HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0100 hrs
Time on left represents time for first value in each row.

Time hrs					
14.4100	7.30	7.28	7.27	7.25	7.24
14.4600	7.22	7.21	7.19	7.18	7.16
14.5100	7.15	7.13	7.12	7.10	7.09
14.5600	7.07	7.06	7.04	7.03	7.02
14.6100	7.00	6.99	6.97	6.96	6.94
14.6600	6.93	6.91	6.90	6.88	6.87
14.7100	6.86	6.84	6.83	6.81	6.80
14.7600	6.78	6.77	6.76	6.74	6.73
14.8100	6.71	6.70	6.68	6.67	6.65
14.8600	6.64	6.63	6.61	6.60	6.58
14.9100	6.57	6.55	6.54	6.53	6.51
14.9600	6.50	6.48	6.47	6.46	6.44
15.0100	6.43	6.41	6.40	6.38	6.37
15.0600	6.35	6.34	6.32	6.31	6.30
15.1100	6.28	6.27	6.25	6.24	6.23
15.1600	6.21	6.20	6.18	6.17	6.15
15.2100	6.14	6.12	6.11	6.10	6.08
15.2600	6.07	6.05	6.04	6.02	6.01
15.3100	5.99	5.98	5.97	5.95	5.94
15.3600	5.92	5.91	5.90	5.88	5.87
15.4100	5.85	5.84	5.82	5.81	5.79
15.4600	5.78	5.76	5.75	5.74	5.72
15.5100	5.71	5.69	5.68	5.66	5.65
15.5600	5.64	5.62	5.61	5.59	5.58
15.6100	5.56	5.55	5.54	5.52	5.51
15.6600	5.49	5.48	5.46	5.45	5.43
15.7100	5.42	5.41	5.39	5.38	5.36
15.7600	5.35	5.34	5.32	5.31	5.29
15.8100	5.28	5.26	5.25	5.23	5.22
15.8600	5.20	5.19	5.18	5.16	5.15
15.9100	5.13	5.12	5.10	5.09	5.08
15.9600	5.06	5.05	5.03	5.02	5.01
16.0100	4.99	4.98	4.96	4.95	4.93
16.0600	4.92	4.91	4.89	4.88	4.87
16.1100	4.86	4.84	4.83	4.82	4.81
16.1600	4.80	4.79	4.78	4.77	4.76
16.2100	4.75	4.74	4.74	4.73	4.72
16.2600	4.71	4.71	4.70	4.69	4.69
16.3100	4.68	4.67	4.67	4.66	4.66
16.3600	4.65	4.64	4.64	4.63	4.63
16.4100	4.62	4.62	4.61	4.60	4.60
16.4600	4.59	4.59	4.58	4.58	4.57
16.5100	4.57	4.56	4.56	4.55	4.55
16.5600	4.54	4.54	4.53	4.53	4.52
16.6100	4.52	4.51	4.50	4.50	4.49

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0100 hrs
Time on left represents time for first value in each row.

Time hrs					
16.6600	4.49	4.48	4.48	4.47	4.47
16.7100	4.46	4.46	4.45	4.45	4.44
16.7600	4.44	4.43	4.43	4.42	4.42
16.8100	4.41	4.41	4.40	4.40	4.39
16.8600	4.39	4.38	4.38	4.37	4.37
16.9100	4.36	4.36	4.35	4.35	4.34
16.9600	4.34	4.33	4.33	4.32	4.32
17.0100	4.31	4.30	4.30	4.29	4.29
17.0600	4.28	4.28	4.27	4.27	4.26
17.1100	4.26	4.25	4.25	4.24	4.24
17.1600	4.23	4.23	4.22	4.22	4.21
17.2100	4.21	4.20	4.20	4.19	4.19
17.2600	4.18	4.18	4.17	4.17	4.16
17.3100	4.16	4.15	4.15	4.14	4.14
17.3600	4.13	4.13	4.12	4.12	4.11
17.4100	4.10	4.10	4.09	4.09	4.08
17.4600	4.08	4.07	4.07	4.06	4.06
17.5100	4.05	4.05	4.04	4.04	4.03
17.5600	4.03	4.02	4.02	4.01	4.01
17.6100	4.00	4.00	3.99	3.99	3.98
17.6600	3.98	3.97	3.97	3.96	3.96
17.7100	3.95	3.95	3.94	3.94	3.93
17.7600	3.93	3.92	3.92	3.91	3.90
17.8100	3.90	3.89	3.89	3.88	3.88
17.8600	3.87	3.87	3.86	3.86	3.85
17.9100	3.85	3.84	3.84	3.83	3.83
17.9600	3.82	3.82	3.81	3.81	3.80
18.0100	3.80	3.79	3.79	3.78	3.78
18.0600	3.77	3.77	3.76	3.76	3.75
18.1100	3.74	3.74	3.73	3.73	3.72
18.1600	3.72	3.71	3.71	3.70	3.70
18.2100	3.69	3.69	3.68	3.68	3.67
18.2600	3.67	3.66	3.66	3.65	3.65
18.3100	3.64	3.64	3.63	3.63	3.62
18.3600	3.62	3.61	3.61	3.60	3.60
18.4100	3.59	3.59	3.58	3.58	3.57
18.4600	3.57	3.56	3.55	3.55	3.54
18.5100	3.54	3.53	3.53	3.52	3.52
18.5600	3.51	3.51	3.50	3.50	3.49
18.6100	3.49	3.48	3.48	3.47	3.47
18.6600	3.46	3.46	3.45	3.45	3.44
18.7100	3.44	3.43	3.43	3.42	3.42
18.7600	3.41	3.41	3.40	3.40	3.39
18.8100	3.39	3.38	3.38	3.37	3.37
18.8600	3.36	3.35	3.35	3.34	3.34

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0100 hrs
Time on left represents time for first value in each row.

Time hrs					
18.9100	3.33	3.33	3.32	3.32	3.31
18.9600	3.31	3.30	3.30	3.29	3.29
19.0100	3.28	3.28	3.27	3.27	3.26
19.0600	3.26	3.25	3.25	3.24	3.24
19.1100	3.23	3.23	3.22	3.22	3.21
19.1600	3.21	3.20	3.20	3.19	3.19
19.2100	3.18	3.18	3.17	3.16	3.16
19.2600	3.15	3.15	3.14	3.14	3.13
19.3100	3.13	3.12	3.12	3.11	3.11
19.3600	3.10	3.10	3.09	3.09	3.08
19.4100	3.08	3.07	3.07	3.06	3.06
19.4600	3.05	3.05	3.04	3.04	3.03
19.5100	3.03	3.02	3.02	3.01	3.01
19.5600	3.00	3.00	2.99	2.99	2.98
19.6100	2.98	2.97	2.96	2.96	2.95
19.6600	2.95	2.94	2.94	2.93	2.93
19.7100	2.92	2.92	2.91	2.91	2.90
19.7600	2.90	2.89	2.89	2.88	2.88
19.8100	2.87	2.87	2.86	2.86	2.85
19.8600	2.85	2.84	2.84	2.83	2.83
19.9100	2.82	2.81	2.81	2.80	2.80
19.9600	2.79	2.79	2.78	2.78	2.77
20.0100	2.77	2.76	2.76	2.75	2.75
20.0600	2.74	2.74	2.73	2.73	2.73
20.1100	2.72	2.72	2.71	2.71	2.71
20.1600	2.70	2.70	2.70	2.69	2.69
20.2100	2.69	2.69	2.68	2.68	2.68
20.2600	2.68	2.68	2.67	2.67	2.67
20.3100	2.67	2.67	2.67	2.66	2.66
20.3600	2.66	2.66	2.66	2.66	2.66
20.4100	2.66	2.65	2.65	2.65	2.65
20.4600	2.65	2.65	2.65	2.65	2.64
20.5100	2.64	2.64	2.64	2.64	2.64
20.5600	2.64	2.64	2.64	2.64	2.63
20.6100	2.63	2.63	2.63	2.63	2.63
20.6600	2.63	2.63	2.63	2.62	2.62
20.7100	2.62	2.62	2.62	2.62	2.62
20.7600	2.62	2.62	2.62	2.62	2.61
20.8100	2.61	2.61	2.61	2.61	2.61
20.8600	2.61	2.61	2.60	2.60	2.60
20.9100	2.60	2.60	2.60	2.60	2.60
20.9600	2.60	2.60	2.60	2.59	2.59
21.0100	2.59	2.59	2.59	2.59	2.59
21.0600	2.59	2.59	2.58	2.58	2.58
21.1100	2.58	2.58	2.58	2.58	2.58

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0100 hrs
Time hrs | Time on left represents time for first value in each row.

Time hrs					
21.1600	2.58	2.58	2.58	2.57	2.57
21.2100	2.57	2.57	2.57	2.57	2.57
21.2600	2.57	2.56	2.56	2.56	2.56
21.3100	2.56	2.56	2.56	2.56	2.56
21.3600	2.56	2.56	2.55	2.55	2.55
21.4100	2.55	2.55	2.55	2.55	2.55
21.4600	2.55	2.54	2.54	2.54	2.54
21.5100	2.54	2.54	2.54	2.54	2.54
21.5600	2.54	2.54	2.53	2.53	2.53
21.6100	2.53	2.53	2.53	2.53	2.53
21.6600	2.53	2.52	2.52	2.52	2.52
21.7100	2.52	2.52	2.52	2.52	2.52
21.7600	2.52	2.51	2.51	2.51	2.51
21.8100	2.51	2.51	2.51	2.51	2.51
21.8600	2.50	2.50	2.50	2.50	2.50
21.9100	2.50	2.50	2.50	2.50	2.50
21.9600	2.49	2.49	2.49	2.49	2.49
22.0100	2.49	2.49	2.49	2.49	2.49
22.0600	2.48	2.48	2.48	2.48	2.48
22.1100	2.48	2.48	2.48	2.48	2.48
22.1600	2.47	2.47	2.47	2.47	2.47
22.2100	2.47	2.47	2.47	2.47	2.46
22.2600	2.46	2.46	2.46	2.46	2.46
22.3100	2.46	2.46	2.46	2.46	2.45
22.3600	2.45	2.45	2.45	2.45	2.45
22.4100	2.45	2.45	2.45	2.45	2.44
22.4600	2.44	2.44	2.44	2.44	2.44
22.5100	2.44	2.44	2.44	2.44	2.43
22.5600	2.43	2.43	2.43	2.43	2.43
22.6100	2.43	2.43	2.43	2.42	2.42
22.6600	2.42	2.42	2.42	2.42	2.42
22.7100	2.42	2.42	2.42	2.41	2.41
22.7600	2.41	2.41	2.41	2.41	2.41
22.8100	2.41	2.41	2.41	2.40	2.40
22.8600	2.40	2.40	2.40	2.40	2.40
22.9100	2.40	2.40	2.40	2.39	2.39
22.9600	2.39	2.39	2.39	2.39	2.39
23.0100	2.39	2.39	2.38	2.38	2.38
23.0600	2.38	2.38	2.38	2.38	2.38
23.1100	2.38	2.38	2.37	2.37	2.37
23.1600	2.37	2.37	2.37	2.37	2.37
23.2100	2.37	2.37	2.36	2.36	2.36
23.2600	2.36	2.36	2.36	2.36	2.36
23.3100	2.36	2.35	2.35	2.35	2.35
23.3600	2.35	2.35	2.35	2.35	2.35

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0100 hrs
Time on left represents time for first value in each row.

Time hrs					
23.4100	2.35	2.34	2.34	2.34	2.34
23.4600	2.34	2.34	2.34	2.34	2.34
23.5100	2.34	2.33	2.33	2.33	2.33
23.5600	2.33	2.33	2.33	2.33	2.33
23.6100	2.33	2.32	2.32	2.32	2.32
23.6600	2.32	2.32	2.32	2.32	2.32
23.7100	2.31	2.31	2.31	2.31	2.31
23.7600	2.31	2.31	2.31	2.31	2.31
23.8100	2.31	2.30	2.30	2.30	2.30
23.8600	2.30	2.30	2.30	2.30	2.30
23.9100	2.29	2.29	2.29	2.29	2.29
23.9600	2.29	2.29	2.29	2.28	2.28
24.0100	2.27	2.26	2.24	2.22	2.18
24.0600	2.14	2.09	2.02	1.95	1.87
24.1100	1.77	1.67	1.57	1.47	1.36
24.1600	1.26	1.16	1.06	.96	.87
24.2100	.79	.71	.64	.58	.52
24.2600	.46	.42	.38	.34	.31
24.3100	.28	.25	.23	.21	.19
24.3600	.17	.15	.14	.12	.11
24.4100	.10	.09	.08	.07	.07
24.4600	.06	.05	.05	.04	.04
24.5100	.03	.03	.03	.02	.02
24.5600	.02	.02	.02	.01	.01
24.6100	.01	.01	.01	.01	.01
24.6600	.01	.00	.00	.00	.00
24.7100	.00	.00	.00	.00	

SUMMARY FOR HYDROGRAPH ADDITION
at Node: POND B IN

HYG Directory: C:\Documents and Settings\vmg.000\Desktop\Luz Torres\Pond-Final\

Upstream Link ID	Upstream Node ID	HYG file	HYG ID	HYG tag
SITE-B	SUBAREA B		SUBAREA B	50

INFLOWS TO: POND B IN

HYG file	HYG ID	HYG tag	Volume ac-ft	Peak Time hrs	Peak Flow cfs
	SUBAREA B	50	18.043	12.0200	238.10

TOTAL FLOW INTO: POND B IN

HYG file	HYG ID	HYG tag	Volume ac-ft	Peak Time hrs	Peak Flow cfs
	POND B IN	50	18.043	12.0200	238.10

TOTAL NODE INFLOW...
HYG file =
HYG ID = POND B IN
HYG Tag = 50

Peak Discharge =	238.10 cfs
Time to Peak =	12.0200 hrs
HYG Volume =	18.043 ac-ft

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0100 hrs
Time on left represents time for first value in each row.

Time hrs					
1.4200	.00	.00	.00	.00	.00
1.4700	.01	.01	.01	.01	.01
1.5200	.02	.02	.02	.03	.03
1.5700	.04	.04	.05	.06	.06
1.6200	.07	.07	.08	.09	.09
1.6700	.10	.11	.12	.12	.13
1.7200	.14	.15	.15	.16	.17
1.7700	.18	.18	.19	.20	.21
1.8200	.21	.22	.23	.24	.24
1.8700	.25	.26	.27	.28	.28
1.9200	.29	.30	.31	.32	.32
1.9700	.33	.34	.35	.35	.36
2.0200	.37	.38	.38	.39	.40
2.0700	.41	.41	.42	.43	.44
2.1200	.44	.45	.46	.47	.48
2.1700	.48	.49	.50	.50	.51
2.2200	.52	.53	.53	.54	.55
2.2700	.56	.56	.57	.58	.59
2.3200	.59	.60	.61	.61	.62
2.3700	.63	.64	.64	.65	.66
2.4200	.67	.67	.68	.69	.69
2.4700	.70	.71	.71	.72	.73
2.5200	.74	.74	.75	.76	.76
2.5700	.77	.78	.78	.79	.80
2.6200	.81	.81	.82	.83	.83
2.6700	.84	.85	.85	.86	.87
2.7200	.87	.88	.89	.89	.90
2.7700	.91	.91	.92	.93	.93
2.8200	.94	.95	.95	.96	.97
2.8700	.97	.98	.99	.99	1.00
2.9200	1.01	1.01	1.02	1.03	1.03

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0100 hrs
Time on left represents time for first value in each row.

Time hrs					
2.9700	1.04	1.05	1.05	1.06	1.07
3.0200	1.07	1.08	1.08	1.09	1.10
3.0700	1.10	1.11	1.12	1.12	1.13
3.1200	1.14	1.14	1.15	1.15	1.16
3.1700	1.17	1.17	1.18	1.19	1.19
3.2200	1.20	1.20	1.21	1.22	1.22
3.2700	1.23	1.23	1.24	1.25	1.25
3.3200	1.26	1.27	1.27	1.28	1.28
3.3700	1.29	1.30	1.30	1.31	1.32
3.4200	1.32	1.33	1.33	1.34	1.34
3.4700	1.35	1.36	1.36	1.37	1.37
3.5200	1.38	1.39	1.39	1.40	1.40
3.5700	1.41	1.42	1.42	1.43	1.43
3.6200	1.44	1.45	1.45	1.46	1.46
3.6700	1.47	1.47	1.48	1.49	1.49
3.7200	1.50	1.50	1.51	1.52	1.52
3.7700	1.53	1.53	1.54	1.54	1.55
3.8200	1.56	1.56	1.57	1.57	1.58
3.8700	1.58	1.59	1.59	1.60	1.61
3.9200	1.61	1.62	1.62	1.63	1.63
3.9700	1.64	1.65	1.65	1.66	1.66
4.0200	1.67	1.67	1.68	1.68	1.69
4.0700	1.69	1.70	1.71	1.71	1.72
4.1200	1.72	1.73	1.73	1.74	1.75
4.1700	1.75	1.76	1.76	1.77	1.78
4.2200	1.78	1.79	1.80	1.80	1.81
4.2700	1.82	1.82	1.83	1.83	1.84
4.3200	1.85	1.85	1.86	1.87	1.87
4.3700	1.88	1.89	1.89	1.90	1.91
4.4200	1.91	1.92	1.93	1.93	1.94
4.4700	1.95	1.95	1.96	1.97	1.97
4.5200	1.98	1.99	1.99	2.00	2.01
4.5700	2.01	2.02	2.03	2.03	2.04
4.6200	2.05	2.05	2.06	2.07	2.07
4.6700	2.08	2.09	2.09	2.10	2.11
4.7200	2.11	2.12	2.13	2.13	2.14
4.7700	2.15	2.15	2.16	2.17	2.17
4.8200	2.18	2.19	2.19	2.20	2.21
4.8700	2.21	2.22	2.23	2.23	2.24
4.9200	2.25	2.25	2.26	2.27	2.27
4.9700	2.28	2.29	2.29	2.30	2.31
5.0200	2.31	2.32	2.33	2.33	2.34
5.0700	2.35	2.35	2.36	2.37	2.37
5.1200	2.38	2.39	2.39	2.40	2.41
5.1700	2.41	2.42	2.43	2.43	2.44

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0100 hrs
Time on left represents time for first value in each row.

Time hrs					
5.2200	2.45	2.45	2.46	2.47	2.47
5.2700	2.48	2.49	2.49	2.50	2.51
5.3200	2.51	2.52	2.53	2.53	2.54
5.3700	2.55	2.55	2.56	2.57	2.57
5.4200	2.58	2.59	2.59	2.60	2.61
5.4700	2.61	2.62	2.63	2.63	2.64
5.5200	2.65	2.65	2.66	2.67	2.67
5.5700	2.68	2.69	2.69	2.70	2.71
5.6200	2.71	2.72	2.73	2.73	2.74
5.6700	2.75	2.75	2.76	2.77	2.77
5.7200	2.78	2.79	2.79	2.80	2.81
5.7700	2.81	2.82	2.83	2.83	2.84
5.8200	2.85	2.85	2.86	2.87	2.87
5.8700	2.88	2.89	2.89	2.90	2.91
5.9200	2.91	2.92	2.92	2.93	2.94
5.9700	2.94	2.95	2.96	2.96	2.97
6.0200	2.98	2.98	2.99	3.00	3.00
6.0700	3.01	3.02	3.02	3.03	3.04
6.1200	3.04	3.05	3.06	3.06	3.07
6.1700	3.08	3.08	3.09	3.10	3.10
6.2200	3.11	3.11	3.12	3.13	3.13
6.2700	3.14	3.15	3.15	3.16	3.17
6.3200	3.17	3.18	3.19	3.19	3.20
6.3700	3.21	3.21	3.22	3.23	3.23
6.4200	3.24	3.25	3.25	3.26	3.26
6.4700	3.27	3.28	3.28	3.29	3.30
6.5200	3.30	3.31	3.32	3.32	3.33
6.5700	3.34	3.34	3.35	3.36	3.36
6.6200	3.37	3.37	3.38	3.39	3.39
6.6700	3.40	3.41	3.41	3.42	3.43
6.7200	3.43	3.44	3.45	3.45	3.46
6.7700	3.46	3.47	3.48	3.48	3.49
6.8200	3.50	3.50	3.51	3.52	3.52
6.8700	3.53	3.54	3.54	3.55	3.55
6.9200	3.56	3.57	3.57	3.58	3.59
6.9700	3.59	3.60	3.61	3.61	3.62
7.0200	3.62	3.63	3.64	3.64	3.65
7.0700	3.66	3.66	3.67	3.68	3.68
7.1200	3.69	3.69	3.70	3.71	3.71
7.1700	3.72	3.73	3.73	3.74	3.75
7.2200	3.75	3.76	3.76	3.77	3.78
7.2700	3.78	3.79	3.80	3.80	3.81
7.3200	3.82	3.82	3.83	3.83	3.84
7.3700	3.85	3.85	3.86	3.87	3.87
7.4200	3.88	3.88	3.89	3.90	3.90

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0100 hrs
Time on left represents time for first value in each row.

Time hrs					
7.4700	3.91	3.92	3.92	3.93	3.93
7.5200	3.94	3.95	3.95	3.96	3.97
7.5700	3.97	3.98	3.98	3.99	4.00
7.6200	4.00	4.01	4.02	4.02	4.03
7.6700	4.03	4.04	4.05	4.05	4.06
7.7200	4.07	4.07	4.08	4.08	4.09
7.7700	4.10	4.10	4.11	4.12	4.12
7.8200	4.13	4.13	4.14	4.15	4.15
7.8700	4.16	4.17	4.17	4.18	4.18
7.9200	4.19	4.20	4.20	4.21	4.21
7.9700	4.22	4.23	4.23	4.24	4.25
8.0200	4.25	4.26	4.27	4.27	4.28
8.0700	4.29	4.30	4.31	4.32	4.33
8.1200	4.34	4.35	4.36	4.37	4.38
8.1700	4.40	4.41	4.42	4.44	4.46
8.2200	4.47	4.49	4.51	4.53	4.54
8.2700	4.56	4.58	4.60	4.62	4.64
8.3200	4.66	4.68	4.70	4.72	4.74
8.3700	4.77	4.79	4.81	4.83	4.85
8.4200	4.87	4.90	4.92	4.94	4.96
8.4700	4.98	5.00	5.03	5.05	5.07
8.5200	5.09	5.12	5.14	5.16	5.18
8.5700	5.21	5.23	5.25	5.27	5.30
8.6200	5.32	5.34	5.37	5.39	5.41
8.6700	5.43	5.46	5.48	5.50	5.53
8.7200	5.55	5.57	5.60	5.62	5.64
8.7700	5.66	5.69	5.71	5.73	5.76
8.8200	5.78	5.80	5.83	5.85	5.87
8.8700	5.90	5.92	5.94	5.97	5.99
8.9200	6.01	6.04	6.06	6.08	6.11
8.9700	6.13	6.15	6.18	6.20	6.22
9.0200	6.25	6.27	6.29	6.31	6.34
9.0700	6.36	6.38	6.40	6.42	6.44
9.1200	6.45	6.47	6.49	6.50	6.52
9.1700	6.53	6.55	6.56	6.57	6.58
9.2200	6.59	6.60	6.61	6.62	6.63
9.2700	6.63	6.64	6.65	6.65	6.66
9.3200	6.67	6.67	6.68	6.68	6.68
9.3700	6.69	6.69	6.70	6.70	6.70
9.4200	6.71	6.71	6.72	6.72	6.72
9.4700	6.73	6.73	6.73	6.74	6.74
9.5200	6.74	6.75	6.75	6.76	6.76
9.5700	6.77	6.78	6.79	6.79	6.80
9.6200	6.82	6.83	6.84	6.86	6.88
9.6700	6.89	6.91	6.93	6.95	6.98

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0100 hrs
Time on left represents time for first value in each row.

Time hrs					
9.7200	7.00	7.03	7.05	7.08	7.11
9.7700	7.14	7.17	7.20	7.23	7.26
9.8200	7.30	7.33	7.36	7.39	7.43
9.8700	7.46	7.50	7.53	7.57	7.60
9.9200	7.64	7.67	7.71	7.75	7.78
9.9700	7.82	7.85	7.89	7.93	7.96
10.0200	8.00	8.04	8.08	8.11	8.15
10.0700	8.19	8.23	8.27	8.31	8.35
10.1200	8.39	8.44	8.48	8.52	8.57
10.1700	8.61	8.66	8.71	8.75	8.80
10.2200	8.85	8.90	8.95	9.00	9.05
10.2700	9.10	9.15	9.21	9.26	9.31
10.3200	9.36	9.42	9.47	9.52	9.58
10.3700	9.63	9.69	9.74	9.80	9.85
10.4200	9.91	9.96	10.02	10.07	10.12
10.4700	10.18	10.23	10.29	10.35	10.40
10.5200	10.46	10.52	10.57	10.63	10.69
10.5700	10.75	10.81	10.87	10.94	11.00
10.6200	11.07	11.13	11.20	11.27	11.34
10.6700	11.41	11.49	11.56	11.64	11.72
10.7200	11.80	11.88	11.96	12.04	12.12
10.7700	12.21	12.29	12.38	12.47	12.56
10.8200	12.65	12.73	12.82	12.91	13.00
10.8700	13.09	13.18	13.27	13.36	13.46
10.9200	13.55	13.64	13.73	13.82	13.92
10.9700	14.01	14.10	14.19	14.29	14.38
11.0200	14.48	14.58	14.68	14.78	14.89
11.0700	14.99	15.10	15.22	15.34	15.46
11.1200	15.59	15.72	15.86	15.99	16.15
11.1700	16.30	16.45	16.61	16.78	16.95
11.2200	17.13	17.31	17.49	17.68	17.87
11.2700	18.06	18.25	18.46	18.66	18.86
11.3200	19.07	19.28	19.49	19.70	19.91
11.3700	20.12	20.33	20.55	20.76	20.98
11.4200	21.20	21.42	21.64	21.85	22.07
11.4700	22.29	22.52	22.76	22.99	23.32
11.5200	23.69	24.07	24.56	25.20	25.85
11.5700	26.58	27.65	28.71	29.77	31.38
11.6200	32.99	34.59	36.66	38.84	41.03
11.6700	43.65	46.60	49.55	52.77	56.46
11.7200	60.16	63.93	68.14	72.35	76.55
11.7700	81.38	86.25	91.12	96.62	102.36
11.8200	108.10	114.29	120.91	127.53	134.58
11.8700	142.65	150.72	158.85	167.76	176.67
11.9200	185.58	193.70	201.70	209.70	216.14

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0100 hrs
Time hrs | Time on left represents time for first value in each row.

Time hrs					
11.9700	221.77	227.40	231.61	234.06	236.50
12.0200	238.10	236.87	235.64	234.35	229.35
12.0700	224.35	219.35	211.92	203.90	195.88
12.1200	187.18	178.00	168.83	159.78	150.93
12.1700	142.08	133.41	125.65	117.90	110.14
12.2200	103.92	97.78	91.64	86.71	82.21
12.2700	77.71	73.81	70.47	67.12	64.01
12.3200	61.43	58.84	56.32	54.30	52.29
12.3700	50.28	48.63	47.02	45.42	44.00
12.4200	42.69	41.37	40.16	39.07	37.98
12.4700	36.93	35.99	35.05	34.11	33.28
12.5200	32.45	31.62	30.88	30.16	29.44
12.5700	28.76	28.12	27.48	26.87	26.30
12.6200	25.74	25.19	24.72	24.25	23.78
12.6700	23.40	23.01	22.62	22.29	21.96
12.7200	21.64	21.35	21.09	20.83	20.59
12.7700	20.38	20.17	19.96	19.78	19.60
12.8200	19.42	19.25	19.09	18.92	18.77
12.8700	18.62	18.47	18.32	18.17	18.03
12.9200	17.88	17.74	17.61	17.47	17.34
12.9700	17.21	17.07	16.94	16.81	16.68
13.0200	16.55	16.43	16.30	16.18	16.06
13.0700	15.94	15.82	15.71	15.59	15.48
13.1200	15.37	15.26	15.16	15.06	14.96
13.1700	14.86	14.76	14.67	14.58	14.49
13.2200	14.40	14.32	14.23	14.16	14.08
13.2700	14.00	13.92	13.85	13.77	13.70
13.3200	13.62	13.55	13.48	13.41	13.34
13.3700	13.27	13.20	13.13	13.06	12.99
13.4200	12.92	12.85	12.78	12.72	12.65
13.4700	12.58	12.51	12.45	12.38	12.31
13.5200	12.24	12.18	12.11	12.05	11.98
13.5700	11.92	11.85	11.79	11.73	11.66
13.6200	11.60	11.54	11.48	11.42	11.36
13.6700	11.31	11.25	11.19	11.14	11.08
13.7200	11.03	10.98	10.92	10.87	10.82
13.7700	10.77	10.72	10.67	10.62	10.57
13.8200	10.52	10.47	10.42	10.37	10.32
13.8700	10.27	10.23	10.18	10.13	10.08
13.9200	10.03	9.98	9.94	9.89	9.84
13.9700	9.79	9.75	9.70	9.65	9.60
14.0200	9.56	9.51	9.46	9.42	9.38
14.0700	9.33	9.29	9.25	9.21	9.17
14.1200	9.13	9.09	9.05	9.02	8.99
14.1700	8.95	8.92	8.89	8.86	8.83

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0100 hrs
Time on left represents time for first value in each row.

Time hrs					
14.2200	8.80	8.77	8.75	8.72	8.70
14.2700	8.68	8.65	8.63	8.61	8.59
14.3200	8.57	8.55	8.53	8.51	8.49
14.3700	8.47	8.45	8.44	8.42	8.40
14.4200	8.38	8.36	8.34	8.33	8.31
14.4700	8.29	8.27	8.26	8.24	8.22
14.5200	8.21	8.19	8.17	8.16	8.14
14.5700	8.12	8.11	8.09	8.07	8.06
14.6200	8.04	8.02	8.00	7.99	7.97
14.6700	7.95	7.94	7.92	7.90	7.89
14.7200	7.87	7.86	7.84	7.82	7.81
14.7700	7.79	7.77	7.76	7.74	7.72
14.8200	7.71	7.69	7.67	7.66	7.64
14.8700	7.62	7.61	7.59	7.57	7.56
14.9200	7.54	7.53	7.51	7.49	7.48
14.9700	7.46	7.44	7.43	7.41	7.39
15.0200	7.38	7.36	7.34	7.33	7.31
15.0700	7.29	7.28	7.26	7.24	7.23
15.1200	7.21	7.20	7.18	7.16	7.15
15.1700	7.13	7.11	7.10	7.08	7.06
15.2200	7.05	7.03	7.01	7.00	6.98
15.2700	6.96	6.95	6.93	6.91	6.90
15.3200	6.88	6.86	6.85	6.83	6.82
15.3700	6.80	6.78	6.77	6.75	6.73
15.4200	6.72	6.70	6.68	6.67	6.65
15.4700	6.63	6.62	6.60	6.58	6.57
15.5200	6.55	6.53	6.52	6.50	6.49
15.5700	6.47	6.45	6.44	6.42	6.40
15.6200	6.39	6.37	6.35	6.33	6.32
15.6700	6.30	6.29	6.27	6.25	6.24
15.7200	6.22	6.20	6.19	6.17	6.15
15.7700	6.14	6.12	6.11	6.09	6.07
15.8200	6.06	6.04	6.02	6.00	5.99
15.8700	5.97	5.96	5.94	5.92	5.91
15.9200	5.89	5.87	5.86	5.84	5.82
15.9700	5.81	5.79	5.78	5.76	5.74
16.0200	5.73	5.71	5.69	5.68	5.66
16.0700	5.64	5.63	5.61	5.60	5.59
16.1200	5.57	5.56	5.55	5.53	5.52
16.1700	5.51	5.50	5.49	5.48	5.47
16.2200	5.46	5.45	5.44	5.43	5.42
16.2700	5.41	5.41	5.40	5.39	5.38
16.3200	5.38	5.37	5.36	5.36	5.35
16.3700	5.34	5.34	5.33	5.32	5.32
16.4200	5.31	5.30	5.30	5.29	5.28

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0100 hrs
Time hrs | Time on left represents time for first value in each row.

Time hrs					
16.4700	5.28	5.27	5.27	5.26	5.25
16.5200	5.25	5.24	5.24	5.23	5.22
16.5700	5.22	5.21	5.21	5.20	5.19
16.6200	5.19	5.18	5.18	5.17	5.16
16.6700	5.16	5.15	5.15	5.14	5.13
16.7200	5.13	5.12	5.12	5.11	5.11
16.7700	5.10	5.09	5.09	5.08	5.08
16.8200	5.07	5.06	5.06	5.05	5.05
16.8700	5.04	5.03	5.03	5.02	5.02
16.9200	5.01	5.01	5.00	4.99	4.99
16.9700	4.98	4.98	4.97	4.96	4.96
17.0200	4.95	4.95	4.94	4.93	4.93
17.0700	4.92	4.92	4.91	4.90	4.90
17.1200	4.89	4.89	4.88	4.88	4.87
17.1700	4.86	4.86	4.85	4.85	4.84
17.2200	4.83	4.83	4.82	4.82	4.81
17.2700	4.80	4.80	4.79	4.79	4.78
17.3200	4.77	4.77	4.76	4.76	4.75
17.3700	4.75	4.74	4.73	4.73	4.72
17.4200	4.72	4.71	4.70	4.70	4.69
17.4700	4.69	4.68	4.67	4.67	4.66
17.5200	4.66	4.65	4.65	4.64	4.63
17.5700	4.63	4.62	4.62	4.61	4.60
17.6200	4.60	4.59	4.59	4.58	4.57
17.6700	4.57	4.56	4.56	4.55	4.54
17.7200	4.54	4.53	4.53	4.52	4.52
17.7700	4.51	4.50	4.50	4.49	4.49
17.8200	4.48	4.47	4.47	4.46	4.46
17.8700	4.45	4.44	4.44	4.43	4.43
17.9200	4.42	4.41	4.41	4.40	4.40
17.9700	4.39	4.39	4.38	4.37	4.37
18.0200	4.36	4.36	4.35	4.34	4.34
18.0700	4.33	4.33	4.32	4.31	4.31
18.1200	4.30	4.30	4.29	4.28	4.28
18.1700	4.27	4.27	4.26	4.26	4.25
18.2200	4.24	4.24	4.23	4.23	4.22
18.2700	4.21	4.21	4.20	4.20	4.19
18.3200	4.18	4.18	4.17	4.17	4.16
18.3700	4.16	4.15	4.14	4.14	4.13
18.4200	4.13	4.12	4.11	4.11	4.10
18.4700	4.10	4.09	4.08	4.08	4.07
18.5200	4.07	4.06	4.05	4.05	4.04
18.5700	4.04	4.03	4.03	4.02	4.01
18.6200	4.01	4.00	4.00	3.99	3.98
18.6700	3.98	3.97	3.97	3.96	3.95

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0100 hrs
Time on left represents time for first value in each row.

Time hrs					
18.7200	3.95	3.94	3.94	3.93	3.92
18.7700	3.92	3.91	3.91	3.90	3.90
18.8200	3.89	3.88	3.88	3.87	3.86
18.8700	3.86	3.85	3.85	3.84	3.84
18.9200	3.83	3.82	3.82	3.81	3.81
18.9700	3.80	3.79	3.79	3.78	3.78
19.0200	3.77	3.76	3.76	3.75	3.75
19.0700	3.74	3.73	3.73	3.72	3.72
19.1200	3.71	3.71	3.70	3.69	3.69
19.1700	3.68	3.68	3.67	3.66	3.66
19.2200	3.65	3.65	3.64	3.63	3.63
19.2700	3.62	3.62	3.61	3.60	3.60
19.3200	3.59	3.59	3.58	3.58	3.57
19.3700	3.56	3.56	3.55	3.55	3.54
19.4200	3.53	3.53	3.52	3.52	3.51
19.4700	3.50	3.50	3.49	3.49	3.48
19.5200	3.47	3.47	3.46	3.46	3.45
19.5700	3.45	3.44	3.43	3.43	3.42
19.6200	3.42	3.41	3.40	3.40	3.39
19.6700	3.39	3.38	3.37	3.37	3.36
19.7200	3.36	3.35	3.34	3.34	3.33
19.7700	3.33	3.32	3.32	3.31	3.30
19.8200	3.30	3.29	3.29	3.28	3.27
19.8700	3.27	3.26	3.26	3.25	3.24
19.9200	3.24	3.23	3.23	3.22	3.21
19.9700	3.21	3.20	3.20	3.19	3.19
20.0200	3.18	3.17	3.17	3.16	3.16
20.0700	3.15	3.15	3.14	3.14	3.13
20.1200	3.13	3.12	3.12	3.11	3.11
20.1700	3.11	3.10	3.10	3.10	3.09
20.2200	3.09	3.09	3.08	3.08	3.08
20.2700	3.08	3.08	3.07	3.07	3.07
20.3200	3.07	3.07	3.06	3.06	3.06
20.3700	3.06	3.06	3.06	3.06	3.05
20.4200	3.05	3.05	3.05	3.05	3.05
20.4700	3.05	3.04	3.04	3.04	3.04
20.5200	3.04	3.04	3.04	3.04	3.04
20.5700	3.03	3.03	3.03	3.03	3.03
20.6200	3.03	3.03	3.03	3.02	3.02
20.6700	3.02	3.02	3.02	3.02	3.02
20.7200	3.02	3.01	3.01	3.01	3.01
20.7700	3.01	3.01	3.01	3.01	3.01
20.8200	3.00	3.00	3.00	3.00	3.00
20.8700	3.00	3.00	3.00	2.99	2.99
20.9200	2.99	2.99	2.99	2.99	2.99

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0100 hrs
Time on left represents time for first value in each row.

Time hrs					
20.9700	2.99	2.99	2.98	2.98	2.98
21.0200	2.98	2.98	2.98	2.98	2.98
21.0700	2.97	2.97	2.97	2.97	2.97
21.1200	2.97	2.97	2.97	2.97	2.96
21.1700	2.96	2.96	2.96	2.96	2.96
21.2200	2.96	2.96	2.95	2.95	2.95
21.2700	2.95	2.95	2.95	2.95	2.95
21.3200	2.94	2.94	2.94	2.94	2.94
21.3700	2.94	2.94	2.94	2.94	2.93
21.4200	2.93	2.93	2.93	2.93	2.93
21.4700	2.93	2.93	2.92	2.92	2.92
21.5200	2.92	2.92	2.92	2.92	2.92
21.5700	2.92	2.91	2.91	2.91	2.91
21.6200	2.91	2.91	2.91	2.91	2.90
21.6700	2.90	2.90	2.90	2.90	2.90
21.7200	2.90	2.90	2.90	2.89	2.89
21.7700	2.89	2.89	2.89	2.89	2.89
21.8200	2.89	2.88	2.88	2.88	2.88
21.8700	2.88	2.88	2.88	2.88	2.87
21.9200	2.87	2.87	2.87	2.87	2.87
21.9700	2.87	2.87	2.87	2.86	2.86
22.0200	2.86	2.86	2.86	2.86	2.86
22.0700	2.86	2.85	2.85	2.85	2.85
22.1200	2.85	2.85	2.85	2.85	2.85
22.1700	2.85	2.84	2.84	2.84	2.84
22.2200	2.84	2.84	2.84	2.83	2.83
22.2700	2.83	2.83	2.83	2.83	2.83
22.3200	2.83	2.83	2.82	2.82	2.82
22.3700	2.82	2.82	2.82	2.82	2.82
22.4200	2.82	2.81	2.81	2.81	2.81
22.4700	2.81	2.81	2.81	2.81	2.80
22.5200	2.80	2.80	2.80	2.80	2.80
22.5700	2.80	2.80	2.80	2.79	2.79
22.6200	2.79	2.79	2.79	2.79	2.79
22.6700	2.78	2.78	2.78	2.78	2.78
22.7200	2.78	2.78	2.78	2.78	2.78
22.7700	2.77	2.77	2.77	2.77	2.77
22.8200	2.77	2.77	2.77	2.76	2.76
22.8700	2.76	2.76	2.76	2.76	2.76
22.9200	2.76	2.75	2.75	2.75	2.75
22.9700	2.75	2.75	2.75	2.75	2.75
23.0200	2.74	2.74	2.74	2.74	2.74
23.0700	2.74	2.74	2.74	2.73	2.73
23.1200	2.73	2.73	2.73	2.73	2.73
23.1700	2.73	2.73	2.72	2.72	2.72

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0100 hrs
Time on left represents time for first value in each row.

Time hrs					
23.2200	2.72	2.72	2.72	2.72	2.72
23.2700	2.71	2.71	2.71	2.71	2.71
23.3200	2.71	2.71	2.71	2.71	2.70
23.3700	2.70	2.70	2.70	2.70	2.70
23.4200	2.70	2.70	2.69	2.69	2.69
23.4700	2.69	2.69	2.69	2.69	2.69
23.5200	2.68	2.68	2.68	2.68	2.68
23.5700	2.68	2.68	2.68	2.68	2.67
23.6200	2.67	2.67	2.67	2.67	2.67
23.6700	2.67	2.67	2.66	2.66	2.66
23.7200	2.66	2.66	2.66	2.66	2.66
23.7700	2.66	2.65	2.65	2.65	2.65
23.8200	2.65	2.65	2.65	2.65	2.64
23.8700	2.64	2.64	2.64	2.64	2.64
23.9200	2.64	2.64	2.64	2.63	2.63
23.9700	2.63	2.63	2.63	2.62	2.61
24.0200	2.60	2.58	2.55	2.51	2.46
24.0700	2.41	2.32	2.24	2.15	2.04
24.1200	1.92	1.81	1.69	1.57	1.44
24.1700	1.33	1.22	1.11	1.00	.91
24.2200	.82	.73	.66	.60	.53
24.2700	.49	.44	.39	.36	.32
24.3200	.29	.26	.24	.21	.19
24.3700	.17	.16	.14	.13	.12
24.4200	.10	.09	.08	.08	.07
24.4700	.06	.05	.05	.04	.04
24.5200	.04	.03	.03	.03	.02
24.5700	.02	.02	.02	.01	.01
24.6200	.01	.01	.01	.01	.01
24.6700	.01	.00	.00	.00	.00
24.7200	.00	.00	.00		

SUMMARY FOR HYDROGRAPH ADDITION
at Node: POND B IN

HYG Directory: C:\Documents and Settings\vmg.000\Desktop\Luz Torres\Pond-Final\

Upstream Link ID	Upstream Node ID	HYG file	HYG ID	HYG tag
SITE-B	SUBAREA B		SUBAREA B	100

INFLOWS TO: POND B IN

HYG file	HYG ID	HYG tag	Volume ac-ft	Peak Time hrs	Peak Flow cfs
	SUBAREA B	100	20.670	12.0200	271.03

TOTAL FLOW INTO: POND B IN

HYG file	HYG ID	HYG tag	Volume ac-ft	Peak Time hrs	Peak Flow cfs
	POND B IN	100	20.670	12.0200	271.03

TOTAL NODE INFLOW...
HYG file =
HYG ID = POND B IN
HYG Tag = 100

Peak Discharge =	271.03 cfs
Time to Peak =	12.0200 hrs
HYG Volume =	20.670 ac-ft

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0100 hrs
Time on left represents time for first value in each row.

Time hrs					
1.2600	.00	.00	.00	.00	.00
1.3100	.01	.01	.01	.01	.01
1.3600	.02	.02	.03	.03	.04
1.4100	.04	.05	.06	.06	.07
1.4600	.08	.09	.09	.10	.11
1.5100	.12	.13	.14	.15	.16
1.5600	.17	.17	.18	.19	.20
1.6100	.21	.22	.23	.24	.25
1.6600	.26	.27	.28	.29	.30
1.7100	.31	.32	.33	.34	.35
1.7600	.36	.36	.37	.38	.39
1.8100	.40	.41	.42	.43	.44
1.8600	.45	.46	.47	.48	.49
1.9100	.50	.51	.52	.52	.53
1.9600	.54	.55	.56	.57	.58
2.0100	.59	.60	.61	.62	.62
2.0600	.63	.64	.65	.66	.67
2.1100	.68	.69	.70	.71	.71
2.1600	.72	.73	.74	.75	.76
2.2100	.77	.78	.78	.79	.80
2.2600	.81	.82	.83	.84	.84
2.3100	.85	.86	.87	.88	.89
2.3600	.90	.90	.91	.92	.93
2.4100	.94	.95	.95	.96	.97
2.4600	.98	.99	.99	1.00	1.01
2.5100	1.02	1.03	1.04	1.04	1.05
2.5600	1.06	1.07	1.08	1.08	1.09
2.6100	1.10	1.11	1.12	1.12	1.13
2.6600	1.14	1.15	1.16	1.16	1.17
2.7100	1.18	1.19	1.20	1.20	1.21
2.7600	1.22	1.23	1.23	1.24	1.25

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0100 hrs
Time on left represents time for first value in each row.

Time hrs					
2.8100	1.26	1.27	1.27	1.28	1.29
2.8600	1.29	1.30	1.31	1.32	1.33
2.9100	1.33	1.34	1.35	1.36	1.36
2.9600	1.37	1.38	1.39	1.39	1.40
3.0100	1.41	1.42	1.42	1.43	1.44
3.0600	1.44	1.45	1.46	1.47	1.47
3.1100	1.48	1.49	1.50	1.50	1.51
3.1600	1.52	1.52	1.53	1.54	1.55
3.2100	1.55	1.56	1.57	1.57	1.58
3.2600	1.59	1.59	1.60	1.61	1.62
3.3100	1.62	1.63	1.64	1.64	1.65
3.3600	1.66	1.67	1.67	1.68	1.69
3.4100	1.69	1.70	1.71	1.71	1.72
3.4600	1.73	1.73	1.74	1.75	1.75
3.5100	1.76	1.77	1.77	1.78	1.79
3.5600	1.79	1.80	1.81	1.81	1.82
3.6100	1.83	1.83	1.84	1.85	1.85
3.6600	1.86	1.87	1.87	1.88	1.89
3.7100	1.89	1.90	1.91	1.91	1.92
3.7600	1.93	1.93	1.94	1.95	1.95
3.8100	1.96	1.96	1.97	1.98	1.98
3.8600	1.99	1.99	2.00	2.01	2.01
3.9100	2.02	2.03	2.03	2.04	2.05
3.9600	2.05	2.06	2.07	2.07	2.08
4.0100	2.08	2.09	2.10	2.10	2.11
4.0600	2.11	2.12	2.13	2.13	2.14
4.1100	2.14	2.15	2.16	2.16	2.17
4.1600	2.18	2.18	2.19	2.20	2.21
4.2100	2.21	2.22	2.23	2.23	2.24
4.2600	2.25	2.26	2.26	2.27	2.28
4.3100	2.29	2.29	2.30	2.31	2.32
4.3600	2.32	2.33	2.34	2.35	2.35
4.4100	2.36	2.37	2.38	2.38	2.39
4.4600	2.40	2.41	2.41	2.42	2.43
4.5100	2.44	2.44	2.45	2.46	2.47
4.5600	2.47	2.48	2.49	2.50	2.50
4.6100	2.51	2.52	2.53	2.53	2.54
4.6600	2.55	2.56	2.57	2.57	2.58
4.7100	2.59	2.60	2.60	2.61	2.62
4.7600	2.63	2.63	2.64	2.65	2.66
4.8100	2.66	2.67	2.68	2.69	2.69
4.8600	2.70	2.71	2.72	2.72	2.73
4.9100	2.74	2.75	2.75	2.76	2.77
4.9600	2.78	2.78	2.79	2.80	2.81
5.0100	2.81	2.82	2.83	2.84	2.84

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0100 hrs
Time on left represents time for first value in each row.

Time hrs					
5.0600	2.85	2.86	2.87	2.87	2.88
5.1100	2.89	2.90	2.90	2.91	2.92
5.1600	2.93	2.93	2.94	2.95	2.96
5.2100	2.96	2.97	2.98	2.99	2.99
5.2600	3.00	3.01	3.02	3.02	3.03
5.3100	3.04	3.05	3.05	3.06	3.07
5.3600	3.08	3.08	3.09	3.10	3.11
5.4100	3.11	3.12	3.13	3.14	3.14
5.4600	3.15	3.16	3.17	3.17	3.18
5.5100	3.19	3.20	3.20	3.21	3.22
5.5600	3.23	3.23	3.24	3.25	3.26
5.6100	3.26	3.27	3.28	3.29	3.29
5.6600	3.30	3.31	3.32	3.32	3.33
5.7100	3.34	3.35	3.35	3.36	3.37
5.7600	3.37	3.38	3.39	3.40	3.40
5.8100	3.41	3.42	3.43	3.43	3.44
5.8600	3.45	3.46	3.46	3.47	3.48
5.9100	3.49	3.49	3.50	3.51	3.52
5.9600	3.52	3.53	3.54	3.54	3.55
6.0100	3.56	3.57	3.57	3.58	3.59
6.0600	3.60	3.60	3.61	3.62	3.62
6.1100	3.63	3.64	3.65	3.65	3.66
6.1600	3.67	3.68	3.68	3.69	3.70
6.2100	3.71	3.71	3.72	3.73	3.73
6.2600	3.74	3.75	3.76	3.76	3.77
6.3100	3.78	3.79	3.79	3.80	3.81
6.3600	3.81	3.82	3.83	3.84	3.84
6.4100	3.85	3.86	3.87	3.87	3.88
6.4600	3.89	3.89	3.90	3.91	3.92
6.5100	3.92	3.93	3.94	3.94	3.95
6.5600	3.96	3.97	3.97	3.98	3.99
6.6100	4.00	4.00	4.01	4.02	4.02
6.6600	4.03	4.04	4.05	4.05	4.06
6.7100	4.07	4.07	4.08	4.09	4.10
6.7600	4.10	4.11	4.12	4.12	4.13
6.8100	4.14	4.15	4.15	4.16	4.17
6.8600	4.17	4.18	4.19	4.20	4.20
6.9100	4.21	4.22	4.22	4.23	4.24
6.9600	4.24	4.25	4.26	4.27	4.27
7.0100	4.28	4.29	4.29	4.30	4.31
7.0600	4.32	4.32	4.33	4.34	4.34
7.1100	4.35	4.36	4.37	4.37	4.38
7.1600	4.39	4.39	4.40	4.41	4.41
7.2100	4.42	4.43	4.44	4.44	4.45
7.2600	4.46	4.46	4.47	4.48	4.48

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0100 hrs
Time on left represents time for first value in each row.

Time hrs					
7.3100	4.49	4.50	4.51	4.51	4.52
7.3600	4.53	4.53	4.54	4.55	4.55
7.4100	4.56	4.57	4.58	4.58	4.59
7.4600	4.60	4.60	4.61	4.62	4.62
7.5100	4.63	4.64	4.65	4.65	4.66
7.5600	4.67	4.67	4.68	4.69	4.69
7.6100	4.70	4.71	4.71	4.72	4.73
7.6600	4.74	4.74	4.75	4.76	4.76
7.7100	4.77	4.78	4.78	4.79	4.80
7.7600	4.80	4.81	4.82	4.83	4.83
7.8100	4.84	4.85	4.85	4.86	4.87
7.8600	4.87	4.88	4.89	4.89	4.90
7.9100	4.91	4.91	4.92	4.93	4.94
7.9600	4.94	4.95	4.96	4.96	4.97
8.0100	4.98	4.98	4.99	5.00	5.01
8.0600	5.02	5.02	5.03	5.04	5.05
8.1100	5.07	5.08	5.09	5.10	5.12
8.1600	5.13	5.15	5.16	5.18	5.20
8.2100	5.22	5.23	5.25	5.27	5.29
8.2600	5.32	5.34	5.36	5.38	5.40
8.3100	5.43	5.45	5.47	5.50	5.52
8.3600	5.55	5.57	5.59	5.62	5.64
8.4100	5.67	5.69	5.72	5.74	5.77
8.4600	5.79	5.82	5.84	5.87	5.90
8.5100	5.92	5.95	5.97	6.00	6.02
8.5600	6.05	6.08	6.10	6.13	6.15
8.6100	6.18	6.21	6.23	6.26	6.28
8.6600	6.31	6.34	6.36	6.39	6.42
8.7100	6.44	6.47	6.49	6.52	6.55
8.7600	6.57	6.60	6.63	6.65	6.68
8.8100	6.71	6.73	6.76	6.79	6.81
8.8600	6.84	6.86	6.89	6.92	6.94
8.9100	6.97	7.00	7.03	7.05	7.08
8.9600	7.10	7.13	7.16	7.18	7.21
9.0100	7.24	7.26	7.29	7.32	7.34
9.0600	7.37	7.39	7.41	7.44	7.46
9.1100	7.48	7.50	7.52	7.54	7.56
9.1600	7.58	7.59	7.61	7.62	7.63
9.2100	7.64	7.66	7.67	7.68	7.69
9.2600	7.69	7.70	7.71	7.72	7.72
9.3100	7.73	7.74	7.74	7.75	7.75
9.3600	7.76	7.76	7.77	7.77	7.77
9.4100	7.78	7.78	7.78	7.79	7.79
9.4600	7.79	7.80	7.80	7.80	7.81
9.5100	7.81	7.82	7.82	7.82	7.83

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0100 hrs
Time on left represents time for first value in each row.

Time hrs					
9.5600	7.84	7.84	7.85	7.86	7.87
9.6100	7.88	7.90	7.91	7.92	7.94
9.6600	7.96	7.98	8.00	8.03	8.05
9.7100	8.08	8.11	8.14	8.17	8.20
9.7600	8.23	8.26	8.30	8.33	8.37
9.8100	8.40	8.44	8.48	8.52	8.55
9.8600	8.59	8.63	8.67	8.71	8.75
9.9100	8.79	8.83	8.87	8.91	8.95
9.9600	9.00	9.04	9.08	9.12	9.16
10.0100	9.20	9.25	9.29	9.33	9.38
10.0600	9.42	9.46	9.51	9.55	9.60
10.1100	9.65	9.70	9.75	9.79	9.84
10.1600	9.89	9.95	10.00	10.05	10.11
10.2100	10.16	10.22	10.27	10.33	10.39
10.2600	10.45	10.50	10.56	10.62	10.68
10.3100	10.74	10.80	10.86	10.93	10.99
10.3600	11.05	11.11	11.17	11.23	11.30
10.4100	11.36	11.42	11.48	11.55	11.61
10.4600	11.67	11.73	11.80	11.86	11.92
10.5100	11.99	12.05	12.12	12.18	12.25
10.5600	12.32	12.38	12.45	12.53	12.60
10.6100	12.67	12.75	12.82	12.90	12.98
10.6600	13.06	13.14	13.22	13.31	13.40
10.7100	13.49	13.58	13.67	13.76	13.86
10.7600	13.95	14.05	14.14	14.24	14.34
10.8100	14.44	14.55	14.65	14.75	14.85
10.8600	14.95	15.05	15.16	15.26	15.37
10.9100	15.47	15.58	15.68	15.79	15.89
10.9600	16.00	16.10	16.21	16.31	16.42
11.0100	16.53	16.64	16.75	16.87	16.98
11.0600	17.10	17.22	17.35	17.48	17.62
11.1100	17.76	17.90	18.06	18.21	18.36
11.1600	18.54	18.71	18.88	19.07	19.26
11.2100	19.46	19.66	19.87	20.07	20.29
11.2600	20.50	20.72	20.94	21.17	21.41
11.3100	21.64	21.87	22.11	22.35	22.59
11.3600	22.83	23.07	23.31	23.56	23.80
11.4100	24.05	24.30	24.55	24.80	25.05
11.4600	25.30	25.54	25.81	26.08	26.35
11.5100	26.72	27.14	27.57	28.13	28.87
11.5600	29.60	30.44	31.65	32.87	34.08
11.6100	35.92	37.76	39.59	41.95	44.44
11.6600	46.94	49.94	53.30	56.67	60.34
11.7100	64.56	68.77	73.08	77.88	82.68
11.7600	87.47	92.97	98.52	104.07	110.33

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0100 hrs
Time on left represents time for first value in each row.

Time hrs					
11.8100	116.87	123.41	130.46	137.99	145.52
11.8600	153.54	162.71	171.88	181.13	191.26
11.9100	201.38	211.51	220.73	229.81	238.89
11.9600	246.20	252.58	258.96	263.73	266.49
12.0100	269.24	271.03	269.61	268.20	266.70
12.0600	260.99	255.28	249.57	241.11	231.97
12.1100	222.84	212.93	202.49	192.05	181.74
12.1600	171.67	161.60	151.74	142.91	134.08
12.2100	125.25	118.18	111.20	104.21	98.60
12.2600	93.48	88.36	83.93	80.12	76.31
12.3100	72.77	69.83	66.90	64.02	61.73
12.3600	59.44	57.15	55.27	53.45	51.62
12.4100	50.02	48.52	47.02	45.64	44.41
12.4600	43.17	41.97	40.90	39.83	38.76
12.5100	37.82	36.88	35.93	35.09	34.27
12.5600	33.45	32.69	31.95	31.22	30.53
12.6100	29.89	29.24	28.62	28.09	27.56
12.6600	27.02	26.58	26.14	25.71	25.32
12.7100	24.95	24.59	24.26	23.96	23.67
12.7600	23.39	23.16	22.92	22.68	22.48
12.8100	22.27	22.06	21.87	21.69	21.50
12.8600	21.32	21.15	20.98	20.81	20.64
12.9100	20.48	20.32	20.16	20.00	19.85
12.9600	19.70	19.55	19.40	19.25	19.10
13.0100	18.95	18.80	18.66	18.52	18.38
13.0600	18.24	18.11	17.97	17.84	17.71
13.1100	17.58	17.46	17.34	17.22	17.10
13.1600	16.99	16.88	16.77	16.67	16.56
13.2100	16.46	16.36	16.27	16.17	16.08
13.2600	15.99	15.90	15.81	15.73	15.64
13.3100	15.56	15.47	15.39	15.31	15.23
13.3600	15.15	15.07	14.99	14.91	14.83
13.4100	14.75	14.68	14.60	14.52	14.44
13.4600	14.37	14.29	14.21	14.14	14.06
13.5100	13.98	13.91	13.83	13.76	13.68
13.5600	13.61	13.54	13.46	13.39	13.32
13.6100	13.25	13.18	13.11	13.04	12.97
13.6600	12.91	12.84	12.78	12.71	12.65
13.7100	12.59	12.53	12.47	12.41	12.35
13.7600	12.29	12.23	12.17	12.12	12.06
13.8100	12.00	11.95	11.89	11.83	11.78
13.8600	11.72	11.67	11.61	11.56	11.50
13.9100	11.45	11.39	11.34	11.29	11.23
13.9600	11.18	11.12	11.07	11.02	10.96
14.0100	10.91	10.86	10.80	10.75	10.70

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0100 hrs
Time on left represents time for first value in each row.

Time hrs					
14.0600	10.65	10.60	10.55	10.51	10.46
14.1100	10.41	10.37	10.33	10.28	10.24
14.1600	10.21	10.17	10.13	10.10	10.06
14.2100	10.03	10.00	9.97	9.94	9.91
14.2600	9.88	9.85	9.83	9.80	9.78
14.3100	9.76	9.73	9.71	9.69	9.67
14.3600	9.64	9.62	9.60	9.58	9.56
14.4100	9.54	9.52	9.50	9.48	9.46
14.4600	9.44	9.42	9.40	9.38	9.36
14.5100	9.34	9.32	9.30	9.28	9.26
14.5600	9.24	9.23	9.21	9.19	9.17
14.6100	9.15	9.13	9.11	9.09	9.07
14.6600	9.05	9.03	9.02	9.00	8.98
14.7100	8.96	8.94	8.92	8.90	8.89
14.7600	8.87	8.85	8.83	8.81	8.79
14.8100	8.77	8.75	8.73	8.72	8.70
14.8600	8.68	8.66	8.64	8.62	8.60
14.9100	8.58	8.57	8.55	8.53	8.51
14.9600	8.49	8.47	8.45	8.44	8.42
15.0100	8.40	8.38	8.36	8.34	8.32
15.0600	8.30	8.28	8.27	8.25	8.23
15.1100	8.21	8.19	8.17	8.15	8.14
15.1600	8.12	8.10	8.08	8.06	8.04
15.2100	8.02	8.00	7.98	7.97	7.95
15.2600	7.93	7.91	7.89	7.87	7.85
15.3100	7.83	7.81	7.80	7.78	7.76
15.3600	7.74	7.72	7.70	7.68	7.67
15.4100	7.65	7.63	7.61	7.59	7.57
15.4600	7.55	7.53	7.51	7.49	7.48
15.5100	7.46	7.44	7.42	7.40	7.38
15.5600	7.36	7.35	7.33	7.31	7.29
15.6100	7.27	7.25	7.23	7.21	7.19
15.6600	7.18	7.16	7.14	7.12	7.10
15.7100	7.08	7.06	7.04	7.03	7.01
15.7600	6.99	6.97	6.95	6.93	6.91
15.8100	6.90	6.88	6.86	6.84	6.82
15.8600	6.80	6.78	6.76	6.74	6.73
15.9100	6.71	6.69	6.67	6.65	6.63
15.9600	6.61	6.60	6.58	6.56	6.54
16.0100	6.52	6.50	6.48	6.46	6.45
16.0600	6.43	6.41	6.39	6.38	6.36
16.1100	6.34	6.33	6.31	6.30	6.28
16.1600	6.27	6.26	6.25	6.23	6.22
16.2100	6.21	6.20	6.19	6.18	6.17
16.2600	6.16	6.15	6.14	6.13	6.12

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0100 hrs
Time on left represents time for first value in each row.

Time hrs					
16.3100	6.11	6.11	6.10	6.09	6.08
16.3600	6.07	6.07	6.06	6.05	6.04
16.4100	6.04	6.03	6.02	6.02	6.01
16.4600	6.00	5.99	5.99	5.98	5.97
16.5100	5.97	5.96	5.95	5.95	5.94
16.5600	5.93	5.93	5.92	5.91	5.91
16.6100	5.90	5.89	5.88	5.88	5.87
16.6600	5.86	5.86	5.85	5.84	5.84
16.7100	5.83	5.82	5.82	5.81	5.80
16.7600	5.80	5.79	5.78	5.78	5.77
16.8100	5.76	5.76	5.75	5.74	5.74
16.8600	5.73	5.72	5.72	5.71	5.70
16.9100	5.70	5.69	5.68	5.68	5.67
16.9600	5.66	5.66	5.65	5.64	5.64
17.0100	5.63	5.62	5.62	5.61	5.60
17.0600	5.60	5.59	5.58	5.58	5.57
17.1100	5.56	5.56	5.55	5.54	5.54
17.1600	5.53	5.52	5.52	5.51	5.50
17.2100	5.50	5.49	5.48	5.48	5.47
17.2600	5.46	5.45	5.45	5.44	5.43
17.3100	5.43	5.42	5.41	5.41	5.40
17.3600	5.40	5.39	5.38	5.38	5.37
17.4100	5.36	5.35	5.35	5.34	5.33
17.4600	5.33	5.32	5.31	5.31	5.30
17.5100	5.29	5.29	5.28	5.27	5.27
17.5600	5.26	5.25	5.25	5.24	5.23
17.6100	5.23	5.22	5.21	5.21	5.20
17.6600	5.19	5.19	5.18	5.17	5.17
17.7100	5.16	5.15	5.15	5.14	5.13
17.7600	5.13	5.12	5.11	5.11	5.10
17.8100	5.09	5.09	5.08	5.07	5.07
17.8600	5.06	5.05	5.05	5.04	5.03
17.9100	5.03	5.02	5.01	5.01	5.00
17.9600	4.99	4.99	4.98	4.97	4.97
18.0100	4.96	4.95	4.95	4.94	4.93
18.0600	4.92	4.92	4.91	4.90	4.90
18.1100	4.89	4.88	4.88	4.87	4.87
18.1600	4.86	4.85	4.85	4.84	4.83
18.2100	4.82	4.82	4.81	4.80	4.80
18.2600	4.79	4.78	4.78	4.77	4.76
18.3100	4.76	4.75	4.74	4.74	4.73
18.3600	4.72	4.72	4.71	4.70	4.70
18.4100	4.69	4.68	4.68	4.67	4.66
18.4600	4.66	4.65	4.64	4.64	4.63
18.5100	4.62	4.62	4.61	4.60	4.60

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0100 hrs
Time on left represents time for first value in each row.

Time hrs					
18.5600	4.59	4.58	4.58	4.57	4.56
18.6100	4.56	4.55	4.54	4.54	4.53
18.6600	4.52	4.52	4.51	4.50	4.50
18.7100	4.49	4.48	4.48	4.47	4.46
18.7600	4.46	4.45	4.44	4.44	4.43
18.8100	4.42	4.42	4.41	4.40	4.39
18.8600	4.39	4.38	4.37	4.37	4.36
18.9100	4.35	4.35	4.34	4.33	4.33
18.9600	4.32	4.32	4.31	4.30	4.29
19.0100	4.29	4.28	4.27	4.27	4.26
19.0600	4.25	4.25	4.24	4.23	4.23
19.1100	4.22	4.21	4.21	4.20	4.19
19.1600	4.19	4.18	4.17	4.17	4.16
19.2100	4.15	4.15	4.14	4.13	4.13
19.2600	4.12	4.11	4.11	4.10	4.09
19.3100	4.09	4.08	4.07	4.07	4.06
19.3600	4.05	4.05	4.04	4.03	4.03
19.4100	4.02	4.01	4.01	4.00	3.99
19.4600	3.99	3.98	3.97	3.97	3.96
19.5100	3.95	3.95	3.94	3.93	3.93
19.5600	3.92	3.91	3.91	3.90	3.89
19.6100	3.89	3.88	3.87	3.86	3.86
19.6600	3.85	3.84	3.84	3.83	3.82
19.7100	3.82	3.81	3.80	3.80	3.79
19.7600	3.78	3.78	3.77	3.76	3.76
19.8100	3.75	3.74	3.74	3.73	3.72
19.8600	3.72	3.71	3.70	3.70	3.69
19.9100	3.68	3.68	3.67	3.66	3.66
19.9600	3.65	3.64	3.64	3.63	3.62
20.0100	3.62	3.61	3.60	3.60	3.59
20.0600	3.58	3.58	3.57	3.57	3.56
20.1100	3.55	3.55	3.54	3.54	3.54
20.1600	3.53	3.53	3.52	3.52	3.52
20.2100	3.51	3.51	3.51	3.50	3.50
20.2600	3.50	3.49	3.49	3.49	3.49
20.3100	3.49	3.48	3.48	3.48	3.48
20.3600	3.48	3.47	3.47	3.47	3.47
20.4100	3.47	3.47	3.46	3.46	3.46
20.4600	3.46	3.46	3.46	3.46	3.45
20.5100	3.45	3.45	3.45	3.45	3.45
20.5600	3.45	3.44	3.44	3.44	3.44
20.6100	3.44	3.44	3.44	3.43	3.43
20.6600	3.43	3.43	3.43	3.43	3.43
20.7100	3.42	3.42	3.42	3.42	3.42
20.7600	3.42	3.42	3.42	3.41	3.41

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0100 hrs
Time on left represents time for first value in each row.

Time hrs					
20.8100	3.41	3.41	3.41	3.41	3.41
20.8600	3.40	3.40	3.40	3.40	3.40
20.9100	3.40	3.40	3.40	3.39	3.39
20.9600	3.39	3.39	3.39	3.39	3.39
21.0100	3.39	3.38	3.38	3.38	3.38
21.0600	3.38	3.38	3.37	3.37	3.37
21.1100	3.37	3.37	3.37	3.37	3.37
21.1600	3.37	3.36	3.36	3.36	3.36
21.2100	3.36	3.36	3.36	3.35	3.35
21.2600	3.35	3.35	3.35	3.35	3.35
21.3100	3.34	3.34	3.34	3.34	3.34
21.3600	3.34	3.34	3.34	3.33	3.33
21.4100	3.33	3.33	3.33	3.33	3.33
21.4600	3.32	3.32	3.32	3.32	3.32
21.5100	3.32	3.32	3.32	3.31	3.31
21.5600	3.31	3.31	3.31	3.31	3.31
21.6100	3.30	3.30	3.30	3.30	3.30
21.6600	3.30	3.30	3.29	3.29	3.29
21.7100	3.29	3.29	3.29	3.29	3.29
21.7600	3.28	3.28	3.28	3.28	3.28
21.8100	3.28	3.28	3.27	3.27	3.27
21.8600	3.27	3.27	3.27	3.27	3.27
21.9100	3.26	3.26	3.26	3.26	3.26
21.9600	3.26	3.26	3.26	3.25	3.25
22.0100	3.25	3.25	3.25	3.25	3.25
22.0600	3.24	3.24	3.24	3.24	3.24
22.1100	3.24	3.24	3.23	3.23	3.23
22.1600	3.23	3.23	3.23	3.23	3.23
22.2100	3.22	3.22	3.22	3.22	3.22
22.2600	3.22	3.22	3.21	3.21	3.21
22.3100	3.21	3.21	3.21	3.21	3.21
22.3600	3.20	3.20	3.20	3.20	3.20
22.4100	3.20	3.20	3.19	3.19	3.19
22.4600	3.19	3.19	3.19	3.19	3.18
22.5100	3.18	3.18	3.18	3.18	3.18
22.5600	3.18	3.18	3.17	3.17	3.17
22.6100	3.17	3.17	3.17	3.17	3.16
22.6600	3.16	3.16	3.16	3.16	3.16
22.7100	3.16	3.16	3.15	3.15	3.15
22.7600	3.15	3.15	3.15	3.15	3.15
22.8100	3.14	3.14	3.14	3.14	3.14
22.8600	3.14	3.13	3.13	3.13	3.13
22.9100	3.13	3.13	3.13	3.13	3.13
22.9600	3.12	3.12	3.12	3.12	3.12
23.0100	3.12	3.12	3.11	3.11	3.11

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0100 hrs
Time on left represents time for first value in each row.

Time hrs					
23.0600	3.11	3.11	3.11	3.11	3.10
23.1100	3.10	3.10	3.10	3.10	3.10
23.1600	3.10	3.10	3.09	3.09	3.09
23.2100	3.09	3.09	3.09	3.09	3.08
23.2600	3.08	3.08	3.08	3.08	3.08
23.3100	3.08	3.07	3.07	3.07	3.07
23.3600	3.07	3.07	3.07	3.07	3.06
23.4100	3.06	3.06	3.06	3.06	3.06
23.4600	3.06	3.05	3.05	3.05	3.05
23.5100	3.05	3.05	3.05	3.05	3.04
23.5600	3.04	3.04	3.04	3.04	3.04
23.6100	3.04	3.03	3.03	3.03	3.03
23.6600	3.03	3.03	3.03	3.02	3.02
23.7100	3.02	3.02	3.02	3.02	3.02
23.7600	3.02	3.02	3.01	3.01	3.01
23.8100	3.01	3.01	3.01	3.01	3.00
23.8600	3.00	3.00	3.00	3.00	3.00
23.9100	3.00	2.99	2.99	2.99	2.99
23.9600	2.99	2.99	2.99	2.98	2.98
24.0100	2.97	2.95	2.93	2.90	2.85
24.0600	2.80	2.73	2.64	2.54	2.44
24.1100	2.31	2.18	2.05	1.92	1.78
24.1600	1.64	1.51	1.38	1.26	1.14
24.2100	1.03	.93	.83	.75	.68
24.2600	.60	.55	.50	.45	.41
24.3100	.37	.33	.30	.27	.24
24.3600	.22	.20	.18	.16	.15
24.4100	.13	.12	.11	.10	.09
24.4600	.08	.07	.06	.06	.05
24.5100	.05	.04	.04	.03	.03
24.5600	.03	.02	.02	.02	.02
24.6100	.01	.01	.01	.01	.01
24.6600	.01	.01	.00	.00	.00
24.7100	.00	.00	.00	.00	

3.08, 3.09, 3.10, 3.11, 3.12,
3.13, 3.14, 3.15, 3.16, 3.17,
3.18, 3.19, 3.20, 3.21, 3.22,
3.23, 3.24, 3.25, 3.26, 3.27,
3.28, 3.29, 3.30, 3.31, 3.32,
3.33, 3.34, 3.35, 3.36, 3.37,
3.38, 3.39, 3.40, 3.41, 3.42,
3.43, 3.44

----- O -----
Outlet 1... 5.01, 5.04, 5.10

----- P -----
POND B... 4.01, 6.01
POND B IN 1... 6.03, 6.14,
6.25, 6.37, 6.49, 6.61, 6.73

----- S -----
San Juan... 2.01, 2.03, 3.45, 3.46,
3.47, 3.48, 3.49, 3.50, 3.51,
3.52, 3.53, 3.54, 3.55, 3.56,
3.57, 3.58, 3.59, 3.60, 3.61,
3.62, 3.63, 3.64, 3.65, 3.66,
3.67, 3.68, 3.69, 3.70, 3.71,
3.72, 3.73, 3.74, 3.75, 3.76,
3.77, 3.78, 3.79

----- W -----
Watershed... 1.01

APPENDIX E
HEC RAS RESULTS- EXISTING CONDITIONS

HEC-RAS Version 3.1.3 May 2005
U.S. Army Corp of Engineers
Hydrologic Engineering Center
609 Second Street
Davis, California

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

PROJECT DATA
Project Title: Buena Vista Creek-1
Project File : creek1.prj
Run Date and Time: 9/17/2008 3:28:59 PM

Project in English units

PLAN DATA

Plan Title: Existing Condition
Plan File : C:\Acad386\Work\projects\oso blanco-ciudad de las ciencias (07181)\HEC-RAS\creek1.p01

Geometry Title: existing condition
Geometry File : C:\Acad386\Work\projects\oso blanco-ciudad de las ciencias (07181)\HEC-RAS\creek1.g01

Flow Title : existing condition
Flow File : C:\Acad386\Work\projects\oso blanco-ciudad de las ciencias (07181)\HEC-RAS\creek1.f01

Plan Summary Information:
Number of: Cross Sections = 17 Multiple Openings = 0
Culverts = 2 Inline Structures = 0
Bridges = 4 Lateral Structures = 0

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

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

FLOW DATA

Flow Title: existing condition
Flow File : C:\Acad386\Work\projects\oso blanco-ciudad de las ciencias (07181)\HEC-RAS\creek1.f01

Flow Data (cfs)

River	Reach	RS	100y	50y	25y	10y	5y	2y	1y
buena vista	one	18	21.94998	19.34341	16.83029	13.70943	11.41777	8.570481	6.531725

buena vista	one	17	22.07374	19.45188	16.92375	13.78419	11.47866	8.614095	6.562877
buena vista	one	15	22.3408	19.68693	17.12794	13.95015	11.61658	8.716896	6.64104
buena vista	one	14	22.48325	19.81182	17.23555	14.03624	11.68681	8.767589	6.677289
buena vista	one	12	22.62655	19.93841	17.34572	14.1263	11.76215	8.824229	6.720902
buena vista	one	11	26.14672	22.94147	19.84637	15.99627	13.16483	9.645792	7.133242
buena vista	one	10	33.12421	29.08634	25.18724	20.33801	16.77167	12.33704	9.166801
buena vista	one	8	66.8015	58.76258	51.00545	41.36589	34.28278	25.48092	19.18623

Boundary Conditions

River	Reach	Profile	Upstream	Downstream
buena vista	one	100y	Critical	Normal S = 0.0066
buena vista	one	50y	Critical	Normal S = 0.0066
buena vista	one	25y	Critical	Normal S = 0.0066
buena vista	one	10y	Critical	Normal S = 0.0066
buena vista	one	5y	Critical	Normal S = 0.0066
buena vista	one	2y	Critical	Normal S = 0.0066
buena vista	one	1y	Critical	Normal S = 0.0066

GEOMETRY DATA

Geometry Title: existing condition
Geometry File : C:\Acad386\Work\projects\oso blanco-ciudad de las ciencias (07181)\HEC-RAS\creek1.g01

CROSS SECTION

RIVER: buena vista
REACH: one RS: 18

INPUT
Description: Seccion # 1 en la Agrimensura
Station Elevation Data num= 23

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	30.64	15.23	30.36	16.56	30.21	24.79	29.99	33.36	29.87
38.58	27.42	42.52	24.9	46.13	22.65	47.54	21.82	49.38	19.41
50.84	18.98	54.29	18.71	57.27	18.87	59.12	19.14	60.32	21
62.27	22.36	64.45	24.03	66.85	24.48	70.39	24.61	78.11	25.15
96.75	26.11	108.17	26.84	117.18	27.91				

Manning's n Values num= 4

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.015	16.56	.013	33.36	.035	66.85	.013

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
42.52	66.85	182.78	138.49	112.63	.1	.3

CROSS SECTION OUTPUT Profile #100y

E.G. Elev (ft)	19.72	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.27	Wt. n-Val.		0.035	
W.S. Elev (ft)	19.45	Reach Len. (ft)	182.78	138.49	112.63
Crit W.S. (ft)	19.45	Flow Area (sq ft)		5.27	
E.G. Slope (ft/ft)	0.023396	Area (sq ft)		5.27	
Q Total (cfs)	21.95	Flow (cfs)		21.95	
Top Width (ft)	9.97	Top Width (ft)		9.97	
Vel Total (ft/s)	4.17	Avg. Vel. (ft/s)		4.17	
Max Chl Dpth (ft)	0.74	Hydr. Depth (ft)		0.53	

Conv. Total (cfs)	143.5	Conv. (cfs)		143.5	
Length Wtd. (ft)	138.49	Wetted Per. (ft)		10.25	
Min Ch El (ft)	18.71	Shear (lb/sq ft)		0.75	
Alpha	1.00	Stream Power (lb/ft s)		3.13	
Frctn Loss (ft)	0.93	Cum Volume (acre-ft)	0.01	0.31	0.02
C & E Loss (ft)	0.06	Cum SA (acres)	0.03	0.29	0.07

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

CROSS SECTION OUTPUT Profile #50y

E.G. Elev (ft)	19.65	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.25	Wt. n-Val.		0.035	
W.S. Elev (ft)	19.40	Reach Len. (ft)	182.78	138.49	112.63
Crit W.S. (ft)	19.40	Flow Area (sq ft)		4.83	
E.G. Slope (ft/ft)	0.023862	Area (sq ft)		4.83	
Q Total (cfs)	19.34	Flow (cfs)		19.34	
Top Width (ft)	9.89	Top Width (ft)		9.89	
Vel Total (ft/s)	4.00	Avg. Vel. (ft/s)		4.00	
Max Chl Dpth (ft)	0.69	Hydr. Depth (ft)		0.49	
Conv. Total (cfs)	125.2	Conv. (cfs)		125.2	
Length Wtd. (ft)	138.49	Wetted Per. (ft)		10.13	
Min Ch El (ft)	18.71	Shear (lb/sq ft)		0.71	
Alpha	1.00	Stream Power (lb/ft s)		2.84	
Frctn Loss (ft)	1.00	Cum Volume (acre-ft)	0.01	0.25	0.01
C & E Loss (ft)	0.05	Cum SA (acres)	0.03	0.25	0.06

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

CROSS SECTION OUTPUT Profile #25y

E.G. Elev (ft)	19.59	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.23	Wt. n-Val.		0.035	
W.S. Elev (ft)	19.36	Reach Len. (ft)	182.78	138.49	112.63
Crit W.S. (ft)	19.36	Flow Area (sq ft)		4.39	
E.G. Slope (ft/ft)	0.024219	Area (sq ft)		4.39	
Q Total (cfs)	16.83	Flow (cfs)		16.83	
Top Width (ft)	9.71	Top Width (ft)		9.71	
Vel Total (ft/s)	3.84	Avg. Vel. (ft/s)		3.84	
Max Chl Dpth (ft)	0.65	Hydr. Depth (ft)		0.45	
Conv. Total (cfs)	108.1	Conv. (cfs)		108.1	
Length Wtd. (ft)	138.49	Wetted Per. (ft)		9.92	
Min Ch El (ft)	18.71	Shear (lb/sq ft)		0.67	
Alpha	1.00	Stream Power (lb/ft s)		2.57	
Frctn Loss (ft)	1.08	Cum Volume (acre-ft)	0.00	0.25	0.00
C & E Loss (ft)	0.04	Cum SA (acres)	0.00	0.26	0.01

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

CROSS SECTION OUTPUT Profile #10y

E.G. Elev (ft)	19.50	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.20	Wt. n-Val.		0.035	
W.S. Elev (ft)	19.30	Reach Len. (ft)	182.78	138.49	112.63
Crit W.S. (ft)	19.30	Flow Area (sq ft)		3.79	
E.G. Slope (ft/ft)	0.025162	Area (sq ft)		3.79	
Q Total (cfs)	13.71	Flow (cfs)		13.71	
Top Width (ft)	9.46	Top Width (ft)		9.46	
Vel Total (ft/s)	3.62	Avg. Vel. (ft/s)		3.62	
Max Chl Dpth (ft)	0.59	Hydr. Depth (ft)		0.40	
Conv. Total (cfs)	86.4	Conv. (cfs)		86.4	
Length Wtd. (ft)	138.49	Wetted Per. (ft)		9.62	
Min Ch El (ft)	18.71	Shear (lb/sq ft)		0.62	
Alpha	1.00	Stream Power (lb/ft s)		2.24	
Frctn Loss (ft)	1.22	Cum Volume (acre-ft)	0.00	0.21	0.00
C & E Loss (ft)	0.04	Cum SA (acres)	0.00	0.25	0.00

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

CROSS SECTION OUTPUT Profile #5y

E.G. Elev (ft)	19.43	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.18	Wt. n-Val.		0.035	
W.S. Elev (ft)	19.25	Reach Len. (ft)	182.78	138.49	112.63
Crit W.S. (ft)	19.25	Flow Area (sq ft)		3.32	
E.G. Slope (ft/ft)	0.026163	Area (sq ft)		3.32	
Q Total (cfs)	11.42	Flow (cfs)		11.42	
Top Width (ft)	9.26	Top Width (ft)		9.26	
Vel Total (ft/s)	3.44	Avg. Vel. (ft/s)		3.44	
Max Chl Dpth (ft)	0.54	Hydr. Depth (ft)		0.36	
Conv. Total (cfs)	70.6	Conv. (cfs)		70.6	
Length Wtd. (ft)	138.49	Wetted Per. (ft)		9.39	
Min Ch El (ft)	18.71	Shear (lb/sq ft)		0.58	
Alpha	1.00	Stream Power (lb/ft s)		1.99	
Frctn Loss (ft)		Cum Volume (acre-ft)	0.00	0.18	
C & E Loss (ft)		Cum SA (acres)	0.00	0.25	

CROSS SECTION OUTPUT Profile #2y

E.G. Elev (ft)	19.34	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.12	Wt. n-Val.		0.035	
W.S. Elev (ft)	19.22	Reach Len. (ft)	182.78	138.49	112.63
Crit W.S. (ft)	19.18	Flow Area (sq ft)		3.08	

E.G. Slope (ft/ft)	0.018595	Area (sq ft)		3.08
Q Total (cfs)	8.57	Flow (cfs)		8.57
Top Width (ft)	9.15	Top Width (ft)		9.15
Vel Total (ft/s)	2.78	Avg. Vel. (ft/s)		2.78
Max Chl Dpth (ft)	0.51	Hydr. Depth (ft)		0.34
Conv. Total (cfs)	62.9	Conv. (cfs)		62.9
Length Wtd. (ft)	138.49	Wetted Per. (ft)		9.26
Min Ch El (ft)	18.71	Shear (lb/sq ft)		0.39
Alpha	1.00	Stream Power (lb/ft s)		1.07
Frctn Loss (ft)	1.45	Cum Volume (acre-ft)	0.00	0.15
C & E Loss (ft)	0.01	Cum SA (acres)	0.00	0.24

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 #1y

E.G. Elev (ft)	19.28	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.08	Wt. n-Val.		0.035	
W.S. Elev (ft)	19.20	Reach Len. (ft)	182.78	138.49	112.63
Crit W.S. (ft)	19.13	Flow Area (sq ft)		2.88	
E.G. Slope (ft/ft)	0.013348	Area (sq ft)		2.88	
Q Total (cfs)	6.53	Flow (cfs)		6.53	
Top Width (ft)	9.06	Top Width (ft)		9.06	
Vel Total (ft/s)	2.27	Avg. Vel. (ft/s)		2.27	
Max Chl Dpth (ft)	0.49	Hydr. Depth (ft)		0.32	
Conv. Total (cfs)	56.5	Conv. (cfs)		56.5	
Length Wtd. (ft)	138.49	Wetted Per. (ft)		9.16	
Min Ch El (ft)	18.71	Shear (lb/sq ft)		0.26	
Alpha	1.00	Stream Power (lb/ft s)		0.59	
Frctn Loss (ft)	1.53	Cum Volume (acre-ft)		0.12	
C & E Loss (ft)	0.00	Cum SA (acres)		0.22	

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

CROSS SECTION

RIVER: buena vista
REACH: one RS: 17

INPUT
Description: Seccion # 2 en la Agrimensura
Station Elevation Data num= 22

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	28.41	9.37	28.33	18.74	28.25	25.72	27.21	27.71	27.01
38.27	27.02	39.77	27.14	48.37	27.15	55.08	26.86	56.81	26.52
60.83	24.32	63	22.78	65.84	22.1	67.2	21.78	70.74	17.72
71.58	17.1	74.82	17.26	77.08	17.24	80.25	19.13	80.44	25.41
88.7	25.93	96.67	26.72						

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.015	27.71	.013	38.27	.035	80.25	.015	80.44	.013

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
56.81	80.44	50.35	59.23	65.49	.1	.3

CROSS SECTION OUTPUT Profile #100y

E.G. Elev (ft)	18.58	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.08	Wt. n-Val.		0.035	
W.S. Elev (ft)	18.49	Reach Len. (ft)	50.35	59.23	65.49
Crit W.S. (ft)	17.93	Flow Area (sq ft)		9.55	
E.G. Slope (ft/ft)	0.003161	Area (sq ft)		9.55	
Q Total (cfs)	22.07	Flow (cfs)		22.07	

Top Width (ft)	9.12	Top Width (ft)		9.12	
Vel Total (ft/s)	2.31	Avg. Vel. (ft/s)		2.31	
Max Chl Dpth (ft)	1.39	Hydr. Depth (ft)		1.05	
Conv. Total (cfs)	392.6	Conv. (cfs)		392.6	
Length Wtd. (ft)	59.23	Wetted Per. (ft)		10.02	
Min Ch El (ft)	17.10	Shear (lb/sq ft)		0.19	
Alpha	1.00	Stream Power (lb/ft s)		0.43	
Frctn Loss (ft)		Cum Volume (acre-ft)	0.01	0.29	0.02
C & E Loss (ft)		Cum SA (acres)	0.03	0.26	0.07

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

CROSS SECTION OUTPUT Profile #50y

E.G. Elev (ft)	18.46	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.08	Wt. n-Val.		0.035	
W.S. Elev (ft)	18.37	Reach Len. (ft)	50.35	59.23	65.49
Crit W.S. (ft)	17.88	Flow Area (sq ft)		8.49	
E.G. Slope (ft/ft)	0.003450	Area (sq ft)		8.49	
Q Total (cfs)	19.45	Flow (cfs)		19.45	
Top Width (ft)	8.81	Top Width (ft)		8.81	
Vel Total (ft/s)	2.29	Avg. Vel. (ft/s)		2.29	
Max Chl Dpth (ft)	1.27	Hydr. Depth (ft)		0.96	
Conv. Total (cfs)	331.2	Conv. (cfs)		331.2	
Length Wtd. (ft)	59.23	Wetted Per. (ft)		9.63	
Min Ch El (ft)	17.10	Shear (lb/sq ft)		0.19	
Alpha	1.00	Stream Power (lb/ft s)		0.43	
Frctn Loss (ft)		Cum Volume (acre-ft)	0.01	0.23	0.01
C & E Loss (ft)		Cum SA (acres)	0.03	0.22	0.06

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

CROSS SECTION OUTPUT Profile #25y

E.G. Elev (ft)	18.34	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.08	Wt. n-Val.		0.035	
W.S. Elev (ft)	18.26	Reach Len. (ft)	50.35	59.23	65.49
Crit W.S. (ft)	17.82	Flow Area (sq ft)		7.45	
E.G. Slope (ft/ft)	0.003809	Area (sq ft)		7.45	
Q Total (cfs)	16.92	Flow (cfs)		16.92	
Top Width (ft)	8.51	Top Width (ft)		8.51	
Vel Total (ft/s)	2.27	Avg. Vel. (ft/s)		2.27	
Max Chl Dpth (ft)	1.16	Hydr. Depth (ft)		0.88	
Conv. Total (cfs)	274.2	Conv. (cfs)		274.2	
Length Wtd. (ft)	59.23	Wetted Per. (ft)		9.24	
Min Ch El (ft)	17.10	Shear (lb/sq ft)		0.19	
Alpha	1.00	Stream Power (lb/ft s)		0.44	
Frctn Loss (ft)		Cum Volume (acre-ft)	0.00	0.23	0.00
C & E Loss (ft)		Cum SA (acres)	0.00	0.23	0.01

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

CROSS SECTION OUTPUT Profile #10y

E.G. Elev (ft)	18.18	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.08	Wt. n-Val.		0.035	
W.S. Elev (ft)	18.10	Reach Len. (ft)	50.35	59.23	65.49
Crit W.S. (ft)	17.75	Flow Area (sq ft)		6.15	
E.G. Slope (ft/ft)	0.004444	Area (sq ft)		6.15	
Q Total (cfs)	13.78	Flow (cfs)		13.78	
Top Width (ft)	8.11	Top Width (ft)		8.11	
Vel Total (ft/s)	2.24	Avg. Vel. (ft/s)		2.24	
Max Chl Dpth (ft)	1.00	Hydr. Depth (ft)		0.76	
Conv. Total (cfs)	206.8	Conv. (cfs)		206.8	
Length Wtd. (ft)	59.23	Wetted Per. (ft)		8.73	
Min Ch El (ft)	17.10	Shear (lb/sq ft)		0.20	
Alpha	1.00	Stream Power (lb/ft s)		0.44	
Frctn Loss (ft)		Cum Volume (acre-ft)	0.00	0.19	0.00

C & E Loss (ft)	Cum SA (acres)	0.00	0.23	0.00

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

CROSS SECTION OUTPUT Profile #5y

		Element	Left OB	Channel	Right OB
E.G. Elev (ft)	18.05	Wt. n-Val.		0.035	
Vel Head (ft)	0.08	Reach Len. (ft)	50.35	59.23	65.49
W.S. Elev (ft)	17.98	Flow Area (sq ft)		5.17	
Crit W.S. (ft)	17.69	Area (sq ft)		5.17	
E.G. Slope (ft/ft)	0.005158	Flow (cfs)		11.48	
Q Total (cfs)	11.48	Top Width (ft)		7.80	
Top Width (ft)	7.80	Avg. Vel. (ft/s)		2.22	
Vel Total (ft/s)	2.22	Hydr. Depth (ft)		0.66	
Max Chl Dpth (ft)	0.88	Conv. (cfs)		159.8	
Conv. Total (cfs)	159.8	Wetted Per. (ft)		8.32	
Length Wtd. (ft)	59.23	Shear (lb/sq ft)		0.20	
Min Ch El (ft)	17.10	Stream Power (lb/ft s)		0.44	
Alpha	1.00	Cum Volume (acre-ft)	0.00	0.17	
Frctn Loss (ft)		Cum SA (acres)	0.00	0.22	
C & E Loss (ft)					

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

CROSS SECTION OUTPUT Profile #2y

		Element	Left OB	Channel	Right OB
E.G. Elev (ft)	17.88	Wt. n-Val.		0.035	
Vel Head (ft)	0.08	Reach Len. (ft)	50.35	59.23	65.49
W.S. Elev (ft)	17.81	Flow Area (sq ft)		3.91	
Crit W.S. (ft)	17.61	Area (sq ft)		3.91	
E.G. Slope (ft/ft)	0.006730	Flow (cfs)		8.61	
Q Total (cfs)	8.61	Top Width (ft)		7.37	
Top Width (ft)	7.37	Avg. Vel. (ft/s)		2.20	
Vel Total (ft/s)	2.20	Hydr. Depth (ft)		0.53	
Max Chl Dpth (ft)	0.71	Conv. (cfs)		105.0	
Conv. Total (cfs)	105.0	Wetted Per. (ft)		7.78	
Length Wtd. (ft)	59.23	Shear (lb/sq ft)		0.21	
Min Ch El (ft)	17.10	Stream Power (lb/ft s)		0.47	
Alpha	1.00	Cum Volume (acre-ft)	0.00	0.14	
Frctn Loss (ft)		Cum SA (acres)	0.00	0.21	
C & E Loss (ft)					

CROSS SECTION OUTPUT Profile #1y

		Element	Left OB	Channel	Right OB
E.G. Elev (ft)	17.75	Wt. n-Val.		0.035	
Vel Head (ft)	0.08	Reach Len. (ft)	50.35	59.23	65.49
W.S. Elev (ft)	17.68	Flow Area (sq ft)		2.95	
Crit W.S. (ft)	17.54	Area (sq ft)		2.95	
E.G. Slope (ft/ft)	0.009248	Flow (cfs)		6.56	
Q Total (cfs)	6.56	Top Width (ft)		7.01	
Top Width (ft)	7.01	Avg. Vel. (ft/s)		2.23	
Vel Total (ft/s)	2.23	Hydr. Depth (ft)		0.42	
Max Chl Dpth (ft)	0.58	Conv. (cfs)		68.2	
Conv. Total (cfs)	68.2	Wetted Per. (ft)		7.32	
Length Wtd. (ft)	59.23	Shear (lb/sq ft)		0.23	
Min Ch El (ft)	17.10	Stream Power (lb/ft s)		0.52	
Alpha	1.00	Cum Volume (acre-ft)		0.11	
Frctn Loss (ft)		Cum SA (acres)		0.19	
C & E Loss (ft)					

CULVERT

RIVER: buena vista
REACH: one RS: 16.5

INPUT

Description:
Distance from Upstream XS = .5
Deck/Roadway Width = 58.23
Weir Coefficient = 2.6
Upstream Deck/Roadway Coordinates
num= 2

Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord
0	20.24	0	100	20.24	0

Upstream Bridge Cross Section Data
Station Elevation Data num= 22

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	28.41	9.37	28.33	18.74	28.25	25.72	27.21	27.71	27.01
38.27	27.02	39.77	27.14	48.37	27.15	55.08	26.86	56.81	26.52
60.83	24.32	63	22.78	65.84	22.1	67.2	21.78	70.74	17.72
71.58	17.1	74.82	17.26	77.08	17.24	80.25	19.13	80.44	25.41
88.7	25.93	96.67	26.72						

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.015	27.71	.013	38.27	.035	80.25	.015	80.44	.013

Bank Sta: Left	Right	Coeff Contr.	Expan.
56.81	80.44	.1	.3

Downstream Deck/Roadway Coordinates
num= 2

Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord
0	19.86	0	100	19.86	0

Downstream Bridge Cross Section Data
Station Elevation Data num= 29

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	26.13	1.18	26.12	2.31	26.08	2.46	25.93	5.95	25.96
9.63	25.93	10.6	25.94	10.76	26.07	15.27	26.06	16.62	26.02
21.11	25.91	22.13	25.88	22.52	25.76	26.87	25.65	29.52	25.62
30.41	25.62	35.45	25.65	35.61	25.84	37.09	25.8	40.47	25.86
42.8	25.49	46.65	23.78	52.26	21.78	60.16	16.75	64.71	16.88
67.67	17.8	72.91	23.58	73.13	25.76	93.13	26.01		

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.013	35.61	.035	42.8	.035	72.91	.015	73.13	.013

Bank Sta: Left	Right	Coeff Contr.	Expan.
42.8	73.13	.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	2.55	2.5

FHWA Chart # 8 - flared wingwalls
FHWA Scale # 1 - Wingwall flared 30 to 75 deg.
Solution Criteria = Highest U.S. EG

Culvert	Upstrm Dist	Length	Top n	Bottom n	Depth Blocked	Entrance Loss Coef	Exit Loss Coef
	.5	58.23	.013	.013	0	.5	1

Number of Barrels = 2
Upstream Elevation = 17.1
Centerline Stations

Sta.	Sta.
72.83	75.83

Downstream Elevation = 16.75
Centerline Stations

Sta.	Sta.
61.11	64.11

CULVERT OUTPUT Profile #100y Culv Group: Culvert #1

Q Culv Group (cfs)	22.07	Culv Full Len (ft)	
# Barrels	2	Culv Vel US (ft/s)	5.22
Q Barrel (cfs)	11.04	Culv Vel DS (ft/s)	5.53
E.G. US. (ft)	18.58	Culv Inv El Up (ft)	17.10
W.S. US. (ft)	18.49	Culv Inv El Dn (ft)	16.75
E.G. DS (ft)	18.09	Culv Frctn Ls (ft)	0.27
W.S. DS (ft)	17.99	Culv Exit Loss (ft)	
Delta EG (ft)	0.49	Culv Entr Loss (ft)	0.21
Delta WS (ft)	0.50	Q Weir (cfs)	
E.G. IC (ft)	18.43	Weir Sta Lft (ft)	
E.G. OC (ft)	18.58	Weir Sta Rgt (ft)	
Culvert Control	Inlet	Weir Submerg	
Culv WS Inlet (ft)	17.95	Weir Max Depth (ft)	
Culv WS Outlet (ft)	17.55	Weir Avg Depth (ft)	
Culv Nml Depth (ft)	0.80	Weir Flow Area (sq ft)	
Culv Crt Depth (ft)	0.85	Min El Weir Flow (ft)	20.25

Note: During the supercritical calculations a hydraulic jump occurred at the outlet of (leaving) the culvert.
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.

CULVERT OUTPUT Profile #50y Culv Group: Culvert #1

Q Culv Group (cfs)	19.45	Culv Full Len (ft)	
# Barrels	2	Culv Vel US (ft/s)	5.00
Q Barrel (cfs)	9.73	Culv Vel DS (ft/s)	5.33
E.G. US. (ft)	18.46	Culv Inv El Up (ft)	17.10
W.S. US. (ft)	18.37	Culv Inv El Dn (ft)	16.75
E.G. DS (ft)	18.02	Culv Frctn Ls (ft)	0.25
W.S. DS (ft)	17.92	Culv Exit Loss (ft)	
Delta EG (ft)	0.44	Culv Entr Loss (ft)	0.19
Delta WS (ft)	0.45	Q Weir (cfs)	
E.G. IC (ft)	18.32	Weir Sta Lft (ft)	
E.G. OC (ft)	18.46	Weir Sta Rgt (ft)	
Culvert Control	Inlet	Weir Submerg	
Culv WS Inlet (ft)	17.88	Weir Max Depth (ft)	
Culv WS Outlet (ft)	17.48	Weir Avg Depth (ft)	
Culv Nml Depth (ft)	0.73	Weir Flow Area (sq ft)	
Culv Crt Depth (ft)	0.78	Min El Weir Flow (ft)	20.25

Note: During the supercritical calculations a hydraulic jump occurred at the outlet of (leaving) the culvert.
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.

CULVERT OUTPUT Profile #25y Culv Group: Culvert #1

Q Culv Group (cfs)	16.92	Culv Full Len (ft)	
# Barrels	2	Culv Vel US (ft/s)	4.78
Q Barrel (cfs)	8.46	Culv Vel DS (ft/s)	5.05
E.G. US. (ft)	18.34	Culv Inv El Up (ft)	17.10
W.S. US. (ft)	18.26	Culv Inv El Dn (ft)	16.75
E.G. DS (ft)	17.93	Culv Frctn Ls (ft)	0.23
W.S. DS (ft)	17.84	Culv Exit Loss (ft)	
Delta EG (ft)	0.41	Culv Entr Loss (ft)	0.18
Delta WS (ft)	0.41	Q Weir (cfs)	
E.G. IC (ft)	18.21	Weir Sta Lft (ft)	

E.G. OC (ft)	18.34	Weir Sta Rgt (ft)	
Culvert Control	Inlet	Weir Submerg	
Culv WS Inlet (ft)	17.81	Weir Max Depth (ft)	
Culv WS Outlet (ft)	17.42	Weir Avg Depth (ft)	
Culv Nml Depth (ft)	0.67	Weir Flow Area (sq ft)	
Culv Crt Depth (ft)	0.71	Min El Weir Flow (ft)	20.25

Note: During the supercritical calculations a hydraulic jump occurred at the outlet of (leaving) the culvert.
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.

CULVERT OUTPUT Profile #10y Culv Group: Culvert #1

Q Culv Group (cfs)	13.78	Culv Full Len (ft)	
# Barrels	2	Culv Vel US (ft/s)	4.46
Q Barrel (cfs)	6.89	Culv Vel DS (ft/s)	4.75
E.G. US. (ft)	18.18	Culv Inv El Up (ft)	17.10
W.S. US. (ft)	18.10	Culv Inv El Dn (ft)	16.75
E.G. DS (ft)	17.80	Culv Frctn Ls (ft)	0.23
W.S. DS (ft)	17.72	Culv Exit Loss (ft)	
Delta EG (ft)	0.38	Culv Entr Loss (ft)	0.15
Delta WS (ft)	0.38	Q Weir (cfs)	
E.G. IC (ft)	18.06	Weir Sta Lft (ft)	
E.G. OC (ft)	18.18	Weir Sta Rgt (ft)	
Culvert Control	Inlet	Weir Submerg	
Culv WS Inlet (ft)	17.72	Weir Max Depth (ft)	
Culv WS Outlet (ft)	17.33	Weir Avg Depth (ft)	
Culv Nml Depth (ft)	0.58	Weir Flow Area (sq ft)	
Culv Crt Depth (ft)	0.62	Min El Weir Flow (ft)	20.25

Note: During the supercritical calculations a hydraulic jump occurred at the outlet of (leaving) the culvert.
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.

CULVERT OUTPUT Profile #5y Culv Group: Culvert #1

Q Culv Group (cfs)	11.48	Culv Full Len (ft)	
# Barrels	2	Culv Vel US (ft/s)	4.20
Q Barrel (cfs)	5.74	Culv Vel DS (ft/s)	4.49
E.G. US. (ft)	18.06	Culv Inv El Up (ft)	17.10
W.S. US. (ft)	17.98	Culv Inv El Dn (ft)	16.75
E.G. DS (ft)	17.70	Culv Frctn Ls (ft)	0.22
W.S. DS (ft)	17.62	Culv Exit Loss (ft)	
Delta EG (ft)	0.36	Culv Entr Loss (ft)	0.14
Delta WS (ft)	0.36	Q Weir (cfs)	
E.G. IC (ft)	17.95	Weir Sta Lft (ft)	
E.G. OC (ft)	18.06	Weir Sta Rgt (ft)	
Culvert Control	Inlet	Weir Submerg	
Culv WS Inlet (ft)	17.65	Weir Max Depth (ft)	
Culv WS Outlet (ft)	17.26	Weir Avg Depth (ft)	
Culv Nml Depth (ft)	0.51	Weir Flow Area (sq ft)	
Culv Crt Depth (ft)	0.55	Min El Weir Flow (ft)	20.25

Note: During the supercritical calculations a hydraulic jump occurred at the outlet of (leaving) the culvert.
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: 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.

CULVERT OUTPUT Profile #2y Culv Group: Culvert #1

Q Culv Group (cfs)	8.61	Culv Full Len (ft)	
# Barrels	2	Culv Vel US (ft/s)	3.81
Q Barrel (cfs)	4.31	Culv Vel DS (ft/s)	4.09
E.G. US. (ft)	17.89	Culv Inv El Up (ft)	17.10
W.S. US. (ft)	17.81	Culv Inv El Dn (ft)	16.75
E.G. DS (ft)	17.56	Culv Frctn Ls (ft)	0.21
W.S. DS (ft)	17.50	Culv Exit Loss (ft)	
Delta EG (ft)	0.33	Culv Entr Loss (ft)	0.11
Delta WS (ft)	0.31	Q Weir (cfs)	
E.G. IC (ft)	17.80	Weir Sta Lft (ft)	
E.G. OC (ft)	17.89	Weir Sta Rgt (ft)	
Culvert Control	Inlet	Weir Submerg	
Culv WS Inlet (ft)	17.55	Weir Max Depth (ft)	
Culv WS Outlet (ft)	17.17	Weir Avg Depth (ft)	
Culv Nml Depth (ft)	0.42	Weir Flow Area (sq ft)	
Culv Crt Depth (ft)	0.45	Min El Weir Flow (ft)	20.25

Note: During the supercritical calculations a hydraulic jump occurred at the outlet of (leaving) the
culvert.
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.
Note: During the supercritical calculations a hydraulic jump occurred at the outlet of (leaving) the
culvert.

CULVERT OUTPUT Profile #1y Culv Group: Culvert #1

Q Culv Group (cfs)	6.56	Culv Full Len (ft)	
# Barrels	2	Culv Vel US (ft/s)	3.48
Q Barrel (cfs)	3.28	Culv Vel DS (ft/s)	3.73
E.G. US. (ft)	17.76	Culv Inv El Up (ft)	17.10
W.S. US. (ft)	17.68	Culv Inv El Dn (ft)	16.75
E.G. DS (ft)	17.45	Culv Frctn Ls (ft)	0.22
W.S. DS (ft)	17.39	Culv Exit Loss (ft)	
Delta EG (ft)	0.31	Culv Entr Loss (ft)	0.09
Delta WS (ft)	0.29	Q Weir (cfs)	
E.G. IC (ft)	17.68	Weir Sta Lft (ft)	
E.G. OC (ft)	17.76	Weir Sta Rgt (ft)	
Culvert Control	Inlet	Weir Submerg	
Culv WS Inlet (ft)	17.48	Weir Max Depth (ft)	
Culv WS Outlet (ft)	17.10	Weir Avg Depth (ft)	
Culv Nml Depth (ft)	0.35	Weir Flow Area (sq ft)	
Culv Crt Depth (ft)	0.38	Min El Weir Flow (ft)	20.25

Note: During the supercritical calculations a hydraulic jump occurred at the outlet of (leaving) the
culvert.
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.
Note: During the supercritical calculations a hydraulic jump occurred at the outlet of (leaving) the
culvert.

CROSS SECTION

RIVER: buena vista

REACH: one RS: 16

INPUT
Description: Seccion #3 en la Agrimensura
Station Elevation Data num= 29

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	26.13	1.18	26.12	2.31	26.08	2.46	25.93	5.95	25.96
9.63	25.93	10.6	25.94	10.76	26.07	15.27	26.06	16.62	26.02
21.11	25.91	22.13	25.88	22.52	25.76	26.87	25.65	29.52	25.62
30.41	25.62	35.45	25.65	35.61	25.84	37.09	25.8	40.47	25.86
42.8	25.49	46.65	23.78	52.26	21.78	60.16	16.75	64.71	16.88
67.67	17.8	72.91	23.58	73.13	25.76	93.13	26.01		

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.013	35.61	.035	42.8	.035	72.91	.015	73.13	.013

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
42.8	73.13	109.35 108.72	11.68	.1	.3

CROSS SECTION OUTPUT Profile #100y

			Left OB	Channel	Right OB
E.G. Elev (ft)	18.09	Element			
Vel Head (ft)	0.10	Wt. n-Val.		0.035	
W.S. Elev (ft)	17.99	Reach Len. (ft)	109.35	108.72	11.68
Crit W.S. (ft)		Flow Area (sq ft)		8.49	
E.G. Slope (ft/ft)	0.004795	Area (sq ft)		8.49	
Q Total (cfs)	22.07	Flow (cfs)		22.07	
Top Width (ft)	9.63	Top Width (ft)		9.63	
Vel Total (ft/s)	2.60	Avg. Vel. (ft/s)		2.60	
Max Chl Dpth (ft)	1.24	Hydr. Depth (ft)		0.88	
Conv. Total (cfs)	318.8	Conv. (cfs)		318.8	
Length Wtd. (ft)	108.72	Wetted Per. (ft)		10.22	
Min Ch El (ft)	16.75	Shear (lb/sq ft)		0.25	
Alpha	1.00	Stream Power (lb/ft s)		0.65	
Frctn Loss (ft)	0.49	Cum Volume (acre-ft)	0.01	0.27	0.02
C & E Loss (ft)	0.00	Cum SA (acres)	0.03	0.25	0.07

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

CROSS SECTION OUTPUT Profile #50y

			Left OB	Channel	Right OB
E.G. Elev (ft)	18.02	Element			
Vel Head (ft)	0.10	Wt. n-Val.		0.035	
W.S. Elev (ft)	17.92	Reach Len. (ft)	109.35	108.72	11.68
Crit W.S. (ft)		Flow Area (sq ft)		7.83	
E.G. Slope (ft/ft)	0.004733	Area (sq ft)		7.83	
Q Total (cfs)	19.45	Flow (cfs)		19.45	
Top Width (ft)	9.46	Top Width (ft)		9.46	
Vel Total (ft/s)	2.48	Avg. Vel. (ft/s)		2.48	
Max Chl Dpth (ft)	1.17	Hydr. Depth (ft)		0.83	
Conv. Total (cfs)	282.7	Conv. (cfs)		282.7	
Length Wtd. (ft)	108.72	Wetted Per. (ft)		9.99	
Min Ch El (ft)	16.75	Shear (lb/sq ft)		0.23	
Alpha	1.00	Stream Power (lb/ft s)		0.58	
Frctn Loss (ft)	0.59	Cum Volume (acre-ft)	0.01	0.22	0.01
C & E Loss (ft)	0.00	Cum SA (acres)	0.03	0.21	0.06

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

CROSS SECTION OUTPUT Profile #25y

			Left OB	Channel	Right OB
E.G. Elev (ft)	17.93	Element			
Vel Head (ft)	0.09	Wt. n-Val.		0.035	
W.S. Elev (ft)	17.84	Reach Len. (ft)	109.35	108.72	11.68
Crit W.S. (ft)		Flow Area (sq ft)		7.11	
E.G. Slope (ft/ft)	0.004781	Area (sq ft)		7.11	
Q Total (cfs)	16.92	Flow (cfs)		16.92	
Top Width (ft)	9.27	Top Width (ft)		9.27	

Vel Total (ft/s)	2.38	Avg. Vel. (ft/s)		2.38	
Max Chl Dpth (ft)	1.09	Hydr. Depth (ft)		0.77	
Conv. Total (cfs)	244.8	Conv. (cfs)		244.8	
Length Wtd. (ft)	108.72	Wetted Per. (ft)		9.75	
Min Ch El (ft)	16.75	Shear (lb/sq ft)		0.22	
Alpha	1.00	Stream Power (lb/ft s)		0.52	
Frctn Loss (ft)	0.59	Cum Volume (acre-ft)	0.00	0.22	0.00
C & E Loss (ft)	0.00	Cum SA (acres)	0.00	0.22	0.01

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

CROSS SECTION OUTPUT Profile #10y

E.G. Elev (ft)	17.80	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.08	Wt. n-Val.		0.035	
W.S. Elev (ft)	17.72	Reach Len. (ft)	109.35	108.72	11.68
Crit W.S. (ft)		Flow Area (sq ft)		5.96	
E.G. Slope (ft/ft)	0.005264	Area (sq ft)		5.96	
Q Total (cfs)	13.78	Flow (cfs)		13.78	
Top Width (ft)	8.76	Top Width (ft)		8.76	
Vel Total (ft/s)	2.31	Avg. Vel. (ft/s)		2.31	
Max Chl Dpth (ft)	0.97	Hydr. Depth (ft)		0.68	
Conv. Total (cfs)	190.0	Conv. (cfs)		190.0	
Length Wtd. (ft)	108.72	Wetted Per. (ft)		9.17	
Min Ch El (ft)	16.75	Shear (lb/sq ft)		0.21	
Alpha	1.00	Stream Power (lb/ft s)		0.49	
Frctn Loss (ft)	0.60	Cum Volume (acre-ft)	0.00	0.19	0.00
C & E Loss (ft)	0.00	Cum SA (acres)	0.00	0.21	0.00

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

CROSS SECTION OUTPUT Profile #5y

E.G. Elev (ft)	17.70	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.08	Wt. n-Val.		0.035	
W.S. Elev (ft)	17.62	Reach Len. (ft)	109.35	108.72	11.68
Crit W.S. (ft)		Flow Area (sq ft)		5.14	
E.G. Slope (ft/ft)	0.005562	Area (sq ft)		5.14	
Q Total (cfs)	11.48	Flow (cfs)		11.48	
Top Width (ft)	8.30	Top Width (ft)		8.30	
Vel Total (ft/s)	2.23	Avg. Vel. (ft/s)		2.23	
Max Chl Dpth (ft)	0.87	Hydr. Depth (ft)		0.62	
Conv. Total (cfs)	153.9	Conv. (cfs)		153.9	
Length Wtd. (ft)	108.72	Wetted Per. (ft)		8.66	
Min Ch El (ft)	16.75	Shear (lb/sq ft)		0.21	
Alpha	1.00	Stream Power (lb/ft s)		0.46	
Frctn Loss (ft)	0.62	Cum Volume (acre-ft)	0.00	0.16	
C & E Loss (ft)	0.00	Cum SA (acres)	0.00	0.21	

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

CROSS SECTION OUTPUT Profile #2y

E.G. Elev (ft)	17.56	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.07	Wt. n-Val.		0.035	
W.S. Elev (ft)	17.50	Reach Len. (ft)	109.35	108.72	11.68
Crit W.S. (ft)		Flow Area (sq ft)		4.17	
E.G. Slope (ft/ft)	0.005692	Area (sq ft)		4.17	
Q Total (cfs)	8.61	Flow (cfs)		8.61	
Top Width (ft)	7.72	Top Width (ft)		7.72	
Vel Total (ft/s)	2.07	Avg. Vel. (ft/s)		2.07	
Max Chl Dpth (ft)	0.75	Hydr. Depth (ft)		0.54	
Conv. Total (cfs)	114.2	Conv. (cfs)		114.2	
Length Wtd. (ft)	108.72	Wetted Per. (ft)		8.03	
Min Ch El (ft)	16.75	Shear (lb/sq ft)		0.18	
Alpha	1.00	Stream Power (lb/ft s)		0.38	
Frctn Loss (ft)	0.61	Cum Volume (acre-ft)	0.00	0.13	
C & E Loss (ft)	0.00	Cum SA (acres)	0.00	0.20	

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

CROSS SECTION OUTPUT Profile #1y

			Left OB	Channel	Right OB
E.G. Elev (ft)	17.45	Element			
Vel Head (ft)	0.06	Wt. n-Val.		0.035	
W.S. Elev (ft)	17.39	Reach Len. (ft)	109.35	108.72	11.68
Crit W.S. (ft)		Flow Area (sq ft)		3.35	
E.G. Slope (ft/ft)	0.006203	Area (sq ft)		3.35	
Q Total (cfs)	6.56	Flow (cfs)		6.56	
Top Width (ft)	7.19	Top Width (ft)		7.19	
Vel Total (ft/s)	1.96	Avg. Vel. (ft/s)		1.96	
Max Chl Dpth (ft)	0.64	Hydr. Depth (ft)		0.47	
Conv. Total (cfs)	83.3	Conv. (cfs)		83.3	
Length Wtd. (ft)	108.72	Wetted Per. (ft)		7.46	
Min Ch El (ft)	16.75	Shear (lb/sq ft)		0.17	
Alpha	1.00	Stream Power (lb/ft s)		0.34	
Frctn Loss (ft)	0.62	Cum Volume (acre-ft)		0.11	
C & E Loss (ft)	0.00	Cum SA (acres)		0.19	

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

CROSS SECTION

RIVER: buena vista
REACH: one RS: 15

INPUT
Description: Seccion # 4 en la Agrimensura
Station Elevation Data num= 17

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	24.78	5.33	24.52	14.6	24.58	23.93	20.8	29.54	20.29
33.76	18	36.47	17.2	37.6	17.12	38.45	16.74	39.2	16.12
41.7	16.13	43.75	16.15	45.02	17.38	46.78	18.04	53.78	18
63.78	21.5	78.78	21.8						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.035	33.76	.035	46.78	.035

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
33.76	46.78	77.31	58.6	38.27	.1 .3

CROSS SECTION OUTPUT Profile #100y

			Left OB	Channel	Right OB
E.G. Elev (ft)	17.61	Element			
Vel Head (ft)	0.09	Wt. n-Val.		0.035	
W.S. Elev (ft)	17.51	Reach Len. (ft)	77.31	58.60	38.27
Crit W.S. (ft)		Flow Area (sq ft)		9.14	
E.G. Slope (ft/ft)	0.004166	Area (sq ft)		9.14	
Q Total (cfs)	22.34	Flow (cfs)		22.34	
Top Width (ft)	9.97	Top Width (ft)		9.97	
Vel Total (ft/s)	2.44	Avg. Vel. (ft/s)		2.44	
Max Chl Dpth (ft)	1.39	Hydr. Depth (ft)		0.92	
Conv. Total (cfs)	346.1	Conv. (cfs)		346.1	
Length Wtd. (ft)	58.60	Wetted Per. (ft)		10.84	
Min Ch El (ft)	16.12	Shear (lb/sq ft)		0.22	
Alpha	1.00	Stream Power (lb/ft s)		0.54	
Frctn Loss (ft)	0.32	Cum Volume (acre-ft)	0.01	0.25	0.02
C & E Loss (ft)	0.01	Cum SA (acres)	0.03	0.22	0.07

CROSS SECTION OUTPUT Profile #50y

			Left OB	Channel	Right OB
E.G. Elev (ft)	17.42	Element			
Vel Head (ft)	0.12	Wt. n-Val.		0.035	
W.S. Elev (ft)	17.30	Reach Len. (ft)	77.31	58.60	38.27

Crit W.S. (ft)		Flow Area (sq ft)		7.16	
E.G. Slope (ft/ft)	0.006197	Area (sq ft)		7.16	
Q Total (cfs)	19.69	Flow (cfs)		19.69	
Top Width (ft)	8.82	Top Width (ft)		8.82	
Vel Total (ft/s)	2.75	Avg. Vel. (ft/s)		2.75	
Max Chl Dpth (ft)	1.18	Hydr. Depth (ft)		0.81	
Conv. Total (cfs)	250.1	Conv. (cfs)		250.1	
Length Wtd. (ft)	58.60	Wetted Per. (ft)		9.61	
Min Ch El (ft)	16.12	Shear (lb/sq ft)		0.29	
Alpha	1.00	Stream Power (lb/ft s)		0.79	
Frctn Loss (ft)	0.30	Cum Volume (acre-ft)	0.01	0.20	0.01
C & E Loss (ft)	0.01	Cum SA (acres)	0.03	0.19	0.06

CROSS SECTION OUTPUT Profile #25y

E.G. Elev (ft)	17.33	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.11	Wt. n-Val.		0.035	
W.S. Elev (ft)	17.22	Reach Len. (ft)	77.31	58.60	38.27
Crit W.S. (ft)		Flow Area (sq ft)		6.44	
E.G. Slope (ft/ft)	0.006299	Area (sq ft)		6.44	
Q Total (cfs)	17.13	Flow (cfs)		17.13	
Top Width (ft)	8.45	Top Width (ft)		8.45	
Vel Total (ft/s)	2.66	Avg. Vel. (ft/s)		2.66	
Max Chl Dpth (ft)	1.10	Hydr. Depth (ft)		0.76	
Conv. Total (cfs)	215.8	Conv. (cfs)		215.8	
Length Wtd. (ft)	58.60	Wetted Per. (ft)		9.19	
Min Ch El (ft)	16.12	Shear (lb/sq ft)		0.28	
Alpha	1.00	Stream Power (lb/ft s)		0.73	
Frctn Loss (ft)	0.30	Cum Volume (acre-ft)	0.00	0.20	0.00
C & E Loss (ft)	0.01	Cum SA (acres)	0.00	0.20	0.01

CROSS SECTION OUTPUT Profile #10y

E.G. Elev (ft)	17.19	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.10	Wt. n-Val.		0.035	
W.S. Elev (ft)	17.09	Reach Len. (ft)	77.31	58.60	38.27
Crit W.S. (ft)		Flow Area (sq ft)		5.46	
E.G. Slope (ft/ft)	0.005778	Area (sq ft)		5.46	
Q Total (cfs)	13.95	Flow (cfs)		13.95	
Top Width (ft)	7.06	Top Width (ft)		7.06	
Vel Total (ft/s)	2.56	Avg. Vel. (ft/s)		2.56	
Max Chl Dpth (ft)	0.97	Hydr. Depth (ft)		0.77	
Conv. Total (cfs)	183.5	Conv. (cfs)		183.5	
Length Wtd. (ft)	58.60	Wetted Per. (ft)		7.74	
Min Ch El (ft)	16.12	Shear (lb/sq ft)		0.25	
Alpha	1.00	Stream Power (lb/ft s)		0.65	
Frctn Loss (ft)	0.29	Cum Volume (acre-ft)	0.00	0.17	0.00
C & E Loss (ft)	0.01	Cum SA (acres)	0.00	0.19	0.00

CROSS SECTION OUTPUT Profile #5y

E.G. Elev (ft)	17.09	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.09	Wt. n-Val.		0.035	
W.S. Elev (ft)	17.00	Reach Len. (ft)	77.31	58.60	38.27
Crit W.S. (ft)		Flow Area (sq ft)		4.80	
E.G. Slope (ft/ft)	0.005768	Area (sq ft)		4.80	
Q Total (cfs)	11.62	Flow (cfs)		11.62	
Top Width (ft)	6.74	Top Width (ft)		6.74	
Vel Total (ft/s)	2.42	Avg. Vel. (ft/s)		2.42	
Max Chl Dpth (ft)	0.88	Hydr. Depth (ft)		0.71	
Conv. Total (cfs)	153.0	Conv. (cfs)		153.0	
Length Wtd. (ft)	58.60	Wetted Per. (ft)		7.36	
Min Ch El (ft)	16.12	Shear (lb/sq ft)		0.23	
Alpha	1.00	Stream Power (lb/ft s)		0.57	
Frctn Loss (ft)	0.29	Cum Volume (acre-ft)	0.00	0.15	
C & E Loss (ft)	0.01	Cum SA (acres)	0.00	0.19	

CROSS SECTION OUTPUT Profile #2y

E.G. Elev (ft)	16.94	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.07	Wt. n-Val.		0.035	
W.S. Elev (ft)	16.87	Reach Len. (ft)	77.31	58.60	38.27
Crit W.S. (ft)		Flow Area (sq ft)		3.98	
E.G. Slope (ft/ft)	0.005537	Area (sq ft)		3.98	
Q Total (cfs)	8.72	Flow (cfs)		8.72	
Top Width (ft)	6.33	Top Width (ft)		6.33	
Vel Total (ft/s)	2.19	Avg. Vel. (ft/s)		2.19	
Max Chl Dpth (ft)	0.75	Hydr. Depth (ft)		0.63	
Conv. Total (cfs)	117.1	Conv. (cfs)		117.1	
Length Wtd. (ft)	58.60	Wetted Per. (ft)		6.88	
Min Ch El (ft)	16.12	Shear (lb/sq ft)		0.20	
Alpha	1.00	Stream Power (lb/ft s)		0.44	
Frctn Loss (ft)	0.28	Cum Volume (acre-ft)	0.00	0.12	
C & E Loss (ft)	0.01	Cum SA (acres)	0.00	0.18	

CROSS SECTION OUTPUT Profile #1y

E.G. Elev (ft)	16.83	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.06	Wt. n-Val.		0.035	
W.S. Elev (ft)	16.77	Reach Len. (ft)	77.31	58.60	38.27
Crit W.S. (ft)		Flow Area (sq ft)		3.35	
E.G. Slope (ft/ft)	0.005248	Area (sq ft)		3.35	
Q Total (cfs)	6.64	Flow (cfs)		6.64	
Top Width (ft)	6.00	Top Width (ft)		6.00	
Vel Total (ft/s)	1.98	Avg. Vel. (ft/s)		1.98	
Max Chl Dpth (ft)	0.65	Hydr. Depth (ft)		0.56	
Conv. Total (cfs)	91.7	Conv. (cfs)		91.7	
Length Wtd. (ft)	58.60	Wetted Per. (ft)		6.48	
Min Ch El (ft)	16.12	Shear (lb/sq ft)		0.17	
Alpha	1.00	Stream Power (lb/ft s)		0.34	
Frctn Loss (ft)	0.28	Cum Volume (acre-ft)		0.10	
C & E Loss (ft)	0.00	Cum SA (acres)		0.17	

CROSS SECTION

RIVER: buena vista
REACH: one RS: 14

INPUT
Description: Seccion #5 en la Agrimensura
Station Elevation Data num= 22

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	23.83	6.81	23.73	12.57	23.95	13.91	23.86	17.91	23.67
23.89	23.35	29.25	23.28	32.04	23.11	36.41	23.19	42.5	23.39
46.65	23.14	47.65	22.88	53.08	19.97	60	17.01	60.69	15.93
64.13	15.95	67.12	15.93	68.34	17.08	83.09	17.18	92.64	19.18
123.13	19.58	147.83	20.68						

Manning's n Values num= 6

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.013	12.57	.015	32.04	.013	42.5	.035	53.08	.035
92.64	.035								

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
53.08	92.64	73.48	28.57	11.33	.1	.3

Blocked Obstructions num= 1

Sta L	Sta R	Elev
68.34	68.35	18.68

CROSS SECTION OUTPUT Profile #100y

E.G. Elev (ft)	17.27	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.07	Wt. n-Val.		0.035	
W.S. Elev (ft)	17.21	Reach Len. (ft)	73.48	28.57	11.33
Crit W.S. (ft)		Flow Area (sq ft)		10.65	

E.G. Slope (ft/ft)	0.007719	Area (sq ft)		10.65	
Q Total (cfs)	22.48	Flow (cfs)		22.48	
Top Width (ft)	23.66	Top Width (ft)		23.66	
Vel Total (ft/s)	2.11	Avg. Vel. (ft/s)		2.11	
Max Chl Dpth (ft)	1.28	Hydr. Depth (ft)		0.45	
Conv. Total (cfs)	255.9	Conv. (cfs)		255.9	
Length Wtd. (ft)	28.57	Wetted Per. (ft)		25.00	
Min Ch El (ft)	15.93	Shear (lb/sq ft)		0.21	
Alpha	1.00	Stream Power (lb/ft s)		0.43	
Frctn Loss (ft)	0.25	Cum Volume (acre-ft)	0.01	0.24	0.02
C & E Loss (ft)	0.01	Cum SA (acres)	0.03	0.20	0.07

Warning: Divided flow computed for this cross-section.

CROSS SECTION OUTPUT Profile #50y

E.G. Elev (ft)	17.11	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.10	Wt. n-Val.		0.035	
W.S. Elev (ft)	17.02	Reach Len. (ft)	73.48	28.57	11.33
Crit W.S. (ft)		Flow Area (sq ft)		7.94	
E.G. Slope (ft/ft)	0.004283	Area (sq ft)		7.94	
Q Total (cfs)	19.81	Flow (cfs)		19.81	
Top Width (ft)	8.29	Top Width (ft)		8.29	
Vel Total (ft/s)	2.50	Avg. Vel. (ft/s)		2.50	
Max Chl Dpth (ft)	1.09	Hydr. Depth (ft)		0.96	
Conv. Total (cfs)	302.7	Conv. (cfs)		302.7	
Length Wtd. (ft)	28.57	Wetted Per. (ft)		9.32	
Min Ch El (ft)	15.93	Shear (lb/sq ft)		0.23	
Alpha	1.00	Stream Power (lb/ft s)		0.57	
Frctn Loss (ft)	0.18	Cum Volume (acre-ft)	0.01	0.19	0.01
C & E Loss (ft)	0.01	Cum SA (acres)	0.03	0.18	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 OUTPUT Profile #25y

E.G. Elev (ft)	17.02	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.09	Wt. n-Val.		0.035	
W.S. Elev (ft)	16.94	Reach Len. (ft)	73.48	28.57	11.33
Crit W.S. (ft)		Flow Area (sq ft)		7.27	
E.G. Slope (ft/ft)	0.004207	Area (sq ft)		7.27	
Q Total (cfs)	17.24	Flow (cfs)		17.24	
Top Width (ft)	8.14	Top Width (ft)		8.14	
Vel Total (ft/s)	2.37	Avg. Vel. (ft/s)		2.37	
Max Chl Dpth (ft)	1.01	Hydr. Depth (ft)		0.89	
Conv. Total (cfs)	265.7	Conv. (cfs)		265.7	
Length Wtd. (ft)	28.57	Wetted Per. (ft)		9.09	
Min Ch El (ft)	15.93	Shear (lb/sq ft)		0.21	
Alpha	1.00	Stream Power (lb/ft s)		0.50	
Frctn Loss (ft)	0.18	Cum Volume (acre-ft)	0.00	0.19	0.00
C & E Loss (ft)	0.01	Cum SA (acres)	0.00	0.19	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 #10y

E.G. Elev (ft)	16.90	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.08	Wt. n-Val.		0.035	
W.S. Elev (ft)	16.82	Reach Len. (ft)	73.48	28.57	11.33
Crit W.S. (ft)		Flow Area (sq ft)		6.34	
E.G. Slope (ft/ft)	0.004207	Area (sq ft)		6.34	
Q Total (cfs)	14.04	Flow (cfs)		14.04	
Top Width (ft)	7.94	Top Width (ft)		7.94	
Vel Total (ft/s)	2.21	Avg. Vel. (ft/s)		2.21	
Max Chl Dpth (ft)	0.89	Hydr. Depth (ft)		0.80	
Conv. Total (cfs)	216.4	Conv. (cfs)		216.4	

Length Wtd. (ft)	28.57	Wetted Per. (ft)		8.79	
Min Ch El (ft)	15.93	Shear (lb/sq ft)		0.19	
Alpha	1.00	Stream Power (lb/ft s)		0.42	
Frctn Loss (ft)	0.17	Cum Volume (acre-ft)	0.00	0.16	0.00
C & E Loss (ft)	0.01	Cum SA (acres)	0.00	0.18	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 #5y

E.G. Elev (ft)	16.79	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.07	Wt. n-Val.		0.035	
W.S. Elev (ft)	16.73	Reach Len. (ft)	73.48	28.57	11.33
Crit W.S. (ft)		Flow Area (sq ft)		5.58	
E.G. Slope (ft/ft)	0.004275	Area (sq ft)		5.58	
Q Total (cfs)	11.69	Flow (cfs)		11.69	
Top Width (ft)	7.78	Top Width (ft)		7.78	
Vel Total (ft/s)	2.09	Avg. Vel. (ft/s)		2.09	
Max Chl Dpth (ft)	0.80	Hydr. Depth (ft)		0.72	
Conv. Total (cfs)	178.7	Conv. (cfs)		178.7	
Length Wtd. (ft)	28.57	Wetted Per. (ft)		8.53	
Min Ch El (ft)	15.93	Shear (lb/sq ft)		0.17	
Alpha	1.00	Stream Power (lb/ft s)		0.37	
Frctn Loss (ft)	0.18	Cum Volume (acre-ft)	0.00	0.14	
C & E Loss (ft)	0.01	Cum SA (acres)	0.00	0.18	

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.

CROSS SECTION OUTPUT Profile #2y

E.G. Elev (ft)	16.66	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.06	Wt. n-Val.		0.035	
W.S. Elev (ft)	16.60	Reach Len. (ft)	73.48	28.57	11.33
Crit W.S. (ft)		Flow Area (sq ft)		4.62	
E.G. Slope (ft/ft)	0.004282	Area (sq ft)		4.62	
Q Total (cfs)	8.77	Flow (cfs)		8.77	
Top Width (ft)	7.57	Top Width (ft)		7.57	
Vel Total (ft/s)	1.90	Avg. Vel. (ft/s)		1.90	
Max Chl Dpth (ft)	0.67	Hydr. Depth (ft)		0.61	
Conv. Total (cfs)	134.0	Conv. (cfs)		134.0	
Length Wtd. (ft)	28.57	Wetted Per. (ft)		8.20	
Min Ch El (ft)	15.93	Shear (lb/sq ft)		0.15	
Alpha	1.00	Stream Power (lb/ft s)		0.29	
Frctn Loss (ft)	0.18	Cum Volume (acre-ft)	0.00	0.12	
C & E Loss (ft)	0.01	Cum SA (acres)	0.00	0.17	

Warning: The conveyance ratio (upstream 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 #1y

E.G. Elev (ft)	16.55	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.05	Wt. n-Val.		0.035	
W.S. Elev (ft)	16.50	Reach Len. (ft)	73.48	28.57	11.33
Crit W.S. (ft)		Flow Area (sq ft)		3.87	
E.G. Slope (ft/ft)	0.004291	Area (sq ft)		3.87	
Q Total (cfs)	6.68	Flow (cfs)		6.68	
Top Width (ft)	7.40	Top Width (ft)		7.40	
Vel Total (ft/s)	1.72	Avg. Vel. (ft/s)		1.72	
Max Chl Dpth (ft)	0.57	Hydr. Depth (ft)		0.52	
Conv. Total (cfs)	101.9	Conv. (cfs)		101.9	
Length Wtd. (ft)	28.57	Wetted Per. (ft)		7.94	
Min Ch El (ft)	15.93	Shear (lb/sq ft)		0.13	
Alpha	1.00	Stream Power (lb/ft s)		0.23	
Frctn Loss (ft)	0.18	Cum Volume (acre-ft)		0.09	
C & E Loss (ft)	0.00	Cum SA (acres)		0.16	

Warning: The conveyance ratio (upstream 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: buena vista
REACH: one RS: 13

INPUT
Description: Seccion #6 en la Agrimensura
Station Elevation Data num= 24

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	22.89	12.3	22.67	17	22.57	21.88	22.57	25.12	22.56
33.04	22.556	41.18	22.73	43.33	22.95	46.57	22.58	49.71	21.37
52.06	20.31	53.79	18.53	55.1	17.52	55.87	17.02	57.06	15.76
59.34	15.77	61.99	15.75	62.7	16.51	65.4	16.94	66.98	17.26
73.26	18.02	78.19	19.22	109.04	19.36	119.14	19.6		

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.015	33.04	.013	41.18	.035	53.79	.035	78.19	.035

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
53.79	78.19	72 198.82	245.66	.1	.3

CROSS SECTION OUTPUT Profile #100y

E.G. Elev (ft)	17.01	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.18	Wt. n-Val.		0.035	
W.S. Elev (ft)	16.83	Reach Len. (ft)	72.00	198.82	245.66
Crit W.S. (ft)		Flow Area (sq ft)		6.62	
E.G. Slope (ft/ft)	0.010313	Area (sq ft)		6.62	
Q Total (cfs)	22.48	Flow (cfs)		22.48	
Top Width (ft)	8.66	Top Width (ft)		8.66	
Vel Total (ft/s)	3.40	Avg. Vel. (ft/s)		3.40	
Max Chl Dpth (ft)	1.08	Hydr. Depth (ft)		0.76	
Conv. Total (cfs)	221.4	Conv. (cfs)		221.4	
Length Wtd. (ft)	198.82	Wetted Per. (ft)		9.48	
Min Ch El (ft)	15.75	Shear (lb/sq ft)		0.45	
Alpha	1.00	Stream Power (lb/ft s)		1.53	
Frctn Loss (ft)	1.51	Cum Volume (acre-ft)	0.01	0.23	0.02
C & E Loss (ft)	0.01	Cum SA (acres)	0.03	0.19	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 OUTPUT Profile #50y

E.G. Elev (ft)	16.93	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.17	Wt. n-Val.		0.035	
W.S. Elev (ft)	16.76	Reach Len. (ft)	72.00	198.82	245.66
Crit W.S. (ft)		Flow Area (sq ft)		6.03	
E.G. Slope (ft/ft)	0.010125	Area (sq ft)		6.03	
Q Total (cfs)	19.81	Flow (cfs)		19.81	
Top Width (ft)	8.15	Top Width (ft)		8.15	
Vel Total (ft/s)	3.29	Avg. Vel. (ft/s)		3.29	
Max Chl Dpth (ft)	1.01	Hydr. Depth (ft)		0.74	
Conv. Total (cfs)	196.9	Conv. (cfs)		196.9	
Length Wtd. (ft)	198.82	Wetted Per. (ft)		8.93	
Min Ch El (ft)	15.75	Shear (lb/sq ft)		0.43	
Alpha	1.00	Stream Power (lb/ft s)		1.40	
Frctn Loss (ft)	1.52	Cum Volume (acre-ft)	0.01	0.19	0.01
C & E Loss (ft)	0.01	Cum SA (acres)	0.03	0.17	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 #25y

E.G. Elev (ft)	16.84	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.16	Wt. n-Val.		0.035	
W.S. Elev (ft)	16.68	Reach Len. (ft)	72.00	198.82	245.66
Crit W.S. (ft)		Flow Area (sq ft)		5.43	
E.G. Slope (ft/ft)	0.009928	Area (sq ft)		5.43	
Q Total (cfs)	17.24	Flow (cfs)		17.24	
Top Width (ft)	7.60	Top Width (ft)		7.60	
Vel Total (ft/s)	3.18	Avg. Vel. (ft/s)		3.18	
Max Chl Dpth (ft)	0.93	Hydr. Depth (ft)		0.71	
Conv. Total (cfs)	173.0	Conv. (cfs)		173.0	
Length Wtd. (ft)	198.82	Wetted Per. (ft)		8.34	
Min Ch El (ft)	15.75	Shear (lb/sq ft)		0.40	
Alpha	1.00	Stream Power (lb/ft s)		1.28	
Frctn Loss (ft)	1.56	Cum Volume (acre-ft)	0.00	0.19	0.00
C & E Loss (ft)	0.01	Cum SA (acres)	0.00	0.18	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 #10y

E.G. Elev (ft)	16.71	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.14	Wt. n-Val.		0.035	
W.S. Elev (ft)	16.57	Reach Len. (ft)	72.00	198.82	245.66
Crit W.S. (ft)		Flow Area (sq ft)		4.63	
E.G. Slope (ft/ft)	0.009678	Area (sq ft)		4.63	
Q Total (cfs)	14.04	Flow (cfs)		14.04	
Top Width (ft)	6.80	Top Width (ft)		6.80	
Vel Total (ft/s)	3.03	Avg. Vel. (ft/s)		3.03	
Max Chl Dpth (ft)	0.82	Hydr. Depth (ft)		0.68	
Conv. Total (cfs)	142.7	Conv. (cfs)		142.7	
Length Wtd. (ft)	198.82	Wetted Per. (ft)		7.48	
Min Ch El (ft)	15.75	Shear (lb/sq ft)		0.37	
Alpha	1.00	Stream Power (lb/ft s)		1.13	
Frctn Loss (ft)	1.56	Cum Volume (acre-ft)	0.00	0.16	0.00
C & E Loss (ft)	0.01	Cum SA (acres)	0.00	0.18	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 #5y

E.G. Elev (ft)	16.61	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.13	Wt. n-Val.		0.035	
W.S. Elev (ft)	16.48	Reach Len. (ft)	72.00	198.82	245.66
Crit W.S. (ft)		Flow Area (sq ft)		4.03	
E.G. Slope (ft/ft)	0.009588	Area (sq ft)		4.03	
Q Total (cfs)	11.69	Flow (cfs)		11.69	
Top Width (ft)	6.29	Top Width (ft)		6.29	
Vel Total (ft/s)	2.90	Avg. Vel. (ft/s)		2.90	
Max Chl Dpth (ft)	0.73	Hydr. Depth (ft)		0.64	
Conv. Total (cfs)	119.4	Conv. (cfs)		119.4	
Length Wtd. (ft)	198.82	Wetted Per. (ft)		6.92	
Min Ch El (ft)	15.75	Shear (lb/sq ft)		0.35	
Alpha	1.00	Stream Power (lb/ft s)		1.01	
Frctn Loss (ft)	1.56	Cum Volume (acre-ft)	0.00	0.14	
C & E Loss (ft)	0.01	Cum SA (acres)	0.00	0.18	

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

CROSS SECTION OUTPUT Profile #2y

E.G. Elev (ft)	16.48	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.11	Wt. n-Val.		0.035	

W.S. Elev (ft)	16.37	Reach Len. (ft)	72.00	198.82	245.66
Crit W.S. (ft)	16.21	Flow Area (sq ft)		3.34	
E.G. Slope (ft/ft)	0.009512	Area (sq ft)		3.34	
Q Total (cfs)	8.77	Flow (cfs)		8.77	
Top Width (ft)	6.08	Top Width (ft)		6.08	
Vel Total (ft/s)	2.63	Avg. Vel. (ft/s)		2.63	
Max Chl Dpth (ft)	0.62	Hydr. Depth (ft)		0.55	
Conv. Total (cfs)	89.9	Conv. (cfs)		89.9	
Length Wtd. (ft)	198.82	Wetted Per. (ft)		6.61	
Min Ch El (ft)	15.75	Shear (lb/sq ft)		0.30	
Alpha	1.00	Stream Power (lb/ft s)		0.79	
Frctn Loss (ft)	1.56	Cum Volume (acre-ft)	0.00	0.11	
C & E Loss (ft)	0.01	Cum SA (acres)	0.00	0.17	

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

CROSS SECTION OUTPUT Profile #1y

E.G. Elev (ft)	16.36	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.09	Wt. n-Val.		0.035	
W.S. Elev (ft)	16.27	Reach Len. (ft)	72.00	198.82	245.66
Crit W.S. (ft)	16.14	Flow Area (sq ft)		2.77	
E.G. Slope (ft/ft)	0.009753	Area (sq ft)		2.77	
Q Total (cfs)	6.68	Flow (cfs)		6.68	
Top Width (ft)	5.90	Top Width (ft)		5.90	
Vel Total (ft/s)	2.41	Avg. Vel. (ft/s)		2.41	
Max Chl Dpth (ft)	0.52	Hydr. Depth (ft)		0.47	
Conv. Total (cfs)	67.6	Conv. (cfs)		67.6	
Length Wtd. (ft)	198.82	Wetted Per. (ft)		6.35	
Min Ch El (ft)	15.75	Shear (lb/sq ft)		0.27	
Alpha	1.00	Stream Power (lb/ft s)		0.64	
Frctn Loss (ft)	1.56	Cum Volume (acre-ft)		0.09	
C & E Loss (ft)	0.01	Cum SA (acres)		0.16	

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

CROSS SECTION

RIVER: buena vista
REACH: one RS: 12

INPUT
Description: Seccion #7 en la Agrimensura
Station Elevation Data num= 25

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	18.5	5.34	18.62	11.13	18.19	15.83	18.28	18.58	18.34
26.21	18.02	29.78	17.75	33.95	17.27	41.51	17.27	45.17	17.36
50.62	16.97	55.78	16.91	58.6	16.35	60.13	15.63	61.62	14.13
64.17	14.15	66.39	14.18	69.17	15.7	76.29	16.84	79.94	17.18
85.06	16.95	87.68	16.91	92.84	16.56	93.89	16.26	98.94	16.58

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.015	29.78	.013	41.51	.035	60.13	.035	69.17	.035

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
60.13	69.17	133.71	117.99	115.63	.1 .3

CROSS SECTION OUTPUT Profile #100y

E.G. Elev (ft)	15.48	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.13	Wt. n-Val.		0.035	
W.S. Elev (ft)	15.35	Reach Len. (ft)	133.71	117.99	115.63
Crit W.S. (ft)		Flow Area (sq ft)		7.71	
E.G. Slope (ft/ft)	0.005812	Area (sq ft)		7.71	
Q Total (cfs)	22.63	Flow (cfs)		22.63	

Top Width (ft)	8.12	Top Width (ft)		8.12	
Vel Total (ft/s)	2.93	Avg. Vel. (ft/s)		2.93	
Max Chl Dpth (ft)	1.22	Hydr. Depth (ft)		0.95	
Conv. Total (cfs)	296.8	Conv. (cfs)		296.8	
Length Wtd. (ft)	117.99	Wetted Per. (ft)		8.93	
Min Ch El (ft)	14.13	Shear (lb/sq ft)		0.31	
Alpha	1.00	Stream Power (lb/ft s)		0.92	
Frctn Loss (ft)	0.50	Cum Volume (acre-ft)	0.01	0.20	0.02
C & E Loss (ft)	0.01	Cum SA (acres)	0.03	0.15	0.07

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

CROSS SECTION OUTPUT Profile #50y

E.G. Elev (ft)	15.38	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.13	Wt. n-Val.		0.035	
W.S. Elev (ft)	15.26	Reach Len. (ft)	133.71	117.99	115.63
Crit W.S. (ft)		Flow Area (sq ft)		6.97	
E.G. Slope (ft/ft)	0.006015	Area (sq ft)		6.97	
Q Total (cfs)	19.94	Flow (cfs)		19.94	
Top Width (ft)	7.86	Top Width (ft)		7.86	
Vel Total (ft/s)	2.86	Avg. Vel. (ft/s)		2.86	
Max Chl Dpth (ft)	1.13	Hydr. Depth (ft)		0.89	
Conv. Total (cfs)	257.1	Conv. (cfs)		257.1	
Length Wtd. (ft)	117.99	Wetted Per. (ft)		8.61	
Min Ch El (ft)	14.13	Shear (lb/sq ft)		0.30	
Alpha	1.00	Stream Power (lb/ft s)		0.87	
Frctn Loss (ft)	0.50	Cum Volume (acre-ft)	0.01	0.16	0.01
C & E Loss (ft)	0.01	Cum SA (acres)	0.03	0.14	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 OUTPUT Profile #25y

E.G. Elev (ft)	15.28	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.12	Wt. n-Val.		0.035	
W.S. Elev (ft)	15.16	Reach Len. (ft)	133.71	117.99	115.63
Crit W.S. (ft)		Flow Area (sq ft)		6.20	
E.G. Slope (ft/ft)	0.006355	Area (sq ft)		6.20	
Q Total (cfs)	17.35	Flow (cfs)		17.35	
Top Width (ft)	7.58	Top Width (ft)		7.58	
Vel Total (ft/s)	2.80	Avg. Vel. (ft/s)		2.80	
Max Chl Dpth (ft)	1.03	Hydr. Depth (ft)		0.82	
Conv. Total (cfs)	217.6	Conv. (cfs)		217.6	
Length Wtd. (ft)	117.99	Wetted Per. (ft)		8.26	
Min Ch El (ft)	14.13	Shear (lb/sq ft)		0.30	
Alpha	1.00	Stream Power (lb/ft s)		0.83	
Frctn Loss (ft)	0.54	Cum Volume (acre-ft)	0.00	0.16	0.00
C & E Loss (ft)	0.01	Cum SA (acres)	0.00	0.15	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 #10y

E.G. Elev (ft)	15.15	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.11	Wt. n-Val.		0.035	
W.S. Elev (ft)	15.04	Reach Len. (ft)	133.71	117.99	115.63
Crit W.S. (ft)		Flow Area (sq ft)		5.35	
E.G. Slope (ft/ft)	0.006473	Area (sq ft)		5.35	
Q Total (cfs)	14.13	Flow (cfs)		14.13	
Top Width (ft)	7.25	Top Width (ft)		7.25	
Vel Total (ft/s)	2.64	Avg. Vel. (ft/s)		2.64	
Max Chl Dpth (ft)	0.91	Hydr. Depth (ft)		0.74	
Conv. Total (cfs)	175.6	Conv. (cfs)		175.6	
Length Wtd. (ft)	117.99	Wetted Per. (ft)		7.86	

Min Ch El (ft)	14.13	Shear (lb/sq ft)		0.27	
Alpha	1.00	Stream Power (lb/ft s)		0.73	
Frctn Loss (ft)	0.57	Cum Volume (acre-ft)	0.00	0.14	0.00
C & E Loss (ft)	0.01	Cum SA (acres)	0.00	0.15	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 #5y

E.G. Elev (ft)	15.05	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.10	Wt. n-Val.		0.035	
W.S. Elev (ft)	14.95	Reach Len. (ft)	133.71	117.99	115.63
Crit W.S. (ft)		Flow Area (sq ft)		4.69	
E.G. Slope (ft/ft)	0.006555	Area (sq ft)		4.69	
Q Total (cfs)	11.76	Flow (cfs)		11.76	
Top Width (ft)	7.00	Top Width (ft)		7.00	
Vel Total (ft/s)	2.51	Avg. Vel. (ft/s)		2.51	
Max Chl Dpth (ft)	0.82	Hydr. Depth (ft)		0.67	
Conv. Total (cfs)	145.3	Conv. (cfs)		145.3	
Length Wtd. (ft)	117.99	Wetted Per. (ft)		7.54	
Min Ch El (ft)	14.13	Shear (lb/sq ft)		0.25	
Alpha	1.00	Stream Power (lb/ft s)		0.64	
Frctn Loss (ft)	0.58	Cum Volume (acre-ft)	0.00	0.12	
C & E Loss (ft)	0.01	Cum SA (acres)	0.00	0.15	

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

CROSS SECTION OUTPUT Profile #2y

E.G. Elev (ft)	14.91	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.08	Wt. n-Val.		0.035	
W.S. Elev (ft)	14.83	Reach Len. (ft)	133.71	117.99	115.63
Crit W.S. (ft)		Flow Area (sq ft)		3.86	
E.G. Slope (ft/ft)	0.006569	Area (sq ft)		3.86	
Q Total (cfs)	8.82	Flow (cfs)		8.82	
Top Width (ft)	6.65	Top Width (ft)		6.65	
Vel Total (ft/s)	2.29	Avg. Vel. (ft/s)		2.29	
Max Chl Dpth (ft)	0.70	Hydr. Depth (ft)		0.58	
Conv. Total (cfs)	108.9	Conv. (cfs)		108.9	
Length Wtd. (ft)	117.99	Wetted Per. (ft)		7.11	
Min Ch El (ft)	14.13	Shear (lb/sq ft)		0.22	
Alpha	1.00	Stream Power (lb/ft s)		0.51	
Frctn Loss (ft)	0.60	Cum Volume (acre-ft)	0.00	0.10	
C & E Loss (ft)	0.01	Cum SA (acres)	0.00	0.14	

CROSS SECTION OUTPUT Profile #1y

E.G. Elev (ft)	14.80	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.07	Wt. n-Val.		0.035	
W.S. Elev (ft)	14.73	Reach Len. (ft)	133.71	117.99	115.63
Crit W.S. (ft)		Flow Area (sq ft)		3.22	
E.G. Slope (ft/ft)	0.006490	Area (sq ft)		3.22	
Q Total (cfs)	6.72	Flow (cfs)		6.72	
Top Width (ft)	6.38	Top Width (ft)		6.38	
Vel Total (ft/s)	2.09	Avg. Vel. (ft/s)		2.09	
Max Chl Dpth (ft)	0.60	Hydr. Depth (ft)		0.51	
Conv. Total (cfs)	83.4	Conv. (cfs)		83.4	
Length Wtd. (ft)	117.99	Wetted Per. (ft)		6.77	
Min Ch El (ft)	14.13	Shear (lb/sq ft)		0.19	
Alpha	1.00	Stream Power (lb/ft s)		0.40	
Frctn Loss (ft)	0.60	Cum Volume (acre-ft)		0.08	
C & E Loss (ft)	0.01	Cum SA (acres)		0.13	

CROSS SECTION

RIVER: buena vista
REACH: one RS: 11

INPUT
Description: Seccion # 8 en la Agrimensura
Station Elevation Data num= 19

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	21.48	4.85	21.34	16.51	21.04	28.54	20.3	34.14	19.13
38.69	18.43	42.4	18.2	48.55	18.2	51.68	18.16	57.58	17.23
59.96	16.96	61.91	15.89	63.55	14.06	67.88	13.47	71.17	13.42
72.47	14.63	74.23	14.93	84.37	15.18	89.44	17.68		

Manning's n Values num= 6

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.013	16.51	.035	42.4	.013	48.55	.035	61.91	.035
84.37	.035								

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
61.91	84.37	155.56	72.04	36.34	.1 .3

CROSS SECTION OUTPUT Profile #100y

			Left OB	Channel	Right OB
E.G. Elev (ft)	14.97	Element			
Vel Head (ft)	0.09	Wt. n-Val.		0.035	
W.S. Elev (ft)	14.88	Reach Len. (ft)	155.56	72.04	36.34
Crit W.S. (ft)	14.31	Flow Area (sq ft)		11.14	
E.G. Slope (ft/ft)	0.003380	Area (sq ft)		11.14	
Q Total (cfs)	26.15	Flow (cfs)		26.15	
Top Width (ft)	11.12	Top Width (ft)		11.12	
Vel Total (ft/s)	2.35	Avg. Vel. (ft/s)		2.35	
Max Chl Dpth (ft)	1.46	Hydr. Depth (ft)		1.00	
Conv. Total (cfs)	449.7	Conv. (cfs)		449.7	
Length Wtd. (ft)	72.04	Wetted Per. (ft)		12.02	
Min Ch El (ft)	13.42	Shear (lb/sq ft)		0.20	
Alpha	1.00	Stream Power (lb/ft s)		0.46	
Frctn Loss (ft)	0.55	Cum Volume (acre-ft)	0.01	0.17	0.02
C & E Loss (ft)	0.03	Cum SA (acres)	0.03	0.12	0.07

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

CROSS SECTION OUTPUT Profile #50y

			Left OB	Channel	Right OB
E.G. Elev (ft)	14.87	Element			
Vel Head (ft)	0.08	Wt. n-Val.		0.035	
W.S. Elev (ft)	14.79	Reach Len. (ft)	155.56	72.04	36.34
Crit W.S. (ft)	14.26	Flow Area (sq ft)		10.13	
E.G. Slope (ft/ft)	0.003309	Area (sq ft)		10.13	
Q Total (cfs)	22.94	Flow (cfs)		22.94	
Top Width (ft)	10.49	Top Width (ft)		10.49	
Vel Total (ft/s)	2.26	Avg. Vel. (ft/s)		2.26	
Max Chl Dpth (ft)	1.37	Hydr. Depth (ft)		0.97	
Conv. Total (cfs)	398.8	Conv. (cfs)		398.8	
Length Wtd. (ft)	72.04	Wetted Per. (ft)		11.34	
Min Ch El (ft)	13.42	Shear (lb/sq ft)		0.18	
Alpha	1.00	Stream Power (lb/ft s)		0.42	
Frctn Loss (ft)	0.55	Cum Volume (acre-ft)	0.01	0.13	0.01
C & E Loss (ft)	0.03	Cum SA (acres)	0.03	0.11	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 OUTPUT Profile #25y

			Left OB	Channel	Right OB
E.G. Elev (ft)	14.73	Element			
Vel Head (ft)	0.08	Wt. n-Val.		0.035	
W.S. Elev (ft)	14.65	Reach Len. (ft)	155.56	72.04	36.34
Crit W.S. (ft)		Flow Area (sq ft)		8.74	

E.G. Slope (ft/ft)	0.003578	Area (sq ft)		8.74	
Q Total (cfs)	19.85	Flow (cfs)		19.85	
Top Width (ft)	9.54	Top Width (ft)		9.54	
Vel Total (ft/s)	2.27	Avg. Vel. (ft/s)		2.27	
Max Chl Dpth (ft)	1.23	Hydr. Depth (ft)		0.92	
Conv. Total (cfs)	331.8	Conv. (cfs)		331.8	
Length Wtd. (ft)	72.04	Wetted Per. (ft)		10.32	
Min Ch El (ft)	13.42	Shear (lb/sq ft)		0.19	
Alpha	1.00	Stream Power (lb/ft s)		0.43	
Frctn Loss (ft)	0.49	Cum Volume (acre-ft)	0.00	0.14	0.00
C & E Loss (ft)	0.01	Cum SA (acres)	0.00	0.13	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 #10y

E.G. Elev (ft)	14.58	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.07	Wt. n-Val.		0.035	
W.S. Elev (ft)	14.50	Reach Len. (ft)	155.56	72.04	36.34
Crit W.S. (ft)		Flow Area (sq ft)		7.39	
E.G. Slope (ft/ft)	0.003811	Area (sq ft)		7.39	
Q Total (cfs)	16.00	Flow (cfs)		16.00	
Top Width (ft)	9.18	Top Width (ft)		9.18	
Vel Total (ft/s)	2.16	Avg. Vel. (ft/s)		2.16	
Max Chl Dpth (ft)	1.08	Hydr. Depth (ft)		0.80	
Conv. Total (cfs)	259.1	Conv. (cfs)		259.1	
Length Wtd. (ft)	72.04	Wetted Per. (ft)		9.84	
Min Ch El (ft)	13.42	Shear (lb/sq ft)		0.18	
Alpha	1.00	Stream Power (lb/ft s)		0.39	
Frctn Loss (ft)	0.44	Cum Volume (acre-ft)	0.00	0.12	0.00
C & E Loss (ft)	0.01	Cum SA (acres)	0.00	0.13	0.00

CROSS SECTION OUTPUT Profile #5y

E.G. Elev (ft)	14.47	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.06	Wt. n-Val.		0.035	
W.S. Elev (ft)	14.40	Reach Len. (ft)	155.56	72.04	36.34
Crit W.S. (ft)		Flow Area (sq ft)		6.46	
E.G. Slope (ft/ft)	0.003874	Area (sq ft)		6.46	
Q Total (cfs)	13.16	Flow (cfs)		13.16	
Top Width (ft)	8.98	Top Width (ft)		8.98	
Vel Total (ft/s)	2.04	Avg. Vel. (ft/s)		2.04	
Max Chl Dpth (ft)	0.98	Hydr. Depth (ft)		0.72	
Conv. Total (cfs)	211.5	Conv. (cfs)		211.5	
Length Wtd. (ft)	72.04	Wetted Per. (ft)		9.56	
Min Ch El (ft)	13.42	Shear (lb/sq ft)		0.16	
Alpha	1.00	Stream Power (lb/ft s)		0.33	
Frctn Loss (ft)	0.41	Cum Volume (acre-ft)	0.00	0.10	
C & E Loss (ft)	0.01	Cum SA (acres)	0.00	0.12	

CROSS SECTION OUTPUT Profile #2y

E.G. Elev (ft)	14.31	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.05	Wt. n-Val.		0.035	
W.S. Elev (ft)	14.25	Reach Len. (ft)	155.56	72.04	36.34
Crit W.S. (ft)		Flow Area (sq ft)		5.17	
E.G. Slope (ft/ft)	0.004127	Area (sq ft)		5.17	
Q Total (cfs)	9.65	Flow (cfs)		9.65	
Top Width (ft)	8.69	Top Width (ft)		8.69	
Vel Total (ft/s)	1.86	Avg. Vel. (ft/s)		1.86	
Max Chl Dpth (ft)	0.83	Hydr. Depth (ft)		0.60	
Conv. Total (cfs)	150.2	Conv. (cfs)		150.2	
Length Wtd. (ft)	72.04	Wetted Per. (ft)		9.15	
Min Ch El (ft)	13.42	Shear (lb/sq ft)		0.15	
Alpha	1.00	Stream Power (lb/ft s)		0.27	
Frctn Loss (ft)	0.35	Cum Volume (acre-ft)	0.00	0.08	
C & E Loss (ft)	0.00	Cum SA (acres)	0.00	0.12	

CROSS SECTION OUTPUT Profile #1y

E.G. Elev (ft)	14.19	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.04	Wt. n-Val.		0.035	
W.S. Elev (ft)	14.15	Reach Len. (ft)	155.56	72.04	36.34
Crit W.S. (ft)		Flow Area (sq ft)		4.25	
E.G. Slope (ft/ft)	0.004166	Area (sq ft)		4.25	
Q Total (cfs)	7.13	Flow (cfs)		7.13	
Top Width (ft)	8.48	Top Width (ft)		8.48	
Vel Total (ft/s)	1.68	Avg. Vel. (ft/s)		1.68	
Max Chl Dpth (ft)	0.73	Hydr. Depth (ft)		0.50	
Conv. Total (cfs)	110.5	Conv. (cfs)		110.5	
Length Wtd. (ft)	72.04	Wetted Per. (ft)		8.84	
Min Ch El (ft)	13.42	Shear (lb/sq ft)		0.12	
Alpha	1.00	Stream Power (lb/ft s)		0.21	
Frctn Loss (ft)	0.37	Cum Volume (acre-ft)		0.07	
C & E Loss (ft)	0.00	Cum SA (acres)		0.11	

CROSS SECTION

RIVER: buena vista
REACH: one RS: 10

INPUT
Description: Seccion #9 en la Agrimensura
Station Elevation Data num= 18

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	21.07	4.61	20.95	8.53	20.85	11.19	20.81	18.26	20.93
24.2	20.9	26.63	20.86	30.91	20.45	37.05	16.88	41.32	16.17
45.58	15.78	49.37	13.17	52.72	13.17	56.08	13.18	59.59	15.18
65.87	16.94	66.87	19.12	76.87	19.42				

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.013	24.2	.035	45.58	.035	65.87	.015	66.87	.035

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
45.58	59.59	249.85	296.25 321.61	.1	.3

CROSS SECTION OUTPUT Profile #100y

E.G. Elev (ft)	14.39	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.37	Wt. n-Val.		0.035	
W.S. Elev (ft)	14.02	Reach Len. (ft)	249.85	296.25	321.61
Crit W.S. (ft)	14.02	Flow Area (sq ft)		6.82	
E.G. Slope (ft/ft)	0.021502	Area (sq ft)		6.82	
Q Total (cfs)	33.12	Flow (cfs)		33.12	
Top Width (ft)	9.42	Top Width (ft)		9.42	
Vel Total (ft/s)	4.86	Avg. Vel. (ft/s)		4.86	
Max Chl Dpth (ft)	0.85	Hydr. Depth (ft)		0.72	
Conv. Total (cfs)	225.9	Conv. (cfs)		225.9	
Length Wtd. (ft)	296.20	Wetted Per. (ft)		9.90	
Min Ch El (ft)	13.17	Shear (lb/sq ft)		0.92	
Alpha	1.00	Stream Power (lb/ft s)		4.49	
Frctn Loss (ft)	0.91	Cum Volume (acre-ft)	0.01	0.16	0.02
C & E Loss (ft)	0.09	Cum SA (acres)	0.03	0.11	0.07

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

depth, the calculated water surface came back below critical depth. This indicates that there
is not a valid subcritical answer. The program defaulted to critical depth.

CROSS SECTION OUTPUT Profile #50y

E.G. Elev (ft)	14.29	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.34	Wt. n-Val.		0.035	
W.S. Elev (ft)	13.95	Reach Len. (ft)	249.85	296.25	321.61
Crit W.S. (ft)	13.95	Flow Area (sq ft)		6.21	
E.G. Slope (ft/ft)	0.021942	Area (sq ft)		6.21	
Q Total (cfs)	29.09	Flow (cfs)		29.09	
Top Width (ft)	9.20	Top Width (ft)		9.20	
Vel Total (ft/s)	4.69	Avg. Vel. (ft/s)		4.69	
Max Chl Dpth (ft)	0.78	Hydr. Depth (ft)		0.67	
Conv. Total (cfs)	196.4	Conv. (cfs)		196.4	
Length Wtd. (ft)	296.02	Wetted Per. (ft)		9.65	
Min Ch El (ft)	13.17	Shear (lb/sq ft)		0.88	
Alpha	1.00	Stream Power (lb/ft s)		4.13	
Frctn Loss (ft)	0.95	Cum Volume (acre-ft)	0.01	0.12	0.01
C & E Loss (ft)	0.09	Cum SA (acres)	0.03	0.09	0.06

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

CROSS SECTION OUTPUT Profile #25y

E.G. Elev (ft)	14.22	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.23	Wt. n-Val.		0.035	
W.S. Elev (ft)	13.99	Reach Len. (ft)	249.85	296.25	321.61
Crit W.S. (ft)	13.89	Flow Area (sq ft)		6.57	
E.G. Slope (ft/ft)	0.013870	Area (sq ft)		6.57	
Q Total (cfs)	25.19	Flow (cfs)		25.19	
Top Width (ft)	9.33	Top Width (ft)		9.33	
Vel Total (ft/s)	3.83	Avg. Vel. (ft/s)		3.83	
Max Chl Dpth (ft)	0.82	Hydr. Depth (ft)		0.70	
Conv. Total (cfs)	213.9	Conv. (cfs)		213.9	
Length Wtd. (ft)	295.90	Wetted Per. (ft)		9.80	
Min Ch El (ft)	13.17	Shear (lb/sq ft)		0.58	
Alpha	1.00	Stream Power (lb/ft s)		2.23	
Frctn Loss (ft)	1.30	Cum Volume (acre-ft)	0.00	0.13	0.00
C & E Loss (ft)	0.05	Cum SA (acres)	0.00	0.11	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.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION OUTPUT Profile #10y

E.G. Elev (ft)	14.13	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.16	Wt. n-Val.		0.035	
W.S. Elev (ft)	13.97	Reach Len. (ft)	249.85	296.25	321.61
Crit W.S. (ft)	13.80	Flow Area (sq ft)		6.39	
E.G. Slope (ft/ft)	0.009836	Area (sq ft)		6.39	
Q Total (cfs)	20.34	Flow (cfs)		20.34	
Top Width (ft)	9.27	Top Width (ft)		9.27	
Vel Total (ft/s)	3.18	Avg. Vel. (ft/s)		3.18	
Max Chl Dpth (ft)	0.80	Hydr. Depth (ft)		0.69	

Conv. Total (cfs)	205.1	Conv. (cfs)		205.1	
Length Wtd. (ft)	296.03	Wetted Per. (ft)		9.73	
Min Ch El (ft)	13.17	Shear (lb/sq ft)		0.40	
Alpha	1.00	Stream Power (lb/ft s)		1.28	
Frctn Loss (ft)	1.47	Cum Volume (acre-ft)	0.00	0.11	0.00
C & E Loss (ft)	0.03	Cum SA (acres)	0.00	0.11	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.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION OUTPUT Profile #5y

E.G. Elev (ft)	14.05	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.12	Wt. n-Val.		0.035	
W.S. Elev (ft)	13.92	Reach Len. (ft)	249.85	296.25	321.61
Crit W.S. (ft)	13.72	Flow Area (sq ft)		5.95	
E.G. Slope (ft/ft)	0.008286	Area (sq ft)		5.95	
Q Total (cfs)	16.77	Flow (cfs)		16.77	
Top Width (ft)	9.11	Top Width (ft)		9.11	
Vel Total (ft/s)	2.82	Avg. Vel. (ft/s)		2.82	
Max Chl Dpth (ft)	0.75	Hydr. Depth (ft)		0.65	
Conv. Total (cfs)	184.2	Conv. (cfs)		184.2	
Length Wtd. (ft)	296.15	Wetted Per. (ft)		9.55	
Min Ch El (ft)	13.17	Shear (lb/sq ft)		0.32	
Alpha	1.00	Stream Power (lb/ft s)		0.91	
Frctn Loss (ft)	1.57	Cum Volume (acre-ft)	0.00	0.09	
C & E Loss (ft)	0.02	Cum SA (acres)	0.00	0.11	

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

CROSS SECTION OUTPUT Profile #2y

E.G. Elev (ft)	13.95	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.08	Wt. n-Val.		0.035	
W.S. Elev (ft)	13.88	Reach Len. (ft)	249.85	296.25	321.61
Crit W.S. (ft)	13.63	Flow Area (sq ft)		5.52	
E.G. Slope (ft/ft)	0.005614	Area (sq ft)		5.52	
Q Total (cfs)	12.34	Flow (cfs)		12.34	
Top Width (ft)	8.96	Top Width (ft)		8.96	
Vel Total (ft/s)	2.24	Avg. Vel. (ft/s)		2.24	
Max Chl Dpth (ft)	0.71	Hydr. Depth (ft)		0.62	
Conv. Total (cfs)	164.7	Conv. (cfs)		164.7	
Length Wtd. (ft)	296.24	Wetted Per. (ft)		9.37	
Min Ch El (ft)	13.17	Shear (lb/sq ft)		0.21	
Alpha	1.00	Stream Power (lb/ft s)		0.46	
Frctn Loss (ft)	1.74	Cum Volume (acre-ft)	0.00	0.08	
C & E Loss (ft)	0.00	Cum SA (acres)	0.00	0.11	

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

CROSS SECTION OUTPUT Profile #1y

E.G. Elev (ft)	13.81	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.07	Wt. n-Val.		0.035	
W.S. Elev (ft)	13.75	Reach Len. (ft)	249.85	296.25	321.61
Crit W.S. (ft)	13.55	Flow Area (sq ft)		4.37	
E.G. Slope (ft/ft)	0.006274	Area (sq ft)		4.37	
Q Total (cfs)	9.17	Flow (cfs)		9.17	
Top Width (ft)	8.54	Top Width (ft)		8.54	
Vel Total (ft/s)	2.10	Avg. Vel. (ft/s)		2.10	
Max Chl Dpth (ft)	0.58	Hydr. Depth (ft)		0.51	
Conv. Total (cfs)	115.7	Conv. (cfs)		115.7	

Length Wtd. (ft)	296.25	Wetted Per. (ft)	8.87
Min Ch El (ft)	13.17	Shear (lb/sq ft)	0.19
Alpha	1.00	Stream Power (lb/ft s)	0.40
Frctn Loss (ft)	1.79	Cum Volume (acre-ft)	0.06
C & E Loss (ft)	0.00	Cum SA (acres)	0.09

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

CROSS SECTION

RIVER: buena vista
REACH: one RS: 9

INPUT
Description: Seccion #10 en la Agrimensura
Station Elevation Data num= 26

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	21.51	2.83	21.5	11.82	21.38	17.96	21.36	20.14	21.06
22.52	20.16	25.1	18.7	25.96	17.4	27.38	17.83	31.48	17.69
34.35	17.09	37.8	15.18	40.59	14.65	45.2	12.05	47.33	12.15
48.15	11.83	49.52	11.12	51.46	11.15	53.48	11.21	54.63	12.49
56.41	12.78	66.54	13.27	67.88	14.38	74.58	14.69	84.51	14.77
96.22	14.67								

Manning's n Values num= 4

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.03	27.38	.013	31.48	.035	67.88	.013

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
45.2	54.63	35.42	55.13	93.81	.1 .3

CROSS SECTION OUTPUT Profile #100y

			Left OB	Channel	Right OB
E.G. Elev (ft)	13.28	Element	0.035	0.035	0.035
Vel Head (ft)	0.05	Wt. n-Val.	35.42	55.13	93.81
W.S. Elev (ft)	13.23	Reach Len. (ft)	1.23	15.61	3.14
Crit W.S. (ft)	12.29	Flow Area (sq ft)	1.23	15.61	3.14
E.G. Slope (ft/ft)	0.001169	Area (sq ft)	1.15	30.02	1.96
Q Total (cfs)	33.12	Flow (cfs)	2.09	9.43	11.05
Top Width (ft)	22.57	Top Width (ft)	0.93	1.92	0.63
Vel Total (ft/s)	1.66	Avg. Vel. (ft/s)	0.59	1.66	0.28
Max Chl Dpth (ft)	2.11	Hydr. Depth (ft)	33.5	877.7	57.4
Conv. Total (cfs)	968.6	Conv. (cfs)	2.40	10.24	11.09
Length Wtd. (ft)	56.02	Wetted Per. (ft)	0.04	0.11	0.02
Min Ch El (ft)	11.12	Shear (lb/sq ft)	0.03	0.21	0.01
Alpha	1.24	Stream Power (lb/ft s)	0.00	0.08	0.01
Frctn Loss (ft)	0.03	Cum Volume (acre-ft)	0.03	0.04	0.03
C & E Loss (ft)	0.01	Cum SA (acres)			

Warning: The conveyance ratio (upstream 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 #50y

			Left OB	Channel	Right OB
E.G. Elev (ft)	13.16	Element	0.035	0.035	0.035
Vel Head (ft)	0.05	Wt. n-Val.	35.42	55.13	93.81
W.S. Elev (ft)	13.11	Reach Len. (ft)	0.99	14.46	1.94
Crit W.S. (ft)	12.23	Flow Area (sq ft)	0.99	14.46	1.94
E.G. Slope (ft/ft)	0.001233	Area (sq ft)	0.88	27.13	1.08
Q Total (cfs)	29.09	Flow (cfs)	1.87	9.43	8.54
Top Width (ft)	19.84	Top Width (ft)	0.89	1.88	0.55
Vel Total (ft/s)	1.67	Avg. Vel. (ft/s)	0.53	1.53	0.23
Max Chl Dpth (ft)	1.99	Hydr. Depth (ft)	25.1	772.7	30.7
Conv. Total (cfs)	828.5	Conv. (cfs)	2.15	10.24	8.57
Length Wtd. (ft)	55.64	Wetted Per. (ft)	0.04	0.11	0.02
Min Ch El (ft)	11.12	Shear (lb/sq ft)			

Alpha	1.19	Stream Power (lb/ft s)	0.03	0.20	0.01
Frctn Loss (ft)	0.03	Cum Volume (acre-ft)	0.00	0.05	0.01
C & E Loss (ft)	0.01	Cum SA (acres)	0.03	0.03	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.
Note: Hydraulic jump has occurred between this cross section and the previous upstream section.

CROSS SECTION OUTPUT Profile #25y

E.G. Elev (ft)	12.87	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.07	Wt. n-Val.	0.035	0.035	0.035
W.S. Elev (ft)	12.80	Reach Len. (ft)	35.42	55.13	93.81
Crit W.S. (ft)		Flow Area (sq ft)	0.50	11.58	0.30
E.G. Slope (ft/ft)	0.002117	Area (sq ft)	0.50	11.58	0.30
Q Total (cfs)	25.19	Flow (cfs)	0.47	24.57	0.15
Top Width (ft)	12.99	Top Width (ft)	1.33	9.43	2.23
Vel Total (ft/s)	2.03	Avg. Vel. (ft/s)	0.93	2.12	0.51
Max Chl Dpth (ft)	1.68	Hydr. Depth (ft)	0.38	1.23	0.14
Conv. Total (cfs)	547.4	Conv. (cfs)	10.1	533.9	3.4
Length Wtd. (ft)	55.10	Wetted Per. (ft)	1.53	10.24	2.25
Min Ch El (ft)	11.12	Shear (lb/sq ft)	0.04	0.15	0.02
Alpha	1.07	Stream Power (lb/ft s)	0.04	0.32	0.01
Frctn Loss (ft)	0.04	Cum Volume (acre-ft)	0.00	0.06	0.00
C & E Loss (ft)	0.01	Cum SA (acres)	0.00	0.05	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 #10y

E.G. Elev (ft)	12.63	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.07	Wt. n-Val.	0.035	0.035	0.035
W.S. Elev (ft)	12.56	Reach Len. (ft)	35.42	55.13	93.81
Crit W.S. (ft)		Flow Area (sq ft)	0.23	9.27	0.01
E.G. Slope (ft/ft)	0.002988	Area (sq ft)	0.23	9.27	0.01
Q Total (cfs)	20.34	Flow (cfs)	0.19	20.14	0.00
Top Width (ft)	10.74	Top Width (ft)	0.90	9.43	0.41
Vel Total (ft/s)	2.14	Avg. Vel. (ft/s)	0.85	2.17	0.24
Max Chl Dpth (ft)	1.44	Hydr. Depth (ft)	0.25	0.98	0.03
Conv. Total (cfs)	372.1	Conv. (cfs)	3.5	368.5	0.1
Length Wtd. (ft)	55.07	Wetted Per. (ft)	1.03	10.24	0.42
Min Ch El (ft)	11.12	Shear (lb/sq ft)	0.04	0.17	0.01
Alpha	1.02	Stream Power (lb/ft s)	0.03	0.37	0.00
Frctn Loss (ft)	0.05	Cum Volume (acre-ft)	0.00	0.06	0.00
C & E Loss (ft)	0.01	Cum SA (acres)	0.00	0.05	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 #5y

E.G. Elev (ft)	12.47	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.07	Wt. n-Val.	0.035	0.035	
W.S. Elev (ft)	12.39	Reach Len. (ft)	35.42	55.13	93.81
Crit W.S. (ft)		Flow Area (sq ft)	0.10	7.73	
E.G. Slope (ft/ft)	0.003694	Area (sq ft)	0.10	7.73	
Q Total (cfs)	16.77	Flow (cfs)	0.08	16.70	
Top Width (ft)	9.95	Top Width (ft)	0.61	9.34	
Vel Total (ft/s)	2.14	Avg. Vel. (ft/s)	0.73	2.16	
Max Chl Dpth (ft)	1.27	Hydr. Depth (ft)	0.17	0.83	
Conv. Total (cfs)	276.0	Conv. (cfs)	1.2	274.7	
Length Wtd. (ft)	55.10	Wetted Per. (ft)	0.70	10.11	
Min Ch El (ft)	11.12	Shear (lb/sq ft)	0.03	0.18	
Alpha	1.01	Stream Power (lb/ft s)	0.03	0.38	
Frctn Loss (ft)	0.06	Cum Volume (acre-ft)	0.00	0.05	
C & E Loss (ft)	0.01	Cum SA (acres)	0.00	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 #2y

E.G. Elev (ft)	12.22	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.08	Wt. n-Val.	0.035	0.035	
W.S. Elev (ft)	12.14	Reach Len. (ft)	35.42	55.13	93.81
Crit W.S. (ft)		Flow Area (sq ft)	0.01	5.42	
E.G. Slope (ft/ft)	0.006154	Area (sq ft)	0.01	5.42	
Q Total (cfs)	12.34	Flow (cfs)	0.00	12.33	
Top Width (ft)	9.09	Top Width (ft)	0.16	8.93	
Vel Total (ft/s)	2.27	Avg. Vel. (ft/s)	0.39	2.28	
Max Chl Dpth (ft)	1.02	Hydr. Depth (ft)	0.05	0.61	
Conv. Total (cfs)	157.3	Conv. (cfs)	0.0	157.2	
Length Wtd. (ft)	55.13	Wetted Per. (ft)	0.19	9.58	
Min Ch El (ft)	11.12	Shear (lb/sq ft)	0.02	0.22	
Alpha	1.00	Stream Power (lb/ft s)	0.01	0.49	
Frctn Loss (ft)	0.07	Cum Volume (acre-ft)	0.00	0.04	
C & E Loss (ft)	0.00	Cum SA (acres)	0.00	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.

CROSS SECTION OUTPUT Profile #1y

E.G. Elev (ft)	12.03	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.08	Wt. n-Val.		0.035	
W.S. Elev (ft)	11.95	Reach Len. (ft)	35.42	55.13	93.81
Crit W.S. (ft)		Flow Area (sq ft)		4.02	
E.G. Slope (ft/ft)	0.005818	Area (sq ft)		4.02	
Q Total (cfs)	9.17	Flow (cfs)		9.17	
Top Width (ft)	6.29	Top Width (ft)		6.29	
Vel Total (ft/s)	2.28	Avg. Vel. (ft/s)		2.28	
Max Chl Dpth (ft)	0.83	Hydr. Depth (ft)		0.64	
Conv. Total (cfs)	120.2	Conv. (cfs)		120.2	
Length Wtd. (ft)	55.13	Wetted Per. (ft)		6.81	
Min Ch El (ft)	11.12	Shear (lb/sq ft)		0.21	
Alpha	1.00	Stream Power (lb/ft s)		0.49	
Frctn Loss (ft)	0.08	Cum Volume (acre-ft)		0.03	
C & E Loss (ft)	0.00	Cum SA (acres)		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

RIVER: buena vista
REACH: one RS: 8

INPUT
Description: Seccion #11 en la Agrimensura
Station Elevation Data num= 19

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	14.97	28.62	14.52	38.05	14.39	50.45	14.13	68.77	13.74
70.17	12.3	71.02	11.5	71.6	11.08	76.34	10.98	79.44	10.99
80.78	12.48	87.3	13.58	93.72	13.43	103.81	13.48	112.11	13.61
118.85	13.7	127.71	13.77	140.64	13.96	155.96	14.47		

Manning's n Values num= 1

Sta	n Val
0	.013

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
70.17	80.78	44.98 32.75	32.95	.1	.3

CROSS SECTION OUTPUT Profile #100y

E.G. Elev (ft)	13.24	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.16	Wt. n-Val.	0.013	0.013	0.013
W.S. Elev (ft)	13.08	Reach Len. (ft)	44.98	32.75	32.95
Crit W.S. (ft)	12.25	Flow Area (sq ft)	0.29	20.04	1.06
E.G. Slope (ft/ft)	0.000399	Area (sq ft)	0.29	20.04	1.06
Q Total (cfs)	66.80	Flow (cfs)	0.28	65.44	1.08
Top Width (ft)	14.92	Top Width (ft)	0.76	10.61	3.55
Vel Total (ft/s)	3.12	Avg. Vel. (ft/s)	0.96	3.27	1.01
Max Chl Dpth (ft)	2.10	Hydr. Depth (ft)	0.39	1.89	0.30
Conv. Total (cfs)	3342.8	Conv. (cfs)	14.1	3274.8	53.9
Length Wtd. (ft)	32.75	Wetted Per. (ft)	1.09	11.73	3.60
Min Ch El (ft)	10.98	Shear (lb/sq ft)	0.01	0.04	0.01
Alpha	1.07	Stream Power (lb/ft s)	0.01	0.14	0.01
Frctn Loss (ft)		Cum Volume (acre-ft)	0.00	0.06	0.00
C & E Loss (ft)		Cum SA (acres)	0.02	0.03	0.02

CROSS SECTION OUTPUT Profile #50y

E.G. Elev (ft)	13.12	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.14	Wt. n-Val.	0.013	0.013	0.013
W.S. Elev (ft)	12.98	Reach Len. (ft)	44.98	32.75	32.95
Crit W.S. (ft)	12.15	Flow Area (sq ft)	0.22	18.95	0.73
E.G. Slope (ft/ft)	0.000377	Area (sq ft)	0.22	18.95	0.73
Q Total (cfs)	58.76	Flow (cfs)	0.19	57.94	0.63
Top Width (ft)	14.21	Top Width (ft)	0.66	10.61	2.94
Vel Total (ft/s)	2.95	Avg. Vel. (ft/s)	0.85	3.06	0.87
Max Chl Dpth (ft)	2.00	Hydr. Depth (ft)	0.34	1.79	0.25
Conv. Total (cfs)	3025.7	Conv. (cfs)	9.7	2983.3	32.6
Length Wtd. (ft)	32.75	Wetted Per. (ft)	0.94	11.73	2.98
Min Ch El (ft)	10.98	Shear (lb/sq ft)	0.01	0.04	0.01
Alpha	1.06	Stream Power (lb/ft s)	0.00	0.12	0.01
Frctn Loss (ft)		Cum Volume (acre-ft)	0.00	0.03	0.00
C & E Loss (ft)		Cum SA (acres)	0.02	0.02	0.02

CROSS SECTION OUTPUT Profile #25y

E.G. Elev (ft)	12.82	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.17	Wt. n-Val.	0.013	0.013	0.013
W.S. Elev (ft)	12.65	Reach Len. (ft)	44.98	32.75	32.95
Crit W.S. (ft)	12.05	Flow Area (sq ft)	0.06	15.48	0.08
E.G. Slope (ft/ft)	0.000573	Area (sq ft)	0.06	15.48	0.08
Q Total (cfs)	51.01	Flow (cfs)	0.04	50.92	0.04
Top Width (ft)	11.95	Top Width (ft)	0.34	10.61	1.00
Vel Total (ft/s)	3.27	Avg. Vel. (ft/s)	0.67	3.29	0.52
Max Chl Dpth (ft)	1.67	Hydr. Depth (ft)	0.17	1.46	0.08
Conv. Total (cfs)	2131.4	Conv. (cfs)	1.7	2127.9	1.8
Length Wtd. (ft)	32.75	Wetted Per. (ft)	0.49	11.73	1.01
Min Ch El (ft)	10.98	Shear (lb/sq ft)	0.00	0.05	0.00
Alpha	1.01	Stream Power (lb/ft s)	0.00	0.16	0.00
Frctn Loss (ft)		Cum Volume (acre-ft)	0.00	0.05	0.00
C & E Loss (ft)		Cum SA (acres)	0.00	0.03	0.00

CROSS SECTION OUTPUT Profile #10y

E.G. Elev (ft)	12.57	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.16	Wt. n-Val.	0.013	0.013	
W.S. Elev (ft)	12.41	Reach Len. (ft)	44.98	32.75	32.95
Crit W.S. (ft)	11.92	Flow Area (sq ft)	0.01	12.93	
E.G. Slope (ft/ft)	0.000680	Area (sq ft)	0.01	12.93	
Q Total (cfs)	41.37	Flow (cfs)	0.00	41.36	
Top Width (ft)	10.65	Top Width (ft)	0.11	10.55	
Vel Total (ft/s)	3.20	Avg. Vel. (ft/s)	0.34	3.20	
Max Chl Dpth (ft)	1.43	Hydr. Depth (ft)	0.05	1.23	
Conv. Total (cfs)	1586.5	Conv. (cfs)	0.1	1586.4	
Length Wtd. (ft)	32.75	Wetted Per. (ft)	0.15	11.63	
Min Ch El (ft)	10.98	Shear (lb/sq ft)	0.00	0.05	

Alpha	1.00	Stream Power (lb/ft s)	0.00	0.15
Frctn Loss (ft)		Cum Volume (acre-ft)	0.00	0.04
C & E Loss (ft)		Cum SA (acres)	0.00	0.03

CROSS SECTION OUTPUT Profile #5y

E.G. Elev (ft)	12.40	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.14	Wt. n-Val.		0.013	
W.S. Elev (ft)	12.26	Reach Len. (ft)	44.98	32.75	32.95
Crit W.S. (ft)	11.82	Flow Area (sq ft)		11.36	
E.G. Slope (ft/ft)	0.000698	Area (sq ft)		11.36	
Q Total (cfs)	34.28	Flow (cfs)		34.28	
Top Width (ft)	10.37	Top Width (ft)		10.37	
Vel Total (ft/s)	3.02	Avg. Vel. (ft/s)		3.02	
Max Chl Dpth (ft)	1.28	Hydr. Depth (ft)		1.10	
Conv. Total (cfs)	1297.5	Conv. (cfs)		1297.5	
Length Wtd. (ft)	32.75	Wetted Per. (ft)		11.37	
Min Ch El (ft)	10.98	Shear (lb/sq ft)		0.04	
Alpha	1.00	Stream Power (lb/ft s)		0.13	
Frctn Loss (ft)		Cum Volume (acre-ft)		0.04	
C & E Loss (ft)		Cum SA (acres)		0.03	

CROSS SECTION OUTPUT Profile #2y

E.G. Elev (ft)	12.15	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.13	Wt. n-Val.		0.013	
W.S. Elev (ft)	12.02	Reach Len. (ft)	44.98	32.75	32.95
Crit W.S. (ft)	11.68	Flow Area (sq ft)		8.95	
E.G. Slope (ft/ft)	0.000787	Area (sq ft)		8.95	
Q Total (cfs)	25.48	Flow (cfs)		25.48	
Top Width (ft)	9.90	Top Width (ft)		9.90	
Vel Total (ft/s)	2.85	Avg. Vel. (ft/s)		2.85	
Max Chl Dpth (ft)	1.04	Hydr. Depth (ft)		0.90	
Conv. Total (cfs)	908.5	Conv. (cfs)		908.5	
Length Wtd. (ft)	32.75	Wetted Per. (ft)		10.70	
Min Ch El (ft)	10.98	Shear (lb/sq ft)		0.04	
Alpha	1.00	Stream Power (lb/ft s)		0.12	
Frctn Loss (ft)		Cum Volume (acre-ft)		0.03	
C & E Loss (ft)		Cum SA (acres)		0.03	

CROSS SECTION OUTPUT Profile #1y

E.G. Elev (ft)	11.95	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.11	Wt. n-Val.		0.013	
W.S. Elev (ft)	11.84	Reach Len. (ft)	44.98	32.75	32.95
Crit W.S. (ft)	11.57	Flow Area (sq ft)		7.15	
E.G. Slope (ft/ft)	0.000883	Area (sq ft)		7.15	
Q Total (cfs)	19.19	Flow (cfs)		19.19	
Top Width (ft)	9.54	Top Width (ft)		9.54	
Vel Total (ft/s)	2.68	Avg. Vel. (ft/s)		2.68	
Max Chl Dpth (ft)	0.86	Hydr. Depth (ft)		0.75	
Conv. Total (cfs)	645.8	Conv. (cfs)		645.8	
Length Wtd. (ft)	32.75	Wetted Per. (ft)		10.18	
Min Ch El (ft)	10.98	Shear (lb/sq ft)		0.04	
Alpha	1.00	Stream Power (lb/ft s)		0.10	
Frctn Loss (ft)		Cum Volume (acre-ft)		0.02	
C & E Loss (ft)		Cum SA (acres)		0.03	

CULVERT

RIVER: buena vista
REACH: one RS: 7.5

INPUT
Description:
Distance from Upstream XS = .5

```
Deck/Roadway Width        =   31.75
Weir Coefficient          =     2.6
Upstream  Deck/Roadway Coordinates
    num=       3
     Sta Hi Cord Lo Cord      Sta Hi Cord Lo Cord      Sta Hi Cord Lo Cord
   68.77   13.74       0    75.6    13.8       0    87.3   13.58       0

Upstream Bridge Cross Section Data
Station Elevation Data    num=      19
     Sta     Elev      Sta     Elev      Sta     Elev      Sta     Elev      Sta     Elev
       0    14.97    28.62    14.52    38.05    14.39    50.45    14.13    68.77    13.74
   70.17     12.3    71.02     11.5     71.6    11.08    76.34    10.98    79.44    10.99
   80.78    12.48     87.3    13.58    93.72    13.43   103.81    13.48   112.11    13.61
  118.85     13.7   127.71    13.77   140.64    13.96   155.96    14.47

Manning's n Values        num=       1
     Sta   n Val
       0    .013

Bank Sta: Left   Right    Coeff Contr.   Expan.
         70.17   80.78             .1       .3

Downstream  Deck/Roadway Coordinates
    num=       3
     Sta Hi Cord Lo Cord      Sta Hi Cord Lo Cord      Sta Hi Cord Lo Cord
   34.73      15       0   44.44   15.05       0   57.58      15       0

Downstream Bridge Cross Section Data
Station Elevation Data    num=      20
     Sta     Elev      Sta     Elev      Sta     Elev      Sta     Elev      Sta     Elev
       0     14.4    12.54    14.66    24.13    14.75     30.4     14.7    34.73    14.66
    37.7    13.68    39.17     12.4    39.45    12.37    40.44    10.79    44.06    10.78
   48.34    10.79    49.65    12.19    49.81    12.52    51.22    13.29    57.58    14.57
   68.73    14.57    83.04    14.29    95.08    14.04   107.71    13.81   115.86    14.26

Manning's n Values        num=       3
     Sta   n Val      Sta   n Val      Sta   n Val
       0    .015    34.73    .013    57.58    .015

Bank Sta: Left   Right    Coeff Contr.   Expan.
          37.7   51.22             .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        =   13.16
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    2.37        8
FHWA Chart # 8 - flared wingwalls
FHWA Scale # 1 - Wingwall flared 30 to 75 deg.
Solution Criteria = Highest U.S. EG
Culvert Upstrm Dist  Length    Top n  Bottom n  Depth Blocked  Entrance Loss Coef   Exit Loss Coef
                .5   31.75     .013     .013        0                  .4                1
Upstream   Elevation =  10.99
           Centerline Station =  75.6
Downstream Elevation =  10.79
           Centerline Station =  44.44

CULVERT OUTPUT  Profile #100y  Culv Group:  Culvert #1

  Q Culv Group (cfs)         66.80    Culv Full Len (ft)
  # Barrels                      1    Culv Vel US (ft/s)          4.73
  Q Barrel (cfs)             66.80    Culv Vel DS (ft/s)          4.15
  E.G. US. (ft)              13.24    Culv Inv El Up (ft)        10.99
  W.S. US. (ft)              13.08    Culv Inv El Dn (ft)        10.79
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E.G. DS (ft)	12.99	Culv Frctn Ls (ft)	0.03
W.S. DS (ft)	12.80	Culv Exit Loss (ft)	0.08
Delta EG (ft)	0.25	Culv Entr Loss (ft)	0.14
Delta WS (ft)	0.28	Q Weir (cfs)	
E.G. IC (ft)	13.06	Weir Sta Lft (ft)	
E.G. OC (ft)	13.24	Weir Sta Rgt (ft)	
Culvert Control	Outlet	Weir Submerg	
Culv WS Inlet (ft)	12.75	Weir Max Depth (ft)	
Culv WS Outlet (ft)	12.80	Weir Avg Depth (ft)	
Culv Nml Depth (ft)	1.05	Weir Flow Area (sq ft)	
Culv Crt Depth (ft)	1.29	Min El Weir Flow (ft)	13.82

CULVERT OUTPUT Profile #50y Culv Group: Culvert #1

Q Culv Group (cfs)	58.76	Culv Full Len (ft)	
# Barrels	1	Culv Vel US (ft/s)	4.18
Q Barrel (cfs)	58.76	Culv Vel DS (ft/s)	3.69
E.G. US. (ft)	13.13	Culv Inv El Up (ft)	10.99
W.S. US. (ft)	12.98	Culv Inv El Dn (ft)	10.79
E.G. DS (ft)	12.93	Culv Frctn Ls (ft)	0.03
W.S. DS (ft)	12.78	Culv Exit Loss (ft)	0.06
Delta EG (ft)	0.20	Culv Entr Loss (ft)	0.11
Delta WS (ft)	0.20	Q Weir (cfs)	
E.G. IC (ft)	12.89	Weir Sta Lft (ft)	
E.G. OC (ft)	13.13	Weir Sta Rgt (ft)	
Culvert Control	Outlet	Weir Submerg	
Culv WS Inlet (ft)	12.75	Weir Max Depth (ft)	
Culv WS Outlet (ft)	12.78	Weir Avg Depth (ft)	
Culv Nml Depth (ft)	0.96	Weir Flow Area (sq ft)	
Culv Crt Depth (ft)	1.19	Min El Weir Flow (ft)	13.82

CULVERT OUTPUT Profile #25y Culv Group: Culvert #1

Q Culv Group (cfs)	51.01	Culv Full Len (ft)	
# Barrels	1	Culv Vel US (ft/s)	4.84
Q Barrel (cfs)	51.01	Culv Vel DS (ft/s)	4.02
E.G. US. (ft)	12.82	Culv Inv El Up (ft)	10.99
W.S. US. (ft)	12.65	Culv Inv El Dn (ft)	10.79
E.G. DS (ft)	12.57	Culv Frctn Ls (ft)	0.04
W.S. DS (ft)	12.38	Culv Exit Loss (ft)	0.06
Delta EG (ft)	0.25	Culv Entr Loss (ft)	0.15
Delta WS (ft)	0.27	Q Weir (cfs)	
E.G. IC (ft)	12.71	Weir Sta Lft (ft)	
E.G. OC (ft)	12.82	Weir Sta Rgt (ft)	
Culvert Control	Outlet	Weir Submerg	
Culv WS Inlet (ft)	12.31	Weir Max Depth (ft)	
Culv WS Outlet (ft)	12.38	Weir Avg Depth (ft)	
Culv Nml Depth (ft)	0.88	Weir Flow Area (sq ft)	
Culv Crt Depth (ft)	1.08	Min El Weir Flow (ft)	13.82

CULVERT OUTPUT Profile #10y Culv Group: Culvert #1

Q Culv Group (cfs)	41.37	Culv Full Len (ft)	
# Barrels	1	Culv Vel US (ft/s)	4.99
Q Barrel (cfs)	41.37	Culv Vel DS (ft/s)	3.86
E.G. US. (ft)	12.57	Culv Inv El Up (ft)	10.99
W.S. US. (ft)	12.41	Culv Inv El Dn (ft)	10.79
E.G. DS (ft)	12.31	Culv Frctn Ls (ft)	0.05
W.S. DS (ft)	12.13	Culv Exit Loss (ft)	0.05
Delta EG (ft)	0.25	Culv Entr Loss (ft)	0.15
Delta WS (ft)	0.28	Q Weir (cfs)	
E.G. IC (ft)	12.48	Weir Sta Lft (ft)	
E.G. OC (ft)	12.57	Weir Sta Rgt (ft)	
Culvert Control	Outlet	Weir Submerg	
Culv WS Inlet (ft)	12.03	Weir Max Depth (ft)	
Culv WS Outlet (ft)	12.13	Weir Avg Depth (ft)	
Culv Nml Depth (ft)	0.77	Weir Flow Area (sq ft)	
Culv Crt Depth (ft)	0.94	Min El Weir Flow (ft)	13.82

CULVERT OUTPUT Profile #5y Culv Group: Culvert #1

Q Culv Group (cfs)	34.28	Culv Full Len (ft)	
# Barrels	1	Culv Vel US (ft/s)	5.17
Q Barrel (cfs)	34.28	Culv Vel DS (ft/s)	6.11
E.G. US. (ft)	12.40	Culv Inv El Up (ft)	10.99
W.S. US. (ft)	12.26	Culv Inv El Dn (ft)	10.79
E.G. DS (ft)	12.11	Culv Frctn Ls (ft)	0.12
W.S. DS (ft)	11.93	Culv Exit Loss (ft)	
Delta EG (ft)	0.29	Culv Entr Loss (ft)	0.17
Delta WS (ft)	0.32	Q Weir (cfs)	
E.G. IC (ft)	12.30	Weir Sta Lft (ft)	
E.G. OC (ft)	12.40	Weir Sta Rgt (ft)	
Culvert Control	Inlet	Weir Submerg	
Culv WS Inlet (ft)	11.82	Weir Max Depth (ft)	
Culv WS Outlet (ft)	11.49	Weir Avg Depth (ft)	
Culv Nml Depth (ft)	0.68	Weir Flow Area (sq ft)	
Culv Crt Depth (ft)	0.83	Min El Weir Flow (ft)	13.82

Note: During the supercritical calculations a hydraulic jump occurred at the outlet of (leaving) the culvert.
Note: The flow in the culvert is entirely supercritical.

CULVERT OUTPUT Profile #2y Culv Group: Culvert #1

Q Culv Group (cfs)	25.48	Culv Full Len (ft)	
# Barrels	1	Culv Vel US (ft/s)	4.68
Q Barrel (cfs)	25.48	Culv Vel DS (ft/s)	5.62
E.G. US. (ft)	12.15	Culv Inv El Up (ft)	10.99
W.S. US. (ft)	12.02	Culv Inv El Dn (ft)	10.79
E.G. DS (ft)	11.85	Culv Frctn Ls (ft)	0.16
W.S. DS (ft)	11.67	Culv Exit Loss (ft)	
Delta EG (ft)	0.30	Culv Entr Loss (ft)	0.14
Delta WS (ft)	0.35	Q Weir (cfs)	
E.G. IC (ft)	12.06	Weir Sta Lft (ft)	
E.G. OC (ft)	12.15	Weir Sta Rgt (ft)	
Culvert Control	Inlet	Weir Submerg	
Culv WS Inlet (ft)	11.67	Weir Max Depth (ft)	
Culv WS Outlet (ft)	11.36	Weir Avg Depth (ft)	
Culv Nml Depth (ft)	0.57	Weir Flow Area (sq ft)	
Culv Crt Depth (ft)	0.68	Min El Weir Flow (ft)	13.82

Note: During the supercritical calculations a hydraulic jump occurred at the outlet of (leaving) the culvert.
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.

CULVERT OUTPUT Profile #1y Culv Group: Culvert #1

Q Culv Group (cfs)	19.19	Culv Full Len (ft)	
# Barrels	1	Culv Vel US (ft/s)	4.26
Q Barrel (cfs)	19.19	Culv Vel DS (ft/s)	5.05
E.G. US. (ft)	11.95	Culv Inv El Up (ft)	10.99
W.S. US. (ft)	11.84	Culv Inv El Dn (ft)	10.79
E.G. DS (ft)	11.64	Culv Frctn Ls (ft)	0.17
W.S. DS (ft)	11.47	Culv Exit Loss (ft)	0.02
Delta EG (ft)	0.31	Culv Entr Loss (ft)	0.11
Delta WS (ft)	0.37	Q Weir (cfs)	
E.G. IC (ft)	11.87	Weir Sta Lft (ft)	
E.G. OC (ft)	11.95	Weir Sta Rgt (ft)	
Culvert Control	Inlet	Weir Submerg	
Culv WS Inlet (ft)	11.55	Weir Max Depth (ft)	
Culv WS Outlet (ft)	11.26	Weir Avg Depth (ft)	

Culv Nml Depth (ft)	0.47	Weir Flow Area (sq ft)	
Culv Crt Depth (ft)	0.56	Min El Weir Flow (ft)	13.82

Note: During the supercritical calculations a hydraulic jump occurred at the outlet of (leaving) the culvert.
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: buena vista
REACH: one RS: 7

INPUT
Description: Seccion #12 en la Agrimensura
Station Elevation Data num= 20

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	14.4	12.54	14.66	24.13	14.75	30.4	14.7	34.73	14.66
37.7	13.68	39.17	12.4	39.45	12.37	40.44	10.79	44.06	10.78
48.34	10.79	49.65	12.19	49.81	12.52	51.22	13.29	57.58	14.57
68.73	14.57	83.04	14.29	95.08	14.04	107.71	13.81	115.86	14.26

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.015	34.73	.013	57.58	.015

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
37.7	51.22	13.93	23	19.43	.1	.3

CROSS SECTION OUTPUT Profile #100y

			Left OB	Channel	Right OB
E.G. Elev (ft)	12.99	Element			
Vel Head (ft)	0.19	Wt. n-Val.		0.013	
W.S. Elev (ft)	12.80	Reach Len. (ft)	13.93	23.00	19.43
Crit W.S. (ft)		Flow Area (sq ft)		19.20	
E.G. Slope (ft/ft)	0.000581	Area (sq ft)		19.20	
Q Total (cfs)	66.80	Flow (cfs)		66.80	
Top Width (ft)	11.61	Top Width (ft)		11.61	
Vel Total (ft/s)	3.48	Avg. Vel. (ft/s)		3.48	
Max Chl Dpth (ft)	2.02	Hydr. Depth (ft)		1.65	
Conv. Total (cfs)	2771.0	Conv. (cfs)		2771.0	
Length Wtd. (ft)	22.54	Wetted Per. (ft)		13.52	
Min Ch El (ft)	10.78	Shear (lb/sq ft)		0.05	
Alpha	1.00	Stream Power (lb/ft s)		0.18	
Frctn Loss (ft)	0.02	Cum Volume (acre-ft)	0.00	0.05	0.00
C & E Loss (ft)	0.00	Cum SA (acres)	0.02	0.02	0.02

CROSS SECTION OUTPUT Profile #50y

			Left OB	Channel	Right OB
E.G. Elev (ft)	12.93	Element			
Vel Head (ft)	0.15	Wt. n-Val.		0.013	
W.S. Elev (ft)	12.78	Reach Len. (ft)	13.93	23.00	19.43
Crit W.S. (ft)		Flow Area (sq ft)		18.98	
E.G. Slope (ft/ft)	0.000464	Area (sq ft)		18.98	
Q Total (cfs)	58.76	Flow (cfs)		58.76	
Top Width (ft)	11.56	Top Width (ft)		11.56	
Vel Total (ft/s)	3.10	Avg. Vel. (ft/s)		3.10	
Max Chl Dpth (ft)	2.00	Hydr. Depth (ft)		1.64	
Conv. Total (cfs)	2727.5	Conv. (cfs)		2727.5	
Length Wtd. (ft)	22.48	Wetted Per. (ft)		13.46	
Min Ch El (ft)	10.78	Shear (lb/sq ft)		0.04	
Alpha	1.00	Stream Power (lb/ft s)		0.13	
Frctn Loss (ft)	0.01	Cum Volume (acre-ft)	0.00	0.01	0.00
C & E Loss (ft)	0.00	Cum SA (acres)	0.02	0.01	0.02

CROSS SECTION OUTPUT Profile #25y

E.G. Elev (ft)	12.57	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.19	Wt. n-Val.		0.013	
W.S. Elev (ft)	12.38	Reach Len. (ft)	13.93	23.00	19.43
Crit W.S. (ft)		Flow Area (sq ft)		14.53	
E.G. Slope (ft/ft)	0.000726	Area (sq ft)		14.53	
Q Total (cfs)	51.01	Flow (cfs)		51.01	
Top Width (ft)	10.35	Top Width (ft)		10.35	
Vel Total (ft/s)	3.51	Avg. Vel. (ft/s)		3.51	
Max Chl Dpth (ft)	1.60	Hydr. Depth (ft)		1.40	
Conv. Total (cfs)	1892.4	Conv. (cfs)		1892.4	
Length Wtd. (ft)	23.00	Wetted Per. (ft)		11.95	
Min Ch El (ft)	10.78	Shear (lb/sq ft)		0.06	
Alpha	1.00	Stream Power (lb/ft s)		0.19	
Frctn Loss (ft)	0.03	Cum Volume (acre-ft)		0.04	
C & E Loss (ft)	0.04	Cum SA (acres)		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 #10y

E.G. Elev (ft)	12.31	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.18	Wt. n-Val.		0.013	
W.S. Elev (ft)	12.13	Reach Len. (ft)	13.93	23.00	19.43
Crit W.S. (ft)		Flow Area (sq ft)		12.03	
E.G. Slope (ft/ft)	0.000834	Area (sq ft)		12.03	
Q Total (cfs)	41.37	Flow (cfs)		41.37	
Top Width (ft)	9.99	Top Width (ft)		9.99	
Vel Total (ft/s)	3.44	Avg. Vel. (ft/s)		3.44	
Max Chl Dpth (ft)	1.35	Hydr. Depth (ft)		1.20	
Conv. Total (cfs)	1432.5	Conv. (cfs)		1432.5	
Length Wtd. (ft)	23.00	Wetted Per. (ft)		11.32	
Min Ch El (ft)	10.78	Shear (lb/sq ft)		0.06	
Alpha	1.00	Stream Power (lb/ft s)		0.19	
Frctn Loss (ft)	0.03	Cum Volume (acre-ft)		0.03	
C & E Loss (ft)	0.03	Cum SA (acres)		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 #5y

E.G. Elev (ft)	12.11	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.18	Wt. n-Val.		0.013	
W.S. Elev (ft)	11.93	Reach Len. (ft)	13.93	23.00	19.43
Crit W.S. (ft)		Flow Area (sq ft)		10.09	
E.G. Slope (ft/ft)	0.000968	Area (sq ft)		10.09	
Q Total (cfs)	34.28	Flow (cfs)		34.28	
Top Width (ft)	9.69	Top Width (ft)		9.69	
Vel Total (ft/s)	3.40	Avg. Vel. (ft/s)		3.40	
Max Chl Dpth (ft)	1.15	Hydr. Depth (ft)		1.04	
Conv. Total (cfs)	1102.0	Conv. (cfs)		1102.0	
Length Wtd. (ft)	23.00	Wetted Per. (ft)		10.82	
Min Ch El (ft)	10.78	Shear (lb/sq ft)		0.06	
Alpha	1.00	Stream Power (lb/ft s)		0.19	
Frctn Loss (ft)	0.04	Cum Volume (acre-ft)		0.03	
C & E Loss (ft)	0.03	Cum SA (acres)		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 #2y

E.G. Elev (ft)	11.85	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.17	Wt. n-Val.		0.013	

W.S. Elev (ft)	11.67	Reach Len. (ft)	13.93	23.00	19.43
Crit W.S. (ft)		Flow Area (sq ft)		7.64	
E.G. Slope (ft/ft)	0.001243	Area (sq ft)		7.64	
Q Total (cfs)	25.48	Flow (cfs)		25.48	
Top Width (ft)	9.28	Top Width (ft)		9.28	
Vel Total (ft/s)	3.33	Avg. Vel. (ft/s)		3.33	
Max Chl Dpth (ft)	0.89	Hydr. Depth (ft)		0.82	
Conv. Total (cfs)	722.7	Conv. (cfs)		722.7	
Length Wtd. (ft)	23.00	Wetted Per. (ft)		10.16	
Min Ch El (ft)	10.78	Shear (lb/sq ft)		0.06	
Alpha	1.00	Stream Power (lb/ft s)		0.19	
Frctn Loss (ft)	0.04	Cum Volume (acre-ft)		0.02	
C & E Loss (ft)	0.02	Cum SA (acres)		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 #1y

E.G. Elev (ft)	11.64	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.17	Wt. n-Val.		0.013	
W.S. Elev (ft)	11.47	Reach Len. (ft)	13.93	23.00	19.43
Crit W.S. (ft)		Flow Area (sq ft)		5.76	
E.G. Slope (ft/ft)	0.001686	Area (sq ft)		5.76	
Q Total (cfs)	19.19	Flow (cfs)		19.19	
Top Width (ft)	8.96	Top Width (ft)		8.96	
Vel Total (ft/s)	3.33	Avg. Vel. (ft/s)		3.33	
Max Chl Dpth (ft)	0.69	Hydr. Depth (ft)		0.64	
Conv. Total (cfs)	467.2	Conv. (cfs)		467.2	
Length Wtd. (ft)	23.00	Wetted Per. (ft)		9.63	
Min Ch El (ft)	10.78	Shear (lb/sq ft)		0.06	
Alpha	1.00	Stream Power (lb/ft s)		0.21	
Frctn Loss (ft)	0.05	Cum Volume (acre-ft)		0.02	
C & E Loss (ft)	0.01	Cum SA (acres)		0.03	

CROSS SECTION

RIVER: buena vista
REACH: one RS: 6

INPUT
Description: Seccion #13 en la Agrimensura
Station Elevation Data num= 17

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	12.83	10.51	12.73	20.07	12.67	29.58	12.6	43.9	12.56
50.44	12.48	54.5	12.53	54.71	10.58	57.42	10.47	60.64	10.67
60.95	12.48	67.24	12.5	72.24	12.49	78.19	12.56	91.06	12.77
104.76	13.13	115.5	13.52						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.013	54.5	.013	60.95	.013

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
54.5	60.95	24.01	29.93	38.29	.1 .3

CROSS SECTION OUTPUT Profile #100y

E.G. Elev (ft)	12.97	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.24	Wt. n-Val.	0.013	0.013	0.013
W.S. Elev (ft)	12.73	Reach Len. (ft)	0.50	0.50	0.50
Crit W.S. (ft)	12.11	Flow Area (sq ft)	5.60	13.53	4.77
E.G. Slope (ft/ft)	0.000876	Area (sq ft)	5.60	13.53	4.77
Q Total (cfs)	66.80	Flow (cfs)	4.80	57.00	5.01
Top Width (ft)	77.96	Top Width (ft)	43.89	6.45	27.62
Vel Total (ft/s)	2.80	Avg. Vel. (ft/s)	0.86	4.21	1.05
Max Chl Dpth (ft)	2.26	Hydr. Depth (ft)	0.13	2.10	0.17
Conv. Total (cfs)	2257.4	Conv. (cfs)	162.1	1926.2	169.2

Length Wtd. (ft)	0.50	Wetted Per. (ft)	43.89	9.74	27.62
Min Ch El (ft)	10.47	Shear (lb/sq ft)	0.01	0.08	0.01
Alpha	1.96	Stream Power (lb/ft s)	0.01	0.32	0.01
Frctn Loss (ft)	0.00	Cum Volume (acre-ft)	0.00	0.04	0.00
C & E Loss (ft)	0.03	Cum SA (acres)	0.02	0.02	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 #50y

E.G. Elev (ft)	12.92	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.17	Wt. n-Val.	0.013	0.013	0.013
W.S. Elev (ft)	12.75	Reach Len. (ft)	0.50	0.50	0.50
Crit W.S. (ft)	11.98	Flow Area (sq ft)	6.34	13.64	5.24
E.G. Slope (ft/ft)	0.000632	Area (sq ft)	6.34	13.64	5.24
Q Total (cfs)	58.76	Flow (cfs)	4.88	49.04	4.85
Top Width (ft)	80.73	Top Width (ft)	45.65	6.45	28.63
Vel Total (ft/s)	2.33	Avg. Vel. (ft/s)	0.77	3.60	0.93
Max Chl Dpth (ft)	2.28	Hydr. Depth (ft)	0.14	2.11	0.18
Conv. Total (cfs)	2338.4	Conv. (cfs)	194.1	1951.5	192.8
Length Wtd. (ft)	0.50	Wetted Per. (ft)	45.66	9.74	28.63
Min Ch El (ft)	10.47	Shear (lb/sq ft)	0.01	0.06	0.01
Alpha	2.01	Stream Power (lb/ft s)	0.00	0.20	0.01
Frctn Loss (ft)	0.00	Cum Volume (acre-ft)	0.00	0.01	0.00
C & E Loss (ft)	0.01	Cum SA (acres)	0.02	0.00	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 #25y

E.G. Elev (ft)	12.50	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.57	Wt. n-Val.		0.013	
W.S. Elev (ft)	11.93	Reach Len. (ft)	0.50	0.50	0.50
Crit W.S. (ft)	11.85	Flow Area (sq ft)		8.39	
E.G. Slope (ft/ft)	0.002903	Area (sq ft)		8.39	
Q Total (cfs)	51.01	Flow (cfs)		51.01	
Top Width (ft)	6.29	Top Width (ft)		6.29	
Vel Total (ft/s)	6.08	Avg. Vel. (ft/s)		6.08	
Max Chl Dpth (ft)	1.46	Hydr. Depth (ft)		1.33	
Conv. Total (cfs)	946.6	Conv. (cfs)		946.6	
Length Wtd. (ft)	0.50	Wetted Per. (ft)		8.57	
Min Ch El (ft)	10.47	Shear (lb/sq ft)		0.18	
Alpha	1.00	Stream Power (lb/ft s)		1.08	
Frctn Loss (ft)	0.00	Cum Volume (acre-ft)		0.03	
C & E Loss (ft)	0.01	Cum SA (acres)		0.02	

CROSS SECTION OUTPUT Profile #10y

E.G. Elev (ft)	12.25	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.50	Wt. n-Val.		0.013	
W.S. Elev (ft)	11.75	Reach Len. (ft)	0.50	0.50	0.50
Crit W.S. (ft)	11.69	Flow Area (sq ft)		7.28	
E.G. Slope (ft/ft)	0.002894	Area (sq ft)		7.28	
Q Total (cfs)	41.37	Flow (cfs)		41.37	
Top Width (ft)	6.24	Top Width (ft)		6.24	
Vel Total (ft/s)	5.68	Avg. Vel. (ft/s)		5.68	
Max Chl Dpth (ft)	1.28	Hydr. Depth (ft)		1.17	
Conv. Total (cfs)	769.0	Conv. (cfs)		769.0	
Length Wtd. (ft)	0.50	Wetted Per. (ft)		8.21	
Min Ch El (ft)	10.47	Shear (lb/sq ft)		0.16	
Alpha	1.00	Stream Power (lb/ft s)		0.91	
Frctn Loss (ft)	0.00	Cum Volume (acre-ft)		0.03	
C & E Loss (ft)	0.01	Cum SA (acres)		0.02	

CROSS SECTION OUTPUT Profile #5y

E.G. Elev (ft)	12.05	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.44	Wt. n-Val.		0.013	
W.S. Elev (ft)	11.61	Reach Len. (ft)	0.50	0.50	0.50
Crit W.S. (ft)	11.55	Flow Area (sq ft)		6.42	
E.G. Slope (ft/ft)	0.002896	Area (sq ft)		6.42	
Q Total (cfs)	34.28	Flow (cfs)		34.28	
Top Width (ft)	6.20	Top Width (ft)		6.20	
Vel Total (ft/s)	5.34	Avg. Vel. (ft/s)		5.34	
Max Chl Dpth (ft)	1.14	Hydr. Depth (ft)		1.03	
Conv. Total (cfs)	637.1	Conv. (cfs)		637.1	
Length Wtd. (ft)	0.50	Wetted Per. (ft)		7.93	
Min Ch El (ft)	10.47	Shear (lb/sq ft)		0.15	
Alpha	1.00	Stream Power (lb/ft s)		0.78	
Frctn Loss (ft)	0.00	Cum Volume (acre-ft)		0.02	
C & E Loss (ft)	0.01	Cum SA (acres)		0.02	

CROSS SECTION OUTPUT Profile #2y

E.G. Elev (ft)	11.79	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.36	Wt. n-Val.		0.013	
W.S. Elev (ft)	11.42	Reach Len. (ft)	0.50	0.50	0.50
Crit W.S. (ft)	11.37	Flow Area (sq ft)		5.26	
E.G. Slope (ft/ft)	0.002913	Area (sq ft)		5.26	
Q Total (cfs)	25.48	Flow (cfs)		25.48	
Top Width (ft)	6.15	Top Width (ft)		6.15	
Vel Total (ft/s)	4.85	Avg. Vel. (ft/s)		4.85	
Max Chl Dpth (ft)	0.95	Hydr. Depth (ft)		0.85	
Conv. Total (cfs)	472.1	Conv. (cfs)		472.1	
Length Wtd. (ft)	0.50	Wetted Per. (ft)		7.55	
Min Ch El (ft)	10.47	Shear (lb/sq ft)		0.13	
Alpha	1.00	Stream Power (lb/ft s)		0.61	
Frctn Loss (ft)	0.00	Cum Volume (acre-ft)		0.02	
C & E Loss (ft)	0.00	Cum SA (acres)		0.02	

CROSS SECTION OUTPUT Profile #1y

E.G. Elev (ft)	11.58	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.30	Wt. n-Val.		0.013	
W.S. Elev (ft)	11.27	Reach Len. (ft)	0.50	0.50	0.50
Crit W.S. (ft)	11.23	Flow Area (sq ft)		4.34	
E.G. Slope (ft/ft)	0.002970	Area (sq ft)		4.34	
Q Total (cfs)	19.19	Flow (cfs)		19.19	
Top Width (ft)	6.11	Top Width (ft)		6.11	
Vel Total (ft/s)	4.42	Avg. Vel. (ft/s)		4.42	
Max Chl Dpth (ft)	0.80	Hydr. Depth (ft)		0.71	
Conv. Total (cfs)	352.0	Conv. (cfs)		352.0	
Length Wtd. (ft)	0.50	Wetted Per. (ft)		7.24	
Min Ch El (ft)	10.47	Shear (lb/sq ft)		0.11	
Alpha	1.00	Stream Power (lb/ft s)		0.49	
Frctn Loss (ft)	0.00	Cum Volume (acre-ft)		0.02	
C & E Loss (ft)	0.00	Cum SA (acres)		0.02	

BRIDGE

RIVER: buena vista
REACH: one RS: 5.5

INPUT
Description:
Distance from Upstream XS = .5
Deck/Roadway Width = 28.93
Weir Coefficient = 2.6
Upstream Deck/Roadway Coordinates
num= 2

Sta Hi Cord	Lo Cord	Sta Hi Cord	Lo Cord
54.5	12.52	12.07	60.95	12.52	12.07

Upstream Bridge Cross Section Data
Station Elevation Data num= 17

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	12.83	10.51	12.73	20.07	12.67	29.58	12.6	43.9	12.56
50.44	12.48	54.5	12.53	54.71	10.58	57.42	10.47	60.64	10.67
60.95	12.48	67.24	12.5	72.24	12.49	78.19	12.56	91.06	12.77
104.76	13.13	115.5	13.52						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.013	54.5	.013	60.95	.013

Bank Sta: Left	Right	Coeff Contr.	Expan.
54.5	60.95	.1	.3

Downstream Deck/Roadway Coordinates
num= 2

Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord
56.04	12.82	12.2	62.95	12.82	12.2

Downstream Bridge Cross Section Data
Station Elevation Data num= 19

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	13.08	7.77	13.01	16.38	12.92	25.9	12.85	35.47	12.84
45.6	12.77	56.04	12.84	56.04	10.28	59.32	10.28	62.95	10.28
62.95	12.82	67.93	12.69	80.12	12.69	86.72	12.65	91.75	12.65
95.06	12.64	101.94	12.57	113.64	12.65	125.29	12.82		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.013	56.04	.013	62.95	.013

Bank Sta: Left	Right	Coeff Contr.	Expan.
56.04	62.95	.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 = 12.07
Energy head used in spillway design =
Spillway height used in design =
Weir crest shape = Broad Crested

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 #100y

			Inside BR US	Inside BR DS
E.G. US. (ft)	12.97	Element		
W.S. US. (ft)	12.73	E.G. Elev (ft)	12.93	12.74
Q Total (cfs)	66.80	W.S. Elev (ft)	12.80	12.35
Q Bridge (cfs)	35.66	Crit W.S. (ft)	12.80	11.70
Q Weir (cfs)		Max Chl Dpth (ft)	2.33	2.07
Weir Sta Lft (ft)		Vel Total (ft/s)	2.52	5.04
Weir Sta Rgt (ft)		Flow Area (sq ft)	26.52	13.27
Weir Submerg		Froude # Chl	0.30	0.62
Weir Max Depth (ft)		Specif Force (cu ft)	21.60	25.18

Min El Weir Flow (ft)	12.58	Hydr Depth (ft)	0.30	
Min El Prs (ft)	12.07	W.P. Total (ft)	103.62	17.66
Delta EG (ft)	0.24	Conv. Total (cfs)	1394.6	1253.2
Delta WS (ft)	0.33	Top Width (ft)	88.38	
BR Open Area (sq ft)	9.30	Frctn Loss (ft)	0.07	0.12
BR Open Vel (ft/s)	3.83	C & E Loss (ft)	0.03	0.12
Coef of Q		Shear Total (lb/sq ft)	0.04	0.13
Br Sel Method	Energy only	Power Total (lb/ft s)	0.09	0.67

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

BRIDGE OUTPUT Profile #50y

E.G. US. (ft)	12.92	Element	Inside BR US	Inside BR DS
W.S. US. (ft)	12.75	E.G. Elev (ft)	12.90	12.64
Q Total (cfs)	58.76	W.S. Elev (ft)	12.77	11.15
Q Bridge (cfs)	33.73	Crit W.S. (ft)	12.77	11.59
Q Weir (cfs)		Max Chl Dpth (ft)	2.30	0.87
Weir Sta Lft (ft)		Vel Total (ft/s)	2.38	9.79
Weir Sta Rgt (ft)		Flow Area (sq ft)	24.70	6.00
Weir Submerg		Froude # Chl	0.28	1.85
Weir Max Depth (ft)		Specif Force (cu ft)	20.13	20.47
Min El Weir Flow (ft)	12.58	Hydr Depth (ft)	0.29	0.87
Min El Prs (ft)	12.07	W.P. Total (ft)	100.62	8.65
Delta EG (ft)	0.28	Conv. Total (cfs)	1288.2	537.7
Delta WS (ft)	1.60	Top Width (ft)	85.38	6.91
BR Open Area (sq ft)	9.30	Frctn Loss (ft)	0.05	0.12
BR Open Vel (ft/s)	5.62	C & E Loss (ft)	0.02	0.14
Coef of Q		Shear Total (lb/sq ft)	0.03	0.52
Br Sel Method	Energy only	Power Total (lb/ft s)	0.08	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: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream 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: The energy method has computed a class B profile.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.

BRIDGE OUTPUT Profile #25y

E.G. US. (ft)	12.50	Element	Inside BR US	Inside BR DS
W.S. US. (ft)	11.93	E.G. Elev (ft)	12.49	12.28
Q Total (cfs)	51.01	W.S. Elev (ft)	11.86	11.99
Q Bridge (cfs)	51.01	Crit W.S. (ft)	11.86	11.47
Q Weir (cfs)		Max Chl Dpth (ft)	1.39	1.71
Weir Sta Lft (ft)		Vel Total (ft/s)	6.37	4.33
Weir Sta Rgt (ft)		Flow Area (sq ft)	8.00	11.79
Weir Submerg		Froude # Chl	0.99	0.58
Weir Max Depth (ft)		Specif Force (cu ft)	15.31	16.91
Min El Weir Flow (ft)	12.58	Hydr Depth (ft)	1.28	1.71
Min El Prs (ft)	12.07	W.P. Total (ft)	8.44	10.32
Delta EG (ft)	0.22	Conv. Total (cfs)	882.6	1473.0
Delta WS (ft)	-0.06	Top Width (ft)	6.27	6.91
BR Open Area (sq ft)	9.30	Frctn Loss (ft)	0.05	0.15
BR Open Vel (ft/s)	6.37	C & E Loss (ft)	0.10	0.05
Coef of Q		Shear Total (lb/sq ft)	0.20	0.09
Br Sel Method	Energy only	Power Total (lb/ft s)	1.26	0.37

Note: Momentum answer is not valid if the water surface is above the low chord or if there is weir
flow. The momentum answer has been disregarded.
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.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid,
energy was used.
Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.

BRIDGE OUTPUT Profile #10y

E.G. US. (ft)	12.25	Element	Inside BR US	Inside BR DS
W.S. US. (ft)	11.75	E.G. Elev (ft)	12.25	12.02
Q Total (cfs)	41.37	W.S. Elev (ft)	11.69	11.76
Q Bridge (cfs)	41.37	Crit W.S. (ft)	11.69	11.32
Q Weir (cfs)		Max Chl Dpth (ft)	1.22	1.48
Weir Sta Lft (ft)		Vel Total (ft/s)	5.96	4.04
Weir Sta Rgt (ft)		Flow Area (sq ft)	6.94	10.24
Weir Submerg		Froude # Chl	1.00	0.58
Weir Max Depth (ft)		Specif Force (cu ft)	11.60	12.78
Min El Weir Flow (ft)	12.58	Hydr Depth (ft)	1.11	1.48
Min El Prs (ft)	12.07	W.P. Total (ft)	8.10	9.87
Delta EG (ft)	0.23	Conv. Total (cfs)	715.1	1199.5
Delta WS (ft)	-0.01	Top Width (ft)	6.22	6.91
BR Open Area (sq ft)	9.30	Frctn Loss (ft)	0.05	0.15
BR Open Vel (ft/s)	5.96	C & E Loss (ft)	0.09	0.05
Coef of Q		Shear Total (lb/sq ft)	0.18	0.08
Br Sel Method	Energy only	Power Total (lb/ft s)	1.07	0.31

Note: Momentum answer is not valid if the water surface is above the low chord or if there is weir
flow. The momentum answer has been disregarded.
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.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid,
energy was used.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.

BRIDGE OUTPUT Profile #5y

E.G. US. (ft)	12.05	Element	Inside BR US	Inside BR DS
W.S. US. (ft)	11.61	E.G. Elev (ft)	12.05	11.81
Q Total (cfs)	34.28	W.S. Elev (ft)	11.55	11.59
Q Bridge (cfs)	34.28	Crit W.S. (ft)	11.55	11.19
Q Weir (cfs)		Max Chl Dpth (ft)	1.08	1.31
Weir Sta Lft (ft)		Vel Total (ft/s)	5.65	3.80
Weir Sta Rgt (ft)		Flow Area (sq ft)	6.07	9.03
Weir Submerg		Froude # Chl	1.00	0.59
Weir Max Depth (ft)		Specif Force (cu ft)	9.04	9.94
Min El Weir Flow (ft)	12.58	Hydr Depth (ft)	0.98	1.31
Min El Prs (ft)	12.07	W.P. Total (ft)	7.81	9.52
Delta EG (ft)	0.24	Conv. Total (cfs)	586.4	995.5
Delta WS (ft)	0.02	Top Width (ft)	6.19	6.91
BR Open Area (sq ft)	9.30	Frctn Loss (ft)	0.05	0.16
BR Open Vel (ft/s)	5.65	C & E Loss (ft)	0.08	0.04
Coef of Q		Shear Total (lb/sq ft)	0.17	0.07
Br Sel Method	Energy only	Power Total (lb/ft s)	0.94	0.27

Warning: For the final momentum answer at the bridge, the upstream energy was computed lower than the energy inside of the bridge deck. This is not physically possible. Please review your bridge
data and results for reasonableness.
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.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.

BRIDGE OUTPUT Profile #2y

E.G. US. (ft)	11.79	Element	Inside BR US	Inside BR DS
W.S. US. (ft)	11.42	E.G. Elev (ft)	11.78	11.54
Q Total (cfs)	25.48	W.S. Elev (ft)	11.37	11.35
Q Bridge (cfs)	25.48	Crit W.S. (ft)	11.37	11.03
Q Weir (cfs)		Max Chl Dpth (ft)	0.90	1.07
Weir Sta Lft (ft)		Vel Total (ft/s)	5.13	3.44
Weir Sta Rgt (ft)		Flow Area (sq ft)	4.97	7.42
Weir Submerg		Froude # Chl	1.00	0.58
Weir Max Depth (ft)		Specif Force (cu ft)	6.10	6.70
Min El Weir Flow (ft)	12.58	Hydr Depth (ft)	0.81	1.07
Min El Prs (ft)	12.07	W.P. Total (ft)	7.45	9.06
Delta EG (ft)	0.25	Conv. Total (cfs)	433.4	741.8
Delta WS (ft)	0.07	Top Width (ft)	6.14	6.91
BR Open Area (sq ft)	9.30	Frctn Loss (ft)	0.05	0.16
BR Open Vel (ft/s)	5.13	C & E Loss (ft)	0.07	0.04
Coef of Q		Shear Total (lb/sq ft)	0.14	0.06
Br Sel Method	Energy only	Power Total (lb/ft s)	0.74	0.21

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

BRIDGE OUTPUT Profile #1y

E.G. US. (ft)	11.58	Element	Inside BR US	Inside BR DS
W.S. US. (ft)	11.27	E.G. Elev (ft)	11.57	11.32
Q Total (cfs)	19.19	W.S. Elev (ft)	11.24	11.17
Q Bridge (cfs)	19.19	Crit W.S. (ft)	11.24	10.90
Q Weir (cfs)		Max Chl Dpth (ft)	0.77	0.89
Weir Sta Lft (ft)		Vel Total (ft/s)	4.65	3.13
Weir Sta Rgt (ft)		Flow Area (sq ft)	4.13	6.12
Weir Submerg		Froude # Chl	1.00	0.59
Weir Max Depth (ft)		Specif Force (cu ft)	4.19	4.58
Min El Weir Flow (ft)	12.58	Hydr Depth (ft)	0.68	0.89
Min El Prs (ft)	12.07	W.P. Total (ft)	7.17	8.68
Delta EG (ft)	0.26	Conv. Total (cfs)	326.2	554.8
Delta WS (ft)	0.11	Top Width (ft)	6.10	6.91
BR Open Area (sq ft)	9.30	Frctn Loss (ft)	0.05	0.17
BR Open Vel (ft/s)	4.65	C & E Loss (ft)	0.06	0.03
Coef of Q		Shear Total (lb/sq ft)	0.12	0.05
Br Sel Method	Energy only	Power Total (lb/ft s)	0.58	0.17

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.
Warning: The conveyance ratio (upstream 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: buena vista
REACH: one RS: 5

INPUT
Description: Seccion #14 en la Agrimensura

```
10.51   12.73
20.07   12.67
29.58   12.6
43.9    12.56
50.4
             4 12.48
54.5    12.53
54.71   10.58
57.42   10.47
60.64   10.67
60.95   1
             2.48
67.24   12.5
72.24   12.49
78.19   12.56
91.06   12.77
104.76  13.
             13
```

115.5 13.52

Station Elevation Data num= 19

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	13.08	7.77	13.01	16.38	12.92	25.9	12.85	35.47	12.84
45.6	12.77	56.04	12.84	56.04	10.28	59.32	10.28	62.95	10.28
62.95	12.82	67.93	12.69	80.12	12.69	86.72	12.65	91.75	12.65
95.06	12.64	101.94	12.57	113.64	12.65	125.29	12.82		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.013	56.04	.013	62.95	.013

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
56.04	62.95	72.89	40.74	46.33	.1	.3

CROSS SECTION OUTPUT Profile #100y

			Left OB	Channel	Right OB
E.G. Elev (ft)	12.72	Element			
Vel Head (ft)	0.32	Wt. n-Val.		0.013	
W.S. Elev (ft)	12.40	Reach Len. (ft)	0.50	0.50	0.50
Crit W.S. (ft)	11.70	Flow Area (sq ft)		14.64	
E.G. Slope (ft/ft)	0.001108	Area (sq ft)		14.64	
Q Total (cfs)	66.80	Flow (cfs)		66.80	
Top Width (ft)	6.91	Top Width (ft)		6.91	
Vel Total (ft/s)	4.56	Avg. Vel. (ft/s)		4.56	
Max Chl Dpth (ft)	2.12	Hydr. Depth (ft)		2.12	
Conv. Total (cfs)	2006.8	Conv. (cfs)		2006.8	
Length Wtd. (ft)	0.50	Wetted Per. (ft)		11.15	
Min Ch El (ft)	10.28	Shear (lb/sq ft)		0.09	
Alpha	1.00	Stream Power (lb/ft s)		0.41	
Frctn Loss (ft)	0.00	Cum Volume (acre-ft)		0.03	
C & E Loss (ft)	0.01	Cum SA (acres)		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 #50y

			Left OB	Channel	Right OB
E.G. Elev (ft)	12.64	Element			
Vel Head (ft)	1.49	Wt. n-Val.		0.013	
W.S. Elev (ft)	11.15	Reach Len. (ft)	0.50	0.50	0.50
Crit W.S. (ft)	11.58	Flow Area (sq ft)		6.00	
E.G. Slope (ft/ft)	0.011942	Area (sq ft)		6.00	
Q Total (cfs)	58.76	Flow (cfs)		58.76	
Top Width (ft)	6.91	Top Width (ft)		6.91	
Vel Total (ft/s)	9.79	Avg. Vel. (ft/s)		9.79	
Max Chl Dpth (ft)	0.87	Hydr. Depth (ft)		0.87	
Conv. Total (cfs)	537.7	Conv. (cfs)		537.7	
Length Wtd. (ft)	0.50	Wetted Per. (ft)		8.65	
Min Ch El (ft)	10.28	Shear (lb/sq ft)		0.52	
Alpha	1.00	Stream Power (lb/ft s)		5.07	
Frctn Loss (ft)	0.01	Cum Volume (acre-ft)		0.00	
C & E Loss (ft)	0.00	Cum SA (acres)		0.00	

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

CROSS SECTION OUTPUT Profile #25y

			Left OB	Channel	Right OB
E.G. Elev (ft)	12.28	Element			
Vel Head (ft)	0.29	Wt. n-Val.		0.013	
W.S. Elev (ft)	11.99	Reach Len. (ft)	0.50	0.50	0.50
Crit W.S. (ft)	11.47	Flow Area (sq ft)		11.79	
E.G. Slope (ft/ft)	0.001201	Area (sq ft)		11.79	
Q Total (cfs)	51.01	Flow (cfs)		51.01	
Top Width (ft)	6.91	Top Width (ft)		6.91	
Vel Total (ft/s)	4.33	Avg. Vel. (ft/s)		4.33	
Max Chl Dpth (ft)	1.71	Hydr. Depth (ft)		1.71	
Conv. Total (cfs)	1472.0	Conv. (cfs)		1472.0	
Length Wtd. (ft)	0.50	Wetted Per. (ft)		10.32	

Min Ch El (ft)	10.28	Shear (lb/sq ft)	0.09
Alpha	1.00	Stream Power (lb/ft s)	0.37
Frctn Loss (ft)	0.00	Cum Volume (acre-ft)	0.02
C & E Loss (ft)	0.00	Cum SA (acres)	0.02

CROSS SECTION OUTPUT Profile #10y

E.G. Elev (ft)	12.01	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.25	Wt. n-Val.		0.013	
W.S. Elev (ft)	11.76	Reach Len. (ft)	0.50	0.50	0.50
Crit W.S. (ft)	11.31	Flow Area (sq ft)		10.24	
E.G. Slope (ft/ft)	0.001191	Area (sq ft)		10.24	
Q Total (cfs)	41.37	Flow (cfs)		41.37	
Top Width (ft)	6.91	Top Width (ft)		6.91	
Vel Total (ft/s)	4.04	Avg. Vel. (ft/s)		4.04	
Max Chl Dpth (ft)	1.48	Hydr. Depth (ft)		1.48	
Conv. Total (cfs)	1198.5	Conv. (cfs)		1198.5	
Length Wtd. (ft)	0.50	Wetted Per. (ft)		9.87	
Min Ch El (ft)	10.28	Shear (lb/sq ft)		0.08	
Alpha	1.00	Stream Power (lb/ft s)		0.31	
Frctn Loss (ft)	0.00	Cum Volume (acre-ft)		0.02	
C & E Loss (ft)	0.00	Cum SA (acres)		0.02	

CROSS SECTION OUTPUT Profile #5y

E.G. Elev (ft)	11.81	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.22	Wt. n-Val.		0.013	
W.S. Elev (ft)	11.59	Reach Len. (ft)	0.50	0.50	0.50
Crit W.S. (ft)	11.19	Flow Area (sq ft)		9.02	
E.G. Slope (ft/ft)	0.001188	Area (sq ft)		9.02	
Q Total (cfs)	34.28	Flow (cfs)		34.28	
Top Width (ft)	6.91	Top Width (ft)		6.91	
Vel Total (ft/s)	3.80	Avg. Vel. (ft/s)		3.80	
Max Chl Dpth (ft)	1.31	Hydr. Depth (ft)		1.31	
Conv. Total (cfs)	994.5	Conv. (cfs)		994.5	
Length Wtd. (ft)	0.50	Wetted Per. (ft)		9.52	
Min Ch El (ft)	10.28	Shear (lb/sq ft)		0.07	
Alpha	1.00	Stream Power (lb/ft s)		0.27	
Frctn Loss (ft)	0.00	Cum Volume (acre-ft)		0.02	
C & E Loss (ft)	0.00	Cum SA (acres)		0.02	

CROSS SECTION OUTPUT Profile #2y

E.G. Elev (ft)	11.54	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.18	Wt. n-Val.		0.013	
W.S. Elev (ft)	11.35	Reach Len. (ft)	0.50	0.50	0.50
Crit W.S. (ft)	11.03	Flow Area (sq ft)		7.41	
E.G. Slope (ft/ft)	0.001183	Area (sq ft)		7.41	
Q Total (cfs)	25.48	Flow (cfs)		25.48	
Top Width (ft)	6.91	Top Width (ft)		6.91	
Vel Total (ft/s)	3.44	Avg. Vel. (ft/s)		3.44	
Max Chl Dpth (ft)	1.07	Hydr. Depth (ft)		1.07	
Conv. Total (cfs)	740.9	Conv. (cfs)		740.9	
Length Wtd. (ft)	0.50	Wetted Per. (ft)		9.05	
Min Ch El (ft)	10.28	Shear (lb/sq ft)		0.06	
Alpha	1.00	Stream Power (lb/ft s)		0.21	
Frctn Loss (ft)	0.00	Cum Volume (acre-ft)		0.01	
C & E Loss (ft)	0.00	Cum SA (acres)		0.02	

CROSS SECTION OUTPUT Profile #1y

E.G. Elev (ft)	11.32	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.15	Wt. n-Val.		0.013	
W.S. Elev (ft)	11.17	Reach Len. (ft)	0.50	0.50	0.50
Crit W.S. (ft)	10.90	Flow Area (sq ft)		6.12	
E.G. Slope (ft/ft)	0.001200	Area (sq ft)		6.12	
Q Total (cfs)	19.19	Flow (cfs)		19.19	

Top Width (ft)	6.91	Top Width (ft)	6.91
Vel Total (ft/s)	3.14	Avg. Vel. (ft/s)	3.14
Max Chl Dpth (ft)	0.89	Hydr. Depth (ft)	0.89
Conv. Total (cfs)	554.0	Conv. (cfs)	554.0
Length Wtd. (ft)	0.50	Wetted Per. (ft)	8.68
Min Ch El (ft)	10.28	Shear (lb/sq ft)	0.05
Alpha	1.00	Stream Power (lb/ft s)	0.17
Frctn Loss (ft)	0.00	Cum Volume (acre-ft)	0.01
C & E Loss (ft)	0.00	Cum SA (acres)	0.02

BRIDGE

RIVER: buena vista
REACH: one RS: 4.5

INPUT
Description:
Distance from Upstream XS = .5
Deck/Roadway Width = 39.74
Weir Coefficient = 2.6
Upstream Deck/Roadway Coordinates
num= 2

Sta Hi Cord	Lo Cord	Sta Hi Cord	Lo Cord
56.04	12.84	12.2	62.95	12.82	12.2

Upstream Bridge Cross Section Data
Station Elevation Data num= 19

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	13.08	7.77	13.01	16.38	12.92	25.9	12.85	35.47	12.84
45.6	12.77	56.04	12.84	56.04	10.28	59.32	10.28	62.95	10.28
62.95	12.82	67.93	12.69	80.12	12.69	86.72	12.65	91.75	12.65
95.06	12.64	101.94	12.57	113.64	12.65	125.29	12.82		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.013	56.04	.013	62.95	.013

Bank Sta: Left Right Coeff Contr. Expan.
56.04 62.95 .1 .3

Downstream Deck/Roadway Coordinates
num= 2

Sta Hi Cord	Lo Cord	Sta Hi Cord	Lo Cord
68.23	12.71	12.25	74.21	12.76	12.25

Downstream Bridge Cross Section Data
Station Elevation Data num= 12

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	13.35	10.02	13.26	25.06	12.98	40.1	12.8	68.23	12.71
68.23	10.2	71.22	10.2	74.21	10.2	74.21	12.76	89.27	12.79
108.56	12.97	113.56	13.35						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.013	68.23	.013	74.21	.013

Bank Sta: Left Right Coeff Contr. Expan.
68.23 74.21 .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 = 12.2
Energy head used in spillway design =
Spillway height used in design =
Weir crest shape = Broad Crested

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 #100y

E.G. US. (ft)	12.72	Element	Inside BR US	Inside BR DS
W.S. US. (ft)	12.40	E.G. Elev (ft)	12.71	12.56
Q Total (cfs)	66.80	W.S. Elev (ft)	12.32	11.85
Q Bridge (cfs)	66.80	Crit W.S. (ft)	11.70	11.77
Q Weir (cfs)		Max Chl Dpth (ft)	2.04	1.65
Weir Sta Lft (ft)		Vel Total (ft/s)	5.04	6.77
Weir Sta Rgt (ft)		Flow Area (sq ft)	13.27	9.87
Weir Submerg		Froude # Chl	0.62	0.93
Weir Max Depth (ft)		Specif Force (cu ft)	24.78	22.19
Min El Weir Flow (ft)	12.72	Hydr Depth (ft)		1.65
Min El Prs (ft)	12.20	W.P. Total (ft)	17.66	9.28
Delta EG (ft)	0.16	Conv. Total (cfs)	1253.2	1176.1
Delta WS (ft)	0.58	Top Width (ft)		5.98
BR Open Area (sq ft)	12.26	Frctn Loss (ft)	0.12	0.00
BR Open Vel (ft/s)	6.77	C & E Loss (ft)	0.03	0.00
Coef of Q		Shear Total (lb/sq ft)	0.13	0.21
Br Sel Method	Energy only	Power Total (lb/ft s)	0.67	1.45

Note: Momentum answer is not valid if the water surface is above the low chord or if there is weir
flow. The momentum answer has been disregarded.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid,
energy was used.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid,
energy was used.

BRIDGE OUTPUT Profile #50y

E.G. US. (ft)	12.64	Element	Inside BR US	Inside BR DS
W.S. US. (ft)	11.15	E.G. Elev (ft)	12.64	12.37
Q Total (cfs)	58.76	W.S. Elev (ft)	11.15	11.72
Q Bridge (cfs)	58.76	Crit W.S. (ft)	11.59	11.65
Q Weir (cfs)		Max Chl Dpth (ft)	0.87	1.52
Weir Sta Lft (ft)		Vel Total (ft/s)	9.79	6.47
Weir Sta Rgt (ft)		Flow Area (sq ft)	6.00	9.08
Weir Submerg		Froude # Chl	1.85	0.93
Weir Max Depth (ft)		Specif Force (cu ft)	20.47	18.70
Min El Weir Flow (ft)	12.72	Hydr Depth (ft)	0.87	1.52
Min El Prs (ft)	12.20	W.P. Total (ft)	8.65	9.02
Delta EG (ft)	0.16	Conv. Total (cfs)	537.7	1043.2
Delta WS (ft)	-0.53	Top Width (ft)	6.91	5.98
BR Open Area (sq ft)	12.26	Frctn Loss (ft)	0.01	
BR Open Vel (ft/s)	9.79	C & E Loss (ft)	0.00	
Coef of Q		Shear Total (lb/sq ft)	0.52	0.20
Br Sel Method	Energy only	Power Total (lb/ft s)	5.07	1.29

Note: Momentum answer is not valid if the water surface is above the low chord or if there is weir
flow. The momentum answer has been disregarded.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid,

energy was used.
Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid,
energy was used.

BRIDGE OUTPUT Profile #25y

			Inside BR US	Inside BR DS
E.G. US. (ft)	12.28	Element		
W.S. US. (ft)	11.99	E.G. Elev (ft)	12.28	12.17
Q Total (cfs)	51.01	W.S. Elev (ft)	11.98	11.58
Q Bridge (cfs)	51.01	Crit W.S. (ft)	11.47	11.51
Q Weir (cfs)		Max Chl Dpth (ft)	1.70	1.38
Weir Sta Lft (ft)		Vel Total (ft/s)	4.33	6.17
Weir Sta Rgt (ft)		Flow Area (sq ft)	11.78	8.26
Weir Submerg		Froude # Chl	0.58	0.93
Weir Max Depth (ft)		Specif Force (cu ft)	16.90	15.49
Min El Weir Flow (ft)	12.72	Hydr Depth (ft)	1.70	1.38
Min El Prs (ft)	12.20	W.P. Total (ft)	10.32	8.74
Delta EG (ft)	0.10	Conv. Total (cfs)	1470.8	909.8
Delta WS (ft)	0.41	Top Width (ft)	6.91	5.98
BR Open Area (sq ft)	12.26	Frctn Loss (ft)	0.07	0.00
BR Open Vel (ft/s)	6.17	C & E Loss (ft)	0.03	0.00
Coef of Q		Shear Total (lb/sq ft)	0.09	0.19
Br Sel Method	Energy only	Power Total (lb/ft s)	0.37	1.14

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

BRIDGE OUTPUT Profile #10y

			Inside BR US	Inside BR DS
E.G. US. (ft)	12.01	Element		
W.S. US. (ft)	11.76	E.G. Elev (ft)	12.01	11.92
Q Total (cfs)	41.37	W.S. Elev (ft)	11.76	11.40
Q Bridge (cfs)	41.37	Crit W.S. (ft)	11.32	11.34
Q Weir (cfs)		Max Chl Dpth (ft)	1.48	1.20
Weir Sta Lft (ft)		Vel Total (ft/s)	4.04	5.75
Weir Sta Rgt (ft)		Flow Area (sq ft)	10.23	7.20
Weir Submerg		Froude # Chl	0.59	0.92
Weir Max Depth (ft)		Specif Force (cu ft)	12.77	11.71
Min El Weir Flow (ft)	12.72	Hydr Depth (ft)	1.48	1.20
Min El Prs (ft)	12.20	W.P. Total (ft)	9.87	8.39
Delta EG (ft)	0.10	Conv. Total (cfs)	1197.4	742.8
Delta WS (ft)	0.36	Top Width (ft)	6.91	5.98
BR Open Area (sq ft)	12.26	Frctn Loss (ft)	0.07	0.00
BR Open Vel (ft/s)	5.75	C & E Loss (ft)	0.03	0.00
Coef of Q		Shear Total (lb/sq ft)	0.08	0.17
Br Sel Method	Energy only	Power Total (lb/ft s)	0.31	0.95

Warning: For the final momentum answer at the bridge, the upstream energy was computed lower than the energy inside of the bridge deck. This is not physically possible. Please review your bridge
data and results for reasonableness.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.

BRIDGE OUTPUT Profile #5y

			Inside BR US	Inside BR DS
E.G. US. (ft)	11.81	Element		
W.S. US. (ft)	11.59	E.G. Elev (ft)	11.81	11.71
Q Total (cfs)	34.28	W.S. Elev (ft)	11.58	11.26
Q Bridge (cfs)	34.28	Crit W.S. (ft)	11.19	11.20
Q Weir (cfs)		Max Chl Dpth (ft)	1.30	1.06
Weir Sta Lft (ft)		Vel Total (ft/s)	3.80	5.39

Weir Sta Rgt (ft)		Flow Area (sq ft)	9.01	6.36
Weir Submerg		Froude # Chl	0.59	0.92
Weir Max Depth (ft)		Specif Force (cu ft)	9.93	9.12
Min El Weir Flow (ft)	12.72	Hydr Depth (ft)	1.30	1.06
Min El Prs (ft)	12.20	W.P. Total (ft)	9.52	8.11
Delta EG (ft)	0.10	Conv. Total (cfs)	993.5	618.5
Delta WS (ft)	0.33	Top Width (ft)	6.91	5.98
BR Open Area (sq ft)	12.26	Frctn Loss (ft)	0.07	0.00
BR Open Vel (ft/s)	5.39	C & E Loss (ft)	0.02	0.00
Coef of Q		Shear Total (lb/sq ft)	0.07	0.15
Br Sel Method	Energy only	Power Total (lb/ft s)	0.27	0.81

Warning: For the final momentum answer at the bridge, the upstream energy was computed lower than the energy inside of the bridge deck. This is not physically possible. Please review your bridge data and results for reasonableness.

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

BRIDGE OUTPUT Profile #2y

E.G. US. (ft)	11.54	Element	Inside BR US	Inside BR DS
W.S. US. (ft)	11.35	E.G. Elev (ft)	11.54	11.44
Q Total (cfs)	25.48	W.S. Elev (ft)	11.35	11.07
Q Bridge (cfs)	25.48	Crit W.S. (ft)	11.03	11.03
Q Weir (cfs)		Max Chl Dpth (ft)	1.07	0.87
Weir Sta Lft (ft)		Vel Total (ft/s)	3.44	4.88
Weir Sta Rgt (ft)		Flow Area (sq ft)	7.40	5.22
Weir Submerg		Froude # Chl	0.59	0.92
Weir Max Depth (ft)		Specif Force (cu ft)	6.69	6.14
Min El Weir Flow (ft)	12.72	Hydr Depth (ft)	1.07	0.87
Min El Prs (ft)	12.20	W.P. Total (ft)	9.05	7.73
Delta EG (ft)	0.09	Conv. Total (cfs)	740.0	459.9
Delta WS (ft)	0.29	Top Width (ft)	6.91	5.98
BR Open Area (sq ft)	12.26	Frctn Loss (ft)	0.07	0.00
BR Open Vel (ft/s)	4.88	C & E Loss (ft)	0.02	0.00
Coef of Q		Shear Total (lb/sq ft)	0.06	0.13
Br Sel Method	Energy only	Power Total (lb/ft s)	0.21	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.

BRIDGE OUTPUT Profile #1y

E.G. US. (ft)	11.32	Element	Inside BR US	Inside BR DS
W.S. US. (ft)	11.17	E.G. Elev (ft)	11.32	11.23
Q Total (cfs)	19.19	W.S. Elev (ft)	11.16	10.93
Q Bridge (cfs)	19.19	Crit W.S. (ft)	10.90	10.88
Q Weir (cfs)		Max Chl Dpth (ft)	0.88	0.73
Weir Sta Lft (ft)		Vel Total (ft/s)	3.14	4.42
Weir Sta Rgt (ft)		Flow Area (sq ft)	6.11	4.34
Weir Submerg		Froude # Chl	0.59	0.91
Weir Max Depth (ft)		Specif Force (cu ft)	4.57	4.21
Min El Weir Flow (ft)	12.72	Hydr Depth (ft)	0.88	0.73
Min El Prs (ft)	12.20	W.P. Total (ft)	8.68	7.43
Delta EG (ft)	0.09	Conv. Total (cfs)	553.1	346.8
Delta WS (ft)	0.25	Top Width (ft)	6.91	5.98
BR Open Area (sq ft)	12.26	Frctn Loss (ft)	0.07	0.00
BR Open Vel (ft/s)	4.42	C & E Loss (ft)	0.02	0.00
Coef of Q		Shear Total (lb/sq ft)	0.05	0.11
Br Sel Method	Energy only	Power Total (lb/ft s)	0.17	0.49

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: buena vista
REACH: one RS: 4

INPUT
Description: Seccion #15 en la Agrimensura
Station Elevation Data num= 12

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	13.35	10.02	13.26	25.06	12.98	40.1	12.8	68.23	12.71
68.23	10.2	71.22	10.2	74.21	10.2	74.21	12.76	89.27	12.79
108.56	12.97	113.56	13.35						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.013	68.23	.013	74.21	.013

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
68.23	74.21	12.72	13.8	12.8	.1	.3

CROSS SECTION OUTPUT Profile #100y

			Left OB	Channel	Right OB
E.G. Elev (ft)	12.56	Element			
Vel Head (ft)	0.74	Wt. n-Val.		0.013	
W.S. Elev (ft)	11.82	Reach Len. (ft)	0.50	0.50	0.50
Crit W.S. (ft)	11.77	Flow Area (sq ft)		9.66	
E.G. Slope (ft/ft)	0.003431	Area (sq ft)		9.66	
Q Total (cfs)	66.80	Flow (cfs)		66.80	
Top Width (ft)	5.98	Top Width (ft)		5.98	
Vel Total (ft/s)	6.91	Avg. Vel. (ft/s)		6.91	
Max Chl Dpth (ft)	1.62	Hydr. Depth (ft)		1.62	
Conv. Total (cfs)	1140.5	Conv. (cfs)		1140.5	
Length Wtd. (ft)	0.50	Wetted Per. (ft)		9.21	
Min Ch El (ft)	10.20	Shear (lb/sq ft)		0.22	
Alpha	1.00	Stream Power (lb/ft s)		1.55	
Frctn Loss (ft)		Cum Volume (acre-ft)		0.02	
C & E Loss (ft)		Cum SA (acres)		0.01	

CROSS SECTION OUTPUT Profile #50y

			Left OB	Channel	Right OB
E.G. Elev (ft)	12.36	Element			
Vel Head (ft)	0.68	Wt. n-Val.		0.013	
W.S. Elev (ft)	11.68	Reach Len. (ft)	0.50	0.50	0.50
Crit W.S. (ft)	11.64	Flow Area (sq ft)		8.86	
E.G. Slope (ft/ft)	0.003406	Area (sq ft)		8.86	
Q Total (cfs)	58.76	Flow (cfs)		58.76	
Top Width (ft)	5.98	Top Width (ft)		5.98	
Vel Total (ft/s)	6.63	Avg. Vel. (ft/s)		6.63	
Max Chl Dpth (ft)	1.48	Hydr. Depth (ft)		1.48	
Conv. Total (cfs)	1006.9	Conv. (cfs)		1006.9	
Length Wtd. (ft)	0.50	Wetted Per. (ft)		8.94	
Min Ch El (ft)	10.20	Shear (lb/sq ft)		0.21	
Alpha	1.00	Stream Power (lb/ft s)		1.40	
Frctn Loss (ft)	0.00	Cum Volume (acre-ft)		0.00	
C & E Loss (ft)	0.00	Cum SA (acres)		0.00	

CROSS SECTION OUTPUT Profile #25y

			Left OB	Channel	Right OB
E.G. Elev (ft)	12.17	Element			
Vel Head (ft)	0.60	Wt. n-Val.		0.013	
W.S. Elev (ft)	11.58	Reach Len. (ft)	0.50	0.50	0.50
Crit W.S. (ft)	11.51	Flow Area (sq ft)		8.23	
E.G. Slope (ft/ft)	0.003181	Area (sq ft)		8.23	
Q Total (cfs)	51.01	Flow (cfs)		51.01	
Top Width (ft)	5.98	Top Width (ft)		5.98	
Vel Total (ft/s)	6.20	Avg. Vel. (ft/s)		6.20	
Max Chl Dpth (ft)	1.38	Hydr. Depth (ft)		1.38	
Conv. Total (cfs)	904.4	Conv. (cfs)		904.4	
Length Wtd. (ft)	0.50	Wetted Per. (ft)		8.73	
Min Ch El (ft)	10.20	Shear (lb/sq ft)		0.19	
Alpha	1.00	Stream Power (lb/ft s)		1.16	

Frctn Loss (ft)	0.00	Cum Volume (acre-ft)	0.01
C & E Loss (ft)	0.01	Cum SA (acres)	0.01

CROSS SECTION OUTPUT Profile #10y

E.G. Elev (ft)	11.92	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.52	Wt. n-Val.		0.013	
W.S. Elev (ft)	11.40	Reach Len. (ft)	0.50	0.50	0.50
Crit W.S. (ft)	11.34	Flow Area (sq ft)		7.16	
E.G. Slope (ft/ft)	0.003145	Area (sq ft)		7.16	
Q Total (cfs)	41.37	Flow (cfs)		41.37	
Top Width (ft)	5.98	Top Width (ft)		5.98	
Vel Total (ft/s)	5.78	Avg. Vel. (ft/s)		5.78	
Max Chl Dpth (ft)	1.20	Hydr. Depth (ft)		1.20	
Conv. Total (cfs)	737.6	Conv. (cfs)		737.6	
Length Wtd. (ft)	0.50	Wetted Per. (ft)		8.38	
Min Ch El (ft)	10.20	Shear (lb/sq ft)		0.17	
Alpha	1.00	Stream Power (lb/ft s)		0.97	
Frctn Loss (ft)	0.00	Cum Volume (acre-ft)		0.01	
C & E Loss (ft)	0.01	Cum SA (acres)		0.01	

CROSS SECTION OUTPUT Profile #5y

E.G. Elev (ft)	11.71	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.46	Wt. n-Val.		0.013	
W.S. Elev (ft)	11.26	Reach Len. (ft)	0.50	0.50	0.50
Crit W.S. (ft)	11.20	Flow Area (sq ft)		6.33	
E.G. Slope (ft/ft)	0.003125	Area (sq ft)		6.33	
Q Total (cfs)	34.28	Flow (cfs)		34.28	
Top Width (ft)	5.98	Top Width (ft)		5.98	
Vel Total (ft/s)	5.42	Avg. Vel. (ft/s)		5.42	
Max Chl Dpth (ft)	1.06	Hydr. Depth (ft)		1.06	
Conv. Total (cfs)	613.3	Conv. (cfs)		613.3	
Length Wtd. (ft)	0.50	Wetted Per. (ft)		8.10	
Min Ch El (ft)	10.20	Shear (lb/sq ft)		0.15	
Alpha	1.00	Stream Power (lb/ft s)		0.83	
Frctn Loss (ft)	0.00	Cum Volume (acre-ft)		0.01	
C & E Loss (ft)	0.00	Cum SA (acres)		0.01	

CROSS SECTION OUTPUT Profile #2y

E.G. Elev (ft)	11.44	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.37	Wt. n-Val.		0.013	
W.S. Elev (ft)	11.07	Reach Len. (ft)	0.50	0.50	0.50
Crit W.S. (ft)	11.02	Flow Area (sq ft)		5.19	
E.G. Slope (ft/ft)	0.003138	Area (sq ft)		5.19	
Q Total (cfs)	25.48	Flow (cfs)		25.48	
Top Width (ft)	5.98	Top Width (ft)		5.98	
Vel Total (ft/s)	4.91	Avg. Vel. (ft/s)		4.91	
Max Chl Dpth (ft)	0.87	Hydr. Depth (ft)		0.87	
Conv. Total (cfs)	454.9	Conv. (cfs)		454.9	
Length Wtd. (ft)	0.50	Wetted Per. (ft)		7.71	
Min Ch El (ft)	10.20	Shear (lb/sq ft)		0.13	
Alpha	1.00	Stream Power (lb/ft s)		0.65	
Frctn Loss (ft)	0.00	Cum Volume (acre-ft)		0.01	
C & E Loss (ft)	0.00	Cum SA (acres)		0.01	

CROSS SECTION OUTPUT Profile #1y

E.G. Elev (ft)	11.23	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.31	Wt. n-Val.		0.013	
W.S. Elev (ft)	10.92	Reach Len. (ft)	0.50	0.50	0.50
Crit W.S. (ft)	10.88	Flow Area (sq ft)		4.30	
E.G. Slope (ft/ft)	0.003151	Area (sq ft)		4.30	
Q Total (cfs)	19.19	Flow (cfs)		19.19	
Top Width (ft)	5.98	Top Width (ft)		5.98	
Vel Total (ft/s)	4.46	Avg. Vel. (ft/s)		4.46	

Max Chl Dpth (ft)	0.72	Hydr. Depth (ft)	0.72
Conv. Total (cfs)	341.8	Conv. (cfs)	341.8
Length Wtd. (ft)	0.50	Wetted Per. (ft)	7.42
Min Ch El (ft)	10.20	Shear (lb/sq ft)	0.11
Alpha	1.00	Stream Power (lb/ft s)	0.51
Frctn Loss (ft)	0.00	Cum Volume (acre-ft)	0.01
C & E Loss (ft)	0.00	Cum SA (acres)	0.01

BRIDGE

RIVER: buena vista
REACH: one RS: 3.5

INPUT
Description:
Distance from Upstream XS = .5
Deck/Roadway Width = 12.8
Weir Coefficient = 2.6
Upstream Deck/Roadway Coordinates
num= 2

Sta Hi Cord	Lo Cord	Sta Hi Cord	Lo Cord
68.23	12.71	12.25	74.21	12.76	12.25

Upstream Bridge Cross Section Data
Station Elevation Data num= 12

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	13.35	10.02	13.26	25.06	12.98	40.1	12.8	68.23	12.71
68.23	10.2	71.22	10.2	74.21	10.2	74.21	12.76	89.27	12.79
108.56	12.97	113.56	13.35						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.013	68.23	.013	74.21	.013

Bank Sta: Left	Right	Coeff Contr.	Expan.
68.23	74.21	.1	.3

Downstream Deck/Roadway Coordinates
num= 2

Sta Hi Cord	Lo Cord	Sta Hi Cord	Lo Cord
64.6	12.45	12.3	71.02	12.58	12.3

Downstream Bridge Cross Section Data
Station Elevation Data num= 11

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	13.39	10.02	13.25	25.05	13.01	40.08	12.8	64.6	12.45
64.6	9.99	67.81	9.99	71.02	9.99	71.02	12.58	109.17	13.01
114.17	13.32								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.013	64.6	.013	71.02	.013

Bank Sta: Left	Right	Coeff Contr.	Expan.
64.6	71.02	.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 = 12.25
Energy head used in spillway design =
Spillway height used in design =
Weir crest shape = Broad Crested

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 #100y

			Inside BR US	Inside BR DS
E.G. US. (ft)	12.56	Element		
W.S. US. (ft)	11.82	E.G. Elev (ft)	12.56	12.24
Q Total (cfs)	66.80	W.S. Elev (ft)	11.77	11.57
Q Bridge (cfs)	66.80	Crit W.S. (ft)	11.77	11.49
Q Weir (cfs)		Max Chl Dpth (ft)	1.57	1.58
Weir Sta Lft (ft)		Vel Total (ft/s)	7.11	6.59
Weir Sta Rgt (ft)		Flow Area (sq ft)	9.40	10.13
Weir Submerg		Froude # Chl	1.00	0.92
Weir Max Depth (ft)		Specif Force (cu ft)	22.13	21.67
Min El Weir Flow (ft)	12.72	Hydr Depth (ft)	1.57	1.58
Min El Prs (ft)	12.25	W.P. Total (ft)	9.12	9.58
Delta EG (ft)	0.32	Conv. Total (cfs)	1095.8	1202.6
Delta WS (ft)	0.26	Top Width (ft)	5.98	6.42
BR Open Area (sq ft)	12.26	Frctn Loss (ft)		
BR Open Vel (ft/s)	7.11	C & E Loss (ft)		
Coef of Q		Shear Total (lb/sq ft)	0.24	0.20
Br Sel Method	Momentum	Power Total (lb/ft s)	1.70	1.34

Note: The momentum method has computed a class B profile.
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.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream 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: The energy method has computed a class B profile.

BRIDGE OUTPUT Profile #50y

			Inside BR US	Inside BR DS
E.G. US. (ft)	12.36	Element		
W.S. US. (ft)	11.68	E.G. Elev (ft)	12.36	12.24
Q Total (cfs)	58.76	W.S. Elev (ft)	11.62	11.03
Q Bridge (cfs)	58.76	Crit W.S. (ft)	11.65	11.37
Q Weir (cfs)		Max Chl Dpth (ft)	1.42	1.04
Weir Sta Lft (ft)		Vel Total (ft/s)	6.94	8.83
Weir Sta Rgt (ft)		Flow Area (sq ft)	8.47	6.65
Weir Submerg		Froude # Chl	1.03	1.53
Weir Max Depth (ft)		Specif Force (cu ft)	18.66	19.57
Min El Weir Flow (ft)	12.72	Hydr Depth (ft)	1.42	1.04
Min El Prs (ft)	12.25	W.P. Total (ft)	8.81	8.49
Delta EG (ft)	0.13	Conv. Total (cfs)	942.5	646.1
Delta WS (ft)	0.65	Top Width (ft)	5.98	6.42
BR Open Area (sq ft)	12.26	Frctn Loss (ft)	0.00	0.07
BR Open Vel (ft/s)	8.83	C & E Loss (ft)	0.01	0.05
Coef of Q		Shear Total (lb/sq ft)	0.23	0.40
Br Sel Method	Energy only	Power Total (lb/ft s)	1.62	3.57

Note: Momentum answer is not valid if the water surface is above the low chord or if there is weir
flow. The momentum answer has been disregarded.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid,
energy was used.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.

BRIDGE OUTPUT Profile #25y

			Inside BR US	Inside BR DS
E.G. US. (ft)	12.17	Element		
W.S. US. (ft)	11.58	E.G. Elev (ft)	12.17	12.05
Q Total (cfs)	51.01	W.S. Elev (ft)	11.51	10.93
Q Bridge (cfs)	51.01	Crit W.S. (ft)	11.51	11.24
Q Weir (cfs)		Max Chl Dpth (ft)	1.31	0.94
Weir Sta Lft (ft)		Vel Total (ft/s)	6.51	8.49
Weir Sta Rgt (ft)		Flow Area (sq ft)	7.84	6.01
Weir Submerg		Froude # Chl	1.00	1.55
Weir Max Depth (ft)		Specif Force (cu ft)	15.44	16.26
Min El Weir Flow (ft)	12.72	Hydr Depth (ft)	1.31	0.94
Min El Prs (ft)	12.25	W.P. Total (ft)	8.60	8.29
Delta EG (ft)	0.13	Conv. Total (cfs)	841.9	553.7
Delta WS (ft)	0.65	Top Width (ft)	5.98	6.42
BR Open Area (sq ft)	12.26	Frctn Loss (ft)	0.04	0.07
BR Open Vel (ft/s)	8.49	C & E Loss (ft)	0.03	0.05
Coef of Q		Shear Total (lb/sq ft)	0.21	0.38
Br Sel Method	Energy only	Power Total (lb/ft s)	1.36	3.26

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.
Warning: The conveyance ratio (upstream 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: The energy method has computed a class B profile.

BRIDGE OUTPUT Profile #10y

			Inside BR US	Inside BR DS
E.G. US. (ft)	11.92	Element		
W.S. US. (ft)	11.40	E.G. Elev (ft)	11.91	11.79
Q Total (cfs)	41.37	W.S. Elev (ft)	11.34	10.79
Q Bridge (cfs)	41.37	Crit W.S. (ft)	11.34	11.08
Q Weir (cfs)		Max Chl Dpth (ft)	1.14	0.80
Weir Sta Lft (ft)		Vel Total (ft/s)	6.08	8.03
Weir Sta Rgt (ft)		Flow Area (sq ft)	6.80	5.15
Weir Submerg		Froude # Chl	1.00	1.58
Weir Max Depth (ft)		Specif Force (cu ft)	11.68	12.38
Min El Weir Flow (ft)	12.72	Hydr Depth (ft)	1.14	0.80
Min El Prs (ft)	12.25	W.P. Total (ft)	8.26	8.03
Delta EG (ft)	0.12	Conv. Total (cfs)	683.7	438.3
Delta WS (ft)	0.61	Top Width (ft)	5.98	6.42
BR Open Area (sq ft)	12.26	Frctn Loss (ft)	0.04	0.07
BR Open Vel (ft/s)	8.03	C & E Loss (ft)	0.03	0.04
Coef of Q		Shear Total (lb/sq ft)	0.19	0.36
Br Sel Method	Energy only	Power Total (lb/ft s)	1.15	2.87

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.

Warning: The conveyance ratio (upstream 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: The energy method has computed a class B profile.

BRIDGE OUTPUT Profile #5y

			Inside BR US	Inside BR DS
E.G. US. (ft)	11.71	Element		
W.S. US. (ft)	11.26	E.G. Elev (ft)	11.71	11.59
Q Total (cfs)	34.28	W.S. Elev (ft)	11.20	10.69
Q Bridge (cfs)	34.28	Crit W.S. (ft)	11.20	10.95
Q Weir (cfs)		Max Chl Dpth (ft)	1.00	0.70
Weir Sta Lft (ft)		Vel Total (ft/s)	5.71	7.64
Weir Sta Rgt (ft)		Flow Area (sq ft)	6.01	4.49
Weir Submerg		Froude # Chl	1.00	1.61
Weir Max Depth (ft)		Specif Force (cu ft)	9.09	9.70
Min El Weir Flow (ft)	12.72	Hydr Depth (ft)	1.00	0.70
Min El Prs (ft)	12.25	W.P. Total (ft)	7.99	7.82
Delta EG (ft)	0.12	Conv. Total (cfs)	567.7	354.4
Delta WS (ft)	0.57	Top Width (ft)	5.98	6.42
BR Open Area (sq ft)	12.26	Frctn Loss (ft)	0.04	0.07
BR Open Vel (ft/s)	7.64	C & E Loss (ft)	0.02	0.04
Coef of Q		Shear Total (lb/sq ft)	0.17	0.34
Br Sel Method	Energy only	Power Total (lb/ft s)	0.98	2.56

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.
Warning: The conveyance ratio (upstream 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: The energy method has computed a class B profile.

BRIDGE OUTPUT Profile #2y

			Inside BR US	Inside BR DS
E.G. US. (ft)	11.44	Element		
W.S. US. (ft)	11.07	E.G. Elev (ft)	11.44	11.33
Q Total (cfs)	25.48	W.S. Elev (ft)	11.03	10.55
Q Bridge (cfs)	25.48	Crit W.S. (ft)	11.03	10.78
Q Weir (cfs)		Max Chl Dpth (ft)	0.83	0.56
Weir Sta Lft (ft)		Vel Total (ft/s)	5.16	7.07
Weir Sta Rgt (ft)		Flow Area (sq ft)	4.94	3.60
Weir Submerg		Froude # Chl	1.00	1.66
Weir Max Depth (ft)		Specif Force (cu ft)	6.12	6.61
Min El Weir Flow (ft)	12.72	Hydr Depth (ft)	0.83	0.56
Min El Prs (ft)	12.25	W.P. Total (ft)	7.63	7.54
Delta EG (ft)	0.12	Conv. Total (cfs)	422.0	251.8
Delta WS (ft)	0.51	Top Width (ft)	5.98	6.42
BR Open Area (sq ft)	12.26	Frctn Loss (ft)	0.04	0.07
BR Open Vel (ft/s)	7.07	C & E Loss (ft)	0.02	0.04
Coef of Q		Shear Total (lb/sq ft)	0.15	0.31
Br Sel Method	Energy only	Power Total (lb/ft s)	0.76	2.16

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.
Warning: The conveyance ratio (upstream 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: The energy method has computed a class B profile.

BRIDGE OUTPUT Profile #1y

E.G. US. (ft)	11.23	Element	Inside BR US	Inside BR DS
W.S. US. (ft)	10.92	E.G. Elev (ft)	11.23	11.12
Q Total (cfs)	19.19	W.S. Elev (ft)	10.88	10.44
Q Bridge (cfs)	19.19	Crit W.S. (ft)	10.88	10.65
Q Weir (cfs)		Max Chl Dpth (ft)	0.68	0.45
Weir Sta Lft (ft)		Vel Total (ft/s)	4.70	6.57
Weir Sta Rgt (ft)		Flow Area (sq ft)	4.08	2.92
Weir Submerg		Froude # Chl	1.00	1.72
Weir Max Depth (ft)		Specif Force (cu ft)	4.19	4.58
Min El Weir Flow (ft)	12.72	Hydr Depth (ft)	0.68	0.45
Min El Prs (ft)	12.25	W.P. Total (ft)	7.35	7.33
Delta EG (ft)	0.12	Conv. Total (cfs)	315.7	180.5
Delta WS (ft)	0.47	Top Width (ft)	5.98	6.42
BR Open Area (sq ft)	12.26	Frctn Loss (ft)	0.04	0.08
BR Open Vel (ft/s)	6.57	C & E Loss (ft)	0.02	0.03
Coef of Q		Shear Total (lb/sq ft)	0.13	0.28
Br Sel Method	Energy only	Power Total (lb/ft s)	0.60	1.85

Warning: The energy equation could not be balanced within the specified number of iterations. The program selected the water surface that had the least amount of error between computed and assumed values.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the 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 conveyance ratio (upstream 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: The energy method has computed a class B profile.

CROSS SECTION

RIVER: buena vista
REACH: one RS: 3

INPUT
Description: Seccion #16 en la Agrimensura
Station Elevation Data num= 11

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	13.39	10.02	13.25	25.05	13.01	40.08	12.8	64.6	12.45
64.6	9.99	67.81	9.99	71.02	9.99	71.02	12.58	109.17	13.01
114.17	13.32								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.013	64.6	.013	71.02	.013

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
64.6	71.02	57.95	62.51	61.61	.1	.3

CROSS SECTION OUTPUT Profile #100y

E.G. Elev (ft)	12.24	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.68	Wt. n-Val.		0.013	
W.S. Elev (ft)	11.56	Reach Len. (ft)	0.50	0.50	0.50
Crit W.S. (ft)	11.48	Flow Area (sq ft)		10.08	
E.G. Slope (ft/ft)	0.003134	Area (sq ft)		10.08	
Q Total (cfs)	66.80	Flow (cfs)		66.80	
Top Width (ft)	6.42	Top Width (ft)		6.42	
Vel Total (ft/s)	6.63	Avg. Vel. (ft/s)		6.63	
Max Chl Dpth (ft)	1.57	Hydr. Depth (ft)		1.57	
Conv. Total (cfs)	1193.3	Conv. (cfs)		1193.3	
Length Wtd. (ft)	0.50	Wetted Per. (ft)		9.56	
Min Ch El (ft)	9.99	Shear (lb/sq ft)		0.21	
Alpha	1.00	Stream Power (lb/ft s)		1.37	
Frctn Loss (ft)	0.00	Cum Volume (acre-ft)		0.01	
C & E Loss (ft)	0.00	Cum SA (acres)		0.01	

CROSS SECTION OUTPUT Profile #50y

E.G. Elev (ft)	12.24	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.21	Wt. n-Val.		0.013	
W.S. Elev (ft)	11.03	Reach Len. (ft)	0.50	0.50	0.50
Crit W.S. (ft)	11.36	Flow Area (sq ft)		6.66	
E.G. Slope (ft/ft)	0.008225	Area (sq ft)		6.66	
Q Total (cfs)	58.76	Flow (cfs)		58.76	
Top Width (ft)	6.42	Top Width (ft)		6.42	
Vel Total (ft/s)	8.82	Avg. Vel. (ft/s)		8.82	
Max Chl Dpth (ft)	1.04	Hydr. Depth (ft)		1.04	
Conv. Total (cfs)	647.9	Conv. (cfs)		647.9	
Length Wtd. (ft)	0.50	Wetted Per. (ft)		8.50	
Min Ch El (ft)	9.99	Shear (lb/sq ft)		0.40	
Alpha	1.00	Stream Power (lb/ft s)		3.55	
Frctn Loss (ft)	0.00	Cum Volume (acre-ft)		0.00	
C & E Loss (ft)	0.00	Cum SA (acres)		0.00	

CROSS SECTION OUTPUT Profile #25y

E.G. Elev (ft)	11.87	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.57	Wt. n-Val.		0.013	
W.S. Elev (ft)	11.30	Reach Len. (ft)	0.50	0.50	0.50
Crit W.S. (ft)	11.24	Flow Area (sq ft)		8.42	
E.G. Slope (ft/ft)	0.003091	Area (sq ft)		8.42	
Q Total (cfs)	51.01	Flow (cfs)		51.01	
Top Width (ft)	6.42	Top Width (ft)		6.42	
Vel Total (ft/s)	6.06	Avg. Vel. (ft/s)		6.06	
Max Chl Dpth (ft)	1.31	Hydr. Depth (ft)		1.31	
Conv. Total (cfs)	917.5	Conv. (cfs)		917.5	
Length Wtd. (ft)	0.50	Wetted Per. (ft)		9.04	
Min Ch El (ft)	9.99	Shear (lb/sq ft)		0.18	
Alpha	1.00	Stream Power (lb/ft s)		1.09	
Frctn Loss (ft)	0.00	Cum Volume (acre-ft)		0.01	
C & E Loss (ft)	0.00	Cum SA (acres)		0.01	

CROSS SECTION OUTPUT Profile #10y

E.G. Elev (ft)	11.63	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.50	Wt. n-Val.		0.013	
W.S. Elev (ft)	11.13	Reach Len. (ft)	0.50	0.50	0.50
Crit W.S. (ft)	11.07	Flow Area (sq ft)		7.32	
E.G. Slope (ft/ft)	0.003081	Area (sq ft)		7.32	
Q Total (cfs)	41.37	Flow (cfs)		41.37	
Top Width (ft)	6.42	Top Width (ft)		6.42	
Vel Total (ft/s)	5.65	Avg. Vel. (ft/s)		5.65	
Max Chl Dpth (ft)	1.14	Hydr. Depth (ft)		1.14	
Conv. Total (cfs)	745.3	Conv. (cfs)		745.3	
Length Wtd. (ft)	0.50	Wetted Per. (ft)		8.70	
Min Ch El (ft)	9.99	Shear (lb/sq ft)		0.16	
Alpha	1.00	Stream Power (lb/ft s)		0.91	
Frctn Loss (ft)	0.00	Cum Volume (acre-ft)		0.01	
C & E Loss (ft)	0.00	Cum SA (acres)		0.01	

CROSS SECTION OUTPUT Profile #5y

E.G. Elev (ft)	11.43	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.44	Wt. n-Val.		0.013	
W.S. Elev (ft)	11.00	Reach Len. (ft)	0.50	0.50	0.50
Crit W.S. (ft)	10.95	Flow Area (sq ft)		6.47	
E.G. Slope (ft/ft)	0.003063	Area (sq ft)		6.47	
Q Total (cfs)	34.28	Flow (cfs)		34.28	
Top Width (ft)	6.42	Top Width (ft)		6.42	
Vel Total (ft/s)	5.30	Avg. Vel. (ft/s)		5.30	
Max Chl Dpth (ft)	1.01	Hydr. Depth (ft)		1.01	
Conv. Total (cfs)	619.5	Conv. (cfs)		619.5	
Length Wtd. (ft)	0.50	Wetted Per. (ft)		8.44	

Min Ch El (ft)	9.99	Shear (lb/sq ft)	0.15
Alpha	1.00	Stream Power (lb/ft s)	0.78
Frctn Loss (ft)	0.00	Cum Volume (acre-ft)	0.01
C & E Loss (ft)	0.00	Cum SA (acres)	0.01

CROSS SECTION OUTPUT Profile #2y

E.G. Elev (ft)	11.17	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.36	Wt. n-Val.		0.013	
W.S. Elev (ft)	10.82	Reach Len. (ft)	0.50	0.50	0.50
Crit W.S. (ft)	10.78	Flow Area (sq ft)		5.30	
E.G. Slope (ft/ft)	0.003096	Area (sq ft)		5.30	
Q Total (cfs)	25.48	Flow (cfs)		25.48	
Top Width (ft)	6.42	Top Width (ft)		6.42	
Vel Total (ft/s)	4.81	Avg. Vel. (ft/s)		4.81	
Max Chl Dpth (ft)	0.83	Hydr. Depth (ft)		0.83	
Conv. Total (cfs)	457.9	Conv. (cfs)		457.9	
Length Wtd. (ft)	0.50	Wetted Per. (ft)		8.07	
Min Ch El (ft)	9.99	Shear (lb/sq ft)		0.13	
Alpha	1.00	Stream Power (lb/ft s)		0.61	
Frctn Loss (ft)	0.00	Cum Volume (acre-ft)		0.01	
C & E Loss (ft)	0.00	Cum SA (acres)		0.01	

CROSS SECTION OUTPUT Profile #1y

E.G. Elev (ft)	10.97	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.29	Wt. n-Val.		0.013	
W.S. Elev (ft)	10.68	Reach Len. (ft)	0.50	0.50	0.50
Crit W.S. (ft)	10.64	Flow Area (sq ft)		4.42	
E.G. Slope (ft/ft)	0.003081	Area (sq ft)		4.42	
Q Total (cfs)	19.19	Flow (cfs)		19.19	
Top Width (ft)	6.42	Top Width (ft)		6.42	
Vel Total (ft/s)	4.34	Avg. Vel. (ft/s)		4.34	
Max Chl Dpth (ft)	0.69	Hydr. Depth (ft)		0.69	
Conv. Total (cfs)	345.6	Conv. (cfs)		345.6	
Length Wtd. (ft)	0.50	Wetted Per. (ft)		7.80	
Min Ch El (ft)	9.99	Shear (lb/sq ft)		0.11	
Alpha	1.00	Stream Power (lb/ft s)		0.47	
Frctn Loss (ft)	0.00	Cum Volume (acre-ft)		0.01	
C & E Loss (ft)	0.00	Cum SA (acres)		0.01	

BRIDGE

RIVER: buena vista
REACH: one RS: 2.5

INPUT
Description:
Distance from Upstream XS = .5
Deck/Roadway Width = 61.51
Weir Coefficient = 2.6
Upstream Deck/Roadway Coordinates
num= 2

Sta Hi Cord	Lo Cord	Sta Hi Cord	Lo Cord
64.6	12.45	12.3	71.02	12.58	12.3

Upstream Bridge Cross Section Data
Station Elevation Data num= 11

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	13.39	10.02	13.25	25.05	13.01	40.08	12.8	64.6	12.45
64.6	9.99	67.81	9.99	71.02	9.99	71.02	12.58	109.17	13.01
114.17	13.32								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.013	64.6	.013	71.02	.013

Bank Sta: Left Right Coeff Contr. Expan.
64.6 71.02 .1 .3

Downstream Deck/Roadway Coordinates
num= 2
Sta Hi Cord Lo Cord Sta Hi Cord Lo Cord
54.02 12.23 11.98 60.49 12.31 11.98

Downstream Bridge Cross Section Data
Station Elevation Data num= 11

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	12.46	8.41	12.41	17.94	12.29	25.21	12.21	54.02	12.23
54.02	9.8	57.5	9.8	60.49	9.8	60.49	12.31	89.88	13.12
106.24	13.59								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.013	54.02	.013	60.49	.013

Bank Sta: Left Right Coeff Contr. Expan.
54.02 60.49 .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 = 11.98
Energy head used in spillway design =
Spillway height used in design =
Weir crest shape = Broad Crested

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 #100y

			Inside BR US	Inside BR DS
E.G. US. (ft)	12.24	Element		
W.S. US. (ft)	11.56	E.G. Elev (ft)	12.24	12.04
Q Total (cfs)	66.80	W.S. Elev (ft)	11.55	11.37
Q Bridge (cfs)	66.80	Crit W.S. (ft)	11.49	11.29
Q Weir (cfs)		Max Chl Dpth (ft)	1.56	1.57
Weir Sta Lft (ft)		Vel Total (ft/s)	6.65	6.59
Weir Sta Rgt (ft)		Flow Area (sq ft)	10.04	10.14
Weir Submerg		Froude # Chl	0.94	0.93
Weir Max Depth (ft)		Specif Force (cu ft)	21.65	21.61
Min El Weir Flow (ft)	12.46	Hydr Depth (ft)	1.56	1.57
Min El Prs (ft)	12.30	W.P. Total (ft)	9.55	9.61
Delta EG (ft)	0.21	Conv. Total (cfs)	1187.5	1202.3
Delta WS (ft)	0.27	Top Width (ft)	6.42	6.47
BR Open Area (sq ft)	14.10	Frctn Loss (ft)	0.19	0.00
BR Open Vel (ft/s)	6.65	C & E Loss (ft)	0.00	0.01
Coef of Q		Shear Total (lb/sq ft)	0.21	0.20
Br Sel Method	Energy only	Power Total (lb/ft s)	1.38	1.34

BRIDGE OUTPUT Profile #50y

			Inside BR US	Inside BR DS
E.G. US. (ft)	12.24	Element		
W.S. US. (ft)	11.03	E.G. Elev (ft)	12.24	11.86

Q Total (cfs)	58.76	W.S. Elev (ft)	11.03	11.07
Q Bridge (cfs)	58.76	Crit W.S. (ft)	11.37	11.16
Q Weir (cfs)		Max Chl Dpth (ft)	1.04	1.27
Weir Sta Lft (ft)		Vel Total (ft/s)	8.82	7.15
Weir Sta Rgt (ft)		Flow Area (sq ft)	6.66	8.22
Weir Submerg		Froude # Chl	1.52	1.12
Weir Max Depth (ft)		Specif Force (cu ft)	19.55	18.27
Min El Weir Flow (ft)	12.46	Hydr Depth (ft)	1.04	1.27
Min El Prs (ft)	12.30	W.P. Total (ft)	8.50	9.01
Delta EG (ft)	0.37	Conv. Total (cfs)	647.9	884.3
Delta WS (ft)	-0.04	Top Width (ft)	6.42	6.47
BR Open Area (sq ft)	14.10	Frctn Loss (ft)	0.00	0.32
BR Open Vel (ft/s)	8.82	C & E Loss (ft)	0.00	0.16
Coef of Q		Shear Total (lb/sq ft)	0.40	0.25
Br Sel Method	Energy only	Power Total (lb/ft s)	3.55	1.80

Note: Momentum answer is not valid if the water surface is above the low chord or if there is weir
flow. The momentum answer has been disregarded.
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.

BRIDGE OUTPUT Profile #25y

E.G. US. (ft)	11.87	Element	Inside BR US	Inside BR DS
W.S. US. (ft)	11.30	E.G. Elev (ft)	11.87	11.67
Q Total (cfs)	51.01	W.S. Elev (ft)	11.29	11.11
Q Bridge (cfs)	51.01	Crit W.S. (ft)	11.24	11.05
Q Weir (cfs)		Max Chl Dpth (ft)	1.30	1.31
Weir Sta Lft (ft)		Vel Total (ft/s)	6.09	6.01
Weir Sta Rgt (ft)		Flow Area (sq ft)	8.37	8.49
Weir Submerg		Froude # Chl	0.94	0.92
Weir Max Depth (ft)		Specif Force (cu ft)	15.11	15.09
Min El Weir Flow (ft)	12.46	Hydr Depth (ft)	1.30	1.31
Min El Prs (ft)	12.30	W.P. Total (ft)	9.03	9.09
Delta EG (ft)	0.20	Conv. Total (cfs)	910.4	926.2
Delta WS (ft)	0.26	Top Width (ft)	6.42	6.47
BR Open Area (sq ft)	14.10	Frctn Loss (ft)	0.19	0.00
BR Open Vel (ft/s)	6.09	C & E Loss (ft)	0.00	0.01
Coef of Q		Shear Total (lb/sq ft)	0.18	0.18
Br Sel Method	Energy only	Power Total (lb/ft s)	1.11	1.06

BRIDGE OUTPUT Profile #10y

E.G. US. (ft)	11.63	Element	Inside BR US	Inside BR DS
W.S. US. (ft)	11.13	E.G. Elev (ft)	11.63	11.43
Q Total (cfs)	41.37	W.S. Elev (ft)	11.12	10.94
Q Bridge (cfs)	41.37	Crit W.S. (ft)	11.08	10.88
Q Weir (cfs)		Max Chl Dpth (ft)	1.13	1.14
Weir Sta Lft (ft)		Vel Total (ft/s)	5.69	5.61
Weir Sta Rgt (ft)		Flow Area (sq ft)	7.27	7.37
Weir Submerg		Froude # Chl	0.94	0.93
Weir Max Depth (ft)		Specif Force (cu ft)	11.43	11.41
Min El Weir Flow (ft)	12.46	Hydr Depth (ft)	1.13	1.14
Min El Prs (ft)	12.30	W.P. Total (ft)	8.69	8.75
Delta EG (ft)	0.20	Conv. Total (cfs)	738.4	752.1
Delta WS (ft)	0.25	Top Width (ft)	6.42	6.47
BR Open Area (sq ft)	14.10	Frctn Loss (ft)	0.19	0.00
BR Open Vel (ft/s)	5.69	C & E Loss (ft)	0.00	0.01
Coef of Q		Shear Total (lb/sq ft)	0.16	0.16
Br Sel Method	Energy only	Power Total (lb/ft s)	0.93	0.89

BRIDGE OUTPUT Profile #5y

E.G. US. (ft)	11.43	Element	Inside BR US	Inside BR DS
W.S. US. (ft)	11.00	E.G. Elev (ft)	11.43	11.24
Q Total (cfs)	34.28	W.S. Elev (ft)	10.99	10.81

Q Bridge (cfs)	34.28	Crit W.S. (ft)	10.95	10.76
Q Weir (cfs)		Max Chl Dpth (ft)	1.00	1.01
Weir Sta Lft (ft)		Vel Total (ft/s)	5.34	5.25
Weir Sta Rgt (ft)		Flow Area (sq ft)	6.42	6.53
Weir Submerg		Froude # Chl	0.94	0.92
Weir Max Depth (ft)		Specif Force (cu ft)	8.90	8.89
Min El Weir Flow (ft)	12.46	Hydr Depth (ft)	1.00	1.01
Min El Prs (ft)	12.30	W.P. Total (ft)	8.42	8.49
Delta EG (ft)	0.20	Conv. Total (cfs)	612.9	627.2
Delta WS (ft)	0.25	Top Width (ft)	6.42	6.47
BR Open Area (sq ft)	14.10	Frctn Loss (ft)	0.19	0.00
BR Open Vel (ft/s)	5.34	C & E Loss (ft)	0.00	0.01
Coef of Q		Shear Total (lb/sq ft)	0.15	0.14
Br Sel Method	Energy only	Power Total (lb/ft s)	0.80	0.75

BRIDGE OUTPUT Profile #2y

E.G. US. (ft)	11.17	Element	Inside BR US	Inside BR DS
W.S. US. (ft)	10.82	E.G. Elev (ft)	11.17	10.98
Q Total (cfs)	25.48	W.S. Elev (ft)	10.81	10.63
Q Bridge (cfs)	25.48	Crit W.S. (ft)	10.78	10.58
Q Weir (cfs)		Max Chl Dpth (ft)	0.82	0.83
Weir Sta Lft (ft)		Vel Total (ft/s)	4.83	4.77
Weir Sta Rgt (ft)		Flow Area (sq ft)	5.28	5.34
Weir Submerg		Froude # Chl	0.94	0.93
Weir Max Depth (ft)		Specif Force (cu ft)	5.99	5.98
Min El Weir Flow (ft)	12.46	Hydr Depth (ft)	0.82	0.83
Min El Prs (ft)	12.30	W.P. Total (ft)	8.06	8.12
Delta EG (ft)	0.20	Conv. Total (cfs)	454.5	461.3
Delta WS (ft)	0.23	Top Width (ft)	6.42	6.47
BR Open Area (sq ft)	14.10	Frctn Loss (ft)	0.19	0.00
BR Open Vel (ft/s)	4.83	C & E Loss (ft)	0.00	0.00
Coef of Q		Shear Total (lb/sq ft)	0.13	0.13
Br Sel Method	Energy only	Power Total (lb/ft s)	0.62	0.60

BRIDGE OUTPUT Profile #1y

E.G. US. (ft)	10.97	Element	Inside BR US	Inside BR DS
W.S. US. (ft)	10.68	E.G. Elev (ft)	10.97	10.78
Q Total (cfs)	19.19	W.S. Elev (ft)	10.67	10.48
Q Bridge (cfs)	19.19	Crit W.S. (ft)	10.65	10.45
Q Weir (cfs)		Max Chl Dpth (ft)	0.68	0.68
Weir Sta Lft (ft)		Vel Total (ft/s)	4.36	4.35
Weir Sta Rgt (ft)		Flow Area (sq ft)	4.40	4.41
Weir Submerg		Froude # Chl	0.93	0.93
Weir Max Depth (ft)		Specif Force (cu ft)	4.11	4.10
Min El Weir Flow (ft)	12.46	Hydr Depth (ft)	0.68	0.68
Min El Prs (ft)	12.30	W.P. Total (ft)	7.79	7.83
Delta EG (ft)	0.20	Conv. Total (cfs)	343.3	344.2
Delta WS (ft)	0.23	Top Width (ft)	6.42	6.47
BR Open Area (sq ft)	14.10	Frctn Loss (ft)	0.19	0.00
BR Open Vel (ft/s)	4.36	C & E Loss (ft)	0.00	0.00
Coef of Q		Shear Total (lb/sq ft)	0.11	0.11
Br Sel Method	Energy only	Power Total (lb/ft s)	0.48	0.48

CROSS SECTION

RIVER: buena vista
REACH: one RS: 2

INPUT
Description: Seccion #17 en la
Agrimensura
10.02 13.25
25.05 13.01
40.08 12.8
64.6 12.45

67.8
1 9.99
71.02 12.58
109.17 13.01
Seccion #17 en la Agrimensura
Station Elevation Data num= 11

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	12.46	8.41	12.41	17.94	12.29	25.21	12.21	54.02	12.23
54.02	9.8	57.5	9.8	60.49	9.8	60.49	12.31	89.88	13.12
106.24	13.59								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.013	54.02	.013	60.49	.013

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
54.02	60.49	0	0	.1	.3

CROSS SECTION OUTPUT Profile #100y

			Left OB	Channel	Right OB
E.G. Elev (ft)	12.04	Element			
Vel Head (ft)	0.75	Wt. n-Val.		0.013	
W.S. Elev (ft)	11.29	Reach Len. (ft)			
Crit W.S. (ft)	11.29	Flow Area (sq ft)		9.61	
E.G. Slope (ft/ft)	0.003614	Area (sq ft)		9.61	
Q Total (cfs)	66.80	Flow (cfs)		66.80	
Top Width (ft)	6.47	Top Width (ft)		6.47	
Vel Total (ft/s)	6.95	Avg. Vel. (ft/s)		6.95	
Max Chl Dpth (ft)	1.49	Hydr. Depth (ft)		1.49	
Conv. Total (cfs)	1111.2	Conv. (cfs)		1111.2	
Length Wtd. (ft)		Wetted Per. (ft)		9.44	
Min Ch El (ft)	9.80	Shear (lb/sq ft)		0.23	
Alpha	1.00	Stream Power (lb/ft s)		1.60	
Frctn Loss (ft)		Cum Volume (acre-ft)			
C & E Loss (ft)		Cum SA (acres)			

Warning: Slope too steep for slope area to converge during supercritical flow calculations (normal depth
is below critical depth). Water surface set to critical depth.

CROSS SECTION OUTPUT Profile #50y

			Left OB	Channel	Right OB
E.G. Elev (ft)	11.86	Element			
Vel Head (ft)	0.79	Wt. n-Val.		0.013	
W.S. Elev (ft)	11.07	Reach Len. (ft)			
Crit W.S. (ft)	11.16	Flow Area (sq ft)		8.22	
E.G. Slope (ft/ft)	0.004416	Area (sq ft)		8.22	
Q Total (cfs)	58.76	Flow (cfs)		58.76	
Top Width (ft)	6.47	Top Width (ft)		6.47	
Vel Total (ft/s)	7.15	Avg. Vel. (ft/s)		7.15	
Max Chl Dpth (ft)	1.27	Hydr. Depth (ft)		1.27	
Conv. Total (cfs)	884.3	Conv. (cfs)		884.3	
Length Wtd. (ft)		Wetted Per. (ft)		9.01	
Min Ch El (ft)	9.80	Shear (lb/sq ft)		0.25	
Alpha	1.00	Stream Power (lb/ft s)		1.80	
Frctn Loss (ft)	0.00	Cum Volume (acre-ft)			
C & E Loss (ft)	0.00	Cum SA (acres)			

CROSS SECTION OUTPUT Profile #25y

			Left OB	Channel	Right OB
E.G. Elev (ft)	11.67	Element			
Vel Head (ft)	0.63	Wt. n-Val.		0.013	
W.S. Elev (ft)	11.04	Reach Len. (ft)			
Crit W.S. (ft)	11.04	Flow Area (sq ft)		8.03	
E.G. Slope (ft/ft)	0.003575	Area (sq ft)		8.03	
Q Total (cfs)	51.01	Flow (cfs)		51.01	
Top Width (ft)	6.47	Top Width (ft)		6.47	
Vel Total (ft/s)	6.35	Avg. Vel. (ft/s)		6.35	
Max Chl Dpth (ft)	1.24	Hydr. Depth (ft)		1.24	

Conv. Total (cfs)	853.1	Conv. (cfs)	853.1
Length Wtd. (ft)		Wetted Per. (ft)	8.95
Min Ch El (ft)	9.80	Shear (lb/sq ft)	0.20
Alpha	1.00	Stream Power (lb/ft s)	1.27
Frctn Loss (ft)		Cum Volume (acre-ft)	
C & E Loss (ft)		Cum SA (acres)	

Warning: Slope too steep for slope area to converge during supercritical flow calculations (normal depth
is below critical depth). Water surface set to critical depth.

CROSS SECTION OUTPUT Profile #10y

E.G. Elev (ft)	11.42	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.54	Wt. n-Val.		0.013	
W.S. Elev (ft)	10.88	Reach Len. (ft)			
Crit W.S. (ft)	10.88	Flow Area (sq ft)		6.99	
E.G. Slope (ft/ft)	0.003543	Area (sq ft)		6.99	
Q Total (cfs)	41.37	Flow (cfs)		41.37	
Top Width (ft)	6.47	Top Width (ft)		6.47	
Vel Total (ft/s)	5.91	Avg. Vel. (ft/s)		5.91	
Max Chl Dpth (ft)	1.08	Hydr. Depth (ft)		1.08	
Conv. Total (cfs)	694.9	Conv. (cfs)		694.9	
Length Wtd. (ft)		Wetted Per. (ft)		8.63	
Min Ch El (ft)	9.80	Shear (lb/sq ft)		0.18	
Alpha	1.00	Stream Power (lb/ft s)		1.06	
Frctn Loss (ft)		Cum Volume (acre-ft)			
C & E Loss (ft)		Cum SA (acres)			

Warning: Slope too steep for slope area to converge during supercritical flow calculations (normal depth
is below critical depth). Water surface set to critical depth.

CROSS SECTION OUTPUT Profile #5y

E.G. Elev (ft)	11.23	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.48	Wt. n-Val.		0.013	
W.S. Elev (ft)	10.75	Reach Len. (ft)			
Crit W.S. (ft)	10.75	Flow Area (sq ft)		6.16	
E.G. Slope (ft/ft)	0.003568	Area (sq ft)		6.16	
Q Total (cfs)	34.28	Flow (cfs)		34.28	
Top Width (ft)	6.47	Top Width (ft)		6.47	
Vel Total (ft/s)	5.56	Avg. Vel. (ft/s)		5.56	
Max Chl Dpth (ft)	0.95	Hydr. Depth (ft)		0.95	
Conv. Total (cfs)	573.9	Conv. (cfs)		573.9	
Length Wtd. (ft)		Wetted Per. (ft)		8.37	
Min Ch El (ft)	9.80	Shear (lb/sq ft)		0.16	
Alpha	1.00	Stream Power (lb/ft s)		0.91	
Frctn Loss (ft)		Cum Volume (acre-ft)			
C & E Loss (ft)		Cum SA (acres)			

Warning: Slope too steep for slope area to converge during supercritical flow calculations (normal depth
is below critical depth). Water surface set to critical depth.

CROSS SECTION OUTPUT Profile #2y

E.G. Elev (ft)	10.98	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.39	Wt. n-Val.		0.013	
W.S. Elev (ft)	10.58	Reach Len. (ft)			
Crit W.S. (ft)	10.58	Flow Area (sq ft)		5.05	
E.G. Slope (ft/ft)	0.003610	Area (sq ft)		5.05	
Q Total (cfs)	25.48	Flow (cfs)		25.48	
Top Width (ft)	6.47	Top Width (ft)		6.47	
Vel Total (ft/s)	5.04	Avg. Vel. (ft/s)		5.04	
Max Chl Dpth (ft)	0.78	Hydr. Depth (ft)		0.78	
Conv. Total (cfs)	424.1	Conv. (cfs)		424.1	
Length Wtd. (ft)		Wetted Per. (ft)		8.03	

Min Ch El (ft)	9.80	Shear (lb/sq ft)	0.14
Alpha	1.00	Stream Power (lb/ft s)	0.71
Frctn Loss (ft)		Cum Volume (acre-ft)	
C & E Loss (ft)		Cum SA (acres)	

Warning: Slope too steep for slope area to converge during supercritical flow calculations (normal depth
is below critical depth). Water surface set to critical depth.

CROSS SECTION OUTPUT Profile #1y

E.G. Elev (ft)	10.77	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.33	Wt. n-Val.		0.013	
W.S. Elev (ft)	10.45	Reach Len. (ft)			
Crit W.S. (ft)	10.45	Flow Area (sq ft)		4.19	
E.G. Slope (ft/ft)	0.003666	Area (sq ft)		4.19	
Q Total (cfs)	19.19	Flow (cfs)		19.19	
Top Width (ft)	6.47	Top Width (ft)		6.47	
Vel Total (ft/s)	4.58	Avg. Vel. (ft/s)		4.58	
Max Chl Dpth (ft)	0.65	Hydr. Depth (ft)		0.65	
Conv. Total (cfs)	316.9	Conv. (cfs)		316.9	
Length Wtd. (ft)		Wetted Per. (ft)		7.76	
Min Ch El (ft)	9.80	Shear (lb/sq ft)		0.12	
Alpha	1.00	Stream Power (lb/ft s)		0.57	
Frctn Loss (ft)		Cum Volume (acre-ft)			
C & E Loss (ft)		Cum SA (acres)			

Warning: Slope too steep for slope area to converge during supercritical flow calculations (normal depth
is below critical depth). Water surface set to critical depth.

SUMMARY OF MANNING'S N VALUES

River:buena vista

Reach	River Sta.	n1	n2	n3	n4	n5	n6	
one	18		.015	.013	.035	.013		
one	17		.015	.013	.035	.015	.013	
one	16.5	Culvert						
one	16		.013	.035	.035	.015	.013	
one	15		.035	.035	.035			
one	14		.013	.015	.013	.035	.035	.035
one	13		.015	.013	.035	.035	.035	
one	12		.015	.013	.035	.035	.035	
one	11		.013	.035	.013	.035	.035	.035
one	10		.013	.035	.035	.015	.035	
one	9		.03	.013	.035	.013		
one	8		.013					
one	7.5	Culvert						
one	7		.015	.013	.015			
one	6		.013	.013	.013			
one	5.5	Bridge						
one	5		.013	.013	.013			
one	4.5	Bridge						
one	4		.013	.013	.013			
one	3.5	Bridge						
one	3		.013	.013	.013			
one	2.5	Bridge						
one	2		.013	.013	.013			

SUMMARY OF REACH LENGTHS

River: buena vista

Reach	River Sta.	Left	Channel	Right
one	18	182.78	138.49	112.63
one	17	50.35	59.23	65.49
one	16.5	Culvert		
one	16	109.35	108.72	11.68
one	15	77.31	58.6	38.27
one	14	73.48	28.57	11.33
one	13	72	198.82	245.66
one	12	133.71	117.99	115.63
one	11	155.56	72.04	36.34
one	10	249.85	296.25	321.61
one	9	35.42	55.13	93.81
one	8	44.98	32.75	32.95
one	7.5	Culvert		
one	7	13.93	23	19.43
one	6	24.01	29.93	38.29
one	5.5	Bridge		
one	5	72.89	40.74	46.33
one	4.5	Bridge		
one	4	12.72	13.8	12.8
one	3.5	Bridge		
one	3	57.95	62.51	61.61
one	2.5	Bridge		
one	2	0	0	0

SUMMARY OF CONTRACTION AND EXPANSION COEFFICIENTS
River: buena vista

Reach	River Sta.	Contr.	Expan.
one	18	.1	.3
one	17	.1	.3
one	16.5	Culvert	
one	16	.1	.3
one	15	.1	.3
one	14	.1	.3
one	13	.1	.3
one	12	.1	.3
one	11	.1	.3
one	10	.1	.3
one	9	.1	.3
one	8	.1	.3
one	7.5	Culvert	
one	7	.1	.3
one	6	.1	.3
one	5.5	Bridge	
one	5	.1	.3
one	4.5	Bridge	
one	4	.1	.3
one	3.5	Bridge	
one	3	.1	.3
one	2.5	Bridge	
one	2	.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
one	18	100y	21.95	18.71	19.45	19.45	19.72	0.023396	4.17	5.27	9.97	1.01
one	18	50y	19.34	18.71	19.40	19.40	19.65	0.023862	4.00	4.83	9.89	1.01
one	18	25y	16.83	18.71	19.36	19.36	19.59	0.024219	3.84	4.39	9.71	1.01
one	18	10y	13.71	18.71	19.30	19.30	19.50	0.025162	3.62	3.79	9.46	1.01
one	18	5y	11.42	18.71	19.25	19.25	19.43	0.026163	3.44	3.32	9.26	1.01

cne	18	2y	8.57	18.71	19.22	19.18	19.34	0.018595	2.78	3.08	9.15	0.84
cne	18	1y	6.53	18.71	19.20	19.13	19.28	0.013348	2.27	2.88	9.06	0.71
cne	17	100y	22.07	17.10	18.49	17.93	18.58	0.003161	2.31	9.55	9.12	0.40
cne	17	50y	19.45	17.10	18.37	17.88	18.46	0.003450	2.29	8.49	8.81	0.41
cne	17	25y	16.92	17.10	18.26	17.82	18.34	0.003809	2.27	7.45	8.51	0.43
cne	17	10y	13.78	17.10	18.10	17.75	18.18	0.004444	2.24	6.15	8.11	0.45
cne	17	5y	11.48	17.10	17.98	17.69	18.05	0.005158	2.22	5.17	7.80	0.48
cne	17	2y	8.61	17.10	17.81	17.61	17.88	0.006730	2.20	3.91	7.37	0.53
cne	17	1y	6.56	17.10	17.68	17.54	17.75	0.009248	2.23	2.95	7.01	0.60
cne	16.5		Culvert									
cne	16	100y	22.07	16.75	17.99		18.09	0.004795	2.60	8.49	9.63	0.49
cne	16	50y	19.45	16.75	17.92		18.02	0.004733	2.48	7.83	9.46	0.48
cne	16	25y	16.92	16.75	17.84		17.93	0.004781	2.38	7.11	9.27	0.48
cne	16	10y	13.78	16.75	17.72		17.80	0.005264	2.31	5.96	8.76	0.49
cne	16	5y	11.48	16.75	17.62		17.70	0.005562	2.23	5.14	8.30	0.50
cne	16	2y	8.61	16.75	17.50		17.56	0.005692	2.07	4.17	7.72	0.50
cne	16	1y	6.56	16.75	17.39		17.45	0.006203	1.96	3.35	7.19	0.51
cne	15	100y	22.34	16.12	17.51		17.61	0.004166	2.44	9.14	9.97	0.45
cne	15	50y	19.69	16.12	17.30		17.42	0.006197	2.75	7.16	8.82	0.54
cne	15	25y	17.13	16.12	17.22		17.33	0.006299	2.66	6.44	8.45	0.54
cne	15	10y	13.95	16.12	17.09		17.19	0.005778	2.56	5.46	7.06	0.51
cne	15	5y	11.62	16.12	17.00		17.09	0.005768	2.42	4.80	6.74	0.51
cne	15	2y	8.72	16.12	16.87		16.94	0.005537	2.19	3.98	6.33	0.49
cne	15	1y	6.64	16.12	16.77		16.83	0.005248	1.98	3.35	6.00	0.47
cne	14	100y	22.48	15.93	17.21		17.27	0.007719	2.11	10.65	23.66	0.55
cne	14	50y	19.81	15.93	17.02		17.11	0.004283	2.50	7.94	8.29	0.45
cne	14	25y	17.24	15.93	16.94		17.02	0.004207	2.37	7.27	8.14	0.44
cne	14	10y	14.04	15.93	16.82		16.90	0.004207	2.21	6.34	7.94	0.44
cne	14	5y	11.69	15.93	16.73		16.79	0.004275	2.09	5.58	7.78	0.44
cne	14	2y	8.77	15.93	16.60		16.66	0.004282	1.90	4.62	7.57	0.43
cne	14	1y	6.68	15.93	16.50		16.55	0.004291	1.72	3.87	7.40	0.42
cne	13	100y	22.48	15.75	16.83		17.01	0.010313	3.40	6.62	8.66	0.68
cne	13	50y	19.81	15.75	16.76		16.93	0.010125	3.29	6.03	8.15	0.67
cne	13	25y	17.24	15.75	16.68		16.84	0.009928	3.18	5.43	7.60	0.66
cne	13	10y	14.04	15.75	16.57		16.71	0.009678	3.03	4.63	6.80	0.65
cne	13	5y	11.69	15.75	16.48		16.61	0.009588	2.90	4.03	6.29	0.64
cne	13	2y	8.77	15.75	16.37	16.21	16.48	0.009612	2.63	3.34	6.08	0.62
cne	13	1y	6.68	15.75	16.27	16.14	16.36	0.009753	2.41	2.77	5.90	0.62
cne	12	100y	22.63	14.13	15.35		15.48	0.006812	2.93	7.71	8.12	0.53
cne	12	50y	19.94	14.13	15.26		15.38	0.006015	2.86	6.97	7.86	0.54
cne	12	25y	17.35	14.13	15.16		15.28	0.006355	2.80	6.20	7.58	0.54
cne	12	10y	14.13	14.13	15.04		15.15	0.006473	2.64	5.35	7.25	0.54
cne	12	5y	11.76	14.13	14.95		15.05	0.006555	2.51	4.69	7.00	0.54
cne	12	2y	8.82	14.13	14.83		14.91	0.006569	2.29	3.86	6.65	0.53
cne	12	1y	6.72	14.13	14.73		14.80	0.006490	2.09	3.22	6.38	0.52
cne	11	100y	26.15	13.42	14.88	14.31	14.97	0.003390	2.35	11.14	11.12	0.41
cne	11	50y	22.94	13.42	14.79	14.26	14.87	0.003309	2.26	10.13	10.49	0.41
cne	11	25y	19.85	13.42	14.65		14.73	0.003578	2.27	8.74	9.54	0.42
cne	11	10y	16.00	13.42	14.50		14.58	0.003811	2.16	7.39	9.18	0.43
cne	11	5y	13.16	13.42	14.40		14.47	0.003874	2.04	6.46	8.98	0.42
cne	11	2y	9.65	13.42	14.25		14.31	0.004127	1.86	5.17	8.69	0.43
cne	11	1y	7.13	13.42	14.15		14.19	0.004166	1.68	4.25	8.48	0.42
cne	10	100y	33.12	13.17	14.02	14.02	14.39	0.021502	4.86	6.82	9.42	1.01
cne	10	50y	29.09	13.17	13.95	13.95	14.29	0.021942	4.69	6.21	9.20	1.01
cne	10	25y	25.19	13.17	13.99	13.89	14.22	0.013870	3.83	6.57	9.33	0.80
cne	10	10y	20.34	13.17	13.97	13.80	14.13	0.009836	3.18	6.39	9.27	0.68
cne	10	5y	16.77	13.17	13.92	13.72	14.05	0.008286	2.82	5.95	9.11	0.62
cne	10	2y	12.34	13.17	13.88	13.63	13.95	0.005614	2.24	5.52	8.96	0.50
cne	10	1y	9.17	13.17	13.75	13.55	13.81	0.006274	2.10	4.37	8.54	0.52
cne	9	100y	33.12	11.12	13.23	12.29	13.28	0.001169	1.92	19.98	22.57	0.26
cne	9	50y	29.09	11.12	13.11	12.23	13.16	0.001233	1.88	17.39	19.84	0.27

cne	9	25y	25.19	11.12	12.80		12.87	0.002117	2.12	12.39	12.99	0.34
cne	9	10y	20.34	11.12	12.56		12.63	0.002988	2.17	9.51	10.74	0.39
cne	9	5y	16.77	11.12	12.39		12.47	0.003694	2.16	7.84	9.95	0.42
cne	9	2y	12.34	11.12	12.14		12.22	0.006154	2.28	5.42	9.09	0.52
cne	9	1y	9.17	11.12	11.95		12.03	0.005818	2.28	4.02	6.29	0.50
cne	8	100y	66.80	10.98	13.08	12.25	13.24	0.000899	3.27	21.40	14.92	0.42
cne	8	50y	58.76	10.98	12.98	12.15	13.12	0.000877	3.06	19.91	14.21	0.40
cne	8	25y	51.01	10.98	12.65	12.05	12.82	0.000573	3.29	15.62	11.95	0.48
cne	8	10y	41.37	10.98	12.41	11.92	12.57	0.000680	3.20	12.94	10.65	0.51
cne	8	5y	34.28	10.98	12.26	11.82	12.40	0.000698	3.02	11.36	10.37	0.51
cne	8	2y	25.48	10.98	12.02	11.68	12.15	0.000787	2.85	8.95	9.90	0.53
cne	8	1y	19.19	10.98	11.84	11.57	11.95	0.000883	2.68	7.15	9.54	0.55
cne	7.5		Culvert									
cne	7	100y	66.80	10.78	12.80		12.99	0.000581	3.48	19.20	11.61	0.48
cne	7	50y	58.76	10.78	12.78		12.93	0.000464	3.10	18.98	11.56	0.43
cne	7	25y	51.01	10.78	12.38		12.57	0.000726	3.51	14.53	10.35	0.52
cne	7	10y	41.37	10.78	12.13		12.31	0.000834	3.44	12.03	9.99	0.55
cne	7	5y	34.28	10.78	11.93		12.11	0.000968	3.40	10.09	9.69	0.59
cne	7	2y	25.48	10.78	11.67		11.85	0.001243	3.33	7.64	9.28	0.65
cne	7	1y	19.19	10.78	11.47		11.64	0.001686	3.33	5.76	8.96	0.73
cne	6	100y	66.80	10.47	12.73	12.11	12.97	0.000876	4.21	23.90	77.96	0.51
cne	6	50y	58.76	10.47	12.75	11.98	12.92	0.000632	3.60	25.21	80.73	0.44
cne	6	25y	51.01	10.47	11.93	11.85	12.50	0.002903	6.08	8.39	6.29	0.93
cne	6	10y	41.37	10.47	11.75	11.69	12.25	0.002894	5.68	7.28	6.24	0.93
cne	6	5y	34.28	10.47	11.61	11.55	12.05	0.002896	5.34	6.42	6.20	0.93
cne	6	2y	25.48	10.47	11.42	11.37	11.79	0.002913	4.85	5.26	6.15	0.92
cne	6	1y	19.19	10.47	11.27	11.23	11.58	0.002970	4.42	4.34	6.11	0.93
cne	5.5		Bridge									
cne	5	100y	66.80	10.28	12.40	11.70	12.72	0.001108	4.56	14.64	6.91	0.55
cne	5	50y	58.76	10.28	11.15	11.58	12.64	0.011942	9.79	6.00	6.91	1.85
cne	5	25y	51.01	10.28	11.99	11.47	12.28	0.001201	4.33	11.79	6.91	0.58
cne	5	10y	41.37	10.28	11.76	11.31	12.01	0.001191	4.04	10.24	6.91	0.59
cne	5	5y	34.28	10.28	11.59	11.19	11.81	0.001188	3.80	9.02	6.91	0.59
cne	5	2y	25.48	10.28	11.35	11.03	11.54	0.001183	3.44	7.41	6.91	0.59
cne	5	1y	19.19	10.28	11.17	10.90	11.32	0.001200	3.14	6.12	6.91	0.59
cne	4.5		Bridge									
cne	4	100y	66.80	10.20	11.82	11.77	12.56	0.003431	6.91	9.66	5.98	0.96
cne	4	50y	58.76	10.20	11.68	11.64	12.36	0.003406	6.63	8.86	5.98	0.96
cne	4	25y	51.01	10.20	11.58	11.51	12.17	0.003181	6.20	8.23	5.98	0.93
cne	4	10y	41.37	10.20	11.40	11.34	11.92	0.003145	5.78	7.16	5.98	0.93
cne	4	5y	34.28	10.20	11.26	11.20	11.71	0.003125	5.42	6.33	5.98	0.93
cne	4	2y	25.48	10.20	11.07	11.02	11.44	0.003138	4.91	5.19	5.98	0.93
cne	4	1y	19.19	10.20	10.92	10.88	11.23	0.003151	4.46	4.30	5.98	0.93
cne	3.5		Bridge									
cne	3	100y	66.80	9.99	11.56	11.48	12.24	0.003134	6.63	10.08	6.42	0.93
cne	3	50y	58.76	9.99	11.03	11.36	12.24	0.008225	8.82	6.66	6.42	1.52
cne	3	25y	51.01	9.99	11.30	11.24	11.87	0.003091	6.06	8.42	6.42	0.93
cne	3	10y	41.37	9.99	11.13	11.07	11.63	0.003081	5.65	7.32	6.42	0.93
cne	3	5y	34.28	9.99	11.00	10.95	11.43	0.003063	5.30	6.47	6.42	0.93
cne	3	2y	25.48	9.99	10.82	10.78	11.17	0.003096	4.81	5.30	6.42	0.93
cne	3	1y	19.19	9.99	10.68	10.64	10.97	0.003081	4.34	4.42	6.42	0.92
cne	2.5		Bridge									
cne	2	100y	66.80	9.80	11.29	11.29	12.04	0.003614	6.95	9.61	6.47	1.01
cne	2	50y	58.76	9.80	11.07	11.16	11.86	0.004416	7.15	8.22	6.47	1.12
cne	2	25y	51.01	9.80	11.04	11.04	11.67	0.003575	6.35	8.03	6.47	1.01
cne	2	10y	41.37	9.80	10.88	10.88	11.42	0.003543	5.91	6.99	6.47	1.00
cne	2	5y	34.28	9.80	10.75	10.75	11.23	0.003568	5.56	6.16	6.47	1.00
cne	2	2y	25.48	9.80	10.58	10.58	10.98	0.003610	5.04	5.05	6.47	1.01
cne	2	1y	19.19	9.80	10.45	10.45	10.77	0.003666	4.58	4.19	6.47	1.00

APPENDIX F
HEC RAS RESULTS- PROPOSED CONDITIONS

HEC-RAS Version 3.1.3 May 2005
U.S. Army Corp of Engineers
Hydrologic Engineering Center
609 Second Street
Davis, California

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

PROJECT DATA
Project Title: Buena Vista Creek-1
Project File : creek1.prj
Run Date and Time: 9/17/2008 3:05:49 PM

Project in English units

PLAN DATA

Plan Title: Proposed Condition
Plan File : C:\Acad386\Work\projects\oso blanco-ciudad de las ciencias (07181)\HEC-RAS\creek1.p02

Geometry Title: Proposed condition
Geometry File : C:\Acad386\Work\projects\oso blanco-ciudad de las ciencias (07181)\HEC-RAS\creek1.g02

Flow Title : proposed condition
Flow File : C:\Acad386\Work\projects\oso blanco-ciudad de las ciencias (07181)\HEC-RAS\creek1.f02

Plan Summary Information:

Number of:	Cross Sections	= 17	Multiple Openings	=	0
	Culverts	= 2	Inline Structures	=	0
	Bridges	= 4	Lateral Structures	=	0

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

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

FLOW DATA

Flow Title: proposed condition
Flow File : C:\Acad386\Work\projects\oso blanco-ciudad de las ciencias (07181)\HEC-RAS\creek1.f02

Flow Data (cfs)

River	Reach	RS	100y	50y	25y	10y	5y	2y	1y
buena vista	one	18	21.94998	19.34341	16.83029	13.70943	11.41777	8.570481	6.531725
buena vista	one	17	22.07374	19.45188	16.92375	13.78419	11.47866	8.614095	6.562877
buena vista	one	15	22.27396	19.62859	17.07753	13.90965	11.58345	8.692824	6.623482
buena vista	one	14	22.32381	19.6722	17.11547	13.94052	11.60893	8.712082	6.637641
buena vista	one	12	22.46795	19.79936	17.22621	14.03086	11.68427	8.769005	6.681538
buena vista	one	11	26.10028	23.24959	20.49688	16.97756	14.02378	10.13431	6.905549
buena vista	one	10	31.08686	27.47861	23.87829	19.34313	15.85892	10.93832	7.457222
buena vista	one	8	65.50586	57.93989	50.56819	41.25743	34.24936	25.28523	18.40942

Boundary Conditions

River	Reach	Profile	Upstream	Downstream
buena vista	one	100y	Critical	Normal S = 0.0066
buena vista	one	50y	Critical	Normal S = 0.0066
buena vista	one	25y	Critical	Normal S = 0.0066
buena vista	one	10y	Critical	Normal S = 0.0066
buena vista	one	5y	Critical	Normal S = 0.0066
buena vista	one	2y	Critical	Normal S = 0.0066
buena vista	one	1y	Critical	Normal S = 0.0066

GEOMETRY DATA

Geometry Title: Proposed condition
Geometry File : C:\Acad386\Work\projects\oso blanco-ciudad de las ciencias (07181)\HEC-RAS\creek1.g02

CROSS SECTION

RIVER: buena vista
REACH: one RS: 18

INPUT
Description: Seccion # 1 en la Agrimensura
Station Elevation Data num= 23

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	30.64	15.23	30.36	16.56	30.21	24.79	29.99	33.36	29.87
38.58	27.42	42.52	24.9	46.13	22.65	47.54	21.82	49.38	19.41
50.84	18.98	54.29	18.71	57.27	18.87	59.12	19.14	60.32	21
62.27	22.36	64.45	24.03	66.85	24.48	70.39	24.61	78.11	25.15
96.75	26.11	108.17	26.84	117.18	27.91				

Manning's n Values num= 4

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.015	16.56	.013	33.36	.035	66.85	.013

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
42.52	66.85	182.78	138.49	112.63	.1	.3

CROSS SECTION OUTPUT Profile #100y

			Left OB	Channel	Right OB
E.G. Elev (ft)	19.72	Element			
Vel Head (ft)	0.27	Wt. n-Val.		0.035	
W.S. Elev (ft)	19.45	Reach Len. (ft)	182.78	138.49	112.63
Crit W.S. (ft)	19.45	Flow Area (sq ft)		5.27	
E.G. Slope (ft/ft)	0.023396	Area (sq ft)		5.27	
Q Total (cfs)	21.95	Flow (cfs)		21.95	
Top Width (ft)	9.97	Top Width (ft)		9.97	

Vel Total (ft/s)	4.17	Avg. Vel. (ft/s)		4.17	
Max Chl Dpth (ft)	0.74	Hydr. Depth (ft)		0.53	
Conv. Total (cfs)	143.5	Conv. (cfs)		143.5	
Length Wtd. (ft)	138.49	Wetted Per. (ft)		10.25	
Min Ch El (ft)	18.71	Shear (lb/sq ft)		0.75	
Alpha	1.00	Stream Power (lb/ft s)		3.13	
Frctn Loss (ft)	0.93	Cum Volume (acre-ft)	0.01	0.31	0.02
C & E Loss (ft)	0.06	Cum SA (acres)	0.03	0.29	0.07

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

CROSS SECTION OUTPUT Profile #50y

E.G. Elev (ft)	19.65	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.25	Wt. n-Val.		0.035	
W.S. Elev (ft)	19.40	Reach Len. (ft)	182.78	138.49	112.63
Crit W.S. (ft)	19.40	Flow Area (sq ft)		4.83	
E.G. Slope (ft/ft)	0.023862	Area (sq ft)		4.83	
Q Total (cfs)	19.34	Flow (cfs)		19.34	
Top Width (ft)	9.89	Top Width (ft)		9.89	
Vel Total (ft/s)	4.00	Avg. Vel. (ft/s)		4.00	
Max Chl Dpth (ft)	0.69	Hydr. Depth (ft)		0.49	
Conv. Total (cfs)	125.2	Conv. (cfs)		125.2	
Length Wtd. (ft)	138.49	Wetted Per. (ft)		10.13	
Min Ch El (ft)	18.71	Shear (lb/sq ft)		0.71	
Alpha	1.00	Stream Power (lb/ft s)		2.84	
Frctn Loss (ft)	1.00	Cum Volume (acre-ft)	0.01	0.25	0.01
C & E Loss (ft)	0.05	Cum SA (acres)	0.03	0.25	0.06

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

CROSS SECTION OUTPUT Profile #25y

E.G. Elev (ft)	19.59	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.23	Wt. n-Val.		0.035	
W.S. Elev (ft)	19.36	Reach Len. (ft)	182.78	138.49	112.63
Crit W.S. (ft)	19.36	Flow Area (sq ft)		4.39	
E.G. Slope (ft/ft)	0.024219	Area (sq ft)		4.39	
Q Total (cfs)	16.83	Flow (cfs)		16.83	
Top Width (ft)	9.71	Top Width (ft)		9.71	
Vel Total (ft/s)	3.84	Avg. Vel. (ft/s)		3.84	
Max Chl Dpth (ft)	0.65	Hydr. Depth (ft)		0.45	
Conv. Total (cfs)	108.1	Conv. (cfs)		108.1	
Length Wtd. (ft)	138.49	Wetted Per. (ft)		9.92	
Min Ch El (ft)	18.71	Shear (lb/sq ft)		0.67	
Alpha	1.00	Stream Power (lb/ft s)		2.57	
Frctn Loss (ft)	1.08	Cum Volume (acre-ft)	0.00	0.24	0.00

C & E Loss (ft)	0.04	Cum SA (acres)	0.00	0.26	0.01

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

CROSS SECTION OUTPUT Profile #10y

E.G. Elev (ft)	19.50	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.20	Wt. n-Val.		0.035	
W.S. Elev (ft)	19.30	Reach Len. (ft)	182.78	138.49	112.63
Crit W.S. (ft)	19.30	Flow Area (sq ft)		3.79	
E.G. Slope (ft/ft)	0.025162	Area (sq ft)		3.79	
Q Total (cfs)	13.71	Flow (cfs)		13.71	
Top Width (ft)	9.46	Top Width (ft)		9.46	
Vel Total (ft/s)	3.62	Avg. Vel. (ft/s)		3.62	
Max Chl Dpth (ft)	0.59	Hydr. Depth (ft)		0.40	
Conv. Total (cfs)	86.4	Conv. (cfs)		86.4	
Length Wtd. (ft)	138.49	Wetted Per. (ft)		9.62	
Min Ch El (ft)	18.71	Shear (lb/sq ft)		0.62	
Alpha	1.00	Stream Power (lb/ft s)		2.24	
Frctn Loss (ft)	1.22	Cum Volume (acre-ft)	0.00	0.21	0.00
C & E Loss (ft)	0.04	Cum SA (acres)	0.00	0.25	0.00

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

CROSS SECTION OUTPUT Profile #5y

E.G. Elev (ft)	19.43	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.18	Wt. n-Val.		0.035	
W.S. Elev (ft)	19.25	Reach Len. (ft)	182.78	138.49	112.63
Crit W.S. (ft)	19.25	Flow Area (sq ft)		3.32	
E.G. Slope (ft/ft)	0.026163	Area (sq ft)		3.32	
Q Total (cfs)	11.42	Flow (cfs)		11.42	
Top Width (ft)	9.26	Top Width (ft)		9.26	
Vel Total (ft/s)	3.44	Avg. Vel. (ft/s)		3.44	
Max Chl Dpth (ft)	0.54	Hydr. Depth (ft)		0.36	
Conv. Total (cfs)	70.6	Conv. (cfs)		70.6	
Length Wtd. (ft)	138.49	Wetted Per. (ft)		9.39	
Min Ch El (ft)	18.71	Shear (lb/sq ft)		0.58	
Alpha	1.00	Stream Power (lb/ft s)		1.99	
Frctn Loss (ft)		Cum Volume (acre-ft)	0.00	0.18	
C & E Loss (ft)		Cum SA (acres)	0.00	0.25	

CROSS SECTION OUTPUT Profile #2y

E.G. Elev (ft)	19.34	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.12	Wt. n-Val.		0.035	

W.S. Elev (ft)	19.22	Reach Len. (ft)	182.78	138.49	112.63
Crit W.S. (ft)	19.18	Flow Area (sq ft)		3.08	
E.G. Slope (ft/ft)	0.018595	Area (sq ft)		3.08	
Q Total (cfs)	8.57	Flow (cfs)		8.57	
Top Width (ft)	9.15	Top Width (ft)		9.15	
Vel Total (ft/s)	2.78	Avg. Vel. (ft/s)		2.78	
Max Chl Dpth (ft)	0.51	Hydr. Depth (ft)		0.34	
Conv. Total (cfs)	62.9	Conv. (cfs)		62.9	
Length Wtd. (ft)	138.49	Wetted Per. (ft)		9.26	
Min Ch El (ft)	18.71	Shear (lb/sq ft)		0.39	
Alpha	1.00	Stream Power (lb/ft s)		1.07	
Frctn Loss (ft)	1.45	Cum Volume (acre-ft)	0.00	0.14	
C & E Loss (ft)	0.01	Cum SA (acres)	0.00	0.24	

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 #1y

E.G. Elev (ft)	19.28	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.08	Wt. n-Val.		0.035	
W.S. Elev (ft)	19.20	Reach Len. (ft)	182.78	138.49	112.63
Crit W.S. (ft)	19.13	Flow Area (sq ft)		2.88	
E.G. Slope (ft/ft)	0.013348	Area (sq ft)		2.88	
Q Total (cfs)	6.53	Flow (cfs)		6.53	
Top Width (ft)	9.06	Top Width (ft)		9.06	
Vel Total (ft/s)	2.27	Avg. Vel. (ft/s)		2.27	
Max Chl Dpth (ft)	0.49	Hydr. Depth (ft)		0.32	
Conv. Total (cfs)	56.5	Conv. (cfs)		56.5	
Length Wtd. (ft)	138.49	Wetted Per. (ft)		9.16	
Min Ch El (ft)	18.71	Shear (lb/sq ft)		0.26	
Alpha	1.00	Stream Power (lb/ft s)		0.59	
Frctn Loss (ft)	1.53	Cum Volume (acre-ft)		0.11	
C & E Loss (ft)	0.00	Cum SA (acres)		0.22	

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

CROSS SECTION

RIVER: buena vista
REACH: one RS: 17

INPUT
Description: Seccion # 2 en la Agrimensura
Station Elevation Data num= 22

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	28.41	9.37	28.33	18.74	28.25	25.72	27.21	27.71	27.01
38.27	27.02	39.77	27.14	48.37	27.15	55.08	26.86	56.81	26.52
60.83	24.32	63	22.78	65.84	22.1	67.2	21.78	70.74	17.72
71.58	17.1	74.82	17.26	77.08	17.24	80.25	19.13	80.44	25.41
88.7	25.93	96.67	26.72						

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.015	27.71	.013	38.27	.035	80.25	.015	80.44	.013

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
56.81	80.44	50.35	59.23	65.49	.1 .3

CROSS SECTION OUTPUT Profile #100y

E.G. Elev (ft)	18.58	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.08	Wt. n-Val.		0.035	
W.S. Elev (ft)	18.49	Reach Len. (ft)	50.35	59.23	65.49
Crit W.S. (ft)	17.93	Flow Area (sq ft)		9.55	

E.G. Slope (ft/ft)	0.003161	Area (sq ft)		9.55	
Q Total (cfs)	22.07	Flow (cfs)		22.07	
Top Width (ft)	9.12	Top Width (ft)		9.12	
Vel Total (ft/s)	2.31	Avg. Vel. (ft/s)		2.31	
Max Chl Dpth (ft)	1.39	Hydr. Depth (ft)		1.05	
Conv. Total (cfs)	392.6	Conv. (cfs)		392.6	
Length Wtd. (ft)	59.23	Wetted Per. (ft)		10.02	
Min Ch El (ft)	17.10	Shear (lb/sq ft)		0.19	
Alpha	1.00	Stream Power (lb/ft s)		0.43	
Frctn Loss (ft)		Cum Volume (acre-ft)	0.01	0.28	0.02
C & E Loss (ft)		Cum SA (acres)	0.03	0.26	0.07

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

CROSS SECTION OUTPUT Profile #50y

E.G. Elev (ft)	18.46	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.08	Wt. n-Val.		0.035	
W.S. Elev (ft)	18.37	Reach Len. (ft)	50.35	59.23	65.49
Crit W.S. (ft)	17.88	Flow Area (sq ft)		8.49	
E.G. Slope (ft/ft)	0.003450	Area (sq ft)		8.49	
Q Total (cfs)	19.45	Flow (cfs)		19.45	
Top Width (ft)	8.81	Top Width (ft)		8.81	
Vel Total (ft/s)	2.29	Avg. Vel. (ft/s)		2.29	
Max Chl Dpth (ft)	1.27	Hydr. Depth (ft)		0.96	
Conv. Total (cfs)	331.2	Conv. (cfs)		331.2	
Length Wtd. (ft)	59.23	Wetted Per. (ft)		9.63	
Min Ch El (ft)	17.10	Shear (lb/sq ft)		0.19	
Alpha	1.00	Stream Power (lb/ft s)		0.43	
Frctn Loss (ft)		Cum Volume (acre-ft)	0.01	0.23	0.01
C & E Loss (ft)		Cum SA (acres)	0.03	0.22	0.06

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

CROSS SECTION OUTPUT Profile #25y

E.G. Elev (ft)	18.34	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.08	Wt. n-Val.		0.035	
W.S. Elev (ft)	18.26	Reach Len. (ft)	50.35	59.23	65.49
Crit W.S. (ft)	17.82	Flow Area (sq ft)		7.45	
E.G. Slope (ft/ft)	0.003809	Area (sq ft)		7.45	
Q Total (cfs)	16.92	Flow (cfs)		16.92	
Top Width (ft)	8.51	Top Width (ft)		8.51	
Vel Total (ft/s)	2.27	Avg. Vel. (ft/s)		2.27	
Max Chl Dpth (ft)	1.16	Hydr. Depth (ft)		0.88	
Conv. Total (cfs)	274.2	Conv. (cfs)		274.2	
Length Wtd. (ft)	59.23	Wetted Per. (ft)		9.24	
Min Ch El (ft)	17.10	Shear (lb/sq ft)		0.19	
Alpha	1.00	Stream Power (lb/ft s)		0.44	
Frctn Loss (ft)		Cum Volume (acre-ft)	0.00	0.22	0.00
C & E Loss (ft)		Cum SA (acres)	0.00	0.23	0.01

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

CROSS SECTION OUTPUT Profile #10y

E.G. Elev (ft)	18.18	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.08	Wt. n-Val.		0.035	
W.S. Elev (ft)	18.10	Reach Len. (ft)	50.35	59.23	65.49
Crit W.S. (ft)	17.75	Flow Area (sq ft)		6.15	
E.G. Slope (ft/ft)	0.004444	Area (sq ft)		6.15	
Q Total (cfs)	13.78	Flow (cfs)		13.78	
Top Width (ft)	8.11	Top Width (ft)		8.11	
Vel Total (ft/s)	2.24	Avg. Vel. (ft/s)		2.24	
Max Chl Dpth (ft)	1.00	Hydr. Depth (ft)		0.76	
Conv. Total (cfs)	206.8	Conv. (cfs)		206.8	
Length Wtd. (ft)	59.23	Wetted Per. (ft)		8.73	
Min Ch El (ft)	17.10	Shear (lb/sq ft)		0.20	

Alpha	1.00	Stream Power (lb/ft s)		0.44	
Frctn Loss (ft)		Cum Volume (acre-ft)	0.00	0.19	0.00
C & E Loss (ft)		Cum SA (acres)	0.00	0.22	0.00

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

CROSS SECTION OUTPUT Profile #5y

E.G. Elev (ft)	18.05	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.08	Wt. n-Val.		0.035	
W.S. Elev (ft)	17.98	Reach Len. (ft)	50.35	59.23	65.49
Crit W.S. (ft)	17.69	Flow Area (sq ft)		5.17	
E.G. Slope (ft/ft)	0.005158	Area (sq ft)		5.17	
Q Total (cfs)	11.48	Flow (cfs)		11.48	
Top Width (ft)	7.80	Top Width (ft)		7.80	
Vel Total (ft/s)	2.22	Avg. Vel. (ft/s)		2.22	
Max Chl Dpth (ft)	0.88	Hydr. Depth (ft)		0.66	
Conv. Total (cfs)	159.8	Conv. (cfs)		159.8	
Length Wtd. (ft)	59.23	Wetted Per. (ft)		8.32	
Min Ch El (ft)	17.10	Shear (lb/sq ft)		0.20	
Alpha	1.00	Stream Power (lb/ft s)		0.44	
Frctn Loss (ft)		Cum Volume (acre-ft)	0.00	0.17	
C & E Loss (ft)		Cum SA (acres)	0.00	0.22	

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

CROSS SECTION OUTPUT Profile #2y

E.G. Elev (ft)	17.88	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.08	Wt. n-Val.		0.035	
W.S. Elev (ft)	17.81	Reach Len. (ft)	50.35	59.23	65.49
Crit W.S. (ft)	17.61	Flow Area (sq ft)		3.91	
E.G. Slope (ft/ft)	0.006730	Area (sq ft)		3.91	
Q Total (cfs)	8.61	Flow (cfs)		8.61	
Top Width (ft)	7.37	Top Width (ft)		7.37	
Vel Total (ft/s)	2.20	Avg. Vel. (ft/s)		2.20	
Max Chl Dpth (ft)	0.71	Hydr. Depth (ft)		0.53	
Conv. Total (cfs)	105.0	Conv. (cfs)		105.0	
Length Wtd. (ft)	59.23	Wetted Per. (ft)		7.78	
Min Ch El (ft)	17.10	Shear (lb/sq ft)		0.21	
Alpha	1.00	Stream Power (lb/ft s)		0.47	
Frctn Loss (ft)		Cum Volume (acre-ft)	0.00	0.13	
C & E Loss (ft)		Cum SA (acres)	0.00	0.21	

CROSS SECTION OUTPUT Profile #1y

E.G. Elev (ft)	17.75	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.08	Wt. n-Val.		0.035	
W.S. Elev (ft)	17.68	Reach Len. (ft)	50.35	59.23	65.49
Crit W.S. (ft)	17.54	Flow Area (sq ft)		2.95	
E.G. Slope (ft/ft)	0.009248	Area (sq ft)		2.95	
Q Total (cfs)	6.56	Flow (cfs)		6.56	
Top Width (ft)	7.01	Top Width (ft)		7.01	
Vel Total (ft/s)	2.23	Avg. Vel. (ft/s)		2.23	
Max Chl Dpth (ft)	0.58	Hydr. Depth (ft)		0.42	
Conv. Total (cfs)	68.2	Conv. (cfs)		68.2	
Length Wtd. (ft)	59.23	Wetted Per. (ft)		7.32	
Min Ch El (ft)	17.10	Shear (lb/sq ft)		0.23	
Alpha	1.00	Stream Power (lb/ft s)		0.52	
Frctn Loss (ft)		Cum Volume (acre-ft)		0.10	
C & E Loss (ft)		Cum SA (acres)		0.19	

CULVERT

RIVER: buena vista
REACH: one RS: 16.5

```
INPUT
Description:
Distance from Upstream XS =       .5
Deck/Roadway Width        =    58.23
Weir Coefficient          =     2.6
Upstream  Deck/Roadway Coordinates
    num=       2
     Sta Hi Cord Lo Cord      Sta Hi Cord Lo Cord
       0   20.24       0      100   20.24       0

Upstream Bridge Cross Section Data
Station Elevation Data     num=      22
     Sta     Elev      Sta     Elev      Sta     Elev      Sta     Elev      Sta     Elev
       0    28.41     9.37    28.33    18.74    28.25    25.72    27.21    27.71    27.01
   38.27    27.02    39.77    27.14    48.37    27.15    55.08    26.86    56.81    26.52
   60.83    24.32       63    22.78    65.84     22.1     67.2    21.78    70.74    17.72
   71.58     17.1    74.82    17.26    77.08    17.24    80.25    19.13    80.44    25.41
    88.7    25.93    96.67    26.72

Manning's n Values         num=       5
     Sta    n Val      Sta    n Val      Sta    n Val      Sta    n Val      Sta    n Val
       0     .015    27.71     .013    38.27     .035    80.25     .015    80.44     .013

Bank Sta: Left   Right    Coeff Contr.   Expan.
         56.81   80.44            .1       .3

Downstream  Deck/Roadway Coordinates
    num=       2
     Sta Hi Cord Lo Cord      Sta Hi Cord Lo Cord
       0   19.86       0      100   19.86       0

Downstream Bridge Cross Section Data
Station Elevation Data     num=      29
     Sta     Elev      Sta     Elev      Sta     Elev      Sta     Elev      Sta     Elev
       0    26.13     1.18    26.12     2.31    26.08     2.46    25.93     5.95    25.96
    9.63    25.93     10.6    25.94    10.76    26.07    15.27    26.06    16.62    26.02
   21.11    25.91    22.13    25.88    22.52    25.76    26.87    25.65    29.52    25.62
   30.41    25.62    35.45    25.65    35.61    25.84    37.09     25.8    40.47    25.86
    42.8    25.49    46.65    23.78    52.26    21.78    60.16    16.75    64.71    16.88
   67.67     17.8    72.91    23.58    73.13    25.76    93.13    26.01

Manning's n Values         num=       5
     Sta    n Val      Sta    n Val      Sta    n Val      Sta    n Val      Sta    n Val
       0     .013    35.61     .035     42.8     .035    72.91     .015    73.13     .013

Bank Sta: Left   Right    Coeff Contr.   Expan.
          42.8   73.13            .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    2.55     2.5
FHWA Chart # 8 - flared wingwalls
FHWA Scale # 1 - Wingwall flared 30 to 75 deg.
Solution Criteria = Highest U.S. EG
Culvert Upstrm Dist  Length    Top n  Bottom n  Depth Blocked  Entrance Loss Coef   Exit Loss Coef
                 .5   58.23     .013     .013        0                  .5                1
Number of Barrels =  2
Upstream   Elevation =  17.1
Centerline Stations
    Sta.     Sta.
   72.83    75.83
```

Downstream Elevation = 16.75
Centerline Stations
Sta. Sta.
61.11 64.11

CULVERT OUTPUT Profile #100y Culv Group: Culvert #1

Q Culv Group (cfs)	22.07	Culv Full Len (ft)	
# Barrels	2	Culv Vel US (ft/s)	5.22
Q Barrel (cfs)	11.04	Culv Vel DS (ft/s)	5.53
E.G. US. (ft)	18.58	Culv Inv El Up (ft)	17.10
W.S. US. (ft)	18.49	Culv Inv El Dn (ft)	16.75
E.G. DS (ft)	18.09	Culv Frctn Ls (ft)	0.28
W.S. DS (ft)	17.99	Culv Exit Loss (ft)	
Delta EG (ft)	0.49	Culv Entr Loss (ft)	0.21
Delta WS (ft)	0.50	Q Weir (cfs)	
E.G. IC (ft)	18.43	Weir Sta Lft (ft)	
E.G. OC (ft)	18.58	Weir Sta Rgt (ft)	
Culvert Control	Inlet	Weir Submerg	
Culv WS Inlet (ft)	17.95	Weir Max Depth (ft)	
Culv WS Outlet (ft)	17.55	Weir Avg Depth (ft)	
Culv Nml Depth (ft)	0.80	Weir Flow Area (sq ft)	
Culv Crt Depth (ft)	0.85	Min El Weir Flow (ft)	20.25

Note: During the supercritical calculations a hydraulic jump occurred at the outlet of (leaving) the culvert.
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.

CULVERT OUTPUT Profile #50y Culv Group: Culvert #1

Q Culv Group (cfs)	19.45	Culv Full Len (ft)	
# Barrels	2	Culv Vel US (ft/s)	5.00
Q Barrel (cfs)	9.73	Culv Vel DS (ft/s)	5.33
E.G. US. (ft)	18.46	Culv Inv El Up (ft)	17.10
W.S. US. (ft)	18.37	Culv Inv El Dn (ft)	16.75
E.G. DS (ft)	18.02	Culv Frctn Ls (ft)	0.25
W.S. DS (ft)	17.92	Culv Exit Loss (ft)	
Delta EG (ft)	0.45	Culv Entr Loss (ft)	0.19
Delta WS (ft)	0.46	Q Weir (cfs)	
E.G. IC (ft)	18.32	Weir Sta Lft (ft)	
E.G. OC (ft)	18.46	Weir Sta Rgt (ft)	
Culvert Control	Inlet	Weir Submerg	
Culv WS Inlet (ft)	17.88	Weir Max Depth (ft)	
Culv WS Outlet (ft)	17.48	Weir Avg Depth (ft)	
Culv Nml Depth (ft)	0.73	Weir Flow Area (sq ft)	
Culv Crt Depth (ft)	0.78	Min El Weir Flow (ft)	20.25

Note: During the supercritical calculations a hydraulic jump occurred at the outlet of (leaving) the culvert.
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.

CULVERT OUTPUT Profile #25y Culv Group: Culvert #1

Q Culv Group (cfs)	16.92	Culv Full Len (ft)	
# Barrels	2	Culv Vel US (ft/s)	4.78
Q Barrel (cfs)	8.46	Culv Vel DS (ft/s)	5.05
E.G. US. (ft)	18.34	Culv Inv El Up (ft)	17.10
W.S. US. (ft)	18.26	Culv Inv El Dn (ft)	16.75
E.G. DS (ft)	17.93	Culv Frctn Ls (ft)	0.23
W.S. DS (ft)	17.84	Culv Exit Loss (ft)	
Delta EG (ft)	0.41	Culv Entr Loss (ft)	0.18

Delta WS (ft)	0.41	Q Weir (cfs)	
E.G. IC (ft)	18.21	Weir Sta Lft (ft)	
E.G. OC (ft)	18.34	Weir Sta Rgt (ft)	
Culvert Control	Inlet	Weir Submerg	
Culv WS Inlet (ft)	17.81	Weir Max Depth (ft)	
Culv WS Outlet (ft)	17.42	Weir Avg Depth (ft)	
Culv Nml Depth (ft)	0.67	Weir Flow Area (sq ft)	
Culv Crt Depth (ft)	0.71	Min El Weir Flow (ft)	20.25

Note: During the supercritical calculations a hydraulic jump occurred at the outlet of (leaving) the culvert.
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.

CULVERT OUTPUT Profile #10y Culv Group: Culvert #1

Q Culv Group (cfs)	13.78	Culv Full Len (ft)	
# Barrels	2	Culv Vel US (ft/s)	4.46
Q Barrel (cfs)	6.89	Culv Vel DS (ft/s)	4.75
E.G. US. (ft)	18.18	Culv Inv El Up (ft)	17.10
W.S. US. (ft)	18.10	Culv Inv El Dn (ft)	16.75
E.G. DS (ft)	17.79	Culv Frctn Ls (ft)	0.23
W.S. DS (ft)	17.71	Culv Exit Loss (ft)	
Delta EG (ft)	0.39	Culv Entr Loss (ft)	0.15
Delta WS (ft)	0.39	Q Weir (cfs)	
E.G. IC (ft)	18.06	Weir Sta Lft (ft)	
E.G. OC (ft)	18.18	Weir Sta Rgt (ft)	
Culvert Control	Inlet	Weir Submerg	
Culv WS Inlet (ft)	17.72	Weir Max Depth (ft)	
Culv WS Outlet (ft)	17.33	Weir Avg Depth (ft)	
Culv Nml Depth (ft)	0.58	Weir Flow Area (sq ft)	
Culv Crt Depth (ft)	0.62	Min El Weir Flow (ft)	20.25

Note: During the supercritical calculations a hydraulic jump occurred at the outlet of (leaving) the culvert.
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.

CULVERT OUTPUT Profile #5y Culv Group: Culvert #1

Q Culv Group (cfs)	11.48	Culv Full Len (ft)	
# Barrels	2	Culv Vel US (ft/s)	4.20
Q Barrel (cfs)	5.74	Culv Vel DS (ft/s)	4.49
E.G. US. (ft)	18.06	Culv Inv El Up (ft)	17.10
W.S. US. (ft)	17.98	Culv Inv El Dn (ft)	16.75
E.G. DS (ft)	17.70	Culv Frctn Ls (ft)	0.22
W.S. DS (ft)	17.62	Culv Exit Loss (ft)	
Delta EG (ft)	0.36	Culv Entr Loss (ft)	0.14
Delta WS (ft)	0.35	Q Weir (cfs)	
E.G. IC (ft)	17.95	Weir Sta Lft (ft)	
E.G. OC (ft)	18.06	Weir Sta Rgt (ft)	
Culvert Control	Inlet	Weir Submerg	
Culv WS Inlet (ft)	17.65	Weir Max Depth (ft)	
Culv WS Outlet (ft)	17.26	Weir Avg Depth (ft)	
Culv Nml Depth (ft)	0.51	Weir Flow Area (sq ft)	
Culv Crt Depth (ft)	0.55	Min El Weir Flow (ft)	20.25

Note: During the supercritical calculations a hydraulic jump occurred at the outlet of (leaving) the culvert.
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: 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.

CULVERT OUTPUT Profile #2y Culv Group: Culvert #1

Q Culv Group (cfs)	8.61	Culv Full Len (ft)	
# Barrels	2	Culv Vel US (ft/s)	3.81
Q Barrel (cfs)	4.31	Culv Vel DS (ft/s)	4.09
E.G. US. (ft)	17.89	Culv Inv El Up (ft)	17.10
W.S. US. (ft)	17.81	Culv Inv El Dn (ft)	16.75
E.G. DS (ft)	17.56	Culv Frctn Ls (ft)	0.22
W.S. DS (ft)	17.49	Culv Exit Loss (ft)	
Delta EG (ft)	0.33	Culv Entr Loss (ft)	0.11
Delta WS (ft)	0.32	Q Weir (cfs)	
E.G. IC (ft)	17.80	Weir Sta Lft (ft)	
E.G. OC (ft)	17.89	Weir Sta Rgt (ft)	
Culvert Control	Inlet	Weir Submerg	
Culv WS Inlet (ft)	17.55	Weir Max Depth (ft)	
Culv WS Outlet (ft)	17.17	Weir Avg Depth (ft)	
Culv Nml Depth (ft)	0.42	Weir Flow Area (sq ft)	
Culv Crt Depth (ft)	0.45	Min El Weir Flow (ft)	20.25

Note: During the supercritical calculations a hydraulic jump occurred at the outlet of (leaving) the
culvert.
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.
Note: During the supercritical calculations a hydraulic jump occurred at the outlet of (leaving) the
culvert.

CULVERT OUTPUT Profile #1y Culv Group: Culvert #1

Q Culv Group (cfs)	6.56	Culv Full Len (ft)	
# Barrels	2	Culv Vel US (ft/s)	3.48
Q Barrel (cfs)	3.28	Culv Vel DS (ft/s)	3.73
E.G. US. (ft)	17.76	Culv Inv El Up (ft)	17.10
W.S. US. (ft)	17.68	Culv Inv El Dn (ft)	16.75
E.G. DS (ft)	17.45	Culv Frctn Ls (ft)	0.22
W.S. DS (ft)	17.39	Culv Exit Loss (ft)	
Delta EG (ft)	0.31	Culv Entr Loss (ft)	0.09
Delta WS (ft)	0.29	Q Weir (cfs)	
E.G. IC (ft)	17.68	Weir Sta Lft (ft)	
E.G. OC (ft)	17.76	Weir Sta Rgt (ft)	
Culvert Control	Inlet	Weir Submerg	
Culv WS Inlet (ft)	17.48	Weir Max Depth (ft)	
Culv WS Outlet (ft)	17.10	Weir Avg Depth (ft)	
Culv Nml Depth (ft)	0.35	Weir Flow Area (sq ft)	
Culv Crt Depth (ft)	0.38	Min El Weir Flow (ft)	20.25

Note: During the supercritical calculations a hydraulic jump occurred at the outlet of (leaving) the
culvert.
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.
Note: During the supercritical calculations a hydraulic jump occurred at the outlet of (leaving) the
culvert.

CROSS SECTION

RIVER: buena vista
REACH: one RS: 16

INPUT
Description: Seccion #3 en la Agrimensura
Station Elevation Data num= 29

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	26.13	1.18	26.12	2.31	26.08	2.46	25.93	5.95	25.96
9.63	25.93	10.6	25.94	10.76	26.07	15.27	26.06	16.62	26.02
21.11	25.91	22.13	25.88	22.52	25.76	26.87	25.65	29.52	25.62
30.41	25.62	35.45	25.65	35.61	25.84	37.09	25.8	40.47	25.86
42.8	25.49	46.65	23.78	52.26	21.78	60.16	16.75	64.71	16.88
67.67	17.8	72.91	23.58	73.13	25.76	93.13	26.01		

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.013	35.61	.035	42.8	.035	72.91	.015	73.13	.013

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
42.8	73.13	109.35	108.72	11.68	.1	.3

CROSS SECTION OUTPUT Profile #100y

E.G. Elev (ft)	18.09	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.11	Wt. n-Val.		0.035	
W.S. Elev (ft)	17.99	Reach Len. (ft)	109.35	108.72	11.68
Crit W.S. (ft)		Flow Area (sq ft)		8.48	
E.G. Slope (ft/ft)	0.004817	Area (sq ft)		8.48	
Q Total (cfs)	22.07	Flow (cfs)		22.07	
Top Width (ft)	9.63	Top Width (ft)		9.63	
Vel Total (ft/s)	2.60	Avg. Vel. (ft/s)		2.60	
Max Chl Dpth (ft)	1.24	Hydr. Depth (ft)		0.88	
Conv. Total (cfs)	318.0	Conv. (cfs)		318.0	
Length Wtd. (ft)	108.72	Wetted Per. (ft)		10.21	
Min Ch El (ft)	16.75	Shear (lb/sq ft)		0.25	
Alpha	1.00	Stream Power (lb/ft s)		0.65	
Frctn Loss (ft)	0.49	Cum Volume (acre-ft)	0.01	0.27	0.02
C & E Loss (ft)	0.00	Cum SA (acres)	0.03	0.24	0.07

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

CROSS SECTION OUTPUT Profile #50y

E.G. Elev (ft)	18.02	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.10	Wt. n-Val.		0.035	
W.S. Elev (ft)	17.92	Reach Len. (ft)	109.35	108.72	11.68
Crit W.S. (ft)		Flow Area (sq ft)		7.82	
E.G. Slope (ft/ft)	0.004761	Area (sq ft)		7.82	
Q Total (cfs)	19.45	Flow (cfs)		19.45	
Top Width (ft)	9.45	Top Width (ft)		9.45	
Vel Total (ft/s)	2.49	Avg. Vel. (ft/s)		2.49	
Max Chl Dpth (ft)	1.17	Hydr. Depth (ft)		0.83	
Conv. Total (cfs)	281.9	Conv. (cfs)		281.9	
Length Wtd. (ft)	108.72	Wetted Per. (ft)		9.99	
Min Ch El (ft)	16.75	Shear (lb/sq ft)		0.23	
Alpha	1.00	Stream Power (lb/ft s)		0.58	
Frctn Loss (ft)	0.59	Cum Volume (acre-ft)	0.01	0.22	0.01
C & E Loss (ft)	0.00	Cum SA (acres)	0.03	0.21	0.06

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

CROSS SECTION OUTPUT Profile #25y

E.G. Elev (ft)	17.93	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.09	Wt. n-Val.		0.035	
W.S. Elev (ft)	17.84	Reach Len. (ft)	109.35	108.72	11.68
Crit W.S. (ft)		Flow Area (sq ft)		7.10	
E.G. Slope (ft/ft)	0.004814	Area (sq ft)		7.10	
Q Total (cfs)	16.92	Flow (cfs)		16.92	

Top Width (ft)	9.26	Top Width (ft)		9.26	
Vel Total (ft/s)	2.38	Avg. Vel. (ft/s)		2.38	
Max Chl Dpth (ft)	1.09	Hydr. Depth (ft)		0.77	
Conv. Total (cfs)	243.9	Conv. (cfs)		243.9	
Length Wtd. (ft)	108.72	Wetted Per. (ft)		9.74	
Min Ch El (ft)	16.75	Shear (lb/sq ft)		0.22	
Alpha	1.00	Stream Power (lb/ft s)		0.52	
Frctn Loss (ft)	0.60	Cum Volume (acre-ft)	0.00	0.21	0.00
C & E Loss (ft)	0.00	Cum SA (acres)	0.00	0.22	0.01

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

CROSS SECTION OUTPUT Profile #10y

E.G. Elev (ft)	17.79	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.08	Wt. n-Val.		0.035	
W.S. Elev (ft)	17.71	Reach Len. (ft)	109.35	108.72	11.68
Crit W.S. (ft)		Flow Area (sq ft)		5.90	
E.G. Slope (ft/ft)	0.005419	Area (sq ft)		5.90	
Q Total (cfs)	13.78	Flow (cfs)		13.78	
Top Width (ft)	8.73	Top Width (ft)		8.73	
Vel Total (ft/s)	2.34	Avg. Vel. (ft/s)		2.34	
Max Chl Dpth (ft)	0.96	Hydr. Depth (ft)		0.68	
Conv. Total (cfs)	187.2	Conv. (cfs)		187.2	
Length Wtd. (ft)	108.72	Wetted Per. (ft)		9.13	
Min Ch El (ft)	16.75	Shear (lb/sq ft)		0.22	
Alpha	1.00	Stream Power (lb/ft s)		0.51	
Frctn Loss (ft)	0.61	Cum Volume (acre-ft)	0.00	0.18	0.00
C & E Loss (ft)	0.00	Cum SA (acres)	0.00	0.21	0.00

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

CROSS SECTION OUTPUT Profile #5y

E.G. Elev (ft)	17.70	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.08	Wt. n-Val.		0.035	
W.S. Elev (ft)	17.62	Reach Len. (ft)	109.35	108.72	11.68
Crit W.S. (ft)		Flow Area (sq ft)		5.16	
E.G. Slope (ft/ft)	0.005486	Area (sq ft)		5.16	
Q Total (cfs)	11.48	Flow (cfs)		11.48	
Top Width (ft)	8.31	Top Width (ft)		8.31	
Vel Total (ft/s)	2.22	Avg. Vel. (ft/s)		2.22	
Max Chl Dpth (ft)	0.87	Hydr. Depth (ft)		0.62	
Conv. Total (cfs)	155.0	Conv. (cfs)		155.0	
Length Wtd. (ft)	108.72	Wetted Per. (ft)		8.68	
Min Ch El (ft)	16.75	Shear (lb/sq ft)		0.20	
Alpha	1.00	Stream Power (lb/ft s)		0.45	
Frctn Loss (ft)	0.61	Cum Volume (acre-ft)	0.00	0.16	
C & E Loss (ft)	0.00	Cum SA (acres)	0.00	0.21	

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

CROSS SECTION OUTPUT Profile #2y

E.G. Elev (ft)	17.56	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.07	Wt. n-Val.		0.035	
W.S. Elev (ft)	17.49	Reach Len. (ft)	109.35	108.72	11.68
Crit W.S. (ft)		Flow Area (sq ft)		4.10	
E.G. Slope (ft/ft)	0.005943	Area (sq ft)		4.10	
Q Total (cfs)	8.61	Flow (cfs)		8.61	
Top Width (ft)	7.68	Top Width (ft)		7.68	
Vel Total (ft/s)	2.10	Avg. Vel. (ft/s)		2.10	
Max Chl Dpth (ft)	0.74	Hydr. Depth (ft)		0.53	
Conv. Total (cfs)	111.7	Conv. (cfs)		111.7	
Length Wtd. (ft)	108.72	Wetted Per. (ft)		7.99	
Min Ch El (ft)	16.75	Shear (lb/sq ft)		0.19	
Alpha	1.00	Stream Power (lb/ft s)		0.40	
Frctn Loss (ft)	0.63	Cum Volume (acre-ft)	0.00	0.13	

C & E Loss (ft)	0.00	Cum SA (acres)		0.00	0.20

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

CROSS SECTION OUTPUT Profile #1y

E.G. Elev (ft)	17.45	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.06	Wt. n-Val.		0.035	
W.S. Elev (ft)	17.39	Reach Len. (ft)	109.35	108.72	11.68
Crit W.S. (ft)		Flow Area (sq ft)		3.35	
E.G. Slope (ft/ft)	0.006207	Area (sq ft)		3.35	
Q Total (cfs)	6.56	Flow (cfs)		6.56	
Top Width (ft)	7.19	Top Width (ft)		7.19	
Vel Total (ft/s)	1.96	Avg. Vel. (ft/s)		1.96	
Max Chl Dpth (ft)	0.64	Hydr. Depth (ft)		0.47	
Conv. Total (cfs)	83.3	Conv. (cfs)		83.3	
Length Wtd. (ft)	108.72	Wetted Per. (ft)		7.45	
Min Ch El (ft)	16.75	Shear (lb/sq ft)		0.17	
Alpha	1.00	Stream Power (lb/ft s)		0.34	
Frctn Loss (ft)	0.62	Cum Volume (acre-ft)		0.10	
C & E Loss (ft)	0.00	Cum SA (acres)		0.18	

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

CROSS SECTION

RIVER: buena vista
REACH: one RS: 15

INPUT
Description: Seccion # 4 en la Agrimensura
Station Elevation Data num= 17

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	24.78	5.33	24.52	14.6	24.58	23.93	20.8	29.54	20.29
33.76	18	36.47	17.2	37.6	17.12	38.45	16.74	39.2	16.12
41.7	16.13	43.75	16.15	45.02	17.38	46.78	18.04	53.78	18
63.78	21.5	78.78	21.8						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.035	33.76	.035	46.78	.035

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
33.76	46.78	77.31	58.6	38.27	.1 .3

CROSS SECTION OUTPUT Profile #100y

E.G. Elev (ft)	17.60	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.09	Wt. n-Val.		0.035	
W.S. Elev (ft)	17.51	Reach Len. (ft)	77.31	58.60	38.27
Crit W.S. (ft)		Flow Area (sq ft)		9.12	
E.G. Slope (ft/ft)	0.004167	Area (sq ft)		9.12	
Q Total (cfs)	22.27	Flow (cfs)		22.27	
Top Width (ft)	9.96	Top Width (ft)		9.96	
Vel Total (ft/s)	2.44	Avg. Vel. (ft/s)		2.44	
Max Chl Dpth (ft)	1.39	Hydr. Depth (ft)		0.92	
Conv. Total (cfs)	345.0	Conv. (cfs)		345.0	
Length Wtd. (ft)	58.60	Wetted Per. (ft)		10.83	
Min Ch El (ft)	16.12	Shear (lb/sq ft)		0.22	
Alpha	1.00	Stream Power (lb/ft s)		0.54	
Frctn Loss (ft)	0.33	Cum Volume (acre-ft)	0.01	0.25	0.02
C & E Loss (ft)	0.01	Cum SA (acres)	0.03	0.22	0.07

CROSS SECTION OUTPUT Profile #50y

E.G. Elev (ft)	17.42	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.12	Wt. n-Val.		0.035	

W.S. Elev (ft)	17.30	Reach Len. (ft)	77.31	58.60	38.27
Crit W.S. (ft)		Flow Area (sq ft)		7.12	
E.G. Slope (ft/ft)	0.006260	Area (sq ft)		7.12	
Q Total (cfs)	19.63	Flow (cfs)		19.63	
Top Width (ft)	8.80	Top Width (ft)		8.80	
Vel Total (ft/s)	2.76	Avg. Vel. (ft/s)		2.76	
Max Chl Dpth (ft)	1.18	Hydr. Depth (ft)		0.81	
Conv. Total (cfs)	248.1	Conv. (cfs)		248.1	
Length Wtd. (ft)	58.60	Wetted Per. (ft)		9.58	
Min Ch El (ft)	16.12	Shear (lb/sq ft)		0.29	
Alpha	1.00	Stream Power (lb/ft s)		0.80	
Frctn Loss (ft)	0.30	Cum Volume (acre-ft)	0.01	0.20	0.01
C & E Loss (ft)	0.01	Cum SA (acres)	0.03	0.19	0.06

CROSS SECTION OUTPUT Profile #25y

E.G. Elev (ft)	17.33	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.11	Wt. n-Val.		0.035	
W.S. Elev (ft)	17.22	Reach Len. (ft)	77.31	58.60	38.27
Crit W.S. (ft)		Flow Area (sq ft)		6.41	
E.G. Slope (ft/ft)	0.006353	Area (sq ft)		6.41	
Q Total (cfs)	17.08	Flow (cfs)		17.08	
Top Width (ft)	8.43	Top Width (ft)		8.43	
Vel Total (ft/s)	2.66	Avg. Vel. (ft/s)		2.66	
Max Chl Dpth (ft)	1.10	Hydr. Depth (ft)		0.76	
Conv. Total (cfs)	214.3	Conv. (cfs)		214.3	
Length Wtd. (ft)	58.60	Wetted Per. (ft)		9.17	
Min Ch El (ft)	16.12	Shear (lb/sq ft)		0.28	
Alpha	1.00	Stream Power (lb/ft s)		0.74	
Frctn Loss (ft)	0.30	Cum Volume (acre-ft)	0.00	0.20	0.00
C & E Loss (ft)	0.01	Cum SA (acres)	0.00	0.20	0.01

CROSS SECTION OUTPUT Profile #10y

E.G. Elev (ft)	17.19	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.10	Wt. n-Val.		0.035	
W.S. Elev (ft)	17.09	Reach Len. (ft)	77.31	58.60	38.27
Crit W.S. (ft)		Flow Area (sq ft)		5.43	
E.G. Slope (ft/ft)	0.005831	Area (sq ft)		5.43	
Q Total (cfs)	13.91	Flow (cfs)		13.91	
Top Width (ft)	7.04	Top Width (ft)		7.04	
Vel Total (ft/s)	2.56	Avg. Vel. (ft/s)		2.56	
Max Chl Dpth (ft)	0.97	Hydr. Depth (ft)		0.77	
Conv. Total (cfs)	182.2	Conv. (cfs)		182.2	
Length Wtd. (ft)	58.60	Wetted Per. (ft)		7.72	
Min Ch El (ft)	16.12	Shear (lb/sq ft)		0.26	
Alpha	1.00	Stream Power (lb/ft s)		0.66	
Frctn Loss (ft)	0.29	Cum Volume (acre-ft)	0.00	0.17	0.00
C & E Loss (ft)	0.01	Cum SA (acres)	0.00	0.19	0.00

CROSS SECTION OUTPUT Profile #5y

E.G. Elev (ft)	17.08	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.09	Wt. n-Val.		0.035	
W.S. Elev (ft)	16.99	Reach Len. (ft)	77.31	58.60	38.27
Crit W.S. (ft)		Flow Area (sq ft)		4.77	
E.G. Slope (ft/ft)	0.005811	Area (sq ft)		4.77	
Q Total (cfs)	11.58	Flow (cfs)		11.58	
Top Width (ft)	6.73	Top Width (ft)		6.73	
Vel Total (ft/s)	2.43	Avg. Vel. (ft/s)		2.43	
Max Chl Dpth (ft)	0.87	Hydr. Depth (ft)		0.71	
Conv. Total (cfs)	152.0	Conv. (cfs)		152.0	
Length Wtd. (ft)	58.60	Wetted Per. (ft)		7.35	
Min Ch El (ft)	16.12	Shear (lb/sq ft)		0.24	
Alpha	1.00	Stream Power (lb/ft s)		0.57	
Frctn Loss (ft)	0.29	Cum Volume (acre-ft)	0.00	0.15	
C & E Loss (ft)	0.01	Cum SA (acres)	0.00	0.19	

CROSS SECTION OUTPUT Profile #2y

E.G. Elev (ft)	16.94	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.07	Wt. n-Val.		0.035	
W.S. Elev (ft)	16.87	Reach Len. (ft)	77.31	58.60	38.27
Crit W.S. (ft)		Flow Area (sq ft)		3.96	
E.G. Slope (ft/ft)	0.005572	Area (sq ft)		3.96	
Q Total (cfs)	8.69	Flow (cfs)		8.69	
Top Width (ft)	6.33	Top Width (ft)		6.33	
Vel Total (ft/s)	2.20	Avg. Vel. (ft/s)		2.20	
Max Chl Dpth (ft)	0.75	Hydr. Depth (ft)		0.63	
Conv. Total (cfs)	116.4	Conv. (cfs)		116.4	
Length Wtd. (ft)	58.60	Wetted Per. (ft)		6.87	
Min Ch El (ft)	16.12	Shear (lb/sq ft)		0.20	
Alpha	1.00	Stream Power (lb/ft s)		0.44	
Frctn Loss (ft)	0.29	Cum Volume (acre-ft)	0.00	0.12	
C & E Loss (ft)	0.01	Cum SA (acres)	0.00	0.18	

CROSS SECTION OUTPUT Profile #1y

E.G. Elev (ft)	16.83	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.06	Wt. n-Val.		0.035	
W.S. Elev (ft)	16.77	Reach Len. (ft)	77.31	58.60	38.27
Crit W.S. (ft)		Flow Area (sq ft)		3.34	
E.G. Slope (ft/ft)	0.005267	Area (sq ft)		3.34	
Q Total (cfs)	6.62	Flow (cfs)		6.62	
Top Width (ft)	6.00	Top Width (ft)		6.00	
Vel Total (ft/s)	1.98	Avg. Vel. (ft/s)		1.98	
Max Chl Dpth (ft)	0.65	Hydr. Depth (ft)		0.56	
Conv. Total (cfs)	91.3	Conv. (cfs)		91.3	
Length Wtd. (ft)	58.60	Wetted Per. (ft)		6.48	
Min Ch El (ft)	16.12	Shear (lb/sq ft)		0.17	
Alpha	1.00	Stream Power (lb/ft s)		0.34	
Frctn Loss (ft)	0.28	Cum Volume (acre-ft)		0.09	
C & E Loss (ft)	0.00	Cum SA (acres)		0.17	

CROSS SECTION

RIVER: buena vista
REACH: one RS: 14

INPUT
Description: Seccion #5 en la Agrimensura
Station Elevation Data num= 22

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	23.83	6.81	23.73	12.57	23.95	13.91	23.86	17.91	23.67
23.89	23.35	29.25	23.28	32.04	23.11	36.41	23.19	42.5	23.39
46.65	23.14	47.65	22.88	53.08	19.97	60	17.01	60.69	15.93
64.13	15.95	67.12	15.93	68.34	17.08	83.09	17.18	92.64	19.18
123.13	19.58	147.83	20.68						

Manning's n Values num= 6

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.013	12.57	.015	32.04	.013	42.5	.035	53.08	.035
92.64	.035								

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
53.08	92.64	73.48	28.57	11.33	.1	.3

Blocked Obstructions num= 1

Sta L	Sta R	Elev
68.34	68.35	18.68

CROSS SECTION OUTPUT Profile #100y

E.G. Elev (ft)	17.27	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.07	Wt. n-Val.		0.035	
W.S. Elev (ft)	17.20	Reach Len. (ft)	73.48	28.57	11.33

Crit W.S. (ft)		Flow Area (sq ft)		10.59	
E.G. Slope (ft/ft)	0.007746	Area (sq ft)		10.59	
Q Total (cfs)	22.32	Flow (cfs)		22.32	
Top Width (ft)	23.64	Top Width (ft)		23.64	
Vel Total (ft/s)	2.11	Avg. Vel. (ft/s)		2.11	
Max Chl Dpth (ft)	1.27	Hydr. Depth (ft)		0.45	
Conv. Total (cfs)	253.6	Conv. (cfs)		253.6	
Length Wtd. (ft)	28.57	Wetted Per. (ft)		24.97	
Min Ch El (ft)	15.93	Shear (lb/sq ft)		0.21	
Alpha	1.00	Stream Power (lb/ft s)		0.43	
Frctn Loss (ft)	0.25	Cum Volume (acre-ft)	0.01	0.23	0.02
C & E Loss (ft)	0.01	Cum SA (acres)	0.03	0.20	0.07

Warning: Divided flow computed for this cross-section.

CROSS SECTION OUTPUT Profile #50y

E.G. Elev (ft)	17.11	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.10	Wt. n-Val.		0.035	
W.S. Elev (ft)	17.01	Reach Len. (ft)	73.48	28.57	11.33
Crit W.S. (ft)		Flow Area (sq ft)		7.88	
E.G. Slope (ft/ft)	0.004303	Area (sq ft)		7.88	
Q Total (cfs)	19.67	Flow (cfs)		19.67	
Top Width (ft)	8.27	Top Width (ft)		8.27	
Vel Total (ft/s)	2.50	Avg. Vel. (ft/s)		2.50	
Max Chl Dpth (ft)	1.08	Hydr. Depth (ft)		0.95	
Conv. Total (cfs)	299.9	Conv. (cfs)		299.9	
Length Wtd. (ft)	28.57	Wetted Per. (ft)		9.29	
Min Ch El (ft)	15.93	Shear (lb/sq ft)		0.23	
Alpha	1.00	Stream Power (lb/ft s)		0.57	
Frctn Loss (ft)	0.18	Cum Volume (acre-ft)	0.01	0.19	0.01
C & E Loss (ft)	0.01	Cum SA (acres)	0.03	0.18	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 OUTPUT Profile #25y

E.G. Elev (ft)	17.02	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.09	Wt. n-Val.		0.035	
W.S. Elev (ft)	16.93	Reach Len. (ft)	73.48	28.57	11.33
Crit W.S. (ft)		Flow Area (sq ft)		7.22	
E.G. Slope (ft/ft)	0.004227	Area (sq ft)		7.22	
Q Total (cfs)	17.12	Flow (cfs)		17.12	
Top Width (ft)	8.13	Top Width (ft)		8.13	
Vel Total (ft/s)	2.37	Avg. Vel. (ft/s)		2.37	
Max Chl Dpth (ft)	1.00	Hydr. Depth (ft)		0.89	
Conv. Total (cfs)	263.3	Conv. (cfs)		263.3	
Length Wtd. (ft)	28.57	Wetted Per. (ft)		9.08	
Min Ch El (ft)	15.93	Shear (lb/sq ft)		0.21	
Alpha	1.00	Stream Power (lb/ft s)		0.50	
Frctn Loss (ft)	0.18	Cum Volume (acre-ft)	0.00	0.19	0.00
C & E Loss (ft)	0.01	Cum SA (acres)	0.00	0.19	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 #10y

E.G. Elev (ft)	16.89	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.08	Wt. n-Val.		0.035	
W.S. Elev (ft)	16.81	Reach Len. (ft)	73.48	28.57	11.33
Crit W.S. (ft)		Flow Area (sq ft)		6.27	
E.G. Slope (ft/ft)	0.004285	Area (sq ft)		6.27	
Q Total (cfs)	13.94	Flow (cfs)		13.94	
Top Width (ft)	7.93	Top Width (ft)		7.93	
Vel Total (ft/s)	2.22	Avg. Vel. (ft/s)		2.22	
Max Chl Dpth (ft)	0.88	Hydr. Depth (ft)		0.79	

Conv. Total (cfs)	213.0	Conv. (cfs)		213.0	
Length Wtd. (ft)	28.57	Wetted Per. (ft)		8.76	
Min Ch El (ft)	15.93	Shear (lb/sq ft)		0.19	
Alpha	1.00	Stream Power (lb/ft s)		0.43	
Frctn Loss (ft)	0.18	Cum Volume (acre-ft)	0.00	0.16	0.00
C & E Loss (ft)	0.01	Cum SA (acres)	0.00	0.18	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 #5y

E.G. Elev (ft)	16.79	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.07	Wt. n-Val.		0.035	
W.S. Elev (ft)	16.72	Reach Len. (ft)	73.48	28.57	11.33
Crit W.S. (ft)		Flow Area (sq ft)		5.54	
E.G. Slope (ft/ft)	0.004317	Area (sq ft)		5.54	
Q Total (cfs)	11.61	Flow (cfs)		11.61	
Top Width (ft)	7.77	Top Width (ft)		7.77	
Vel Total (ft/s)	2.09	Avg. Vel. (ft/s)		2.09	
Max Chl Dpth (ft)	0.79	Hydr. Depth (ft)		0.71	
Conv. Total (cfs)	176.7	Conv. (cfs)		176.7	
Length Wtd. (ft)	28.57	Wetted Per. (ft)		8.52	
Min Ch El (ft)	15.93	Shear (lb/sq ft)		0.18	
Alpha	1.00	Stream Power (lb/ft s)		0.37	
Frctn Loss (ft)	0.18	Cum Volume (acre-ft)	0.00	0.14	
C & E Loss (ft)	0.01	Cum SA (acres)	0.00	0.18	

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.

CROSS SECTION OUTPUT Profile #2y

E.G. Elev (ft)	16.65	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.06	Wt. n-Val.		0.035	
W.S. Elev (ft)	16.60	Reach Len. (ft)	73.48	28.57	11.33
Crit W.S. (ft)		Flow Area (sq ft)		4.59	
E.G. Slope (ft/ft)	0.004330	Area (sq ft)		4.59	
Q Total (cfs)	8.71	Flow (cfs)		8.71	
Top Width (ft)	7.56	Top Width (ft)		7.56	
Vel Total (ft/s)	1.90	Avg. Vel. (ft/s)		1.90	
Max Chl Dpth (ft)	0.67	Hydr. Depth (ft)		0.61	
Conv. Total (cfs)	132.4	Conv. (cfs)		132.4	
Length Wtd. (ft)	28.57	Wetted Per. (ft)		8.19	
Min Ch El (ft)	15.93	Shear (lb/sq ft)		0.15	
Alpha	1.00	Stream Power (lb/ft s)		0.29	
Frctn Loss (ft)	0.19	Cum Volume (acre-ft)	0.00	0.11	
C & E Loss (ft)	0.01	Cum SA (acres)	0.00	0.17	

Warning: The conveyance ratio (upstream 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 #1y

E.G. Elev (ft)	16.54	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.05	Wt. n-Val.		0.035	
W.S. Elev (ft)	16.50	Reach Len. (ft)	73.48	28.57	11.33
Crit W.S. (ft)		Flow Area (sq ft)		3.87	
E.G. Slope (ft/ft)	0.004249	Area (sq ft)		3.87	
Q Total (cfs)	6.64	Flow (cfs)		6.64	
Top Width (ft)	7.40	Top Width (ft)		7.40	
Vel Total (ft/s)	1.71	Avg. Vel. (ft/s)		1.71	
Max Chl Dpth (ft)	0.57	Hydr. Depth (ft)		0.52	
Conv. Total (cfs)	101.8	Conv. (cfs)		101.8	
Length Wtd. (ft)	28.57	Wetted Per. (ft)		7.94	
Min Ch El (ft)	15.93	Shear (lb/sq ft)		0.13	
Alpha	1.00	Stream Power (lb/ft s)		0.22	
Frctn Loss (ft)	0.18	Cum Volume (acre-ft)		0.09	

C & E Loss (ft)	0.00	Cum SA (acres)	0.16

Warning: The conveyance ratio (upstream 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: buena vista
REACH: one RS: 13

INPUT
Description: Seccion #6 en la Agrimensura
Station Elevation Data num= 24

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	22.89	12.3	22.67	17	22.57	21.88	22.57	25.12	22.56
33.04	22.556	41.18	22.73	43.33	22.95	46.57	22.58	49.71	21.37
52.06	20.31	53.79	18.53	55.1	17.52	55.87	17.02	57.06	15.76
59.34	15.77	61.99	15.75	62.7	16.51	65.4	16.94	66.98	17.26
73.26	18.02	78.19	19.22	109.04	19.36	119.14	19.6		

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.015	33.04	.013	41.18	.035	53.79	.035	78.19	.035

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
53.79	78.19	72 198.82	245.66	.1	.3

CROSS SECTION OUTPUT Profile #100y

E.G. Elev (ft)	17.00	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.18	Wt. n-Val.		0.035	
W.S. Elev (ft)	16.83	Reach Len. (ft)	72.00	198.82	245.66
Crit W.S. (ft)		Flow Area (sq ft)		6.58	
E.G. Slope (ft/ft)	0.010319	Area (sq ft)		6.58	
Q Total (cfs)	22.32	Flow (cfs)		22.32	
Top Width (ft)	8.63	Top Width (ft)		8.63	
Vel Total (ft/s)	3.39	Avg. Vel. (ft/s)		3.39	
Max Chl Dpth (ft)	1.08	Hydr. Depth (ft)		0.76	
Conv. Total (cfs)	219.8	Conv. (cfs)		219.8	
Length Wtd. (ft)	198.82	Wetted Per. (ft)		9.44	
Min Ch El (ft)	15.75	Shear (lb/sq ft)		0.45	
Alpha	1.00	Stream Power (lb/ft s)		1.52	
Frctn Loss (ft)	1.51	Cum Volume (acre-ft)	0.01	0.23	0.02
C & E Loss (ft)	0.01	Cum SA (acres)	0.03	0.19	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 OUTPUT Profile #50y

E.G. Elev (ft)	16.92	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.17	Wt. n-Val.		0.035	
W.S. Elev (ft)	16.75	Reach Len. (ft)	72.00	198.82	245.66
Crit W.S. (ft)		Flow Area (sq ft)		5.95	
E.G. Slope (ft/ft)	0.010316	Area (sq ft)		5.95	
Q Total (cfs)	19.67	Flow (cfs)		19.67	
Top Width (ft)	8.08	Top Width (ft)		8.08	
Vel Total (ft/s)	3.31	Avg. Vel. (ft/s)		3.31	
Max Chl Dpth (ft)	1.00	Hydr. Depth (ft)		0.74	
Conv. Total (cfs)	193.7	Conv. (cfs)		193.7	
Length Wtd. (ft)	198.82	Wetted Per. (ft)		8.85	
Min Ch El (ft)	15.75	Shear (lb/sq ft)		0.43	
Alpha	1.00	Stream Power (lb/ft s)		1.43	
Frctn Loss (ft)	1.51	Cum Volume (acre-ft)	0.01	0.18	0.01
C & E Loss (ft)	0.01	Cum SA (acres)	0.03	0.17	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 #25y

E.G. Elev (ft)	16.83	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.16	Wt. n-Val.		0.035	
W.S. Elev (ft)	16.67	Reach Len. (ft)	72.00	198.82	245.66
Crit W.S. (ft)		Flow Area (sq ft)		5.34	
E.G. Slope (ft/ft)	0.010193	Area (sq ft)		5.34	
Q Total (cfs)	17.12	Flow (cfs)		17.12	
Top Width (ft)	7.51	Top Width (ft)		7.51	
Vel Total (ft/s)	3.21	Avg. Vel. (ft/s)		3.21	
Max Chl Dpth (ft)	0.92	Hydr. Depth (ft)		0.71	
Conv. Total (cfs)	169.5	Conv. (cfs)		169.5	
Length Wtd. (ft)	198.82	Wetted Per. (ft)		8.25	
Min Ch El (ft)	15.75	Shear (lb/sq ft)		0.41	
Alpha	1.00	Stream Power (lb/ft s)		1.32	
Frctn Loss (ft)	1.53	Cum Volume (acre-ft)	0.00	0.18	0.00
C & E Loss (ft)	0.01	Cum SA (acres)	0.00	0.18	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 #10y

E.G. Elev (ft)	16.70	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.15	Wt. n-Val.		0.035	
W.S. Elev (ft)	16.54	Reach Len. (ft)	72.00	198.82	245.66
Crit W.S. (ft)		Flow Area (sq ft)		4.45	
E.G. Slope (ft/ft)	0.010510	Area (sq ft)		4.45	
Q Total (cfs)	13.94	Flow (cfs)		13.94	
Top Width (ft)	6.60	Top Width (ft)		6.60	
Vel Total (ft/s)	3.14	Avg. Vel. (ft/s)		3.14	
Max Chl Dpth (ft)	0.79	Hydr. Depth (ft)		0.67	
Conv. Total (cfs)	136.0	Conv. (cfs)		136.0	
Length Wtd. (ft)	198.82	Wetted Per. (ft)		7.27	
Min Ch El (ft)	15.75	Shear (lb/sq ft)		0.40	
Alpha	1.00	Stream Power (lb/ft s)		1.26	
Frctn Loss (ft)	1.52	Cum Volume (acre-ft)	0.00	0.16	0.00
C & E Loss (ft)	0.02	Cum SA (acres)	0.00	0.18	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 #5y

E.G. Elev (ft)	16.60	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.14	Wt. n-Val.		0.035	
W.S. Elev (ft)	16.46	Reach Len. (ft)	72.00	198.82	245.66
Crit W.S. (ft)	16.30	Flow Area (sq ft)		3.90	
E.G. Slope (ft/ft)	0.010444	Area (sq ft)		3.90	
Q Total (cfs)	11.61	Flow (cfs)		11.61	
Top Width (ft)	6.25	Top Width (ft)		6.25	
Vel Total (ft/s)	2.98	Avg. Vel. (ft/s)		2.98	
Max Chl Dpth (ft)	0.71	Hydr. Depth (ft)		0.62	
Conv. Total (cfs)	113.6	Conv. (cfs)		113.6	
Length Wtd. (ft)	198.82	Wetted Per. (ft)		6.86	
Min Ch El (ft)	15.75	Shear (lb/sq ft)		0.37	
Alpha	1.00	Stream Power (lb/ft s)		1.10	
Frctn Loss (ft)	1.52	Cum Volume (acre-ft)	0.00	0.14	
C & E Loss (ft)	0.01	Cum SA (acres)	0.00	0.18	

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

CROSS SECTION OUTPUT Profile #2y

E.G. Elev (ft)	16.46	Element	Left OB	Channel	Right OB

Vel Head (ft)	0.12	Wt. n-Val.		0.035	
W.S. Elev (ft)	16.34	Reach Len. (ft)	72.00	198.82	245.66
Crit W.S. (ft)	16.21	Flow Area (sq ft)		3.19	
E.G. Slope (ft/ft)	0.010787	Area (sq ft)		3.19	
Q Total (cfs)	8.71	Flow (cfs)		8.71	
Top Width (ft)	6.04	Top Width (ft)		6.04	
Vel Total (ft/s)	2.73	Avg. Vel. (ft/s)		2.73	
Max Chl Dpth (ft)	0.59	Hydr. Depth (ft)		0.53	
Conv. Total (cfs)	83.9	Conv. (cfs)		83.9	
Length Wtd. (ft)	198.82	Wetted Per. (ft)		6.54	
Min Ch El (ft)	15.75	Shear (lb/sq ft)		0.33	
Alpha	1.00	Stream Power (lb/ft s)		0.90	
Frctn Loss (ft)	1.52	Cum Volume (acre-ft)	0.00	0.11	
C & E Loss (ft)	0.01	Cum SA (acres)	0.00	0.17	

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

CROSS SECTION OUTPUT Profile #1y

E.G. Elev (ft)	16.36	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.09	Wt. n-Val.		0.035	
W.S. Elev (ft)	16.27	Reach Len. (ft)	72.00	198.82	245.66
Crit W.S. (ft)	16.14	Flow Area (sq ft)		2.74	
E.G. Slope (ft/ft)	0.010001	Area (sq ft)		2.74	
Q Total (cfs)	6.64	Flow (cfs)		6.64	
Top Width (ft)	5.89	Top Width (ft)		5.89	
Vel Total (ft/s)	2.43	Avg. Vel. (ft/s)		2.43	
Max Chl Dpth (ft)	0.52	Hydr. Depth (ft)		0.46	
Conv. Total (cfs)	66.4	Conv. (cfs)		66.4	
Length Wtd. (ft)	198.82	Wetted Per. (ft)		6.34	
Min Ch El (ft)	15.75	Shear (lb/sq ft)		0.27	
Alpha	1.00	Stream Power (lb/ft s)		0.65	
Frctn Loss (ft)	1.56	Cum Volume (acre-ft)		0.08	
C & E Loss (ft)	0.01	Cum SA (acres)		0.15	

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

CROSS SECTION

RIVER: buena vista
REACH: one RS: 12

INPUT
Description: Seccion #7 en la Agrimensura
Station Elevation Data num= 25

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	18.5	5.34	18.62	11.13	18.19	15.83	18.28	18.58	18.34
26.21	18.02	29.78	17.75	33.95	17.27	41.51	17.27	45.17	17.36
50.62	16.97	55.78	16.91	58.6	16.35	60.13	15.63	61.62	14.13
64.17	14.15	66.39	14.18	69.17	15.7	76.29	16.84	79.94	17.18
85.06	16.95	87.68	16.91	92.84	16.56	93.89	16.26	98.94	16.58

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.015	29.78	.013	41.51	.035	60.13	.035	69.17	.035

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
60.13	69.17	133.71	117.99	115.63	.1 .3

CROSS SECTION OUTPUT Profile #100y

E.G. Elev (ft)	15.48	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.13	Wt. n-Val.		0.035	
W.S. Elev (ft)	15.35	Reach Len. (ft)	133.71	117.99	115.63
Crit W.S. (ft)		Flow Area (sq ft)		7.67	
E.G. Slope (ft/ft)	0.005810	Area (sq ft)		7.67	

Q Total (cfs)	22.47	Flow (cfs)		22.47	
Top Width (ft)	8.11	Top Width (ft)		8.11	
Vel Total (ft/s)	2.93	Avg. Vel. (ft/s)		2.93	
Max Chl Dpth (ft)	1.22	Hydr. Depth (ft)		0.95	
Conv. Total (cfs)	294.8	Conv. (cfs)		294.8	
Length Wtd. (ft)	117.99	Wetted Per. (ft)		8.91	
Min Ch El (ft)	14.13	Shear (lb/sq ft)		0.31	
Alpha	1.00	Stream Power (lb/ft s)		0.91	
Frctn Loss (ft)	0.53	Cum Volume (acre-ft)	0.01	0.20	0.02
C & E Loss (ft)	0.01	Cum SA (acres)	0.03	0.15	0.07

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

CROSS SECTION OUTPUT Profile #50y

E.G. Elev (ft)	15.39	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.12	Wt. n-Val.		0.035	
W.S. Elev (ft)	15.26	Reach Len. (ft)	133.71	117.99	115.63
Crit W.S. (ft)		Flow Area (sq ft)		7.00	
E.G. Slope (ft/ft)	0.005865	Area (sq ft)		7.00	
Q Total (cfs)	19.80	Flow (cfs)		19.80	
Top Width (ft)	7.87	Top Width (ft)		7.87	
Vel Total (ft/s)	2.83	Avg. Vel. (ft/s)		2.83	
Max Chl Dpth (ft)	1.13	Hydr. Depth (ft)		0.89	
Conv. Total (cfs)	258.5	Conv. (cfs)		258.5	
Length Wtd. (ft)	117.99	Wetted Per. (ft)		8.62	
Min Ch El (ft)	14.13	Shear (lb/sq ft)		0.30	
Alpha	1.00	Stream Power (lb/ft s)		0.84	
Frctn Loss (ft)	0.52	Cum Volume (acre-ft)	0.01	0.16	0.01
C & E Loss (ft)	0.01	Cum SA (acres)	0.03	0.13	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 OUTPUT Profile #25y

E.G. Elev (ft)	15.29	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.12	Wt. n-Val.		0.035	
W.S. Elev (ft)	15.17	Reach Len. (ft)	133.71	117.99	115.63
Crit W.S. (ft)		Flow Area (sq ft)		6.30	
E.G. Slope (ft/ft)	0.005990	Area (sq ft)		6.30	
Q Total (cfs)	17.23	Flow (cfs)		17.23	
Top Width (ft)	7.62	Top Width (ft)		7.62	
Vel Total (ft/s)	2.73	Avg. Vel. (ft/s)		2.73	
Max Chl Dpth (ft)	1.04	Hydr. Depth (ft)		0.83	
Conv. Total (cfs)	222.6	Conv. (cfs)		222.6	
Length Wtd. (ft)	117.99	Wetted Per. (ft)		8.30	
Min Ch El (ft)	14.13	Shear (lb/sq ft)		0.28	
Alpha	1.00	Stream Power (lb/ft s)		0.78	
Frctn Loss (ft)	0.55	Cum Volume (acre-ft)	0.00	0.16	0.00
C & E Loss (ft)	0.01	Cum SA (acres)	0.00	0.15	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 #10y

E.G. Elev (ft)	15.17	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.10	Wt. n-Val.		0.035	
W.S. Elev (ft)	15.07	Reach Len. (ft)	133.71	117.99	115.63
Crit W.S. (ft)		Flow Area (sq ft)		5.51	
E.G. Slope (ft/ft)	0.005847	Area (sq ft)		5.51	
Q Total (cfs)	14.03	Flow (cfs)		14.03	
Top Width (ft)	7.32	Top Width (ft)		7.32	
Vel Total (ft/s)	2.55	Avg. Vel. (ft/s)		2.55	
Max Chl Dpth (ft)	0.94	Hydr. Depth (ft)		0.75	
Conv. Total (cfs)	183.5	Conv. (cfs)		183.5	

Length Wtd. (ft)	117.99	Wetted Per. (ft)		7.93	
Min Ch El (ft)	14.13	Shear (lb/sq ft)		0.25	
Alpha	1.00	Stream Power (lb/ft s)		0.65	
Frctn Loss (ft)	0.58	Cum Volume (acre-ft)	0.00	0.14	0.00
C & E Loss (ft)	0.01	Cum SA (acres)	0.00	0.15	0.00

CROSS SECTION OUTPUT Profile #5y

E.G. Elev (ft)	15.06	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.09	Wt. n-Val.		0.035	
W.S. Elev (ft)	14.97	Reach Len. (ft)	133.71	117.99	115.63
Crit W.S. (ft)		Flow Area (sq ft)		4.85	
E.G. Slope (ft/ft)	0.005858	Area (sq ft)		4.85	
Q Total (cfs)	11.68	Flow (cfs)		11.68	
Top Width (ft)	7.06	Top Width (ft)		7.06	
Vel Total (ft/s)	2.41	Avg. Vel. (ft/s)		2.41	
Max Chl Dpth (ft)	0.84	Hydr. Depth (ft)		0.69	
Conv. Total (cfs)	152.7	Conv. (cfs)		152.7	
Length Wtd. (ft)	117.99	Wetted Per. (ft)		7.62	
Min Ch El (ft)	14.13	Shear (lb/sq ft)		0.23	
Alpha	1.00	Stream Power (lb/ft s)		0.56	
Frctn Loss (ft)	0.59	Cum Volume (acre-ft)	0.00	0.12	
C & E Loss (ft)	0.00	Cum SA (acres)	0.00	0.14	

CROSS SECTION OUTPUT Profile #2y

E.G. Elev (ft)	14.93	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.07	Wt. n-Val.		0.035	
W.S. Elev (ft)	14.85	Reach Len. (ft)	133.71	117.99	115.63
Crit W.S. (ft)		Flow Area (sq ft)		4.02	
E.G. Slope (ft/ft)	0.005732	Area (sq ft)		4.02	
Q Total (cfs)	8.77	Flow (cfs)		8.77	
Top Width (ft)	6.72	Top Width (ft)		6.72	
Vel Total (ft/s)	2.18	Avg. Vel. (ft/s)		2.18	
Max Chl Dpth (ft)	0.72	Hydr. Depth (ft)		0.60	
Conv. Total (cfs)	115.8	Conv. (cfs)		115.8	
Length Wtd. (ft)	117.99	Wetted Per. (ft)		7.19	
Min Ch El (ft)	14.13	Shear (lb/sq ft)		0.20	
Alpha	1.00	Stream Power (lb/ft s)		0.44	
Frctn Loss (ft)	0.63	Cum Volume (acre-ft)	0.00	0.09	
C & E Loss (ft)	0.00	Cum SA (acres)	0.00	0.14	

CROSS SECTION OUTPUT Profile #1y

E.G. Elev (ft)	14.80	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.07	Wt. n-Val.		0.035	
W.S. Elev (ft)	14.73	Reach Len. (ft)	133.71	117.99	115.63
Crit W.S. (ft)		Flow Area (sq ft)		3.24	
E.G. Slope (ft/ft)	0.006314	Area (sq ft)		3.24	
Q Total (cfs)	6.68	Flow (cfs)		6.68	
Top Width (ft)	6.38	Top Width (ft)		6.38	
Vel Total (ft/s)	2.06	Avg. Vel. (ft/s)		2.06	
Max Chl Dpth (ft)	0.60	Hydr. Depth (ft)		0.51	
Conv. Total (cfs)	84.1	Conv. (cfs)		84.1	
Length Wtd. (ft)	117.99	Wetted Per. (ft)		6.78	
Min Ch El (ft)	14.13	Shear (lb/sq ft)		0.19	
Alpha	1.00	Stream Power (lb/ft s)		0.39	
Frctn Loss (ft)	0.63	Cum Volume (acre-ft)		0.07	
C & E Loss (ft)	0.01	Cum SA (acres)		0.13	

CROSS SECTION

RIVER: buena vista
REACH: one RS: 11

INPUT

Description: Seccion # 8 en la Agrimensura

Station Elevation Data num= 19

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	21.48	4.85	21.34	16.51	21.04	28.54	20.3	34.14	19.13
38.69	18.43	42.4	18.2	48.55	18.2	51.68	18.16	57.58	17.23
59.96	16.96	61.91	15.89	63.55	14.06	67.88	13.47	71.17	13.42
72.47	14.63	74.23	14.93	84.37	15.18	89.44	17.68		

Manning's n Values num= 6

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.013	16.51	.035	42.4	.013	48.55	.035	61.91	.035
84.37	.035								

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
61.91	84.37	155.56	72.04	36.34	.1 .3

CROSS SECTION OUTPUT Profile #100y

E.G. Elev (ft)	14.94	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.09	Wt. n-Val.		0.035	
W.S. Elev (ft)	14.84	Reach Len. (ft)	155.56	72.04	36.34
Crit W.S. (ft)	14.31	Flow Area (sq ft)		10.76	
E.G. Slope (ft/ft)	0.003680	Area (sq ft)		10.76	
Q Total (cfs)	26.10	Flow (cfs)		26.10	
Top Width (ft)	10.88	Top Width (ft)		10.88	
Vel Total (ft/s)	2.43	Avg. Vel. (ft/s)		2.43	
Max Chl Dpth (ft)	1.42	Hydr. Depth (ft)		0.99	
Conv. Total (cfs)	430.2	Conv. (cfs)		430.2	
Length Wtd. (ft)	72.04	Wetted Per. (ft)		11.77	
Min Ch El (ft)	13.42	Shear (lb/sq ft)		0.21	
Alpha	1.00	Stream Power (lb/ft s)		0.51	
Frctn Loss (ft)	0.57	Cum Volume (acre-ft)	0.01	0.17	0.02
C & E Loss (ft)	0.03	Cum SA (acres)	0.03	0.12	0.07

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

CROSS SECTION OUTPUT Profile #50y

E.G. Elev (ft)	14.85	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.09	Wt. n-Val.		0.035	
W.S. Elev (ft)	14.76	Reach Len. (ft)	155.56	72.04	36.34
Crit W.S. (ft)	14.26	Flow Area (sq ft)		9.89	
E.G. Slope (ft/ft)	0.003611	Area (sq ft)		9.89	
Q Total (cfs)	23.25	Flow (cfs)		23.25	
Top Width (ft)	10.33	Top Width (ft)		10.33	
Vel Total (ft/s)	2.35	Avg. Vel. (ft/s)		2.35	
Max Chl Dpth (ft)	1.34	Hydr. Depth (ft)		0.96	
Conv. Total (cfs)	386.9	Conv. (cfs)		386.9	
Length Wtd. (ft)	72.04	Wetted Per. (ft)		11.17	
Min Ch El (ft)	13.42	Shear (lb/sq ft)		0.20	
Alpha	1.00	Stream Power (lb/ft s)		0.47	
Frctn Loss (ft)	0.57	Cum Volume (acre-ft)	0.01	0.13	0.01
C & E Loss (ft)	0.02	Cum SA (acres)	0.03	0.11	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 OUTPUT Profile #25y

E.G. Elev (ft)	14.73	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.09	Wt. n-Val.		0.035	
W.S. Elev (ft)	14.64	Reach Len. (ft)	155.56	72.04	36.34
Crit W.S. (ft)	14.21	Flow Area (sq ft)		8.66	
E.G. Slope (ft/ft)	0.003897	Area (sq ft)		8.66	
Q Total (cfs)	20.50	Flow (cfs)		20.50	
Top Width (ft)	9.49	Top Width (ft)		9.49	
Vel Total (ft/s)	2.37	Avg. Vel. (ft/s)		2.37	
Max Chl Dpth (ft)	1.22	Hydr. Depth (ft)		0.91	

Conv. Total (cfs)	328.3	Conv. (cfs)		328.3	
Length Wtd. (ft)	72.04	Wetted Per. (ft)		10.27	
Min Ch El (ft)	13.42	Shear (lb/sq ft)		0.21	
Alpha	1.00	Stream Power (lb/ft s)		0.49	
Frctn Loss (ft)	0.53	Cum Volume (acre-ft)	0.00	0.14	0.00
C & E Loss (ft)	0.02	Cum SA (acres)	0.00	0.13	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 #10y

E.G. Elev (ft)	14.58	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.08	Wt. n-Val.		0.035	
W.S. Elev (ft)	14.50	Reach Len. (ft)	155.56	72.04	36.34
Crit W.S. (ft)		Flow Area (sq ft)		7.39	
E.G. Slope (ft/ft)	0.004288	Area (sq ft)		7.39	
Q Total (cfs)	16.98	Flow (cfs)		16.98	
Top Width (ft)	9.18	Top Width (ft)		9.18	
Vel Total (ft/s)	2.30	Avg. Vel. (ft/s)		2.30	
Max Chl Dpth (ft)	1.08	Hydr. Depth (ft)		0.81	
Conv. Total (cfs)	259.3	Conv. (cfs)		259.3	
Length Wtd. (ft)	72.04	Wetted Per. (ft)		9.84	
Min Ch El (ft)	13.42	Shear (lb/sq ft)		0.20	
Alpha	1.00	Stream Power (lb/ft s)		0.46	
Frctn Loss (ft)	0.49	Cum Volume (acre-ft)	0.00	0.12	0.00
C & E Loss (ft)	0.01	Cum SA (acres)	0.00	0.12	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 #5y

E.G. Elev (ft)	14.47	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.07	Wt. n-Val.		0.035	
W.S. Elev (ft)	14.40	Reach Len. (ft)	155.56	72.04	36.34
Crit W.S. (ft)		Flow Area (sq ft)		6.44	
E.G. Slope (ft/ft)	0.004458	Area (sq ft)		6.44	
Q Total (cfs)	14.02	Flow (cfs)		14.02	
Top Width (ft)	8.97	Top Width (ft)		8.97	
Vel Total (ft/s)	2.18	Avg. Vel. (ft/s)		2.18	
Max Chl Dpth (ft)	0.98	Hydr. Depth (ft)		0.72	
Conv. Total (cfs)	210.0	Conv. (cfs)		210.0	
Length Wtd. (ft)	72.04	Wetted Per. (ft)		9.55	
Min Ch El (ft)	13.42	Shear (lb/sq ft)		0.19	
Alpha	1.00	Stream Power (lb/ft s)		0.41	
Frctn Loss (ft)	0.46	Cum Volume (acre-ft)	0.00	0.10	
C & E Loss (ft)	0.01	Cum SA (acres)	0.00	0.12	

CROSS SECTION OUTPUT Profile #2y

E.G. Elev (ft)	14.30	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.06	Wt. n-Val.		0.035	
W.S. Elev (ft)	14.23	Reach Len. (ft)	155.56	72.04	36.34
Crit W.S. (ft)		Flow Area (sq ft)		5.00	
E.G. Slope (ft/ft)	0.005066	Area (sq ft)		5.00	
Q Total (cfs)	10.13	Flow (cfs)		10.13	
Top Width (ft)	8.65	Top Width (ft)		8.65	
Vel Total (ft/s)	2.03	Avg. Vel. (ft/s)		2.03	
Max Chl Dpth (ft)	0.81	Hydr. Depth (ft)		0.58	
Conv. Total (cfs)	142.4	Conv. (cfs)		142.4	
Length Wtd. (ft)	72.04	Wetted Per. (ft)		9.09	
Min Ch El (ft)	13.42	Shear (lb/sq ft)		0.17	
Alpha	1.00	Stream Power (lb/ft s)		0.35	
Frctn Loss (ft)	0.42	Cum Volume (acre-ft)	0.00	0.08	
C & E Loss (ft)	0.00	Cum SA (acres)	0.00	0.12	

CROSS SECTION OUTPUT Profile #1y

E.G. Elev (ft)	14.17	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.05	Wt. n-Val.		0.035	
W.S. Elev (ft)	14.12	Reach Len. (ft)	155.56	72.04	36.34
Crit W.S. (ft)		Flow Area (sq ft)		4.04	
E.G. Slope (ft/ft)	0.004576	Area (sq ft)		4.04	
Q Total (cfs)	6.91	Flow (cfs)		6.91	
Top Width (ft)	8.43	Top Width (ft)		8.43	
Vel Total (ft/s)	1.71	Avg. Vel. (ft/s)		1.71	
Max Chl Dpth (ft)	0.70	Hydr. Depth (ft)		0.48	
Conv. Total (cfs)	102.1	Conv. (cfs)		102.1	
Length Wtd. (ft)	72.04	Wetted Per. (ft)		8.77	
Min Ch El (ft)	13.42	Shear (lb/sq ft)		0.13	
Alpha	1.00	Stream Power (lb/ft s)		0.22	
Frctn Loss (ft)	0.46	Cum Volume (acre-ft)		0.06	
C & E Loss (ft)	0.00	Cum SA (acres)		0.11	

CROSS SECTION

RIVER: buena vista
REACH: one RS: 10

INPUT
Description: Seccion #9 en la Agrimensura
Station Elevation Data num= 18

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	21.07	4.61	20.95	8.53	20.85	11.19	20.81	18.26	20.93
24.2	20.9	26.63	20.86	30.91	20.45	37.05	16.88	41.32	16.17
45.58	15.78	49.37	13.17	52.72	13.17	56.08	13.18	59.59	15.18
65.87	16.94	66.87	19.12	76.87	19.42				

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.013	24.2	.035	45.58	.035	65.87	.015	66.87	.035

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
45.58	59.59	249.85	296.25	321.61	.1	.3

CROSS SECTION OUTPUT Profile #100y

E.G. Elev (ft)	14.34	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.35	Wt. n-Val.		0.035	
W.S. Elev (ft)	13.99	Reach Len. (ft)	249.85	296.25	321.61
Crit W.S. (ft)	13.99	Flow Area (sq ft)		6.51	
E.G. Slope (ft/ft)	0.021738	Area (sq ft)		6.51	
Q Total (cfs)	31.09	Flow (cfs)		31.09	
Top Width (ft)	9.31	Top Width (ft)		9.31	
Vel Total (ft/s)	4.77	Avg. Vel. (ft/s)		4.77	
Max Chl Dpth (ft)	0.82	Hydr. Depth (ft)		0.70	
Conv. Total (cfs)	210.8	Conv. (cfs)		210.8	
Length Wtd. (ft)	296.17	Wetted Per. (ft)		9.78	
Min Ch El (ft)	13.17	Shear (lb/sq ft)		0.90	
Alpha	1.00	Stream Power (lb/ft s)		4.32	
Frctn Loss (ft)	0.85	Cum Volume (acre-ft)	0.01	0.16	0.02
C & E Loss (ft)	0.09	Cum SA (acres)	0.03	0.11	0.07

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

is not a valid subcritical answer. The program defaulted to critical depth.

CROSS SECTION OUTPUT Profile #50y

E.G. Elev (ft)	14.26	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.33	Wt. n-Val.		0.035	
W.S. Elev (ft)	13.93	Reach Len. (ft)	249.85	296.25	321.61
Crit W.S. (ft)	13.93	Flow Area (sq ft)		5.96	
E.G. Slope (ft/ft)	0.022159	Area (sq ft)		5.96	
Q Total (cfs)	27.48	Flow (cfs)		27.48	
Top Width (ft)	9.12	Top Width (ft)		9.12	
Vel Total (ft/s)	4.61	Avg. Vel. (ft/s)		4.61	
Max Chl Dpth (ft)	0.76	Hydr. Depth (ft)		0.65	
Conv. Total (cfs)	184.6	Conv. (cfs)		184.6	
Length Wtd. (ft)	296.01	Wetted Per. (ft)		9.55	
Min Ch El (ft)	13.17	Shear (lb/sq ft)		0.86	
Alpha	1.00	Stream Power (lb/ft s)		3.98	
Frctn Loss (ft)	0.88	Cum Volume (acre-ft)	0.01	0.12	0.01
C & E Loss (ft)	0.09	Cum SA (acres)	0.03	0.09	0.06

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

CROSS SECTION OUTPUT Profile #25y

E.G. Elev (ft)	14.18	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.24	Wt. n-Val.		0.035	
W.S. Elev (ft)	13.93	Reach Len. (ft)	249.85	296.25	321.61
Crit W.S. (ft)	13.86	Flow Area (sq ft)		6.02	
E.G. Slope (ft/ft)	0.016176	Area (sq ft)		6.02	
Q Total (cfs)	23.88	Flow (cfs)		23.88	
Top Width (ft)	9.14	Top Width (ft)		9.14	
Vel Total (ft/s)	3.96	Avg. Vel. (ft/s)		3.96	
Max Chl Dpth (ft)	0.76	Hydr. Depth (ft)		0.66	
Conv. Total (cfs)	187.7	Conv. (cfs)		187.7	
Length Wtd. (ft)	295.90	Wetted Per. (ft)		9.58	
Min Ch El (ft)	13.17	Shear (lb/sq ft)		0.64	
Alpha	1.00	Stream Power (lb/ft s)		2.52	
Frctn Loss (ft)	1.26	Cum Volume (acre-ft)	0.00	0.12	0.00
C & E Loss (ft)	0.05	Cum SA (acres)	0.00	0.11	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.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION OUTPUT Profile #10y

E.G. Elev (ft)	14.09	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.17	Wt. n-Val.		0.035	
W.S. Elev (ft)	13.92	Reach Len. (ft)	249.85	296.25	321.61
Crit W.S. (ft)	13.78	Flow Area (sq ft)		5.89	
E.G. Slope (ft/ft)	0.011341	Area (sq ft)		5.89	
Q Total (cfs)	19.34	Flow (cfs)		19.34	
Top Width (ft)	9.09	Top Width (ft)		9.09	
Vel Total (ft/s)	3.28	Avg. Vel. (ft/s)		3.28	
Max Chl Dpth (ft)	0.75	Hydr. Depth (ft)		0.65	
Conv. Total (cfs)	181.6	Conv. (cfs)		181.6	
Length Wtd. (ft)	296.03	Wetted Per. (ft)		9.52	

Min Ch El (ft)	13.17	Shear (lb/sq ft)		0.44	
Alpha	1.00	Stream Power (lb/ft s)		1.44	
Frctn Loss (ft)	1.43	Cum Volume (acre-ft)	0.00	0.11	0.00
C & E Loss (ft)	0.03	Cum SA (acres)	0.00	0.11	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.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION OUTPUT Profile #5y

E.G. Elev (ft)	14.00	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.13	Wt. n-Val.		0.035	
W.S. Elev (ft)	13.87	Reach Len. (ft)	249.85	296.25	321.61
Crit W.S. (ft)	13.70	Flow Area (sq ft)		5.49	
E.G. Slope (ft/ft)	0.009443	Area (sq ft)		5.49	
Q Total (cfs)	15.86	Flow (cfs)		15.86	
Top Width (ft)	8.95	Top Width (ft)		8.95	
Vel Total (ft/s)	2.89	Avg. Vel. (ft/s)		2.89	
Max Chl Dpth (ft)	0.70	Hydr. Depth (ft)		0.61	
Conv. Total (cfs)	163.2	Conv. (cfs)		163.2	
Length Wtd. (ft)	296.14	Wetted Per. (ft)		9.35	
Min Ch El (ft)	13.17	Shear (lb/sq ft)		0.35	
Alpha	1.00	Stream Power (lb/ft s)		1.00	
Frctn Loss (ft)	1.53	Cum Volume (acre-ft)	0.00	0.09	
C & E Loss (ft)	0.02	Cum SA (acres)	0.00	0.11	

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

CROSS SECTION OUTPUT Profile #2y

E.G. Elev (ft)	13.88	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.08	Wt. n-Val.		0.035	
W.S. Elev (ft)	13.80	Reach Len. (ft)	249.85	296.25	321.61
Crit W.S. (ft)	13.59	Flow Area (sq ft)		4.80	
E.G. Slope (ft/ft)	0.006705	Area (sq ft)		4.80	
Q Total (cfs)	10.94	Flow (cfs)		10.94	
Top Width (ft)	8.70	Top Width (ft)		8.70	
Vel Total (ft/s)	2.28	Avg. Vel. (ft/s)		2.28	
Max Chl Dpth (ft)	0.63	Hydr. Depth (ft)		0.55	
Conv. Total (cfs)	133.6	Conv. (cfs)		133.6	
Length Wtd. (ft)	296.24	Wetted Per. (ft)		9.06	
Min Ch El (ft)	13.17	Shear (lb/sq ft)		0.22	
Alpha	1.00	Stream Power (lb/ft s)		0.51	
Frctn Loss (ft)	1.66	Cum Volume (acre-ft)	0.00	0.07	
C & E Loss (ft)	0.01	Cum SA (acres)	0.00	0.11	

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

CROSS SECTION OUTPUT Profile #1y

E.G. Elev (ft)	13.70	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.08	Wt. n-Val.		0.035	
W.S. Elev (ft)	13.63	Reach Len. (ft)	249.85	296.25	321.61
Crit W.S. (ft)	13.50	Flow Area (sq ft)		3.37	
E.G. Slope (ft/ft)	0.009210	Area (sq ft)		3.37	
Q Total (cfs)	7.46	Flow (cfs)		7.46	
Top Width (ft)	8.16	Top Width (ft)		8.16	
Vel Total (ft/s)	2.21	Avg. Vel. (ft/s)		2.21	
Max Chl Dpth (ft)	0.46	Hydr. Depth (ft)		0.41	
Conv. Total (cfs)	77.7	Conv. (cfs)		77.7	
Length Wtd. (ft)	296.25	Wetted Per. (ft)		8.42	
Min Ch El (ft)	13.17	Shear (lb/sq ft)		0.23	

Alpha	1.00	Stream Power (lb/ft s)	0.51
Frctn Loss (ft)	1.69	Cum Volume (acre-ft)	0.05
C & E Loss (ft)	0.01	Cum SA (acres)	0.09

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

CROSS SECTION

RIVER: buena vista
REACH: one RS: 9

INPUT
Description: Seccion #10 en la Agrimensura
Station Elevation Data num= 26

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	21.51	2.83	21.5	11.82	21.38	17.96	21.36	20.14	21.06
22.52	20.16	25.1	18.7	25.96	17.4	27.38	17.83	31.48	17.69
34.35	17.09	37.8	15.18	40.59	14.65	45.2	12.05	47.33	12.15
48.15	11.83	49.52	11.12	51.46	11.15	53.48	11.21	54.63	12.49
56.41	12.78	66.54	13.27	67.88	14.38	74.58	14.69	84.51	14.77
96.22	14.67								

Manning's n Values num= 4

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.03	27.38	.013	31.48	.035	67.88	.013

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
45.2	54.63	35.42	55.13	93.81	.1 .3

CROSS SECTION OUTPUT Profile #100y

E.G. Elev (ft)	13.26	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.05	Wt. n-Val.	0.035	0.035	0.035
W.S. Elev (ft)	13.21	Reach Len. (ft)	35.42	55.13	93.81
Crit W.S. (ft)	12.26	Flow Area (sq ft)	1.20	15.46	2.96
E.G. Slope (ft/ft)	0.001073	Area (sq ft)	1.20	15.46	2.96
Q Total (cfs)	31.09	Flow (cfs)	1.06	28.28	1.74
Top Width (ft)	22.21	Top Width (ft)	2.06	9.43	10.72
Vel Total (ft/s)	1.58	Avg. Vel. (ft/s)	0.88	1.83	0.59
Max Chl Dpth (ft)	2.09	Hydr. Depth (ft)	0.58	1.64	0.28
Conv. Total (cfs)	949.1	Conv. (cfs)	32.3	863.6	53.2
Length Wtd. (ft)	55.95	Wetted Per. (ft)	2.37	10.24	10.76
Min Ch El (ft)	11.12	Shear (lb/sq ft)	0.03	0.10	0.02
Alpha	1.23	Stream Power (lb/ft s)	0.03	0.19	0.01
Frctn Loss (ft)	0.03	Cum Volume (acre-ft)	0.00	0.08	0.01
C & E Loss (ft)	0.01	Cum SA (acres)	0.03	0.04	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.
Note: Hydraulic jump has occurred between this cross section and the previous upstream section.

CROSS SECTION OUTPUT Profile #50y

E.G. Elev (ft)	13.15	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.05	Wt. n-Val.	0.035	0.035	0.035
W.S. Elev (ft)	13.10	Reach Len. (ft)	35.42	55.13	93.81
Crit W.S. (ft)	12.20	Flow Area (sq ft)	0.98	14.40	1.89
E.G. Slope (ft/ft)	0.001119	Area (sq ft)	0.98	14.40	1.89
Q Total (cfs)	27.48	Flow (cfs)	0.82	25.67	0.99
Top Width (ft)	19.69	Top Width (ft)	1.86	9.43	8.40
Vel Total (ft/s)	1.59	Avg. Vel. (ft/s)	0.84	1.78	0.52
Max Chl Dpth (ft)	1.98	Hydr. Depth (ft)	0.53	1.53	0.22
Conv. Total (cfs)	821.4	Conv. (cfs)	24.6	767.2	29.6
Length Wtd. (ft)	55.62	Wetted Per. (ft)	2.14	10.24	8.43
Min Ch El (ft)	11.12	Shear (lb/sq ft)	0.03	0.10	0.02

Alpha	1.18	Stream Power (lb/ft s)	0.03	0.18	0.01
Frctn Loss (ft)	0.03	Cum Volume (acre-ft)	0.00	0.05	0.01
C & E Loss (ft)	0.01	Cum SA (acres)	0.03	0.03	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.
Note: Hydraulic jump has occurred between this cross section and the previous upstream section.

CROSS SECTION OUTPUT Profile #25y

E.G. Elev (ft)	12.86	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.06	Wt. n-Val.	0.035	0.035	0.035
W.S. Elev (ft)	12.80	Reach Len. (ft)	35.42	55.13	93.81
Crit W.S. (ft)		Flow Area (sq ft)	0.49	11.53	0.29
E.G. Slope (ft/ft)	0.001934	Area (sq ft)	0.49	11.53	0.29
Q Total (cfs)	23.88	Flow (cfs)	0.44	23.30	0.14
Top Width (ft)	12.87	Top Width (ft)	1.32	9.43	2.11
Vel Total (ft/s)	1.94	Avg. Vel. (ft/s)	0.88	2.02	0.49
Max Chl Dpth (ft)	1.68	Hydr. Depth (ft)	0.37	1.22	0.14
Conv. Total (cfs)	543.0	Conv. (cfs)	9.9	529.8	3.2
Length Wtd. (ft)	55.10	Wetted Per. (ft)	1.52	10.24	2.14
Min Ch El (ft)	11.12	Shear (lb/sq ft)	0.04	0.14	0.02
Alpha	1.06	Stream Power (lb/ft s)	0.03	0.27	0.01
Frctn Loss (ft)	0.04	Cum Volume (acre-ft)	0.00	0.06	0.00
C & E Loss (ft)	0.01	Cum SA (acres)	0.00	0.05	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 #10y

E.G. Elev (ft)	12.63	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.07	Wt. n-Val.	0.035	0.035	0.035
W.S. Elev (ft)	12.56	Reach Len. (ft)	35.42	55.13	93.81
Crit W.S. (ft)		Flow Area (sq ft)	0.23	9.31	0.02
E.G. Slope (ft/ft)	0.002663	Area (sq ft)	0.23	9.31	0.02
Q Total (cfs)	19.34	Flow (cfs)	0.19	19.15	0.00
Top Width (ft)	10.77	Top Width (ft)	0.91	9.43	0.44
Vel Total (ft/s)	2.02	Avg. Vel. (ft/s)	0.80	2.06	0.23
Max Chl Dpth (ft)	1.44	Hydr. Depth (ft)	0.26	0.99	0.04
Conv. Total (cfs)	374.8	Conv. (cfs)	3.6	371.2	0.1
Length Wtd. (ft)	55.07	Wetted Per. (ft)	1.04	10.24	0.44
Min Ch El (ft)	11.12	Shear (lb/sq ft)	0.04	0.15	0.01
Alpha	1.02	Stream Power (lb/ft s)	0.03	0.31	0.00
Frctn Loss (ft)	0.05	Cum Volume (acre-ft)	0.00	0.05	0.00
C & E Loss (ft)	0.01	Cum SA (acres)	0.00	0.05	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 #5y

E.G. Elev (ft)	12.46	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.06	Wt. n-Val.	0.035	0.035	
W.S. Elev (ft)	12.40	Reach Len. (ft)	35.42	55.13	93.81
Crit W.S. (ft)		Flow Area (sq ft)	0.11	7.78	
E.G. Slope (ft/ft)	0.003236	Area (sq ft)	0.11	7.78	
Q Total (cfs)	15.86	Flow (cfs)	0.07	15.78	
Top Width (ft)	9.97	Top Width (ft)	0.62	9.35	
Vel Total (ft/s)	2.01	Avg. Vel. (ft/s)	0.69	2.03	
Max Chl Dpth (ft)	1.28	Hydr. Depth (ft)	0.17	0.83	
Conv. Total (cfs)	278.8	Conv. (cfs)	1.3	277.5	
Length Wtd. (ft)	55.10	Wetted Per. (ft)	0.71	10.11	
Min Ch El (ft)	11.12	Shear (lb/sq ft)	0.03	0.16	
Alpha	1.01	Stream Power (lb/ft s)	0.02	0.32	
Frctn Loss (ft)	0.06	Cum Volume (acre-ft)	0.00	0.05	
C & E Loss (ft)	0.01	Cum SA (acres)	0.00	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 #2y

			Left OB	Channel	Right OB
E.G. Elev (ft)	12.21	Element			
Vel Head (ft)	0.06	Wt. n-Val.	0.035	0.035	
W.S. Elev (ft)	12.15	Reach Len. (ft)	35.42	55.13	93.81
Crit W.S. (ft)		Flow Area (sq ft)	0.01	5.50	
E.G. Slope (ft/ft)	0.004739	Area (sq ft)	0.01	5.50	
Q Total (cfs)	10.94	Flow (cfs)	0.00	10.94	
Top Width (ft)	9.30	Top Width (ft)	0.18	9.13	
Vel Total (ft/s)	1.99	Avg. Vel. (ft/s)	0.36	1.99	
Max Chl Dpth (ft)	1.03	Hydr. Depth (ft)	0.05	0.60	
Conv. Total (cfs)	158.9	Conv. (cfs)	0.0	158.9	
Length Wtd. (ft)	55.13	Wetted Per. (ft)	0.21	9.78	
Min Ch El (ft)	11.12	Shear (lb/sq ft)	0.01	0.17	
Alpha	1.00	Stream Power (lb/ft s)	0.00	0.33	
Frctn Loss (ft)	0.06	Cum Volume (acre-ft)	0.00	0.04	
C & E Loss (ft)	0.01	Cum SA (acres)	0.00	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 #1y

			Left OB	Channel	Right OB
E.G. Elev (ft)	12.00	Element			
Vel Head (ft)	0.05	Wt. n-Val.		0.035	
W.S. Elev (ft)	11.94	Reach Len. (ft)	35.42	55.13	93.81
Crit W.S. (ft)		Flow Area (sq ft)		4.00	
E.G. Slope (ft/ft)	0.003895	Area (sq ft)		4.00	
Q Total (cfs)	7.46	Flow (cfs)		7.46	
Top Width (ft)	6.28	Top Width (ft)		6.28	
Vel Total (ft/s)	1.86	Avg. Vel. (ft/s)		1.86	
Max Chl Dpth (ft)	0.82	Hydr. Depth (ft)		0.64	
Conv. Total (cfs)	119.5	Conv. (cfs)		119.5	
Length Wtd. (ft)	55.13	Wetted Per. (ft)		6.80	
Min Ch El (ft)	11.12	Shear (lb/sq ft)		0.14	
Alpha	1.00	Stream Power (lb/ft s)		0.27	
Frctn Loss (ft)	0.07	Cum Volume (acre-ft)		0.03	
C & E Loss (ft)	0.01	Cum SA (acres)		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

RIVER: buena vista
REACH: one RS: 8

INPUT
Description: Seccion #11 en la Agrimensura
Station Elevation Data num= 19

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	14.97	28.62	14.52	38.05	14.39	50.45	14.13	68.77	13.74
70.17	12.3	71.02	11.5	71.6	11.08	76.34	10.98	79.44	10.99
80.78	12.48	87.3	13.58	93.72	13.43	103.81	13.48	112.11	13.61
118.85	13.7	127.71	13.77	140.64	13.96	155.96	14.47		

Manning's n Values num= 1

Sta	n Val
0	.013

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
70.17	80.78	44.98	32.75	32.95	.1 .3

CROSS SECTION OUTPUT Profile #100y

E.G. Elev (ft)	13.22	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.16	Wt. n-Val.	0.013	0.013	0.013
W.S. Elev (ft)	13.06	Reach Len. (ft)	44.98	32.75	32.95
Crit W.S. (ft)	12.23	Flow Area (sq ft)	0.28	19.85	1.00
E.G. Slope (ft/ft)	0.000397	Area (sq ft)	0.28	19.85	1.00
Q Total (cfs)	65.51	Flow (cfs)	0.26	64.25	0.99
Top Width (ft)	14.79	Top Width (ft)	0.74	10.61	3.44
Vel Total (ft/s)	3.10	Avg. Vel. (ft/s)	0.94	3.24	0.99
Max Chl Dpth (ft)	2.08	Hydr. Depth (ft)	0.38	1.87	0.29
Conv. Total (cfs)	3285.7	Conv. (cfs)	13.3	3222.7	49.7
Length Wtd. (ft)	32.75	Wetted Per. (ft)	1.06	11.73	3.49
Min Ch El (ft)	10.98	Shear (lb/sq ft)	0.01	0.04	0.01
Alpha	1.07	Stream Power (lb/ft s)	0.01	0.14	0.01
Frctn Loss (ft)		Cum Volume (acre-ft)	0.00	0.06	0.00
C & E Loss (ft)		Cum SA (acres)	0.03	0.03	0.02

CROSS SECTION OUTPUT Profile #50y

E.G. Elev (ft)	13.11	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.14	Wt. n-Val.	0.013	0.013	0.013
W.S. Elev (ft)	12.97	Reach Len. (ft)	44.98	32.75	32.95
Crit W.S. (ft)	12.14	Flow Area (sq ft)	0.22	18.87	0.71
E.G. Slope (ft/ft)	0.000372	Area (sq ft)	0.22	18.87	0.71
Q Total (cfs)	57.94	Flow (cfs)	0.18	57.16	0.60
Top Width (ft)	14.15	Top Width (ft)	0.65	10.61	2.89
Vel Total (ft/s)	2.93	Avg. Vel. (ft/s)	0.84	3.03	0.85
Max Chl Dpth (ft)	1.99	Hydr. Depth (ft)	0.33	1.78	0.24
Conv. Total (cfs)	3002.1	Conv. (cfs)	9.4	2961.4	31.3
Length Wtd. (ft)	32.75	Wetted Per. (ft)	0.93	11.73	2.94
Min Ch El (ft)	10.98	Shear (lb/sq ft)	0.01	0.04	0.01
Alpha	1.06	Stream Power (lb/ft s)	0.00	0.11	0.00
Frctn Loss (ft)		Cum Volume (acre-ft)	0.00	0.03	0.00
C & E Loss (ft)		Cum SA (acres)	0.02	0.02	0.02

CROSS SECTION OUTPUT Profile #25y

E.G. Elev (ft)	12.80	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.17	Wt. n-Val.	0.013	0.013	0.013
W.S. Elev (ft)	12.64	Reach Len. (ft)	44.98	32.75	32.95
Crit W.S. (ft)	12.05	Flow Area (sq ft)	0.06	15.36	0.07
E.G. Slope (ft/ft)	0.000578	Area (sq ft)	0.06	15.36	0.07
Q Total (cfs)	50.57	Flow (cfs)	0.04	50.50	0.04
Top Width (ft)	11.87	Top Width (ft)	0.33	10.61	0.93
Vel Total (ft/s)	3.27	Avg. Vel. (ft/s)	0.66	3.29	0.50
Max Chl Dpth (ft)	1.66	Hydr. Depth (ft)	0.17	1.45	0.08
Conv. Total (cfs)	2103.8	Conv. (cfs)	1.5	2100.8	1.5
Length Wtd. (ft)	32.75	Wetted Per. (ft)	0.47	11.73	0.94
Min Ch El (ft)	10.98	Shear (lb/sq ft)	0.00	0.05	0.00
Alpha	1.01	Stream Power (lb/ft s)	0.00	0.16	0.00
Frctn Loss (ft)		Cum Volume (acre-ft)	0.00	0.05	0.00
C & E Loss (ft)		Cum SA (acres)	0.00	0.03	0.00

CROSS SECTION OUTPUT Profile #10y

E.G. Elev (ft)	12.56	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.16	Wt. n-Val.	0.013	0.013	
W.S. Elev (ft)	12.41	Reach Len. (ft)	44.98	32.75	32.95
Crit W.S. (ft)	11.92	Flow Area (sq ft)	0.01	12.91	
E.G. Slope (ft/ft)	0.000681	Area (sq ft)	0.01	12.91	
Q Total (cfs)	41.26	Flow (cfs)	0.00	41.26	
Top Width (ft)	10.65	Top Width (ft)	0.10	10.54	
Vel Total (ft/s)	3.20	Avg. Vel. (ft/s)	0.33	3.20	
Max Chl Dpth (ft)	1.43	Hydr. Depth (ft)	0.05	1.22	
Conv. Total (cfs)	1581.4	Conv. (cfs)	0.1	1581.4	
Length Wtd. (ft)	32.75	Wetted Per. (ft)	0.15	11.63	
Min Ch El (ft)	10.98	Shear (lb/sq ft)	0.00	0.05	
Alpha	1.00	Stream Power (lb/ft s)	0.00	0.15	

Frctn Loss (ft)		Cum Volume (acre-ft)	0.00	0.04
C & E Loss (ft)		Cum SA (acres)	0.00	0.03

CROSS SECTION OUTPUT Profile #5y

E.G. Elev (ft)	12.40	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.14	Wt. n-Val.		0.013	
W.S. Elev (ft)	12.26	Reach Len. (ft)	44.98	32.75	32.95
Crit W.S. (ft)	11.82	Flow Area (sq ft)		11.35	
E.G. Slope (ft/ft)	0.000698	Area (sq ft)		11.35	
Q Total (cfs)	34.25	Flow (cfs)		34.25	
Top Width (ft)	10.36	Top Width (ft)		10.36	
Vel Total (ft/s)	3.02	Avg. Vel. (ft/s)		3.02	
Max Chl Dpth (ft)	1.28	Hydr. Depth (ft)		1.10	
Conv. Total (cfs)	1296.0	Conv. (cfs)		1296.0	
Length Wtd. (ft)	32.75	Wetted Per. (ft)		11.37	
Min Ch El (ft)	10.98	Shear (lb/sq ft)		0.04	
Alpha	1.00	Stream Power (lb/ft s)		0.13	
Frctn Loss (ft)		Cum Volume (acre-ft)		0.04	
C & E Loss (ft)		Cum SA (acres)		0.03	

CROSS SECTION OUTPUT Profile #2y

E.G. Elev (ft)	12.14	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.13	Wt. n-Val.		0.013	
W.S. Elev (ft)	12.02	Reach Len. (ft)	44.98	32.75	32.95
Crit W.S. (ft)	11.68	Flow Area (sq ft)		8.90	
E.G. Slope (ft/ft)	0.000789	Area (sq ft)		8.90	
Q Total (cfs)	25.29	Flow (cfs)		25.29	
Top Width (ft)	9.89	Top Width (ft)		9.89	
Vel Total (ft/s)	2.84	Avg. Vel. (ft/s)		2.84	
Max Chl Dpth (ft)	1.04	Hydr. Depth (ft)		0.90	
Conv. Total (cfs)	900.1	Conv. (cfs)		900.1	
Length Wtd. (ft)	32.75	Wetted Per. (ft)		10.69	
Min Ch El (ft)	10.98	Shear (lb/sq ft)		0.04	
Alpha	1.00	Stream Power (lb/ft s)		0.12	
Frctn Loss (ft)		Cum Volume (acre-ft)		0.03	
C & E Loss (ft)		Cum SA (acres)		0.03	

CROSS SECTION OUTPUT Profile #1y

E.G. Elev (ft)	11.92	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.11	Wt. n-Val.		0.013	
W.S. Elev (ft)	11.81	Reach Len. (ft)	44.98	32.75	32.95
Crit W.S. (ft)	11.55	Flow Area (sq ft)		6.92	
E.G. Slope (ft/ft)	0.000898	Area (sq ft)		6.92	
Q Total (cfs)	18.41	Flow (cfs)		18.41	
Top Width (ft)	9.49	Top Width (ft)		9.49	
Vel Total (ft/s)	2.66	Avg. Vel. (ft/s)		2.66	
Max Chl Dpth (ft)	0.83	Hydr. Depth (ft)		0.73	
Conv. Total (cfs)	614.4	Conv. (cfs)		614.4	
Length Wtd. (ft)	32.75	Wetted Per. (ft)		10.12	
Min Ch El (ft)	10.98	Shear (lb/sq ft)		0.04	
Alpha	1.00	Stream Power (lb/ft s)		0.10	
Frctn Loss (ft)		Cum Volume (acre-ft)		0.02	
C & E Loss (ft)		Cum SA (acres)		0.03	

CULVERT

RIVER: buena vista
REACH: one RS: 7.5

INPUT
Description:
Distance from Upstream XS = .5
Deck/Roadway Width = 31.75

```
Weir Coefficient          =     2.6
Upstream  Deck/Roadway Coordinates
    num=        3
     Sta Hi Cord Lo Cord      Sta Hi Cord Lo Cord      Sta Hi Cord Lo Cord
   68.77   13.74        0    75.6    13.8        0    87.3   13.58        0

Upstream Bridge Cross Section Data
Station Elevation Data    num=       19
     Sta    Elev      Sta    Elev      Sta    Elev      Sta    Elev      Sta    Elev
       0   14.97    28.62   14.52    38.05   14.39    50.45   14.13    68.77   13.74
   70.17    12.3    71.02    11.5     71.6   11.08    76.34   10.98    79.44   10.99
   80.78   12.48     87.3   13.58    93.72   13.43   103.81   13.48   112.11   13.61
  118.85    13.7   127.71   13.77   140.64   13.96   155.96   14.47

Manning's n Values        num=       1
     Sta   n Val
       0    .013

Bank Sta: Left   Right    Coeff Contr.   Expan.
         70.17   80.78            .1       .3

Downstream  Deck/Roadway Coordinates
    num=        3
     Sta Hi Cord Lo Cord      Sta Hi Cord Lo Cord      Sta Hi Cord Lo Cord
   34.73      15        0   44.44   15.05        0   57.58      15        0

Downstream Bridge Cross Section Data
Station Elevation Data    num=       20
     Sta    Elev      Sta    Elev      Sta    Elev      Sta    Elev      Sta    Elev
       0    14.4    12.54   14.66    24.13   14.75     30.4    14.7    34.73   14.66
    37.7   13.68    39.17    12.4    39.45   12.37    40.44   10.79    44.06   10.78
   48.34   10.79    49.65   12.19    49.81   12.52    51.22   13.29    57.58   14.57
   68.73   14.57    83.04   14.29    95.08   14.04   107.71   13.81   115.86   14.26

Manning's n Values        num=       3
     Sta   n Val      Sta   n Val      Sta   n Val
       0    .015    34.73    .013    57.58    .015

Bank Sta: Left   Right    Coeff Contr.   Expan.
          37.7   51.22            .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        =   13.16
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    2.37       8
FHWA Chart # 8 - flared wingwalls
FHWA Scale # 1 - Wingwall flared 30 to 75 deg.
Solution Criteria = Highest U.S. EG
Culvert Upstrm Dist  Length    Top n  Bottom n  Depth Blocked  Entrance Loss Coef   Exit Loss Coef
                .5   31.75     .013     .013        0                  .4                1
Upstream   Elevation =  10.99
           Centerline Station =  75.6
Downstream Elevation =  10.79
           Centerline Station =  44.44

CULVERT OUTPUT  Profile #100y  Culv Group:  Culvert #1

  Q Culv Group (cfs)         65.51    Culv Full Len (ft)
  # Barrels                     1     Culv Vel US (ft/s)          4.65
  Q Barrel (cfs)             65.51    Culv Vel DS (ft/s)          4.09
  E.G. US. (ft)              13.22    Culv Inv El Up (ft)        10.99
  W.S. US. (ft)              13.06    Culv Inv El Dn (ft)        10.79
  E.G. DS (ft)               12.98    Culv Frctn Ls (ft)          0.03
```

W.S. DS (ft)	12.79	Culv Exit Loss (ft)	0.08
Delta EG (ft)	0.24	Culv Entr Loss (ft)	0.13
Delta WS (ft)	0.27	Q Weir (cfs)	
E.G. IC (ft)	13.04	Weir Sta Lft (ft)	
E.G. OC (ft)	13.22	Weir Sta Rgt (ft)	
Culvert Control	Outlet	Weir Submerg	
Culv WS Inlet (ft)	12.75	Weir Max Depth (ft)	
Culv WS Outlet (ft)	12.79	Weir Avg Depth (ft)	
Culv Nml Depth (ft)	1.03	Weir Flow Area (sq ft)	
Culv Crt Depth (ft)	1.28	Min El Weir Flow (ft)	13.82

CULVERT OUTPUT Profile #50y Culv Group: Culvert #1

Q Culv Group (cfs)	57.94	Culv Full Len (ft)	
# Barrels	1	Culv Vel US (ft/s)	4.12
Q Barrel (cfs)	57.94	Culv Vel DS (ft/s)	3.64
E.G. US. (ft)	13.12	Culv Inv El Up (ft)	10.99
W.S. US. (ft)	12.97	Culv Inv El Dn (ft)	10.79
E.G. DS (ft)	12.92	Culv Frctn Ls (ft)	0.03
W.S. DS (ft)	12.78	Culv Exit Loss (ft)	0.06
Delta EG (ft)	0.19	Culv Entr Loss (ft)	0.11
Delta WS (ft)	0.19	Q Weir (cfs)	
E.G. IC (ft)	12.87	Weir Sta Lft (ft)	
E.G. OC (ft)	13.12	Weir Sta Rgt (ft)	
Culvert Control	Outlet	Weir Submerg	
Culv WS Inlet (ft)	12.75	Weir Max Depth (ft)	
Culv WS Outlet (ft)	12.78	Weir Avg Depth (ft)	
Culv Nml Depth (ft)	0.95	Weir Flow Area (sq ft)	
Culv Crt Depth (ft)	1.18	Min El Weir Flow (ft)	13.82

CULVERT OUTPUT Profile #25y Culv Group: Culvert #1

Q Culv Group (cfs)	50.57	Culv Full Len (ft)	
# Barrels	1	Culv Vel US (ft/s)	4.85
Q Barrel (cfs)	50.57	Culv Vel DS (ft/s)	4.01
E.G. US. (ft)	12.80	Culv Inv El Up (ft)	10.99
W.S. US. (ft)	12.64	Culv Inv El Dn (ft)	10.79
E.G. DS (ft)	12.56	Culv Frctn Ls (ft)	0.04
W.S. DS (ft)	12.37	Culv Exit Loss (ft)	0.06
Delta EG (ft)	0.25	Culv Entr Loss (ft)	0.15
Delta WS (ft)	0.27	Q Weir (cfs)	
E.G. IC (ft)	12.70	Weir Sta Lft (ft)	
E.G. OC (ft)	12.80	Weir Sta Rgt (ft)	
Culvert Control	Outlet	Weir Submerg	
Culv WS Inlet (ft)	12.29	Weir Max Depth (ft)	
Culv WS Outlet (ft)	12.37	Weir Avg Depth (ft)	
Culv Nml Depth (ft)	0.87	Weir Flow Area (sq ft)	
Culv Crt Depth (ft)	1.07	Min El Weir Flow (ft)	13.82

CULVERT OUTPUT Profile #10y Culv Group: Culvert #1

Q Culv Group (cfs)	41.26	Culv Full Len (ft)	
# Barrels	1	Culv Vel US (ft/s)	4.99
Q Barrel (cfs)	41.26	Culv Vel DS (ft/s)	3.86
E.G. US. (ft)	12.56	Culv Inv El Up (ft)	10.99
W.S. US. (ft)	12.41	Culv Inv El Dn (ft)	10.79
E.G. DS (ft)	12.31	Culv Frctn Ls (ft)	0.05
W.S. DS (ft)	12.13	Culv Exit Loss (ft)	0.05
Delta EG (ft)	0.25	Culv Entr Loss (ft)	0.15
Delta WS (ft)	0.28	Q Weir (cfs)	
E.G. IC (ft)	12.48	Weir Sta Lft (ft)	
E.G. OC (ft)	12.56	Weir Sta Rgt (ft)	
Culvert Control	Outlet	Weir Submerg	
Culv WS Inlet (ft)	12.02	Weir Max Depth (ft)	
Culv WS Outlet (ft)	12.13	Weir Avg Depth (ft)	
Culv Nml Depth (ft)	0.76	Weir Flow Area (sq ft)	
Culv Crt Depth (ft)	0.94	Min El Weir Flow (ft)	13.82

CULVERT OUTPUT Profile #5y Culv Group: Culvert #1

Q Culv Group (cfs)	34.25	Culv Full Len (ft)	
# Barrels	1	Culv Vel US (ft/s)	5.17
Q Barrel (cfs)	34.25	Culv Vel DS (ft/s)	6.11
E.G. US. (ft)	12.40	Culv Inv El Up (ft)	10.99
W.S. US. (ft)	12.26	Culv Inv El Dn (ft)	10.79
E.G. DS (ft)	12.11	Culv Frctn Ls (ft)	0.12
W.S. DS (ft)	11.93	Culv Exit Loss (ft)	
Delta EG (ft)	0.29	Culv Entr Loss (ft)	0.17
Delta WS (ft)	0.32	Q Weir (cfs)	
E.G. IC (ft)	12.30	Weir Sta Lft (ft)	
E.G. OC (ft)	12.40	Weir Sta Rgt (ft)	
Culvert Control	Inlet	Weir Submerg	
Culv WS Inlet (ft)	11.82	Weir Max Depth (ft)	
Culv WS Outlet (ft)	11.49	Weir Avg Depth (ft)	
Culv Nml Depth (ft)	0.68	Weir Flow Area (sq ft)	
Culv Crt Depth (ft)	0.83	Min El Weir Flow (ft)	13.82

Note: During the supercritical calculations a hydraulic jump occurred at the outlet of (leaving) the culvert.
Note: The flow in the culvert is entirely supercritical.

CULVERT OUTPUT Profile #2y Culv Group: Culvert #1

Q Culv Group (cfs)	25.29	Culv Full Len (ft)	
# Barrels	1	Culv Vel US (ft/s)	4.67
Q Barrel (cfs)	25.29	Culv Vel DS (ft/s)	5.67
E.G. US. (ft)	12.14	Culv Inv El Up (ft)	10.99
W.S. US. (ft)	12.02	Culv Inv El Dn (ft)	10.79
E.G. DS (ft)	11.84	Culv Frctn Ls (ft)	0.16
W.S. DS (ft)	11.67	Culv Exit Loss (ft)	0.00
Delta EG (ft)	0.30	Culv Entr Loss (ft)	0.14
Delta WS (ft)	0.35	Q Weir (cfs)	
E.G. IC (ft)	12.05	Weir Sta Lft (ft)	
E.G. OC (ft)	12.14	Weir Sta Rgt (ft)	
Culvert Control	Inlet	Weir Submerg	
Culv WS Inlet (ft)	11.67	Weir Max Depth (ft)	
Culv WS Outlet (ft)	11.35	Weir Avg Depth (ft)	
Culv Nml Depth (ft)	0.56	Weir Flow Area (sq ft)	
Culv Crt Depth (ft)	0.68	Min El Weir Flow (ft)	13.82

Note: During the supercritical calculations a hydraulic jump occurred at the outlet of (leaving) the culvert.
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.

CULVERT OUTPUT Profile #1y Culv Group: Culvert #1

Q Culv Group (cfs)	18.41	Culv Full Len (ft)	
# Barrels	1	Culv Vel US (ft/s)	4.20
Q Barrel (cfs)	18.41	Culv Vel DS (ft/s)	5.04
E.G. US. (ft)	11.92	Culv Inv El Up (ft)	10.99
W.S. US. (ft)	11.81	Culv Inv El Dn (ft)	10.79
E.G. DS (ft)	11.61	Culv Frctn Ls (ft)	0.17
W.S. DS (ft)	11.44	Culv Exit Loss (ft)	0.03
Delta EG (ft)	0.31	Culv Entr Loss (ft)	0.11
Delta WS (ft)	0.37	Q Weir (cfs)	
E.G. IC (ft)	11.84	Weir Sta Lft (ft)	
E.G. OC (ft)	11.92	Weir Sta Rgt (ft)	
Culvert Control	Inlet	Weir Submerg	
Culv WS Inlet (ft)	11.54	Weir Max Depth (ft)	
Culv WS Outlet (ft)	11.25	Weir Avg Depth (ft)	
Culv Nml Depth (ft)	0.46	Weir Flow Area (sq ft)	

Culv Crt Depth (ft) 0.55 Min El Weir Flow (ft) 13.82

Note: During the supercritical calculations a hydraulic jump occurred at the outlet of (leaving) the culvert.
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: buena vista
REACH: one RS: 7

INPUT
Description: Seccion #12 en la Agrimensura
Station Elevation Data num= 20

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	14.4	12.54	14.66	24.13	14.75	30.4	14.7	34.73	14.66
37.7	13.68	39.17	12.4	39.45	12.37	40.44	10.79	44.06	10.78
48.34	10.79	49.65	12.19	49.81	12.52	51.22	13.29	57.58	14.57
68.73	14.57	83.04	14.29	95.08	14.04	107.71	13.81	115.86	14.26

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.015	34.73	.013	57.58	.015

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
37.7	51.22	13.93	23	19.43	.1	.3

CROSS SECTION OUTPUT Profile #100y

			Left OB	Channel	Right OB
E.G. Elev (ft)	12.98	Element			
Vel Head (ft)	0.18	Wt. n-Val.		0.013	
W.S. Elev (ft)	12.79	Reach Len. (ft)	13.93	23.00	19.43
Crit W.S. (ft)		Flow Area (sq ft)		19.12	
E.G. Slope (ft/ft)	0.000565	Area (sq ft)		19.12	
Q Total (cfs)	65.51	Flow (cfs)		65.51	
Top Width (ft)	11.59	Top Width (ft)		11.59	
Vel Total (ft/s)	3.43	Avg. Vel. (ft/s)		3.43	
Max Chl Dpth (ft)	2.01	Hydr. Depth (ft)		1.65	
Conv. Total (cfs)	2756.4	Conv. (cfs)		2756.4	
Length Wtd. (ft)	22.50	Wetted Per. (ft)		13.50	
Min Ch El (ft)	10.78	Shear (lb/sq ft)		0.05	
Alpha	1.00	Stream Power (lb/ft s)		0.17	
Frctn Loss (ft)	0.02	Cum Volume (acre-ft)	0.00	0.05	0.00
C & E Loss (ft)	0.00	Cum SA (acres)	0.02	0.02	0.02

CROSS SECTION OUTPUT Profile #50y

			Left OB	Channel	Right OB
E.G. Elev (ft)	12.92	Element			
Vel Head (ft)	0.15	Wt. n-Val.		0.013	
W.S. Elev (ft)	12.78	Reach Len. (ft)	13.93	23.00	19.43
Crit W.S. (ft)		Flow Area (sq ft)		18.96	
E.G. Slope (ft/ft)	0.000452	Area (sq ft)		18.96	
Q Total (cfs)	57.94	Flow (cfs)		57.94	
Top Width (ft)	11.55	Top Width (ft)		11.55	
Vel Total (ft/s)	3.06	Avg. Vel. (ft/s)		3.06	
Max Chl Dpth (ft)	2.00	Hydr. Depth (ft)		1.64	
Conv. Total (cfs)	2724.1	Conv. (cfs)		2724.1	
Length Wtd. (ft)	22.49	Wetted Per. (ft)		13.45	
Min Ch El (ft)	10.78	Shear (lb/sq ft)		0.04	
Alpha	1.00	Stream Power (lb/ft s)		0.12	
Frctn Loss (ft)	0.01	Cum Volume (acre-ft)	0.00	0.01	0.00
C & E Loss (ft)	0.00	Cum SA (acres)	0.02	0.01	0.02

CROSS SECTION OUTPUT Profile #25y

E.G. Elev (ft)	12.56	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.19	Wt. n-Val.		0.013	
W.S. Elev (ft)	12.37	Reach Len. (ft)	13.93	23.00	19.43
Crit W.S. (ft)		Flow Area (sq ft)		14.42	
E.G. Slope (ft/ft)	0.000726	Area (sq ft)		14.42	
Q Total (cfs)	50.57	Flow (cfs)		50.57	
Top Width (ft)	10.28	Top Width (ft)		10.28	
Vel Total (ft/s)	3.51	Avg. Vel. (ft/s)		3.51	
Max Chl Dpth (ft)	1.59	Hydr. Depth (ft)		1.40	
Conv. Total (cfs)	1876.3	Conv. (cfs)		1876.3	
Length Wtd. (ft)	23.00	Wetted Per. (ft)		11.87	
Min Ch El (ft)	10.78	Shear (lb/sq ft)		0.06	
Alpha	1.00	Stream Power (lb/ft s)		0.19	
Frctn Loss (ft)	0.03	Cum Volume (acre-ft)		0.04	
C & E Loss (ft)	0.04	Cum SA (acres)		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 #10y

E.G. Elev (ft)	12.31	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.18	Wt. n-Val.		0.013	
W.S. Elev (ft)	12.13	Reach Len. (ft)	13.93	23.00	19.43
Crit W.S. (ft)		Flow Area (sq ft)		12.00	
E.G. Slope (ft/ft)	0.000835	Area (sq ft)		12.00	
Q Total (cfs)	41.26	Flow (cfs)		41.26	
Top Width (ft)	9.99	Top Width (ft)		9.99	
Vel Total (ft/s)	3.44	Avg. Vel. (ft/s)		3.44	
Max Chl Dpth (ft)	1.35	Hydr. Depth (ft)		1.20	
Conv. Total (cfs)	1427.4	Conv. (cfs)		1427.4	
Length Wtd. (ft)	23.00	Wetted Per. (ft)		11.31	
Min Ch El (ft)	10.78	Shear (lb/sq ft)		0.06	
Alpha	1.00	Stream Power (lb/ft s)		0.19	
Frctn Loss (ft)	0.03	Cum Volume (acre-ft)		0.03	
C & E Loss (ft)	0.03	Cum SA (acres)		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 #5y

E.G. Elev (ft)	12.11	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.18	Wt. n-Val.		0.013	
W.S. Elev (ft)	11.93	Reach Len. (ft)	13.93	23.00	19.43
Crit W.S. (ft)		Flow Area (sq ft)		10.09	
E.G. Slope (ft/ft)	0.000968	Area (sq ft)		10.09	
Q Total (cfs)	34.25	Flow (cfs)		34.25	
Top Width (ft)	9.69	Top Width (ft)		9.69	
Vel Total (ft/s)	3.40	Avg. Vel. (ft/s)		3.40	
Max Chl Dpth (ft)	1.15	Hydr. Depth (ft)		1.04	
Conv. Total (cfs)	1100.6	Conv. (cfs)		1100.6	
Length Wtd. (ft)	23.00	Wetted Per. (ft)		10.81	
Min Ch El (ft)	10.78	Shear (lb/sq ft)		0.06	
Alpha	1.00	Stream Power (lb/ft s)		0.19	
Frctn Loss (ft)	0.04	Cum Volume (acre-ft)		0.03	
C & E Loss (ft)	0.03	Cum SA (acres)		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 #2y

E.G. Elev (ft)	11.84	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.17	Wt. n-Val.		0.013	
W.S. Elev (ft)	11.67	Reach Len. (ft)	13.93	23.00	19.43

Crit W.S. (ft)		Flow Area (sq ft)	7.59
E.G. Slope (ft/ft)	0.001252	Area (sq ft)	7.59
Q Total (cfs)	25.29	Flow (cfs)	25.29
Top Width (ft)	9.27	Top Width (ft)	9.27
Vel Total (ft/s)	3.33	Avg. Vel. (ft/s)	3.33
Max Chl Dpth (ft)	0.89	Hydr. Depth (ft)	0.82
Conv. Total (cfs)	714.6	Conv. (cfs)	714.6
Length Wtd. (ft)	23.00	Wetted Per. (ft)	10.14
Min Ch El (ft)	10.78	Shear (lb/sq ft)	0.06
Alpha	1.00	Stream Power (lb/ft s)	0.19
Frctn Loss (ft)	0.04	Cum Volume (acre-ft)	0.02
C & E Loss (ft)	0.02	Cum SA (acres)	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 #1y

E.G. Elev (ft)	11.61	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.17	Wt. n-Val.		0.013	
W.S. Elev (ft)	11.44	Reach Len. (ft)	13.93	23.00	19.43
Crit W.S. (ft)		Flow Area (sq ft)		5.52	
E.G. Slope (ft/ft)	0.001774	Area (sq ft)		5.52	
Q Total (cfs)	18.41	Flow (cfs)		18.41	
Top Width (ft)	8.92	Top Width (ft)		8.92	
Vel Total (ft/s)	3.34	Avg. Vel. (ft/s)		3.34	
Max Chl Dpth (ft)	0.66	Hydr. Depth (ft)		0.62	
Conv. Total (cfs)	437.1	Conv. (cfs)		437.1	
Length Wtd. (ft)	23.00	Wetted Per. (ft)		9.56	
Min Ch El (ft)	10.78	Shear (lb/sq ft)		0.06	
Alpha	1.00	Stream Power (lb/ft s)		0.21	
Frctn Loss (ft)	0.05	Cum Volume (acre-ft)		0.02	
C & E Loss (ft)	0.01	Cum SA (acres)		0.03	

CROSS SECTION

RIVER: buena vista
REACH: one RS: 6

INPUT
Description: Seccion #13 en la Agrimensura
Station Elevation Data num= 17

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	12.83	10.51	12.73	20.07	12.67	29.58	12.6	43.9	12.56
50.44	12.48	54.5	12.53	54.71	10.58	57.42	10.47	60.64	10.67
60.95	12.48	67.24	12.5	72.24	12.49	78.19	12.56	91.06	12.77
104.76	13.13	115.5	13.52						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.013	54.5	.013	60.95	.013

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
54.5	60.95	24.01	29.93	38.29	.1 .3

CROSS SECTION OUTPUT Profile #100y

E.G. Elev (ft)	12.96	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.22	Wt. n-Val.	0.013	0.013	0.013
W.S. Elev (ft)	12.74	Reach Len. (ft)	0.50	0.50	0.50
Crit W.S. (ft)	12.09	Flow Area (sq ft)	6.07	13.60	5.07
E.G. Slope (ft/ft)	0.000805	Area (sq ft)	6.07	13.60	5.07
Q Total (cfs)	65.51	Flow (cfs)	5.17	55.10	5.23
Top Width (ft)	79.77	Top Width (ft)	45.04	6.45	28.27
Vel Total (ft/s)	2.65	Avg. Vel. (ft/s)	0.85	4.05	1.03
Max Chl Dpth (ft)	2.27	Hydr. Depth (ft)	0.13	2.11	0.18
Conv. Total (cfs)	2309.3	Conv. (cfs)	182.4	1942.5	184.3
Length Wtd. (ft)	0.50	Wetted Per. (ft)	45.04	9.74	28.27

Min Ch El (ft)	10.47	Shear (lb/sq ft)	0.01	0.07	0.01
Alpha	1.99	Stream Power (lb/ft s)	0.01	0.28	0.01
Frctn Loss (ft)	0.00	Cum Volume (acre-ft)	0.00	0.04	0.00
C & E Loss (ft)	0.03	Cum SA (acres)	0.02	0.02	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 #50y

E.G. Elev (ft)	12.91	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.17	Wt. n-Val.	0.013	0.013	0.013
W.S. Elev (ft)	12.74	Reach Len. (ft)	0.50	0.50	0.50
Crit W.S. (ft)	11.97	Flow Area (sq ft)	6.21	13.62	5.16
E.G. Slope (ft/ft)	0.000621	Area (sq ft)	6.21	13.62	5.16
Q Total (cfs)	57.94	Flow (cfs)	4.70	48.53	4.71
Top Width (ft)	80.29	Top Width (ft)	45.37	6.45	28.47
Vel Total (ft/s)	2.32	Avg. Vel. (ft/s)	0.76	3.56	0.91
Max Chl Dpth (ft)	2.27	Hydr. Depth (ft)	0.14	2.11	0.18
Conv. Total (cfs)	2324.9	Conv. (cfs)	188.7	1947.4	188.9
Length Wtd. (ft)	0.50	Wetted Per. (ft)	45.37	9.74	28.47
Min Ch El (ft)	10.47	Shear (lb/sq ft)	0.01	0.05	0.01
Alpha	2.00	Stream Power (lb/ft s)	0.00	0.19	0.01
Frctn Loss (ft)	0.00	Cum Volume (acre-ft)	0.00	0.01	0.00
C & E Loss (ft)	0.01	Cum SA (acres)	0.02	0.00	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 #25y

E.G. Elev (ft)	12.49	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.57	Wt. n-Val.		0.013	
W.S. Elev (ft)	11.92	Reach Len. (ft)	0.50	0.50	0.50
Crit W.S. (ft)	11.85	Flow Area (sq ft)		8.35	
E.G. Slope (ft/ft)	0.002900	Area (sq ft)		8.35	
Q Total (cfs)	50.57	Flow (cfs)		50.57	
Top Width (ft)	6.29	Top Width (ft)		6.29	
Vel Total (ft/s)	6.06	Avg. Vel. (ft/s)		6.06	
Max Chl Dpth (ft)	1.45	Hydr. Depth (ft)		1.33	
Conv. Total (cfs)	939.0	Conv. (cfs)		939.0	
Length Wtd. (ft)	0.50	Wetted Per. (ft)		8.55	
Min Ch El (ft)	10.47	Shear (lb/sq ft)		0.18	
Alpha	1.00	Stream Power (lb/ft s)		1.07	
Frctn Loss (ft)	0.00	Cum Volume (acre-ft)		0.03	
C & E Loss (ft)	0.01	Cum SA (acres)		0.02	

CROSS SECTION OUTPUT Profile #10y

E.G. Elev (ft)	12.25	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.50	Wt. n-Val.		0.013	
W.S. Elev (ft)	11.75	Reach Len. (ft)	0.50	0.50	0.50
Crit W.S. (ft)	11.68	Flow Area (sq ft)		7.27	
E.G. Slope (ft/ft)	0.002893	Area (sq ft)		7.27	
Q Total (cfs)	41.26	Flow (cfs)		41.26	
Top Width (ft)	6.24	Top Width (ft)		6.24	
Vel Total (ft/s)	5.67	Avg. Vel. (ft/s)		5.67	
Max Chl Dpth (ft)	1.28	Hydr. Depth (ft)		1.17	
Conv. Total (cfs)	767.0	Conv. (cfs)		767.0	
Length Wtd. (ft)	0.50	Wetted Per. (ft)		8.20	
Min Ch El (ft)	10.47	Shear (lb/sq ft)		0.16	
Alpha	1.00	Stream Power (lb/ft s)		0.91	
Frctn Loss (ft)	0.00	Cum Volume (acre-ft)		0.03	
C & E Loss (ft)	0.01	Cum SA (acres)		0.02	

CROSS SECTION OUTPUT Profile #5y

E.G. Elev (ft)	12.05	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.44	Wt. n-Val.		0.013	
W.S. Elev (ft)	11.61	Reach Len. (ft)	0.50	0.50	0.50
Crit W.S. (ft)	11.55	Flow Area (sq ft)		6.41	
E.G. Slope (ft/ft)	0.002896	Area (sq ft)		6.41	
Q Total (cfs)	34.25	Flow (cfs)		34.25	
Top Width (ft)	6.20	Top Width (ft)		6.20	
Vel Total (ft/s)	5.34	Avg. Vel. (ft/s)		5.34	
Max Chl Dpth (ft)	1.14	Hydr. Depth (ft)		1.03	
Conv. Total (cfs)	636.4	Conv. (cfs)		636.4	
Length Wtd. (ft)	0.50	Wetted Per. (ft)		7.92	
Min Ch El (ft)	10.47	Shear (lb/sq ft)		0.15	
Alpha	1.00	Stream Power (lb/ft s)		0.78	
Frctn Loss (ft)	0.00	Cum Volume (acre-ft)		0.02	
C & E Loss (ft)	0.01	Cum SA (acres)		0.02	

CROSS SECTION OUTPUT Profile #2y

E.G. Elev (ft)	11.78	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.36	Wt. n-Val.		0.013	
W.S. Elev (ft)	11.42	Reach Len. (ft)	0.50	0.50	0.50
Crit W.S. (ft)	11.37	Flow Area (sq ft)		5.25	
E.G. Slope (ft/ft)	0.002882	Area (sq ft)		5.25	
Q Total (cfs)	25.29	Flow (cfs)		25.29	
Top Width (ft)	6.15	Top Width (ft)		6.15	
Vel Total (ft/s)	4.82	Avg. Vel. (ft/s)		4.82	
Max Chl Dpth (ft)	0.95	Hydr. Depth (ft)		0.85	
Conv. Total (cfs)	471.0	Conv. (cfs)		471.0	
Length Wtd. (ft)	0.50	Wetted Per. (ft)		7.54	
Min Ch El (ft)	10.47	Shear (lb/sq ft)		0.13	
Alpha	1.00	Stream Power (lb/ft s)		0.60	
Frctn Loss (ft)	0.00	Cum Volume (acre-ft)		0.02	
C & E Loss (ft)	0.00	Cum SA (acres)		0.02	

CROSS SECTION OUTPUT Profile #1y

E.G. Elev (ft)	11.55	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.29	Wt. n-Val.		0.013	
W.S. Elev (ft)	11.25	Reach Len. (ft)	0.50	0.50	0.50
Crit W.S. (ft)	11.22	Flow Area (sq ft)		4.24	
E.G. Slope (ft/ft)	0.002936	Area (sq ft)		4.24	
Q Total (cfs)	18.41	Flow (cfs)		18.41	
Top Width (ft)	6.10	Top Width (ft)		6.10	
Vel Total (ft/s)	4.34	Avg. Vel. (ft/s)		4.34	
Max Chl Dpth (ft)	0.78	Hydr. Depth (ft)		0.69	
Conv. Total (cfs)	339.8	Conv. (cfs)		339.8	
Length Wtd. (ft)	0.50	Wetted Per. (ft)		7.21	
Min Ch El (ft)	10.47	Shear (lb/sq ft)		0.11	
Alpha	1.00	Stream Power (lb/ft s)		0.47	
Frctn Loss (ft)	0.00	Cum Volume (acre-ft)		0.02	
C & E Loss (ft)	0.00	Cum SA (acres)		0.02	

BRIDGE

RIVER: buena vista
REACH: one RS: 5.5

INPUT
Description:
Distance from Upstream XS = .5
Deck/Roadway Width = 28.93
Weir Coefficient = 2.6
Upstream Deck/Roadway Coordinates
num= 2

Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord
54.5	12.52	12.07	60.95	12.52	12.07

Upstream Bridge Cross Section Data
Station Elevation Data num= 17

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	12.83	10.51	12.73	20.07	12.67	29.58	12.6	43.9	12.56
50.44	12.48	54.5	12.53	54.71	10.58	57.42	10.47	60.64	10.67
60.95	12.48	67.24	12.5	72.24	12.49	78.19	12.56	91.06	12.77
104.76	13.13	115.5	13.52						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.013	54.5	.013	60.95	.013

Bank Sta: Left	Right	Coeff Contr.	Expan.
54.5	60.95	.1	.3

Downstream Deck/Roadway Coordinates
num= 2

Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord
56.04	12.82	12.2	62.95	12.82	12.2

Downstream Bridge Cross Section Data
Station Elevation Data num= 19

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	13.08	7.77	13.01	16.38	12.92	25.9	12.85	35.47	12.84
45.6	12.77	56.04	12.84	56.04	10.28	59.32	10.28	62.95	10.28
62.95	12.82	67.93	12.69	80.12	12.69	86.72	12.65	91.75	12.65
95.06	12.64	101.94	12.57	113.64	12.65	125.29	12.82		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.013	56.04	.013	62.95	.013

Bank Sta: Left	Right	Coeff Contr.	Expan.
56.04	62.95	.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 = 12.07
Energy head used in spillway design =
Spillway height used in design =
Weir crest shape = Broad Crested

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 #100y

		Element	Inside BR US	Inside BR DS
E.G. US. (ft)	12.96	E.G. Elev (ft)	12.92	12.71
W.S. US. (ft)	12.74	W.S. Elev (ft)	12.80	12.33
Q Total (cfs)	65.51	Crit W.S. (ft)	12.80	11.69
Q Bridge (cfs)	34.91	Max Chl Dpth (ft)	2.33	2.05
Q Weir (cfs)		Vel Total (ft/s)	2.47	4.94
Weir Sta Lft (ft)		Flow Area (sq ft)	26.57	13.27
Weir Sta Rgt (ft)		Froude # Chl	0.29	0.61
Weir Submerg		Specif Force (cu ft)	21.38	24.48
Weir Max Depth (ft)		Hydr Depth (ft)	0.30	
Min El Weir Flow (ft)	12.58			

Min El Prs (ft)	12.07	W.P. Total (ft)	103.69	17.66
Delta EG (ft)	0.27	Conv. Total (cfs)	1397.2	1253.2
Delta WS (ft)	0.37	Top Width (ft)	88.45	
BR Open Area (sq ft)	9.30	Frctn Loss (ft)	0.07	0.12
BR Open Vel (ft/s)	3.75	C & E Loss (ft)	0.03	0.13
Coef of Q		Shear Total (lb/sq ft)	0.04	0.13
Br Sel Method	Energy only	Power Total (lb/ft s)	0.09	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: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.

BRIDGE OUTPUT Profile #50y

E.G. US. (ft)	12.91	Element	Inside BR US	Inside BR DS
W.S. US. (ft)	12.74	E.G. Elev (ft)	12.89	12.63
Q Total (cfs)	57.94	W.S. Elev (ft)	12.77	11.13
Q Bridge (cfs)	33.82	Crit W.S. (ft)	12.77	11.57
Q Weir (cfs)		Max Chl Dpth (ft)	2.30	0.85
Weir Sta Lft (ft)		Vel Total (ft/s)	2.39	9.82
Weir Sta Rgt (ft)		Flow Area (sq ft)	24.28	5.90
Weir Submerg		Froude # Chl	0.29	1.87
Weir Max Depth (ft)		Specif Force (cu ft)	19.97	20.19
Min El Weir Flow (ft)	12.58	Hydr Depth (ft)	0.29	0.85
Min El Prs (ft)	12.07	W.P. Total (ft)	99.89	8.62
Delta EG (ft)	0.28	Conv. Total (cfs)	1264.3	524.1
Delta WS (ft)	1.61	Top Width (ft)	84.65	6.91
BR Open Area (sq ft)	9.30	Frctn Loss (ft)	0.05	0.12
BR Open Vel (ft/s)	5.73	C & E Loss (ft)	0.02	0.14
Coef of Q		Shear Total (lb/sq ft)	0.03	0.52
Br Sel Method	Energy only	Power Total (lb/ft s)	0.08	5.13

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream 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: The energy method has computed a class B profile.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.

BRIDGE OUTPUT Profile #25y

E.G. US. (ft)	12.49	Element	Inside BR US	Inside BR DS

W.S. US. (ft)	11.92	E.G. Elev (ft)	12.48	12.27
Q Total (cfs)	50.57	W.S. Elev (ft)	11.85	11.98
Q Bridge (cfs)	50.57	Crit W.S. (ft)	11.85	11.47
Q Weir (cfs)		Max Chl Dpth (ft)	1.38	1.70
Weir Sta Lft (ft)		Vel Total (ft/s)	6.38	4.31
Weir Sta Rgt (ft)		Flow Area (sq ft)	7.93	11.72
Weir Submerg		Froude # Chl	1.00	0.58
Weir Max Depth (ft)		Specif Force (cu ft)	15.14	16.72
Min El Weir Flow (ft)	12.58	Hydr Depth (ft)	1.26	1.70
Min El Prs (ft)	12.07	W.P. Total (ft)	8.42	10.30
Delta EG (ft)	0.22	Conv. Total (cfs)	870.6	1460.7
Delta WS (ft)	-0.06	Top Width (ft)	6.27	6.91
BR Open Area (sq ft)	9.30	Frctn Loss (ft)	0.05	0.15
BR Open Vel (ft/s)	6.38	C & E Loss (ft)	0.10	0.05
Coef of Q		Shear Total (lb/sq ft)	0.20	0.09
Br Sel Method	Energy only	Power Total (lb/ft s)	1.27	0.37

Note: Momentum answer is not valid if the water surface is above the low chord or if there is weir flow. The momentum answer has been disregarded.

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.

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

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

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

BRIDGE OUTPUT Profile #10y

E.G. US. (ft)	12.25	Element	Inside BR US	Inside BR DS
W.S. US. (ft)	11.75	E.G. Elev (ft)	12.24	12.01
Q Total (cfs)	41.26	W.S. Elev (ft)	11.69	11.76
Q Bridge (cfs)	41.26	Crit W.S. (ft)	11.69	11.31
Q Weir (cfs)		Max Chl Dpth (ft)	1.22	1.48
Weir Sta Lft (ft)		Vel Total (ft/s)	5.96	4.04
Weir Sta Rgt (ft)		Flow Area (sq ft)	6.92	10.22
Weir Submerg		Froude # Chl	1.00	0.58
Weir Max Depth (ft)		Specif Force (cu ft)	11.56	12.73
Min El Weir Flow (ft)	12.58	Hydr Depth (ft)	1.11	1.48
Min El Prs (ft)	12.07	W.P. Total (ft)	8.09	9.87
Delta EG (ft)	0.23	Conv. Total (cfs)	712.3	1196.4
Delta WS (ft)	-0.01	Top Width (ft)	6.22	6.91
BR Open Area (sq ft)	9.30	Frctn Loss (ft)	0.05	0.15
BR Open Vel (ft/s)	5.96	C & E Loss (ft)	0.09	0.05
Coef of Q		Shear Total (lb/sq ft)	0.18	0.08
Br Sel Method	Energy only	Power Total (lb/ft s)	1.07	0.31

Note: Momentum answer is not valid if the water surface is above the low chord or if there is weir flow. The momentum answer has been disregarded.

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

BRIDGE OUTPUT Profile #5y

			Inside BR US	Inside BR DS
E.G. US. (ft)	12.05	Element		
W.S. US. (ft)	11.61	E.G. Elev (ft)	12.05	11.81
Q Total (cfs)	34.25	W.S. Elev (ft)	11.55	11.59
Q Bridge (cfs)	34.25	Crit W.S. (ft)	11.55	11.19
Q Weir (cfs)		Max Chl Dpth (ft)	1.08	1.31
Weir Sta Lft (ft)		Vel Total (ft/s)	5.64	3.80
Weir Sta Rgt (ft)		Flow Area (sq ft)	6.07	9.02
Weir Submerg		Froude # Chl	1.00	0.59
Weir Max Depth (ft)		Specif Force (cu ft)	9.03	9.93
Min El Weir Flow (ft)	12.58	Hydr Depth (ft)	0.98	1.31
Min El Prs (ft)	12.07	W.P. Total (ft)	7.81	9.52
Delta EG (ft)	0.24	Conv. Total (cfs)	586.4	994.5
Delta WS (ft)	0.02	Top Width (ft)	6.19	6.91
BR Open Area (sq ft)	9.30	Frctn Loss (ft)	0.05	0.16
BR Open Vel (ft/s)	5.64	C & E Loss (ft)	0.08	0.04
Coef of Q		Shear Total (lb/sq ft)	0.17	0.07
Br Sel Method	Energy only	Power Total (lb/ft s)	0.93	0.27

Warning: For the final momentum answer at the bridge, the upstream energy was computed lower than the energy inside of the bridge deck. This is not physically possible. Please review your bridge
data and results for reasonableness.
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.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.

BRIDGE OUTPUT Profile #2y

			Inside BR US	Inside BR DS
E.G. US. (ft)	11.78	Element		
W.S. US. (ft)	11.42	E.G. Elev (ft)	11.78	11.53
Q Total (cfs)	25.29	W.S. Elev (ft)	11.37	11.35
Q Bridge (cfs)	25.29	Crit W.S. (ft)	11.37	11.02
Q Weir (cfs)		Max Chl Dpth (ft)	0.90	1.07
Weir Sta Lft (ft)		Vel Total (ft/s)	5.10	3.43
Weir Sta Rgt (ft)		Flow Area (sq ft)	4.96	7.38
Weir Submerg		Froude # Chl	1.00	0.58
Weir Max Depth (ft)		Specif Force (cu ft)	6.04	6.63
Min El Weir Flow (ft)	12.58	Hydr Depth (ft)	0.81	1.07
Min El Prs (ft)	12.07	W.P. Total (ft)	7.45	9.04
Delta EG (ft)	0.25	Conv. Total (cfs)	432.6	736.0
Delta WS (ft)	0.07	Top Width (ft)	6.14	6.91
BR Open Area (sq ft)	9.30	Frctn Loss (ft)	0.05	0.16
BR Open Vel (ft/s)	5.10	C & E Loss (ft)	0.07	0.04
Coef of Q		Shear Total (lb/sq ft)	0.14	0.06
Br Sel Method	Energy only	Power Total (lb/ft s)	0.72	0.21

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

BRIDGE OUTPUT Profile #1y

			Inside BR US	Inside BR DS
E.G. US. (ft)	11.55	Element		
W.S. US. (ft)	11.25	E.G. Elev (ft)	11.54	11.29
Q Total (cfs)	18.41	W.S. Elev (ft)	11.22	11.14
Q Bridge (cfs)	18.41	Crit W.S. (ft)	11.22	10.88
Q Weir (cfs)		Max Chl Dpth (ft)	0.75	0.86
Weir Sta Lft (ft)		Vel Total (ft/s)	4.58	3.09
Weir Sta Rgt (ft)		Flow Area (sq ft)	4.02	5.96
Weir Submerg		Froude # Chl	0.99	0.59
Weir Max Depth (ft)		Specif Force (cu ft)	3.97	4.33
Min El Weir Flow (ft)	12.58	Hydr Depth (ft)	0.66	0.86
Min El Prs (ft)	12.07	W.P. Total (ft)	7.14	8.63
Delta EG (ft)	0.26	Conv. Total (cfs)	313.8	531.6
Delta WS (ft)	0.11	Top Width (ft)	6.09	6.91
BR Open Area (sq ft)	9.30	Frctn Loss (ft)	0.05	0.17
BR Open Vel (ft/s)	4.58	C & E Loss (ft)	0.05	0.03
Coef of Q		Shear Total (lb/sq ft)	0.12	0.05
Br Sel Method	Energy only	Power Total (lb/ft s)	0.55	0.16

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.
Warning: The conveyance ratio (upstream 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: buena vista
REACH: one RS: 5

INPUT
Description: Seccion #14 en la Agrimensura

```
10.51   12.73
20.07   12.67
29.58   12.6
43.9    12.56
50.4
              4 12.48
54.5    12.53
54.71   10.58
57.42   10.47
60.64   10.67
60.95   1
              2.48
67.24   12.5
72.24   12.49
78.19   12.56
91.06   12.77
104.76  13.
              13
```

115.5 13.52

Station Elevation Data num= 19

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	13.08	7.77	13.01	16.38	12.92	25.9	12.85	35.47	12.84
45.6	12.77	56.04	12.84	56.04	10.28	59.32	10.28	62.95	10.28
62.95	12.82	67.93	12.69	80.12	12.69	86.72	12.65	91.75	12.65
95.06	12.64	101.94	12.57	113.64	12.65	125.29	12.82		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.013	56.04	.013	62.95	.013

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
56.04	62.95	72.89	40.74	46.33	.1	.3

CROSS SECTION OUTPUT Profile #100y

E.G. Elev (ft)	12.69	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.32	Wt. n-Val.		0.013	
W.S. Elev (ft)	12.37	Reach Len. (ft)	0.50	0.50	0.50
Crit W.S. (ft)	11.68	Flow Area (sq ft)		14.43	
E.G. Slope (ft/ft)	0.001111	Area (sq ft)		14.43	
Q Total (cfs)	65.51	Flow (cfs)		65.51	
Top Width (ft)	6.91	Top Width (ft)		6.91	
Vel Total (ft/s)	4.54	Avg. Vel. (ft/s)		4.54	
Max Chl Dpth (ft)	2.09	Hydr. Depth (ft)		2.09	
Conv. Total (cfs)	1965.6	Conv. (cfs)		1965.6	
Length Wtd. (ft)	0.50	Wetted Per. (ft)		11.09	
Min Ch El (ft)	10.28	Shear (lb/sq ft)		0.09	
Alpha	1.00	Stream Power (lb/ft s)		0.41	
Frctn Loss (ft)	0.00	Cum Volume (acre-ft)		0.03	
C & E Loss (ft)	0.01	Cum SA (acres)		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 #50y

E.G. Elev (ft)	12.63	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.50	Wt. n-Val.		0.013	
W.S. Elev (ft)	11.13	Reach Len. (ft)	0.50	0.50	0.50
Crit W.S. (ft)	11.57	Flow Area (sq ft)		5.90	
E.G. Slope (ft/ft)	0.012221	Area (sq ft)		5.90	
Q Total (cfs)	57.94	Flow (cfs)		57.94	
Top Width (ft)	6.91	Top Width (ft)		6.91	
Vel Total (ft/s)	9.82	Avg. Vel. (ft/s)		9.82	
Max Chl Dpth (ft)	0.85	Hydr. Depth (ft)		0.85	
Conv. Total (cfs)	524.1	Conv. (cfs)		524.1	
Length Wtd. (ft)	0.50	Wetted Per. (ft)		8.62	
Min Ch El (ft)	10.28	Shear (lb/sq ft)		0.52	
Alpha	1.00	Stream Power (lb/ft s)		5.13	
Frctn Loss (ft)	0.01	Cum Volume (acre-ft)		0.00	
C & E Loss (ft)	0.00	Cum SA (acres)		0.00	

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

CROSS SECTION OUTPUT Profile #25y

E.G. Elev (ft)	12.27	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.29	Wt. n-Val.		0.013	
W.S. Elev (ft)	11.98	Reach Len. (ft)	0.50	0.50	0.50
Crit W.S. (ft)	11.46	Flow Area (sq ft)		11.72	
E.G. Slope (ft/ft)	0.001200	Area (sq ft)		11.72	
Q Total (cfs)	50.57	Flow (cfs)		50.57	
Top Width (ft)	6.91	Top Width (ft)		6.91	
Vel Total (ft/s)	4.32	Avg. Vel. (ft/s)		4.32	
Max Chl Dpth (ft)	1.70	Hydr. Depth (ft)		1.70	
Conv. Total (cfs)	1459.6	Conv. (cfs)		1459.6	
Length Wtd. (ft)	0.50	Wetted Per. (ft)		10.30	

Min Ch El (ft)	10.28	Shear (lb/sq ft)	0.09
Alpha	1.00	Stream Power (lb/ft s)	0.37
Frctn Loss (ft)	0.00	Cum Volume (acre-ft)	0.02
C & E Loss (ft)	0.00	Cum SA (acres)	0.02

CROSS SECTION OUTPUT Profile #10y

E.G. Elev (ft)	12.01	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.25	Wt. n-Val.		0.013	
W.S. Elev (ft)	11.76	Reach Len. (ft)	0.50	0.50	0.50
Crit W.S. (ft)	11.31	Flow Area (sq ft)		10.22	
E.G. Slope (ft/ft)	0.001191	Area (sq ft)		10.22	
Q Total (cfs)	41.26	Flow (cfs)		41.26	
Top Width (ft)	6.91	Top Width (ft)		6.91	
Vel Total (ft/s)	4.04	Avg. Vel. (ft/s)		4.04	
Max Chl Dpth (ft)	1.48	Hydr. Depth (ft)		1.48	
Conv. Total (cfs)	1195.4	Conv. (cfs)		1195.4	
Length Wtd. (ft)	0.50	Wetted Per. (ft)		9.87	
Min Ch El (ft)	10.28	Shear (lb/sq ft)		0.08	
Alpha	1.00	Stream Power (lb/ft s)		0.31	
Frctn Loss (ft)	0.00	Cum Volume (acre-ft)		0.02	
C & E Loss (ft)	0.00	Cum SA (acres)		0.02	

CROSS SECTION OUTPUT Profile #5y

E.G. Elev (ft)	11.81	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.22	Wt. n-Val.		0.013	
W.S. Elev (ft)	11.58	Reach Len. (ft)	0.50	0.50	0.50
Crit W.S. (ft)	11.19	Flow Area (sq ft)		9.01	
E.G. Slope (ft/ft)	0.001188	Area (sq ft)		9.01	
Q Total (cfs)	34.25	Flow (cfs)		34.25	
Top Width (ft)	6.91	Top Width (ft)		6.91	
Vel Total (ft/s)	3.80	Avg. Vel. (ft/s)		3.80	
Max Chl Dpth (ft)	1.30	Hydr. Depth (ft)		1.30	
Conv. Total (cfs)	993.6	Conv. (cfs)		993.6	
Length Wtd. (ft)	0.50	Wetted Per. (ft)		9.52	
Min Ch El (ft)	10.28	Shear (lb/sq ft)		0.07	
Alpha	1.00	Stream Power (lb/ft s)		0.27	
Frctn Loss (ft)	0.00	Cum Volume (acre-ft)		0.02	
C & E Loss (ft)	0.00	Cum SA (acres)		0.02	

CROSS SECTION OUTPUT Profile #2y

E.G. Elev (ft)	11.53	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.18	Wt. n-Val.		0.013	
W.S. Elev (ft)	11.35	Reach Len. (ft)	0.50	0.50	0.50
Crit W.S. (ft)	11.02	Flow Area (sq ft)		7.37	
E.G. Slope (ft/ft)	0.001183	Area (sq ft)		7.37	
Q Total (cfs)	25.29	Flow (cfs)		25.29	
Top Width (ft)	6.91	Top Width (ft)		6.91	
Vel Total (ft/s)	3.43	Avg. Vel. (ft/s)		3.43	
Max Chl Dpth (ft)	1.07	Hydr. Depth (ft)		1.07	
Conv. Total (cfs)	735.1	Conv. (cfs)		735.1	
Length Wtd. (ft)	0.50	Wetted Per. (ft)		9.04	
Min Ch El (ft)	10.28	Shear (lb/sq ft)		0.06	
Alpha	1.00	Stream Power (lb/ft s)		0.21	
Frctn Loss (ft)	0.00	Cum Volume (acre-ft)		0.01	
C & E Loss (ft)	0.00	Cum SA (acres)		0.02	

CROSS SECTION OUTPUT Profile #1y

E.G. Elev (ft)	11.29	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.15	Wt. n-Val.		0.013	
W.S. Elev (ft)	11.14	Reach Len. (ft)	0.50	0.50	0.50
Crit W.S. (ft)	10.88	Flow Area (sq ft)		5.95	
E.G. Slope (ft/ft)	0.001203	Area (sq ft)		5.95	
Q Total (cfs)	18.41	Flow (cfs)		18.41	

Top Width (ft)	6.91	Top Width (ft)	6.91
Vel Total (ft/s)	3.09	Avg. Vel. (ft/s)	3.09
Max Chl Dpth (ft)	0.86	Hydr. Depth (ft)	0.86
Conv. Total (cfs)	530.8	Conv. (cfs)	530.8
Length Wtd. (ft)	0.50	Wetted Per. (ft)	8.63
Min Ch El (ft)	10.28	Shear (lb/sq ft)	0.05
Alpha	1.00	Stream Power (lb/ft s)	0.16
Frctn Loss (ft)	0.00	Cum Volume (acre-ft)	0.01
C & E Loss (ft)	0.00	Cum SA (acres)	0.02

BRIDGE

RIVER: buena vista
REACH: one RS: 4.5

INPUT
Description:
Distance from Upstream XS = .5
Deck/Roadway Width = 39.74
Weir Coefficient = 2.6
Upstream Deck/Roadway Coordinates
num= 2

Sta Hi Cord	Lo Cord	Sta Hi Cord	Lo Cord
56.04	12.84	12.2	62.95	12.82	12.2

Upstream Bridge Cross Section Data
Station Elevation Data num= 19

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	13.08	7.77	13.01	16.38	12.92	25.9	12.85	35.47	12.84
45.6	12.77	56.04	12.84	56.04	10.28	59.32	10.28	62.95	10.28
62.95	12.82	67.93	12.69	80.12	12.69	86.72	12.65	91.75	12.65
95.06	12.64	101.94	12.57	113.64	12.65	125.29	12.82		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.013	56.04	.013	62.95	.013

Bank Sta: Left	Right	Coeff Contr.	Expan.
56.04	62.95	.1	.3

Downstream Deck/Roadway Coordinates
num= 2

Sta Hi Cord	Lo Cord	Sta Hi Cord	Lo Cord
68.23	12.71	12.25	74.21	12.76	12.25

Downstream Bridge Cross Section Data
Station Elevation Data num= 12

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	13.35	10.02	13.26	25.06	12.98	40.1	12.8	68.23	12.71
68.23	10.2	71.22	10.2	74.21	10.2	74.21	12.76	89.27	12.79
108.56	12.97	113.56	13.35						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.013	68.23	.013	74.21	.013

Bank Sta: Left	Right	Coeff Contr.	Expan.
68.23	74.21	.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 = 12.2
Energy head used in spillway design =
Spillway height used in design =
Weir crest shape = Broad Crested

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 #100y

			Element	Inside BR US	Inside BR DS
E.G. US. (ft)	12.69		E.G. Elev (ft)	12.68	12.53
W.S. US. (ft)	12.37		W.S. Elev (ft)	12.30	11.83
Q Total (cfs)	65.51		Crit W.S. (ft)	11.69	11.76
Q Bridge (cfs)	65.51		Max Chl Dpth (ft)	2.02	1.63
Q Weir (cfs)			Vel Total (ft/s)	4.94	6.71
Weir Sta Lft (ft)			Flow Area (sq ft)	13.27	9.77
Weir Sta Rgt (ft)			Froude # Chl	0.61	0.92
Weir Submerg			Specif Force (cu ft)	24.14	21.62
Weir Max Depth (ft)			Hydr Depth (ft)		1.63
Min El Weir Flow (ft)	12.72		W.P. Total (ft)	17.66	9.25
Min El Prs (ft)	12.20		Conv. Total (cfs)	1253.2	1158.2
Delta EG (ft)	0.16		Top Width (ft)		5.98
Delta WS (ft)	0.57		Frctn Loss (ft)	0.12	0.00
BR Open Area (sq ft)	12.26		C & E Loss (ft)	0.03	0.00
BR Open Vel (ft/s)	6.71		Shear Total (lb/sq ft)	0.13	0.21
Coef of Q			Power Total (lb/ft s)	0.63	1.41
Br Sel Method	Energy only				

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

BRIDGE OUTPUT Profile #50y

			Element	Inside BR US	Inside BR DS
E.G. US. (ft)	12.63		E.G. Elev (ft)	12.63	12.35
W.S. US. (ft)	11.13		W.S. Elev (ft)	11.13	11.70
Q Total (cfs)	57.94		Crit W.S. (ft)	11.57	11.63
Q Bridge (cfs)	57.94		Max Chl Dpth (ft)	0.85	1.50
Q Weir (cfs)			Vel Total (ft/s)	9.82	6.44
Weir Sta Lft (ft)			Flow Area (sq ft)	5.90	8.99
Weir Sta Rgt (ft)			Froude # Chl	1.87	0.93
Weir Submerg			Specif Force (cu ft)	20.19	18.35
Weir Max Depth (ft)			Hydr Depth (ft)	0.85	1.50
Min El Weir Flow (ft)	12.72		W.P. Total (ft)	8.62	8.99
Min El Prs (ft)	12.20		Conv. Total (cfs)	524.1	1027.9
Delta EG (ft)	0.18		Top Width (ft)	6.91	5.98
Delta WS (ft)	-0.56		Frctn Loss (ft)	0.01	
BR Open Area (sq ft)	12.26		C & E Loss (ft)	0.00	
BR Open Vel (ft/s)	9.82		Shear Total (lb/sq ft)	0.52	0.20
Coef of Q			Power Total (lb/ft s)	5.13	1.28
Br Sel Method	Energy only				

Note: Momentum answer is not valid if the water surface is above the low chord or if there is weir
flow. The momentum answer has been disregarded.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid,
energy was used.
Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.

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

BRIDGE OUTPUT Profile #25y

			Inside BR US	Inside BR DS
E.G. US. (ft)	12.27	Element		
W.S. US. (ft)	11.98	E.G. Elev (ft)	12.26	12.16
Q Total (cfs)	50.57	W.S. Elev (ft)	11.97	11.57
Q Bridge (cfs)	50.57	Crit W.S. (ft)	11.47	11.51
Q Weir (cfs)		Max Chl Dpth (ft)	1.69	1.37
Weir Sta Lft (ft)		Vel Total (ft/s)	4.32	6.16
Weir Sta Rgt (ft)		Flow Area (sq ft)	11.71	8.21
Weir Submerg		Froude # Chl	0.58	0.93
Weir Max Depth (ft)		Specif Force (cu ft)	16.71	15.31
Min El Weir Flow (ft)	12.72	Hydr Depth (ft)	1.69	1.37
Min El Prs (ft)	12.20	W.P. Total (ft)	10.30	8.73
Delta EG (ft)	0.10	Conv. Total (cfs)	1458.5	901.8
Delta WS (ft)	0.41	Top Width (ft)	6.91	5.98
BR Open Area (sq ft)	12.26	Frctn Loss (ft)	0.07	0.00
BR Open Vel (ft/s)	6.16	C & E Loss (ft)	0.03	0.00
Coef of Q		Shear Total (lb/sq ft)	0.09	0.18
Br Sel Method	Energy only	Power Total (lb/ft s)	0.37	1.14

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

BRIDGE OUTPUT Profile #10y

			Inside BR US	Inside BR DS
E.G. US. (ft)	12.01	Element		
W.S. US. (ft)	11.76	E.G. Elev (ft)	12.01	11.91
Q Total (cfs)	41.26	W.S. Elev (ft)	11.76	11.40
Q Bridge (cfs)	41.26	Crit W.S. (ft)	11.31	11.34
Q Weir (cfs)		Max Chl Dpth (ft)	1.48	1.20
Weir Sta Lft (ft)		Vel Total (ft/s)	4.04	5.75
Weir Sta Rgt (ft)		Flow Area (sq ft)	10.21	7.18
Weir Submerg		Froude # Chl	0.59	0.92
Weir Max Depth (ft)		Specif Force (cu ft)	12.72	11.67
Min El Weir Flow (ft)	12.72	Hydr Depth (ft)	1.48	1.20
Min El Prs (ft)	12.20	W.P. Total (ft)	9.87	8.38
Delta EG (ft)	0.10	Conv. Total (cfs)	1194.3	740.4
Delta WS (ft)	0.36	Top Width (ft)	6.91	5.98
BR Open Area (sq ft)	12.26	Frctn Loss (ft)	0.07	0.00
BR Open Vel (ft/s)	5.75	C & E Loss (ft)	0.03	0.00
Coef of Q		Shear Total (lb/sq ft)	0.08	0.17
Br Sel Method	Energy only	Power Total (lb/ft s)	0.31	0.95

Warning: For the final momentum answer at the bridge, the upstream energy was computed lower than the energy inside of the bridge deck. This is not physically possible. Please review your bridge
data and results for reasonableness.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.

BRIDGE OUTPUT Profile #5y

			Inside BR US	Inside BR DS
E.G. US. (ft)	11.81	Element		
W.S. US. (ft)	11.58	E.G. Elev (ft)	11.81	11.71
Q Total (cfs)	34.25	W.S. Elev (ft)	11.58	11.26
Q Bridge (cfs)	34.25	Crit W.S. (ft)	11.19	11.20
Q Weir (cfs)		Max Chl Dpth (ft)	1.30	1.06
Weir Sta Lft (ft)		Vel Total (ft/s)	3.80	5.39
Weir Sta Rgt (ft)		Flow Area (sq ft)	9.01	6.36
Weir Submerg		Froude # Chl	0.59	0.92
Weir Max Depth (ft)		Specif Force (cu ft)	9.92	9.11

Min El Weir Flow (ft)	12.72	Hydr Depth (ft)	1.30	1.06
Min El Prs (ft)	12.20	W.P. Total (ft)	9.52	8.11
Delta EG (ft)	0.10	Conv. Total (cfs)	992.5	617.8
Delta WS (ft)	0.33	Top Width (ft)	6.91	5.98
BR Open Area (sq ft)	12.26	Frctn Loss (ft)	0.07	0.00
BR Open Vel (ft/s)	5.39	C & E Loss (ft)	0.02	0.00
Coef of Q		Shear Total (lb/sq ft)	0.07	0.15
Br Sel Method	Energy only	Power Total (lb/ft s)	0.27	0.81

Warning: For the final momentum answer at the bridge, the upstream energy was computed lower than the energy inside of the bridge deck. This is not physically possible. Please review your bridge data and results for reasonableness.

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

BRIDGE OUTPUT Profile #2y

E.G. US. (ft)	11.53	Element	Inside BR US	Inside BR DS
W.S. US. (ft)	11.35	E.G. Elev (ft)	11.53	11.44
Q Total (cfs)	25.29	W.S. Elev (ft)	11.35	11.07
Q Bridge (cfs)	25.29	Crit W.S. (ft)	11.02	11.02
Q Weir (cfs)		Max Chl Dpth (ft)	1.07	0.87
Weir Sta Lft (ft)		Vel Total (ft/s)	3.43	4.86
Weir Sta Rgt (ft)		Flow Area (sq ft)	7.36	5.20
Weir Submerg		Froude # Chl	0.59	0.92
Weir Max Depth (ft)		Specif Force (cu ft)	6.62	6.08
Min El Weir Flow (ft)	12.72	Hydr Depth (ft)	1.07	0.87
Min El Prs (ft)	12.20	W.P. Total (ft)	9.04	7.72
Delta EG (ft)	0.09	Conv. Total (cfs)	734.1	456.8
Delta WS (ft)	0.28	Top Width (ft)	6.91	5.98
BR Open Area (sq ft)	12.26	Frctn Loss (ft)	0.07	0.00
BR Open Vel (ft/s)	4.86	C & E Loss (ft)	0.02	0.00
Coef of Q		Shear Total (lb/sq ft)	0.06	0.13
Br Sel Method	Energy only	Power Total (lb/ft s)	0.21	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.

BRIDGE OUTPUT Profile #1y

E.G. US. (ft)	11.29	Element	Inside BR US	Inside BR DS
W.S. US. (ft)	11.14	E.G. Elev (ft)	11.29	11.20
Q Total (cfs)	18.41	W.S. Elev (ft)	11.14	10.91
Q Bridge (cfs)	18.41	Crit W.S. (ft)	10.88	10.87
Q Weir (cfs)		Max Chl Dpth (ft)	0.86	0.71
Weir Sta Lft (ft)		Vel Total (ft/s)	3.10	4.35
Weir Sta Rgt (ft)		Flow Area (sq ft)	5.94	4.23
Weir Submerg		Froude # Chl	0.59	0.91
Weir Max Depth (ft)		Specif Force (cu ft)	4.33	3.98
Min El Weir Flow (ft)	12.72	Hydr Depth (ft)	0.86	0.71
Min El Prs (ft)	12.20	W.P. Total (ft)	8.63	7.39
Delta EG (ft)	0.09	Conv. Total (cfs)	529.9	333.2
Delta WS (ft)	0.24	Top Width (ft)	6.91	5.98
BR Open Area (sq ft)	12.26	Frctn Loss (ft)	0.07	0.00
BR Open Vel (ft/s)	4.35	C & E Loss (ft)	0.01	0.00
Coef of Q		Shear Total (lb/sq ft)	0.05	0.11
Br Sel Method	Energy only	Power Total (lb/ft s)	0.16	0.47

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

CROSS SECTION

RIVER: buena vista
REACH: one RS: 4

INPUT
Description: Seccion #15 en la Agrimensura
Station Elevation Data num= 12

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	13.35	10.02	13.26	25.06	12.98	40.1	12.8	68.23	12.71
68.23	10.2	71.22	10.2	74.21	10.2	74.21	12.76	89.27	12.79
108.56	12.97	113.56	13.35						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.013	68.23	.013	74.21	.013

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
68.23	74.21	12.72	13.8	12.8	.1	.3

CROSS SECTION OUTPUT Profile #100y

			Left OB	Channel	Right OB
E.G. Elev (ft)	12.53	Element			
Vel Head (ft)	0.73	Wt. n-Val.		0.013	
W.S. Elev (ft)	11.80	Reach Len. (ft)	0.50	0.50	0.50
Crit W.S. (ft)	11.74	Flow Area (sq ft)		9.54	
E.G. Slope (ft/ft)	0.003422	Area (sq ft)		9.54	
Q Total (cfs)	65.51	Flow (cfs)		65.51	
Top Width (ft)	5.98	Top Width (ft)		5.98	
Vel Total (ft/s)	6.87	Avg. Vel. (ft/s)		6.87	
Max Chl Dpth (ft)	1.60	Hydr. Depth (ft)		1.60	
Conv. Total (cfs)	1119.7	Conv. (cfs)		1119.7	
Length Wtd. (ft)	0.50	Wetted Per. (ft)		9.17	
Min Ch El (ft)	10.20	Shear (lb/sq ft)		0.22	
Alpha	1.00	Stream Power (lb/ft s)		1.53	
Frctn Loss (ft)		Cum Volume (acre-ft)		0.02	
C & E Loss (ft)		Cum SA (acres)		0.01	

CROSS SECTION OUTPUT Profile #50y

			Left OB	Channel	Right OB
E.G. Elev (ft)	12.35	Element			
Vel Head (ft)	0.65	Wt. n-Val.		0.013	
W.S. Elev (ft)	11.70	Reach Len. (ft)	0.50	0.50	0.50
Crit W.S. (ft)	11.62	Flow Area (sq ft)		8.96	
E.G. Slope (ft/ft)	0.003211	Area (sq ft)		8.96	
Q Total (cfs)	57.94	Flow (cfs)		57.94	
Top Width (ft)	5.98	Top Width (ft)		5.98	
Vel Total (ft/s)	6.47	Avg. Vel. (ft/s)		6.47	
Max Chl Dpth (ft)	1.50	Hydr. Depth (ft)		1.50	
Conv. Total (cfs)	1022.5	Conv. (cfs)		1022.5	
Length Wtd. (ft)	0.50	Wetted Per. (ft)		8.98	
Min Ch El (ft)	10.20	Shear (lb/sq ft)		0.20	
Alpha	1.00	Stream Power (lb/ft s)		1.29	
Frctn Loss (ft)	0.00	Cum Volume (acre-ft)		0.00	
C & E Loss (ft)	0.00	Cum SA (acres)		0.00	

CROSS SECTION OUTPUT Profile #25y

			Left OB	Channel	Right OB
E.G. Elev (ft)	12.16	Element			
Vel Head (ft)	0.59	Wt. n-Val.		0.013	
W.S. Elev (ft)	11.57	Reach Len. (ft)	0.50	0.50	0.50
Crit W.S. (ft)	11.50	Flow Area (sq ft)		8.18	
E.G. Slope (ft/ft)	0.003182	Area (sq ft)		8.18	
Q Total (cfs)	50.57	Flow (cfs)		50.57	
Top Width (ft)	5.98	Top Width (ft)		5.98	
Vel Total (ft/s)	6.18	Avg. Vel. (ft/s)		6.18	
Max Chl Dpth (ft)	1.37	Hydr. Depth (ft)		1.37	
Conv. Total (cfs)	896.5	Conv. (cfs)		896.5	
Length Wtd. (ft)	0.50	Wetted Per. (ft)		8.72	
Min Ch El (ft)	10.20	Shear (lb/sq ft)		0.19	
Alpha	1.00	Stream Power (lb/ft s)		1.15	
Frctn Loss (ft)	0.00	Cum Volume (acre-ft)		0.01	
C & E Loss (ft)	0.01	Cum SA (acres)		0.01	

CROSS SECTION OUTPUT Profile #10y

E.G. Elev (ft)	11.91	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.52	Wt. n-Val.		0.013	
W.S. Elev (ft)	11.40	Reach Len. (ft)	0.50	0.50	0.50
Crit W.S. (ft)	11.34	Flow Area (sq ft)		7.15	
E.G. Slope (ft/ft)	0.003150	Area (sq ft)		7.15	
Q Total (cfs)	41.26	Flow (cfs)		41.26	
Top Width (ft)	5.98	Top Width (ft)		5.98	
Vel Total (ft/s)	5.77	Avg. Vel. (ft/s)		5.77	
Max Chl Dpth (ft)	1.20	Hydr. Depth (ft)		1.20	
Conv. Total (cfs)	735.1	Conv. (cfs)		735.1	
Length Wtd. (ft)	0.50	Wetted Per. (ft)		8.37	
Min Ch El (ft)	10.20	Shear (lb/sq ft)		0.17	
Alpha	1.00	Stream Power (lb/ft s)		0.97	
Frctn Loss (ft)	0.00	Cum Volume (acre-ft)		0.01	
C & E Loss (ft)	0.00	Cum SA (acres)		0.01	

CROSS SECTION OUTPUT Profile #5y

E.G. Elev (ft)	11.71	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.46	Wt. n-Val.		0.013	
W.S. Elev (ft)	11.26	Reach Len. (ft)	0.50	0.50	0.50
Crit W.S. (ft)	11.20	Flow Area (sq ft)		6.32	
E.G. Slope (ft/ft)	0.003125	Area (sq ft)		6.32	
Q Total (cfs)	34.25	Flow (cfs)		34.25	
Top Width (ft)	5.98	Top Width (ft)		5.98	
Vel Total (ft/s)	5.42	Avg. Vel. (ft/s)		5.42	
Max Chl Dpth (ft)	1.06	Hydr. Depth (ft)		1.06	
Conv. Total (cfs)	612.6	Conv. (cfs)		612.6	
Length Wtd. (ft)	0.50	Wetted Per. (ft)		8.09	
Min Ch El (ft)	10.20	Shear (lb/sq ft)		0.15	
Alpha	1.00	Stream Power (lb/ft s)		0.83	
Frctn Loss (ft)	0.00	Cum Volume (acre-ft)		0.01	
C & E Loss (ft)	0.00	Cum SA (acres)		0.01	

CROSS SECTION OUTPUT Profile #2y

E.G. Elev (ft)	11.44	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.37	Wt. n-Val.		0.013	
W.S. Elev (ft)	11.06	Reach Len. (ft)	0.50	0.50	0.50
Crit W.S. (ft)	11.02	Flow Area (sq ft)		5.16	
E.G. Slope (ft/ft)	0.003133	Area (sq ft)		5.16	
Q Total (cfs)	25.29	Flow (cfs)		25.29	
Top Width (ft)	5.98	Top Width (ft)		5.98	
Vel Total (ft/s)	4.90	Avg. Vel. (ft/s)		4.90	
Max Chl Dpth (ft)	0.86	Hydr. Depth (ft)		0.86	
Conv. Total (cfs)	451.7	Conv. (cfs)		451.7	
Length Wtd. (ft)	0.50	Wetted Per. (ft)		7.71	
Min Ch El (ft)	10.20	Shear (lb/sq ft)		0.13	
Alpha	1.00	Stream Power (lb/ft s)		0.64	
Frctn Loss (ft)	0.00	Cum Volume (acre-ft)		0.01	
C & E Loss (ft)	0.00	Cum SA (acres)		0.01	

CROSS SECTION OUTPUT Profile #1y

E.G. Elev (ft)	11.20	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.30	Wt. n-Val.		0.013	
W.S. Elev (ft)	10.90	Reach Len. (ft)	0.50	0.50	0.50
Crit W.S. (ft)	10.87	Flow Area (sq ft)		4.19	
E.G. Slope (ft/ft)	0.003144	Area (sq ft)		4.19	
Q Total (cfs)	18.41	Flow (cfs)		18.41	
Top Width (ft)	5.98	Top Width (ft)		5.98	
Vel Total (ft/s)	4.39	Avg. Vel. (ft/s)		4.39	
Max Chl Dpth (ft)	0.70	Hydr. Depth (ft)		0.70	
Conv. Total (cfs)	328.3	Conv. (cfs)		328.3	
Length Wtd. (ft)	0.50	Wetted Per. (ft)		7.38	

Min Ch El (ft)	10.20	Shear (lb/sq ft)	0.11
Alpha	1.00	Stream Power (lb/ft s)	0.49
Frctn Loss (ft)	0.00	Cum Volume (acre-ft)	0.01
C & E Loss (ft)	0.00	Cum SA (acres)	0.01

BRIDGE

RIVER: buena vista
REACH: one RS: 3.5

INPUT
Description:
Distance from Upstream XS = .5
Deck/Roadway Width = 12.8
Weir Coefficient = 2.6
Upstream Deck/Roadway Coordinates
num= 2

Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord
68.23	12.71	12.25	74.21	12.76	12.25

Upstream Bridge Cross Section Data
Station Elevation Data num= 12

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	13.35	10.02	13.26	25.06	12.98	40.1	12.8	68.23	12.71
68.23	10.2	71.22	10.2	74.21	10.2	74.21	12.76	89.27	12.79
108.56	12.97	113.56	13.35						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.013	68.23	.013	74.21	.013

Bank Sta: Left	Right	Coeff Contr.	Expan.
68.23	74.21	.1	.3

Downstream Deck/Roadway Coordinates
num= 2

Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord
64.6	12.45	12.3	71.02	12.58	12.3

Downstream Bridge Cross Section Data
Station Elevation Data num= 11

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	13.39	10.02	13.25	25.05	13.01	40.08	12.8	64.6	12.45
64.6	9.99	67.81	9.99	71.02	9.99	71.02	12.58	109.17	13.01
114.17	13.32								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.013	64.6	.013	71.02	.013

Bank Sta: Left	Right	Coeff Contr.	Expan.
64.6	71.02	.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 = 12.25
Energy head used in spillway design =
Spillway height used in design =
Weir crest shape = Broad Crested

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 #100y

			Inside BR US	Inside BR DS
E.G. US. (ft)	12.53	Element		
W.S. US. (ft)	11.80	E.G. Elev (ft)	12.53	12.21
Q Total (cfs)	65.51	W.S. Elev (ft)	11.76	11.55
Q Bridge (cfs)	65.51	Crit W.S. (ft)	11.76	11.47
Q Weir (cfs)		Max Chl Dpth (ft)	1.56	1.56
Weir Sta Lft (ft)		Vel Total (ft/s)	7.04	6.55
Weir Sta Rgt (ft)		Flow Area (sq ft)	9.30	10.00
Weir Submerg		Froude # Chl	1.00	0.92
Weir Max Depth (ft)		Specif Force (cu ft)	21.56	21.11
Min El Weir Flow (ft)	12.72	Hydr Depth (ft)	1.56	1.56
Min El Prs (ft)	12.25	W.P. Total (ft)	9.09	9.54
Delta EG (ft)	0.31	Conv. Total (cfs)	1079.3	1180.4
Delta WS (ft)	0.26	Top Width (ft)	5.98	6.42
BR Open Area (sq ft)	12.26	Frctn Loss (ft)		
BR Open Vel (ft/s)	7.04	C & E Loss (ft)		
Coef of Q		Shear Total (lb/sq ft)	0.24	0.20
Br Sel Method	Momentum	Power Total (lb/ft s)	1.66	1.32

Note: The momentum method has computed a class B profile.
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.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream 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: The energy method has computed a class B profile.

BRIDGE OUTPUT Profile #50y

			Inside BR US	Inside BR DS
E.G. US. (ft)	12.35	Element		
W.S. US. (ft)	11.70	E.G. Elev (ft)	12.34	12.22
Q Total (cfs)	57.94	W.S. Elev (ft)	11.60	11.02
Q Bridge (cfs)	57.94	Crit W.S. (ft)	11.63	11.35
Q Weir (cfs)		Max Chl Dpth (ft)	1.40	1.03
Weir Sta Lft (ft)		Vel Total (ft/s)	6.92	8.80
Weir Sta Rgt (ft)		Flow Area (sq ft)	8.37	6.58
Weir Submerg		Froude # Chl	1.03	1.53
Weir Max Depth (ft)		Specif Force (cu ft)	18.31	19.21
Min El Weir Flow (ft)	12.72	Hydr Depth (ft)	1.40	1.03
Min El Prs (ft)	12.25	W.P. Total (ft)	8.78	8.47
Delta EG (ft)	-0.11	Conv. Total (cfs)	927.1	636.2
Delta WS (ft)	0.68	Top Width (ft)	5.98	6.42
BR Open Area (sq ft)	12.26	Frctn Loss (ft)	0.00	0.07
BR Open Vel (ft/s)	8.80	C & E Loss (ft)	0.01	0.05
Coef of Q		Shear Total (lb/sq ft)	0.23	0.40
Br Sel Method	Energy only	Power Total (lb/ft s)	1.61	3.54

Note: Momentum answer is not valid if the water surface is above the low chord or if there is weir flow. The momentum answer has been disregarded.

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

BRIDGE OUTPUT Profile #25y

			Inside BR US	Inside BR DS
E.G. US. (ft)	12.16	Element		
W.S. US. (ft)	11.57	E.G. Elev (ft)	12.16	12.03
Q Total (cfs)	50.57	W.S. Elev (ft)	11.51	10.92
Q Bridge (cfs)	50.57	Crit W.S. (ft)	11.51	11.23
Q Weir (cfs)		Max Chl Dpth (ft)	1.31	0.93
Weir Sta Lft (ft)		Vel Total (ft/s)	6.47	8.47
Weir Sta Rgt (ft)		Flow Area (sq ft)	7.82	5.97
Weir Submerg		Froude # Chl	1.00	1.55
Weir Max Depth (ft)		Specif Force (cu ft)	15.27	16.08
Min El Weir Flow (ft)	12.72	Hydr Depth (ft)	1.31	0.93
Min El Prs (ft)	12.25	W.P. Total (ft)	8.59	8.28
Delta EG (ft)	0.13	Conv. Total (cfs)	838.5	548.6
Delta WS (ft)	0.65	Top Width (ft)	5.98	6.42
BR Open Area (sq ft)	12.26	Frctn Loss (ft)	0.04	0.07
BR Open Vel (ft/s)	8.47	C & E Loss (ft)	0.03	0.05
Coef of Q		Shear Total (lb/sq ft)	0.21	0.38
Br Sel Method	Energy only	Power Total (lb/ft s)	1.34	3.24

Warning: The energy equation could not be balanced within the specified number of iterations. The program selected the water surface that had the least amount of error between computed and assumed values.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical
depth, the 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 conveyance ratio (upstream 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: The energy method has computed a class B profile.

BRIDGE OUTPUT Profile #10y

			Inside BR US	Inside BR DS
E.G. US. (ft)	11.91	Element		
W.S. US. (ft)	11.40	E.G. Elev (ft)	11.91	11.79
Q Total (cfs)	41.26	W.S. Elev (ft)	11.34	10.79
Q Bridge (cfs)	41.26	Crit W.S. (ft)	11.34	11.08
Q Weir (cfs)		Max Chl Dpth (ft)	1.14	0.80
Weir Sta Lft (ft)		Vel Total (ft/s)	6.04	8.02
Weir Sta Rgt (ft)		Flow Area (sq ft)	6.83	5.14
Weir Submerg		Froude # Chl	1.00	1.58
Weir Max Depth (ft)		Specif Force (cu ft)	11.64	12.34
Min El Weir Flow (ft)	12.72	Hydr Depth (ft)	1.14	0.80
Min El Prs (ft)	12.25	W.P. Total (ft)	8.26	8.02
Delta EG (ft)	0.12	Conv. Total (cfs)	687.1	437.0
Delta WS (ft)	0.60	Top Width (ft)	5.98	6.42
BR Open Area (sq ft)	12.26	Frctn Loss (ft)	0.04	0.07
BR Open Vel (ft/s)	8.02	C & E Loss (ft)	0.02	0.04
Coef of Q		Shear Total (lb/sq ft)	0.19	0.36
Br Sel Method	Energy only	Power Total (lb/ft s)	1.12	2.86

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.
Warning: The conveyance ratio (upstream 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: The energy method has computed a class B profile.

BRIDGE OUTPUT Profile #5y

E.G. US. (ft)	11.71	Element	Inside BR US	Inside BR DS
W.S. US. (ft)	11.26	E.G. Elev (ft)	11.71	11.59
Q Total (cfs)	34.25	W.S. Elev (ft)	11.20	10.69
Q Bridge (cfs)	34.25	Crit W.S. (ft)	11.20	10.95
Q Weir (cfs)		Max Chl Dpth (ft)	1.00	0.70
Weir Sta Lft (ft)		Vel Total (ft/s)	5.70	7.64
Weir Sta Rgt (ft)		Flow Area (sq ft)	6.01	4.48
Weir Submerg		Froude # Chl	1.00	1.61
Weir Max Depth (ft)		Specif Force (cu ft)	9.08	9.69
Min El Weir Flow (ft)	12.72	Hydr Depth (ft)	1.00	0.70
Min El Prs (ft)	12.25	W.P. Total (ft)	7.99	7.82
Delta EG (ft)	0.12	Conv. Total (cfs)	567.7	353.9
Delta WS (ft)	0.57	Top Width (ft)	5.98	6.42
BR Open Area (sq ft)	12.26	Frctn Loss (ft)	0.04	0.07
BR Open Vel (ft/s)	7.64	C & E Loss (ft)	0.02	0.04
Coef of Q		Shear Total (lb/sq ft)	0.17	0.34
Br Sel Method	Energy only	Power Total (lb/ft s)	0.97	2.56

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.
Warning: The conveyance ratio (upstream 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: The energy method has computed a class B profile.

BRIDGE OUTPUT Profile #2y

E.G. US. (ft)	11.44	Element	Inside BR US	Inside BR DS
W.S. US. (ft)	11.06	E.G. Elev (ft)	11.43	11.32
Q Total (cfs)	25.29	W.S. Elev (ft)	11.02	10.55
Q Bridge (cfs)	25.29	Crit W.S. (ft)	11.02	10.77
Q Weir (cfs)		Max Chl Dpth (ft)	0.82	0.56
Weir Sta Lft (ft)		Vel Total (ft/s)	5.17	7.05
Weir Sta Rgt (ft)		Flow Area (sq ft)	4.89	3.58
Weir Submerg		Froude # Chl	1.01	1.66
Weir Max Depth (ft)		Specif Force (cu ft)	6.06	6.54
Min El Weir Flow (ft)	12.72	Hydr Depth (ft)	0.82	0.56
Min El Prs (ft)	12.25	W.P. Total (ft)	7.61	7.54
Delta EG (ft)	0.12	Conv. Total (cfs)	415.6	249.6
Delta WS (ft)	0.51	Top Width (ft)	5.98	6.42
BR Open Area (sq ft)	12.26	Frctn Loss (ft)	0.04	0.07
BR Open Vel (ft/s)	7.05	C & E Loss (ft)	0.02	0.04
Coef of Q		Shear Total (lb/sq ft)	0.15	0.30
Br Sel Method	Energy only	Power Total (lb/ft s)	0.77	2.15

Warning: The energy equation could not be balanced within the specified number of iterations. The program selected the water surface that had the least amount of error between computed and assumed values.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the 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 conveyance ratio (upstream 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: The energy method has computed a class B profile.

BRIDGE OUTPUT Profile #1y

E.G. US. (ft)	11.20	Element	Inside BR US	Inside BR DS
W.S. US. (ft)	10.90	E.G. Elev (ft)	11.20	11.08

Q Total (cfs)	18.41	W.S. Elev (ft)	10.87	10.43
Q Bridge (cfs)	18.41	Crit W.S. (ft)	10.87	10.63
Q Weir (cfs)		Max Chl Dpth (ft)	0.67	0.44
Weir Sta Lft (ft)		Vel Total (ft/s)	4.61	6.46
Weir Sta Rgt (ft)		Flow Area (sq ft)	3.99	2.85
Weir Submerg		Froude # Chl	0.99	1.71
Weir Max Depth (ft)		Specif Force (cu ft)	3.97	4.32
Min El Weir Flow (ft)	12.72	Hydr Depth (ft)	0.67	0.44
Min El Prs (ft)	12.25	W.P. Total (ft)	7.32	7.31
Delta EG (ft)	0.12	Conv. Total (cfs)	305.0	174.0
Delta WS (ft)	0.47	Top Width (ft)	5.98	6.42
BR Open Area (sq ft)	12.26	Frctn Loss (ft)	0.04	0.08
BR Open Vel (ft/s)	6.46	C & E Loss (ft)	0.01	0.03
Coef of Q		Shear Total (lb/sq ft)	0.12	0.27
Br Sel Method	Energy only	Power Total (lb/ft s)	0.57	1.76

Warning: The energy equation could not be balanced within the specified number of iterations. The program selected the water surface that had the least amount of error between computed and assumed values.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.
Warning: The conveyance ratio (upstream 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: The energy method has computed a class B profile.

CROSS SECTION

RIVER: buena vista
REACH: one RS: 3

INPUT
Description: Seccion #16 en la Agrimensura
Station Elevation Data num= 11

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	13.39	10.02	13.25	25.05	13.01	40.08	12.8	64.6	12.45
64.6	9.99	67.81	9.99	71.02	9.99	71.02	12.58	109.17	13.01
114.17	13.32								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.013	64.6	.013	71.02	.013

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
64.6	71.02	57.95	62.51	61.61	.1	.3

CROSS SECTION OUTPUT Profile #100y

E.G. Elev (ft)	12.21	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.67	Wt. n-Val.		0.013	
W.S. Elev (ft)	11.54	Reach Len. (ft)	0.50	0.50	0.50
Crit W.S. (ft)	11.46	Flow Area (sq ft)		9.95	
E.G. Slope (ft/ft)	0.003129	Area (sq ft)		9.95	
Q Total (cfs)	65.51	Flow (cfs)		65.51	
Top Width (ft)	6.42	Top Width (ft)		6.42	
Vel Total (ft/s)	6.58	Avg. Vel. (ft/s)		6.58	
Max Chl Dpth (ft)	1.55	Hydr. Depth (ft)		1.55	
Conv. Total (cfs)	1171.0	Conv. (cfs)		1171.0	
Length Wtd. (ft)	0.50	Wetted Per. (ft)		9.52	
Min Ch El (ft)	9.99	Shear (lb/sq ft)		0.20	
Alpha	1.00	Stream Power (lb/ft s)		1.34	
Frctn Loss (ft)	0.00	Cum Volume (acre-ft)		0.01	
C & E Loss (ft)	0.00	Cum SA (acres)		0.01	

CROSS SECTION OUTPUT Profile #50y

E.G. Elev (ft)	12.22	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.20	Wt. n-Val.		0.013	
W.S. Elev (ft)	11.02	Reach Len. (ft)	0.50	0.50	0.50
Crit W.S. (ft)	11.35	Flow Area (sq ft)		6.59	
E.G. Slope (ft/ft)	0.008273	Area (sq ft)		6.59	
Q Total (cfs)	57.94	Flow (cfs)		57.94	
Top Width (ft)	6.42	Top Width (ft)		6.42	
Vel Total (ft/s)	8.79	Avg. Vel. (ft/s)		8.79	
Max Chl Dpth (ft)	1.03	Hydr. Depth (ft)		1.03	
Conv. Total (cfs)	637.0	Conv. (cfs)		637.0	
Length Wtd. (ft)	0.50	Wetted Per. (ft)		8.47	
Min Ch El (ft)	9.99	Shear (lb/sq ft)		0.40	
Alpha	1.00	Stream Power (lb/ft s)		3.53	
Frctn Loss (ft)	0.00	Cum Volume (acre-ft)		0.00	
C & E Loss (ft)	0.00	Cum SA (acres)		0.00	

CROSS SECTION OUTPUT Profile #25y

E.G. Elev (ft)	11.86	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.57	Wt. n-Val.		0.013	
W.S. Elev (ft)	11.29	Reach Len. (ft)	0.50	0.50	0.50
Crit W.S. (ft)	11.23	Flow Area (sq ft)		8.37	
E.G. Slope (ft/ft)	0.003090	Area (sq ft)		8.37	
Q Total (cfs)	50.57	Flow (cfs)		50.57	
Top Width (ft)	6.42	Top Width (ft)		6.42	
Vel Total (ft/s)	6.04	Avg. Vel. (ft/s)		6.04	
Max Chl Dpth (ft)	1.30	Hydr. Depth (ft)		1.30	
Conv. Total (cfs)	909.7	Conv. (cfs)		909.7	
Length Wtd. (ft)	0.50	Wetted Per. (ft)		9.03	
Min Ch El (ft)	9.99	Shear (lb/sq ft)		0.18	
Alpha	1.00	Stream Power (lb/ft s)		1.08	
Frctn Loss (ft)	0.00	Cum Volume (acre-ft)		0.01	
C & E Loss (ft)	0.00	Cum SA (acres)		0.01	

CROSS SECTION OUTPUT Profile #10y

E.G. Elev (ft)	11.62	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.50	Wt. n-Val.		0.013	
W.S. Elev (ft)	11.13	Reach Len. (ft)	0.50	0.50	0.50
Crit W.S. (ft)	11.07	Flow Area (sq ft)		7.30	
E.G. Slope (ft/ft)	0.003080	Area (sq ft)		7.30	
Q Total (cfs)	41.26	Flow (cfs)		41.26	
Top Width (ft)	6.42	Top Width (ft)		6.42	
Vel Total (ft/s)	5.65	Avg. Vel. (ft/s)		5.65	
Max Chl Dpth (ft)	1.14	Hydr. Depth (ft)		1.14	
Conv. Total (cfs)	743.4	Conv. (cfs)		743.4	
Length Wtd. (ft)	0.50	Wetted Per. (ft)		8.70	
Min Ch El (ft)	9.99	Shear (lb/sq ft)		0.16	
Alpha	1.00	Stream Power (lb/ft s)		0.91	
Frctn Loss (ft)	0.00	Cum Volume (acre-ft)		0.01	
C & E Loss (ft)	0.00	Cum SA (acres)		0.01	

CROSS SECTION OUTPUT Profile #5y

E.G. Elev (ft)	11.43	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.44	Wt. n-Val.		0.013	
W.S. Elev (ft)	11.00	Reach Len. (ft)	0.50	0.50	0.50
Crit W.S. (ft)	10.95	Flow Area (sq ft)		6.46	
E.G. Slope (ft/ft)	0.003063	Area (sq ft)		6.46	
Q Total (cfs)	34.25	Flow (cfs)		34.25	
Top Width (ft)	6.42	Top Width (ft)		6.42	
Vel Total (ft/s)	5.30	Avg. Vel. (ft/s)		5.30	
Max Chl Dpth (ft)	1.01	Hydr. Depth (ft)		1.01	
Conv. Total (cfs)	618.8	Conv. (cfs)		618.8	
Length Wtd. (ft)	0.50	Wetted Per. (ft)		8.43	
Min Ch El (ft)	9.99	Shear (lb/sq ft)		0.15	
Alpha	1.00	Stream Power (lb/ft s)		0.78	
Frctn Loss (ft)	0.00	Cum Volume (acre-ft)		0.01	

C & E Loss (ft)	0.00	Cum SA (acres)	0.01

CROSS SECTION OUTPUT Profile #2y

E.G. Elev (ft)	11.17	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.36	Wt. n-Val.		0.013	
W.S. Elev (ft)	10.81	Reach Len. (ft)	0.50	0.50	0.50
Crit W.S. (ft)	10.77	Flow Area (sq ft)		5.27	
E.G. Slope (ft/ft)	0.003097	Area (sq ft)		5.27	
Q Total (cfs)	25.29	Flow (cfs)		25.29	
Top Width (ft)	6.42	Top Width (ft)		6.42	
Vel Total (ft/s)	4.79	Avg. Vel. (ft/s)		4.79	
Max Chl Dpth (ft)	0.82	Hydr. Depth (ft)		0.82	
Conv. Total (cfs)	454.4	Conv. (cfs)		454.4	
Length Wtd. (ft)	0.50	Wetted Per. (ft)		8.06	
Min Ch El (ft)	9.99	Shear (lb/sq ft)		0.13	
Alpha	1.00	Stream Power (lb/ft s)		0.61	
Frctn Loss (ft)	0.00	Cum Volume (acre-ft)		0.01	
C & E Loss (ft)	0.00	Cum SA (acres)		0.01	

CROSS SECTION OUTPUT Profile #1y

E.G. Elev (ft)	10.94	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.29	Wt. n-Val.		0.013	
W.S. Elev (ft)	10.66	Reach Len. (ft)	0.50	0.50	0.50
Crit W.S. (ft)	10.62	Flow Area (sq ft)		4.29	
E.G. Slope (ft/ft)	0.003094	Area (sq ft)		4.29	
Q Total (cfs)	18.41	Flow (cfs)		18.41	
Top Width (ft)	6.42	Top Width (ft)		6.42	
Vel Total (ft/s)	4.29	Avg. Vel. (ft/s)		4.29	
Max Chl Dpth (ft)	0.67	Hydr. Depth (ft)		0.67	
Conv. Total (cfs)	331.0	Conv. (cfs)		331.0	
Length Wtd. (ft)	0.50	Wetted Per. (ft)		7.76	
Min Ch El (ft)	9.99	Shear (lb/sq ft)		0.11	
Alpha	1.00	Stream Power (lb/ft s)		0.46	
Frctn Loss (ft)	0.00	Cum Volume (acre-ft)		0.01	
C & E Loss (ft)	0.00	Cum SA (acres)		0.01	

BRIDGE

RIVER: buena vista
REACH: one RS: 2.5

INPUT
Description:
Distance from Upstream XS = .5
Deck/Roadway Width = 61.51
Weir Coefficient = 2.6
Upstream Deck/Roadway Coordinates
num= 2

Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord
64.6	12.45	12.3	71.02	12.58	12.3

Upstream Bridge Cross Section Data
Station Elevation Data num= 11

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	13.39	10.02	13.25	25.05	13.01	40.08	12.8	64.6	12.45
64.6	9.99	67.81	9.99	71.02	9.99	71.02	12.58	109.17	13.01
114.17	13.32								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.013	64.6	.013	71.02	.013

Bank Sta: Left	Right	Coeff Contr.	Expan.
64.6	71.02	.1	.3

Downstream Deck/Roadway Coordinates
num= 2

Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord
54.02	12.23	11.98	60.49	12.31	11.98

Downstream Bridge Cross Section Data
Station Elevation Data num= 11

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	12.46	8.41	12.41	17.94	12.29	25.21	12.21	54.02	12.23
54.02	9.8	57.5	9.8	60.49	9.8	60.49	12.31	89.88	13.12
106.24	13.59								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.013	54.02	.013	60.49	.013

Bank Sta: Left	Right	Coeff Contr.	Expan.
54.02	60.49	.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 = 11.98
Energy head used in spillway design =
Spillway height used in design =
Weir crest shape = Broad Crested

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 #100y

			Inside BR US	Inside BR DS
E.G. US. (ft)	12.21	Element		
W.S. US. (ft)	11.54	E.G. Elev (ft)	12.21	12.01
Q Total (cfs)	65.51	W.S. Elev (ft)	11.53	11.35
Q Bridge (cfs)	65.51	Crit W.S. (ft)	11.47	11.27
Q Weir (cfs)		Max Chl Dpth (ft)	1.54	1.55
Weir Sta Lft (ft)		Vel Total (ft/s)	6.61	6.54
Weir Sta Rgt (ft)		Flow Area (sq ft)	9.91	10.02
Weir Submerg		Froude # Chl	0.94	0.93
Weir Max Depth (ft)		Specif Force (cu ft)	21.10	21.06
Min El Weir Flow (ft)	12.46	Hydr Depth (ft)	1.54	1.55
Min El Prs (ft)	12.30	W.P. Total (ft)	9.51	9.57
Delta EG (ft)	0.21	Conv. Total (cfs)	1165.3	1180.6
Delta WS (ft)	0.27	Top Width (ft)	6.42	6.47
BR Open Area (sq ft)	14.10	Frctn Loss (ft)	0.19	0.00
BR Open Vel (ft/s)	6.61	C & E Loss (ft)	0.00	0.01
Coef of Q		Shear Total (lb/sq ft)	0.21	0.20
Br Sel Method	Energy only	Power Total (lb/ft s)	1.36	1.32

BRIDGE OUTPUT Profile #50y

			Inside BR US	Inside BR DS
E.G. US. (ft)	12.22	Element		
W.S. US. (ft)	11.02	E.G. Elev (ft)	12.22	11.84
Q Total (cfs)	57.94	W.S. Elev (ft)	11.02	11.07
Q Bridge (cfs)	57.94	Crit W.S. (ft)	11.35	11.16
Q Weir (cfs)		Max Chl Dpth (ft)	1.03	1.27

Weir Sta Lft (ft)		Vel Total (ft/s)	8.79	7.07
Weir Sta Rgt (ft)		Flow Area (sq ft)	6.59	8.20
Weir Submerg		Froude # Chl	1.53	1.11
Weir Max Depth (ft)		Specif Force (cu ft)	19.20	17.91
Min El Weir Flow (ft)	12.46	Hydr Depth (ft)	1.03	1.27
Min El Prs (ft)	12.30	W.P. Total (ft)	8.47	9.00
Delta EG (ft)	0.38	Conv. Total (cfs)	637.0	879.8
Delta WS (ft)	-0.09	Top Width (ft)	6.42	6.47
BR Open Area (sq ft)	14.10	Frctn Loss (ft)	0.00	0.32
BR Open Vel (ft/s)	8.79	C & E Loss (ft)	0.00	0.16
Coef of Q		Shear Total (lb/sq ft)	0.40	0.25
Br Sel Method	Energy only	Power Total (lb/ft s)	3.53	1.74

Note: Momentum answer is not valid if the water surface is above the low chord or if there is weir flow. The momentum answer has been disregarded.

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.

BRIDGE OUTPUT Profile #25y

E.G. US. (ft)	11.86	Element	Inside BR US	Inside BR DS
W.S. US. (ft)	11.29	E.G. Elev (ft)	11.86	11.66
Q Total (cfs)	50.57	W.S. Elev (ft)	11.29	11.10
Q Bridge (cfs)	50.57	Crit W.S. (ft)	11.23	11.03
Q Weir (cfs)		Max Chl Dpth (ft)	1.30	1.30
Weir Sta Lft (ft)		Vel Total (ft/s)	6.08	6.01
Weir Sta Rgt (ft)		Flow Area (sq ft)	8.32	8.41
Weir Submerg		Froude # Chl	0.94	0.93
Weir Max Depth (ft)		Specif Force (cu ft)	14.94	14.91
Min El Weir Flow (ft)	12.46	Hydr Depth (ft)	1.30	1.30
Min El Prs (ft)	12.30	W.P. Total (ft)	9.01	9.07
Delta EG (ft)	0.20	Conv. Total (cfs)	901.2	914.6
Delta WS (ft)	0.26	Top Width (ft)	6.42	6.47
BR Open Area (sq ft)	14.10	Frctn Loss (ft)	0.19	0.00
BR Open Vel (ft/s)	6.08	C & E Loss (ft)	0.00	0.01
Coef of Q		Shear Total (lb/sq ft)	0.18	0.18
Br Sel Method	Energy only	Power Total (lb/ft s)	1.10	1.06

BRIDGE OUTPUT Profile #10y

E.G. US. (ft)	11.62	Element	Inside BR US	Inside BR DS
W.S. US. (ft)	11.13	E.G. Elev (ft)	11.62	11.43
Q Total (cfs)	41.26	W.S. Elev (ft)	11.12	10.94
Q Bridge (cfs)	41.26	Crit W.S. (ft)	11.08	10.88
Q Weir (cfs)		Max Chl Dpth (ft)	1.13	1.14
Weir Sta Lft (ft)		Vel Total (ft/s)	5.68	5.59
Weir Sta Rgt (ft)		Flow Area (sq ft)	7.26	7.38
Weir Submerg		Froude # Chl	0.94	0.92
Weir Max Depth (ft)		Specif Force (cu ft)	11.39	11.37
Min El Weir Flow (ft)	12.46	Hydr Depth (ft)	1.13	1.14
Min El Prs (ft)	12.30	W.P. Total (ft)	8.68	8.75
Delta EG (ft)	0.20	Conv. Total (cfs)	737.3	752.8
Delta WS (ft)	0.25	Top Width (ft)	6.42	6.47
BR Open Area (sq ft)	14.10	Frctn Loss (ft)	0.19	0.00
BR Open Vel (ft/s)	5.68	C & E Loss (ft)	0.00	0.01
Coef of Q		Shear Total (lb/sq ft)	0.16	0.16
Br Sel Method	Energy only	Power Total (lb/ft s)	0.93	0.88

BRIDGE OUTPUT Profile #5y

E.G. US. (ft)	11.43	Element	Inside BR US	Inside BR DS
W.S. US. (ft)	11.00	E.G. Elev (ft)	11.43	11.24
Q Total (cfs)	34.25	W.S. Elev (ft)	10.99	10.81
Q Bridge (cfs)	34.25	Crit W.S. (ft)	10.95	10.75
Q Weir (cfs)		Max Chl Dpth (ft)	1.00	1.01
Weir Sta Lft (ft)		Vel Total (ft/s)	5.34	5.27

Weir Sta Rgt (ft)		Flow Area (sq ft)	6.41	6.50
Weir Submerg		Froude # Chl	0.94	0.93
Weir Max Depth (ft)		Specif Force (cu ft)	8.88	8.87
Min El Weir Flow (ft)	12.46	Hydr Depth (ft)	1.00	1.01
Min El Prs (ft)	12.30	W.P. Total (ft)	8.42	8.48
Delta EG (ft)	0.20	Conv. Total (cfs)	611.4	622.8
Delta WS (ft)	0.25	Top Width (ft)	6.42	6.47
BR Open Area (sq ft)	14.10	Frctn Loss (ft)	0.19	0.00
BR Open Vel (ft/s)	5.34	C & E Loss (ft)	0.00	0.00
Coef of Q		Shear Total (lb/sq ft)	0.15	0.14
Br Sel Method	Energy only	Power Total (lb/ft s)	0.80	0.76

BRIDGE OUTPUT Profile #2y

E.G. US. (ft)	11.17	Element	Inside BR US	Inside BR DS
W.S. US. (ft)	10.81	E.G. Elev (ft)	11.17	10.97
Q Total (cfs)	25.29	W.S. Elev (ft)	10.81	10.62
Q Bridge (cfs)	25.29	Crit W.S. (ft)	10.77	10.58
Q Weir (cfs)		Max Chl Dpth (ft)	0.82	0.82
Weir Sta Lft (ft)		Vel Total (ft/s)	4.82	4.76
Weir Sta Rgt (ft)		Flow Area (sq ft)	5.25	5.32
Weir Submerg		Froude # Chl	0.94	0.92
Weir Max Depth (ft)		Specif Force (cu ft)	5.93	5.92
Min El Weir Flow (ft)	12.46	Hydr Depth (ft)	0.82	0.82
Min El Prs (ft)	12.30	W.P. Total (ft)	8.06	8.11
Delta EG (ft)	0.20	Conv. Total (cfs)	451.1	458.4
Delta WS (ft)	0.23	Top Width (ft)	6.42	6.47
BR Open Area (sq ft)	14.10	Frctn Loss (ft)	0.19	0.00
BR Open Vel (ft/s)	4.82	C & E Loss (ft)	0.00	0.00
Coef of Q		Shear Total (lb/sq ft)	0.13	0.12
Br Sel Method	Energy only	Power Total (lb/ft s)	0.62	0.59

BRIDGE OUTPUT Profile #1y

E.G. US. (ft)	10.94	Element	Inside BR US	Inside BR DS
W.S. US. (ft)	10.66	E.G. Elev (ft)	10.94	10.75
Q Total (cfs)	18.41	W.S. Elev (ft)	10.66	10.47
Q Bridge (cfs)	18.41	Crit W.S. (ft)	10.63	10.43
Q Weir (cfs)		Max Chl Dpth (ft)	0.67	0.67
Weir Sta Lft (ft)		Vel Total (ft/s)	4.31	4.26
Weir Sta Rgt (ft)		Flow Area (sq ft)	4.28	4.32
Weir Submerg		Froude # Chl	0.93	0.92
Weir Max Depth (ft)		Specif Force (cu ft)	3.89	3.88
Min El Weir Flow (ft)	12.46	Hydr Depth (ft)	0.67	0.67
Min El Prs (ft)	12.30	W.P. Total (ft)	7.75	7.81
Delta EG (ft)	0.20	Conv. Total (cfs)	328.7	332.8
Delta WS (ft)	0.23	Top Width (ft)	6.42	6.47
BR Open Area (sq ft)	14.10	Frctn Loss (ft)	0.19	0.00
BR Open Vel (ft/s)	4.31	C & E Loss (ft)	0.00	0.00
Coef of Q		Shear Total (lb/sq ft)	0.11	0.11
Br Sel Method	Energy only	Power Total (lb/ft s)	0.47	0.45

CROSS SECTION

RIVER: buena vista
REACH: one RS: 2

INPUT
Description: Seccion #17 en la
Agrimensura
10.02 13.25
25.05 13.01
40.08 12.8
64.6 12.45
67.8
1 9.99
71.02 12.58

109.17 13.01
Seccion #17 en la Agrimensura
Station Elevation Data num= 11

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	12.46	8.41	12.41	17.94	12.29	25.21	12.21	54.02	12.23
54.02	9.8	57.5	9.8	60.49	9.8	60.49	12.31	89.88	13.12
106.24	13.59								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.013	54.02	.013	60.49	.013

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
54.02	60.49	0	0	.1	.3

CROSS SECTION OUTPUT Profile #100y

			Left OB	Channel	Right OB
E.G. Elev (ft)	12.01	Element			
Vel Head (ft)	0.74	Wt. n-Val.		0.013	
W.S. Elev (ft)	11.27	Reach Len. (ft)			
Crit W.S. (ft)	11.27	Flow Area (sq ft)		9.48	
E.G. Slope (ft/ft)	0.003610	Area (sq ft)		9.48	
Q Total (cfs)	65.51	Flow (cfs)		65.51	
Top Width (ft)	6.47	Top Width (ft)		6.47	
Vel Total (ft/s)	6.91	Avg. Vel. (ft/s)		6.91	
Max Chl Dpth (ft)	1.47	Hydr. Depth (ft)		1.47	
Conv. Total (cfs)	1090.3	Conv. (cfs)		1090.3	
Length Wtd. (ft)		Wetted Per. (ft)		9.40	
Min Ch El (ft)	9.80	Shear (lb/sq ft)		0.23	
Alpha	1.00	Stream Power (lb/ft s)		1.57	
Frctn Loss (ft)		Cum Volume (acre-ft)			
C & E Loss (ft)		Cum SA (acres)			

Warning: Slope too steep for slope area to converge during supercritical flow calculations (normal depth
is below critical depth). Water surface set to critical depth.

CROSS SECTION OUTPUT Profile #50y

			Left OB	Channel	Right OB
E.G. Elev (ft)	11.84	Element			
Vel Head (ft)	0.73	Wt. n-Val.		0.013	
W.S. Elev (ft)	11.11	Reach Len. (ft)			
Crit W.S. (ft)	11.15	Flow Area (sq ft)		8.47	
E.G. Slope (ft/ft)	0.003933	Area (sq ft)		8.47	
Q Total (cfs)	57.94	Flow (cfs)		57.94	
Top Width (ft)	6.47	Top Width (ft)		6.47	
Vel Total (ft/s)	6.84	Avg. Vel. (ft/s)		6.84	
Max Chl Dpth (ft)	1.31	Hydr. Depth (ft)		1.31	
Conv. Total (cfs)	923.9	Conv. (cfs)		923.9	
Length Wtd. (ft)		Wetted Per. (ft)		9.09	
Min Ch El (ft)	9.80	Shear (lb/sq ft)		0.23	
Alpha	1.00	Stream Power (lb/ft s)		1.57	
Frctn Loss (ft)	0.00	Cum Volume (acre-ft)			
C & E Loss (ft)	0.01	Cum SA (acres)			

CROSS SECTION OUTPUT Profile #25y

			Left OB	Channel	Right OB
E.G. Elev (ft)	11.66	Element			
Vel Head (ft)	0.62	Wt. n-Val.		0.013	
W.S. Elev (ft)	11.03	Reach Len. (ft)			
Crit W.S. (ft)	11.03	Flow Area (sq ft)		7.98	
E.G. Slope (ft/ft)	0.003574	Area (sq ft)		7.98	
Q Total (cfs)	50.57	Flow (cfs)		50.57	
Top Width (ft)	6.47	Top Width (ft)		6.47	
Vel Total (ft/s)	6.34	Avg. Vel. (ft/s)		6.34	
Max Chl Dpth (ft)	1.23	Hydr. Depth (ft)		1.23	
Conv. Total (cfs)	845.9	Conv. (cfs)		845.9	
Length Wtd. (ft)		Wetted Per. (ft)		8.94	
Min Ch El (ft)	9.80	Shear (lb/sq ft)		0.20	

Alpha	1.00	Stream Power (lb/ft s)	1.26
Frctn Loss (ft)		Cum Volume (acre-ft)	
C & E Loss (ft)		Cum SA (acres)	

Warning: Slope too steep for slope area to converge during supercritical flow calculations (normal depth
is below critical depth). Water surface set to critical depth.

CROSS SECTION OUTPUT Profile #10y

E.G. Elev (ft)	11.42	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.54	Wt. n-Val.		0.013	
W.S. Elev (ft)	10.88	Reach Len. (ft)			
Crit W.S. (ft)	10.88	Flow Area (sq ft)		6.98	
E.G. Slope (ft/ft)	0.003544	Area (sq ft)		6.98	
Q Total (cfs)	41.26	Flow (cfs)		41.26	
Top Width (ft)	6.47	Top Width (ft)		6.47	
Vel Total (ft/s)	5.91	Avg. Vel. (ft/s)		5.91	
Max Chl Dpth (ft)	1.08	Hydr. Depth (ft)		1.08	
Conv. Total (cfs)	693.0	Conv. (cfs)		693.0	
Length Wtd. (ft)		Wetted Per. (ft)		8.63	
Min Ch El (ft)	9.80	Shear (lb/sq ft)		0.18	
Alpha	1.00	Stream Power (lb/ft s)		1.06	
Frctn Loss (ft)		Cum Volume (acre-ft)			
C & E Loss (ft)		Cum SA (acres)			

Warning: Slope too steep for slope area to converge during supercritical flow calculations (normal depth
is below critical depth). Water surface set to critical depth.

CROSS SECTION OUTPUT Profile #5y

E.G. Elev (ft)	11.23	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.48	Wt. n-Val.		0.013	
W.S. Elev (ft)	10.75	Reach Len. (ft)			
Crit W.S. (ft)	10.75	Flow Area (sq ft)		6.16	
E.G. Slope (ft/ft)	0.003570	Area (sq ft)		6.16	
Q Total (cfs)	34.25	Flow (cfs)		34.25	
Top Width (ft)	6.47	Top Width (ft)		6.47	
Vel Total (ft/s)	5.56	Avg. Vel. (ft/s)		5.56	
Max Chl Dpth (ft)	0.95	Hydr. Depth (ft)		0.95	
Conv. Total (cfs)	573.2	Conv. (cfs)		573.2	
Length Wtd. (ft)		Wetted Per. (ft)		8.37	
Min Ch El (ft)	9.80	Shear (lb/sq ft)		0.16	
Alpha	1.00	Stream Power (lb/ft s)		0.91	
Frctn Loss (ft)		Cum Volume (acre-ft)			
C & E Loss (ft)		Cum SA (acres)			

Warning: Slope too steep for slope area to converge during supercritical flow calculations (normal depth
is below critical depth). Water surface set to critical depth.

CROSS SECTION OUTPUT Profile #2y

E.G. Elev (ft)	10.97	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.39	Wt. n-Val.		0.013	
W.S. Elev (ft)	10.58	Reach Len. (ft)			
Crit W.S. (ft)	10.58	Flow Area (sq ft)		5.03	
E.G. Slope (ft/ft)	0.003611	Area (sq ft)		5.03	
Q Total (cfs)	25.29	Flow (cfs)		25.29	
Top Width (ft)	6.47	Top Width (ft)		6.47	
Vel Total (ft/s)	5.03	Avg. Vel. (ft/s)		5.03	
Max Chl Dpth (ft)	0.78	Hydr. Depth (ft)		0.78	
Conv. Total (cfs)	420.8	Conv. (cfs)		420.8	
Length Wtd. (ft)		Wetted Per. (ft)		8.02	
Min Ch El (ft)	9.80	Shear (lb/sq ft)		0.14	
Alpha	1.00	Stream Power (lb/ft s)		0.71	
Frctn Loss (ft)		Cum Volume (acre-ft)			

C & E Loss (ft) Cum SA (acres)

Warning: Slope too steep for slope area to converge during supercritical flow calculations (normal depth
is below critical depth). Water surface set to critical depth.

CROSS SECTION OUTPUT Profile #1y

E.G. Elev (ft)	10.75	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.32	Wt. n-Val.		0.013	
W.S. Elev (ft)	10.43	Reach Len. (ft)			
Crit W.S. (ft)	10.43	Flow Area (sq ft)		4.07	
E.G. Slope (ft/ft)	0.003682	Area (sq ft)		4.07	
Q Total (cfs)	18.41	Flow (cfs)		18.41	
Top Width (ft)	6.47	Top Width (ft)		6.47	
Vel Total (ft/s)	4.52	Avg. Vel. (ft/s)		4.52	
Max Chl Dpth (ft)	0.63	Hydr. Depth (ft)		0.63	
Conv. Total (cfs)	303.4	Conv. (cfs)		303.4	
Length Wtd. (ft)		Wetted Per. (ft)		7.73	
Min Ch El (ft)	9.80	Shear (lb/sq ft)		0.12	
Alpha	1.00	Stream Power (lb/ft s)		0.55	
Frctn Loss (ft)		Cum Volume (acre-ft)			
C & E Loss (ft)		Cum SA (acres)			

Warning: Slope too steep for slope area to converge during supercritical flow calculations (normal depth
is below critical depth). Water surface set to critical depth.

SUMMARY OF MANNING'S N VALUES

River:buena vista

Reach	River Sta.	n1	n2	n3	n4	n5	n6	
one	18		.015	.013	.035	.013		
one	17		.015	.013	.035	.015	.013	
one	16.5	Culvert						
one	16		.013	.035	.035	.015	.013	
one	15		.035	.035	.035			
one	14		.013	.015	.013	.035	.035	.035
one	13		.015	.013	.035	.035	.035	
one	12		.015	.013	.035	.035	.035	
one	11		.013	.035	.013	.035	.035	.035
one	10		.013	.035	.035	.015	.035	
one	9		.03	.013	.035	.013		
one	8		.013					
one	7.5	Culvert						
one	7		.015	.013	.015			
one	6		.013	.013	.013			
one	5.5	Bridge						
one	5		.013	.013	.013			
one	4.5	Bridge						
one	4		.013	.013	.013			
one	3.5	Bridge						
one	3		.013	.013	.013			
one	2.5	Bridge						
one	2		.013	.013	.013			

SUMMARY OF REACH LENGTHS

River: buena vista

Reach	River Sta.	Left	Channel	Right

one	18	182.78	138.49	112.63
one	17	50.35	59.23	65.49
one	16.5	Culvert		
one	16	109.35	108.72	11.68
one	15	77.31	58.6	38.27
one	14	73.48	28.57	11.33
one	13	72	198.82	245.66
one	12	133.71	117.99	115.63
one	11	155.56	72.04	36.34
one	10	249.85	296.25	321.61
one	9	35.42	55.13	93.81
one	8	44.98	32.75	32.95
one	7.5	Culvert		
one	7	13.93	23	19.43
one	6	24.01	29.93	38.29
one	5.5	Bridge		
one	5	72.89	40.74	46.33
one	4.5	Bridge		
one	4	12.72	13.8	12.8
one	3.5	Bridge		
one	3	57.95	62.51	61.61
one	2.5	Bridge		
one	2	0	0	0

SUMMARY OF CONTRACTION AND EXPANSION COEFFICIENTS
River: buena vista

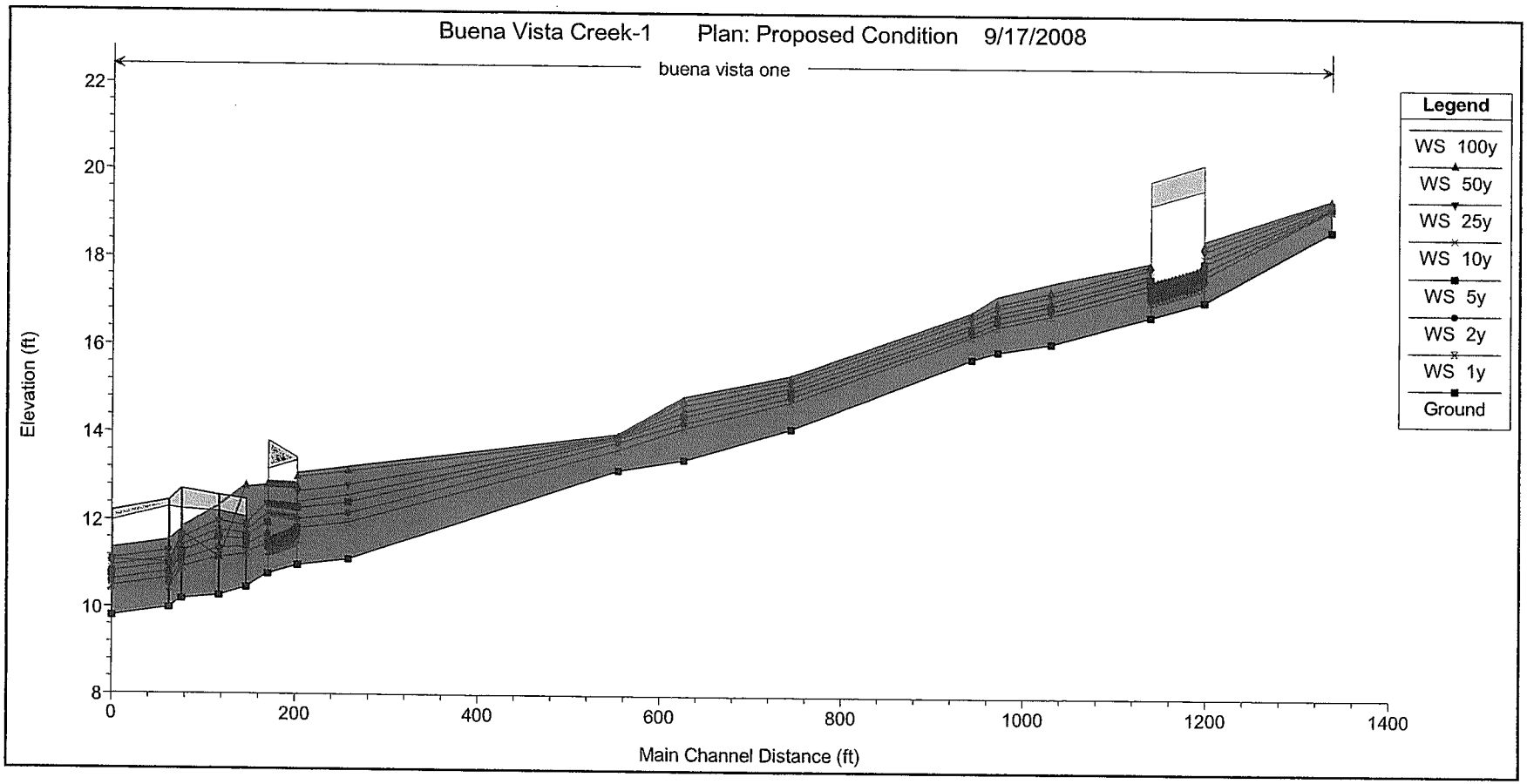
Reach	River Sta.	Contr.	Expan.
one	18	.1	.3
one	17	.1	.3
one	16.5	Culvert	
one	16	.1	.3
one	15	.1	.3
one	14	.1	.3
one	13	.1	.3
one	12	.1	.3
one	11	.1	.3
one	10	.1	.3
one	9	.1	.3
one	8	.1	.3
one	7.5	Culvert	
one	7	.1	.3
one	6	.1	.3
one	5.5	Bridge	
one	5	.1	.3
one	4.5	Bridge	
one	4	.1	.3
one	3.5	Bridge	
one	3	.1	.3
one	2.5	Bridge	
one	2	.1	.3

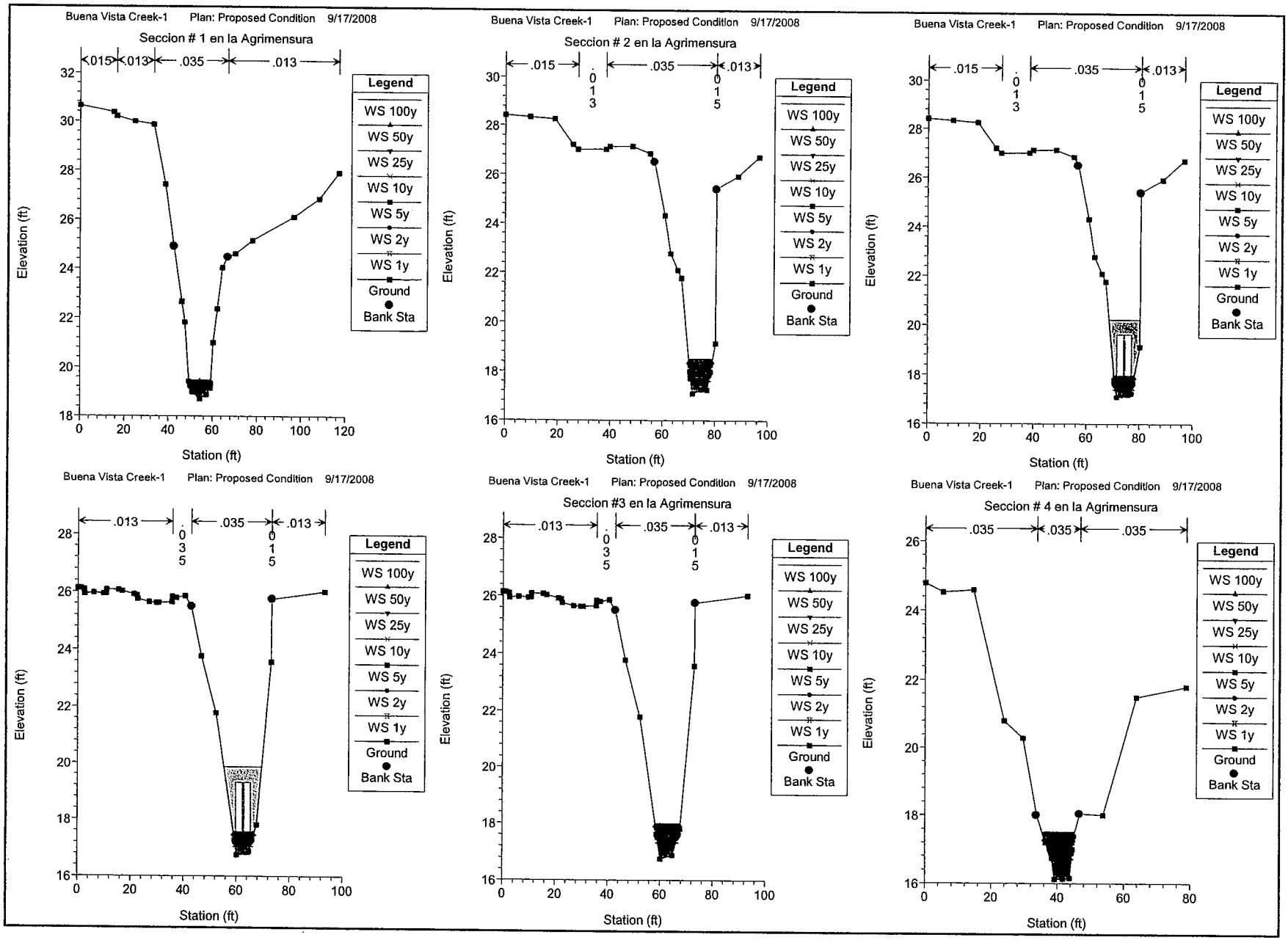
Profile Output Table - Standard Table 1

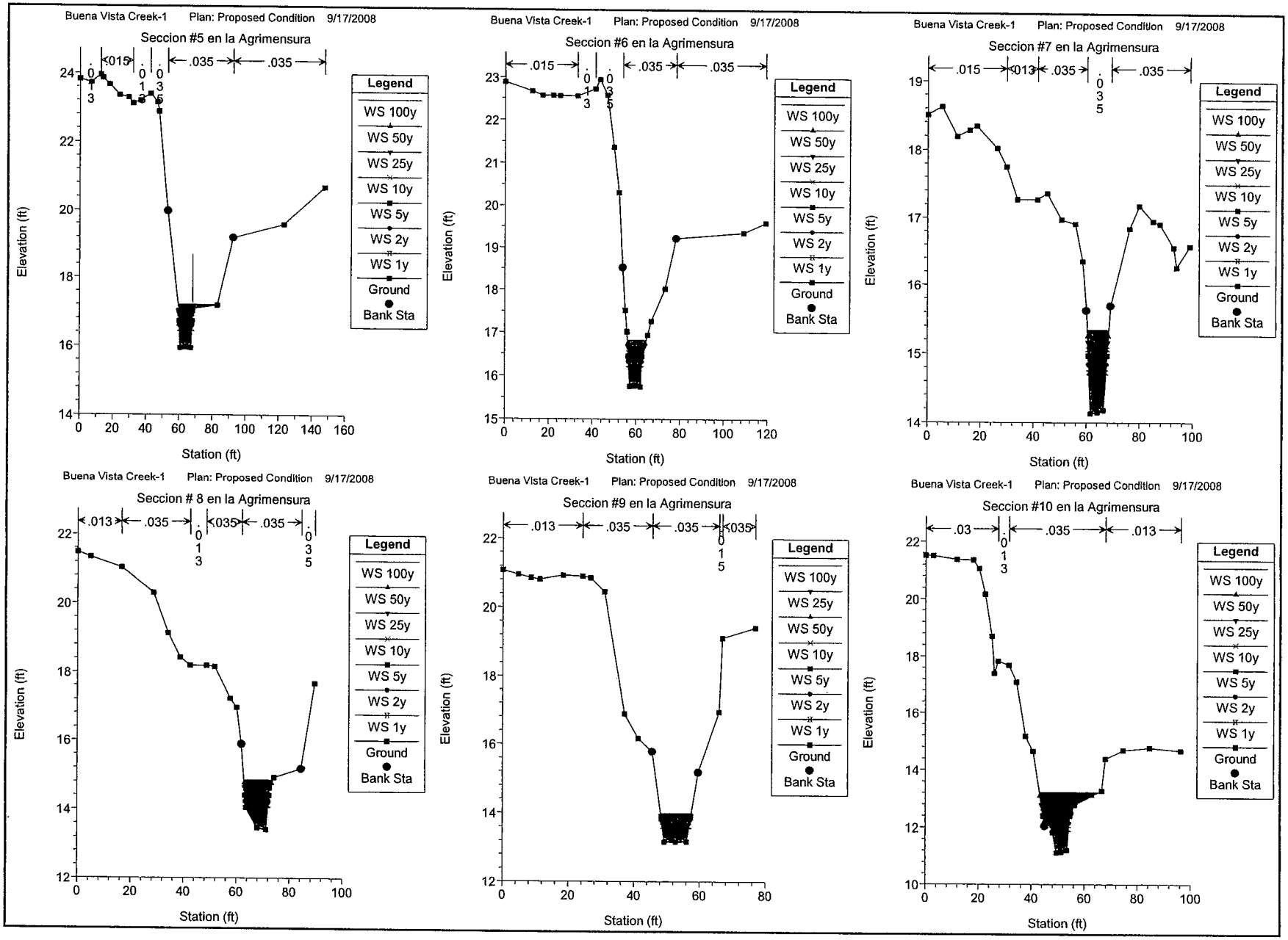
Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
one	18	100y	21.95	18.71	19.45	19.45	19.72	0.023396	4.17	5.27	9.97	1.01
one	18	50y	19.34	18.71	19.40	19.40	19.65	0.023862	4.00	4.83	9.89	1.01
one	18	25y	16.83	18.71	19.36	19.36	19.59	0.024219	3.84	4.39	9.71	1.01
one	18	10y	13.71	18.71	19.30	19.30	19.50	0.025162	3.62	3.79	9.46	1.01
one	18	5y	11.42	18.71	19.25	19.25	19.43	0.026163	3.44	3.32	9.26	1.01
one	18	2y	8.57	18.71	19.22	19.18	19.34	0.018595	2.78	3.08	9.15	0.84
one	18	1y	6.53	18.71	19.20	19.13	19.28	0.013348	2.27	2.88	9.06	0.71

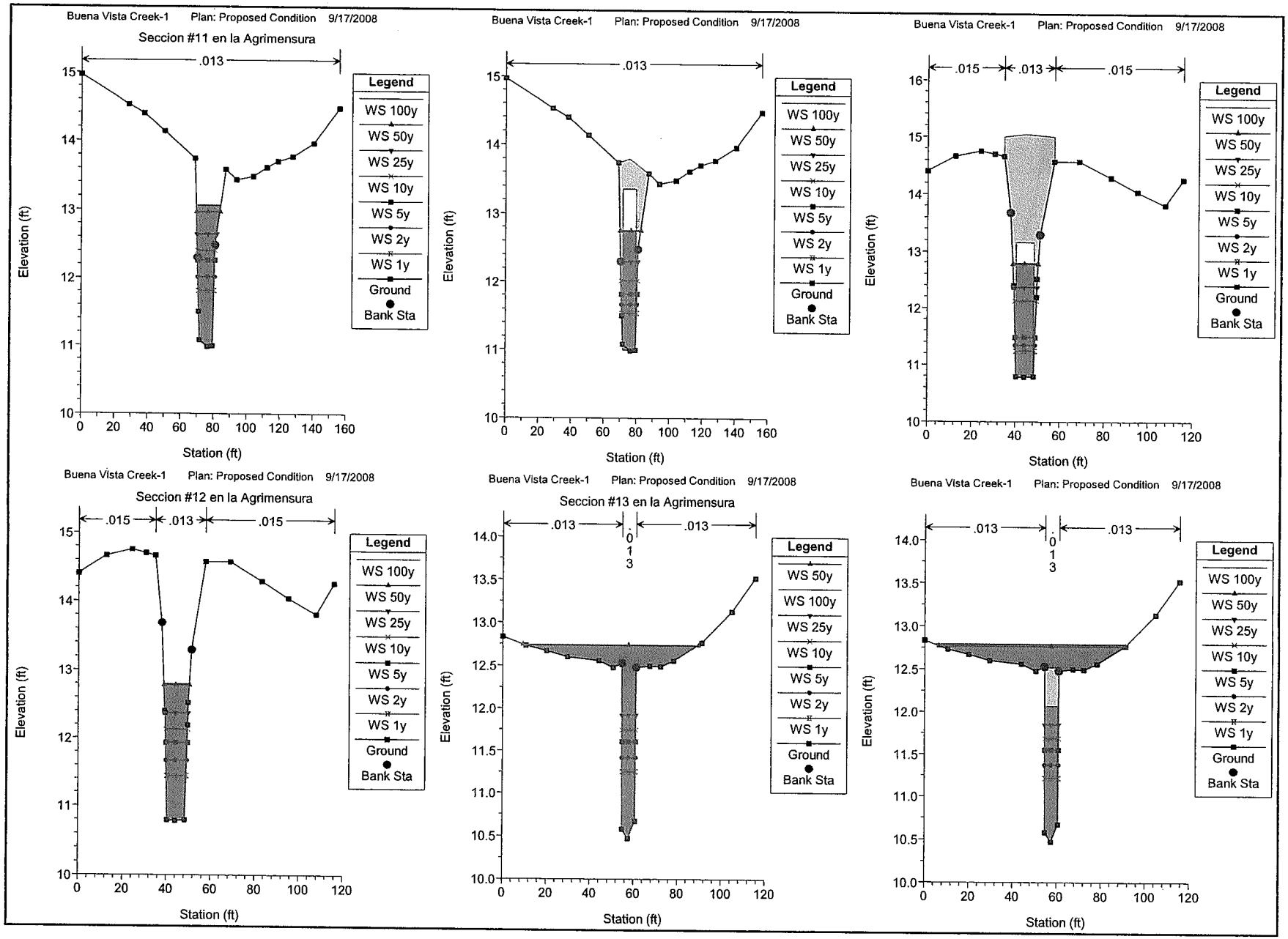
cne	17	100y	22.07	17.10	18.49	17.93	18.58	0.003161	2.31	9.55	9.12	0.40
cne	17	50y	19.45	17.10	18.37	17.88	18.46	0.003450	2.29	8.49	8.81	0.41
cne	17	25y	16.92	17.10	18.26	17.82	18.34	0.003809	2.27	7.45	8.51	0.43
cne	17	10y	13.78	17.10	18.10	17.75	18.18	0.004444	2.24	6.15	8.11	0.45
cne	17	5y	11.48	17.10	17.98	17.69	18.05	0.005158	2.22	5.17	7.80	0.48
cne	17	2y	8.61	17.10	17.81	17.61	17.88	0.006730	2.20	3.91	7.37	0.53
cne	17	1y	6.56	17.10	17.68	17.54	17.75	0.009248	2.23	2.95	7.01	0.60
cne	16.5		Culvert									
cne	16	100y	22.07	16.75	17.99		18.09	0.004817	2.60	8.48	9.63	0.49
cne	16	50y	19.45	16.75	17.92		18.02	0.004761	2.49	7.82	9.45	0.48
cne	16	25y	16.92	16.75	17.84		17.93	0.004814	2.38	7.10	9.26	0.48
cne	16	10y	13.78	16.75	17.71		17.79	0.005419	2.34	5.90	8.73	0.50
cne	16	5y	11.48	16.75	17.62		17.70	0.005486	2.22	5.16	8.31	0.50
cne	16	2y	8.61	16.75	17.49		17.56	0.005943	2.10	4.10	7.68	0.51
cne	16	1y	6.56	16.75	17.39		17.45	0.006207	1.96	3.35	7.19	0.51
cne	15	100y	22.27	16.12	17.51		17.60	0.004167	2.44	9.12	9.96	0.45
cne	15	50y	19.63	16.12	17.30		17.42	0.006260	2.76	7.12	8.80	0.54
cne	15	25y	17.08	16.12	17.22		17.33	0.006353	2.66	6.41	8.43	0.54
cne	15	10y	13.91	16.12	17.09		17.19	0.005831	2.56	5.43	7.04	0.51
cne	15	5y	11.58	16.12	16.99		17.08	0.005811	2.43	4.77	6.73	0.51
cne	15	2y	8.69	16.12	16.87		16.94	0.005572	2.20	3.96	6.33	0.49
cne	15	1y	6.62	16.12	16.77		16.83	0.006267	1.98	3.34	6.00	0.47
cne	14	100y	22.32	15.93	17.20		17.27	0.007746	2.11	10.59	23.64	0.56
cne	14	50y	19.67	15.93	17.01		17.11	0.004303	2.50	7.88	8.27	0.45
cne	14	25y	17.12	15.93	16.93		17.02	0.004227	2.37	7.22	8.13	0.44
cne	14	10y	13.94	15.93	16.81		16.89	0.004285	2.22	6.27	7.93	0.44
cne	14	5y	11.61	15.93	16.72		16.79	0.004317	2.09	5.54	7.77	0.44
cne	14	2y	8.71	15.93	16.60		16.65	0.004330	1.90	4.59	7.56	0.43
cne	14	1y	6.64	15.93	16.50		16.54	0.004249	1.71	3.87	7.40	0.42
cne	13	100y	22.32	15.75	16.83		17.00	0.010319	3.39	6.58	8.63	0.68
cne	13	50y	19.67	15.75	16.75		16.92	0.010316	3.31	5.95	8.08	0.68
cne	13	25y	17.12	15.75	16.67		16.83	0.010193	3.21	5.34	7.51	0.67
cne	13	10y	13.94	15.75	16.54		16.70	0.010510	3.14	4.45	6.60	0.67
cne	13	5y	11.61	15.75	16.46	16.30	16.60	0.010444	2.98	3.90	6.25	0.66
cne	13	2y	8.71	15.75	16.34	16.21	16.46	0.010787	2.73	3.19	6.04	0.66
cne	13	1y	6.64	15.75	16.27	16.14	16.36	0.010001	2.43	2.74	5.89	0.63
cne	12	100y	22.47	14.13	15.35		15.48	0.005810	2.93	7.67	8.11	0.53
cne	12	50y	19.80	14.13	15.26		15.39	0.005865	2.83	7.00	7.87	0.53
cne	12	25y	17.23	14.13	15.17		15.29	0.005990	2.73	6.30	7.62	0.53
cne	12	10y	14.03	14.13	15.07		15.17	0.005847	2.55	5.51	7.32	0.52
cne	12	5y	11.68	14.13	14.97		15.06	0.005658	2.41	4.85	7.06	0.51
cne	12	2y	8.77	14.13	14.85		14.93	0.005732	2.18	4.02	6.72	0.50
cne	12	1y	6.68	14.13	14.73		14.80	0.006314	2.06	3.24	6.38	0.51
cne	11	100y	26.10	13.42	14.84	14.31	14.94	0.003680	2.43	10.76	10.88	0.43
cne	11	50y	23.25	13.42	14.76	14.26	14.85	0.003611	2.35	9.89	10.33	0.42
cne	11	25y	20.50	13.42	14.64	14.21	14.73	0.003897	2.37	8.66	9.49	0.44
cne	11	10y	16.98	13.42	14.50		14.58	0.004288	2.30	7.39	9.18	0.45
cne	11	5y	14.02	13.42	14.40		14.47	0.004458	2.18	6.44	8.97	0.45
cne	11	2y	10.13	13.42	14.23		14.30	0.005066	2.03	5.00	8.65	0.47
cne	11	1y	6.91	13.42	14.12		14.17	0.004576	1.71	4.04	8.43	0.44
cne	10	100y	31.09	13.17	13.99	13.99	14.34	0.021738	4.77	6.51	9.31	1.01
cne	10	50y	27.48	13.17	13.93	13.93	14.26	0.022159	4.61	5.96	9.12	1.01
cne	10	25y	23.88	13.17	13.93	13.86	14.18	0.016176	3.96	6.02	9.14	0.86
cne	10	10y	19.34	13.17	13.92	13.78	14.09	0.011341	3.28	5.89	9.09	0.72
cne	10	5y	15.86	13.17	13.87	13.70	14.00	0.009443	2.89	5.49	8.95	0.65
cne	10	2y	10.94	13.17	13.80	13.59	13.88	0.006705	2.28	4.80	8.70	0.54
cne	10	1y	7.46	13.17	13.63	13.50	13.70	0.009210	2.21	3.37	8.16	0.61
cne	9	100y	31.09	11.12	13.21	12.26	13.26	0.001073	1.83	19.62	22.21	0.25
cne	9	50y	27.48	11.12	13.10	12.20	13.15	0.001119	1.78	17.26	19.69	0.25
cne	9	25y	23.88	11.12	12.80		12.86	0.001934	2.02	12.31	12.87	0.32
cne	9	10y	19.34	11.12	12.56		12.63	0.002663	2.06	9.56	10.77	0.36
cne	9	5y	15.86	11.12	12.40		12.46	0.003236	2.03	7.89	9.97	0.39

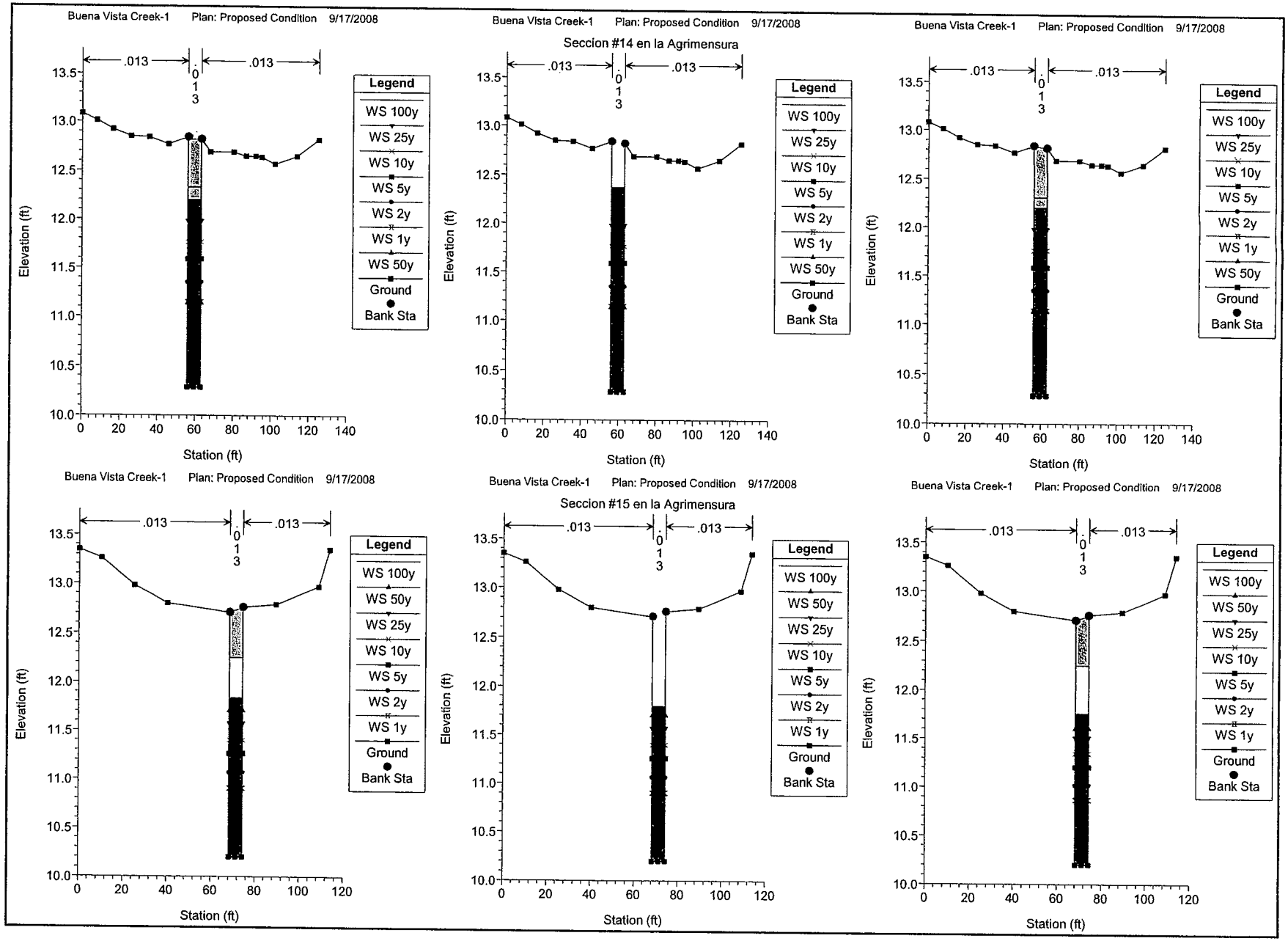
cne	9	2y	10.94	11.12	12.15		12.21	0.004739	1.99	5.50	9.30	0.45
cne	9	1y	7.46	11.12	11.94		12.00	0.003895	1.86	4.00	6.28	0.41
cne	8	100y	65.51	10.98	13.06	12.23	13.22	0.000397	3.24	21.13	14.79	0.42
cne	8	50y	57.94	10.98	12.97	12.14	13.11	0.000372	3.03	19.79	14.15	0.40
cne	8	25y	50.57	10.98	12.64	12.05	12.80	0.000578	3.29	15.48	11.87	0.48
cne	8	10y	41.26	10.98	12.41	11.92	12.56	0.000681	3.20	12.91	10.65	0.51
cne	8	5y	34.25	10.98	12.26	11.82	12.40	0.000698	3.02	11.35	10.36	0.51
cne	8	2y	25.29	10.98	12.02	11.68	12.14	0.000789	2.84	8.90	9.89	0.53
cne	8	1y	18.41	10.98	11.81	11.55	11.92	0.000898	2.66	6.92	9.49	0.55
cne	7.5		Culvert									
cne	7	100y	65.51	10.78	12.79		12.98	0.000565	3.43	19.12	11.59	0.47
cne	7	50y	57.94	10.78	12.78		12.92	0.000452	3.06	18.96	11.55	0.42
cne	7	25y	50.57	10.78	12.37		12.56	0.000726	3.51	14.42	10.28	0.52
cne	7	10y	41.26	10.78	12.13		12.31	0.000835	3.44	12.00	9.99	0.55
cne	7	5y	34.25	10.78	11.93		12.11	0.000988	3.40	10.09	9.69	0.59
cne	7	2y	25.29	10.78	11.67		11.84	0.001252	3.33	7.59	9.27	0.65
cne	7	1y	18.41	10.78	11.44		11.61	0.001774	3.34	5.52	8.92	0.75
cne	6	100y	65.51	10.47	12.74	12.09	12.96	0.000805	4.05	24.74	79.77	0.49
cne	6	50y	57.94	10.47	12.74	11.97	12.91	0.000621	3.56	24.99	80.29	0.43
cne	6	25y	50.57	10.47	11.92	11.85	12.49	0.002900	6.06	8.35	6.29	0.93
cne	6	10y	41.26	10.47	11.75	11.68	12.25	0.002893	5.67	7.27	6.24	0.93
cne	6	5y	34.25	10.47	11.61	11.55	12.05	0.002896	5.34	6.41	6.20	0.93
cne	6	2y	25.29	10.47	11.42	11.37	11.78	0.002882	4.82	5.25	6.15	0.92
cne	6	1y	18.41	10.47	11.25	11.22	11.55	0.002936	4.34	4.24	6.10	0.92
cne	5.5		Bridge									
cne	5	100y	65.51	10.28	12.37	11.68	12.69	0.001111	4.54	14.43	6.91	0.55
cne	5	50y	57.94	10.28	11.13	11.57	12.63	0.012221	9.82	5.90	6.91	1.87
cne	5	25y	50.57	10.28	11.98	11.46	12.27	0.001200	4.32	11.72	6.91	0.58
cne	5	10y	41.26	10.28	11.76	11.31	12.01	0.001191	4.04	10.22	6.91	0.59
cne	5	5y	34.25	10.28	11.58	11.19	11.81	0.001188	3.80	9.01	6.91	0.59
cne	5	2y	25.29	10.28	11.35	11.02	11.53	0.001183	3.43	7.37	6.91	0.59
cne	5	1y	18.41	10.28	11.14	10.88	11.29	0.001203	3.09	5.95	6.91	0.59
cne	4.5		Bridge									
cne	4	100y	65.51	10.20	11.80	11.74	12.53	0.003422	6.87	9.54	5.98	0.96
cne	4	50y	57.94	10.20	11.70	11.62	12.35	0.003211	6.47	8.96	5.98	0.93
cne	4	25y	50.57	10.20	11.57	11.50	12.16	0.003182	6.18	8.18	5.98	0.93
cne	4	10y	41.26	10.20	11.40	11.34	11.91	0.003150	5.77	7.15	5.98	0.93
cne	4	5y	34.25	10.20	11.26	11.20	11.71	0.003125	5.42	6.32	5.98	0.93
cne	4	2y	25.29	10.20	11.06	11.02	11.44	0.003133	4.90	5.16	5.98	0.93
cne	4	1y	18.41	10.20	10.90	10.87	11.20	0.003144	4.39	4.19	5.98	0.92
cne	3.5		Bridge									
cne	3	100y	65.51	9.99	11.54	11.46	12.21	0.003129	6.58	9.95	6.42	0.93
cne	3	50y	57.94	9.99	11.02	11.35	12.22	0.008273	8.79	6.59	6.42	1.53
cne	3	25y	50.57	9.99	11.29	11.23	11.86	0.003080	6.04	8.37	6.42	0.93
cne	3	10y	41.26	9.99	11.13	11.07	11.62	0.003080	5.65	7.30	6.42	0.93
cne	3	5y	34.25	9.99	11.00	10.95	11.43	0.003063	5.30	6.46	6.42	0.93
cne	3	2y	25.29	9.99	10.81	10.77	11.17	0.003097	4.79	5.27	6.42	0.93
cne	3	1y	18.41	9.99	10.66	10.62	10.94	0.003094	4.29	4.29	6.42	0.92
cne	2.5		Bridge									
cne	2	100y	65.51	9.80	11.27	11.27	12.01	0.003610	6.91	9.48	6.47	1.01
cne	2	50y	57.94	9.80	11.11	11.15	11.84	0.003933	6.84	8.47	6.47	1.05
cne	2	25y	50.57	9.80	11.03	11.03	11.66	0.003574	6.34	7.98	6.47	1.01
cne	2	10y	41.26	9.80	10.88	10.88	11.42	0.003544	5.91	6.98	6.47	1.00
cne	2	5y	34.25	9.80	10.75	10.75	11.23	0.003570	5.56	6.16	6.47	1.01
cne	2	2y	25.29	9.80	10.58	10.58	10.97	0.003611	5.03	5.03	6.47	1.01
cne	2	1y	18.41	9.80	10.43	10.43	10.75	0.003682	4.52	4.07	6.47	1.01

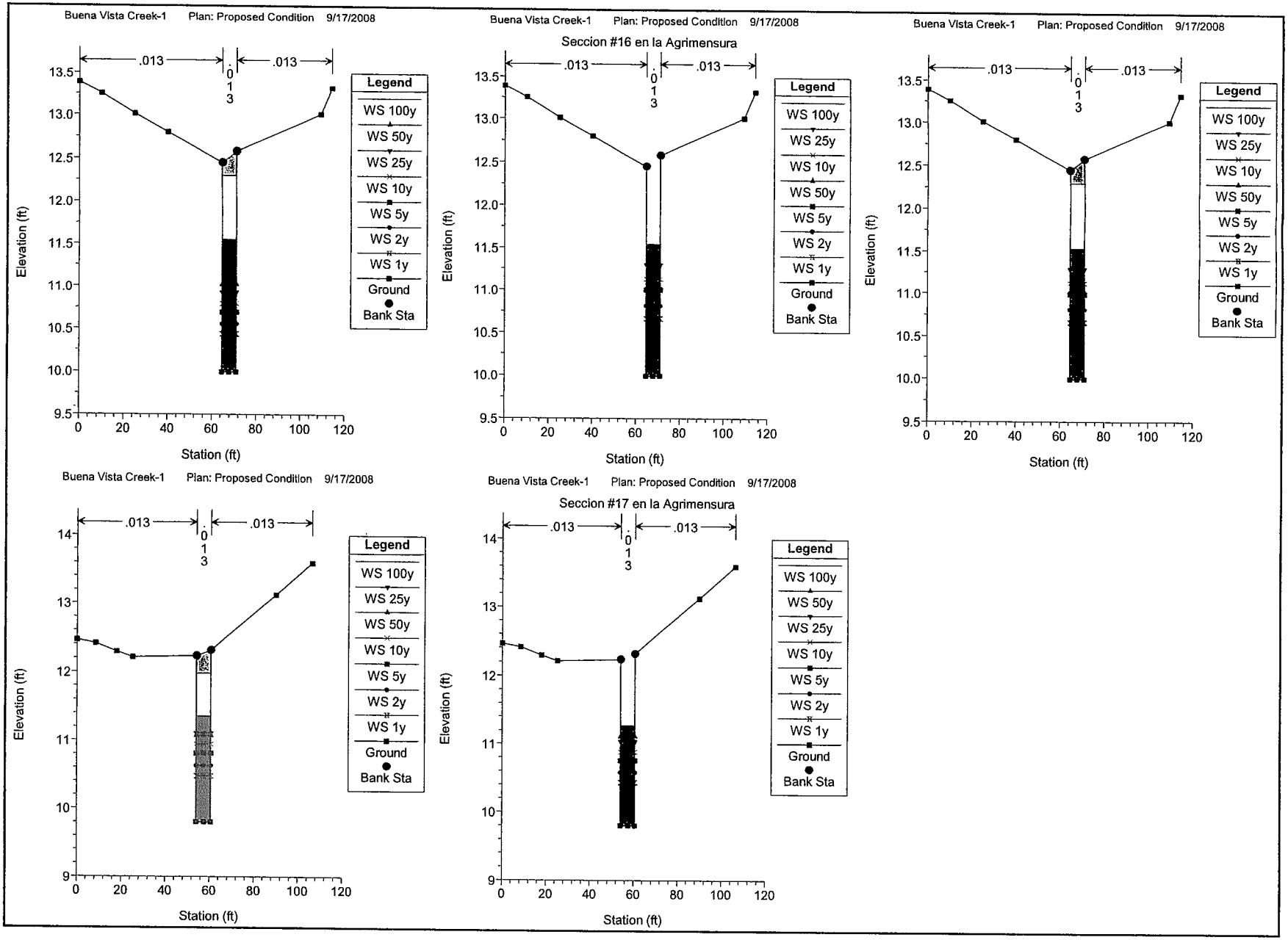

Buena Vista Creek-1 Plan: Proposed Condition 9/17/2008
buena vista one
Elevation (ft)
22
20
18
16
14
12
10
8
0
200
400
600
800
1000
1200
1400
Main Channel Distance (ft)
Legend
WS 100y
WS 50y
WS 25y
WS 10y
WS 5y
WS 2y
WS 1y
Ground


Buena Vista Creek-1 Plan: Proposed Condition 9/17/2008
Seccion # 1 en la Agrimensura
.015 .013 .035 .013
Elevation (ft)
Station (ft)
Legend
WS 100y
WS 50y
WS 25y
WS 10y
WS 5y
WS 2y
WS 1y
Ground
Bank Sta
Buena Vista Creek-1 Plan: Proposed Condition 9/17/2008
Seccion # 2 en la Agrimensura
.015 .013 .035 .013
Elevation (ft)
Station (ft)
Legend
WS 100y
WS 50y
WS 25y
WS 10y
WS 5y
WS 2y
WS 1y
Ground
Bank Sta
Buena Vista Creek-1 Plan: Proposed Condition 9/17/2008
.015 .013 .035 .013
Elevation (ft)
Station (ft)
Legend
WS 100y
WS 50y
WS 25y
WS 10y
WS 5y
WS 2y
WS 1y
Ground
Bank Sta
Buena Vista Creek-1 Plan: Proposed Condition 9/17/2008
.013 .035 .013
Elevation (ft)
Station (ft)
Legend
WS 100y
WS 50y
WS 25y
WS 10y
WS 5y
WS 2y
WS 1y
Ground
Bank Sta
Buena Vista Creek-1 Plan: Proposed Condition 9/17/2008
Seccion #3 en la Agrimensura
.013 .035 .013
Elevation (ft)
Station (ft)
Legend
WS 100y
WS 50y
WS 25y
WS 10y
WS 5y
WS 2y
WS 1y
Ground
Bank Sta
Buena Vista Creek-1 Plan: Proposed Condition 9/17/2008
Seccion # 4 en la Agrimensura
.035 .035 .035
Elevation (ft)
Station (ft)
Legend
WS 100y
WS 50y
WS 25y
WS 10y
WS 5y
WS 2y
WS 1y
Ground
Bank Sta


Buena Vista Creek-1 Plan: Proposed Condition 9/17/2008
Seccion #5 en la Agrimensura
.015
.035
.035
Legend
WS 100y
WS 50y
WS 25y
WS 10y
WS 5y
WS 2y
WS 1y
Ground
Bank Sta
Elevation (ft)
Station (ft)
Buena Vista Creek-1 Plan: Proposed Condition 9/17/2008
Seccion #6 en la Agrimensura
.015
.035
.035
Legend
WS 100y
WS 50y
WS 25y
WS 10y
WS 5y
WS 2y
WS 1y
Ground
Bank Sta
Elevation (ft)
Station (ft)
Buena Vista Creek-1 Plan: Proposed Condition 9/17/2008
Seccion #7 en la Agrimensura
.015
.013
.035
.035
Legend
WS 100y
WS 50y
WS 25y
WS 10y
WS 5y
WS 2y
WS 1y
Ground
Bank Sta
Elevation (ft)
Station (ft)
Buena Vista Creek-1 Plan: Proposed Condition 9/17/2008
Seccion # 8 en la Agrimensura
.013
.035
.035
.035
Legend
WS 100y
WS 50y
WS 25y
WS 10y
WS 5y
WS 2y
WS 1y
Ground
Bank Sta
Elevation (ft)
Station (ft)
Buena Vista Creek-1 Plan: Proposed Condition 9/17/2008
Seccion #9 en la Agrimensura
.013
.035
.035
.035
Legend
WS 100y
WS 25y
WS 50y
WS 10y
WS 5y
WS 2y
WS 1y
Ground
Bank Sta
Elevation (ft)
Station (ft)
Buena Vista Creek-1 Plan: Proposed Condition 9/17/2008
Seccion #10 en la Agrimensura
.03
.035
.013
Legend
WS 100y
WS 50y
WS 25y
WS 10y
WS 5y
WS 2y
WS 1y
Ground
Bank Sta
Elevation (ft)
Station (ft)


Buena Vista Creek-1 Plan: Proposed Condition 9/17/2008
Seccion #11 en la Agrimensura
.013
Legend
WS 100y
WS 50y
WS 25y
WS 10y
WS 5y
WS 2y
WS 1y
Ground
Bank Sta
Elevation (ft)
Station (ft)
Buena Vista Creek-1 Plan: Proposed Condition 9/17/2008
.013
Legend
WS 100y
WS 50y
WS 25y
WS 10y
WS 5y
WS 2y
WS 1y
Ground
Bank Sta
Elevation (ft)
Station (ft)
Buena Vista Creek-1 Plan: Proposed Condition 9/17/2008
.015
.013
.015
Legend
WS 100y
WS 50y
WS 25y
WS 10y
WS 5y
WS 2y
WS 1y
Ground
Bank Sta
Elevation (ft)
Station (ft)
Buena Vista Creek-1 Plan: Proposed Condition 9/17/2008
Seccion #12 en la Agrimensura
.015
.013
.015
Legend
WS 100y
WS 50y
WS 25y
WS 10y
WS 5y
WS 2y
WS 1y
Ground
Bank Sta
Elevation (ft)
Station (ft)
Buena Vista Creek-1 Plan: Proposed Condition 9/17/2008
Seccion #13 en la Agrimensura
.013
.013
Legend
WS 50y
WS 100y
WS 25y
WS 10y
WS 5y
WS 2y
WS 1y
Ground
Bank Sta
Elevation (ft)
Station (ft)
Buena Vista Creek-1 Plan: Proposed Condition 9/17/2008
.013
.013
Legend
WS 100y
WS 50y
WS 25y
WS 10y
WS 5y
WS 2y
WS 1y
Ground
Bank Sta
Elevation (ft)
Station (ft)


Buena Vista Creek-1 Plan: Proposed Condition 9/17/2008
.013
.013
.013
Legend
WS 100y
WS 25y
WS 10y
WS 5y
WS 2y
WS 1y
WS 50y
Ground
Bank Sta
Elevation (ft)
Station (ft)
Buena Vista Creek-1 Plan: Proposed Condition 9/17/2008
Seccion #14 en la Agrimensura
Buena Vista Creek-1 Plan: Proposed Condition 9/17/2008
Buena Vista Creek-1 Plan: Proposed Condition 9/17/2008
Buena Vista Creek-1 Plan: Proposed Condition 9/17/2008
Seccion #15 en la Agrimensura
Buena Vista Creek-1 Plan: Proposed Condition 9/17/2008


Buena Vista Creek-1 Plan: Proposed Condition 9/17/2008
.013
.013
.0
1
3
Legend
WS 100y
WS 50y
WS 25y
WS 10y
WS 5y
WS 2y
WS 1y
Ground
Bank Sta
Elevation (ft)
Station (ft)
Buena Vista Creek-1 Plan: Proposed Condition 9/17/2008
Seccion #16 en la Agrimensura
Buena Vista Creek-1 Plan: Proposed Condition 9/17/2008
Buena Vista Creek-1 Plan: Proposed Condition 9/17/2008
Seccion #17 en la Agrimensura

APPENDIX G
PONDPACK AND HEC-RAS MODELS-ELECTRONIC COPY

THE FOLLOWING FILES ARE STORED IN THE CD BELOW:

I) Hydrologic-Hydraulic Modeling (Pond Pack v10.00)

1) Existing Conditions
   i) Oso blancoxc.ppw

2) Proposed Conditions
   i) Oso blancopc.ppw