4.61	1.30
Frctn Loss (ft)	0.11	Cum Volume (acre-ft)	29.77	80.29	42.99
C & E Loss (ft)	0.11	Cum SA (acres)	2.64	3.74	4.38

CROSS SECTION

RIVER: San Juan Creek
REACH: Upper RS: 689.540

INPUT
Description:
Station Elevation Data num= 83

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	315.68	1.78	314.9	8.04	313.36	22.84	310.17	71.19	310.67
77.22	310.64	79.68	310.53	110.23	310.23	118.7	309.97	136.03	308.67

142.26	308.2	155.63	305.95	164.43	303.91	172.11	302.65	207.79	296.45
210.35	295.96	210.79	295.85	211.67	295.76	241.52	292.88	268.52	289.5
274.55	287.66	275.2	287.47	278.24	285.5	289.41	279.7	292.9	277.64
298.31	276.24	304.9	274.81	309.73	274.88	322.99	274.62	334.02	274.66
335.56	274.66	347.63	274.62	368.55	274.55	376.04	274.5	394.48	275.14
408.08	275.24	436.8	275.47	460.94	275.66	519.36	275.64	543.38	275.7
624.92	279.86	658.41	281.61	675.57	282.52	699.63	284.96	730.62	287.94
731.07	287.95	753.37	288.27	785.94	289.61	794.73	289.97	800.43	290.48
869	294.37	872.21	294.44	876.2	294.54	906.85	295.16	921.14	295.45
926.81	295.72	957.23	296.27	962.64	296.5	986.23	298.95	990.16	299.55
1012.49	301.77	1021.76	302.06	1043.82	302.77	1054.29	303.06	1093.14	305.93
1100.81	306.41	1102.19	306.7	1112.49	306.83	1151.54	307.67	1163.49	307.91
1184.33	307.64	1235.13	306.94	1284.7	305.79	1288.24	305.71	1352.07	305.58
1385.84	306.03	1419.92	308.25	1454.43	309.95	1472.07	312.07	1489.74	313.22
1501.6	314.38	1509.43	314.86	1511.42	315.14				

Manning's n Values num= 7

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.07	136.03	.035	347.63	.05	408.08	.035	785.94	.05
906.85	.035	1284.7	.02						

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
289.41	624.92	173.41	174.32	168.46	.1	.3

CROSS SECTION OUTPUT Profile #Q50

			Left OB	Channel	Right OB
E.G. Elev (ft)	286.08	Element			
Vel Head (ft)	0.47	Wt. n-Val.	0.035	0.037	0.035
W.S. Elev (ft)	285.61	Reach Len. (ft)	173.41	174.32	168.46
Crit W.S. (ft)		Flow Area (sq ft)	33.68	3255.86	271.67
E.G. Slope (ft/ft)	0.000958	Area (sq ft)	33.68	3255.86	271.67
Q Total (cfs)	19090.00	Flow (cfs)	84.37	18210.68	794.95
Top Width (ft)	428.38	Top Width (ft)	11.35	335.51	81.52
Vel Total (ft/s)	5.36	Avg. Vel. (ft/s)	2.50	5.59	2.93
Max Chl Dpth (ft)	11.11	Hydr. Depth (ft)	2.97	9.70	3.33
Conv. Total (cfs)	616819.7	Conv. (cfs)	2726.2	588407.8	25685.7
Length Wtd. (ft)	173.57	Wetted Per. (ft)	12.80	336.53	81.74
Min Ch El (ft)	274.50	Shear (lb/sq ft)	0.16	0.58	0.20
Alpha	1.05	Stream Power (lb/ft s)	0.39	3.24	0.58
Frctn Loss (ft)	0.32	Cum Volume (acre-ft)	5.07	24.55	7.19
C & E Loss (ft)	0.08	Cum SA (acres)	0.67	2.58	1.40

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

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

CROSS SECTION OUTPUT Profile #Q100

			Left OB	Channel	Right OB
E.G. Elev (ft)	289.24	Element			
Vel Head (ft)	0.64	Wt. n-Val.	0.035	0.037	0.035
W.S. Elev (ft)	288.60	Reach Len. (ft)	173.41	174.32	168.46
Crit W.S. (ft)		Flow Area (sq ft)	75.64	4258.80	572.19
E.G. Slope (ft/ft)	0.000928	Area (sq ft)	75.64	4258.80	572.19
Q Total (cfs)	30242.00	Flow (cfs)	236.50	28085.71	1919.79
Top Width (ft)	490.03	Top Width (ft)	17.95	335.51	136.57
Vel Total (ft/s)	6.16	Avg. Vel. (ft/s)	3.13	6.59	3.36
Max Chl Dpth (ft)	14.10	Hydr. Depth (ft)	4.21	12.69	4.19

Conv. Total (cfs)	992856.3	Conv. (cfs)	7764.4	922064.6	63027.3
Length Wtd. (ft)	173.37	Wetted Per. (ft)	20.12	336.53	136.91
Min Ch El (ft)	274.50	Shear (lb/sq ft)	0.22	0.73	0.24
Alpha	1.08	Stream Power (lb/ft s)	0.68	4.83	0.81
Frctn Loss (ft)	0.29	Cum Volume (acre-ft)	7.19	32.19	11.75
C & E Loss (ft)	0.10	Cum SA (acres)	0.73	2.58	1.72

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 OUTPUT Profile #Q100HC

			Left OB	Channel	Right OB
E.G. Elev (ft)	298.49	Element			
Vel Head (ft)	0.93	Wt. n-Val.	0.035	0.037	0.036
W.S. Elev (ft)	297.56	Reach Len. (ft)	173.41	174.32	168.46
Crit W.S. (ft)		Flow Area (sq ft)	539.38	7263.53	2672.33
E.G. Slope (ft/ft)	0.000722	Area (sq ft)	539.38	7263.53	2672.33
Q Total (cfs)	76166.00	Flow (cfs)	2018.06	60482.36	13665.58
Top Width (ft)	771.44	Top Width (ft)	88.01	335.51	347.92
Vel Total (ft/s)	7.27	Avg. Vel. (ft/s)	3.74	8.33	5.11
Max Chl Dpth (ft)	23.06	Hydr. Depth (ft)	6.13	21.65	7.68
Conv. Total (cfs)	2834474.0	Conv. (cfs)	75100.8	2250816.0	508556.7
Length Wtd. (ft)	172.78	Wetted Per. (ft)	90.82	336.53	348.51
Min Ch El (ft)	274.50	Shear (lb/sq ft)	0.27	0.97	0.35
Alpha	1.14	Stream Power (lb/ft s)	1.00	8.10	1.77
Frctn Loss (ft)	0.21	Cum Volume (acre-ft)	17.58	55.13	32.56
C & E Loss (ft)	0.11	Cum SA (acres)	1.81	2.58	3.08

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 Creek
REACH: Upper RS: 515.223

INPUT
Description:
Station Elevation Data num= 71

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	308.61	1.86	308.42	7.51	305.55	11.43	303.33	12.51	303.14
21.17	300.52	25.5	300.34	94.16	297.4	121.97	296.27	125.13	295.93
128.55	295.33	131.34	293.6	135.27	291.87	141.81	288.38	147.46	287.95
178.3	289.63	180.65	289.73	181.38	289.76	182.38	289.63	193.41	288.2
205.54	278.48	207.86	276.8	208.82	276.11	212.72	275.2	216.78	274.86
221.71	274.45	239.6	274.21	268.91	275.74	290.75	275.92	318.8	276.15
382.56	276.66	394.57	276.76	401.96	276.57	414.44	277.03	443.9	279.23
471.83	281.04	494.28	282.49	505.19	284.43	535.57	288.71	612.06	293.45
630.22	294.27	636.83	294.8	675.79	296.3	692.85	296.53	701.04	297.66
730.55	300.42	735.65	301.14	738.66	302.21	739.62	302.36	754.33	304.67
775.5	307.29	780.69	308.39	799.98	308.86	811.2	309.06	843.22	310.05
854.39	310.26	867.43	310.5	873.3	310.84	882.91	310.61	962.37	307.94

962.46	307.94	962.55	307.93	962.96	307.92	1023.28	304.39	1083.92	303.92
1085.49	303.91	1142.91	303.12	1229.01	304.73	1243.34	305.16	1252.01	305.87
1275.2	308.26								

Manning's n Values num= 9

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.07	25.5	.035	216.78	.05	318.8	.035	382.56	.05
471.83	.035	739.62	.05	854.39	.035	1083.92	.02		

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
207.86	382.56	204.8	207.7	197.7	.1	.3

CROSS SECTION OUTPUT Profile #Q50

			Left OB	Channel	Right OB
E.G. Elev (ft)	285.68	Element			
Vel Head (ft)	1.30	Wt. n-Val.	0.035	0.044	0.049
W.S. Elev (ft)	284.38	Reach Len. (ft)	204.80	207.70	197.70
Crit W.S. (ft)		Flow Area (sq ft)	37.37	1512.52	615.32
E.G. Slope (ft/ft)	0.004746	Area (sq ft)	37.37	1512.52	615.32
Q Total (cfs)	19090.00	Flow (cfs)	229.25	14793.96	4066.79
Top Width (ft)	306.74	Top Width (ft)	9.68	174.70	122.36
Vel Total (ft/s)	8.82	Avg. Vel. (ft/s)	6.13	9.78	6.61
Max Chl Dpth (ft)	10.17	Hydr. Depth (ft)	3.86	8.66	5.03
Conv. Total (cfs)	277102.2	Conv. (cfs)	3327.8	214742.8	59031.7
Length Wtd. (ft)	205.69	Wetted Per. (ft)	12.30	175.10	122.72
Min Ch El (ft)	274.21	Shear (lb/sq ft)	0.90	2.56	1.49
Alpha	1.08	Stream Power (lb/ft s)	5.52	25.03	9.82
Frctn Loss (ft)	0.66	Cum Volume (acre-ft)	4.93	15.01	5.47
C & E Loss (ft)	0.12	Cum SA (acres)	0.63	1.56	1.01

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Note: Manning's n values were composited to a single value in the main channel.

CROSS SECTION OUTPUT Profile #Q100

			Left OB	Channel	Right OB
E.G. Elev (ft)	288.85	Element			
Vel Head (ft)	1.60	Wt. n-Val.	0.035	0.044	0.048
W.S. Elev (ft)	287.25	Reach Len. (ft)	204.80	207.70	197.70
Crit W.S. (ft)		Flow Area (sq ft)	70.34	2014.43	995.95
E.G. Slope (ft/ft)	0.004033	Area (sq ft)	70.34	2014.43	995.95
Q Total (cfs)	30242.00	Flow (cfs)	490.81	21985.57	7765.62
Top Width (ft)	330.65	Top Width (ft)	13.27	174.70	142.68
Vel Total (ft/s)	9.82	Avg. Vel. (ft/s)	6.98	10.91	7.80
Max Chl Dpth (ft)	13.04	Hydr. Depth (ft)	5.30	11.53	6.98
Conv. Total (cfs)	476225.1	Conv. (cfs)	7728.8	346209.9	122286.4
Length Wtd. (ft)	205.28	Wetted Per. (ft)	16.90	175.10	143.25
Min Ch El (ft)	274.21	Shear (lb/sq ft)	1.05	2.90	1.75
Alpha	1.07	Stream Power (lb/ft s)	7.31	31.61	13.65
Frctn Loss (ft)	0.58	Cum Volume (acre-ft)	6.90	19.64	8.72
C & E Loss (ft)	0.14	Cum SA (acres)	0.67	1.56	1.18

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

CROSS SECTION OUTPUT Profile #Q100HC

			Left OB	Channel	Right OB
E.G. Elev (ft)	298.17	Element			

Vel Head (ft)	2.02	Wt. n-Val.	0.035	0.044	0.045
W.S. Elev (ft)	296.15	Reach Len. (ft)	204.80	207.70	197.70
Crit W.S. (ft)		Flow Area (sq ft)	635.82	3567.96	2812.38
E.G. Slope (ft/ft)	0.002605	Area (sq ft)	635.82	3567.96	2812.38
Q Total (cfs)	76166.00	Flow (cfs)	5048.04	45818.28	25299.68
Top Width (ft)	548.70	Top Width (ft)	84.75	174.70	289.25
Vel Total (ft/s)	10.86	Avg. Vel. (ft/s)	7.94	12.84	9.00
Max Chl Dpth (ft)	21.94	Hydr. Depth (ft)	7.50	20.42	9.72
Conv. Total (cfs)	1492248.0	Conv. (cfs)	98901.5	897673.8	495672.5
Length Wtd. (ft)	204.47	Wetted Per. (ft)	90.66	175.10	290.13
Min Ch El (ft)	274.21	Shear (lb/sq ft)	1.14	3.31	1.58
Alpha	1.11	Stream Power (lb/ft s)	9.06	42.56	14.18
Frctn Loss (ft)	0.44	Cum Volume (acre-ft)	15.24	33.45	21.96
C & E Loss (ft)	0.05	Cum SA (acres)	1.47	1.56	1.85

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

CROSS SECTION

RIVER: San Juan Creek
REACH: Upper RS: 307.535

INPUT
Description:
Station Elevation Data num= 63

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	301.23	.4	300.92	6.76	298.99	7.8	298.81	30.4	294.27
35.42	294.17	57.94	293.8	62.96	293.82	123.1	296.69	126.05	296.94
129.2	296.94	154.2	295.64	156.67	295.46	157.94	294.76	163.27	290.83
175.14	282.24	190.07	277.01	190.43	276.89	190.81	276.74	191.13	276.69
200.87	275.64	202.13	275.5	207.45	274.93	221.92	275.55	288.75	274.43
291.26	274.39	299.97	274.24	305.32	274.05	323.18	274.04	364.03	273.76
378.63	274.33	401.74	275.15	429.12	276.12	475.21	279.53	502.18	281.64
512.3	282.44	571.65	293.06	580.27	294.69	590.6	296.96	602.61	298.95
621.05	302	624.86	302.69	640.92	305.26	662.59	308.31	675.2	308.36
695.63	308.2	703.05	307.04	714.63	305.24	729.6	302.07	736.12	301.46
753.26	301.08	770.57	300.7	810.78	300.4	910.67	300.61	980.25	300.98
1067.12	301.4	1122.81	301.67	1158.28	301.89	1166.38	302.14	1210.81	304.47
1211.71	304.55	1214.72	304.86	1255.44	308.62				

Manning's n Values num= 9

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	200.87	.05	288.75	.035	401.74	.05	502.18	.035
602.61	.05	703.05	.035	753.26	.05	1067.12	.02		

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
221.92	401.74	205.4	195.45	188.3	.1	.3

CROSS SECTION OUTPUT Profile #Q50

E.G. Elev (ft)	284.90	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.89	Wt. n-Val.	0.043	0.039	0.050
W.S. Elev (ft)	284.01	Reach Len. (ft)	205.40	195.45	188.30
Crit W.S. (ft)		Flow Area (sq ft)	336.06	1715.13	633.78
E.G. Slope (ft/ft)	0.002301	Area (sq ft)	336.06	1715.13	633.78
Q Total (cfs)	19090.00	Flow (cfs)	2030.09	14125.25	2934.67
Top Width (ft)	348.39	Top Width (ft)	49.23	179.82	119.34

Vel Total (ft/s)	7.11	Avg. Vel. (ft/s)	6.04	8.24	4.63
Max Chl Dpth (ft)	10.25	Hydr. Depth (ft)	6.83	9.54	5.31
Conv. Total (cfs)	397980.2	Conv. (cfs)	42322.4	294477.1	61180.7
Length Wtd. (ft)	196.69	Wetted Per. (ft)	50.85	179.86	119.74
Min Ch El (ft)	273.76	Shear (lb/sq ft)	0.95	1.37	0.76
Alpha	1.13	Stream Power (lb/ft s)	5.73	11.28	3.52
Frctn Loss (ft)	0.29	Cum Volume (acre-ft)	4.05	7.31	2.64
C & E Loss (ft)	0.11	Cum SA (acres)	0.49	0.71	0.46

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

CROSS SECTION OUTPUT Profile #Q100

E.G. Elev (ft)	288.13	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.12	Wt. n-Val.	0.043	0.039	0.049
W.S. Elev (ft)	287.01	Reach Len. (ft)	205.40	195.45	188.30
Crit W.S. (ft)		Flow Area (sq ft)	489.89	2254.31	1016.75
E.G. Slope (ft/ft)	0.002068	Area (sq ft)	489.89	2254.31	1016.75
Q Total (cfs)	30242.00	Flow (cfs)	3431.28	21055.29	5755.43
Top Width (ft)	369.29	Top Width (ft)	53.37	179.82	136.10
Vel Total (ft/s)	8.04	Avg. Vel. (ft/s)	7.00	9.34	5.66
Max Chl Dpth (ft)	13.25	Hydr. Depth (ft)	9.18	12.54	7.47
Conv. Total (cfs)	665030.0	Conv. (cfs)	75454.7	463011.8	126563.6
Length Wtd. (ft)	196.57	Wetted Per. (ft)	55.97	179.86	136.76
Min Ch El (ft)	273.76	Shear (lb/sq ft)	1.13	1.62	0.96
Alpha	1.12	Stream Power (lb/ft s)	7.92	15.11	5.43
Frctn Loss (ft)	0.27	Cum Volume (acre-ft)	5.58	9.46	4.15
C & E Loss (ft)	0.12	Cum SA (acres)	0.51	0.71	0.55

Warning: The conveyance ratio (upstream 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)	297.68	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.84	Wt. n-Val.	0.042	0.039	0.047
W.S. Elev (ft)	295.84	Reach Len. (ft)	205.40	195.45	188.30
Crit W.S. (ft)		Flow Area (sq ft)	1124.55	3841.65	2434.26
E.G. Slope (ft/ft)	0.001770	Area (sq ft)	1124.55	3841.65	2434.26
Q Total (cfs)	76166.00	Flow (cfs)	9268.85	47180.94	19716.21
Top Width (ft)	517.73	Top Width (ft)	154.16	179.82	183.75
Vel Total (ft/s)	10.29	Avg. Vel. (ft/s)	8.24	12.28	8.10
Max Chl Dpth (ft)	22.08	Hydr. Depth (ft)	7.29	21.36	13.25
Conv. Total (cfs)	1810293.0	Conv. (cfs)	220299.4	1121384.0	468609.5
Length Wtd. (ft)	196.15	Wetted Per. (ft)	159.69	179.86	185.23
Min Ch El (ft)	273.76	Shear (lb/sq ft)	0.78	2.36	1.45
Alpha	1.12	Stream Power (lb/ft s)	6.41	28.99	11.76
Frctn Loss (ft)	0.26	Cum Volume (acre-ft)	11.10	15.79	10.05
C & E Loss (ft)	0.17	Cum SA (acres)	0.91	0.71	0.77

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 Juan Creek
REACH: Upper RS: 112.108

INPUT
Description:
Station Elevation Data num= 61

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	310.44	5.01	306.36	15.74	299.18	21.57	296.52	24.15	295.85
41.27	293.91	47.61	293.42	51.87	292.92	81.25	290.37	81.37	290.34
81.64	290.23	89.03	287.58	93.4	284.32	103.59	277.32	108.59	275.34
117.11	274.59	128.15	273.94	132.75	274.14	136.48	274.3	144.9	274.67
188.79	275.65	220.69	275.66	223.32	275.51	254.34	273.76	266.22	273.09
275.33	272.7	304.53	272.37	336.46	271.93	349.86	272.54	392.03	274.14
409.43	274.84	433.42	275.79	438.04	275.81	462.01	280.55	470.36	282.04
483.87	283.82	522.85	288.95	533.5	290.6	540.97	291.75	597.04	301.48
612.31	304.63	629.61	308.29	636.48	308.14	645.16	307.04	658.22	305.39
664.69	304.37	672.72	303.05	681.09	302.66	710.69	300.89	726.06	300.37
732.01	300.39	771.69	300.57	781.63	300.61	966.04	301.54	1029.77	301.82
1081	302.05	1132.6	302.92	1166.38	303.63	1223.5	306.58	1225	306.66
1240.69	308.03								

Manning's n Values num= 10

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	136.48	.05	223.32	.035	409.43	.05	483.87	.035
533.5	.05	645.16	.035	732.01	.05	781.63	.035	1029.77	.02

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
254.34	392.03	35.14 112.11	87.83	.1	.3

CROSS SECTION OUTPUT Profile #Q50

			Left OB	Channel	Right OB
E.G. Elev (ft)	284.51	Element			
Vel Head (ft)	0.52	Wt. n-Val.	0.042	0.035	0.043
W.S. Elev (ft)	283.98	Reach Len. (ft)			
Crit W.S. (ft)	279.06	Flow Area (sq ft)	1381.75	1544.75	586.77
E.G. Slope (ft/ft)	0.001000	Area (sq ft)	1381.75	1544.75	586.77
Q Total (cfs)	19090.00	Flow (cfs)	6454.06	10391.61	2244.32
Top Width (ft)	391.22	Top Width (ft)	160.45	137.69	93.08
Vel Total (ft/s)	5.43	Avg. Vel. (ft/s)	4.67	6.73	3.82
Max Chl Dpth (ft)	12.05	Hydr. Depth (ft)	8.61	11.22	6.30
Conv. Total (cfs)	603557.3	Conv. (cfs)	204054.3	328545.6	70957.5
Length Wtd. (ft)		Wetted Per. (ft)	163.03	137.77	93.83
Min Ch El (ft)	271.93	Shear (lb/sq ft)	0.53	0.70	0.39
Alpha	1.14	Stream Power (lb/ft s)	2.47	4.71	1.49
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)	287.74	Element			
Vel Head (ft)	0.71	Wt. n-Val.	0.042	0.035	0.044
W.S. Elev (ft)	287.02	Reach Len. (ft)			
Crit W.S. (ft)	280.76	Flow Area (sq ft)	1876.11	1963.57	905.04
E.G. Slope (ft/ft)	0.001000	Area (sq ft)	1876.11	1963.57	905.04
Q Total (cfs)	30242.00	Flow (cfs)	10534.30	15497.35	4210.36
Top Width (ft)	418.44	Top Width (ft)	164.57	137.69	116.19

Vel Total (ft/s)	6.37	Avg. Vel. (ft/s)	5.61	7.89	4.65
Max Chl Dpth (ft)	15.09	Hydr. Depth (ft)	11.40	14.26	7.79
Conv. Total (cfs)	956305.4	Conv. (cfs)	333113.0	490053.4	133138.9
Length Wtd. (ft)		Wetted Per. (ft)	168.15	137.77	117.14
Min Ch El (ft)	271.93	Shear (lb/sq ft)	0.70	0.89	0.48
Alpha	1.13	Stream Power (lb/ft s)	3.91	7.02	2.24
Frctn Loss (ft)		Cum Volume (acre-ft)			
C & E Loss (ft)		Cum SA (acres)			

CROSS SECTION OUTPUT Profile #Q100HC

E.G. Elev (ft)	297.26	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.28	Wt. n-Val.	0.042	0.035	0.044
W.S. Elev (ft)	295.98	Reach Len. (ft)			
Crit W.S. (ft)	286.15	Flow Area (sq ft)	3583.16	3196.33	2215.64
E.G. Slope (ft/ft)	0.001000	Area (sq ft)	3583.16	3196.33	2215.64
Q Total (cfs)	76166.00	Flow (cfs)	26373.47	34915.88	14876.66
Top Width (ft)	541.67	Top Width (ft)	230.68	137.69	173.30
Vel Total (ft/s)	8.47	Avg. Vel. (ft/s)	7.36	10.92	6.71
Max Chl Dpth (ft)	24.05	Hydr. Depth (ft)	15.53	23.21	12.78
Conv. Total (cfs)	2407995.0	Conv. (cfs)	833799.6	1103869.0	470327.1
Length Wtd. (ft)		Wetted Per. (ft)	235.22	137.77	174.96
Min Ch El (ft)	271.93	Shear (lb/sq ft)	0.95	1.45	0.79
Alpha	1.15	Stream Power (lb/ft s)	7.00	15.83	5.31
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	n8	n9	n10	n11	n12	n13	n14	n15	n16	n17	n18	n19	n20
Upper	4656.846	.02	.035	.02	.05	.035	.07	.035													
Upper	4455.918	.035	.02	.035	.02	.05	.035	.02	.07	.035											
Upper	4237.798	.07	.035	.02	.035	.02	.07	.035													
Upper	4029.826	.035	.02	.035	.02	.07	.035														
Upper	3777.506	.035	.02	.035	.02	.07	.035														
Upper	3688.827	.035	.02	.035	.02	.07	.035														
Upper	3444.123	.035	.02	.035	.02	.07	.035														
Upper	3403.43*	.035	.032	.023	.023	.035	.02	.02	.02	.02	.026	.066	.054	.063	.035	.042	.042				
Upper	3362.75*	.035	.029	.026	.026	.035	.02	.02	.02	.02	.032	.062	.058	.056	.035	.049	.049				
Upper	3322.06*	.035	.026	.029	.029	.035	.02	.02	.02	.02	.038	.058	.062	.049	.035	.056	.056				
Upper	3281.37*	.035	.023	.032	.032	.035	.02	.02	.02	.02	.044	.054	.066	.042	.035	.063	.063				
Upper	3240.694	.035	.02	.035	.02	.05	.07	.035	.07												
Upper	3198.13*	.035	.031	.024	.024	.035	.02	.02	.02	.043	.058	.02	.031	.027	.046	.061	.061				
Upper	3155.57*	.035	.027	.027	.027	.035	.02	.02	.02	.035	.045	.02	.027	.035	.043	.053	.053				

Upper		3113.01*		.035	.024	.031	.031	.035	.02	.02	.02	.027	.032	.02	.024
.043	.039	.044	.044												
Upper		3070.453		.035	.02	.035	.02	.05	.035						
Upper		2920.457		.02	.035	.05	.035	.02	.05						
Upper		2752.174		.035	.05	.035	.02	.05							
Upper		2710.51*		.035	.038	.05	.047	.035	.038	.047	.025	.05	.047	.02	.02
.025	.025	.05	.05												
Upper		2668.85*		.035	.04	.05	.045	.035	.04	.045	.03	.05	.045	.02	.02
.03	.05	.05													
Upper		2627.20*		.035	.043	.05	.043	.035	.043	.043	.035	.05	.043	.02	.02
.035	.05	.05													
Upper		2585.54*		.035	.045	.05	.04	.035	.045	.04	.04	.05	.04	.02	.02
.04	.05														
Upper		2543.88*		.035	.047	.05	.038	.035	.047	.038	.045	.05	.038	.02	.02
.045	.045	.05	.05												
Upper		2502.231		.035	.05	.035	.05	.035	.05	.035	.02	.05			
Upper		2456.91*		.035	.041	.053	.064	.038	.05	.038	.047	.035	.025	.05	.047
.032	.025	.053	.067												
Upper		2411.59*		.035	.047	.057	.058	.04	.045	.035	.03	.05	.045	.03	.057
.063															
Upper		2366.27*		.035	.053	.06	.053	.043	.05	.043	.035	.05	.043	.027	.035
.06	.06														
Upper		2320.95*		.035	.058	.063	.047	.045	.05	.045	.035	.04	.05	.04	.025
.04	.063	.057													
Upper		2275.63*		.035	.064	.041	.047	.05	.047	.038	.035	.045	.05	.038	.022
.045	.067	.053													
Upper		2230.316		.035	.07	.035	.05	.035	.05	.035	.02	.05	.07	.05	
Upper		2190.21*		.033	.065	.04	.053	.065	.037	.035	.048	.035	.048	.035	.033
.02	.05	.053	.07	.05											
Upper		2150.11*		.031	.06	.045	.056	.06	.039	.035	.046	.035	.046	.035	.031
.02	.05	.056	.07	.05											
Upper		2110.00*		.029	.055	.05	.059	.055	.041	.035	.041	.044	.035	.044	.035
.029	.033	.05	.059	.07	.05										
Upper		2069.90*		.026	.029	.05	.055	.061	.05	.044	.035	.044	.041	.035	.041
.035	.026	.02	.037	.05	.07	.05									
Upper		2029.80*		.024	.031	.045	.06	.064	.045	.046	.035	.046	.039	.035	.039
.035	.024	.02	.041	.05	.064	.07	.05								
Upper		1989.70*		.022	.04	.065	.067	.04	.048	.035	.048	.037	.035	.037	.035
.022	.02	.046	.05	.067	.07	.05									
Upper		1949.598		.02	.035	.07	.035	.05	.035	.05	.035	.02	.05	.07	.05
Upper		1618.909		.035	.05	.035	.05	.035	.02	.05					
Upper		1441.576		.02	.07	.035	.05	.035	.05	.035	.07	.035	.07	.035	.02
.05															
Upper		1199.171		.07	.035	.05	.035	.05	.035	.02					
Upper		1082.126		.035	.07	.035	.02	.07	.035	.05	.035	.05	.035	.02	
Upper		1060	Bridge												
Upper		867.557		.035	.02	.07	.035	.05	.035	.05	.035	.05	.035	.07	.035
.02															
Upper		689.540		.07	.035	.05	.035	.05	.035	.02					
Upper		515.223		.07	.035	.05	.035	.05	.035	.05	.035	.02			
Upper		307.535		.035	.05	.035	.05	.035	.05	.035	.05	.02			
Upper		112.108		.035	.05	.035	.05	.035	.05	.035	.05	.035	.02		

SUMMARY OF REACH LENGTHS

River: San Juan Creek

Reach	River Sta.	Left	Channel	Right
Upper	4656.846	187	200.95	202.2
Upper	4455.918	223.3	218.1	206
Upper	4237.798	218.3	207.95	195.2
Upper	4029.826	277.92	252.3	228.6
Upper	3777.506	90	88.68	88.38
Upper	3688.827	239.7	244.68	248.16
Upper	3444.123	43.8	40.69	36.67
Upper	3403.43*	43.8	40.69	36.67
Upper	3362.75*	43.8	40.69	36.67
Upper	3322.06*	43.8	40.69	36.67
Upper	3281.37*	43.8	40.69	36.67
Upper	3240.694	42.89	42.56	42.65
Upper	3198.13*	42.89	42.56	42.65
Upper	3155.57*	42.89	42.56	42.65
Upper	3113.01*	42.89	42.56	42.65
Upper	3070.453	156.12	150	143.31
Upper	2920.457	160.12	168.28	173.88
Upper	2752.174	29.22	41.66	51.58
Upper	2710.51*	29.22	41.66	51.58
Upper	2668.85*	29.22	41.66	51.58
Upper	2627.20*	29.22	41.66	51.58
Upper	2585.54*	29.22	41.66	51.58
Upper	2543.88*	29.22	41.66	51.58
Upper	2502.231	45.42	45.32	47.38
Upper	2456.91*	45.42	45.32	47.38
Upper	2411.59*	45.42	45.32	47.38
Upper	2366.27*	45.42	45.32	47.38
Upper	2320.95*	45.42	45.32	47.38
Upper	2275.63*	45.42	45.32	47.38
Upper	2230.316	42.6	40.1	40.87
Upper	2190.21*	42.6	40.1	40.87
Upper	2150.11*	42.6	40.1	40.87
Upper	2110.00*	42.6	40.1	40.87
Upper	2069.90*	42.6	40.1	40.87
Upper	2029.80*	42.6	40.1	40.87
Upper	1989.70*	42.6	40.1	40.87
Upper	1949.598	407.52	330.72	271.52
Upper	1618.909	167.05	177.35	174.2
Upper	1441.576	225.37	242.4	257.8
Upper	1199.171	111.64	117.05	117.88
Upper	1082.126	207.38	214.57	222.4
Upper	1060	Bridge		
Upper	867.557	194.86	178.02	165.62
Upper	689.540	173.41	174.32	168.46
Upper	515.223	204.8	207.7	197.7
Upper	307.535	205.4	195.45	188.3
Upper	112.108	35.14	112.11	87.83

SUMMARY OF CONTRACTION AND EXPANSION COEFFICIENTS
River: San Juan Creek

Reach	River Sta.	Contr.	Expan.

Upper	4656.846		.1	.3
Upper	4455.918		.1	.3
Upper	4237.798		.1	.3
Upper	4029.826		.1	.3
Upper	3777.506		.1	.3
Upper	3688.827		.1	.3
Upper	3444.123		.1	.3
Upper	3403.43*		.1	.3
Upper	3362.75*		.1	.3
Upper	3322.06*		.1	.3
Upper	3281.37*		.1	.3
Upper	3240.694		.1	.3
Upper	3198.13*		.1	.3
Upper	3155.57*		.1	.3
Upper	3113.01*		.1	.3
Upper	3070.453		.1	.3
Upper	2920.457		.1	.3
Upper	2752.174		.1	.3
Upper	2710.51*		.1	.3
Upper	2668.85*		.1	.3
Upper	2627.20*		.1	.3
Upper	2585.54*		.1	.3
Upper	2543.88*		.1	.3
Upper	2502.231		.1	.3
Upper	2456.91*		.1	.3
Upper	2411.59*		.1	.3
Upper	2366.27*		.1	.3
Upper	2320.95*		.1	.3
Upper	2275.63*		.1	.3
Upper	2230.316		.1	.3
Upper	2190.21*		.1	.3
Upper	2150.11*		.1	.3
Upper	2110.00*		.1	.3
Upper	2069.90*		.1	.3
Upper	2029.80*		.1	.3
Upper	1989.70*		.1	.3
Upper	1949.598		.1	.3
Upper	1618.909		.1	.3
Upper	1441.576		.1	.3
Upper	1199.171		.1	.3
Upper	1082.126		.3	.5
Upper	1060	Bridge		
Upper	867.557		.3	.5
Upper	689.540		.1	.3
Upper	515.223		.1	.3
Upper	307.535		.1	.3
Upper	112.108		.1	.3

Profile Output Table - Standard Table 1

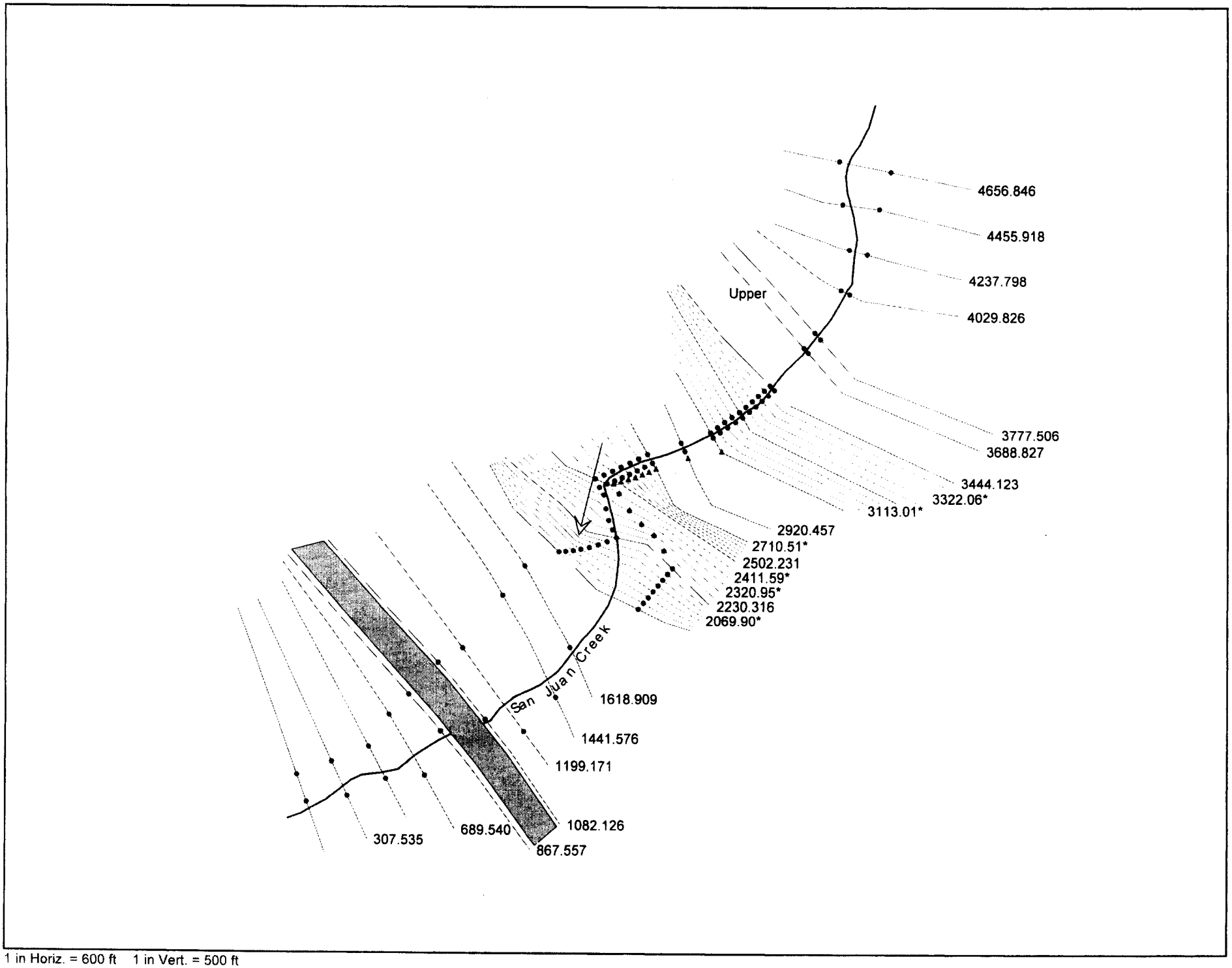
Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
Upper	4656.846	Q50	19090.00	307.52	326.78	314.03	326.99	0.000254	3.80	5797.48	460.53	0.16
Upper	4656.846	Q100	30242.00	307.52	333.84	316.06	334.05	0.000179	3.96	9396.65	567.00	0.14
Upper	4656.846	Q100HC	76166.00	307.52	334.98	322.72	336.16	0.000948	9.38	10061.30	600.88	0.32

Upper	4455.918	Q50	19090.00	307.74	326.68		326.92	0.000346	4.33	5140.96	499.31	0.18
Upper	4455.918	Q100	30242.00	307.74	333.81		334.01	0.000194	4.04	8933.84	566.21	0.14
Upper	4455.918	Q100HC	76166.00	307.74	334.82		335.94	0.001027	9.54	9516.62	582.22	0.33
Upper	4237.798	Q50	19090.00	306.67	326.44		326.83	0.000412	6.04	4262.73	464.36	0.25
Upper	4237.798	Q100	30242.00	306.67	333.71		333.96	0.000178	4.95	8061.88	559.47	0.17
Upper	4237.798	Q100HC	76166.00	306.67	334.20		335.68	0.001028	12.03	8334.76	565.22	0.41
Upper	4029.826	Q50	19090.00	305.97	326.02		326.68	0.000854	8.79	3532.90	505.54	0.36
Upper	4029.826	Q100	30242.00	305.97	333.63		333.92	0.000251	5.97	7672.24	597.96	0.20
Upper	4029.826	Q100HC	76166.00	305.97	333.56		335.39	0.001619	15.13	7626.00	596.47	0.52
Upper	3777.506	Q50	19090.00	301.00	325.19		326.38	0.001218	11.19	2898.95	459.32	0.42
Upper	3777.506	Q100	30242.00	301.00	333.55		333.86	0.000248	6.23	7601.64	679.27	0.20
Upper	3777.506	Q100HC	76166.00	301.00	332.40		334.88	0.002112	17.73	6834.19	651.58	0.57
Upper	3688.827	Q50	19090.00	301.39	324.34		326.19	0.001912	14.37	2538.51	469.83	0.54
Upper	3688.827	Q100	30242.00	301.39	333.51		333.83	0.000271	6.82	7484.24	649.93	0.21
Upper	3688.827	Q100HC	76166.00	301.39	331.47		334.60	0.002897	21.31	6231.23	587.81	0.69
Upper	3444.123	Q50	19090.00	295.17	319.89	319.89	325.15	0.004552	20.75	1255.81	139.47	0.78
Upper	3444.123	Q100	30242.00	295.17	333.50	324.96	333.76	0.000198	5.98	8327.15	702.37	0.18
Upper	3444.123	Q100HC	76166.00	295.17	331.27		333.81	0.002177	18.99	6851.13	614.17	0.58
Upper	3403.43*	Q50	19090.00	294.85	317.90	319.17	324.91	0.002013	23.55	1199.47	154.06	0.92
Upper	3403.43*	Q100	30242.00	294.85	319.42	319.42	332.46	0.003569	32.89	1457.62	180.95	1.23
Upper	3403.43*	Q100HC	76166.00	294.85	329.47	329.47	333.58	0.001230	24.80	6406.63	622.80	0.77
Upper	3362.75*	Q50	19090.00	294.53	314.95	318.37	324.55	0.003083	27.32	1019.88	142.26	1.13
Upper	3362.75*	Q100	30242.00	294.53	317.24	323.57	332.12	0.004403	35.33	1394.92	180.14	1.37
Upper	3362.75*	Q100HC	76166.00	294.53	326.75	328.53	333.28	0.001999	30.67	5416.49	594.88	0.99
Upper	3322.06*	Q50	19090.00	294.20	312.66	316.58	324.22	0.004142	30.09	953.05	147.95	1.30
Upper	3322.06*	Q100	30242.00	294.20	314.97	320.76	331.72	0.005508	37.85	1335.57	180.59	1.53
Upper	3322.06*	Q100HC	76166.00	294.20	324.93	327.44	333.04	0.002512	33.87	4994.81	593.79	1.11
Upper	3281.37*	Q50	19090.00	293.88	310.46	314.86	323.84	0.005483	32.75	913.93	154.07	1.49
Upper	3281.37*	Q100	30242.00	293.88	312.59	319.26	331.28	0.007060	40.59	1274.84	177.26	1.72
Upper	3281.37*	Q100HC	76166.00	293.88	323.21	326.21	332.78	0.003012	36.51	4645.20	589.09	1.22
Upper	3240.694	Q50	19090.00	293.56	316.26	311.57	317.58	0.001374	11.96	2424.28	280.19	0.45
Upper	3240.694	Q100	30242.00	293.56	320.61	314.28	321.94	0.001254	12.92	3862.64	466.24	0.45
Upper	3240.694	Q100HC	76166.00	293.56	326.93	323.76	328.92	0.001570	16.72	7598.05	626.91	0.52
Upper	3198.13*	Q50	19090.00	292.38	313.63		317.29	0.001332	19.35	1846.91	212.49	0.77
Upper	3198.13*	Q100	30242.00	292.38	316.05	316.05	321.47	0.001852	24.63	2481.79	296.66	0.92
Upper	3198.13*	Q100HC	76166.00	292.38	324.29	324.29	328.62	0.001397	26.40	6438.05	597.98	0.84
Upper	3155.57*	Q50	19090.00	291.20	313.01	313.01	317.18	0.001473	20.32	1815.82	271.98	0.80
Upper	3155.57*	Q100	30242.00	291.20	315.11	316.68	321.31	0.002111	25.99	2476.70	340.10	0.97
Upper	3155.57*	Q100HC	76166.00	291.20	321.03	323.05	328.26	0.002468	32.90	5157.73	552.01	1.09
Upper	3113.01*	Q50	19090.00	290.01	310.52	313.01	316.89	0.002387	24.16	1491.67	251.14	0.99
Upper	3113.01*	Q100	30242.00	290.01	312.76	315.33	320.99	0.003030	29.38	2166.77	327.40	1.14
Upper	3113.01*	Q100HC	76166.00	290.01	318.68	321.58	327.94	0.003366	36.60	4533.42	497.73	1.25
Upper	3070.453	Q50	19090.00	288.83	308.39	308.68	317.07	0.010454	27.19	978.95	209.60	1.15
Upper	3070.453	Q100	30242.00	288.83	312.29	312.29	315.51	0.004191	19.71	2533.59	320.45	0.75
Upper	3070.453	Q100HC	76166.00	288.83	313.85	318.55	327.25	0.016278	40.72	3048.46	347.27	1.50

Upper	2920.457	Q50	19090.00	286.89	307.55	303.52	307.66	0.000139	3.55	7334.38	540.61	0.14
Upper	2920.457	Q100	30242.00	286.89	303.52	303.52	304.06	0.000833	7.43	5216.28	464.59	0.33
Upper	2920.457	Q100HC	76166.00	286.89	303.52	303.52	306.98	0.005281	18.71	5216.28	464.59	0.84
Upper	2752.174	Q50	19090.00	287.44	307.58	302.97	307.63	0.000051	2.16	11190.81	655.68	0.09
Upper	2752.174	Q100	30242.00	287.44	303.12	302.97	303.33	0.000286	4.30	8339.92	558.75	0.19
Upper	2752.174	Q100HC	76166.00	287.44	302.97	302.97	304.31	0.001864	10.90	8255.63	542.24	0.50
Upper	2710.51*	Q50	19090.00	287.30	307.58	303.00	307.63	0.000043	2.15	11736.07	676.68	0.09
Upper	2710.51*	Q100	30242.00	287.30	303.13	303.00	303.31	0.000246	4.35	8769.28	646.61	0.20
Upper	2710.51*	Q100HC	76166.00	287.30	303.00	303.00	304.22	0.001599	11.03	8688.01	621.63	0.50
Upper	2668.85*	Q50	19090.00	287.17	307.58	303.02	307.62	0.000039	1.89	12291.28	696.70	0.07
Upper	2668.85*	Q100	30242.00	287.17	303.13	303.03	303.30	0.000224	3.80	9234.05	675.69	0.17
Upper	2668.85*	Q100HC	76166.00	287.17	303.04	303.03	304.12	0.001444	9.63	9174.21	670.18	0.43
Upper	2627.20*	Q50	19090.00	287.04	307.59	302.20	307.62	0.000036	1.66	12854.88	716.42	0.07
Upper	2627.20*	Q100	30242.00	287.04	303.14	303.06	303.29	0.000203	3.34	9709.28	697.90	0.15
Upper	2627.20*	Q100HC	76166.00	287.04	303.08	303.06	304.05	0.001304	8.44	9669.75	696.61	0.38
Upper	2585.54*	Q50	19090.00	286.90	307.59	302.10	307.62	0.000033	1.48	13425.61	735.43	0.06
Upper	2585.54*	Q100	30242.00	286.90	303.14	303.09	303.28	0.000184	2.97	10193.50	718.74	0.13
Upper	2585.54*	Q100HC	76166.00	286.90	303.11	303.09	303.98	0.001173	7.51	10170.03	718.62	0.34
Upper	2543.88*	Q50	19090.00	286.77	307.59	301.61	307.62	0.000030	1.33	14002.79	754.20	0.05
Upper	2543.88*	Q100	30242.00	286.77	303.15	303.12	303.27	0.000166	2.66	10686.71	738.79	0.12
Upper	2543.88*	Q100HC	76166.00	286.77	303.13	303.12	303.92	0.001058	6.71	10676.50	738.75	0.30
Upper	2502.231	Q50	19090.00	286.63	301.31	301.31	307.04	0.007702	19.92	1048.55	679.51	0.94
Upper	2502.231	Q100	30242.00	286.63	303.15	303.15	303.26	0.000146	2.98	11188.45	758.27	0.13
Upper	2502.231	Q100HC	76166.00	286.63	303.15	303.15	303.87	0.000926	7.50	11188.45	758.27	0.33
Upper	2456.91*	Q50	19090.00	285.77	288.68	288.29	289.54	0.007836	5.02	2594.56	689.73	0.60
Upper	2456.91*	Q100	30242.00	285.77	290.94	288.90	291.76	0.004968	6.39	4165.05	701.03	0.54
Upper	2456.91*	Q100HC	76166.00	285.77	299.36	292.19	300.23	0.001665	7.59	10242.42	740.26	0.37
Upper	2411.59*	Q50	19090.00	284.91	288.34	287.40	289.18	0.008118	6.08	2624.87	671.55	0.65
Upper	2411.59*	Q100	30242.00	284.91	290.76	288.48	291.54	0.004404	6.87	4268.86	687.34	0.54
Upper	2411.59*	Q100HC	76166.00	284.91	299.31	291.82	300.15	0.001511	7.76	10370.96	738.39	0.37
Upper	2366.27*	Q50	19090.00	284.05	288.04	286.96	288.82	0.006919	6.73	2705.71	656.56	0.65
Upper	2366.27*	Q100	30242.00	284.05	290.61	288.01	291.34	0.003689	7.18	4422.55	677.53	0.52
Upper	2366.27*	Q100HC	76166.00	284.05	299.25	291.42	300.08	0.001404	8.07	10565.61	740.85	0.37
Upper	2320.95*	Q50	19090.00	283.20	287.84	286.42	288.53	0.004935	6.35	2899.44	646.58	0.55
Upper	2320.95*	Q100	30242.00	283.20	290.51	287.51	291.17	0.002773	6.62	4662.93	672.96	0.45
Upper	2320.95*	Q100HC	76166.00	283.20	299.24	290.98	300.00	0.001186	7.49	10884.26	752.39	0.33
Upper	2275.63*	Q50	19090.00	282.32	287.75	285.75	288.32	0.003008	6.47	3207.20	642.27	0.50
Upper	2275.63*	Q100	30242.00	282.32	290.46	286.90	291.05	0.001844	6.73	4991.40	674.94	0.42
Upper	2275.63*	Q100HC	76166.00	282.32	299.20	290.50	299.95	0.000902	7.76	11337.17	784.46	0.34
Upper	2230.316	Q50	19090.00	281.20	287.72		288.16	0.002354	5.22	3613.52	645.72	0.37
Upper	2230.316	Q100	30242.00	281.20	290.45		290.94	0.001611	5.54	5434.33	688.17	0.33
Upper	2230.316	Q100HC	76166.00	281.20	299.24		299.87	0.000843	6.36	11985.39	798.46	0.27
Upper	2190.21*	Q50	19090.00	280.92	287.56		288.06	0.001990	6.28	3579.67	643.38	0.45
Upper	2190.21*	Q100	30242.00	280.92	290.32		290.87	0.001358	6.64	5407.42	682.42	0.39

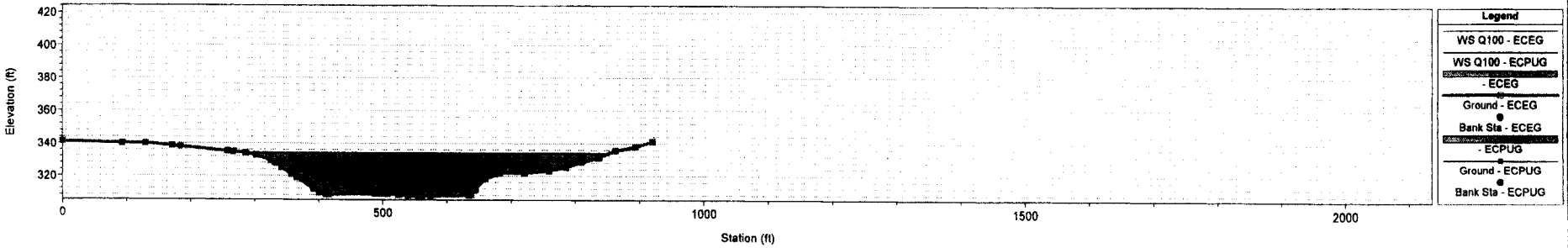
Upper	2190.21*	Q100HC	76166.00	280.92	299.11		299.83	0.000740	7.74	11927.88	796.59	0.32
Upper	2150.11*	Q50	19090.00	280.63	287.49		287.98	0.001833	6.17	3605.40	641.89	0.43
Upper	2150.11*	Q100	30242.00	280.63	290.27		290.81	0.001246	6.51	5443.92	677.96	0.38
Upper	2150.11*	Q100HC	76166.00	280.63	299.09		299.80	0.000690	7.62	11960.33	795.79	0.32
Upper	2110.00*	Q50	19090.00	280.35	287.43		287.91	0.001722	6.03	3639.39	639.77	0.42
Upper	2110.00*	Q100	30242.00	280.35	290.23		290.76	0.001183	6.38	5484.05	673.66	0.37
Upper	2110.00*	Q100HC	76166.00	280.35	299.06		299.77	0.000671	7.53	11992.89	795.92	0.31
Upper	2069.90*	Q50	19090.00	280.07	287.38		287.83	0.001565	5.81	3686.76	637.13	0.40
Upper	2069.90*	Q100	30242.00	280.07	290.20		290.71	0.001089	6.17	5535.00	669.93	0.36
Upper	2069.90*	Q100HC	76166.00	280.07	299.04		299.74	0.000633	7.35	12038.74	797.46	0.30
Upper	2029.80*	Q50	19090.00	279.79	287.33		287.77	0.001417	5.58	3740.11	633.39	0.38
Upper	2029.80*	Q100	30242.00	279.79	290.17		290.66	0.001015	6.00	5585.84	666.16	0.35
Upper	2029.80*	Q100HC	76166.00	279.79	299.03		299.71	0.000600	7.19	12088.69	805.01	0.30
Upper	1989.70*	Q50	19090.00	279.50	287.30		287.71	0.001278	5.36	3803.44	628.55	0.37
Upper	1989.70*	Q100	30242.00	279.50	290.15		290.62	0.000931	5.80	5645.71	662.50	0.33
Upper	1989.70*	Q100HC	76166.00	279.50	299.02		299.68	0.000569	7.04	12152.12	814.99	0.29
Upper	1949.598	Q50	19090.00	279.22	287.26		287.65	0.001313	5.10	3870.26	622.50	0.35
Upper	1949.598	Q100	30242.00	279.22	290.12		290.57	0.000975	5.55	5705.91	659.10	0.32
Upper	1949.598	Q100HC	76166.00	279.22	299.00		299.66	0.000623	6.85	12222.92	828.32	0.28
Upper	1618.909	Q50	19090.00	278.19	286.73		287.12	0.001862	5.13	3869.62	611.74	0.34
Upper	1618.909	Q100	30242.00	278.19	289.75		290.18	0.001306	5.45	5740.93	630.53	0.30
Upper	1618.909	Q100HC	76166.00	278.19	298.73		299.40	0.000856	6.75	11740.31	736.06	0.27
Upper	1441.576	Q50	19090.00	277.80	286.58		286.84	0.000993	4.16	4675.71	617.37	0.26
Upper	1441.576	Q100	30242.00	277.80	289.64		289.97	0.000817	4.68	6594.45	637.30	0.25
Upper	1441.576	Q100HC	76166.00	277.80	298.67		299.24	0.000648	6.21	12756.61	783.59	0.24
Upper	1199.171	Q50	19090.00	275.29	286.42		286.65	0.000592	3.90	4990.94	562.53	0.22
Upper	1199.171	Q100	30242.00	275.29	289.49		289.80	0.000567	4.59	6752.47	587.62	0.23
Upper	1199.171	Q100HC	76166.00	275.29	298.49		299.10	0.000545	6.45	12837.92	843.50	0.24
Upper	1082.126	Q50	19090.00	274.39	286.24	280.91	286.56	0.000971	4.61	4225.99	514.45	0.26
Upper	1082.126	Q100	30242.00	274.39	289.29	282.42	289.71	0.000891	5.31	5861.22	571.94	0.26
Upper	1082.126	Q100HC	76166.00	274.39	298.40	286.82	299.02	0.000653	6.54	12385.97	844.58	0.25
Upper	1060		Bridge									
Upper	867.557	Q50	19090.00	274.72	285.97		286.29	0.000780	4.20	4337.60	535.54	0.24
Upper	867.557	Q100	30242.00	274.72	289.06		289.46	0.000715	4.81	6101.52	608.15	0.24
Upper	867.557	Q100HC	76166.00	274.72	298.13		298.71	0.000564	6.08	12780.27	852.52	0.23
Upper	689.540	Q50	19090.00	274.50	285.61		286.08	0.000958	5.59	3561.22	428.38	0.32
Upper	689.540	Q100	30242.00	274.50	288.60		289.24	0.000928	6.59	4906.63	490.03	0.33
Upper	689.540	Q100HC	76166.00	274.50	297.56		298.49	0.000722	8.33	10475.24	771.44	0.32
Upper	515.223	Q50	19090.00	274.21	284.38		285.68	0.004746	9.78	2165.21	306.74	0.59
Upper	515.223	Q100	30242.00	274.21	287.25		288.85	0.004033	10.91	3080.72	330.65	0.57
Upper	515.223	Q100HC	76166.00	274.21	296.15		298.17	0.002605	12.84	7016.16	548.70	0.50
Upper	307.535	Q50	19090.00	273.76	284.01		284.90	0.002301	8.24	2684.97	348.39	0.47
Upper	307.535	Q100	30242.00	273.76	287.01		288.13	0.002068	9.34	3760.95	369.29	0.46
Upper	307.535	Q100HC	76166.00	273.76	295.84		297.68	0.001770	12.28	7400.46	517.73	0.47

Upper	112.108	Q50	19090.00	271.93	283.98	279.06	284.51	0.001000	6.73	3513.27	391.22	0.35
Upper	112.108	Q100	30242.00	271.93	287.02	280.76	287.74	0.001000	7.89	4744.73	418.44	0.37
Upper	112.108	Q100HC	76166.00	271.93	295.98	286.15	297.26	0.001000	10.92	8995.13	541.67	0.40



1 in Horiz. = 600 ft 1 in Vert. = 500 ft

Project Model BX2 Plan: 1) ECPUG 2) ECEG
RS = 4656.846



Project Model BX2 Plan: 1) ECPUG 2) ECEG
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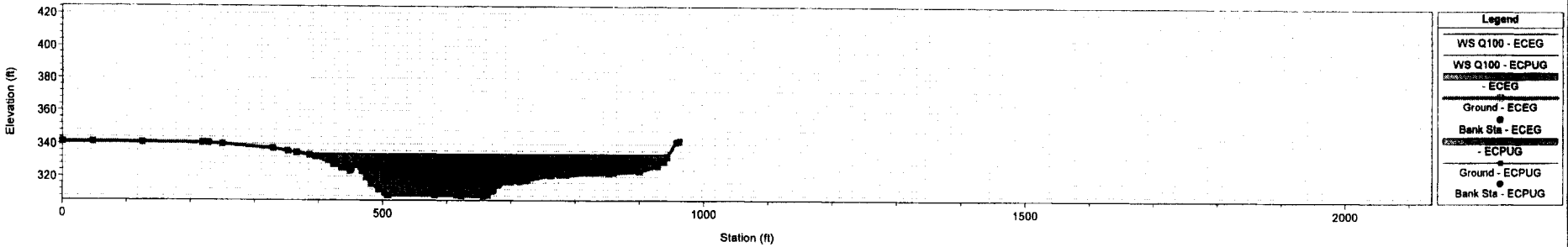
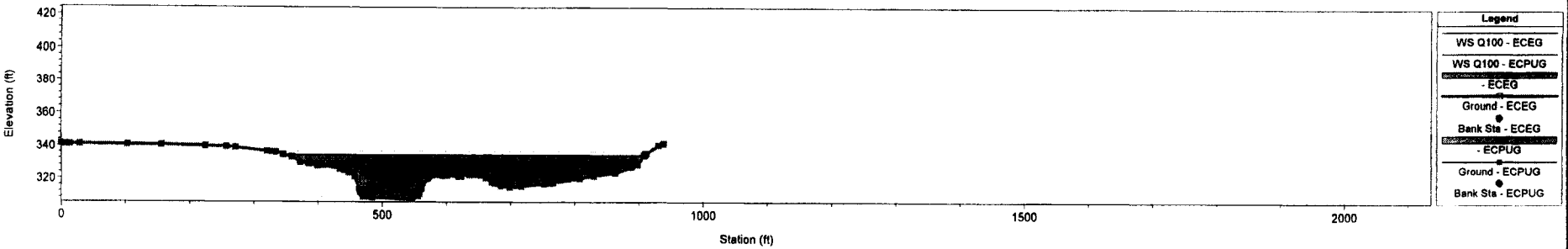
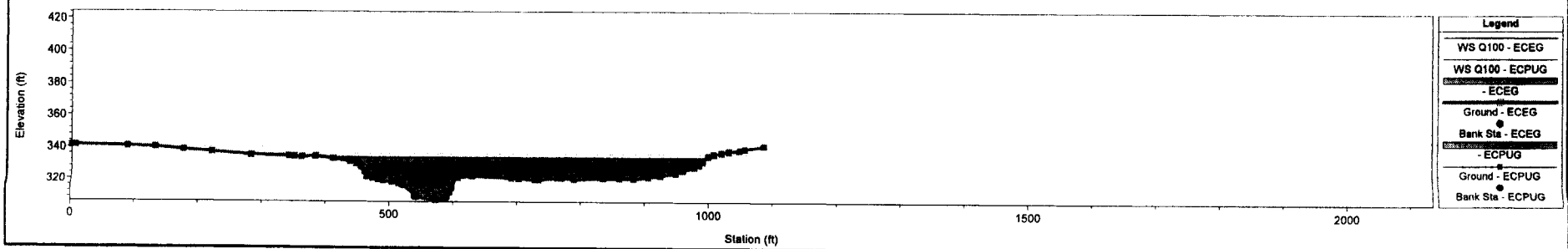


Project Model BX2 Plan: 1) ECPUG 2) ECEG
RS = 4237.798

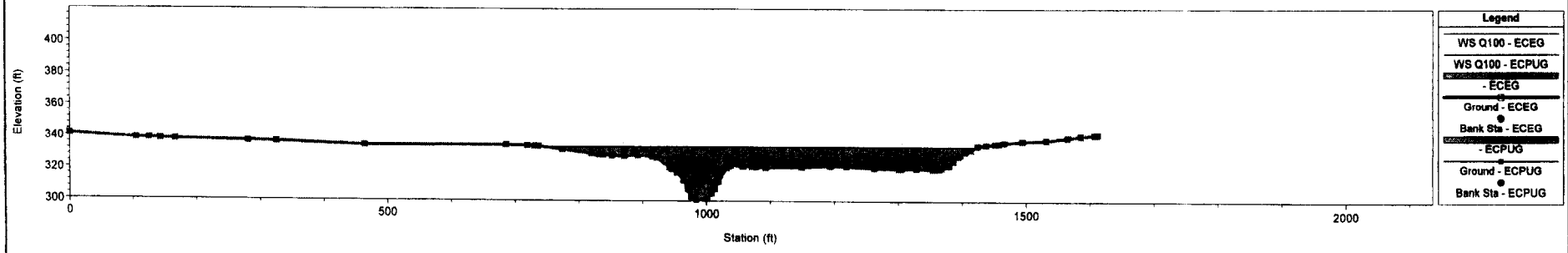


Project Model BX2 Plan: 1) ECPUG 2) ECEG
RS = 4029.826 Manual Entry for Manning's N Distribution

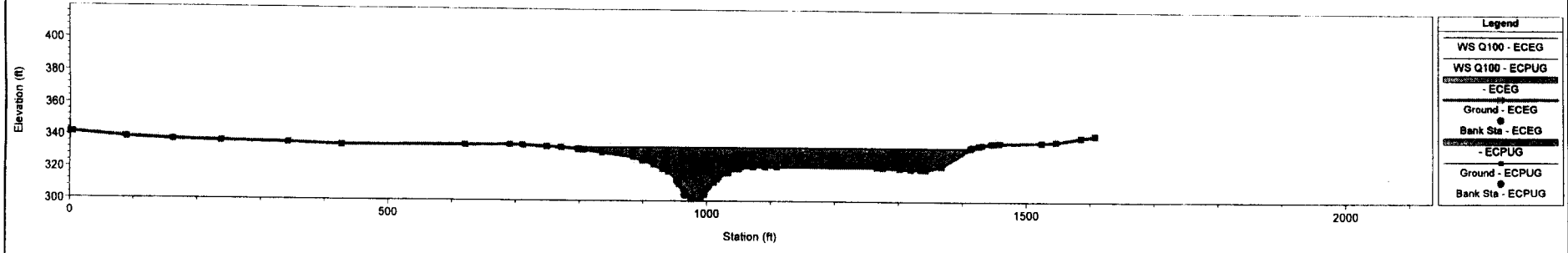


1 in Horiz. = 250 ft 1 in Vert. = 100 ft

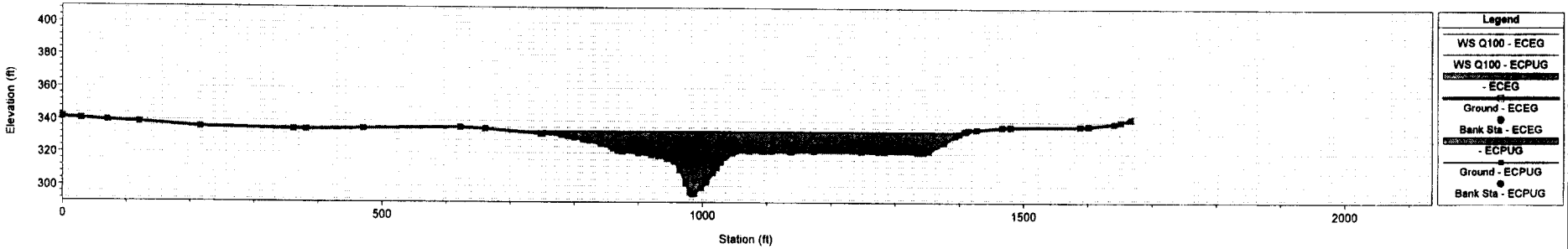
Project Model BX2 Plan: 1) ECPUG 2) ECEG
RS = 3777.506



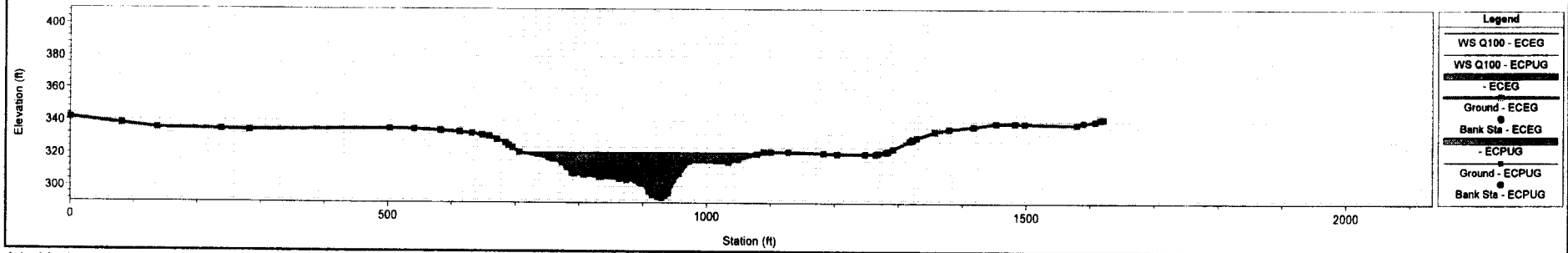
Project Model BX2 Plan: 1) ECPUG 2) ECEG
RS = 3688.827



Project Model BX2 Plan: 1) ECPUG 2) ECEG
RS = 3444.123

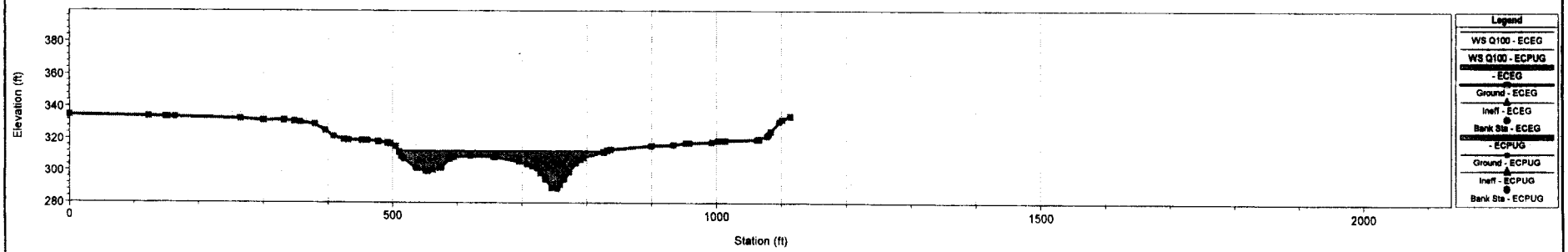


Project Model BX2 Plan: 1) ECPUG 2) ECEG
RS = 3240.694

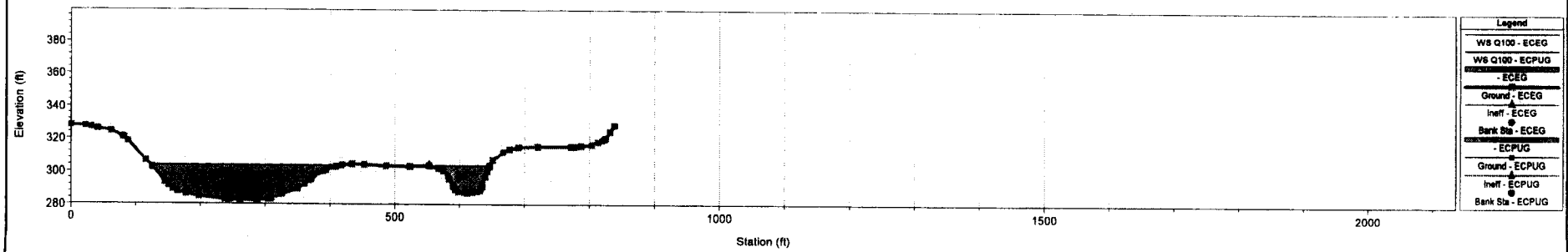


1 in Horiz. = 250 ft 1 in Vert. = 100 ft

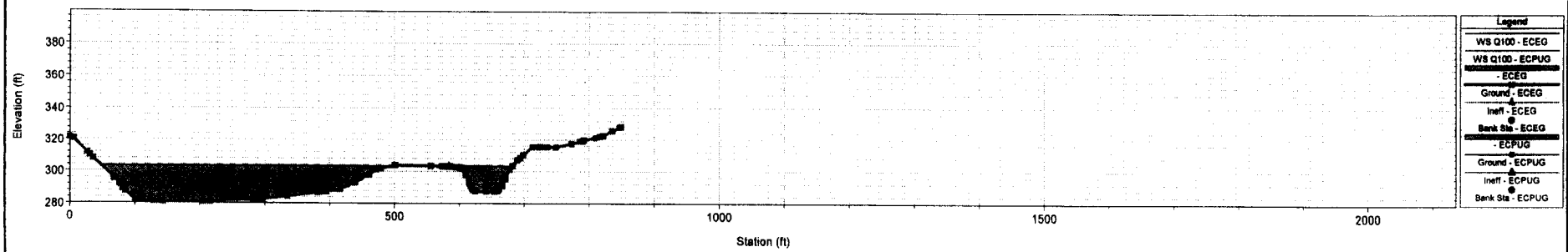
Project Model BX2 Plan: 1) ECPUG 2) ECEG
RS = 3070.453



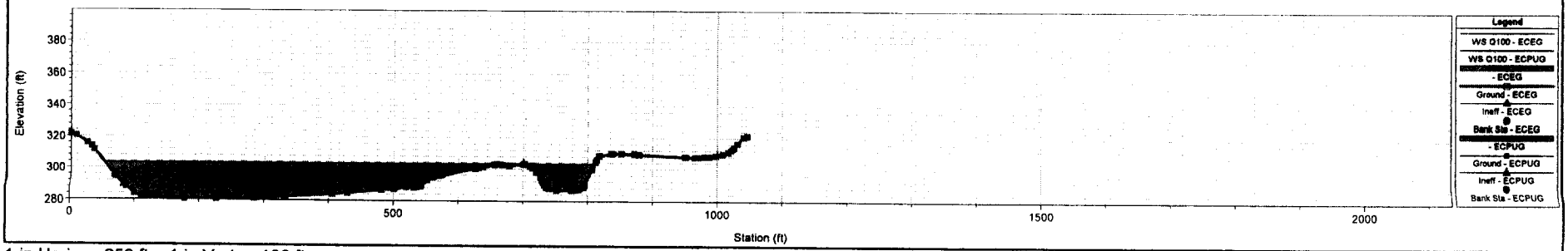
Project Model BX2 Plan: 1) ECPUG 2) ECEG
RS = 2920.457



Project Model BX2 Plan: 1) ECPUG 2) ECEG
RS = 2752.174

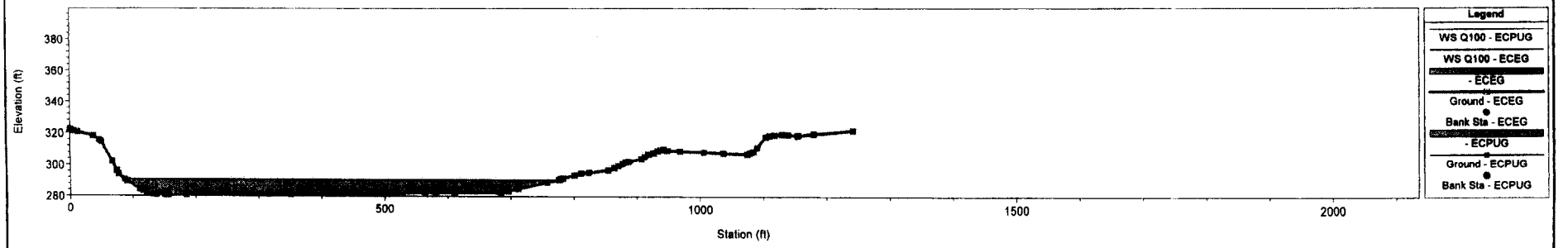


Project Model BX2 Plan: 1) ECPUG 2) ECEG
RS = 2502.231

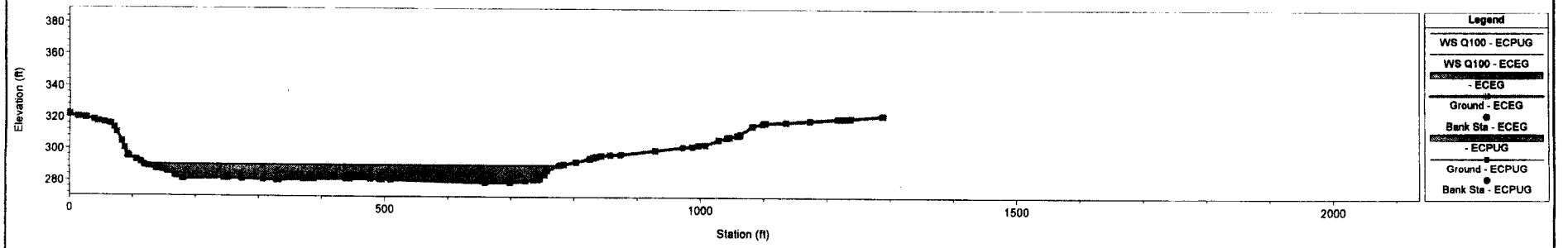


1 in Horiz. = 250 ft 1 in Vert. = 100 ft

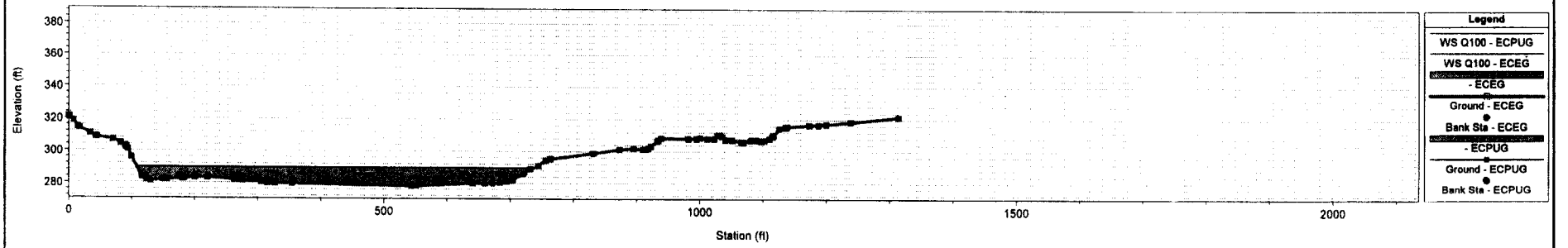
Project Model BX2 Plan: 1) ECPUG 2) ECEG
RS = 2230.316



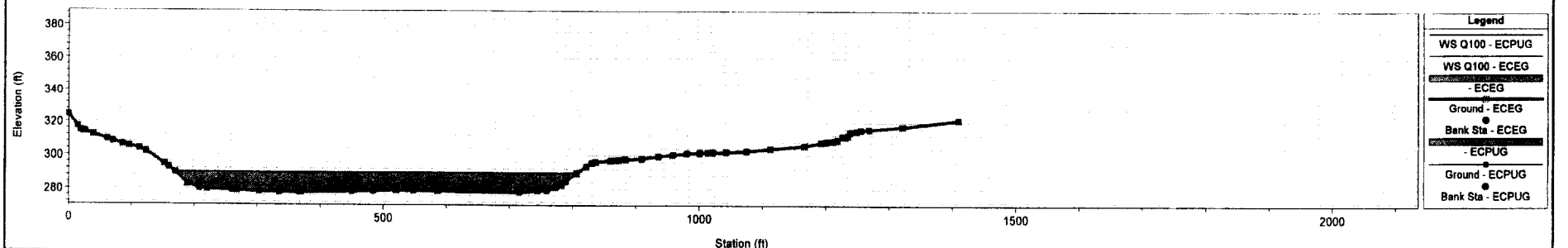
Project Model BX2 Plan: 1) ECPUG 2) ECEG
RS = 1949.598



Project Model BX2 Plan: 1) ECPUG 2) ECEG
RS = 1618.909

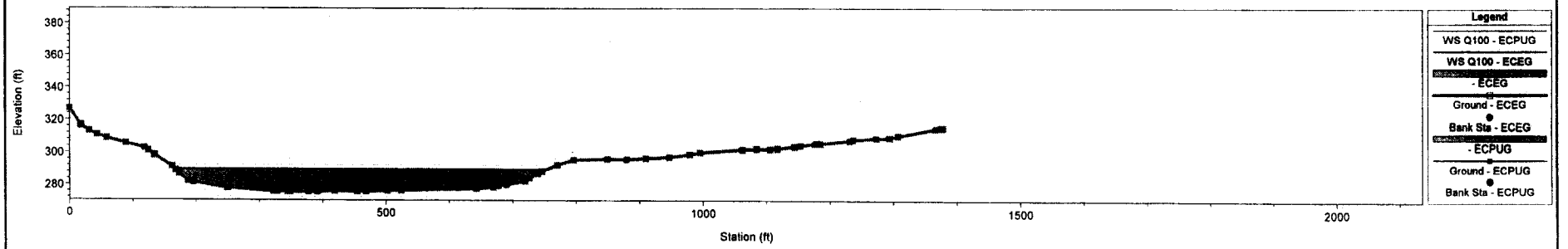


Project Model BX2 Plan: 1) ECPUG 2) ECEG
RS = 1441.576

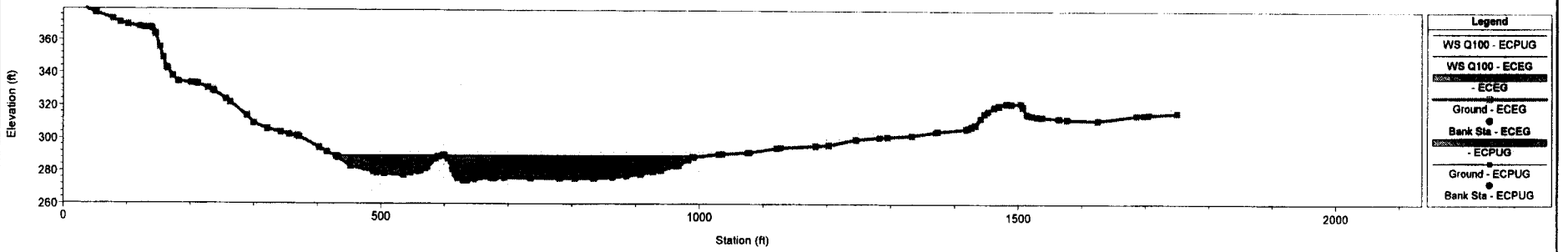


1 in Horiz. = 250 ft 1 in Vert. = 100 ft

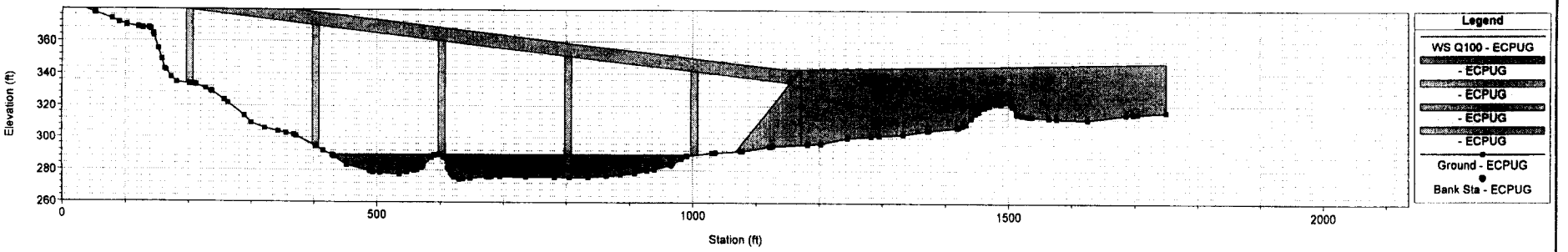
Project Model BX2 Plan: 1) ECPUG 2) ECEG
RS = 1199.171



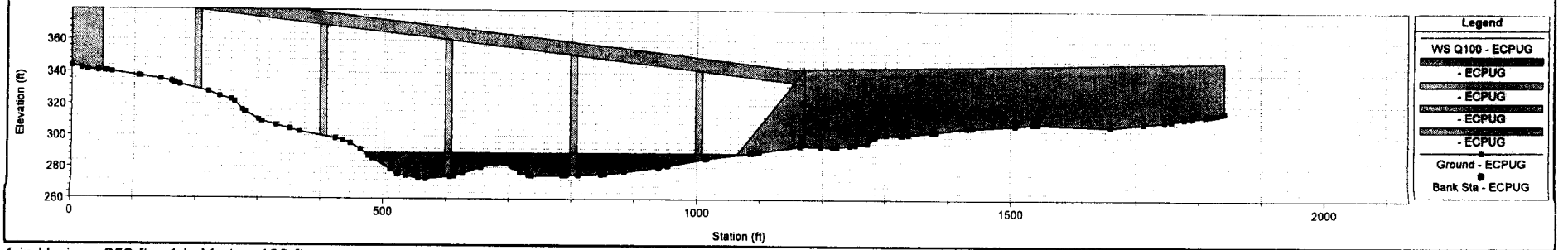
Project Model BX2 Plan: 1) ECPUG 2) ECEG
RS = 1082.126



Project Model BX2 Plan: 1) ECPUG 2) ECEG
RS = 1060 BR

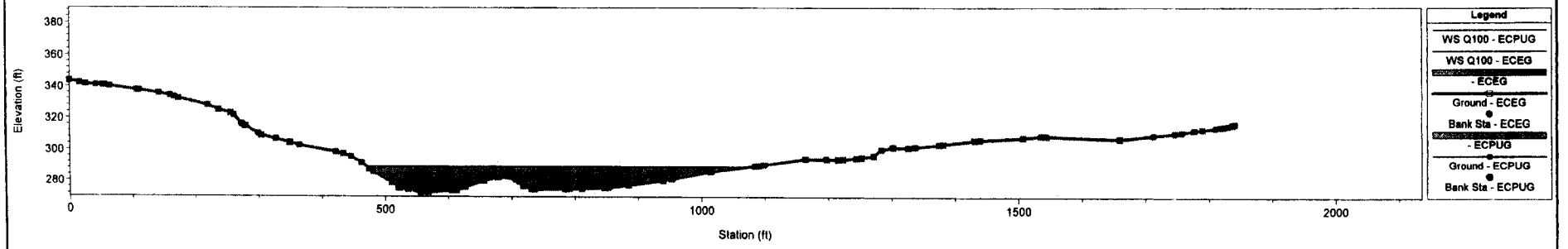


Project Model BX2 Plan: 1) ECPUG 2) ECEG
RS = 1060 BR

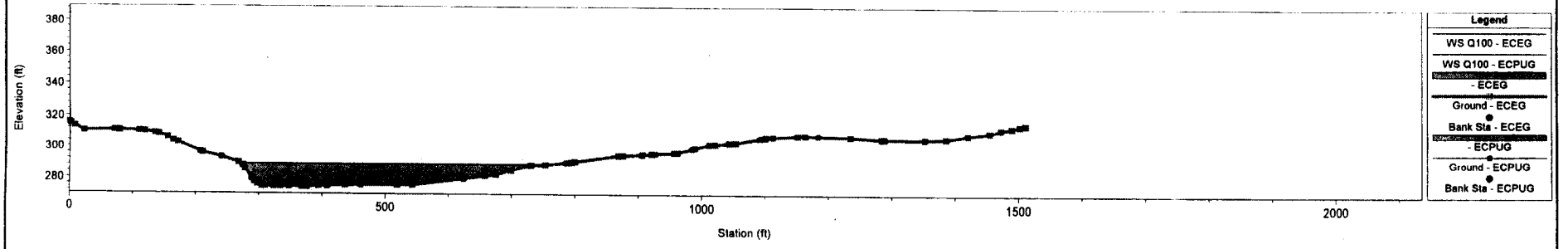


1 in Horiz. = 250 ft 1 in Vert. = 100 ft

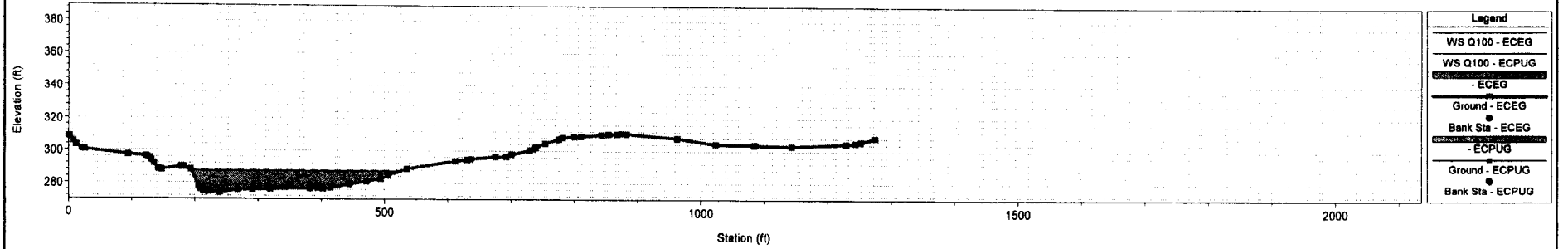
Project Model BX2 Plan: 1) ECPUG 2) ECEG
RS = 867.557



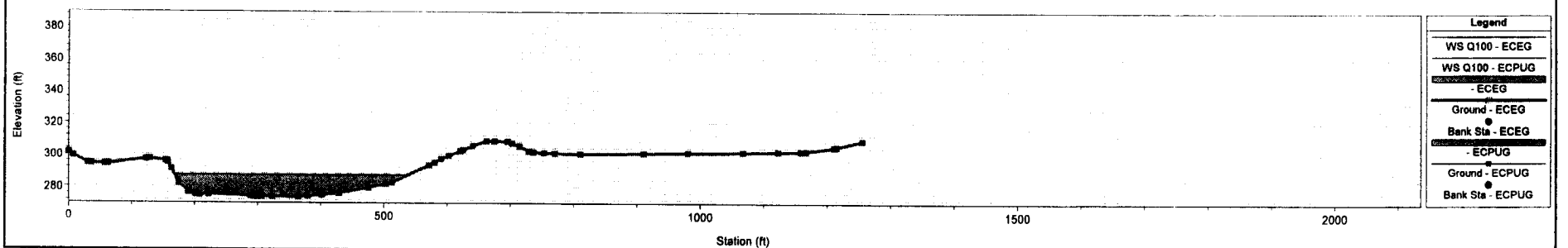
Project Model BX2 Plan: 1) ECPUG 2) ECEG
RS = 689.540



Project Model BX2 Plan: 1) ECPUG 2) ECEG
RS = 515.223



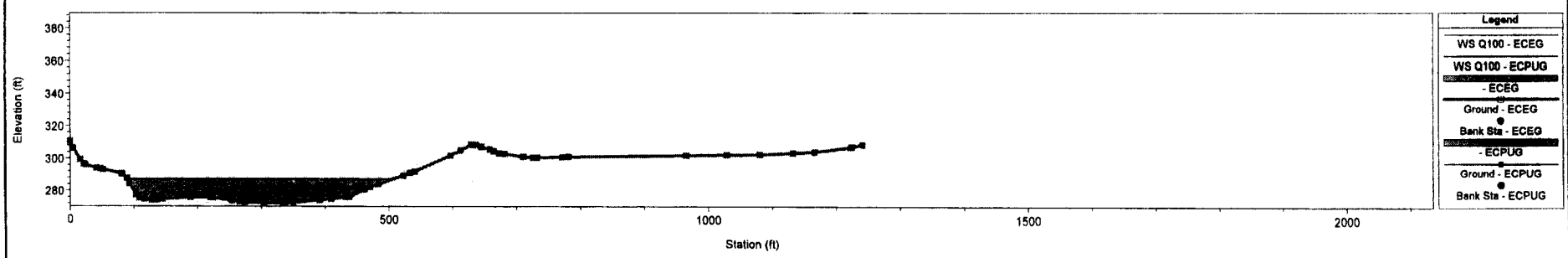
Project Model BX2 Plan: 1) ECPUG 2) ECEG
RS = 307.535



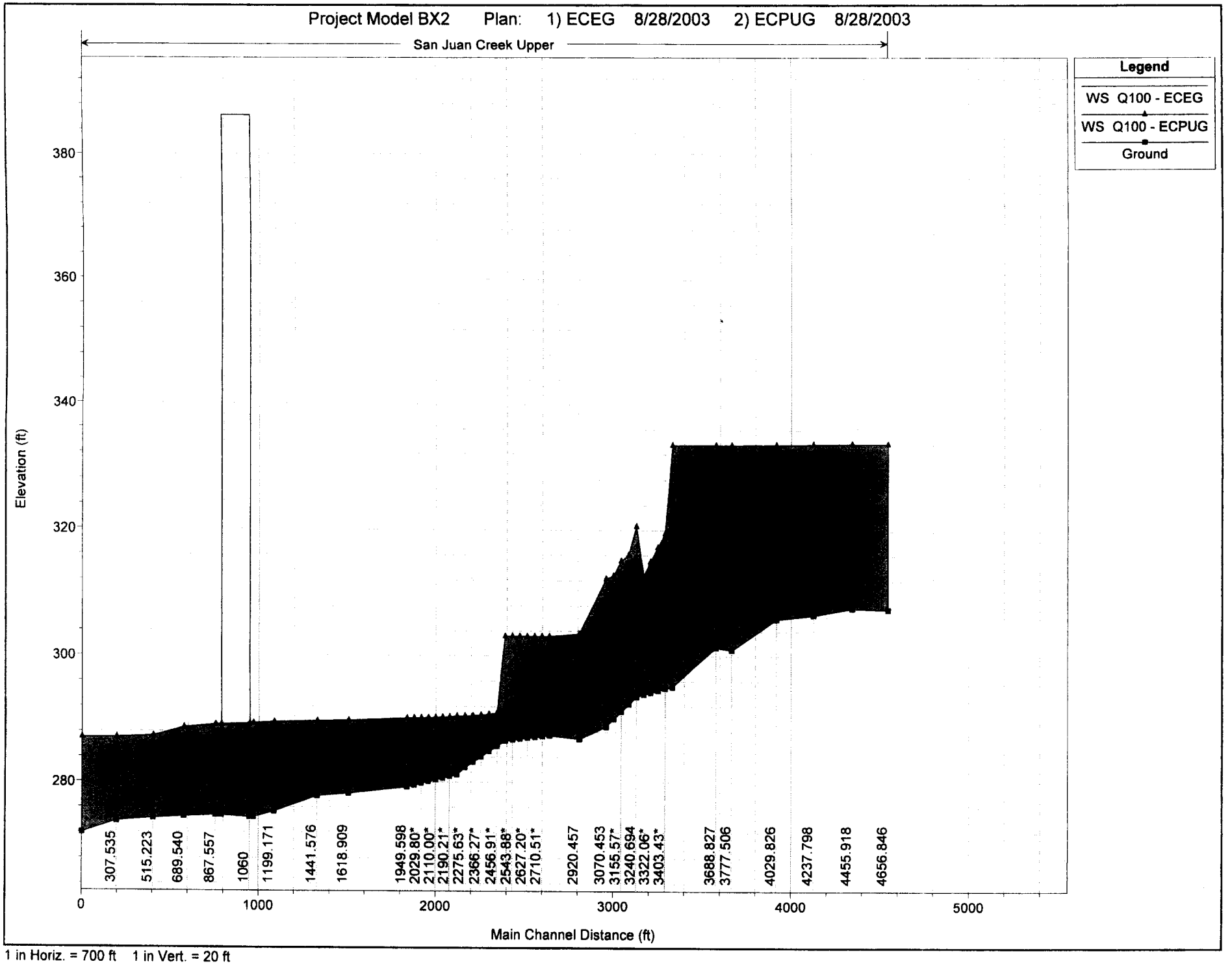
1 in Horiz. = 250 ft 1 in Vert. = 100 ft

Project Model BX2 Plan: 1) ECPUG 2) ECEG

RS = 112.108



1 in Horiz. = 250 ft 1 in Vert. = 100 ft



1 in Horiz. = 700 ft 1 in Vert. = 20 ft

APPENDIX Y
HYDRAULIC MODEL INPUT & RESULTS
FEC-M ALTERNATIVE AT CRISTIANITOS CREEK
(MODEL "CX")

Appendix Y. **Hydraulic Model Input & Results**

FEC-M Alternative at Cristianitos 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:

1183 (3880)

1122 (3680)

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 CX3
Project File : PMCX3.prj
Run Date and Time: 8/28/2003 10:58:55 PM

Project in English units

PLAN DATA

Plan Title: Existing Flow/Existing Geometry
Plan File : c:\projects\2PDA0104\hydr\LHS\Modeling\Model C\HEC-RAS\PMCX3.p01

Geometry Title: Existing Conditions
Geometry File : c:\projects\2PDA0104\hydr\LHS\Modeling\Model C\HEC-RAS\PMCX3.g01

Flow Title : Existing Conditions
Flow File : c:\projects\2PDA0104\hydr\LHS\Modeling\Model C\HEC-RAS\PMCX3.f01

Plan Summary Information:

Number of:	Cross Sections	= 49	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 C\HEC-RAS\PMCX3.f01

Flow Data (cfs)

River	Reach	RS	Q2	Q5	Q10	Q25	Q50	Q100	Q100HC
Cristianitos	Upper	5602.033	1	12	29	117	247	375	1089

Boundary Conditions

River	Reach	Profile	Upstream	Downstream
Cristianitos	Upper	Q2	Normal S = 0.01	Normal S = 0.04
Cristianitos	Upper	Q5	Normal S = 0.01	Normal S = 0.04
Cristianitos	Upper	Q10	Normal S = 0.01	Normal S = 0.04
Cristianitos	Upper	Q25	Normal S = 0.01	Normal S = 0.04
Cristianitos	Upper	Q50	Normal S = 0.01	Normal S = 0.04
Cristianitos	Upper	Q100	Normal S = 0.01	Normal S = 0.04
Cristianitos	Upper	Q100HC	Normal S = 0.01	Normal S = 0.04

GEOMETRY DATA

Geometry Title: Existing Conditions
Geometry File : c:\projects\2PDA0104\hydr\LHS\Modeling\Model C\HEC-RAS\PMCX3.g01

CROSS SECTION

RIVER: Cristianitos
REACH: Upper RS: 5602.033

INPUT
Description:
Station Elevation Data num= 34

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	370.48	3.41	370.02	29.87	366.39	32.79	364.63	33.46	364.05
40.29	356.36	56.36	338.09	56.47	337.98	56.51	337.95	60.73	335.27
71.39	334.97	77.07	334.82	79.9	334.74	81.95	334.78	87.36	334.74
100.51	334.82	120.9	335.47	142.32	337.35	144.81	337.48	173.79	338.96
196.32	340.91	248.92	342.49	297.84	344.33	304.22	344.59	324.29	345.41
340.73	346.56	342.54	346.69	346.75	347.38	349.41	348.2	365.15	351.84
381.77	355.53	386.81	356.49	395.84	356.96	405.63	358.44		

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	77.07	.05	304.22	.02	340.73	.05	405.63	.035

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
77.07	100.51	261.72	217.24	135.38	.1	.3

CROSS SECTION OUTPUT Profile #Q50

E.G. Elev (ft)	336.20	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.40	Wt. n-Val.	0.035	0.050	0.050
W.S. Elev (ft)	335.80	Reach Len. (ft)	261.72	217.24	135.38
Crit W.S. (ft)	335.80	Flow Area (sq ft)	12.63	24.08	14.00
E.G. Slope (ft/ft)	0.028941	Area (sq ft)	12.63	24.08	14.00
Q Total (cfs)	247.00	Flow (cfs)	73.85	123.98	49.17
Top Width (ft)	64.78	Top Width (ft)	17.18	23.44	24.16
Vel Total (ft/s)	4.87	Avg. Vel. (ft/s)	5.85	5.15	3.51
Max Chl Dpth (ft)	1.06	Hydr. Depth (ft)	0.74	1.03	0.58
Conv. Total (cfs)	1451.9	Conv. (cfs)	434.1	728.8	289.1
Length Wtd. (ft)	203.94	Wetted Per. (ft)	17.34	23.44	24.19
Min Ch El (ft)	334.74	Shear (lb/sq ft)	1.32	1.86	1.05
Alpha	1.10	Stream Power (lb/ft s)	7.70	9.56	3.67
Frctn Loss (ft)	1.94	Cum Volume (acre-ft)	1.30	5.77	1.26
C & E Loss (ft)	0.06	Cum SA (acres)	1.23	2.24	1.37

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water 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)	336.58	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.51	Wt. n-Val.	0.035	0.050	0.050
W.S. Elev (ft)	336.07	Reach Len. (ft)	261.72	217.24	135.38
Crit W.S. (ft)	336.07	Flow Area (sq ft)	17.29	30.37	20.89
E.G. Slope (ft/ft)	0.026329	Area (sq ft)	17.29	30.37	20.89
Q Total (cfs)	375.00	Flow (cfs)	116.65	174.00	84.35
Top Width (ft)	68.25	Top Width (ft)	17.60	23.44	27.22
Vel Total (ft/s)	5.47	Avg. Vel. (ft/s)	6.75	5.73	4.04
Max Chl Dpth (ft)	1.33	Hydr. Depth (ft)	0.98	1.30	0.77
Conv. Total (cfs)	2311.1	Conv. (cfs)	718.9	1072.3	519.8
Length Wtd. (ft)	203.00	Wetted Per. (ft)	17.84	23.44	27.25
Min Ch El (ft)	334.74	Shear (lb/sq ft)	1.59	2.13	1.26
Alpha	1.10	Stream Power (lb/ft s)	10.75	12.20	5.09
Frctn Loss (ft)	1.92	Cum Volume (acre-ft)	2.02	7.05	1.96
C & E Loss (ft)	0.07	Cum SA (acres)	1.47	2.24	1.64

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water 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)	338.08	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.93	Wt. n-Val.	0.035	0.050	0.050
W.S. Elev (ft)	337.15	Reach Len. (ft)	261.72	217.24	135.38
Crit W.S. (ft)	337.15	Flow Area (sq ft)	37.22	55.69	56.94
E.G. Slope (ft/ft)	0.021056	Area (sq ft)	37.22	55.69	56.94
Q Total (cfs)	1089.00	Flow (cfs)	348.66	427.58	312.77
Top Width (ft)	82.27	Top Width (ft)	19.30	23.44	39.53
Vel Total (ft/s)	7.27	Avg. Vel. (ft/s)	9.37	7.68	5.49
Max Chl Dpth (ft)	2.41	Hydr. Depth (ft)	1.93	2.38	1.44
Conv. Total (cfs)	7504.9	Conv. (cfs)	2402.8	2946.7	2155.4
Length Wtd. (ft)	201.99	Wetted Per. (ft)	19.85	23.44	39.61
Min Ch El (ft)	334.74	Shear (lb/sq ft)	2.46	3.12	1.89
Alpha	1.13	Stream Power (lb/ft s)	23.09	23.98	10.38
Frctn Loss (ft)	1.78	Cum Volume (acre-ft)	5.80	11.74	5.98
C & E Loss (ft)	0.14	Cum SA (acres)	2.30	2.24	2.83

Warning: The energy equation could not be balanced within the specified number of iterations. The program selected the water surface that had the least amount of error between computed and assumed values.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water 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: Cristianitos
REACH: Upper RS: 5384.793

INPUT
Description:
Station Elevation Data num= 34

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	358.26	.68	358	19.3	350.29	31.71	345.88	44.5	341.79
45.82	341.36	47.67	340.85	50.82	339.97	63.52	333.95	65.33	333.52
65.43	333.49	69.26	332.55	73.58	331.04	80.91	328.98	83.63	328.19
88.99	328.97	94.87	329.16	109.46	333.11	113.47	334.08	119.21	334.95
132.83	335.55	135.85	335.68	152.98	336.43	204.52	338.89	227.46	339.3
234.98	339.44	246.89	339.86	252.4	339.82	263.61	339.72	277.15	341.75
277.31	341.8	290.28	345.94	302.7	350.04	311.59	352.7		

Manning's n Values num= 4

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.07	65.43	.05	227.46	.02	277.31	.05

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
80.91	88.99	205.91	215.49	222.8	.1	.3

CROSS SECTION OUTPUT Profile #Q50

E.G. Elev (ft)	332.08	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.21	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	331.87	Reach Len. (ft)	205.91	215.49	222.80
Crit W.S. (ft)	330.77	Flow Area (sq ft)	14.59	26.55	30.02

E.G. Slope (ft/ft)	0.004664	Area (sq ft)	14.59	26.55	30.02
Q Total (cfs)	247.00	Flow (cfs)	37.80	117.46	91.74
Top Width (ft)	33.66	Top Width (ft)	9.70	8.08	15.88
Vel Total (ft/s)	3.47	Avg. Vel. (ft/s)	2.59	4.42	3.06
Max Chl Dpth (ft)	3.68	Hydr. Depth (ft)	1.50	3.29	1.89
Conv. Total (cfs)	3616.7	Conv. (cfs)	553.6	1719.9	1343.3
Length Wtd. (ft)	215.40	Wetted Per. (ft)	10.12	8.25	16.24
Min Ch El (ft)	328.19	Shear (lb/sq ft)	0.42	0.94	0.54
Alpha	1.15	Stream Power (lb/ft s)	1.09	4.15	1.64
Frctn Loss (ft)	1.97	Cum Volume (acre-ft)	1.22	5.65	1.19
C & E Loss (ft)	0.06	Cum SA (acres)	1.15	2.16	1.31

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was 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)	332.82	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.27	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	332.54	Reach Len. (ft)	205.91	215.49	222.80
Crit W.S. (ft)	331.30	Flow Area (sq ft)	21.81	32.02	41.61
E.G. Slope (ft/ft)	0.004817	Area (sq ft)	21.81	32.02	41.61
Q Total (cfs)	375.00	Flow (cfs)	66.36	163.08	145.56
Top Width (ft)	38.09	Top Width (ft)	11.63	8.08	18.38
Vel Total (ft/s)	3.93	Avg. Vel. (ft/s)	3.04	5.09	3.50
Max Chl Dpth (ft)	4.35	Hydr. Depth (ft)	1.87	3.96	2.26
Conv. Total (cfs)	5403.3	Conv. (cfs)	956.2	2349.8	2097.4
Length Wtd. (ft)	215.24	Wetted Per. (ft)	12.17	8.25	18.83
Min Ch El (ft)	328.19	Shear (lb/sq ft)	0.54	1.17	0.66
Alpha	1.14	Stream Power (lb/ft s)	1.64	5.94	2.32
Frctn Loss (ft)	1.99	Cum Volume (acre-ft)	1.90	6.90	1.86
C & E Loss (ft)	0.07	Cum SA (acres)	1.39	2.16	1.57

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

CROSS SECTION OUTPUT Profile #Q100HC

E.G. Elev (ft)	335.47	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.46	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	335.01	Reach Len. (ft)	205.91	215.49	222.80
Crit W.S. (ft)	333.16	Flow Area (sq ft)	61.77	51.93	99.99
E.G. Slope (ft/ft)	0.004807	Area (sq ft)	61.77	51.93	99.99
Q Total (cfs)	1089.00	Flow (cfs)	286.19	364.75	438.05
Top Width (ft)	59.24	Top Width (ft)	19.62	8.08	31.54
Vel Total (ft/s)	5.10	Avg. Vel. (ft/s)	4.63	7.02	4.38
Max Chl Dpth (ft)	6.82	Hydr. Depth (ft)	3.15	6.43	3.17

Conv. Total (cfs)	15707.3	Conv. (cfs)	4127.9	5261.0	6318.3
Length Wtd. (ft)	214.75	Wetted Per. (ft)	20.57	8.25	32.25
Min Ch El (ft)	328.19	Shear (lb/sq ft)	0.90	1.89	0.93
Alpha	1.15	Stream Power (lb/ft s)	4.18	13.27	4.08
Frctn Loss (ft)	1.88	Cum Volume (acre-ft)	5.50	11.48	5.74
C & E Loss (ft)	0.12	Cum SA (acres)	2.18	2.16	2.72

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

CROSS SECTION

RIVER: Cristianitos
REACH: Upper RS: 5168.714

INPUT
Description:
Station Elevation Data num= 33

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	342.34	28.54	340.48	44.42	339.66	64.52	339.14	80.72	338.7
85.76	338.45	123.37	337.28	137.41	336.57	140.19	336.42	144.85	336.4
153.17	336.35	155.88	335.99	163.68	334.51	164.2	334.22	175.32	328.47
180.3	327.98	182.67	327.56	184.81	327.2	193.24	327.19	194.86	327.56
205.11	332.52	209.01	334.37	209.27	334.48	212.5	334.76	218.71	335.32
226.15	335.99	238.43	337.09	239.96	337.4	256.8	341.11	260.22	342.7
263.37	343.44	264.82	343.79	286.27	350.75				

Manning's n Values num= 4

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	137.41	.05	226.15	.02	263.37	.05

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
182.67	194.86	149.85	194.03 206.85	.1	.3

CROSS SECTION OUTPUT Profile #Q50

E.G. Elev (ft)	330.05	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.77	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	329.28	Reach Len. (ft)	149.85	194.03	206.85
Crit W.S. (ft)	329.28	Flow Area (sq ft)	9.51	24.78	3.07
E.G. Slope (ft/ft)	0.025603	Area (sq ft)	9.51	24.78	3.07
Q Total (cfs)	247.00	Flow (cfs)	46.26	188.40	12.34
Top Width (ft)	24.68	Top Width (ft)	8.93	12.19	3.56
Vel Total (ft/s)	6.61	Avg. Vel. (ft/s)	4.87	7.60	4.02
Max Chl Dpth (ft)	2.09	Hydr. Depth (ft)	1.07	2.03	0.86
Conv. Total (cfs)	1543.7	Conv. (cfs)	289.1	1177.4	77.1
Length Wtd. (ft)	189.84	Wetted Per. (ft)	9.18	12.26	3.96
Min Ch El (ft)	327.19	Shear (lb/sq ft)	1.65	3.23	1.24
Alpha	1.13	Stream Power (lb/ft s)	8.05	24.56	4.98
Frctn Loss (ft)	3.22	Cum Volume (acre-ft)	1.16	5.52	1.11
C & E Loss (ft)	0.08	Cum SA (acres)	1.11	2.11	1.26

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water 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)	330.76	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.96	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	329.80	Reach Len. (ft)	149.85	194.03	206.85
Crit W.S. (ft)	329.80	Flow Area (sq ft)	14.34	31.04	5.17
E.G. Slope (ft/ft)	0.024438	Area (sq ft)	14.34	31.04	5.17
Q Total (cfs)	375.00	Flow (cfs)	83.06	267.80	24.14
Top Width (ft)	26.73	Top Width (ft)	9.92	12.19	4.62
Vel Total (ft/s)	7.42	Avg. Vel. (ft/s)	5.79	8.63	4.67
Max Chl Dpth (ft)	2.61	Hydr. Depth (ft)	1.45	2.55	1.12
Conv. Total (cfs)	2398.8	Conv. (cfs)	531.3	1713.1	154.4
Length Wtd. (ft)	188.97	Wetted Per. (ft)	10.30	12.26	5.14
Min Ch El (ft)	327.19	Shear (lb/sq ft)	2.12	3.86	1.54
Alpha	1.13	Stream Power (lb/ft s)	12.30	33.32	7.17
Frctn Loss (ft)	3.40	Cum Volume (acre-ft)	1.82	6.74	1.74
C & E Loss (ft)	0.08	Cum SA (acres)	1.34	2.11	1.51

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water 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)	333.47	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.65	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	331.83	Reach Len. (ft)	149.85	194.03	206.85
Crit W.S. (ft)	331.83	Flow Area (sq ft)	38.48	55.80	18.83
E.G. Slope (ft/ft)	0.020598	Area (sq ft)	38.48	55.80	18.83
Q Total (cfs)	1089.00	Flow (cfs)	311.34	653.55	124.12
Top Width (ft)	34.86	Top Width (ft)	13.85	12.19	8.82
Vel Total (ft/s)	9.63	Avg. Vel. (ft/s)	8.09	11.71	6.59
Max Chl Dpth (ft)	4.64	Hydr. Depth (ft)	2.78	4.58	2.13
Conv. Total (cfs)	7587.8	Conv. (cfs)	2169.3	4553.7	864.8
Length Wtd. (ft)	187.38	Wetted Per. (ft)	14.72	12.26	9.80
Min Ch El (ft)	327.19	Shear (lb/sq ft)	3.36	5.85	2.47
Alpha	1.14	Stream Power (lb/ft s)	27.19	68.54	16.29
Frctn Loss (ft)	3.70	Cum Volume (acre-ft)	5.26	11.21	5.43
C & E Loss (ft)	0.01	Cum SA (acres)	2.10	2.11	2.62

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

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

CROSS SECTION

RIVER: Cristianitos
REACH: Upper RS: 4976.143

INPUT
Description:
Station Elevation Data num= 37

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	341.81	.55	341.77	7.72	340.98	18.02	339.54	25.08	338.74
31.55	338.46	57.95	337.67	99.08	336.24	104.59	336.33	108.05	335.89
129.49	332.26	133.76	330.93	138.61	329.41	141.05	328.36	152.11	323.59
153.93	322.61	160.39	321.76	163.58	321.34	170.45	322.45	170.71	322.53
175.62	324.84	182.67	327.95	199.45	330.8	207.1	331.56	221.18	334.45
221.61	334.53	222.13	334.59	227.08	334.59	237.11	334.58	238.69	334.58
252.37	333.93	253.97	333.78	254.76	333.84	269.51	335.06	270.43	335.22
285.75	338.94	303.99	343.38						

Manning's n Values num= 4

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	133.76	.05	237.11	.02	285.75	.05

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
153.93	170.45	251.57	198.55	152.18	.1	.3

CROSS SECTION OUTPUT Profile #Q50

			Left OB	Channel	Right OB
E.G. Elev (ft)	324.81	Element			
Vel Head (ft)	0.49	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	324.32	Reach Len. (ft)	251.57	198.55	152.18
Crit W.S. (ft)	323.83	Flow Area (sq ft)	2.85	39.36	3.90
E.G. Slope (ft/ft)	0.012088	Area (sq ft)	2.85	39.36	3.90
Q Total (cfs)	247.00	Flow (cfs)	7.54	227.85	11.60
Top Width (ft)	24.12	Top Width (ft)	3.52	16.52	4.07
Vel Total (ft/s)	5.36	Avg. Vel. (ft/s)	2.64	5.79	2.98
Max Chl Dpth (ft)	2.98	Hydr. Depth (ft)	0.81	2.38	0.96
Conv. Total (cfs)	2246.5	Conv. (cfs)	68.6	2072.4	105.5
Length Wtd. (ft)	196.77	Wetted Per. (ft)	3.92	16.69	4.49
Min Ch El (ft)	321.34	Shear (lb/sq ft)	0.55	1.78	0.66
Alpha	1.10	Stream Power (lb/ft s)	1.45	10.30	1.95
Frctn Loss (ft)	3.34	Cum Volume (acre-ft)	1.14	5.38	1.09
C & E Loss (ft)	0.01	Cum SA (acres)	1.09	2.05	1.24

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 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)	325.54	Element			

Vel Head (ft)	0.71	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	324.83	Reach Len. (ft)	251.57	198.55	152.18
Crit W.S. (ft)	324.41	Flow Area (sq ft)	4.93	47.71	6.23
E.G. Slope (ft/ft)	0.013779	Area (sq ft)	4.93	47.71	6.23
Q Total (cfs)	375.00	Flow (cfs)	16.61	335.26	23.13
Top Width (ft)	26.36	Top Width (ft)	4.70	16.52	5.15
Vel Total (ft/s)	6.37	Avg. Vel. (ft/s)	3.37	7.03	3.71
Max Chl Dpth (ft)	3.49	Hydr. Depth (ft)	1.05	2.89	1.21
Conv. Total (cfs)	3194.6	Conv. (cfs)	141.5	2856.1	197.1
Length Wtd. (ft)	196.57	Wetted Per. (ft)	5.20	16.69	5.67
Min Ch El (ft)	321.34	Shear (lb/sq ft)	0.82	2.46	0.94
Alpha	1.12	Stream Power (lb/ft s)	2.75	17.28	3.51
Frctn Loss (ft)	3.61	Cum Volume (acre-ft)	1.78	6.56	1.71
C & E Loss (ft)	0.05	Cum SA (acres)	1.31	2.05	1.49

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

CROSS SECTION OUTPUT Profile #Q100HC

E.G. Elev (ft)	328.51	Element	Left OB	Channel	Right OB
Vel Head (ft)	2.56	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	325.96	Reach Len. (ft)	251.57	198.55	152.18
Crit W.S. (ft)	326.59	Flow Area (sq ft)	11.68	66.30	13.46
E.G. Slope (ft/ft)	0.033707	Area (sq ft)	11.68	66.30	13.46
Q Total (cfs)	1089.00	Flow (cfs)	81.76	907.22	100.03
Top Width (ft)	31.52	Top Width (ft)	7.30	16.52	7.70
Vel Total (ft/s)	11.91	Avg. Vel. (ft/s)	7.00	13.68	7.43
Max Chl Dpth (ft)	4.61	Hydr. Depth (ft)	1.60	4.01	1.75
Conv. Total (cfs)	5931.5	Conv. (cfs)	445.3	4941.4	544.8
Length Wtd. (ft)	197.40	Wetted Per. (ft)	8.04	16.69	8.46
Min Ch El (ft)	321.34	Shear (lb/sq ft)	3.06	8.36	3.35
Alpha	1.16	Stream Power (lb/ft s)	21.40	114.37	24.88
Frctn Loss (ft)	4.86	Cum Volume (acre-ft)	5.18	10.94	5.36
C & E Loss (ft)	0.09	Cum SA (acres)	2.07	2.05	2.58

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

CROSS SECTION

RIVER: Cristianitos
REACH: Upper RS: 4775.451

INPUT
Description:
Station Elevation Data num= 27

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	336.24	.68	336.1	12.18	333.55	16.62	332.18	24.6	330.41
40.55	326.89	52.65	324.73	71.54	321.89	78.96	321.31	84.22	320.9
99.55	319.78	104.9	319.4	106.97	319.3	115.93	319.77	137.63	320.84
143.48	321.69	158.41	325.47	168.75	328.08	174.44	328.46	189.4	329.5
207.77	330.77	209.29	331.02	220.89	332.62	236.13	334.69	241.69	335.44

243.53 336.42 245.97 337.08

Manning's n Values num= 4

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	24.6	.05	189.4	.02	236.13	.05

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
99.55	115.93	217.54	216 209.75	.1	.3

CROSS SECTION OUTPUT Profile #Q50

			Left OB	Channel	Right OB
E.G. Elev (ft)	321.47	Element			
Vel Head (ft)	0.45	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	321.03	Reach Len. (ft)	217.54	216.00	209.75
Crit W.S. (ft)	321.03	Flow Area (sq ft)	10.61	24.50	15.75
E.G. Slope (ft/ft)	0.025550	Area (sq ft)	10.61	24.50	15.75
Q Total (cfs)	247.00	Flow (cfs)	36.82	152.06	58.11
Top Width (ft)	56.30	Top Width (ft)	16.94	16.38	22.98
Vel Total (ft/s)	4.86	Avg. Vel. (ft/s)	3.47	6.21	3.69
Max Chl Dpth (ft)	1.73	Hydr. Depth (ft)	0.63	1.50	0.69
Conv. Total (cfs)	1545.3	Conv. (cfs)	230.4	951.3	363.6
Length Wtd. (ft)	215.21	Wetted Per. (ft)	16.99	16.41	23.02
Min Ch El (ft)	319.30	Shear (lb/sq ft)	1.00	2.38	1.09
Alpha	1.22	Stream Power (lb/ft s)	3.46	14.78	4.03
Frctn Loss (ft)	1.53	Cum Volume (acre-ft)	1.10	5.23	1.06
C & E Loss (ft)	0.09	Cum SA (acres)	1.03	1.97	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 conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water 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)	321.88	Element			
Vel Head (ft)	0.55	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	321.33	Reach Len. (ft)	217.54	216.00	209.75
Crit W.S. (ft)	321.33	Flow Area (sq ft)	16.26	29.41	22.95
E.G. Slope (ft/ft)	0.025639	Area (sq ft)	16.26	29.41	22.95
Q Total (cfs)	375.00	Flow (cfs)	65.59	206.53	102.87
Top Width (ft)	62.20	Top Width (ft)	20.78	16.38	25.04
Vel Total (ft/s)	5.46	Avg. Vel. (ft/s)	4.03	7.02	4.48
Max Chl Dpth (ft)	2.03	Hydr. Depth (ft)	0.78	1.80	0.92
Conv. Total (cfs)	2342.0	Conv. (cfs)	409.7	1289.9	642.5
Length Wtd. (ft)	215.06	Wetted Per. (ft)	20.84	16.41	25.10
Min Ch El (ft)	319.30	Shear (lb/sq ft)	1.25	2.87	1.46
Alpha	1.19	Stream Power (lb/ft s)	5.04	20.15	6.56
Frctn Loss (ft)	1.61	Cum Volume (acre-ft)	1.72	6.39	1.66
C & E Loss (ft)	0.10	Cum SA (acres)	1.24	1.97	1.44

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

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water 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)	323.38	Element			
Vel Head (ft)	0.93	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	322.44	Reach Len. (ft)	217.54	216.00	209.75
Crit W.S. (ft)	322.44	Flow Area (sq ft)	46.57	47.73	54.42
E.G. Slope (ft/ft)	0.023907	Area (sq ft)	46.57	47.73	54.42
Q Total (cfs)	1089.00	Flow (cfs)	275.85	446.93	366.22
Top Width (ft)	78.60	Top Width (ft)	31.69	16.38	30.53
Vel Total (ft/s)	7.32	Avg. Vel. (ft/s)	5.92	9.36	6.73
Max Chl Dpth (ft)	3.14	Hydr. Depth (ft)	1.47	2.91	1.78
Conv. Total (cfs)	7043.2	Conv. (cfs)	1784.1	2890.6	2368.6
Length Wtd. (ft)	214.81	Wetted Per. (ft)	31.81	16.41	30.71
Min Ch El (ft)	319.30	Shear (lb/sq ft)	2.18	4.34	2.65
Alpha	1.12	Stream Power (lb/ft s)	12.94	40.65	17.80
Frctn Loss (ft)	1.81	Cum Volume (acre-ft)	5.01	10.68	5.24
C & E Loss (ft)	0.15	Cum SA (acres)	1.95	1.97	2.51

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water 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: Cristianitos
REACH: Upper RS: 4558.571

INPUT
Description:
Station Elevation Data num= 27

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	335.46	5.45	333.28	8.84	331.92	31.22	322.02	39.82	319.89
45	318.29	53.09	315.79	58.74	314.98	72.43	314.56	76.57	314.74
77.75	315	84.9	317.05	96.64	321.48	111.92	322.35	121.42	322.75
127.32	323.2	127.91	323.27	132.3	323.79	134.84	324.92	136.67	325.12
162.11	327.79	181.78	328.4	198.07	330.04	204.55	330.42	253.64	333.24
268.12	334.08	272.73	334.59						

Manning's n Values num= 4

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	5.45	.05	204.55	.02	253.64	.05

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

58.74 77.75 218.41 219.16 218.8 .1 .3

CROSS SECTION OUTPUT Profile #Q50

E.G. Elev (ft)	317.74	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.15	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	317.59	Reach Len. (ft)	218.41	219.16	218.80
Crit W.S. (ft)	316.36	Flow Area (sq ft)	17.70	53.99	11.58
E.G. Slope (ft/ft)	0.003284	Area (sq ft)	17.70	53.99	11.58
Q Total (cfs)	247.00	Flow (cfs)	39.49	184.13	23.37
Top Width (ft)	39.07	Top Width (ft)	11.47	19.01	8.58
Vel Total (ft/s)	2.97	Avg. Vel. (ft/s)	2.23	3.41	2.02
Max Chl Dpth (ft)	3.03	Hydr. Depth (ft)	1.54	2.84	1.35
Conv. Total (cfs)	4310.3	Conv. (cfs)	689.2	3213.3	407.9
Length Wtd. (ft)	219.01	Wetted Per. (ft)	11.80	19.05	8.97
Min Ch El (ft)	314.56	Shear (lb/sq ft)	0.31	0.58	0.26
Alpha	1.12	Stream Power (lb/ft s)	0.69	1.98	0.53
Frctn Loss (ft)	1.55	Cum Volume (acre-ft)	1.03	5.04	0.99
C & E Loss (ft)	0.05	Cum SA (acres)	0.96	1.88	1.12

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

CROSS SECTION OUTPUT Profile #Q100

E.G. Elev (ft)	318.42	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.21	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	318.22	Reach Len. (ft)	218.41	219.16	218.80
Crit W.S. (ft)	316.80	Flow Area (sq ft)	25.51	65.88	17.46
E.G. Slope (ft/ft)	0.003510	Area (sq ft)	25.51	65.88	17.46
Q Total (cfs)	375.00	Flow (cfs)	67.25	265.24	42.51
Top Width (ft)	42.75	Top Width (ft)	13.50	19.01	10.24
Vel Total (ft/s)	3.45	Avg. Vel. (ft/s)	2.64	4.03	2.43
Max Chl Dpth (ft)	3.66	Hydr. Depth (ft)	1.89	3.47	1.71
Conv. Total (cfs)	6329.7	Conv. (cfs)	1135.1	4477.0	717.5
Length Wtd. (ft)	218.99	Wetted Per. (ft)	13.92	19.05	10.74
Min Ch El (ft)	314.56	Shear (lb/sq ft)	0.40	0.76	0.36
Alpha	1.13	Stream Power (lb/ft s)	1.06	3.05	0.87
Frctn Loss (ft)	1.61	Cum Volume (acre-ft)	1.62	6.15	1.57
C & E Loss (ft)	0.06	Cum SA (acres)	1.15	1.88	1.35

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 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)	320.87	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.45	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	320.42	Reach Len. (ft)	218.41	219.16	218.80

Crit W.S. (ft)	318.51	Flow Area (sq ft)	63.27	107.80	46.49
E.G. Slope (ft/ft)	0.004251	Area (sq ft)	63.27	107.80	46.49
Q Total (cfs)	1089.00	Flow (cfs)	249.39	663.37	176.24
Top Width (ft)	56.16	Top Width (ft)	21.06	19.01	16.08
Vel Total (ft/s)	5.01	Avg. Vel. (ft/s)	3.94	6.15	3.79
Max Chl Dpth (ft)	5.86	Hydr. Depth (ft)	3.00	5.67	2.89
Conv. Total (cfs)	16701.7	Conv. (cfs)	3824.8	10173.9	2703.0
Length Wtd. (ft)	218.92	Wetted Per. (ft)	21.80	19.05	16.99
Min Ch El (ft)	314.56	Shear (lb/sq ft)	0.77	1.50	0.73
Alpha	1.16	Stream Power (lb/ft s)	3.04	9.24	2.75
Frctn Loss (ft)	1.76	Cum Volume (acre-ft)	4.73	10.29	5.00
C & E Loss (ft)	0.09	Cum SA (acres)	1.82	1.88	2.40

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

RIVER: Cristianitos
REACH: Upper RS: 4339.721

INPUT
Description:
Station Elevation Data num= 30

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	332.61	9.49	328.12	19.77	324.24	31.08	319.97	36.47	317.91
36.86	317.76	39.1	317.11	53.14	314.16	54.59	313.85	63.33	313.27
67.52	313.82	73.15	314.58	76.72	315.13	80.59	316.75	87.3	319.86
88.78	320.06	96.95	321.97	105.23	322.18	134.78	322.92	135.07	322.93
135.74	322.95	137.22	323.05	146.18	323.77	147.19	323.86	182.34	326.79
186.07	327.33	194.4	328.53	195.52	328.8	209.93	332.19	219.69	334.53

Manning's n Values num= 4

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	19.77	.05	147.19	.02	195.52	.05

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
54.59	67.52	190.38	207.42	206.55	.1 .3

CROSS SECTION OUTPUT Profile #Q50

E.G. Elev (ft)	316.14	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.67	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	315.47	Reach Len. (ft)	190.38	207.42	206.55
Crit W.S. (ft)	315.47	Flow Area (sq ft)	6.23	24.79	9.51
E.G. Slope (ft/ft)	0.024996	Area (sq ft)	6.23	24.79	9.51
Q Total (cfs)	247.00	Flow (cfs)	25.04	179.27	42.69
Top Width (ft)	30.64	Top Width (ft)	7.70	12.93	10.02
Vel Total (ft/s)	6.09	Avg. Vel. (ft/s)	4.02	7.23	4.49
Max Chl Dpth (ft)	2.20	Hydr. Depth (ft)	0.81	1.92	0.95
Conv. Total (cfs)	1562.3	Conv. (cfs)	158.4	1133.9	270.0
Length Wtd. (ft)	205.95	Wetted Per. (ft)	7.87	12.99	10.18

Min Ch El (ft)	313.27	Shear (lb/sq ft)	1.24	2.98	1.46
Alpha	1.16	Stream Power (lb/ft s)	4.97	21.54	6.54
Frctn Loss (ft)	2.69	Cum Volume (acre-ft)	0.97	4.84	0.94
C & E Loss (ft)	0.09	Cum SA (acres)	0.91	1.80	1.07

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water 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)	316.75	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.83	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	315.92	Reach Len. (ft)	190.38	207.42	206.55
Crit W.S. (ft)	315.92	Flow Area (sq ft)	10.20	30.64	14.29
E.G. Slope (ft/ft)	0.024123	Area (sq ft)	10.20	30.64	14.29
Q Total (cfs)	375.00	Flow (cfs)	47.47	250.67	76.86
Top Width (ft)	33.88	Top Width (ft)	9.85	12.93	11.10
Vel Total (ft/s)	6.80	Avg. Vel. (ft/s)	4.66	8.18	5.38
Max Chl Dpth (ft)	2.65	Hydr. Depth (ft)	1.04	2.37	1.29
Conv. Total (cfs)	2414.5	Conv. (cfs)	305.6	1614.0	494.8
Length Wtd. (ft)	205.60	Wetted Per. (ft)	10.07	12.99	11.35
Min Ch El (ft)	313.27	Shear (lb/sq ft)	1.53	3.55	1.90
Alpha	1.15	Stream Power (lb/ft s)	7.10	29.07	10.20
Frctn Loss (ft)	2.85	Cum Volume (acre-ft)	1.53	5.91	1.49
C & E Loss (ft)	0.09	Cum SA (acres)	1.09	1.80	1.30

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

CROSS SECTION OUTPUT Profile #Q100HC

E.G. Elev (ft)	319.02	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.35	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	317.67	Reach Len. (ft)	190.38	207.42	206.55
Crit W.S. (ft)	317.67	Flow Area (sq ft)	34.44	53.22	37.21
E.G. Slope (ft/ft)	0.020510	Area (sq ft)	34.44	53.22	37.21
Q Total (cfs)	1089.00	Flow (cfs)	227.25	580.02	281.73
Top Width (ft)	45.41	Top Width (ft)	17.42	12.93	15.06
Vel Total (ft/s)	8.72	Avg. Vel. (ft/s)	6.60	10.90	7.57
Max Chl Dpth (ft)	4.40	Hydr. Depth (ft)	1.98	4.12	2.47
Conv. Total (cfs)	7604.1	Conv. (cfs)	1586.8	4050.1	1967.2
Length Wtd. (ft)	204.53	Wetted Per. (ft)	17.84	12.99	15.68
Min Ch El (ft)	313.27	Shear (lb/sq ft)	2.47	5.25	3.04

Alpha	1.15	Stream Power (lb/ft s)	16.31	57.19	23.01
Frctn Loss (ft)	3.31	Cum Volume (acre-ft)	4.49	9.89	4.79
C & E Loss (ft)	0.03	Cum SA (acres)	1.72	1.80	2.32

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

CROSS SECTION

RIVER: Cristianitos
REACH: Upper RS: 4132.011

INPUT
Description:
Station Elevation Data num= 36

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	334.65	2.44	334.07	8.36	332.98	29.86	327.65	42.49	326.47
46.03	325.64	50.11	324.93	66.18	321.48	69.74	320.72	76.87	317.55
77.19	317.4	78.02	316.99	91.29	309.8	92.8	309.04	93.53	308.96
102.19	308.24	107.7	309.06	141.33	319.66	147.19	321.53	147.51	321.56
149.75	321.55	153.26	321.63	157.06	321.72	159.57	321.78	175.64	322.11
176.01	322.12	186.93	322.19	205.53	323.58	216.37	325.48	234.46	328.65
235.18	328.84	237.7	329.48	248.59	332.68	250.7	332.98	252	333.27
254.55	333.82								

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	66.18	.05	175.64	.02	216.37	.05	252	.035

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
92.8	107.7	132.25	251.37	309.34	.1	.3

CROSS SECTION OUTPUT Profile #Q50

			Left OB	Channel	Right OB
E.G. Elev (ft)	311.73	Element			
Vel Head (ft)	0.37	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	311.36	Reach Len. (ft)	132.25	251.37	309.34
Crit W.S. (ft)	310.62	Flow Area (sq ft)	5.17	40.52	8.38
E.G. Slope (ft/ft)	0.008015	Area (sq ft)	5.17	40.52	8.38
Q Total (cfs)	247.00	Flow (cfs)	14.12	209.19	23.69
Top Width (ft)	26.58	Top Width (ft)	4.39	14.90	7.29
Vel Total (ft/s)	4.57	Avg. Vel. (ft/s)	2.73	5.16	2.83
Max Chl Dpth (ft)	3.12	Hydr. Depth (ft)	1.18	2.72	1.15
Conv. Total (cfs)	2758.9	Conv. (cfs)	157.7	2336.6	264.6
Length Wtd. (ft)	249.20	Wetted Per. (ft)	4.96	14.99	7.64
Min Ch El (ft)	308.24	Shear (lb/sq ft)	0.52	1.35	0.55
Alpha	1.14	Stream Power (lb/ft s)	1.42	6.98	1.55
Frctn Loss (ft)	3.22	Cum Volume (acre-ft)	0.95	4.68	0.89
C & E Loss (ft)	0.02	Cum SA (acres)	0.88	1.74	1.03

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than

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

CROSS SECTION OUTPUT Profile #Q100

E.G. Elev (ft)	312.44	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.52	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	311.92	Reach Len. (ft)	132.25	251.37	309.34
Crit W.S. (ft)	311.18	Flow Area (sq ft)	7.93	48.92	12.99
E.G. Slope (ft/ft)	0.009006	Area (sq ft)	7.93	48.92	12.99
Q Total (cfs)	375.00	Flow (cfs)	26.51	303.44	45.05
Top Width (ft)	29.40	Top Width (ft)	5.42	14.90	9.08
Vel Total (ft/s)	5.37	Avg. Vel. (ft/s)	3.34	6.20	3.47
Max Chl Dpth (ft)	3.68	Hydr. Depth (ft)	1.46	3.28	1.43
Conv. Total (cfs)	3951.6	Conv. (cfs)	279.3	3197.6	474.7
Length Wtd. (ft)	248.17	Wetted Per. (ft)	6.14	14.99	9.52
Min Ch El (ft)	308.24	Shear (lb/sq ft)	0.73	1.83	0.77
Alpha	1.16	Stream Power (lb/ft s)	2.43	11.38	2.66
Frctn Loss (ft)	3.41	Cum Volume (acre-ft)	1.49	5.72	1.42
C & E Loss (ft)	0.02	Cum SA (acres)	1.06	1.74	1.25

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.
Warning: The energy loss was greater than 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)	315.02	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.26	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	313.76	Reach Len. (ft)	132.25	251.37	309.34
Crit W.S. (ft)	313.31	Flow Area (sq ft)	20.99	76.26	34.99
E.G. Slope (ft/ft)	0.013125	Area (sq ft)	20.99	76.26	34.99
Q Total (cfs)	1089.00	Flow (cfs)	117.21	767.88	203.91
Top Width (ft)	38.61	Top Width (ft)	8.81	14.90	14.90
Vel Total (ft/s)	8.23	Avg. Vel. (ft/s)	5.58	10.07	5.83
Max Chl Dpth (ft)	5.52	Hydr. Depth (ft)	2.38	5.12	2.35
Conv. Total (cfs)	9505.6	Conv. (cfs)	1023.1	6702.6	1779.8
Length Wtd. (ft)	243.52	Wetted Per. (ft)	10.00	14.99	15.62
Min Ch El (ft)	308.24	Shear (lb/sq ft)	1.72	4.17	1.84
Alpha	1.20	Stream Power (lb/ft s)	9.61	41.96	10.69
Frctn Loss (ft)	4.04	Cum Volume (acre-ft)	4.37	9.58	4.62
C & E Loss (ft)	0.02	Cum SA (acres)	1.67	1.74	2.25

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

CROSS SECTION

RIVER: Cristianitos
REACH: Upper RS: 3880.409

INPUT
Description:
Station Elevation Data num= 48

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	342.48	9.01	340.21	19.83	337.87	40.96	334.36	51.5	332.48
67.16	330.55	71.13	330.4	85.15	329.15	92.36	328.9	100.92	328.23
152.95	323.6	161.79	322.36	175.79	321.1	205.74	318.35	224.36	315.67
228.52	315.01	229.27	314.9	248.11	309.95	253.96	308.41	253.97	308.41
254.01	308.4	269.26	306.59	276.65	305.72	284.57	306.55	292.53	307.28
294.81	307.32	300.66	308.98	308.2	310.06	319.93	313.66	324.09	314.93
342.79	315.87	343.49	315.9	357.12	316.61	369.03	317.1	394.67	320.77
400.59	321.64	402.79	322.3	405.86	323.27	424.64	328.88	426.55	329.52
459.53	339.65	465.09	340.67	493.8	347.07	499.05	347.68	512.71	350.36
520.2	351.42	540.01	353.91	544.1	354.68				

Manning's n Values num= 4

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	228.52	.05	342.79	.02	394.67	.05

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
269.26	284.57	247.42	202.85	208.23	.1 .3

CROSS SECTION OUTPUT Profile #Q50

E.G. Elev (ft)	308.49	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.58	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	307.91	Reach Len. (ft)	247.42	202.85	208.23
Crit W.S. (ft)	307.91	Flow Area (sq ft)	7.34	27.02	9.92
E.G. Slope (ft/ft)	0.024249	Area (sq ft)	7.34	27.02	9.92
Q Total (cfs)	247.00	Flow (cfs)	25.61	181.89	39.49
Top Width (ft)	38.75	Top Width (ft)	11.12	15.31	12.32
Vel Total (ft/s)	5.58	Avg. Vel. (ft/s)	3.49	6.73	3.98
Max Chl Dpth (ft)	2.19	Hydr. Depth (ft)	0.66	1.77	0.81
Conv. Total (cfs)	1586.2	Conv. (cfs)	164.5	1168.1	253.6
Length Wtd. (ft)	208.27	Wetted Per. (ft)	11.20	15.40	12.43
Min Ch El (ft)	305.72	Shear (lb/sq ft)	0.99	2.66	1.21
Alpha	1.19	Stream Power (lb/ft s)	3.46	17.88	4.81
Frctn Loss (ft)	0.78	Cum Volume (acre-ft)	0.93	4.49	0.83
C & E Loss (ft)	0.14	Cum SA (acres)	0.86	1.65	0.96

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water 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)	309.01	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.70	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	308.31	Reach Len. (ft)	247.42	202.85	208.23
Crit W.S. (ft)	308.31	Flow Area (sq ft)	12.44	33.13	15.11
E.G. Slope (ft/ft)	0.023472	Area (sq ft)	12.44	33.13	15.11
Q Total (cfs)	375.00	Flow (cfs)	50.95	251.28	72.77
Top Width (ft)	43.51	Top Width (ft)	14.48	15.31	13.72
Vel Total (ft/s)	6.18	Avg. Vel. (ft/s)	4.10	7.59	4.82
Max Chl Dpth (ft)	2.59	Hydr. Depth (ft)	0.86	2.16	1.10

Conv. Total (cfs)	2447.7	Conv. (cfs)	332.6	1640.2	475.0
Length Wtd. (ft)	209.73	Wetted Per. (ft)	14.58	15.40	13.89
Min Ch El (ft)	305.72	Shear (lb/sq ft)	1.25	3.15	1.59
Alpha	1.19	Stream Power (lb/ft s)	5.12	23.90	7.67
Frctn Loss (ft)	0.90	Cum Volume (acre-ft)	1.46	5.48	1.32
C & E Loss (ft)	0.17	Cum SA (acres)	1.03	1.65	1.17

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water 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)	310.96	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.18	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	309.78	Reach Len. (ft)	247.42	202.85	208.23
Crit W.S. (ft)	309.78	Flow Area (sq ft)	38.50	55.67	40.25
E.G. Slope (ft/ft)	0.021596	Area (sq ft)	38.50	55.67	40.25
Q Total (cfs)	1089.00	Flow (cfs)	253.51	572.57	262.91
Top Width (ft)	57.50	Top Width (ft)	20.51	15.31	21.68
Vel Total (ft/s)	8.10	Avg. Vel. (ft/s)	6.59	10.28	6.53
Max Chl Dpth (ft)	4.06	Hydr. Depth (ft)	1.88	3.64	1.86
Conv. Total (cfs)	7410.4	Conv. (cfs)	1725.1	3896.2	1789.1
Length Wtd. (ft)	213.92	Wetted Per. (ft)	20.79	15.40	22.00
Min Ch El (ft)	305.72	Shear (lb/sq ft)	2.50	4.87	2.47
Alpha	1.16	Stream Power (lb/ft s)	16.44	50.11	16.11
Frctn Loss (ft)	1.24	Cum Volume (acre-ft)	4.28	9.20	4.35
C & E Loss (ft)	0.25	Cum SA (acres)	1.62	1.65	2.12

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water 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: Cristianitos
REACH: Upper RS: 3679.763

INPUT
Description:

Station Elevation Data num= 36

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	346.53	3.32	346.22	26.22	342.82	41.89	340.73	56.01	337.99
61.27	336.69	75.08	331.14	80.96	329.5	113.9	318.28	122.65	316.27
127.36	314.99	138.08	313.83	163.62	311.61	163.88	311.59	169.21	310.34
190.3	305.42	203.39	302.4	208.16	301.62	214.16	300.98	217.31	301.37
221.27	301.89	223.82	302.86	230.23	305.15	235.97	307.81	238.1	307.99
247.34	308.74	262.48	309.69	305.7	311.88	310.8	312.14	353.32	314.37
365.66	315.52	368.35	315.97	373.15	316.94	407.24	323.5	416.2	324.5
430.57	326.46								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.035	163.62	.05	305.7	.02

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
203.39	223.82	239.31	207.71 163.34	.1	.3

CROSS SECTION OUTPUT Profile #Q50

			Left OB	Channel	Right OB
E.G. Elev (ft)	305.49	Element			
Vel Head (ft)	0.10	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	305.39	Reach Len. (ft)	239.31	207.71	163.34
Crit W.S. (ft)	303.32	Flow Area (sq ft)	19.43	76.60	8.97
E.G. Slope (ft/ft)	0.001452	Area (sq ft)	19.43	76.60	8.97
Q Total (cfs)	247.00	Flow (cfs)	28.30	207.14	11.56
Top Width (ft)	40.34	Top Width (ft)	12.98	20.43	6.94
Vel Total (ft/s)	2.35	Avg. Vel. (ft/s)	1.46	2.70	1.29
Max Chl Dpth (ft)	4.41	Hydr. Depth (ft)	1.50	3.75	1.29
Conv. Total (cfs)	6481.0	Conv. (cfs)	742.6	5435.1	303.3
Length Wtd. (ft)	208.01	Wetted Per. (ft)	13.32	20.76	7.39
Min Ch El (ft)	300.98	Shear (lb/sq ft)	0.13	0.33	0.11
Alpha	1.17	Stream Power (lb/ft s)	0.19	0.90	0.14
Frctn Loss (ft)	0.47	Cum Volume (acre-ft)	0.85	4.25	0.78
C & E Loss (ft)	0.01	Cum SA (acres)	0.79	1.57	0.92

Warning: The conveyance ratio (upstream 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)	306.21	Element			
Vel Head (ft)	0.14	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	306.07	Reach Len. (ft)	239.31	207.71	163.34
Crit W.S. (ft)	303.84	Flow Area (sq ft)	29.11	90.32	14.11
E.G. Slope (ft/ft)	0.001738	Area (sq ft)	29.11	90.32	14.11
Q Total (cfs)	375.00	Flow (cfs)	53.15	298.22	23.63
Top Width (ft)	44.67	Top Width (ft)	15.86	20.43	8.39
Vel Total (ft/s)	2.81	Avg. Vel. (ft/s)	1.83	3.30	1.67
Max Chl Dpth (ft)	5.09	Hydr. Depth (ft)	1.84	4.42	1.68
Conv. Total (cfs)	8995.0	Conv. (cfs)	1274.9	7153.2	566.9
Length Wtd. (ft)	207.67	Wetted Per. (ft)	16.28	20.76	8.98
Min Ch El (ft)	300.98	Shear (lb/sq ft)	0.19	0.47	0.17
Alpha	1.18	Stream Power (lb/ft s)	0.35	1.56	0.29
Frctn Loss (ft)	0.52	Cum Volume (acre-ft)	1.34	5.20	1.25
C & E Loss (ft)	0.01	Cum SA (acres)	0.94	1.57	1.12

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 OUTPUT Profile #Q100HC

E.G. Elev (ft)	308.76	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.35	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	308.41	Reach Len. (ft)	239.31	207.71	163.34
Crit W.S. (ft)	305.78	Flow Area (sq ft)	78.01	138.17	41.44
E.G. Slope (ft/ft)	0.002626	Area (sq ft)	78.01	138.17	41.44
Q Total (cfs)	1089.00	Flow (cfs)	243.48	744.40	101.12
Top Width (ft)	65.75	Top Width (ft)	25.90	20.43	19.43
Vel Total (ft/s)	4.23	Avg. Vel. (ft/s)	3.12	5.39	2.44
Max Chl Dpth (ft)	7.43	Hydr. Depth (ft)	3.01	6.76	2.13
Conv. Total (cfs)	21252.4	Conv. (cfs)	4751.6	14527.4	1973.4
Length Wtd. (ft)	206.77	Wetted Per. (ft)	26.59	20.76	20.44
Min Ch El (ft)	300.98	Shear (lb/sq ft)	0.48	1.09	0.33
Alpha	1.26	Stream Power (lb/ft s)	1.50	5.88	0.81
Frctn Loss (ft)	0.61	Cum Volume (acre-ft)	3.95	8.75	4.15
C & E Loss (ft)	0.00	Cum SA (acres)	1.49	1.57	2.02

CROSS SECTION

RIVER: Cristianitos
REACH: Upper RS: 3469.412

INPUT
Description:
Station Elevation Data num= 48

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	334.72	1.29	334.58	1.66	334.48	2.51	334.26	31.45	324.29
56.95	319.89	67.87	317.62	71.05	317.52	93.85	315.85	110.92	315.97
113.35	315.8	117.64	315.92	120.86	315.7	124.04	315.59	124.85	315.52
125.12	315.49	127.58	315.29	130.25	314.66	137.29	313.06	146.45	310.82
153.98	310.26	168.9	309.15	170.62	309.12	172.64	309.09	173.95	309.13
176.15	309.2	180.71	308.87	187.76	307.98	196.73	305.86	204.78	303.55
211.9	301.86	223.61	302.08	234.39	303.58	250.52	305.81	260.14	307.14
267.26	308.2	276.9	308.58	278.95	308.68	303.79	309.87	320.92	310.69
328.83	310.7	344.07	310.72	349.57	311.36	370.76	313.82	379.31	314.74
389.46	317.04	403.67	319.37	416.15	322.13				

Manning's n Values num= 6

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	124.85	.05	153.98	.035	170.62	.05	303.79	.02
349.57	.05								

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
204.78	234.39	262.64	172.27	112.8	.1	.3

CROSS SECTION OUTPUT Profile #Q50

E.G. Elev (ft)	305.02	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.16	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	304.86	Reach Len. (ft)	262.64	172.27	112.80
Crit W.S. (ft)		Flow Area (sq ft)	2.99	71.04	5.92
E.G. Slope (ft/ft)	0.003905	Area (sq ft)	2.99	71.04	5.92
Q Total (cfs)	247.00	Flow (cfs)	4.07	234.83	8.10

Top Width (ft)	43.42	Top Width (ft)	4.56	29.61	9.25
Vel Total (ft/s)	3.09	Avg. Vel. (ft/s)	1.36	3.31	1.37
Max Chl Dpth (ft)	3.00	Hydr. Depth (ft)	0.65	2.40	0.64
Conv. Total (cfs)	3952.7	Conv. (cfs)	65.1	3757.9	129.7
Length Wtd. (ft)	175.99	Wetted Per. (ft)	4.75	29.91	9.34
Min Ch El (ft)	301.86	Shear (lb/sq ft)	0.15	0.58	0.15
Alpha	1.10	Stream Power (lb/ft s)	0.21	1.91	0.21
Frctn Loss (ft)	1.47	Cum Volume (acre-ft)	0.79	3.90	0.76
C & E Loss (ft)	0.06	Cum SA (acres)	0.74	1.45	0.89

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

CROSS SECTION OUTPUT Profile #Q100

E.G. Elev (ft)	305.69	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.21	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	305.48	Reach Len. (ft)	262.64	172.27	112.80
Crit W.S. (ft)		Flow Area (sq ft)	6.48	89.37	13.03
E.G. Slope (ft/ft)	0.003825	Area (sq ft)	6.48	89.37	13.03
Q Total (cfs)	375.00	Flow (cfs)	11.31	340.71	22.98
Top Width (ft)	50.06	Top Width (ft)	6.72	29.61	13.73
Vel Total (ft/s)	3.44	Avg. Vel. (ft/s)	1.75	3.81	1.76
Max Chl Dpth (ft)	3.62	Hydr. Depth (ft)	0.96	3.02	0.95
Conv. Total (cfs)	6063.5	Conv. (cfs)	182.9	5509.0	371.5
Length Wtd. (ft)	175.79	Wetted Per. (ft)	6.99	29.91	13.86
Min Ch El (ft)	301.86	Shear (lb/sq ft)	0.22	0.71	0.22
Alpha	1.14	Stream Power (lb/ft s)	0.39	2.72	0.40
Frctn Loss (ft)	1.42	Cum Volume (acre-ft)	1.24	4.77	1.20
C & E Loss (ft)	0.07	Cum SA (acres)	0.88	1.45	1.07

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 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)	308.15	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.34	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	307.81	Reach Len. (ft)	262.64	172.27	112.80
Crit W.S. (ft)		Flow Area (sq ft)	33.00	158.34	64.52
E.G. Slope (ft/ft)	0.003290	Area (sq ft)	33.00	158.34	64.52
Q Total (cfs)	1089.00	Flow (cfs)	88.07	819.81	181.12
Top Width (ft)	76.13	Top Width (ft)	16.29	29.61	30.23
Vel Total (ft/s)	4.26	Avg. Vel. (ft/s)	2.67	5.18	2.81
Max Chl Dpth (ft)	5.95	Hydr. Depth (ft)	2.03	5.35	2.13
Conv. Total (cfs)	18985.4	Conv. (cfs)	1535.5	14292.4	3157.6
Length Wtd. (ft)	174.92	Wetted Per. (ft)	16.84	29.91	30.53
Min Ch El (ft)	301.86	Shear (lb/sq ft)	0.40	1.09	0.43
Alpha	1.22	Stream Power (lb/ft s)	1.07	5.63	1.22

Frctn Loss (ft)	1.20	Cum Volume (acre-ft)	3.64	8.04	3.95
C & E Loss (ft)	0.12	Cum SA (acres)	1.38	1.45	1.93

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

CROSS SECTION

RIVER: Cristianitos
REACH: Upper RS: 3296.568

INPUT
Description: Manual Modification of Mannings N Values
Station Elevation Data num= 36

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	321.7	4.34	320.02	11.58	317.14	15.27	315.45	17.46	315.18
26.72	314.05	37.7	312.49	48.28	311.86	72.75	310.59	73.1	310.57
82.8	309.84	93.41	309.3	97.79	309.08	102.36	308.98	108.38	308.31
115.22	304.56	122.16	301.31	126.14	300.96	127.24	300.85	133.86	300.86
136.02	300.86	137.05	300.95	140.39	301.4	153.93	306.36	155.68	307.17
156.24	307.43	157.3	307.98	162.97	308.45	164.88	308.8	185.64	308.41
207.01	308.54	228.82	308.65	257.01	312.63	274.44	317.49	277.19	318
291	321.55								

Manning's n Values num= 2

Sta	n Val	Sta	n Val
0	.035	17.46	.05

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
126.14	137.05	197.4	211.35 205.37	.1	.3

CROSS SECTION OUTPUT Profile #Q50

E.G. Elev (ft)	303.50	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.75	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	302.75	Reach Len. (ft)	197.40	211.35	205.37
Crit W.S. (ft)	302.75	Flow Area (sq ft)	8.64	20.55	7.74
E.G. Slope (ft/ft)	0.028811	Area (sq ft)	8.64	20.55	7.74
Q Total (cfs)	247.00	Flow (cfs)	48.34	158.01	40.65
Top Width (ft)	24.99	Top Width (ft)	7.05	10.91	7.02
Vel Total (ft/s)	6.69	Avg. Vel. (ft/s)	5.60	7.69	5.25
Max Chl Dpth (ft)	1.90	Hydr. Depth (ft)	1.22	1.88	1.10
Conv. Total (cfs)	1455.2	Conv. (cfs)	284.8	930.9	239.5
Length Wtd. (ft)	208.19	Wetted Per. (ft)	7.39	10.92	7.29
Min Ch El (ft)	300.85	Shear (lb/sq ft)	2.10	3.38	1.91
Alpha	1.08	Stream Power (lb/ft s)	11.77	26.03	10.03
Frctn Loss (ft)	2.45	Cum Volume (acre-ft)	0.76	3.71	0.74
C & E Loss (ft)	0.15	Cum SA (acres)	0.71	1.37	0.86

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than

0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water 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)	304.20	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.94	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	303.26	Reach Len. (ft)	197.40	211.35	205.37
Crit W.S. (ft)	303.26	Flow Area (sq ft)	12.54	26.15	11.71
E.G. Slope (ft/ft)	0.026789	Area (sq ft)	12.54	26.15	11.71
Q Total (cfs)	375.00	Flow (cfs)	78.41	227.64	68.95
Top Width (ft)	27.48	Top Width (ft)	8.15	10.91	8.42
Vel Total (ft/s)	7.44	Avg. Vel. (ft/s)	6.25	8.71	5.89
Max Chl Dpth (ft)	2.41	Hydr. Depth (ft)	1.54	2.40	1.39
Conv. Total (cfs)	2291.1	Conv. (cfs)	479.0	1390.8	421.3
Length Wtd. (ft)	207.87	Wetted Per. (ft)	8.60	10.92	8.78
Min Ch El (ft)	300.85	Shear (lb/sq ft)	2.44	4.00	2.23
Alpha	1.09	Stream Power (lb/ft s)	15.25	34.87	13.13
Frctn Loss (ft)	2.52	Cum Volume (acre-ft)	1.18	4.54	1.17
C & E Loss (ft)	0.18	Cum SA (acres)	0.84	1.37	1.05

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

CROSS SECTION OUTPUT Profile #Q100HC

E.G. Elev (ft)	306.83	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.59	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	305.24	Reach Len. (ft)	197.40	211.35	205.37
Crit W.S. (ft)	305.24	Flow Area (sq ft)	32.70	47.67	33.64
E.G. Slope (ft/ft)	0.022092	Area (sq ft)	32.70	47.67	33.64
Q Total (cfs)	1089.00	Flow (cfs)	266.30	562.52	260.18
Top Width (ft)	36.87	Top Width (ft)	12.15	10.91	13.81
Vel Total (ft/s)	9.55	Avg. Vel. (ft/s)	8.14	11.80	7.73
Max Chl Dpth (ft)	4.39	Hydr. Depth (ft)	2.69	4.37	2.44
Conv. Total (cfs)	7326.7	Conv. (cfs)	1791.7	3784.6	1750.5
Length Wtd. (ft)	207.06	Wetted Per. (ft)	13.06	10.92	14.52
Min Ch El (ft)	300.85	Shear (lb/sq ft)	3.45	6.02	3.20
Alpha	1.12	Stream Power (lb/ft s)	28.11	71.05	24.71
Frctn Loss (ft)	3.18	Cum Volume (acre-ft)	3.44	7.63	3.83
C & E Loss (ft)	0.19	Cum SA (acres)	1.29	1.37	1.87

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

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water 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: Cristianitos
REACH: Upper RS: 3085.474

INPUT
Description:
Station Elevation Data num= 25

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	314.87	18.38	313.25	31.02	312.27	58.16	310.16	87.34	307.92
113.66	304.31	134.08	302.37	135.11	302.04	135.13	302.03	151.03	295.97
152.41	295.44	164.67	295.89	168.36	295.85	173.61	297.25	188.34	301.94
191.63	302.16	197.14	302.55	231.27	301.74	248.83	301.27	254.63	301.22
259.4	301.33	282.32	302.47	314.55	306.64	326.16	308.64	344.66	314.42

Manning's n Values num= 2

Sta	n Val	Sta	n Val
0	.02	31.02	.05

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
151.03	164.67	136.96	234.47	286.66	.1	.3

CROSS SECTION OUTPUT Profile #Q50

			Left OB	Channel	Right OB
E.G. Elev (ft)	298.58	Element			
Vel Head (ft)	0.26	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	298.32	Reach Len. (ft)	136.96	234.47	286.66
Crit W.S. (ft)	297.45	Flow Area (sq ft)	7.27	36.22	20.18
E.G. Slope (ft/ft)	0.006341	Area (sq ft)	7.27	36.22	20.18
Q Total (cfs)	247.00	Flow (cfs)	18.34	163.50	65.17
Top Width (ft)	32.13	Top Width (ft)	6.18	13.64	12.31
Vel Total (ft/s)	3.88	Avg. Vel. (ft/s)	2.52	4.51	3.23
Max Chl Dpth (ft)	2.88	Hydr. Depth (ft)	1.18	2.66	1.64
Conv. Total (cfs)	3101.8	Conv. (cfs)	230.3	2053.2	818.4
Length Wtd. (ft)	234.54	Wetted Per. (ft)	6.61	13.75	12.66
Min Ch El (ft)	295.44	Shear (lb/sq ft)	0.44	1.04	0.63
Alpha	1.11	Stream Power (lb/ft s)	1.10	4.71	2.04
Frctn Loss (ft)	2.75	Cum Volume (acre-ft)	0.72	3.58	0.67
C & E Loss (ft)	0.02	Cum SA (acres)	0.68	1.31	0.82

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 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)	299.25	Element			
Vel Head (ft)	0.36	Wt. n-Val.	0.050	0.050	0.050

W.S. Elev (ft)	298.90	Reach Len. (ft)	136.96	234.47	286.66
Crit W.S. (ft)	297.94	Flow Area (sq ft)	11.23	44.02	27.74
E.G. Slope (ft/ft)	0.006882	Area (sq ft)	11.23	44.02	27.74
Q Total (cfs)	375.00	Flow (cfs)	34.11	235.75	105.14
Top Width (ft)	35.43	Top Width (ft)	7.68	13.64	14.11
Vel Total (ft/s)	4.52	Avg. Vel. (ft/s)	3.04	5.36	3.79
Max Chl Dpth (ft)	3.46	Hydr. Depth (ft)	1.46	3.23	1.97
Conv. Total (cfs)	4520.2	Conv. (cfs)	411.2	2841.7	1267.4
Length Wtd. (ft)	233.68	Wetted Per. (ft)	8.22	13.75	14.55
Min Ch El (ft)	295.44	Shear (lb/sq ft)	0.59	1.38	0.82
Alpha	1.12	Stream Power (lb/ft s)	1.78	7.37	3.11
Frctn Loss (ft)	3.01	Cum Volume (acre-ft)	1.13	4.37	1.08
C & E Loss (ft)	0.02	Cum SA (acres)	0.80	1.31	0.99

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 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)	301.49	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.95	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	300.54	Reach Len. (ft)	136.96	234.47	286.66
Crit W.S. (ft)	299.83	Flow Area (sq ft)	27.43	66.48	55.23
E.G. Slope (ft/ft)	0.011319	Area (sq ft)	27.43	66.48	55.23
Q Total (cfs)	1089.00	Flow (cfs)	143.89	601.10	344.02
Top Width (ft)	44.92	Top Width (ft)	12.00	13.64	19.28
Vel Total (ft/s)	7.30	Avg. Vel. (ft/s)	5.24	9.04	6.23
Max Chl Dpth (ft)	5.10	Hydr. Depth (ft)	2.29	4.87	2.86
Conv. Total (cfs)	10236.1	Conv. (cfs)	1352.5	5650.0	3233.6
Length Wtd. (ft)	233.81	Wetted Per. (ft)	12.84	13.75	19.98
Min Ch El (ft)	295.44	Shear (lb/sq ft)	1.51	3.42	1.95
Alpha	1.14	Stream Power (lb/ft s)	7.92	30.90	12.17
Frctn Loss (ft)	3.79	Cum Volume (acre-ft)	3.31	7.36	3.62
C & E Loss (ft)	0.00	Cum SA (acres)	1.23	1.31	1.79

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

CROSS SECTION

RIVER: Cristianitos
REACH: Upper RS: 2851.001

INPUT
Description: Manual Modification of Manning's N Values
Station Elevation Data num= 41

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	310.99	6.84	309.32	23.14	306.75	31.88	304.6	39.14	301.85
60.82	296.51	65.52	295.36	66.42	295.07	68.17	294.82	70.11	294.94
70.73	294.98	81.17	294.25	85.36	293.97	87.62	294.13	103.28	294.22
125.57	295.46	129.46	295.64	131.97	295.68	137.44	297.13	145.24	299.2
145.56	299.3	145.94	299.29	150.87	300.71	152.51	300.32	157.35	296.83

160.74	295.86	194.58	296.2	203.39	296.55	205.24	296.66	220.82	296.01
235.2	295.73	244.1	295.6	247.39	295.11	286.77	295.25	318.68	295.45
329.34	296.34	350.56	300.28	362.09	303	381.58	306.49	392.27	308.08
394.95	308.79								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.05	203.39	.035	350.56	.07

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
81.17	103.28	31.68	39.54	25.34	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
150.87	394.95	300.71	F

CROSS SECTION OUTPUT Profile #Q50

E.G. Elev (ft)	295.83	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.42	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	295.41	Reach Len. (ft)	31.68	39.54	25.34
Crit W.S. (ft)	295.41	Flow Area (sq ft)	10.53	27.76	12.63
E.G. Slope (ft/ft)	0.028538	Area (sq ft)	10.53	27.76	23.75
Q Total (cfs)	247.00	Flow (cfs)	40.12	162.16	44.72
Top Width (ft)	125.46	Top Width (ft)	15.84	22.11	87.51
Vel Total (ft/s)	4.85	Avg. Vel. (ft/s)	3.81	5.84	3.54
Max Chl Dpth (ft)	1.44	Hydr. Depth (ft)	0.67	1.26	0.59
Conv. Total (cfs)	1462.1	Conv. (cfs)	237.5	959.9	264.7
Length Wtd. (ft)	36.38	Wetted Per. (ft)	15.94	22.13	21.35
Min Ch El (ft)	293.97	Shear (lb/sq ft)	1.18	2.24	1.05
Alpha	1.15	Stream Power (lb/ft s)	4.49	13.06	3.73
Frctn Loss (ft)	0.71	Cum Volume (acre-ft)	0.69	3.40	0.53
C & E Loss (ft)	0.00	Cum SA (acres)	0.64	1.21	0.49

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

CROSS SECTION OUTPUT Profile #Q100

E.G. Elev (ft)	296.22	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.58	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	295.64	Reach Len. (ft)	31.68	39.54	25.34
Crit W.S. (ft)	295.64	Flow Area (sq ft)	14.42	33.03	18.28
E.G. Slope (ft/ft)	0.032149	Area (sq ft)	14.42	33.03	47.15
Q Total (cfs)	375.00	Flow (cfs)	69.00	229.86	76.14
Top Width (ft)	145.22	Top Width (ft)	16.81	22.11	106.30
Vel Total (ft/s)	5.71	Avg. Vel. (ft/s)	4.79	6.96	4.17
Max Chl Dpth (ft)	1.67	Hydr. Depth (ft)	0.86	1.49	0.69
Conv. Total (cfs)	2091.5	Conv. (cfs)	384.8	1282.0	424.6
Length Wtd. (ft)	35.78	Wetted Per. (ft)	16.94	22.13	26.45
Min Ch El (ft)	293.97	Shear (lb/sq ft)	1.71	3.00	1.39

Alpha	1.15	Stream Power (lb/ft s)	8.18	20.85	5.78
Frctn Loss (ft)	0.74	Cum Volume (acre-ft)	1.09	4.16	0.83
C & E Loss (ft)	0.00	Cum SA (acres)	0.76	1.21	0.60

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

CROSS SECTION OUTPUT Profile #Q100HC

E.G. Elev (ft)	297.69	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.93	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	296.76	Reach Len. (ft)	31.68	39.54	25.34
Crit W.S. (ft)	296.76	Flow Area (sq ft)	35.74	57.72	52.49
E.G. Slope (ft/ft)	0.025176	Area (sq ft)	35.74	57.72	233.09
Q Total (cfs)	1089.00	Flow (cfs)	235.56	515.84	337.59
Top Width (ft)	250.26	Top Width (ft)	21.37	22.11	206.78
Vel Total (ft/s)	7.46	Avg. Vel. (ft/s)	6.59	8.94	6.43
Max Chl Dpth (ft)	2.79	Hydr. Depth (ft)	1.67	2.61	1.60
Conv. Total (cfs)	6863.3	Conv. (cfs)	1484.6	3251.0	2127.6
Length Wtd. (ft)	34.21	Wetted Per. (ft)	21.63	22.13	32.95
Min Ch El (ft)	293.97	Shear (lb/sq ft)	2.60	4.10	2.50
Alpha	1.08	Stream Power (lb/ft s)	17.12	36.65	16.11
Frctn Loss (ft)	0.48	Cum Volume (acre-ft)	3.21	7.02	2.67
C & E Loss (ft)	0.06	Cum SA (acres)	1.18	1.21	1.05

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

CROSS SECTION

RIVER: Cristianitos
REACH: Upper RS: 2811.46*

INPUT
Description:
Station Elevation Data num= 67

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	309.99	6.05	308.7	7.65	308.35	7.82	308.3	10.52	307.65
17.9	306.21	18.89	306	19.65	305.88	26.44	304.86	36.43	302.69
44.72	300.06	45.5	299.89	55.63	297.71	56.1	297.61	57.92	297.22
69.5	294.76	74.87	293.62	75.9	293.34	77.9	293.07	79.66	293.1
80.11	293.12	80.82	293.14	92.75	292.34	96.72	292.08	98.87	292.22
113.72	292.31	120.31	292.75	126.7	293.2	132.45	293.88	134.52	294.09
138.15	294.44	140.5	294.6	145.6	296.12	152.88	298.29	153.18	298.39
153.54	298.4	154.98	298.86	155.41	299	158.14	299.83	158.32	299.8
159.67	299.53	164.19	296.62	165.06	296.4	167.35	295.8	188.18	295.99
198.94	296.08	207.16	296.37	208.89	296.46	223.43	295.88	236.86	295.62
245.17	295.5	248.24	295.07	285	295.14	304.82	295.23	308.24	295.24
308.98	295.25	310.83	295.28	314.78	295.33	318.2	295.63	324.73	296.18
344.54	299.73	350.92	301.16	352.89	301.63	355.3	302.2	373.5	305.58
383.47	307.15	385.98	307.81						

Manning's n Values num= 7

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.05	92.75	.035	113.72	.04	207.16	.04	344.54	.07
352.89	.07	385.98	.07						

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
92.75	113.72	31.68	39.54	25.34	.1	.3

CROSS SECTION OUTPUT Profile #Q50

			Left OB	Channel	Right OB
E.G. Elev (ft)	294.38	Element			
Vel Head (ft)	1.17	Wt. n-Val.	0.050	0.035	0.040
W.S. Elev (ft)	293.22	Reach Len. (ft)	31.68	39.54	25.34
Crit W.S. (ft)	293.57	Flow Area (sq ft)	6.15	20.48	6.11
E.G. Slope (ft/ft)	0.051561	Area (sq ft)	6.15	20.48	6.11
Q Total (cfs)	247.00	Flow (cfs)	21.94	194.22	30.84
Top Width (ft)	50.07	Top Width (ft)	15.96	20.97	13.14
Vel Total (ft/s)	7.55	Avg. Vel. (ft/s)	3.57	9.48	5.05
Max Chl Dpth (ft)	1.14	Hydr. Depth (ft)	0.39	0.98	0.46
Conv. Total (cfs)	1087.8	Conv. (cfs)	96.6	855.3	135.8
Length Wtd. (ft)	37.15	Wetted Per. (ft)	15.99	20.98	13.17
Min Ch El (ft)	292.08	Shear (lb/sq ft)	1.24	3.14	1.49
Alpha	1.32	Stream Power (lb/ft s)	4.42	29.79	7.53
Frctn Loss (ft)	1.37	Cum Volume (acre-ft)	0.69	3.38	0.52
C & E Loss (ft)	0.07	Cum SA (acres)	0.63	1.19	0.46

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.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.
Note: Program found supercritical flow starting at this cross section.

CROSS SECTION OUTPUT Profile #Q100

			Left OB	Channel	Right OB
E.G. Elev (ft)	294.80	Element			
Vel Head (ft)	1.32	Wt. n-Val.	0.050	0.035	0.040
W.S. Elev (ft)	293.48	Reach Len. (ft)	31.68	39.54	25.34
Crit W.S. (ft)	293.88	Flow Area (sq ft)	10.59	26.03	9.88
E.G. Slope (ft/ft)	0.044671	Area (sq ft)	10.59	26.03	9.88
Q Total (cfs)	375.00	Flow (cfs)	47.72	269.64	57.64

Top Width (ft)	53.73	Top Width (ft)	17.38	20.97	15.38
Vel Total (ft/s)	8.06	Avg. Vel. (ft/s)	4.50	10.36	5.83
Max Chl Dpth (ft)	1.40	Hydr. Depth (ft)	0.61	1.24	0.64
Conv. Total (cfs)	1774.3	Conv. (cfs)	225.8	1275.8	272.7
Length Wtd. (ft)	36.50	Wetted Per. (ft)	17.45	20.98	15.43
Min Ch El (ft)	292.08	Shear (lb/sq ft)	1.69	3.46	1.79
Alpha	1.31	Stream Power (lb/ft s)	7.63	35.84	10.42
Frctn Loss (ft)	1.35	Cum Volume (acre-ft)	1.08	4.13	0.81
C & E Loss (ft)	0.07	Cum SA (acres)	0.75	1.19	0.56

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

CROSS SECTION OUTPUT Profile #Q100HC

E.G. Elev (ft)	296.57	Element	Left OB	Channel	Right OB
Vel Head (ft)	2.08	Wt. n-Val.	0.050	0.035	0.040
W.S. Elev (ft)	294.49	Reach Len. (ft)	31.68	39.54	25.34
Crit W.S. (ft)	295.35	Flow Area (sq ft)	30.30	47.10	29.91
E.G. Slope (ft/ft)	0.035479	Area (sq ft)	30.30	47.10	29.91
Q Total (cfs)	1089.00	Flow (cfs)	209.05	645.64	234.31
Top Width (ft)	68.09	Top Width (ft)	21.97	20.97	25.15
Vel Total (ft/s)	10.15	Avg. Vel. (ft/s)	6.90	13.71	7.83
Max Chl Dpth (ft)	2.41	Hydr. Depth (ft)	1.38	2.25	1.19
Conv. Total (cfs)	5781.6	Conv. (cfs)	1109.9	3427.7	1243.9
Length Wtd. (ft)	35.17	Wetted Per. (ft)	22.15	20.98	25.25
Min Ch El (ft)	292.08	Shear (lb/sq ft)	3.03	4.97	2.62
Alpha	1.30	Stream Power (lb/ft s)	20.91	68.15	20.56
Frctn Loss (ft)	1.01	Cum Volume (acre-ft)	3.18	6.97	2.59
C & E Loss (ft)	0.11	Cum SA (acres)	1.17	1.19	0.98

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

CROSS SECTION

RIVER: Cristianitos
REACH: Upper RS: 2771.92*

INPUT
Description:
Station Elevation Data num= 67

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	308.99	6.81	307.71	8.6	307.35	8.79	307.29	11.83	306.36
20.14	304.49	21.25	304.2	22.1	304.08	29.74	302.96	40.98	300.77
50.31	298.26	51.18	298.09	62.57	295.91	63.1	295.81	65.15	295.43

78.17	293	84.21	291.88	85.37	291.61	87.62	291.32	89.61	291.29
90.11	291.3	90.91	291.31	104.33	290.43	108.09	290.19	110.11	290.31
124.15	290.41	130.27	290.89	136.21	291.41	141.55	292.41	143.48	292.73
146.85	293.24	149.03	293.53	153.77	295.11	160.53	297.37	160.81	297.48
161.14	297.51	162.47	297.98	162.88	298.12	165.41	298.95	165.57	298.94
166.83	298.74	171.03	296.41	171.84	296.25	173.97	295.75	193.31	295.9
203.3	295.95	210.94	296.18	212.54	296.25	226.05	295.75	238.52	295.51
246.23	295.39	249.08	295.04	283.22	295.03	301.63	295.07	304.81	295.07
305.49	295.08	307.21	295.13	310.88	295.22	314.06	295.49	320.12	296.02
338.52	299.17	344.44	300.43	346.28	300.86	348.52	301.4	365.41	304.66
374.68	306.22	377	306.83						

Manning's n Values num= 7

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.05	104.33	.035	124.15	.045	210.94	.045	338.52	.07
346.28	.07	377	.07						

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
104.33	124.15	31.68	39.54	25.34	.1	.3

CROSS SECTION OUTPUT Profile #Q50

			Left OB	Channel	Right OB
E.G. Elev (ft)	292.54	Element			
Vel Head (ft)	1.16	Wt. n-Val.	0.050	0.035	0.045
W.S. Elev (ft)	291.38	Reach Len. (ft)	31.68	39.54	25.34
Crit W.S. (ft)	291.74	Flow Area (sq ft)	7.07	20.58	5.81
E.G. Slope (ft/ft)	0.047657	Area (sq ft)	7.07	20.58	5.81
Q Total (cfs)	247.00	Flow (cfs)	25.34	195.44	26.21
Top Width (ft)	48.66	Top Width (ft)	17.16	19.82	11.69
Vel Total (ft/s)	7.38	Avg. Vel. (ft/s)	3.59	9.50	4.51
Max Chl Dpth (ft)	1.19	Hydr. Depth (ft)	0.41	1.04	0.50
Conv. Total (cfs)	1131.4	Conv. (cfs)	116.1	895.3	120.1
Length Wtd. (ft)	37.28	Wetted Per. (ft)	17.19	19.83	11.73
Min Ch El (ft)	290.19	Shear (lb/sq ft)	1.22	3.09	1.47
Alpha	1.37	Stream Power (lb/ft s)	4.39	29.32	6.65
Frctn Loss (ft)	1.84	Cum Volume (acre-ft)	0.68	3.36	0.52
C & E Loss (ft)	0.00	Cum SA (acres)	0.62	1.17	0.45

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

CROSS SECTION OUTPUT Profile #Q100

			Left OB	Channel	Right OB
E.G. Elev (ft)	293.09	Element			
Vel Head (ft)	1.48	Wt. n-Val.	0.050	0.035	0.045
W.S. Elev (ft)	291.61	Reach Len. (ft)	31.68	39.54	25.34
Crit W.S. (ft)	292.06	Flow Area (sq ft)	11.20	25.11	8.67
E.G. Slope (ft/ft)	0.048741	Area (sq ft)	11.20	25.11	8.67
Q Total (cfs)	375.00	Flow (cfs)	51.68	275.52	47.81
Top Width (ft)	51.86	Top Width (ft)	18.93	19.82	13.11
Vel Total (ft/s)	8.34	Avg. Vel. (ft/s)	4.62	10.97	5.52
Max Chl Dpth (ft)	1.42	Hydr. Depth (ft)	0.59	1.27	0.66
Conv. Total (cfs)	1698.6	Conv. (cfs)	234.1	1248.0	216.5
Length Wtd. (ft)	36.72	Wetted Per. (ft)	18.98	19.83	13.17
Min Ch El (ft)	290.19	Shear (lb/sq ft)	1.80	3.85	2.00
Alpha	1.37	Stream Power (lb/ft s)	8.28	42.28	11.05
Frctn Loss (ft)	1.70	Cum Volume (acre-ft)	1.07	4.11	0.81
C & E Loss (ft)	0.02	Cum SA (acres)	0.74	1.17	0.55

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

CROSS SECTION OUTPUT Profile #Q100HC

			Left OB	Channel	Right OB
E.G. Elev (ft)	295.11	Element			
Vel Head (ft)	2.57	Wt. n-Val.	0.050	0.035	0.045
W.S. Elev (ft)	292.54	Reach Len. (ft)	31.68	39.54	25.34
Crit W.S. (ft)	293.32	Flow Area (sq ft)	31.04	43.66	23.27
E.G. Slope (ft/ft)	0.044933	Area (sq ft)	31.04	43.66	23.27
Q Total (cfs)	1089.00	Flow (cfs)	233.23	664.83	190.94
Top Width (ft)	61.71	Top Width (ft)	23.69	19.82	18.20
Vel Total (ft/s)	11.12	Avg. Vel. (ft/s)	7.51	15.23	8.20
Max Chl Dpth (ft)	2.35	Hydr. Depth (ft)	1.31	2.20	1.28
Conv. Total (cfs)	5137.4	Conv. (cfs)	1100.3	3136.4	900.8
Length Wtd. (ft)	35.47	Wetted Per. (ft)	23.83	19.83	18.34
Min Ch El (ft)	290.19	Shear (lb/sq ft)	3.65	6.18	3.56
Alpha	1.34	Stream Power (lb/ft s)	27.46	94.04	29.20
Frctn Loss (ft)	1.40	Cum Volume (acre-ft)	3.16	6.93	2.58
C & E Loss (ft)	0.05	Cum SA (acres)	1.15	1.17	0.97

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

CROSS SECTION

RIVER: Cristianitos
REACH: Upper RS: 2732.38*

INPUT
Description:
Station Elevation Data num= 67

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	307.99	7.57	306.72	9.56	306.35	9.77	306.27	13.15	305.07
22.37	302.76	23.61	302.41	24.56	302.27	33.04	301.07	45.52	298.86
55.89	296.47	56.86	296.3	69.52	294.12	70.1	294.02	72.38	293.64
86.85	291.25	93.56	290.14	94.85	289.89	97.35	289.58	99.56	289.48
100.12	289.48	101	289.47	115.91	288.52	119.45	288.3	121.36	288.4
134.59	288.5	140.24	289.02	145.72	289.61	150.65	290.95	152.43	291.36
155.54	292.05	157.55	292.45	161.93	294.1	168.17	296.46	168.43	296.56
168.73	296.61	169.97	297.1	170.34	297.25	172.68	298.07	172.83	298.07
173.99	297.95	177.87	296.2	178.61	296.09	180.58	295.69	198.44	295.81
207.66	295.83	214.71	296	216.19	296.05	228.66	295.62	240.17	295.4
247.3	295.29	249.93	295	281.45	294.92	298.44	294.91	301.38	294.9
302.01	294.92	303.6	294.98	306.99	295.1	309.92	295.36	315.52	295.86
332.5	298.62	337.97	299.7	339.66	300.1	341.73	300.6	357.33	303.75
365.88	305.29	368.03	305.85						

Manning's n Values num= 7

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.05	115.91	.035	134.59	.05	214.71	.05	332.5	.07
339.66	.07	368.03	.07						

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
115.91	134.59	31.68 39.54	25.34	.1	.3

CROSS SECTION OUTPUT Profile #Q50

E.G. Elev (ft)	290.73	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.23	Wt. n-Val.	0.050	0.035	0.050
W.S. Elev (ft)	289.50	Reach Len. (ft)	31.68	39.54	25.34
Crit W.S. (ft)	289.89	Flow Area (sq ft)	7.58	19.96	5.26
E.G. Slope (ft/ft)	0.048780	Area (sq ft)	7.58	19.96	5.26
Q Total (cfs)	247.00	Flow (cfs)	29.22	195.54	22.24
Top Width (ft)	45.60	Top Width (ft)	16.81	18.68	10.11
Vel Total (ft/s)	7.53	Avg. Vel. (ft/s)	3.86	9.80	4.23
Max Chl Dpth (ft)	1.20	Hydr. Depth (ft)	0.45	1.07	0.52
Conv. Total (cfs)	1118.3	Conv. (cfs)	132.3	885.4	100.7
Length Wtd. (ft)	37.36	Wetted Per. (ft)	16.84	18.69	10.16
Min Ch El (ft)	288.30	Shear (lb/sq ft)	1.37	3.25	1.58
Alpha	1.40	Stream Power (lb/ft s)	5.28	31.86	6.66
Frctn Loss (ft)	1.80	Cum Volume (acre-ft)	0.68	3.35	0.51
C & E Loss (ft)	0.01	Cum SA (acres)	0.61	1.16	0.45

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

CROSS SECTION OUTPUT Profile #Q100

E.G. Elev (ft)	291.29	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.54	Wt. n-Val.	0.050	0.035	0.050
W.S. Elev (ft)	289.75	Reach Len. (ft)	31.68	39.54	25.34
Crit W.S. (ft)	290.21	Flow Area (sq ft)	12.27	24.63	8.02
E.G. Slope (ft/ft)	0.048345	Area (sq ft)	12.27	24.63	8.02
Q Total (cfs)	375.00	Flow (cfs)	57.91	276.38	40.71
Top Width (ft)	50.27	Top Width (ft)	19.94	18.68	11.65
Vel Total (ft/s)	8.35	Avg. Vel. (ft/s)	4.72	11.22	5.07
Max Chl Dpth (ft)	1.45	Hydr. Depth (ft)	0.62	1.32	0.69
Conv. Total (cfs)	1705.5	Conv. (cfs)	263.4	1257.0	185.1
Length Wtd. (ft)	36.84	Wetted Per. (ft)	19.98	18.69	11.72
Min Ch El (ft)	288.30	Shear (lb/sq ft)	1.85	3.98	2.07
Alpha	1.42	Stream Power (lb/ft s)	8.75	44.63	10.48
Frctn Loss (ft)	1.78	Cum Volume (acre-ft)	1.06	4.09	0.80
C & E Loss (ft)	0.01	Cum SA (acres)	0.72	1.16	0.55

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

CROSS SECTION OUTPUT Profile #Q100HC

E.G. Elev (ft)	293.46	Element	Left OB	Channel	Right OB
Vel Head (ft)	2.78	Wt. n-Val.	0.050	0.035	0.050
W.S. Elev (ft)	290.68	Reach Len. (ft)	31.68	39.54	25.34
Crit W.S. (ft)	291.53	Flow Area (sq ft)	33.53	42.01	20.45
E.G. Slope (ft/ft)	0.047687	Area (sq ft)	33.53	42.01	20.45
Q Total (cfs)	1089.00	Flow (cfs)	259.48	668.27	161.25
Top Width (ft)	59.37	Top Width (ft)	25.62	18.68	15.07
Vel Total (ft/s)	11.35	Avg. Vel. (ft/s)	7.74	15.91	7.89
Max Chl Dpth (ft)	2.38	Hydr. Depth (ft)	1.31	2.25	1.36
Conv. Total (cfs)	4986.9	Conv. (cfs)	1188.2	3060.2	738.4
Length Wtd. (ft)	35.63	Wetted Per. (ft)	25.74	18.69	15.27
Min Ch El (ft)	288.30	Shear (lb/sq ft)	3.88	6.69	3.99

Alpha	1.39	Stream Power (lb/ft s)	30.01	106.45	31.44
Frctn Loss (ft)	1.64	Cum Volume (acre-ft)	3.14	6.89	2.56
C & E Loss (ft)	0.02	Cum SA (acres)	1.13	1.16	0.96

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

RIVER: Cristianitos
REACH: Upper RS: 2692.84*

INPUT
Description:
Station Elevation Data num= 67

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	306.98	8.32	305.73	10.51	305.35	10.74	305.26	14.46	303.77
24.61	301.04	25.96	300.61	27.01	300.47	36.34	299.17	50.07	296.94
61.48	294.68	62.54	294.5	76.46	292.32	77.11	292.23	79.61	291.85
95.53	289.49	102.91	288.4	104.32	288.16	107.07	287.83	109.5	287.67
110.12	287.66	111.09	287.63	127.49	286.62	130.81	286.4	132.6	286.48
145.03	286.6	150.21	287.16	155.24	287.82	159.76	289.49	161.38	289.99
164.24	290.85	166.08	291.37	170.09	293.09	175.82	295.54	176.05	295.65
176.33	295.72	177.46	296.22	177.81	296.38	179.95	297.19	180.09	297.21
181.15	297.15	184.7	295.98	185.39	295.93	187.19	295.63	203.57	295.72
212.02	295.71	218.49	295.81	219.85	295.85	231.28	295.49	241.83	295.29
248.36	295.19	250.77	294.96	279.67	294.81	295.25	294.75	297.95	294.73
298.52	294.75	299.98	294.84	303.09	294.98	305.78	295.23	310.91	295.7
326.48	298.06	331.49	298.97	333.05	299.33	334.94	299.8	349.24	302.83
357.09	304.35	359.05	304.87						

Manning's n Values num= 7

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.05	127.49	.035	145.03	.055	218.49	.055	326.48	.07
333.05	.07	359.05	.07						

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
127.49	145.03	31.68 39.54	25.34	.1	.3

CROSS SECTION OUTPUT Profile #Q50

E.G. Elev (ft)	288.91	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.28	Wt. n-Val.	0.050	0.035	0.055
W.S. Elev (ft)	287.63	Reach Len. (ft)	31.68	39.54	25.34
Crit W.S. (ft)	288.04	Flow Area (sq ft)	8.28	19.40	4.73
E.G. Slope (ft/ft)	0.048612	Area (sq ft)	8.28	19.40	4.73
Q Total (cfs)	247.00	Flow (cfs)	34.36	194.07	18.57
Top Width (ft)	42.70	Top Width (ft)	16.40	17.54	8.76
Vel Total (ft/s)	7.62	Avg. Vel. (ft/s)	4.15	10.01	3.93
Max Chl Dpth (ft)	1.23	Hydr. Depth (ft)	0.50	1.11	0.54
Conv. Total (cfs)	1120.3	Conv. (cfs)	155.9	880.2	84.2
Length Wtd. (ft)	37.38	Wetted Per. (ft)	16.43	17.55	8.82
Min Ch El (ft)	286.40	Shear (lb/sq ft)	1.53	3.35	1.63
Alpha	1.41	Stream Power (lb/ft s)	6.35	33.56	6.39
Frctn Loss (ft)	1.82	Cum Volume (acre-ft)	0.67	3.33	0.51
C & E Loss (ft)	0.00	Cum SA (acres)	0.59	1.14	0.44

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

CROSS SECTION OUTPUT Profile #Q100

E.G. Elev (ft)	289.50	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.60	Wt. n-Val.	0.050	0.035	0.055
W.S. Elev (ft)	287.90	Reach Len. (ft)	31.68	39.54	25.34
Crit W.S. (ft)	288.38	Flow Area (sq ft)	13.38	24.05	7.30
E.G. Slope (ft/ft)	0.048163	Area (sq ft)	13.38	24.05	7.30
Q Total (cfs)	375.00	Flow (cfs)	64.64	276.37	33.99
Top Width (ft)	48.91	Top Width (ft)	20.96	17.54	10.41
Vel Total (ft/s)	8.38	Avg. Vel. (ft/s)	4.83	11.49	4.65
Max Chl Dpth (ft)	1.50	Hydr. Depth (ft)	0.64	1.37	0.70
Conv. Total (cfs)	1708.7	Conv. (cfs)	294.5	1259.3	154.9
Length Wtd. (ft)	36.92	Wetted Per. (ft)	21.00	17.55	10.50
Min Ch El (ft)	286.40	Shear (lb/sq ft)	1.92	4.12	2.09
Alpha	1.47	Stream Power (lb/ft s)	9.25	47.35	9.73
Frctn Loss (ft)	1.78	Cum Volume (acre-ft)	1.05	4.07	0.80
C & E Loss (ft)	0.01	Cum SA (acres)	0.71	1.14	0.54

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)	291.74	Element	Left OB	Channel	Right OB
Vel Head (ft)	2.89	Wt. n-Val.	0.050	0.035	0.055
W.S. Elev (ft)	288.85	Reach Len. (ft)	31.68	39.54	25.34
Crit W.S. (ft)	289.73	Flow Area (sq ft)	36.59	40.72	18.43
E.G. Slope (ft/ft)	0.048214	Area (sq ft)	36.59	40.72	18.43
Q Total (cfs)	1089.00	Flow (cfs)	287.41	665.36	136.24
Top Width (ft)	58.12	Top Width (ft)	27.60	17.54	12.99
Vel Total (ft/s)	11.37	Avg. Vel. (ft/s)	7.85	16.34	7.39
Max Chl Dpth (ft)	2.45	Hydr. Depth (ft)	1.33	2.32	1.42
Conv. Total (cfs)	4959.5	Conv. (cfs)	1308.9	3030.2	620.5
Length Wtd. (ft)	35.72	Wetted Per. (ft)	27.71	17.55	13.24
Min Ch El (ft)	286.40	Shear (lb/sq ft)	3.98	6.98	4.19
Alpha	1.44	Stream Power (lb/ft s)	31.22	114.12	30.97
Frctn Loss (ft)	1.71	Cum Volume (acre-ft)	3.11	6.86	2.55
C & E Loss (ft)	0.01	Cum SA (acres)	1.11	1.14	0.95

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

CROSS SECTION

RIVER: Cristianitos
REACH: Upper RS: 2653.30*

INPUT
Description:
Station Elevation Data num= 67

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	305.98	9.08	304.73	11.47	304.35	11.72	304.24	15.77	302.48

26.84	299.32	28.32	298.82	29.46	298.66	39.65	297.28	54.62	295.03
67.06	292.88	68.22	292.71	83.41	290.53	84.11	290.44	86.84	290.07
104.2	287.74	112.26	286.66	113.8	286.43	116.8	286.08	119.45	285.86
120.12	285.84	121.18	285.79	139.07	284.71	142.17	284.51	143.85	284.57
155.47	284.69	160.18	285.3	164.75	286.03	168.86	288.03	170.34	288.62
172.93	289.65	174.61	290.29	178.26	292.08	183.46	294.63	183.68	294.74
183.93	294.83	184.96	295.35	185.27	295.51	187.22	296.32	187.35	296.34
188.31	296.36	191.54	295.77	192.17	295.77	193.81	295.57	208.69	295.63
216.38	295.59	222.26	295.63	223.5	295.65	233.89	295.36	243.49	295.18
249.43	295.08	251.62	294.92	277.9	294.7	292.07	294.6	294.51	294.57
295.04	294.59	296.36	294.69	299.19	294.87	301.63	295.1	306.3	295.55
320.46	297.51	325.02	298.24	326.43	298.57	328.15	299	341.16	301.92
348.29	303.42	350.08	303.89						

Manning's n Values num= 7

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.05	139.07	.035	155.47	.06	222.26	.06	320.46	.07
326.43	.07	350.08	.07						

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
139.07	155.47	31.68	39.54	25.34	.1 .3

CROSS SECTION OUTPUT Profile #Q50

			Left OB	Channel	Right OB
E.G. Elev (ft)	287.09	Element			
Vel Head (ft)	1.32	Wt. n-Val.	0.050	0.035	0.060
W.S. Elev (ft)	285.76	Reach Len. (ft)	31.68	39.54	25.34
Crit W.S. (ft)	286.19	Flow Area (sq ft)	9.16	18.77	4.28
E.G. Slope (ft/ft)	0.048551	Area (sq ft)	9.16	18.77	4.28
Q Total (cfs)	247.00	Flow (cfs)	39.05	192.14	15.82
Top Width (ft)	41.42	Top Width (ft)	17.42	16.40	7.60
Vel Total (ft/s)	7.67	Avg. Vel. (ft/s)	4.26	10.23	3.70
Max Chl Dpth (ft)	1.25	Hydr. Depth (ft)	0.53	1.14	0.56
Conv. Total (cfs)	1121.0	Conv. (cfs)	177.2	872.0	71.8
Length Wtd. (ft)	37.37	Wetted Per. (ft)	17.45	16.41	7.68
Min Ch El (ft)	284.51	Shear (lb/sq ft)	1.59	3.47	1.69
Alpha	1.45	Stream Power (lb/ft s)	6.78	35.49	6.24
Frctn Loss (ft)	1.82	Cum Volume (acre-ft)	0.66	3.31	0.51
C & E Loss (ft)	0.00	Cum SA (acres)	0.58	1.12	0.44

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

CROSS SECTION OUTPUT Profile #Q100

			Left OB	Channel	Right OB
E.G. Elev (ft)	287.71	Element			
Vel Head (ft)	1.67	Wt. n-Val.	0.050	0.035	0.060
W.S. Elev (ft)	286.03	Reach Len. (ft)	31.68	39.54	25.34
Crit W.S. (ft)	286.55	Flow Area (sq ft)	14.55	23.23	6.57
E.G. Slope (ft/ft)	0.048515	Area (sq ft)	14.55	23.23	6.57
Q Total (cfs)	375.00	Flow (cfs)	72.85	273.86	28.29
Top Width (ft)	47.40	Top Width (ft)	21.71	16.40	9.29
Vel Total (ft/s)	8.45	Avg. Vel. (ft/s)	5.01	11.79	4.30
Max Chl Dpth (ft)	1.52	Hydr. Depth (ft)	0.67	1.42	0.71
Conv. Total (cfs)	1702.5	Conv. (cfs)	330.8	1243.4	128.4
Length Wtd. (ft)	36.92	Wetted Per. (ft)	21.75	16.41	9.39
Min Ch El (ft)	284.51	Shear (lb/sq ft)	2.03	4.29	2.12
Alpha	1.51	Stream Power (lb/ft s)	10.14	50.55	9.13

Frctn Loss (ft)	1.78	Cum Volume (acre-ft)	1.04	4.05	0.79
C & E Loss (ft)	0.01	Cum SA (acres)	0.69	1.12	0.53

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

CROSS SECTION OUTPUT Profile #Q100HC

E.G. Elev (ft)	290.00	Element	Left OB	Channel	Right OB
Vel Head (ft)	2.99	Wt. n-Val.	0.050	0.035	0.060
W.S. Elev (ft)	287.01	Reach Len. (ft)	31.68	39.54	25.34
Crit W.S. (ft)	287.94	Flow Area (sq ft)	39.70	39.23	16.61
E.G. Slope (ft/ft)	0.048634	Area (sq ft)	39.70	39.23	16.61
Q Total (cfs)	1089.00	Flow (cfs)	317.02	656.78	115.20
Top Width (ft)	57.11	Top Width (ft)	29.42	16.40	11.29
Vel Total (ft/s)	11.40	Avg. Vel. (ft/s)	7.99	16.74	6.93
Max Chl Dpth (ft)	2.50	Hydr. Depth (ft)	1.35	2.39	1.47
Conv. Total (cfs)	4938.1	Conv. (cfs)	1437.5	2978.2	522.4
Length Wtd. (ft)	35.75	Wetted Per. (ft)	29.52	16.41	11.62
Min Ch El (ft)	284.51	Shear (lb/sq ft)	4.08	7.26	4.34
Alpha	1.48	Stream Power (lb/ft s)	32.61	121.53	30.11
Frctn Loss (ft)	1.73	Cum Volume (acre-ft)	3.09	6.82	2.54
C & E Loss (ft)	0.01	Cum SA (acres)	1.09	1.12	0.95

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

CROSS SECTION

RIVER: Cristianitos
REACH: Upper RS: 2613.76*

INPUT
Description:
Station Elevation Data num= 67

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	304.98	9.83	303.74	12.42	303.35	12.69	303.22	17.09	301.18
29.08	297.6	30.68	297.02	31.92	296.86	42.95	295.39	59.17	293.11
72.64	291.09	73.9	290.91	90.35	288.73	91.12	288.64	94.07	288.28
112.88	285.98	121.6	284.92	123.27	284.7	126.52	284.33	129.39	284.05
130.12	284.01	131.27	283.96	150.65	282.8	153.54	282.62	155.1	282.66
165.9	282.79	170.14	283.43	174.26	284.23	177.96	286.57	179.29	287.26
181.63	288.45	183.14	289.22	186.42	291.07	191.11	293.72	191.3	293.83
191.53	293.94	192.45	294.47	192.74	294.63	194.49	295.44	194.6	295.48
195.47	295.57	198.38	295.56	198.94	295.62	200.42	295.52	213.82	295.54
220.75	295.46	226.04	295.44	227.15	295.44	236.51	295.23	245.15	295.07
250.49	294.98	252.47	294.89	276.12	294.59	288.88	294.44	291.08	294.4
291.55	294.42	292.75	294.55	295.29	294.75	297.49	294.97	301.69	295.39
314.44	296.96	318.54	297.51	319.82	297.8	321.37	298.2	333.07	301
339.49	302.49	341.1	302.91						

Manning's n Values num= 7

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.05	150.65	.035	165.9	.065	226.04	.065	314.44	.07
319.82	.07	341.1	.07						

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
150.65	165.9	31.68	39.54	25.34	.1	.3

CROSS SECTION OUTPUT Profile #Q50

E.G. Elev (ft)	285.27	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.37	Wt. n-Val.	0.050	0.035	0.065
W.S. Elev (ft)	283.90	Reach Len. (ft)	31.68	39.54	25.34
Crit W.S. (ft)	284.34	Flow Area (sq ft)	10.08	18.07	3.91
E.G. Slope (ft/ft)	0.048533	Area (sq ft)	10.08	18.07	3.91
Q Total (cfs)	247.00	Flow (cfs)	44.18	189.15	13.67
Top Width (ft)	40.25	Top Width (ft)	18.35	15.25	6.65
Vel Total (ft/s)	7.71	Avg. Vel. (ft/s)	4.39	10.47	3.50
Max Chl Dpth (ft)	1.28	Hydr. Depth (ft)	0.55	1.18	0.59
Conv. Total (cfs)	1121.2	Conv. (cfs)	200.5	858.6	62.1
Length Wtd. (ft)	37.09	Wetted Per. (ft)	18.38	15.26	6.74
Min Ch El (ft)	282.62	Shear (lb/sq ft)	1.66	3.59	1.76
Alpha	1.48	Stream Power (lb/ft s)	7.28	37.56	6.14
Frctn Loss (ft)	1.81	Cum Volume (acre-ft)	0.66	3.29	0.50
C & E Loss (ft)	0.00	Cum SA (acres)	0.57	1.11	0.43

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

CROSS SECTION OUTPUT Profile #Q100

E.G. Elev (ft)	285.90	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.73	Wt. n-Val.	0.050	0.035	0.065
W.S. Elev (ft)	284.18	Reach Len. (ft)	31.68	39.54	25.34
Crit W.S. (ft)	284.71	Flow Area (sq ft)	15.82	22.29	5.95
E.G. Slope (ft/ft)	0.048706	Area (sq ft)	15.82	22.29	5.95
Q Total (cfs)	375.00	Flow (cfs)	81.82	268.96	24.22
Top Width (ft)	45.87	Top Width (ft)	22.54	15.25	8.08
Vel Total (ft/s)	8.51	Avg. Vel. (ft/s)	5.17	12.06	4.07
Max Chl Dpth (ft)	1.56	Hydr. Depth (ft)	0.70	1.46	0.74
Conv. Total (cfs)	1699.2	Conv. (cfs)	370.7	1218.7	109.8
Length Wtd. (ft)	36.63	Wetted Per. (ft)	22.59	15.26	8.20
Min Ch El (ft)	282.62	Shear (lb/sq ft)	2.13	4.44	2.21
Alpha	1.54	Stream Power (lb/ft s)	11.01	53.60	8.99
Frctn Loss (ft)	1.79	Cum Volume (acre-ft)	1.03	4.02	0.79
C & E Loss (ft)	0.01	Cum SA (acres)	0.68	1.11	0.53

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

CROSS SECTION OUTPUT Profile #Q100HC

E.G. Elev (ft)	288.26	Element	Left OB	Channel	Right OB
Vel Head (ft)	3.08	Wt. n-Val.	0.050	0.035	0.065
W.S. Elev (ft)	285.17	Reach Len. (ft)	31.68	39.54	25.34
Crit W.S. (ft)	286.14	Flow Area (sq ft)	42.83	37.53	15.00
E.G. Slope (ft/ft)	0.049064	Area (sq ft)	42.83	37.53	15.00
Q Total (cfs)	1089.00	Flow (cfs)	347.90	643.22	97.88
Top Width (ft)	56.25	Top Width (ft)	31.14	15.25	9.85
Vel Total (ft/s)	11.42	Avg. Vel. (ft/s)	8.12	17.14	6.53
Max Chl Dpth (ft)	2.55	Hydr. Depth (ft)	1.38	2.46	1.52
Conv. Total (cfs)	4916.4	Conv. (cfs)	1570.6	2903.8	441.9

Length Wtd. (ft)	35.42	Wetted Per. (ft)	31.25	15.26	10.25
Min Ch El (ft)	282.62	Shear (lb/sq ft)	4.20	7.54	4.48
Alpha	1.52	Stream Power (lb/ft s)	34.10	129.14	29.25
Frctn Loss (ft)	1.75	Cum Volume (acre-ft)	3.06	6.78	2.53
C & E Loss (ft)	0.01	Cum SA (acres)	1.07	1.11	0.94

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

CROSS SECTION

RIVER: Cristianitos
REACH: Upper RS: 2574.222

INPUT
Description: Manual Modification of Manning's N Values
Station Elevation Data num= 31

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	303.98	10.59	302.75	13.38	302.35	18.4	299.89	31.31	295.88
33.04	295.23	34.37	295.05	79.58	289.12	97.3	286.94	98.12	286.85
101.3	286.49	139.34	282.24	162.23	280.89	164.9	280.73	176.34	280.88
180.11	281.57	183.77	282.44	187.06	285.11	199.95	293.59	200.2	293.76
201.86	294.61	205.72	295.46	218.95	295.45	285.69	294.28	287.65	294.23
288.07	294.26	289.13	294.4	293.35	294.84	312.07	296.78	313.2	297.04
332.13	301.93								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.05	162.23	.035	313.2	.07

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
162.23	176.34	33.68	41.34	37.89	.1	.3

CROSS SECTION OUTPUT Profile #Q50

E.G. Elev (ft)	283.41	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.42	Wt. n-Val.	0.050	0.035	0.035
W.S. Elev (ft)	281.99	Reach Len. (ft)	33.68	41.34	37.89
Crit W.S. (ft)	282.45	Flow Area (sq ft)	10.23	16.68	3.25
E.G. Slope (ft/ft)	0.051296	Area (sq ft)	10.23	16.68	3.25
Q Total (cfs)	247.00	Flow (cfs)	46.10	179.31	21.59
Top Width (ft)	38.26	Top Width (ft)	18.62	14.11	5.53
Vel Total (ft/s)	8.19	Avg. Vel. (ft/s)	4.51	10.75	6.65
Max Chl Dpth (ft)	1.26	Hydr. Depth (ft)	0.55	1.18	0.59
Conv. Total (cfs)	1090.6	Conv. (cfs)	203.6	791.7	95.3
Length Wtd. (ft)	39.35	Wetted Per. (ft)	18.65	14.12	5.64
Min Ch El (ft)	280.73	Shear (lb/sq ft)	1.76	3.78	1.84
Alpha	1.36	Stream Power (lb/ft s)	7.91	40.68	12.25
Frctn Loss (ft)	1.85	Cum Volume (acre-ft)	0.65	3.28	0.50
C & E Loss (ft)	0.01	Cum SA (acres)	0.55	1.10	0.43

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

CROSS SECTION OUTPUT Profile #Q100

E.G. Elev (ft)	284.06	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.80	Wt. n-Val.	0.050	0.035	0.035
W.S. Elev (ft)	282.26	Reach Len. (ft)	33.68	41.34	37.89
Crit W.S. (ft)	282.80	Flow Area (sq ft)	15.86	20.49	4.89
E.G. Slope (ft/ft)	0.051743	Area (sq ft)	15.86	20.49	4.89
Q Total (cfs)	375.00	Flow (cfs)	83.49	253.63	37.87
Top Width (ft)	43.83	Top Width (ft)	23.05	14.11	6.66
Vel Total (ft/s)	9.09	Avg. Vel. (ft/s)	5.26	12.38	7.75
Max Chl Dpth (ft)	1.53	Hydr. Depth (ft)	0.69	1.45	0.73
Conv. Total (cfs)	1648.6	Conv. (cfs)	367.0	1115.0	166.5
Length Wtd. (ft)	39.03	Wetted Per. (ft)	23.09	14.12	6.81
Min Ch El (ft)	280.73	Shear (lb/sq ft)	2.22	4.69	2.32
Alpha	1.40	Stream Power (lb/ft s)	11.68	58.04	17.97
Frctn Loss (ft)	1.84	Cum Volume (acre-ft)	1.02	4.01	0.79
C & E Loss (ft)	0.01	Cum SA (acres)	0.66	1.10	0.52

Warning: The energy loss was greater than 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)	286.44	Element	Left OB	Channel	Right OB
Vel Head (ft)	3.22	Wt. n-Val.	0.050	0.035	0.035
W.S. Elev (ft)	283.22	Reach Len. (ft)	33.68	41.34	37.89
Crit W.S. (ft)	284.22	Flow Area (sq ft)	42.12	34.03	12.33
E.G. Slope (ft/ft)	0.052269	Area (sq ft)	42.12	34.03	12.33
Q Total (cfs)	1089.00	Flow (cfs)	345.58	593.98	149.45
Top Width (ft)	54.14	Top Width (ft)	31.64	14.11	8.39
Vel Total (ft/s)	12.31	Avg. Vel. (ft/s)	8.20	17.45	12.12
Max Chl Dpth (ft)	2.49	Hydr. Depth (ft)	1.33	2.41	1.47
Conv. Total (cfs)	4763.3	Conv. (cfs)	1511.5	2598.1	653.7
Length Wtd. (ft)	38.17	Wetted Per. (ft)	31.74	14.12	8.83
Min Ch El (ft)	280.73	Shear (lb/sq ft)	4.33	7.87	4.56
Alpha	1.37	Stream Power (lb/ft s)	35.53	137.31	55.23
Frctn Loss (ft)	1.79	Cum Volume (acre-ft)	3.02	6.75	2.53
C & E Loss (ft)	0.01	Cum SA (acres)	1.05	1.10	0.93

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

CROSS SECTION

RIVER: Cristianitos
REACH: Upper RS: 2532.87*

INPUT
Description:
Station Elevation Data num= 68

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	303.51	10.92	302.33	11.04	302.32	13.79	301.97	18.96	299.92
31.21	296.79	32.27	296.52	34.05	295.97	35.43	295.81	39.39	295.34
74.12	291.48	82.02	290.61	89.21	289.85	96.53	289.1	98.69	288.87
100.29	288.69	101.13	288.6	101.17	288.6	104.41	288.15	105.33	288.02
105.98	287.93	106.7	287.85	111.25	287.29	115.22	286.75	126.45	285.21
134.3	284.13	138.49	283.4	143.62	282.52	148.83	281.83	162.72	280.2
167.21	279.85	171.33	279.63	181.48	279.83	185.63	280.81	188.46	281.59

189.66	281.9	193.29	284.34	195	285.3	206.35	291.34	207.48	291.93
207.75	292.08	209.58	292.85	213.83	293.73	215.72	293.82	216.03	293.83
219.91	294.02	222.38	294.08	227.21	294.09	228.4	294.1	240.15	294.01
269.63	293.67	285.13	293.43	288.75	293.4	301.89	293.36	304.05	293.35
304.51	293.37	305.12	293.44	305.67	293.5	310.32	293.9	310.45	293.91
326.83	295.42	330.93	295.86	331.29	295.93	332.18	296.13	335.99	297.04
343.79	298.89	346.92	299.93	353.02	301.91				

Manning's n Values num= 10

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.047	31.21	.038	74.12	.044	105.33	.026	167.21	.035
181.48	.063	215.72	.035	305.12	.042	332.18	.07	353.02	.07

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
167.21	181.48	33.68	41.34	37.89	.1	.3

CROSS SECTION OUTPUT Profile #Q50

E.G. Elev (ft)	282.08	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.82	Wt. n-Val.	0.026	0.035	0.063
W.S. Elev (ft)	281.26	Reach Len. (ft)	33.68	41.34	37.89
Crit W.S. (ft)	281.43	Flow Area (sq ft)	10.36	21.82	4.28
E.G. Slope (ft/ft)	0.018752	Area (sq ft)	10.36	21.82	4.28
Q Total (cfs)	247.00	Flow (cfs)	67.58	168.33	11.08
Top Width (ft)	33.60	Top Width (ft)	13.54	14.27	5.79
Vel Total (ft/s)	6.77	Avg. Vel. (ft/s)	6.52	7.71	2.59
Max Chl Dpth (ft)	1.63	Hydr. Depth (ft)	0.77	1.53	0.74
Conv. Total (cfs)	1803.7	Conv. (cfs)	493.5	1229.3	80.9
Length Wtd. (ft)	39.42	Wetted Per. (ft)	13.62	14.28	5.97
Min Ch El (ft)	279.63	Shear (lb/sq ft)	0.89	1.79	0.84
Alpha	1.14	Stream Power (lb/ft s)	5.81	13.80	2.17
Frctn Loss (ft)	1.15	Cum Volume (acre-ft)	0.64	3.26	0.50
C & E Loss (ft)	0.18	Cum SA (acres)	0.54	1.08	0.43

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.
Warning: The energy loss was greater than 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)	282.68	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.07	Wt. n-Val.	0.026	0.035	0.063
W.S. Elev (ft)	281.60	Reach Len. (ft)	33.68	41.34	37.89
Crit W.S. (ft)	281.86	Flow Area (sq ft)	15.47	26.68	6.46
E.G. Slope (ft/ft)	0.019209	Area (sq ft)	15.47	26.68	6.46
Q Total (cfs)	375.00	Flow (cfs)	117.19	238.24	19.57
Top Width (ft)	37.74	Top Width (ft)	16.44	14.27	7.03
Vel Total (ft/s)	7.71	Avg. Vel. (ft/s)	7.58	8.93	3.03
Max Chl Dpth (ft)	1.97	Hydr. Depth (ft)	0.94	1.87	0.92
Conv. Total (cfs)	2705.7	Conv. (cfs)	845.6	1718.9	141.2
Length Wtd. (ft)	39.11	Wetted Per. (ft)	16.54	14.28	7.25
Min Ch El (ft)	279.63	Shear (lb/sq ft)	1.12	2.24	1.07
Alpha	1.16	Stream Power (lb/ft s)	8.50	20.01	3.24
Frctn Loss (ft)	1.16	Cum Volume (acre-ft)	1.01	3.98	0.78
C & E Loss (ft)	0.22	Cum SA (acres)	0.64	1.08	0.52

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.
Warning: The energy loss was greater than 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)	284.93	Element			
Vel Head (ft)	2.15	Wt. n-Val.	0.026	0.035	0.063
W.S. Elev (ft)	282.78	Reach Len. (ft)	33.68	41.34	37.89
Crit W.S. (ft)	283.39	Flow Area (sq ft)	40.34	43.54	16.54
E.G. Slope (ft/ft)	0.020647	Area (sq ft)	40.34	43.54	16.54
Q Total (cfs)	1089.00	Flow (cfs)	452.10	558.63	78.27
Top Width (ft)	48.90	Top Width (ft)	25.13	14.27	9.50
Vel Total (ft/s)	10.84	Avg. Vel. (ft/s)	11.21	12.83	4.73
Max Chl Dpth (ft)	3.15	Hydr. Depth (ft)	1.61	3.05	1.74
Conv. Total (cfs)	7578.9	Conv. (cfs)	3146.4	3887.8	544.7
Length Wtd. (ft)	38.27	Wetted Per. (ft)	25.31	14.28	10.02
Min Ch El (ft)	279.63	Shear (lb/sq ft)	2.05	3.93	2.13
Alpha	1.18	Stream Power (lb/ft s)	23.03	50.43	10.06
Frctn Loss (ft)	1.19	Cum Volume (acre-ft)	2.99	6.72	2.51
C & E Loss (ft)	0.32	Cum SA (acres)	1.03	1.08	0.93

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

CROSS SECTION

RIVER: Cristianitos
REACH: Upper RS: 2491.53*

INPUT
Description:
Station Elevation Data num= 68

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	303.04	11.24	301.91	11.37	301.9	14.2	301.59	19.53	299.96
32.14	297.38	33.23	297.15	35.07	296.71	36.48	296.56	40.56	296.14
76.33	292.84	84.47	292.09	91.87	291.44	99.41	290.82	101.63	290.61
103.27	290.44	104.14	290.36	104.18	290.36	107.52	289.81	108.47	289.65
109.14	289.54	109.88	289.45	114.56	288.83	118.65	288.17	130.21	286.31
138.3	285.01	142.62	284.01	147.89	282.8	153.26	281.72	167.56	279.25
172.19	278.81	177.76	278.52	186.62	278.78	191.16	280.05	194.24	281
195.56	281.36	199.51	283.57	201.38	284.48	213.77	289.77	215.01	290.28
215.31	290.41	217.3	291.09	221.94	292	224	292.18	224.34	292.21
228.58	292.58	231.28	292.7	236.55	292.74	237.85	292.75	250.68	292.75
282.86	292.55	299.79	292.31	303.74	292.32	318.08	292.45	320.44	292.46
320.95	292.49	321.62	292.54	322.22	292.6	327.29	292.95	327.43	292.96
345.32	294.45	349.8	294.95	350.18	295.01	351.16	295.22	355.32	296.15
363.84	298.01	367.25	299.36	373.91	301.89				

Manning's n Values num= 10

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.044	32.14	.041	76.33	.038	108.47	.032	172.19	.035
186.62	.056	224	.035	321.62	.049	351.16	.07	373.91	.07

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
172.19	186.62	33.68	41.34	37.89	.1	.3

CROSS SECTION OUTPUT Profile #Q50

E.G. Elev (ft)	281.20	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.05	Wt. n-Val.	0.032	0.035	0.056
W.S. Elev (ft)	280.15	Reach Len. (ft)	33.68	41.34	37.89
Crit W.S. (ft)	280.43	Flow Area (sq ft)	7.50	21.51	3.34
E.G. Slope (ft/ft)	0.025477	Area (sq ft)	7.50	21.51	3.34
Q Total (cfs)	247.00	Flow (cfs)	46.11	190.16	10.73
Top Width (ft)	29.10	Top Width (ft)	9.82	14.43	4.85
Vel Total (ft/s)	7.64	Avg. Vel. (ft/s)	6.15	8.84	3.22
Max Chl Dpth (ft)	1.63	Hydr. Depth (ft)	0.76	1.49	0.69
Conv. Total (cfs)	1547.5	Conv. (cfs)	288.9	1191.3	67.2
Length Wtd. (ft)	39.93	Wetted Per. (ft)	9.92	14.44	5.04
Min Ch El (ft)	278.52	Shear (lb/sq ft)	1.20	2.37	1.05
Alpha	1.16	Stream Power (lb/ft s)	7.39	20.94	3.39
Frctn Loss (ft)	0.86	Cum Volume (acre-ft)	0.64	3.24	0.50
C & E Loss (ft)	0.02	Cum SA (acres)	0.53	1.07	0.42

CROSS SECTION OUTPUT Profile #Q100

E.G. Elev (ft)	281.83	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.28	Wt. n-Val.	0.032	0.035	0.056
W.S. Elev (ft)	280.55	Reach Len. (ft)	33.68	41.34	37.89
Crit W.S. (ft)	280.89	Flow Area (sq ft)	11.98	27.39	5.58
E.G. Slope (ft/ft)	0.023193	Area (sq ft)	11.98	27.39	5.58
Q Total (cfs)	375.00	Flow (cfs)	83.15	271.32	20.54
Top Width (ft)	32.78	Top Width (ft)	12.18	14.43	6.17
Vel Total (ft/s)	8.34	Avg. Vel. (ft/s)	6.94	9.91	3.68
Max Chl Dpth (ft)	2.03	Hydr. Depth (ft)	0.98	1.90	0.90
Conv. Total (cfs)	2462.4	Conv. (cfs)	546.0	1781.6	134.9
Length Wtd. (ft)	39.65	Wetted Per. (ft)	12.31	14.44	6.42
Min Ch El (ft)	278.52	Shear (lb/sq ft)	1.41	2.75	1.26
Alpha	1.18	Stream Power (lb/ft s)	9.78	27.20	4.63
Frctn Loss (ft)	0.82	Cum Volume (acre-ft)	1.00	3.96	0.78
C & E Loss (ft)	0.02	Cum SA (acres)	0.63	1.07	0.51

CROSS SECTION OUTPUT Profile #Q100HC

E.G. Elev (ft)	284.16	Element	Left OB	Channel	Right OB
Vel Head (ft)	2.13	Wt. n-Val.	0.032	0.035	0.056
W.S. Elev (ft)	282.03	Reach Len. (ft)	33.68	41.34	37.89
Crit W.S. (ft)	282.59	Flow Area (sq ft)	36.31	48.75	18.08
E.G. Slope (ft/ft)	0.019559	Area (sq ft)	36.31	48.75	18.08
Q Total (cfs)	1089.00	Flow (cfs)	342.36	651.42	95.22
Top Width (ft)	45.07	Top Width (ft)	20.49	14.43	10.15
Vel Total (ft/s)	10.56	Avg. Vel. (ft/s)	9.43	13.36	5.27
Max Chl Dpth (ft)	3.51	Hydr. Depth (ft)	1.77	3.38	1.78
Conv. Total (cfs)	7786.7	Conv. (cfs)	2448.0	4657.9	680.8

Length Wtd. (ft)	38.88	Wetted Per. (ft)	20.76	14.44	10.69
Min Ch El (ft)	278.52	Shear (lb/sq ft)	2.14	4.12	2.07
Alpha	1.23	Stream Power (lb/ft s)	20.14	55.08	10.88
Frctn Loss (ft)	0.77	Cum Volume (acre-ft)	2.96	6.67	2.50
C & E Loss (ft)	0.00	Cum SA (acres)	1.01	1.07	0.92

CROSS SECTION

RIVER: Cristianitos
REACH: Upper RS: 2450.18*

INPUT
Description:
Station Elevation Data num= 68

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	302.56	11.57	301.5	11.7	301.48	14.61	301.21	20.09	299.99
33.07	297.96	34.19	297.79	36.08	297.45	37.54	297.32	41.73	296.94
78.53	294.2	86.91	293.58	94.53	293.03	102.28	292.53	104.57	292.34
106.26	292.19	107.16	292.11	107.19	292.11	110.63	291.47	111.61	291.29
112.3	291.16	113.05	291.05	117.87	290.37	122.09	289.6	133.98	287.41
142.3	285.88	146.74	284.62	152.17	283.07	157.69	281.6	172.41	278.3
177.17	277.77	184.2	277.42	191.77	277.72	196.68	279.29	200.02	280.42
201.45	280.82	205.74	282.81	207.76	283.65	221.2	288.19	222.54	288.62
222.86	288.73	225.03	289.33	230.06	290.27	232.29	290.54	232.65	290.58
237.25	291.14	240.18	291.32	245.89	291.38	247.3	291.4	261.21	291.5
296.1	291.43	314.45	291.19	318.73	291.23	334.28	291.53	336.84	291.58
337.38	291.6	338.11	291.65	338.76	291.69	344.26	292.01	344.41	292.02
363.81	293.48	368.66	294.03	369.08	294.09	370.13	294.31	374.64	295.26
383.88	297.13	387.59	298.78	394.81	301.87				

Manning's n Values num= 10

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.041	33.07	.044	78.53	.032	111.61	.038	177.17	.035
191.77	.049	232.29	.035	338.11	.056	370.13	.07	394.81	.07

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
177.17	191.77	33.68 41.34	37.89	.1	.3

CROSS SECTION OUTPUT Profile #Q50

E.G. Elev (ft)	280.19	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.07	Wt. n-Val.	0.038	0.035	0.049
W.S. Elev (ft)	279.13	Reach Len. (ft)	33.68	41.34	37.89
Crit W.S. (ft)	279.39	Flow Area (sq ft)	6.72	22.55	3.09
E.G. Slope (ft/ft)	0.024634	Area (sq ft)	6.72	22.55	3.09
Q Total (cfs)	247.00	Flow (cfs)	35.08	200.65	11.27
Top Width (ft)	27.45	Top Width (ft)	8.45	14.60	4.40
Vel Total (ft/s)	7.63	Avg. Vel. (ft/s)	5.22	8.90	3.64
Max Chl Dpth (ft)	1.71	Hydr. Depth (ft)	0.80	1.54	0.70
Conv. Total (cfs)	1573.7	Conv. (cfs)	223.5	1278.4	71.8
Length Wtd. (ft)	40.21	Wetted Per. (ft)	8.57	14.61	4.62
Min Ch El (ft)	277.42	Shear (lb/sq ft)	1.21	2.37	1.03
Alpha	1.18	Stream Power (lb/ft s)	6.30	21.11	3.75
Frctn Loss (ft)	1.00	Cum Volume (acre-ft)	0.63	3.22	0.49
C & E Loss (ft)	0.00	Cum SA (acres)	0.53	1.06	0.42

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 #Q100

			Left OB	Channel	Right OB
E.G. Elev (ft)	280.89	Element			
Vel Head (ft)	1.37	Wt. n-Val.	0.038	0.035	0.049
W.S. Elev (ft)	279.53	Reach Len. (ft)	33.68	41.34	37.89
Crit W.S. (ft)	279.88	Flow Area (sq ft)	10.45	28.39	5.10
E.G. Slope (ft/ft)	0.023881	Area (sq ft)	10.45	28.39	5.10
Q Total (cfs)	375.00	Flow (cfs)	63.40	289.92	21.69
Top Width (ft)	30.44	Top Width (ft)	10.23	14.60	5.61
Vel Total (ft/s)	8.54	Avg. Vel. (ft/s)	6.07	10.21	4.25
Max Chl Dpth (ft)	2.11	Hydr. Depth (ft)	1.02	1.94	0.91
Conv. Total (cfs)	2426.6	Conv. (cfs)	410.2	1876.1	140.3
Length Wtd. (ft)	39.98	Wetted Per. (ft)	10.40	14.61	5.89
Min Ch El (ft)	277.42	Shear (lb/sq ft)	1.50	2.90	1.29
Alpha	1.21	Stream Power (lb/ft s)	9.09	29.58	5.49
Frctn Loss (ft)	0.93	Cum Volume (acre-ft)	0.99	3.93	0.77
C & E Loss (ft)	0.01	Cum SA (acres)	0.62	1.06	0.51

CROSS SECTION OUTPUT Profile #Q100HC

			Left OB	Channel	Right OB
E.G. Elev (ft)	283.39	Element			
Vel Head (ft)	2.26	Wt. n-Val.	0.038	0.035	0.049
W.S. Elev (ft)	281.13	Reach Len. (ft)	33.68	41.34	37.89
Crit W.S. (ft)	281.74	Flow Area (sq ft)	32.54	51.76	17.95
E.G. Slope (ft/ft)	0.019627	Area (sq ft)	32.54	51.76	17.95
Q Total (cfs)	1089.00	Flow (cfs)	267.42	715.21	106.37
Top Width (ft)	42.31	Top Width (ft)	17.37	14.60	10.34
Vel Total (ft/s)	10.65	Avg. Vel. (ft/s)	8.22	13.82	5.93
Max Chl Dpth (ft)	3.71	Hydr. Depth (ft)	1.87	3.54	1.74
Conv. Total (cfs)	7773.3	Conv. (cfs)	1908.9	5105.2	759.2
Length Wtd. (ft)	39.30	Wetted Per. (ft)	17.71	14.61	10.90
Min Ch El (ft)	277.42	Shear (lb/sq ft)	2.25	4.34	2.02
Alpha	1.28	Stream Power (lb/ft s)	18.50	59.96	11.96
Frctn Loss (ft)	0.76	Cum Volume (acre-ft)	2.94	6.62	2.48
C & E Loss (ft)	0.01	Cum SA (acres)	0.99	1.06	0.91

CROSS SECTION

RIVER: Cristianitos
REACH: Upper RS: 2408.84*

INPUT
Description:
Station Elevation Data num= 68

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	302.09	11.89	301.08	12.03	301.07	15.02	300.83	20.66	300.02
34	298.55	35.15	298.42	37.1	298.19	38.59	298.07	42.91	297.73
80.74	295.56	89.35	295.06	97.18	294.62	105.16	294.25	107.51	294.08
109.25	293.94	110.17	293.87	110.21	293.87	113.74	293.13	114.74	292.92
115.45	292.77	116.23	292.66	121.19	291.91	125.52	291.03	137.74	288.52
146.3	286.76	150.87	285.23	156.45	283.35	162.13	281.49	177.25	277.35
182.15	276.73	190.63	276.31	196.91	276.67	202.2	278.53	205.81	279.83
207.34	280.29	211.96	282.04	214.15	282.82	228.62	286.62	230.07	286.96

230.42	287.05	232.75	287.57	238.17	288.54	240.57	288.9	240.97	288.96
245.92	289.71	249.07	289.94	255.23	290.03	256.75	290.05	271.74	290.24
309.33	290.31	329.11	290.08	333.72	290.15	350.48	290.62	353.23	290.69
353.82	290.72	354.61	290.75	355.31	290.79	361.24	291.07	361.4	291.07
382.29	292.5	387.53	293.11	387.97	293.17	389.11	293.39	393.97	294.37
403.93	296.26	407.92	298.21	415.7	301.85				

Manning's n Values num= 10

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.038	34	.047	80.74	.026	114.74	.044	182.15	.035
196.91	.042	240.57	.035	354.61	.063	389.11	.07	415.7	.07

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
182.15	196.91	33.68	41.34	37.89	.1	.3

CROSS SECTION OUTPUT Profile #Q50

			Left OB	Channel	Right OB
E.G. Elev (ft)	279.18	Element			
Vel Head (ft)	1.12	Wt. n-Val.	0.044	0.035	0.042
W.S. Elev (ft)	278.07	Reach Len. (ft)	33.68	41.34	37.89
Crit W.S. (ft)	278.35	Flow Area (sq ft)	5.98	23.05	2.78
E.G. Slope (ft/ft)	0.025023	Area (sq ft)	5.98	23.05	2.78
Q Total (cfs)	247.00	Flow (cfs)	27.11	208.10	11.80
Top Width (ft)	26.26	Top Width (ft)	7.52	14.76	3.98
Vel Total (ft/s)	7.76	Avg. Vel. (ft/s)	4.53	9.03	4.24
Max Chl Dpth (ft)	1.76	Hydr. Depth (ft)	0.80	1.56	0.70
Conv. Total (cfs)	1561.5	Conv. (cfs)	171.4	1315.5	74.6
Length Wtd. (ft)	39.95	Wetted Per. (ft)	7.66	14.78	4.22
Min Ch El (ft)	276.31	Shear (lb/sq ft)	1.22	2.44	1.03
Alpha	1.19	Stream Power (lb/ft s)	5.53	21.99	4.37
Frctn Loss (ft)	1.00	Cum Volume (acre-ft)	0.62	3.20	0.49
C & E Loss (ft)	0.00	Cum SA (acres)	0.52	1.04	0.41

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

CROSS SECTION OUTPUT Profile #Q100

			Left OB	Channel	Right OB
E.G. Elev (ft)	279.91	Element			
Vel Head (ft)	1.44	Wt. n-Val.	0.044	0.035	0.042
W.S. Elev (ft)	278.47	Reach Len. (ft)	33.68	41.34	37.89
Crit W.S. (ft)	278.85	Flow Area (sq ft)	9.33	29.02	4.62
E.G. Slope (ft/ft)	0.024493	Area (sq ft)	9.33	29.02	4.62
Q Total (cfs)	375.00	Flow (cfs)	49.76	302.26	22.98
Top Width (ft)	28.89	Top Width (ft)	9.00	14.76	5.13
Vel Total (ft/s)	8.73	Avg. Vel. (ft/s)	5.34	10.42	4.97
Max Chl Dpth (ft)	2.16	Hydr. Depth (ft)	1.04	1.97	0.90
Conv. Total (cfs)	2396.1	Conv. (cfs)	318.0	1931.3	146.8
Length Wtd. (ft)	39.70	Wetted Per. (ft)	9.19	14.78	5.44
Min Ch El (ft)	276.31	Shear (lb/sq ft)	1.55	3.00	1.30
Alpha	1.22	Stream Power (lb/ft s)	8.28	31.27	6.46
Frctn Loss (ft)	0.97	Cum Volume (acre-ft)	0.98	3.90	0.77
C & E Loss (ft)	0.01	Cum SA (acres)	0.62	1.04	0.50

CROSS SECTION OUTPUT Profile #Q100HC

			Left OB	Channel	Right OB
E.G. Elev (ft)	282.57	Element			

Vel Head (ft)	2.47	Wt. n-Val.	0.044	0.035	0.042
W.S. Elev (ft)	280.10	Reach Len. (ft)	33.68	41.34	37.89
Crit W.S. (ft)	280.80	Flow Area (sq ft)	28.80	53.02	16.66
E.G. Slope (ft/ft)	0.020739	Area (sq ft)	28.80	53.02	16.66
Q Total (cfs)	1089.00	Flow (cfs)	213.01	759.62	116.38
Top Width (ft)	39.50	Top Width (ft)	14.94	14.76	9.80
Vel Total (ft/s)	11.06	Avg. Vel. (ft/s)	7.40	14.33	6.98
Max Chl Dpth (ft)	3.79	Hydr. Depth (ft)	1.93	3.59	1.70
Conv. Total (cfs)	7562.0	Conv. (cfs)	1479.1	5274.8	808.1
Length Wtd. (ft)	39.07	Wetted Per. (ft)	15.35	14.78	10.38
Min Ch El (ft)	276.31	Shear (lb/sq ft)	2.43	4.64	2.08
Alpha	1.30	Stream Power (lb/ft s)	17.97	66.54	14.52
Frctn Loss (ft)	0.79	Cum Volume (acre-ft)	2.91	6.57	2.47
C & E Loss (ft)	0.02	Cum SA (acres)	0.98	1.04	0.90

CROSS SECTION

RIVER: Cristianitos
REACH: Upper RS: 2367.498

INPUT
Description:
Station Elevation Data num= 42

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	301.62	12.36	300.65	34.93	299.14	44.08	298.53	82.95	296.92
99.84	296.21	108.03	295.96	110.45	295.82	113.22	295.62	117.88	294.55
118.61	294.38	119.41	294.26	124.5	293.45	128.95	292.46	141.51	289.62
150.3	287.64	154.99	285.84	166.56	281.38	182.1	276.4	187.13	275.69
197.06	275.21	202.05	275.62	211.59	279.24	220.53	281.99	236.05	285.04
248.86	287.26	249.28	287.33	254.59	288.27	257.97	288.56	264.57	288.67
282.27	288.99	322.57	289.19	343.77	288.96	348.71	289.06	371.1	289.86
378.38	290.13	400.78	291.53	406.87	292.25	413.3	293.48	423.97	295.38
428.25	297.64	436.59	301.83						

Manning's n Values num= 6

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	34.93	.05	82.95	.02	117.88	.05	248.86	.035
371.1	.07								

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
187.13	202.05	247.74	274.53	224.08	.1	.3

CROSS SECTION OUTPUT Profile #Q50

E.G. Elev (ft)	278.30	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.30	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	278.00	Reach Len. (ft)	247.74	274.53	224.08
Crit W.S. (ft)	277.26	Flow Area (sq ft)	13.88	38.29	7.49
E.G. Slope (ft/ft)	0.007397	Area (sq ft)	13.88	38.29	7.49
Q Total (cfs)	247.00	Flow (cfs)	43.16	183.25	20.60
Top Width (ft)	31.24	Top Width (ft)	10.04	14.92	6.28
Vel Total (ft/s)	4.14	Avg. Vel. (ft/s)	3.11	4.79	2.75
Max Chl Dpth (ft)	2.79	Hydr. Depth (ft)	1.38	2.57	1.19
Conv. Total (cfs)	2871.8	Conv. (cfs)	501.8	2130.6	239.5
Length Wtd. (ft)	266.53	Wetted Per. (ft)	10.34	14.95	6.72
Min Ch El (ft)	275.21	Shear (lb/sq ft)	0.62	1.18	0.51
Alpha	1.13	Stream Power (lb/ft s)	1.93	5.66	1.41

Frctn Loss (ft)	0.98	Cum Volume (acre-ft)	0.62	3.17	0.49
C & E Loss (ft)	0.06	Cum SA (acres)	0.51	1.03	0.41

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

CROSS SECTION OUTPUT Profile #Q100

E.G. Elev (ft)	279.01	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.39	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	278.62	Reach Len. (ft)	247.74	274.53	224.08
Crit W.S. (ft)	277.76	Flow Area (sq ft)	20.59	47.40	11.82
E.G. Slope (ft/ft)	0.007463	Area (sq ft)	20.59	47.40	11.82
Q Total (cfs)	375.00	Flow (cfs)	74.34	262.67	37.99
Top Width (ft)	34.76	Top Width (ft)	11.94	14.92	7.89
Vel Total (ft/s)	4.70	Avg. Vel. (ft/s)	3.61	5.54	3.21
Max Chl Dpth (ft)	3.41	Hydr. Depth (ft)	1.72	3.18	1.50
Conv. Total (cfs)	4340.9	Conv. (cfs)	860.6	3040.6	439.8
Length Wtd. (ft)	265.08	Wetted Per. (ft)	12.34	14.95	8.44
Min Ch El (ft)	275.21	Shear (lb/sq ft)	0.78	1.48	0.65
Alpha	1.14	Stream Power (lb/ft s)	2.81	8.19	2.10
Frctn Loss (ft)	1.06	Cum Volume (acre-ft)	0.97	3.87	0.76
C & E Loss (ft)	0.07	Cum SA (acres)	0.61	1.03	0.50

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was 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)	281.48	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.80	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	280.69	Reach Len. (ft)	247.74	274.53	224.08
Crit W.S. (ft)	279.66	Flow Area (sq ft)	51.99	78.29	34.45
E.G. Slope (ft/ft)	0.008518	Area (sq ft)	51.99	78.29	34.45
Q Total (cfs)	1089.00	Flow (cfs)	277.82	647.55	163.63
Top Width (ft)	47.56	Top Width (ft)	18.40	14.92	14.24
Vel Total (ft/s)	6.61	Avg. Vel. (ft/s)	5.34	8.27	4.75
Max Chl Dpth (ft)	5.48	Hydr. Depth (ft)	2.83	5.25	2.42
Conv. Total (cfs)	11799.4	Conv. (cfs)	3010.2	7016.3	1772.9
Length Wtd. (ft)	261.28	Wetted Per. (ft)	19.12	14.95	15.12
Min Ch El (ft)	275.21	Shear (lb/sq ft)	1.45	2.78	1.21
Alpha	1.18	Stream Power (lb/ft s)	7.73	23.04	5.75
Frctn Loss (ft)	1.39	Cum Volume (acre-ft)	2.88	6.51	2.45
C & E Loss (ft)	0.13	Cum SA (acres)	0.97	1.03	0.89

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

CROSS SECTION

RIVER: Cristianitos
REACH: Upper RS: 2092.970

INPUT
Description: Manual Modification of Manning's N Values
Station Elevation Data num= 36

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	302.18	.68	301.93	7.44	300.75	31.22	295.87	45.01	295.38
72.87	294.38	75.02	294.26	101.69	292.81	113.02	292.19	120.76	291.77
125.34	291.22	137.27	288.99	140.65	288.21	144.3	286.8	157.17	282.05
168.07	278.03	181.91	274.69	183.47	274.35	184.44	274.17	189.35	274.3
209.04	274.63	211.09	274.78	212.57	275.36	215.65	276.16	220.45	277.28
222.89	278.05	230.41	281.51	235.57	282.91	245.09	285.48	251.96	288.79
308.56	291.39	324.9	292.63	329.94	293.04	361.43	299.34	369.18	300.75
375.11	302.47								

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.05	45.01	.02	75.02	.05	251.96	.035	361.43	.05

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
181.91	209.04	205.07 204.04	201.6	.1	.3

CROSS SECTION OUTPUT Profile #Q50

			Left OB	Channel	Right OB
E.G. Elev (ft)	277.26	Element			
Vel Head (ft)	0.10	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	277.16	Reach Len. (ft)	205.07	204.04	201.60
Crit W.S. (ft)		Flow Area (sq ft)	12.63	74.33	14.57
E.G. Slope (ft/ft)	0.002207	Area (sq ft)	12.63	74.33	14.57
Q Total (cfs)	247.00	Flow (cfs)	19.91	202.89	24.20
Top Width (ft)	48.25	Top Width (ft)	10.23	27.13	10.89
Vel Total (ft/s)	2.43	Avg. Vel. (ft/s)	1.58	2.73	1.66
Max Chl Dpth (ft)	2.99	Hydr. Depth (ft)	1.23	2.74	1.34
Conv. Total (cfs)	5257.5	Conv. (cfs)	423.8	4318.6	515.2
Length Wtd. (ft)	203.87	Wetted Per. (ft)	10.52	27.19	11.22
Min Ch El (ft)	274.17	Shear (lb/sq ft)	0.17	0.38	0.18
Alpha	1.11	Stream Power (lb/ft s)	0.26	1.03	0.30
Frctn Loss (ft)	1.06	Cum Volume (acre-ft)	0.54	2.81	0.43
C & E Loss (ft)	0.05	Cum SA (acres)	0.46	0.90	0.36

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 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)	277.87	Element			
Vel Head (ft)	0.14	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	277.73	Reach Len. (ft)	205.07	204.04	201.60
Crit W.S. (ft)		Flow Area (sq ft)	19.15	89.83	21.38
E.G. Slope (ft/ft)	0.002478	Area (sq ft)	19.15	89.83	21.38
Q Total (cfs)	375.00	Flow (cfs)	36.75	294.76	43.49

Top Width (ft)	52.56	Top Width (ft)	12.60	27.13	12.84
Vel Total (ft/s)	2.88	Avg. Vel. (ft/s)	1.92	3.28	2.03
Max Chl Dpth (ft)	3.56	Hydr. Depth (ft)	1.52	3.31	1.67
Conv. Total (cfs)	7533.8	Conv. (cfs)	738.3	5921.7	873.8
Length Wtd. (ft)	203.83	Wetted Per. (ft)	12.96	27.19	13.25
Min Ch El (ft)	274.17	Shear (lb/sq ft)	0.23	0.51	0.25
Alpha	1.12	Stream Power (lb/ft s)	0.44	1.68	0.51
Frctn Loss (ft)	1.14	Cum Volume (acre-ft)	0.86	3.43	0.68
C & E Loss (ft)	0.05	Cum SA (acres)	0.54	0.90	0.44

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)	279.97	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.36	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	279.60	Reach Len. (ft)	205.07	204.04	201.60
Crit W.S. (ft)		Flow Area (sq ft)	48.26	140.67	49.80
E.G. Slope (ft/ft)	0.003616	Area (sq ft)	48.26	140.67	49.80
Q Total (cfs)	1089.00	Flow (cfs)	161.78	752.06	175.16
Top Width (ft)	62.47	Top Width (ft)	18.11	27.13	17.23
Vel Total (ft/s)	4.56	Avg. Vel. (ft/s)	3.35	5.35	3.52
Max Chl Dpth (ft)	5.43	Hydr. Depth (ft)	2.67	5.19	2.89
Conv. Total (cfs)	18109.1	Conv. (cfs)	2690.2	12506.1	2912.8
Length Wtd. (ft)	203.76	Wetted Per. (ft)	18.79	27.19	18.03
Min Ch El (ft)	274.17	Shear (lb/sq ft)	0.58	1.17	0.62
Alpha	1.12	Stream Power (lb/ft s)	1.94	6.25	2.19
Frctn Loss (ft)	1.46	Cum Volume (acre-ft)	2.60	5.82	2.23
C & E Loss (ft)	0.07	Cum SA (acres)	0.86	0.90	0.81

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

CROSS SECTION

RIVER: Cristianitos
REACH: Upper RS: 1888.931

INPUT
Description: Manual Modification of Manning's N Values
Station Elevation Data num= 31

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	295.28	2.85	295.04	27.05	292.96	39.87	291.63	40.22	291.59
53.2	290.2	61.12	288.73	62.2	288.39	71.93	283.17	75.76	281.52
76	281.42	89.2	276.75	115.04	274.04	118.23	273.71	122.99	273.44
127.77	274.02	148.88	276.66	149.44	276.93	153.07	278.44	160.86	281.85
162.91	282.01	167.32	282.36	169.78	282.83	200.39	283.99	217.15	284.49

240.82 285.24 246.54 285.95 269.26 289.31 269.65 289.4 272.87 290.2
284.81 293.06

Manning's n Values num= 4

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.05	2.85	.02	39.87	.05	200.39	.035

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
115.04	127.77	204.52	201.29 197.93	.1	.3

CROSS SECTION OUTPUT Profile #Q50

			Left OB	Channel	Right OB
E.G. Elev (ft)	276.16	Element			
Vel Head (ft)	0.58	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	275.58	Reach Len. (ft)	204.52	201.29	197.93
Crit W.S. (ft)	275.58	Flow Area (sq ft)	11.30	23.82	9.72
E.G. Slope (ft/ft)	0.023957	Area (sq ft)	11.30	23.82	9.72
Q Total (cfs)	247.00	Flow (cfs)	43.48	165.83	37.69
Top Width (ft)	39.88	Top Width (ft)	14.68	12.73	12.47
Vel Total (ft/s)	5.51	Avg. Vel. (ft/s)	3.85	6.96	3.88
Max Chl Dpth (ft)	2.14	Hydr. Depth (ft)	0.77	1.87	0.78
Conv. Total (cfs)	1595.8	Conv. (cfs)	280.9	1071.4	243.5
Length Wtd. (ft)	201.85	Wetted Per. (ft)	14.76	12.79	12.57
Min Ch El (ft)	273.44	Shear (lb/sq ft)	1.14	2.79	1.16
Alpha	1.23	Stream Power (lb/ft s)	4.41	19.39	4.49
Frctn Loss (ft)	4.01	Cum Volume (acre-ft)	0.49	2.58	0.37
C & E Loss (ft)	0.09	Cum SA (acres)	0.40	0.80	0.31

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

CROSS SECTION OUTPUT Profile #Q100

			Left OB	Channel	Right OB
E.G. Elev (ft)	276.68	Element			
Vel Head (ft)	0.68	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	275.99	Reach Len. (ft)	204.52	201.29	197.93
Crit W.S. (ft)	275.99	Flow Area (sq ft)	18.19	29.09	15.57
E.G. Slope (ft/ft)	0.022844	Area (sq ft)	18.19	29.09	15.57
Q Total (cfs)	375.00	Flow (cfs)	80.13	225.93	68.94
Top Width (ft)	47.13	Top Width (ft)	18.62	12.73	15.78
Vel Total (ft/s)	5.97	Avg. Vel. (ft/s)	4.41	7.77	4.43
Max Chl Dpth (ft)	2.55	Hydr. Depth (ft)	0.98	2.28	0.99
Conv. Total (cfs)	2481.1	Conv. (cfs)	530.1	1494.8	456.1
Length Wtd. (ft)	201.91	Wetted Per. (ft)	18.73	12.79	15.90
Min Ch El (ft)	273.44	Shear (lb/sq ft)	1.39	3.24	1.40
Alpha	1.24	Stream Power (lb/ft s)	6.10	25.19	6.18
Frctn Loss (ft)	2.69	Cum Volume (acre-ft)	0.77	3.16	0.59
C & E Loss (ft)	0.14	Cum SA (acres)	0.47	0.80	0.38

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than

0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water 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)	278.43	Element			
Vel Head (ft)	1.06	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	277.37	Reach Len. (ft)	204.52	201.29	197.93
Crit W.S. (ft)	277.37	Flow Area (sq ft)	51.70	46.67	43.51
E.G. Slope (ft/ft)	0.020627	Area (sq ft)	51.70	46.67	43.51
Q Total (cfs)	1089.00	Flow (cfs)	333.27	472.12	283.61
Top Width (ft)	63.07	Top Width (ft)	27.61	12.73	22.74
Vel Total (ft/s)	7.68	Avg. Vel. (ft/s)	6.45	10.12	6.52
Max Chl Dpth (ft)	3.93	Hydr. Depth (ft)	1.87	3.67	1.91
Conv. Total (cfs)	7582.5	Conv. (cfs)	2320.5	3287.3	1974.7
Length Wtd. (ft)	201.87	Wetted Per. (ft)	27.85	12.79	23.05
Min Ch El (ft)	273.44	Shear (lb/sq ft)	2.39	4.70	2.43
Alpha	1.16	Stream Power (lb/ft s)	15.41	47.53	15.84
Frctn Loss (ft)	1.07	Cum Volume (acre-ft)	2.36	5.38	2.01
C & E Loss (ft)	0.26	Cum SA (acres)	0.76	0.80	0.72

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.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water 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: Cristianitos
REACH: Upper RS: 1687.641

INPUT
Description:
Station Elevation Data num= 31

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	288.97	6.47	288.5	10.52	288.2	34.2	286.29	36.98	285.81
37.63	285.58	38.8	285.3	41	284.77	52.7	281.83	63.68	275.92
70.47	271.27	73.35	270.03	79.54	268.89	82.78	268.87	97.4	268.77
109.57	268.42	127.77	268.12	129.87	268.39	134.89	269.05	157.14	272.61
162.57	273.97	172.02	275.51	175.62	276.1	184.56	277.49	218.81	280.72
225.14	281.83	240.5	282.99	247.12	283.51	252.21	283.73	287.61	285.23
323.35	289.27								

Manning's n Values num= 4

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.05	6.47	.02	38.8	.05	252.21	.035

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
109.57	129.87	183.83	189.09 195.8	.1	.3

CROSS SECTION OUTPUT Profile #Q50

E.G. Elev (ft)	269.91	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.27	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	269.64	Reach Len. (ft)	183.83	189.09	195.80
Crit W.S. (ft)	269.46	Flow Area (sq ft)	28.71	27.85	5.71
E.G. Slope (ft/ft)	0.016761	Area (sq ft)	28.71	27.85	5.71
Q Total (cfs)	247.00	Flow (cfs)	98.33	132.21	16.46
Top Width (ft)	63.11	Top Width (ft)	34.10	20.30	8.71
Vel Total (ft/s)	3.97	Avg. Vel. (ft/s)	3.43	4.75	2.88
Max Chl Dpth (ft)	1.52	Hydr. Depth (ft)	0.84	1.37	0.66
Conv. Total (cfs)	1907.8	Conv. (cfs)	759.5	1021.2	127.2
Length Wtd. (ft)	188.36	Wetted Per. (ft)	34.18	20.32	8.80
Min Ch El (ft)	268.12	Shear (lb/sq ft)	0.88	1.43	0.68
Alpha	1.10	Stream Power (lb/ft s)	3.01	6.81	1.96
Frctn Loss (ft)	2.14	Cum Volume (acre-ft)	0.39	2.46	0.34
C & E Loss (ft)	0.03	Cum SA (acres)	0.28	0.73	0.26

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

CROSS SECTION OUTPUT Profile #Q100

E.G. Elev (ft)	270.46	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.23	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	270.23	Reach Len. (ft)	183.83	189.09	195.80
Crit W.S. (ft)	269.72	Flow Area (sq ft)	49.82	39.89	11.97
E.G. Slope (ft/ft)	0.008729	Area (sq ft)	49.82	39.89	11.97
Q Total (cfs)	375.00	Flow (cfs)	169.16	173.63	32.21
Top Width (ft)	69.41	Top Width (ft)	36.69	20.30	12.42
Vel Total (ft/s)	3.69	Avg. Vel. (ft/s)	3.40	4.35	2.69
Max Chl Dpth (ft)	2.11	Hydr. Depth (ft)	1.36	1.96	0.96
Conv. Total (cfs)	4013.7	Conv. (cfs)	1810.5	1858.4	344.8
Length Wtd. (ft)	188.31	Wetted Per. (ft)	36.84	20.32	12.55
Min Ch El (ft)	268.12	Shear (lb/sq ft)	0.74	1.07	0.52
Alpha	1.07	Stream Power (lb/ft s)	2.50	4.66	1.40
Frctn Loss (ft)	1.66	Cum Volume (acre-ft)	0.61	3.00	0.53
C & E Loss (ft)	0.05	Cum SA (acres)	0.34	0.73	0.31

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

CROSS SECTION OUTPUT Profile #Q100HC

E.G. Elev (ft)	273.11	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.20	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	272.92	Reach Len. (ft)	183.83	189.09	195.80
Crit W.S. (ft)	270.80	Flow Area (sq ft)	155.43	94.34	67.65
E.G. Slope (ft/ft)	0.002377	Area (sq ft)	155.43	94.34	67.65

Q Total (cfs)	1089.00	Flow (cfs)	535.59	380.40	173.00
Top Width (ft)	90.29	Top Width (ft)	41.50	20.30	28.49
Vel Total (ft/s)	3.43	Avg. Vel. (ft/s)	3.45	4.03	2.56
Max Chl Dpth (ft)	4.80	Hydr. Depth (ft)	3.74	4.65	2.37
Conv. Total (cfs)	22335.8	Conv. (cfs)	10985.3	7802.2	3548.4
Length Wtd. (ft)	188.65	Wetted Per. (ft)	42.38	20.32	28.85
Min Ch El (ft)	268.12	Shear (lb/sq ft)	0.54	0.69	0.35
Alpha	1.07	Stream Power (lb/ft s)	1.88	2.78	0.89
Frctn Loss (ft)	0.77	Cum Volume (acre-ft)	1.88	5.06	1.76
C & E Loss (ft)	0.09	Cum SA (acres)	0.59	0.73	0.60

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.

CROSS SECTION

RIVER: Cristianitos
REACH: Upper RS: 1498.554

INPUT
Description: Manual Modification of Manning's N Values
Station Elevation Data num= 36

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	287.39	10.15	286.65	40.58	284.44	44	284.19	79.24	281.74
79.88	281.71	81	281.59	106.55	276.82	108.3	276.55	109.23	276.2
113.25	274.68	121.12	269.41	128.54	264.28	131.27	262.61	131.96	262.57
134.28	262.58	136.52	264.25	141.39	267.33	143.28	268.61	144.29	268.71
165.4	271.67	167.31	272.19	177.87	274.7	181.27	274.95	186	275.27
199.19	276.17	211.92	276.24	221.38	275.98	222.3	275.95	245	275.28
261.89	274.79	274.74	276.22	308.23	279.16	328.1	280.98	333	281.81
338.17	283.27								

Manning's n Values num= 4

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.05	10.15	.02	40.58	.05	245	.035

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
128.54	136.52	214.87	210.71	206.13	.1	.3

CROSS SECTION OUTPUT Profile #Q50

E.G. Elev (ft)	267.74	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.55	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	267.20	Reach Len. (ft)	214.87	210.71	206.13
Crit W.S. (ft)		Flow Area (sq ft)	6.16	32.62	6.87
E.G. Slope (ft/ft)	0.008190	Area (sq ft)	6.16	32.62	6.87
Q Total (cfs)	247.00	Flow (cfs)	18.69	206.92	21.38
Top Width (ft)	16.86	Top Width (ft)	4.22	7.98	4.66
Vel Total (ft/s)	5.41	Avg. Vel. (ft/s)	3.04	6.34	3.11
Max Chl Dpth (ft)	4.63	Hydr. Depth (ft)	1.46	4.09	1.47
Conv. Total (cfs)	2729.3	Conv. (cfs)	206.6	2286.5	236.3
Length Wtd. (ft)	210.67	Wetted Per. (ft)	5.13	9.01	5.51
Min Ch El (ft)	262.57	Shear (lb/sq ft)	0.61	1.85	0.64
Alpha	1.20	Stream Power (lb/ft s)	1.86	11.75	1.98
Frctn Loss (ft)	1.68	Cum Volume (acre-ft)	0.32	2.33	0.31

C & E Loss (ft)	0.04	Cum SA (acres)	0.20	0.66	0.23

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

CROSS SECTION OUTPUT Profile #Q100

E.G. Elev (ft)	268.76	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.73	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	268.02	Reach Len. (ft)	214.87	210.71	206.13
Crit W.S. (ft)		Flow Area (sq ft)	10.14	39.22	11.24
E.G. Slope (ft/ft)	0.008928	Area (sq ft)	10.14	39.22	11.24
Q Total (cfs)	375.00	Flow (cfs)	37.98	293.74	43.28
Top Width (ft)	19.29	Top Width (ft)	5.42	7.98	5.90
Vel Total (ft/s)	6.19	Avg. Vel. (ft/s)	3.74	7.49	3.85
Max Chl Dpth (ft)	5.45	Hydr. Depth (ft)	1.87	4.92	1.91
Conv. Total (cfs)	3968.7	Conv. (cfs)	402.0	3108.8	458.0
Length Wtd. (ft)	210.66	Wetted Per. (ft)	6.59	9.01	7.00
Min Ch El (ft)	262.57	Shear (lb/sq ft)	0.86	2.43	0.89
Alpha	1.23	Stream Power (lb/ft s)	3.21	18.18	3.45
Frctn Loss (ft)	1.93	Cum Volume (acre-ft)	0.48	2.83	0.48
C & E Loss (ft)	0.03	Cum SA (acres)	0.25	0.66	0.27

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 OUTPUT Profile #Q100HC

E.G. Elev (ft)	272.25	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.13	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	271.12	Reach Len. (ft)	214.87	210.71	206.13
Crit W.S. (ft)		Flow Area (sq ft)	33.92	63.94	55.16
E.G. Slope (ft/ft)	0.008662	Area (sq ft)	33.92	63.94	55.16
Q Total (cfs)	1089.00	Flow (cfs)	186.59	653.28	249.13
Top Width (ft)	42.93	Top Width (ft)	9.98	7.98	24.97
Vel Total (ft/s)	7.12	Avg. Vel. (ft/s)	5.50	10.22	4.52
Max Chl Dpth (ft)	8.55	Hydr. Depth (ft)	3.40	8.01	2.21
Conv. Total (cfs)	11700.8	Conv. (cfs)	2004.8	7019.2	2676.8
Length Wtd. (ft)	210.54	Wetted Per. (ft)	12.10	9.01	26.43
Min Ch El (ft)	262.57	Shear (lb/sq ft)	1.52	3.84	1.13
Alpha	1.43	Stream Power (lb/ft s)	8.34	39.23	5.10
Frctn Loss (ft)	2.51	Cum Volume (acre-ft)	1.48	4.71	1.48
C & E Loss (ft)	0.07	Cum SA (acres)	0.49	0.66	0.48

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

CROSS SECTION

RIVER: Cristianitos
REACH: Upper RS: 1287.849

INPUT
Description:
Station Elevation Data num= 39

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	280.52	7.5	280.66	44.83	281.33	52.47	281.1	78.41	280.35
90	279.73	91.22	279.69	92.1	279.64	93.7	279.61	94.64	279.59
119.49	279.1	140.93	276.58	148.44	275.8	156.1	272.64	161.16	270.21
172.36	264.81	175.3	263.19	178.17	262.33	186.41	262.55	187.53	262.6
188.56	263.2	193.17	265.89	193.85	266.32	196.08	266.88	202.76	268.89
204.13	269.31	232.37	269.57	232.64	269.57	233.64	269.61	236.3	269.6
238.49	269.67	268.05	271.2	296.38	273.37	316.49	275.27	316.8	275.3
340.16	276.54	364.56	277.65	371.19	278.31	374.79	278.95		

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	7.5	.05	52.47	.02	93.7	.05	232.37	.035

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
175.3	188.56	250.54	220.45	190.34	.1	.3

CROSS SECTION OUTPUT Profile #Q50

E.G. Elev (ft)	266.02	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.42	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	265.60	Reach Len. (ft)	250.54	220.45	190.34
Crit W.S. (ft)	264.75	Flow Area (sq ft)	5.35	40.36	4.94
E.G. Slope (ft/ft)	0.007808	Area (sq ft)	5.35	40.36	4.94
Q Total (cfs)	247.00	Flow (cfs)	14.37	219.36	13.27
Top Width (ft)	21.95	Top Width (ft)	4.58	13.26	4.11
Vel Total (ft/s)	4.88	Avg. Vel. (ft/s)	2.68	5.44	2.69
Max Chl Dpth (ft)	3.27	Hydr. Depth (ft)	1.17	3.04	1.20
Conv. Total (cfs)	2795.3	Conv. (cfs)	162.6	2482.5	150.2
Length Wtd. (ft)	218.78	Wetted Per. (ft)	5.18	13.55	4.76
Min Ch El (ft)	262.33	Shear (lb/sq ft)	0.50	1.45	0.51
Alpha	1.14	Stream Power (lb/ft s)	1.35	7.89	1.36
Frctn Loss (ft)	2.89	Cum Volume (acre-ft)	0.29	2.16	0.28
C & E Loss (ft)	0.01	Cum SA (acres)	0.18	0.61	0.21

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

CROSS SECTION OUTPUT Profile #Q100

E.G. Elev (ft)	266.80	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.62	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	266.18	Reach Len. (ft)	250.54	220.45	190.34
Crit W.S. (ft)	265.39	Flow Area (sq ft)	8.33	48.00	7.58
E.G. Slope (ft/ft)	0.009372	Area (sq ft)	8.33	48.00	7.58
Q Total (cfs)	375.00	Flow (cfs)	28.28	320.84	25.87
Top Width (ft)	24.10	Top Width (ft)	5.77	13.26	5.06
Vel Total (ft/s)	5.87	Avg. Vel. (ft/s)	3.39	6.68	3.41
Max Chl Dpth (ft)	3.85	Hydr. Depth (ft)	1.44	3.62	1.50
Conv. Total (cfs)	3873.6	Conv. (cfs)	292.2	3314.2	267.3
Length Wtd. (ft)	218.31	Wetted Per. (ft)	6.50	13.55	5.87
Min Ch El (ft)	262.33	Shear (lb/sq ft)	0.75	2.07	0.76

Alpha	1.16	Stream Power (lb/ft s)	2.55	13.85	2.58
Frctn Loss (ft)	3.22	Cum Volume (acre-ft)	0.44	2.61	0.43
C & E Loss (ft)	0.00	Cum SA (acres)	0.22	0.61	0.25

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 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)	269.67	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.79	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	267.88	Reach Len. (ft)	250.54	220.45	190.34
Crit W.S. (ft)	267.88	Flow Area (sq ft)	21.23	70.65	21.15
E.G. Slope (ft/ft)	0.017438	Area (sq ft)	21.23	70.65	21.15
Q Total (cfs)	1089.00	Flow (cfs)	133.71	833.70	121.59
Top Width (ft)	33.44	Top Width (ft)	9.32	13.26	10.86
Vel Total (ft/s)	9.63	Avg. Vel. (ft/s)	6.30	11.80	5.75
Max Chl Dpth (ft)	5.55	Hydr. Depth (ft)	2.28	5.33	1.95
Conv. Total (cfs)	8246.6	Conv. (cfs)	1012.6	6313.3	920.7
Length Wtd. (ft)	217.72	Wetted Per. (ft)	10.44	13.55	11.93
Min Ch El (ft)	262.33	Shear (lb/sq ft)	2.21	5.68	1.93
Alpha	1.24	Stream Power (lb/ft s)	13.95	66.97	11.10
Frctn Loss (ft)	2.63	Cum Volume (acre-ft)	1.34	4.39	1.30
C & E Loss (ft)	0.36	Cum SA (acres)	0.44	0.61	0.40

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water 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: Cristianitos
REACH: Upper RS: 1067.404

INPUT
Description: Manual Modification of Manning's N Values
Station Elevation Data num= 36

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	281.66	7.48	280.87	32.61	278.22	54.94	277.58	69.35	276.66
73.11	276.46	80.17	275.06	81.96	274.25	92.97	265.32	94.84	263.84
95.65	263.31	96.34	263.24	98.42	262.8	104.43	261.53	106.12	261.19
124.23	261.22	128.45	261.5	132.45	261.75	145.11	262.45	147.45	263.04
151.49	264.05	167.36	267.07	172.74	268.37	194.25	269.62	201.48	270.04
209.45	270.28	230	270.28	263.05	270.28	293.09	270.27	301	270.62
314.54	271.41	337.46	272.72	348.15	273.86	363.06	276.29	367.93	277.65
374.23	279.71								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.02	7.48	.05	230	.035

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
104.43	128.45	214.21	224.44 225.13	.1	.3

CROSS SECTION OUTPUT Profile #Q50

E.G. Elev (ft)	263.12	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.50	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	262.62	Reach Len. (ft)	214.21	224.44	225.13
Crit W.S. (ft)	262.62	Flow Area (sq ft)	2.82	33.10	10.64
E.G. Slope (ft/ft)	0.027141	Area (sq ft)	2.82	33.10	10.64
Q Total (cfs)	247.00	Flow (cfs)	9.07	200.39	37.53
Top Width (ft)	46.52	Top Width (ft)	5.16	24.02	17.34
Vel Total (ft/s)	5.31	Avg. Vel. (ft/s)	3.22	6.06	3.53
Max Chl Dpth (ft)	1.43	Hydr. Depth (ft)	0.55	1.38	0.61
Conv. Total (cfs)	1499.3	Conv. (cfs)	55.1	1216.4	227.8
Length Wtd. (ft)	223.32	Wetted Per. (ft)	5.28	24.06	17.39
Min Ch El (ft)	261.19	Shear (lb/sq ft)	0.90	2.33	1.04
Alpha	1.14	Stream Power (lb/ft s)	2.91	14.11	3.66
Frctn Loss (ft)	0.69	Cum Volume (acre-ft)	0.27	1.97	0.25
C & E Loss (ft)	0.12	Cum SA (acres)	0.15	0.52	0.16

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

CROSS SECTION OUTPUT Profile #Q100

E.G. Elev (ft)	263.58	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.63	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	262.95	Reach Len. (ft)	214.21	224.44	225.13
Crit W.S. (ft)	262.95	Flow Area (sq ft)	4.78	41.02	16.58
E.G. Slope (ft/ft)	0.026463	Area (sq ft)	4.78	41.02	16.58
Q Total (cfs)	375.00	Flow (cfs)	18.13	283.03	73.85
Top Width (ft)	49.39	Top Width (ft)	6.72	24.02	18.65
Vel Total (ft/s)	6.01	Avg. Vel. (ft/s)	3.79	6.90	4.46
Max Chl Dpth (ft)	1.76	Hydr. Depth (ft)	0.71	1.71	0.89
Conv. Total (cfs)	2305.2	Conv. (cfs)	111.4	1739.8	454.0
Length Wtd. (ft)	223.14	Wetted Per. (ft)	6.87	24.06	18.74
Min Ch El (ft)	261.19	Shear (lb/sq ft)	1.15	2.82	1.46
Alpha	1.12	Stream Power (lb/ft s)	4.36	19.43	6.51
Frctn Loss (ft)	0.75	Cum Volume (acre-ft)	0.40	2.39	0.38
C & E Loss (ft)	0.15	Cum SA (acres)	0.18	0.52	0.19

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

0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water 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)	265.70	Element			
Vel Head (ft)	0.58	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	265.12	Reach Len. (ft)	214.21	224.44	225.13
Crit W.S. (ft)	264.25	Flow Area (sq ft)	25.66	93.07	67.08
E.G. Slope (ft/ft)	0.008859	Area (sq ft)	25.66	93.07	67.08
Q Total (cfs)	1089.00	Flow (cfs)	119.22	641.44	328.34
Top Width (ft)	63.88	Top Width (ft)	11.20	24.02	28.65
Vel Total (ft/s)	5.86	Avg. Vel. (ft/s)	4.65	6.89	4.89
Max Chl Dpth (ft)	3.93	Hydr. Depth (ft)	2.29	3.87	2.34
Conv. Total (cfs)	11570.0	Conv. (cfs)	1266.6	6814.9	3488.4
Length Wtd. (ft)	222.71	Wetted Per. (ft)	11.99	24.06	28.98
Min Ch El (ft)	261.19	Shear (lb/sq ft)	1.18	2.14	1.28
Alpha	1.09	Stream Power (lb/ft s)	5.50	14.74	6.27
Frctn Loss (ft)	0.74	Cum Volume (acre-ft)	1.20	3.97	1.11
C & E Loss (ft)	0.09	Cum SA (acres)	0.38	0.52	0.31

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

CROSS SECTION

RIVER: Cristianitos
REACH: Upper RS: 842.967

INPUT
Description:
Station Elevation Data num= 34

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	275.6	14.58	274.94	42.41	273.03	59	272.35	63.08	271.62
68.79	270.91	93.76	268.35	104.79	267.58	111.35	267.13	126.37	265.84
163.27	263.48	168.16	262.59	170.5	262.13	170.8	261.99	174.43	260.24
179.55	257.71	186.46	256.5	191.03	255.7	195.46	254.89	200.4	256.49
200.41	256.49	202.43	256.83	208.36	261.28	211.46	263.98	214.59	266.7
217.15	267.98	219.78	269.15	229.11	270.45	231.09	270.77	232.06	271.01
234.36	271.53	239.66	272.78	248.07	274.78	254.16	275.75		

Manning's n Values num= 1

Sta	n Val
0	.05

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
186.46	200.4	34.32	37.87	38.81	.1 .3

CROSS SECTION OUTPUT Profile #Q50

			Left OB	Channel	Right OB
E.G. Elev (ft)	260.40	Element			
Vel Head (ft)	0.09	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	260.31	Reach Len. (ft)	34.32	37.87	38.81

Crit W.S. (ft)	257.80	Flow Area (sq ft)	29.01	64.30	15.49
E.G. Slope (ft/ft)	0.001114	Area (sq ft)	29.01	64.30	15.49
Q Total (cfs)	247.00	Flow (cfs)	49.40	173.45	24.15
Top Width (ft)	32.79	Top Width (ft)	12.18	13.94	6.67
Vel Total (ft/s)	2.27	Avg. Vel. (ft/s)	1.70	2.70	1.56
Max Chl Dpth (ft)	5.42	Hydr. Depth (ft)	2.38	4.61	2.32
Conv. Total (cfs)	7402.0	Conv. (cfs)	1480.4	5197.8	723.8
Length Wtd. (ft)	37.39	Wetted Per. (ft)	12.89	14.34	7.86
Min Ch El (ft)	254.89	Shear (lb/sq ft)	0.16	0.31	0.14
Alpha	1.15	Stream Power (lb/ft s)	0.27	0.84	0.21
Frctn Loss (ft)	0.03	Cum Volume (acre-ft)	0.19	1.72	0.18
C & E Loss (ft)	0.01	Cum SA (acres)	0.11	0.42	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 #Q100

E.G. Elev (ft)	261.36	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.13	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	261.24	Reach Len. (ft)	34.32	37.87	38.81
Crit W.S. (ft)	258.34	Flow Area (sq ft)	41.16	77.20	22.23
E.G. Slope (ft/ft)	0.001248	Area (sq ft)	41.16	77.20	22.23
Q Total (cfs)	375.00	Flow (cfs)	84.61	248.97	41.43
Top Width (ft)	35.94	Top Width (ft)	14.10	13.94	7.90
Vel Total (ft/s)	2.67	Avg. Vel. (ft/s)	2.06	3.22	1.86
Max Chl Dpth (ft)	6.35	Hydr. Depth (ft)	2.92	5.54	2.81
Conv. Total (cfs)	10616.7	Conv. (cfs)	2395.4	7048.5	1172.8
Length Wtd. (ft)	37.32	Wetted Per. (ft)	15.02	14.34	9.40
Min Ch El (ft)	254.89	Shear (lb/sq ft)	0.21	0.42	0.18
Alpha	1.16	Stream Power (lb/ft s)	0.44	1.35	0.34
Frctn Loss (ft)	0.03	Cum Volume (acre-ft)	0.29	2.08	0.28
C & E Loss (ft)	0.02	Cum SA (acres)	0.13	0.42	0.13

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 #Q100HC

E.G. Elev (ft)	264.88	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.29	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	264.59	Reach Len. (ft)	34.32	37.87	38.81
Crit W.S. (ft)		Flow Area (sq ft)	116.21	123.91	55.19
E.G. Slope (ft/ft)	0.001710	Area (sq ft)	116.21	123.91	55.19
Q Total (cfs)	1089.00	Flow (cfs)	282.37	641.37	165.25
Top Width (ft)	66.21	Top Width (ft)	40.51	13.94	11.76
Vel Total (ft/s)	3.69	Avg. Vel. (ft/s)	2.43	5.18	2.99
Max Chl Dpth (ft)	9.70	Hydr. Depth (ft)	2.87	8.89	4.69
Conv. Total (cfs)	26333.8	Conv. (cfs)	6828.3	15509.5	3996.0
Length Wtd. (ft)	37.23	Wetted Per. (ft)	41.80	14.34	14.51
Min Ch El (ft)	254.89	Shear (lb/sq ft)	0.30	0.92	0.41
Alpha	1.37	Stream Power (lb/ft s)	0.72	4.78	1.22
Frctn Loss (ft)	0.04	Cum Volume (acre-ft)	0.86	3.42	0.79
C & E Loss (ft)	0.03	Cum SA (acres)	0.25	0.42	0.20

Warning: The conveyance ratio (upstream 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: Cristianitos
REACH: Upper RS: 805.097*

INPUT
Description:
Station Elevation Data num= 58

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	275.61	13.14	275.03	34.12	273.65	38.23	273.36	53.18	272.68
56.86	272.04	57.53	271.96	62	271.41	78.36	269.73	84.51	269.05
93.73	268.32	94.45	268.25	100.37	267.76	113.9	266.42	117.49	266.14
125.33	265.52	147.16	263.3	151.57	262.37	153.23	262	153.68	261.89
153.95	261.77	157.22	260.16	161.84	257.86	168.07	256.58	169.06	256.31
170.35	256.11	173.08	255.68	176.03	255.2	177.94	254.9	178.52	254.98
179.6	255.12	185.32	255.9	190.14	256.57	190.15	256.57	191.11	256.73
192.2	256.92	192.28	256.97	196.74	259.89	198.22	260.85	201.37	263.2
204.55	265.57	207.15	266.72	209.12	267.51	209.82	267.8	210.62	267.93
219.29	269.63	221.3	270.06	222.28	270.35	222.65	270.45	224.62	271.02
225.08	271.16	229.99	272.47	235.69	274	238.53	274.73	238.79	274.78
242.07	275.37	242.88	275.48	244.71	275.73				

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.05	168.07	.047	190.14	.047	242.88	.035	244.71	.047

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
168.07	190.14	34.32	37.87	38.81	.1	.3

CROSS SECTION OUTPUT Profile #Q50

			Left OB	Channel	Right OB
E.G. Elev (ft)	260.36	Element			
Vel Head (ft)	0.05	Wt. n-Val.	0.050	0.047	0.047
W.S. Elev (ft)	260.31	Reach Len. (ft)	34.32	37.87	38.81
Crit W.S. (ft)		Flow Area (sq ft)	25.30	101.51	16.15
E.G. Slope (ft/ft)	0.000518	Area (sq ft)	25.30	101.51	16.15
Q Total (cfs)	247.00	Flow (cfs)	28.36	200.51	18.14
Top Width (ft)	40.48	Top Width (ft)	11.16	22.07	7.25
Vel Total (ft/s)	1.73	Avg. Vel. (ft/s)	1.12	1.98	1.12
Max Chl Dpth (ft)	5.41	Hydr. Depth (ft)	2.27	4.60	2.23
Conv. Total (cfs)	10849.1	Conv. (cfs)	1245.6	8806.9	796.6
Length Wtd. (ft)	37.60	Wetted Per. (ft)	11.86	22.33	8.29
Min Ch El (ft)	254.90	Shear (lb/sq ft)	0.07	0.15	0.06
Alpha	1.14	Stream Power (lb/ft s)	0.08	0.29	0.07
Frctn Loss (ft)	0.01	Cum Volume (acre-ft)	0.17	1.65	0.17
C & E Loss (ft)	0.01	Cum SA (acres)	0.10	0.40	0.10

CROSS SECTION OUTPUT Profile #Q100

			Left OB	Channel	Right OB
E.G. Elev (ft)	261.32	Element			
Vel Head (ft)	0.08	Wt. n-Val.	0.050	0.047	0.047
W.S. Elev (ft)	261.24	Reach Len. (ft)	34.32	37.87	38.81
Crit W.S. (ft)		Flow Area (sq ft)	36.56	122.04	23.55
E.G. Slope (ft/ft)	0.000596	Area (sq ft)	36.56	122.04	23.55
Q Total (cfs)	375.00	Flow (cfs)	50.37	292.31	32.32

Top Width (ft)	43.72	Top Width (ft)	13.05	22.07	8.61
Vel Total (ft/s)	2.06	Avg. Vel. (ft/s)	1.38	2.40	1.37
Max Chl Dpth (ft)	6.34	Hydr. Depth (ft)	2.80	5.53	2.74
Conv. Total (cfs)	15357.5	Conv. (cfs)	2063.0	11971.0	1323.5
Length Wtd. (ft)	37.55	Wetted Per. (ft)	13.97	22.33	9.93
Min Ch El (ft)	254.90	Shear (lb/sq ft)	0.10	0.20	0.09
Alpha	1.15	Stream Power (lb/ft s)	0.13	0.49	0.12
Frctn Loss (ft)	0.02	Cum Volume (acre-ft)	0.26	2.00	0.26
C & E Loss (ft)	0.01	Cum SA (acres)	0.12	0.40	0.12

CROSS SECTION OUTPUT Profile #Q100HC

E.G. Elev (ft)	264.80	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.18	Wt. n-Val.	0.050	0.047	0.047
W.S. Elev (ft)	264.62	Reach Len. (ft)	34.32	37.87	38.81
Crit W.S. (ft)		Flow Area (sq ft)	106.41	196.60	60.27
E.G. Slope (ft/ft)	0.000830	Area (sq ft)	106.41	196.60	60.27
Q Total (cfs)	1089.00	Flow (cfs)	190.51	763.29	135.20
Top Width (ft)	69.10	Top Width (ft)	33.89	22.07	13.14
Vel Total (ft/s)	3.00	Avg. Vel. (ft/s)	1.79	3.88	2.24
Max Chl Dpth (ft)	9.72	Hydr. Depth (ft)	3.14	8.91	4.59
Conv. Total (cfs)	37808.7	Conv. (cfs)	6614.2	26500.3	4694.1
Length Wtd. (ft)	37.45	Wetted Per. (ft)	35.18	22.33	15.59
Min Ch El (ft)	254.90	Shear (lb/sq ft)	0.16	0.46	0.20
Alpha	1.31	Stream Power (lb/ft s)	0.28	1.77	0.45
Frctn Loss (ft)	0.02	Cum Volume (acre-ft)	0.77	3.28	0.74
C & E Loss (ft)	0.02	Cum SA (acres)	0.22	0.40	0.19

CROSS SECTION

RIVER: Cristianitos
REACH: Upper RS: 767.227*

INPUT
Description:
Station Elevation Data num= 58

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	275.62	11.7	275.12	30.39	273.96	34.04	273.68	47.36	273
50.63	272.46	51.24	272.38	55.22	271.9	69.78	270.41	75.26	269.76
83.47	268.99	84.12	268.93	89.38	268.4	101.44	267	104.63	266.69
111.62	266.01	131.06	263.11	134.98	262.14	136.46	261.76	136.86	261.66
137.1	261.54	140.02	260.09	144.13	258	149.67	256.65	150.75	256.27
152.16	256.08	155.13	255.66	158.34	255.2	160.42	254.91	161.34	254.99
163.06	255.13	172.19	255.95	179.89	256.64	179.9	256.64	180.87	256.8
181.98	257.01	182.05	257.05	186.58	259.59	188.09	260.41	191.28	262.42
194.5	264.44	197.14	265.47	199.15	266.18	199.85	266.44	200.67	266.59
209.46	268.82	211.5	269.36	212.5	269.68	212.88	269.8	214.87	270.51
215.34	270.69	220.33	272.17	226.11	273.89	228.99	274.68	229.26	274.74
232.58	275.41	233.41	275.5	235.27	275.71				

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.05	149.67	.045	179.89	.045	233.41	.035	235.27	.045

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
149.67	179.89	34.32 37.87	38.81	.1	.3

CROSS SECTION OUTPUT Profile #Q50

E.G. Elev (ft)	260.34	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.03	Wt. n-Val.	0.050	0.045	0.045
W.S. Elev (ft)	260.31	Reach Len. (ft)	34.32	37.87	38.81
Crit W.S. (ft)		Flow Area (sq ft)	21.79	138.21	17.02
E.G. Slope (ft/ft)	0.000294	Area (sq ft)	21.79	138.21	17.02
Q Total (cfs)	247.00	Flow (cfs)	17.72	214.44	14.84
Top Width (ft)	48.33	Top Width (ft)	10.09	30.22	8.02
Vel Total (ft/s)	1.40	Avg. Vel. (ft/s)	0.81	1.55	0.87
Max Chl Dpth (ft)	5.40	Hydr. Depth (ft)	2.16	4.57	2.12
Conv. Total (cfs)	14408.7	Conv. (cfs)	1033.4	12509.5	865.8
Length Wtd. (ft)	37.71	Wetted Per. (ft)	10.81	30.46	8.91
Min Ch El (ft)	254.91	Shear (lb/sq ft)	0.04	0.08	0.04
Alpha	1.12	Stream Power (lb/ft s)	0.03	0.13	0.03
Frctn Loss (ft)	0.01	Cum Volume (acre-ft)	0.15	1.54	0.15
C & E Loss (ft)	0.00	Cum SA (acres)	0.09	0.38	0.09

CROSS SECTION OUTPUT Profile #Q100

E.G. Elev (ft)	261.29	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.05	Wt. n-Val.	0.050	0.045	0.045
W.S. Elev (ft)	261.24	Reach Len. (ft)	34.32	37.87	38.81
Crit W.S. (ft)		Flow Area (sq ft)	32.09	166.41	25.22
E.G. Slope (ft/ft)	0.000342	Area (sq ft)	32.09	166.41	25.22
Q Total (cfs)	375.00	Flow (cfs)	32.37	315.32	27.32
Top Width (ft)	51.72	Top Width (ft)	11.97	30.22	9.52
Vel Total (ft/s)	1.68	Avg. Vel. (ft/s)	1.01	1.89	1.08
Max Chl Dpth (ft)	6.33	Hydr. Depth (ft)	2.68	5.51	2.65
Conv. Total (cfs)	20272.8	Conv. (cfs)	1749.8	17046.3	1476.7
Length Wtd. (ft)	37.68	Wetted Per. (ft)	12.91	30.46	10.68
Min Ch El (ft)	254.91	Shear (lb/sq ft)	0.05	0.12	0.05
Alpha	1.14	Stream Power (lb/ft s)	0.05	0.22	0.05
Frctn Loss (ft)	0.01	Cum Volume (acre-ft)	0.23	1.87	0.24
C & E Loss (ft)	0.00	Cum SA (acres)	0.11	0.38	0.11

CROSS SECTION OUTPUT Profile #Q100HC

E.G. Elev (ft)	264.76	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.12	Wt. n-Val.	0.050	0.045	0.045
W.S. Elev (ft)	264.64	Reach Len. (ft)	34.32	37.87	38.81
Crit W.S. (ft)		Flow Area (sq ft)	96.26	268.99	66.72
E.G. Slope (ft/ft)	0.000482	Area (sq ft)	96.26	268.99	66.72
Q Total (cfs)	1089.00	Flow (cfs)	136.15	833.52	119.32
Top Width (ft)	74.19	Top Width (ft)	28.85	30.22	15.12
Vel Total (ft/s)	2.52	Avg. Vel. (ft/s)	1.41	3.10	1.79
Max Chl Dpth (ft)	9.73	Hydr. Depth (ft)	3.34	8.90	4.41
Conv. Total (cfs)	49583.5	Conv. (cfs)	6199.3	37951.4	5432.9
Length Wtd. (ft)	37.59	Wetted Per. (ft)	30.18	30.46	17.23
Min Ch El (ft)	254.91	Shear (lb/sq ft)	0.10	0.27	0.12
Alpha	1.25	Stream Power (lb/ft s)	0.14	0.82	0.21
Frctn Loss (ft)	0.01	Cum Volume (acre-ft)	0.69	3.07	0.69
C & E Loss (ft)	0.01	Cum SA (acres)	0.20	0.38	0.18

CROSS SECTION

RIVER: Cristianitos
REACH: Upper RS: 729.357*

INPUT
Description:
Station Elevation Data num= 58

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	275.63	10.27	275.21	26.65	274.26	29.86	274.01	41.54	273.33
44.41	272.88	44.94	272.81	48.43	272.4	61.21	271.09	66.01	270.46
73.21	269.67	73.78	269.6	78.4	269.03	88.97	267.58	91.78	267.24
97.9	266.49	114.95	262.93	118.4	261.92	119.69	261.53	120.04	261.42
120.25	261.32	122.81	260.01	126.41	258.15	131.28	256.73	132.45	256.24
133.97	256.05	137.18	255.64	140.65	255.19	142.9	254.93	144.16	255
146.53	255.14	159.06	256	169.63	256.71	169.64	256.72	170.63	256.88
171.75	257.1	171.83	257.13	176.43	259.29	177.95	259.98	181.19	261.64
184.46	263.32	187.14	264.21	189.17	264.84	189.89	265.09	190.72	265.26
199.64	268	201.71	268.65	202.72	269.02	203.1	269.15	205.13	270
205.6	270.21	210.66	271.86	216.53	273.78	219.45	274.63	219.72	274.7
223.1	275.44	223.93	275.52	225.82	275.69				

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.05	131.28	.043	169.63	.043	223.93	.035	225.82	.043

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
131.28	169.63	34.32	37.87	38.81	.1	.3

CROSS SECTION OUTPUT Profile #Q50

			Left OB	Channel	Right OB
E.G. Elev (ft)	260.33	Element			
Vel Head (ft)	0.02	Wt. n-Val.	0.050	0.043	0.043
W.S. Elev (ft)	260.31	Reach Len. (ft)	34.32	37.87	38.81
Crit W.S. (ft)		Flow Area (sq ft)	18.48	174.25	18.27
E.G. Slope (ft/ft)	0.000183	Area (sq ft)	18.48	174.25	18.27
Q Total (cfs)	247.00	Flow (cfs)	11.36	222.62	13.01
Top Width (ft)	56.37	Top Width (ft)	9.05	38.35	8.96
Vel Total (ft/s)	1.17	Avg. Vel. (ft/s)	0.61	1.28	0.71
Max Chl Dpth (ft)	5.38	Hydr. Depth (ft)	2.04	4.54	2.04
Conv. Total (cfs)	18251.9	Conv. (cfs)	839.7	16450.5	961.7
Length Wtd. (ft)	37.78	Wetted Per. (ft)	9.78	38.59	9.72
Min Ch El (ft)	254.93	Shear (lb/sq ft)	0.02	0.05	0.02
Alpha	1.11	Stream Power (lb/ft s)	0.01	0.07	0.02
Frctn Loss (ft)	0.01	Cum Volume (acre-ft)	0.13	1.41	0.14
C & E Loss (ft)	0.00	Cum SA (acres)	0.08	0.35	0.08

CROSS SECTION OUTPUT Profile #Q100

			Left OB	Channel	Right OB
E.G. Elev (ft)	261.28	Element			
Vel Head (ft)	0.03	Wt. n-Val.	0.050	0.043	0.043
W.S. Elev (ft)	261.24	Reach Len. (ft)	34.32	37.87	38.81
Crit W.S. (ft)		Flow Area (sq ft)	27.80	210.10	27.50
E.G. Slope (ft/ft)	0.000215	Area (sq ft)	27.80	210.10	27.50
Q Total (cfs)	375.00	Flow (cfs)	21.39	329.10	24.51
Top Width (ft)	60.02	Top Width (ft)	10.88	38.35	10.79
Vel Total (ft/s)	1.41	Avg. Vel. (ft/s)	0.77	1.57	0.89
Max Chl Dpth (ft)	6.31	Hydr. Depth (ft)	2.56	5.48	2.55

Conv. Total (cfs)	25602.9	Conv. (cfs)	1460.2	22469.2	1673.5
Length Wtd. (ft)	37.76	Wetted Per. (ft)	11.83	38.59	11.77
Min Ch El (ft)	254.93	Shear (lb/sq ft)	0.03	0.07	0.03
Alpha	1.12	Stream Power (lb/ft s)	0.02	0.11	0.03
Frctn Loss (ft)	0.01	Cum Volume (acre-ft)	0.21	1.71	0.21
C & E Loss (ft)	0.00	Cum SA (acres)	0.10	0.35	0.10

CROSS SECTION OUTPUT Profile #Q100HC

E.G. Elev (ft)	264.74	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.09	Wt. n-Val.	0.050	0.043	0.043
W.S. Elev (ft)	264.65	Reach Len. (ft)	34.32	37.87	38.81
Crit W.S. (ft)		Flow Area (sq ft)	85.65	340.65	76.46
E.G. Slope (ft/ft)	0.000306	Area (sq ft)	85.65	340.65	76.46
Q Total (cfs)	1089.00	Flow (cfs)	98.71	879.53	110.76
Top Width (ft)	81.83	Top Width (ft)	24.56	38.35	18.92
Vel Total (ft/s)	2.17	Avg. Vel. (ft/s)	1.15	2.58	1.45
Max Chl Dpth (ft)	9.72	Hydr. Depth (ft)	3.49	8.88	4.04
Conv. Total (cfs)	62253.8	Conv. (cfs)	5643.0	50279.3	6331.5
Length Wtd. (ft)	37.69	Wetted Per. (ft)	25.95	38.59	20.61
Min Ch El (ft)	254.93	Shear (lb/sq ft)	0.06	0.17	0.07
Alpha	1.22	Stream Power (lb/ft s)	0.07	0.44	0.10
Frctn Loss (ft)	0.01	Cum Volume (acre-ft)	0.62	2.81	0.62
C & E Loss (ft)	0.01	Cum SA (acres)	0.18	0.35	0.17

CROSS SECTION

RIVER: Cristianitos
REACH: Upper RS: 691.487*

INPUT
Description:
Station Elevation Data num= 58

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	275.64	8.83	275.3	22.92	274.57	25.68	274.34	35.72	273.65
38.19	273.29	38.64	273.24	41.65	272.9	52.63	271.78	56.76	271.16
62.96	270.35	63.44	270.28	67.41	269.66	76.51	268.16	78.92	267.8
84.18	266.98	98.85	262.75	101.81	261.7	102.92	261.3	103.22	261.18
103.41	261.09	105.6	259.94	108.7	258.29	112.89	256.81	114.14	256.21
115.77	256.02	119.23	255.62	122.96	255.19	125.37	254.94	126.98	255.02
130	255.16	145.93	256.05	159.37	256.79	159.38	256.79	160.38	256.96
161.53	257.19	161.6	257.21	166.27	258.99	167.81	259.55	171.1	260.86
174.42	262.19	177.13	262.96	179.2	263.51	179.92	263.74	180.77	263.93
189.81	267.18	191.91	267.95	192.94	268.35	193.33	268.5	195.38	269.5
195.87	269.73	201	271.55	206.95	273.66	209.92	274.58	210.19	274.66
213.61	275.48	214.46	275.54	216.37	275.67				

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.05	112.89	.04	159.37	.04	214.46	.035	216.37	.04

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
112.89	159.37	34.32	37.87	38.81	.1	.3

CROSS SECTION OUTPUT Profile #Q50

E.G. Elev (ft)	260.33	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.02	Wt. n-Val.	0.050	0.040	0.040
W.S. Elev (ft)	260.31	Reach Len. (ft)	34.32	37.87	38.81
Crit W.S. (ft)		Flow Area (sq ft)	15.38	209.55	20.04
E.G. Slope (ft/ft)	0.000116	Area (sq ft)	15.38	209.55	20.04
Q Total (cfs)	247.00	Flow (cfs)	7.17	227.85	11.98
Top Width (ft)	64.81	Top Width (ft)	7.99	46.48	10.34
Vel Total (ft/s)	1.01	Avg. Vel. (ft/s)	0.47	1.09	0.60
Max Chl Dpth (ft)	5.37	Hydr. Depth (ft)	1.93	4.51	1.94
Conv. Total (cfs)	22943.9	Conv. (cfs)	666.1	21164.8	1113.0
Length Wtd. (ft)	37.83	Wetted Per. (ft)	8.75	46.74	10.96
Min Ch El (ft)	254.94	Shear (lb/sq ft)	0.01	0.03	0.01
Alpha	1.10	Stream Power (lb/ft s)	0.01	0.04	0.01
Frctn Loss (ft)	0.00	Cum Volume (acre-ft)	0.12	1.24	0.12
C & E Loss (ft)	0.00	Cum SA (acres)	0.08	0.32	0.07

CROSS SECTION OUTPUT Profile #Q100

E.G. Elev (ft)	261.27	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.03	Wt. n-Val.	0.050	0.040	0.040
W.S. Elev (ft)	261.24	Reach Len. (ft)	34.32	37.87	38.81
Crit W.S. (ft)		Flow Area (sq ft)	23.70	253.04	30.81
E.G. Slope (ft/ft)	0.000136	Area (sq ft)	23.70	253.04	30.81
Q Total (cfs)	375.00	Flow (cfs)	13.86	337.98	23.16
Top Width (ft)	69.00	Top Width (ft)	9.83	46.48	12.69
Vel Total (ft/s)	1.22	Avg. Vel. (ft/s)	0.58	1.34	0.75
Max Chl Dpth (ft)	6.30	Hydr. Depth (ft)	2.41	5.44	2.43
Conv. Total (cfs)	32156.8	Conv. (cfs)	1188.4	28982.2	1986.3
Length Wtd. (ft)	37.82	Wetted Per. (ft)	10.81	46.74	13.48
Min Ch El (ft)	254.94	Shear (lb/sq ft)	0.02	0.05	0.02
Alpha	1.11	Stream Power (lb/ft s)	0.01	0.06	0.01
Frctn Loss (ft)	0.00	Cum Volume (acre-ft)	0.19	1.51	0.19
C & E Loss (ft)	0.00	Cum SA (acres)	0.09	0.32	0.09

CROSS SECTION OUTPUT Profile #Q100HC

E.G. Elev (ft)	264.72	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.07	Wt. n-Val.	0.050	0.040	0.040
W.S. Elev (ft)	264.65	Reach Len. (ft)	34.32	37.87	38.81
Crit W.S. (ft)		Flow Area (sq ft)	74.69	411.59	91.78
E.G. Slope (ft/ft)	0.000193	Area (sq ft)	74.69	411.59	91.78
Q Total (cfs)	1089.00	Flow (cfs)	69.35	906.14	113.51
Top Width (ft)	90.54	Top Width (ft)	20.65	46.48	23.42
Vel Total (ft/s)	1.88	Avg. Vel. (ft/s)	0.93	2.20	1.24
Max Chl Dpth (ft)	9.71	Hydr. Depth (ft)	3.62	8.86	3.92
Conv. Total (cfs)	78357.7	Conv. (cfs)	4989.9	65200.6	8167.3
Length Wtd. (ft)	37.78	Wetted Per. (ft)	22.16	46.74	24.75
Min Ch El (ft)	254.94	Shear (lb/sq ft)	0.04	0.11	0.04
Alpha	1.20	Stream Power (lb/ft s)	0.04	0.23	0.06
Frctn Loss (ft)	0.01	Cum Volume (acre-ft)	0.55	2.48	0.55
C & E Loss (ft)	0.00	Cum SA (acres)	0.16	0.32	0.15

CROSS SECTION

RIVER: Cristianitos

REACH: Upper RS: 653.617*

INPUT
Description:
Station Elevation Data num= 58

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	275.65	7.39	275.39	19.18	274.87	21.49	274.66	29.9	273.98
31.97	273.71	32.35	273.67	34.86	273.4	44.06	272.46	47.52	271.86
52.7	271.03	53.1	270.95	56.43	270.29	64.04	268.74	66.06	268.35
70.47	267.47	82.74	262.56	85.22	261.48	86.15	261.06	86.41	260.95
86.56	260.87	88.4	259.86	90.99	258.44	94.49	256.88	95.84	256.17
97.58	255.99	101.28	255.6	105.27	255.18	107.85	254.95	109.81	255.03
113.46	255.17	132.8	256.09	149.12	256.86	149.13	256.87	150.14	257.03
151.3	257.27	151.38	257.3	156.11	258.69	157.68	259.12	161.01	260.08
164.38	261.06	167.13	261.7	169.22	262.17	169.96	262.39	170.81	262.59
179.99	266.36	182.12	267.24	183.16	267.69	183.55	267.86	185.64	268.99
186.13	269.26	191.33	271.24	197.37	273.55	200.38	274.53	200.65	274.62
204.13	275.51	204.98	275.56	206.93	275.65				

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.05	94.49	.038	149.12	.038	204.98	.035	206.93	.038

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
94.49	149.12	34.32 37.87	38.81	.1	.3

CROSS SECTION OUTPUT Profile #Q50

E.G. Elev (ft)	260.32	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.01	Wt. n-Val.	0.050	0.038	0.038
W.S. Elev (ft)	260.31	Reach Len. (ft)	34.32	37.87	38.81
Crit W.S. (ft)		Flow Area (sq ft)	12.45	244.73	22.91
E.G. Slope (ft/ft)	0.000079	Area (sq ft)	12.45	244.73	22.91
Q Total (cfs)	247.00	Flow (cfs)	4.53	230.91	11.56
Top Width (ft)	74.21	Top Width (ft)	6.90	54.63	12.67
Vel Total (ft/s)	0.88	Avg. Vel. (ft/s)	0.36	0.94	0.50
Max Chl Dpth (ft)	5.36	Hydr. Depth (ft)	1.80	4.48	1.81
Conv. Total (cfs)	27723.8	Conv. (cfs)	508.7	25917.4	1297.7
Length Wtd. (ft)	37.86	Wetted Per. (ft)	7.72	54.91	13.14
Min Ch El (ft)	254.95	Shear (lb/sq ft)	0.01	0.02	0.01
Alpha	1.09	Stream Power (lb/ft s)	0.00	0.02	0.00
Frctn Loss (ft)	0.00	Cum Volume (acre-ft)	0.11	1.04	0.10
C & E Loss (ft)	0.00	Cum SA (acres)	0.07	0.27	0.06

CROSS SECTION OUTPUT Profile #Q100

E.G. Elev (ft)	261.26	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.02	Wt. n-Val.	0.050	0.038	0.038
W.S. Elev (ft)	261.24	Reach Len. (ft)	34.32	37.87	38.81
Crit W.S. (ft)		Flow Area (sq ft)	19.73	295.90	36.30
E.G. Slope (ft/ft)	0.000093	Area (sq ft)	19.73	295.90	36.30
Q Total (cfs)	375.00	Flow (cfs)	9.03	342.95	23.02
Top Width (ft)	79.43	Top Width (ft)	8.75	54.63	16.05
Vel Total (ft/s)	1.07	Avg. Vel. (ft/s)	0.46	1.16	0.63
Max Chl Dpth (ft)	6.29	Hydr. Depth (ft)	2.26	5.42	2.26
Conv. Total (cfs)	38886.1	Conv. (cfs)	936.2	35563.2	2386.8
Length Wtd. (ft)	37.85	Wetted Per. (ft)	9.78	54.91	16.65
Min Ch El (ft)	254.95	Shear (lb/sq ft)	0.01	0.03	0.01

Alpha	1.11	Stream Power (lb/ft s)	0.01	0.04	0.01
Frctn Loss (ft)	0.00	Cum Volume (acre-ft)	0.17	1.27	0.16
C & E Loss (ft)	0.00	Cum SA (acres)	0.09	0.27	0.08

CROSS SECTION OUTPUT Profile #Q100HC

E.G. Elev (ft)	264.71	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.05	Wt. n-Val.	0.050	0.038	0.038
W.S. Elev (ft)	264.66	Reach Len. (ft)	34.32	37.87	38.81
Crit W.S. (ft)		Flow Area (sq ft)	63.40	482.54	111.91
E.G. Slope (ft/ft)	0.000130	Area (sq ft)	63.40	482.54	111.91
Q Total (cfs)	1089.00	Flow (cfs)	48.39	914.84	125.77
Top Width (ft)	98.36	Top Width (ft)	17.00	54.63	26.73
Vel Total (ft/s)	1.66	Avg. Vel. (ft/s)	0.76	1.90	1.12
Max Chl Dpth (ft)	9.71	Hydr. Depth (ft)	3.73	8.83	4.19
Conv. Total (cfs)	95648.2	Conv. (cfs)	4250.1	80351.2	11046.9
Length Wtd. (ft)	37.83	Wetted Per. (ft)	18.72	54.91	27.90
Min Ch El (ft)	254.95	Shear (lb/sq ft)	0.03	0.07	0.03
Alpha	1.16	Stream Power (lb/ft s)	0.02	0.13	0.04
Frctn Loss (ft)	0.01	Cum Volume (acre-ft)	0.50	2.09	0.46
C & E Loss (ft)	0.00	Cum SA (acres)	0.14	0.27	0.12

CROSS SECTION

RIVER: Cristianitos
REACH: Upper RS: 615.747

INPUT
Description:
Station Elevation Data num= 29

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	275.66	15.45	275.18	26.05	274.1	35.48	273.14	42.44	271.71
53.2	268.9	56.75	267.96	69.38	260.83	76.1	256.96	77.53	256.14
79.39	255.96	87.58	255.18	90.33	254.96	92.63	255.04	96.93	255.18
119.67	256.14	138.86	256.94	139.9	257.11	141.15	257.38	145.95	258.39
159.25	260.84	160.86	261.26	173.78	267.21	176.39	268.78	187.79	273.44
191.12	274.58	194.64	275.55	195.51	275.58	197.48	275.63		

Manning's n Values num= 2

Sta	n Val	Sta	n Val
0	.05	195.51	.035

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
76.1	138.86	50.75	42.38	33.15	.1

CROSS SECTION OUTPUT Profile #Q50

E.G. Elev (ft)	260.32	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.01	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	260.31	Reach Len. (ft)	50.75	42.38	33.15
Crit W.S. (ft)		Flow Area (sq ft)	9.72	278.94	28.82
E.G. Slope (ft/ft)	0.000107	Area (sq ft)	9.72	278.94	28.82
Q Total (cfs)	247.00	Flow (cfs)	3.83	230.97	12.21
Top Width (ft)	86.06	Top Width (ft)	5.81	62.76	17.49
Vel Total (ft/s)	0.78	Avg. Vel. (ft/s)	0.39	0.83	0.42
Max Chl Dpth (ft)	5.35	Hydr. Depth (ft)	1.67	4.44	1.65

Conv. Total (cfs)	23884.6	Conv. (cfs)	370.0	22334.1	1180.5
Length Wtd. (ft)	42.06	Wetted Per. (ft)	6.70	63.07	17.81
Min Ch El (ft)	254.96	Shear (lb/sq ft)	0.01	0.03	0.01
Alpha	1.08	Stream Power (lb/ft s)	0.00	0.02	0.00
Frctn Loss (ft)	0.00	Cum Volume (acre-ft)	0.10	0.82	0.08
C & E Loss (ft)	0.00	Cum SA (acres)	0.07	0.22	0.05

CROSS SECTION OUTPUT Profile #Q100

E.G. Elev (ft)	261.26	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.01	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	261.24	Reach Len. (ft)	50.75	42.38	33.15
Crit W.S. (ft)		Flow Area (sq ft)	15.93	337.75	47.47
E.G. Slope (ft/ft)	0.000123	Area (sq ft)	15.93	337.75	47.47
Q Total (cfs)	375.00	Flow (cfs)	7.93	341.19	25.88
Top Width (ft)	92.15	Top Width (ft)	7.45	62.76	21.94
Vel Total (ft/s)	0.93	Avg. Vel. (ft/s)	0.50	1.01	0.55
Max Chl Dpth (ft)	6.28	Hydr. Depth (ft)	2.14	5.38	2.16
Conv. Total (cfs)	33767.2	Conv. (cfs)	714.3	30722.6	2330.3
Length Wtd. (ft)	41.95	Wetted Per. (ft)	8.60	63.07	22.36
Min Ch El (ft)	254.96	Shear (lb/sq ft)	0.01	0.04	0.02
Alpha	1.09	Stream Power (lb/ft s)	0.01	0.04	0.01
Frctn Loss (ft)	0.00	Cum Volume (acre-ft)	0.16	0.99	0.12
C & E Loss (ft)	0.00	Cum SA (acres)	0.08	0.22	0.06

CROSS SECTION OUTPUT Profile #Q100HC

E.G. Elev (ft)	264.70	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.04	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	264.66	Reach Len. (ft)	50.75	42.38	33.15
Crit W.S. (ft)		Flow Area (sq ft)	51.78	552.41	135.29
E.G. Slope (ft/ft)	0.000168	Area (sq ft)	51.78	552.41	135.29
Q Total (cfs)	1089.00	Flow (cfs)	44.47	904.04	140.49
Top Width (ft)	105.66	Top Width (ft)	13.51	62.76	29.39
Vel Total (ft/s)	1.47	Avg. Vel. (ft/s)	0.86	1.64	1.04
Max Chl Dpth (ft)	9.70	Hydr. Depth (ft)	3.83	8.80	4.60
Conv. Total (cfs)	84024.2	Conv. (cfs)	3431.0	69753.4	10839.8
Length Wtd. (ft)	41.60	Wetted Per. (ft)	15.55	63.07	30.56
Min Ch El (ft)	254.96	Shear (lb/sq ft)	0.03	0.09	0.05
Alpha	1.10	Stream Power (lb/ft s)	0.03	0.15	0.05
Frctn Loss (ft)	0.01	Cum Volume (acre-ft)	0.45	1.64	0.35
C & E Loss (ft)	0.00	Cum SA (acres)	0.13	0.22	0.10

CROSS SECTION

RIVER: Cristianitos
REACH: Upper RS: 573.367*

INPUT
Description:
Station Elevation Data num= 49

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	274.7	14.57	274.25	14.66	274.24	20.79	273.66	24.56	273.26
29.01	272.78	33.45	272.28	36.87	271.6	40.02	270.8	50.16	267.74
51.23	267.42	52.2	267.12	53.51	266.72	53.74	266.6	64.88	260.44

65.42	260.17	69.34	258.14	71.75	256.88	72.96	256.21	74.54	256.05
81.47	255.34	83.79	255.13	85.66	255.2	89.14	255.33	107.54	256.17
123.07	256.87	124.02	257.05	125.16	257.31	126.3	257.56	129.54	258.61
136	260.56	139.62	261.63	140.09	261.77	141.67	262.12	143.14	262.54
144.17	263.01	146.97	264.31	154.93	267.41	155.39	267.65	157.31	268.65
157.53	268.73	157.95	268.9	167.71	272.65	169.21	273.14	170.75	273.64
173.96	274.49	174.75	274.54	175.48	274.57	176.55	274.64		

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.05	71.75	.038	123.07	.038	174.75	.038	176.55	.038

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
71.75	123.07	50.75	42.38	33.15	.1	.3

CROSS SECTION OUTPUT Profile #Q50

			Left OB	Channel	Right OB
E.G. Elev (ft)	260.31	Element			
Vel Head (ft)	0.02	Wt. n-Val.	0.050	0.038	0.038
W.S. Elev (ft)	260.30	Reach Len. (ft)	50.75	42.38	33.15
Crit W.S. (ft)		Flow Area (sq ft)	11.20	224.12	21.85
E.G. Slope (ft/ft)	0.000098	Area (sq ft)	11.20	224.12	21.85
Q Total (cfs)	247.00	Flow (cfs)	4.33	230.45	12.22
Top Width (ft)	69.96	Top Width (ft)	6.58	51.32	12.05
Vel Total (ft/s)	0.96	Avg. Vel. (ft/s)	0.39	1.03	0.56
Max Chl Dpth (ft)	5.17	Hydr. Depth (ft)	1.70	4.37	1.81
Conv. Total (cfs)	25009.6	Conv. (cfs)	438.2	23334.2	1237.1
Length Wtd. (ft)	42.10	Wetted Per. (ft)	7.41	51.59	12.54
Min Ch El (ft)	255.13	Shear (lb/sq ft)	0.01	0.03	0.01
Alpha	1.09	Stream Power (lb/ft s)	0.00	0.03	0.01
Frctn Loss (ft)	0.01	Cum Volume (acre-ft)	0.09	0.57	0.06
C & E Loss (ft)	0.00	Cum SA (acres)	0.06	0.17	0.04

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

CROSS SECTION OUTPUT Profile #Q100

			Left OB	Channel	Right OB
E.G. Elev (ft)	261.25	Element			
Vel Head (ft)	0.02	Wt. n-Val.	0.050	0.038	0.038
W.S. Elev (ft)	261.23	Reach Len. (ft)	50.75	42.38	33.15
Crit W.S. (ft)		Flow Area (sq ft)	18.16	272.03	34.56
E.G. Slope (ft/ft)	0.000113	Area (sq ft)	18.16	272.03	34.56
Q Total (cfs)	375.00	Flow (cfs)	8.90	341.95	24.15
Top Width (ft)	74.81	Top Width (ft)	8.30	51.32	15.19
Vel Total (ft/s)	1.15	Avg. Vel. (ft/s)	0.49	1.26	0.70
Max Chl Dpth (ft)	6.10	Hydr. Depth (ft)	2.19	5.30	2.27
Conv. Total (cfs)	35341.8	Conv. (cfs)	838.7	32227.2	2275.9
Length Wtd. (ft)	42.04	Wetted Per. (ft)	9.37	51.59	15.82
Min Ch El (ft)	255.13	Shear (lb/sq ft)	0.01	0.04	0.02
Alpha	1.11	Stream Power (lb/ft s)	0.01	0.05	0.01
Frctn Loss (ft)	0.01	Cum Volume (acre-ft)	0.14	0.70	0.09
C & E Loss (ft)	0.00	Cum SA (acres)	0.07	0.17	0.05

Warning: The conveyance ratio (upstream 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)	264.69	Element			
Vel Head (ft)	0.06	Wt. n-Val.	0.050	0.038	0.038
W.S. Elev (ft)	264.63	Reach Len. (ft)	50.75	42.38	33.15
Crit W.S. (ft)		Flow Area (sq ft)	56.89	446.78	104.44
E.G. Slope (ft/ft)	0.000154	Area (sq ft)	56.89	446.78	104.44
Q Total (cfs)	1089.00	Flow (cfs)	48.01	913.05	127.94
Top Width (ft)	90.51	Top Width (ft)	14.46	51.32	24.73
Vel Total (ft/s)	1.79	Avg. Vel. (ft/s)	0.84	2.04	1.23
Max Chl Dpth (ft)	9.50	Hydr. Depth (ft)	3.94	8.71	4.22
Conv. Total (cfs)	87878.2	Conv. (cfs)	3873.8	73679.8	10324.6
Length Wtd. (ft)	41.81	Wetted Per. (ft)	16.41	51.59	25.98
Min Ch El (ft)	255.13	Shear (lb/sq ft)	0.03	0.08	0.04
Alpha	1.16	Stream Power (lb/ft s)	0.03	0.17	0.05
Frctn Loss (ft)	0.01	Cum Volume (acre-ft)	0.39	1.16	0.26
C & E Loss (ft)	0.00	Cum SA (acres)	0.12	0.17	0.08

CROSS SECTION

RIVER: Cristianitos
REACH: Upper RS: 530.987*

INPUT
Description:
Station Elevation Data num= 49

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	273.73	13.69	273.32	13.77	273.31	19.53	272.82	23.07	272.41
27.25	271.94	31.43	271.42	34.64	270.8	37.59	269.89	47.12	266.58
48.13	266.23	49.03	265.92	50.27	265.49	50.48	265.37	60.95	259.73
61.46	259.5	65.14	257.85	67.41	256.8	68.4	256.28	69.69	256.13
75.35	255.49	77.26	255.3	78.68	255.37	81.34	255.48	95.41	256.2
107.28	256.81	108.13	256.99	109.16	257.24	110.2	257.49	113.12	258.84
118.96	261.42	122.24	262.84	122.66	263.02	124.09	263.4	125.42	263.82
126.35	264.25	128.89	265.42	136.07	267.62	136.49	267.79	138.23	268.52
138.43	268.58	138.81	268.72	147.63	271.85	148.98	272.27	150.37	272.69
153.28	273.44	154	273.5	154.65	273.54	155.62	273.64		

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.05	67.41	.041	107.28	.041	154	.041	155.62	.041

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
67.41	107.28	50.75 42.38	33.15	.1	.3

CROSS SECTION OUTPUT Profile #Q50

			Left OB	Channel	Right OB
E.G. Elev (ft)	260.30	Element			
Vel Head (ft)	0.03	Wt. n-Val.	0.050	0.041	0.041
W.S. Elev (ft)	260.28	Reach Len. (ft)	50.75	42.38	33.15
Crit W.S. (ft)		Flow Area (sq ft)	13.23	170.77	17.68
E.G. Slope (ft/ft)	0.000194	Area (sq ft)	13.23	170.77	17.68
Q Total (cfs)	247.00	Flow (cfs)	7.49	226.28	13.23
Top Width (ft)	56.45	Top Width (ft)	7.48	39.87	9.10
Vel Total (ft/s)	1.22	Avg. Vel. (ft/s)	0.57	1.33	0.75
Max Chl Dpth (ft)	4.98	Hydr. Depth (ft)	1.77	4.28	1.94
Conv. Total (cfs)	17752.4	Conv. (cfs)	538.4	16263.0	951.0

Length Wtd. (ft)	42.21	Wetted Per. (ft)	8.25	40.09	9.78
Min Ch El (ft)	255.30	Shear (lb/sq ft)	0.02	0.05	0.02
Alpha	1.10	Stream Power (lb/ft s)	0.01	0.07	0.02
Frctn Loss (ft)	0.01	Cum Volume (acre-ft)	0.07	0.38	0.04
C & E Loss (ft)	0.00	Cum SA (acres)	0.05	0.12	0.03

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

CROSS SECTION OUTPUT Profile #Q100

E.G. Elev (ft)	261.24	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.04	Wt. n-Val.	0.050	0.041	0.041
W.S. Elev (ft)	261.21	Reach Len. (ft)	50.75	42.38	33.15
Crit W.S. (ft)		Flow Area (sq ft)	20.97	207.77	27.10
E.G. Slope (ft/ft)	0.000221	Area (sq ft)	20.97	207.77	27.10
Q Total (cfs)	375.00	Flow (cfs)	14.96	335.03	25.01
Top Width (ft)	60.27	Top Width (ft)	9.20	39.87	11.20
Vel Total (ft/s)	1.47	Avg. Vel. (ft/s)	0.71	1.61	0.92
Max Chl Dpth (ft)	5.91	Hydr. Depth (ft)	2.28	5.21	2.42
Conv. Total (cfs)	25240.0	Conv. (cfs)	1006.8	22549.9	1683.3
Length Wtd. (ft)	42.19	Wetted Per. (ft)	10.21	40.09	12.07
Min Ch El (ft)	255.30	Shear (lb/sq ft)	0.03	0.07	0.03
Alpha	1.12	Stream Power (lb/ft s)	0.02	0.12	0.03
Frctn Loss (ft)	0.01	Cum Volume (acre-ft)	0.11	0.46	0.07
C & E Loss (ft)	0.00	Cum SA (acres)	0.06	0.12	0.04

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

CROSS SECTION OUTPUT Profile #Q100HC

E.G. Elev (ft)	264.68	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.09	Wt. n-Val.	0.050	0.041	0.041
W.S. Elev (ft)	264.59	Reach Len. (ft)	50.75	42.38	33.15
Crit W.S. (ft)		Flow Area (sq ft)	62.68	342.54	79.19
E.G. Slope (ft/ft)	0.000297	Area (sq ft)	62.68	342.54	79.19
Q Total (cfs)	1089.00	Flow (cfs)	75.67	894.70	118.64
Top Width (ft)	75.15	Top Width (ft)	15.48	39.87	19.80
Vel Total (ft/s)	2.25	Avg. Vel. (ft/s)	1.21	2.61	1.50
Max Chl Dpth (ft)	9.29	Hydr. Depth (ft)	4.05	8.59	4.00
Conv. Total (cfs)	63153.6	Conv. (cfs)	4388.1	51885.4	6880.0
Length Wtd. (ft)	42.13	Wetted Per. (ft)	17.34	40.09	21.34
Min Ch El (ft)	255.30	Shear (lb/sq ft)	0.07	0.16	0.07
Alpha	1.18	Stream Power (lb/ft s)	0.08	0.41	0.10
Frctn Loss (ft)	0.02	Cum Volume (acre-ft)	0.32	0.77	0.19
C & E Loss (ft)	0.01	Cum SA (acres)	0.10	0.12	0.06

Warning: The conveyance ratio (upstream 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: Cristianitos
REACH: Upper RS: 488.607*

INPUT
Description:
Station Elevation Data num= 49

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	272.77	12.8	272.39	12.89	272.39	18.27	271.98	21.59	271.57
25.49	271.09	29.4	270.56	32.41	270	35.17	268.97	44.09	265.42
45.03	265.05	45.87	264.71	47.03	264.25	47.23	264.14	57.02	259.02
57.49	258.84	60.94	257.56	63.06	256.72	63.83	256.35	64.83	256.22
69.24	255.65	70.72	255.48	71.71	255.53	73.55	255.63	83.27	256.23
91.48	256.74	92.25	256.92	93.17	257.17	94.09	257.41	96.71	259.06
101.93	262.28	104.85	264.05	105.23	264.28	106.51	264.68	107.7	265.1
108.53	265.49	110.8	266.53	117.22	267.82	117.59	267.93	119.15	268.39
119.33	268.42	119.67	268.55	127.55	271.06	128.76	271.4	130	271.75
132.6	272.38	133.24	272.45	133.82	272.52	134.69	272.65		

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.05	63.06	.044	91.48	.044	133.24	.044	134.69	.044

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
63.06	91.48	50.75	42.38	33.15	.1	.3

CROSS SECTION OUTPUT Profile #Q50

			Left OB	Channel	Right OB
E.G. Elev (ft)	260.29	Element			
Vel Head (ft)	0.05	Wt. n-Val.	0.050	0.044	0.044
W.S. Elev (ft)	260.24	Reach Len. (ft)	50.75	42.38	33.15
Crit W.S. (ft)		Flow Area (sq ft)	15.67	118.78	14.68
E.G. Slope (ft/ft)	0.000440	Area (sq ft)	15.67	118.78	14.68
Q Total (cfs)	247.00	Flow (cfs)	14.04	217.43	15.53
Top Width (ft)	43.95	Top Width (ft)	8.38	28.42	7.15
Vel Total (ft/s)	1.66	Avg. Vel. (ft/s)	0.90	1.83	1.06
Max Chl Dpth (ft)	4.76	Hydr. Depth (ft)	1.87	4.18	2.05
Conv. Total (cfs)	11775.2	Conv. (cfs)	669.2	10365.4	740.6
Length Wtd. (ft)	42.46	Wetted Per. (ft)	9.10	28.60	8.04
Min Ch El (ft)	255.48	Shear (lb/sq ft)	0.05	0.11	0.05
Alpha	1.12	Stream Power (lb/ft s)	0.04	0.21	0.05
Frctn Loss (ft)	0.03	Cum Volume (acre-ft)	0.06	0.24	0.03
C & E Loss (ft)	0.01	Cum SA (acres)	0.04	0.09	0.02

Warning: The conveyance ratio (upstream 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)	261.23	Element			
Vel Head (ft)	0.07	Wt. n-Val.	0.050	0.044	0.044
W.S. Elev (ft)	261.16	Reach Len. (ft)	50.75	42.38	33.15
Crit W.S. (ft)		Flow Area (sq ft)	24.16	144.84	21.92
E.G. Slope (ft/ft)	0.000492	Area (sq ft)	24.16	144.84	21.92
Q Total (cfs)	375.00	Flow (cfs)	26.79	320.10	28.11
Top Width (ft)	47.19	Top Width (ft)	10.13	28.42	8.63
Vel Total (ft/s)	1.96	Avg. Vel. (ft/s)	1.11	2.21	1.28
Max Chl Dpth (ft)	5.68	Hydr. Depth (ft)	2.38	5.10	2.54
Conv. Total (cfs)	16899.6	Conv. (cfs)	1207.3	14425.7	1266.6
Length Wtd. (ft)	42.50	Wetted Per. (ft)	11.08	28.60	9.79
Min Ch El (ft)	255.48	Shear (lb/sq ft)	0.07	0.16	0.07

Alpha	1.14	Stream Power (lb/ft s)	0.07	0.34	0.09
Frctn Loss (ft)	0.03	Cum Volume (acre-ft)	0.09	0.29	0.05
C & E Loss (ft)	0.01	Cum SA (acres)	0.05	0.09	0.03

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

CROSS SECTION OUTPUT Profile #Q100HC

E.G. Elev (ft)	264.66	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.16	Wt. n-Val.	0.050	0.044	0.044
W.S. Elev (ft)	264.49	Reach Len. (ft)	50.75	42.38	33.15
Crit W.S. (ft)		Flow Area (sq ft)	68.56	239.56	59.80
E.G. Slope (ft/ft)	0.000640	Area (sq ft)	68.56	239.56	59.80
Q Total (cfs)	1089.00	Flow (cfs)	123.94	844.45	120.61
Top Width (ft)	59.49	Top Width (ft)	16.64	28.42	14.43
Vel Total (ft/s)	2.96	Avg. Vel. (ft/s)	1.81	3.53	2.02
Max Chl Dpth (ft)	9.01	Hydr. Depth (ft)	4.12	8.43	4.14
Conv. Total (cfs)	43032.5	Conv. (cfs)	4897.5	33369.0	4766.0
Length Wtd. (ft)	42.62	Wetted Per. (ft)	18.40	28.60	16.50
Min Ch El (ft)	255.48	Shear (lb/sq ft)	0.15	0.33	0.14
Alpha	1.19	Stream Power (lb/ft s)	0.27	1.18	0.29
Frctn Loss (ft)	0.04	Cum Volume (acre-ft)	0.24	0.49	0.13
C & E Loss (ft)	0.02	Cum SA (acres)	0.08	0.09	0.05

Warning: The conveyance ratio (upstream 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: Cristianitos
REACH: Upper RS: 446.227*

INPUT
Description:
Station Elevation Data num= 49

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	271.8	11.92	271.46	12	271.46	17.01	271.13	20.1	270.73
23.74	270.25	27.38	269.7	30.17	269.2	32.75	268.06	41.05	264.27
41.92	263.86	42.71	263.51	43.79	263.02	43.97	262.92	53.09	258.3
53.53	258.18	56.74	257.27	58.72	256.64	59.27	256.42	59.98	256.3
63.13	255.81	64.19	255.65	64.73	255.69	65.75	255.78	71.14	256.27
75.69	256.68	76.37	256.86	77.18	257.09	77.99	257.33	80.3	259.28
84.89	263.15	87.47	265.25	87.81	265.53	88.93	265.96	89.98	266.38
90.71	266.72	92.71	267.64	98.37	268.03	98.7	268.06	100.06	268.26
100.22	268.27	100.52	268.37	107.47	270.27	108.53	270.54	109.63	270.81
111.92	271.32	112.48	271.41	113	271.49	113.76	271.65		

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.05	58.72	.047	75.69	.047	112.48	.047	113.76	.047

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
58.72	75.69	50.75 42.38	33.15	.1	.3

CROSS SECTION OUTPUT Profile #Q50

E.G. Elev (ft)	260.25	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.11	Wt. n-Val.	0.050	0.047	0.047
W.S. Elev (ft)	260.14	Reach Len. (ft)	50.75	42.38	33.15
Crit W.S. (ft)		Flow Area (sq ft)	18.25	68.00	11.91
E.G. Slope (ft/ft)	0.001337	Area (sq ft)	18.25	68.00	11.91
Q Total (cfs)	247.00	Flow (cfs)	29.72	197.16	20.12
Top Width (ft)	31.87	Top Width (ft)	9.26	16.97	5.63
Vel Total (ft/s)	2.52	Avg. Vel. (ft/s)	1.63	2.90	1.69
Max Chl Dpth (ft)	4.49	Hydr. Depth (ft)	1.97	4.01	2.12
Conv. Total (cfs)	6754.5	Conv. (cfs)	812.8	5391.6	550.1
Length Wtd. (ft)	43.17	Wetted Per. (ft)	9.94	17.12	6.75
Min Ch El (ft)	255.65	Shear (lb/sq ft)	0.15	0.33	0.15
Alpha	1.15	Stream Power (lb/ft s)	0.25	0.96	0.25
Frctn Loss (ft)	0.15	Cum Volume (acre-ft)	0.04	0.15	0.02
C & E Loss (ft)	0.09	Cum SA (acres)	0.03	0.07	0.02

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream 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)	261.19	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.16	Wt. n-Val.	0.050	0.047	0.047
W.S. Elev (ft)	261.03	Reach Len. (ft)	50.75	42.38	33.15
Crit W.S. (ft)		Flow Area (sq ft)	27.26	83.08	17.39
E.G. Slope (ft/ft)	0.001450	Area (sq ft)	27.26	83.08	17.39
Q Total (cfs)	375.00	Flow (cfs)	53.57	286.68	34.75
Top Width (ft)	34.67	Top Width (ft)	11.02	16.97	6.69
Vel Total (ft/s)	2.94	Avg. Vel. (ft/s)	1.97	3.45	2.00
Max Chl Dpth (ft)	5.38	Hydr. Depth (ft)	2.47	4.90	2.60
Conv. Total (cfs)	9848.0	Conv. (cfs)	1406.9	7528.6	912.5
Length Wtd. (ft)	43.31	Wetted Per. (ft)	11.91	17.12	8.13
Min Ch El (ft)	255.65	Shear (lb/sq ft)	0.21	0.44	0.19
Alpha	1.16	Stream Power (lb/ft s)	0.41	1.52	0.39
Frctn Loss (ft)	0.16	Cum Volume (acre-ft)	0.06	0.18	0.03
C & E Loss (ft)	0.10	Cum SA (acres)	0.04	0.07	0.02

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream 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)	264.59	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.34	Wt. n-Val.	0.050	0.047	0.047
W.S. Elev (ft)	264.25	Reach Len. (ft)	50.75	42.38	33.15
Crit W.S. (ft)		Flow Area (sq ft)	73.21	137.79	45.13
E.G. Slope (ft/ft)	0.001749	Area (sq ft)	73.21	137.79	45.13
Q Total (cfs)	1089.00	Flow (cfs)	221.51	731.81	135.68
Top Width (ft)	45.16	Top Width (ft)	17.64	16.97	10.56
Vel Total (ft/s)	4.25	Avg. Vel. (ft/s)	3.03	5.31	3.01
Max Chl Dpth (ft)	8.60	Hydr. Depth (ft)	4.15	8.12	4.28
Conv. Total (cfs)	26036.9	Conv. (cfs)	5296.0	17496.9	3244.0

Length Wtd. (ft)	43.66	Wetted Per. (ft)	19.27	17.12	13.17
Min Ch El (ft)	255.65	Shear (lb/sq ft)	0.41	0.88	0.37
Alpha	1.21	Stream Power (lb/ft s)	1.26	4.67	1.13
Frctn Loss (ft)	0.18	Cum Volume (acre-ft)	0.16	0.31	0.09
C & E Loss (ft)	0.16	Cum SA (acres)	0.06	0.07	0.04

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 conveyance ratio (upstream 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: Cristianitos
REACH: Upper RS: 403.848

INPUT
Description:
Station Elevation Data num= 25

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	270.84	11.11	270.53	15.75	270.29	21.98	269.41	27.94	268.4
38.82	262.68	39.55	262.3	40.72	261.69	49.16	257.59	52.54	256.98
54.37	256.56	57.65	255.82	59.9	256.61	61.89	257.25	67.86	264.01
70.09	266.46	70.38	266.78	72.89	267.96	74.62	268.75	79.8	268.2
81.12	268.12	81.38	268.2	88.31	269.67	92.17	270.46	92.83	270.66

Manning's n Values num= 1

Sta	n Val
0	.05

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
54.37	59.9	35.73	38.67	40.52	.1	.3

CROSS SECTION OUTPUT Profile #Q50

E.G. Elev (ft)	260.02	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.97	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	259.04	Reach Len. (ft)	35.73	38.67	40.52
Crit W.S. (ft)	259.04	Flow Area (sq ft)	12.29	15.73	5.63
E.G. Slope (ft/ft)	0.024706	Area (sq ft)	12.29	15.73	5.63
Q Total (cfs)	247.00	Flow (cfs)	72.60	143.79	30.61
Top Width (ft)	17.31	Top Width (ft)	8.20	5.53	3.58
Vel Total (ft/s)	7.34	Avg. Vel. (ft/s)	5.91	9.14	5.44
Max Chl Dpth (ft)	3.22	Hydr. Depth (ft)	1.50	2.84	1.58
Conv. Total (cfs)	1571.4	Conv. (cfs)	461.9	914.8	194.8
Length Wtd. (ft)	38.21	Wetted Per. (ft)	8.64	5.75	4.48
Min Ch El (ft)	255.82	Shear (lb/sq ft)	2.19	4.22	1.94
Alpha	1.16	Stream Power (lb/ft s)	12.96	38.59	10.53
Frctn Loss (ft)	0.94	Cum Volume (acre-ft)	0.02	0.11	0.01
C & E Loss (ft)	0.01	Cum SA (acres)	0.02	0.05	0.02

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

depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.

CROSS SECTION OUTPUT Profile #Q100

E.G. Elev (ft)	260.92	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.20	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	259.72	Reach Len. (ft)	35.73	38.67	40.52
Crit W.S. (ft)	259.72	Flow Area (sq ft)	18.28	19.45	8.24
E.G. Slope (ft/ft)	0.023800	Area (sq ft)	18.28	19.45	8.24
Q Total (cfs)	375.00	Flow (cfs)	123.78	201.06	50.15
Top Width (ft)	19.29	Top Width (ft)	9.59	5.53	4.17
Vel Total (ft/s)	8.16	Avg. Vel. (ft/s)	6.77	10.34	6.09
Max Chl Dpth (ft)	3.90	Hydr. Depth (ft)	1.91	3.52	1.98
Conv. Total (cfs)	2430.7	Conv. (cfs)	802.4	1303.3	325.1
Length Wtd. (ft)	38.13	Wetted Per. (ft)	10.18	5.75	5.38
Min Ch El (ft)	255.82	Shear (lb/sq ft)	2.67	5.03	2.27
Alpha	1.16	Stream Power (lb/ft s)	18.06	51.98	13.84
Frctn Loss (ft)	0.90	Cum Volume (acre-ft)	0.03	0.13	0.02
C & E Loss (ft)	0.02	Cum SA (acres)	0.03	0.05	0.02

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

CROSS SECTION OUTPUT Profile #Q100HC

E.G. Elev (ft)	264.25	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.99	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	262.26	Reach Len. (ft)	35.73	38.67	40.52
Crit W.S. (ft)	262.26	Flow Area (sq ft)	49.29	33.51	21.69
E.G. Slope (ft/ft)	0.020999	Area (sq ft)	49.29	33.51	21.69
Q Total (cfs)	1089.00	Flow (cfs)	450.71	467.52	170.77
Top Width (ft)	26.69	Top Width (ft)	14.74	5.53	6.41
Vel Total (ft/s)	10.42	Avg. Vel. (ft/s)	9.14	13.95	7.87
Max Chl Dpth (ft)	6.44	Hydr. Depth (ft)	3.34	6.06	3.38
Conv. Total (cfs)	7515.0	Conv. (cfs)	3110.2	3226.3	1178.5
Length Wtd. (ft)	37.93	Wetted Per. (ft)	15.93	5.75	8.77
Min Ch El (ft)	255.82	Shear (lb/sq ft)	4.06	7.64	3.24
Alpha	1.18	Stream Power (lb/ft s)	37.09	106.65	25.51
Frctn Loss (ft)	0.78	Cum Volume (acre-ft)	0.09	0.22	0.07
C & E Loss (ft)	0.02	Cum SA (acres)	0.04	0.05	0.03

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

CROSS SECTION

RIVER: Cristianitos
REACH: Upper RS: 365.174*

INPUT
Description:
Station Elevation Data num= 41

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	270.49	7.32	270.14	10.12	269.95	11.12	269.88	15.76	269.47
22	268.47	27.96	267.38	29.3	266.75	31.64	265.51	38.85	261.75
39.58	261.37	39.91	261.2	40.36	260.97	40.75	260.76	49.19	256.64
49.97	256.45	52.58	255.92	52.77	255.87	54.41	255.45	56.95	254.79
57.95	254.53	57.98	254.53	62.64	255.51	64.1	255.95	64.83	256.19
71.43	262.14	73.89	264.31	74.22	264.59	75.6	265.18	76.99	265.77
77.54	266	78.9	266.6	81.78	266.71	84.62	266.83	86.08	266.94
86.37	267.04	87.05	267.22	94.03	268.91	95.22	269.19	98.29	270.03
99.02	270.28								

Manning's n Values num= 4

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.05	54.41	.05	62.64	.05	99.02	.05

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
54.41	62.64	35.73	38.67	40.52	.1	.3

CROSS SECTION OUTPUT Profile #Q50

			Left OB	Channel	Right OB
E.G. Elev (ft)	258.67	Element			
Vel Head (ft)	1.52	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	257.15	Reach Len. (ft)	35.73	38.67	40.52
Crit W.S. (ft)	257.56	Flow Area (sq ft)	5.91	17.62	3.36
E.G. Slope (ft/ft)	0.049277	Area (sq ft)	5.91	17.62	3.36
Q Total (cfs)	247.00	Flow (cfs)	36.60	189.69	20.71
Top Width (ft)	17.74	Top Width (ft)	6.26	8.23	3.25
Vel Total (ft/s)	9.18	Avg. Vel. (ft/s)	6.19	10.77	6.16
Max Chl Dpth (ft)	2.62	Hydr. Depth (ft)	0.95	2.14	1.03
Conv. Total (cfs)	1112.7	Conv. (cfs)	164.9	854.5	93.3
Length Wtd. (ft)	38.45	Wetted Per. (ft)	6.51	8.45	3.72
Min Ch El (ft)	254.53	Shear (lb/sq ft)	2.80	6.41	2.78
Alpha	1.16	Stream Power (lb/ft s)	17.30	69.07	17.12
Frctn Loss (ft)	1.29	Cum Volume (acre-ft)	0.01	0.09	0.01
C & E Loss (ft)	0.05	Cum SA (acres)	0.01	0.05	0.01

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

CROSS SECTION OUTPUT Profile #Q100

			Left OB	Channel	Right OB
E.G. Elev (ft)	259.58	Element			
Vel Head (ft)	1.93	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	257.65	Reach Len. (ft)	35.73	38.67	40.52
Crit W.S. (ft)	258.19	Flow Area (sq ft)	9.30	21.74	5.13
E.G. Slope (ft/ft)	0.048945	Area (sq ft)	9.30	21.74	5.13

Q Total (cfs)	375.00	Flow (cfs)	69.70	268.37	36.94
Top Width (ft)	19.32	Top Width (ft)	7.28	8.23	3.81
Vel Total (ft/s)	10.37	Avg. Vel. (ft/s)	7.49	12.34	7.20
Max Chl Dpth (ft)	3.12	Hydr. Depth (ft)	1.28	2.64	1.35
Conv. Total (cfs)	1695.0	Conv. (cfs)	315.0	1213.0	167.0
Length Wtd. (ft)	38.38	Wetted Per. (ft)	7.65	8.45	4.47
Min Ch El (ft)	254.53	Shear (lb/sq ft)	3.72	7.86	3.51
Alpha	1.16	Stream Power (lb/ft s)	27.84	97.05	25.26
Frctn Loss (ft)	1.26	Cum Volume (acre-ft)	0.02	0.11	0.02
C & E Loss (ft)	0.07	Cum SA (acres)	0.02	0.05	0.02

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

E.G. Elev (ft)	262.99	Element	Left OB	Channel	Right OB
Vel Head (ft)	3.39	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	259.60	Reach Len. (ft)	35.73	38.67	40.52
Crit W.S. (ft)	260.59	Flow Area (sq ft)	27.44	37.82	14.68
E.G. Slope (ft/ft)	0.044721	Area (sq ft)	27.44	37.82	14.68
Q Total (cfs)	1089.00	Flow (cfs)	297.64	645.53	145.83
Top Width (ft)	25.49	Top Width (ft)	11.28	8.23	5.97
Vel Total (ft/s)	13.62	Avg. Vel. (ft/s)	10.85	17.07	9.93
Max Chl Dpth (ft)	5.07	Hydr. Depth (ft)	2.43	4.60	2.46
Conv. Total (cfs)	5149.6	Conv. (cfs)	1407.5	3052.5	689.6
Length Wtd. (ft)	38.22	Wetted Per. (ft)	12.10	8.45	7.39
Min Ch El (ft)	254.53	Shear (lb/sq ft)	6.33	12.50	5.55
Alpha	1.18	Stream Power (lb/ft s)	68.65	213.30	55.12
Frctn Loss (ft)	1.12	Cum Volume (acre-ft)	0.06	0.19	0.05
C & E Loss (ft)	0.14	Cum SA (acres)	0.03	0.05	0.03

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

CROSS SECTION

RIVER: Cristianitos
REACH: Upper RS: 326.500*

INPUT
Description:
Station Elevation Data num= 41

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	270.14	7.32	269.65	10.13	269.35	11.13	269.24	15.77	268.65
22.01	267.53	27.98	266.36	29.32	265.81	31.66	264.56	38.87	260.82

39.61	260.44	39.94	260.27	40.39	260.04	40.78	259.84	49.23	255.69
50.01	255.45	52.61	254.86	52.81	254.81	54.45	254.35	57.17	253.55
58.25	253.24	58.31	253.24	65.37	254.41	66.98	254.87	67.78	255.12
75	260.28	77.7	262.16	78.05	262.4	79.57	262.99	81.09	263.57
81.7	263.8	83.18	264.45	86.34	264.94	89.45	265.46	91.04	265.76
91.36	265.88	92.1	266.11	99.74	268.15	101.05	268.49	104.41	269.6
105.21	269.9								

Manning's n Values num= 4

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.05	54.45	.05	65.37	.05	105.21	.05

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
54.45	65.37	35.73	38.67	40.52	.1	.3

CROSS SECTION OUTPUT Profile #Q50

E.G. Elev (ft)	257.02	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.05	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	255.98	Reach Len. (ft)	35.73	38.67	40.52
Crit W.S. (ft)	256.14	Flow Area (sq ft)	5.07	23.68	3.46
E.G. Slope (ft/ft)	0.031645	Area (sq ft)	5.07	23.68	3.46
Q Total (cfs)	247.00	Flow (cfs)	23.83	206.54	16.63
Top Width (ft)	20.34	Top Width (ft)	5.81	10.92	3.61
Vel Total (ft/s)	7.67	Avg. Vel. (ft/s)	4.70	8.72	4.81
Max Chl Dpth (ft)	2.74	Hydr. Depth (ft)	0.87	2.17	0.96
Conv. Total (cfs)	1388.5	Conv. (cfs)	133.9	1161.1	93.5
Length Wtd. (ft)	38.56	Wetted Per. (ft)	6.05	11.18	3.99
Min Ch El (ft)	253.24	Shear (lb/sq ft)	1.66	4.19	1.71
Alpha	1.14	Stream Power (lb/ft s)	7.78	36.51	8.23
Frctn Loss (ft)	1.50	Cum Volume (acre-ft)	0.01	0.07	0.01
C & E Loss (ft)	0.14	Cum SA (acres)	0.01	0.04	0.01

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

CROSS SECTION OUTPUT Profile #Q100

E.G. Elev (ft)	257.87	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.43	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	256.44	Reach Len. (ft)	35.73	38.67	40.52
Crit W.S. (ft)	256.72	Flow Area (sq ft)	7.94	28.68	5.26
E.G. Slope (ft/ft)	0.034503	Area (sq ft)	7.94	28.68	5.26
Q Total (cfs)	375.00	Flow (cfs)	47.30	296.75	30.95
Top Width (ft)	21.91	Top Width (ft)	6.74	10.92	4.25
Vel Total (ft/s)	8.95	Avg. Vel. (ft/s)	5.96	10.35	5.89
Max Chl Dpth (ft)	3.20	Hydr. Depth (ft)	1.18	2.63	1.24
Conv. Total (cfs)	2018.8	Conv. (cfs)	254.6	1597.6	166.6
Length Wtd. (ft)	38.51	Wetted Per. (ft)	7.09	11.18	4.78
Min Ch El (ft)	253.24	Shear (lb/sq ft)	2.41	5.53	2.37
Alpha	1.15	Stream Power (lb/ft s)	14.38	57.20	13.96
Frctn Loss (ft)	1.57	Cum Volume (acre-ft)	0.01	0.09	0.01
C & E Loss (ft)	0.15	Cum SA (acres)	0.01	0.04	0.01

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 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)	261.24	Element	Left OB	Channel	Right OB
Vel Head (ft)	3.17	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	258.07	Reach Len. (ft)	35.73	38.67	40.52
Crit W.S. (ft)	259.00	Flow Area (sq ft)	21.70	46.55	14.09
E.G. Slope (ft/ft)	0.043160	Area (sq ft)	21.70	46.55	14.09
Q Total (cfs)	1089.00	Flow (cfs)	213.39	744.17	131.44
Top Width (ft)	27.54	Top Width (ft)	10.07	10.92	6.54
Vel Total (ft/s)	13.22	Avg. Vel. (ft/s)	9.83	15.98	9.33
Max Chl Dpth (ft)	4.83	Hydr. Depth (ft)	2.15	4.26	2.15
Conv. Total (cfs)	5241.9	Conv. (cfs)	1027.2	3582.0	632.7
Length Wtd. (ft)	38.38	Wetted Per. (ft)	10.80	11.18	7.59
Min Ch El (ft)	253.24	Shear (lb/sq ft)	5.42	11.22	5.00
Alpha	1.17	Stream Power (lb/ft s)	53.25	179.43	46.65
Frctn Loss (ft)	1.68	Cum Volume (acre-ft)	0.04	0.15	0.04
C & E Loss (ft)	0.07	Cum SA (acres)	0.02	0.04	0.02

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

CROSS SECTION

RIVER: Cristianitos
REACH: Upper RS: 287.827*

INPUT
Description:
Station Elevation Data num= 41

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	269.8	7.33	269.15	10.14	268.75	11.13	268.59	15.78	267.84
22.03	266.59	28	265.34	29.34	264.87	31.69	263.6	38.9	259.88
39.63	259.51	39.96	259.34	40.41	259.11	40.81	258.91	49.26	254.74
50.04	254.45	52.65	253.8	52.85	253.75	54.48	253.24	57.4	252.32
58.55	251.96	58.64	251.96	68.11	253.31	69.85	253.79	70.72	254.06
78.57	258.41	81.5	260	81.89	260.21	83.54	260.79	85.19	261.38
85.85	261.61	87.46	262.3	90.89	263.17	94.27	264.09	96.01	264.58
96.35	264.72	97.15	265.01	105.46	267.39	106.88	267.8	110.53	269.16
111.4	269.51								

Manning's n Values num= 4

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.05	54.48	.05	68.11	.05	111.4	.05

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
54.48	68.11	35.73	38.67	40.52	.1 .3

CROSS SECTION OUTPUT Profile #Q50

E.G. Elev (ft)	255.64	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.16	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	254.48	Reach Len. (ft)	35.73	38.67	40.52
Crit W.S. (ft)	254.74	Flow Area (sq ft)	2.66	25.31	2.25
E.G. Slope (ft/ft)	0.040727	Area (sq ft)	2.66	25.31	2.25
Q Total (cfs)	247.00	Flow (cfs)	10.95	226.14	9.91

Top Width (ft)	21.50	Top Width (ft)	4.51	13.63	3.36
Vel Total (ft/s)	8.17	Avg. Vel. (ft/s)	4.12	8.93	4.40
Max Chl Dpth (ft)	2.52	Hydr. Depth (ft)	0.59	1.86	0.67
Conv. Total (cfs)	1223.9	Conv. (cfs)	54.3	1120.6	49.1
Length Wtd. (ft)	38.63	Wetted Per. (ft)	4.68	13.92	3.58
Min Ch El (ft)	251.96	Shear (lb/sq ft)	1.45	4.62	1.60
Alpha	1.12	Stream Power (lb/ft s)	5.95	41.30	7.04
Frctn Loss (ft)	1.38	Cum Volume (acre-ft)	0.00	0.05	0.00
C & E Loss (ft)	0.01	Cum SA (acres)	0.01	0.03	0.01

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

CROSS SECTION OUTPUT Profile #Q100

E.G. Elev (ft)	256.43	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.49	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	254.95	Reach Len. (ft)	35.73	38.67	40.52
Crit W.S. (ft)	255.31	Flow Area (sq ft)	5.05	31.69	4.02
E.G. Slope (ft/ft)	0.039973	Area (sq ft)	5.05	31.69	4.02
Q Total (cfs)	375.00	Flow (cfs)	27.09	325.88	22.04
Top Width (ft)	23.47	Top Width (ft)	5.64	13.63	4.21
Vel Total (ft/s)	9.20	Avg. Vel. (ft/s)	5.36	10.28	5.48
Max Chl Dpth (ft)	2.99	Hydr. Depth (ft)	0.90	2.33	0.96
Conv. Total (cfs)	1875.6	Conv. (cfs)	135.5	1629.9	110.2
Length Wtd. (ft)	38.59	Wetted Per. (ft)	5.90	13.92	4.54
Min Ch El (ft)	251.96	Shear (lb/sq ft)	2.14	5.68	2.21
Alpha	1.13	Stream Power (lb/ft s)	11.46	58.41	12.11
Frctn Loss (ft)	1.43	Cum Volume (acre-ft)	0.01	0.06	0.01
C & E Loss (ft)	0.01	Cum SA (acres)	0.01	0.03	0.01

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

CROSS SECTION OUTPUT Profile #Q100HC

E.G. Elev (ft)	259.55	Element	Left OB	Channel	Right OB
Vel Head (ft)	2.93	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	256.61	Reach Len. (ft)	35.73	38.67	40.52
Crit W.S. (ft)	257.46	Flow Area (sq ft)	17.28	54.44	13.56
E.G. Slope (ft/ft)	0.041494	Area (sq ft)	17.28	54.44	13.56
Q Total (cfs)	1089.00	Flow (cfs)	154.09	818.10	116.82
Top Width (ft)	29.87	Top Width (ft)	9.02	13.63	7.22
Vel Total (ft/s)	12.77	Avg. Vel. (ft/s)	8.92	15.03	8.62
Max Chl Dpth (ft)	4.65	Hydr. Depth (ft)	1.92	3.99	1.88
Conv. Total (cfs)	5346.1	Conv. (cfs)	756.4	4016.2	573.5
Length Wtd. (ft)	38.50	Wetted Per. (ft)	9.67	13.92	7.99
Min Ch El (ft)	251.96	Shear (lb/sq ft)	4.63	10.13	4.40
Alpha	1.16	Stream Power (lb/ft s)	41.27	152.22	37.89
Frctn Loss (ft)	1.62	Cum Volume (acre-ft)	0.02	0.11	0.02
C & E Loss (ft)	0.07	Cum SA (acres)	0.01	0.03	0.02

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

CROSS SECTION

RIVER: Cristianitos
REACH: Upper RS: 249.153*

INPUT
Description:
Station Elevation Data num= 42

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	269.45	7.33	268.66	10.14	268.14	11.14	267.95	15.79	267.02
22.04	265.66	28.02	264.32	29.36	263.92	31.71	262.65	38.93	258.95
39.66	258.58	39.99	258.41	40.44	258.18	40.83	257.98	49.3	253.79
50.08	253.45	52.69	252.74	52.88	252.68	54.52	252.14	57.62	251.08
58.85	250.67	58.97	250.67	70.84	252.21	72.73	252.7	73.67	252.99
82.14	256.54	85.31	257.85	85.72	258.02	87.5	258.6	89.28	259.18
90	259.41	91.74	260.14	95.45	261.41	99.09	262.72	100.97	263.4
100.98	263.41	101.34	263.55	102.21	263.9	111.17	266.63	112.71	267.1
116.65	268.73	117.59	269.13						

Manning's n Values num= 4

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.05	54.52	.05	70.84	.05	117.59	.05

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
54.52	70.84	35.73 38.67	40.52	.1	.3

CROSS SECTION OUTPUT Profile #Q50

			Left OB	Channel	Right OB
E.G. Elev (ft)	254.16	Element			
Vel Head (ft)	0.93	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	253.24	Reach Len. (ft)	35.73	38.67	40.52
Crit W.S. (ft)	253.35	Flow Area (sq ft)	1.91	29.56	1.91
E.G. Slope (ft/ft)	0.032945	Area (sq ft)	1.91	29.56	1.91
Q Total (cfs)	247.00	Flow (cfs)	6.47	233.72	6.81
Top Width (ft)	23.39	Top Width (ft)	3.65	16.32	3.42
Vel Total (ft/s)	7.40	Avg. Vel. (ft/s)	3.40	7.91	3.56
Max Chl Dpth (ft)	2.57	Hydr. Depth (ft)	0.52	1.81	0.56
Conv. Total (cfs)	1360.8	Conv. (cfs)	35.6	1287.6	37.5
Length Wtd. (ft)	38.65	Wetted Per. (ft)	3.81	16.66	3.57
Min Ch El (ft)	250.67	Shear (lb/sq ft)	1.03	3.65	1.10
Alpha	1.09	Stream Power (lb/ft s)	3.49	28.85	3.92
Frctn Loss (ft)	1.41	Cum Volume (acre-ft)	0.00	0.03	0.00
C & E Loss (ft)	0.07	Cum SA (acres)	0.00	0.02	0.00

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

CROSS SECTION OUTPUT Profile #Q100

			Left OB	Channel	Right OB
E.G. Elev (ft)	254.93	Element			
Vel Head (ft)	1.27	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	253.66	Reach Len. (ft)	35.73	38.67	40.52
Crit W.S. (ft)	253.91	Flow Area (sq ft)	3.73	36.41	3.56
E.G. Slope (ft/ft)	0.035154	Area (sq ft)	3.73	36.41	3.56
Q Total (cfs)	375.00	Flow (cfs)	16.79	341.65	16.56
Top Width (ft)	25.65	Top Width (ft)	4.91	16.32	4.42
Vel Total (ft/s)	8.58	Avg. Vel. (ft/s)	4.50	9.38	4.66
Max Chl Dpth (ft)	2.99	Hydr. Depth (ft)	0.76	2.23	0.81

Conv. Total (cfs)	2000.1	Conv. (cfs)	89.5	1822.2	88.3
Length Wtd. (ft)	38.64	Wetted Per. (ft)	5.14	16.66	4.66
Min Ch El (ft)	250.67	Shear (lb/sq ft)	1.59	4.80	1.68
Alpha	1.11	Stream Power (lb/ft s)	7.16	45.00	7.81
Frctn Loss (ft)	1.45	Cum Volume (acre-ft)	0.00	0.03	0.00
C & E Loss (ft)	0.06	Cum SA (acres)	0.00	0.02	0.00

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

CROSS SECTION OUTPUT Profile #Q100HC

E.G. Elev (ft)	257.90	Element	Left OB	Channel	Right OB
Vel Head (ft)	2.71	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	255.19	Reach Len. (ft)	35.73	38.67	40.52
Crit W.S. (ft)	255.96	Flow Area (sq ft)	13.73	61.52	13.18
E.G. Slope (ft/ft)	0.040049	Area (sq ft)	13.73	61.52	13.18
Q Total (cfs)	1089.00	Flow (cfs)	111.17	873.98	103.85
Top Width (ft)	32.46	Top Width (ft)	8.06	16.32	8.09
Vel Total (ft/s)	12.32	Avg. Vel. (ft/s)	8.10	14.21	7.88
Max Chl Dpth (ft)	4.52	Hydr. Depth (ft)	1.70	3.77	1.63
Conv. Total (cfs)	5441.7	Conv. (cfs)	555.5	4367.3	518.9
Length Wtd. (ft)	38.58	Wetted Per. (ft)	8.65	16.66	8.64
Min Ch El (ft)	250.67	Shear (lb/sq ft)	3.97	9.23	3.81
Alpha	1.15	Stream Power (lb/ft s)	32.14	131.15	30.06
Frctn Loss (ft)	1.57	Cum Volume (acre-ft)	0.01	0.06	0.01
C & E Loss (ft)	0.07	Cum SA (acres)	0.01	0.02	0.01

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: Cristianitos
REACH: Upper RS: 210.480

INPUT
Description:
Station Elevation Data num= 22

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	269.1	7.34	268.16	10.15	267.54	29.38	262.98	31.73	261.69
40.02	257.48	40.47	257.25	50.11	252.45	52.92	251.62	54.56	251.03
57.85	249.84	59.15	249.38	59.3	249.38	73.58	251.11	75.6	251.62
91.47	256.41	94.15	257.22	100	259.64	105.94	262.23	107.26	262.79
118.54	266.4	123.78	268.75						

Manning's n Values num= 1

Sta	n Val
0	.05

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
54.56	73.58	0 0	0	.1	.3

CROSS SECTION OUTPUT Profile #Q50

E.G. Elev (ft)	252.78	Element	Left OB	Channel	Right OB

Vel Head (ft)	0.95	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	251.83	Reach Len. (ft)			
Crit W.S. (ft)	251.98	Flow Area (sq ft)	0.91	30.53	1.02
E.G. Slope (ft/ft)	0.038673	Area (sq ft)	0.91	30.53	1.02
Q Total (cfs)	247.00	Flow (cfs)	2.71	241.26	3.02
Top Width (ft)	24.10	Top Width (ft)	2.36	19.02	2.72
Vel Total (ft/s)	7.61	Avg. Vel. (ft/s)	2.98	7.90	2.97
Max Chl Dpth (ft)	2.45	Hydr. Depth (ft)	0.39	1.60	0.37
Conv. Total (cfs)	1256.0	Conv. (cfs)	13.8	1226.8	15.4
Length Wtd. (ft)		Wetted Per. (ft)	2.49	19.41	2.82
Min Ch El (ft)	249.38	Shear (lb/sq ft)	0.88	3.80	0.87
Alpha	1.06	Stream Power (lb/ft s)	2.63	30.01	2.59
Frctn Loss (ft)	1.38	Cum Volume (acre-ft)			
C & E Loss (ft)	0.00	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

E.G. Elev (ft)	253.52	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.24	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	252.28	Reach Len. (ft)			
Crit W.S. (ft)	252.52	Flow Area (sq ft)	2.29	38.97	2.55
E.G. Slope (ft/ft)	0.037267	Area (sq ft)	2.29	38.97	2.55
Q Total (cfs)	375.00	Flow (cfs)	8.97	355.76	10.27
Top Width (ft)	27.08	Top Width (ft)	3.86	19.02	4.19
Vel Total (ft/s)	8.56	Avg. Vel. (ft/s)	3.92	9.13	4.02
Max Chl Dpth (ft)	2.90	Hydr. Depth (ft)	0.59	2.05	0.61
Conv. Total (cfs)	1942.5	Conv. (cfs)	46.5	1842.9	53.2
Length Wtd. (ft)		Wetted Per. (ft)	4.06	19.41	4.36
Min Ch El (ft)	249.38	Shear (lb/sq ft)	1.31	4.67	1.36
Alpha	1.09	Stream Power (lb/ft s)	5.14	42.64	5.49
Frctn Loss (ft)	1.40	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 #Q100HC

E.G. Elev (ft)	256.32	Element	Left OB	Channel	Right OB
Vel Head (ft)	2.52	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	253.80	Reach Len. (ft)			
Crit W.S. (ft)	254.49	Flow Area (sq ft)	10.84	67.92	12.78
E.G. Slope (ft/ft)	0.038983	Area (sq ft)	10.84	67.92	12.78
Q Total (cfs)	1089.00	Flow (cfs)	79.89	918.52	90.59
Top Width (ft)	35.42	Top Width (ft)	7.16	19.02	9.24
Vel Total (ft/s)	11.90	Avg. Vel. (ft/s)	7.37	13.52	7.09
Max Chl Dpth (ft)	4.42	Hydr. Depth (ft)	1.51	3.57	1.38
Conv. Total (cfs)	5515.6	Conv. (cfs)	404.6	4652.1	458.8
Length Wtd. (ft)		Wetted Per. (ft)	7.70	19.41	9.62
Min Ch El (ft)	249.38	Shear (lb/sq ft)	3.43	8.52	3.23
Alpha	1.15	Stream Power (lb/ft s)	25.26	115.16	22.91
Frctn Loss (ft)	1.52	Cum Volume (acre-ft)			
C & E Loss (ft)	0.06	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.

SUMMARY OF MANNING'S N VALUES

River:Cristianitos

Reach	River Sta.	n1	n2	n3	n4	n5	n6	n7	n8	n9	n10
Upper	5602.033	.035	.05	.02	.05	.035					
Upper	5384.793	.07	.05	.02	.05						
Upper	5168.714	.035	.05	.02	.05						
Upper	4976.143	.035	.05	.02	.05						
Upper	4775.451	.035	.05	.02	.05						
Upper	4558.571	.035	.05	.02	.05						
Upper	4339.721	.035	.05	.02	.05						
Upper	4132.011	.035	.05	.02	.05	.035					
Upper	3880.409	.035	.05	.02	.05						
Upper	3679.763	.035	.05	.02							
Upper	3469.412	.035	.05	.035	.05	.02	.05				
Upper	3296.568	.035	.05								
Upper	3085.474	.02	.05								
Upper	2851.001	.05	.035	.07							
Upper	2811.46*	.05	.035	.04	.04	.07	.07	.07			
Upper	2771.92*	.05	.035	.045	.045	.07	.07	.07			
Upper	2732.38*	.05	.035	.05	.05	.07	.07	.07			
Upper	2692.84*	.05	.035	.055	.055	.07	.07	.07			
Upper	2653.30*	.05	.035	.06	.06	.07	.07	.07			
Upper	2613.76*	.05	.035	.065	.065	.07	.07	.07			
Upper	2574.222	.05	.035	.07							
Upper	2532.87*	.047	.038	.044	.026	.035	.063	.035	.042	.07	.07
Upper	2491.53*	.044	.041	.038	.032	.035	.056	.035	.049	.07	.07
Upper	2450.18*	.041	.044	.032	.038	.035	.049	.035	.056	.07	.07
Upper	2408.84*	.038	.047	.026	.044	.035	.042	.035	.063	.07	.07
Upper	2367.498	.035	.05	.02	.05	.035	.07				
Upper	2092.970	.05	.02	.05	.035	.05					
Upper	1888.931	.05	.02	.05	.035						
Upper	1687.641	.05	.02	.05	.035						
Upper	1498.554	.05	.02	.05	.035						
Upper	1287.849	.035	.05	.02	.05	.035					
Upper	1067.404	.02	.05	.035							
Upper	842.967	.05									
Upper	805.097*	.05	.047	.047	.035	.047					
Upper	767.227*	.05	.045	.045	.035	.045					
Upper	729.357*	.05	.043	.043	.035	.043					
Upper	691.487*	.05	.04	.04	.035	.04					
Upper	653.617*	.05	.038	.038	.035	.038					
Upper	615.747	.05	.035								
Upper	573.367*	.05	.038	.038	.038	.038					
Upper	530.987*	.05	.041	.041	.041	.041					
Upper	488.607*	.05	.044	.044	.044	.044					
Upper	446.227*	.05	.047	.047	.047	.047					
Upper	403.848	.05									
Upper	365.174*	.05	.05	.05	.05						
Upper	326.500*	.05	.05	.05	.05						
Upper	287.827*	.05	.05	.05	.05						

Upper	249.153*	.05	.05	.05	.05
Upper	210.480	.05			

SUMMARY OF REACH LENGTHS

River: Cristianitos

Reach	River Sta.	Left	Channel	Right
Upper	5602.033	261.72	217.24	135.38
Upper	5384.793	205.91	215.49	222.8
Upper	5168.714	149.85	194.03	206.85
Upper	4976.143	251.57	198.55	152.18
Upper	4775.451	217.54	216	209.75
Upper	4558.571	218.41	219.16	218.8
Upper	4339.721	190.38	207.42	206.55
Upper	4132.011	132.25	251.37	309.34
Upper	3880.409	247.42	202.85	208.23
Upper	3679.763	239.31	207.71	163.34
Upper	3469.412	262.64	172.27	112.8
Upper	3296.568	197.4	211.35	205.37
Upper	3085.474	136.96	234.47	286.66
Upper	2851.001	31.68	39.54	25.34
Upper	2811.46*	31.68	39.54	25.34
Upper	2771.92*	31.68	39.54	25.34
Upper	2732.38*	31.68	39.54	25.34
Upper	2692.84*	31.68	39.54	25.34
Upper	2653.30*	31.68	39.54	25.34
Upper	2613.76*	31.68	39.54	25.34
Upper	2574.222	33.68	41.34	37.89
Upper	2532.87*	33.68	41.34	37.89
Upper	2491.53*	33.68	41.34	37.89
Upper	2450.18*	33.68	41.34	37.89
Upper	2408.84*	33.68	41.34	37.89
Upper	2367.498	247.74	274.53	224.08
Upper	2092.970	205.07	204.04	201.6
Upper	1888.931	204.52	201.29	197.93
Upper	1687.641	183.83	189.09	195.8
Upper	1498.554	214.87	210.71	206.13
Upper	1287.849	250.54	220.45	190.34
Upper	1067.404	214.21	224.44	225.13
Upper	842.967	34.32	37.87	38.81
Upper	805.097*	34.32	37.87	38.81
Upper	767.227*	34.32	37.87	38.81
Upper	729.357*	34.32	37.87	38.81
Upper	691.487*	34.32	37.87	38.81
Upper	653.617*	34.32	37.87	38.81
Upper	615.747	50.75	42.38	33.15
Upper	573.367*	50.75	42.38	33.15
Upper	530.987*	50.75	42.38	33.15
Upper	488.607*	50.75	42.38	33.15
Upper	446.227*	50.75	42.38	33.15
Upper	403.848	35.73	38.67	40.52
Upper	365.174*	35.73	38.67	40.52
Upper	326.500*	35.73	38.67	40.52
Upper	287.827*	35.73	38.67	40.52

Upper	249.153*	35.73	38.67	40.52
Upper	210.480	0	0	0

SUMMARY OF CONTRACTION AND EXPANSION COEFFICIENTS
River: Cristianitos

Reach	River Sta.	Contr.	Expan.
Upper	5602.033	.1	.3
Upper	5384.793	.1	.3
Upper	5168.714	.1	.3
Upper	4976.143	.1	.3
Upper	4775.451	.1	.3
Upper	4558.571	.1	.3
Upper	4339.721	.1	.3
Upper	4132.011	.1	.3
Upper	3880.409	.1	.3
Upper	3679.763	.1	.3
Upper	3469.412	.1	.3
Upper	3296.568	.1	.3
Upper	3085.474	.1	.3
Upper	2851.001	.1	.3
Upper	2811.46*	.1	.3
Upper	2771.92*	.1	.3
Upper	2732.38*	.1	.3
Upper	2692.84*	.1	.3
Upper	2653.30*	.1	.3
Upper	2613.76*	.1	.3
Upper	2574.222	.1	.3
Upper	2532.87*	.1	.3
Upper	2491.53*	.1	.3
Upper	2450.18*	.1	.3
Upper	2408.84*	.1	.3
Upper	2367.498	.1	.3
Upper	2092.970	.1	.3
Upper	1888.931	.1	.3
Upper	1687.641	.1	.3
Upper	1498.554	.1	.3
Upper	1287.849	.1	.3
Upper	1067.404	.1	.3
Upper	842.967	.1	.3
Upper	805.097*	.1	.3
Upper	767.227*	.1	.3
Upper	729.357*	.1	.3
Upper	691.487*	.1	.3
Upper	653.617*	.1	.3
Upper	615.747	.1	.3
Upper	573.367*	.1	.3
Upper	530.987*	.1	.3
Upper	488.607*	.1	.3
Upper	446.227*	.1	.3
Upper	403.848	.1	.3
Upper	365.174*	.1	.3
Upper	326.500*	.1	.3
Upper	287.827*	.1	.3

Upper	249.153*	.1	.3
Upper	210.480	.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
Upper	5602.033	Q50	247.00	334.74	335.80	335.80	336.20	0.028941	5.15	50.72	64.78	0.89
Upper	5602.033	Q100	375.00	334.74	336.07	336.07	336.58	0.026329	5.73	68.54	68.25	0.89
Upper	5602.033	Q100HC	1089.00	334.74	337.15	337.15	338.08	0.021056	7.68	149.85	82.27	0.88
Upper	5384.793	Q50	247.00	328.19	331.87	330.77	332.08	0.004664	4.42	71.16	33.66	0.43
Upper	5384.793	Q100	375.00	328.19	332.54	331.30	332.82	0.004817	5.09	95.43	38.09	0.45
Upper	5384.793	Q100HC	1089.00	328.19	335.01	333.16	335.47	0.004807	7.02	213.69	59.24	0.49
Upper	5168.714	Q50	247.00	327.19	329.28	329.28	330.05	0.025603	7.60	37.36	24.68	0.94
Upper	5168.714	Q100	375.00	327.19	329.80	329.80	330.76	0.024438	8.63	50.55	26.73	0.95
Upper	5168.714	Q100HC	1089.00	327.19	331.83	331.83	333.47	0.020598	11.71	113.10	34.86	0.96
Upper	4976.143	Q50	247.00	321.34	324.32	323.83	324.81	0.012088	5.79	46.11	24.12	0.66
Upper	4976.143	Q100	375.00	321.34	324.83	324.41	325.54	0.013779	7.03	58.88	26.36	0.73
Upper	4976.143	Q100HC	1089.00	321.34	325.96	326.59	328.51	0.033707	13.68	91.43	31.52	1.20
Upper	4775.451	Q50	247.00	319.30	321.03	321.03	321.47	0.025550	6.21	50.86	56.30	0.89
Upper	4775.451	Q100	375.00	319.30	321.33	321.33	321.88	0.025639	7.02	68.63	62.20	0.92
Upper	4775.451	Q100HC	1089.00	319.30	322.44	322.44	323.38	0.023907	9.36	148.72	78.60	0.97
Upper	4558.571	Q50	247.00	314.56	317.59	316.36	317.74	0.003284	3.41	83.27	39.07	0.36
Upper	4558.571	Q100	375.00	314.56	318.22	316.80	318.42	0.003510	4.03	108.85	42.75	0.38
Upper	4558.571	Q100HC	1089.00	314.56	320.42	318.51	320.87	0.004251	6.15	217.55	56.16	0.46
Upper	4339.721	Q50	247.00	313.27	315.47	315.47	316.14	0.024996	7.23	40.53	30.64	0.92
Upper	4339.721	Q100	375.00	313.27	315.92	315.92	316.75	0.024123	8.18	55.12	33.88	0.94
Upper	4339.721	Q100HC	1089.00	313.27	317.67	317.67	319.02	0.020510	10.90	124.86	45.41	0.95
Upper	4132.011	Q50	247.00	308.24	311.36	310.62	311.73	0.008015	5.16	54.07	26.58	0.55
Upper	4132.011	Q100	375.00	308.24	311.92	311.18	312.44	0.009006	6.20	69.83	29.40	0.60
Upper	4132.011	Q100HC	1089.00	308.24	313.76	313.31	315.02	0.013125	10.07	132.24	38.61	0.78
Upper	3880.409	Q50	247.00	305.72	307.91	307.91	308.49	0.024249	6.73	44.28	38.75	0.89
Upper	3880.409	Q100	375.00	305.72	308.31	308.31	309.01	0.023472	7.59	60.68	43.51	0.91
Upper	3880.409	Q100HC	1089.00	305.72	309.78	309.78	310.96	0.021596	10.28	134.42	57.50	0.95
Upper	3679.763	Q50	247.00	300.98	305.39	303.32	305.49	0.001452	2.70	105.00	40.34	0.25
Upper	3679.763	Q100	375.00	300.98	306.07	303.84	306.21	0.001738	3.30	133.55	44.67	0.28
Upper	3679.763	Q100HC	1089.00	300.98	308.41	305.78	308.76	0.002626	5.39	257.63	65.75	0.37
Upper	3469.412	Q50	247.00	301.86	304.86		305.02	0.003905	3.31	79.94	43.42	0.38
Upper	3469.412	Q100	375.00	301.86	305.48		305.69	0.003825	3.81	108.87	50.06	0.39
Upper	3469.412	Q100HC	1089.00	301.86	307.81		308.15	0.003290	5.18	255.86	76.13	0.39
Upper	3296.568	Q50	247.00	300.85	302.75	302.75	303.50	0.028811	7.69	36.93	24.99	0.99
Upper	3296.568	Q100	375.00	300.85	303.26	303.26	304.20	0.026789	8.71	50.39	27.48	0.99
Upper	3296.568	Q100HC	1089.00	300.85	305.24	305.24	306.83	0.022092	11.80	114.02	36.87	0.99
Upper	3085.474	Q50	247.00	295.44	298.32	297.45	298.58	0.006341	4.51	63.67	32.13	0.49
Upper	3085.474	Q100	375.00	295.44	298.90	297.94	299.25	0.006882	5.36	82.99	35.43	0.53

Upper	3085.474	Q100HC	1089.00	295.44	300.54	299.83	301.49	0.011319	9.04	149.15	44.92	0.72
Upper	2851.001	Q50	247.00	293.97	295.41	295.41	295.83	0.028538	5.84	50.93	125.46	0.92
Upper	2851.001	Q100	375.00	293.97	295.64	295.64	296.22	0.032149	6.96	65.72	145.22	1.00
Upper	2851.001	Q100HC	1089.00	293.97	296.76	296.76	297.69	0.025176	8.94	145.95	250.26	0.97
Upper	2811.46*	Q50	247.00	292.08	293.22	293.57	294.38	0.051561	9.48	32.73	50.07	1.69
Upper	2811.46*	Q100	375.00	292.08	293.48	293.88	294.80	0.044671	10.36	46.50	53.73	1.64
Upper	2811.46*	Q100HC	1089.00	292.08	294.49	295.35	296.57	0.035479	13.71	107.31	68.09	1.61
Upper	2771.92*	Q50	247.00	290.19	291.38	291.74	292.54	0.047657	9.50	33.45	48.66	1.64
Upper	2771.92*	Q100	375.00	290.19	291.61	292.06	293.09	0.048741	10.97	44.98	51.86	1.72
Upper	2771.92*	Q100HC	1089.00	290.19	292.54	293.32	295.11	0.044933	15.23	97.97	61.71	1.81
Upper	2732.38*	Q50	247.00	288.30	289.50	289.89	290.73	0.048780	9.80	32.80	45.60	1.67
Upper	2732.38*	Q100	375.00	288.30	289.75	290.21	291.29	0.048345	11.22	44.92	50.27	1.72
Upper	2732.38*	Q100HC	1089.00	288.30	290.68	291.53	293.46	0.047687	15.91	95.98	59.37	1.87
Upper	2692.84*	Q50	247.00	286.40	287.63	288.04	288.91	0.048612	10.01	32.40	42.70	1.68
Upper	2692.84*	Q100	375.00	286.40	287.90	288.38	289.50	0.048163	11.49	44.73	48.91	1.73
Upper	2692.84*	Q100HC	1089.00	286.40	288.85	289.73	291.74	0.048214	16.34	95.74	58.12	1.89
Upper	2653.30*	Q50	247.00	284.51	285.76	286.19	287.09	0.048551	10.23	32.22	41.42	1.69
Upper	2653.30*	Q100	375.00	284.51	286.03	286.55	287.71	0.048515	11.79	44.35	47.40	1.75
Upper	2653.30*	Q100HC	1089.00	284.51	287.01	287.94	290.00	0.048634	16.74	95.55	57.11	1.91
Upper	2613.76*	Q50	247.00	282.62	283.90	284.34	285.27	0.048533	10.47	32.05	40.25	1.69
Upper	2613.76*	Q100	375.00	282.62	284.18	284.71	285.90	0.048706	12.06	44.06	45.87	1.76
Upper	2613.76*	Q100HC	1089.00	282.62	285.17	286.14	288.26	0.049064	17.14	95.36	56.25	1.93
Upper	2574.222	Q50	247.00	280.73	281.99	282.45	283.41	0.051296	10.75	30.15	38.26	1.74
Upper	2574.222	Q100	375.00	280.73	282.26	282.80	284.06	0.051743	12.38	41.24	43.83	1.81
Upper	2574.222	Q100HC	1089.00	280.73	283.22	284.22	286.44	0.052269	17.45	88.48	54.14	1.98
Upper	2532.87*	Q50	247.00	279.63	281.26	281.43	282.08	0.018752	7.71	36.46	33.60	1.10
Upper	2532.87*	Q100	375.00	279.63	281.60	281.86	282.68	0.019209	8.93	48.62	37.74	1.15
Upper	2532.87*	Q100HC	1089.00	279.63	282.78	283.39	284.93	0.020647	12.83	100.43	48.90	1.29
Upper	2491.53*	Q50	247.00	278.52	280.15	280.43	281.20	0.025477	8.84	32.35	29.10	1.28
Upper	2491.53*	Q100	375.00	278.52	280.55	280.89	281.83	0.023193	9.91	44.95	32.78	1.27
Upper	2491.53*	Q100HC	1089.00	278.52	282.03	282.59	284.16	0.019559	13.36	103.14	45.07	1.28
Upper	2450.18*	Q50	247.00	277.42	279.13	279.39	280.19	0.024634	8.90	32.36	27.45	1.26
Upper	2450.18*	Q100	375.00	277.42	279.53	279.88	280.89	0.023881	10.21	43.94	30.44	1.29
Upper	2450.18*	Q100HC	1089.00	277.42	281.13	281.74	283.39	0.019627	13.82	102.25	42.31	1.29
Upper	2408.84*	Q50	247.00	276.31	278.07	278.35	279.18	0.025023	9.03	31.81	26.26	1.27
Upper	2408.84*	Q100	375.00	276.31	278.47	278.85	279.91	0.024493	10.42	42.96	28.89	1.31
Upper	2408.84*	Q100HC	1089.00	276.31	280.10	280.80	282.57	0.020739	14.33	98.48	39.50	1.33
Upper	2367.498	Q50	247.00	275.21	278.00	277.26	278.30	0.007397	4.79	59.66	31.24	0.53
Upper	2367.498	Q100	375.00	275.21	278.62	277.76	279.01	0.007463	5.54	79.81	34.76	0.55
Upper	2367.498	Q100HC	1089.00	275.21	280.69	279.66	281.48	0.008518	8.27	164.73	47.56	0.64
Upper	2092.970	Q50	247.00	274.17	277.16		277.26	0.002207	2.73	101.52	48.25	0.29
Upper	2092.970	Q100	375.00	274.17	277.73		277.87	0.002478	3.28	130.35	52.56	0.32
Upper	2092.970	Q100HC	1089.00	274.17	279.60		279.97	0.003616	5.35	238.73	62.47	0.41
Upper	1888.931	Q50	247.00	273.44	275.58	275.58	276.16	0.023957	6.96	44.84	39.88	0.90

Upper	1888.931	Q100	375.00	273.44	275.99	275.99	276.68	0.022844	7.77	62.84	47.13	0.91
Upper	1888.931	Q100HC	1089.00	273.44	277.37	277.37	278.43	0.020627	10.12	141.88	63.07	0.93
Upper	1687.641	Q50	247.00	268.12	269.64	269.46	269.91	0.016761	4.75	62.27	63.11	0.71
Upper	1687.641	Q100	375.00	268.12	270.23	269.72	270.46	0.008729	4.35	101.68	69.41	0.55
Upper	1687.641	Q100HC	1089.00	268.12	272.92	270.80	273.11	0.002377	4.03	317.42	90.29	0.33
Upper	1498.554	Q50	247.00	262.57	267.20		267.74	0.008190	6.34	45.64	16.86	0.55
Upper	1498.554	Q100	375.00	262.57	268.02		268.76	0.008928	7.49	60.61	19.29	0.60
Upper	1498.554	Q100HC	1089.00	262.57	271.12		272.25	0.008662	10.22	153.02	42.93	0.64
Upper	1287.849	Q50	247.00	262.33	265.60	264.75	266.02	0.007808	5.44	50.64	21.95	0.55
Upper	1287.849	Q100	375.00	262.33	266.18	265.39	266.80	0.009372	6.68	63.91	24.10	0.62
Upper	1287.849	Q100HC	1089.00	262.33	267.88	267.88	269.67	0.017438	11.80	113.03	33.44	0.90
Upper	1067.404	Q50	247.00	261.19	262.62	262.62	263.12	0.027141	6.06	46.55	46.52	0.91
Upper	1067.404	Q100	375.00	261.19	262.95	262.95	263.58	0.026463	6.90	62.38	49.39	0.93
Upper	1067.404	Q100HC	1089.00	261.19	265.12	264.25	265.70	0.008859	6.89	185.81	63.88	0.62
Upper	842.967	Q50	247.00	254.89	260.31	257.80	260.40	0.001114	2.70	108.81	32.79	0.22
Upper	842.967	Q100	375.00	254.89	261.24	258.34	261.36	0.001248	3.22	140.59	35.94	0.24
Upper	842.967	Q100HC	1089.00	254.89	264.59		264.88	0.001710	5.18	295.30	66.21	0.31
Upper	805.097*	Q50	247.00	254.90	260.31		260.36	0.000518	1.98	142.96	40.48	0.16
Upper	805.097*	Q100	375.00	254.90	261.24		261.32	0.000596	2.40	182.14	43.72	0.18
Upper	805.097*	Q100HC	1089.00	254.90	264.62		264.80	0.000830	3.88	363.28	69.10	0.23
Upper	767.227*	Q50	247.00	254.91	260.31		260.34	0.000294	1.55	177.03	48.33	0.13
Upper	767.227*	Q100	375.00	254.91	261.24		261.29	0.000342	1.89	223.71	51.72	0.14
Upper	767.227*	Q100HC	1089.00	254.91	264.64		264.76	0.000482	3.10	431.98	74.19	0.18
Upper	729.357*	Q50	247.00	254.93	260.31		260.33	0.000183	1.28	211.01	56.37	0.11
Upper	729.357*	Q100	375.00	254.93	261.24		261.28	0.000215	1.57	265.40	60.02	0.12
Upper	729.357*	Q100HC	1089.00	254.93	264.65		264.74	0.000306	2.58	502.76	81.83	0.15
Upper	691.487*	Q50	247.00	254.94	260.31		260.33	0.000116	1.09	244.96	64.81	0.09
Upper	691.487*	Q100	375.00	254.94	261.24		261.27	0.000136	1.34	307.55	69.00	0.10
Upper	691.487*	Q100HC	1089.00	254.94	264.65		264.72	0.000193	2.20	578.05	90.54	0.13
Upper	653.617*	Q50	247.00	254.95	260.31		260.32	0.000079	0.94	280.09	74.21	0.08
Upper	653.617*	Q100	375.00	254.95	261.24		261.26	0.000093	1.16	351.93	79.43	0.09
Upper	653.617*	Q100HC	1089.00	254.95	264.66		264.71	0.000130	1.90	657.85	98.36	0.11
Upper	615.747	Q50	247.00	254.96	260.31		260.32	0.000107	0.83	317.48	86.06	0.07
Upper	615.747	Q100	375.00	254.96	261.24		261.26	0.000123	1.01	401.15	92.15	0.08
Upper	615.747	Q100HC	1089.00	254.96	264.66		264.70	0.000168	1.64	739.48	105.66	0.10
Upper	573.367*	Q50	247.00	255.13	260.30		260.31	0.000098	1.03	257.17	69.96	0.09
Upper	573.367*	Q100	375.00	255.13	261.23		261.25	0.000113	1.26	324.75	74.81	0.10
Upper	573.367*	Q100HC	1089.00	255.13	264.63		264.69	0.000154	2.04	608.11	90.51	0.12
Upper	530.987*	Q50	247.00	255.30	260.28		260.30	0.000194	1.33	201.68	56.45	0.11
Upper	530.987*	Q100	375.00	255.30	261.21		261.24	0.000221	1.61	255.83	60.27	0.12
Upper	530.987*	Q100HC	1089.00	255.30	264.59		264.68	0.000297	2.61	484.42	75.15	0.16
Upper	488.607*	Q50	247.00	255.48	260.24		260.29	0.000440	1.83	149.14	43.95	0.16
Upper	488.607*	Q100	375.00	255.48	261.16		261.23	0.000492	2.21	190.92	47.19	0.17
Upper	488.607*	Q100HC	1089.00	255.48	264.49		264.66	0.000640	3.53	367.92	59.49	0.21

Upper	446.227*	Q50	247.00	255.65	260.14		260.25	0.001337	2.90	98.16	31.87	0.26
Upper	446.227*	Q100	375.00	255.65	261.03		261.19	0.001450	3.45	127.72	34.67	0.27
Upper	446.227*	Q100HC	1089.00	255.65	264.25		264.59	0.001749	5.31	256.13	45.16	0.33
Upper	403.848	Q50	247.00	255.82	259.04	259.04	260.02	0.024706	9.14	33.65	17.31	0.96
Upper	403.848	Q100	375.00	255.82	259.72	259.72	260.92	0.023800	10.34	45.97	19.29	0.97
Upper	403.848	Q100HC	1089.00	255.82	262.26	262.26	264.25	0.020999	13.95	104.49	26.69	1.00
Upper	365.174*	Q50	247.00	254.53	257.15	257.56	258.67	0.049277	10.77	26.89	17.74	1.30
Upper	365.174*	Q100	375.00	254.53	257.65	258.19	259.58	0.048945	12.34	36.17	19.32	1.34
Upper	365.174*	Q100HC	1089.00	254.53	259.60	260.59	262.99	0.044721	17.07	79.94	25.49	1.40
Upper	326.500*	Q50	247.00	253.24	255.98	256.14	257.02	0.031645	8.72	32.21	20.34	1.04
Upper	326.500*	Q100	375.00	253.24	256.44	256.72	257.87	0.034503	10.35	41.88	21.91	1.13
Upper	326.500*	Q100HC	1089.00	253.24	258.07	259.00	261.24	0.043160	15.98	82.35	27.54	1.36
Upper	287.827*	Q50	247.00	251.96	254.48	254.74	255.64	0.040727	8.93	30.22	21.50	1.16
Upper	287.827*	Q100	375.00	251.96	254.95	255.31	256.43	0.039973	10.28	40.77	23.47	1.19
Upper	287.827*	Q100HC	1089.00	251.96	256.61	257.46	259.55	0.041494	15.03	85.29	29.87	1.32
Upper	249.153*	Q50	247.00	250.67	253.24	253.35	254.16	0.032945	7.91	33.38	23.39	1.04
Upper	249.153*	Q100	375.00	250.67	253.66	253.91	254.93	0.035154	9.38	43.70	25.65	1.11
Upper	249.153*	Q100HC	1089.00	250.67	255.19	255.96	257.90	0.040049	14.21	88.43	32.46	1.29
Upper	210.480	Q50	247.00	249.38	251.83	251.98	252.78	0.038673	7.90	32.46	24.10	1.10
Upper	210.480	Q100	375.00	249.38	252.28	252.52	253.52	0.037267	9.13	43.81	27.08	1.12
Upper	210.480	Q100HC	1089.00	249.38	253.80	254.49	256.32	0.038983	13.52	91.54	35.42	1.26

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 CX3
Project File : PMCX3.prj
Run Date and Time: 8/28/2003 11:02:38 PM

Project in English units

PLAN DATA

Plan Title: Existing Flow/Proposed-Ultimate Geometry
Plan File : c:\projects\2PDA0104\hydr\LHS\Modeling\Model C\HEC-RAS\PMCX3.p03

Geometry Title: Proposed Conditions - Ultimate
Geometry File : c:\projects\2PDA0104\hydr\LHS\Modeling\Model C\HEC-RAS\PMCX3.g03

Flow Title : Existing Conditions
Flow File : c:\projects\2PDA0104\hydr\LHS\Modeling\Model C\HEC-RAS\PMCX3.f01

Plan Summary Information:

Number of:	Cross Sections	= 49	Mulitple Openings	=	0
	Culverts	= 0	Inline Structures	=	0
	Bridges	= 1	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 C\HEC-RAS\PMCX3.f01

Flow Data (cfs)

River	Reach	RS	Q2	Q5	Q10	Q25	Q50	Q100	Q100HC
Cristianitos	Upper	5602.033	1	12	29	117	247	375	1089

Boundary Conditions

River	Reach	Profile	Upstream	Downstream
Cristianitos	Upper	Q2	Normal S = 0.01	Normal S = 0.04
Cristianitos	Upper	Q5	Normal S = 0.01	Normal S = 0.04
Cristianitos	Upper	Q10	Normal S = 0.01	Normal S = 0.04
Cristianitos	Upper	Q25	Normal S = 0.01	Normal S = 0.04
Cristianitos	Upper	Q50	Normal S = 0.01	Normal S = 0.04
Cristianitos	Upper	Q100	Normal S = 0.01	Normal S = 0.04
Cristianitos	Upper	Q100HC	Normal S = 0.01	Normal S = 0.04

GEOMETRY DATA

Geometry Title: Proposed Conditions - Ultimate
Geometry File : c:\projects\2PDA0104\hydr\LHS\Modeling\Model C\HEC-RAS\PMCX3.g03

CROSS SECTION

RIVER: Cristianitos
REACH: Upper RS: 5602.033

INPUT
Description:
Station Elevation Data num= 34

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	370.48	3.41	370.02	29.87	366.39	32.79	364.63	33.46	364.05
40.29	356.36	56.36	338.09	56.47	337.98	56.51	337.95	60.73	335.27
71.39	334.97	77.07	334.82	79.9	334.74	81.95	334.78	87.36	334.74
100.51	334.82	120.9	335.47	142.32	337.35	144.81	337.48	173.79	338.96
196.32	340.91	248.92	342.49	297.84	344.33	304.22	344.59	324.29	345.41
340.73	346.56	342.54	346.69	346.75	347.38	349.41	348.2	365.15	351.84
381.77	355.53	386.81	356.49	395.84	356.96	405.63	358.44		

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	77.07	.05	304.22	.02	340.73	.05	405.63	.035

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
77.07	100.51	261.72	217.24	135.38	.1	.3

CROSS SECTION OUTPUT Profile #Q50

E.G. Elev (ft)	336.20	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.40	Wt. n-Val.	0.035	0.050	0.050
W.S. Elev (ft)	335.80	Reach Len. (ft)	261.72	217.24	135.38
Crit W.S. (ft)	335.80	Flow Area (sq ft)	12.63	24.08	14.00
E.G. Slope (ft/ft)	0.028941	Area (sq ft)	12.63	24.08	14.00
Q Total (cfs)	247.00	Flow (cfs)	73.85	123.98	49.17
Top Width (ft)	64.78	Top Width (ft)	17.18	23.44	24.16
Vel Total (ft/s)	4.87	Avg. Vel. (ft/s)	5.85	5.15	3.51
Max Chl Dpth (ft)	1.06	Hydr. Depth (ft)	0.74	1.03	0.58
Conv. Total (cfs)	1451.9	Conv. (cfs)	434.1	728.8	289.1
Length Wtd. (ft)	203.94	Wetted Per. (ft)	17.34	23.44	24.19
Min Ch El (ft)	334.74	Shear (lb/sq ft)	1.32	1.86	1.05
Alpha	1.10	Stream Power (lb/ft s)	7.70	9.56	3.67
Frctn Loss (ft)	1.94	Cum Volume (acre-ft)	1.35	6.00	1.29
C & E Loss (ft)	0.06	Cum SA (acres)	1.26	2.30	1.39

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water 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)	336.58	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.51	Wt. n-Val.	0.035	0.050	0.050
W.S. Elev (ft)	336.07	Reach Len. (ft)	261.72	217.24	135.38
Crit W.S. (ft)	336.07	Flow Area (sq ft)	17.29	30.37	20.89
E.G. Slope (ft/ft)	0.026329	Area (sq ft)	17.29	30.37	20.89
Q Total (cfs)	375.00	Flow (cfs)	116.65	174.00	84.35
Top Width (ft)	68.25	Top Width (ft)	17.60	23.44	27.22
Vel Total (ft/s)	5.47	Avg. Vel. (ft/s)	6.75	5.73	4.04
Max Chl Dpth (ft)	1.33	Hydr. Depth (ft)	0.98	1.30	0.77
Conv. Total (cfs)	2311.1	Conv. (cfs)	718.9	1072.3	519.8
Length Wtd. (ft)	203.00	Wetted Per. (ft)	17.84	23.44	27.25
Min Ch El (ft)	334.74	Shear (lb/sq ft)	1.59	2.13	1.26
Alpha	1.10	Stream Power (lb/ft s)	10.75	12.20	5.09
Frctn Loss (ft)	1.92	Cum Volume (acre-ft)	2.09	7.32	2.00
C & E Loss (ft)	0.07	Cum SA (acres)	1.50	2.30	1.66

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water 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)	338.08	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.93	Wt. n-Val.	0.035	0.050	0.050
W.S. Elev (ft)	337.15	Reach Len. (ft)	261.72	217.24	135.38
Crit W.S. (ft)	337.15	Flow Area (sq ft)	37.22	55.69	56.94
E.G. Slope (ft/ft)	0.021056	Area (sq ft)	37.22	55.69	56.94
Q Total (cfs)	1089.00	Flow (cfs)	348.66	427.58	312.77
Top Width (ft)	82.27	Top Width (ft)	19.30	23.44	39.53
Vel Total (ft/s)	7.27	Avg. Vel. (ft/s)	9.37	7.68	5.49
Max Chl Dpth (ft)	2.41	Hydr. Depth (ft)	1.93	2.38	1.44
Conv. Total (cfs)	7504.9	Conv. (cfs)	2402.8	2946.7	2155.4
Length Wtd. (ft)	201.99	Wetted Per. (ft)	19.85	23.44	39.61
Min Ch El (ft)	334.74	Shear (lb/sq ft)	2.46	3.12	1.89
Alpha	1.13	Stream Power (lb/ft s)	23.09	23.98	10.38
Frctn Loss (ft)	1.78	Cum Volume (acre-ft)	5.99	12.16	6.11
C & E Loss (ft)	0.14	Cum SA (acres)	2.35	2.30	2.89

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

CROSS SECTION

RIVER: Cristianitos
REACH: Upper RS: 5384.793

INPUT
Description:
Station Elevation Data num= 34

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	358.26	.68	358	19.3	350.29	31.71	345.88	44.5	341.79
45.82	341.36	47.67	340.85	50.82	339.97	63.52	333.95	65.33	333.52
65.43	333.49	69.26	332.55	73.58	331.04	80.91	328.98	83.63	328.19
88.99	328.97	94.87	329.16	109.46	333.11	113.47	334.08	119.21	334.95
132.83	335.55	135.85	335.68	152.98	336.43	204.52	338.89	227.46	339.3
234.98	339.44	246.89	339.86	252.4	339.82	263.61	339.72	277.15	341.75
277.31	341.8	290.28	345.94	302.7	350.04	311.59	352.7		

Manning's n Values num= 4

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.07	65.43	.05	227.46	.02	277.31	.05

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
80.91	88.99	205.91	215.49	222.8	.1	.3

CROSS SECTION OUTPUT Profile #Q50

E.G. Elev (ft)	332.08	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.21	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	331.87	Reach Len. (ft)	205.91	215.49	222.80

Crit W.S. (ft)	330.77	Flow Area (sq ft)	14.59	26.55	30.02
E.G. Slope (ft/ft)	0.004664	Area (sq ft)	14.59	26.55	30.02
Q Total (cfs)	247.00	Flow (cfs)	37.80	117.46	91.74
Top Width (ft)	33.66	Top Width (ft)	9.70	8.08	15.88
Vel Total (ft/s)	3.47	Avg. Vel. (ft/s)	2.59	4.42	3.06
Max Chl Dpth (ft)	3.68	Hydr. Depth (ft)	1.50	3.29	1.89
Conv. Total (cfs)	3616.7	Conv. (cfs)	553.6	1719.9	1343.3
Length Wtd. (ft)	215.40	Wetted Per. (ft)	10.12	8.25	16.24
Min Ch El (ft)	328.19	Shear (lb/sq ft)	0.42	0.94	0.54
Alpha	1.15	Stream Power (lb/ft s)	1.09	4.15	1.64
Frctn Loss (ft)	1.97	Cum Volume (acre-ft)	1.27	5.88	1.22
C & E Loss (ft)	0.06	Cum SA (acres)	1.18	2.22	1.33

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

CROSS SECTION OUTPUT Profile #Q100

E.G. Elev (ft)	332.82	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.27	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	332.54	Reach Len. (ft)	205.91	215.49	222.80
Crit W.S. (ft)	331.30	Flow Area (sq ft)	21.81	32.02	41.61
E.G. Slope (ft/ft)	0.004817	Area (sq ft)	21.81	32.02	41.61
Q Total (cfs)	375.00	Flow (cfs)	66.36	163.08	145.56
Top Width (ft)	38.09	Top Width (ft)	11.63	8.08	18.38
Vel Total (ft/s)	3.93	Avg. Vel. (ft/s)	3.04	5.09	3.50
Max Chl Dpth (ft)	4.35	Hydr. Depth (ft)	1.87	3.96	2.26
Conv. Total (cfs)	5403.3	Conv. (cfs)	956.2	2349.8	2097.4
Length Wtd. (ft)	215.24	Wetted Per. (ft)	12.17	8.25	18.83
Min Ch El (ft)	328.19	Shear (lb/sq ft)	0.54	1.17	0.66
Alpha	1.14	Stream Power (lb/ft s)	1.64	5.94	2.32
Frctn Loss (ft)	1.99	Cum Volume (acre-ft)	1.98	7.17	1.90
C & E Loss (ft)	0.07	Cum SA (acres)	1.42	2.22	1.59

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was 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)	335.47	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.46	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	335.01	Reach Len. (ft)	205.91	215.49	222.80
Crit W.S. (ft)	333.16	Flow Area (sq ft)	61.77	51.93	99.99
E.G. Slope (ft/ft)	0.004807	Area (sq ft)	61.77	51.93	99.99
Q Total (cfs)	1089.00	Flow (cfs)	286.19	364.75	438.05
Top Width (ft)	59.24	Top Width (ft)	19.62	8.08	31.54
Vel Total (ft/s)	5.10	Avg. Vel. (ft/s)	4.63	7.02	4.38

Max Chl Dpth (ft)	6.82	Hydr. Depth (ft)	3.15	6.43	3.17
Conv. Total (cfs)	15707.3	Conv. (cfs)	4127.9	5261.0	6318.3
Length Wtd. (ft)	214.75	Wetted Per. (ft)	20.57	8.25	32.25
Min Ch El (ft)	328.19	Shear (lb/sq ft)	0.90	1.89	0.93
Alpha	1.15	Stream Power (lb/ft s)	4.18	13.27	4.08
Frctn Loss (ft)	1.88	Cum Volume (acre-ft)	5.69	11.89	5.87
C & E Loss (ft)	0.12	Cum SA (acres)	2.23	2.22	2.78

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

CROSS SECTION

RIVER: Cristianitos
REACH: Upper RS: 5168.714

INPUT
Description:
Station Elevation Data num= 33

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	342.34	28.54	340.48	44.42	339.66	64.52	339.14	80.72	338.7
85.76	338.45	123.37	337.28	137.41	336.57	140.19	336.42	144.85	336.4
153.17	336.35	155.88	335.99	163.68	334.51	164.2	334.22	175.32	328.47
180.3	327.98	182.67	327.56	184.81	327.2	193.24	327.19	194.86	327.56
205.11	332.52	209.01	334.37	209.27	334.48	212.5	334.76	218.71	335.32
226.15	335.99	238.43	337.09	239.96	337.4	256.8	341.11	260.22	342.7
263.37	343.44	264.82	343.79	286.27	350.75				

Manning's n Values num= 4

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	137.41	.05	226.15	.02	263.37	.05

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
182.67	194.86	149.85	194.03	206.85	.1	.3

CROSS SECTION OUTPUT Profile #Q50

E.G. Elev (ft)	330.05	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.77	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	329.28	Reach Len. (ft)	149.85	194.03	206.85
Crit W.S. (ft)	329.28	Flow Area (sq ft)	9.51	24.78	3.07
E.G. Slope (ft/ft)	0.025603	Area (sq ft)	9.51	24.78	3.07
Q Total (cfs)	247.00	Flow (cfs)	46.26	188.40	12.34
Top Width (ft)	24.68	Top Width (ft)	8.93	12.19	3.56
Vel Total (ft/s)	6.61	Avg. Vel. (ft/s)	4.87	7.60	4.02
Max Chl Dpth (ft)	2.09	Hydr. Depth (ft)	1.07	2.03	0.86
Conv. Total (cfs)	1543.7	Conv. (cfs)	289.1	1177.4	77.1
Length Wtd. (ft)	189.84	Wetted Per. (ft)	9.18	12.26	3.96
Min Ch El (ft)	327.19	Shear (lb/sq ft)	1.65	3.23	1.24
Alpha	1.13	Stream Power (lb/ft s)	8.05	24.56	4.98
Frctn Loss (ft)	3.22	Cum Volume (acre-ft)	1.21	5.75	1.13
C & E Loss (ft)	0.08	Cum SA (acres)	1.13	2.17	1.28

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water 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)	330.76	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.96	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	329.80	Reach Len. (ft)	149.85	194.03	206.85
Crit W.S. (ft)	329.80	Flow Area (sq ft)	14.34	31.04	5.17
E.G. Slope (ft/ft)	0.024438	Area (sq ft)	14.34	31.04	5.17
Q Total (cfs)	375.00	Flow (cfs)	83.06	267.80	24.14
Top Width (ft)	26.73	Top Width (ft)	9.92	12.19	4.62
Vel Total (ft/s)	7.42	Avg. Vel. (ft/s)	5.79	8.63	4.67
Max Chl Dpth (ft)	2.61	Hydr. Depth (ft)	1.45	2.55	1.12
Conv. Total (cfs)	2398.8	Conv. (cfs)	531.3	1713.1	154.4
Length Wtd. (ft)	188.97	Wetted Per. (ft)	10.30	12.26	5.14
Min Ch El (ft)	327.19	Shear (lb/sq ft)	2.12	3.86	1.54
Alpha	1.13	Stream Power (lb/ft s)	12.30	33.32	7.17
Frctn Loss (ft)	3.40	Cum Volume (acre-ft)	1.89	7.01	1.78
C & E Loss (ft)	0.08	Cum SA (acres)	1.37	2.17	1.53

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water 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)	333.47	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.65	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	331.83	Reach Len. (ft)	149.85	194.03	206.85
Crit W.S. (ft)	331.83	Flow Area (sq ft)	38.48	55.80	18.83
E.G. Slope (ft/ft)	0.020598	Area (sq ft)	38.48	55.80	18.83
Q Total (cfs)	1089.00	Flow (cfs)	311.34	653.55	124.12
Top Width (ft)	34.86	Top Width (ft)	13.85	12.19	8.82
Vel Total (ft/s)	9.63	Avg. Vel. (ft/s)	8.09	11.71	6.59
Max Chl Dpth (ft)	4.64	Hydr. Depth (ft)	2.78	4.58	2.13
Conv. Total (cfs)	7587.8	Conv. (cfs)	2169.3	4553.7	864.8
Length Wtd. (ft)	187.38	Wetted Per. (ft)	14.72	12.26	9.80
Min Ch El (ft)	327.19	Shear (lb/sq ft)	3.36	5.85	2.47
Alpha	1.14	Stream Power (lb/ft s)	27.19	68.54	16.29
Frctn Loss (ft)	3.70	Cum Volume (acre-ft)	5.45	11.62	5.57
C & E Loss (ft)	0.01	Cum SA (acres)	2.15	2.17	2.68

Warning: The energy equation could not be balanced within the specified number of iterations. The

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

CROSS SECTION

RIVER: Cristianitos
REACH: Upper RS: 4976.143

INPUT
Description:
Station Elevation Data num= 37

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	341.81	.55	341.77	7.72	340.98	18.02	339.54	25.08	338.74
31.55	338.46	57.95	337.67	99.08	336.24	104.59	336.33	108.05	335.89
129.49	332.26	133.76	330.93	138.61	329.41	141.05	328.36	152.11	323.59
153.93	322.61	160.39	321.76	163.58	321.34	170.45	322.45	170.71	322.53
175.62	324.84	182.67	327.95	199.45	330.8	207.1	331.56	221.18	334.45
221.61	334.53	222.13	334.59	227.08	334.59	237.11	334.58	238.69	334.58
252.37	333.93	253.97	333.78	254.76	333.84	269.51	335.06	270.43	335.22
285.75	338.94	303.99	343.38						

Manning's n Values num= 4

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	133.76	.05	237.11	.02	285.75	.05

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
153.93	170.45	251.57	198.55	152.18	.1	.3

CROSS SECTION OUTPUT Profile #Q50

			Left OB	Channel	Right OB
E.G. Elev (ft)	324.81	Element			
Vel Head (ft)	0.49	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	324.32	Reach Len. (ft)	251.57	198.55	152.18
Crit W.S. (ft)	323.83	Flow Area (sq ft)	2.85	39.36	3.90
E.G. Slope (ft/ft)	0.012088	Area (sq ft)	2.85	39.36	3.90
Q Total (cfs)	247.00	Flow (cfs)	7.54	227.85	11.60
Top Width (ft)	24.12	Top Width (ft)	3.52	16.52	4.07
Vel Total (ft/s)	5.36	Avg. Vel. (ft/s)	2.64	5.79	2.98
Max Chl Dpth (ft)	2.98	Hydr. Depth (ft)	0.81	2.38	0.96
Conv. Total (cfs)	2246.5	Conv. (cfs)	68.6	2072.4	105.5
Length Wtd. (ft)	196.77	Wetted Per. (ft)	3.92	16.69	4.49
Min Ch El (ft)	321.34	Shear (lb/sq ft)	0.55	1.78	0.66
Alpha	1.10	Stream Power (lb/ft s)	1.45	10.30	1.95
Frctn Loss (ft)	3.34	Cum Volume (acre-ft)	1.19	5.61	1.12
C & E Loss (ft)	0.01	Cum SA (acres)	1.11	2.10	1.26

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

CROSS SECTION OUTPUT Profile #Q100

E.G. Elev (ft)	325.54	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.71	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	324.83	Reach Len. (ft)	251.57	198.55	152.18
Crit W.S. (ft)	324.41	Flow Area (sq ft)	4.93	47.71	6.23
E.G. Slope (ft/ft)	0.013779	Area (sq ft)	4.93	47.71	6.23
Q Total (cfs)	375.00	Flow (cfs)	16.61	335.26	23.13
Top Width (ft)	26.36	Top Width (ft)	4.70	16.52	5.15
Vel Total (ft/s)	6.37	Avg. Vel. (ft/s)	3.37	7.03	3.71
Max Chl Dpth (ft)	3.49	Hydr. Depth (ft)	1.05	2.89	1.21
Conv. Total (cfs)	3194.6	Conv. (cfs)	141.5	2856.1	197.1
Length Wtd. (ft)	196.57	Wetted Per. (ft)	5.20	16.69	5.67
Min Ch El (ft)	321.34	Shear (lb/sq ft)	0.82	2.46	0.94
Alpha	1.12	Stream Power (lb/ft s)	2.75	17.28	3.51
Frctn Loss (ft)	3.61	Cum Volume (acre-ft)	1.86	6.83	1.76
C & E Loss (ft)	0.05	Cum SA (acres)	1.34	2.10	1.51

Warning: The energy loss was greater than 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)	328.51	Element	Left OB	Channel	Right OB
Vel Head (ft)	2.56	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	325.96	Reach Len. (ft)	251.57	198.55	152.18
Crit W.S. (ft)	326.59	Flow Area (sq ft)	11.68	66.30	13.46
E.G. Slope (ft/ft)	0.033707	Area (sq ft)	11.68	66.30	13.46
Q Total (cfs)	1089.00	Flow (cfs)	81.76	907.22	100.03
Top Width (ft)	31.52	Top Width (ft)	7.30	16.52	7.70
Vel Total (ft/s)	11.91	Avg. Vel. (ft/s)	7.00	13.68	7.43
Max Chl Dpth (ft)	4.61	Hydr. Depth (ft)	1.60	4.01	1.75
Conv. Total (cfs)	5931.5	Conv. (cfs)	445.3	4941.4	544.8
Length Wtd. (ft)	197.40	Wetted Per. (ft)	8.04	16.69	8.46
Min Ch El (ft)	321.34	Shear (lb/sq ft)	3.06	8.36	3.35
Alpha	1.16	Stream Power (lb/ft s)	21.40	114.37	24.88
Frctn Loss (ft)	4.86	Cum Volume (acre-ft)	5.37	11.35	5.49
C & E Loss (ft)	0.09	Cum SA (acres)	2.12	2.10	2.64

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The energy loss was 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: Cristianitos
REACH: Upper RS: 4775.451

INPUT
Description:
Station Elevation Data num= 27

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	336.24	.68	336.1	12.18	333.55	16.62	332.18	24.6	330.41
40.55	326.89	52.65	324.73	71.54	321.89	78.96	321.31	84.22	320.9
99.55	319.78	104.9	319.4	106.97	319.3	115.93	319.77	137.63	320.84
143.48	321.69	158.41	325.47	168.75	328.08	174.44	328.46	189.4	329.5

207.77 330.77 209.29 331.02 220.89 332.62 236.13 334.69 241.69 335.44
243.53 336.42 245.97 337.08

Manning's n Values num= 4

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	24.6	.05	189.4	.02	236.13	.05

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
99.55	115.93	217.54	216	209.75	.1	.3

CROSS SECTION OUTPUT Profile #Q50

			Left OB	Channel	Right OB
E.G. Elev (ft)	321.47	Element			
Vel Head (ft)	0.45	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	321.03	Reach Len. (ft)	217.54	216.00	209.75
Crit W.S. (ft)	321.03	Flow Area (sq ft)	10.61	24.50	15.75
E.G. Slope (ft/ft)	0.025550	Area (sq ft)	10.61	24.50	15.75
Q Total (cfs)	247.00	Flow (cfs)	36.82	152.06	58.11
Top Width (ft)	56.30	Top Width (ft)	16.94	16.38	22.98
Vel Total (ft/s)	4.86	Avg. Vel. (ft/s)	3.47	6.21	3.69
Max Chl Dpth (ft)	1.73	Hydr. Depth (ft)	0.63	1.50	0.69
Conv. Total (cfs)	1545.3	Conv. (cfs)	230.4	951.3	363.6
Length Wtd. (ft)	215.21	Wetted Per. (ft)	16.99	16.41	23.02
Min Ch El (ft)	319.30	Shear (lb/sq ft)	1.00	2.38	1.09
Alpha	1.22	Stream Power (lb/ft s)	3.46	14.78	4.03
Frctn Loss (ft)	1.53	Cum Volume (acre-ft)	1.15	5.46	1.08
C & E Loss (ft)	0.09	Cum SA (acres)	1.05	2.03	1.21

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water 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)	321.88	Element			
Vel Head (ft)	0.55	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	321.33	Reach Len. (ft)	217.54	216.00	209.75
Crit W.S. (ft)	321.33	Flow Area (sq ft)	16.26	29.41	22.95
E.G. Slope (ft/ft)	0.025639	Area (sq ft)	16.26	29.41	22.95
Q Total (cfs)	375.00	Flow (cfs)	65.59	206.53	102.87
Top Width (ft)	62.20	Top Width (ft)	20.78	16.38	25.04
Vel Total (ft/s)	5.46	Avg. Vel. (ft/s)	4.03	7.02	4.48
Max Chl Dpth (ft)	2.03	Hydr. Depth (ft)	0.78	1.80	0.92
Conv. Total (cfs)	2342.0	Conv. (cfs)	409.7	1289.9	642.5
Length Wtd. (ft)	215.06	Wetted Per. (ft)	20.84	16.41	25.10
Min Ch El (ft)	319.30	Shear (lb/sq ft)	1.25	2.87	1.46
Alpha	1.19	Stream Power (lb/ft s)	5.04	20.15	6.56
Frctn Loss (ft)	1.61	Cum Volume (acre-ft)	1.80	6.66	1.71
C & E Loss (ft)	0.10	Cum SA (acres)	1.27	2.03	1.45

Warning: The energy equation could not be balanced within the specified number of iterations. The

program used critical depth for the water surface and continued on with the calculations.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water 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)	323.38	Element			
Vel Head (ft)	0.93	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	322.44	Reach Len. (ft)	217.54	216.00	209.75
Crit W.S. (ft)	322.44	Flow Area (sq ft)	46.57	47.73	54.42
E.G. Slope (ft/ft)	0.023907	Area (sq ft)	46.57	47.73	54.42
Q Total (cfs)	1089.00	Flow (cfs)	275.85	446.93	366.22
Top Width (ft)	78.60	Top Width (ft)	31.69	16.38	30.53
Vel Total (ft/s)	7.32	Avg. Vel. (ft/s)	5.92	9.36	6.73
Max Chl Dpth (ft)	3.14	Hydr. Depth (ft)	1.47	2.91	1.78
Conv. Total (cfs)	7043.2	Conv. (cfs)	1784.1	2890.6	2368.6
Length Wtd. (ft)	214.81	Wetted Per. (ft)	31.81	16.41	30.71
Min Ch El (ft)	319.30	Shear (lb/sq ft)	2.18	4.34	2.65
Alpha	1.12	Stream Power (lb/ft s)	12.94	40.65	17.80
Frctn Loss (ft)	1.80	Cum Volume (acre-ft)	5.20	11.09	5.37
C & E Loss (ft)	0.15	Cum SA (acres)	2.00	2.03	2.57

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

CROSS SECTION

RIVER: Cristianitos
REACH: Upper RS: 4558.571

INPUT
Description:
Station Elevation Data num= 27

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	335.46	5.45	333.28	8.84	331.92	31.22	322.02	39.82	319.89
45	318.29	53.09	315.79	58.74	314.98	72.43	314.56	76.57	314.74
77.75	315	84.9	317.05	96.64	321.48	111.92	322.35	121.42	322.75
127.32	323.2	127.91	323.27	132.3	323.79	134.84	324.92	136.67	325.12
162.11	327.79	181.78	328.4	198.07	330.04	204.55	330.42	253.64	333.24
268.12	334.08	272.73	334.59						

Manning's n Values num= 4

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	5.45	.05	204.55	.02	253.64	.05

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
58.74	77.75	218.41	219.16 218.8	.1	.3

CROSS SECTION OUTPUT Profile #Q50

E.G. Elev (ft)	317.74	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.15	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	317.59	Reach Len. (ft)	218.41	219.16	218.80
Crit W.S. (ft)	316.36	Flow Area (sq ft)	17.71	54.00	11.58
E.G. Slope (ft/ft)	0.003282	Area (sq ft)	17.71	54.00	11.58
Q Total (cfs)	247.00	Flow (cfs)	39.50	184.13	23.38
Top Width (ft)	39.07	Top Width (ft)	11.48	19.01	8.58
Vel Total (ft/s)	2.97	Avg. Vel. (ft/s)	2.23	3.41	2.02
Max Chl Dpth (ft)	3.03	Hydr. Depth (ft)	1.54	2.84	1.35
Conv. Total (cfs)	4311.5	Conv. (cfs)	689.4	3214.0	408.1
Length Wtd. (ft)	219.01	Wetted Per. (ft)	11.81	19.05	8.97
Min Ch El (ft)	314.56	Shear (lb/sq ft)	0.31	0.58	0.26
Alpha	1.12	Stream Power (lb/ft s)	0.69	1.98	0.53
Frctn Loss (ft)	1.55	Cum Volume (acre-ft)	1.08	5.27	1.02
C & E Loss (ft)	0.05	Cum SA (acres)	0.98	1.94	1.13

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

CROSS SECTION OUTPUT Profile #Q100

E.G. Elev (ft)	318.42	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.21	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	318.21	Reach Len. (ft)	218.41	219.16	218.80
Crit W.S. (ft)	316.80	Flow Area (sq ft)	25.49	65.85	17.45
E.G. Slope (ft/ft)	0.003516	Area (sq ft)	25.49	65.85	17.45
Q Total (cfs)	375.00	Flow (cfs)	67.23	265.27	42.49
Top Width (ft)	42.74	Top Width (ft)	13.49	19.01	10.23
Vel Total (ft/s)	3.45	Avg. Vel. (ft/s)	2.64	4.03	2.44
Max Chl Dpth (ft)	3.65	Hydr. Depth (ft)	1.89	3.46	1.70
Conv. Total (cfs)	6324.3	Conv. (cfs)	1133.9	4473.8	716.6
Length Wtd. (ft)	218.99	Wetted Per. (ft)	13.92	19.05	10.73
Min Ch El (ft)	314.56	Shear (lb/sq ft)	0.40	0.76	0.36
Alpha	1.13	Stream Power (lb/ft s)	1.06	3.06	0.87
Frctn Loss (ft)	1.61	Cum Volume (acre-ft)	1.69	6.42	1.61
C & E Loss (ft)	0.06	Cum SA (acres)	1.18	1.94	1.37

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 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)	320.87	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.45	Wt. n-Val.	0.050	0.050	0.050

W.S. Elev (ft)	320.42	Reach Len. (ft)	218.41	219.16	218.80
Crit W.S. (ft)	318.51	Flow Area (sq ft)	63.35	107.88	46.55
E.G. Slope (ft/ft)	0.004239	Area (sq ft)	63.35	107.88	46.55
Q Total (cfs)	1089.00	Flow (cfs)	249.46	663.21	176.32
Top Width (ft)	56.18	Top Width (ft)	21.08	19.01	16.09
Vel Total (ft/s)	5.00	Avg. Vel. (ft/s)	3.94	6.15	3.79
Max Chl Dpth (ft)	5.86	Hydr. Depth (ft)	3.01	5.67	2.89
Conv. Total (cfs)	16725.7	Conv. (cfs)	3831.5	10186.2	2708.1
Length Wtd. (ft)	218.92	Wetted Per. (ft)	21.82	19.05	17.00
Min Ch El (ft)	314.56	Shear (lb/sq ft)	0.77	1.50	0.72
Alpha	1.16	Stream Power (lb/ft s)	3.03	9.21	2.75
Frctn Loss (ft)	1.75	Cum Volume (acre-ft)	4.92	10.71	5.13
C & E Loss (ft)	0.09	Cum SA (acres)	1.87	1.94	2.46

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

RIVER: Cristianitos
REACH: Upper RS: 4339.721

INPUT
Description:
Station Elevation Data num= 30

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	332.61	9.49	328.12	19.77	324.24	31.08	319.97	36.47	317.91
36.86	317.76	39.1	317.11	53.14	314.16	54.59	313.85	63.33	313.27
67.52	313.82	73.15	314.58	76.72	315.13	80.59	316.75	87.3	319.86
88.78	320.06	96.95	321.97	105.23	322.18	134.78	322.92	135.07	322.93
135.74	322.95	137.22	323.05	146.18	323.77	147.19	323.86	182.34	326.79
186.07	327.33	194.4	328.53	195.52	328.8	209.93	332.19	219.69	334.53

Manning's n Values num= 4

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	19.77	.05	147.19	.02	195.52	.05

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
54.59	67.52	190.38	207.42	206.55	.1	.3

CROSS SECTION OUTPUT Profile #Q50

E.G. Elev (ft)	316.14	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.67	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	315.47	Reach Len. (ft)	190.38	207.42	206.55
Crit W.S. (ft)	315.47	Flow Area (sq ft)	6.23	24.79	9.51
E.G. Slope (ft/ft)	0.024996	Area (sq ft)	6.23	24.79	9.51
Q Total (cfs)	247.00	Flow (cfs)	25.04	179.27	42.69
Top Width (ft)	30.64	Top Width (ft)	7.70	12.93	10.02
Vel Total (ft/s)	6.09	Avg. Vel. (ft/s)	4.02	7.23	4.49
Max Chl Dpth (ft)	2.20	Hydr. Depth (ft)	0.81	1.92	0.95
Conv. Total (cfs)	1562.3	Conv. (cfs)	158.4	1133.9	270.0

Length Wtd. (ft)	206.01	Wetted Per. (ft)	7.87	12.99	10.18
Min Ch El (ft)	313.27	Shear (lb/sq ft)	1.24	2.98	1.46
Alpha	1.16	Stream Power (lb/ft s)	4.97	21.54	6.54
Frctn Loss (ft)	3.37	Cum Volume (acre-ft)	1.02	5.07	0.96
C & E Loss (ft)	0.06	Cum SA (acres)	0.93	1.86	1.09

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

CROSS SECTION OUTPUT Profile #Q100

E.G. Elev (ft)	316.75	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.83	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	315.92	Reach Len. (ft)	190.38	207.42	206.55
Crit W.S. (ft)	315.92	Flow Area (sq ft)	10.20	30.64	14.29
E.G. Slope (ft/ft)	0.024123	Area (sq ft)	10.20	30.64	14.29
Q Total (cfs)	375.00	Flow (cfs)	47.47	250.67	76.86
Top Width (ft)	33.88	Top Width (ft)	9.85	12.93	11.10
Vel Total (ft/s)	6.80	Avg. Vel. (ft/s)	4.66	8.18	5.38
Max Chl Dpth (ft)	2.65	Hydr. Depth (ft)	1.04	2.37	1.29
Conv. Total (cfs)	2414.5	Conv. (cfs)	305.6	1614.0	494.8
Length Wtd. (ft)	205.67	Wetted Per. (ft)	10.07	12.99	11.35
Min Ch El (ft)	313.27	Shear (lb/sq ft)	1.53	3.55	1.90
Alpha	1.15	Stream Power (lb/ft s)	7.10	29.07	10.20
Frctn Loss (ft)	3.64	Cum Volume (acre-ft)	1.60	6.18	1.53
C & E Loss (ft)	0.04	Cum SA (acres)	1.12	1.86	1.32

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water 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)	319.02	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.35	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	317.67	Reach Len. (ft)	190.38	207.42	206.55
Crit W.S. (ft)	317.67	Flow Area (sq ft)	34.44	53.22	37.21
E.G. Slope (ft/ft)	0.020510	Area (sq ft)	34.44	53.22	37.21
Q Total (cfs)	1089.00	Flow (cfs)	227.25	580.02	281.73
Top Width (ft)	45.41	Top Width (ft)	17.42	12.93	15.06
Vel Total (ft/s)	8.72	Avg. Vel. (ft/s)	6.60	10.90	7.57
Max Chl Dpth (ft)	4.40	Hydr. Depth (ft)	1.98	4.12	2.47
Conv. Total (cfs)	7604.1	Conv. (cfs)	1586.8	4050.1	1967.2
Length Wtd. (ft)	204.61	Wetted Per. (ft)	17.84	12.99	15.68
Min Ch El (ft)	313.27	Shear (lb/sq ft)	2.47	5.25	3.04
Alpha	1.15	Stream Power (lb/ft s)	16.31	57.19	23.01

Frctn Loss (ft)	4.04	Cum Volume (acre-ft)	4.68	10.30	4.92
C & E Loss (ft)	0.03	Cum SA (acres)	1.78	1.86	2.38

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water 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: Cristianitos
REACH: Upper RS: 4132.011

INPUT
Description:
Station Elevation Data num= 36

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	334.65	2.44	334.07	8.36	332.98	29.86	327.65	42.49	326.47
46.03	325.64	50.11	324.93	66.18	321.48	69.74	320.72	76.87	317.55
77.19	317.4	78.02	316.99	91.29	309.8	92.8	309.04	93.53	308.96
102.19	308.24	107.7	309.06	141.33	319.66	147.19	321.53	147.51	321.56
149.75	321.55	153.26	321.63	157.06	321.72	159.57	321.78	175.64	322.11
176.01	322.12	186.93	322.19	205.53	323.58	216.37	325.48	234.46	328.65
235.18	328.84	237.7	329.48	248.59	332.68	250.7	332.98	252	333.27
254.55	333.82								

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	66.18	.05	175.64	.02	216.37	.05	252	.035

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
92.8	107.7	132.25	251.37	309.34	.1	.3

CROSS SECTION OUTPUT Profile #Q50

E.G. Elev (ft)	311.58	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.47	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	311.11	Reach Len. (ft)	132.25	251.37	309.34
Crit W.S. (ft)	310.62	Flow Area (sq ft)	4.12	36.77	6.64
E.G. Slope (ft/ft)	0.011553	Area (sq ft)	4.12	36.77	6.64
Q Total (cfs)	247.00	Flow (cfs)	12.53	213.60	20.87
Top Width (ft)	25.31	Top Width (ft)	3.92	14.90	6.49
Vel Total (ft/s)	5.20	Avg. Vel. (ft/s)	3.04	5.81	3.14
Max Chl Dpth (ft)	2.87	Hydr. Depth (ft)	1.05	2.47	1.02
Conv. Total (cfs)	2298.0	Conv. (cfs)	116.6	1987.3	194.1
Length Wtd. (ft)	248.58	Wetted Per. (ft)	4.43	14.99	6.81
Min Ch El (ft)	308.24	Shear (lb/sq ft)	0.67	1.77	0.70
Alpha	1.13	Stream Power (lb/ft s)	2.04	10.27	2.21
Frctn Loss (ft)	2.98	Cum Volume (acre-ft)	1.00	4.92	0.93
C & E Loss (ft)	0.04	Cum SA (acres)	0.91	1.79	1.05

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

CROSS SECTION OUTPUT Profile #Q100

E.G. Elev (ft)	312.28	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.69	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	311.59	Reach Len. (ft)	132.25	251.37	309.34
Crit W.S. (ft)	311.18	Flow Area (sq ft)	6.24	44.01	10.17
E.G. Slope (ft/ft)	0.013512	Area (sq ft)	6.24	44.01	10.17
Q Total (cfs)	375.00	Flow (cfs)	23.59	311.59	39.81
Top Width (ft)	27.75	Top Width (ft)	4.82	14.90	8.03
Vel Total (ft/s)	6.21	Avg. Vel. (ft/s)	3.78	7.08	3.92
Max Chl Dpth (ft)	3.35	Hydr. Depth (ft)	1.30	2.95	1.27
Conv. Total (cfs)	3226.1	Conv. (cfs)	203.0	2680.6	342.5
Length Wtd. (ft)	246.88	Wetted Per. (ft)	5.45	14.99	8.42
Min Ch El (ft)	308.24	Shear (lb/sq ft)	0.97	2.48	1.02
Alpha	1.15	Stream Power (lb/ft s)	3.65	17.53	3.99
Frctn Loss (ft)	3.09	Cum Volume (acre-ft)	1.57	6.00	1.47
C & E Loss (ft)	0.08	Cum SA (acres)	1.09	1.79	1.27

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 OUTPUT Profile #Q100HC

E.G. Elev (ft)	314.95	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.65	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	313.30	Reach Len. (ft)	132.25	251.37	309.34
Crit W.S. (ft)	313.31	Flow Area (sq ft)	17.19	69.52	28.57
E.G. Slope (ft/ft)	0.019068	Area (sq ft)	17.19	69.52	28.57
Q Total (cfs)	1089.00	Flow (cfs)	108.26	793.18	187.56
Top Width (ft)	36.34	Top Width (ft)	7.98	14.90	13.46
Vel Total (ft/s)	9.45	Avg. Vel. (ft/s)	6.30	11.41	6.57
Max Chl Dpth (ft)	5.06	Hydr. Depth (ft)	2.16	4.67	2.12
Conv. Total (cfs)	7886.3	Conv. (cfs)	784.0	5744.0	1358.3
Length Wtd. (ft)	242.99	Wetted Per. (ft)	9.05	14.99	14.12
Min Ch El (ft)	308.24	Shear (lb/sq ft)	2.26	5.52	2.41
Alpha	1.19	Stream Power (lb/ft s)	14.25	62.97	15.82
Frctn Loss (ft)	4.04	Cum Volume (acre-ft)	4.57	10.01	4.76
C & E Loss (ft)	0.03	Cum SA (acres)	1.72	1.79	2.31

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.
This may indicate the need for additional cross sections.
Note: Program found supercritical flow starting at this cross section.

CROSS SECTION

RIVER: Cristianitos
REACH: Upper RS: 3880.409

INPUT
Description:
Station Elevation Data num= 48

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	342.48	9.01	340.21	19.83	337.87	40.96	334.36	51.5	332.48
67.16	330.55	71.13	330.4	85.15	329.15	92.36	328.9	100.92	328.23
152.95	323.6	161.79	322.36	175.79	321.1	205.74	318.35	224.36	315.67
228.52	315.01	229.27	314.9	248.11	309.95	253.96	308.41	253.97	308.41
254.01	308.4	269.26	306.59	276.65	305.72	284.57	306.55	292.53	307.28

294.81	307.32	300.66	308.98	308.2	310.06	319.93	313.66	324.09	314.93
342.79	315.87	343.49	315.9	357.12	316.61	369.03	317.1	394.67	320.77
400.59	321.64	402.79	322.3	405.86	323.27	424.64	328.88	426.55	329.52
459.53	339.65	465.09	340.67	493.8	347.07	499.05	347.68	512.71	350.36
520.2	351.42	540.01	353.91	544.1	354.68				

Manning's n Values num= 4

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	228.52	.05	342.79	.02	394.67	.05

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
269.26	284.57	247.42	202.85 208.23	.3	.5

CROSS SECTION OUTPUT Profile #Q50

			Left OB	Channel	Right OB
E.G. Elev (ft)	308.56	Element			
Vel Head (ft)	0.35	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	308.21	Reach Len. (ft)	1.00	1.00	1.00
Crit W.S. (ft)	307.91	Flow Area (sq ft)	11.03	31.60	13.76
E.G. Slope (ft/ft)	0.012462	Area (sq ft)	11.03	31.60	13.76
Q Total (cfs)	247.00	Flow (cfs)	31.64	169.21	46.15
Top Width (ft)	42.32	Top Width (ft)	13.64	15.31	13.37
Vel Total (ft/s)	4.38	Avg. Vel. (ft/s)	2.87	5.36	3.35
Max Chl Dpth (ft)	2.49	Hydr. Depth (ft)	0.81	2.06	1.03
Conv. Total (cfs)	2212.6	Conv. (cfs)	283.4	1515.8	413.4
Length Wtd. (ft)	1.00	Wetted Per. (ft)	13.73	15.40	13.53
Min Ch El (ft)	305.72	Shear (lb/sq ft)	0.63	1.60	0.79
Alpha	1.19	Stream Power (lb/ft s)	1.79	8.55	2.65
Frctn Loss (ft)	0.02	Cum Volume (acre-ft)	0.98	4.73	0.85
C & E Loss (ft)	0.06	Cum SA (acres)	0.88	1.71	0.98

CROSS SECTION OUTPUT Profile #Q100

			Left OB	Channel	Right OB
E.G. Elev (ft)	309.11	Element			
Vel Head (ft)	0.42	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	308.69	Reach Len. (ft)	1.00	1.00	1.00
Crit W.S. (ft)	308.31	Flow Area (sq ft)	18.37	38.95	20.59
E.G. Slope (ft/ft)	0.011610	Area (sq ft)	18.37	38.95	20.59
Q Total (cfs)	375.00	Flow (cfs)	63.15	231.47	80.38
Top Width (ft)	46.73	Top Width (ft)	16.36	15.31	15.06
Vel Total (ft/s)	4.81	Avg. Vel. (ft/s)	3.44	5.94	3.90
Max Chl Dpth (ft)	2.97	Hydr. Depth (ft)	1.12	2.54	1.37
Conv. Total (cfs)	3480.3	Conv. (cfs)	586.1	2148.3	746.0
Length Wtd. (ft)	1.00	Wetted Per. (ft)	16.50	15.40	15.29
Min Ch El (ft)	305.72	Shear (lb/sq ft)	0.81	1.83	0.98
Alpha	1.17	Stream Power (lb/ft s)	2.77	10.89	3.81
Frctn Loss (ft)	0.02	Cum Volume (acre-ft)	1.53	5.76	1.36
C & E Loss (ft)	0.08	Cum SA (acres)	1.06	1.71	1.19

Warning: The conveyance ratio (upstream 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)	311.12	Element			
Vel Head (ft)	0.71	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	310.41	Reach Len. (ft)	1.00	1.00	1.00

Crit W.S. (ft)	309.78	Flow Area (sq ft)	52.05	65.23	54.93
E.G. Slope (ft/ft)	0.010820	Area (sq ft)	52.05	65.23	54.93
Q Total (cfs)	1089.00	Flow (cfs)	275.34	527.82	285.85
Top Width (ft)	62.95	Top Width (ft)	22.88	15.31	24.76
Vel Total (ft/s)	6.32	Avg. Vel. (ft/s)	5.29	8.09	5.20
Max Chl Dpth (ft)	4.69	Hydr. Depth (ft)	2.27	4.26	2.22
Conv. Total (cfs)	10469.5	Conv. (cfs)	2647.0	5074.3	2748.1
Length Wtd. (ft)	1.00	Wetted Per. (ft)	23.25	15.40	25.15
Min Ch El (ft)	305.72	Shear (lb/sq ft)	1.51	2.86	1.48
Alpha	1.15	Stream Power (lb/ft s)	8.00	23.14	7.68
Frctn Loss (ft)	0.01	Cum Volume (acre-ft)	4.46	9.62	4.47
C & E Loss (ft)	0.14	Cum SA (acres)	1.67	1.71	2.18

Warning: The conveyance ratio (upstream 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: Hydraulic jump has occurred between this cross section and the previous upstream section.

BRIDGE

RIVER: Cristianitos
REACH: Upper RS: 3870

INPUT
Description:
Distance from Upstream XS = 1
Deck/Roadway Width = 159.68
Weir Coefficient = 2.6
Upstream Deck/Roadway Coordinates
num= 6

Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord
0	384	0	93.5	382.87	0	93.5	382.87	375.78
536.41	375.88	368.79	536.41	375.88	0	600	374	0

Upstream Bridge Cross Section Data
Station Elevation Data num= 48

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	342.48	9.01	340.21	19.83	337.87	40.96	334.36	51.5	332.48
67.16	330.55	71.13	330.4	85.15	329.15	92.36	328.9	100.92	328.23
152.95	323.6	161.79	322.36	175.79	321.1	205.74	318.35	224.36	315.67
228.52	315.01	229.27	314.9	248.11	309.95	253.96	308.41	253.97	308.41
254.01	308.4	269.26	306.59	276.65	305.72	284.57	306.55	292.53	307.28
294.81	307.32	300.66	308.98	308.2	310.06	319.93	313.66	324.09	314.93
342.79	315.87	343.49	315.9	357.12	316.61	369.03	317.1	394.67	320.77
400.59	321.64	402.79	322.3	405.86	323.27	424.64	328.88	426.55	329.52
459.53	339.65	465.09	340.67	493.8	347.07	499.05	347.68	512.71	350.36
520.2	351.42	540.01	353.91	544.1	354.68				

Manning's n Values num= 4

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	228.52	.05	342.79	.02	394.67	.05

Bank Sta: Left	Right	Coeff Contr.	Expan.
269.26	284.57	.3	.5

Downstream Deck/Roadway Coordinates
num= 6

Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord

```
      0     384       0   11.48  382.87       0   11.48  382.87  375.78
 454.39  375.88  368.79  454.39  375.88       0     460     374       0

Downstream Bridge Cross Section Data
Station Elevation Data    num=      36
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  346.53    3.32  346.22   26.22  342.82   41.89  340.73   56.01  337.99
   61.27  336.69   75.08  331.14   80.96   329.5   113.9  318.28  122.65  316.27
  127.36  314.99  138.08  313.83  163.62  311.61  163.88  311.59  169.21  310.34
   190.3  305.42  203.39   302.4  208.16  301.62  214.16  300.98  217.31  301.37
  221.27  301.89  223.82  302.86  230.23  305.15  235.97  307.81   238.1  307.99
  247.34  308.74  262.48  309.69   305.7  311.88   310.8  312.14  353.32  314.37
  365.66  315.52  368.35  315.97  373.15  316.94  407.24   323.5   416.2   324.5
  430.57  326.46

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .035  163.62     .05  305.7     .02

Bank Sta: Left   Right    Coeff Contr.   Expan.
        203.39  223.82             .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           =
Energy head used in spillway design           =
Spillway height used in design                =
Weir crest shape                              = Broad Crested

Number of Abutments =  2

Abutment Data
Upstream     num=       2
     Sta    Elev     Sta    Elev
   65.62  383.85   203.4  314.96
Downstream     num=       2
     Sta    Elev     Sta    Elev
   -16.4  383.85  121.39  314.96

Abutment Data
Upstream     num=       2
     Sta    Elev     Sta    Elev
  492.12  344.48   564.3  377.29
Downstream     num=       2
     Sta    Elev     Sta    Elev
  377.29  318.42  482.28  377.29

Number of Piers =  2

Pier Data
Pier Station     Upstream=   226.4    Downstream=   144.4
Upstream     num=       2
    Width   Elev    Width   Elev
   11.001      0   11.001    400
Downstream     num=       2
    Width   Elev    Width   Elev
   11.001      0   11.001    400
```

Pier Data
Pier Station Upstream= 403.5 Downstream= 321.5
Upstream num= 2

Width	Elev	Width	Elev
11.001	0	11.001	400

Downstream num= 2

Width	Elev	Width	Elev
11.001	0	11.001	400

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)	308.56	Element		
W.S. US. (ft)	308.21	E.G. Elev (ft)	308.49	305.56
Q Total (cfs)	247.00	W.S. Elev (ft)	307.92	305.47
Q Bridge (cfs)	247.00	Crit W.S. (ft)	307.92	303.32
Q Weir (cfs)		Max Chl Dpth (ft)	2.20	4.49
Weir Sta Lft (ft)		Vel Total (ft/s)	5.54	2.29
Weir Sta Rgt (ft)		Flow Area (sq ft)	44.55	108.06
Weir Submerg		Froude # Chl	0.89	0.24
Weir Max Depth (ft)		Specif Force (cu ft)	77.91	199.33
Min El Weir Flow (ft)	376.27	Hydr Depth (ft)	1.15	2.65
Min El Prs (ft)	375.78	W.P. Total (ft)	39.12	41.98
Delta EG (ft)	3.06	Conv. Total (cfs)	1599.5	6741.1
Delta WS (ft)	2.80	Top Width (ft)	38.83	40.83
BR Open Area (sq ft)	17876.36	Frctn Loss (ft)	0.56	4.35
BR Open Vel (ft/s)	5.54	C & E Loss (ft)	0.24	0.07
Coef of Q		Shear Total (lb/sq ft)	1.70	0.22
Br Sel Method	Energy only	Power Total (lb/ft s)	9.40	0.49

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.
Warning: The energy loss was 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 OUTPUT Profile #Q100

		Element	Inside BR US	Inside BR DS
E.G. US. (ft)	309.11	E.G. Elev (ft)	309.01	306.29
W.S. US. (ft)	308.69	W.S. Elev (ft)	308.32	306.16
Q Total (cfs)	375.00	Crit W.S. (ft)	308.32	303.85
Q Bridge (cfs)	375.00	Max Chl Dpth (ft)	2.60	5.18
Q Weir (cfs)		Vel Total (ft/s)	6.13	2.72
Weir Sta Lft (ft)		Flow Area (sq ft)	61.18	137.64
Weir Sta Rgt (ft)		Froude # Chl	0.90	0.27
Weir Submerg		Specif Force (cu ft)	129.68	298.77
Weir Max Depth (ft)		Hydr Depth (ft)	1.40	3.04
Min El Weir Flow (ft)	376.27	W.P. Total (ft)	44.02	46.64
Min El Prs (ft)	375.78	Conv. Total (cfs)	2475.8	9370.8
Delta EG (ft)	2.89	Top Width (ft)	43.65	45.26
Delta WS (ft)	2.61	Frctn Loss (ft)	0.64	4.14
BR Open Area (sq ft)	17876.36	C & E Loss (ft)	0.28	0.10
BR Open Vel (ft/s)	6.13	Shear Total (lb/sq ft)	1.99	0.30
Coef of Q		Power Total (lb/ft s)	12.20	0.80
Br Sel Method	Energy only			

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

		Element	Inside BR US	Inside BR DS
E.G. US. (ft)	311.12	E.G. Elev (ft)	310.96	308.87
W.S. US. (ft)	310.41	W.S. Elev (ft)	309.79	308.54
Q Total (cfs)	1089.00	Crit W.S. (ft)	309.79	305.80
Q Bridge (cfs)	1089.00	Max Chl Dpth (ft)	4.07	7.56
Q Weir (cfs)		Vel Total (ft/s)	8.07	4.09
Weir Sta Lft (ft)		Flow Area (sq ft)	134.99	266.50
Weir Sta Rgt (ft)		Froude # Chl	0.95	0.35
Weir Submerg		Specif Force (cu ft)	482.40	887.96
Weir Max Depth (ft)		Hydr Depth (ft)	2.34	3.92
Min El Weir Flow (ft)	376.27	W.P. Total (ft)	58.31	70.01
Min El Prs (ft)	375.78	Conv. Total (cfs)	7453.3	22123.6
Delta EG (ft)	2.36	Top Width (ft)	57.61	67.96
Delta WS (ft)	2.00	Frctn Loss (ft)	0.87	3.53
BR Open Area (sq ft)	17876.36	C & E Loss (ft)	0.42	0.15
BR Open Vel (ft/s)	8.07	Shear Total (lb/sq ft)	3.09	0.58
Coef of Q		Power Total (lb/ft s)	24.89	2.35
Br Sel Method	Energy only			

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

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

CROSS SECTION

RIVER: Cristianitos
REACH: Upper RS: 3679.763

INPUT
Description:
Station Elevation Data num= 36

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	346.53	3.32	346.22	26.22	342.82	41.89	340.73	56.01	337.99
61.27	336.69	75.08	331.14	80.96	329.5	113.9	318.28	122.65	316.27
127.36	314.99	138.08	313.83	163.62	311.61	163.88	311.59	169.21	310.34
190.3	305.42	203.39	302.4	208.16	301.62	214.16	300.98	217.31	301.37
221.27	301.89	223.82	302.86	230.23	305.15	235.97	307.81	238.1	307.99
247.34	308.74	262.48	309.69	305.7	311.88	310.8	312.14	353.32	314.37
365.66	315.52	368.35	315.97	373.15	316.94	407.24	323.5	416.2	324.5
430.57	326.46								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.035	163.62	.05	305.7	.02

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
203.39	223.82	239.31	207.71	163.34	.3	.5

CROSS SECTION OUTPUT Profile #Q50

			Left OB	Channel	Right OB
E.G. Elev (ft)	305.50	Element			
Vel Head (ft)	0.10	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	305.40	Reach Len. (ft)	239.31	207.71	163.34
Crit W.S. (ft)		Flow Area (sq ft)	19.56	76.81	9.04
E.G. Slope (ft/ft)	0.001437	Area (sq ft)	19.56	76.81	9.04
Q Total (cfs)	247.00	Flow (cfs)	28.41	206.97	11.63
Top Width (ft)	40.41	Top Width (ft)	13.02	20.43	6.96
Vel Total (ft/s)	2.34	Avg. Vel. (ft/s)	1.45	2.69	1.29
Max Chl Dpth (ft)	4.42	Hydr. Depth (ft)	1.50	3.76	1.30
Conv. Total (cfs)	6516.3	Conv. (cfs)	749.5	5460.2	306.7
Length Wtd. (ft)	208.02	Wetted Per. (ft)	13.36	20.76	7.41
Min Ch El (ft)	300.98	Shear (lb/sq ft)	0.13	0.33	0.11
Alpha	1.17	Stream Power (lb/ft s)	0.19	0.89	0.14
Frctn Loss (ft)	0.46	Cum Volume (acre-ft)	0.85	4.25	0.78
C & E Loss (ft)	0.02	Cum SA (acres)	0.79	1.57	0.92

Warning: The conveyance ratio (upstream 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)	306.22	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.14	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	306.08	Reach Len. (ft)	239.31	207.71	163.34
Crit W.S. (ft)		Flow Area (sq ft)	29.29	90.55	14.21
E.G. Slope (ft/ft)	0.001721	Area (sq ft)	29.29	90.55	14.21
Q Total (cfs)	375.00	Flow (cfs)	53.31	297.97	23.73
Top Width (ft)	44.74	Top Width (ft)	15.91	20.43	8.41
Vel Total (ft/s)	2.80	Avg. Vel. (ft/s)	1.82	3.29	1.67
Max Chl Dpth (ft)	5.10	Hydr. Depth (ft)	1.84	4.43	1.69
Conv. Total (cfs)	9039.5	Conv. (cfs)	1285.0	7182.6	571.9
Length Wtd. (ft)	207.67	Wetted Per. (ft)	16.32	20.76	9.01
Min Ch El (ft)	300.98	Shear (lb/sq ft)	0.19	0.47	0.17
Alpha	1.18	Stream Power (lb/ft s)	0.35	1.54	0.28
Frctn Loss (ft)	0.51	Cum Volume (acre-ft)	1.34	5.20	1.25
C & E Loss (ft)	0.02	Cum SA (acres)	0.94	1.57	1.12

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 OUTPUT Profile #Q100HC

E.G. Elev (ft)	308.76	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.35	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	308.41	Reach Len. (ft)	239.31	207.71	163.34
Crit W.S. (ft)		Flow Area (sq ft)	78.05	138.20	41.48
E.G. Slope (ft/ft)	0.002623	Area (sq ft)	78.05	138.20	41.48
Q Total (cfs)	1089.00	Flow (cfs)	243.53	744.33	101.13
Top Width (ft)	65.78	Top Width (ft)	25.90	20.43	19.45
Vel Total (ft/s)	4.23	Avg. Vel. (ft/s)	3.12	5.39	2.44
Max Chl Dpth (ft)	7.43	Hydr. Depth (ft)	3.01	6.76	2.13
Conv. Total (cfs)	21262.8	Conv. (cfs)	4755.0	14533.1	1974.6
Length Wtd. (ft)	206.77	Wetted Per. (ft)	26.59	20.76	20.46
Min Ch El (ft)	300.98	Shear (lb/sq ft)	0.48	1.09	0.33
Alpha	1.26	Stream Power (lb/ft s)	1.50	5.87	0.81
Frctn Loss (ft)	0.61	Cum Volume (acre-ft)	3.95	8.75	4.15
C & E Loss (ft)	0.00	Cum SA (acres)	1.49	1.57	2.02

CROSS SECTION

RIVER: Cristianitos
REACH: Upper RS: 3469.412

INPUT
Description:
Station Elevation Data num= 48

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	334.72	1.29	334.58	1.66	334.48	2.51	334.26	31.45	324.29
56.95	319.89	67.87	317.62	71.05	317.52	93.85	315.85	110.92	315.97
113.35	315.8	117.64	315.92	120.86	315.7	124.04	315.59	124.85	315.52
125.12	315.49	127.58	315.29	130.25	314.66	137.29	313.06	146.45	310.82
153.98	310.26	168.9	309.15	170.62	309.12	172.64	309.09	173.95	309.13
176.15	309.2	180.71	308.87	187.76	307.98	196.73	305.86	204.78	303.55
211.9	301.86	223.61	302.08	234.39	303.58	250.52	305.81	260.14	307.14

267.26	308.2	276.9	308.58	278.95	308.68	303.79	309.87	320.92	310.69
328.83	310.7	344.07	310.72	349.57	311.36	370.76	313.82	379.31	314.74
389.46	317.04	403.67	319.37	416.15	322.13				

Manning's n Values num= 6

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	124.85	.05	153.98	.035	170.62	.05	303.79	.02
349.57	.05								

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
204.78	234.39	262.64	172.27	112.8	.1 .3

CROSS SECTION OUTPUT Profile #Q50

			Left OB	Channel	Right OB
E.G. Elev (ft)	305.02	Element			
Vel Head (ft)	0.16	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	304.86	Reach Len. (ft)	262.64	172.27	112.80
Crit W.S. (ft)		Flow Area (sq ft)	2.99	71.04	5.92
E.G. Slope (ft/ft)	0.003905	Area (sq ft)	2.99	71.04	5.92
Q Total (cfs)	247.00	Flow (cfs)	4.07	234.83	8.10
Top Width (ft)	43.42	Top Width (ft)	4.56	29.61	9.25
Vel Total (ft/s)	3.09	Avg. Vel. (ft/s)	1.36	3.31	1.37
Max Chl Dpth (ft)	3.00	Hydr. Depth (ft)	0.65	2.40	0.64
Conv. Total (cfs)	3952.7	Conv. (cfs)	65.1	3757.9	129.7
Length Wtd. (ft)	175.99	Wetted Per. (ft)	4.75	29.91	9.34
Min Ch El (ft)	301.86	Shear (lb/sq ft)	0.15	0.58	0.15
Alpha	1.10	Stream Power (lb/ft s)	0.21	1.91	0.21
Frctn Loss (ft)	1.47	Cum Volume (acre-ft)	0.79	3.90	0.76
C & E Loss (ft)	0.06	Cum SA (acres)	0.74	1.45	0.89

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

CROSS SECTION OUTPUT Profile #Q100

			Left OB	Channel	Right OB
E.G. Elev (ft)	305.69	Element			
Vel Head (ft)	0.21	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	305.48	Reach Len. (ft)	262.64	172.27	112.80
Crit W.S. (ft)		Flow Area (sq ft)	6.48	89.37	13.03
E.G. Slope (ft/ft)	0.003825	Area (sq ft)	6.48	89.37	13.03
Q Total (cfs)	375.00	Flow (cfs)	11.31	340.71	22.98
Top Width (ft)	50.06	Top Width (ft)	6.72	29.61	13.73
Vel Total (ft/s)	3.44	Avg. Vel. (ft/s)	1.75	3.81	1.76
Max Chl Dpth (ft)	3.62	Hydr. Depth (ft)	0.96	3.02	0.95
Conv. Total (cfs)	6063.5	Conv. (cfs)	182.9	5509.0	371.5
Length Wtd. (ft)	175.79	Wetted Per. (ft)	6.99	29.91	13.86
Min Ch El (ft)	301.86	Shear (lb/sq ft)	0.22	0.71	0.22
Alpha	1.14	Stream Power (lb/ft s)	0.39	2.72	0.40
Frctn Loss (ft)	1.42	Cum Volume (acre-ft)	1.24	4.77	1.20
C & E Loss (ft)	0.07	Cum SA (acres)	0.88	1.45	1.07

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

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 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)	308.15	Element			
Vel Head (ft)	0.34	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	307.81	Reach Len. (ft)	262.64	172.27	112.80
Crit W.S. (ft)		Flow Area (sq ft)	33.00	158.34	64.52
E.G. Slope (ft/ft)	0.003290	Area (sq ft)	33.00	158.34	64.52
Q Total (cfs)	1089.00	Flow (cfs)	88.07	819.81	181.12
Top Width (ft)	76.13	Top Width (ft)	16.29	29.61	30.23
Vel Total (ft/s)	4.26	Avg. Vel. (ft/s)	2.67	5.18	2.81
Max Chl Dpth (ft)	5.95	Hydr. Depth (ft)	2.03	5.35	2.13
Conv. Total (cfs)	18985.4	Conv. (cfs)	1535.5	14292.4	3157.6
Length Wtd. (ft)	174.92	Wetted Per. (ft)	16.84	29.91	30.53
Min Ch El (ft)	301.86	Shear (lb/sq ft)	0.40	1.09	0.43
Alpha	1.22	Stream Power (lb/ft s)	1.07	5.63	1.22
Frctn Loss (ft)	1.20	Cum Volume (acre-ft)	3.64	8.04	3.95
C & E Loss (ft)	0.12	Cum SA (acres)	1.38	1.45	1.93

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

CROSS SECTION

RIVER: Cristianitos
REACH: Upper RS: 3296.568

INPUT
Description: Manual Modification of Mannings N Values, XS Modified 2:1 Slope
Sta 162-291
Station Elevation Data num= 29

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	321.7	4.34	320.02	11.58	317.14	15.27	315.45	17.46	315.18
26.72	314.05	37.7	312.49	48.28	311.86	72.75	310.59	73.1	310.57
82.8	309.84	93.41	309.3	97.79	309.08	102.36	308.98	108.38	308.31
115.22	304.56	122.16	301.31	126.14	300.96	127.24	300.85	133.86	300.86
136.02	300.86	137.05	300.95	140.39	301.4	153.93	306.36	155.68	307.17
156.24	307.43	157.3	307.98	162.97	308.45	291	372		

Manning's n Values num= 2

Sta	n Val	Sta	n Val
0	.035	17.46	.05

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
126.14	137.05	197.4	211.35	205.37	.1	.3

CROSS SECTION OUTPUT Profile #Q50

			Left OB	Channel	Right OB
E.G. Elev (ft)	303.50	Element			

Vel Head (ft)	0.75	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	302.75	Reach Len. (ft)	197.40	211.35	205.37
Crit W.S. (ft)	302.75	Flow Area (sq ft)	8.64	20.55	7.74
E.G. Slope (ft/ft)	0.028811	Area (sq ft)	8.64	20.55	7.74
Q Total (cfs)	247.00	Flow (cfs)	48.34	158.01	40.65
Top Width (ft)	24.99	Top Width (ft)	7.05	10.91	7.02
Vel Total (ft/s)	6.69	Avg. Vel. (ft/s)	5.60	7.69	5.25
Max Chl Dpth (ft)	1.90	Hydr. Depth (ft)	1.22	1.88	1.10
Conv. Total (cfs)	1455.2	Conv. (cfs)	284.8	930.9	239.5
Length Wtd. (ft)	208.19	Wetted Per. (ft)	7.39	10.92	7.29
Min Ch El (ft)	300.85	Shear (lb/sq ft)	2.10	3.38	1.91
Alpha	1.08	Stream Power (lb/ft s)	11.77	26.03	10.03
Frctn Loss (ft)	2.45	Cum Volume (acre-ft)	0.76	3.71	0.74
C & E Loss (ft)	0.15	Cum SA (acres)	0.71	1.37	0.86

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water 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)	304.20	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.94	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	303.26	Reach Len. (ft)	197.40	211.35	205.37
Crit W.S. (ft)	303.26	Flow Area (sq ft)	12.54	26.15	11.71
E.G. Slope (ft/ft)	0.026789	Area (sq ft)	12.54	26.15	11.71
Q Total (cfs)	375.00	Flow (cfs)	78.41	227.64	68.95
Top Width (ft)	27.48	Top Width (ft)	8.15	10.91	8.42
Vel Total (ft/s)	7.44	Avg. Vel. (ft/s)	6.25	8.71	5.89
Max Chl Dpth (ft)	2.41	Hydr. Depth (ft)	1.54	2.40	1.39
Conv. Total (cfs)	2291.1	Conv. (cfs)	479.0	1390.8	421.3
Length Wtd. (ft)	207.87	Wetted Per. (ft)	8.60	10.92	8.78
Min Ch El (ft)	300.85	Shear (lb/sq ft)	2.44	4.00	2.23
Alpha	1.09	Stream Power (lb/ft s)	15.25	34.87	13.13
Frctn Loss (ft)	2.52	Cum Volume (acre-ft)	1.18	4.54	1.17
C & E Loss (ft)	0.18	Cum SA (acres)	0.84	1.37	1.05

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

CROSS SECTION OUTPUT Profile #Q100HC

E.G. Elev (ft)	306.83	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.59	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	305.24	Reach Len. (ft)	197.40	211.35	205.37
Crit W.S. (ft)	305.24	Flow Area (sq ft)	32.70	47.67	33.64
E.G. Slope (ft/ft)	0.022092	Area (sq ft)	32.70	47.67	33.64
Q Total (cfs)	1089.00	Flow (cfs)	266.30	562.52	260.18
Top Width (ft)	36.87	Top Width (ft)	12.15	10.91	13.81
Vel Total (ft/s)	9.55	Avg. Vel. (ft/s)	8.14	11.80	7.73
Max Chl Dpth (ft)	4.39	Hydr. Depth (ft)	2.69	4.37	2.44
Conv. Total (cfs)	7326.7	Conv. (cfs)	1791.7	3784.6	1750.5
Length Wtd. (ft)	207.06	Wetted Per. (ft)	13.06	10.92	14.52
Min Ch El (ft)	300.85	Shear (lb/sq ft)	3.45	6.02	3.20
Alpha	1.12	Stream Power (lb/ft s)	28.11	71.05	24.71
Frctn Loss (ft)	3.18	Cum Volume (acre-ft)	3.44	7.63	3.83
C & E Loss (ft)	0.19	Cum SA (acres)	1.29	1.37	1.87

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water 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: Cristianitos
REACH: Upper RS: 3085.474

INPUT
Description: XS Modified 2:1 Slope Sta 265-344
Station Elevation Data num= 23

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	314.87	18.38	313.25	31.02	312.27	58.16	310.16	87.34	307.92
113.66	304.31	134.08	302.37	135.11	302.04	135.13	302.03	151.03	295.97
152.41	295.44	164.67	295.89	168.36	295.85	173.61	297.25	188.34	301.94
191.63	302.16	197.14	302.55	231.27	301.74	248.83	301.27	254.63	301.22
259.4	301.33	265	301.61	344.66	341				

Manning's n Values num= 2

Sta	n Val	Sta	n Val
0	.02	31.02	.05

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
151.03	164.67	136.96	234.47 286.66	.1	.3

CROSS SECTION OUTPUT Profile #Q50

E.G. Elev (ft)	298.58	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.26	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	298.32	Reach Len. (ft)	136.96	234.47	286.66
Crit W.S. (ft)	297.45	Flow Area (sq ft)	7.27	36.22	20.18
E.G. Slope (ft/ft)	0.006341	Area (sq ft)	7.27	36.22	20.18
Q Total (cfs)	247.00	Flow (cfs)	18.34	163.50	65.17
Top Width (ft)	32.13	Top Width (ft)	6.18	13.64	12.31

Vel Total (ft/s)	3.88	Avg. Vel. (ft/s)	2.52	4.51	3.23
Max Chl Dpth (ft)	2.88	Hydr. Depth (ft)	1.18	2.66	1.64
Conv. Total (cfs)	3101.8	Conv. (cfs)	230.3	2053.2	818.4
Length Wtd. (ft)	234.54	Wetted Per. (ft)	6.61	13.75	12.66
Min Ch El (ft)	295.44	Shear (lb/sq ft)	0.44	1.04	0.63
Alpha	1.11	Stream Power (lb/ft s)	1.10	4.71	2.04
Frctn Loss (ft)	2.75	Cum Volume (acre-ft)	0.72	3.58	0.67
C & E Loss (ft)	0.02	Cum SA (acres)	0.68	1.31	0.82

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was 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)	299.25	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.36	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	298.90	Reach Len. (ft)	136.96	234.47	286.66
Crit W.S. (ft)	297.94	Flow Area (sq ft)	11.23	44.02	27.74
E.G. Slope (ft/ft)	0.006882	Area (sq ft)	11.23	44.02	27.74
Q Total (cfs)	375.00	Flow (cfs)	34.11	235.75	105.14
Top Width (ft)	35.43	Top Width (ft)	7.68	13.64	14.11
Vel Total (ft/s)	4.52	Avg. Vel. (ft/s)	3.04	5.36	3.79
Max Chl Dpth (ft)	3.46	Hydr. Depth (ft)	1.46	3.23	1.97
Conv. Total (cfs)	4520.2	Conv. (cfs)	411.2	2841.7	1267.4
Length Wtd. (ft)	233.68	Wetted Per. (ft)	8.22	13.75	14.55
Min Ch El (ft)	295.44	Shear (lb/sq ft)	0.59	1.38	0.82
Alpha	1.12	Stream Power (lb/ft s)	1.78	7.37	3.11
Frctn Loss (ft)	3.01	Cum Volume (acre-ft)	1.13	4.37	1.08
C & E Loss (ft)	0.02	Cum SA (acres)	0.80	1.31	0.99

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was 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)	301.49	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.95	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	300.54	Reach Len. (ft)	136.96	234.47	286.66
Crit W.S. (ft)	299.83	Flow Area (sq ft)	27.43	66.48	55.23
E.G. Slope (ft/ft)	0.011319	Area (sq ft)	27.43	66.48	55.23
Q Total (cfs)	1089.00	Flow (cfs)	143.89	601.10	344.02
Top Width (ft)	44.92	Top Width (ft)	12.00	13.64	19.28
Vel Total (ft/s)	7.30	Avg. Vel. (ft/s)	5.24	9.04	6.23
Max Chl Dpth (ft)	5.10	Hydr. Depth (ft)	2.29	4.87	2.86
Conv. Total (cfs)	10236.1	Conv. (cfs)	1352.5	5650.0	3233.6
Length Wtd. (ft)	233.81	Wetted Per. (ft)	12.84	13.75	19.98
Min Ch El (ft)	295.44	Shear (lb/sq ft)	1.51	3.42	1.95
Alpha	1.14	Stream Power (lb/ft s)	7.92	30.90	12.17
Frctn Loss (ft)	3.79	Cum Volume (acre-ft)	3.31	7.36	3.62
C & E Loss (ft)	0.00	Cum SA (acres)	1.23	1.31	1.79

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

CROSS SECTION

RIVER: Cristianitos
REACH: Upper RS: 2851.001

INPUT
Description: Manual Modification of Manning's N Values
Station Elevation Data num= 41

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	310.99	6.84	309.32	23.14	306.75	31.88	304.6	39.14	301.85
60.82	296.51	65.52	295.36	66.42	295.07	68.17	294.82	70.11	294.94
70.73	294.98	81.17	294.25	85.36	293.97	87.62	294.13	103.28	294.22
125.57	295.46	129.46	295.64	131.97	295.68	137.44	297.13	145.24	299.2
145.56	299.3	145.94	299.29	150.87	300.71	152.51	300.32	157.35	296.83
160.74	295.86	194.58	296.2	203.39	296.55	205.24	296.66	220.82	296.01
235.2	295.73	244.1	295.6	247.39	295.11	286.77	295.25	318.68	295.45
329.34	296.34	350.56	300.28	362.09	303	381.58	306.49	392.27	308.08
394.95	308.79								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.05	203.39	.035	350.56	.07

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
81.17	103.28	31.68	39.54	25.34	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
150.87	394.95	300.71	F

CROSS SECTION OUTPUT Profile #Q50

			Left OB	Channel	Right OB
E.G. Elev (ft)	295.83	Element			
Vel Head (ft)	0.42	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	295.41	Reach Len. (ft)	31.68	39.54	25.34
Crit W.S. (ft)	295.41	Flow Area (sq ft)	10.53	27.76	12.63
E.G. Slope (ft/ft)	0.028538	Area (sq ft)	10.53	27.76	23.75
Q Total (cfs)	247.00	Flow (cfs)	40.12	162.16	44.72
Top Width (ft)	125.46	Top Width (ft)	15.84	22.11	87.51
Vel Total (ft/s)	4.85	Avg. Vel. (ft/s)	3.81	5.84	3.54
Max Chl Dpth (ft)	1.44	Hydr. Depth (ft)	0.67	1.26	0.59
Conv. Total (cfs)	1462.1	Conv. (cfs)	237.5	959.9	264.7
Length Wtd. (ft)	36.38	Wetted Per. (ft)	15.94	22.13	21.35
Min Ch El (ft)	293.97	Shear (lb/sq ft)	1.18	2.24	1.05
Alpha	1.15	Stream Power (lb/ft s)	4.49	13.06	3.73
Frctn Loss (ft)	0.71	Cum Volume (acre-ft)	0.69	3.40	0.53
C & E Loss (ft)	0.00	Cum SA (acres)	0.64	1.21	0.49

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

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

CROSS SECTION OUTPUT Profile #Q100

			Left OB	Channel	Right OB
E.G. Elev (ft)	296.22	Element			
Vel Head (ft)	0.58	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	295.64	Reach Len. (ft)	31.68	39.54	25.34
Crit W.S. (ft)	295.64	Flow Area (sq ft)	14.42	33.03	18.28
E.G. Slope (ft/ft)	0.032149	Area (sq ft)	14.42	33.03	47.15
Q Total (cfs)	375.00	Flow (cfs)	69.00	229.86	76.14
Top Width (ft)	145.22	Top Width (ft)	16.81	22.11	106.30
Vel Total (ft/s)	5.71	Avg. Vel. (ft/s)	4.79	6.96	4.17
Max Chl Dpth (ft)	1.67	Hydr. Depth (ft)	0.86	1.49	0.69
Conv. Total (cfs)	2091.5	Conv. (cfs)	384.8	1282.0	424.6
Length Wtd. (ft)	35.78	Wetted Per. (ft)	16.94	22.13	26.45
Min Ch El (ft)	293.97	Shear (lb/sq ft)	1.71	3.00	1.39
Alpha	1.15	Stream Power (lb/ft s)	8.18	20.85	5.78
Frctn Loss (ft)	0.74	Cum Volume (acre-ft)	1.09	4.16	0.83
C & E Loss (ft)	0.00	Cum SA (acres)	0.76	1.21	0.60

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

CROSS SECTION OUTPUT Profile #Q100HC

			Left OB	Channel	Right OB
E.G. Elev (ft)	297.69	Element			
Vel Head (ft)	0.93	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	296.76	Reach Len. (ft)	31.68	39.54	25.34
Crit W.S. (ft)	296.76	Flow Area (sq ft)	35.74	57.72	52.49
E.G. Slope (ft/ft)	0.025176	Area (sq ft)	35.74	57.72	233.09
Q Total (cfs)	1089.00	Flow (cfs)	235.56	515.84	337.59
Top Width (ft)	250.26	Top Width (ft)	21.37	22.11	206.78
Vel Total (ft/s)	7.46	Avg. Vel. (ft/s)	6.59	8.94	6.43
Max Chl Dpth (ft)	2.79	Hydr. Depth (ft)	1.67	2.61	1.60
Conv. Total (cfs)	6863.3	Conv. (cfs)	1484.6	3251.0	2127.6
Length Wtd. (ft)	34.21	Wetted Per. (ft)	21.63	22.13	32.95
Min Ch El (ft)	293.97	Shear (lb/sq ft)	2.60	4.10	2.50
Alpha	1.08	Stream Power (lb/ft s)	17.12	36.65	16.11
Frctn Loss (ft)	0.48	Cum Volume (acre-ft)	3.21	7.02	2.67
C & E Loss (ft)	0.06	Cum SA (acres)	1.18	1.21	1.05

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

CROSS SECTION

RIVER: Cristianitos
REACH: Upper RS: 2811.46*

INPUT
Description:
Station Elevation Data num= 67

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	309.99	6.05	308.7	7.65	308.35	7.82	308.3	10.52	307.65
17.9	306.21	18.89	306	19.65	305.88	26.44	304.86	36.43	302.69
44.72	300.06	45.5	299.89	55.63	297.71	56.1	297.61	57.92	297.22
69.5	294.76	74.87	293.62	75.9	293.34	77.9	293.07	79.66	293.1
80.11	293.12	80.82	293.14	92.75	292.34	96.72	292.08	98.87	292.22
113.72	292.31	120.31	292.75	126.7	293.2	132.45	293.88	134.52	294.09
138.15	294.44	140.5	294.6	145.6	296.12	152.88	298.29	153.18	298.39
153.54	298.4	154.98	298.86	155.41	299	158.14	299.83	158.32	299.8
159.67	299.53	164.19	296.62	165.06	296.4	167.35	295.8	188.18	295.99
198.94	296.08	207.16	296.37	208.89	296.46	223.43	295.88	236.86	295.62
245.17	295.5	248.24	295.07	285	295.14	304.82	295.23	308.24	295.24
308.98	295.25	310.83	295.28	314.78	295.33	318.2	295.63	324.73	296.18
344.54	299.73	350.92	301.16	352.89	301.63	355.3	302.2	373.5	305.58
383.47	307.15	385.98	307.81						

Manning's n Values num= 7

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.05	92.75	.035	113.72	.04	207.16	.04	344.54	.07
352.89	.07	385.98	.07						

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
92.75	113.72	31.68 39.54	25.34	.1	.3

CROSS SECTION OUTPUT Profile #Q50

E.G. Elev (ft)	294.38	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.17	Wt. n-Val.	0.050	0.035	0.040
W.S. Elev (ft)	293.22	Reach Len. (ft)	31.68	39.54	25.34
Crit W.S. (ft)	293.57	Flow Area (sq ft)	6.15	20.48	6.11
E.G. Slope (ft/ft)	0.051561	Area (sq ft)	6.15	20.48	6.11
Q Total (cfs)	247.00	Flow (cfs)	21.94	194.22	30.84
Top Width (ft)	50.07	Top Width (ft)	15.96	20.97	13.14
Vel Total (ft/s)	7.55	Avg. Vel. (ft/s)	3.57	9.48	5.05
Max Chl Dpth (ft)	1.14	Hydr. Depth (ft)	0.39	0.98	0.46
Conv. Total (cfs)	1087.8	Conv. (cfs)	96.6	855.3	135.8
Length Wtd. (ft)	37.15	Wetted Per. (ft)	15.99	20.98	13.17

Min Ch El (ft)	292.08	Shear (lb/sq ft)	1.24	3.14	1.49
Alpha	1.32	Stream Power (lb/ft s)	4.42	29.79	7.53
Frctn Loss (ft)	1.37	Cum Volume (acre-ft)	0.69	3.38	0.52
C & E Loss (ft)	0.07	Cum SA (acres)	0.63	1.19	0.46

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.
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)	294.80	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.32	Wt. n-Val.	0.050	0.035	0.040
W.S. Elev (ft)	293.48	Reach Len. (ft)	31.68	39.54	25.34
Crit W.S. (ft)	293.88	Flow Area (sq ft)	10.59	26.03	9.88
E.G. Slope (ft/ft)	0.044671	Area (sq ft)	10.59	26.03	9.88
Q Total (cfs)	375.00	Flow (cfs)	47.72	269.64	57.64
Top Width (ft)	53.73	Top Width (ft)	17.38	20.97	15.38
Vel Total (ft/s)	8.06	Avg. Vel. (ft/s)	4.50	10.36	5.83
Max Chl Dpth (ft)	1.40	Hydr. Depth (ft)	0.61	1.24	0.64
Conv. Total (cfs)	1774.3	Conv. (cfs)	225.8	1275.8	272.7
Length Wtd. (ft)	36.50	Wetted Per. (ft)	17.45	20.98	15.43
Min Ch El (ft)	292.08	Shear (lb/sq ft)	1.69	3.46	1.79
Alpha	1.31	Stream Power (lb/ft s)	7.63	35.84	10.42
Frctn Loss (ft)	1.35	Cum Volume (acre-ft)	1.08	4.13	0.81
C & E Loss (ft)	0.07	Cum SA (acres)	0.75	1.19	0.56

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
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)	296.57	Element	Left OB	Channel	Right OB
Vel Head (ft)	2.08	Wt. n-Val.	0.050	0.035	0.040
W.S. Elev (ft)	294.49	Reach Len. (ft)	31.68	39.54	25.34
Crit W.S. (ft)	295.35	Flow Area (sq ft)	30.30	47.10	29.91
E.G. Slope (ft/ft)	0.035479	Area (sq ft)	30.30	47.10	29.91
Q Total (cfs)	1089.00	Flow (cfs)	209.05	645.64	234.31
Top Width (ft)	68.09	Top Width (ft)	21.97	20.97	25.15
Vel Total (ft/s)	10.15	Avg. Vel. (ft/s)	6.90	13.71	7.83
Max Chl Dpth (ft)	2.41	Hydr. Depth (ft)	1.38	2.25	1.19
Conv. Total (cfs)	5781.6	Conv. (cfs)	1109.9	3427.7	1243.9
Length Wtd. (ft)	35.17	Wetted Per. (ft)	22.15	20.98	25.25
Min Ch El (ft)	292.08	Shear (lb/sq ft)	3.03	4.97	2.62
Alpha	1.30	Stream Power (lb/ft s)	20.91	68.15	20.56
Frctn Loss (ft)	1.01	Cum Volume (acre-ft)	3.18	6.97	2.59
C & E Loss (ft)	0.11	Cum SA (acres)	1.17	1.19	0.98

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

additional cross sections.
Warning: The energy loss was 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: Cristianitos
REACH: Upper RS: 2771.92*

INPUT
Description:
Station Elevation Data num= 67

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	308.99	6.81	307.71	8.6	307.35	8.79	307.29	11.83	306.36
20.14	304.49	21.25	304.2	22.1	304.08	29.74	302.96	40.98	300.77
50.31	298.26	51.18	298.09	62.57	295.91	63.1	295.81	65.15	295.43
78.17	293	84.21	291.88	85.37	291.61	87.62	291.32	89.61	291.29
90.11	291.3	90.91	291.31	104.33	290.43	108.09	290.19	110.11	290.31
124.15	290.41	130.27	290.89	136.21	291.41	141.55	292.41	143.48	292.73
146.85	293.24	149.03	293.53	153.77	295.11	160.53	297.37	160.81	297.48
161.14	297.51	162.47	297.98	162.88	298.12	165.41	298.95	165.57	298.94
166.83	298.74	171.03	296.41	171.84	296.25	173.97	295.75	193.31	295.9
203.3	295.95	210.94	296.18	212.54	296.25	226.05	295.75	238.52	295.51
246.23	295.39	249.08	295.04	283.22	295.03	301.63	295.07	304.81	295.07
305.49	295.08	307.21	295.13	310.88	295.22	314.06	295.49	320.12	296.02
338.52	299.17	344.44	300.43	346.28	300.86	348.52	301.4	365.41	304.66
374.68	306.22	377	306.83						

Manning's n Values num= 7

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.05	104.33	.035	124.15	.045	210.94	.045	338.52	.07
346.28	.07	377	.07						

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
104.33	124.15	31.68	39.54	25.34	.1 .3

CROSS SECTION OUTPUT Profile #Q50

			Left OB	Channel	Right OB
E.G. Elev (ft)	292.54	Element			
Vel Head (ft)	1.16	Wt. n-Val.	0.050	0.035	0.045
W.S. Elev (ft)	291.38	Reach Len. (ft)	31.68	39.54	25.34
Crit W.S. (ft)	291.74	Flow Area (sq ft)	7.07	20.58	5.81
E.G. Slope (ft/ft)	0.047657	Area (sq ft)	7.07	20.58	5.81
Q Total (cfs)	247.00	Flow (cfs)	25.34	195.44	26.21
Top Width (ft)	48.66	Top Width (ft)	17.16	19.82	11.69
Vel Total (ft/s)	7.38	Avg. Vel. (ft/s)	3.59	9.50	4.51
Max Chl Dpth (ft)	1.19	Hydr. Depth (ft)	0.41	1.04	0.50
Conv. Total (cfs)	1131.4	Conv. (cfs)	116.1	895.3	120.1
Length Wtd. (ft)	37.28	Wetted Per. (ft)	17.19	19.83	11.73
Min Ch El (ft)	290.19	Shear (lb/sq ft)	1.22	3.09	1.47
Alpha	1.37	Stream Power (lb/ft s)	4.39	29.32	6.65
Frctn Loss (ft)	1.84	Cum Volume (acre-ft)	0.68	3.36	0.52
C & E Loss (ft)	0.00	Cum SA (acres)	0.62	1.17	0.45

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.

This may indicate the need for additional cross sections.

CROSS SECTION OUTPUT Profile #Q100

E.G. Elev (ft)	293.09	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.48	Wt. n-Val.	0.050	0.035	0.045
W.S. Elev (ft)	291.61	Reach Len. (ft)	31.68	39.54	25.34
Crit W.S. (ft)	292.06	Flow Area (sq ft)	11.20	25.11	8.67
E.G. Slope (ft/ft)	0.048741	Area (sq ft)	11.20	25.11	8.67
Q Total (cfs)	375.00	Flow (cfs)	51.68	275.52	47.81
Top Width (ft)	51.86	Top Width (ft)	18.93	19.82	13.11
Vel Total (ft/s)	8.34	Avg. Vel. (ft/s)	4.62	10.97	5.52
Max Chl Dpth (ft)	1.42	Hydr. Depth (ft)	0.59	1.27	0.66
Conv. Total (cfs)	1698.6	Conv. (cfs)	234.1	1248.0	216.5
Length Wtd. (ft)	36.72	Wetted Per. (ft)	18.98	19.83	13.17
Min Ch El (ft)	290.19	Shear (lb/sq ft)	1.80	3.85	2.00
Alpha	1.37	Stream Power (lb/ft s)	8.28	42.28	11.05
Frctn Loss (ft)	1.70	Cum Volume (acre-ft)	1.07	4.11	0.81
C & E Loss (ft)	0.02	Cum SA (acres)	0.74	1.17	0.55

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

CROSS SECTION OUTPUT Profile #Q100HC

E.G. Elev (ft)	295.11	Element	Left OB	Channel	Right OB
Vel Head (ft)	2.57	Wt. n-Val.	0.050	0.035	0.045
W.S. Elev (ft)	292.54	Reach Len. (ft)	31.68	39.54	25.34
Crit W.S. (ft)	293.32	Flow Area (sq ft)	31.04	43.66	23.27
E.G. Slope (ft/ft)	0.044933	Area (sq ft)	31.04	43.66	23.27
Q Total (cfs)	1089.00	Flow (cfs)	233.23	664.83	190.94
Top Width (ft)	61.71	Top Width (ft)	23.69	19.82	18.20
Vel Total (ft/s)	11.12	Avg. Vel. (ft/s)	7.51	15.23	8.20
Max Chl Dpth (ft)	2.35	Hydr. Depth (ft)	1.31	2.20	1.28
Conv. Total (cfs)	5137.4	Conv. (cfs)	1100.3	3136.4	900.8
Length Wtd. (ft)	35.47	Wetted Per. (ft)	23.83	19.83	18.34
Min Ch El (ft)	290.19	Shear (lb/sq ft)	3.65	6.18	3.56
Alpha	1.34	Stream Power (lb/ft s)	27.46	94.04	29.20
Frctn Loss (ft)	1.40	Cum Volume (acre-ft)	3.16	6.93	2.58
C & E Loss (ft)	0.05	Cum SA (acres)	1.15	1.17	0.97

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

CROSS SECTION

RIVER: Cristianitos
REACH: Upper RS: 2732.38*

INPUT
Description:
Station Elevation Data num= 67

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	307.99	7.57	306.72	9.56	306.35	9.77	306.27	13.15	305.07
22.37	302.76	23.61	302.41	24.56	302.27	33.04	301.07	45.52	298.86
55.89	296.47	56.86	296.3	69.52	294.12	70.1	294.02	72.38	293.64

86.85	291.25	93.56	290.14	94.85	289.89	97.35	289.58	99.56	289.48
100.12	289.48	101	289.47	115.91	288.52	119.45	288.3	121.36	288.4
134.59	288.5	140.24	289.02	145.72	289.61	150.65	290.95	152.43	291.36
155.54	292.05	157.55	292.45	161.93	294.1	168.17	296.46	168.43	296.56
168.73	296.61	169.97	297.1	170.34	297.25	172.68	298.07	172.83	298.07
173.99	297.95	177.87	296.2	178.61	296.09	180.58	295.69	198.44	295.81
207.66	295.83	214.71	296	216.19	296.05	228.66	295.62	240.17	295.4
247.3	295.29	249.93	295	281.45	294.92	298.44	294.91	301.38	294.9
302.01	294.92	303.6	294.98	306.99	295.1	309.92	295.36	315.52	295.86
332.5	298.62	337.97	299.7	339.66	300.1	341.73	300.6	357.33	303.75
365.88	305.29	368.03	305.85						

Manning's n Values num= 7

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.05	115.91	.035	134.59	.05	214.71	.05	332.5	.07
339.66	.07	368.03	.07						

Bank Sta: Left	Right	Lengths: Left Channel		Right	Coeff Contr.	Expan.
115.91	134.59		31.68	39.54	25.34	.1	.3

CROSS SECTION OUTPUT Profile #Q50

			Left OB	Channel	Right OB
E.G. Elev (ft)	290.73	Element			
Vel Head (ft)	1.23	Wt. n-Val.	0.050	0.035	0.050
W.S. Elev (ft)	289.50	Reach Len. (ft)	31.68	39.54	25.34
Crit W.S. (ft)	289.89	Flow Area (sq ft)	7.58	19.96	5.26
E.G. Slope (ft/ft)	0.048780	Area (sq ft)	7.58	19.96	5.26
Q Total (cfs)	247.00	Flow (cfs)	29.22	195.54	22.24
Top Width (ft)	45.60	Top Width (ft)	16.81	18.68	10.11
Vel Total (ft/s)	7.53	Avg. Vel. (ft/s)	3.86	9.80	4.23
Max Chl Dpth (ft)	1.20	Hydr. Depth (ft)	0.45	1.07	0.52
Conv. Total (cfs)	1118.3	Conv. (cfs)	132.3	885.4	100.7
Length Wtd. (ft)	37.36	Wetted Per. (ft)	16.84	18.69	10.16
Min Ch El (ft)	288.30	Shear (lb/sq ft)	1.37	3.25	1.58
Alpha	1.40	Stream Power (lb/ft s)	5.28	31.86	6.66
Frctn Loss (ft)	1.80	Cum Volume (acre-ft)	0.68	3.35	0.51
C & E Loss (ft)	0.01	Cum SA (acres)	0.61	1.16	0.45

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

CROSS SECTION OUTPUT Profile #Q100

			Left OB	Channel	Right OB
E.G. Elev (ft)	291.29	Element			
Vel Head (ft)	1.54	Wt. n-Val.	0.050	0.035	0.050
W.S. Elev (ft)	289.75	Reach Len. (ft)	31.68	39.54	25.34
Crit W.S. (ft)	290.21	Flow Area (sq ft)	12.27	24.63	8.02
E.G. Slope (ft/ft)	0.048345	Area (sq ft)	12.27	24.63	8.02
Q Total (cfs)	375.00	Flow (cfs)	57.91	276.38	40.71
Top Width (ft)	50.27	Top Width (ft)	19.94	18.68	11.65
Vel Total (ft/s)	8.35	Avg. Vel. (ft/s)	4.72	11.22	5.07
Max Chl Dpth (ft)	1.45	Hydr. Depth (ft)	0.62	1.32	0.69
Conv. Total (cfs)	1705.5	Conv. (cfs)	263.4	1257.0	185.1
Length Wtd. (ft)	36.84	Wetted Per. (ft)	19.98	18.69	11.72
Min Ch El (ft)	288.30	Shear (lb/sq ft)	1.85	3.98	2.07
Alpha	1.42	Stream Power (lb/ft s)	8.75	44.63	10.48
Frctn Loss (ft)	1.78	Cum Volume (acre-ft)	1.06	4.09	0.80
C & E Loss (ft)	0.01	Cum SA (acres)	0.72	1.16	0.55

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

CROSS SECTION OUTPUT Profile #Q100HC

E.G. Elev (ft)	293.46	Element	Left OB	Channel	Right OB
Vel Head (ft)	2.78	Wt. n-Val.	0.050	0.035	0.050
W.S. Elev (ft)	290.68	Reach Len. (ft)	31.68	39.54	25.34
Crit W.S. (ft)	291.53	Flow Area (sq ft)	33.53	42.01	20.45
E.G. Slope (ft/ft)	0.047687	Area (sq ft)	33.53	42.01	20.45
Q Total (cfs)	1089.00	Flow (cfs)	259.48	668.27	161.25
Top Width (ft)	59.37	Top Width (ft)	25.62	18.68	15.07
Vel Total (ft/s)	11.35	Avg. Vel. (ft/s)	7.74	15.91	7.89
Max Chl Dpth (ft)	2.38	Hydr. Depth (ft)	1.31	2.25	1.36
Conv. Total (cfs)	4986.9	Conv. (cfs)	1188.2	3060.2	738.4
Length Wtd. (ft)	35.63	Wetted Per. (ft)	25.74	18.69	15.27
Min Ch El (ft)	288.30	Shear (lb/sq ft)	3.88	6.69	3.99
Alpha	1.39	Stream Power (lb/ft s)	30.01	106.45	31.44
Frctn Loss (ft)	1.64	Cum Volume (acre-ft)	3.14	6.89	2.56
C & E Loss (ft)	0.02	Cum SA (acres)	1.13	1.16	0.96

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

RIVER: Cristianitos
REACH: Upper RS: 2692.84*

INPUT
Description:
Station Elevation Data num= 67

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	306.98	8.32	305.73	10.51	305.35	10.74	305.26	14.46	303.77
24.61	301.04	25.96	300.61	27.01	300.47	36.34	299.17	50.07	296.94
61.48	294.68	62.54	294.5	76.46	292.32	77.11	292.23	79.61	291.85
95.53	289.49	102.91	288.4	104.32	288.16	107.07	287.83	109.5	287.67
110.12	287.66	111.09	287.63	127.49	286.62	130.81	286.4	132.6	286.48
145.03	286.6	150.21	287.16	155.24	287.82	159.76	289.49	161.38	289.99
164.24	290.85	166.08	291.37	170.09	293.09	175.82	295.54	176.05	295.65
176.33	295.72	177.46	296.22	177.81	296.38	179.95	297.19	180.09	297.21
181.15	297.15	184.7	295.98	185.39	295.93	187.19	295.63	203.57	295.72
212.02	295.71	218.49	295.81	219.85	295.85	231.28	295.49	241.83	295.29
248.36	295.19	250.77	294.96	279.67	294.81	295.25	294.75	297.95	294.73
298.52	294.75	299.98	294.84	303.09	294.98	305.78	295.23	310.91	295.7
326.48	298.06	331.49	298.97	333.05	299.33	334.94	299.8	349.24	302.83
357.09	304.35	359.05	304.87						

Manning's n Values num= 7

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.05	127.49	.035	145.03	.055	218.49	.055	326.48	.07
333.05	.07	359.05	.07						

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
127.49	145.03	31.68 39.54	25.34	.1	.3

CROSS SECTION OUTPUT Profile #Q50

E.G. Elev (ft)	288.91	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.28	Wt. n-Val.	0.050	0.035	0.055
W.S. Elev (ft)	287.63	Reach Len. (ft)	31.68	39.54	25.34
Crit W.S. (ft)	288.04	Flow Area (sq ft)	8.28	19.40	4.73
E.G. Slope (ft/ft)	0.048612	Area (sq ft)	8.28	19.40	4.73
Q Total (cfs)	247.00	Flow (cfs)	34.36	194.07	18.57
Top Width (ft)	42.70	Top Width (ft)	16.40	17.54	8.76
Vel Total (ft/s)	7.62	Avg. Vel. (ft/s)	4.15	10.01	3.93
Max Chl Dpth (ft)	1.23	Hydr. Depth (ft)	0.50	1.11	0.54
Conv. Total (cfs)	1120.3	Conv. (cfs)	155.9	880.2	84.2
Length Wtd. (ft)	37.38	Wetted Per. (ft)	16.43	17.55	8.82
Min Ch El (ft)	286.40	Shear (lb/sq ft)	1.53	3.35	1.63
Alpha	1.41	Stream Power (lb/ft s)	6.35	33.56	6.39
Frctn Loss (ft)	1.82	Cum Volume (acre-ft)	0.67	3.33	0.51
C & E Loss (ft)	0.00	Cum SA (acres)	0.59	1.14	0.44

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

CROSS SECTION OUTPUT Profile #Q100

E.G. Elev (ft)	289.50	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.60	Wt. n-Val.	0.050	0.035	0.055
W.S. Elev (ft)	287.90	Reach Len. (ft)	31.68	39.54	25.34
Crit W.S. (ft)	288.38	Flow Area (sq ft)	13.38	24.05	7.30
E.G. Slope (ft/ft)	0.048163	Area (sq ft)	13.38	24.05	7.30
Q Total (cfs)	375.00	Flow (cfs)	64.64	276.37	33.99
Top Width (ft)	48.91	Top Width (ft)	20.96	17.54	10.41
Vel Total (ft/s)	8.38	Avg. Vel. (ft/s)	4.83	11.49	4.65
Max Chl Dpth (ft)	1.50	Hydr. Depth (ft)	0.64	1.37	0.70
Conv. Total (cfs)	1708.7	Conv. (cfs)	294.5	1259.3	154.9
Length Wtd. (ft)	36.92	Wetted Per. (ft)	21.00	17.55	10.50
Min Ch El (ft)	286.40	Shear (lb/sq ft)	1.92	4.12	2.09
Alpha	1.47	Stream Power (lb/ft s)	9.25	47.35	9.73
Frctn Loss (ft)	1.78	Cum Volume (acre-ft)	1.05	4.07	0.80
C & E Loss (ft)	0.01	Cum SA (acres)	0.71	1.14	0.54

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)	291.74	Element	Left OB	Channel	Right OB
Vel Head (ft)	2.89	Wt. n-Val.	0.050	0.035	0.055
W.S. Elev (ft)	288.85	Reach Len. (ft)	31.68	39.54	25.34
Crit W.S. (ft)	289.73	Flow Area (sq ft)	36.59	40.72	18.43
E.G. Slope (ft/ft)	0.048214	Area (sq ft)	36.59	40.72	18.43
Q Total (cfs)	1089.00	Flow (cfs)	287.41	665.36	136.24
Top Width (ft)	58.12	Top Width (ft)	27.60	17.54	12.99
Vel Total (ft/s)	11.37	Avg. Vel. (ft/s)	7.85	16.34	7.39
Max Chl Dpth (ft)	2.45	Hydr. Depth (ft)	1.33	2.32	1.42
Conv. Total (cfs)	4959.5	Conv. (cfs)	1308.9	3030.2	620.5
Length Wtd. (ft)	35.72	Wetted Per. (ft)	27.71	17.55	13.24
Min Ch El (ft)	286.40	Shear (lb/sq ft)	3.98	6.98	4.19

Alpha	1.44	Stream Power (lb/ft s)	31.22	114.12	30.97
Frctn Loss (ft)	1.71	Cum Volume (acre-ft)	3.11	6.86	2.55
C & E Loss (ft)	0.01	Cum SA (acres)	1.11	1.14	0.95

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

CROSS SECTION

RIVER: Cristianitos
REACH: Upper RS: 2653.30*

INPUT
Description:
Station Elevation Data num= 67

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	305.98	9.08	304.73	11.47	304.35	11.72	304.24	15.77	302.48
26.84	299.32	28.32	298.82	29.46	298.66	39.65	297.28	54.62	295.03
67.06	292.88	68.22	292.71	83.41	290.53	84.11	290.44	86.84	290.07
104.2	287.74	112.26	286.66	113.8	286.43	116.8	286.08	119.45	285.86
120.12	285.84	121.18	285.79	139.07	284.71	142.17	284.51	143.85	284.57
155.47	284.69	160.18	285.3	164.75	286.03	168.86	288.03	170.34	288.62
172.93	289.65	174.61	290.29	178.26	292.08	183.46	294.63	183.68	294.74
183.93	294.83	184.96	295.35	185.27	295.51	187.22	296.32	187.35	296.34
188.31	296.36	191.54	295.77	192.17	295.77	193.81	295.57	208.69	295.63
216.38	295.59	222.26	295.63	223.5	295.65	233.89	295.36	243.49	295.18
249.43	295.08	251.62	294.92	277.9	294.7	292.07	294.6	294.51	294.57
295.04	294.59	296.36	294.69	299.19	294.87	301.63	295.1	306.3	295.55
320.46	297.51	325.02	298.24	326.43	298.57	328.15	299	341.16	301.92
348.29	303.42	350.08	303.89						

Manning's n Values num= 7

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.05	139.07	.035	155.47	.06	222.26	.06	320.46	.07
326.43	.07	350.08	.07						

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
139.07	155.47	31.68	39.54	25.34	.1	.3

CROSS SECTION OUTPUT Profile #Q50

E.G. Elev (ft)	287.09	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.32	Wt. n-Val.	0.050	0.035	0.060
W.S. Elev (ft)	285.76	Reach Len. (ft)	31.68	39.54	25.34
Crit W.S. (ft)	286.19	Flow Area (sq ft)	9.16	18.77	4.28
E.G. Slope (ft/ft)	0.048551	Area (sq ft)	9.16	18.77	4.28
Q Total (cfs)	247.00	Flow (cfs)	39.05	192.14	15.82
Top Width (ft)	41.42	Top Width (ft)	17.42	16.40	7.60
Vel Total (ft/s)	7.67	Avg. Vel. (ft/s)	4.26	10.23	3.70
Max Chl Dpth (ft)	1.25	Hydr. Depth (ft)	0.53	1.14	0.56
Conv. Total (cfs)	1121.0	Conv. (cfs)	177.2	872.0	71.8
Length Wtd. (ft)	37.37	Wetted Per. (ft)	17.45	16.41	7.68
Min Ch El (ft)	284.51	Shear (lb/sq ft)	1.59	3.47	1.69
Alpha	1.45	Stream Power (lb/ft s)	6.78	35.49	6.24
Frctn Loss (ft)	1.82	Cum Volume (acre-ft)	0.66	3.31	0.51
C & E Loss (ft)	0.00	Cum SA (acres)	0.58	1.12	0.44

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

CROSS SECTION OUTPUT Profile #Q100

E.G. Elev (ft)	287.71	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.67	Wt. n-Val.	0.050	0.035	0.060
W.S. Elev (ft)	286.03	Reach Len. (ft)	31.68	39.54	25.34
Crit W.S. (ft)	286.55	Flow Area (sq ft)	14.55	23.23	6.57
E.G. Slope (ft/ft)	0.048515	Area (sq ft)	14.55	23.23	6.57
Q Total (cfs)	375.00	Flow (cfs)	72.85	273.86	28.29
Top Width (ft)	47.40	Top Width (ft)	21.71	16.40	9.29
Vel Total (ft/s)	8.45	Avg. Vel. (ft/s)	5.01	11.79	4.30
Max Chl Dpth (ft)	1.52	Hydr. Depth (ft)	0.67	1.42	0.71
Conv. Total (cfs)	1702.5	Conv. (cfs)	330.8	1243.4	128.4
Length Wtd. (ft)	36.92	Wetted Per. (ft)	21.75	16.41	9.39
Min Ch El (ft)	284.51	Shear (lb/sq ft)	2.03	4.29	2.12
Alpha	1.51	Stream Power (lb/ft s)	10.14	50.55	9.13
Frctn Loss (ft)	1.78	Cum Volume (acre-ft)	1.04	4.05	0.79
C & E Loss (ft)	0.01	Cum SA (acres)	0.69	1.12	0.53

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

CROSS SECTION OUTPUT Profile #Q100HC

E.G. Elev (ft)	290.00	Element	Left OB	Channel	Right OB
Vel Head (ft)	2.99	Wt. n-Val.	0.050	0.035	0.060
W.S. Elev (ft)	287.01	Reach Len. (ft)	31.68	39.54	25.34
Crit W.S. (ft)	287.94	Flow Area (sq ft)	39.70	39.23	16.61
E.G. Slope (ft/ft)	0.048634	Area (sq ft)	39.70	39.23	16.61
Q Total (cfs)	1089.00	Flow (cfs)	317.02	656.78	115.20
Top Width (ft)	57.11	Top Width (ft)	29.42	16.40	11.29
Vel Total (ft/s)	11.40	Avg. Vel. (ft/s)	7.99	16.74	6.93
Max Chl Dpth (ft)	2.50	Hydr. Depth (ft)	1.35	2.39	1.47
Conv. Total (cfs)	4938.1	Conv. (cfs)	1437.5	2978.2	522.4
Length Wtd. (ft)	35.75	Wetted Per. (ft)	29.52	16.41	11.62
Min Ch El (ft)	284.51	Shear (lb/sq ft)	4.08	7.26	4.34
Alpha	1.48	Stream Power (lb/ft s)	32.61	121.53	30.11
Frctn Loss (ft)	1.73	Cum Volume (acre-ft)	3.09	6.82	2.54
C & E Loss (ft)	0.01	Cum SA (acres)	1.09	1.12	0.95

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

CROSS SECTION

RIVER: Cristianitos
REACH: Upper RS: 2613.76*

INPUT
Description:
Station Elevation Data num= 67

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	304.98	9.83	303.74	12.42	303.35	12.69	303.22	17.09	301.18

29.08	297.6	30.68	297.02	31.92	296.86	42.95	295.39	59.17	293.11
72.64	291.09	73.9	290.91	90.35	288.73	91.12	288.64	94.07	288.28
112.88	285.98	121.6	284.92	123.27	284.7	126.52	284.33	129.39	284.05
130.12	284.01	131.27	283.96	150.65	282.8	153.54	282.62	155.1	282.66
165.9	282.79	170.14	283.43	174.26	284.23	177.96	286.57	179.29	287.26
181.63	288.45	183.14	289.22	186.42	291.07	191.11	293.72	191.3	293.83
191.53	293.94	192.45	294.47	192.74	294.63	194.49	295.44	194.6	295.48
195.47	295.57	198.38	295.56	198.94	295.62	200.42	295.52	213.82	295.54
220.75	295.46	226.04	295.44	227.15	295.44	236.51	295.23	245.15	295.07
250.49	294.98	252.47	294.89	276.12	294.59	288.88	294.44	291.08	294.4
291.55	294.42	292.75	294.55	295.29	294.75	297.49	294.97	301.69	295.39
314.44	296.96	318.54	297.51	319.82	297.8	321.37	298.2	333.07	301
339.49	302.49	341.1	302.91						

Manning's n Values num= 7

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.05	150.65	.035	165.9	.065	226.04	.065	314.44	.07
319.82	.07	341.1	.07						

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
150.65	165.9	31.68	39.54	25.34	.1	.3

CROSS SECTION OUTPUT Profile #Q50

			Left OB	Channel	Right OB
E.G. Elev (ft)	285.27	Element			
Vel Head (ft)	1.37	Wt. n-Val.	0.050	0.035	0.065
W.S. Elev (ft)	283.90	Reach Len. (ft)	31.68	39.54	25.34
Crit W.S. (ft)	284.34	Flow Area (sq ft)	10.08	18.07	3.91
E.G. Slope (ft/ft)	0.048533	Area (sq ft)	10.08	18.07	3.91
Q Total (cfs)	247.00	Flow (cfs)	44.18	189.15	13.67
Top Width (ft)	40.25	Top Width (ft)	18.35	15.25	6.65
Vel Total (ft/s)	7.71	Avg. Vel. (ft/s)	4.39	10.47	3.50
Max Chl Dpth (ft)	1.28	Hydr. Depth (ft)	0.55	1.18	0.59
Conv. Total (cfs)	1121.2	Conv. (cfs)	200.5	858.6	62.1
Length Wtd. (ft)	37.09	Wetted Per. (ft)	18.38	15.26	6.74
Min Ch El (ft)	282.62	Shear (lb/sq ft)	1.66	3.59	1.76
Alpha	1.48	Stream Power (lb/ft s)	7.28	37.56	6.14
Frctn Loss (ft)	1.81	Cum Volume (acre-ft)	0.66	3.29	0.50
C & E Loss (ft)	0.00	Cum SA (acres)	0.57	1.11	0.43

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

CROSS SECTION OUTPUT Profile #Q100

			Left OB	Channel	Right OB
E.G. Elev (ft)	285.90	Element			
Vel Head (ft)	1.73	Wt. n-Val.	0.050	0.035	0.065
W.S. Elev (ft)	284.18	Reach Len. (ft)	31.68	39.54	25.34
Crit W.S. (ft)	284.71	Flow Area (sq ft)	15.82	22.29	5.95
E.G. Slope (ft/ft)	0.048706	Area (sq ft)	15.82	22.29	5.95
Q Total (cfs)	375.00	Flow (cfs)	81.82	268.96	24.22
Top Width (ft)	45.87	Top Width (ft)	22.54	15.25	8.08
Vel Total (ft/s)	8.51	Avg. Vel. (ft/s)	5.17	12.06	4.07
Max Chl Dpth (ft)	1.56	Hydr. Depth (ft)	0.70	1.46	0.74
Conv. Total (cfs)	1699.2	Conv. (cfs)	370.7	1218.7	109.8
Length Wtd. (ft)	36.63	Wetted Per. (ft)	22.59	15.26	8.20
Min Ch El (ft)	282.62	Shear (lb/sq ft)	2.13	4.44	2.21
Alpha	1.54	Stream Power (lb/ft s)	11.01	53.60	8.99

Frctn Loss (ft)	1.79	Cum Volume (acre-ft)	1.03	4.02	0.79
C & E Loss (ft)	0.01	Cum SA (acres)	0.68	1.11	0.53

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

CROSS SECTION OUTPUT Profile #Q100HC

E.G. Elev (ft)	288.26	Element	Left OB	Channel	Right OB
Vel Head (ft)	3.08	Wt. n-Val.	0.050	0.035	0.065
W.S. Elev (ft)	285.17	Reach Len. (ft)	31.68	39.54	25.34
Crit W.S. (ft)	286.14	Flow Area (sq ft)	42.83	37.53	15.00
E.G. Slope (ft/ft)	0.049064	Area (sq ft)	42.83	37.53	15.00
Q Total (cfs)	1089.00	Flow (cfs)	347.90	643.22	97.88
Top Width (ft)	56.25	Top Width (ft)	31.14	15.25	9.85
Vel Total (ft/s)	11.42	Avg. Vel. (ft/s)	8.12	17.14	6.53
Max Chl Dpth (ft)	2.55	Hydr. Depth (ft)	1.38	2.46	1.52
Conv. Total (cfs)	4916.4	Conv. (cfs)	1570.6	2903.8	441.9
Length Wtd. (ft)	35.42	Wetted Per. (ft)	31.25	15.26	10.25
Min Ch El (ft)	282.62	Shear (lb/sq ft)	4.20	7.54	4.48
Alpha	1.52	Stream Power (lb/ft s)	34.10	129.14	29.25
Frctn Loss (ft)	1.75	Cum Volume (acre-ft)	3.06	6.78	2.53
C & E Loss (ft)	0.01	Cum SA (acres)	1.07	1.11	0.94

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

CROSS SECTION

RIVER: Cristianitos
REACH: Upper RS: 2574.222

INPUT
Description: Manual Modification of Manning's N Values
Station Elevation Data num= 31

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	303.98	10.59	302.75	13.38	302.35	18.4	299.89	31.31	295.88
33.04	295.23	34.37	295.05	79.58	289.12	97.3	286.94	98.12	286.85
101.3	286.49	139.34	282.24	162.23	280.89	164.9	280.73	176.34	280.88
180.11	281.57	183.77	282.44	187.06	285.11	199.95	293.59	200.2	293.76
201.86	294.61	205.72	295.46	218.95	295.45	285.69	294.28	287.65	294.23
288.07	294.26	289.13	294.4	293.35	294.84	312.07	296.78	313.2	297.04
332.13	301.93								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.05	162.23	.035	313.2	.07

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
162.23	176.34	33.68	41.34	37.89	.1 .3

CROSS SECTION OUTPUT Profile #Q50

E.G. Elev (ft)	283.41	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.42	Wt. n-Val.	0.050	0.035	0.035
W.S. Elev (ft)	281.99	Reach Len. (ft)	33.68	41.34	37.89

Crit W.S. (ft)	282.45	Flow Area (sq ft)	10.23	16.68	3.25
E.G. Slope (ft/ft)	0.051296	Area (sq ft)	10.23	16.68	3.25
Q Total (cfs)	247.00	Flow (cfs)	46.10	179.31	21.59
Top Width (ft)	38.26	Top Width (ft)	18.62	14.11	5.53
Vel Total (ft/s)	8.19	Avg. Vel. (ft/s)	4.51	10.75	6.65
Max Chl Dpth (ft)	1.26	Hydr. Depth (ft)	0.55	1.18	0.59
Conv. Total (cfs)	1090.6	Conv. (cfs)	203.6	791.7	95.3
Length Wtd. (ft)	39.35	Wetted Per. (ft)	18.65	14.12	5.64
Min Ch El (ft)	280.73	Shear (lb/sq ft)	1.76	3.78	1.84
Alpha	1.36	Stream Power (lb/ft s)	7.91	40.68	12.25
Frctn Loss (ft)	1.85	Cum Volume (acre-ft)	0.65	3.28	0.50
C & E Loss (ft)	0.01	Cum SA (acres)	0.55	1.10	0.43

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

CROSS SECTION OUTPUT Profile #Q100

E.G. Elev (ft)	284.06	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.80	Wt. n-Val.	0.050	0.035	0.035
W.S. Elev (ft)	282.26	Reach Len. (ft)	33.68	41.34	37.89
Crit W.S. (ft)	282.80	Flow Area (sq ft)	15.86	20.49	4.89
E.G. Slope (ft/ft)	0.051743	Area (sq ft)	15.86	20.49	4.89
Q Total (cfs)	375.00	Flow (cfs)	83.49	253.63	37.87
Top Width (ft)	43.83	Top Width (ft)	23.05	14.11	6.66
Vel Total (ft/s)	9.09	Avg. Vel. (ft/s)	5.26	12.38	7.75
Max Chl Dpth (ft)	1.53	Hydr. Depth (ft)	0.69	1.45	0.73
Conv. Total (cfs)	1648.6	Conv. (cfs)	367.0	1115.0	166.5
Length Wtd. (ft)	39.03	Wetted Per. (ft)	23.09	14.12	6.81
Min Ch El (ft)	280.73	Shear (lb/sq ft)	2.22	4.69	2.32
Alpha	1.40	Stream Power (lb/ft s)	11.68	58.04	17.97
Frctn Loss (ft)	1.84	Cum Volume (acre-ft)	1.02	4.01	0.79
C & E Loss (ft)	0.01	Cum SA (acres)	0.66	1.10	0.52

Warning: The energy loss was greater than 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)	286.44	Element	Left OB	Channel	Right OB
Vel Head (ft)	3.22	Wt. n-Val.	0.050	0.035	0.035
W.S. Elev (ft)	283.22	Reach Len. (ft)	33.68	41.34	37.89
Crit W.S. (ft)	284.22	Flow Area (sq ft)	42.12	34.03	12.33
E.G. Slope (ft/ft)	0.052269	Area (sq ft)	42.12	34.03	12.33
Q Total (cfs)	1089.00	Flow (cfs)	345.58	593.98	149.45
Top Width (ft)	54.14	Top Width (ft)	31.64	14.11	8.39
Vel Total (ft/s)	12.31	Avg. Vel. (ft/s)	8.20	17.45	12.12
Max Chl Dpth (ft)	2.49	Hydr. Depth (ft)	1.33	2.41	1.47
Conv. Total (cfs)	4763.3	Conv. (cfs)	1511.5	2598.1	653.7
Length Wtd. (ft)	38.17	Wetted Per. (ft)	31.74	14.12	8.83
Min Ch El (ft)	280.73	Shear (lb/sq ft)	4.33	7.87	4.56
Alpha	1.37	Stream Power (lb/ft s)	35.53	137.31	55.23
Frctn Loss (ft)	1.79	Cum Volume (acre-ft)	3.02	6.75	2.53
C & E Loss (ft)	0.01	Cum SA (acres)	1.05	1.10	0.93

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.

This may indicate the need for additional cross sections.

CROSS SECTION

RIVER: Cristianitos
REACH: Upper RS: 2532.87*

INPUT
Description:
Station Elevation Data num= 68

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	303.51	10.92	302.33	11.04	302.32	13.79	301.97	18.96	299.92
31.21	296.79	32.27	296.52	34.05	295.97	35.43	295.81	39.39	295.34
74.12	291.48	82.02	290.61	89.21	289.85	96.53	289.1	98.69	288.87
100.29	288.69	101.13	288.6	101.17	288.6	104.41	288.15	105.33	288.02
105.98	287.93	106.7	287.85	111.25	287.29	115.22	286.75	126.45	285.21
134.3	284.13	138.49	283.4	143.62	282.52	148.83	281.83	162.72	280.2
167.21	279.85	171.33	279.63	181.48	279.83	185.63	280.81	188.46	281.59
189.66	281.9	193.29	284.34	195	285.3	206.35	291.34	207.48	291.93
207.75	292.08	209.58	292.85	213.83	293.73	215.72	293.82	216.03	293.83
219.91	294.02	222.38	294.08	227.21	294.09	228.4	294.1	240.15	294.01
269.63	293.67	285.13	293.43	288.75	293.4	301.89	293.36	304.05	293.35
304.51	293.37	305.12	293.44	305.67	293.5	310.32	293.9	310.45	293.91
326.83	295.42	330.93	295.86	331.29	295.93	332.18	296.13	335.99	297.04
343.79	298.89	346.92	299.93	353.02	301.91				

Manning's n Values num= 10

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.047	31.21	.038	74.12	.044	105.33	.026	167.21	.035
181.48	.063	215.72	.035	305.12	.042	332.18	.07	353.02	.07

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
167.21	181.48	33.68	41.34	37.89	.1	.3

CROSS SECTION OUTPUT Profile #Q50

E.G. Elev (ft)	282.08	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.82	Wt. n-Val.	0.026	0.035	0.063
W.S. Elev (ft)	281.26	Reach Len. (ft)	33.68	41.34	37.89
Crit W.S. (ft)	281.43	Flow Area (sq ft)	10.36	21.82	4.28
E.G. Slope (ft/ft)	0.018752	Area (sq ft)	10.36	21.82	4.28
Q Total (cfs)	247.00	Flow (cfs)	67.58	168.33	11.08
Top Width (ft)	33.60	Top Width (ft)	13.54	14.27	5.79
Vel Total (ft/s)	6.77	Avg. Vel. (ft/s)	6.52	7.71	2.59
Max Chl Dpth (ft)	1.63	Hydr. Depth (ft)	0.77	1.53	0.74
Conv. Total (cfs)	1803.7	Conv. (cfs)	493.5	1229.3	80.9
Length Wtd. (ft)	39.42	Wetted Per. (ft)	13.62	14.28	5.97
Min Ch El (ft)	279.63	Shear (lb/sq ft)	0.89	1.79	0.84
Alpha	1.14	Stream Power (lb/ft s)	5.81	13.80	2.17
Frctn Loss (ft)	1.15	Cum Volume (acre-ft)	0.64	3.26	0.50
C & E Loss (ft)	0.18	Cum SA (acres)	0.54	1.08	0.43

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.
Warning: The energy loss was greater than 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)	282.68	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.07	Wt. n-Val.	0.026	0.035	0.063
W.S. Elev (ft)	281.60	Reach Len. (ft)	33.68	41.34	37.89
Crit W.S. (ft)	281.86	Flow Area (sq ft)	15.47	26.68	6.46
E.G. Slope (ft/ft)	0.019209	Area (sq ft)	15.47	26.68	6.46
Q Total (cfs)	375.00	Flow (cfs)	117.19	238.24	19.57
Top Width (ft)	37.74	Top Width (ft)	16.44	14.27	7.03
Vel Total (ft/s)	7.71	Avg. Vel. (ft/s)	7.58	8.93	3.03
Max Chl Dpth (ft)	1.97	Hydr. Depth (ft)	0.94	1.87	0.92
Conv. Total (cfs)	2705.7	Conv. (cfs)	845.6	1718.9	141.2
Length Wtd. (ft)	39.11	Wetted Per. (ft)	16.54	14.28	7.25
Min Ch El (ft)	279.63	Shear (lb/sq ft)	1.12	2.24	1.07
Alpha	1.16	Stream Power (lb/ft s)	8.50	20.01	3.24
Frctn Loss (ft)	1.16	Cum Volume (acre-ft)	1.01	3.98	0.78
C & E Loss (ft)	0.22	Cum SA (acres)	0.64	1.08	0.52

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.
Warning: The energy loss was greater than 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)	284.93	Element	Left OB	Channel	Right OB
Vel Head (ft)	2.15	Wt. n-Val.	0.026	0.035	0.063
W.S. Elev (ft)	282.78	Reach Len. (ft)	33.68	41.34	37.89
Crit W.S. (ft)	283.39	Flow Area (sq ft)	40.34	43.54	16.54
E.G. Slope (ft/ft)	0.020647	Area (sq ft)	40.34	43.54	16.54
Q Total (cfs)	1089.00	Flow (cfs)	452.10	558.63	78.27
Top Width (ft)	48.90	Top Width (ft)	25.13	14.27	9.50
Vel Total (ft/s)	10.84	Avg. Vel. (ft/s)	11.21	12.83	4.73
Max Chl Dpth (ft)	3.15	Hydr. Depth (ft)	1.61	3.05	1.74
Conv. Total (cfs)	7578.9	Conv. (cfs)	3146.4	3887.8	544.7
Length Wtd. (ft)	38.27	Wetted Per. (ft)	25.31	14.28	10.02
Min Ch El (ft)	279.63	Shear (lb/sq ft)	2.05	3.93	2.13
Alpha	1.18	Stream Power (lb/ft s)	23.03	50.43	10.06
Frctn Loss (ft)	1.19	Cum Volume (acre-ft)	2.99	6.72	2.51
C & E Loss (ft)	0.32	Cum SA (acres)	1.03	1.08	0.93

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

CROSS SECTION

RIVER: Cristianitos
REACH: Upper RS: 2491.53*

INPUT
Description:
Station Elevation Data num= 68

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	303.04	11.24	301.91	11.37	301.9	14.2	301.59	19.53	299.96
32.14	297.38	33.23	297.15	35.07	296.71	36.48	296.56	40.56	296.14
76.33	292.84	84.47	292.09	91.87	291.44	99.41	290.82	101.63	290.61
103.27	290.44	104.14	290.36	104.18	290.36	107.52	289.81	108.47	289.65
109.14	289.54	109.88	289.45	114.56	288.83	118.65	288.17	130.21	286.31
138.3	285.01	142.62	284.01	147.89	282.8	153.26	281.72	167.56	279.25
172.19	278.81	177.76	278.52	186.62	278.78	191.16	280.05	194.24	281
195.56	281.36	199.51	283.57	201.38	284.48	213.77	289.77	215.01	290.28
215.31	290.41	217.3	291.09	221.94	292	224	292.18	224.34	292.21
228.58	292.58	231.28	292.7	236.55	292.74	237.85	292.75	250.68	292.75
282.86	292.55	299.79	292.31	303.74	292.32	318.08	292.45	320.44	292.46
320.95	292.49	321.62	292.54	322.22	292.6	327.29	292.95	327.43	292.96
345.32	294.45	349.8	294.95	350.18	295.01	351.16	295.22	355.32	296.15
363.84	298.01	367.25	299.36	373.91	301.89				

Manning's n Values num= 10

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.044	32.14	.041	76.33	.038	108.47	.032	172.19	.035
186.62	.056	224	.035	321.62	.049	351.16	.07	373.91	.07

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
172.19	186.62	33.68	41.34	37.89	.1	.3

CROSS SECTION OUTPUT Profile #Q50

			Left OB	Channel	Right OB
E.G. Elev (ft)	281.20	Element			
Vel Head (ft)	1.05	Wt. n-Val.	0.032	0.035	0.056
W.S. Elev (ft)	280.15	Reach Len. (ft)	33.68	41.34	37.89
Crit W.S. (ft)	280.43	Flow Area (sq ft)	7.50	21.51	3.34
E.G. Slope (ft/ft)	0.025477	Area (sq ft)	7.50	21.51	3.34
Q Total (cfs)	247.00	Flow (cfs)	46.11	190.16	10.73
Top Width (ft)	29.10	Top Width (ft)	9.82	14.43	4.85
Vel Total (ft/s)	7.64	Avg. Vel. (ft/s)	6.15	8.84	3.22
Max Chl Dpth (ft)	1.63	Hydr. Depth (ft)	0.76	1.49	0.69
Conv. Total (cfs)	1547.5	Conv. (cfs)	288.9	1191.3	67.2
Length Wtd. (ft)	39.93	Wetted Per. (ft)	9.92	14.44	5.04
Min Ch El (ft)	278.52	Shear (lb/sq ft)	1.20	2.37	1.05
Alpha	1.16	Stream Power (lb/ft s)	7.39	20.94	3.39
Frctn Loss (ft)	0.86	Cum Volume (acre-ft)	0.64	3.24	0.50
C & E Loss (ft)	0.02	Cum SA (acres)	0.53	1.07	0.42

CROSS SECTION OUTPUT Profile #Q100

			Left OB	Channel	Right OB
E.G. Elev (ft)	281.83	Element			
Vel Head (ft)	1.28	Wt. n-Val.	0.032	0.035	0.056
W.S. Elev (ft)	280.55	Reach Len. (ft)	33.68	41.34	37.89
Crit W.S. (ft)	280.89	Flow Area (sq ft)	11.98	27.39	5.58
E.G. Slope (ft/ft)	0.023193	Area (sq ft)	11.98	27.39	5.58
Q Total (cfs)	375.00	Flow (cfs)	83.15	271.32	20.54
Top Width (ft)	32.78	Top Width (ft)	12.18	14.43	6.17
Vel Total (ft/s)	8.34	Avg. Vel. (ft/s)	6.94	9.91	3.68
Max Chl Dpth (ft)	2.03	Hydr. Depth (ft)	0.98	1.90	0.90
Conv. Total (cfs)	2462.4	Conv. (cfs)	546.0	1781.6	134.9

Length Wtd. (ft)	39.65	Wetted Per. (ft)	12.31	14.44	6.42
Min Ch El (ft)	278.52	Shear (lb/sq ft)	1.41	2.75	1.26
Alpha	1.18	Stream Power (lb/ft s)	9.78	27.20	4.63
Frctn Loss (ft)	0.82	Cum Volume (acre-ft)	1.00	3.96	0.78
C & E Loss (ft)	0.02	Cum SA (acres)	0.63	1.07	0.51

CROSS SECTION OUTPUT Profile #Q100HC

E.G. Elev (ft)	284.16	Element	Left OB	Channel	Right OB
Vel Head (ft)	2.13	Wt. n-Val.	0.032	0.035	0.056
W.S. Elev (ft)	282.03	Reach Len. (ft)	33.68	41.34	37.89
Crit W.S. (ft)	282.59	Flow Area (sq ft)	36.31	48.75	18.08
E.G. Slope (ft/ft)	0.019559	Area (sq ft)	36.31	48.75	18.08
Q Total (cfs)	1089.00	Flow (cfs)	342.36	651.42	95.22
Top Width (ft)	45.07	Top Width (ft)	20.49	14.43	10.15
Vel Total (ft/s)	10.56	Avg. Vel. (ft/s)	9.43	13.36	5.27
Max Chl Dpth (ft)	3.51	Hydr. Depth (ft)	1.77	3.38	1.78
Conv. Total (cfs)	7786.7	Conv. (cfs)	2448.0	4657.9	680.8
Length Wtd. (ft)	38.88	Wetted Per. (ft)	20.76	14.44	10.69
Min Ch El (ft)	278.52	Shear (lb/sq ft)	2.14	4.12	2.07
Alpha	1.23	Stream Power (lb/ft s)	20.14	55.08	10.88
Frctn Loss (ft)	0.77	Cum Volume (acre-ft)	2.96	6.67	2.50
C & E Loss (ft)	0.00	Cum SA (acres)	1.01	1.07	0.92

CROSS SECTION

RIVER: Cristianitos
REACH: Upper RS: 2450.18*

INPUT
Description:
Station Elevation Data num= 68

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	302.56	11.57	301.5	11.7	301.48	14.61	301.21	20.09	299.99
33.07	297.96	34.19	297.79	36.08	297.45	37.54	297.32	41.73	296.94
78.53	294.2	86.91	293.58	94.53	293.03	102.28	292.53	104.57	292.34
106.26	292.19	107.16	292.11	107.19	292.11	110.63	291.47	111.61	291.29
112.3	291.16	113.05	291.05	117.87	290.37	122.09	289.6	133.98	287.41
142.3	285.88	146.74	284.62	152.17	283.07	157.69	281.6	172.41	278.3
177.17	277.77	184.2	277.42	191.77	277.72	196.68	279.29	200.02	280.42
201.45	280.82	205.74	282.81	207.76	283.65	221.2	288.19	222.54	288.62
222.86	288.73	225.03	289.33	230.06	290.27	232.29	290.54	232.65	290.58
237.25	291.14	240.18	291.32	245.89	291.38	247.3	291.4	261.21	291.5
296.1	291.43	314.45	291.19	318.73	291.23	334.28	291.53	336.84	291.58
337.38	291.6	338.11	291.65	338.76	291.69	344.26	292.01	344.41	292.02
363.81	293.48	368.66	294.03	369.08	294.09	370.13	294.31	374.64	295.26
383.88	297.13	387.59	298.78	394.81	301.87				

Manning's n Values num= 10

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.041	33.07	.044	78.53	.032	111.61	.038	177.17	.035
191.77	.049	232.29	.035	338.11	.056	370.13	.07	394.81	.07

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
177.17	191.77	33.68 41.34	37.89	.1	.3

CROSS SECTION OUTPUT Profile #Q50

E.G. Elev (ft)	280.19	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.07	Wt. n-Val.	0.038	0.035	0.049
W.S. Elev (ft)	279.13	Reach Len. (ft)	33.68	41.34	37.89
Crit W.S. (ft)	279.39	Flow Area (sq ft)	6.72	22.55	3.09
E.G. Slope (ft/ft)	0.024634	Area (sq ft)	6.72	22.55	3.09
Q Total (cfs)	247.00	Flow (cfs)	35.08	200.65	11.27
Top Width (ft)	27.45	Top Width (ft)	8.45	14.60	4.40
Vel Total (ft/s)	7.63	Avg. Vel. (ft/s)	5.22	8.90	3.64
Max Chl Dpth (ft)	1.71	Hydr. Depth (ft)	0.80	1.54	0.70
Conv. Total (cfs)	1573.7	Conv. (cfs)	223.5	1278.4	71.8
Length Wtd. (ft)	40.21	Wetted Per. (ft)	8.57	14.61	4.62
Min Ch El (ft)	277.42	Shear (lb/sq ft)	1.21	2.37	1.03
Alpha	1.18	Stream Power (lb/ft s)	6.30	21.11	3.75
Frctn Loss (ft)	1.00	Cum Volume (acre-ft)	0.63	3.22	0.49
C & E Loss (ft)	0.00	Cum SA (acres)	0.53	1.06	0.42

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 #Q100

E.G. Elev (ft)	280.89	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.37	Wt. n-Val.	0.038	0.035	0.049
W.S. Elev (ft)	279.53	Reach Len. (ft)	33.68	41.34	37.89
Crit W.S. (ft)	279.88	Flow Area (sq ft)	10.45	28.39	5.10
E.G. Slope (ft/ft)	0.023881	Area (sq ft)	10.45	28.39	5.10
Q Total (cfs)	375.00	Flow (cfs)	63.40	289.92	21.69
Top Width (ft)	30.44	Top Width (ft)	10.23	14.60	5.61
Vel Total (ft/s)	8.54	Avg. Vel. (ft/s)	6.07	10.21	4.25
Max Chl Dpth (ft)	2.11	Hydr. Depth (ft)	1.02	1.94	0.91
Conv. Total (cfs)	2426.6	Conv. (cfs)	410.2	1876.1	140.3
Length Wtd. (ft)	39.98	Wetted Per. (ft)	10.40	14.61	5.89
Min Ch El (ft)	277.42	Shear (lb/sq ft)	1.50	2.90	1.29
Alpha	1.21	Stream Power (lb/ft s)	9.09	29.58	5.49
Frctn Loss (ft)	0.93	Cum Volume (acre-ft)	0.99	3.93	0.77
C & E Loss (ft)	0.01	Cum SA (acres)	0.62	1.06	0.51

CROSS SECTION OUTPUT Profile #Q100HC

E.G. Elev (ft)	283.39	Element	Left OB	Channel	Right OB
Vel Head (ft)	2.26	Wt. n-Val.	0.038	0.035	0.049
W.S. Elev (ft)	281.13	Reach Len. (ft)	33.68	41.34	37.89
Crit W.S. (ft)	281.74	Flow Area (sq ft)	32.54	51.76	17.95
E.G. Slope (ft/ft)	0.019627	Area (sq ft)	32.54	51.76	17.95
Q Total (cfs)	1089.00	Flow (cfs)	267.42	715.21	106.37
Top Width (ft)	42.31	Top Width (ft)	17.37	14.60	10.34
Vel Total (ft/s)	10.65	Avg. Vel. (ft/s)	8.22	13.82	5.93
Max Chl Dpth (ft)	3.71	Hydr. Depth (ft)	1.87	3.54	1.74
Conv. Total (cfs)	7773.3	Conv. (cfs)	1908.9	5105.2	759.2
Length Wtd. (ft)	39.30	Wetted Per. (ft)	17.71	14.61	10.90
Min Ch El (ft)	277.42	Shear (lb/sq ft)	2.25	4.34	2.02
Alpha	1.28	Stream Power (lb/ft s)	18.50	59.96	11.96
Frctn Loss (ft)	0.76	Cum Volume (acre-ft)	2.94	6.62	2.48
C & E Loss (ft)	0.01	Cum SA (acres)	0.99	1.06	0.91

CROSS SECTION

RIVER: Cristianitos
REACH: Upper RS: 2408.84*

INPUT
Description:
Station Elevation Data num= 68

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	302.09	11.89	301.08	12.03	301.07	15.02	300.83	20.66	300.02
34	298.55	35.15	298.42	37.1	298.19	38.59	298.07	42.91	297.73
80.74	295.56	89.35	295.06	97.18	294.62	105.16	294.25	107.51	294.08
109.25	293.94	110.17	293.87	110.21	293.87	113.74	293.13	114.74	292.92
115.45	292.77	116.23	292.66	121.19	291.91	125.52	291.03	137.74	288.52
146.3	286.76	150.87	285.23	156.45	283.35	162.13	281.49	177.25	277.35
182.15	276.73	190.63	276.31	196.91	276.67	202.2	278.53	205.81	279.83
207.34	280.29	211.96	282.04	214.15	282.82	228.62	286.62	230.07	286.96
230.42	287.05	232.75	287.57	238.17	288.54	240.57	288.9	240.97	288.96
245.92	289.71	249.07	289.94	255.23	290.03	256.75	290.05	271.74	290.24
309.33	290.31	329.11	290.08	333.72	290.15	350.48	290.62	353.23	290.69
353.82	290.72	354.61	290.75	355.31	290.79	361.24	291.07	361.4	291.07
382.29	292.5	387.53	293.11	387.97	293.17	389.11	293.39	393.97	294.37
403.93	296.26	407.92	298.21	415.7	301.85				

Manning's n Values num= 10

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.038	34	.047	80.74	.026	114.74	.044	182.15	.035
196.91	.042	240.57	.035	354.61	.063	389.11	.07	415.7	.07

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
182.15	196.91	33.68	41.34	37.89	.1	.3

CROSS SECTION OUTPUT Profile #Q50

E.G. Elev (ft)	279.18	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.12	Wt. n-Val.	0.044	0.035	0.042
W.S. Elev (ft)	278.07	Reach Len. (ft)	33.68	41.34	37.89
Crit W.S. (ft)	278.35	Flow Area (sq ft)	5.98	23.05	2.78
E.G. Slope (ft/ft)	0.025023	Area (sq ft)	5.98	23.05	2.78
Q Total (cfs)	247.00	Flow (cfs)	27.11	208.10	11.80
Top Width (ft)	26.26	Top Width (ft)	7.52	14.76	3.98
Vel Total (ft/s)	7.76	Avg. Vel. (ft/s)	4.53	9.03	4.24
Max Chl Dpth (ft)	1.76	Hydr. Depth (ft)	0.80	1.56	0.70
Conv. Total (cfs)	1561.5	Conv. (cfs)	171.4	1315.5	74.6
Length Wtd. (ft)	39.95	Wetted Per. (ft)	7.66	14.78	4.22
Min Ch El (ft)	276.31	Shear (lb/sq ft)	1.22	2.44	1.03
Alpha	1.19	Stream Power (lb/ft s)	5.53	21.99	4.37
Frctn Loss (ft)	1.00	Cum Volume (acre-ft)	0.62	3.20	0.49
C & E Loss (ft)	0.00	Cum SA (acres)	0.52	1.04	0.41

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

CROSS SECTION OUTPUT Profile #Q100

E.G. Elev (ft)	279.91	Element	Left OB	Channel	Right OB

Vel Head (ft)	1.44	Wt. n-Val.	0.044	0.035	0.042
W.S. Elev (ft)	278.47	Reach Len. (ft)	33.68	41.34	37.89
Crit W.S. (ft)	278.85	Flow Area (sq ft)	9.33	29.02	4.62
E.G. Slope (ft/ft)	0.024493	Area (sq ft)	9.33	29.02	4.62
Q Total (cfs)	375.00	Flow (cfs)	49.76	302.26	22.98
Top Width (ft)	28.89	Top Width (ft)	9.00	14.76	5.13
Vel Total (ft/s)	8.73	Avg. Vel. (ft/s)	5.34	10.42	4.97
Max Chl Dpth (ft)	2.16	Hydr. Depth (ft)	1.04	1.97	0.90
Conv. Total (cfs)	2396.1	Conv. (cfs)	318.0	1931.3	146.8
Length Wtd. (ft)	39.70	Wetted Per. (ft)	9.19	14.78	5.44
Min Ch El (ft)	276.31	Shear (lb/sq ft)	1.55	3.00	1.30
Alpha	1.22	Stream Power (lb/ft s)	8.28	31.27	6.46
Frctn Loss (ft)	0.97	Cum Volume (acre-ft)	0.98	3.90	0.77
C & E Loss (ft)	0.01	Cum SA (acres)	0.62	1.04	0.50

CROSS SECTION OUTPUT Profile #Q100HC

E.G. Elev (ft)	282.57	Element	Left OB	Channel	Right OB
Vel Head (ft)	2.47	Wt. n-Val.	0.044	0.035	0.042
W.S. Elev (ft)	280.10	Reach Len. (ft)	33.68	41.34	37.89
Crit W.S. (ft)	280.80	Flow Area (sq ft)	28.80	53.02	16.66
E.G. Slope (ft/ft)	0.020739	Area (sq ft)	28.80	53.02	16.66
Q Total (cfs)	1089.00	Flow (cfs)	213.01	759.62	116.38
Top Width (ft)	39.50	Top Width (ft)	14.94	14.76	9.80
Vel Total (ft/s)	11.06	Avg. Vel. (ft/s)	7.40	14.33	6.98
Max Chl Dpth (ft)	3.79	Hydr. Depth (ft)	1.93	3.59	1.70
Conv. Total (cfs)	7562.0	Conv. (cfs)	1479.1	5274.8	808.1
Length Wtd. (ft)	39.07	Wetted Per. (ft)	15.35	14.78	10.38
Min Ch El (ft)	276.31	Shear (lb/sq ft)	2.43	4.64	2.08
Alpha	1.30	Stream Power (lb/ft s)	17.97	66.54	14.52
Frctn Loss (ft)	0.79	Cum Volume (acre-ft)	2.91	6.57	2.47
C & E Loss (ft)	0.02	Cum SA (acres)	0.98	1.04	0.90

CROSS SECTION

RIVER: Cristianitos
REACH: Upper RS: 2367.498

INPUT
Description:
Station Elevation Data num= 42

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	301.62	12.36	300.65	34.93	299.14	44.08	298.53	82.95	296.92
99.84	296.21	108.03	295.96	110.45	295.82	113.22	295.62	117.88	294.55
118.61	294.38	119.41	294.26	124.5	293.45	128.95	292.46	141.51	289.62
150.3	287.64	154.99	285.84	166.56	281.38	182.1	276.4	187.13	275.69
197.06	275.21	202.05	275.62	211.59	279.24	220.53	281.99	236.05	285.04
248.86	287.26	249.28	287.33	254.59	288.27	257.97	288.56	264.57	288.67
282.27	288.99	322.57	289.19	343.77	288.96	348.71	289.06	371.1	289.86
378.38	290.13	400.78	291.53	406.87	292.25	413.3	293.48	423.97	295.38
428.25	297.64	436.59	301.83						

Manning's n Values num= 6

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	34.93	.05	82.95	.02	117.88	.05	248.86	.035
371.1	.07								

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
187.13	202.05	247.74	274.53 224.08	.1	.3

CROSS SECTION OUTPUT Profile #Q50

			Left OB	Channel	Right OB
E.G. Elev (ft)	278.30	Element			
Vel Head (ft)	0.30	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	278.00	Reach Len. (ft)	247.74	274.53	224.08
Crit W.S. (ft)	277.26	Flow Area (sq ft)	13.88	38.29	7.49
E.G. Slope (ft/ft)	0.007397	Area (sq ft)	13.88	38.29	7.49
Q Total (cfs)	247.00	Flow (cfs)	43.16	183.25	20.60
Top Width (ft)	31.24	Top Width (ft)	10.04	14.92	6.28
Vel Total (ft/s)	4.14	Avg. Vel. (ft/s)	3.11	4.79	2.75
Max Chl Dpth (ft)	2.79	Hydr. Depth (ft)	1.38	2.57	1.19
Conv. Total (cfs)	2871.8	Conv. (cfs)	501.8	2130.6	239.5
Length Wtd. (ft)	266.53	Wetted Per. (ft)	10.34	14.95	6.72
Min Ch El (ft)	275.21	Shear (lb/sq ft)	0.62	1.18	0.51
Alpha	1.13	Stream Power (lb/ft s)	1.93	5.66	1.41
Frctn Loss (ft)	0.98	Cum Volume (acre-ft)	0.62	3.17	0.49
C & E Loss (ft)	0.06	Cum SA (acres)	0.51	1.03	0.41

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Note: 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)	279.01	Element			
Vel Head (ft)	0.39	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	278.62	Reach Len. (ft)	247.74	274.53	224.08
Crit W.S. (ft)	277.76	Flow Area (sq ft)	20.59	47.40	11.82
E.G. Slope (ft/ft)	0.007463	Area (sq ft)	20.59	47.40	11.82
Q Total (cfs)	375.00	Flow (cfs)	74.34	262.67	37.99
Top Width (ft)	34.76	Top Width (ft)	11.94	14.92	7.89
Vel Total (ft/s)	4.70	Avg. Vel. (ft/s)	3.61	5.54	3.21
Max Chl Dpth (ft)	3.41	Hydr. Depth (ft)	1.72	3.18	1.50
Conv. Total (cfs)	4340.9	Conv. (cfs)	860.6	3040.6	439.8
Length Wtd. (ft)	265.08	Wetted Per. (ft)	12.34	14.95	8.44
Min Ch El (ft)	275.21	Shear (lb/sq ft)	0.78	1.48	0.65
Alpha	1.14	Stream Power (lb/ft s)	2.81	8.19	2.10
Frctn Loss (ft)	1.06	Cum Volume (acre-ft)	0.97	3.87	0.76
C & E Loss (ft)	0.07	Cum SA (acres)	0.61	1.03	0.50

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

			Left OB	Channel	Right OB
E.G. Elev (ft)	281.48	Element			
Vel Head (ft)	0.80	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	280.69	Reach Len. (ft)	247.74	274.53	224.08

Crit W.S. (ft)	279.66	Flow Area (sq ft)	51.99	78.29	34.45
E.G. Slope (ft/ft)	0.008518	Area (sq ft)	51.99	78.29	34.45
Q Total (cfs)	1089.00	Flow (cfs)	277.82	647.55	163.63
Top Width (ft)	47.56	Top Width (ft)	18.40	14.92	14.24
Vel Total (ft/s)	6.61	Avg. Vel. (ft/s)	5.34	8.27	4.75
Max Chl Dpth (ft)	5.48	Hydr. Depth (ft)	2.83	5.25	2.42
Conv. Total (cfs)	11799.4	Conv. (cfs)	3010.2	7016.3	1772.9
Length Wtd. (ft)	261.28	Wetted Per. (ft)	19.12	14.95	15.12
Min Ch El (ft)	275.21	Shear (lb/sq ft)	1.45	2.78	1.21
Alpha	1.18	Stream Power (lb/ft s)	7.73	23.04	5.75
Frctn Loss (ft)	1.39	Cum Volume (acre-ft)	2.88	6.51	2.45
C & E Loss (ft)	0.13	Cum SA (acres)	0.97	1.03	0.89

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

CROSS SECTION

RIVER: Cristianitos
REACH: Upper RS: 2092.970

INPUT
Description: Manual Modification of Manning's N Values
Station Elevation Data num= 36

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	302.18	.68	301.93	7.44	300.75	31.22	295.87	45.01	295.38
72.87	294.38	75.02	294.26	101.69	292.81	113.02	292.19	120.76	291.77
125.34	291.22	137.27	288.99	140.65	288.21	144.3	286.8	157.17	282.05
168.07	278.03	181.91	274.69	183.47	274.35	184.44	274.17	189.35	274.3
209.04	274.63	211.09	274.78	212.57	275.36	215.65	276.16	220.45	277.28
222.89	278.05	230.41	281.51	235.57	282.91	245.09	285.48	251.96	288.79
308.56	291.39	324.9	292.63	329.94	293.04	361.43	299.34	369.18	300.75
375.11	302.47								

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.05	45.01	.02	75.02	.05	251.96	.035	361.43	.05

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
181.91	209.04	205.07	204.04	201.6	.1	.3

CROSS SECTION OUTPUT Profile #Q50

E.G. Elev (ft)	277.26	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.10	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	277.16	Reach Len. (ft)	205.07	204.04	201.60
Crit W.S. (ft)		Flow Area (sq ft)	12.63	74.33	14.57
E.G. Slope (ft/ft)	0.002207	Area (sq ft)	12.63	74.33	14.57
Q Total (cfs)	247.00	Flow (cfs)	19.91	202.89	24.20
Top Width (ft)	48.25	Top Width (ft)	10.23	27.13	10.89
Vel Total (ft/s)	2.43	Avg. Vel. (ft/s)	1.58	2.73	1.66
Max Chl Dpth (ft)	2.99	Hydr. Depth (ft)	1.23	2.74	1.34
Conv. Total (cfs)	5257.5	Conv. (cfs)	423.8	4318.6	515.2
Length Wtd. (ft)	203.87	Wetted Per. (ft)	10.52	27.19	11.22

Min Ch El (ft)	274.17	Shear (lb/sq ft)	0.17	0.38	0.18
Alpha	1.11	Stream Power (lb/ft s)	0.26	1.03	0.30
Frctn Loss (ft)	1.06	Cum Volume (acre-ft)	0.54	2.81	0.43
C & E Loss (ft)	0.05	Cum SA (acres)	0.46	0.90	0.36

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 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)	277.87	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.14	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	277.73	Reach Len. (ft)	205.07	204.04	201.60
Crit W.S. (ft)		Flow Area (sq ft)	19.15	89.83	21.38
E.G. Slope (ft/ft)	0.002478	Area (sq ft)	19.15	89.83	21.38
Q Total (cfs)	375.00	Flow (cfs)	36.75	294.76	43.49
Top Width (ft)	52.56	Top Width (ft)	12.60	27.13	12.84
Vel Total (ft/s)	2.88	Avg. Vel. (ft/s)	1.92	3.28	2.03
Max Chl Dpth (ft)	3.56	Hydr. Depth (ft)	1.52	3.31	1.67
Conv. Total (cfs)	7533.8	Conv. (cfs)	738.3	5921.7	873.8
Length Wtd. (ft)	203.83	Wetted Per. (ft)	12.96	27.19	13.25
Min Ch El (ft)	274.17	Shear (lb/sq ft)	0.23	0.51	0.25
Alpha	1.12	Stream Power (lb/ft s)	0.44	1.68	0.51
Frctn Loss (ft)	1.14	Cum Volume (acre-ft)	0.86	3.43	0.68
C & E Loss (ft)	0.05	Cum SA (acres)	0.54	0.90	0.44

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)	279.97	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.36	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	279.60	Reach Len. (ft)	205.07	204.04	201.60
Crit W.S. (ft)		Flow Area (sq ft)	48.26	140.67	49.80
E.G. Slope (ft/ft)	0.003616	Area (sq ft)	48.26	140.67	49.80
Q Total (cfs)	1089.00	Flow (cfs)	161.78	752.06	175.16
Top Width (ft)	62.47	Top Width (ft)	18.11	27.13	17.23
Vel Total (ft/s)	4.56	Avg. Vel. (ft/s)	3.35	5.35	3.52
Max Chl Dpth (ft)	5.43	Hydr. Depth (ft)	2.67	5.19	2.89
Conv. Total (cfs)	18109.1	Conv. (cfs)	2690.2	12506.1	2912.8
Length Wtd. (ft)	203.76	Wetted Per. (ft)	18.79	27.19	18.03
Min Ch El (ft)	274.17	Shear (lb/sq ft)	0.58	1.17	0.62
Alpha	1.12	Stream Power (lb/ft s)	1.94	6.25	2.19
Frctn Loss (ft)	1.46	Cum Volume (acre-ft)	2.60	5.82	2.23
C & E Loss (ft)	0.07	Cum SA (acres)	0.86	0.90	0.81

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

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

CROSS SECTION

RIVER: Cristianitos
REACH: Upper RS: 1888.931

INPUT
Description: Manual Modification of Manning's N Values
Station Elevation Data num= 31

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	295.28	2.85	295.04	27.05	292.96	39.87	291.63	40.22	291.59
53.2	290.2	61.12	288.73	62.2	288.39	71.93	283.17	75.76	281.52
76	281.42	89.2	276.75	115.04	274.04	118.23	273.71	122.99	273.44
127.77	274.02	148.88	276.66	149.44	276.93	153.07	278.44	160.86	281.85
162.91	282.01	167.32	282.36	169.78	282.83	200.39	283.99	217.15	284.49
240.82	285.24	246.54	285.95	269.26	289.31	269.65	289.4	272.87	290.2
284.81	293.06								

Manning's n Values num= 4

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.05	2.85	.02	39.87	.05	200.39	.035

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
115.04	127.77	204.52	201.29	197.93	.1	.3

CROSS SECTION OUTPUT Profile #Q50

E.G. Elev (ft)	276.16	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.58	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	275.58	Reach Len. (ft)	204.52	201.29	197.93
Crit W.S. (ft)	275.58	Flow Area (sq ft)	11.30	23.82	9.72
E.G. Slope (ft/ft)	0.023957	Area (sq ft)	11.30	23.82	9.72
Q Total (cfs)	247.00	Flow (cfs)	43.48	165.83	37.69
Top Width (ft)	39.88	Top Width (ft)	14.68	12.73	12.47
Vel Total (ft/s)	5.51	Avg. Vel. (ft/s)	3.85	6.96	3.88
Max Chl Dpth (ft)	2.14	Hydr. Depth (ft)	0.77	1.87	0.78
Conv. Total (cfs)	1595.8	Conv. (cfs)	280.9	1071.4	243.5
Length Wtd. (ft)	201.85	Wetted Per. (ft)	14.76	12.79	12.57
Min Ch El (ft)	273.44	Shear (lb/sq ft)	1.14	2.79	1.16
Alpha	1.23	Stream Power (lb/ft s)	4.41	19.39	4.49
Frctn Loss (ft)	4.01	Cum Volume (acre-ft)	0.49	2.58	0.37
C & E Loss (ft)	0.09	Cum SA (acres)	0.40	0.80	0.31

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

CROSS SECTION OUTPUT Profile #Q100

E.G. Elev (ft)	276.68	Element	Left OB	Channel	Right OB

Vel Head (ft)	0.68	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	275.99	Reach Len. (ft)	204.52	201.29	197.93
Crit W.S. (ft)	275.99	Flow Area (sq ft)	18.19	29.09	15.57
E.G. Slope (ft/ft)	0.022844	Area (sq ft)	18.19	29.09	15.57
Q Total (cfs)	375.00	Flow (cfs)	80.13	225.93	68.94
Top Width (ft)	47.13	Top Width (ft)	18.62	12.73	15.78
Vel Total (ft/s)	5.97	Avg. Vel. (ft/s)	4.41	7.77	4.43
Max Chl Dpth (ft)	2.55	Hydr. Depth (ft)	0.98	2.28	0.99
Conv. Total (cfs)	2481.1	Conv. (cfs)	530.1	1494.8	456.1
Length Wtd. (ft)	201.91	Wetted Per. (ft)	18.73	12.79	15.90
Min Ch El (ft)	273.44	Shear (lb/sq ft)	1.39	3.24	1.40
Alpha	1.24	Stream Power (lb/ft s)	6.10	25.19	6.18
Frctn Loss (ft)	2.69	Cum Volume (acre-ft)	0.77	3.16	0.59
C & E Loss (ft)	0.14	Cum SA (acres)	0.47	0.80	0.38

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water 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)	278.43	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.06	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	277.37	Reach Len. (ft)	204.52	201.29	197.93
Crit W.S. (ft)	277.37	Flow Area (sq ft)	51.70	46.67	43.51
E.G. Slope (ft/ft)	0.020627	Area (sq ft)	51.70	46.67	43.51
Q Total (cfs)	1089.00	Flow (cfs)	333.27	472.12	283.61
Top Width (ft)	63.07	Top Width (ft)	27.61	12.73	22.74
Vel Total (ft/s)	7.68	Avg. Vel. (ft/s)	6.45	10.12	6.52
Max Chl Dpth (ft)	3.93	Hydr. Depth (ft)	1.87	3.67	1.91
Conv. Total (cfs)	7582.5	Conv. (cfs)	2320.5	3287.3	1974.7
Length Wtd. (ft)	201.87	Wetted Per. (ft)	27.85	12.79	23.05
Min Ch El (ft)	273.44	Shear (lb/sq ft)	2.39	4.70	2.43
Alpha	1.16	Stream Power (lb/ft s)	15.41	47.53	15.84
Frctn Loss (ft)	1.07	Cum Volume (acre-ft)	2.36	5.38	2.01
C & E Loss (ft)	0.26	Cum SA (acres)	0.76	0.80	0.72

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.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water 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: Cristianitos
REACH: Upper RS: 1687.641

INPUT
Description:
Station Elevation Data num= 31

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	288.97	6.47	288.5	10.52	288.2	34.2	286.29	36.98	285.81
37.63	285.58	38.8	285.3	41	284.77	52.7	281.83	63.68	275.92
70.47	271.27	73.35	270.03	79.54	268.89	82.78	268.87	97.4	268.77
109.57	268.42	127.77	268.12	129.87	268.39	134.89	269.05	157.14	272.61
162.57	273.97	172.02	275.51	175.62	276.1	184.56	277.49	218.81	280.72
225.14	281.83	240.5	282.99	247.12	283.51	252.21	283.73	287.61	285.23
323.35	289.27								

Manning's n Values num= 4

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.05	6.47	.02	38.8	.05	252.21	.035

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
109.57	129.87	183.83	189.09	195.8	.1	.3

CROSS SECTION OUTPUT Profile #Q50

E.G. Elev (ft)	269.91	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.27	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	269.64	Reach Len. (ft)	183.83	189.09	195.80
Crit W.S. (ft)	269.46	Flow Area (sq ft)	28.71	27.85	5.71
E.G. Slope (ft/ft)	0.016761	Area (sq ft)	28.71	27.85	5.71
Q Total (cfs)	247.00	Flow (cfs)	98.33	132.21	16.46
Top Width (ft)	63.11	Top Width (ft)	34.10	20.30	8.71
Vel Total (ft/s)	3.97	Avg. Vel. (ft/s)	3.43	4.75	2.88
Max Chl Dpth (ft)	1.52	Hydr. Depth (ft)	0.84	1.37	0.66
Conv. Total (cfs)	1907.8	Conv. (cfs)	759.5	1021.2	127.2
Length Wtd. (ft)	188.36	Wetted Per. (ft)	34.18	20.32	8.80
Min Ch El (ft)	268.12	Shear (lb/sq ft)	0.88	1.43	0.68
Alpha	1.10	Stream Power (lb/ft s)	3.01	6.81	1.96
Frctn Loss (ft)	2.14	Cum Volume (acre-ft)	0.39	2.46	0.34
C & E Loss (ft)	0.03	Cum SA (acres)	0.28	0.73	0.26

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

CROSS SECTION OUTPUT Profile #Q100

E.G. Elev (ft)	270.46	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.23	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	270.23	Reach Len. (ft)	183.83	189.09	195.80
Crit W.S. (ft)	269.72	Flow Area (sq ft)	49.82	39.89	11.97
E.G. Slope (ft/ft)	0.008729	Area (sq ft)	49.82	39.89	11.97
Q Total (cfs)	375.00	Flow (cfs)	169.16	173.63	32.21
Top Width (ft)	69.41	Top Width (ft)	36.69	20.30	12.42
Vel Total (ft/s)	3.69	Avg. Vel. (ft/s)	3.40	4.35	2.69
Max Chl Dpth (ft)	2.11	Hydr. Depth (ft)	1.36	1.96	0.96
Conv. Total (cfs)	4013.7	Conv. (cfs)	1810.5	1858.4	344.8

Length Wtd. (ft)	188.31	Wetted Per. (ft)	36.84	20.32	12.55
Min Ch El (ft)	268.12	Shear (lb/sq ft)	0.74	1.07	0.52
Alpha	1.07	Stream Power (lb/ft s)	2.50	4.66	1.40
Frctn Loss (ft)	1.66	Cum Volume (acre-ft)	0.61	3.00	0.53
C & E Loss (ft)	0.05	Cum SA (acres)	0.34	0.73	0.31

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

CROSS SECTION OUTPUT Profile #Q100HC

E.G. Elev (ft)	273.11	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.20	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	272.92	Reach Len. (ft)	183.83	189.09	195.80
Crit W.S. (ft)	270.80	Flow Area (sq ft)	155.43	94.34	67.65
E.G. Slope (ft/ft)	0.002377	Area (sq ft)	155.43	94.34	67.65
Q Total (cfs)	1089.00	Flow (cfs)	535.59	380.40	173.00
Top Width (ft)	90.29	Top Width (ft)	41.50	20.30	28.49
Vel Total (ft/s)	3.43	Avg. Vel. (ft/s)	3.45	4.03	2.56
Max Chl Dpth (ft)	4.80	Hydr. Depth (ft)	3.74	4.65	2.37
Conv. Total (cfs)	22335.8	Conv. (cfs)	10985.3	7802.2	3548.4
Length Wtd. (ft)	188.65	Wetted Per. (ft)	42.38	20.32	28.85
Min Ch El (ft)	268.12	Shear (lb/sq ft)	0.54	0.69	0.35
Alpha	1.07	Stream Power (lb/ft s)	1.88	2.78	0.89
Frctn Loss (ft)	0.77	Cum Volume (acre-ft)	1.88	5.06	1.76
C & E Loss (ft)	0.09	Cum SA (acres)	0.59	0.73	0.60

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.

CROSS SECTION

RIVER: Cristianitos
REACH: Upper RS: 1498.554

INPUT
Description: Manual Modification of Manning's N Values
Station Elevation Data num= 36

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	287.39	10.15	286.65	40.58	284.44	44	284.19	79.24	281.74
79.88	281.71	81	281.59	106.55	276.82	108.3	276.55	109.23	276.2
113.25	274.68	121.12	269.41	128.54	264.28	131.27	262.61	131.96	262.57
134.28	262.58	136.52	264.25	141.39	267.33	143.28	268.61	144.29	268.71
165.4	271.67	167.31	272.19	177.87	274.7	181.27	274.95	186	275.27
199.19	276.17	211.92	276.24	221.38	275.98	222.3	275.95	245	275.28
261.89	274.79	274.74	276.22	308.23	279.16	328.1	280.98	333	281.81
338.17	283.27								

Manning's n Values num= 4

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.05	10.15	.02	40.58	.05	245	.035

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
128.54	136.52	214.87	210.71 206.13	.1	.3

CROSS SECTION OUTPUT Profile #Q50

E.G. Elev (ft)	267.74	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.55	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	267.20	Reach Len. (ft)	214.87	210.71	206.13
Crit W.S. (ft)		Flow Area (sq ft)	6.16	32.62	6.87
E.G. Slope (ft/ft)	0.008190	Area (sq ft)	6.16	32.62	6.87
Q Total (cfs)	247.00	Flow (cfs)	18.69	206.92	21.38
Top Width (ft)	16.86	Top Width (ft)	4.22	7.98	4.66
Vel Total (ft/s)	5.41	Avg. Vel. (ft/s)	3.04	6.34	3.11
Max Chl Dpth (ft)	4.63	Hydr. Depth (ft)	1.46	4.09	1.47
Conv. Total (cfs)	2729.3	Conv. (cfs)	206.6	2286.5	236.3
Length Wtd. (ft)	210.67	Wetted Per. (ft)	5.13	9.01	5.51
Min Ch El (ft)	262.57	Shear (lb/sq ft)	0.61	1.85	0.64
Alpha	1.20	Stream Power (lb/ft s)	1.86	11.75	1.98
Frctn Loss (ft)	1.68	Cum Volume (acre-ft)	0.32	2.33	0.31
C & E Loss (ft)	0.04	Cum SA (acres)	0.20	0.66	0.23

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

CROSS SECTION OUTPUT Profile #Q100

E.G. Elev (ft)	268.76	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.73	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	268.02	Reach Len. (ft)	214.87	210.71	206.13
Crit W.S. (ft)		Flow Area (sq ft)	10.14	39.22	11.24
E.G. Slope (ft/ft)	0.008928	Area (sq ft)	10.14	39.22	11.24
Q Total (cfs)	375.00	Flow (cfs)	37.98	293.74	43.28
Top Width (ft)	19.29	Top Width (ft)	5.42	7.98	5.90
Vel Total (ft/s)	6.19	Avg. Vel. (ft/s)	3.74	7.49	3.85
Max Chl Dpth (ft)	5.45	Hydr. Depth (ft)	1.87	4.92	1.91
Conv. Total (cfs)	3968.7	Conv. (cfs)	402.0	3108.8	458.0
Length Wtd. (ft)	210.66	Wetted Per. (ft)	6.59	9.01	7.00
Min Ch El (ft)	262.57	Shear (lb/sq ft)	0.86	2.43	0.89
Alpha	1.23	Stream Power (lb/ft s)	3.21	18.18	3.45
Frctn Loss (ft)	1.93	Cum Volume (acre-ft)	0.48	2.83	0.48
C & E Loss (ft)	0.03	Cum SA (acres)	0.25	0.66	0.27

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 OUTPUT Profile #Q100HC

E.G. Elev (ft)	272.25	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.13	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	271.12	Reach Len. (ft)	214.87	210.71	206.13
Crit W.S. (ft)		Flow Area (sq ft)	33.92	63.94	55.16
E.G. Slope (ft/ft)	0.008662	Area (sq ft)	33.92	63.94	55.16
Q Total (cfs)	1089.00	Flow (cfs)	186.59	653.28	249.13
Top Width (ft)	42.93	Top Width (ft)	9.98	7.98	24.97
Vel Total (ft/s)	7.12	Avg. Vel. (ft/s)	5.50	10.22	4.52
Max Chl Dpth (ft)	8.55	Hydr. Depth (ft)	3.40	8.01	2.21
Conv. Total (cfs)	11700.8	Conv. (cfs)	2004.8	7019.2	2676.8

Length Wtd. (ft)	210.54	Wetted Per. (ft)	12.10	9.01	26.43
Min Ch El (ft)	262.57	Shear (lb/sq ft)	1.52	3.84	1.13
Alpha	1.43	Stream Power (lb/ft s)	8.34	39.23	5.10
Frctn Loss (ft)	2.51	Cum Volume (acre-ft)	1.48	4.71	1.48
C & E Loss (ft)	0.07	Cum SA (acres)	0.49	0.66	0.48

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

CROSS SECTION

RIVER: Cristianitos
REACH: Upper RS: 1287.849

INPUT
Description:
Station Elevation Data num= 39

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	280.52	7.5	280.66	44.83	281.33	52.47	281.1	78.41	280.35
90	279.73	91.22	279.69	92.1	279.64	93.7	279.61	94.64	279.59
119.49	279.1	140.93	276.58	148.44	275.8	156.1	272.64	161.16	270.21
172.36	264.81	175.3	263.19	178.17	262.33	186.41	262.55	187.53	262.6
188.56	263.2	193.17	265.89	193.85	266.32	196.08	266.88	202.76	268.89
204.13	269.31	232.37	269.57	232.64	269.57	233.64	269.61	236.3	269.6
238.49	269.67	268.05	271.2	296.38	273.37	316.49	275.27	316.8	275.3
340.16	276.54	364.56	277.65	371.19	278.31	374.79	278.95		

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	7.5	.05	52.47	.02	93.7	.05	232.37	.035

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
175.3	188.56	250.54	220.45	190.34	.1	.3

CROSS SECTION OUTPUT Profile #Q50

E.G. Elev (ft)	266.02	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.42	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	265.60	Reach Len. (ft)	250.54	220.45	190.34
Crit W.S. (ft)	264.75	Flow Area (sq ft)	5.35	40.36	4.94
E.G. Slope (ft/ft)	0.007808	Area (sq ft)	5.35	40.36	4.94
Q Total (cfs)	247.00	Flow (cfs)	14.37	219.36	13.27
Top Width (ft)	21.95	Top Width (ft)	4.58	13.26	4.11
Vel Total (ft/s)	4.88	Avg. Vel. (ft/s)	2.68	5.44	2.69
Max Chl Dpth (ft)	3.27	Hydr. Depth (ft)	1.17	3.04	1.20
Conv. Total (cfs)	2795.3	Conv. (cfs)	162.6	2482.5	150.2
Length Wtd. (ft)	218.78	Wetted Per. (ft)	5.18	13.55	4.76
Min Ch El (ft)	262.33	Shear (lb/sq ft)	0.50	1.45	0.51
Alpha	1.14	Stream Power (lb/ft s)	1.35	7.89	1.36
Frctn Loss (ft)	2.89	Cum Volume (acre-ft)	0.29	2.16	0.28
C & E Loss (ft)	0.01	Cum SA (acres)	0.18	0.61	0.21

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

CROSS SECTION OUTPUT Profile #Q100

E.G. Elev (ft)	266.80	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.62	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	266.18	Reach Len. (ft)	250.54	220.45	190.34
Crit W.S. (ft)	265.39	Flow Area (sq ft)	8.33	48.00	7.58
E.G. Slope (ft/ft)	0.009372	Area (sq ft)	8.33	48.00	7.58
Q Total (cfs)	375.00	Flow (cfs)	28.28	320.84	25.87
Top Width (ft)	24.10	Top Width (ft)	5.77	13.26	5.06
Vel Total (ft/s)	5.87	Avg. Vel. (ft/s)	3.39	6.68	3.41
Max Chl Dpth (ft)	3.85	Hydr. Depth (ft)	1.44	3.62	1.50
Conv. Total (cfs)	3873.6	Conv. (cfs)	292.2	3314.2	267.3
Length Wtd. (ft)	218.31	Wetted Per. (ft)	6.50	13.55	5.87
Min Ch El (ft)	262.33	Shear (lb/sq ft)	0.75	2.07	0.76
Alpha	1.16	Stream Power (lb/ft s)	2.55	13.85	2.58
Frctn Loss (ft)	3.22	Cum Volume (acre-ft)	0.44	2.61	0.43
C & E Loss (ft)	0.00	Cum SA (acres)	0.22	0.61	0.25

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 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)	269.67	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.79	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	267.88	Reach Len. (ft)	250.54	220.45	190.34
Crit W.S. (ft)	267.88	Flow Area (sq ft)	21.23	70.65	21.15
E.G. Slope (ft/ft)	0.017438	Area (sq ft)	21.23	70.65	21.15
Q Total (cfs)	1089.00	Flow (cfs)	133.71	833.70	121.59
Top Width (ft)	33.44	Top Width (ft)	9.32	13.26	10.86
Vel Total (ft/s)	9.63	Avg. Vel. (ft/s)	6.30	11.80	5.75
Max Chl Dpth (ft)	5.55	Hydr. Depth (ft)	2.28	5.33	1.95
Conv. Total (cfs)	8246.6	Conv. (cfs)	1012.6	6313.3	920.7
Length Wtd. (ft)	217.72	Wetted Per. (ft)	10.44	13.55	11.93
Min Ch El (ft)	262.33	Shear (lb/sq ft)	2.21	5.68	1.93
Alpha	1.24	Stream Power (lb/ft s)	13.95	66.97	11.10
Frctn Loss (ft)	2.63	Cum Volume (acre-ft)	1.34	4.39	1.30
C & E Loss (ft)	0.36	Cum SA (acres)	0.44	0.61	0.40

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water 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: Cristianitos
REACH: Upper RS: 1067.404

INPUT
Description: Manual Modification of Manning's N Values
Station Elevation Data num= 36

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	281.66	7.48	280.87	32.61	278.22	54.94	277.58	69.35	276.66
73.11	276.46	80.17	275.06	81.96	274.25	92.97	265.32	94.84	263.84
95.65	263.31	96.34	263.24	98.42	262.8	104.43	261.53	106.12	261.19
124.23	261.22	128.45	261.5	132.45	261.75	145.11	262.45	147.45	263.04
151.49	264.05	167.36	267.07	172.74	268.37	194.25	269.62	201.48	270.04
209.45	270.28	230	270.28	263.05	270.28	293.09	270.27	301	270.62
314.54	271.41	337.46	272.72	348.15	273.86	363.06	276.29	367.93	277.65
374.23	279.71								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.02	7.48	.05	230	.035

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
104.43	128.45	214.21	224.44	225.13	.1	.3

CROSS SECTION OUTPUT Profile #Q50

			Left OB	Channel	Right OB
E.G. Elev (ft)	263.12	Element			
Vel Head (ft)	0.50	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	262.62	Reach Len. (ft)	214.21	224.44	225.13
Crit W.S. (ft)	262.62	Flow Area (sq ft)	2.82	33.10	10.64
E.G. Slope (ft/ft)	0.027141	Area (sq ft)	2.82	33.10	10.64
Q Total (cfs)	247.00	Flow (cfs)	9.07	200.39	37.53
Top Width (ft)	46.52	Top Width (ft)	5.16	24.02	17.34
Vel Total (ft/s)	5.31	Avg. Vel. (ft/s)	3.22	6.06	3.53
Max Chl Dpth (ft)	1.43	Hydr. Depth (ft)	0.55	1.38	0.61
Conv. Total (cfs)	1499.3	Conv. (cfs)	55.1	1216.4	227.8
Length Wtd. (ft)	223.32	Wetted Per. (ft)	5.28	24.06	17.39
Min Ch El (ft)	261.19	Shear (lb/sq ft)	0.90	2.33	1.04
Alpha	1.14	Stream Power (lb/ft s)	2.91	14.11	3.66
Frctn Loss (ft)	0.69	Cum Volume (acre-ft)	0.27	1.97	0.25
C & E Loss (ft)	0.12	Cum SA (acres)	0.15	0.52	0.16

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

CROSS SECTION OUTPUT Profile #Q100

			Left OB	Channel	Right OB
E.G. Elev (ft)	263.58	Element			
Vel Head (ft)	0.63	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	262.95	Reach Len. (ft)	214.21	224.44	225.13

Crit W.S. (ft)	262.95	Flow Area (sq ft)	4.78	41.02	16.58
E.G. Slope (ft/ft)	0.026463	Area (sq ft)	4.78	41.02	16.58
Q Total (cfs)	375.00	Flow (cfs)	18.13	283.03	73.85
Top Width (ft)	49.39	Top Width (ft)	6.72	24.02	18.65
Vel Total (ft/s)	6.01	Avg. Vel. (ft/s)	3.79	6.90	4.46
Max Chl Dpth (ft)	1.76	Hydr. Depth (ft)	0.71	1.71	0.89
Conv. Total (cfs)	2305.2	Conv. (cfs)	111.4	1739.8	454.0
Length Wtd. (ft)	223.14	Wetted Per. (ft)	6.87	24.06	18.74
Min Ch El (ft)	261.19	Shear (lb/sq ft)	1.15	2.82	1.46
Alpha	1.12	Stream Power (lb/ft s)	4.36	19.43	6.51
Frctn Loss (ft)	0.75	Cum Volume (acre-ft)	0.40	2.39	0.38
C & E Loss (ft)	0.15	Cum SA (acres)	0.18	0.52	0.19

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water 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)	265.70	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.58	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	265.12	Reach Len. (ft)	214.21	224.44	225.13
Crit W.S. (ft)	264.25	Flow Area (sq ft)	25.66	93.07	67.08
E.G. Slope (ft/ft)	0.008859	Area (sq ft)	25.66	93.07	67.08
Q Total (cfs)	1089.00	Flow (cfs)	119.22	641.44	328.34
Top Width (ft)	63.88	Top Width (ft)	11.20	24.02	28.65
Vel Total (ft/s)	5.86	Avg. Vel. (ft/s)	4.65	6.89	4.89
Max Chl Dpth (ft)	3.93	Hydr. Depth (ft)	2.29	3.87	2.34
Conv. Total (cfs)	11570.0	Conv. (cfs)	1266.6	6814.9	3488.4
Length Wtd. (ft)	222.71	Wetted Per. (ft)	11.99	24.06	28.98
Min Ch El (ft)	261.19	Shear (lb/sq ft)	1.18	2.14	1.28
Alpha	1.09	Stream Power (lb/ft s)	5.50	14.74	6.27
Frctn Loss (ft)	0.74	Cum Volume (acre-ft)	1.20	3.97	1.11
C & E Loss (ft)	0.09	Cum SA (acres)	0.38	0.52	0.31

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

CROSS SECTION

RIVER: Cristianitos
REACH: Upper RS: 842.967

INPUT
Description:
Station Elevation Data num= 34

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	275.6	14.58	274.94	42.41	273.03	59	272.35	63.08	271.62

68.79	270.91	93.76	268.35	104.79	267.58	111.35	267.13	126.37	265.84
163.27	263.48	168.16	262.59	170.5	262.13	170.8	261.99	174.43	260.24
179.55	257.71	186.46	256.5	191.03	255.7	195.46	254.89	200.4	256.49
200.41	256.49	202.43	256.83	208.36	261.28	211.46	263.98	214.59	266.7
217.15	267.98	219.78	269.15	229.11	270.45	231.09	270.77	232.06	271.01
234.36	271.53	239.66	272.78	248.07	274.78	254.16	275.75		

Manning's n Values num= 1

Sta	n Val
0	.05

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
186.46	200.4	34.32	37.87	38.81	.1 .3

CROSS SECTION OUTPUT Profile #Q50

E.G. Elev (ft)	260.40	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.09	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	260.31	Reach Len. (ft)	34.32	37.87	38.81
Crit W.S. (ft)	257.80	Flow Area (sq ft)	29.01	64.30	15.49
E.G. Slope (ft/ft)	0.001114	Area (sq ft)	29.01	64.30	15.49
Q Total (cfs)	247.00	Flow (cfs)	49.40	173.45	24.15
Top Width (ft)	32.79	Top Width (ft)	12.18	13.94	6.67
Vel Total (ft/s)	2.27	Avg. Vel. (ft/s)	1.70	2.70	1.56
Max Chl Dpth (ft)	5.42	Hydr. Depth (ft)	2.38	4.61	2.32
Conv. Total (cfs)	7402.0	Conv. (cfs)	1480.4	5197.8	723.8
Length Wtd. (ft)	37.39	Wetted Per. (ft)	12.89	14.34	7.86
Min Ch El (ft)	254.89	Shear (lb/sq ft)	0.16	0.31	0.14
Alpha	1.15	Stream Power (lb/ft s)	0.27	0.84	0.21
Frctn Loss (ft)	0.03	Cum Volume (acre-ft)	0.19	1.72	0.18
C & E Loss (ft)	0.01	Cum SA (acres)	0.11	0.42	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.
Note: Hydraulic jump has occurred between this cross section and the previous upstream section.

CROSS SECTION OUTPUT Profile #Q100

E.G. Elev (ft)	261.36	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.13	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	261.24	Reach Len. (ft)	34.32	37.87	38.81
Crit W.S. (ft)	258.34	Flow Area (sq ft)	41.16	77.20	22.23
E.G. Slope (ft/ft)	0.001248	Area (sq ft)	41.16	77.20	22.23
Q Total (cfs)	375.00	Flow (cfs)	84.61	248.97	41.43
Top Width (ft)	35.94	Top Width (ft)	14.10	13.94	7.90
Vel Total (ft/s)	2.67	Avg. Vel. (ft/s)	2.06	3.22	1.86
Max Chl Dpth (ft)	6.35	Hydr. Depth (ft)	2.92	5.54	2.81
Conv. Total (cfs)	10616.7	Conv. (cfs)	2395.4	7048.5	1172.8
Length Wtd. (ft)	37.32	Wetted Per. (ft)	15.02	14.34	9.40
Min Ch El (ft)	254.89	Shear (lb/sq ft)	0.21	0.42	0.18
Alpha	1.16	Stream Power (lb/ft s)	0.44	1.35	0.34
Frctn Loss (ft)	0.03	Cum Volume (acre-ft)	0.29	2.08	0.28
C & E Loss (ft)	0.02	Cum SA (acres)	0.13	0.42	0.13

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

CROSS SECTION OUTPUT Profile #Q100HC

E.G. Elev (ft)	264.88	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.29	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	264.59	Reach Len. (ft)	34.32	37.87	38.81
Crit W.S. (ft)		Flow Area (sq ft)	116.21	123.91	55.19
E.G. Slope (ft/ft)	0.001710	Area (sq ft)	116.21	123.91	55.19
Q Total (cfs)	1089.00	Flow (cfs)	282.37	641.37	165.25
Top Width (ft)	66.21	Top Width (ft)	40.51	13.94	11.76
Vel Total (ft/s)	3.69	Avg. Vel. (ft/s)	2.43	5.18	2.99
Max Chl Dpth (ft)	9.70	Hydr. Depth (ft)	2.87	8.89	4.69
Conv. Total (cfs)	26333.8	Conv. (cfs)	6828.3	15509.5	3996.0
Length Wtd. (ft)	37.23	Wetted Per. (ft)	41.80	14.34	14.51
Min Ch El (ft)	254.89	Shear (lb/sq ft)	0.30	0.92	0.41
Alpha	1.37	Stream Power (lb/ft s)	0.72	4.78	1.22
Frctn Loss (ft)	0.04	Cum Volume (acre-ft)	0.86	3.42	0.79
C & E Loss (ft)	0.03	Cum SA (acres)	0.25	0.42	0.20

Warning: The conveyance ratio (upstream 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: Cristianitos
REACH: Upper RS: 805.097*

INPUT
Description:
Station Elevation Data num= 58

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	275.61	13.14	275.03	34.12	273.65	38.23	273.36	53.18	272.68
56.86	272.04	57.53	271.96	62	271.41	78.36	269.73	84.51	269.05
93.73	268.32	94.45	268.25	100.37	267.76	113.9	266.42	117.49	266.14
125.33	265.52	147.16	263.3	151.57	262.37	153.23	262	153.68	261.89
153.95	261.77	157.22	260.16	161.84	257.86	168.07	256.58	169.06	256.31
170.35	256.11	173.08	255.68	176.03	255.2	177.94	254.9	178.52	254.98
179.6	255.12	185.32	255.9	190.14	256.57	190.15	256.57	191.11	256.73
192.2	256.92	192.28	256.97	196.74	259.89	198.22	260.85	201.37	263.2
204.55	265.57	207.15	266.72	209.12	267.51	209.82	267.8	210.62	267.93
219.29	269.63	221.3	270.06	222.28	270.35	222.65	270.45	224.62	271.02
225.08	271.16	229.99	272.47	235.69	274	238.53	274.73	238.79	274.78
242.07	275.37	242.88	275.48	244.71	275.73				

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.05	168.07	.047	190.14	.047	242.88	.035	244.71	.047

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
168.07	190.14	34.32	37.87	38.81	.1	.3

CROSS SECTION OUTPUT Profile #Q50

E.G. Elev (ft)	260.36	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.05	Wt. n-Val.	0.050	0.047	0.047
W.S. Elev (ft)	260.31	Reach Len. (ft)	34.32	37.87	38.81
Crit W.S. (ft)		Flow Area (sq ft)	25.30	101.51	16.15

E.G. Slope (ft/ft)	0.000518	Area (sq ft)	25.30	101.51	16.15
Q Total (cfs)	247.00	Flow (cfs)	28.36	200.51	18.14
Top Width (ft)	40.48	Top Width (ft)	11.16	22.07	7.25
Vel Total (ft/s)	1.73	Avg. Vel. (ft/s)	1.12	1.98	1.12
Max Chl Dpth (ft)	5.41	Hydr. Depth (ft)	2.27	4.60	2.23
Conv. Total (cfs)	10849.1	Conv. (cfs)	1245.6	8806.9	796.6
Length Wtd. (ft)	37.60	Wetted Per. (ft)	11.86	22.33	8.29
Min Ch El (ft)	254.90	Shear (lb/sq ft)	0.07	0.15	0.06
Alpha	1.14	Stream Power (lb/ft s)	0.08	0.29	0.07
Frctn Loss (ft)	0.01	Cum Volume (acre-ft)	0.17	1.65	0.17
C & E Loss (ft)	0.01	Cum SA (acres)	0.10	0.40	0.10

CROSS SECTION OUTPUT Profile #Q100

E.G. Elev (ft)	261.32	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.08	Wt. n-Val.	0.050	0.047	0.047
W.S. Elev (ft)	261.24	Reach Len. (ft)	34.32	37.87	38.81
Crit W.S. (ft)		Flow Area (sq ft)	36.56	122.04	23.55
E.G. Slope (ft/ft)	0.000596	Area (sq ft)	36.56	122.04	23.55
Q Total (cfs)	375.00	Flow (cfs)	50.37	292.31	32.32
Top Width (ft)	43.72	Top Width (ft)	13.05	22.07	8.61
Vel Total (ft/s)	2.06	Avg. Vel. (ft/s)	1.38	2.40	1.37
Max Chl Dpth (ft)	6.34	Hydr. Depth (ft)	2.80	5.53	2.74
Conv. Total (cfs)	15357.5	Conv. (cfs)	2063.0	11971.0	1323.5
Length Wtd. (ft)	37.55	Wetted Per. (ft)	13.97	22.33	9.93
Min Ch El (ft)	254.90	Shear (lb/sq ft)	0.10	0.20	0.09
Alpha	1.15	Stream Power (lb/ft s)	0.13	0.49	0.12
Frctn Loss (ft)	0.02	Cum Volume (acre-ft)	0.26	2.00	0.26
C & E Loss (ft)	0.01	Cum SA (acres)	0.12	0.40	0.12

CROSS SECTION OUTPUT Profile #Q100HC

E.G. Elev (ft)	264.80	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.18	Wt. n-Val.	0.050	0.047	0.047
W.S. Elev (ft)	264.62	Reach Len. (ft)	34.32	37.87	38.81
Crit W.S. (ft)		Flow Area (sq ft)	106.41	196.60	60.27
E.G. Slope (ft/ft)	0.000830	Area (sq ft)	106.41	196.60	60.27
Q Total (cfs)	1089.00	Flow (cfs)	190.51	763.29	135.20
Top Width (ft)	69.10	Top Width (ft)	33.89	22.07	13.14
Vel Total (ft/s)	3.00	Avg. Vel. (ft/s)	1.79	3.88	2.24
Max Chl Dpth (ft)	9.72	Hydr. Depth (ft)	3.14	8.91	4.59
Conv. Total (cfs)	37808.7	Conv. (cfs)	6614.2	26500.3	4694.1
Length Wtd. (ft)	37.45	Wetted Per. (ft)	35.18	22.33	15.59
Min Ch El (ft)	254.90	Shear (lb/sq ft)	0.16	0.46	0.20
Alpha	1.31	Stream Power (lb/ft s)	0.28	1.77	0.45
Frctn Loss (ft)	0.02	Cum Volume (acre-ft)	0.77	3.28	0.74
C & E Loss (ft)	0.02	Cum SA (acres)	0.22	0.40	0.19

CROSS SECTION

RIVER: Cristianitos
REACH: Upper RS: 767.227*

INPUT
Description:

Station Elevation Data num= 58

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	275.62	11.7	275.12	30.39	273.96	34.04	273.68	47.36	273
50.63	272.46	51.24	272.38	55.22	271.9	69.78	270.41	75.26	269.76
83.47	268.99	84.12	268.93	89.38	268.4	101.44	267	104.63	266.69
111.62	266.01	131.06	263.11	134.98	262.14	136.46	261.76	136.86	261.66
137.1	261.54	140.02	260.09	144.13	258	149.67	256.65	150.75	256.27
152.16	256.08	155.13	255.66	158.34	255.2	160.42	254.91	161.34	254.99
163.06	255.13	172.19	255.95	179.89	256.64	179.9	256.64	180.87	256.8
181.98	257.01	182.05	257.05	186.58	259.59	188.09	260.41	191.28	262.42
194.5	264.44	197.14	265.47	199.15	266.18	199.85	266.44	200.67	266.59
209.46	268.82	211.5	269.36	212.5	269.68	212.88	269.8	214.87	270.51
215.34	270.69	220.33	272.17	226.11	273.89	228.99	274.68	229.26	274.74
232.58	275.41	233.41	275.5	235.27	275.71				

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.05	149.67	.045	179.89	.045	233.41	.035	235.27	.045

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
149.67	179.89	34.32	37.87	38.81	.1	.3

CROSS SECTION OUTPUT Profile #Q50

E.G. Elev (ft)	260.34	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.03	Wt. n-Val.	0.050	0.045	0.045
W.S. Elev (ft)	260.31	Reach Len. (ft)	34.32	37.87	38.81
Crit W.S. (ft)		Flow Area (sq ft)	21.79	138.21	17.02
E.G. Slope (ft/ft)	0.000294	Area (sq ft)	21.79	138.21	17.02
Q Total (cfs)	247.00	Flow (cfs)	17.72	214.44	14.84
Top Width (ft)	48.33	Top Width (ft)	10.09	30.22	8.02
Vel Total (ft/s)	1.40	Avg. Vel. (ft/s)	0.81	1.55	0.87
Max Chl Dpth (ft)	5.40	Hydr. Depth (ft)	2.16	4.57	2.12
Conv. Total (cfs)	14408.7	Conv. (cfs)	1033.4	12509.5	865.8
Length Wtd. (ft)	37.71	Wetted Per. (ft)	10.81	30.46	8.91
Min Ch El (ft)	254.91	Shear (lb/sq ft)	0.04	0.08	0.04
Alpha	1.12	Stream Power (lb/ft s)	0.03	0.13	0.03
Frctn Loss (ft)	0.01	Cum Volume (acre-ft)	0.15	1.54	0.15
C & E Loss (ft)	0.00	Cum SA (acres)	0.09	0.38	0.09

CROSS SECTION OUTPUT Profile #Q100

E.G. Elev (ft)	261.29	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.05	Wt. n-Val.	0.050	0.045	0.045
W.S. Elev (ft)	261.24	Reach Len. (ft)	34.32	37.87	38.81
Crit W.S. (ft)		Flow Area (sq ft)	32.09	166.41	25.22
E.G. Slope (ft/ft)	0.000342	Area (sq ft)	32.09	166.41	25.22
Q Total (cfs)	375.00	Flow (cfs)	32.37	315.32	27.32
Top Width (ft)	51.72	Top Width (ft)	11.97	30.22	9.52
Vel Total (ft/s)	1.68	Avg. Vel. (ft/s)	1.01	1.89	1.08
Max Chl Dpth (ft)	6.33	Hydr. Depth (ft)	2.68	5.51	2.65
Conv. Total (cfs)	20272.8	Conv. (cfs)	1749.8	17046.3	1476.7
Length Wtd. (ft)	37.68	Wetted Per. (ft)	12.91	30.46	10.68
Min Ch El (ft)	254.91	Shear (lb/sq ft)	0.05	0.12	0.05
Alpha	1.14	Stream Power (lb/ft s)	0.05	0.22	0.05
Frctn Loss (ft)	0.01	Cum Volume (acre-ft)	0.23	1.87	0.24
C & E Loss (ft)	0.00	Cum SA (acres)	0.11	0.38	0.11

CROSS SECTION OUTPUT Profile #Q100HC

E.G. Elev (ft)	264.76	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.12	Wt. n-Val.	0.050	0.045	0.045
W.S. Elev (ft)	264.64	Reach Len. (ft)	34.32	37.87	38.81
Crit W.S. (ft)		Flow Area (sq ft)	96.26	268.99	66.72
E.G. Slope (ft/ft)	0.000482	Area (sq ft)	96.26	268.99	66.72
Q Total (cfs)	1089.00	Flow (cfs)	136.15	833.52	119.32
Top Width (ft)	74.19	Top Width (ft)	28.85	30.22	15.12
Vel Total (ft/s)	2.52	Avg. Vel. (ft/s)	1.41	3.10	1.79
Max Chl Dpth (ft)	9.73	Hydr. Depth (ft)	3.34	8.90	4.41
Conv. Total (cfs)	49583.5	Conv. (cfs)	6199.3	37951.4	5432.9
Length Wtd. (ft)	37.59	Wetted Per. (ft)	30.18	30.46	17.23
Min Ch El (ft)	254.91	Shear (lb/sq ft)	0.10	0.27	0.12
Alpha	1.25	Stream Power (lb/ft s)	0.14	0.82	0.21
Frctn Loss (ft)	0.01	Cum Volume (acre-ft)	0.69	3.07	0.69
C & E Loss (ft)	0.01	Cum SA (acres)	0.20	0.38	0.18

CROSS SECTION

RIVER: Cristianitos
REACH: Upper RS: 729.357*

INPUT
Description:
Station Elevation Data num= 58

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	275.63	10.27	275.21	26.65	274.26	29.86	274.01	41.54	273.33
44.41	272.88	44.94	272.81	48.43	272.4	61.21	271.09	66.01	270.46
73.21	269.67	73.78	269.6	78.4	269.03	88.97	267.58	91.78	267.24
97.9	266.49	114.95	262.93	118.4	261.92	119.69	261.53	120.04	261.42
120.25	261.32	122.81	260.01	126.41	258.15	131.28	256.73	132.45	256.24
133.97	256.05	137.18	255.64	140.65	255.19	142.9	254.93	144.16	255
146.53	255.14	159.06	256	169.63	256.71	169.64	256.72	170.63	256.88
171.75	257.1	171.83	257.13	176.43	259.29	177.95	259.98	181.19	261.64
184.46	263.32	187.14	264.21	189.17	264.84	189.89	265.09	190.72	265.26
199.64	268	201.71	268.65	202.72	269.02	203.1	269.15	205.13	270
205.6	270.21	210.66	271.86	216.53	273.78	219.45	274.63	219.72	274.7
223.1	275.44	223.93	275.52	225.82	275.69				

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.05	131.28	.043	169.63	.043	223.93	.035	225.82	.043

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
131.28	169.63	34.32	37.87	38.81	.1	.3

CROSS SECTION OUTPUT Profile #Q50

E.G. Elev (ft)	260.33	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.02	Wt. n-Val.	0.050	0.043	0.043
W.S. Elev (ft)	260.31	Reach Len. (ft)	34.32	37.87	38.81
Crit W.S. (ft)		Flow Area (sq ft)	18.48	174.25	18.27
E.G. Slope (ft/ft)	0.000183	Area (sq ft)	18.48	174.25	18.27
Q Total (cfs)	247.00	Flow (cfs)	11.36	222.62	13.01
Top Width (ft)	56.37	Top Width (ft)	9.05	38.35	8.96

Vel Total (ft/s)	1.17	Avg. Vel. (ft/s)	0.61	1.28	0.71
Max Chl Dpth (ft)	5.38	Hydr. Depth (ft)	2.04	4.54	2.04
Conv. Total (cfs)	18251.9	Conv. (cfs)	839.7	16450.5	961.7
Length Wtd. (ft)	37.78	Wetted Per. (ft)	9.78	38.59	9.72
Min Ch El (ft)	254.93	Shear (lb/sq ft)	0.02	0.05	0.02
Alpha	1.11	Stream Power (lb/ft s)	0.01	0.07	0.02
Frctn Loss (ft)	0.01	Cum Volume (acre-ft)	0.13	1.41	0.14
C & E Loss (ft)	0.00	Cum SA (acres)	0.08	0.35	0.08

CROSS SECTION OUTPUT Profile #Q100

E.G. Elev (ft)	261.28	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.03	Wt. n-Val.	0.050	0.043	0.043
W.S. Elev (ft)	261.24	Reach Len. (ft)	34.32	37.87	38.81
Crit W.S. (ft)		Flow Area (sq ft)	27.80	210.10	27.50
E.G. Slope (ft/ft)	0.000215	Area (sq ft)	27.80	210.10	27.50
Q Total (cfs)	375.00	Flow (cfs)	21.39	329.10	24.51
Top Width (ft)	60.02	Top Width (ft)	10.88	38.35	10.79
Vel Total (ft/s)	1.41	Avg. Vel. (ft/s)	0.77	1.57	0.89
Max Chl Dpth (ft)	6.31	Hydr. Depth (ft)	2.56	5.48	2.55
Conv. Total (cfs)	25602.9	Conv. (cfs)	1460.2	22469.2	1673.5
Length Wtd. (ft)	37.76	Wetted Per. (ft)	11.83	38.59	11.77
Min Ch El (ft)	254.93	Shear (lb/sq ft)	0.03	0.07	0.03
Alpha	1.12	Stream Power (lb/ft s)	0.02	0.11	0.03
Frctn Loss (ft)	0.01	Cum Volume (acre-ft)	0.21	1.71	0.21
C & E Loss (ft)	0.00	Cum SA (acres)	0.10	0.35	0.10

CROSS SECTION OUTPUT Profile #Q100HC

E.G. Elev (ft)	264.74	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.09	Wt. n-Val.	0.050	0.043	0.043
W.S. Elev (ft)	264.65	Reach Len. (ft)	34.32	37.87	38.81
Crit W.S. (ft)		Flow Area (sq ft)	85.65	340.65	76.46
E.G. Slope (ft/ft)	0.000306	Area (sq ft)	85.65	340.65	76.46
Q Total (cfs)	1089.00	Flow (cfs)	98.71	879.53	110.76
Top Width (ft)	81.83	Top Width (ft)	24.56	38.35	18.92
Vel Total (ft/s)	2.17	Avg. Vel. (ft/s)	1.15	2.58	1.45
Max Chl Dpth (ft)	9.72	Hydr. Depth (ft)	3.49	8.88	4.04
Conv. Total (cfs)	62253.8	Conv. (cfs)	5643.0	50279.3	6331.5
Length Wtd. (ft)	37.69	Wetted Per. (ft)	25.95	38.59	20.61
Min Ch El (ft)	254.93	Shear (lb/sq ft)	0.06	0.17	0.07
Alpha	1.22	Stream Power (lb/ft s)	0.07	0.44	0.10
Frctn Loss (ft)	0.01	Cum Volume (acre-ft)	0.62	2.81	0.62
C & E Loss (ft)	0.01	Cum SA (acres)	0.18	0.35	0.17

CROSS SECTION

RIVER: Cristianitos
REACH: Upper RS: 691.487*

INPUT
Description:
Station Elevation Data num= 58

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	275.64	8.83	275.3	22.92	274.57	25.68	274.34	35.72	273.65

38.19	273.29	38.64	273.24	41.65	272.9	52.63	271.78	56.76	271.16
62.96	270.35	63.44	270.28	67.41	269.66	76.51	268.16	78.92	267.8
84.18	266.98	98.85	262.75	101.81	261.7	102.92	261.3	103.22	261.18
103.41	261.09	105.6	259.94	108.7	258.29	112.89	256.81	114.14	256.21
115.77	256.02	119.23	255.62	122.96	255.19	125.37	254.94	126.98	255.02
130	255.16	145.93	256.05	159.37	256.79	159.38	256.79	160.38	256.96
161.53	257.19	161.6	257.21	166.27	258.99	167.81	259.55	171.1	260.86
174.42	262.19	177.13	262.96	179.2	263.51	179.92	263.74	180.77	263.93
189.81	267.18	191.91	267.95	192.94	268.35	193.33	268.5	195.38	269.5
195.87	269.73	201	271.55	206.95	273.66	209.92	274.58	210.19	274.66
213.61	275.48	214.46	275.54	216.37	275.67				

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.05	112.89	.04	159.37	.04	214.46	.035	216.37	.04

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
112.89	159.37	34.32	37.87	38.81	.1	.3

CROSS SECTION OUTPUT Profile #Q50

			Left OB	Channel	Right OB
E.G. Elev (ft)	260.33	Element			
Vel Head (ft)	0.02	Wt. n-Val.	0.050	0.040	0.040
W.S. Elev (ft)	260.31	Reach Len. (ft)	34.32	37.87	38.81
Crit W.S. (ft)		Flow Area (sq ft)	15.38	209.55	20.04
E.G. Slope (ft/ft)	0.000116	Area (sq ft)	15.38	209.55	20.04
Q Total (cfs)	247.00	Flow (cfs)	7.17	227.85	11.98
Top Width (ft)	64.81	Top Width (ft)	7.99	46.48	10.34
Vel Total (ft/s)	1.01	Avg. Vel. (ft/s)	0.47	1.09	0.60
Max Chl Dpth (ft)	5.37	Hydr. Depth (ft)	1.93	4.51	1.94
Conv. Total (cfs)	22943.9	Conv. (cfs)	666.1	21164.8	1113.0
Length Wtd. (ft)	37.83	Wetted Per. (ft)	8.75	46.74	10.96
Min Ch El (ft)	254.94	Shear (lb/sq ft)	0.01	0.03	0.01
Alpha	1.10	Stream Power (lb/ft s)	0.01	0.04	0.01
Frctn Loss (ft)	0.00	Cum Volume (acre-ft)	0.12	1.24	0.12
C & E Loss (ft)	0.00	Cum SA (acres)	0.08	0.32	0.07

CROSS SECTION OUTPUT Profile #Q100

			Left OB	Channel	Right OB
E.G. Elev (ft)	261.27	Element			
Vel Head (ft)	0.03	Wt. n-Val.	0.050	0.040	0.040
W.S. Elev (ft)	261.24	Reach Len. (ft)	34.32	37.87	38.81
Crit W.S. (ft)		Flow Area (sq ft)	23.70	253.04	30.81
E.G. Slope (ft/ft)	0.000136	Area (sq ft)	23.70	253.04	30.81
Q Total (cfs)	375.00	Flow (cfs)	13.86	337.98	23.16
Top Width (ft)	69.00	Top Width (ft)	9.83	46.48	12.69
Vel Total (ft/s)	1.22	Avg. Vel. (ft/s)	0.58	1.34	0.75
Max Chl Dpth (ft)	6.30	Hydr. Depth (ft)	2.41	5.44	2.43
Conv. Total (cfs)	32156.8	Conv. (cfs)	1188.4	28982.2	1986.3
Length Wtd. (ft)	37.82	Wetted Per. (ft)	10.81	46.74	13.48
Min Ch El (ft)	254.94	Shear (lb/sq ft)	0.02	0.05	0.02
Alpha	1.11	Stream Power (lb/ft s)	0.01	0.06	0.01
Frctn Loss (ft)	0.00	Cum Volume (acre-ft)	0.19	1.51	0.19
C & E Loss (ft)	0.00	Cum SA (acres)	0.09	0.32	0.09

CROSS SECTION OUTPUT Profile #Q100HC

E.G. Elev (ft)	264.72	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.07	Wt. n-Val.	0.050	0.040	0.040
W.S. Elev (ft)	264.65	Reach Len. (ft)	34.32	37.87	38.81
Crit W.S. (ft)		Flow Area (sq ft)	74.69	411.59	91.78
E.G. Slope (ft/ft)	0.000193	Area (sq ft)	74.69	411.59	91.78
Q Total (cfs)	1089.00	Flow (cfs)	69.35	906.14	113.51
Top Width (ft)	90.54	Top Width (ft)	20.65	46.48	23.42
Vel Total (ft/s)	1.88	Avg. Vel. (ft/s)	0.93	2.20	1.24
Max Chl Dpth (ft)	9.71	Hydr. Depth (ft)	3.62	8.86	3.92
Conv. Total (cfs)	78357.7	Conv. (cfs)	4989.9	65200.6	8167.3
Length Wtd. (ft)	37.78	Wetted Per. (ft)	22.16	46.74	24.75
Min Ch El (ft)	254.94	Shear (lb/sq ft)	0.04	0.11	0.04
Alpha	1.20	Stream Power (lb/ft s)	0.04	0.23	0.06
Frctn Loss (ft)	0.01	Cum Volume (acre-ft)	0.55	2.48	0.55
C & E Loss (ft)	0.00	Cum SA (acres)	0.16	0.32	0.15

CROSS SECTION

RIVER: Cristianitos
REACH: Upper RS: 653.617*

INPUT
Description:
Station Elevation Data num= 58

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	275.65	7.39	275.39	19.18	274.87	21.49	274.66	29.9	273.98
31.97	273.71	32.35	273.67	34.86	273.4	44.06	272.46	47.52	271.86
52.7	271.03	53.1	270.95	56.43	270.29	64.04	268.74	66.06	268.35
70.47	267.47	82.74	262.56	85.22	261.48	86.15	261.06	86.41	260.95
86.56	260.87	88.4	259.86	90.99	258.44	94.49	256.88	95.84	256.17
97.58	255.99	101.28	255.6	105.27	255.18	107.85	254.95	109.81	255.03
113.46	255.17	132.8	256.09	149.12	256.86	149.13	256.87	150.14	257.03
151.3	257.27	151.38	257.3	156.11	258.69	157.68	259.12	161.01	260.08
164.38	261.06	167.13	261.7	169.22	262.17	169.96	262.39	170.81	262.59
179.99	266.36	182.12	267.24	183.16	267.69	183.55	267.86	185.64	268.99
186.13	269.26	191.33	271.24	197.37	273.55	200.38	274.53	200.65	274.62
204.13	275.51	204.98	275.56	206.93	275.65				

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.05	94.49	.038	149.12	.038	204.98	.035	206.93	.038

Bank Sta: Left	Right	Lengths: Left Channel		Right	Coeff Contr.	Expan.
94.49	149.12	34.32	37.87	38.81	.1	.3

CROSS SECTION OUTPUT Profile #Q50

E.G. Elev (ft)	260.32	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.01	Wt. n-Val.	0.050	0.038	0.038
W.S. Elev (ft)	260.31	Reach Len. (ft)	34.32	37.87	38.81
Crit W.S. (ft)		Flow Area (sq ft)	12.45	244.73	22.91
E.G. Slope (ft/ft)	0.000079	Area (sq ft)	12.45	244.73	22.91
Q Total (cfs)	247.00	Flow (cfs)	4.53	230.91	11.56
Top Width (ft)	74.21	Top Width (ft)	6.90	54.63	12.67
Vel Total (ft/s)	0.88	Avg. Vel. (ft/s)	0.36	0.94	0.50
Max Chl Dpth (ft)	5.36	Hydr. Depth (ft)	1.80	4.48	1.81
Conv. Total (cfs)	27723.8	Conv. (cfs)	508.7	25917.4	1297.7

Length Wtd. (ft)	37.86	Wetted Per. (ft)	7.72	54.91	13.14
Min Ch El (ft)	254.95	Shear (lb/sq ft)	0.01	0.02	0.01
Alpha	1.09	Stream Power (lb/ft s)	0.00	0.02	0.00
Frctn Loss (ft)	0.00	Cum Volume (acre-ft)	0.11	1.04	0.10
C & E Loss (ft)	0.00	Cum SA (acres)	0.07	0.27	0.06

CROSS SECTION OUTPUT Profile #Q100

E.G. Elev (ft)	261.26	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.02	Wt. n-Val.	0.050	0.038	0.038
W.S. Elev (ft)	261.24	Reach Len. (ft)	34.32	37.87	38.81
Crit W.S. (ft)		Flow Area (sq ft)	19.73	295.90	36.30
E.G. Slope (ft/ft)	0.000093	Area (sq ft)	19.73	295.90	36.30
Q Total (cfs)	375.00	Flow (cfs)	9.03	342.95	23.02
Top Width (ft)	79.43	Top Width (ft)	8.75	54.63	16.05
Vel Total (ft/s)	1.07	Avg. Vel. (ft/s)	0.46	1.16	0.63
Max Chl Dpth (ft)	6.29	Hydr. Depth (ft)	2.26	5.42	2.26
Conv. Total (cfs)	38886.1	Conv. (cfs)	936.2	35563.2	2386.8
Length Wtd. (ft)	37.85	Wetted Per. (ft)	9.78	54.91	16.65
Min Ch El (ft)	254.95	Shear (lb/sq ft)	0.01	0.03	0.01
Alpha	1.11	Stream Power (lb/ft s)	0.01	0.04	0.01
Frctn Loss (ft)	0.00	Cum Volume (acre-ft)	0.17	1.27	0.16
C & E Loss (ft)	0.00	Cum SA (acres)	0.09	0.27	0.08

CROSS SECTION OUTPUT Profile #Q100HC

E.G. Elev (ft)	264.71	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.05	Wt. n-Val.	0.050	0.038	0.038
W.S. Elev (ft)	264.66	Reach Len. (ft)	34.32	37.87	38.81
Crit W.S. (ft)		Flow Area (sq ft)	63.40	482.54	111.91
E.G. Slope (ft/ft)	0.000130	Area (sq ft)	63.40	482.54	111.91
Q Total (cfs)	1089.00	Flow (cfs)	48.39	914.84	125.77
Top Width (ft)	98.36	Top Width (ft)	17.00	54.63	26.73
Vel Total (ft/s)	1.66	Avg. Vel. (ft/s)	0.76	1.90	1.12
Max Chl Dpth (ft)	9.71	Hydr. Depth (ft)	3.73	8.83	4.19
Conv. Total (cfs)	95648.2	Conv. (cfs)	4250.1	80351.2	11046.9
Length Wtd. (ft)	37.83	Wetted Per. (ft)	18.72	54.91	27.90
Min Ch El (ft)	254.95	Shear (lb/sq ft)	0.03	0.07	0.03
Alpha	1.16	Stream Power (lb/ft s)	0.02	0.13	0.04
Frctn Loss (ft)	0.01	Cum Volume (acre-ft)	0.50	2.09	0.46
C & E Loss (ft)	0.00	Cum SA (acres)	0.14	0.27	0.12

CROSS SECTION

RIVER: Cristianitos
REACH: Upper RS: 615.747

INPUT
Description:
Station Elevation Data num= 29

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	275.66	15.45	275.18	26.05	274.1	35.48	273.14	42.44	271.71
53.2	268.9	56.75	267.96	69.38	260.83	76.1	256.96	77.53	256.14
79.39	255.96	87.58	255.18	90.33	254.96	92.63	255.04	96.93	255.18
119.67	256.14	138.86	256.94	139.9	257.11	141.15	257.38	145.95	258.39

159.25	260.84	160.86	261.26	173.78	267.21	176.39	268.78	187.79	273.44
191.12	274.58	194.64	275.55	195.51	275.58	197.48	275.63		

Manning's n Values num= 2

Sta	n Val	Sta	n Val
0	.05	195.51	.035

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
76.1	138.86	50.75	42.38	33.15	.1	.3

CROSS SECTION OUTPUT Profile #Q50

			Left OB	Channel	Right OB
E.G. Elev (ft)	260.32	Element			
Vel Head (ft)	0.01	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	260.31	Reach Len. (ft)	50.75	42.38	33.15
Crit W.S. (ft)		Flow Area (sq ft)	9.72	278.94	28.82
E.G. Slope (ft/ft)	0.000107	Area (sq ft)	9.72	278.94	28.82
Q Total (cfs)	247.00	Flow (cfs)	3.83	230.97	12.21
Top Width (ft)	86.06	Top Width (ft)	5.81	62.76	17.49
Vel Total (ft/s)	0.78	Avg. Vel. (ft/s)	0.39	0.83	0.42
Max Chl Dpth (ft)	5.35	Hydr. Depth (ft)	1.67	4.44	1.65
Conv. Total (cfs)	23884.6	Conv. (cfs)	370.0	22334.1	1180.5
Length Wtd. (ft)	42.06	Wetted Per. (ft)	6.70	63.07	17.81
Min Ch El (ft)	254.96	Shear (lb/sq ft)	0.01	0.03	0.01
Alpha	1.08	Stream Power (lb/ft s)	0.00	0.02	0.00
Frctn Loss (ft)	0.00	Cum Volume (acre-ft)	0.10	0.82	0.08
C & E Loss (ft)	0.00	Cum SA (acres)	0.07	0.22	0.05

CROSS SECTION OUTPUT Profile #Q100

			Left OB	Channel	Right OB
E.G. Elev (ft)	261.26	Element			
Vel Head (ft)	0.01	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	261.24	Reach Len. (ft)	50.75	42.38	33.15
Crit W.S. (ft)		Flow Area (sq ft)	15.93	337.75	47.47
E.G. Slope (ft/ft)	0.000123	Area (sq ft)	15.93	337.75	47.47
Q Total (cfs)	375.00	Flow (cfs)	7.93	341.19	25.88
Top Width (ft)	92.15	Top Width (ft)	7.45	62.76	21.94
Vel Total (ft/s)	0.93	Avg. Vel. (ft/s)	0.50	1.01	0.55
Max Chl Dpth (ft)	6.28	Hydr. Depth (ft)	2.14	5.38	2.16
Conv. Total (cfs)	33767.2	Conv. (cfs)	714.3	30722.6	2330.3
Length Wtd. (ft)	41.95	Wetted Per. (ft)	8.60	63.07	22.36
Min Ch El (ft)	254.96	Shear (lb/sq ft)	0.01	0.04	0.02
Alpha	1.09	Stream Power (lb/ft s)	0.01	0.04	0.01
Frctn Loss (ft)	0.00	Cum Volume (acre-ft)	0.16	0.99	0.12
C & E Loss (ft)	0.00	Cum SA (acres)	0.08	0.22	0.06

CROSS SECTION OUTPUT Profile #Q100HC

			Left OB	Channel	Right OB
E.G. Elev (ft)	264.70	Element			
Vel Head (ft)	0.04	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	264.66	Reach Len. (ft)	50.75	42.38	33.15
Crit W.S. (ft)		Flow Area (sq ft)	51.78	552.41	135.29
E.G. Slope (ft/ft)	0.000168	Area (sq ft)	51.78	552.41	135.29
Q Total (cfs)	1089.00	Flow (cfs)	44.47	904.04	140.49
Top Width (ft)	105.66	Top Width (ft)	13.51	62.76	29.39
Vel Total (ft/s)	1.47	Avg. Vel. (ft/s)	0.86	1.64	1.04
Max Chl Dpth (ft)	9.70	Hydr. Depth (ft)	3.83	8.80	4.60

Conv. Total (cfs)	84024.2	Conv. (cfs)	3431.0	69753.4	10839.8
Length Wtd. (ft)	41.60	Wetted Per. (ft)	15.55	63.07	30.56
Min Ch El (ft)	254.96	Shear (lb/sq ft)	0.03	0.09	0.05
Alpha	1.10	Stream Power (lb/ft s)	0.03	0.15	0.05
Frctn Loss (ft)	0.01	Cum Volume (acre-ft)	0.45	1.64	0.35
C & E Loss (ft)	0.00	Cum SA (acres)	0.13	0.22	0.10

CROSS SECTION

RIVER: Cristianitos
REACH: Upper RS: 573.367*

INPUT
Description:
Station Elevation Data num= 49

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	274.7	14.57	274.25	14.66	274.24	20.79	273.66	24.56	273.26
29.01	272.78	33.45	272.28	36.87	271.6	40.02	270.8	50.16	267.74
51.23	267.42	52.2	267.12	53.51	266.72	53.74	266.6	64.88	260.44
65.42	260.17	69.34	258.14	71.75	256.88	72.96	256.21	74.54	256.05
81.47	255.34	83.79	255.13	85.66	255.2	89.14	255.33	107.54	256.17
123.07	256.87	124.02	257.05	125.16	257.31	126.3	257.56	129.54	258.61
136	260.56	139.62	261.63	140.09	261.77	141.67	262.12	143.14	262.54
144.17	263.01	146.97	264.31	154.93	267.41	155.39	267.65	157.31	268.65
157.53	268.73	157.95	268.9	167.71	272.65	169.21	273.14	170.75	273.64
173.96	274.49	174.75	274.54	175.48	274.57	176.55	274.64		

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.05	71.75	.038	123.07	.038	174.75	.038	176.55	.038

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
71.75	123.07	50.75	42.38	33.15	.1	.3

CROSS SECTION OUTPUT Profile #Q50

E.G. Elev (ft)	260.31	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.02	Wt. n-Val.	0.050	0.038	0.038
W.S. Elev (ft)	260.30	Reach Len. (ft)	50.75	42.38	33.15
Crit W.S. (ft)		Flow Area (sq ft)	11.20	224.12	21.85
E.G. Slope (ft/ft)	0.000098	Area (sq ft)	11.20	224.12	21.85
Q Total (cfs)	247.00	Flow (cfs)	4.33	230.45	12.22
Top Width (ft)	69.96	Top Width (ft)	6.58	51.32	12.05
Vel Total (ft/s)	0.96	Avg. Vel. (ft/s)	0.39	1.03	0.56
Max Chl Dpth (ft)	5.17	Hydr. Depth (ft)	1.70	4.37	1.81
Conv. Total (cfs)	25009.6	Conv. (cfs)	438.2	23334.2	1237.1
Length Wtd. (ft)	42.10	Wetted Per. (ft)	7.41	51.59	12.54
Min Ch El (ft)	255.13	Shear (lb/sq ft)	0.01	0.03	0.01
Alpha	1.09	Stream Power (lb/ft s)	0.00	0.03	0.01
Frctn Loss (ft)	0.01	Cum Volume (acre-ft)	0.09	0.57	0.06
C & E Loss (ft)	0.00	Cum SA (acres)	0.06	0.17	0.04

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

CROSS SECTION OUTPUT Profile #Q100

E.G. Elev (ft)	261.25	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.02	Wt. n-Val.	0.050	0.038	0.038
W.S. Elev (ft)	261.23	Reach Len. (ft)	50.75	42.38	33.15
Crit W.S. (ft)		Flow Area (sq ft)	18.16	272.03	34.56
E.G. Slope (ft/ft)	0.000113	Area (sq ft)	18.16	272.03	34.56
Q Total (cfs)	375.00	Flow (cfs)	8.90	341.95	24.15
Top Width (ft)	74.81	Top Width (ft)	8.30	51.32	15.19
Vel Total (ft/s)	1.15	Avg. Vel. (ft/s)	0.49	1.26	0.70
Max Chl Dpth (ft)	6.10	Hydr. Depth (ft)	2.19	5.30	2.27
Conv. Total (cfs)	35341.8	Conv. (cfs)	838.7	32227.2	2275.9
Length Wtd. (ft)	42.04	Wetted Per. (ft)	9.37	51.59	15.82
Min Ch El (ft)	255.13	Shear (lb/sq ft)	0.01	0.04	0.02
Alpha	1.11	Stream Power (lb/ft s)	0.01	0.05	0.01
Frctn Loss (ft)	0.01	Cum Volume (acre-ft)	0.14	0.70	0.09
C & E Loss (ft)	0.00	Cum SA (acres)	0.07	0.17	0.05

Warning: The conveyance ratio (upstream 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)	264.69	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.06	Wt. n-Val.	0.050	0.038	0.038
W.S. Elev (ft)	264.63	Reach Len. (ft)	50.75	42.38	33.15
Crit W.S. (ft)		Flow Area (sq ft)	56.89	446.78	104.44
E.G. Slope (ft/ft)	0.000154	Area (sq ft)	56.89	446.78	104.44
Q Total (cfs)	1089.00	Flow (cfs)	48.01	913.05	127.94
Top Width (ft)	90.51	Top Width (ft)	14.46	51.32	24.73
Vel Total (ft/s)	1.79	Avg. Vel. (ft/s)	0.84	2.04	1.23
Max Chl Dpth (ft)	9.50	Hydr. Depth (ft)	3.94	8.71	4.22
Conv. Total (cfs)	87878.2	Conv. (cfs)	3873.8	73679.8	10324.6
Length Wtd. (ft)	41.81	Wetted Per. (ft)	16.41	51.59	25.98
Min Ch El (ft)	255.13	Shear (lb/sq ft)	0.03	0.08	0.04
Alpha	1.16	Stream Power (lb/ft s)	0.03	0.17	0.05
Frctn Loss (ft)	0.01	Cum Volume (acre-ft)	0.39	1.16	0.26
C & E Loss (ft)	0.00	Cum SA (acres)	0.12	0.17	0.08

CROSS SECTION

RIVER: Cristianitos
REACH: Upper RS: 530.987*

INPUT
Description:
Station Elevation Data num= 49

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	273.73	13.69	273.32	13.77	273.31	19.53	272.82	23.07	272.41
27.25	271.94	31.43	271.42	34.64	270.8	37.59	269.89	47.12	266.58
48.13	266.23	49.03	265.92	50.27	265.49	50.48	265.37	60.95	259.73
61.46	259.5	65.14	257.85	67.41	256.8	68.4	256.28	69.69	256.13
75.35	255.49	77.26	255.3	78.68	255.37	81.34	255.48	95.41	256.2
107.28	256.81	108.13	256.99	109.16	257.24	110.2	257.49	113.12	258.84
118.96	261.42	122.24	262.84	122.66	263.02	124.09	263.4	125.42	263.82
126.35	264.25	128.89	265.42	136.07	267.62	136.49	267.79	138.23	268.52
138.43	268.58	138.81	268.72	147.63	271.85	148.98	272.27	150.37	272.69

153.28	273.44	154	273.5	154.65	273.54	155.62	273.64

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.05	67.41	.041	107.28	.041	154	.041	155.62	.041

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
67.41	107.28	50.75	42.38	33.15	.1	.3

CROSS SECTION OUTPUT Profile #Q50

			Left OB	Channel	Right OB
E.G. Elev (ft)	260.30	Element			
Vel Head (ft)	0.03	Wt. n-Val.	0.050	0.041	0.041
W.S. Elev (ft)	260.28	Reach Len. (ft)	50.75	42.38	33.15
Crit W.S. (ft)		Flow Area (sq ft)	13.23	170.77	17.68
E.G. Slope (ft/ft)	0.000194	Area (sq ft)	13.23	170.77	17.68
Q Total (cfs)	247.00	Flow (cfs)	7.49	226.28	13.23
Top Width (ft)	56.45	Top Width (ft)	7.48	39.87	9.10
Vel Total (ft/s)	1.22	Avg. Vel. (ft/s)	0.57	1.33	0.75
Max Chl Dpth (ft)	4.98	Hydr. Depth (ft)	1.77	4.28	1.94
Conv. Total (cfs)	17752.4	Conv. (cfs)	538.4	16263.0	951.0
Length Wtd. (ft)	42.21	Wetted Per. (ft)	8.25	40.09	9.78
Min Ch El (ft)	255.30	Shear (lb/sq ft)	0.02	0.05	0.02
Alpha	1.10	Stream Power (lb/ft s)	0.01	0.07	0.02
Frctn Loss (ft)	0.01	Cum Volume (acre-ft)	0.07	0.38	0.04
C & E Loss (ft)	0.00	Cum SA (acres)	0.05	0.12	0.03

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

CROSS SECTION OUTPUT Profile #Q100

			Left OB	Channel	Right OB
E.G. Elev (ft)	261.24	Element			
Vel Head (ft)	0.04	Wt. n-Val.	0.050	0.041	0.041
W.S. Elev (ft)	261.21	Reach Len. (ft)	50.75	42.38	33.15
Crit W.S. (ft)		Flow Area (sq ft)	20.97	207.77	27.10
E.G. Slope (ft/ft)	0.000221	Area (sq ft)	20.97	207.77	27.10
Q Total (cfs)	375.00	Flow (cfs)	14.96	335.03	25.01
Top Width (ft)	60.27	Top Width (ft)	9.20	39.87	11.20
Vel Total (ft/s)	1.47	Avg. Vel. (ft/s)	0.71	1.61	0.92
Max Chl Dpth (ft)	5.91	Hydr. Depth (ft)	2.28	5.21	2.42
Conv. Total (cfs)	25240.0	Conv. (cfs)	1006.8	22549.9	1683.3
Length Wtd. (ft)	42.19	Wetted Per. (ft)	10.21	40.09	12.07
Min Ch El (ft)	255.30	Shear (lb/sq ft)	0.03	0.07	0.03
Alpha	1.12	Stream Power (lb/ft s)	0.02	0.12	0.03
Frctn Loss (ft)	0.01	Cum Volume (acre-ft)	0.11	0.46	0.07
C & E Loss (ft)	0.00	Cum SA (acres)	0.06	0.12	0.04

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

CROSS SECTION OUTPUT Profile #Q100HC

			Left OB	Channel	Right OB
E.G. Elev (ft)	264.68	Element			
Vel Head (ft)	0.09	Wt. n-Val.	0.050	0.041	0.041
W.S. Elev (ft)	264.59	Reach Len. (ft)	50.75	42.38	33.15
Crit W.S. (ft)		Flow Area (sq ft)	62.68	342.54	79.19

E.G. Slope (ft/ft)	0.000297	Area (sq ft)	62.68	342.54	79.19
Q Total (cfs)	1089.00	Flow (cfs)	75.67	894.70	118.64
Top Width (ft)	75.15	Top Width (ft)	15.48	39.87	19.80
Vel Total (ft/s)	2.25	Avg. Vel. (ft/s)	1.21	2.61	1.50
Max Chl Dpth (ft)	9.29	Hydr. Depth (ft)	4.05	8.59	4.00
Conv. Total (cfs)	63153.6	Conv. (cfs)	4388.1	51885.4	6880.0
Length Wtd. (ft)	42.13	Wetted Per. (ft)	17.34	40.09	21.34
Min Ch El (ft)	255.30	Shear (lb/sq ft)	0.07	0.16	0.07
Alpha	1.18	Stream Power (lb/ft s)	0.08	0.41	0.10
Frctn Loss (ft)	0.02	Cum Volume (acre-ft)	0.32	0.77	0.19
C & E Loss (ft)	0.01	Cum SA (acres)	0.10	0.12	0.06

Warning: The conveyance ratio (upstream 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: Cristianitos
REACH: Upper RS: 488.607*

INPUT
Description:
Station Elevation Data num= 49

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	272.77	12.8	272.39	12.89	272.39	18.27	271.98	21.59	271.57
25.49	271.09	29.4	270.56	32.41	270	35.17	268.97	44.09	265.42
45.03	265.05	45.87	264.71	47.03	264.25	47.23	264.14	57.02	259.02
57.49	258.84	60.94	257.56	63.06	256.72	63.83	256.35	64.83	256.22
69.24	255.65	70.72	255.48	71.71	255.53	73.55	255.63	83.27	256.23
91.48	256.74	92.25	256.92	93.17	257.17	94.09	257.41	96.71	259.06
101.93	262.28	104.85	264.05	105.23	264.28	106.51	264.68	107.7	265.1
108.53	265.49	110.8	266.53	117.22	267.82	117.59	267.93	119.15	268.39
119.33	268.42	119.67	268.55	127.55	271.06	128.76	271.4	130	271.75
132.6	272.38	133.24	272.45	133.82	272.52	134.69	272.65		

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.05	63.06	.044	91.48	.044	133.24	.044	134.69	.044

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
63.06	91.48	50.75	42.38	33.15	.1	.3

CROSS SECTION OUTPUT Profile #Q50

E.G. Elev (ft)	260.29	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.05	Wt. n-Val.	0.050	0.044	0.044
W.S. Elev (ft)	260.24	Reach Len. (ft)	50.75	42.38	33.15
Crit W.S. (ft)		Flow Area (sq ft)	15.67	118.78	14.68
E.G. Slope (ft/ft)	0.000440	Area (sq ft)	15.67	118.78	14.68
Q Total (cfs)	247.00	Flow (cfs)	14.04	217.43	15.53
Top Width (ft)	43.95	Top Width (ft)	8.38	28.42	7.15
Vel Total (ft/s)	1.66	Avg. Vel. (ft/s)	0.90	1.83	1.06
Max Chl Dpth (ft)	4.76	Hydr. Depth (ft)	1.87	4.18	2.05
Conv. Total (cfs)	11775.2	Conv. (cfs)	669.2	10365.4	740.6
Length Wtd. (ft)	42.46	Wetted Per. (ft)	9.10	28.60	8.04
Min Ch El (ft)	255.48	Shear (lb/sq ft)	0.05	0.11	0.05
Alpha	1.12	Stream Power (lb/ft s)	0.04	0.21	0.05

Frctn Loss (ft)	0.03	Cum Volume (acre-ft)	0.06	0.24	0.03
C & E Loss (ft)	0.01	Cum SA (acres)	0.04	0.09	0.02

Warning: The conveyance ratio (upstream 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)	261.23	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.07	Wt. n-Val.	0.050	0.044	0.044
W.S. Elev (ft)	261.16	Reach Len. (ft)	50.75	42.38	33.15
Crit W.S. (ft)		Flow Area (sq ft)	24.16	144.84	21.92
E.G. Slope (ft/ft)	0.000492	Area (sq ft)	24.16	144.84	21.92
Q Total (cfs)	375.00	Flow (cfs)	26.79	320.10	28.11
Top Width (ft)	47.19	Top Width (ft)	10.13	28.42	8.63
Vel Total (ft/s)	1.96	Avg. Vel. (ft/s)	1.11	2.21	1.28
Max Chl Dpth (ft)	5.68	Hydr. Depth (ft)	2.38	5.10	2.54
Conv. Total (cfs)	16899.6	Conv. (cfs)	1207.3	14425.7	1266.6
Length Wtd. (ft)	42.50	Wetted Per. (ft)	11.08	28.60	9.79
Min Ch El (ft)	255.48	Shear (lb/sq ft)	0.07	0.16	0.07
Alpha	1.14	Stream Power (lb/ft s)	0.07	0.34	0.09
Frctn Loss (ft)	0.03	Cum Volume (acre-ft)	0.09	0.29	0.05
C & E Loss (ft)	0.01	Cum SA (acres)	0.05	0.09	0.03

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

CROSS SECTION OUTPUT Profile #Q100HC

E.G. Elev (ft)	264.66	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.16	Wt. n-Val.	0.050	0.044	0.044
W.S. Elev (ft)	264.49	Reach Len. (ft)	50.75	42.38	33.15
Crit W.S. (ft)		Flow Area (sq ft)	68.56	239.56	59.80
E.G. Slope (ft/ft)	0.000640	Area (sq ft)	68.56	239.56	59.80
Q Total (cfs)	1089.00	Flow (cfs)	123.94	844.45	120.61
Top Width (ft)	59.49	Top Width (ft)	16.64	28.42	14.43
Vel Total (ft/s)	2.96	Avg. Vel. (ft/s)	1.81	3.53	2.02
Max Chl Dpth (ft)	9.01	Hydr. Depth (ft)	4.12	8.43	4.14
Conv. Total (cfs)	43032.5	Conv. (cfs)	4897.5	33369.0	4766.0
Length Wtd. (ft)	42.62	Wetted Per. (ft)	18.40	28.60	16.50
Min Ch El (ft)	255.48	Shear (lb/sq ft)	0.15	0.33	0.14
Alpha	1.19	Stream Power (lb/ft s)	0.27	1.18	0.29
Frctn Loss (ft)	0.04	Cum Volume (acre-ft)	0.24	0.49	0.13
C & E Loss (ft)	0.02	Cum SA (acres)	0.08	0.09	0.05

Warning: The conveyance ratio (upstream 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: Cristianitos
REACH: Upper RS: 446.227*

INPUT
Description:

Station Elevation Data num= 49

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	271.8	11.92	271.46	12	271.46	17.01	271.13	20.1	270.73
23.74	270.25	27.38	269.7	30.17	269.2	32.75	268.06	41.05	264.27
41.92	263.86	42.71	263.51	43.79	263.02	43.97	262.92	53.09	258.3
53.53	258.18	56.74	257.27	58.72	256.64	59.27	256.42	59.98	256.3
63.13	255.81	64.19	255.65	64.73	255.69	65.75	255.78	71.14	256.27
75.69	256.68	76.37	256.86	77.18	257.09	77.99	257.33	80.3	259.28
84.89	263.15	87.47	265.25	87.81	265.53	88.93	265.96	89.98	266.38
90.71	266.72	92.71	267.64	98.37	268.03	98.7	268.06	100.06	268.26
100.22	268.27	100.52	268.37	107.47	270.27	108.53	270.54	109.63	270.81
111.92	271.32	112.48	271.41	113	271.49	113.76	271.65		

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.05	58.72	.047	75.69	.047	112.48	.047	113.76	.047

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
58.72	75.69	50.75	42.38	33.15	.1 .3

CROSS SECTION OUTPUT Profile #Q50

			Left OB	Channel	Right OB
E.G. Elev (ft)	260.25	Element			
Vel Head (ft)	0.11	Wt. n-Val.	0.050	0.047	0.047
W.S. Elev (ft)	260.14	Reach Len. (ft)	50.75	42.38	33.15
Crit W.S. (ft)		Flow Area (sq ft)	18.25	68.00	11.91
E.G. Slope (ft/ft)	0.001337	Area (sq ft)	18.25	68.00	11.91
Q Total (cfs)	247.00	Flow (cfs)	29.72	197.16	20.12
Top Width (ft)	31.87	Top Width (ft)	9.26	16.97	5.63
Vel Total (ft/s)	2.52	Avg. Vel. (ft/s)	1.63	2.90	1.69
Max Chl Dpth (ft)	4.49	Hydr. Depth (ft)	1.97	4.01	2.12
Conv. Total (cfs)	6754.5	Conv. (cfs)	812.8	5391.6	550.1
Length Wtd. (ft)	43.17	Wetted Per. (ft)	9.94	17.12	6.75
Min Ch El (ft)	255.65	Shear (lb/sq ft)	0.15	0.33	0.15
Alpha	1.15	Stream Power (lb/ft s)	0.25	0.96	0.25
Frctn Loss (ft)	0.15	Cum Volume (acre-ft)	0.04	0.15	0.02
C & E Loss (ft)	0.09	Cum SA (acres)	0.03	0.07	0.02

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream 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)	261.19	Element			
Vel Head (ft)	0.16	Wt. n-Val.	0.050	0.047	0.047
W.S. Elev (ft)	261.03	Reach Len. (ft)	50.75	42.38	33.15
Crit W.S. (ft)		Flow Area (sq ft)	27.26	83.08	17.39
E.G. Slope (ft/ft)	0.001450	Area (sq ft)	27.26	83.08	17.39
Q Total (cfs)	375.00	Flow (cfs)	53.57	286.68	34.75
Top Width (ft)	34.67	Top Width (ft)	11.02	16.97	6.69
Vel Total (ft/s)	2.94	Avg. Vel. (ft/s)	1.97	3.45	2.00
Max Chl Dpth (ft)	5.38	Hydr. Depth (ft)	2.47	4.90	2.60
Conv. Total (cfs)	9848.0	Conv. (cfs)	1406.9	7528.6	912.5
Length Wtd. (ft)	43.31	Wetted Per. (ft)	11.91	17.12	8.13
Min Ch El (ft)	255.65	Shear (lb/sq ft)	0.21	0.44	0.19
Alpha	1.16	Stream Power (lb/ft s)	0.41	1.52	0.39

Frctn Loss (ft)	0.16	Cum Volume (acre-ft)	0.06	0.18	0.03
C & E Loss (ft)	0.10	Cum SA (acres)	0.04	0.07	0.02

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream 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)	264.59	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.34	Wt. n-Val.	0.050	0.047	0.047
W.S. Elev (ft)	264.25	Reach Len. (ft)	50.75	42.38	33.15
Crit W.S. (ft)		Flow Area (sq ft)	73.21	137.79	45.13
E.G. Slope (ft/ft)	0.001749	Area (sq ft)	73.21	137.79	45.13
Q Total (cfs)	1089.00	Flow (cfs)	221.51	731.81	135.68
Top Width (ft)	45.16	Top Width (ft)	17.64	16.97	10.56
Vel Total (ft/s)	4.25	Avg. Vel. (ft/s)	3.03	5.31	3.01
Max Chl Dpth (ft)	8.60	Hydr. Depth (ft)	4.15	8.12	4.28
Conv. Total (cfs)	26036.9	Conv. (cfs)	5296.0	17496.9	3244.0
Length Wtd. (ft)	43.66	Wetted Per. (ft)	19.27	17.12	13.17
Min Ch El (ft)	255.65	Shear (lb/sq ft)	0.41	0.88	0.37
Alpha	1.21	Stream Power (lb/ft s)	1.26	4.67	1.13
Frctn Loss (ft)	0.18	Cum Volume (acre-ft)	0.16	0.31	0.09
C & E Loss (ft)	0.16	Cum SA (acres)	0.06	0.07	0.04

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 conveyance ratio (upstream 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: Cristianitos
REACH: Upper RS: 403.848

INPUT
Description:
Station Elevation Data num= 25

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	270.84	11.11	270.53	15.75	270.29	21.98	269.41	27.94	268.4
38.82	262.68	39.55	262.3	40.72	261.69	49.16	257.59	52.54	256.98
54.37	256.56	57.65	255.82	59.9	256.61	61.89	257.25	67.86	264.01
70.09	266.46	70.38	266.78	72.89	267.96	74.62	268.75	79.8	268.2
81.12	268.12	81.38	268.2	88.31	269.67	92.17	270.46	92.83	270.66

Manning's n Values num= 1

Sta	n Val
0	.05

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
54.37	59.9	35.73	38.67	40.52	.1 .3

CROSS SECTION OUTPUT Profile #Q50

E.G. Elev (ft)	260.02	Element	Left OB	Channel	Right OB

Vel Head (ft)	0.97	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	259.04	Reach Len. (ft)	35.73	38.67	40.52
Crit W.S. (ft)	259.04	Flow Area (sq ft)	12.29	15.73	5.63
E.G. Slope (ft/ft)	0.024706	Area (sq ft)	12.29	15.73	5.63
Q Total (cfs)	247.00	Flow (cfs)	72.60	143.79	30.61
Top Width (ft)	17.31	Top Width (ft)	8.20	5.53	3.58
Vel Total (ft/s)	7.34	Avg. Vel. (ft/s)	5.91	9.14	5.44
Max Chl Dpth (ft)	3.22	Hydr. Depth (ft)	1.50	2.84	1.58
Conv. Total (cfs)	1571.4	Conv. (cfs)	461.9	914.8	194.8
Length Wtd. (ft)	38.21	Wetted Per. (ft)	8.64	5.75	4.48
Min Ch El (ft)	255.82	Shear (lb/sq ft)	2.19	4.22	1.94
Alpha	1.16	Stream Power (lb/ft s)	12.96	38.59	10.53
Frctn Loss (ft)	0.94	Cum Volume (acre-ft)	0.02	0.11	0.01
C & E Loss (ft)	0.01	Cum SA (acres)	0.02	0.05	0.02

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

CROSS SECTION OUTPUT Profile #Q100

E.G. Elev (ft)	260.92	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.20	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	259.72	Reach Len. (ft)	35.73	38.67	40.52
Crit W.S. (ft)	259.72	Flow Area (sq ft)	18.28	19.45	8.24
E.G. Slope (ft/ft)	0.023800	Area (sq ft)	18.28	19.45	8.24
Q Total (cfs)	375.00	Flow (cfs)	123.78	201.06	50.15
Top Width (ft)	19.29	Top Width (ft)	9.59	5.53	4.17
Vel Total (ft/s)	8.16	Avg. Vel. (ft/s)	6.77	10.34	6.09
Max Chl Dpth (ft)	3.90	Hydr. Depth (ft)	1.91	3.52	1.98
Conv. Total (cfs)	2430.7	Conv. (cfs)	802.4	1303.3	325.1
Length Wtd. (ft)	38.13	Wetted Per. (ft)	10.18	5.75	5.38
Min Ch El (ft)	255.82	Shear (lb/sq ft)	2.67	5.03	2.27
Alpha	1.16	Stream Power (lb/ft s)	18.06	51.98	13.84
Frctn Loss (ft)	0.90	Cum Volume (acre-ft)	0.03	0.13	0.02
C & E Loss (ft)	0.02	Cum SA (acres)	0.03	0.05	0.02

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

CROSS SECTION OUTPUT Profile #Q100HC

E.G. Elev (ft)	264.25	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.99	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	262.26	Reach Len. (ft)	35.73	38.67	40.52
Crit W.S. (ft)	262.26	Flow Area (sq ft)	49.29	33.51	21.69
E.G. Slope (ft/ft)	0.020999	Area (sq ft)	49.29	33.51	21.69
Q Total (cfs)	1089.00	Flow (cfs)	450.71	467.52	170.77

Top Width (ft)	26.69	Top Width (ft)	14.74	5.53	6.41
Vel Total (ft/s)	10.42	Avg. Vel. (ft/s)	9.14	13.95	7.87
Max Chl Dpth (ft)	6.44	Hydr. Depth (ft)	3.34	6.06	3.38
Conv. Total (cfs)	7515.0	Conv. (cfs)	3110.2	3226.3	1178.5
Length Wtd. (ft)	37.93	Wetted Per. (ft)	15.93	5.75	8.77
Min Ch El (ft)	255.82	Shear (lb/sq ft)	4.06	7.64	3.24
Alpha	1.18	Stream Power (lb/ft s)	37.09	106.65	25.51
Frctn Loss (ft)	0.78	Cum Volume (acre-ft)	0.09	0.22	0.07
C & E Loss (ft)	0.02	Cum SA (acres)	0.04	0.05	0.03

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

CROSS SECTION

RIVER: Cristianitos
REACH: Upper RS: 365.174*

INPUT
Description:
Station Elevation Data num= 41

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	270.49	7.32	270.14	10.12	269.95	11.12	269.88	15.76	269.47
22	268.47	27.96	267.38	29.3	266.75	31.64	265.51	38.85	261.75
39.58	261.37	39.91	261.2	40.36	260.97	40.75	260.76	49.19	256.64
49.97	256.45	52.58	255.92	52.77	255.87	54.41	255.45	56.95	254.79
57.95	254.53	57.98	254.53	62.64	255.51	64.1	255.95	64.83	256.19
71.43	262.14	73.89	264.31	74.22	264.59	75.6	265.18	76.99	265.77
77.54	266	78.9	266.6	81.78	266.71	84.62	266.83	86.08	266.94
86.37	267.04	87.05	267.22	94.03	268.91	95.22	269.19	98.29	270.03
99.02	270.28								

Manning's n Values num= 4

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.05	54.41	.05	62.64	.05	99.02	.05

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
54.41	62.64	35.73	38.67	40.52	.1 .3

CROSS SECTION OUTPUT Profile #Q50

E.G. Elev (ft)	258.67	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.52	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	257.15	Reach Len. (ft)	35.73	38.67	40.52
Crit W.S. (ft)	257.56	Flow Area (sq ft)	5.91	17.62	3.36
E.G. Slope (ft/ft)	0.049277	Area (sq ft)	5.91	17.62	3.36
Q Total (cfs)	247.00	Flow (cfs)	36.60	189.69	20.71
Top Width (ft)	17.74	Top Width (ft)	6.26	8.23	3.25
Vel Total (ft/s)	9.18	Avg. Vel. (ft/s)	6.19	10.77	6.16
Max Chl Dpth (ft)	2.62	Hydr. Depth (ft)	0.95	2.14	1.03
Conv. Total (cfs)	1112.7	Conv. (cfs)	164.9	854.5	93.3
Length Wtd. (ft)	38.45	Wetted Per. (ft)	6.51	8.45	3.72

Min Ch El (ft)	254.53	Shear (lb/sq ft)	2.80	6.41	2.78
Alpha	1.16	Stream Power (lb/ft s)	17.30	69.07	17.12
Frctn Loss (ft)	1.29	Cum Volume (acre-ft)	0.01	0.09	0.01
C & E Loss (ft)	0.05	Cum SA (acres)	0.01	0.05	0.01

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

CROSS SECTION OUTPUT Profile #Q100

E.G. Elev (ft)	259.58	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.93	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	257.65	Reach Len. (ft)	35.73	38.67	40.52
Crit W.S. (ft)	258.19	Flow Area (sq ft)	9.30	21.74	5.13
E.G. Slope (ft/ft)	0.048945	Area (sq ft)	9.30	21.74	5.13
Q Total (cfs)	375.00	Flow (cfs)	69.70	268.37	36.94
Top Width (ft)	19.32	Top Width (ft)	7.28	8.23	3.81
Vel Total (ft/s)	10.37	Avg. Vel. (ft/s)	7.49	12.34	7.20
Max Chl Dpth (ft)	3.12	Hydr. Depth (ft)	1.28	2.64	1.35
Conv. Total (cfs)	1695.0	Conv. (cfs)	315.0	1213.0	167.0
Length Wtd. (ft)	38.38	Wetted Per. (ft)	7.65	8.45	4.47
Min Ch El (ft)	254.53	Shear (lb/sq ft)	3.72	7.86	3.51
Alpha	1.16	Stream Power (lb/ft s)	27.84	97.05	25.26
Frctn Loss (ft)	1.26	Cum Volume (acre-ft)	0.02	0.11	0.02
C & E Loss (ft)	0.07	Cum SA (acres)	0.02	0.05	0.02

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 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)	262.99	Element	Left OB	Channel	Right OB
Vel Head (ft)	3.39	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	259.60	Reach Len. (ft)	35.73	38.67	40.52
Crit W.S. (ft)	260.59	Flow Area (sq ft)	27.44	37.82	14.68
E.G. Slope (ft/ft)	0.044721	Area (sq ft)	27.44	37.82	14.68
Q Total (cfs)	1089.00	Flow (cfs)	297.64	645.53	145.83
Top Width (ft)	25.49	Top Width (ft)	11.28	8.23	5.97
Vel Total (ft/s)	13.62	Avg. Vel. (ft/s)	10.85	17.07	9.93
Max Chl Dpth (ft)	5.07	Hydr. Depth (ft)	2.43	4.60	2.46
Conv. Total (cfs)	5149.6	Conv. (cfs)	1407.5	3052.5	689.6
Length Wtd. (ft)	38.22	Wetted Per. (ft)	12.10	8.45	7.39
Min Ch El (ft)	254.53	Shear (lb/sq ft)	6.33	12.50	5.55
Alpha	1.18	Stream Power (lb/ft s)	68.65	213.30	55.12
Frctn Loss (ft)	1.12	Cum Volume (acre-ft)	0.06	0.19	0.05
C & E Loss (ft)	0.14	Cum SA (acres)	0.03	0.05	0.03

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: Cristianitos
REACH: Upper RS: 326.500*

INPUT
Description:
Station Elevation Data num= 41

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	270.14	7.32	269.65	10.13	269.35	11.13	269.24	15.77	268.65
22.01	267.53	27.98	266.36	29.32	265.81	31.66	264.56	38.87	260.82
39.61	260.44	39.94	260.27	40.39	260.04	40.78	259.84	49.23	255.69
50.01	255.45	52.61	254.86	52.81	254.81	54.45	254.35	57.17	253.55
58.25	253.24	58.31	253.24	65.37	254.41	66.98	254.87	67.78	255.12
75	260.28	77.7	262.16	78.05	262.4	79.57	262.99	81.09	263.57
81.7	263.8	83.18	264.45	86.34	264.94	89.45	265.46	91.04	265.76
91.36	265.88	92.1	266.11	99.74	268.15	101.05	268.49	104.41	269.6
105.21	269.9								

Manning's n Values num= 4

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.05	54.45	.05	65.37	.05	105.21	.05

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
54.45	65.37	35.73	38.67	40.52	.1	.3

CROSS SECTION OUTPUT Profile #Q50

			Left OB	Channel	Right OB
E.G. Elev (ft)	257.02	Element			
Vel Head (ft)	1.05	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	255.98	Reach Len. (ft)	35.73	38.67	40.52
Crit W.S. (ft)	256.14	Flow Area (sq ft)	5.07	23.68	3.46
E.G. Slope (ft/ft)	0.031645	Area (sq ft)	5.07	23.68	3.46
Q Total (cfs)	247.00	Flow (cfs)	23.83	206.54	16.63
Top Width (ft)	20.34	Top Width (ft)	5.81	10.92	3.61
Vel Total (ft/s)	7.67	Avg. Vel. (ft/s)	4.70	8.72	4.81
Max Chl Dpth (ft)	2.74	Hydr. Depth (ft)	0.87	2.17	0.96
Conv. Total (cfs)	1388.5	Conv. (cfs)	133.9	1161.1	93.5
Length Wtd. (ft)	38.56	Wetted Per. (ft)	6.05	11.18	3.99
Min Ch El (ft)	253.24	Shear (lb/sq ft)	1.66	4.19	1.71
Alpha	1.14	Stream Power (lb/ft s)	7.78	36.51	8.23
Frctn Loss (ft)	1.50	Cum Volume (acre-ft)	0.01	0.07	0.01
C & E Loss (ft)	0.14	Cum SA (acres)	0.01	0.04	0.01

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

CROSS SECTION OUTPUT Profile #Q100

			Left OB	Channel	Right OB
E.G. Elev (ft)	257.87	Element			
Vel Head (ft)	1.43	Wt. n-Val.	0.050	0.050	0.050

W.S. Elev (ft)	256.44	Reach Len. (ft)	35.73	38.67	40.52
Crit W.S. (ft)	256.72	Flow Area (sq ft)	7.94	28.68	5.26
E.G. Slope (ft/ft)	0.034503	Area (sq ft)	7.94	28.68	5.26
Q Total (cfs)	375.00	Flow (cfs)	47.30	296.75	30.95
Top Width (ft)	21.91	Top Width (ft)	6.74	10.92	4.25
Vel Total (ft/s)	8.95	Avg. Vel. (ft/s)	5.96	10.35	5.89
Max Chl Dpth (ft)	3.20	Hydr. Depth (ft)	1.18	2.63	1.24
Conv. Total (cfs)	2018.8	Conv. (cfs)	254.6	1597.6	166.6
Length Wtd. (ft)	38.51	Wetted Per. (ft)	7.09	11.18	4.78
Min Ch El (ft)	253.24	Shear (lb/sq ft)	2.41	5.53	2.37
Alpha	1.15	Stream Power (lb/ft s)	14.38	57.20	13.96
Frctn Loss (ft)	1.57	Cum Volume (acre-ft)	0.01	0.09	0.01
C & E Loss (ft)	0.15	Cum SA (acres)	0.01	0.04	0.01

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 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)	261.24	Element	Left OB	Channel	Right OB
Vel Head (ft)	3.17	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	258.07	Reach Len. (ft)	35.73	38.67	40.52
Crit W.S. (ft)	259.00	Flow Area (sq ft)	21.70	46.55	14.09
E.G. Slope (ft/ft)	0.043160	Area (sq ft)	21.70	46.55	14.09
Q Total (cfs)	1089.00	Flow (cfs)	213.39	744.17	131.44
Top Width (ft)	27.54	Top Width (ft)	10.07	10.92	6.54
Vel Total (ft/s)	13.22	Avg. Vel. (ft/s)	9.83	15.98	9.33
Max Chl Dpth (ft)	4.83	Hydr. Depth (ft)	2.15	4.26	2.15
Conv. Total (cfs)	5241.9	Conv. (cfs)	1027.2	3582.0	632.7
Length Wtd. (ft)	38.38	Wetted Per. (ft)	10.80	11.18	7.59
Min Ch El (ft)	253.24	Shear (lb/sq ft)	5.42	11.22	5.00
Alpha	1.17	Stream Power (lb/ft s)	53.25	179.43	46.65
Frctn Loss (ft)	1.68	Cum Volume (acre-ft)	0.04	0.15	0.04
C & E Loss (ft)	0.07	Cum SA (acres)	0.02	0.04	0.02

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

CROSS SECTION

RIVER: Cristianitos
REACH: Upper RS: 287.827*

INPUT
Description:
Station Elevation Data num= 41

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	269.8	7.33	269.15	10.14	268.75	11.13	268.59	15.78	267.84
22.03	266.59	28	265.34	29.34	264.87	31.69	263.6	38.9	259.88
39.63	259.51	39.96	259.34	40.41	259.11	40.81	258.91	49.26	254.74
50.04	254.45	52.65	253.8	52.85	253.75	54.48	253.24	57.4	252.32
58.55	251.96	58.64	251.96	68.11	253.31	69.85	253.79	70.72	254.06
78.57	258.41	81.5	260	81.89	260.21	83.54	260.79	85.19	261.38
85.85	261.61	87.46	262.3	90.89	263.17	94.27	264.09	96.01	264.58

96.35 264.72 97.15 265.01 105.46 267.39 106.88 267.8 110.53 269.16
111.4 269.51

Manning's n Values num= 4

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.05	54.48	.05	68.11	.05	111.4	.05

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
54.48	68.11	35.73 38.67	40.52	.1	.3

CROSS SECTION OUTPUT Profile #Q50

			Left OB	Channel	Right OB
E.G. Elev (ft)	255.64	Element			
Vel Head (ft)	1.16	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	254.48	Reach Len. (ft)	35.73	38.67	40.52
Crit W.S. (ft)	254.74	Flow Area (sq ft)	2.66	25.31	2.25
E.G. Slope (ft/ft)	0.040727	Area (sq ft)	2.66	25.31	2.25
Q Total (cfs)	247.00	Flow (cfs)	10.95	226.14	9.91
Top Width (ft)	21.50	Top Width (ft)	4.51	13.63	3.36
Vel Total (ft/s)	8.17	Avg. Vel. (ft/s)	4.12	8.93	4.40
Max Chl Dpth (ft)	2.52	Hydr. Depth (ft)	0.59	1.86	0.67
Conv. Total (cfs)	1223.9	Conv. (cfs)	54.3	1120.6	49.1
Length Wtd. (ft)	38.63	Wetted Per. (ft)	4.68	13.92	3.58
Min Ch El (ft)	251.96	Shear (lb/sq ft)	1.45	4.62	1.60
Alpha	1.12	Stream Power (lb/ft s)	5.95	41.30	7.04
Frctn Loss (ft)	1.38	Cum Volume (acre-ft)	0.00	0.05	0.00
C & E Loss (ft)	0.01	Cum SA (acres)	0.01	0.03	0.01

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

CROSS SECTION OUTPUT Profile #Q100

			Left OB	Channel	Right OB
E.G. Elev (ft)	256.43	Element			
Vel Head (ft)	1.49	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	254.95	Reach Len. (ft)	35.73	38.67	40.52
Crit W.S. (ft)	255.31	Flow Area (sq ft)	5.05	31.69	4.02
E.G. Slope (ft/ft)	0.039973	Area (sq ft)	5.05	31.69	4.02
Q Total (cfs)	375.00	Flow (cfs)	27.09	325.88	22.04
Top Width (ft)	23.47	Top Width (ft)	5.64	13.63	4.21
Vel Total (ft/s)	9.20	Avg. Vel. (ft/s)	5.36	10.28	5.48
Max Chl Dpth (ft)	2.99	Hydr. Depth (ft)	0.90	2.33	0.96
Conv. Total (cfs)	1875.6	Conv. (cfs)	135.5	1629.9	110.2
Length Wtd. (ft)	38.59	Wetted Per. (ft)	5.90	13.92	4.54
Min Ch El (ft)	251.96	Shear (lb/sq ft)	2.14	5.68	2.21
Alpha	1.13	Stream Power (lb/ft s)	11.46	58.41	12.11
Frctn Loss (ft)	1.43	Cum Volume (acre-ft)	0.01	0.06	0.01
C & E Loss (ft)	0.01	Cum SA (acres)	0.01	0.03	0.01

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

CROSS SECTION OUTPUT Profile #Q100HC

			Left OB	Channel	Right OB
E.G. Elev (ft)	259.55	Element			
Vel Head (ft)	2.93	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	256.61	Reach Len. (ft)	35.73	38.67	40.52

Crit W.S. (ft)	257.46	Flow Area (sq ft)	17.28	54.44	13.56
E.G. Slope (ft/ft)	0.041494	Area (sq ft)	17.28	54.44	13.56
Q Total (cfs)	1089.00	Flow (cfs)	154.09	818.10	116.82
Top Width (ft)	29.87	Top Width (ft)	9.02	13.63	7.22
Vel Total (ft/s)	12.77	Avg. Vel. (ft/s)	8.92	15.03	8.62
Max Chl Dpth (ft)	4.65	Hydr. Depth (ft)	1.92	3.99	1.88
Conv. Total (cfs)	5346.1	Conv. (cfs)	756.4	4016.2	573.5
Length Wtd. (ft)	38.50	Wetted Per. (ft)	9.67	13.92	7.99
Min Ch El (ft)	251.96	Shear (lb/sq ft)	4.63	10.13	4.40
Alpha	1.16	Stream Power (lb/ft s)	41.27	152.22	37.89
Frctn Loss (ft)	1.62	Cum Volume (acre-ft)	0.02	0.11	0.02
C & E Loss (ft)	0.07	Cum SA (acres)	0.01	0.03	0.02

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

CROSS SECTION

RIVER: Cristianitos
REACH: Upper RS: 249.153*

INPUT
Description:
Station Elevation Data num= 42

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	269.45	7.33	268.66	10.14	268.14	11.14	267.95	15.79	267.02
22.04	265.66	28.02	264.32	29.36	263.92	31.71	262.65	38.93	258.95
39.66	258.58	39.99	258.41	40.44	258.18	40.83	257.98	49.3	253.79
50.08	253.45	52.69	252.74	52.88	252.68	54.52	252.14	57.62	251.08
58.85	250.67	58.97	250.67	70.84	252.21	72.73	252.7	73.67	252.99
82.14	256.54	85.31	257.85	85.72	258.02	87.5	258.6	89.28	259.18
90	259.41	91.74	260.14	95.45	261.41	99.09	262.72	100.97	263.4
100.98	263.41	101.34	263.55	102.21	263.9	111.17	266.63	112.71	267.1
116.65	268.73	117.59	269.13						

Manning's n Values num= 4

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.05	54.52	.05	70.84	.05	117.59	.05

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
54.52	70.84	35.73 38.67	40.52	.1	.3

CROSS SECTION OUTPUT Profile #Q50

E.G. Elev (ft)	254.16	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.93	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	253.24	Reach Len. (ft)	35.73	38.67	40.52
Crit W.S. (ft)	253.35	Flow Area (sq ft)	1.91	29.56	1.91
E.G. Slope (ft/ft)	0.032945	Area (sq ft)	1.91	29.56	1.91
Q Total (cfs)	247.00	Flow (cfs)	6.47	233.72	6.81
Top Width (ft)	23.39	Top Width (ft)	3.65	16.32	3.42
Vel Total (ft/s)	7.40	Avg. Vel. (ft/s)	3.40	7.91	3.56
Max Chl Dpth (ft)	2.57	Hydr. Depth (ft)	0.52	1.81	0.56
Conv. Total (cfs)	1360.8	Conv. (cfs)	35.6	1287.6	37.5
Length Wtd. (ft)	38.65	Wetted Per. (ft)	3.81	16.66	3.57
Min Ch El (ft)	250.67	Shear (lb/sq ft)	1.03	3.65	1.10
Alpha	1.09	Stream Power (lb/ft s)	3.49	28.85	3.92

Frctn Loss (ft)	1.41	Cum Volume (acre-ft)	0.00	0.03	0.00
C & E Loss (ft)	0.07	Cum SA (acres)	0.00	0.02	0.00

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

CROSS SECTION OUTPUT Profile #Q100

		Element	Left OB	Channel	Right OB
E.G. Elev (ft)	254.93	Wt. n-Val.	0.050	0.050	0.050
Vel Head (ft)	1.27	Reach Len. (ft)	35.73	38.67	40.52
W.S. Elev (ft)	253.66	Flow Area (sq ft)	3.73	36.41	3.56
Crit W.S. (ft)	253.91	Area (sq ft)	3.73	36.41	3.56
E.G. Slope (ft/ft)	0.035154	Flow (cfs)	16.79	341.65	16.56
Q Total (cfs)	375.00	Top Width (ft)	4.91	16.32	4.42
Top Width (ft)	25.65	Avg. Vel. (ft/s)	4.50	9.38	4.66
Vel Total (ft/s)	8.58	Hydr. Depth (ft)	0.76	2.23	0.81
Max Chl Dpth (ft)	2.99	Conv. (cfs)	89.5	1822.2	88.3
Conv. Total (cfs)	2000.1	Wetted Per. (ft)	5.14	16.66	4.66
Length Wtd. (ft)	38.64	Shear (lb/sq ft)	1.59	4.80	1.68
Min Ch El (ft)	250.67	Stream Power (lb/ft s)	7.16	45.00	7.81
Alpha	1.11	Cum Volume (acre-ft)	0.00	0.03	0.00
Frctn Loss (ft)	1.45	Cum SA (acres)	0.00	0.02	0.00
C & E Loss (ft)	0.06				

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

CROSS SECTION OUTPUT Profile #Q100HC

		Element	Left OB	Channel	Right OB
E.G. Elev (ft)	257.90	Wt. n-Val.	0.050	0.050	0.050
Vel Head (ft)	2.71	Reach Len. (ft)	35.73	38.67	40.52
W.S. Elev (ft)	255.19	Flow Area (sq ft)	13.73	61.52	13.18
Crit W.S. (ft)	255.96	Area (sq ft)	13.73	61.52	13.18
E.G. Slope (ft/ft)	0.040049	Flow (cfs)	111.17	873.98	103.85
Q Total (cfs)	1089.00	Top Width (ft)	8.06	16.32	8.09
Top Width (ft)	32.46	Avg. Vel. (ft/s)	8.10	14.21	7.88
Vel Total (ft/s)	12.32	Hydr. Depth (ft)	1.70	3.77	1.63
Max Chl Dpth (ft)	4.52	Conv. (cfs)	555.5	4367.3	518.9
Conv. Total (cfs)	5441.7	Wetted Per. (ft)	8.65	16.66	8.64
Length Wtd. (ft)	38.58	Shear (lb/sq ft)	3.97	9.23	3.81
Min Ch El (ft)	250.67	Stream Power (lb/ft s)	32.14	131.15	30.06
Alpha	1.15	Cum Volume (acre-ft)	0.01	0.06	0.01
Frctn Loss (ft)	1.57	Cum SA (acres)	0.01	0.02	0.01
C & E Loss (ft)	0.07				

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

CROSS SECTION

RIVER: Cristianitos
REACH: Upper RS: 210.480

INPUT
Description:

Station Elevation Data num= 22

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	269.1	7.34	268.16	10.15	267.54	29.38	262.98	31.73	261.69
40.02	257.48	40.47	257.25	50.11	252.45	52.92	251.62	54.56	251.03
57.85	249.84	59.15	249.38	59.3	249.38	73.58	251.11	75.6	251.62
91.47	256.41	94.15	257.22	100	259.64	105.94	262.23	107.26	262.79
118.54	266.4	123.78	268.75						

Manning's n Values num= 1

Sta	n Val
0	.05

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
54.56	73.58	0	0	.1	.3

CROSS SECTION OUTPUT Profile #Q50

			Left OB	Channel	Right OB
E.G. Elev (ft)	252.78	Element			
Vel Head (ft)	0.95	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	251.83	Reach Len. (ft)			
Crit W.S. (ft)	251.98	Flow Area (sq ft)	0.91	30.53	1.02
E.G. Slope (ft/ft)	0.038673	Area (sq ft)	0.91	30.53	1.02
Q Total (cfs)	247.00	Flow (cfs)	2.71	241.26	3.02
Top Width (ft)	24.10	Top Width (ft)	2.36	19.02	2.72
Vel Total (ft/s)	7.61	Avg. Vel. (ft/s)	2.98	7.90	2.97
Max Chl Dpth (ft)	2.45	Hydr. Depth (ft)	0.39	1.60	0.37
Conv. Total (cfs)	1256.0	Conv. (cfs)	13.8	1226.8	15.4
Length Wtd. (ft)		Wetted Per. (ft)	2.49	19.41	2.82
Min Ch El (ft)	249.38	Shear (lb/sq ft)	0.88	3.80	0.87
Alpha	1.06	Stream Power (lb/ft s)	2.63	30.01	2.59
Frctn Loss (ft)	1.38	Cum Volume (acre-ft)			
C & E Loss (ft)	0.00	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)	253.52	Element			
Vel Head (ft)	1.24	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	252.28	Reach Len. (ft)			
Crit W.S. (ft)	252.52	Flow Area (sq ft)	2.29	38.97	2.55
E.G. Slope (ft/ft)	0.037267	Area (sq ft)	2.29	38.97	2.55
Q Total (cfs)	375.00	Flow (cfs)	8.97	355.76	10.27
Top Width (ft)	27.08	Top Width (ft)	3.86	19.02	4.19
Vel Total (ft/s)	8.56	Avg. Vel. (ft/s)	3.92	9.13	4.02
Max Chl Dpth (ft)	2.90	Hydr. Depth (ft)	0.59	2.05	0.61
Conv. Total (cfs)	1942.5	Conv. (cfs)	46.5	1842.9	53.2
Length Wtd. (ft)		Wetted Per. (ft)	4.06	19.41	4.36
Min Ch El (ft)	249.38	Shear (lb/sq ft)	1.31	4.67	1.36
Alpha	1.09	Stream Power (lb/ft s)	5.14	42.64	5.49
Frctn Loss (ft)	1.40	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 #Q100HC

E.G. Elev (ft)	256.32	Element	Left OB	Channel	Right OB
Vel Head (ft)	2.52	Wt. n-Val.	0.050	0.050	0.050
W.S. Elev (ft)	253.80	Reach Len. (ft)			
Crit W.S. (ft)	254.49	Flow Area (sq ft)	10.84	67.92	12.78
E.G. Slope (ft/ft)	0.038983	Area (sq ft)	10.84	67.92	12.78
Q Total (cfs)	1089.00	Flow (cfs)	79.89	918.52	90.59
Top Width (ft)	35.42	Top Width (ft)	7.16	19.02	9.24
Vel Total (ft/s)	11.90	Avg. Vel. (ft/s)	7.37	13.52	7.09
Max Chl Dpth (ft)	4.42	Hydr. Depth (ft)	1.51	3.57	1.38
Conv. Total (cfs)	5515.6	Conv. (cfs)	404.6	4652.1	458.8
Length Wtd. (ft)		Wetted Per. (ft)	7.70	19.41	9.62
Min Ch El (ft)	249.38	Shear (lb/sq ft)	3.43	8.52	3.23
Alpha	1.15	Stream Power (lb/ft s)	25.26	115.16	22.91
Frctn Loss (ft)	1.52	Cum Volume (acre-ft)			
C & E Loss (ft)	0.06	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.

SUMMARY OF MANNING'S N VALUES

River:Cristianitos

Reach	River Sta.	n1	n2	n3	n4	n5	n6	n7	n8	n9	n10
Upper	5602.033	.035	.05	.02	.05	.035					
Upper	5384.793	.07	.05	.02	.05						
Upper	5168.714	.035	.05	.02	.05						
Upper	4976.143	.035	.05	.02	.05						
Upper	4775.451	.035	.05	.02	.05						
Upper	4558.571	.035	.05	.02	.05						
Upper	4339.721	.035	.05	.02	.05						
Upper	4132.011	.035	.05	.02	.05	.035					
Upper	3880.409	.035	.05	.02	.05						
Upper	3870	Bridge									
Upper	3679.763	.035	.05	.02							
Upper	3469.412	.035	.05	.035	.05	.02	.05				
Upper	3296.568	.035	.05								
Upper	3085.474	.02	.05								
Upper	2851.001	.05	.035	.07							
Upper	2811.46*	.05	.035	.04	.04	.07	.07	.07			
Upper	2771.92*	.05	.035	.045	.045	.07	.07	.07			
Upper	2732.38*	.05	.035	.05	.05	.07	.07	.07			
Upper	2692.84*	.05	.035	.055	.055	.07	.07	.07			
Upper	2653.30*	.05	.035	.06	.06	.07	.07	.07			
Upper	2613.76*	.05	.035	.065	.065	.07	.07	.07			
Upper	2574.222	.05	.035	.07							
Upper	2532.87*	.047	.038	.044	.026	.035	.063	.035	.042	.07	.07
Upper	2491.53*	.044	.041	.038	.032	.035	.056	.035	.049	.07	.07
Upper	2450.18*	.041	.044	.032	.038	.035	.049	.035	.056	.07	.07
Upper	2408.84*	.038	.047	.026	.044	.035	.042	.035	.063	.07	.07
Upper	2367.498	.035	.05	.02	.05	.035	.07				
Upper	2092.970	.05	.02	.05	.035	.05					
Upper	1888.931	.05	.02	.05	.035						

Upper	1687.641	.05	.02	.05	.035	
Upper	1498.554	.05	.02	.05	.035	
Upper	1287.849	.035	.05	.02	.05	.035
Upper	1067.404	.02	.05	.035		
Upper	842.967	.05				
Upper	805.097*	.05	.047	.047	.035	.047
Upper	767.227*	.05	.045	.045	.035	.045
Upper	729.357*	.05	.043	.043	.035	.043
Upper	691.487*	.05	.04	.04	.035	.04
Upper	653.617*	.05	.038	.038	.035	.038
Upper	615.747	.05	.035			
Upper	573.367*	.05	.038	.038	.038	.038
Upper	530.987*	.05	.041	.041	.041	.041
Upper	488.607*	.05	.044	.044	.044	.044
Upper	446.227*	.05	.047	.047	.047	.047
Upper	403.848	.05				
Upper	365.174*	.05	.05	.05	.05	
Upper	326.500*	.05	.05	.05	.05	
Upper	287.827*	.05	.05	.05	.05	
Upper	249.153*	.05	.05	.05	.05	
Upper	210.480	.05				

SUMMARY OF REACH LENGTHS

River: Cristianitos

Reach	River Sta.	Left	Channel	Right
Upper	5602.033	261.72	217.24	135.38
Upper	5384.793	205.91	215.49	222.8
Upper	5168.714	149.85	194.03	206.85
Upper	4976.143	251.57	198.55	152.18
Upper	4775.451	217.54	216	209.75
Upper	4558.571	218.41	219.16	218.8
Upper	4339.721	190.38	207.42	206.55
Upper	4132.011	132.25	251.37	309.34
Upper	3880.409	247.42	202.85	208.23
Upper	3870	Bridge		
Upper	3679.763	239.31	207.71	163.34
Upper	3469.412	262.64	172.27	112.8
Upper	3296.568	197.4	211.35	205.37
Upper	3085.474	136.96	234.47	286.66
Upper	2851.001	31.68	39.54	25.34
Upper	2811.46*	31.68	39.54	25.34
Upper	2771.92*	31.68	39.54	25.34
Upper	2732.38*	31.68	39.54	25.34
Upper	2692.84*	31.68	39.54	25.34
Upper	2653.30*	31.68	39.54	25.34
Upper	2613.76*	31.68	39.54	25.34
Upper	2574.222	33.68	41.34	37.89
Upper	2532.87*	33.68	41.34	37.89
Upper	2491.53*	33.68	41.34	37.89
Upper	2450.18*	33.68	41.34	37.89
Upper	2408.84*	33.68	41.34	37.89
Upper	2367.498	247.74	274.53	224.08
Upper	2092.970	205.07	204.04	201.6

Upper	1888.931	204.52	201.29	197.93
Upper	1687.641	183.83	189.09	195.8
Upper	1498.554	214.87	210.71	206.13
Upper	1287.849	250.54	220.45	190.34
Upper	1067.404	214.21	224.44	225.13
Upper	842.967	34.32	37.87	38.81
Upper	805.097*	34.32	37.87	38.81
Upper	767.227*	34.32	37.87	38.81
Upper	729.357*	34.32	37.87	38.81
Upper	691.487*	34.32	37.87	38.81
Upper	653.617*	34.32	37.87	38.81
Upper	615.747	50.75	42.38	33.15
Upper	573.367*	50.75	42.38	33.15
Upper	530.987*	50.75	42.38	33.15
Upper	488.607*	50.75	42.38	33.15
Upper	446.227*	50.75	42.38	33.15
Upper	403.848	35.73	38.67	40.52
Upper	365.174*	35.73	38.67	40.52
Upper	326.500*	35.73	38.67	40.52
Upper	287.827*	35.73	38.67	40.52
Upper	249.153*	35.73	38.67	40.52
Upper	210.480	0	0	0

SUMMARY OF CONTRACTION AND EXPANSION COEFFICIENTS
River: Cristianitos

Reach	River Sta.		Contr.	Expan.
Upper	5602.033		.1	.3
Upper	5384.793		.1	.3
Upper	5168.714		.1	.3
Upper	4976.143		.1	.3
Upper	4775.451		.1	.3
Upper	4558.571		.1	.3
Upper	4339.721		.1	.3
Upper	4132.011		.1	.3
Upper	3880.409		.3	.5
Upper	3870	Bridge		
Upper	3679.763		.3	.5
Upper	3469.412		.1	.3
Upper	3296.568		.1	.3
Upper	3085.474		.1	.3
Upper	2851.001		.1	.3
Upper	2811.46*		.1	.3
Upper	2771.92*		.1	.3
Upper	2732.38*		.1	.3
Upper	2692.84*		.1	.3
Upper	2653.30*		.1	.3
Upper	2613.76*		.1	.3
Upper	2574.222		.1	.3
Upper	2532.87*		.1	.3
Upper	2491.53*		.1	.3
Upper	2450.18*		.1	.3
Upper	2408.84*		.1	.3
Upper	2367.498		.1	.3

Upper	2092.970	.1	.3
Upper	1888.931	.1	.3
Upper	1687.641	.1	.3
Upper	1498.554	.1	.3
Upper	1287.849	.1	.3
Upper	1067.404	.1	.3
Upper	842.967	.1	.3
Upper	805.097*	.1	.3
Upper	767.227*	.1	.3
Upper	729.357*	.1	.3
Upper	691.487*	.1	.3
Upper	653.617*	.1	.3
Upper	615.747	.1	.3
Upper	573.367*	.1	.3
Upper	530.987*	.1	.3
Upper	488.607*	.1	.3
Upper	446.227*	.1	.3
Upper	403.848	.1	.3
Upper	365.174*	.1	.3
Upper	326.500*	.1	.3
Upper	287.827*	.1	.3
Upper	249.153*	.1	.3
Upper	210.480	.1	.3

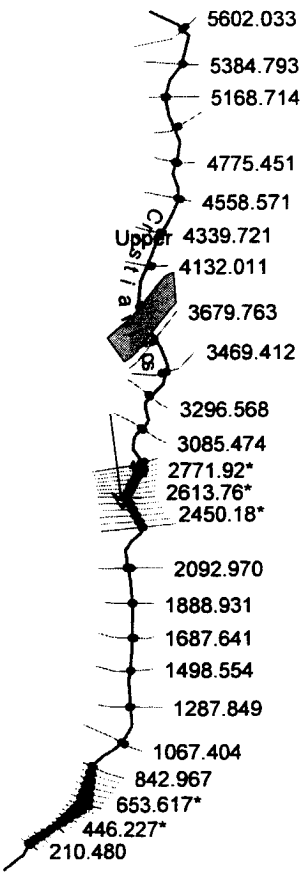
Profile Output Table - Standard Table 1

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
Upper	5602.033	Q50	247.00	334.74	335.80	335.80	336.20	0.028941	5.15	50.72	64.78	0.89
Upper	5602.033	Q100	375.00	334.74	336.07	336.07	336.58	0.026329	5.73	68.54	68.25	0.89
Upper	5602.033	Q100HC	1089.00	334.74	337.15	337.15	338.08	0.021056	7.68	149.85	82.27	0.88
Upper	5384.793	Q50	247.00	328.19	331.87	330.77	332.08	0.004664	4.42	71.16	33.66	0.43
Upper	5384.793	Q100	375.00	328.19	332.54	331.30	332.82	0.004817	5.09	95.43	38.09	0.45
Upper	5384.793	Q100HC	1089.00	328.19	335.01	333.16	335.47	0.004807	7.02	213.69	59.24	0.49
Upper	5168.714	Q50	247.00	327.19	329.28	329.28	330.05	0.025603	7.60	37.36	24.68	0.94
Upper	5168.714	Q100	375.00	327.19	329.80	329.80	330.76	0.024438	8.63	50.55	26.73	0.95
Upper	5168.714	Q100HC	1089.00	327.19	331.83	331.83	333.47	0.020598	11.71	113.10	34.86	0.96
Upper	4976.143	Q50	247.00	321.34	324.32	323.83	324.81	0.012088	5.79	46.11	24.12	0.66
Upper	4976.143	Q100	375.00	321.34	324.83	324.41	325.54	0.013779	7.03	58.88	26.36	0.73
Upper	4976.143	Q100HC	1089.00	321.34	325.96	326.59	328.51	0.033707	13.68	91.43	31.52	1.20
Upper	4775.451	Q50	247.00	319.30	321.03	321.03	321.47	0.025550	6.21	50.86	56.30	0.89
Upper	4775.451	Q100	375.00	319.30	321.33	321.33	321.88	0.025639	7.02	68.63	62.20	0.92
Upper	4775.451	Q100HC	1089.00	319.30	322.44	322.44	323.38	0.023907	9.36	148.72	78.60	0.97
Upper	4558.571	Q50	247.00	314.56	317.59	316.36	317.74	0.003282	3.41	83.28	39.07	0.36
Upper	4558.571	Q100	375.00	314.56	318.21	316.80	318.42	0.003516	4.03	108.78	42.74	0.38
Upper	4558.571	Q100HC	1089.00	314.56	320.42	318.51	320.87	0.004239	6.15	217.78	56.18	0.45
Upper	4339.721	Q50	247.00	313.27	315.47	315.47	316.14	0.024996	7.23	40.53	30.64	0.92
Upper	4339.721	Q100	375.00	313.27	315.92	315.92	316.75	0.024123	8.18	55.12	33.88	0.94
Upper	4339.721	Q100HC	1089.00	313.27	317.67	317.67	319.02	0.020510	10.90	124.86	45.41	0.95
Upper	4132.011	Q50	247.00	308.24	311.11	310.62	311.58	0.011553	5.81	47.53	25.31	0.65

Upper	4132.011	Q100	375.00	308.24	311.59	311.18	312.28	0.013512	7.08	60.41	27.75	0.73
Upper	4132.011	Q100HC	1089.00	308.24	313.30	313.31	314.95	0.019068	11.41	115.28	36.34	0.93
Upper	3880.409	Q50	247.00	305.72	308.21	307.91	308.56	0.012462	5.36	56.39	42.32	0.66
Upper	3880.409	Q100	375.00	305.72	308.69	308.31	309.11	0.011610	5.94	77.90	46.73	0.66
Upper	3880.409	Q100HC	1089.00	305.72	310.41	309.78	311.12	0.010820	8.09	172.21	62.95	0.69
Upper	3870		Bridge									
Upper	3679.763	Q50	247.00	300.98	305.40		305.50	0.001437	2.69	105.41	40.41	0.24
Upper	3679.763	Q100	375.00	300.98	306.08		306.22	0.001721	3.29	134.04	44.74	0.28
Upper	3679.763	Q100HC	1089.00	300.98	308.41		308.76	0.002623	5.39	257.73	65.78	0.36
Upper	3469.412	Q50	247.00	301.86	304.86		305.02	0.003905	3.31	79.94	43.42	0.38
Upper	3469.412	Q100	375.00	301.86	305.48		305.69	0.003825	3.81	108.87	50.06	0.39
Upper	3469.412	Q100HC	1089.00	301.86	307.81		308.15	0.003290	5.18	255.86	76.13	0.39
Upper	3296.568	Q50	247.00	300.85	302.75	302.75	303.50	0.028811	7.69	36.93	24.99	0.99
Upper	3296.568	Q100	375.00	300.85	303.26	303.26	304.20	0.026789	8.71	50.39	27.48	0.99
Upper	3296.568	Q100HC	1089.00	300.85	305.24	305.24	306.83	0.022092	11.80	114.02	36.87	0.99
Upper	3085.474	Q50	247.00	295.44	298.32	297.45	298.58	0.006341	4.51	63.67	32.13	0.49
Upper	3085.474	Q100	375.00	295.44	298.90	297.94	299.25	0.006882	5.36	82.99	35.43	0.53
Upper	3085.474	Q100HC	1089.00	295.44	300.54	299.83	301.49	0.011319	9.04	149.15	44.92	0.72
Upper	2851.001	Q50	247.00	293.97	295.41	295.41	295.83	0.028538	5.84	50.93	125.46	0.92
Upper	2851.001	Q100	375.00	293.97	295.64	295.64	296.22	0.032149	6.96	65.72	145.22	1.00
Upper	2851.001	Q100HC	1089.00	293.97	296.76	296.76	297.69	0.025176	8.94	145.95	250.26	0.97
Upper	2811.46*	Q50	247.00	292.08	293.22	293.57	294.38	0.051561	9.48	32.73	50.07	1.69
Upper	2811.46*	Q100	375.00	292.08	293.48	293.88	294.80	0.044671	10.36	46.50	53.73	1.64
Upper	2811.46*	Q100HC	1089.00	292.08	294.49	295.35	296.57	0.035479	13.71	107.31	68.09	1.61
Upper	2771.92*	Q50	247.00	290.19	291.38	291.74	292.54	0.047657	9.50	33.45	48.66	1.64
Upper	2771.92*	Q100	375.00	290.19	291.61	292.06	293.09	0.048741	10.97	44.98	51.86	1.72
Upper	2771.92*	Q100HC	1089.00	290.19	292.54	293.32	295.11	0.044933	15.23	97.97	61.71	1.81
Upper	2732.38*	Q50	247.00	288.30	289.50	289.89	290.73	0.048780	9.80	32.80	45.60	1.67
Upper	2732.38*	Q100	375.00	288.30	289.75	290.21	291.29	0.048345	11.22	44.92	50.27	1.72
Upper	2732.38*	Q100HC	1089.00	288.30	290.68	291.53	293.46	0.047687	15.91	95.98	59.37	1.87
Upper	2692.84*	Q50	247.00	286.40	287.63	288.04	288.91	0.048612	10.01	32.40	42.70	1.68
Upper	2692.84*	Q100	375.00	286.40	287.90	288.38	289.50	0.048163	11.49	44.73	48.91	1.73
Upper	2692.84*	Q100HC	1089.00	286.40	288.85	289.73	291.74	0.048214	16.34	95.74	58.12	1.89
Upper	2653.30*	Q50	247.00	284.51	285.76	286.19	287.09	0.048551	10.23	32.22	41.42	1.69
Upper	2653.30*	Q100	375.00	284.51	286.03	286.55	287.71	0.048515	11.79	44.35	47.40	1.75
Upper	2653.30*	Q100HC	1089.00	284.51	287.01	287.94	290.00	0.048634	16.74	95.55	57.11	1.91
Upper	2613.76*	Q50	247.00	282.62	283.90	284.34	285.27	0.048533	10.47	32.05	40.25	1.69
Upper	2613.76*	Q100	375.00	282.62	284.18	284.71	285.90	0.048706	12.06	44.06	45.87	1.76
Upper	2613.76*	Q100HC	1089.00	282.62	285.17	286.14	288.26	0.049064	17.14	95.36	56.25	1.93
Upper	2574.222	Q50	247.00	280.73	281.99	282.45	283.41	0.051296	10.75	30.15	38.26	1.74
Upper	2574.222	Q100	375.00	280.73	282.26	282.80	284.06	0.051743	12.38	41.24	43.83	1.81
Upper	2574.222	Q100HC	1089.00	280.73	283.22	284.22	286.44	0.052269	17.45	88.48	54.14	1.98
Upper	2532.87*	Q50	247.00	279.63	281.26	281.43	282.08	0.018752	7.71	36.46	33.60	1.10
Upper	2532.87*	Q100	375.00	279.63	281.60	281.86	282.68	0.019209	8.93	48.62	37.74	1.15

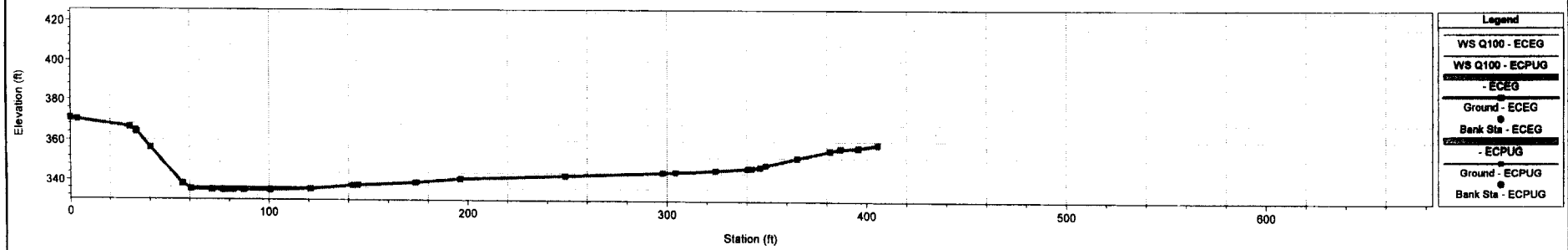
Upper	2532.87*	Q100HC	1089.00	279.63	282.78	283.39	284.93	0.020647	12.83	100.43	48.90	1.29
Upper	2491.53*	Q50	247.00	278.52	280.15	280.43	281.20	0.025477	8.84	32.35	29.10	1.28
Upper	2491.53*	Q100	375.00	278.52	280.55	280.89	281.83	0.023193	9.91	44.95	32.78	1.27
Upper	2491.53*	Q100HC	1089.00	278.52	282.03	282.59	284.16	0.019559	13.36	103.14	45.07	1.28
Upper	2450.18*	Q50	247.00	277.42	279.13	279.39	280.19	0.024634	8.90	32.36	27.45	1.26
Upper	2450.18*	Q100	375.00	277.42	279.53	279.88	280.89	0.023881	10.21	43.94	30.44	1.29
Upper	2450.18*	Q100HC	1089.00	277.42	281.13	281.74	283.39	0.019627	13.82	102.25	42.31	1.29
Upper	2408.84*	Q50	247.00	276.31	278.07	278.35	279.18	0.025023	9.03	31.81	26.26	1.27
Upper	2408.84*	Q100	375.00	276.31	278.47	278.85	279.91	0.024493	10.42	42.96	28.89	1.31
Upper	2408.84*	Q100HC	1089.00	276.31	280.10	280.80	282.57	0.020739	14.33	98.48	39.50	1.33
Upper	2367.498	Q50	247.00	275.21	278.00	277.26	278.30	0.007397	4.79	59.66	31.24	0.53
Upper	2367.498	Q100	375.00	275.21	278.62	277.76	279.01	0.007463	5.54	79.81	34.76	0.55
Upper	2367.498	Q100HC	1089.00	275.21	280.69	279.66	281.48	0.008518	8.27	164.73	47.56	0.64
Upper	2092.970	Q50	247.00	274.17	277.16		277.26	0.002207	2.73	101.52	48.25	0.29
Upper	2092.970	Q100	375.00	274.17	277.73		277.87	0.002478	3.28	130.35	52.56	0.32
Upper	2092.970	Q100HC	1089.00	274.17	279.60		279.97	0.003616	5.35	238.73	62.47	0.41
Upper	1888.931	Q50	247.00	273.44	275.58	275.58	276.16	0.023957	6.96	44.84	39.88	0.90
Upper	1888.931	Q100	375.00	273.44	275.99	275.99	276.68	0.022844	7.77	62.84	47.13	0.91
Upper	1888.931	Q100HC	1089.00	273.44	277.37	277.37	278.43	0.020627	10.12	141.88	63.07	0.93
Upper	1687.641	Q50	247.00	268.12	269.64	269.46	269.91	0.016761	4.75	62.27	63.11	0.71
Upper	1687.641	Q100	375.00	268.12	270.23	269.72	270.46	0.008729	4.35	101.68	69.41	0.55
Upper	1687.641	Q100HC	1089.00	268.12	272.92	270.80	273.11	0.002377	4.03	317.42	90.29	0.33
Upper	1498.554	Q50	247.00	262.57	267.20		267.74	0.008190	6.34	45.64	16.86	0.55
Upper	1498.554	Q100	375.00	262.57	268.02		268.76	0.008928	7.49	60.61	19.29	0.60
Upper	1498.554	Q100HC	1089.00	262.57	271.12		272.25	0.008662	10.22	153.02	42.93	0.64
Upper	1287.849	Q50	247.00	262.33	265.60	264.75	266.02	0.007808	5.44	50.64	21.95	0.55
Upper	1287.849	Q100	375.00	262.33	266.18	265.39	266.80	0.009372	6.68	63.91	24.10	0.62
Upper	1287.849	Q100HC	1089.00	262.33	267.88	267.88	269.67	0.017438	11.80	113.03	33.44	0.90
Upper	1067.404	Q50	247.00	261.19	262.62	262.62	263.12	0.027141	6.06	46.55	46.52	0.91
Upper	1067.404	Q100	375.00	261.19	262.95	262.95	263.58	0.026463	6.90	62.38	49.39	0.93
Upper	1067.404	Q100HC	1089.00	261.19	265.12	264.25	265.70	0.008859	6.89	185.81	63.88	0.62
Upper	842.967	Q50	247.00	254.89	260.31	257.80	260.40	0.001114	2.70	108.81	32.79	0.22
Upper	842.967	Q100	375.00	254.89	261.24	258.34	261.36	0.001248	3.22	140.59	35.94	0.24
Upper	842.967	Q100HC	1089.00	254.89	264.59		264.88	0.001710	5.18	295.30	66.21	0.31
Upper	805.097*	Q50	247.00	254.90	260.31		260.36	0.000518	1.98	142.96	40.48	0.16
Upper	805.097*	Q100	375.00	254.90	261.24		261.32	0.000596	2.40	182.14	43.72	0.18
Upper	805.097*	Q100HC	1089.00	254.90	264.62		264.80	0.000830	3.88	363.28	69.10	0.23
Upper	767.227*	Q50	247.00	254.91	260.31		260.34	0.000294	1.55	177.03	48.33	0.13
Upper	767.227*	Q100	375.00	254.91	261.24		261.29	0.000342	1.89	223.71	51.72	0.14
Upper	767.227*	Q100HC	1089.00	254.91	264.64		264.76	0.000482	3.10	431.98	74.19	0.18
Upper	729.357*	Q50	247.00	254.93	260.31		260.33	0.000183	1.28	211.01	56.37	0.11
Upper	729.357*	Q100	375.00	254.93	261.24		261.28	0.000215	1.57	265.40	60.02	0.12
Upper	729.357*	Q100HC	1089.00	254.93	264.65		264.74	0.000306	2.58	502.76	81.83	0.15
Upper	691.487*	Q50	247.00	254.94	260.31		260.33	0.000116	1.09	244.96	64.81	0.09

Upper	691.487*	Q100	375.00	254.94	261.24		261.27	0.000136	1.34	307.55	69.00	0.10
Upper	691.487*	Q100HC	1089.00	254.94	264.65		264.72	0.000193	2.20	578.05	90.54	0.13
Upper	653.617*	Q50	247.00	254.95	260.31		260.32	0.000079	0.94	280.09	74.21	0.08
Upper	653.617*	Q100	375.00	254.95	261.24		261.26	0.000093	1.16	351.93	79.43	0.09
Upper	653.617*	Q100HC	1089.00	254.95	264.66		264.71	0.000130	1.90	657.85	98.36	0.11
Upper	615.747	Q50	247.00	254.96	260.31		260.32	0.000107	0.83	317.48	86.06	0.07
Upper	615.747	Q100	375.00	254.96	261.24		261.26	0.000123	1.01	401.15	92.15	0.08
Upper	615.747	Q100HC	1089.00	254.96	264.66		264.70	0.000168	1.64	739.48	105.66	0.10
Upper	573.367*	Q50	247.00	255.13	260.30		260.31	0.000098	1.03	257.17	69.96	0.09
Upper	573.367*	Q100	375.00	255.13	261.23		261.25	0.000113	1.26	324.75	74.81	0.10
Upper	573.367*	Q100HC	1089.00	255.13	264.63		264.69	0.000154	2.04	608.11	90.51	0.12
Upper	530.987*	Q50	247.00	255.30	260.28		260.30	0.000194	1.33	201.68	56.45	0.11
Upper	530.987*	Q100	375.00	255.30	261.21		261.24	0.000221	1.61	255.83	60.27	0.12
Upper	530.987*	Q100HC	1089.00	255.30	264.59		264.68	0.000297	2.61	484.42	75.15	0.16
Upper	488.607*	Q50	247.00	255.48	260.24		260.29	0.000440	1.83	149.14	43.95	0.16
Upper	488.607*	Q100	375.00	255.48	261.16		261.23	0.000492	2.21	190.92	47.19	0.17
Upper	488.607*	Q100HC	1089.00	255.48	264.49		264.66	0.000640	3.53	367.92	59.49	0.21
Upper	446.227*	Q50	247.00	255.65	260.14		260.25	0.001337	2.90	98.16	31.87	0.26
Upper	446.227*	Q100	375.00	255.65	261.03		261.19	0.001450	3.45	127.72	34.67	0.27
Upper	446.227*	Q100HC	1089.00	255.65	264.25		264.59	0.001749	5.31	256.13	45.16	0.33
Upper	403.848	Q50	247.00	255.82	259.04	259.04	260.02	0.024706	9.14	33.65	17.31	0.96
Upper	403.848	Q100	375.00	255.82	259.72	259.72	260.92	0.023800	10.34	45.97	19.29	0.97
Upper	403.848	Q100HC	1089.00	255.82	262.26	262.26	264.25	0.020999	13.95	104.49	26.69	1.00
Upper	365.174*	Q50	247.00	254.53	257.15	257.56	258.67	0.049277	10.77	26.89	17.74	1.30
Upper	365.174*	Q100	375.00	254.53	257.65	258.19	259.58	0.048945	12.34	36.17	19.32	1.34
Upper	365.174*	Q100HC	1089.00	254.53	259.60	260.59	262.99	0.044721	17.07	79.94	25.49	1.40
Upper	326.500*	Q50	247.00	253.24	255.98	256.14	257.02	0.031645	8.72	32.21	20.34	1.04
Upper	326.500*	Q100	375.00	253.24	256.44	256.72	257.87	0.034503	10.35	41.88	21.91	1.13
Upper	326.500*	Q100HC	1089.00	253.24	258.07	259.00	261.24	0.043160	15.98	82.35	27.54	1.36
Upper	287.827*	Q50	247.00	251.96	254.48	254.74	255.64	0.040727	8.93	30.22	21.50	1.16
Upper	287.827*	Q100	375.00	251.96	254.95	255.31	256.43	0.039973	10.28	40.77	23.47	1.19
Upper	287.827*	Q100HC	1089.00	251.96	256.61	257.46	259.55	0.041494	15.03	85.29	29.87	1.32
Upper	249.153*	Q50	247.00	250.67	253.24	253.35	254.16	0.032945	7.91	33.38	23.39	1.04
Upper	249.153*	Q100	375.00	250.67	253.66	253.91	254.93	0.035154	9.38	43.70	25.65	1.11
Upper	249.153*	Q100HC	1089.00	250.67	255.19	255.96	257.90	0.040049	14.21	88.43	32.46	1.29
Upper	210.480	Q50	247.00	249.38	251.83	251.98	252.78	0.038673	7.90	32.46	24.10	1.10
Upper	210.480	Q100	375.00	249.38	252.28	252.52	253.52	0.037267	9.13	43.81	27.08	1.12
Upper	210.480	Q100HC	1089.00	249.38	253.80	254.49	256.32	0.038983	13.52	91.54	35.42	1.26

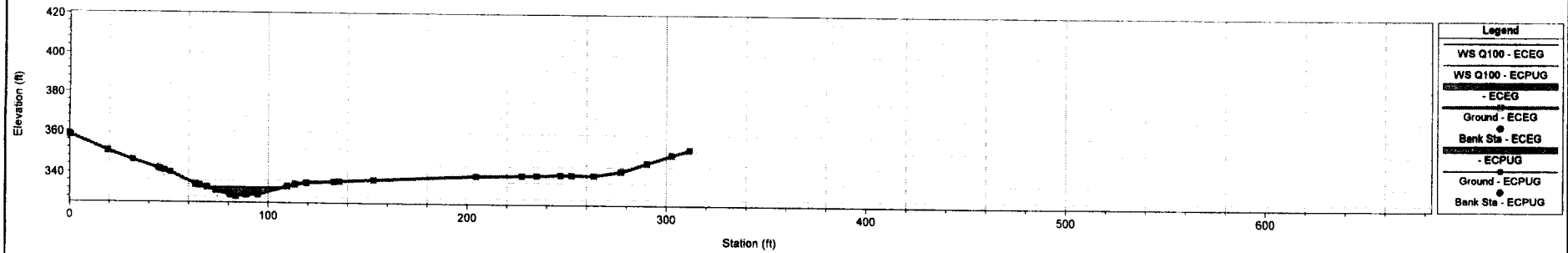


1 in Horiz. = 1100 ft 1 in Vert. = 500 ft

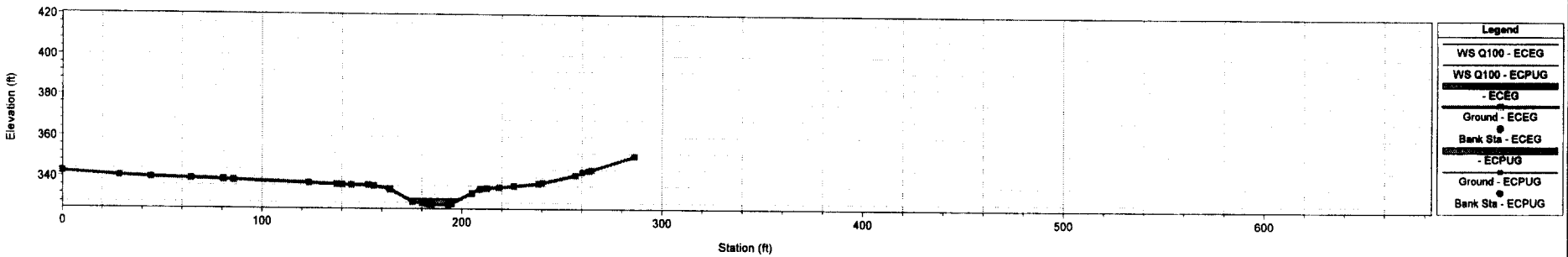
Project Model CX3 Plan: 1) ECPUG 2) ECEG
RS = 5602.033



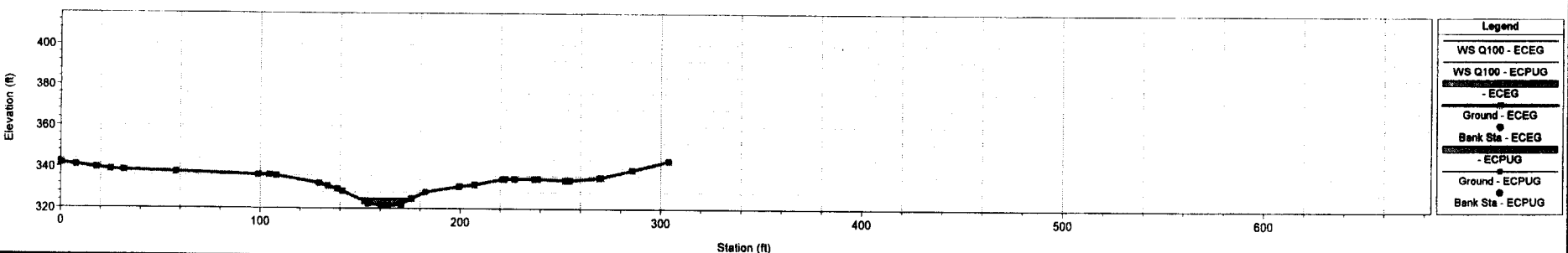
Project Model CX3 Plan: 1) ECPUG 2) ECEG
RS = 5384.793



Project Model CX3 Plan: 1) ECPUG 2) ECEG
RS = 5168.714

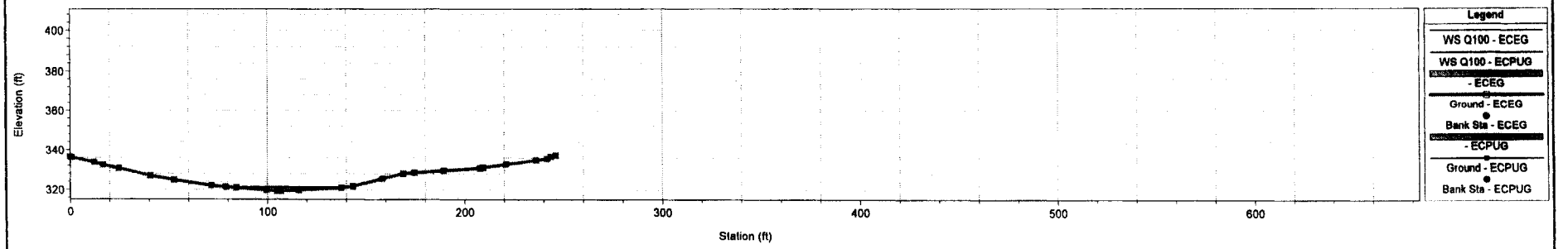


Project Model CX3 Plan: 1) ECPUG 2) ECEG
RS = 4976.143

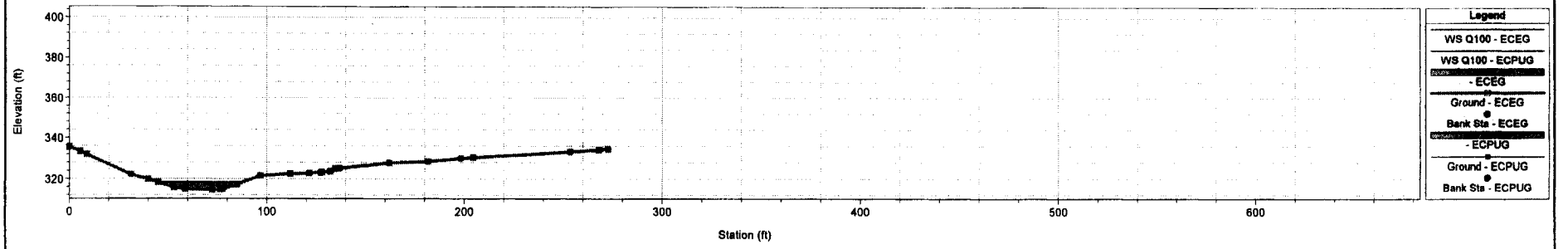


1 in Horiz. = 80 ft 1 in Vert. = 80 ft

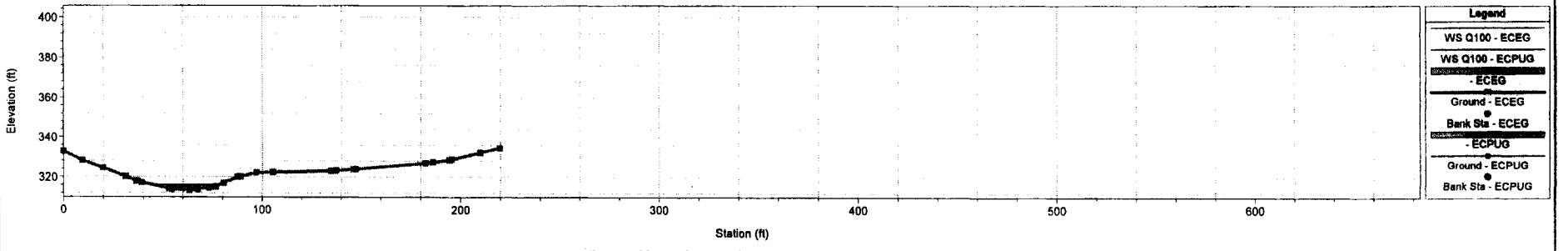
Project Model CX3 Plan: 1) ECPUG 2) ECEG
RS = 4775.451



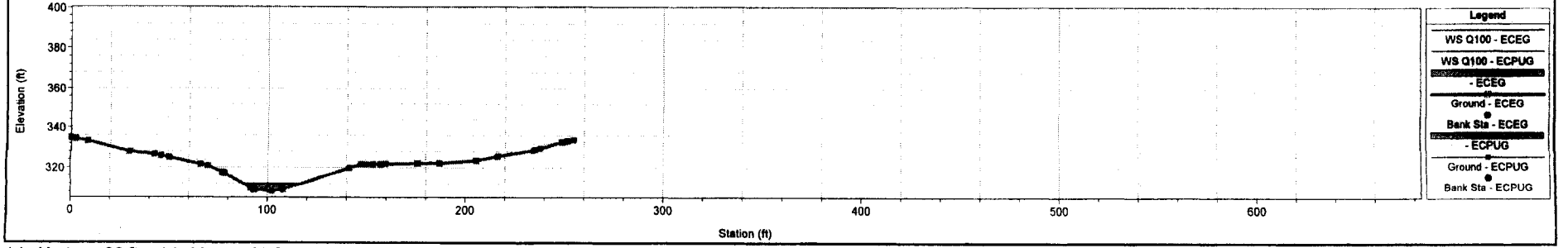
Project Model CX3 Plan: 1) ECPUG 2) ECEG
RS = 4558.571



Project Model CX3 Plan: 1) ECPUG 2) ECEG
RS = 4339.721

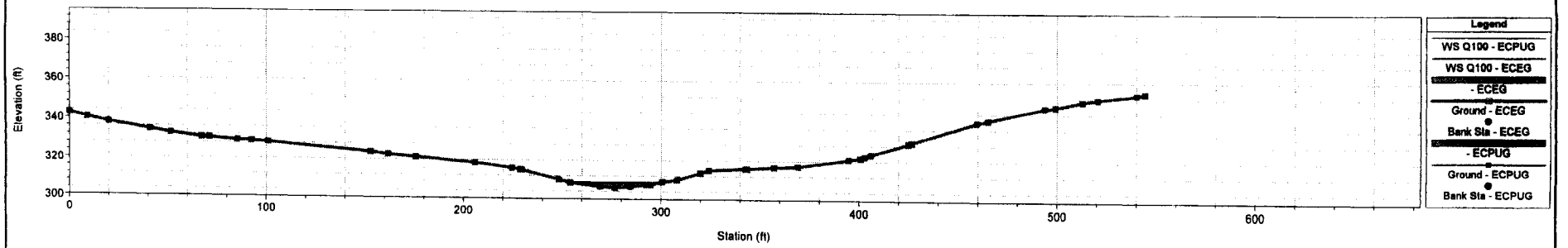


Project Model CX3 Plan: 1) ECPUG 2) ECEG
RS = 4132.011

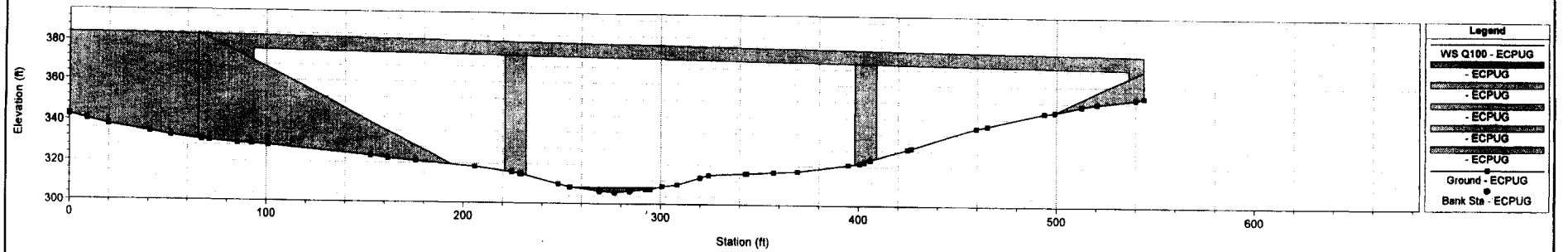


1 in Horiz. = 80 ft 1 in Vert. = 80 ft

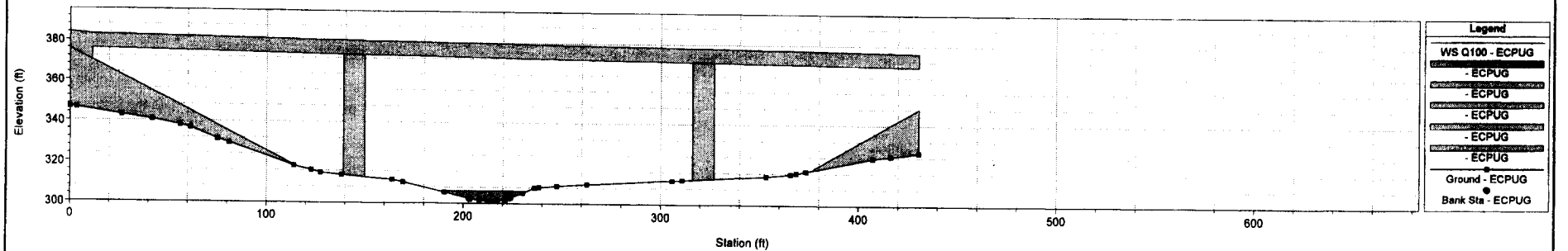
Project Model CX3 Plan: 1) ECPUG 2) ECEG
RS = 3880.409



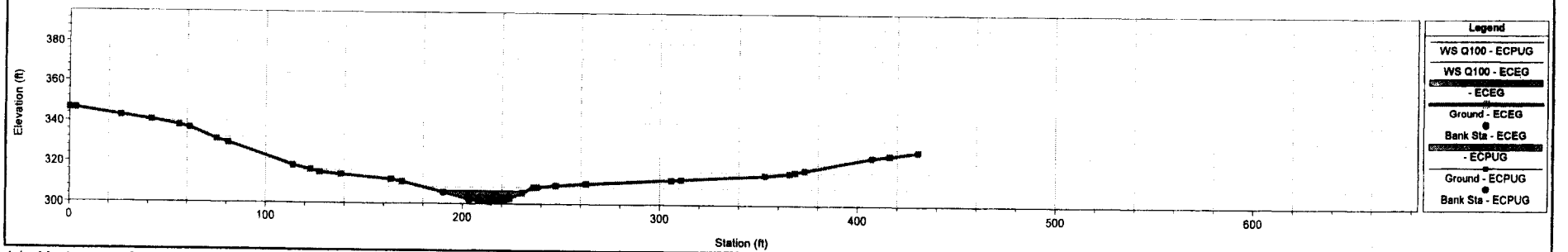
Project Model CX3 Plan: 1) ECPUG 2) ECEG
RS = 3870 BR



Project Model CX3 Plan: 1) ECPUG 2) ECEG
RS = 3870 BR

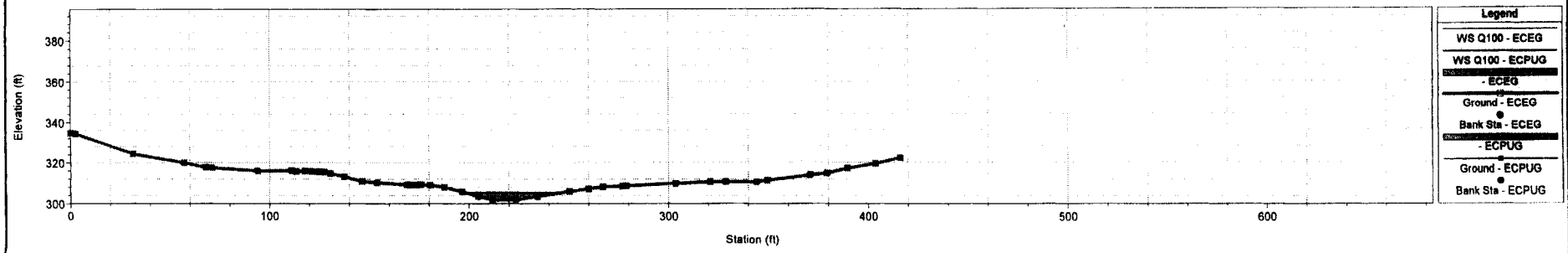


Project Model CX3 Plan: 1) ECPUG 2) ECEG
RS = 3679.763

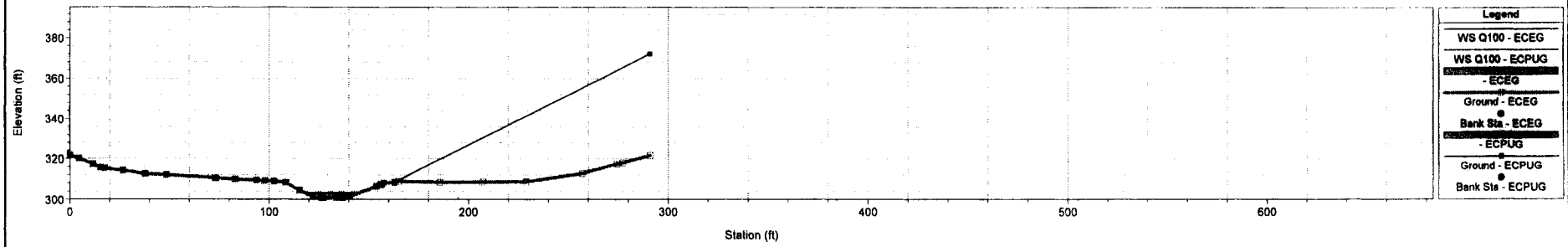


1 in Horiz. = 80 ft 1 in Vert. = 80 ft

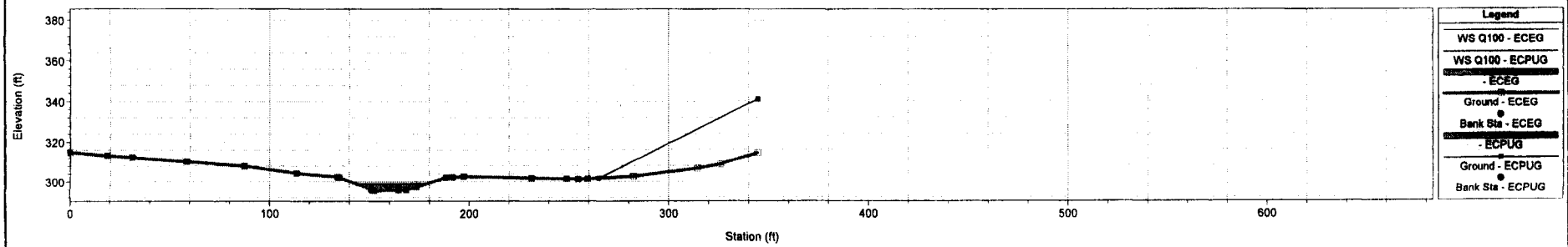
Project Model CX3 Plan: 1) ECPUG 2) ECEG
RS = 3469.412



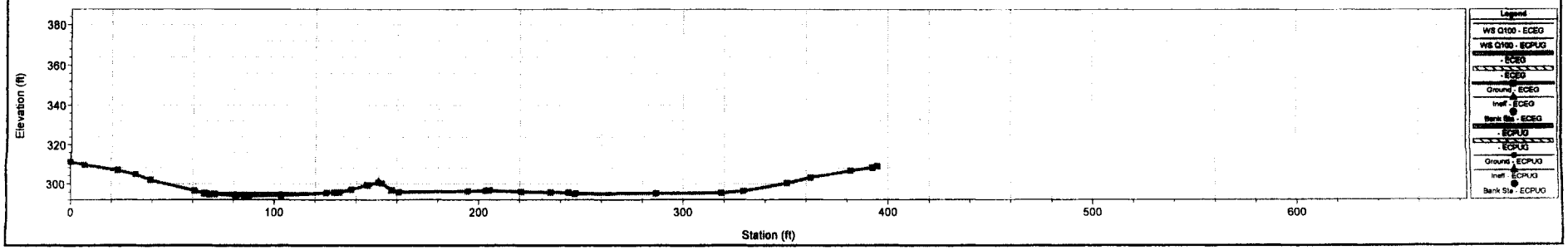
Project Model CX3 Plan: 1) ECPUG 2) ECEG
RS = 3296.568 Manual Modification of Mannings N Values, XS Modified 2:1 Slope



Project Model CX3 Plan: 1) ECPUG 2) ECEG
RS = 3085.474 XS Modified 2:1 Slope Sta 265-344

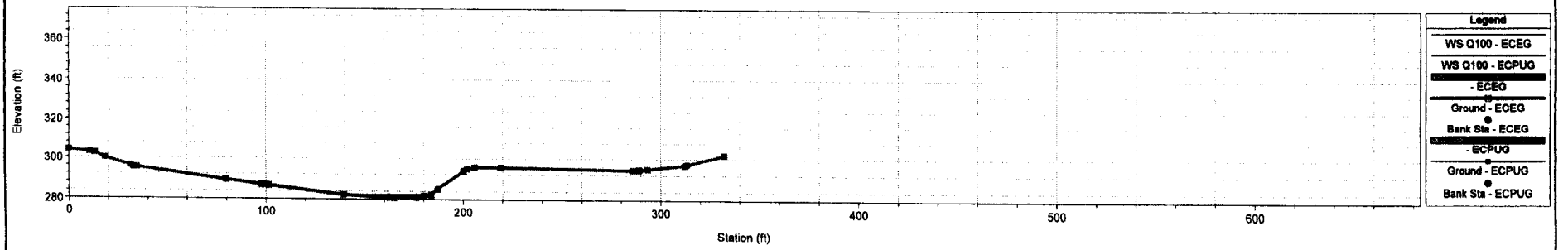


Project Model CX3 Plan: 1) ECPUG 2) ECEG
RS = 2851.001 Manual Modification of Manning's N Values

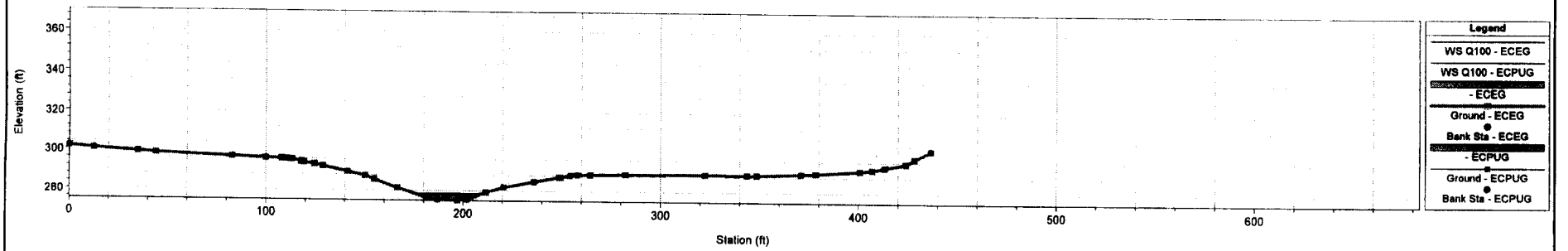


1 in Horiz. = 80 ft 1 in Vert. = 80 ft

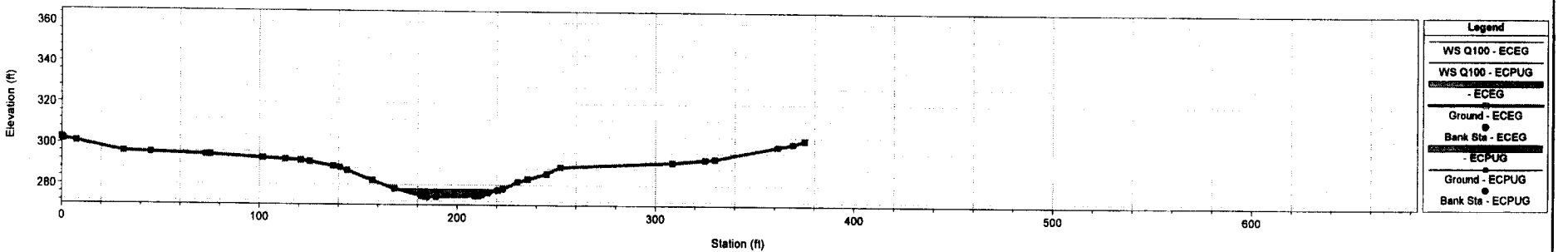
Project Model CX3 Plan: 1) ECPUG 2) ECEG
RS = 2574.222 Manual Modification of Manning's N Values



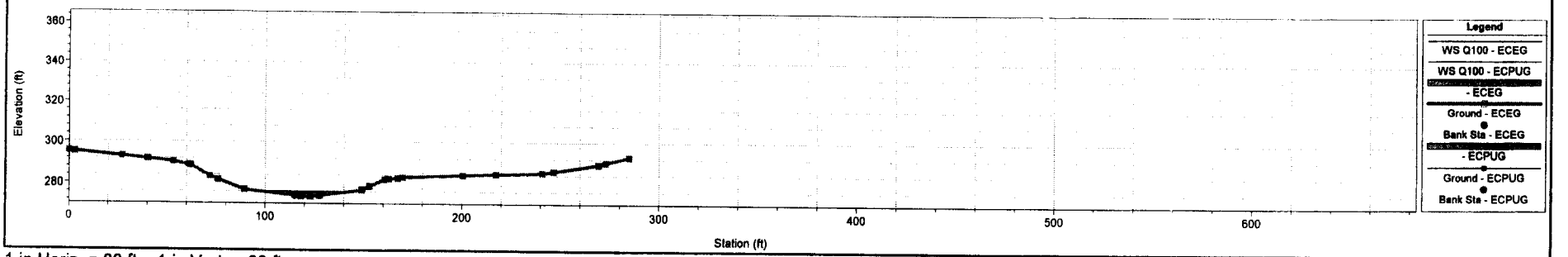
Project Model CX3 Plan: 1) ECPUG 2) ECEG
RS = 2367.498



Project Model CX3 Plan: 1) ECPUG 2) ECEG
RS = 2092.970 Manual Modification of Manning's N Values

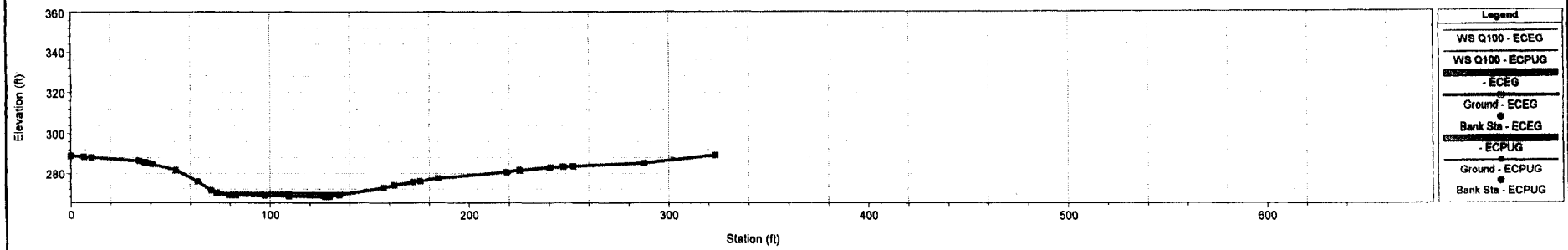


Project Model CX3 Plan: 1) ECPUG 2) ECEG
RS = 1888.931 Manual Modification of Manning's N Values

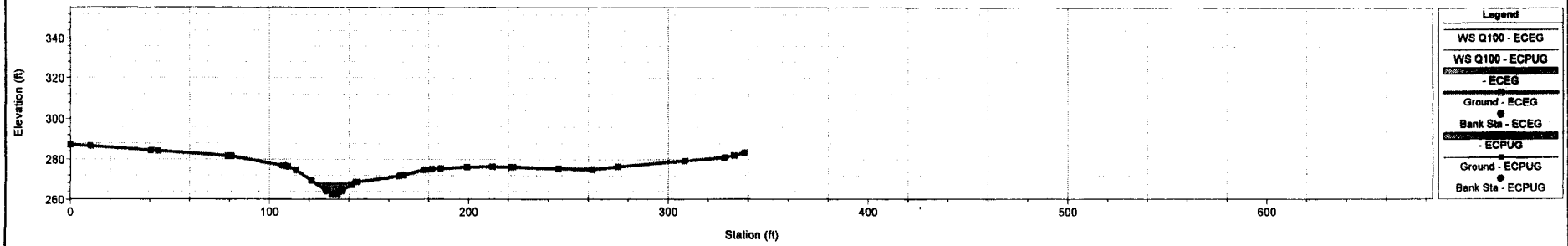


1 in Horiz. = 80 ft 1 in Vert. = 80 ft

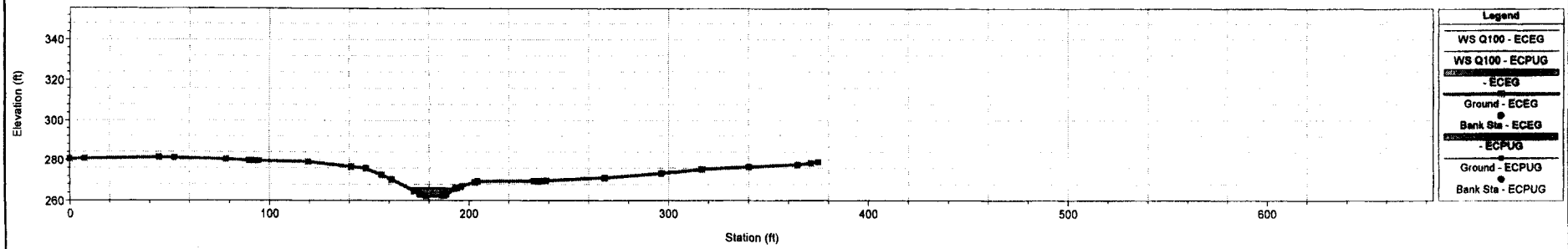
Project Model CX3 Plan: 1) ECPUG 2) ECEG
RS = 1687.641



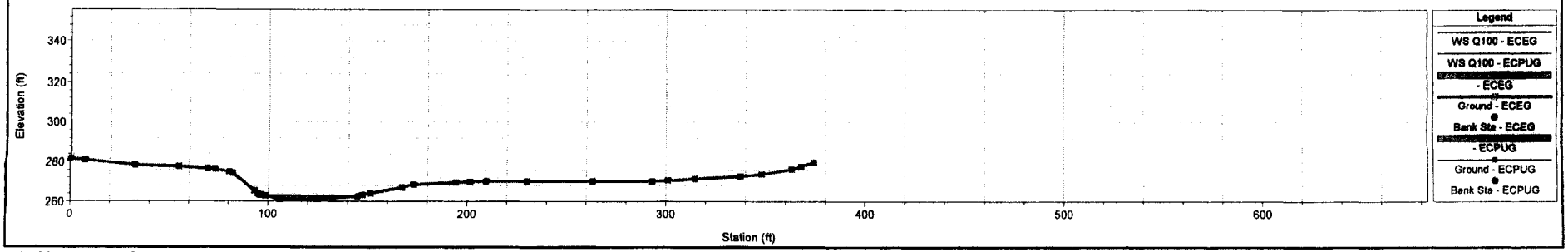
Project Model CX3 Plan: 1) ECPUG 2) ECEG
RS = 1498.554 Manual Modification of Manning's N Values



Project Model CX3 Plan: 1) ECPUG 2) ECEG
RS = 1287.849

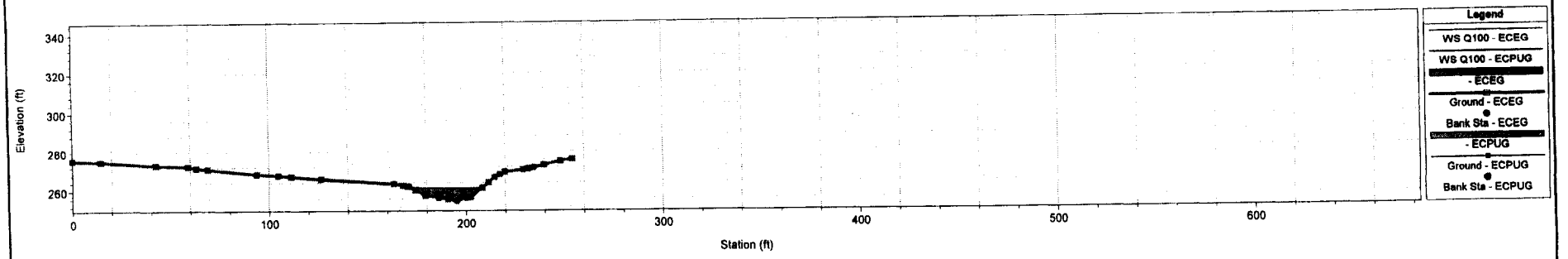


Project Model CX3 Plan: 1) ECPUG 2) ECEG
RS = 1067.404 Manual Modification of Manning's N Values

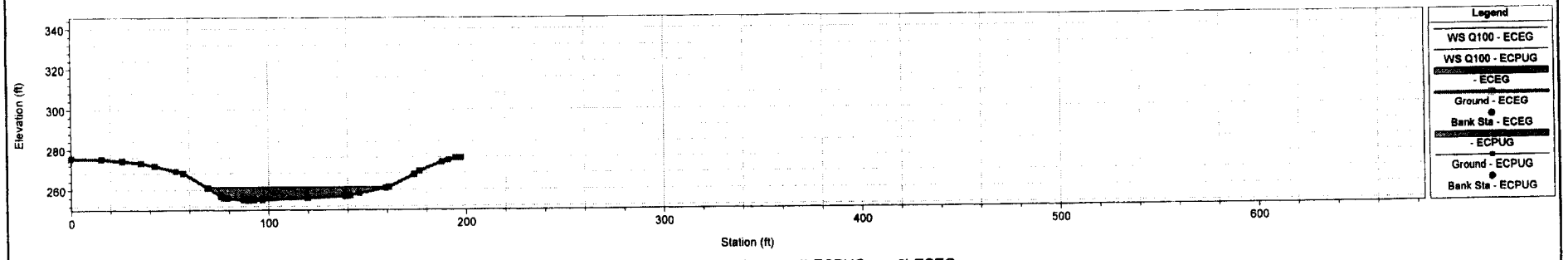


1 in Horiz. = 80 ft 1 in Vert. = 80 ft

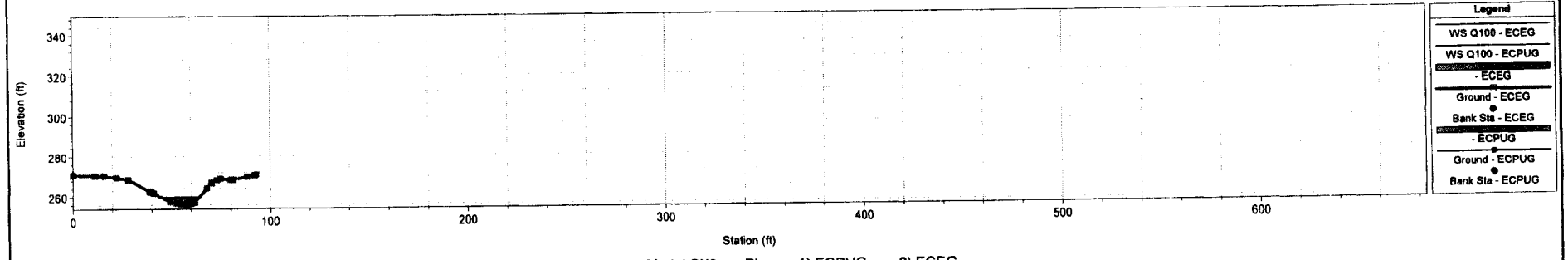
Project Model CX3 Plan: 1) ECPUG 2) ECEG
RS = 842.967



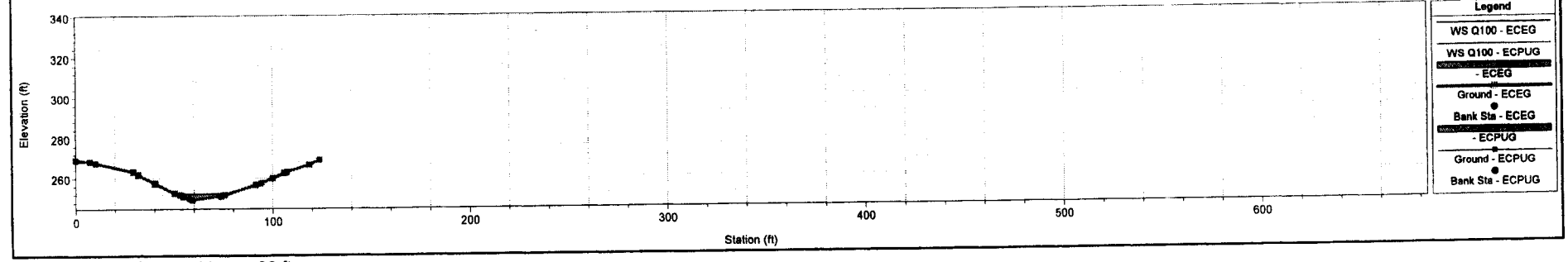
Project Model CX3 Plan: 1) ECPUG 2) ECEG
RS = 615.747



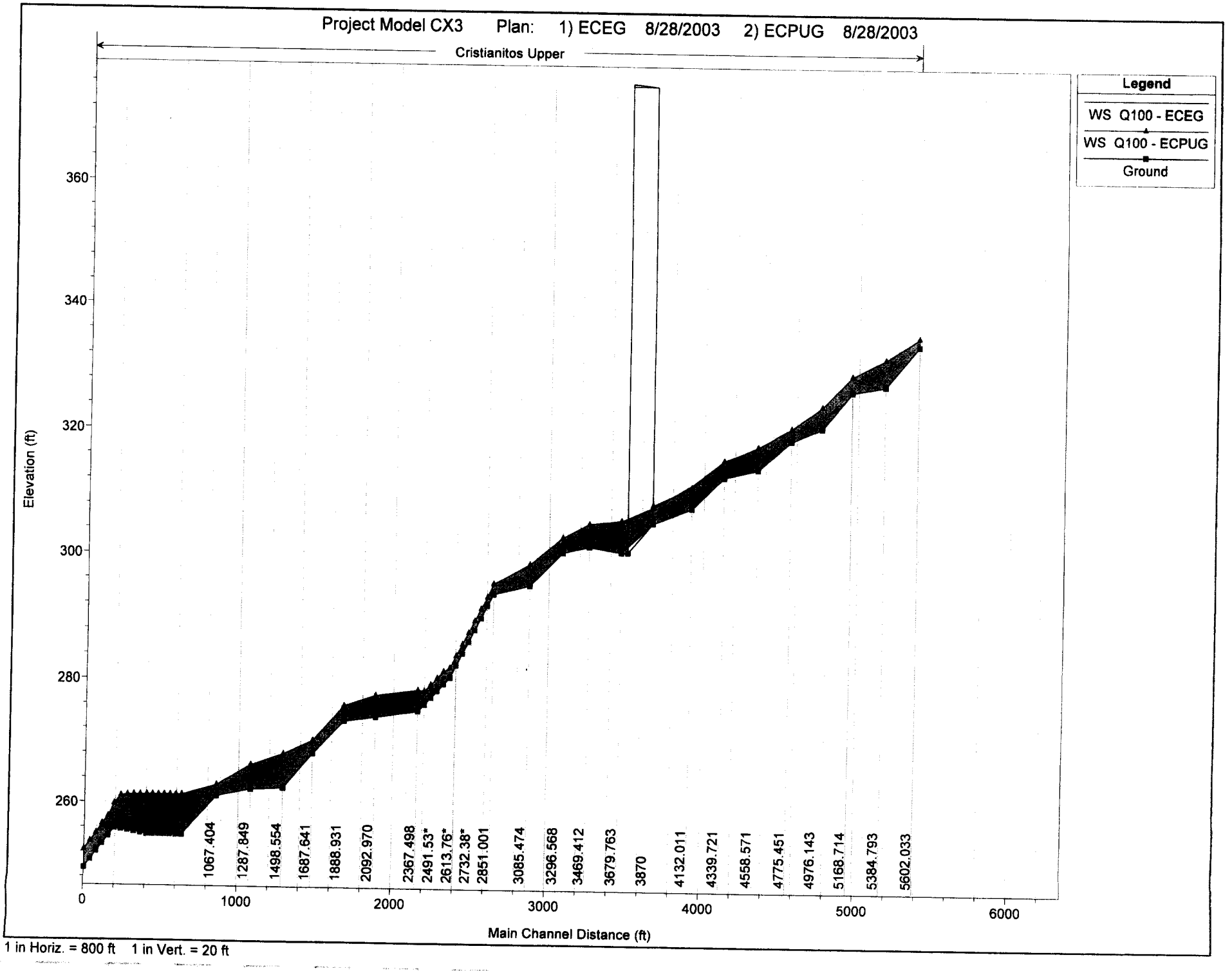
Project Model CX3 Plan: 1) ECPUG 2) ECEG
RS = 403.848



Project Model CX3 Plan: 1) ECPUG 2) ECEG
RS = 210.480



1 in Horiz. = 80 ft 1 in Vert. = 80 ft


Project Model CX3 Plan: 1) ECEG 8/28/2003 2) ECPUG 8/28/2003
Cristianitos Upper
Legend
WS Q100 - ECEG
WS Q100 - ECPUG
Ground
Elevation (ft)
360
340
320
300
280
260
1067.404
1287.849
1498.554
1687.641
1888.931
2092.970
2367.498
2491.53*
2613.76*
2732.38*
2851.001
3085.474
3296.568
3469.412
3679.763
3870
4132.011
4339.721
4558.571
4775.451
4976.143
5168.714
5384.793
5602.033
0
1000
2000
3000
4000
5000
6000
Main Channel Distance (ft)
1 in Horiz. = 800 ft 1 in Vert. = 20 ft