* Alpha	* 1.00	* Stream Power (N/m s)	*	* 18.45	*
* Frctn Loss (m)	* 0.16	* Cum Volume (1000 m3)	*	* 9.80	*
* C & E Loss (m)	* 0.00	* Cum dA (1000 m2)	*	* 13.27	*

CROSS SECTION OUTPUT Profile #PF 3

* E.G. Elev (m)	* 77.11	* Element	* Left OB	* Channel	* Right OB	*
* Vel Head (m)	* 0.05	* Wt. n-Val.	*	* 0.040	*	*
* W.S. Elev (m)	* 77.06	* Reach Len. (m)	* 81.16	* 80.54	* 76.15	*
* Crit W.S. (m)	*	* Flow Area (m2)	*	* 23.29	*	*
* E.G. Slope (m/m)	*0.001631	* Area (m2)	*	* 23.29	*	*
* Q Total (m3/s)	* 23.88	* Flow (m3/s)	*	* 23.88	*	*
* Top Width (m)	* 21.79	* Top Width (m)	*	* 21.79	*	*
* Vel Total (m/s)	* 1.03	* Avg. Vel. (m/s)	*	* 1.03	*	*
* Max Chl Dpth (m)	* 1.20	* Hydr. Depth (m)	*	* 1.07	*	*
* Conv. Total (m3/s)	* 591.3	* Conv. (m3/s)	*	* 591.3	*	*
* Length Wtd. (m)	* 80.54	* Wetted Per. (m)	*	* 22.75	*	*
* Min Ch El (m)	* 75.86	* Shear (N/m2)	*	* 16.37	*	*
* Alpha	* 1.00	* Stream Power (N/m s)	*	* 16.79	*	*
* Frctn Loss (m)	* 0.16	* Cum Volume (1000 m3)	*	* 13.89	*	*
* C & E Loss (m)	* 0.00	* Cum DA (1000 m2)	*	* 14.08	*	*

CROSS SECTION OUTPUT Profile #PF 4

* E.G. Elev (m)	* 77.41	* Element	* Left OB	* Channel	* Right OB	*
* Vel Head (m)	* 0.07	* Wt. n-Val.	*	* 0.040	*	*
* W.S. Elev (m)	* 77.34	* Reach Len. (m)	* 81.16	* 80.54	* 76.15	*
* Crit W.S. (m)	*	* Flow Area (m2)	*	* 29.53	*	*
* E.G. Slope (m/m)	*0.001576	* Area (m2)	*	* 29.53	*	*
* Q Total (m3/s)	* 34.10	* Flow (m3/s)	*	* 34.10	*	*
* Top Width (m)	* 22.32	* Top Width (m)	*	* 22.32	*	*
* Vel Total (m/s)	* 1.15	* Avg. Vel. (m/s)	*	* 1.15	*	*
* Max Chl Dpth (m)	* 1.48	* Hydr. Depth (m)	*	* 1.32	*	*
* Conv. Total (m3/s)	* 858.9	* Conv. (m3/s)	*	* 858.9	*	*
* Length Wtd. (m)	* 80.54	* Wetted Per. (m)	*	* 23.53	*	*
* Min Ch El (m)	* 75.86	* Shear (N/m2)	*	* 19.40	*	*
* Alpha	* 1.00	* Stream Power (N/m s)	*	* 22.40	*	*
* Frctn Loss (m)	* 0.17	* Cum Volume (1000 m3)	*	* 17.49	*	*
* C & E Loss (m)	* 0.00	* Cum DA (1000 m2)	*	* 15.01	*	*

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 #PF 5

* E.G. Elev (m)	* 77.64	* Element	* Left OB	* Channel	* Right OB	*
* Vel Head (m)	* 0.09	* Wt. n-Val.	*	* 0.040	*	*
* W.S. Elev (m)	* 77.56	* Reach Len. (m)	* 81.16	* 80.54	* 76.15	*
* Crit W.S. (m)	*	* Flow Area (m2)	*	* 34.41	*	*
* E.G. Slope (m/m)	*0.001658	* Area (m2)	*	* 34.41	*	*
* Q Total (m3/s)	* 44.39	* Flow (m3/s)	*	* 44.39	*	*
* Top Width (m)	* 22.72	* Top Width (m)	*	* 22.72	*	*
* Vel Total (m/s)	* 1.29	* Avg. Vel. (m/s)	*	* 1.29	*	*
* Max Chl Dpth (m)	* 1.70	* Hydr. Depth (m)	*	* 1.51	*	*
* Conv. Total (m3/s)	* 1090.2	* Conv. (m3/s)	*	* 1090.2	*	*
* Length Wtd. (m)	* 80.54	* Wetted Per. (m)	*	* 24.12	*	*
* Min Ch El (m)	* 75.86	* Shear (N/m2)	*	* 23.19	*	*
* Alpha	* 1.00	* Stream Power (N/m s)	*	* 29.92	*	*
* Frctn Loss (m)	* 0.17	* Cum Volume (1000 m3)	*	* 20.74	*	*
* C & E Loss (m)	* 0.00	* Cum DA (1000 m2)	*	* 15.49	*	*

CROSS SECTION OUTPUT Profile #PF 6

* E.G. Elev (m)	* 77.87	* Element	* Left OB	* Channel	* Right OB	*
* Vel Head (m)	* 0.10	* Wt. n-Val.	*	* 0.040	*	*
* W.S. Elev (m)	* 77.76	* Reach Len. (m)	* 81.16	* 80.54	* 76.15	*
* Crit W.S. (m)	*	* Flow Area (m2)	*	* 39.18	*	*
* E.G. Slope (m/m)	*0.001717	* Area (m2)	*	* 39.18	*	*
* Q Total (m3/s)	* 55.21	* Flow (m3/s)	*	* 55.21	*	*
* Top Width (m)	* 23.11	* Top Width (m)	*	* 23.11	*	*
* Vel Total (m/s)	* 1.41	* Avg. Vel. (m/s)	*	* 1.41	*	*
* Max Chl Dpth (m)	* 1.90	* Hydr. Depth (m)	*	* 1.70	*	*
* Conv. Total (m3/s)	* 1332.3	* Conv. (m3/s)	*	* 1332.3	*	*
* Length Wtd. (m)	* 80.54	* Wetted Per. (m)	*	* 24.69	*	*
* Min Ch El (m)	* 75.86	* Shear (N/m2)	*	* 26.72	*	*
* Alpha	* 1.00	* Stream Power (N/m s)	*	* 37.65	*	*
* Frctn Loss (m)	* 0.17	* Cum Volume (1000 m3)	*	* 23.93	*	*
* C & E Loss (m)	* 0.00	* Cum DA (1000 m2)	*	* 15.97	*	*

CROSS SECTION OUTPUT Profile #PF 7

* E.G. Elev (m)	* 78.08	* Element	* Left OB	* Channel	* Right OB	*
* Vel Head (m)	* 0.12	* Wt. n-Val.	*	* 0.040	*	*
* W.S. Elev (m)	* 77.96	* Reach Len. (m)	* 81.16	* 80.54	* 76.15	*
* Crit W.S. (m)	*	* Flow Area (m2)	*	* 43.85	*	*
* E.G. Slope (m/m)	*0.001778	* Area (m2)	*	* 43.85	*	*
* Q Total (m3/s)	* 66.68	* Flow (m3/s)	*	* 66.68	*	*
* Top Width (m)	* 23.58	* Top Width (m)	*	* 23.58	*	*
* Vel Total (m/s)	* 1.52	* Avg. Vel. (m/s)	*	* 1.52	*	*
* Max Chl Dpth (m)	* 2.10	* Hydr. Depth (m)	*	* 1.86	*	*
* Conv. Total (m3/s)	* 1581.3	* Conv. (m3/s)	*	* 1581.3	*	*
* Length Wtd. (m)	* 80.54	* Wetted Per. (m)	*	* 25.31	*	*
* Min Ch El (m)	* 75.86	* Shear (N/m2)	*	* 30.21	*	*
* Alpha	* 1.00	* Stream Power (N/m s)	*	* 45.94	*	*
* Frctn Loss (m)	* 0.18	* Cum Volume (1000 m3)	*	* 27.13	*	*
* C & E Loss (m)	* 0.00	* Cum DA (1000 m2)	*	* 16.45	*	*

CROSS SECTION OUTPUT Profile #PF 8

* E.G. Elev (m)	* 78.23	* Element	* Left OB	* Channel	* Right OB	*
* Vel Head (m)	* 0.13	* Wt. n-Val.	*	* 0.040	*	*
* W.S. Elev (m)	* 78.09	* Reach Len. (m)	* 81.16	* 80.54	* 76.15	*
* Crit W.S. (m)	*	* Flow Area (m2)	*	* 46.60	*	*
* E.G. Slope (m/m)	*0.001812	* Area (m2)	*	* 46.60	*	*
* Q Total (m3/s)	* 73.41	* Flow (m3/s)	*	* 73.81	*	*
* Top Width (m)	* 23.86	* Top Width (m)	*	* 23.86	*	*
* Vel Total (m/s)	* 1.58	* Avg. Vel. (m/s)	*	* 1.58	*	*
* Max Chl Dpth (m)	* 2.22	* Hydr. Depth (m)	*	* 1.95	*	*
* Conv. Total (m3/s)	* 1733.5	* Conv. (m3/s)	*	* 1733.5	*	*
* Length Wtd. (m)	* 80.54	* Wetted Per. (m)	*	* 25.68	*	*
* Min Ch El (m)	* 75.86	* Shear (N/m2)	*	* 32.27	*	*

* Alpha	*	1.00	* Stream Power (N/m s)	*		*	51.10	*	*
* Frctn Loss (m)	*	0.18	* Cum Volume (1000 m3)	*		*	29.04	*	*
* C & E Loss (m)	*	0.00	* Cum CA (1000 m2)	*		*	16.73	*	*

CROSS SECTION OUTPUT Profile #PF 9

* E.G. Elev (m)	*	78.46	* Element	*	Left OB	*	Channel	*	Right OB
* Vel Head (m)	*	0.15	* Wt. n-Val.	*		*	0.040	*	*
* W.S. Elev (m)	*	78.31	* Reach Len. (m)	*	81.16	*	80.54	*	76.15 *
* Crit W.S. (m)	*		* Flow Area (m2)	*		*	52.25	*	*
* E.G. Slope (m/m)	*	0.001572	* Area (m2)	*		*	52.25	*	*
* Q Total (m3/s)	*	18.04	* Flow (m3/s)	*		*	88.04	*	*
* Top Width (m)	*	24.41	* Top Width (m)	*		*	24.43	*	*
* Vel Total (m/s)	*	1.70	* Avg. Vel. (m/s)	*		*	1.70	*	*
* Max Chl Dpth (m)	*	2.45	* Hydr. Depth (m)	*		*	2.14	*	*
* Conv. Total (m3/s)	*	2058.2	* Conv. (m3/s)	*		*	2058.2	*	*
* Length Wtd. (m)	*	49.54	* Wetted Per. (m)	*		*	26.41	*	*
* Min Ch El (m)	*	73.86	* Shear (N/m2)	*		*	36.30	*	*
* Alpha	*	1.00	* Stream Power (N/m s)	*		*	61.87	*	*
* Frctn Loss (m)	*	0.14	* Cum Volume (1000 m3)	*		*	32.98	*	*
* C & E Loss (m)	*	0.00	* Cum CA (1000 m2)	*		*	17.35	*	*

CROSS SECTION OUTPUT Profile #PF 10

* E.G. Elev (m)	*	78.53	* Element	*	Left OB	*	Channel	*	Right OB
* Vel Head (m)	*	0.15	* Wt. n-Val.	*		*	0.040	*	*
* W.S. Elev (m)	*	78.37	* Reach Len. (m)	*	81.16	*	80.54	*	76.15 *
* Crit W.S. (m)	*		* Flow Area (m2)	*		*	53.73	*	*
* E.G. Slope (m/m)	*	0.001890	* Area (m2)	*		*	53.73	*	*
* Q Total (m3/s)	*	93.79	* Flow (m3/s)	*		*	93.29	*	*
* Top Width (m)	*	24.57	* Top Width (m)	*		*	24.57	*	*
* Vel Total (m/s)	*	1.74	* Avg. Vel. (m/s)	*		*	1.74	*	*
* Max Chl Dpth (m)	*	2.51	* Hydr. Depth (m)	*		*	2.19	*	*
* Conv. Total (m3/s)	*	2146.0	* Conv. (m3/s)	*		*	2146.0	*	*
* Length Wtd. (m)	*	80.54	* Wetted Per. (m)	*		*	26.60	*	*
* Min Ch El (m)	*	73.86	* Shear (N/m2)	*		*	37.43	*	*
* Alpha	*	1.00	* Stream Power (N/m s)	*		*	64.89	*	*
* Frctn Loss (m)	*	0.16	* Cum Volume (1000 m3)	*		*	34.04	*	*
* C & E Loss (m)	*	0.00	* Cum CA (1000 m2)	*		*	17.50	*	*

CROSS SECTION OUTPUT Profile #PF 11

* E.G. Elev (m)	*	78.62	* Element	*	Left OB	*	Channel	*	Right OB
* Vel Head (m)	*	0.16	* Wt. n-Val.	*		*	0.040	*	*
* W.S. Elev (m)	*	78.63	* Reach Len. (m)	*	81.16	*	80.54	*	76.15 *
* Crit W.S. (m)	*		* Flow Area (m2)	*		*	60.28	*	*
* E.G. Slope (m/m)	*	0.001965	* Area (m2)	*		*	60.28	*	*
* Q Total (m3/s)	*	112.91	* Flow (m3/s)	*		*	112.91	*	*
* Top Width (m)	*	25.71	* Top Width (m)	*		*	25.21	*	*
* Vel Total (m/s)	*	1.87	* Avg. Vel. (m/s)	*		*	1.87	*	*
* Max Chl Dpth (m)	*	2.78	* Hydr. Depth (m)	*		*	2.39	*	*
* Conv. Total (m3/s)	*	2547.2	* Conv. (m3/s)	*		*	2547.2	*	*
* Length Wtd. (m)	*	80.54	* Wetted Per. (m)	*		*	29.43	*	*
* Min Ch El (m)	*	75.86	* Shear (N/m2)	*		*	42.34	*	*
* Alpha	*	1.00	* Stream Power (N/m s)	*		*	79.31	*	*
* Frctn Loss (m)	*	0.19	* Cum Volume (1000 m3)	*		*	38.79	*	*
* C & E Loss (m)	*	0.00	* Cum CA (1000 m2)	*		*	18.12	*	*

CROSS SECTION OUTPUT Profile #PF 12

* E.G. Elev (m)	*	79.4	* Element	*	Left OB	*	Channel	*	Right OB
* Vel Head (m)	*	[illegible]	* Wt. n-Val.	*		*	0.040	*	*
* W.S. Elev (m)	*	79.19	* Reach Len. (m)	*	81.16	*	80.54	*	76.15 *
* Crit W.S. (m)	*		* Flow Area (m2)	*		*	74.42	*	*
* E.G. Slope (m/m)	*	0.002[illegible]	* Area (m2)	*		*	74.42	*	*
* Q Total (m3/s)	*	150.71	* Flow (m3/s)	*		*	150.71	*	*
* Top Width (m)	*	26.51	* Top Width (m)	*		*	26.51	*	*
* Vel Total (m/s)	*	2.13	* Avg. Vel. (m/s)	*		*	2.13	*	*
* Max Chl Dpth (m)	*	3.17	* Hydr. Depth (m)	*		*	2.81	*	*
* Conv. Total (m3/s)	*	3475.1	* Conv. (m3/s)	*		*	3475.1	*	*
* Length Wtd. (m)	*	80.54	* Wetted Per. (m)	*		*	29.15	*	*
* Min Ch El (m)	*	75.86	* Shear (N/m2)	*		*	52.21	*	*
* Alpha	*	1.00	* Stream Power (N/m s)	*		*	111.25	*	*
* Frctn Loss (m)	*	0.17	* Cum Volume (1000 m3)	*		*	49.33	*	*
* C & E Loss (m)	*	0.00	* Cum CA (1000 m2)	*		*	19.66	*	*

CROSS SECTION OUTPUT Profile #PF 13

* E.G. Elev (m)	*	[illegible]	* Element	*	Left OB	*	Channel	*	Right OB
* Vel Head (m)	*	[illegible]	* Wt. n-Val.	*		*	0.040	*	*
* W.S. Elev (m)	*	[illegible]	* Reach Len. (m)	*	81.16	*	80.54	*	76.15 *
* Crit W.S. (m)	*		* Flow Area (m2)	*		*	85.22	*	*
* E.G. Slope (m/m)	*	0.00[illegible]	* Area (m2)	*		*	85.22	*	*
* Q Total (m3/s)	*	[illegible]	* Flow (m3/s)	*		*	198.20	*	*
* Top Width (m)	*	[illegible]	* Top Width (m)	*		*	27.49	*	*
* Vel Total (m/s)	*	[illegible]	* Avg. Vel. (m/s)	*		*	2.33	*	*
* Max Chl Dpth (m)	*	[illegible]	* Hydr. Depth (m)	*		*	3.10	*	*
* Conv. Total (m3/s)	*	4235.1	* Conv. (m3/s)	*		*	4235.1	*	*
* Length Wtd. (m)	*	[illegible]	* Wetted Per. (m)	*		*	30.41	*	*
* Min Ch El (m)	*	[illegible]	* Shear (N/m2)	*		*	69.19	*	*
* Alpha	*	[illegible]	* Stream Power (N/m s)	*		*	139.99	*	*
* Frctn Loss (m)	*	[illegible]	* Cum Volume (1000 m3)	*		*	57.28	*	*
* C & E Loss (m)	*	[illegible]	* Cum CA (1000 m2)	*		*	20.21	*	*

[illegible]

[illegible]

[illegible]

[illegible]

0 .045 0 .04 38.14 .045

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
0	38.14	38.75	46.36	54.9	.1	.3

CROSS SECTION OUTPUT Profile RPF 1

			Left OB	Channel	Right OB
E.G. Elev (m)	75.88	Element		0.040	
Vel Head (m)	0.01	Wt. n-Val.	38.75	46.36	54.90
W.S. Elev (m)	75.87	Reach Len. (m)		2.84	
Crit W.S. (m)		Flow Area (m2)		2.84	
E.G. Slope (m/m)	0.002841	Area (m2)		1.31	
Q Total (m3/s)	1.31	Flow (m3/s)		13.88	
Top Width (m)	13.88	Top Width (m)		0.46	
Vel Total (m/s)	0.46	Avg. Vel. (m/s)		0.28	
Max Chl Dpth (m)	0.28	Hydr. Depth (m)		24.6	
Conv. Total (m3/s)	24.6	Conv. (m3/s)		14.00	
Length Wtd. (m)	46.36	Wetted Per. (m)		5.66	
Min Ch El (m)	75.59	Shear (N/m2)		2.61	
Alpha	1.00	Stream Power (N/m s)		1.95	
Frctn Loss (m)	0.11	Cum Volume (1000 m3)		8.85	
C & E Loss (m)	0.00	Cum SA (1000 m2)			

CROSS SECTION OUTPUT Profile RPF 2

			Left OB	Channel	Right OB
E.G. Elev (m)	76.60	Element		0.040	
Vel Head (m)	0.05	Wt. n-Val.	38.75	46.36	54.90
W.S. Elev (m)	76.55	Reach Len. (m)		13.52	
Crit W.S. (m)		Flow Area (m2)		13.52	
E.G. Slope (m/m)	0.002331	Area (m2)		13.74	
Q Total (m3/s)	13.74	Flow (m3/s)		16.85	
Top Width (m)	16.85	Top Width (m)		1.02	
Vel Total (m/s)	1.02	Avg. Vel. (m/s)		0.80	
Max Chl Dpth (m)	0.96	Hydr. Depth (m)		285.2	
Conv. Total (m3/s)	285.2	Conv. (m3/s)		17.45	
Length Wtd. (m)	46.36	Wetted Per. (m)		17.64	
Min Ch El (m)	75.59	Shear (N/m2)		17.92	
Alpha	1.60	Stream Power (N/m s)		8.60	
Frctn Loss (m)	0.08	Cum Volume (1000 m3)		11.74	
C & E Loss (m)	0.01	Cum SA (1000 m2)			

CROSS SECTION OUTPUT Profile RPF 3

			Left OB	Channel	Right OB
E.G. Elev (m)	76.95	Element		0.040	
Vel Head (m)	0.08	Wt. n-Val.	38.75	46.36	54.90
W.S. Elev (m)	76.87	Reach Len. (m)		18.91	
Crit W.S. (m)		Flow Area (m2)		18.91	
E.G. Slope (m/m)	0.002452	Area (m2)		23.68	
Q Total (m3/s)	23.68	Flow (m3/s)		17.50	
Top Width (m)	17.50	Top Width (m)		1.26	
Vel Total (m/s)	1.26	Avg. Vel. (m/s)		1.08	
Max Chl Dpth (m)	1.28	Hydr. Depth (m)		482.3	
Conv. Total (m3/s)	482.3	Conv. (m3/s)		18.37	
Length Wtd. (m)	46.36	Wetted Per. (m)		24.76	
Min Ch El (m)	75.59	Shear (N/m2)		31.26	
Alpha	1.00	Stream Power (N/m s)		12.19	
Frctn Loss (m)	0.09	Cum Volume (1000 m3)		12.50	
C & E Loss (m)	0.01	Cum SA (1000 m2)			

CROSS SECTION OUTPUT Profile RPF 4

			Left OB	Channel	Right OB
E.G. Elev (m)	77.21	Element		0.040	
Vel Head (m)	0.10	Wt. n-Val.	38.75	46.36	54.90
W.S. Elev (m)	77.11	Reach Len. (m)		24.55	
Crit W.S. (m)		Flow Area (m2)		24.55	
E.G. Slope (m/m)	0.002005	Area (m2)		34.19	
Q Total (m3/s)	34.10	Flow (m3/s)		23.63	
Top Width (m)	23.63	Top Width (m)		1.35	
Vel Total (m/s)	1.35	Avg. Vel. (m/s)		1.04	
Max Chl Dpth (m)	1.54	Hydr. Depth (m)		612.9	
Conv. Total (m3/s)	612.9	Conv. (m3/s)		24.31	
Length Wtd. (m)	46.36	Wetted Per. (m)		30.21	
Min Ch El (m)	75.59	Shear (N/m2)		41.89	
Alpha	1.00	Stream Power (N/m s)		15.31	
Frctn Loss (m)	0.09	Cum Volume (1000 m3)		13.16	
C & E Loss (m)	0.01	Cum SA (1000 m2)			

Warning: The conveyance ratio (upstream 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 RPF 5

			Left OB	Channel	Right OB
E.G. Elev (m)	77.47	Element		0.040	
Vel Head (m)	0.11	Wt. n-Val.	38.75	46.36	54.90
W.S. Elev (m)	77.36	Reach Len. (m)		29.85	
Crit W.S. (m)		Flow Area (m2)		29.85	
E.G. Slope (m/m)	0.002026	Area (m2)		44.29	
Q Total (m3/s)	44.29	Flow (m3/s)		24.15	
Top Width (m)	24.15	Top Width (m)		1.49	
Vel Total (m/s)	1.49	Avg. Vel. (m/s)		1.23	
Max Chl Dpth (m)	1.76	Hydr. Depth (m)		830.1	
Conv. Total (m3/s)	830.1	Conv. (m3/s)		25.44	
Length Wtd. (m)	46.36	Wetted Per. (m)		32.90	
Min Ch El (m)	75.59	Shear (N/m2)		48.94	
Alpha	1.00	Stream Power (N/m s)		18.16	
Frctn Loss (m)	0.08	Cum Volume (1000 m3)		13.60	
C & E Loss (m)	0.01	Cum SA (1000 m2)			

CROSS SECTION OUTPUT Profile RPF 6

			Left OB	Channel	Right OB
E.G. Elev (m)	[illegible]	Element		0.040	
Vel Head (m)	[illegible]	Wt. n-Val.	38.75	46.36	54.90
W.S. Elev (m)	[illegible]	Reach Len. (m)		35.05	
Crit W.S. (m)		Flow Area (m2)		35.05	
E.G. Slope (m/m)	[illegible]	Area (m2)		55.21	
Q Total (m3/s)	[illegible]	Flow (m3/s)		25.60	
Top Width (m)	[illegible]	Top Width (m)		1.58	
Vel Total (m/s)	1.58	Avg. Vel. (m/s)		1.37	
Max Chl Dpth (m)	[illegible]	Hydr. Depth (m)		1044.0	
Conv. Total (m3/s)	1044.0	Conv. (m3/s)		26.96	
Length Wtd. (m)	[illegible]	Wetted Per. (m)		35.46	
Min Ch El (m)	[illegible]	Shear (N/m2)			

* Alpha	* 1.70	* Stream Power (N/m s)	* 56.17 *
* Frctn Loss (m)	* 0.00	* Cum Volume (1000 m3)	* 20.94 *
* C & E Loss (m)	* 0.01	* Cum EA (1000 m2)	* 14.01 *

CROSS SECTION OUTPUT Profile #FF 7

* E.G. Elev (m)	* 77.96	* Element	* Left OB	* Channel	* Right OB *
* Vel Head (m)	* 0.24	* Wt. n Val.	*	* 0.040	*
* W.S. Elev (m)	* 77.72	* Reach Len. (m)	* 38.75	* 46.36	* 54.90 *
* Crit W.S. (m)	*	* Flow Area (m2)	*	* 40.40	*
* E.G. Slope (m/m)	*0.002734	* Area (m2)	*	* 40.40	*
* Q Total (m3/s)	* 98.68	* Flow (m3/s)	*	* 66.68	*
* Top Width (m)	* 26.47	* Top Width (m)	*	* 26.97	*
* Vel Total (m/s)	* 1.65	* Avg. Vel. (m/s)	*	* 1.65	*
* Max Chl Dpth (m)	* 2.19	* Hydr. Depth (m)	*	* 1.50	*
* Conv. Total (m3/s)	* 1276.2	* Conv. (m3/s)	*	* 1276.2	*
* Length Wtd. (m)	* 46.36	* Wetted Per. (m)	*	* 28.44	*
* Min Ch El (m)	* 75.57	* Shear (N/m2)	*	* 38.03	*
* Alpha	* 1.96	* Stream Power (N/m s)	*	* 62.77	*
* Frctn Loss (m)	* 0.05	* Cum Volume (1000 m3)	*	* 23.73	*
* C & E Loss (m)	* 0.01	* Cum EA (1000 m2)	*	* 14.41 *	

CROSS SECTION OUTPUT Profile #FF 8

* E.G. Elev (m)	* 78.02	* Element	* Left OB	* Channel	* Right OB *
* Vel Head (m)	* 0.[illegible]	* Wt. n Val.	*	* 0.040	*
* W.S. Elev (m)	* 77.[illegible]	* Reach Len. (m)	* 38.75	* 46.36	* 54.90 *
* Crit W.S. (m)	*	* Flow Area (m2)	*	* 43.65	*
* E.G. Slope (m/m)	*0.002[illegible]	* Area (m2)	*	* 43.65	*
* Q Total (m3/s)	* 73.81	* Flow (m3/s)	*	* 73.81	*
* Top Width (m)	* 27.77	* Top Width (m)	*	* 27.77	*
* Vel Total (m/s)	* 1.69	* Avg. Vel. (m/s)	*	* 1.69	*
* Max Chl Dpth (m)	* 2.[illegible]	* Hydr. Depth (m)	*	* 1.57	*
* Conv. Total (m3/s)	* 1423.[illegible]	* Conv. (m3/s)	*	* 1423.2	*
* Length Wtd. (m)	* 46.36	* Wetted Per. (m)	*	* 29.30	*
* Min Ch El (m)	* 75.[illegible]	* Shear (N/m2)	*	* 39.29	*
* Alpha	* 1.80	* Stream Power (N/m s)	*	* 66.44	*
* Frctn Loss (m)	* 0.00	* Cum Volume (1000 m3)	*	* 25.40	*
* C & E Loss (m)	* 0.01	* Cum EA (1000 m2)	*	* 14.65 *	

CROSS SECTION OUTPUT Profile #FF 9

* E.G. Elev (m)	* 78.[illegible]	* Element	* Left OB	* Channel	* Right OB *
* Vel Head (m)	* 0.1[illegible]	* Wt. n Val.	*	* 0.040	*
* W.S. Elev (m)	* 77.[illegible]	* Reach Len. (m)	* 38.75	* 46.36	* 54.90 *
* Crit W.S. (m)	*	* Flow Area (m2)	*	* 50.58	*
* E.G. Slope (m/m)	*0.00[illegible]	* Area (m2)	*	* 50.58	*
* Q Total (m3/s)	* 89.04	* Flow (m3/s)	*	* 89.04	*
* Top Width (m)	* 28.40	* Top Width (m)	*	* 29.40	*
* Vel Total (m/s)	* 1.76	* Avg. Vel. (m/s)	*	* 1.76	*
* Max Chl Dpth (m)	* 2.54	* Hydr. Depth (m)	*	* 1.72	*
* Conv. Total (m3/s)	* 1750.1	* Conv. (m3/s)	*	* 1750.0	*
* Length Wtd. (m)	* 46.36	* Wetted Per. (m)	*	* 31.07	*
* Min Ch El (m)	* 75.[illegible]	* Shear (N/m2)	*	* 41.33	*
* Alpha	* 1.[illegible]	* Stream Power (N/m s)	*	* 72.76	*
* Frctn Loss (m)	* 0.[illegible]	* Cum Volume (1000 m3)	*	* 28.84	*
* C & E Loss (m)	* 0.01	* Cum EA (1000 m2)	*	* 15.28 *	

CROSS SECTION OUTPUT Profile #FF 10

* E.G. Elev (m)	* [illegible]	* Element	* Left OB	* Channel	* Right OB *
* Vel Head (m)	* [illegible]	* Wt. n Val.	*	* 0.040	*
* W.S. Elev (m)	* 78.[illegible]	* Reach Len. (m)	* 38.75	* 46.36	* 54.90 *
* Crit W.S. (m)	*	* Flow Area (m2)	*	* 52.43	*
* E.G. Slope (m/m)	*0.00[illegible]	* Area (m2)	*	* 52.43	*
* Q Total (m3/s)	* [illegible]	* Flow (m3/s)	*	* 93.29	*
* Top Width (m)	* [illegible]	* Top Width (m)	*	* 29.81	*
* Vel Total (m/s)	* 1.78	* Avg. Vel. (m/s)	*	* 1.78	*
* Max Chl Dpth (m)	* [illegible]	* Hydr. Depth (m)	*	* 1.76	*
* Conv. Total (m3/s)	* 1840.	* Conv. (m3/s)	*	* 1840.2	*
* Length Wtd. (m)	* [illegible]	* Wetted Per. (m)	*	* 31.52	*
* Min Ch El (m)	* 75.[illegible]	* Shear (N/m2)	*	* 41.92	*
* Alpha	* 1.[illegible]	* Stream Power (N/m s)	*	* 74.59	*
* Frctn Loss (m)	* 0.[illegible]	* Cum Volume (1000 m3)	*	* 29.77	*
* C & E Loss (m)	* [illegible]	* Cum EA (1000 m2)	*	* 15.31 *	

CROSS SECTION OUTPUT Profile #FF 11

* E.G. Elev (m)	* 78.[illegible]	* Element	* Left OB	* Channel	* Right OB *
* Vel Head (m)	* 0.10	* Wt. n Val.	*	* 0.040	*
* W.S. Elev (m)	* 78.4[illegible]	* Reach Len. (m)	* 38.75	* 46.36	* 54.90 *
* Crit W.S. (m)	*	* Flow Area (m2)	*	* 60.82	*
* E.G. Slope (m/m)	*0.00[illegible]	* Area (m2)	*	* 60.82	*
* Q Total (m3/s)	* [illegible]	* Flow (m3/s)	*	* 112.91	*
* Top Width (m)	* [illegible]	* Top Width (m)	*	* 31.07	*
* Vel Total (m/s)	* [illegible]	* Avg. Vel. (m/s)	*	* 1.86	*
* Max Chl Dpth (m)	* [illegible]	* Hydr. Depth (m)	*	* 1.92	*
* Conv. Total (m3/s)	* [illegible]	* Conv. (m3/s)	*	* 2262.6	*
* Length Wtd. (m)	* [illegible]	* Wetted Per. (m)	*	* 33.51	*
* Min Ch El (m)	* [illegible]	* Shear (N/m2)	*	* 44.33	*
* Alpha	* [illegible]	* Stream Power (N/m s)	*	* 82.29	*
* Frctn Loss (m)	* [illegible]	* Cum Volume (1000 m3)	*	* 33.91	*
* C & E Loss (m)	* [illegible]	* Cum EA (1000 m2)	*	* 15.81 *	

CROSS SECTION OUTPUT Profile #FF 12

* E.G. Elev (m)	* [illegible]	* Element	* Left OB	* Channel	* Right OB *
* Vel Head (m)	* [illegible]	* Wt. n Val.	*	* 0.040	*
* W.S. Elev (m)	* [illegible]	* Reach Len. (m)	* 38.75	* 46.36	* 54.90 *
* Crit W.S. (m)	*	* Flow Area (m2)	*	* 79.81	*
* E.G. Slope (m/m)	*[illegible]	* Area (m2)	*	* 79.81	*
* Q Total (m3/s)	* [illegible]	* Flow (m3/s)	*	* 158.71	*
* Top Width (m)	* [illegible]	* Top Width (m)	*	* 34.27	*
* Vel Total (m/s)	* [illegible]	* Avg. Vel. (m/s)	*	* 1.99	*
* Max Chl Dpth (m)	* 1.44	* Hydr. Depth (m)	*	* 2.33	*
* Conv. Total (m3/s)	* [illegible]	* Conv. (m3/s)	*	* 3354.4	*
* Length Wtd. (m)	* [illegible]	* Wetted Per. (m)	*	* 36.66	*
* Min Ch El (m)	* [illegible]	* Shear (N/m2)	*	* 47.96	*
* Alpha	* [illegible]	* Stream Power (N/m s)	*	* 95.17	*
* Frctn Loss (m)	* [illegible]	* Cum Volume (1000 m3)	*	* 43.12	*
* C & E Loss (m)	* [illegible]	* Cum EA (1000 m2)	*	* 17.21 *	

Warning: The cross-section end points had to be extended vertically for the computed water surface.

CROSS SECTION OUTPUT Profile #PF 1

			Left OB	Channel	Right OB
W.S. Elev (m)	79.67	Element			
Vel Head (m)	0.23	Wt. n-Vel.		0.040	
W.S. Elev (m)	79.44	Reach Len. (m)	38.75	46.36	54.90
Crit W.S. (m)		Flow Area (m2)		94.12	
E.G. Slope (m/m)	0.002684	Area (m2)		94.12	
Q Total (m3/s)	198.20	Flow (m3/s)		198.20	
Top Width (m)	34.64	Top Width (m)		34.64	
Vel Total (m/s)	2.11	Avg. Vel. (m/s)		2.11	
Max Chl Depth (m)	3.64	Hydr. Depth (m)		2.72	
Conv. Total (m3/s)	4339.5	Conv. (m3/s)		4339.5	
Length Wtd. (m)	46.36	Wetted Per. (m)		37.58	
Min Ch El (m)	75.59	Shear (N/m2)		51.24	
Alpha	1.00	Stream Power (N/m s)		107.90	
Frctn Loss (m)	0.08	Cum Volume (1000 m3)		49.97	
C & E Loss (m)	0.01	Cum AA (1000 m2)		17.71	

Warning: The cross-section end points had to be extended vertically for the computed water surface.

CROSS SECTION

PLAN: CATAMUNA
REACH: ONE RS: 9

HDPE
Description:
Station Elevation Data: num= 10

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	78.07	.38	78.07	7.78	77.88	8.23	76.16	12.84	75.82
21.18	75.56	24.24	75.19	27.07	75.59	30.04	77.57	34.08	80.12

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.045	0	.04	0.00	.045

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
0	18.68	16.41	17.58	18.72	.1	.3

CROSS SECTION OUTPUT Profile #PF 2

			Left OB	Channel	Right OB
W.S. Elev (m)	79.35	Element			
Vel Head (m)	0.04	Wt. n-Vel.		0.040	
W.S. Elev (m)	79.31	Reach Len. (m)	14.03	17.58	18.72
Crit W.S. (m)		Flow Area (m2)		2.87	
E.G. Slope (m/m)	0.002929	Area (m2)		2.87	
Q Total (m3/s)	1.31	Flow (m3/s)		1.31	
Top Width (m)	14.14	Top Width (m)		14.14	
Vel Total (m/s)	0.46	Avg. Vel. (m/s)		0.46	
Max Chl Depth (m)	0.26	Hydr. Depth (m)		0.20	
Conv. Total (m3/s)	24.6	Conv. (m3/s)		24.6	
Length Wtd. (m)	17.58	Wetted Per. (m)		14.32	
Min Ch El (m)	75.49	Shear (N/m2)		5.56	
Alpha	1.00	Stream Power (N/m s)		2.54	
Frctn Loss (m)	0.01	Cum Volume (1000 m3)		1.82	
C & E Loss (m)	0.00	Cum AA (1000 m2)		8.15	

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.3. This may indicate the need for additional cross sections.

CROSS SECTION OUTPUT Profile #PF 3

			Left OB	Channel	Right OB
W.S. Elev (m)	[illegible]	Element			
Vel Head (m)	[illegible]	Wt. n-Vel.		0.040	
W.S. Elev (m)	[illegible]	Reach Len. (m)	14.03	17.58	18.72
Crit W.S. (m)		Flow Area (m2)		17.43	
E.G. Slope (m/m)	[illegible]	Area (m2)		17.43	
Q Total (m3/s)	13.74	Flow (m3/s)		13.74	
Top Width (m)	[illegible]	Top Width (m)		22.81	
Vel Total (m/s)	[illegible]	Avg. Vel. (m/s)		0.79	
Max Chl Depth (m)	[illegible]	Hydr. Depth (m)		0.76	
Conv. Total (m3/s)	[illegible]	Conv. (m3/s)		159.9	
Length Wtd. (m)	[illegible]	Wetted Per. (m)		23.23	
Min Ch El (m)	75.48	Shear (N/m2)		10.73	
Alpha	1.00	Stream Power (N/m s)		9.45	
Frctn Loss (m)	[illegible]	Cum Volume (1000 m3)		7.85	
C & E Loss (m)	[illegible]	Cum AA (1000 m2)		10.92	

CROSS SECTION OUTPUT Profile #PF 4

			Left OB	Channel	Right OB
W.S. Elev (m)	[illegible]	Element			
Vel Head (m)	[illegible]	Wt. n-Vel.		0.040	
W.S. Elev (m)	[illegible]	Reach Len. (m)	14.03	17.58	18.72
Crit W.S. (m)		Flow Area (m2)		24.98	
E.G. Slope (m/m)	[illegible]	Area (m2)		24.98	
Q Total (m3/s)	[illegible]	Flow (m3/s)		23.38	
Top Width (m)	[illegible]	Top Width (m)		23.96	
Vel Total (m/s)	[illegible]	Avg. Vel. (m/s)		0.94	
Max Chl Depth (m)	[illegible]	Hydr. Depth (m)		1.04	
Conv. Total (m3/s)	[illegible]	Conv. (m3/s)		631.9	
Length Wtd. (m)	[illegible]	Wetted Per. (m)		24.54	
Min Ch El (m)	[illegible]	Shear (N/m2)		14.24	
Alpha	[illegible]	Stream Power (N/m s)		13.01	
Frctn Loss (m)	[illegible]	Cum Volume (1000 m3)		11.13	
C & E Loss (m)	[illegible]	Cum AA (1000 m2)		11.54	

CROSS SECTION OUTPUT Profile #PF 5

			Left OB	Channel	Right OB
W.S. Elev (m)	[illegible]	Element			
Vel Head (m)	[illegible]	Wt. n-Vel.		0.047	
W.S. Elev (m)	[illegible]	Reach Len. (m)	14.03	17.58	18.72
Crit W.S. (m)		Flow Area (m2)		11.11	
E.G. Slope (m/m)	[illegible]	Area (m2)		11.11	
Q Total (m3/s)	[illegible]	Flow (m3/s)		14.10	
Top Width (m)	[illegible]	Top Width (m)		4.87	
Vel Total (m/s)	[illegible]	Avg. Vel. (m/s)		1.24	

* Max Chl Depth (m)	1.58	* Hydr. Depth (m)		1.26
* Conv. Total (m3/s)	895.3	* Conv. (m3/s)		895.3
* Length Wtd. (m)	17.58	* Wetted Per. (m)		25.59
Min Ch El (m)	75.48	* Shear (N/m2)		17.41
Alpha	1.00	* Stream Power (N/m s)		18.96
* Frctn Loss (m)	0.02	* Cum Volume (1000 m3)		14.01
* C & E Loss (m)	0.00	* Cum SA (1000 m2)		12.04

CROSS SECTION OUTPUT Profile RSF 5

* E.G. Elev (m)	77.36	* Element	* Left OB	* Channel	* Right OB
* Vel Head (m)	0.07	* Wt. n-Vel.		0.040	
* W.S. Elev (m)	77.29	* Reach Len. (m)	14.03	17.58	18.72
* Crit W.S. (m)		* Flow Area (m2)		36.94	
* E.G. Slope (m/m)	*0.001481	* Area (m2)		36.94	
* Q Total (m3/s)	44.39	* Flow (m3/s)		44.39	
* Top Width (m)	25.65	* Top Width (m)		25.65	
* Vel Total (m/s)	1.20	* Avg. Vel. (m/s)		1.20	
* Max Chl Dpth (m)	1.81	* Hydr. Depth (m)		1.44	
* Conv. Total (m3/s)	1152.6	* Conv. (m3/s)		1152.6	
* Length Wtd. (m)	17.58	* Wetted Per. (m)		26.49	
* Min Ch El (m)	75.48	* Shear (N/m2)		20.28	
* Alpha	1.00	* Stream Power (N/m s)		24.38	
* Frctn Loss (m)	0.02	* Cum Volume (1000 m3)		16.61	
* C & E Loss (m)	0.00	* Cum SA (1000 m2)		12.44	

CROSS SECTION OUTPUT Profile RSF 6

* E.G. Elev (m)	77.58	* Element	* Left OB	* Channel	* Right OB
* Vel Head (m)	0.09	* Wt. n-Vel.		0.040	
* W.S. Elev (m)	77.50	* Reach Len. (m)	14.03	17.58	18.72
* Crit W.S. (m)		* Flow Area (m2)		42.39	
* E.G. Slope (m/m)	*0.001517	* Area (m2)		42.39	
* Q Total (m3/s)	55.21	* Flow (m3/s)		55.21	
* Top Width (m)	26.38	* Top Width (m)		26.38	
* Vel Total (m/s)	1.30	* Avg. Vel. (m/s)		1.30	
* Max Chl Dpth (m)	2.02	* Hydr. Depth (m)		1.61	
* Conv. Total (m3/s)	1419.8	* Conv. (m3/s)		1419.8	
* Length Wtd. (m)	17.58	* Wetted Per. (m)		27.33	
* Min Ch El (m)	75.48	* Shear (N/m2)		23.00	
* Alpha	1.00	* Stream Power (N/m s)		29.95	
* Frctn Loss (m)	0.02	* Cum Volume (1000 m3)		19.15	
* C & E Loss (m)	0.00	* Cum SA (1000 m2)		12.81	

CROSS SECTION OUTPUT Profile RSF 7

* E.G. Elev (m)	77.84	* Element	* Left OB	* Channel	* Right OB
* Vel Head (m)	0.10	* Wt. n-Vel.		0.040	
* W.S. Elev (m)	77.74	* Reach Len. (m)	14.03	17.58	18.72
* Crit W.S. (m)		* Flow Area (m2)		47.83	
* E.G. Slope (m/m)	*0.001542	* Area (m2)		47.83	
* Q Total (m3/s)	66.68	* Flow (m3/s)		66.68	
* Top Width (m)	27.21	* Top Width (m)		27.21	
* Vel Total (m/s)	1.39	* Avg. Vel. (m/s)		1.39	
* Max Chl Dpth (m)	2.22	* Hydr. Depth (m)		1.76	
Conv. Total (m3/s)	1698.2	* Conv. (m3/s)		1698.2	
Length Wtd. (m)	17.58	* Wetted Per. (m)		28.26	
* Min Ch El (m)	75.48	* Shear (N/m2)		25.59	
* Alpha	1.00	* Stream Power (N/m s)		35.68	
* Frctn Loss (m)	0.02	* Cum Volume (1000 m3)		21.69	
* C & E Loss (m)	0.00	* Cum SA (1000 m2)		13.16	

CROSS SECTION OUTPUT Profile RSF 8

* E.G. Elev (m)	77.94	* Element	* Left OB	* Channel	* Right OB
* Vel Head (m)	0.11	* Wt. n-Vel.		0.040	
* W.S. Elev (m)	77.83	* Reach Len. (m)	14.03	17.58	18.72
* Crit W.S. (m)		* Flow Area (m2)		51.08	
* E.G. Slope (m/m)	*0.001564	* Area (m2)		51.08	
* Q Total (m3/s)	71.81	* Flow (m3/s)		71.81	
* Top Width (m)	27.71	* Top Width (m)		27.71	
* Vel Total (m/s)	1.44	* Avg. Vel. (m/s)		1.44	
* Max Chl Dpth (m)	2.34	* Hydr. Depth (m)		1.84	
* Conv. Total (m3/s)	1870.0	* Conv. (m3/s)		1870.0	
* Length Wtd. (m)	17.58	* Wetted Per. (m)		28.83	
* Min Ch El (m)	75.48	* Shear (N/m2)		27.67	
* Alpha	1.00	* Stream Power (N/m s)		39.12	
* Frctn Loss (m)	0.02	* Cum Volume (1000 m3)		23.21	
* C & E Loss (m)	0.00	* Cum SA (1000 m2)		13.36	

CROSS SECTION OUTPUT Profile RSF 9

* E.G. Elev (m)	78.18	* Element	* Left OB	* Channel	* Right OB
* Vel Head (m)	0.11	* Wt. n-Vel.		0.040	
* W.S. Elev (m)	78.06	* Reach Len. (m)	14.03	17.58	18.72
* Crit W.S. (m)		* Flow Area (m2)		57.99	
* E.G. Slope (m/m)	*0.001696	* Area (m2)		57.99	
* Q Total (m3/s)	89.04	* Flow (m3/s)		89.04	
* Top Width (m)	30.67	* Top Width (m)		30.67	
* Vel Total (m/s)	1.54	* Avg. Vel. (m/s)		1.54	
* Max Chl Dpth (m)	2.58	* Hydr. Depth (m)		1.89	
* Conv. Total (m3/s)	2161.9	* Conv. (m3/s)		2161.9	
* Length Wtd. (m)	17.58	* Wetted Per. (m)		31.84	
* Min Ch El (m)	75.48	* Shear (N/m2)		30.30	
* Alpha	1.00	* Stream Power (N/m s)		46.52	
* Frctn Loss (m)	0.01	* Cum Volume (1000 m3)		26.22	
* C & E Loss (m)	0.00	* Cum SA (1000 m2)		13.79	

CROSS SECTION OUTPUT Profile RSF 10

* E.G. Elev (m)	78.23	* Element	* Left OB	* Channel	* Right OB
* Vel Head (m)	0.12	* Wt. n-Vel.		0.040	
* W.S. Elev (m)	78.12	* Reach Len. (m)	14.03	17.58	18.72
* Crit W.S. (m)		* Flow Area (m2)		59.93	
* E.G. Slope (m/m)	*0.001695	* Area (m2)		59.93	
* Q Total (m3/s)	93.29	* Flow (m3/s)		93.29	
* Top Width (m)	31.00	* Top Width (m)		31.00	
* Vel Total (m/s)	1.56	* Avg. Vel. (m/s)		1.56	
* Max Chl Dpth (m)	2.64	* Hydr. Depth (m)		1.93	
* Conv. Total (m3/s)	2266.1	* Conv. (m3/s)		2266.1	
* Length Wtd. (m)	17.58	* Wetted Per. (m)		32.22	

* Min Ch El (m)	* 75.48	* Shear (N/m2)	*	* 30.91	*
* Alpha	* 1.00	* Stream Power (N/m s)	*	* 48.12	*
* Frctn Loss (m)	* 0.03	* Cum Volume (1000 m3)	*	* 27.16	*
* C & E Loss (m)	* 0.00	* Cum SA (1000 m2)	*	* 13.90	*

CROSS SECTION OUTPUT Profile RPF 11

* E.G. Elev (m)	* 78.53	* Element	* Left OB	* Channel	* Right OB	*
* Vel Head (m)	* 0.14	* Wt. n-Val.	*	* 0.040	*	*
* W.S. Elev (m)	* 78.40	* Reach Len. (m)	* 14.03	* 17.58	* 18.72	*
* Crit W.S. (m)	*	* Flow Area (m2)	*	* 68.57	*	*
* E.G. Slope (m/m)	*0.001651	* Area (m2)	*	* 68.57	*	*
* Q Total (m3/s)	* 112.91	* Flow (m3/s)	*	* 112.91	*	*
* Top Width (m)	* 31.75	* Top Width (m)	*	* 31.75	*	*
* Vel Total (m/s)	* 1.65	* Avg. Vel. (m/s)	*	* 1.65	*	*
* Max Chl Dpth (m)	* 2.92	* Hydr. Depth (m)	*	* 2.16	*	*
* Conv. Total (m3/s)	* 2779.0	* Conv. (m3/s)	*	* 2779.0	*	*
* Length Wtd. (m)	* 17.58	* Wetted Per. (m)	*	* 33.22	*	*
* Min Ch El (m)	* 75.48	* Shear (N/m2)	*	* 33.41	*	*
* Alpha	* 1.00	* Stream Power (N/m s)	*	* 55.02	*	*
* Frctn Loss (m)	* 0.03	* Cum Volume (1000 m3)	*	* 30.91	*	*
* C & E Loss (m)	* 0.00	* Cum SA (1000 m2)	*	* 14.36	*	*

CROSS SECTION OUTPUT Profile RPF 12

* E.G. Elev (m)	* 79.14	* Element	* Left OB	* Channel	* Right OB	*
* Vel Head (m)	* 0.17	* Wt. n-Val.	*	* 0.040	*	*
* W.S. Elev (m)	* 78.97	* Reach Len. (m)	* 14.03	* 17.58	* 18.72	*
* Crit W.S. (m)	*	* Flow Area (m2)	*	* 87.18	*	*
* E.G. Slope (m/m)	*0.001588	* Area (m2)	*	* 87.18	*	*
* Q Total (m3/s)	* 158.71	* Flow (m3/s)	*	* 158.71	*	*
* Top Width (m)	* 33.31	* Top Width (m)	*	* 33.31	*	*
* Vel Total (m/s)	* 1.82	* Avg. Vel. (m/s)	*	* 1.82	*	*
* Max Chl Dpth (m)	* 3.49	* Hydr. Depth (m)	*	* 2.62	*	*
* Conv. Total (m3/s)	* 3982.2	* Conv. (m3/s)	*	* 3982.2	*	*
* Length Wtd. (m)	* 17.58	* Wetted Per. (m)	*	* 35.30	*	*
* Min Ch El (m)	* 75.48	* Shear (N/m2)	*	* 38.47	*	*
* Alpha	* 1.00	* Stream Power (N/m s)	*	* 70.03	*	*
* Frctn Loss (m)	* 0.03	* Cum Volume (1000 m3)	*	* 39.25	*	*
* C & E Loss (m)	* 0.00	* Cum SA (1000 m2)	*	* 15.64	*	*

CROSS SECTION OUTPUT Profile RPF 13

* E.G. Elev (m)	* 79.58	* Element	* Left OB	* Channel	* Right OB	*
* Vel Head (m)	* 0.20	* Wt. n-Val.	*	* 0.040	*	*
* W.S. Elev (m)	* 79.38	* Reach Len. (m)	* 14.03	* 17.58	* 18.72	*
* Crit W.S. (m)	*	* Flow Area (m2)	*	* 101.29	*	*
* E.G. Slope (m/m)	*0.001588	* Area (m2)	*	* 101.29	*	*
* Q Total (m3/s)	* 198.25	* Flow (m3/s)	*	* 198.25	*	*
* Top Width (m)	* 34.14	* Top Width (m)	*	* 34.14	*	*
* Vel Total (m/s)	* 1.96	* Avg. Vel. (m/s)	*	* 1.96	*	*
* Max Chl Dpth (m)	* 3.90	* Hydr. Depth (m)	*	* 2.95	*	*
* Conv. Total (m3/s)	* 4973.8	* Conv. (m3/s)	*	* 4973.8	*	*
* Length Wtd. (m)	* 17.58	* Wetted Per. (m)	*	* 36.79	*	*
* Min Ch El (m)	* 75.48	* Shear (N/m2)	*	* 42.87	*	*
* Alpha	* 1.00	* Stream Power (N/m s)	*	* 83.88	*	*
* Frctn Loss (m)	* 0.03	* Cum Volume (1000 m3)	*	* 45.45	*	*
* C & E Loss (m)	* 0.00	* Cum SA (1000 m2)	*	* 16.11	*	*

Warning: The cross-section end points had to be extended vertically for the computed water surface.

CROSS SECTION

RIVER: CAYAGUAS
REACH: ABC RS: 4

INPUT
Description:
Station Elevation Data num= 8

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
[illegible]	79.95	3.42	76.84	4.52	75.48	5.28	75.51	6.95	75.51
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	15.08	79.11		

Manning's n Values num= 3

Sta	n Val
[illegible]	[illegible]

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
[illegible] 15.09 [illegible] 75.01 80.91 .1 .3

CROSS SECTION OUTPUT Profile RPF 1

* E.G. Elev (m)	* 75.71	* Element	* Left OB	* Channel	* Right OB	*
* Vel Head (m)	* 0.00	* Wt. n-Val.	*	* 0.040	*	*
* W.S. Elev (m)	* 75.72	* Reach Len. (m)	* 68.74	* 75.61	* 80.01	*
* Crit W.S. (m)	*	* Flow Area (m2)	*	* 5.25	*	*
* E.G. Slope (m/m)	*0.000582	* Area (m2)	*	* 5.25	*	*
* Q Total (m3/s)	* 1.31	* Flow (m3/s)	*	* 1.31	*	*
* Top Width (m)	* 18.35	* Top Width (m)	*	* 18.35	*	*
* Vel Total (m/s)	* 0.25	* Avg. Vel. (m/s)	*	* 0.25	*	*
* Max Chl Dpth (m)	* 0.28	* Hydr. Depth (m)	*	* 0.28	*	*
* Conv. Total (m3/s)	* 96.8	* Conv. (m3/s)	*	* 96.8	*	*
* Length Wtd. (m)	* 75.61	* Wetted Per. (m)	*	* 18.46	*	*
* Min Ch El (m)	* 75.48	* Shear (N/m2)	*	* 1.48	*	*
* Alpha	* 1.00	* Stream Power (N/m s)	*	* 0.37	*	*
* Frctn Loss (m)	* 0.06	* Cum Volume (1000 m3)	*	* 1.75	*	*
* C & E Loss (m)	* 0.00	* Cum SA (1000 m2)	*	* 7.81	*	*

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.3. This may indicate the need for additional cross sections.

CROSS SECTION OUTPUT Profile RPF 2

* E.G. Elev (m)	* 76.47	* Element	* Left OB	* Channel	* Right OB	*
* Vel Head (m)	* 0.02	* Wt. n-Val.	*	* 0.040	*	*
* W.S. Elev (m)	* 76.47	* Reach Len. (m)	* 68.74	* 75.61	* 80.01	*
* Crit W.S. (m)	*	* Flow Area (m2)	*	* 20.77	*	*
* E.G. Slope (m/m)	*0.000417	* Area (m2)	*	* 20.77	*	*
* Q Total (m3/s)	* 13.74	* Flow (m3/s)	*	* 13.74	*	*

Top Width (m)	22.84	Top Width (m)	22.84	
Vel Total (m/s)	0.66	Avg. Vel. (m/s)	0.66	
Max Chl Dpth (m)	1.09	Hydr. Depth (m)	0.91	
Conv. Total (m3/s)	480.7	Conv. (m3/s)	480.7	
Length Wtd. (m)	75.61	Wetted Per. (m)	23.32	
Min Ch El (m)	75.38	Shear (N/m2)	7.14	
Alpha	1.00	Stream Power (N/m s)	4.72	
Frctn Loss (m)	0.09	Cum Volume (1000 m3)	7.55	
C & E Loss (m)	0.00	Cum SA (1000 m2)	10.42	

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

CROSS SECTION OUTPUT Profile RPF 3

			Left OB	Channel	Right OB
E.G. Elev (m)	76.83	Element		0.040	
Vel Head (m)	0.04	Wt. n-Val.	68.76	75.61	80.01
W.S. Elev (m)	76.79	Reach Len. (m)		28.34	
Crit W.S. (m)		Flow Area (m2)		28.34	
E.G. Slope (m/m)	0.000956	Area (m2)		23.88	
Q Total (m3/s)	27.58	Flow (m3/s)		24.23	
Top Width (m)	24.23	Top Width (m)		0.84	
Vel Total (m/s)	0.84	Avg. Vel. (m/s)		1.17	
Max Chl Dpth (m)	1.41	Hydr. Depth (m)		772.2	
Conv. Total (m3/s)	772.2	Conv. (m3/s)		24.91	
Length Wtd. (m)	75.61	Wetted Per. (m)		10.67	
Min Ch El (m)	75.38	Shear (N/m2)		8.99	
Alpha	1.00	Stream Power (N/m s)		10.71	
Frctn Loss (m)	0.10	Cum Volume (1000 m3)		11.11	
C & E Loss (m)	0.00	Cum SA (1000 m2)			

Warning: The conveyance ratio (upstream 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 RPF 4

			Left OB	Channel	Right OB
E.G. Elev (m)	77.10	Element		0.040	
Vel Head (m)	0.05	Wt. n-Val.	68.76	75.61	80.01
W.S. Elev (m)	77.05	Reach Len. (m)		34.76	
Crit W.S. (m)		Flow Area (m2)		34.76	
E.G. Slope (m/m)	0.001056	Area (m2)		34.10	
Q Total (m3/s)	34.10	Flow (m3/s)		25.35	
Top Width (m)	25.35	Top Width (m)		0.98	
Vel Total (m/s)	0.98	Avg. Vel. (m/s)		1.37	
Max Chl Dpth (m)	1.67	Hydr. Depth (m)		1049.4	
Conv. Total (m3/s)	1049.4	Conv. (m3/s)		26.19	
Length Wtd. (m)	75.61	Wetted Per. (m)		13.74	
Min Ch El (m)	75.38	Shear (N/m2)		13.48	
Alpha	1.00	Stream Power (N/m s)		13.43	
Frctn Loss (m)	0.11	Cum Volume (1000 m3)		11.59	
C & E Loss (m)	0.00	Cum SA (1000 m2)			

CROSS SECTION OUTPUT Profile RPF 5

			Left OB	Channel	Right OB
E.G. Elev (m)	[illegible]	Element		0.040	
Vel Head (m)	0.06	Wt. n-Val.	68.76	75.61	80.01
W.S. Elev (m)	[illegible]	Reach Len. (m)		40.51	
Crit W.S. (m)		Flow Area (m2)		40.51	
E.G. Slope (m/m)	[illegible]	Area (m2)		44.39	
Q Total (m3/s)	44.39	Flow (m3/s)		26.32	
Top Width (m)	26.32	Top Width (m)		1.10	
Vel Total (m/s)	1.10	Avg. Vel. (m/s)		1.54	
Max Chl Dpth (m)	[illegible]	Hydr. Depth (m)		1317.8	
Conv. Total (m3/s)	1317.8	Conv. (m3/s)		27.29	
Length Wtd. (m)	75.61	Wetted Per. (m)		16.52	
Min Ch El (m)	75.38	Shear (N/m2)		18.10	
Alpha	[illegible]	Stream Power (N/m s)		15.93	
Frctn Loss (m)	0.11	Cum Volume (1000 m3)		11.99	
C & E Loss (m)	[illegible]	Cum SA (1000 m2)			

CROSS SECTION OUTPUT Profile RPF 6

			Left OB	Channel	Right OB
E.G. Elev (m)	[illegible]	Element		0.040	
Vel Head (m)	[illegible]	Wt. n-Val.	68.76	75.61	80.01
W.S. Elev (m)	[illegible]	Reach Len. (m)		46.11	
Crit W.S. (m)		Flow Area (m2)		46.11	
E.G. Slope (m/m)	[illegible]	Area (m2)		55.21	
Q Total (m3/s)	[illegible]	Flow (m3/s)		27.23	
Top Width (m)	[illegible]	Top Width (m)		1.20	
Vel Total (m/s)	[illegible]	Avg. Vel. (m/s)		1.69	
Max Chl Dpth (m)	[illegible]	Hydr. Depth (m)		1595.6	
Conv. Total (m3/s)	[illegible]	Conv. (m3/s)		28.32	
Length Wtd. (m)	[illegible]	Wetted Per. (m)		19.12	
Min Ch El (m)	[illegible]	Shear (N/m2)		22.89	
Alpha	[illegible]	Stream Power (N/m s)		18.37	
Frctn Loss (m)	[illegible]	Cum Volume (1000 m3)		12.33	
C & E Loss (m)	[illegible]	Cum SA (1000 m2)			

CROSS SECTION OUTPUT Profile RPF 7

			Left OB	Channel	Right OB
E.G. Elev (m)	[illegible]	Element		0.040	
Vel Head (m)	0.68	Wt. n-Val.	68.76	75.61	80.01
W.S. Elev (m)	[illegible]	Reach Len. (m)		51.73	
Crit W.S. (m)		Flow Area (m2)		51.73	
E.G. Slope (m/m)	[illegible]	Area (m2)		66.68	
Q Total (m3/s)	[illegible]	Flow (m3/s)		28.11	
Top Width (m)	[illegible]	Top Width (m)		1.29	
Vel Total (m/s)	[illegible]	Avg. Vel. (m/s)		1.84	
Max Chl Dpth (m)	[illegible]	Hydr. Depth (m)		1888.3	
Conv. Total (m3/s)	1888.3	Conv. (m3/s)		29.32	
Length Wtd. (m)	[illegible]	Wetted Per. (m)		21.57	
Min Ch El (m)	[illegible]	Shear (N/m2)		27.81	
Alpha	[illegible]	Stream Power (N/m s)		20.81	
Frctn Loss (m)	[illegible]	Cum Volume (1000 m3)		12.67	
C & E Loss (m)	[illegible]	Cum SA (1000 m2)			

CROSS SECTION OUTPUT Profile RPF 8

			Left OB	Channel	Right OB
E.G. Elev (m)	[illegible]	Element		0.040	
Vel Head (m)	[illegible]	Wt. n-Val.	68.76	75.61	80.01
W.S. Elev (m)	[illegible]	Reach Len. (m)			

Crit W.S. (m)		Flow Area (m2)		55.09	
E.G. Slope (m/m)	0.001272	Area (m2)		55.09	
Q Total (m3/s)	73.81	Flow (m3/s)		73.81	
Top Width (m)	28.62	Top Width (m)		28.62	
Vel Total (m/s)	1.34	Avg. Vel. (m/s)		1.34	
Max Chl Dpth (m)	2.42	Hydr. Depth (m)		1.92	
Conv. Total (m3/s)	2069.7	Conv. (m3/s)		2069.7	
Length Wtd. (m)	35.61	Wetted Per. (m)		29.90	
Min Ch El (m)	75.38	Shear (N/m2)		22.97	
Alpha	1.00	Stream Power (N/m s)		30.78	
Froth Loss (m)	0.12	Cum Volume (1000 m3)		22.27	
C & E Loss (m)	0.00	Cum KA (1000 m2)		12.87	

CROSS SECTION OUTPUT Profile #PF 9

			Left OB	Channel	Right OB
E.G. Elev (m)	78.15	Element			
Vel Head (m)	0.11	Wt. n-Val.		0.040	
W.S. Elev (m)	78.04	Reach Len. (m)	68.76	75.61	80.01
Crit W.S. (m)		Flow Area (m2)		62.00	
E.G. Slope (m/m)	0.001314	Area (m2)		62.00	
Q Total (m3/s)	89.04	Flow (m3/s)		89.04	
Top Width (m)	29.65	Top Width (m)		29.65	
Vel Total (m/s)	1.44	Avg. Vel. (m/s)		1.44	
Max Chl Dpth (m)	2.66	Hydr. Depth (m)		2.09	
Conv. Total (m3/s)	2456.5	Conv. (m3/s)		2456.5	
Length Wtd. (m)	35.61	Wetted Per. (m)		31.07	
Min Ch El (m)	75.38	Shear (N/m2)		25.71	
Alpha	1.00	Stream Power (N/m s)		36.92	
Froth Loss (m)	0.12	Cum Volume (1000 m3)		25.27	
C & E Loss (m)	0.00	Cum KA (1000 m2)		13.26	

CROSS SECTION OUTPUT Profile #PF 10

			Left OB	Channel	Right OB
E.G. Elev (m)	78.21	Element			
Vel Head (m)	0.11	Wt. n-Val.		0.040	
W.S. Elev (m)	78.10	Reach Len. (m)	68.76	75.61	80.01
Crit W.S. (m)		Flow Area (m2)		63.87	
E.G. Slope (m/m)	0.001324	Area (m2)		63.87	
Q Total (m3/s)	93.29	Flow (m3/s)		93.29	
Top Width (m)	29.92	Top Width (m)		29.92	
Vel Total (m/s)	1.46	Avg. Vel. (m/s)		1.46	
Max Chl Dpth (m)	2.72	Hydr. Depth (m)		2.13	
Conv. Total (m3/s)	2564.0	Conv. (m3/s)		2564.0	
Length Wtd. (m)	75.61	Wetted Per. (m)		31.38	
Min Ch El (m)	75.38	Shear (N/m2)		26.42	
Alpha	1.00	Stream Power (N/m s)		38.59	
Froth Loss (m)	0.12	Cum Volume (1000 m3)		26.07	
C & E Loss (m)	0.00	Cum KA (1000 m2)		13.36	

CROSS SECTION OUTPUT Profile #PF 11

			Left OB	Channel	Right OB
E.G. Elev (m)	78.50	Element			
Vel Head (m)	0.12	Wt. n-Val.		0.040	
W.S. Elev (m)	78.38	Reach Len. (m)	68.76	75.61	80.01
Crit W.S. (m)		Flow Area (m2)		72.24	
E.G. Slope (m/m)	0.001360	Area (m2)		72.24	
Q Total (m3/s)	112.91	Flow (m3/s)		112.91	
Top Width (m)	31.11	Top Width (m)		31.11	
Vel Total (m/s)	1.56	Avg. Vel. (m/s)		1.56	
Max Chl Dpth (m)	3.03	Hydr. Depth (m)		2.32	
Conv. Total (m3/s)	3061.1	Conv. (m3/s)		3061.1	
Length Wtd. (m)	75.61	Wetted Per. (m)		32.74	
Min Ch El (m)	75.38	Shear (N/m2)		29.44	
Alpha	1.00	Stream Power (N/m s)		46.01	
Froth Loss (m)	0.13	Cum Volume (1000 m3)		29.67	
C & E Loss (m)	0.00	Cum KA (1000 m2)		13.80	

CROSS SECTION OUTPUT Profile #PF 12

			Left OB	Channel	Right OB
E.G. Elev (m)	79.11	Element			
Vel Head (m)	0.14	Wt. n-Val.		0.040	
W.S. Elev (m)	78.97	Reach Len. (m)	68.76	75.61	80.01
Crit W.S. (m)		Flow Area (m2)		90.74	
E.G. Slope (m/m)	0.001404	Area (m2)		90.74	
Q Total (m3/s)	158.31	Flow (m3/s)		158.31	
Top Width (m)	33.59	Top Width (m)		33.59	
Vel Total (m/s)	1.75	Avg. Vel. (m/s)		1.75	
Max Chl Dpth (m)	3.57	Hydr. Depth (m)		2.70	
Conv. Total (m3/s)	4236.9	Conv. (m3/s)		4236.9	
Length Wtd. (m)	75.61	Wetted Per. (m)		35.56	
Min Ch El (m)	75.38	Shear (N/m2)		35.13	
Alpha	1.00	Stream Power (N/m s)		61.44	
Froth Loss (m)	0.14	Cum Volume (1000 m3)		37.69	
C & E Loss (m)	0.01	Cum KA (1000 m2)		15.05	

CROSS SECTION OUTPUT Profile #PF 13

			Left OB	Channel	Right OB
E.G. Elev (m)	79.55	Element			
Vel Head (m)	0.18	Wt. n-Val.		0.040	
W.S. Elev (m)	79.37	Reach Len. (m)	68.76	75.61	80.01
Crit W.S. (m)		Flow Area (m2)		105.04	
E.G. Slope (m/m)	0.001417	Area (m2)		105.04	
Q Total (m3/s)	198.20	Flow (m3/s)		198.20	
Top Width (m)	34.58	Top Width (m)		34.58	
Vel Total (m/s)	1.89	Avg. Vel. (m/s)		1.89	
Max Chl Dpth (m)	3.94	Hydr. Depth (m)		3.04	
Conv. Total (m3/s)	5264.8	Conv. (m3/s)		5264.8	
Length Wtd. (m)	75.61	Wetted Per. (m)		37.00	
Min Ch El (m)	75.38	Shear (N/m2)		38.46	
Alpha	1.00	Stream Power (N/m s)		74.45	
Froth Loss (m)	0.13	Cum Volume (1000 m3)		43.83	
C & E Loss (m)	0.01	Cum KA (1000 m2)		15.50	

(Warn) The cross-section end points had to be extended vertically for the computed water surface.

No Warnings

Warnings/Errors/Cautions
Errors: 0 Warnings: 0 Notes: 7

INPUT
Description:
Section Elevation Data num= 7

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	75.18	6.56	76.05	12.55	75.72	14.03	75.42	19.17	75.3
25.97	75.44	39.57	82.66						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.045	0	.04	39.57	.045

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
0	39.57		56.97	66.61	66.64	.1	.3

CROSS SECTION OUTPUT Profile RPF 1

			Left OB	Channel	Right OB
E.G. Elev (m)	75.67	Element			
Vel Head (m)	0.01	Wt. n-Val.		0.040	
W.S. Elev (m)	75.66	Reach Len. (m)	56.97	66.61	66.64
Crit W.S. (m)		Flow Area (m2)		3.32	
E.G. Slope (m/m)	0.001386	Area (m2)		3.32	
Q Total (m3/s)	1.31	Flow (m3/s)		1.31	
Top Width (m)	11.86	Top Width (m)		11.86	
Vel Total (m/s)	0.40	Avg. Vel. (m/s)		0.40	
Max Chl Dpth (m)	0.36	Hydr. Depth (m)		0.28	
Conv. Total (m3/s)	35.2	Conv. (m3/s)		35.2	
Length Wtd. (m)	66.61	Wetted Per. (m)		11.88	
Min Ch El (m)	75.30	Shear (N/m2)		3.76	
Alpha	1.00	Stream Power (N/m s)		1.48	
Frctn Loss (m)	0.08	Cum Volume (1000 m3)		1.43	
C & E Loss (m)	0.00	Cum SA (1000 m2)		6.77	

CROSS SECTION OUTPUT Profile RPF 2

			Left OB	Channel	Right OB
E.G. Elev (m)	76.40	Element			
Vel Head (m)	0.04	Wt. n-Val.		0.040	
W.S. Elev (m)	76.36	Reach Len. (m)	56.97	66.61	66.64
Crit W.S. (m)		Flow Area (m2)		15.69	
E.G. Slope (m/m)	0.001856	Area (m2)		15.69	
Q Total (m3/s)	13.74	Flow (m3/s)		13.74	
Top Width (m)	21.02	Top Width (m)		21.02	
Vel Total (m/s)	0.88	Avg. Vel. (m/s)		0.88	
Max Chl Dpth (m)	1.06	Hydr. Depth (m)		0.75	
Conv. Total (m3/s)	318.9	Conv. (m3/s)		318.9	
Length Wtd. (m)	66.61	Wetted Per. (m)		21.40	
Min Ch El (m)	75.30	Shear (N/m2)		13.34	
Alpha	1.00	Stream Power (N/m s)		11.69	
Frctn Loss (m)	0.12	Cum Volume (1000 m3)		6.17	
C & E Loss (m)	0.00	Cum SA (1000 m2)		8.76	

CROSS SECTION OUTPUT Profile RPF 3

			Left OB	Channel	Right OB
E.G. Elev (m)	76.73	Element			
Vel Head (m)	0.06	Wt. n-Val.		0.040	
W.S. Elev (m)	76.67	Reach Len. (m)	56.97	66.61	66.64
Crit W.S. (m)		Flow Area (m2)		22.32	
E.G. Slope (m/m)	0.001883	Area (m2)		22.32	
Q Total (m3/s)	23.88	Flow (m3/s)		23.88	
Top Width (m)	22.28	Top Width (m)		22.28	
Vel Total (m/s)	1.07	Avg. Vel. (m/s)		1.07	
Max Chl Dpth (m)	1.37	Hydr. Depth (m)		1.00	
Conv. Total (m3/s)	550.3	Conv. (m3/s)		550.3	
Length Wtd. (m)	66.61	Wetted Per. (m)		22.80	
Min Ch El (m)	75.30	Shear (N/m2)		18.88	
Alpha	1.00	Stream Power (N/m s)		19.34	
Frctn Loss (m)	0.13	Cum Volume (1000 m3)		8.79	
C & E Loss (m)	0.00	Cum SA (1000 m2)		9.35	

CROSS SECTION OUTPUT Profile RPF 4

			Left OB	Channel	Right OB
E.G. Elev (m)	76.99	Element			
Vel Head (m)	0.08	Wt. n-Val.		0.040	
W.S. Elev (m)	76.92	Reach Len. (m)	56.97	66.61	66.64
Crit W.S. (m)		Flow Area (m2)		27.94	
E.G. Slope (m/m)	0.001929	Area (m2)		27.94	
Q Total (m3/s)	34.10	Flow (m3/s)		34.10	
Top Width (m)	23.29	Top Width (m)		23.29	
Vel Total (m/s)	1.22	Avg. Vel. (m/s)		1.22	
Max Chl Dpth (m)	1.62	Hydr. Depth (m)		1.20	
Conv. Total (m3/s)	774.5	Conv. (m3/s)		774.5	
Length Wtd. (m)	66.61	Wetted Per. (m)		23.93	
Min Ch El (m)	75.30	Shear (N/m2)		22.20	
Alpha	1.00	Stream Power (N/m s)		27.09	
Frctn Loss (m)	0.13	Cum Volume (1000 m3)		11.08	
C & E Loss (m)	0.00	Cum SA (1000 m2)		9.75	

CROSS SECTION OUTPUT Profile RPF 5

			Left OB	Channel	Right OB
E.G. Elev (m)	77.22	Element			
Vel Head (m)	0.09	Wt. n-Val.		0.040	
W.S. Elev (m)	77.13	Reach Len. (m)	56.97	66.61	66.64
Crit W.S. (m)		Flow Area (m2)		32.97	
E.G. Slope (m/m)	0.001995	Area (m2)		32.97	
Q Total (m3/s)	44.39	Flow (m3/s)		44.39	
Top Width (m)	24.16	Top Width (m)		24.16	
Vel Total (m/s)	1.35	Avg. Vel. (m/s)		1.35	
Max Chl Dpth (m)	1.83	Hydr. Depth (m)		1.36	
Conv. Total (m3/s)	993.9	Conv. (m3/s)		993.9	
Length Wtd. (m)	66.61	Wetted Per. (m)		24.93	
Min Ch El (m)	75.30	Shear (N/m2)		25.93	
Alpha	1.00	Stream Power (N/m s)		34.88	
Frctn Loss (m)	0.15	Cum Volume (1000 m3)		13.15	
C & E Loss (m)	0.00	Cum SA (1000 m2)		10.05	

CROSS SECTION OUTPUT Profile RPF 6

			Left OB	Channel	Right OB
E.G. Elev (m)	77.44	Element			
Vel Head (m)	0.11	Wt. n-Val.		0.040	
W.S. Elev (m)	77.33	Reach Len. (m)	56.97	66.61	66.64
Crit W.S. (m)		Flow Area (m2)		37.50	

* E.G. Slope (m/m)	*0.002035	* Area (m2)	*	* 37.90 *
* Q Total (m3/s)	* 55.21	* Flow (m3/s)	*	* 55.21 *
* Top Width (m)	* 24.98	* Top Width (m)	*	* 24.98 *
Vel Total (m/s)	* 1.46	* Avg. Vel. (m/s)	*	* 1.46 *
Max Chl Dpth (m)	* 2.03	* Hydr. Depth (m)	*	* 1.52 *
* Conv. Total (m3/s)	* 1223.9	* Conv. (m3/s)	*	* 1223.9 *
* Length Wtd. (m)	* 66.61	* Wetted Per. (m)	*	* 25.81 *
* Min Ch El (m)	* 75.30	* Shear (N/m2)	*	* 29.30 *
* Alpha	* 1.00	* Stream Power (N/m s)	*	* 42.68 *
* Frctn Loss (m)	* 0.15	* Cum Volume (1000 m3)	*	* 15.18 *
* C & E Loss (m)	* 0.00	* Cum SA (1000 m2)	*	* 10.36 *

CROSS SECTION OUTPUT Profile RPF 7

* E.G. Elev (m)	* 77.65	* Element	* Left OB *	Channel *	Right OB *
* Vel Head (m)	* 0.12	* Wt. n-Val.	*	* 0.040 *	*
* W.S. Elev (m)	* 77.52	* Reach Len. (m)	* 56.97 *	* 66.61 *	* 66.64 *
* Crit W.S. (m)	*	* Flow Area (m2)	*	* 42.87 *	*
* E.G. Slope (m/m)	*0.002059	* Area (m2)	*	* 42.87 *	*
* Q Total (m3/s)	* 66.68	* Flow (m3/s)	*	* 66.68 *	*
* Top Width (m)	* 25.79	* Top Width (m)	*	* 25.79 *	*
* Vel Total (m/s)	* 1.56	* Avg. Vel. (m/s)	*	* 1.56 *	*
* Max Chl Dpth (m)	* 2.22	* Hydr. Depth (m)	*	* 1.66 *	*
* Conv. Total (m3/s)	* 1469.3	* Conv. (m3/s)	*	* 1469.3 *	*
* Length Wtd. (m)	* 66.61	* Wetted Per. (m)	*	* 26.71 *	*
* Min Ch El (m)	* 75.30	* Shear (N/m2)	*	* 32.42 *	*
* Alpha	* 1.00	* Stream Power (N/m s)	*	* 50.42 *	*
* Frctn Loss (m)	* 0.16	* Cum Volume (1000 m3)	*	* 17.24 *	*
* C & E Loss (m)	* 0.00	* Cum SA (1000 m2)	*	* 10.63 *	*

CROSS SECTION OUTPUT Profile RPF 8

* E.G. Elev (m)	* 77.77	* Element	* Left OB *	Channel *	Right OB *
* Vel Head (m)	* 0.13	* Wt. n-Val.	*	* 0.040 *	*
* W.S. Elev (m)	* 77.64	* Reach Len. (m)	* 56.97 *	* 66.61 *	* 66.64 *
* Crit W.S. (m)	*	* Flow Area (m2)	*	* 45.86 *	*
* E.G. Slope (m/m)	*0.002069	* Area (m2)	*	* 45.86 *	*
* Q Total (m3/s)	* 73.81	* Flow (m3/s)	*	* 73.81 *	*
* Top Width (m)	* 26.26	* Top Width (m)	*	* 26.26 *	*
* Vel Total (m/s)	* 1.61	* Avg. Vel. (m/s)	*	* 1.61 *	*
* Max Chl Dpth (m)	* 2.34	* Hydr. Depth (m)	*	* 1.75 *	*
* Conv. Total (m3/s)	* 1622.7	* Conv. (m3/s)	*	* 1622.7 *	*
* Length Wtd. (m)	* 66.61	* Wetted Per. (m)	*	* 27.23 *	*
* Min Ch El (m)	* 75.30	* Shear (N/m2)	*	* 34.17 *	*
* Alpha	* 1.00	* Stream Power (N/m s)	*	* 54.99 *	*
* Frctn Loss (m)	* 0.16	* Cum Volume (1000 m3)	*	* 18.46 *	*
* C & E Loss (m)	* 0.00	* Cum SA (1000 m2)	*	* 10.79 *	*

CROSS SECTION OUTPUT Profile RPF 9

* E.G. Elev (m)	* 78.02	* Element	* Left OB *	Channel *	Right OB *
* Vel Head (m)	* 0.15	* Wt. n-Val.	*	* 0.040 *	*
* W.S. Elev (m)	* 77.87	* Reach Len. (m)	* 56.97 *	* 66.61 *	* 66.64 *
* Crit W.S. (m)	*	* Flow Area (m2)	*	* 52.02 *	*
* E.G. Slope (m/m)	*0.002080	* Area (m2)	*	* 52.02 *	*
* Q Total (m3/s)	* 89.04	* Flow (m3/s)	*	* 89.04 *	*
* Top Width (m)	* 27.20	* Top Width (m)	*	* 27.20 *	*
* Vel Total (m/s)	* 1.71	* Avg. Vel. (m/s)	*	* 1.71 *	*
* Max Chl Dpth (m)	* 2.57	* Hydr. Depth (m)	*	* 1.91 *	*
* Conv. Total (m3/s)	* 1952.2	* Conv. (m3/s)	*	* 1952.2 *	*
* Length Wtd. (m)	* 66.61	* Wetted Per. (m)	*	* 28.28 *	*
* Min Ch El (m)	* 75.30	* Shear (N/m2)	*	* 37.52 *	*
* Alpha	* 1.00	* Stream Power (N/m s)	*	* 64.22 *	*
* Frctn Loss (m)	* 0.18	* Cum Volume (1000 m3)	*	* 20.96 *	*
* C & E Loss (m)	* 0.00	* Cum SA (1000 m2)	*	* 11.11 *	*

CROSS SECTION OUTPUT Profile RPF 10

* E.G. Elev (m)	* 78.08	* Element	* Left OB *	Channel *	Right OB *
* Vel Head (m)	* 0.15	* Wt. n-Val.	*	* 0.040 *	*
* W.S. Elev (m)	* 77.93	* Reach Len. (m)	* 56.97 *	* 66.61 *	* 66.64 *
* Crit W.S. (m)	*	* Flow Area (m2)	*	* 53.69 *	*
* E.G. Slope (m/m)	*0.002083	* Area (m2)	*	* 53.69 *	*
* Q Total (m3/s)	* 93.29	* Flow (m3/s)	*	* 93.29 *	*
* Top Width (m)	* 27.45	* Top Width (m)	*	* 27.45 *	*
* Vel Total (m/s)	* 1.74	* Avg. Vel. (m/s)	*	* 1.74 *	*
* Max Chl Dpth (m)	* 2.63	* Hydr. Depth (m)	*	* 1.96 *	*
* Conv. Total (m3/s)	* 2044.2	* Conv. (m3/s)	*	* 2044.2 *	*
* Length Wtd. (m)	* 66.61	* Wetted Per. (m)	*	* 28.56 *	*
* Min Ch El (m)	* 75.30	* Shear (N/m2)	*	* 38.39 *	*
* Alpha	* 1.00	* Stream Power (N/m s)	*	* 66.71 *	*
* Frctn Loss (m)	* 0.16	* Cum Volume (1000 m3)	*	* 21.63 *	*
* C & E Loss (m)	* 0.00	* Cum SA (1000 m2)	*	* 11.19 *	*

CROSS SECTION OUTPUT Profile RPF 11

* E.G. Elev (m)	* 78.27	* Element	* Left OB *	Channel *	Right OB *
* Vel Head (m)	* 0.17	* Wt. n-Val.	*	* 0.040 *	*
* W.S. Elev (m)	* 78.10	* Reach Len. (m)	* 56.97 *	* 66.61 *	* 66.64 *
* Crit W.S. (m)	*	* Flow Area (m2)	*	* 61.20 *	*
* E.G. Slope (m/m)	*0.002085	* Area (m2)	*	* 61.20 *	*
* Q Total (m3/s)	* 112.91	* Flow (m3/s)	*	* 112.91 *	*
* Top Width (m)	* 28.55	* Top Width (m)	*	* 28.55 *	*
* Vel Total (m/s)	* 1.84	* Avg. Vel. (m/s)	*	* 1.84 *	*
* Max Chl Dpth (m)	* 2.98	* Hydr. Depth (m)	*	* 2.14 *	*
* Conv. Total (m3/s)	* 2472.9	* Conv. (m3/s)	*	* 2472.9 *	*
* Length Wtd. (m)	* 66.61	* Wetted Per. (m)	*	* 29.79 *	*
* Min Ch El (m)	* 75.30	* Shear (N/m2)	*	* 42.01 *	*
* Alpha	* 1.00	* Stream Power (N/m s)	*	* 77.48 *	*
* Frctn Loss (m)	* 0.16	* Cum Volume (1000 m3)	*	* 24.62 *	*
* C & E Loss (m)	* 0.01	* Cum SA (1000 m2)	*	* 11.55 *	*

CROSS SECTION OUTPUT Profile RPF 12

* E.G. Elev (m)	* 78.37	* Element	* Left OB *	Channel *	Right OB *
* Vel Head (m)	* 0.24	* Wt. n-Val.	*	* 0.040 *	*
* W.S. Elev (m)	* 78.14	* Reach Len. (m)	* 56.97 *	* 66.61 *	* 66.64 *
* Crit W.S. (m)	*	* Flow Area (m2)	*	* 77.94 *	*
* E.G. Slope (m/m)	*0.002055	* Area (m2)	*	* 77.94 *	*
* Q Total (m3/s)	* 158.71	* Flow (m3/s)	*	* 158.71 *	*
* Top Width (m)	* 30.87	* Top Width (m)	*	* 30.87 *	*

* Vel Total (m/s)	* 2.04	* Avg. Vel. (m/s)	*	* 2.04 *
* Max Chl Dpth (m)	* 3.46	* Hydr. Depth (m)	*	* 2.53 *
Conv. Total (m3/s)	* 3501.0	* Conv. (m3/s)	*	* 3501.0 *
* Length Wtd. (m)	* 66.61	* Wetted Per. (m)	*	* 32.36 *
* Min Ch El (m)	* 75.30	* Shear (N/m2)	*	* 48.54 *
* Alpha	* 1.00	* Stream Power (N/m s)	*	* 98.84 *
* Frctn Loss (m)	* 0.16	* Cum Volume (1000 m3)	*	* 31.31 *
* C & E Loss (m)	* 0.01	* Cum DA (1000 m2)	*	* 12.42 *

CROSS SECTION OUTPUT Profile #PF 13

			Left OB	Channel	Right OB
* E.G. Elev (m)	* 79.41	* Element	*	* 0.040 *	*
* Vel Head (m)	* 0.24	* Wt. n-Val.	*	*	*
* W.S. Elev (m)	* 79.17	* Reach Len. (m)	* 56.97	* 66.61 *	66.64 *
* Crit W.S. (m)	*	* Flow Area (m2)	*	* 90.97 *	*
* E.G. Slope (m/m)	*0.002084	* Area (m2)	*	* 99.97 *	*
* Q Total (m3/s)	* 199.20	* Flow (m3/s)	*	* 198.20 *	*
* Top Width (m)	* 32.55	* Top Width (m)	*	* 32.55 *	*
* Vel Total (m/s)	* 2.18	* Avg. Vel. (m/s)	*	* 2.18 *	*
* Max Chl Dpth (m)	* 3.87	* Hydr. Depth (m)	*	* 2.79 *	*
* Conv. Total (m3/s)	* 4362.9	* Conv. (m3/s)	*	* 4362.9 *	*
* Length Wtd. (m)	* 66.61	* Wetted Per. (m)	*	* 34.23 *	*
* Min Ch El (m)	* 75.30	* Shear (N/m2)	*	* 53.78 *	*
* Alpha	* 1.00	* Stream Power (N/m s)	*	* 117.17 *	*
* Frctn Loss (m)	* 0.16	* Cum Volume (1000 m3)	*	* 38.22 *	*
* C & E Loss (m)	* 0.01	* Cum DA (1000 m2)	*	* 12.96 *	*

CROSS SECTION

RIVER: CAYAGUAS
REACH: ONE RS: 6

INPUT
Description:
Station Elevation Data num= 9

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	77.67	2.23	76.16	4.83	75.54	9.37	75.25	11.75	75.47
12.14	75.27	19.83	75.25	20.4	76.01	21.13	81.54		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.035	9	.04	21.13	.045

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
0	21.13		36.04	32.05	28.03	.1	.3

CROSS SECTION OUTPUT Profile #PF 1

			Left OB	Channel	Right OB
* E.G. Elev (m)	* 75.58	* Element	*	* 0.040 *	*
* Vel Head (m)	* 0.01	* Wt. n-Val.	*	*	*
* W.S. Elev (m)	* 75.58	* Reach Len. (m)	* 36.04	* 32.05 *	28.03 *
* Crit W.S. (m)	*	* Flow Area (m2)	*	* 4.03 *	*
* E.G. Slope (m/m)	*0.001023	* Area (m2)	*	* 1.31 *	*
* Q Total (m3/s)	* 1.31	* Flow (m3/s)	*	* 15.30 *	*
* Top Width (m)	* 15.30	* Top Width (m)	*	* 0.32 *	*
* Vel Total (m/s)	* 0.32	* Avg. Vel. (m/s)	*	* 0.26 *	*
* Max Chl Dpth (m)	* 0.33	* Hydr. Depth (m)	*	* 41.0 *	*
* Conv. Total (m3/s)	* 41.0	* Conv. (m3/s)	*	* 15.56 *	*
* Length Wtd. (m)	* 32.05	* Wetted Per. (m)	*	* 2.60 *	*
* Min Ch El (m)	* 75.25	* Shear (N/m2)	*	* 0.84 *	*
* Alpha	* 1.00	* Stream Power (N/m s)	*	* 1.18 *	*
* Frctn Loss (m)	* 0.07	* Cum Volume (1000 m3)	*	* 5.86 *	*
* C & E Loss (m)	* 0.00	* Cum DA (1000 m2)	*	*	*

Warning: The conveyance ratio (upstream 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 #PF 2

			Left OB	Channel	Right OB
* E.G. Elev (m)	* 76.29	* Element	*	* 0.040 *	*
* Vel Head (m)	* 0.04	* Wt. n-Val.	*	*	*
* W.S. Elev (m)	* 76.25	* Reach Len. (m)	* 36.04	* 32.05 *	28.03 *
* Crit W.S. (m)	*	* Flow Area (m2)	*	* 15.29 *	*
* E.G. Slope (m/m)	*0.001766	* Area (m2)	*	* 15.29 *	*
* Q Total (m3/s)	* 13.74	* Flow (m3/s)	*	* 13.74 *	*
* Top Width (m)	* 18.72	* Top Width (m)	*	* 18.73 *	*
* Vel Total (m/s)	* 0.90	* Avg. Vel. (m/s)	*	* 0.90 *	*
* Max Chl Dpth (m)	* 0.99	* Hydr. Depth (m)	*	* 0.82 *	*
* Conv. Total (m3/s)	* 326.9	* Conv. (m3/s)	*	* 326.9 *	*
* Length Wtd. (m)	* 32.05	* Wetted Per. (m)	*	* 19.32 *	*
* Min Ch El (m)	* 75.25	* Shear (N/m2)	*	* 13.50 *	*
* Alpha	* 1.00	* Stream Power (N/m s)	*	* 12.32 *	*
* Frctn Loss (m)	* 0.13	* Cum Volume (1000 m3)	*	* 5.14 *	*
* C & E Loss (m)	* 0.01	* Cum DA (1000 m2)	*	* 7.44 *	*

Warning: The conveyance ratio (upstream 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 #PF 3

			Left OB	Channel	Right OB
* E.G. Elev (m)	* 76.60	* Element	*	* 0.040 *	*
* Vel Head (m)	* 0.07	* Wt. n-Val.	*	*	*
* W.S. Elev (m)	* 76.53	* Reach Len. (m)	* 36.04	* 32.05 *	28.03 *
* Crit W.S. (m)	*	* Flow Area (m2)	*	* 20.85 *	*
* E.G. Slope (m/m)	*0.002049	* Area (m2)	*	* 20.85 *	*
* Q Total (m3/s)	* 23.88	* Flow (m3/s)	*	* 23.88 *	*
* Top Width (m)	* 19.72	* Top Width (m)	*	* 19.72 *	*
* Vel Total (m/s)	* 1.15	* Avg. Vel. (m/s)	*	* 1.15 *	*
* Max Chl Dpth (m)	* 1.28	* Hydr. Depth (m)	*	* 1.06 *	*
* Conv. Total (m3/s)	* 527.6	* Conv. (m3/s)	*	* 527.6 *	*
* Length Wtd. (m)	* 32.05	* Wetted Per. (m)	*	* 20.47 *	*
* Min Ch El (m)	* 75.25	* Shear (N/m2)	*	* 20.46 *	*
* Alpha	* 1.00	* Stream Power (N/m s)	*	* 23.43 *	*
* Frctn Loss (m)	* 0.13	* Cum Volume (1000 m3)	*	* 7.35 *	*
* C & E Loss (m)	* 0.01	* Cum DA (1000 m2)	*	* 7.96 *	*

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

CROSS SECTION OUTPUT Profile #PF 4

E.G. Elev (m)	76.85	Element	Left OB	Channel	Right OB
Vel Head (m)	0.09	Wt. n-Val.		0.040	
W.S. Elev (m)	76.76	Reach Len. (m)	36.04	32.05	28.03
Crit W.S. (m)		Flow Area (m2)		25.48	
E.G. Slope (m/m)	0.002269	Area (m2)		25.48	
Q Total (m3/s)	34.10	Flow (m3/s)		34.10	
Top Width (m)	20.51	Top Width (m)		20.51	
Vel Total (m/s)	1.34	Avg. Vel. (m/s)		1.34	
Max Chl Dpth (m)	1.51	Hydr. Depth (m)		1.24	
Conv. Total (m3/s)	715.9	Conv. (m3/s)		715.9	
Length Wtd. (m)	32.05	Wetted Per. (m)		21.38	
Min Ch El (m)	75.25	Shear (N/m2)		26.51	
Alpha	1.00	Stream Power (N/m s)		35.48	
Frctn Loss (m)	0.13	Cum Volume (1000 m3)		9.28	
C & E Loss (m)	0.01	Cum DA (1000 m2)		8.30	

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

CROSS SECTION OUTPUT Profile #PF 5

E.G. Elev (m)	77.07	Element	Left OB	Channel	Right OB
Vel Head (m)	0.11	Wt. n-Val.		0.040	
W.S. Elev (m)	76.96	Reach Len. (m)	36.04	32.05	28.03
Crit W.S. (m)		Flow Area (m2)		29.58	
E.G. Slope (m/m)	0.002451	Area (m2)		29.58	
Q Total (m3/s)	44.39	Flow (m3/s)		44.39	
Top Width (m)	21.18	Top Width (m)		21.18	
Vel Total (m/s)	1.50	Avg. Vel. (m/s)		1.50	
Max Chl Dpth (m)	1.71	Hydr. Depth (m)		1.40	
Conv. Total (m3/s)	896.6	Conv. (m3/s)		896.6	
Length Wtd. (m)	32.05	Wetted Per. (m)		22.17	
Min Ch El (m)	75.25	Shear (N/m2)		32.08	
Alpha	1.00	Stream Power (N/m s)		48.14	
Frctn Loss (m)	0.15	Cum Volume (1000 m3)		11.07	
C & E Loss (m)	0.01	Cum DA (1000 m2)		8.57	

Warning: The conveyance ratio (upstream 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 #PF 6

E.G. Elev (m)	77.24	Element	Left OB	Channel	Right OB
Vel Head (m)	0.14	Wt. n-Val.		0.040	
W.S. Elev (m)	77.14	Reach Len. (m)	36.04	32.05	28.03
Crit W.S. (m)		Flow Area (m2)		33.62	
E.G. Slope (m/m)	0.002587	Area (m2)		33.62	
Q Total (m3/s)	55.21	Flow (m3/s)		55.21	
Top Width (m)	21.82	Top Width (m)		21.82	
Vel Total (m/s)	1.64	Avg. Vel. (m/s)		1.64	
Max Chl Dpth (m)	1.89	Hydr. Depth (m)		1.54	
Conv. Total (m3/s)	1085.3	Conv. (m3/s)		1085.3	
Length Wtd. (m)	32.05	Wetted Per. (m)		22.91	
Min Ch El (m)	75.25	Shear (N/m2)		37.24	
Alpha	1.00	Stream Power (N/m s)		61.15	
Frctn Loss (m)	0.15	Cum Volume (1000 m3)		12.81	
C & E Loss (m)	0.01	Cum DA (1000 m2)		8.80	

Warning: The conveyance ratio (upstream 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 #PF 7

E.G. Elev (m)	77.49	Element	Left OB	Channel	Right OB
Vel Head (m)	0.16	Wt. n-Val.		0.040	
W.S. Elev (m)	77.33	Reach Len. (m)	36.04	32.05	28.03
Crit W.S. (m)		Flow Area (m2)		37.71	
E.G. Slope (m/m)	0.002684	Area (m2)		37.71	
Q Total (m3/s)	66.68	Flow (m3/s)		66.68	
Top Width (m)	22.45	Top Width (m)		22.45	
Vel Total (m/s)	1.77	Avg. Vel. (m/s)		1.77	
Max Chl Dpth (m)	2.08	Hydr. Depth (m)		1.68	
Conv. Total (m3/s)	1287.0	Conv. (m3/s)		1287.0	
Length Wtd. (m)	32.05	Wetted Per. (m)		23.64	
Min Ch El (m)	75.25	Shear (N/m2)		41.99	
Alpha	1.00	Stream Power (N/m s)		74.24	
Frctn Loss (m)	0.17	Cum Volume (1000 m3)		14.55	
C & E Loss (m)	0.01	Cum DA (1000 m2)		9.03	

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 #PF 8

E.G. Elev (m)	77.61	Element	Left OB	Channel	Right OB
Vel Head (m)	0.17	Wt. n-Val.		0.040	
W.S. Elev (m)	77.44	Reach Len. (m)	36.04	32.05	28.03
Crit W.S. (m)		Flow Area (m2)		40.18	
E.G. Slope (m/m)	0.002738	Area (m2)		40.18	
Q Total (m3/s)	73.81	Flow (m3/s)		73.81	
Top Width (m)	22.83	Top Width (m)		22.83	
Vel Total (m/s)	1.84	Avg. Vel. (m/s)		1.84	
Max Chl Dpth (m)	2.19	Hydr. Depth (m)		1.76	
Conv. Total (m3/s)	1413.1	Conv. (m3/s)		1413.1	
Length Wtd. (m)	32.05	Wetted Per. (m)		24.07	
Min Ch El (m)	75.25	Shear (N/m2)		44.65	
Alpha	1.00	Stream Power (N/m s)		82.03	
Frctn Loss (m)	0.17	Cum Volume (1000 m3)		15.59	
C & E Loss (m)	0.01	Cum DA (1000 m2)		9.16	

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 OUTPUT Profile #PF 9

E.G. Elev (m)	77.85	Element	Left OB	Channel	Right OB
Vel Head (m)	0.20	Wt. n-Val.		0.040	
W.S. Elev (m)	77.65	Reach Len. (m)	36.04	32.05	28.03
Crit W.S. (m)		Flow Area (m2)		45.27	
E.G. Slope (m/m)	0.002756	Area (m2)		45.27	

* Q Total (m3/s)	*	89.04	* Flow (m3/s)	*		*	89.04	*	*
* Top Width (m)	*	23.58	* Top Width (m)	*		*	23.58	*	*
* Vel Total (m/s)	*	1.97	* Avg. Vel. (m/s)	*		*	1.97	*	*
Max Chl Dpth (m)	*	2.41	* Hydr. Depth (m)	*		*	1.92	*	*
* Conv. Total (m3/s)	*	1683.9	* Conv. (m3/s)	*		*	1683.9	*	*
* Length Wtd. (m)	*	32.05	* Wetted Per. (m)	*		*	24.95	*	*
* Min Ch El (m)	*	75.25	* Shear (N/m2)	*		*	49.76	*	*
* Alpha	*	1.00	* Stream Power (N/m s)	*		*	97.87	*	*
* Frctn Loss (m)	*	0.12	* Cum Volume (1000 m3)	*		*	17.72	*	*
* C & E Loss (m)	*	0.01	* Cum AA (1000 m2)	*		*	9.42	*	*

CROSS SECTION OUTPUT Profile #PF 10

* E.G. Elev (m)	*	77.92	* Element	*	Left OB	*	Channel	*	Right OB *
* Vel Head (m)	*	0.20	* Wt. n-Val.	*		*	0.040	*	*
* W.S. Elev (m)	*	77.72	* Reach Len. (m)	*	36.04	*	32.05	*	28.03 *
* Crit W.S. (m)	*		* Flow Area (m2)	*		*	46.65	*	*
* E.G. Slope (m/m)	*	0.002508	* Area (m2)	*		*	46.65	*	*
* Q Total (m3/s)	*	93.29	* Flow (m3/s)	*		*	93.29	*	*
* Top Width (m)	*	23.71	* Top Width (m)	*		*	23.71	*	*
* Vel Total (m/s)	*	2.00	* Avg. Vel. (m/s)	*		*	2.00	*	*
* Max Chl Dpth (m)	*	2.47	* Hydr. Depth (m)	*		*	1.97	*	*
* Conv. Total (m3/s)	*	1761.2	* Conv. (m3/s)	*		*	1761.2	*	*
* Length Wtd. (m)	*	32.05	* Wetted Per. (m)	*		*	25.14	*	*
* Min Ch El (m)	*	75.25	* Shear (N/m2)	*		*	51.06	*	*
* Alpha	*	1.00	* Stream Power (N/m s)	*		*	102.10	*	*
* Frctn Loss (m)	*	0.12	* Cum Volume (1000 m3)	*		*	18.29	*	*
* C & E Loss (m)	*	0.01	* Cum AA (1000 m2)	*		*	9.49	*	*

Warning: The cross-section end points had to be extended vertically for the computed water surface.

CROSS SECTION OUTPUT Profile #PF 11

* E.G. Elev (m)	*	78.21	* Element	*	Left OB	*	Channel	*	Right OB *
* Vel Head (m)	*	0.23	* Wt. n-Val.	*		*	0.040	*	*
* W.S. Elev (m)	*	77.97	* Reach Len. (m)	*	36.04	*	32.05	*	28.03 *
* Crit W.S. (m)	*		* Flow Area (m2)	*		*	52.80	*	*
* E.G. Slope (m/m)	*	0.002838	* Area (m2)	*		*	52.80	*	*
* Q Total (m3/s)	*	112.91	* Flow (m3/s)	*		*	112.91	*	*
* Top Width (m)	*	24.21	* Top Width (m)	*		*	24.21	*	*
* Vel Total (m/s)	*	2.14	* Avg. Vel. (m/s)	*		*	2.14	*	*
* Max Chl Dpth (m)	*	2.72	* Hydr. Depth (m)	*		*	2.18	*	*
* Conv. Total (m3/s)	*	2119.1	* Conv. (m3/s)	*		*	2119.1	*	*
* Length Wtd. (m)	*	32.05	* Wetted Per. (m)	*		*	25.96	*	*
* Min Ch El (m)	*	75.25	* Shear (N/m2)	*		*	56.63	*	*
* Alpha	*	1.00	* Stream Power (N/m s)	*		*	121.09	*	*
* Frctn Loss (m)	*	0.11	* Cum Volume (1000 m3)	*		*	20.83	*	*
* C & E Loss (m)	*	0.01	* Cum AA (1000 m2)	*		*	9.79	*	*

Warning: The cross-section end points had to be extended vertically for the computed water surface.

CROSS SECTION OUTPUT Profile #PF 12

* E.G. Elev (m)	*	78.50	* Element	*	Left OB	*	Channel	*	Right OB *
* Vel Head (m)	*	0.28	* Wt. n-Val.	*		*	0.040	*	*
* W.S. Elev (m)	*	78.51	* Reach Len. (m)	*	36.04	*	32.05	*	28.03 *
* Crit W.S. (m)	*		* Flow Area (m2)	*		*	66.12	*	*
* E.G. Slope (m/m)	*	0.002886	* Area (m2)	*		*	66.12	*	*
* Q Total (m3/s)	*	158.71	* Flow (m3/s)	*		*	158.71	*	*
* Top Width (m)	*	25.25	* Top Width (m)	*		*	25.25	*	*
* Vel Total (m/s)	*	2.40	* Avg. Vel. (m/s)	*		*	2.40	*	*
* Max Chl Dpth (m)	*	3.26	* Hydr. Depth (m)	*		*	2.62	*	*
* Conv. Total (m3/s)	*	2954.1	* Conv. (m3/s)	*		*	2954.1	*	*
* Length Wtd. (m)	*	32.05	* Wetted Per. (m)	*		*	27.67	*	*
* Min Ch El (m)	*	75.25	* Shear (N/m2)	*		*	67.63	*	*
* Alpha	*	1.00	* Stream Power (N/m s)	*		*	162.34	*	*
* Frctn Loss (m)	*	0.11	* Cum Volume (1000 m3)	*		*	26.51	*	*
* C & E Loss (m)	*	0.00	* Cum AA (1000 m2)	*		*	10.75	*	*

Warning: The cross-section end points had to be extended vertically for the computed water surface.

CROSS SECTION OUTPUT Profile #PF 13

* E.G. Elev (m)	*	79.24	* Element	*	Left OB	*	Channel	*	Right OB *
* Vel Head (m)	*	0.35	* Wt. n-Val.	*		*	0.040	*	*
* W.S. Elev (m)	*	78.89	* Reach Len. (m)	*	36.04	*	32.05	*	28.03 *
* Crit W.S. (m)	*		* Flow Area (m2)	*		*	75.90	*	*
* E.G. Slope (m/m)	*	0.003009	* Area (m2)	*		*	75.90	*	*
* Q Total (m3/s)	*	198.20	* Flow (m3/s)	*		*	198.20	*	*
* Top Width (m)	*	25.99	* Top Width (m)	*		*	25.99	*	*
* Vel Total (m/s)	*	2.61	* Avg. Vel. (m/s)	*		*	2.61	*	*
* Max Chl Dpth (m)	*	3.64	* Hydr. Depth (m)	*		*	2.92	*	*
* Conv. Total (m3/s)	*	3613.0	* Conv. (m3/s)	*		*	3613.0	*	*
* Length Wtd. (m)	*	32.05	* Wetted Per. (m)	*		*	28.89	*	*
* Min Ch El (m)	*	75.25	* Shear (N/m2)	*		*	77.54	*	*
* Alpha	*	1.00	* Stream Power (N/m s)	*		*	202.48	*	*
* Frctn Loss (m)	*	0.11	* Cum Volume (1000 m3)	*		*	30.86	*	*
* C & E Loss (m)	*	0.00	* Cum AA (1000 m2)	*		*	11.02	*	*

Warning: The cross-section end points had to be extended vertically for the computed water surface.

HYDRAULIC SETTING

RIVER: CAYAGUAS
REACH: CHF RS: 5

INPUT
Description:
Distance Elevation Data num= 4
Sta Elev Sta Elev Sta Elev Sta Elev Sta Elev
[illegible] 4.36 76.57 [illegible] 23.71 75.3 31.62 80.18
[illegible]

Manning's n Values num= 3
Sta n Val Sta n Val Sta n Val
[illegible] 0 .04 [illegible] .045

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
[illegible] [illegible] 34.4 [illegible] .1 .3

CROSS SECTION OUTPUT Profile RPF 1

E.G. Elev (m)	75.51	Element	Left OB	Channel	Right OB
Vel Head (m)	0.03	Wt. n-Val.		0.040	
W.S. Elev (m)	75.48	Reach Len. (m)	39.18	34.80	30.66
Crit W.S. (m)		Flow Area (m2)		1.71	
E.G. Slope (m/m)	0.008538	Area (m2)		1.71	
Q Total (m3/s)	1.31	Flow (m3/s)		1.31	
Top Width (m)	8.93	Top Width (m)		8.93	
Vel Total (m/s)	0.76	Avg. Vel. (m/s)		0.76	
Max Chl Dpth (m)	0.24	Hydr. Depth (m)		0.19	
Conv. Total (m3/s)	14.2	Conv. (m3/s)		14.2	
Length Wtd. (m)	34.80	Wetted Per. (m)		8.99	
Min Ch El (m)	75.22	Shear (N/m2)		15.95	
Alpha	1.00	Stream Power (N/m s)		12.20	
Frctn Loss (m)	0.22	Cum Volume (1000 m3)		1.09	
C & E Loss (m)	0.01	Cum SA (1000 m2)		5.47	

CROSS SECTION OUTPUT Profile RPF 2

E.G. Elev (m)	76.14	Element	Left OB	Channel	Right OB
Vel Head (m)	0.19	Wt. n-Val.		0.040	
W.S. Elev (m)	75.95	Reach Len. (m)	39.18	34.80	30.66
Crit W.S. (m)	75.88	Flow Area (m2)		7.11	
E.G. Slope (m/m)	0.015280	Area (m2)		7.11	
Q Total (m3/s)	13.74	Flow (m3/s)		13.74	
Top Width (m)	14.16	Top Width (m)		14.16	
Vel Total (m/s)	1.93	Avg. Vel. (m/s)		1.93	
Max Chl Dpth (m)	0.73	Hydr. Depth (m)		0.50	
Conv. Total (m3/s)	111.1	Conv. (m3/s)		111.1	
Length Wtd. (m)	34.80	Wetted Per. (m)		14.37	
Min Ch El (m)	75.32	Shear (N/m2)		74.15	
Alpha	1.00	Stream Power (N/m s)		143.35	
Frctn Loss (m)	0.15	Cum Volume (1000 m3)		4.78	
C & E Loss (m)	0.04	Cum SA (1000 m2)		6.91	

Warning: The conveyance ratio (upstream 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 RPF 3

E.G. Elev (m)	76.43	Element	Left OB	Channel	Right OB
Vel Head (m)	0.22	Wt. n-Val.		0.040	
W.S. Elev (m)	76.22	Reach Len. (m)	39.18	34.80	30.66
Crit W.S. (m)		Flow Area (m2)		11.57	
E.G. Slope (m/m)	0.012451	Area (m2)		11.57	
Q Total (m3/s)	23.88	Flow (m3/s)		23.88	
Top Width (m)	17.13	Top Width (m)		17.33	
Vel Total (m/s)	2.06	Avg. Vel. (m/s)		2.06	
Max Chl Dpth (m)	1.01	Hydr. Depth (m)		0.67	
Conv. Total (m3/s)	218.4	Conv. (m3/s)		218.4	
Length Wtd. (m)	34.80	Wetted Per. (m)		17.84	
Min Ch El (m)	75.22	Shear (N/m2)		76.91	
Alpha	1.00	Stream Power (N/m s)		158.72	
Frctn Loss (m)	0.14	Cum Volume (1000 m3)		6.81	
C & E Loss (m)	0.05	Cum SA (1000 m2)		7.36	

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

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

CROSS SECTION OUTPUT Profile RPF 4

E.G. Elev (m)	76.70	Element	Left OB	Channel	Right OB
Vel Head (m)	0.27	Wt. n-Val.		0.040	
W.S. Elev (m)	76.43	Reach Len. (m)	39.18	34.80	30.66
Crit W.S. (m)		Flow Area (m2)		16.15	
E.G. Slope (m/m)	0.009714	Area (m2)		16.15	
Q Total (m3/s)	34.19	Flow (m3/s)		34.19	
Top Width (m)	20.47	Top Width (m)		20.07	
Vel Total (m/s)	2.11	Avg. Vel. (m/s)		2.11	
Max Chl Dpth (m)	1.26	Hydr. Depth (m)		0.80	
Conv. Total (m3/s)	344.9	Conv. (m3/s)		344.9	
Length Wtd. (m)	34.80	Wetted Per. (m)		20.45	
Min Ch El (m)	75.22	Shear (N/m2)		75.68	
Alpha	1.00	Stream Power (N/m s)		159.80	
Frctn Loss (m)	0.11	Cum Volume (1000 m3)		8.61	
C & E Loss (m)	0.04	Cum SA (1000 m2)		7.65	

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

CROSS SECTION OUTPUT Profile RPF 5

E.G. Elev (m)	76.93	Element	Left OB	Channel	Right OB
Vel Head (m)	0.23	Wt. n-Val.		0.040	
W.S. Elev (m)	76.70	Reach Len. (m)	39.18	34.80	30.66
Crit W.S. (m)		Flow Area (m2)		20.74	
E.G. Slope (m/m)	0.007971	Area (m2)		20.74	
Q Total (m3/s)	44.39	Flow (m3/s)		44.39	
Top Width (m)	21.60	Top Width (m)		21.60	
Vel Total (m/s)	2.14	Avg. Vel. (m/s)		2.14	
Max Chl Dpth (m)	1.49	Hydr. Depth (m)		0.94	
Conv. Total (m3/s)	497.2	Conv. (m3/s)		497.2	
Length Wtd. (m)	34.80	Wetted Per. (m)		22.00	
Min Ch El (m)	75.22	Shear (N/m2)		73.41	
Alpha	1.00	Stream Power (N/m s)		157.13	
Frctn Loss (m)	0.12	Cum Volume (1000 m3)		10.26	
C & E Loss (m)	0.04	Cum SA (1000 m2)		7.68	

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

CROSS SECTION OUTPUT Profile RPF 6

E.G. Elev (m)	77.14	Element	Left OB	Channel	Right OB
Vel Head (m)	0.21	Wt. n-Val.		0.040	
W.S. Elev (m)	76.93	Reach Len. (m)	39.18	34.80	30.66
Crit W.S. (m)		Flow Area (m2)		25.25	
E.G. Slope (m/m)	0.006958	Area (m2)		25.25	

Q Total (m3/s)	55.21	Flow (m3/s)	55.21
Top Width (m)	22.42	Top Width (m)	22.42
Vel Total (m/s)	2.19	Avg. Vel. (m/s)	2.19
Max Chl Dpth (m)	1.68	Hydr. Depth (m)	1.13
Conv. Total (m3/s)	671.6	Conv. (m3/s)	671.6
Length Wtd. (m)	34.80	Wetted Per. (m)	23.00
Min Ch El (m)	75.22	Shear (N/m2)	72.75
Alpha	1.00	Stream Power (N/m s)	159.10
Frctn Loss (m)	0.12	Cum Volume (1000 m3)	11.87
C & E Loss (m)	0.04	Cum SA (1000 m2)	8.09

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

CROSS SECTION OUTPUT Profile RPF 7

			Left OB	Channel	Right OB
E.G. Elev (m)	77.36	Element		0.040	
Vel Head (m)	0.26	Wt. n-Val.	39.18	34.80	30.66
W.S. Elev (m)	77.10	Reach Len. (m)		29.80	
Crit W.S. (m)		Flow Area (m2)		29.80	
E.G. Slope (m/m)	+0.005965	Area (m2)		66.68	
Q Total (m3/s)	66.68	Flow (m3/s)		23.22	
Top Width (m)	23.22	Top Width (m)		2.24	
Vel Total (m/s)	2.24	Avg. Vel. (m/s)		1.28	
Max Chl Dpth (m)	1.88	Hydr. Depth (m)		863.3	
Conv. Total (m3/s)	861.3	Conv. (m3/s)		23.89	
Length Wtd. (m)	34.80	Wetted Per. (m)		72.97	
Min Ch El (m)	75.22	Shear (N/m2)		163.27	
Alpha	1.00	Stream Power (N/m s)		13.47	
Frctn Loss (m)	0.11	Cum Volume (1000 m3)		8.29	
C & E Loss (m)	0.04	Cum SA (1000 m2)			

Warning: The conveyance ratio (upstream 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 RPF 8

			Left OB	Channel	Right OB
E.G. Elev (m)	77.48	Element		0.040	
Vel Head (m)	0.26	Wt. n-Val.	39.18	34.80	30.66
W.S. Elev (m)	77.22	Reach Len. (m)		32.54	
Crit W.S. (m)		Flow Area (m2)		32.54	
E.G. Slope (m/m)	+0.005610	Area (m2)		73.81	
Q Total (m3/s)	73.81	Flow (m3/s)		23.68	
Top Width (m)	23.68	Top Width (m)		2.27	
Vel Total (m/s)	2.27	Avg. Vel. (m/s)		1.37	
Max Chl Dpth (m)	2.00	Hydr. Depth (m)		985.5	
Conv. Total (m3/s)	985.5	Conv. (m3/s)		24.41	
Length Wtd. (m)	34.80	Wetted Per. (m)		73.33	
Min Ch El (m)	75.22	Shear (N/m2)		166.32	
Alpha	1.00	Stream Power (N/m s)		14.43	
Frctn Loss (m)	0.11	Cum Volume (1000 m3)		8.41	
C & E Loss (m)	0.04	Cum SA (1000 m2)			

Warning: The conveyance ratio (upstream 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 RPF 9

			Left OB	Channel	Right OB
E.G. Elev (m)	77.73	Element		0.040	
Vel Head (m)	0.28	Wt. n-Val.	39.18	34.80	30.66
W.S. Elev (m)	77.45	Reach Len. (m)		38.21	
Crit W.S. (m)		Flow Area (m2)		38.21	
E.G. Slope (m/m)	+0.005455	Area (m2)		89.04	
Q Total (m3/s)	89.04	Flow (m3/s)		24.62	
Top Width (m)	24.62	Top Width (m)		2.33	
Vel Total (m/s)	2.33	Avg. Vel. (m/s)		1.55	
Max Chl Dpth (m)	2.23	Hydr. Depth (m)		1252.4	
Conv. Total (m3/s)	1252.4	Conv. (m3/s)		25.46	
Length Wtd. (m)	34.80	Wetted Per. (m)		74.40	
Min Ch El (m)	75.22	Shear (N/m2)		173.35	
Alpha	1.00	Stream Power (N/m s)		16.38	
Frctn Loss (m)	0.11	Cum Volume (1000 m3)		8.65	
C & E Loss (m)	0.04	Cum SA (1000 m2)			

Warning: The conveyance ratio (upstream 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 RPF 10

			Left OB	Channel	Right OB
E.G. Elev (m)	77.79	Element		0.040	
Vel Head (m)	0.28	Wt. n-Val.	39.18	34.80	30.66
W.S. Elev (m)	77.51	Reach Len. (m)		39.76	
Crit W.S. (m)		Flow Area (m2)		39.76	
E.G. Slope (m/m)	+0.004934	Area (m2)		93.29	
Q Total (m3/s)	93.29	Flow (m3/s)		24.87	
Top Width (m)	24.87	Top Width (m)		2.35	
Vel Total (m/s)	2.35	Avg. Vel. (m/s)		1.60	
Max Chl Dpth (m)	2.28	Hydr. Depth (m)		1328.1	
Conv. Total (m3/s)	1328.1	Conv. (m3/s)		25.74	
Length Wtd. (m)	34.80	Wetted Per. (m)		74.74	
Min Ch El (m)	75.22	Shear (N/m2)		175.37	
Alpha	1.00	Stream Power (N/m s)		16.90	
Frctn Loss (m)	0.10	Cum Volume (1000 m3)		8.71	
C & E Loss (m)	0.04	Cum SA (1000 m2)			

Warning: The conveyance ratio (upstream 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 RPF 11

			Left OB	Channel	Right OB
E.G. Elev (m)	78.09	Element		0.040	
Vel Head (m)	0.30	Wt. n-Val.	39.18	34.80	30.66
W.S. Elev (m)	77.79	Reach Len. (m)		46.72	
Crit W.S. (m)		Flow Area (m2)		46.72	
E.G. Slope (m/m)	+0.004100	Area (m2)		112.91	
Q Total (m3/s)	112.91	Flow (m3/s)		25.96	
Top Width (m)	25.96	Top Width (m)		2.42	
Vel Total (m/s)	2.42	Avg. Vel. (m/s)		1.80	
Max Chl Dpth (m)	2.57	Hydr. Depth (m)		1685.1	
Conv. Total (m3/s)	1685.1	Conv. (m3/s)		26.97	
Length Wtd. (m)	34.80	Wetted Per. (m)		76.29	
Min Ch El (m)	75.22	Shear (N/m2)			

* Alpha	*	1.00	* Stream Power (N/m s)	*		*	184.35	*		*
* Frctn Loss (m)	*	0.10	* Cum Volume (1000 m3)	*		*	19.24	*		*
* C & E Loss (m)	*	0.04	* Cum EA (1000 m2)	*		*	8.99	*		*

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

CROSS SECTION OUTPUT Profile RPF 12

* E.G. Elev (m)	*	78.69	* Element	*	Left OB	*	Channel	*	Right OB	*
* Vel Head (m)	*	0.12	* Wt. n-Val.	*		*	0.040	*		*
* W.S. Elev (m)	*	78.56	* Reach Len. (m)	*	39.18	*	34.80	*	30.66	*
* Crit W.S. (m)	*		* Flow Area (m2)	*		*	62.34	*		*
* E.G. Slope (m/m)	*	0.003624	* Area (m2)	*		*	62.34	*		*
* Q Total (m3/s)	*	158.71	* Flow (m3/s)	*		*	158.71	*		*
* Top Width (m)	*	28.20	* Top Width (m)	*		*	28.20	*		*
* Vel Total (m/s)	*	2.55	* Avg. Vel. (m/s)	*		*	2.55	*		*
* Max Chl Dpth (m)	*	3.14	* Hydr. Depth (m)	*		*	2.21	*		*
* Conv. Total (m3/s)	*	2566.4	* Conv. (m3/s)	*		*	2566.4	*		*
* Length Wtd. (m)	*	34.80	* Wetted Per. (m)	*		*	29.51	*		*
* Min Ch El (m)	*	75.22	* Shear (N/m2)	*		*	79.24	*		*
* Alpha	*	1.00	* Stream Power (N/m s)	*		*	201.73	*		*
* Frctn Loss (m)	*	0.10	* Cum Volume (1000 m3)	*		*	24.45	*		*
* C & E Loss (m)	*	0.04	* Cum EA (1000 m2)	*		*	9.89	*		*

Warning: The cross-section end points had to be extended vertically for the computed water surface.

CROSS SECTION OUTPUT Profile RPF 13

* E.G. Elev (m)	*	79.13	* Element	*	Left OB	*	Channel	*	Right OB	*
* Vel Head (m)	*	0.27	* Wt. n-Val.	*		*	0.040	*		*
* W.S. Elev (m)	*	78.77	* Reach Len. (m)	*	39.18	*	34.80	*	30.66	*
* Crit W.S. (m)	*		* Flow Area (m2)	*		*	73.78	*		*
* E.G. Slope (m/m)	*	0.003946	* Area (m2)	*		*	73.78	*		*
* Q Total (m3/s)	*	198.29	* Flow (m3/s)	*		*	198.20	*		*
* Top Width (m)	*	28.88	* Top Width (m)	*		*	28.88	*		*
* Vel Total (m/s)	*	2.69	* Avg. Vel. (m/s)	*		*	2.69	*		*
* Max Chl Dpth (m)	*	3.55	* Hydr. Depth (m)	*		*	2.55	*		*
* Conv. Total (m3/s)	*	3310.0	* Conv. (m3/s)	*		*	3310.0	*		*
* Length Wtd. (m)	*	34.80	* Wetted Per. (m)	*		*	30.69	*		*
* Min Ch El (m)	*	75.22	* Shear (N/m2)	*		*	84.52	*		*
* Alpha	*	1.08	* Stream Power (N/m s)	*		*	227.05	*		*
* Frctn Loss (m)	*	0.09	* Cum Volume (1000 m3)	*		*	28.27	*		*
* C & E Loss (m)	*	0.05	* Cum EA (1000 m2)	*		*	10.14	*		*

Warning: The cross-section end points had to be extended vertically for the computed water surface.
Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.

[illegible]

[illegible]

[illegible] DATA[illegible]
[illegible] RPF RS: [illegible]

[illegible]
[illegible]

[illegible] Elevation Data				num						
	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
	[illegible]	[illegible]	[illegible]	78.12	[illegible]	77.00	[illegible]	75.77	5.89	75.13
	[illegible]	[illegible]	21.11	75.94	[illegible]	[illegible]	[illegible]	[illegible]	38.32	78.84

Manning's n Values		num=		3	
	Sta	n Val	Sta	n Val	Sta	n Val
	[illegible]	[illegible]	[illegible]	.04	[illegible]	.045

[illegible]	Left	Right	Lengths:	Left	Channel	Right	Coeff Contr.	Expan.
	[illegible]	48.32		[illegible]	41.[illegible]	[illegible]	[illegible]	[illegible]

[illegible] SECTION OUTPUT Profile RPF [illegible]

* E.G. Elev (m)	*	75.28	* Element	*	Left OB	*	Channel	*	Right OB	*
* Vel Head (m)	*	0.01	* Wt. n-Val.	*		*	0.040	*		*
* W.S. Elev (m)	*	75.27	* Reach Len. (m)	*	56.65	*	43.34	*	12.92	*
* Crit W.S. (m)	*		* Flow Area (m2)	*		*	2.73	*		*
* E.G. Slope (m/m)	*	0.005054	* Area (m2)	*		*	2.70	*		*
* Q Total (m3/s)	*	1.31	* Flow (m3/s)	*		*	1.31	*		*
* Top Width (m)	*	18.79	* Top Width (m)	*		*	18.79	*		*
* Vel Total (m/s)	*	0.49	* Avg. Vel. (m/s)	*		*	0.49	*		*
* Max Chl Dpth (m)	*	0.24	* Hydr. Depth (m)	*		*	0.14	*		*
* Conv. Total (m3/s)	*	18.4	* Conv. (m3/s)	*		*	18.4	*		*
* Length Wtd. (m)	*	43.34	* Wetted Per. (m)	*		*	18.91	*		*
* Min Ch El (m)	*	75.04	* Shear (N/m2)	*		*	7.08	*		*
* Alpha	*	1.00	* Stream Power (N/m s)	*		*	2.42	*		*
* Frctn Loss (m)	*	0.11	* Cum Volume (1000 m3)	*		*	1.01	*		*
* C & E Loss (m)	*	0.00	* Cum EA (1000 m2)	*		*	4.56	*		*

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

[illegible] SECTION OUTPUT Profile RPF [illegible]

* E.G. Elev (m)	*	75.41	* Element	*	Left OB	*	Channel	*	Right OB	*
* Vel Head (m)	*	0.04	* Wt. n-Val.	*		*	0.040	*		*
* W.S. Elev (m)	*	75.40	* Reach Len. (m)	*	56.65	*	43.34	*	12.92	*
* Crit W.S. (m)	*		* Flow Area (m2)	*		*	15.26	*		*
* E.G. Slope (m/m)	*	0.002941	* Area (m2)	*		*	15.26	*		*
* Q Total (m3/s)	*	13.71	* Flow (m3/s)	*		*	13.74	*		*
* Top Width (m)	*	21.22	* Top Width (m)	*		*	21.22	*		*
* Vel Total (m/s)	*	0.90	* Avg. Vel. (m/s)	*		*	0.90	*		*
* Max Chl Dpth (m)	*	0.46	* Hydr. Depth (m)	*		*	0.72	*		*
* Conv. Total (m3/s)	*	901.0	* Conv. (m3/s)	*		*	901.0	*		*
* Length Wtd. (m)	*	43.34	* Wetted Per. (m)	*		*	21.76	*		*
* Min Ch El (m)	*	75.04	* Shear (N/m2)	*		*	14.11	*		*
* Alpha	*	1.00	* Stream Power (N/m s)	*		*	12.40	*		*
* Frctn Loss (m)	*	0.08	* Cum Volume (1000 m3)	*		*	4.29	*		*
* C & E Loss (m)	*	0.00	* Cum EA (1000 m2)	*		*	8.20	*		*

[illegible] SECTION OUTPUT Profile RPF [illegible]

E.G. Elev (m)	76.26	Element	Left OB	Channel	Right OB	
Vel Head (m)	0.06	Wt. n-Val.		0.040		
W.S. Elev (m)	76.20	Reach Len. (m)	56.65	43.34	32.92	
Crit W.S. (m)		Flow Area (m2)		21.82		
E.G. Slope (m/m)	0.002076	Area (m2)		21.82		
Q Total (m3/s)	23.88	Flow (m3/s)		23.88		
Top Width (m)	22.60	Top Width (m)		22.60		
Vel Total (m/s)	1.09	Avg. Vel. (m/s)		1.09		
Max Chl Dpth (m)	1.16	Hydr. Depth (m)		0.97		
Conv. Total (m3/s)	524.1	Conv. (m3/s)		524.1		
Length Wtd. (m)	43.34	Wetted Per. (m)		23.18		
Min Ch El (m)	75.04	Shear (N/m2)		19.17		
Alpha	1.00	Stream Power (N/m s)		20.97		
Frctn Loss (m)	0.07	Cum Volume (1000 m3)		6.25		
C & E Loss (m)	0.01	Cum SA (1000 m2)		8.67		

CROSS SECTION OUTPUT Profile #PF 4

E.G. Elev (m)	76.52	Element	Left OB	Channel	Right OB	
Vel Head (m)	0.08	Wt. n-Val.		0.040		
W.S. Elev (m)	76.45	Reach Len. (m)	56.65	43.34	32.92	
Crit W.S. (m)		Flow Area (m2)		27.58		
E.G. Slope (m/m)	0.002073	Area (m2)		27.58		
Q Total (m3/s)	34.10	Flow (m3/s)		34.10		
Top Width (m)	23.67	Top Width (m)		23.67		
Vel Total (m/s)	1.24	Avg. Vel. (m/s)		1.24		
Max Chl Dpth (m)	1.41	Hydr. Depth (m)		1.17		
Conv. Total (m3/s)	748.9	Conv. (m3/s)		748.9		
Length Wtd. (m)	43.34	Wetted Per. (m)		24.37		
Min Ch El (m)	75.04	Shear (N/m2)		23.01		
Alpha	1.06	Stream Power (N/m s)		28.45		
Frctn Loss (m)	0.07	Cum Volume (1000 m3)		7.85		
C & E Loss (m)	0.01	Cum SA (1000 m2)		8.89		

CROSS SECTION OUTPUT Profile #PF 5

E.G. Elev (m)	76.76	Element	Left OB	Channel	Right OB	
Vel Head (m)	0.09	Wt. n-Val.		0.040		
W.S. Elev (m)	76.67	Reach Len. (m)	56.65	43.34	32.92	
Crit W.S. (m)		Flow Area (m2)		32.92		
E.G. Slope (m/m)	0.002062	Area (m2)		32.92		
Q Total (m3/s)	44.39	Flow (m3/s)		44.39		
Top Width (m)	24.62	Top Width (m)		24.62		
Vel Total (m/s)	1.35	Avg. Vel. (m/s)		1.35		
Max Chl Dpth (m)	1.63	Hydr. Depth (m)		1.34		
Conv. Total (m3/s)	977.5	Conv. (m3/s)		977.5		
Length Wtd. (m)	43.34	Wetted Per. (m)		25.42		
Min Ch El (m)	75.04	Shear (N/m2)		26.18		
Alpha	1.09	Stream Power (N/m s)		35.31		
Frctn Loss (m)	0.07	Cum Volume (1000 m3)		9.33		
C & E Loss (m)	0.01	Cum SA (1000 m2)		7.08		

CROSS SECTION OUTPUT Profile #PF 6

E.G. Elev (m)	76.93	Element	Left OB	Channel	Right OB	
Vel Head (m)	0.11	Wt. n-Val.		0.040		
W.S. Elev (m)	76.88	Reach Len. (m)	56.65	43.34	32.92	
Crit W.S. (m)		Flow Area (m2)		38.18		
E.G. Slope (m/m)	0.002049	Area (m2)		38.18		
Q Total (m3/s)	55.21	Flow (m3/s)		55.21		
Top Width (m)	25.52	Top Width (m)		25.52		
Vel Total (m/s)	1.45	Avg. Vel. (m/s)		1.45		
Max Chl Dpth (m)	1.84	Hydr. Depth (m)		1.50		
Conv. Total (m3/s)	1219.7	Conv. (m3/s)		1219.7		
Length Wtd. (m)	43.34	Wetted Per. (m)		26.42		
Min Ch El (m)	75.04	Shear (N/m2)		29.03		
Alpha	1.09	Stream Power (N/m s)		41.98		
Frctn Loss (m)	0.07	Cum Volume (1000 m3)		10.76		
C & E Loss (m)	0.01	Cum SA (1000 m2)		7.26		

CROSS SECTION OUTPUT Profile #PF 7

E.G. Elev (m)	77.20	Element	Left OB	Channel	Right OB	
Vel Head (m)	0.12	Wt. n-Val.		0.040		
W.S. Elev (m)	77.08	Reach Len. (m)	56.65	43.34	32.92	
Crit W.S. (m)		Flow Area (m2)		43.47		
E.G. Slope (m/m)	0.002038	Area (m2)		43.47		
Q Total (m3/s)	66.68	Flow (m3/s)		66.68		
Top Width (m)	26.39	Top Width (m)		26.39		
Vel Total (m/s)	1.53	Avg. Vel. (m/s)		1.53		
Max Chl Dpth (m)	2.04	Hydr. Depth (m)		1.65		
Conv. Total (m3/s)	1478.6	Conv. (m3/s)		1478.6		
Length Wtd. (m)	43.34	Wetted Per. (m)		27.40		
Min Ch El (m)	75.04	Shear (N/m2)		31.65		
Alpha	1.09	Stream Power (N/m s)		48.54		
Frctn Loss (m)	0.07	Cum Volume (1000 m3)		12.20		
C & E Loss (m)	0.01	Cum SA (1000 m2)		7.43		

CROSS SECTION OUTPUT Profile #PF 8

E.G. Elev (m)	77.33	Element	Left OB	Channel	Right OB	
Vel Head (m)	0.13	Wt. n-Val.		0.040		
W.S. Elev (m)	77.20	Reach Len. (m)	56.65	43.34	32.92	
Crit W.S. (m)		Flow Area (m2)		46.66		
E.G. Slope (m/m)	0.002025	Area (m2)		46.66		
Q Total (m3/s)	73.81	Flow (m3/s)		73.81		
Top Width (m)	26.92	Top Width (m)		26.92		
Vel Total (m/s)	1.58	Avg. Vel. (m/s)		1.58		
Max Chl Dpth (m)	2.24	Hydr. Depth (m)		1.73		
Conv. Total (m3/s)	1640.4	Conv. (m3/s)		1640.4		
Length Wtd. (m)	43.34	Wetted Per. (m)		27.98		
Min Ch El (m)	75.04	Shear (N/m2)		33.11		
Alpha	1.09	Stream Power (N/m s)		52.38		
Frctn Loss (m)	0.07	Cum Volume (1000 m3)		13.05		
C & E Loss (m)	0.01	Cum SA (1000 m2)		7.53		

CROSS SECTION OUTPUT Profile #PF 9

E.G. Elev (m)	77.55	Element	Left OB	Channel	Right OB	
Vel Head (m)	0.14	Wt. n-Val.		0.040		
W.S. Elev (m)	77.41	Reach Len. (m)	56.65	43.34	32.92	

Crit W.S. (m)		Flow Area (m2)	53.23
E.G. Slope (m/m)	0.002005	Area (m2)	53.23
Q Total (m3/s)	89.04	Flow (m3/s)	89.04
Top Width (m)	27.97	Top Width (m)	27.97
Vel Total (m/s)	1.67	Avg. Vel. (m/s)	1.67
Max Chl Dpth (m)	2.40	Hydr. Depth (m)	1.90
Conv. Total (m3/s)	1988.4	Conv. (m3/s)	1988.4
Length Wtd. (m)	43.34	Wetted Per. (m)	29.14
Min Ch El (m)	75.04	Shear (N/m2)	35.92
Alpha	1.00	Stream Power (N/m s)	60.09
Frctn Loss (m)	0.07	Cum Volume (1000 m3)	14.79
C & E Loss (m)	0.01	Cum SA (1000 m2)	7.73

CROSS SECTION OUTPUT Profile RPF 10

			Left OB	Channel	Right OB
E.G. Elev (m)	77.65	Element		0.040	
Vel Head (m)	0.15	Wt. n-Val.	56.65	43.34	32.92
W.S. Elev (m)	77.50	Reach Len. (m)		55.01	
Crit W.S. (m)		Flow Area (m2)		55.01	
E.G. Slope (m/m)	0.002000	Area (m2)		93.29	
Q Total (m3/s)	93.29	Flow (m3/s)		28.25	
Top Width (m)	28.25	Top Width (m)		1.70	
Vel Total (m/s)	1.70	Avg. Vel. (m/s)		1.95	
Max Chl Dpth (m)	2.46	Hydr. Depth (m)		2086.1	
Conv. Total (m3/s)	2086.1	Conv. (m3/s)		29.45	
Length Wtd. (m)	43.34	Wetted Per. (m)		36.64	
Min Ch El (m)	75.04	Shear (N/m2)		42.13	
Alpha	1.00	Stream Power (N/m s)		15.25	
Frctn Loss (m)	0.07	Cum Volume (1000 m3)		7.79	
C & E Loss (m)	0.02	Cum SA (1000 m2)			

CROSS SECTION OUTPUT Profile RPF 11

			Left OB	Channel	Right OB
E.G. Elev (m)	77.44	Element		0.040	
Vel Head (m)	0.16	Wt. n-Val.	56.65	43.34	32.92
W.S. Elev (m)	77.28	Reach Len. (m)		63.05	
Crit W.S. (m)		Flow Area (m2)		63.05	
E.G. Slope (m/m)	0.002007	Area (m2)		112.91	
Q Total (m3/s)	112.91	Flow (m3/s)		29.88	
Top Width (m)	29.88	Top Width (m)		1.79	
Vel Total (m/s)	1.79	Avg. Vel. (m/s)		2.11	
Max Chl Dpth (m)	2.74	Hydr. Depth (m)		2520.0	
Conv. Total (m3/s)	2520.0	Conv. (m3/s)		31.19	
Length Wtd. (m)	43.34	Wetted Per. (m)		39.80	
Min Ch El (m)	75.04	Shear (N/m2)		71.27	
Alpha	1.00	Stream Power (N/m s)		17.33	
Frctn Loss (m)	0.07	Cum Volume (1000 m3)		8.02	
C & E Loss (m)	0.02	Cum SA (1000 m2)			

CROSS SECTION OUTPUT Profile RPF 12

			Left OB	Channel	Right OB
E.G. Elev (m)	78.[illegible]	Element		0.040	
Vel Head (m)	0.[illegible]	Wt. n-Val.	56.65	43.34	32.92
W.S. Elev (m)	78.37	Reach Len. (m)		82.08	
Crit W.S. (m)		Flow Area (m2)		82.08	
E.G. Slope (m/m)	0.002[illegible]	Area (m2)		158.71	
Q Total (m3/s)	158.71	Flow (m3/s)		35.12	
Top Width (m)	35.12	Top Width (m)		1.93	
Vel Total (m/s)	1.93	Avg. Vel. (m/s)		2.34	
Max Chl Dpth (m)	2.33	Hydr. Depth (m)		3506.3	
Conv. Total (m3/s)	3506.3	Conv. (m3/s)		36.75	
Length Wtd. (m)	43.34	Wetted Per. (m)		44.88	
Min Ch El (m)	75.04	Shear (N/m2)		86.78	
Alpha	1.00	Stream Power (N/m s)		21.94	
Frctn Loss (m)	0.07	Cum Volume (1000 m3)		8.74	
C & E Loss (m)	0.02	Cum SA (1000 m2)			

Warning: The cross section end points had to be extended vertically for the computed water surface.

CROSS SECTION OUTPUT Profile RPF 13

			Left OB	Channel	Right OB
E.G. Elev (m)	78.[illegible]	Element		0.040	
Vel Head (m)	0.[illegible]	Wt. n-Val.	56.65	43.34	32.92
W.S. Elev (m)	78.[illegible]	Reach Len. (m)		97.24	
Crit W.S. (m)		Flow Area (m2)		97.24	
E.G. Slope (m/m)	0.00[illegible]	Area (m2)		198.20	
Q Total (m3/s)	198.20	Flow (m3/s)		37.93	
Top Width (m)	37.93	Top Width (m)		2.04	
Vel Total (m/s)	2.04	Avg. Vel. (m/s)		2.56	
Max Chl Dpth (m)	3.24	Hydr. Depth (m)		4395.5	
Conv. Total (m3/s)	4395.5	Conv. (m3/s)		40.00	
Length Wtd. (m)	43.34	Wetted Per. (m)		48.43	
Min Ch El (m)	75.04	Shear (N/m2)		98.80	
Alpha	1.00	Stream Power (N/m s)		25.29	
Frctn Loss (m)	0.07	Cum Volume (1000 m3)		8.97	
C & E Loss (m)	0.02	Cum SA (1000 m2)			

Warning: The cross section end points had to be extended vertically for the computed water surface.

CROSS SECTION

RIVER: CAYAGUAS
REACH: 2EK RS: [illegible]

INPUT
Description:
Station Elevation Data num= 10

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	12	35	10.99	14.88
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	35.69	77.78	39.69	78.25

Manning's n Values num= 4

Sta	n Val	Sta	n Val	Sta	n Val
[illegible]	.45	[illegible]	.38	19.[illegible]	.[illegible]

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
[illegible]	[illegible]	[illegible]	127.15	57.37	.1	.3

CROSS SECTION OUTPUT Profile RPF 1

E.G. Elev (m)	75.17	Element	Left OB	Channel	Right OB	
Vel Head (m)	0.01	Wt. n-Val.		0.040		
W.S. Elev (m)	75.17	Reach Len. (m)	123.52	107.15	97.07	
Crit W.S. (m)		Flow Area (m2)		3.80		
E.G. Slope (m/m)	0.001435	Area (m2)		3.80		
Q Total (m3/s)	1.31	Flow (m3/s)		1.31		
Top Width (m)	17.17	Top Width (m)		17.17		
Vel Total (m/s)	0.34	Avg. Vel. (m/s)		0.34		
Max Chl Dpth (m)	0.29	Hydr. Depth (m)		0.22		
Conv. Total (m3/s)	34.6	Conv. (m3/s)		34.6		
Length Wtd. (m)	107.15	Wetted Per. (m)		17.35		
Min Ch El (m)	74.88	Shear (N/m2)		3.09		
Alpha	1.00	Stream Power (N/m s)		1.06		
Frctn Loss (m)	0.15	Cum Volume (1000 m3)		0.87		
C & E Loss (m)	0.00	Cum SA (1000 m2)		4.21		

CROSS SECTION OUTPUT Profile RPF 2

E.G. Elev (m)	75.80	Element	Left OB	Channel	Right OB	
Vel Head (m)	0.03	Wt. n-Val.		0.040		
W.S. Elev (m)	75.83	Reach Len. (m)	123.52	107.15	97.07	
Crit W.S. (m)		Flow Area (m2)		18.50		
E.G. Slope (m/m)	0.001467	Area (m2)		18.50		
Q Total (m3/s)	13.74	Flow (m3/s)		13.74		
Top Width (m)	26.61	Top Width (m)		26.61		
Vel Total (m/s)	0.74	Avg. Vel. (m/s)		0.74		
Max Chl Dpth (m)	0.95	Hydr. Depth (m)		0.70		
Conv. Total (m3/s)	338.7	Conv. (m3/s)		338.7		
Length Wtd. (m)	107.15	Wetted Per. (m)		27.10		
Min Ch El (m)	74.88	Shear (N/m2)		9.82		
Alpha	1.05	Stream Power (N/m s)		7.29		
Frctn Loss (m)	0.18	Cum Volume (1000 m3)		3.66		
C & E Loss (m)	0.00	Cum SA (1000 m2)		5.26		

CROSS SECTION OUTPUT Profile RPF 3

E.G. Elev (m)	76.18	Element	Left OB	Channel	Right OB	
Vel Head (m)	0.04	Wt. n-Val.		0.040		
W.S. Elev (m)	76.14	Reach Len. (m)	123.52	107.15	97.07	
Crit W.S. (m)		Flow Area (m2)		26.89		
E.G. Slope (m/m)	0.001371	Area (m2)		26.89		
Q Total (m3/s)	23.98	Flow (m3/s)		23.98		
Top Width (m)	27.97	Top Width (m)		27.97		
Vel Total (m/s)	0.89	Avg. Vel. (m/s)		0.89		
Max Chl Dpth (m)	1.26	Hydr. Depth (m)		0.96		
Conv. Total (m3/s)	845.0	Conv. (m3/s)		845.0		
Length Wtd. (m)	107.15	Wetted Per. (m)		28.61		
Min Ch El (m)	74.88	Shear (N/m2)		12.63		
Alpha	1.09	Stream Power (N/m s)		11.22		
Frctn Loss (m)	0.18	Cum Volume (1000 m3)		5.20		
C & E Loss (m)	0.00	Cum SA (1000 m2)		5.57		

CROSS SECTION OUTPUT Profile RPF 4

E.G. Elev (m)	76.45	Element	Left OB	Channel	Right OB	
Vel Head (m)	0.05	Wt. n-Val.		0.040		
W.S. Elev (m)	76.39	Reach Len. (m)	123.52	107.15	97.07	
Crit W.S. (m)		Flow Area (m2)		34.15		
E.G. Slope (m/m)	0.001335	Area (m2)		34.15		
Q Total (m3/s)	34.10	Flow (m3/s)		34.10		
Top Width (m)	29.12	Top Width (m)		29.12		
Vel Total (m/s)	1.00	Avg. Vel. (m/s)		1.00		
Max Chl Dpth (m)	1.51	Hydr. Depth (m)		1.17		
Conv. Total (m3/s)	933.1	Conv. (m3/s)		933.1		
Length Wtd. (m)	107.15	Wetted Per. (m)		29.88		
Min Ch El (m)	74.88	Shear (N/m2)		14.06		
Alpha	1.08	Stream Power (N/m s)		14.44		
Frctn Loss (m)	0.19	Cum Volume (1000 m3)		6.52		
C & E Loss (m)	0.00	Cum SA (1000 m2)		5.74		

CROSS SECTION OUTPUT Profile RPF 5

E.G. Elev (m)	76.68	Element	Left OB	Channel	Right OB	
Vel Head (m)	0.06	Wt. n-Val.		0.040		
W.S. Elev (m)	76.62	Reach Len. (m)	123.52	107.15	97.07	
Crit W.S. (m)		Flow Area (m2)		40.84		
E.G. Slope (m/m)	0.001319	Area (m2)		40.84		
Q Total (m3/s)	44.19	Flow (m3/s)		44.19		
Top Width (m)	30.15	Top Width (m)		30.15		
Vel Total (m/s)	1.08	Avg. Vel. (m/s)		1.09		
Max Chl Dpth (m)	1.74	Hydr. Depth (m)		1.35		
Conv. Total (m3/s)	1226.7	Conv. (m3/s)		1226.7		
Length Wtd. (m)	107.15	Wetted Per. (m)		31.01		
Min Ch El (m)	74.88	Shear (N/m2)		18.91		
Alpha	1.09	Stream Power (N/m s)		19.38		
Frctn Loss (m)	0.19	Cum Volume (1000 m3)		7.73		
C & E Loss (m)	0.01	Cum SA (1000 m2)		5.89		

CROSS SECTION OUTPUT Profile RPF 6

E.G. Elev (m)	76.90	Element	Left OB	Channel	Right OB	
Vel Head (m)	0.07	Wt. n-Val.		0.040		
W.S. Elev (m)	76.83	Reach Len. (m)	123.52	107.15	97.07	
Crit W.S. (m)		Flow Area (m2)		47.39		
E.G. Slope (m/m)	0.001287	Area (m2)		47.39		
Q Total (m3/s)	55.21	Flow (m3/s)		55.21		
Top Width (m)	31.05	Top Width (m)		31.05		
Vel Total (m/s)	1.16	Avg. Vel. (m/s)		1.16		
Max Chl Dpth (m)	1.95	Hydr. Depth (m)		1.53		
Conv. Total (m3/s)	1539.1	Conv. (m3/s)		1539.1		
Length Wtd. (m)	107.15	Wetted Per. (m)		32.01		
Min Ch El (m)	74.88	Shear (N/m2)		19.66		
Alpha	1.09	Stream Power (N/m s)		21.76		
Frctn Loss (m)	0.19	Cum Volume (1000 m3)		8.91		
C & E Loss (m)	0.01	Cum SA (1000 m2)		6.03		

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 RPF 7

			Left OB	Channel	Right OB
E.G. Elev (m)	77.12	Element		0.040	
Vel Head (m)	0.08	Wt. n-Val.	123.52	107.15	97.07
W.S. Elev (m)	77.04	Reach Len. (m)		53.95	
Crit W.S. (m)		Flow Area (m2)		53.95	
E.G. Slope (m/m)	+0.001267	Area (m2)		66.68	
Q Total (m3/s)	66.68	Flow (m3/s)		31.91	
Top Width (m)	31.91	Top Width (m)		1.24	
Vel Total (m/s)	1.24	Avg. Vel. (m/s)		1.69	
Max Chl Dpth (m)	2.16	Hydr. Depth (m)		1873.0	
Conv. Total (m3/s)	1873.0	Conv. (m3/s)		32.97	
Length Wtd. (m)	107.15	Wetted Per. (m)		20.34	
Min Ch El (m)	74.88	Shear (N/m2)		25.14	
Alpha	1.00	Stream Power (N/m s)		10.09	
Frctn Loss (m)	0.19	Cum Volume (1000 m3)		6.17	
C & E Loss (m)	0.01	Cum SA (1000 m2)			

Warning: The conveyance ratio (upstream 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 RPF 8

			Left OB	Channel	Right OB
E.G. Elev (m)	77.25	Element		0.040	
Vel Head (m)	0.08	Wt. n-Val.	123.52	107.15	97.07
W.S. Elev (m)	77.16	Reach Len. (m)		57.86	
Crit W.S. (m)		Flow Area (m2)		57.86	
E.G. Slope (m/m)	+0.001258	Area (m2)		73.81	
Q Total (m3/s)	73.41	Flow (m3/s)		32.41	
Top Width (m)	32.41	Top Width (m)		1.28	
Vel Total (m/s)	1.28	Avg. Vel. (m/s)		1.79	
Max Chl Dpth (m)	2.28	Hydr. Depth (m)		2081.3	
Conv. Total (m3/s)	2081.3	Conv. (m3/s)		33.53	
Length Wtd. (m)	107.15	Wetted Per. (m)		21.29	
Min Ch El (m)	74.88	Shear (N/m2)		27.15	
Alpha	1.00	Stream Power (N/m s)		10.79	
Frctn Loss (m)	0.18	Cum Volume (1000 m3)		6.25	
C & E Loss (m)	0.01	Cum SA (1000 m2)			

Warning: The conveyance ratio (upstream 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 RPF 9

			Left OB	Channel	Right OB
E.G. Elev (m)	77.50	Element		0.040	
Vel Head (m)	0.09	Wt. n-Val.	123.52	107.15	97.07
W.S. Elev (m)	77.41	Reach Len. (m)		65.88	
Crit W.S. (m)		Flow Area (m2)		65.88	
E.G. Slope (m/m)	+0.001241	Area (m2)		89.04	
Q Total (m3/s)	89.04	Flow (m3/s)		33.41	
Top Width (m)	33.41	Top Width (m)		1.35	
Vel Total (m/s)	1.35	Avg. Vel. (m/s)		1.97	
Max Chl Dpth (m)	2.53	Hydr. Depth (m)		2528.0	
Conv. Total (m3/s)	2528.0	Conv. (m3/s)		34.64	
Length Wtd. (m)	107.15	Wetted Per. (m)		23.14	
Min Ch El (m)	74.88	Shear (N/m2)		31.27	
Alpha	1.00	Stream Power (N/m s)		12.21	
Frctn Loss (m)	0.19	Cum Volume (1000 m3)		6.40	
C & E Loss (m)	0.01	Cum SA (1000 m2)			

Warning: The conveyance ratio (upstream 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 RPF 10

			Left OB	Channel	Right OB
E.G. Elev (m)	77.51	Element		0.040	
Vel Head (m)	0.10	Wt. n-Val.	123.52	107.15	97.07
W.S. Elev (m)	77.47	Reach Len. (m)		68.04	
Crit W.S. (m)		Flow Area (m2)		68.04	
E.G. Slope (m/m)	+0.001237	Area (m2)		91.29	
Q Total (m3/s)	91.29	Flow (m3/s)		33.67	
Top Width (m)	33.67	Top Width (m)		1.37	
Vel Total (m/s)	1.37	Avg. Vel. (m/s)		2.02	
Max Chl Dpth (m)	2.59	Hydr. Depth (m)		2652.9	
Conv. Total (m3/s)	2652.9	Conv. (m3/s)		34.94	
Length Wtd. (m)	107.15	Wetted Per. (m)		23.62	
Min Ch El (m)	74.88	Shear (N/m2)		32.38	
Alpha	1.00	Stream Power (N/m s)		12.59	
Frctn Loss (m)	0.19	Cum Volume (1000 m3)		6.44	
C & E Loss (m)	0.01	Cum SA (1000 m2)			

Warning: The conveyance ratio (upstream 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 RPF 11

			Left OB	Channel	Right OB
E.G. Elev (m)	77.86	Element		0.040	
Vel Head (m)	0.11	Wt. n-Val.	123.52	107.15	97.07
W.S. Elev (m)	77.75	Reach Len. (m)		77.69	
Crit W.S. (m)		Flow Area (m2)		77.69	
E.G. Slope (m/m)	+0.001222	Area (m2)		112.91	
Q Total (m3/s)	112.91	Flow (m3/s)		34.82	
Top Width (m)	34.82	Top Width (m)		1.45	
Vel Total (m/s)	1.45	Avg. Vel. (m/s)		2.23	
Max Chl Dpth (m)	2.87	Hydr. Depth (m)		3229.8	
Conv. Total (m3/s)	3229.8	Conv. (m3/s)		36.23	
Length Wtd. (m)	107.15	Wetted Per. (m)		25.70	
Min Ch El (m)	74.88	Shear (N/m2)		37.35	
Alpha	1.00	Stream Power (N/m s)		14.28	
Frctn Loss (m)	0.20	Cum Volume (1000 m3)		6.61	
C & E Loss (m)	0.01	Cum SA (1000 m2)			

Warning: The conveyance ratio (upstream 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 RPF 12

			Left OB	Channel	Right OB
E.G. Elev (m)	[illegible]	Element		0.040	
Vel Head (m)	[illegible]	Wt. n-Val.	123.52	107.15	97.07
W.S. Elev (m)	[illegible]	Reach Len. (m)		99.76	
Crit W.S. (m)		Flow Area (m2)		99.76	
E.G. Slope (m/m)	+0.001256	Area (m2)		158.71	
Q Total (m3/s)	[illegible]	Flow (m3/s)			

* Top Width (m)	* 39.69	* Top Width (m)	*	* 39.69 *
* Vel Total (m/s)	* 1.59	* Avg. Vel. (m/s)	*	* 1.59 *
* Max Chl Dpth (m)	* 3.46	* Hydr. Depth (m)	*	* 2.51 *
* Conv. Total (m3/s)	* 4478.6	* Conv. (m3/s)	*	* 4478.6 *
* Length Wtd. (m)	* 107.15	* Wetted Per. (m)	*	* 41.45 *
* Min Ch El (m)	* 74.88	* Shear (N/m2)	*	* 29.64 *
* Alpha	* 1.00	* Stream Power (N/m s)	*	* 47.15 *
* Frctn Loss (m)	* 0.20	* Cum Volume (1000 m3)	*	* 18.00 *
* C & E Loss (m)	* 0.02	* Cum EA (1000 m2)	*	* 7.17 *

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

CROSS SECTION OUTPUT Profile #PF 13

* E.G. Elev (m)	* 78.91	* Element	* Left OB *	Channel *	Right OB *
* Vel Head (m)	* 0.15	* Wt. n-Val.	*	* 0.040 *	*
* W.S. Elev (m)	* 78.76	* Reach Len. (m)	* 123.52	* 107.15 *	97.07 *
* Crit W.S. (m)	*	* Flow Area (m2)	*	* 116.37 *	*
* E.G. Slope (m/m)	*0.001204	* Area (m2)	*	* 116.37 *	*
* Q Total (m3/s)	* 199.20	* Flow (m3/s)	*	* 199.20 *	*
* Top Width (m)	* 39.69	* Top Width (m)	*	* 39.69 *	*
* Vel Total (m/s)	* 1.70	* Avg. Vel. (m/s)	*	* 1.70 *	*
* Max Chl Dpth (m)	* 3.88	* Hydr. Depth (m)	*	* 2.93 *	*
* Conv. Total (m3/s)	* 5712.5	* Conv. (m3/s)	*	* 5712.5 *	*
* Length Wtd. (m)	* 107.15	* Wetted Per. (m)	*	* 42.29 *	*
* Min Ch El (m)	* 74.88	* Shear (N/m2)	*	* 32.48 *	*
* Alpha	* 1.00	* Stream Power (N/m s)	*	* 55.32 *	*
* Frctn Loss (m)	* 0.20	* Cum Volume (1000 m3)	*	* 20.66 *	*
* C & E Loss (m)	* 0.02	* Cum EA (1000 m2)	*	* 7.28 *	*

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

CROSS SECTION

PROJ: CAYAGUAS
REACH: CHR RS: 2

INPUT
Description:
Station Elevation Data num= 4

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	77.04	1.46	75.19	7.62	74.39	7.62	74.04	13.62	74.76
19.57	74.71	19.69	75.17	21.76	79.76				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.045	0	.04	24.76	.045

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
0 24.76 46.98 48.26 51.31 .1 .3

CROSS SECTION OUTPUT Profile #PF 1

* E.G. Elev (m)	* 75.03	* Element	* Left OB *	Channel *	Right OB *
* Vel Head (m)	* 0.02	* Wt. n-Val.	*	* 0.040 *	*
* W.S. Elev (m)	* 75.02	* Reach Len. (m)	* 46.98	* 48.26 *	51.31 *
* Crit W.S. (m)	*	* Flow Area (m2)	*	* 3.90 *	*
* E.G. Slope (m/m)	*0.001294	* Area (m2)	*	* 3.90 *	*
* Q Total (m3/s)	* 1.31	* Flow (m3/s)	*	* 1.31 *	*
* Top Width (m)	* 16.89	* Top Width (m)	*	* 16.89 *	*
* Vel Total (m/s)	* 0.34	* Avg. Vel. (m/s)	*	* 0.34 *	*
* Max Chl Dpth (m)	* 0.21	* Hydr. Depth (m)	*	* 0.23 *	*
* Conv. Total (m3/s)	* 36.4	* Conv. (m3/s)	*	* 36.4 *	*
* Length Wtd. (m)	* 48.26	* Wetted Per. (m)	*	* 17.07 *	*
* Min Ch El (m)	* 74.71	* Shear (N/m2)	*	* 2.90 *	*
* Alpha	* 1.00	* Stream Power (N/m s)	*	* 0.97 *	*
* Frctn Loss (m)	* 0.04	* Cum Volume (1000 m3)	*	* 0.46 *	*
* C & E Loss (m)	* 0.00	* Cum EA (1000 m2)	*	* 2.39 *	*

CROSS SECTION OUTPUT Profile #PF 2

* E.G. Elev (m)	* 75.48	* Element	* Left OB *	Channel *	Right OB *
* Vel Head (m)	* 0.02	* Wt. n-Val.	*	* 0.040 *	*
* W.S. Elev (m)	* 75.46	* Reach Len. (m)	* 46.98	* 48.26 *	51.31 *
* Crit W.S. (m)	*	* Flow Area (m2)	*	* 14.77 *	*
* E.G. Slope (m/m)	*0.001945	* Area (m2)	*	* 14.77 *	*
* Q Total (m3/s)	* 13.74	* Flow (m3/s)	*	* 13.74 *	*
* Top Width (m)	* 18.41	* Top Width (m)	*	* 18.41 *	*
* Vel Total (m/s)	* 0.93	* Avg. Vel. (m/s)	*	* 0.93 *	*
* Max Chl Dpth (m)	* 0.94	* Hydr. Depth (m)	*	* 0.80 *	*
* Conv. Total (m3/s)	* 311.2	* Conv. (m3/s)	*	* 311.2 *	*
* Length Wtd. (m)	* 48.26	* Wetted Per. (m)	*	* 19.16 *	*
* Min Ch El (m)	* 74.71	* Shear (N/m2)	*	* 14.74 *	*
* Alpha	* 1.04	* Stream Power (N/m s)	*	* 13.75 *	*
* Frctn Loss (m)	* 0.11	* Cum Volume (1000 m3)	*	* 1.88 *	*
* C & E Loss (m)	* 0.00	* Cum EA (1000 m2)	*	* 2.85 *	*

CROSS SECTION OUTPUT Profile #PF 3

* E.G. Elev (m)	* 75.94	* Element	* Left OB *	Channel *	Right OB *
* Vel Head (m)	* 0.07	* Wt. n-Val.	*	* 0.040 *	*
* W.S. Elev (m)	* 75.92	* Reach Len. (m)	* 46.98	* 48.26 *	51.31 *
* Crit W.S. (m)	*	* Flow Area (m2)	*	* 20.13 *	*
* E.G. Slope (m/m)	*0.002130	* Area (m2)	*	* 20.13 *	*
* Q Total (m3/s)	* 23.88	* Flow (m3/s)	*	* 23.88 *	*
* Top Width (m)	* 19.05	* Top Width (m)	*	* 19.05 *	*
* Vel Total (m/s)	* 1.19	* Avg. Vel. (m/s)	*	* 1.19 *	*
* Max Chl Dpth (m)	* 1.21	* Hydr. Depth (m)	*	* 1.06 *	*
* Conv. Total (m3/s)	* 505.7	* Conv. (m3/s)	*	* 505.7 *	*
* Length Wtd. (m)	* 48.26	* Wetted Per. (m)	*	* 19.99 *	*
* Min Ch El (m)	* 74.71	* Shear (N/m2)	*	* 22.03 *	*
* Alpha	* 1.00	* Stream Power (N/m s)	*	* 26.13 *	*

* Frctn Loss (m)	*	0.12	* Cum Volume (1000 m3)	*		*	2.68	*	*
* C & E Loss (m)	*	0.00	* Cum SA (1000 m2)	*		*	3.05	*	*

CROSS SECTION OUTPUT Profile RPF 4

* E.G. Elev (m)	*	76.25	* Element	*	Left OB	*	Channel	*	Right OB *
* Vel Head (m)	*	0.10	* Wt. n-Val.	*		*	0.040	*	*
* W.S. Elev (m)	*	76.15	* Reach Len. (m)	*	46.88	*	48.26	*	51.31 *
* Crit W.S. (m)	*		* Flow Area (m2)	*		*	24.64	*	*
* E.G. Slope (m/m)	*	0.002430	* Area (m2)	*		*	24.64	*	*
* Q Total (m3/s)	*	34.10	* Flow (m3/s)	*		*	34.10	*	*
* Top Width (m)	*	19.57	* Top Width (m)	*		*	19.57	*	*
* Vel Total (m/s)	*	1.38	* Avg. Vel. (m/s)	*		*	1.38	*	*
* Max Chl Dpth (m)	*	1.24	* Hydr. Depth (m)	*		*	1.26	*	*
* Conv. Total (m3/s)	*	691.7	* Conv. (m3/s)	*		*	691.7	*	*
* Length Wtd. (m)	*	48.26	* Wetted Per. (m)	*		*	20.71	*	*
* Min Ch El (m)	*	74.71	* Shear (N/m2)	*		*	28.36	*	*
* Alpha	*	1.00	* Stream Power (N/m s)	*		*	39.25	*	*
* Frctn Loss (m)	*	0.13	* Cum Volume (1000 m3)	*		*	3.37	*	*
* C & E Loss (m)	*	0.00	* Cum SA (1000 m2)	*		*	3.13	*	*

CROSS SECTION OUTPUT Profile RPF 5

* E.G. Elev (m)	*	76.49	* Element	*	Left OB	*	Channel	*	Right OB *
* Vel Head (m)	*	0.12	* Wt. n-Val.	*		*	0.040	*	*
* W.S. Elev (m)	*	76.36	* Reach Len. (m)	*	46.88	*	48.26	*	51.31 *
* Crit W.S. (m)	*		* Flow Area (m2)	*		*	28.75	*	*
* E.G. Slope (m/m)	*	0.002565	* Area (m2)	*		*	28.75	*	*
* Q Total (m3/s)	*	44.39	* Flow (m3/s)	*		*	44.39	*	*
* Top Width (m)	*	20.04	* Top Width (m)	*		*	20.04	*	*
* Vel Total (m/s)	*	1.54	* Avg. Vel. (m/s)	*		*	1.54	*	*
* Max Chl Dpth (m)	*	1.65	* Hydr. Depth (m)	*		*	1.43	*	*
* Conv. Total (m3/s)	*	876.5	* Conv. (m3/s)	*		*	876.5	*	*
* Length Wtd. (m)	*	48.26	* Wetted Per. (m)	*		*	21.35	*	*
* Min Ch El (m)	*	74.71	* Shear (N/m2)	*		*	33.88	*	*
* Alpha	*	1.00	* Stream Power (N/m s)	*		*	52.31	*	*
* Frctn Loss (m)	*	0.14	* Cum Volume (1000 m3)	*		*	4.00	*	*
* C & E Loss (m)	*	0.00	* Cum SA (1000 m2)	*		*	3.20	*	*

CROSS SECTION OUTPUT Profile RPF 6

* E.G. Elev (m)	*	76.70	* Element	*	Left OB	*	Channel	*	Right OB *
* Vel Head (m)	*	0.14	* Wt. n-Val.	*		*	0.040	*	*
* W.S. Elev (m)	*	76.56	* Reach Len. (m)	*	46.88	*	48.26	*	51.31 *
* Crit W.S. (m)	*		* Flow Area (m2)	*		*	32.74	*	*
* E.G. Slope (m/m)	*	0.002671	* Area (m2)	*		*	32.74	*	*
* Q Total (m3/s)	*	55.21	* Flow (m3/s)	*		*	55.21	*	*
* Top Width (m)	*	20.48	* Top Width (m)	*		*	20.48	*	*
* Vel Total (m/s)	*	1.69	* Avg. Vel. (m/s)	*		*	1.69	*	*
* Max Chl Dpth (m)	*	1.85	* Hydr. Depth (m)	*		*	1.60	*	*
* Conv. Total (m3/s)	*	1068.3	* Conv. (m3/s)	*		*	1068.3	*	*
* Length Wtd. (m)	*	48.26	* Wetted Per. (m)	*		*	21.96	*	*
* Min Ch El (m)	*	74.71	* Shear (N/m2)	*		*	39.05	*	*
* Alpha	*	1.00	* Stream Power (N/m s)	*		*	65.86	*	*
* Frctn Loss (m)	*	0.15	* Cum Volume (1000 m3)	*		*	4.62	*	*
* C & E Loss (m)	*	0.00	* Cum SA (1000 m2)	*		*	3.27	*	*

CROSS SECTION OUTPUT Profile RPF 7

* E.G. Elev (m)	*	76.92	* Element	*	Left OB	*	Channel	*	Right OB *
* Vel Head (m)	*	0.17	* Wt. n-Val.	*		*	0.040	*	*
* W.S. Elev (m)	*	76.75	* Reach Len. (m)	*	46.88	*	48.26	*	51.31 *
* Crit W.S. (m)	*		* Flow Area (m2)	*		*	36.70	*	*
* E.G. Slope (m/m)	*	0.002759	* Area (m2)	*		*	36.70	*	*
* Q Total (m3/s)	*	66.68	* Flow (m3/s)	*		*	66.68	*	*
* Top Width (m)	*	20.91	* Top Width (m)	*		*	20.91	*	*
* Vel Total (m/s)	*	1.82	* Avg. Vel. (m/s)	*		*	1.82	*	*
* Max Chl Dpth (m)	*	2.04	* Hydr. Depth (m)	*		*	1.76	*	*
* Conv. Total (m3/s)	*	1269.5	* Conv. (m3/s)	*		*	1269.5	*	*
* Length Wtd. (m)	*	48.26	* Wetted Per. (m)	*		*	22.55	*	*
* Min Ch El (m)	*	74.71	* Shear (N/m2)	*		*	44.03	*	*
* Alpha	*	1.03	* Stream Power (N/m s)	*		*	80.00	*	*
* Frctn Loss (m)	*	0.15	* Cum Volume (1000 m3)	*		*	5.23	*	*
* C & E Loss (m)	*	0.00	* Cum SA (1000 m2)	*		*	3.34	*	*

CROSS SECTION OUTPUT Profile RPF 8

* E.G. Elev (m)	*	77.04	* Element	*	Left OB	*	Channel	*	Right OB *
* Vel Head (m)	*	0.18	* Wt. n-Val.	*		*	0.040	*	*
* W.S. Elev (m)	*	76.86	* Reach Len. (m)	*	46.88	*	48.26	*	51.31 *
* Crit W.S. (m)	*		* Flow Area (m2)	*		*	39.05	*	*
* E.G. Slope (m/m)	*	0.002896	* Area (m2)	*		*	39.05	*	*
* Q Total (m3/s)	*	73.81	* Flow (m3/s)	*		*	73.81	*	*
* Top Width (m)	*	21.16	* Top Width (m)	*		*	21.16	*	*
* Vel Total (m/s)	*	1.89	* Avg. Vel. (m/s)	*		*	1.89	*	*
* Max Chl Dpth (m)	*	2.15	* Hydr. Depth (m)	*		*	1.85	*	*
* Conv. Total (m3/s)	*	1393.5	* Conv. (m3/s)	*		*	1393.5	*	*
* Length Wtd. (m)	*	48.26	* Wetted Per. (m)	*		*	22.88	*	*
* Min Ch El (m)	*	74.71	* Shear (N/m2)	*		*	46.93	*	*
* Alpha	*	1.00	* Stream Power (N/m s)	*		*	88.70	*	*
* Frctn Loss (m)	*	0.15	* Cum Volume (1000 m3)	*		*	5.55	*	*
* C & E Loss (m)	*	0.00	* Cum SA (1000 m2)	*		*	3.38	*	*

CROSS SECTION OUTPUT Profile RPF 9

* E.G. Elev (m)	*	77.29	* Element	*	Left OB	*	Channel	*	Right OB *
* Vel Head (m)	*	0.21	* Wt. n-Val.	*		*	0.040	*	*
* W.S. Elev (m)	*	77.08	* Reach Len. (m)	*	46.88	*	48.26	*	51.31 *
* Crit W.S. (m)	*		* Flow Area (m2)	*		*	43.82	*	*
* E.G. Slope (m/m)	*	0.002842	* Area (m2)	*		*	43.82	*	*
* Q Total (m3/s)	*	89.04	* Flow (m3/s)	*		*	89.04	*	*
* Top Width (m)	*	21.66	* Top Width (m)	*		*	21.66	*	*
* Vel Total (m/s)	*	2.03	* Avg. Vel. (m/s)	*		*	2.03	*	*
* Max Chl Dpth (m)	*	2.37	* Hydr. Depth (m)	*		*	2.02	*	*
* Conv. Total (m3/s)	*	1655.7	* Conv. (m3/s)	*		*	1655.7	*	*
* Length Wtd. (m)	*	48.26	* Wetted Per. (m)	*		*	23.58	*	*
* Min Ch El (m)	*	74.71	* Shear (N/m2)	*		*	52.70	*	*
* Alpha	*	1.00	* Stream Power (N/m s)	*		*	107.09	*	*
* Frctn Loss (m)	*	0.16	* Cum Volume (1000 m3)	*		*	6.33	*	*
* C & E Loss (m)	*	0.00	* Cum SA (1000 m2)	*		*	3.45	*	*

CROSS SECTION OUTPUT Profile RPF 10

			Left OB	Channel	Right OB
E.G. Elev (m)	77.36	Element		0.040	
Vel Head (m)	0.22	Wt. n-Val.	46.88	48.26	51.31
W.S. Elev (m)	77.14	Reach Len. (m)		45.10	
Crit W.S. (m)		Flow Area (m2)		45.10	
E.G. Slope (m/m)	0.003914	Area (m2)		93.29	
Q Total (m3/s)	93.29	Flow (m3/s)		21.79	
Top Width (m)	21.79	Top Width (m)		2.07	
Vel Total (m/s)	2.07	Avg. Vel. (m/s)		2.07	
Max Chl Dpth (m)	2.43	Hydr. Depth (m)		1728.2	
Conv. Total (m3/s)	1728.2	Conv. (m3/s)		23.76	
Length Wtd. (m)	48.26	Wetted Per. (m)		34.23	
Min Ch El (m)	74.71	Shear (N/m2)		112.18	
Alpha	1.00	Stream Power (N/m s)		6.53	
Frctn Loss (m)	0.16	Cum Volume (1000 m3)		3.47	
C & E Loss (m)	0.00	Cum SA (1000 m2)			

CROSS SECTION OUTPUT Profile RPF 11

			Left OB	Channel	Right OB
E.G. Elev (m)	77.45	Element		0.040	
Vel Head (m)	0.75	Wt. n-Val.	46.88	48.26	51.31
W.S. Elev (m)	77.40	Reach Len. (m)		50.75	
Crit W.S. (m)		Flow Area (m2)		50.75	
E.G. Slope (m/m)	0.003008	Area (m2)		112.91	
Q Total (m3/s)	112.91	Flow (m3/s)		22.36	
Top Width (m)	22.36	Top Width (m)		2.22	
Vel Total (m/s)	2.22	Avg. Vel. (m/s)		2.27	
Max Chl Dpth (m)	2.69	Hydr. Depth (m)		2058.8	
Conv. Total (m3/s)	2058.8	Conv. (m3/s)		24.55	
Length Wtd. (m)	48.26	Wetted Per. (m)		60.96	
Min Ch El (m)	74.71	Shear (N/m2)		135.63	
Alpha	1.00	Stream Power (N/m s)		7.40	
Frctn Loss (m)	0.16	Cum Volume (1000 m3)		3.55	
C & E Loss (m)	0.00	Cum SA (1000 m2)			

CROSS SECTION OUTPUT Profile RPF 12

			Left OB	Channel	Right OB
E.G. Elev (m)	78.25	Element		0.040	
Vel Head (m)	0.33	Wt. n-Val.	46.88	48.26	51.31
W.S. Elev (m)	77.92	Reach Len. (m)		62.70	
Crit W.S. (m)		Flow Area (m2)		62.70	
E.G. Slope (m/m)	0.001190	Area (m2)		158.71	
Q Total (m3/s)	158.71	Flow (m3/s)		23.38	
Top Width (m)	23.38	Top Width (m)		2.53	
Vel Total (m/s)	2.53	Avg. Vel. (m/s)		2.68	
Max Chl Dpth (m)	3.21	Hydr. Depth (m)		2810.2	
Conv. Total (m3/s)	2810.2	Conv. (m3/s)		26.12	
Length Wtd. (m)	48.26	Wetted Per. (m)		75.07	
Min Ch El (m)	74.71	Shear (N/m2)		190.02	
Alpha	1.00	Stream Power (N/m s)		9.30	
Frctn Loss (m)	0.17	Cum Volume (1000 m3)		3.75	
C & E Loss (m)	0.00	Cum SA (1000 m2)			

Warning: The cross-section end points had to be extended vertically for the computed water surface.

CROSS SECTION OUTPUT Profile RPF 13

			Left OB	Channel	Right OB
E.G. Elev (m)	78.58	Element		0.040	
Vel Head (m)	0.19	Wt. n-Val.	46.88	48.26	51.31
W.S. Elev (m)	78.39	Reach Len. (m)		71.39	
Crit W.S. (m)		Flow Area (m2)		71.39	
E.G. Slope (m/m)	0.000847	Area (m2)		198.29	
Q Total (m3/s)	198.29	Flow (m3/s)		23.98	
Top Width (m)	23.98	Top Width (m)		2.78	
Vel Total (m/s)	2.78	Avg. Vel. (m/s)		2.94	
Max Chl Dpth (m)	3.68	Hydr. Depth (m)		3365.7	
Conv. Total (m3/s)	3365.7	Conv. (m3/s)		27.20	
Length Wtd. (m)	48.26	Wetted Per. (m)		87.63	
Min Ch El (m)	74.71	Shear (N/m2)		243.46	
Alpha	1.00	Stream Power (N/m s)		10.60	
Frctn Loss (m)	0.18	Cum Volume (1000 m3)		3.88	
C & E Loss (m)	0.01	Cum SA (1000 m2)			

Warning: The cross-section end points had to be extended vertically for the computed water surface.

CROSS SECTION

RIVER: CAYAGUAS

REACH: [illegible]

RS: 1

INPUT

Description:

Station Elevation Data											
Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

Manning's n Values

Sta	n Val
[illegible]	.04

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
[illegible]	25.64	[illegible]	[illegible]	38.64	.1	.3

CROSS SECTION OUTPUT Profile RPF 1

			Left OB	Channel	Right OB
E.G. Elev (m)	[illegible]	Element		0.040	
Vel Head (m)	[illegible]	Wt. n-Val.	34.38	39.31	38.64
W.S. Elev (m)	[illegible]	Reach Len. (m)		1.91	
Crit W.S. (m)		Flow Area (m2)		1.91	
E.G. Slope (m/m)	[illegible]	Area (m2)		1.21	
Q Total (m3/s)	1.21	Flow (m3/s)		14.53	
Top Width (m)	14.53	Top Width (m)		0.34	
Vel Total (m/s)	0.11	Avg. Vel. (m/s)		0.24	
Max Chl Dpth (m)	0.16	Hydr. Depth (m)		37.2	
Conv. Total (m3/s)	[illegible]	Conv. (m3/s)		16.67	
Length Wtd. (m)	39.31	Wetted Per. (m)		2.86	
Min Ch El (m)	[illegible]	Shear (N/m2)			

* Alpha	*	1.00	* Stream Power (N/m s)	*		*	0.96	*	*
* Frctn Loss (m)	*	0.09	* Cum Volume (1000 m3)	*		*	0.27	*	*
* C & E Loss (m)	*	0.00	* Cum SA (1000 m2)	*		*	1.58	*	*

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

CROSS SECTION OUTPUT Profile RPF 2

* E.G. Elev (m)	*	75.57	* Element	*	Left OB	*	Channel	*	Right OB *
* Vel Head (m)	*	0.05	* Wt. n-Vel.	*		*	0.040	*	*
* W.S. Elev (m)	*	75.52	* Reach Len. (m)	*	34.38	*	39.31	*	38.64 *
* Crit W.S. (m)	*		* Flow Area (m2)	*		*	13.57	*	*
* E.G. Slope (m/m)	*	0.002479	* Area (m2)	*		*	13.57	*	*
* Q Total (m3/s)	*	13.74	* Flow (m3/s)	*		*	13.74	*	*
* Top Width (m)	*	17.97	* Top Width (m)	*		*	17.97	*	*
* Vel Total (m/s)	*	1.01	* Avg. Vel. (m/s)	*		*	1.01	*	*
* Max Chl Dpth (m)	*	0.92	* Hydr. Depth (m)	*		*	0.76	*	*
* Conv. Total (m3/s)	*	276.0	* Conv. (m3/s)	*		*	276.0	*	*
* Length Wtd. (m)	*	39.31	* Wetted Per. (m)	*		*	18.50	*	*
* Min Ch El (m)	*	74.60	* Shear (N/m2)	*		*	17.82	*	*
* Alpha	*	1.00	* Stream Power (N/m s)	*		*	18.05	*	*
* Frctn Loss (m)	*	0.13	* Cum Volume (1000 m3)	*		*	1.19	*	*
* C & E Loss (m)	*	0.00	* Cum SA (1000 m2)	*		*	1.87	*	*

CROSS SECTION OUTPUT Profile RPF 3

* E.G. Elev (m)	*	75.87	* Element	*	Left OB	*	Channel	*	Right OB *
* Vel Head (m)	*	0.09	* Wt. n-Vel.	*		*	0.040	*	*
* W.S. Elev (m)	*	75.78	* Reach Len. (m)	*	34.38	*	39.31	*	38.64 *
* Crit W.S. (m)	*		* Flow Area (m2)	*		*	18.39	*	*
* E.G. Slope (m/m)	*	0.002842	* Area (m2)	*		*	18.39	*	*
* Q Total (m3/s)	*	23.88	* Flow (m3/s)	*		*	23.88	*	*
* Top Width (m)	*	18.65	* Top Width (m)	*		*	18.65	*	*
* Vel Total (m/s)	*	1.30	* Avg. Vel. (m/s)	*		*	1.30	*	*
* Max Chl Dpth (m)	*	1.18	* Hydr. Depth (m)	*		*	0.99	*	*
* Conv. Total (m3/s)	*	444.0	* Conv. (m3/s)	*		*	444.0	*	*
* Length Wtd. (m)	*	39.31	* Wetted Per. (m)	*		*	19.36	*	*
* Min Ch El (m)	*	74.60	* Shear (N/m2)	*		*	26.93	*	*
* Alpha	*	1.09	* Stream Power (N/m s)	*		*	34.98	*	*
* Frctn Loss (m)	*	0.13	* Cum Volume (1000 m3)	*		*	1.75	*	*
* C & E Loss (m)	*	0.00	* Cum SA (1000 m2)	*		*	2.24	*	*

CROSS SECTION OUTPUT Profile RPF 4

* E.G. Elev (m)	*	76.12	* Element	*	Left OB	*	Channel	*	Right OB *
* Vel Head (m)	*	0.12	* Wt. n-Vel.	*		*	0.040	*	*
* W.S. Elev (m)	*	76.00	* Reach Len. (m)	*	34.38	*	39.31	*	38.64 *
* Crit W.S. (m)	*		* Flow Area (m2)	*		*	22.48	*	*
* E.G. Slope (m/m)	*	0.003165	* Area (m2)	*		*	22.48	*	*
* Q Total (m3/s)	*	34.10	* Flow (m3/s)	*		*	34.10	*	*
* Top Width (m)	*	19.20	* Top Width (m)	*		*	19.20	*	*
* Vel Total (m/s)	*	1.52	* Avg. Vel. (m/s)	*		*	1.52	*	*
* Max Chl Dpth (m)	*	1.40	* Hydr. Depth (m)	*		*	1.17	*	*
* Conv. Total (m3/s)	*	606.1	* Conv. (m3/s)	*		*	606.1	*	*
* Length Wtd. (m)	*	39.31	* Wetted Per. (m)	*		*	20.07	*	*
* Min Ch El (m)	*	74.60	* Shear (N/m2)	*		*	34.76	*	*
* Alpha	*	1.00	* Stream Power (N/m s)	*		*	52.73	*	*
* Frctn Loss (m)	*	0.13	* Cum Volume (1000 m3)	*		*	2.23	*	*
* C & E Loss (m)	*	0.01	* Cum SA (1000 m2)	*		*	2.20	*	*

CROSS SECTION OUTPUT Profile RPF 5

* E.G. Elev (m)	*	76.34	* Element	*	Left OB	*	Channel	*	Right OB *
* Vel Head (m)	*	0.15	* Wt. n-Vel.	*		*	0.040	*	*
* W.S. Elev (m)	*	76.20	* Reach Len. (m)	*	34.38	*	39.31	*	38.64 *
* Crit W.S. (m)	*		* Flow Area (m2)	*		*	26.29	*	*
* E.G. Slope (m/m)	*	0.003118	* Area (m2)	*		*	26.29	*	*
* Q Total (m3/s)	*	44.39	* Flow (m3/s)	*		*	44.39	*	*
* Top Width (m)	*	19.71	* Top Width (m)	*		*	19.71	*	*
* Vel Total (m/s)	*	1.69	* Avg. Vel. (m/s)	*		*	1.69	*	*
* Max Chl Dpth (m)	*	1.60	* Hydr. Depth (m)	*		*	1.33	*	*
* Conv. Total (m3/s)	*	770.7	* Conv. (m3/s)	*		*	770.7	*	*
* Length Wtd. (m)	*	39.31	* Wetted Per. (m)	*		*	20.71	*	*
* Min Ch El (m)	*	74.60	* Shear (N/m2)	*		*	41.30	*	*
* Alpha	*	1.00	* Stream Power (N/m s)	*		*	69.73	*	*
* Frctn Loss (m)	*	0.12	* Cum Volume (1000 m3)	*		*	2.47	*	*
* C & E Loss (m)	*	0.01	* Cum SA (1000 m2)	*		*	2.24	*	*

CROSS SECTION OUTPUT Profile RPF 6

* E.G. Elev (m)	*	76.56	* Element	*	Left OB	*	Channel	*	Right OB *
* Vel Head (m)	*	0.17	* Wt. n-Vel.	*		*	0.040	*	*
* W.S. Elev (m)	*	76.38	* Reach Len. (m)	*	34.38	*	39.31	*	38.64 *
* Crit W.S. (m)	*		* Flow Area (m2)	*		*	30.05	*	*
* E.G. Slope (m/m)	*	0.003429	* Area (m2)	*		*	30.05	*	*
* Q Total (m3/s)	*	55.21	* Flow (m3/s)	*		*	55.21	*	*
* Top Width (m)	*	20.19	* Top Width (m)	*		*	20.19	*	*
* Vel Total (m/s)	*	1.84	* Avg. Vel. (m/s)	*		*	1.84	*	*
* Max Chl Dpth (m)	*	1.78	* Hydr. Depth (m)	*		*	1.49	*	*
* Conv. Total (m3/s)	*	944.1	* Conv. (m3/s)	*		*	944.1	*	*
* Length Wtd. (m)	*	39.31	* Wetted Per. (m)	*		*	23.23	*	*
* Min Ch El (m)	*	74.60	* Shear (N/m2)	*		*	47.25	*	*
* Alpha	*	1.00	* Stream Power (N/m s)	*		*	86.92	*	*
* Frctn Loss (m)	*	0.12	* Cum Volume (1000 m3)	*		*	3.10	*	*
* C & E Loss (m)	*	0.01	* Cum SA (1000 m2)	*		*	2.29	*	*

CROSS SECTION OUTPUT Profile RPF

* E.G. Elev (m)	*	76.77	* Element	*	Left OB	*	Channel	*	Right OB *
* Vel Head (m)	*	0.20	* Wt. n-Vel.	*		*	0.040	*	*
* W.S. Elev (m)	*	76.57	* Reach Len. (m)	*	34.38	*	39.31	*	38.64 *
* Crit W.S. (m)	*		* Flow Area (m2)	*		*	33.81	*	*
* E.G. Slope (m/m)	*	0.003494	* Area (m2)	*		*	33.81	*	*
* Q Total (m3/s)	*	66.68	* Flow (m3/s)	*		*	66.68	*	*
* Top Width (m)	*	20.66	* Top Width (m)	*		*	20.66	*	*
* Vel Total (m/s)	*	1.97	* Avg. Vel. (m/s)	*		*	1.97	*	*
* Max Chl Dpth (m)	*	1.87	* Hydr. Depth (m)	*		*	1.64	*	*
* Conv. Total (m3/s)	*	1128.0	* Conv. (m3/s)	*		*	1128.0	*	*
* Length Wtd. (m)	*	39.31	* Wetted Per. (m)	*		*	24.93	*	*
* Min Ch El (m)	*	74.60	* Shear (N/m2)	*		*	52.82	*	*

* Alpha	* 1.60	* Stream Power (N/m s)	* 104.19 *
* Frctn Loss (m)	* 0.11	* Cum Volume (1000 m3)	* 3.53 *
* C & E Loss (m)	* 0.02	* Cum SA (1000 m2)	* 2.33 *

CROSS SECTION OUTPUT Profile #PF 8

* E.G. Elev (m)	* 76.49	* Element	* Left OB	* Channel	* Right OB *
* Vel Head (m)	* 0.21	* Wt. n-Val.	*	* 0.040	* *
* W.S. Elev (m)	* 76.08	* Reach Len. (m)	* 34.38	* 39.31	* 38.64 *
* Crit W.S. (m)	*	* Flow Area (m2)	*	* 36.05	* *
* E.G. Slope (m/m)	*0.003530	* Area (m2)	*	* 36.05	* *
* Q Total (m3/s)	* 73.81	* Flow (m3/s)	*	* 73.81	* *
* Top Width (m)	* 20.94	* Top Width (m)	*	* 20.94	* *
* Vel Total (m/s)	* 2.05	* Avg. Vel. (m/s)	*	* 2.05	* *
* Max Chl Dpth (m)	* 2.08	* Hydr. Depth (m)	*	* 1.72	* *
* Conv. Total (m3/s)	* 1242.2	* Conv. (m3/s)	*	* 1242.2	* *
* Length Wtd. (m)	* 39.31	* Wetted Per. (m)	*	* 22.28	* *
* Min Ch El (m)	* 74.60	* Shear (N/m2)	*	* 56.02	* *
* Alpha	* 1.00	* Stream Power (N/m s)	*	* 114.68	* *
* Frctn Loss (m)	* 0.12	* Cum Volume (1000 m3)	*	* 3.78	* *
* C & E Loss (m)	* 0.02	* Cum SA (1000 m2)	*	* 2.36	* *

CROSS SECTION OUTPUT Profile #PF 9

* E.G. Elev (m)	* 77.14	* Element	* Left OB	* Channel	* Right OB *
* Vel Head (m)	* 0.24	* Wt. n-Val.	*	* 0.040	* *
* W.S. Elev (m)	* 76.89	* Reach Len. (m)	* 34.38	* 39.31	* 38.64 *
* Crit W.S. (m)	*	* Flow Area (m2)	*	* 40.64	* *
* E.G. Slope (m/m)	*0.003553	* Area (m2)	*	* 40.64	* *
* Q Total (m3/s)	* 89.04	* Flow (m3/s)	*	* 89.04	* *
* Top Width (m)	* 21.50	* Top Width (m)	*	* 21.50	* *
* Vel Total (m/s)	* 2.19	* Avg. Vel. (m/s)	*	* 2.19	* *
* Max Chl Dpth (m)	* 2.29	* Hydr. Depth (m)	*	* 1.89	* *
* Conv. Total (m3/s)	* 1485.4	* Conv. (m3/s)	*	* 1485.4	* *
* Length Wtd. (m)	* 39.31	* Wetted Per. (m)	*	* 22.99	* *
* Min Ch El (m)	* 74.60	* Shear (N/m2)	*	* 62.29	* *
* Alpha	* 1.50	* Stream Power (N/m s)	*	* 136.48	* *
* Frctn Loss (m)	* 0.12	* Cum Volume (1000 m3)	*	* 4.29	* *
* C & E Loss (m)	* 0.02	* Cum SA (1000 m2)	*	* 2.41	* *

CROSS SECTION OUTPUT Profile #PF 10

* E.G. Elev (m)	* 77.26	* Element	* Left OB	* Channel	* Right OB *
* Vel Head (m)	* 0.25	* Wt. n-Val.	*	* 0.040	* *
* W.S. Elev (m)	* 76.95	* Reach Len. (m)	* 34.38	* 39.31	* 38.64 *
* Crit W.S. (m)	*	* Flow Area (m2)	*	* 41.88	* *
* E.G. Slope (m/m)	*0.003604	* Area (m2)	*	* 41.88	* *
* Q Total (m3/s)	* 93.29	* Flow (m3/s)	*	* 93.29	* *
* Top Width (m)	* 21.64	* Top Width (m)	*	* 21.64	* *
* Vel Total (m/s)	* 2.23	* Avg. Vel. (m/s)	*	* 2.23	* *
* Max Chl Dpth (m)	* 2.35	* Hydr. Depth (m)	*	* 1.93	* *
* Conv. Total (m3/s)	* 1553.0	* Conv. (m3/s)	*	* 1553.0	* *
* Length Wtd. (m)	* 39.31	* Wetted Per. (m)	*	* 23.18	* *
* Min Ch El (m)	* 74.60	* Shear (N/m2)	*	* 63.94	* *
* Alpha	* 1.60	* Stream Power (N/m s)	*	* 142.44	* *
* Frctn Loss (m)	* 0.12	* Cum Volume (1000 m3)	*	* 4.43	* *
* C & E Loss (m)	* 0.02	* Cum SA (1000 m2)	*	* 2.42	* *

CROSS SECTION OUTPUT Profile #PF 11

* E.G. Elev (m)	* 77.49	* Element	* Left OB	* Channel	* Right OB *
* Vel Head (m)	* 0.29	* Wt. n-Val.	*	* 0.040	* *
* W.S. Elev (m)	* 77.20	* Reach Len. (m)	* 34.38	* 39.31	* 38.64 *
* Crit W.S. (m)	*	* Flow Area (m2)	*	* 47.35	* *
* E.G. Slope (m/m)	*0.003676	* Area (m2)	*	* 47.35	* *
* Q Total (m3/s)	* 112.91	* Flow (m3/s)	*	* 112.91	* *
* Top Width (m)	* 22.78	* Top Width (m)	*	* 22.28	* *
* Vel Total (m/s)	* 2.38	* Avg. Vel. (m/s)	*	* 2.38	* *
* Max Chl Dpth (m)	* 2.60	* Hydr. Depth (m)	*	* 2.12	* *
* Conv. Total (m3/s)	* 1862.3	* Conv. (m3/s)	*	* 1862.3	* *
* Length Wtd. (m)	* 39.31	* Wetted Per. (m)	*	* 23.95	* *
* Min Ch El (m)	* 74.60	* Shear (N/m2)	*	* 71.14	* *
* Alpha	* 1.80	* Stream Power (N/m s)	*	* 169.65	* *
* Frctn Loss (m)	* 0.13	* Cum Volume (1000 m3)	*	* 5.01	* *
* C & E Loss (m)	* 0.02	* Cum SA (1000 m2)	*	* 2.47	* *

CROSS SECTION OUTPUT Profile #PF 12

* E.G. Elev (m)	* 78.08	* Element	* Left OB	* Channel	* Right OB *
* Vel Head (m)	* 0.32	* Wt. n-Val.	*	* 0.040	* *
* W.S. Elev (m)	* 77.76	* Reach Len. (m)	* 34.38	* 39.31	* 38.64 *
* Crit W.S. (m)	*	* Flow Area (m2)	*	* 58.94	* *
* E.G. Slope (m/m)	*0.003797	* Area (m2)	*	* 58.94	* *
* Q Total (m3/s)	* 158.71	* Flow (m3/s)	*	* 158.71	* *
* Top Width (m)	* 23.23	* Top Width (m)	*	* 23.23	* *
* Vel Total (m/s)	* 2.69	* Avg. Vel. (m/s)	*	* 2.69	* *
* Max Chl Dpth (m)	* 3.16	* Hydr. Depth (m)	*	* 2.54	* *
* Conv. Total (m3/s)	* 2575.7	* Conv. (m3/s)	*	* 2575.7	* *
* Length Wtd. (m)	* 39.31	* Wetted Per. (m)	*	* 25.50	* *
* Min Ch El (m)	* 74.60	* Shear (N/m2)	*	* 88.05	* *
* Alpha	* 1.90	* Stream Power (N/m s)	*	* 231.71	* *
* Frctn Loss (m)	* 0.22	* Cum Volume (1000 m3)	*	* 6.36	* *
* C & E Loss (m)	* 0.03	* Cum SA (1000 m2)	*	* 2.66	* *

Warning: The cross-section end points had to be extended vertically for the computed water surface.

CROSS SECTION OUTPUT Profile #PF 1

* E.G. Elev (m)	* 78.30	* Element	* Left OB	* Channel	* Right OB *
* Vel Head (m)	* 0.45	* Wt. n-Val.	*	* 0.040	* *
* W.S. Elev (m)	* 77.85	* Reach Len. (m)	* 34.38	* 39.31	* 38.64 *
* Crit W.S. (m)	*	* Flow Area (m2)	*	* 67.04	* *
* E.G. Slope (m/m)	*0.004053	* Area (m2)	*	* 67.04	* *
* Q Total (m3/s)	* 198.20	* Flow (m3/s)	*	* 198.20	* *
* Top Width (m)	* 23.76	* Top Width (m)	*	* 23.76	* *
* Vel Total (m/s)	* 2.96	* Avg. Vel. (m/s)	*	* 2.96	* *
* Max Chl Dpth (m)	* 3.45	* Hydr. Depth (m)	*	* 2.82	* *
* Conv. Total (m3/s)	* 3113.1	* Conv. (m3/s)	*	* 3113.1	* *
* Length Wtd. (m)	* 39.31	* Wetted Per. (m)	*	* 26.48	* *
* Min Ch El (m)	* 74.60	* Shear (N/m2)	*	* 100.63	* *
* Alpha	* 1.90	* Stream Power (N/m s)	*	* 297.50	* *

* Frctn Loss (m)	* 0.13	* Cum Volume (1000 m3)	*	* 7.26	*
* C & E Loss (m)	* 0.04	* Cum SA (1000 m2)	*	* 2.73	*

Warning: The cross-section end points had to be extended vertically for the computed water surface.

CROSS SECTION

RIVER: CAYAGUAS
REACH: ONE RS: 0.5

INPUT
Description:
Station Elevation Data num= 9

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	75.56	5.05	75.12	6.53	74.87	14.06	74.66	16.29	74.54
19.14	74.64	23.33	74.82	25.79	76.94				

Manning's n Values num= 1

Sta	n Val
0	.04

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
0	25.79	69.57	67.32	64.36	.1	.3

CROSS SECTION OUTPUT Profile #PF 1

			Left OB	Channel	Right OB
* E.G. Elev (m)	* 74.88	* Element	*	* 0.040	*
* Vel Head (m)	* 0.01	* Wt. n-Val.	* 69.57	* 67.32	* 64.36 *
* W.S. Elev (m)	* 74.86	* Reach Len. (m)	*	* 2.50	*
* Crit W.S. (m)	*	* Flow Area (m2)	*	* 2.50	*
* E.G. Slope (m/m)	*0.005473	* Area (m2)	*	* 1.31	*
* Q Total (m3/s)	* 1.31	* Flow (m3/s)	*	* 16.56	*
* Top Width (m)	* 16.56	* Top Width (m)	*	* 0.52	*
* Vel Total (m/s)	* 0.52	* Avg. Vel. (m/s)	*	* 0.15	*
* Max Chl Dpth (m)	* 0.32	* Hydr. Depth (m)	*	* 17.7	*
* Conv. Total (m3/s)	* 17.7	* Conv. (m3/s)	*	* 16.58	*
* Length Wtd. (m)	* 67.32	* Wetted Per. (m)	*	* 8.09	*
* Min Ch El (m)	* 74.54	* Shear (N/m2)	*	* 4.24	*
* Alpha	* 1.00	* Stream Power (N/m s)	*	* 0.14	*
* Frctn Loss (m)	* 0.49	* Cum Volume (1000 m3)	*	* 0.93	*
* C & E Loss (m)	* 0.00	* Cum SA (1000 m2)	*	*	*

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

CROSS SECTION OUTPUT Profile #PF 2

			Left OB	Channel	Right OB
* E.G. Elev (m)	* 75.45	* Element	*	* 0.040	*
* Vel Head (m)	* 0.06	* Wt. n-Val.	* 69.57	* 67.32	* 64.36 *
* W.S. Elev (m)	* 75.39	* Reach Len. (m)	*	* 12.42	*
* Crit W.S. (m)	*	* Flow Area (m2)	*	* 12.42	*
* E.G. Slope (m/m)	*0.004244	* Area (m2)	*	* 13.74	*
* Q Total (m3/s)	* 13.74	* Flow (m3/s)	*	* 21.96	*
* Top Width (m)	* 21.96	* Top Width (m)	*	* 1.11	*
* Vel Total (m/s)	* 1.11	* Avg. Vel. (m/s)	*	* 0.57	*
* Max Chl Dpth (m)	* 0.81	* Hydr. Depth (m)	*	* 210.8	*
* Conv. Total (m3/s)	* 210.8	* Conv. (m3/s)	*	* 22.21	*
* Length Wtd. (m)	* 67.32	* Wetted Per. (m)	*	* 33.30	*
* Min Ch El (m)	* 74.54	* Shear (N/m2)	*	* 25.77	*
* Alpha	* 1.00	* Stream Power (N/m s)	*	* 0.68	*
* Frctn Loss (m)	* 0.42	* Cum Volume (1000 m3)	*	* 1.18	*
* C & E Loss (m)	* 0.01	* Cum SA (1000 m2)	*	*	*

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

CROSS SECTION OUTPUT Profile #PF 3

			Left OB	Channel	Right OB
* E.G. Elev (m)	* 75.[illegible]	* Element	*	* 0.040	*
* Vel Head (m)	* 0.[illegible]	* Wt. n-Val.	* 69.57	* 67.32	* 64.36 *
* W.S. Elev (m)	* 75.[illegible]	* Reach Len. (m)	*	* 18.87	*
* Crit W.S. (m)	*	* Flow Area (m2)	*	* 18.87	*
* E.G. Slope (m/m)	*0.003[illegible]	* Area (m2)	*	* 23.85	*
* Q Total (m3/s)	* 21.[illegible]	* Flow (m3/s)	*	* 24.39	*
* Top Width (m)	* 24.[illegible]	* Top Width (m)	*	* 1.27	*
* Vel Total (m/s)	* 1.[illegible]	* Avg. Vel. (m/s)	*	* 0.78	*
* Max Chl Dpth (m)	* 1.[illegible]	* Hydr. Depth (m)	*	* 393.5	*
* Conv. Total (m3/s)	* 393.5	* Conv. (m3/s)	*	* 24.76	*
* Length Wtd. (m)	* 67.[illegible]	* Wetted Per. (m)	*	* 27.52	*
* Min Ch El (m)	* 74.[illegible]	* Shear (N/m2)	*	* 38.83	*
* Alpha	* 1.[illegible]	* Stream Power (N/m s)	*	* 1.02	*
* Frctn Loss (m)	* 0.[illegible]	* Cum Volume (1000 m3)	*	* 1.30	*
* C & E Loss (m)	* 0.[illegible]	* Cum SA (1000 m2)	*	*	*

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

CROSS SECTION OUTPUT Profile #PF 4

			Left OB	Channel	Right OB
* E.G. Elev (m)	* 75.[illegible]	* Element	*	* 0.040	*
* Vel Head (m)	* 0.10	* Wt. n-Val.	* 69.57	* 67.32	* 64.36 *
* W.S. Elev (m)	* 75.[illegible]	* Reach Len. (m)	*	* 24.42	*
* Crit W.S. (m)	*	* Flow Area (m2)	*	* 24.42	*
* E.G. Slope (m/m)	*0.00[illegible]	* Area (m2)	*	* 34.19	*
* Q Total (m3/s)	* 34.[illegible]	* Flow (m3/s)	*	* 24.57	*
* Top Width (m)	* 24.[illegible]	* Top Width (m)	*	* 1.40	*
* Vel Total (m/s)	* 1.40	* Avg. Vel. (m/s)	*	* 0.99	*
* Max Chl Dpth (m)	* 1.[illegible]	* Hydr. Depth (m)	*	* 595.6	*
* Conv. Total (m3/s)	* 595.[illegible]	* Conv. (m3/s)	*	* 25.34	*
* Length Wtd. (m)	* 67.[illegible]	* Wetted Per. (m)	*	* 30.98	*
* Min Ch El (m)	* 74.[illegible]	* Shear (N/m2)	*	* 43.26	*
* Alpha	* 1.[illegible]	* Stream Power (N/m s)	*	* 1.31	*
* Frctn Loss (m)	* 0.[illegible]	* Cum Volume (1000 m3)	*	* 1.34	*
* C & E Loss (m)	* 0.[illegible]	* Cum SA (1000 m2)	*	*	*

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

CROSS SECTION OUTPUT Profile RPF 5

E.G. Elev (m)	76.21	Element	Left OB	Channel	Right OB
Vel Head (m)	0.12	Wt. n-Vel.		0.040	
W.S. Elev (m)	76.09	Reach Len. (m)	69.57	67.32	64.36
Crit W.S. (m)		Flow Area (m2)		29.51	
E.G. Slope (m/m)	0.001025	Area (m2)		29.51	
Q Total (m3/s)	44.39	Flow (m3/s)		44.39	
Top Width (m)	24.81	Top Width (m)		24.81	
Vel Total (m/s)	1.50	Avg. Vel. (m/s)		1.50	
Max Chl Dpth (m)	1.55	Hydr. Depth (m)		1.19	
Conv. Total (m3/s)	805.8	Conv. (m3/s)		805.8	
Length Wtd. (m)	67.32	Wetted Per. (m)		25.86	
Min Ch El (m)	74.54	Shear (N/m2)		33.96	
Alpha	1.00	Stream Power (N/m s)		51.08	
Frctn Loss (m)	0.34	Cum Volume (1000 m3)		1.57	
C & E Loss (m)	0.02	Cum OA (1000 m2)		1.37	

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

CROSS SECTION OUTPUT Profile RPF 6

E.G. Elev (m)	76.42	Element	Left OB	Channel	Right OB
Vel Head (m)	0.13	Wt. n-Vel.		0.040	
W.S. Elev (m)	76.29	Reach Len. (m)	69.57	67.32	64.36
Crit W.S. (m)		Flow Area (m2)		34.44	
E.G. Slope (m/m)	0.002880	Area (m2)		34.44	
Q Total (m3/s)	55.21	Flow (m3/s)		55.21	
Top Width (m)	25.03	Top Width (m)		25.03	
Vel Total (m/s)	1.60	Avg. Vel. (m/s)		1.60	
Max Chl Dpth (m)	1.75	Hydr. Depth (m)		1.38	
Conv. Total (m3/s)	1028.7	Conv. (m3/s)		1028.7	
Length Wtd. (m)	67.32	Wetted Per. (m)		28.36	
Min Ch El (m)	74.54	Shear (N/m2)		38.90	
Alpha	1.00	Stream Power (N/m s)		59.16	
Frctn Loss (m)	0.33	Cum Volume (1000 m3)		1.83	
C & E Loss (m)	0.04	Cum OA (1000 m2)		1.40	

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

CROSS SECTION OUTPUT Profile RPF 7

E.G. Elev (m)	76.63	Element	Left OB	Channel	Right OB
Vel Head (m)	0.15	Wt. n-Vel.		0.040	
W.S. Elev (m)	76.48	Reach Len. (m)	69.57	67.32	64.36
Crit W.S. (m)		Flow Area (m2)		39.79	
E.G. Slope (m/m)	0.002717	Area (m2)		39.79	
Q Total (m3/s)	66.68	Flow (m3/s)		66.68	
Top Width (m)	25.26	Top Width (m)		25.26	
Vel Total (m/s)	1.70	Avg. Vel. (m/s)		1.70	
Max Chl Dpth (m)	1.91	Hydr. Depth (m)		1.55	
Conv. Total (m3/s)	1265.2	Conv. (m3/s)		1265.2	
Length Wtd. (m)	67.32	Wetted Per. (m)		26.85	
Min Ch El (m)	74.54	Shear (N/m2)		38.84	
Alpha	1.00	Stream Power (N/m s)		67.44	
Frctn Loss (m)	0.32	Cum Volume (1000 m3)		2.08	
C & E Loss (m)	0.04	Cum OA (1000 m2)		1.43	

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

CROSS SECTION OUTPUT Profile RPF 8

E.G. Elev (m)	76.75	Element	Left OB	Channel	Right OB
Vel Head (m)	0.16	Wt. n-Vel.		0.040	
W.S. Elev (m)	76.59	Reach Len. (m)	69.57	67.32	64.36
Crit W.S. (m)		Flow Area (m2)		42.12	
E.G. Slope (m/m)	0.002744	Area (m2)		42.12	
Q Total (m3/s)	73.91	Flow (m3/s)		73.91	
Top Width (m)	25.39	Top Width (m)		25.39	
Vel Total (m/s)	1.75	Avg. Vel. (m/s)		1.75	
Max Chl Dpth (m)	2.05	Hydr. Depth (m)		1.66	
Conv. Total (m3/s)	1411.6	Conv. (m3/s)		1411.6	
Length Wtd. (m)	67.32	Wetted Per. (m)		27.13	
Min Ch El (m)	74.54	Shear (N/m2)		41.42	
Alpha	1.00	Stream Power (N/m s)		72.43	
Frctn Loss (m)	0.32	Cum Volume (1000 m3)		2.28	
C & E Loss (m)	0.04	Cum OA (1000 m2)		1.45	

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

CROSS SECTION OUTPUT Profile #PF 9

E.G. Elev (m)	76.99	Element	Left OB	Channel	Right OB	
Vel Head (m)	0.18	Wt. n-Val.		0.040		
W.S. Elev (m)	76.82	Reach Len. (m)	69.57	67.32	64.36	
Crit W.S. (m)		Flow Area (m2)		47.84		
E.G. Slope (m/m)	0.002655	Area (m2)		47.84		
Q Total (m3/s)	89.04	Flow (m3/s)		89.04		
Top Width (m)	25.65	Top Width (m)		25.65		
Vel Total (m/s)	1.86	Avg. Vel. (m/s)		1.86		
Max Chl Dpth (m)	2.08	Hydr. Depth (m)		1.87		
Conv. Total (m3/s)	1721.7	Conv. (m3/s)		1721.7		
Length Wtd. (m)	67.32	Wetted Per. (m)		27.70		
Min Ch El (m)	74.54	Shear (N/m2)		45.30		
Alpha	1.00	Stream Power (N/m s)		84.31		
Frctn Loss (m)	0.31	Cum Volume (1000 m3)		2.55		
C & E Loss (m)	0.03	Cum XA (1000 m2)		1.48		

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

CROSS SECTION OUTPUT Profile #PF 10

E.G. Elev (m)	77.06	Element	Left OB	Channel	Right OB	
Vel Head (m)	0.18	Wt. n-Val.		0.040		
W.S. Elev (m)	76.88	Reach Len. (m)	69.57	67.32	64.36	
Crit W.S. (m)		Flow Area (m2)		49.36		
E.G. Slope (m/m)	0.002664	Area (m2)		49.36		
Q Total (m3/s)	93.29	Flow (m3/s)		93.29		
Top Width (m)	25.72	Top Width (m)		25.72		
Vel Total (m/s)	1.89	Avg. Vel. (m/s)		1.89		
Max Chl Dpth (m)	2.14	Hydr. Depth (m)		1.92		
Conv. Total (m3/s)	1807.4	Conv. (m3/s)		1807.4		
Length Wtd. (m)	67.32	Wetted Per. (m)		27.85		
Min Ch El (m)	74.54	Shear (N/m2)		46.31		
Alpha	1.00	Stream Power (N/m s)		87.51		
Frctn Loss (m)	0.31	Cum Volume (1000 m3)		2.63		
C & E Loss (m)	0.03	Cum XA (1000 m2)		1.49		

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

CROSS SECTION OUTPUT Profile #PF 11

E.G. Elev (m)	77.34	Element	Left OB	Channel	Right OB	
Vel Head (m)	0.21	Wt. n-Val.		0.040		
W.S. Elev (m)	77.13	Reach Len. (m)	69.57	67.32	64.36	
Crit W.S. (m)		Flow Area (m2)		55.99		
E.G. Slope (m/m)	0.002832	Area (m2)		55.99		
Q Total (m3/s)	112.91	Flow (m3/s)		112.91		
Top Width (m)	25.79	Top Width (m)		25.79		
Vel Total (m/s)	2.02	Avg. Vel. (m/s)		2.02		
Max Chl Dpth (m)	2.59	Hydr. Depth (m)		2.17		
Conv. Total (m3/s)	2200.8	Conv. (m3/s)		2200.8		
Length Wtd. (m)	67.32	Wetted Per. (m)		28.40		
Min Ch El (m)	74.54	Shear (N/m2)		50.89		
Alpha	1.00	Stream Power (N/m s)		102.62		
Frctn Loss (m)	0.31	Cum Volume (1000 m3)		3.00		
C & E Loss (m)	0.04	Cum XA (1000 m2)		1.53		

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

CROSS SECTION OUTPUT Profile #PF 12

E.G. Elev (m)	77.42	Element	Left OB	Channel	Right OB	
Vel Head (m)	0.27	Wt. n-Val.		0.040		
W.S. Elev (m)	77.15	Reach Len. (m)	69.57	67.32	64.36	
Crit W.S. (m)		Flow Area (m2)		69.39		
E.G. Slope (m/m)	0.002688	Area (m2)		69.39		
Q Total (m3/s)	158.71	Flow (m3/s)		158.71		
Top Width (m)	25.79	Top Width (m)		25.79		
Vel Total (m/s)	2.29	Avg. Vel. (m/s)		2.29		
Max Chl Dpth (m)	2.61	Hydr. Depth (m)		2.69		
Conv. Total (m3/s)	3072.7	Conv. (m3/s)		3072.7		
Length Wtd. (m)	67.32	Wetted Per. (m)		29.44		
Min Ch El (m)	74.54	Shear (N/m2)		61.67		
Alpha	1.00	Stream Power (N/m s)		141.06		
Frctn Loss (m)	0.31	Cum Volume (1000 m3)		3.84		
C & E Loss (m)	0.04	Cum XA (1000 m2)		1.70		

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

CROSS SECTION OUTPUT Profile #PF 13

E.G. Elev (m)	78.41	Element	Left OB	Channel	Right OB	
Vel Head (m)	0.32	Wt. n-Val.		0.040		
W.S. Elev (m)	78.09	Reach Len. (m)	69.57	67.32	64.36	
Crit W.S. (m)		Flow Area (m2)		78.35		
E.G. Slope (m/m)	0.002664	Area (m2)		78.35		
Q Total (m3/s)	198.20	Flow (m3/s)		198.20		
Top Width (m)	25.79	Top Width (m)		25.79		

Vel Total (m/s)	2.53	Avg. Vel. (m/s)	2.53	
Max Chl Dpth (m)	3.46	Hydr. Depth (m)	3.04	
Conv. Total (m3/s)	3703.8	Conv. (m3/s)	3703.8	
Length Wtd. (m)	67.32	Wetted Per. (m)	30.13	
Min Ch El (m)	74.54	Shear (N/m2)	73.02	
Alpha	1.00	Stream Power (N/m s)	184.71	
Frctn Loss (m)	0.33	Cum Volume (1000 m3)	4.40	
C & E Loss (m)	0.04	Cum SA (1000 m2)	1.75	

Warning: The cross-section end points had to be extended vertically for the computed water surface.
Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.1. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION

RIVER: CAYAGUAS
REACH: ONE RS: 0

INPUT
Description:

Station Elevation Data num=				8					
Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	77.81	4.9	76.86	9.24	76.52	11.29	75.11	12.8	74.1
17.44	74.29	22.79	74.1	29.29	76.51				

Manning's n Values num=				3	
Sta	n Val	Sta	n Val	Sta	n Val
0	.045	0	.01	29.29	.045

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
0	29.29	0	0	0	.1	.3

CROSS SECTION OUTPUT Profile #PF 1

			Left OB	Channel	Right OB
E.G. Elev (m)	74.89	Element		0.040	
Vel Head (m)	0.03	Wt. n-Val.			
W.S. Elev (m)	74.86	Reach Len. (m)		1.78	
Crit W.S. (m)	74.51	Flow Area (m2)		1.78	
E.G. Slope (m/m)	0.010001	Area (m2)		1.31	
Q Total (m3/s)	1.11	Flow (m3/s)		11.08	
Top Width (m)	11.08	Top Width (m)		0.73	
Vel Total (m/s)	0.73	Avg. Vel. (m/s)		0.16	
Max Chl Dpth (m)	0.26	Hydr. Depth (m)		13.1	
Conv. Total (m3/s)	13.1	Conv. (m3/s)		11.21	
Length Wtd. (m)		Wetted Per. (m)		15.61	
Min Ch El (m)	74.14	Shear (N/m2)		11.46	
Alpha	1.00	Stream Power (N/m s)			
Frctn Loss (m)		Cum Volume (1000 m3)			
C & E Loss (m)		Cum SA (1000 m2)			

CROSS SECTION OUTPUT Profile #PF 2

			Left OB	Channel	Right OB
E.G. Elev (m)	75.02	Element		0.040	
Vel Head (m)	0.15	Wt. n-Val.			
W.S. Elev (m)	74.86	Reach Len. (m)		7.89	
Crit W.S. (m)	74.73	Flow Area (m2)		7.89	
E.G. Slope (m/m)	0.010008	Area (m2)		13.74	
Q Total (m3/s)	11.14	Flow (m3/s)		13.19	
Top Width (m)	13.19	Top Width (m)		1.74	
Vel Total (m/s)	1.74	Avg. Vel. (m/s)		0.60	
Max Chl Dpth (m)	0.60	Hydr. Depth (m)		137.1	
Conv. Total (m3/s)	137.1	Conv. (m3/s)		13.56	
Length Wtd. (m)		Wetted Per. (m)		57.07	
Min Ch El (m)	74.14	Shear (N/m2)		99.44	
Alpha	1.00	Stream Power (N/m s)			
Frctn Loss (m)		Cum Volume (1000 m3)			
C & E Loss (m)		Cum SA (1000 m2)			

CROSS SECTION OUTPUT Profile #PF 3

			Left OB	Channel	Right OB
E.G. Elev (m)	75.34	Element		0.040	
Vel Head (m)	0.12	Wt. n-Val.			
W.S. Elev (m)	75.22	Reach Len. (m)		11.36	
Crit W.S. (m)	75.06	Flow Area (m2)		11.36	
E.G. Slope (m/m)	0.010011	Area (m2)		23.88	
Q Total (m3/s)	14.49	Flow (m3/s)		14.25	
Top Width (m)	14.25	Top Width (m)		2.10	
Vel Total (m/s)	2.10	Avg. Vel. (m/s)		0.80	
Max Chl Dpth (m)	1.02	Hydr. Depth (m)		238.8	
Conv. Total (m3/s)	238.8	Conv. (m3/s)		14.75	
Length Wtd. (m)		Wetted Per. (m)		75.59	
Min Ch El (m)	74.14	Shear (N/m2)		158.85	
Alpha	1.00	Stream Power (N/m s)			
Frctn Loss (m)		Cum Volume (1000 m3)			
C & E Loss (m)		Cum SA (1000 m2)			

CROSS SECTION OUTPUT Profile #PF 4

			Left OB	Channel	Right OB
E.G. Elev (m)	75.61	Element		0.040	
Vel Head (m)	0.28	Wt. n-Val.			
W.S. Elev (m)	75.33	Reach Len. (m)		14.43	
Crit W.S. (m)	75.16	Flow Area (m2)		14.43	
E.G. Slope (m/m)	0.010013	Area (m2)		34.10	
Q Total (m3/s)	14.19	Flow (m3/s)		15.12	
Top Width (m)	15.12	Top Width (m)		2.36	
Vel Total (m/s)	2.36	Avg. Vel. (m/s)		0.95	
Max Chl Dpth (m)	1.22	Hydr. Depth (m)		340.7	
Conv. Total (m3/s)	340.7	Conv. (m3/s)		15.72	
Length Wtd. (m)		Wetted Per. (m)		90.18	
Min Ch El (m)	74.14	Shear (N/m2)		213.15	
Alpha	1.00	Stream Power (N/m s)			
Frctn Loss (m)		Cum Volume (1000 m3)			
C & E Loss (m)		Cum SA (1000 m2)			

CROSS SECTION OUTPUT Profile #PF 5

E.G. Elev (m)	75.84	Element	Left OB	Channel	Right OB
Vel Head (m)	0.24	Wt. n-Val.		0.040	
W.S. Elev (m)	75.51	Reach Len. (m)			
Crit W.S. (m)	75.33	Flow Area (m2)		17.27	
E.G. Slope (m/m)	*0.010008	Area (m2)		17.27	
Q Total (m3/s)	44.39	Flow (m3/s)		44.39	
Top Width (m)	15.88	Top Width (m)		15.88	
Vel Total (m/s)	2.57	Avg. Vel. (m/s)		2.57	
Max Chl Dpth (m)	1.41	Hydr. Depth (m)		1.09	
Conv. Total (m3/s)	443.7	Conv. (m3/s)		443.7	
Length Wtd. (m)		Wetted Per. (m)		16.57	
Min Ch El (m)	74.10	Shear (N/m2)		102.29	
Alpha	1.00	Stream Power (N/m s)		263.00	
Frctn Loss (m)		Cum Volume (1000 m3)			
C & E Loss (m)		Cum SA (1000 m2)			

CROSS SECTION OUTPUT Profile RPF 6

E.G. Elev (m)	76.07	Element	Left OB	Channel	Right OB
Vel Head (m)	0.19	Wt. n-Val.		0.040	
W.S. Elev (m)	75.68	Reach Len. (m)			
Crit W.S. (m)	75.49	Flow Area (m2)		20.06	
E.G. Slope (m/m)	*0.010004	Area (m2)		20.06	
Q Total (m3/s)	55.21	Flow (m3/s)		55.21	
Top Width (m)	16.50	Top Width (m)		16.59	
Vel Total (m/s)	2.75	Avg. Vel. (m/s)		2.75	
Max Chl Dpth (m)	1.58	Hydr. Depth (m)		1.21	
Conv. Total (m3/s)	552.9	Conv. (m3/s)		552.0	
Length Wtd. (m)		Wetted Per. (m)		17.36	
Min Ch El (m)	74.10	Shear (N/m2)		113.32	
Alpha	1.00	Stream Power (N/m s)		311.94	
Frctn Loss (m)		Cum Volume (1000 m3)			
C & E Loss (m)		Cum SA (1000 m2)			

CROSS SECTION OUTPUT Profile RPF 7

E.G. Elev (m)	76.28	Element	Left OB	Channel	Right OB
Vel Head (m)	0.43	Wt. n-Val.		0.040	
W.S. Elev (m)	75.84	Reach Len. (m)			
Crit W.S. (m)	75.65	Flow Area (m2)		22.85	
E.G. Slope (m/m)	*0.010008	Area (m2)		22.85	
Q Total (m3/s)	66.68	Flow (m3/s)		66.68	
Top Width (m)	17.27	Top Width (m)		17.27	
Vel Total (m/s)	2.92	Avg. Vel. (m/s)		2.92	
Max Chl Dpth (m)	1.75	Hydr. Depth (m)		1.32	
Conv. Total (m3/s)	666.7	Conv. (m3/s)		666.7	
Length Wtd. (m)		Wetted Per. (m)		18.13	
Min Ch El (m)	74.10	Shear (N/m2)		123.65	
Alpha	1.00	Stream Power (N/m s)		360.76	
Frctn Loss (m)		Cum Volume (1000 m3)			
C & E Loss (m)		Cum SA (1000 m2)			

CROSS SECTION OUTPUT Profile RPF 8

E.G. Elev (m)	76.40	Element	Left OB	Channel	Right OB
Vel Head (m)	0.46	Wt. n-Val.		0.040	
W.S. Elev (m)	75.94	Reach Len. (m)			
Crit W.S. (m)	75.74	Flow Area (m2)		24.53	
E.G. Slope (m/m)	*0.010002	Area (m2)		24.53	
Q Total (m3/s)	73.81	Flow (m3/s)		73.81	
Top Width (m)	17.67	Top Width (m)		17.67	
Vel Total (m/s)	3.01	Avg. Vel. (m/s)		3.01	
Max Chl Dpth (m)	1.84	Hydr. Depth (m)		1.39	
Conv. Total (m3/s)	738.0	Conv. (m3/s)		738.0	
Length Wtd. (m)		Wetted Per. (m)		18.57	
Min Ch El (m)	74.10	Shear (N/m2)		129.52	
Alpha	1.00	Stream Power (N/m s)		389.75	
Frctn Loss (m)		Cum Volume (1000 m3)			
C & E Loss (m)		Cum SA (1000 m2)			

CROSS SECTION OUTPUT Profile RPF 9

E.G. Elev (m)	76.65	Element	Left OB	Channel	Right OB
Vel Head (m)	0.52	Wt. n-Val.		0.040	
W.S. Elev (m)	76.13	Reach Len. (m)			
Crit W.S. (m)	75.92	Flow Area (m2)		27.95	
E.G. Slope (m/m)	*0.010014	Area (m2)		27.95	
Q Total (m3/s)	89.04	Flow (m3/s)		89.04	
Top Width (m)	18.46	Top Width (m)		18.46	
Vel Total (m/s)	3.19	Avg. Vel. (m/s)		3.19	
Max Chl Dpth (m)	2.03	Hydr. Depth (m)		1.51	
Conv. Total (m3/s)	889.8	Conv. (m3/s)		889.8	
Length Wtd. (m)		Wetted Per. (m)		19.45	
Min Ch El (m)	74.10	Shear (N/m2)		141.10	
Alpha	1.00	Stream Power (N/m s)		449.47	
Frctn Loss (m)		Cum Volume (1000 m3)			
C & E Loss (m)		Cum SA (1000 m2)			

CROSS SECTION OUTPUT Profile RPF 10

E.G. Elev (m)	76.71	Element	Left OB	Channel	Right OB
Vel Head (m)	0.53	Wt. n-Val.		0.040	
W.S. Elev (m)	76.18	Reach Len. (m)			
Crit W.S. (m)	75.97	Flow Area (m2)		28.88	
E.G. Slope (m/m)	*0.010013	Area (m2)		28.88	
Q Total (m3/s)	93.29	Flow (m3/s)		93.29	
Top Width (m)	18.67	Top Width (m)		18.67	
Vel Total (m/s)	3.23	Avg. Vel. (m/s)		3.23	
Max Chl Dpth (m)	2.08	Hydr. Depth (m)		1.55	
Conv. Total (m3/s)	932.3	Conv. (m3/s)		932.3	
Length Wtd. (m)		Wetted Per. (m)		19.69	
Min Ch El (m)	74.10	Shear (N/m2)		144.05	
Alpha	1.00	Stream Power (N/m s)		465.26	
Frctn Loss (m)		Cum Volume (1000 m3)			
C & E Loss (m)		Cum SA (1000 m2)			

CROSS SECTION OUTPUT Profile RPF 11

E.G. Elev (m)	76.45	Element	Left OB	Channel	Right OB
Vel Head (m)	1.59	Wt. n-Val.		0.040	

W.S. Elev (m)	76.40	Reach Len. (m)		
Crit W.S. (m)	76.18	Flow Area (m2)		33.06
E.G. Slope (m/m)	0.009569	Area (m2)		33.06
Q Total (m3/s)	112.91	Flow (m3/s)		112.91
Top Width (m)	19.57	Top Width (m)		19.57
Vel Total (m/s)	3.42	Avg. Vel. (m/s)		3.42
Max Chl Dpth (m)	2.30	Hydr. Depth (m)		1.69
Conv. Total (m3/s)	1129.1	Conv. (m3/s)		1129.1
Length Wtd. (m)		Wetted Per. (m)		20.70
Min Ch El (m)	74.10	Shear (N/m2)		156.59
Alpha	1.00	Stream Power (N/m s)		534.84
Frctn Loss (m)		Cum Volume (1000 m3)		
C & E Loss (m)		Cum SA (1000 m2)		

CROSS SECTION OUTPUT Profile RPF 12

			Left OB	Channel	Right OB
E.G. Elev (m)	77.57	Element		0.040	
Vel Head (m)	0.64	Wt. n-Val.			
W.S. Elev (m)	76.93	Reach Len. (m)		44.66	
Crit W.S. (m)	76.65	Flow Area (m2)		44.66	
E.G. Slope (m/m)	0.010003	Area (m2)		158.71	
Q Total (m3/s)	158.71	Flow (m3/s)		24.74	
Top Width (m)	24.74	Top Width (m)		3.55	
Vel Total (m/s)	3.55	Avg. Vel. (m/s)		1.81	
Max Chl Dpth (m)	2.83	Hydr. Depth (m)		1586.9	
Conv. Total (m3/s)	1586.9	Conv. (m3/s)		26.36	
Length Wtd. (m)		Wetted Per. (m)		166.21	
Min Ch El (m)	74.10	Shear (N/m2)		590.65	
Alpha	1.00	Stream Power (N/m s)			
Frctn Loss (m)		Cum Volume (1000 m3)			
C & E Loss (m)		Cum SA (1000 m2)			

CROSS SECTION OUTPUT Profile RPF 13

			Left OB	Channel	Right OB
E.G. Elev (m)	77.96	Element		0.040	
Vel Head (m)	0.73	Wt. n-Val.			
W.S. Elev (m)	77.23	Reach Len. (m)		52.48	
Crit W.S. (m)	77.00	Flow Area (m2)		52.48	
E.G. Slope (m/m)	0.010003	Area (m2)		198.20	
Q Total (m3/s)	198.20	Flow (m3/s)		26.32	
Top Width (m)	26.32	Top Width (m)		3.78	
Vel Total (m/s)	3.78	Avg. Vel. (m/s)		1.99	
Max Chl Dpth (m)	3.19	Hydr. Depth (m)		1981.7	
Conv. Total (m3/s)	1981.7	Conv. (m3/s)		28.27	
Length Wtd. (m)		Wetted Per. (m)		182.09	
Min Ch El (m)	74.10	Shear (N/m2)		687.66	
Alpha	1.00	Stream Power (N/m s)			
Frctn Loss (m)		Cum Volume (1000 m3)			
C & E Loss (m)		Cum SA (1000 m2)			

SUMMARY OF MANNING'S N VALUES

River:CAYAGUAS

Reach	River Sta.	n1	n2	n3
*20E	20	.045*	.04*	.045*
*19E	19	.045*	.04*	.045*
*18E	18	.045*	.04*	.045*
*17E	17	.04*	.045*	
*16E	16	.045*	.04*	.045*
*15E	15	.045*	.04*	.045*
*14E	14	.045*	.04*	.045*
*13E	13	.045*	.04*	.045*
*12E	12	.045*	.04*	.045*
*11E	11	.045*	.04*	.045*
*10E	10	.045*	.04*	.045*
*9E	9	.04*		
*8E	8	.045*	.04*	.045*
*7E	7	.045*	.04*	.045*
*6E	6	.045*	.04*	.045*
*5E	5	.045*	.04*	.045*
*4E	4	.045*	.04*	.045*
*3E	3	.045*	.04*	.045*
*2E	2	.04*		
*1E	1	.04*		
*0E	0.5	.045*	.04*	.045*
*0E	0			

SUMMARY OF REACH LENGTHS

River: CAYAGUAS

Reach	River Sta.	Left	Channel	Right
*20E	20	38.56*	38.56*	38.5*
*19E	19	51.65*	54.52*	78.31*
*18E	18	45.02*	30.21*	14.88*
*17E	17	45.55*	31.67*	32.65*
*16E	16	15.21*	14.38*	14.83*
*15E	15	20.[illegible]	17.26*	10.09*
*14E	14	1.55*	1.55*	1.55*
*13E	13	16.8*	17.03*	15.37*
*12E	12	87.63*	48.67*	95.98*
*11E	11	51.16*	80.54*	78.15*
*10E	10	28.75*	16.38*	54.9*
*9E	9	14.93*	17.58*	18.32*
*8E	8	48.2[illegible]*	75.61*	80.01*
*7E	7	[illegible]	48.41*	66.64*
*6E	6	44.04*	22.85*	28.03*
*5E	5	30.18*	31.9*	30.66*
*4E	4	[illegible]	23.34*	32.92*
*3E	3	[illegible]	27.15*	47.03*
*2E	2	10.46*	48.28*	51.31*
*1E	1	34.38*	38.31*	38.64*
*0E	0.5	[illegible]	47.32*	64.38*
*0E	0		0*	0*

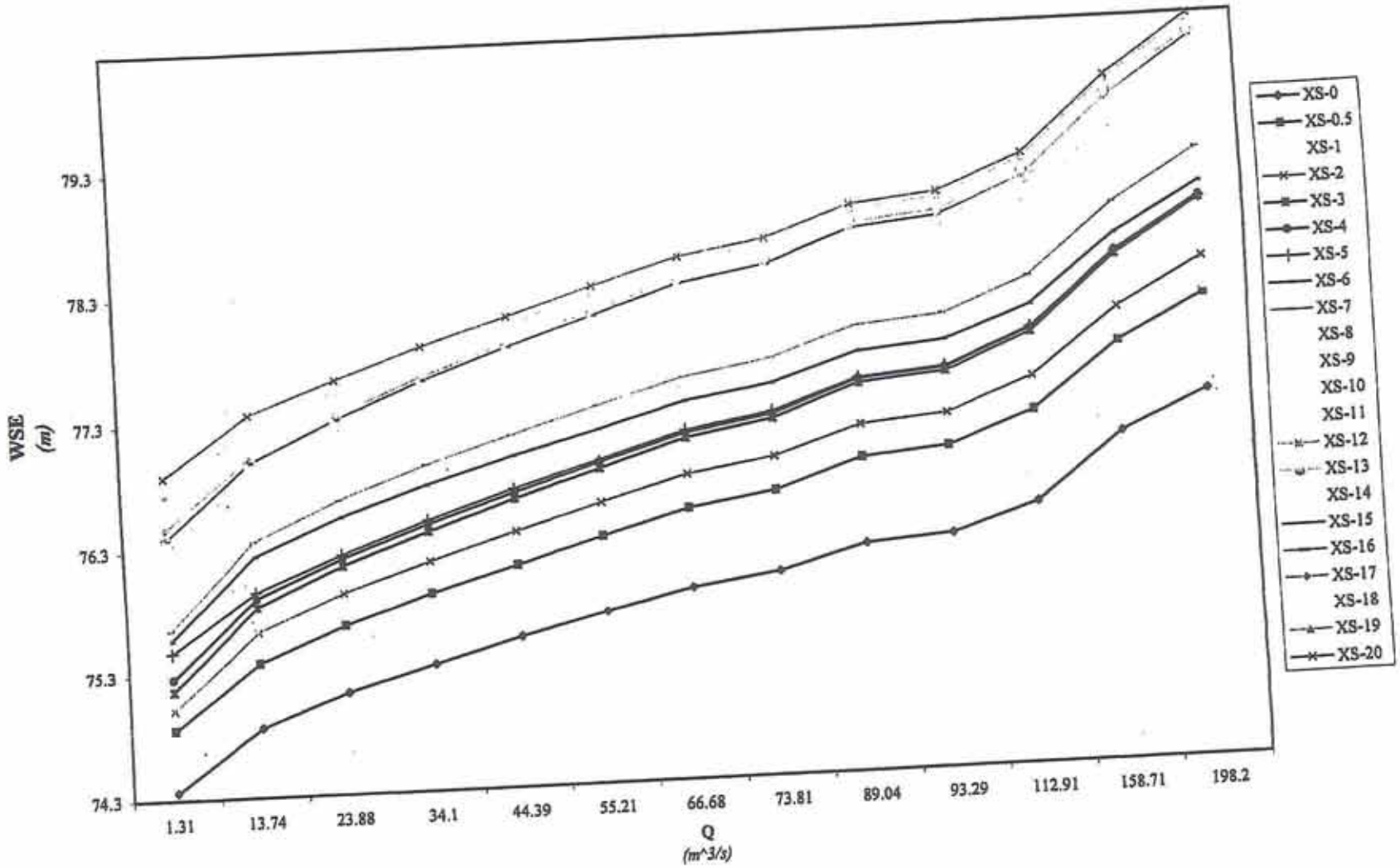
Profile Output Table - Standard Table 1

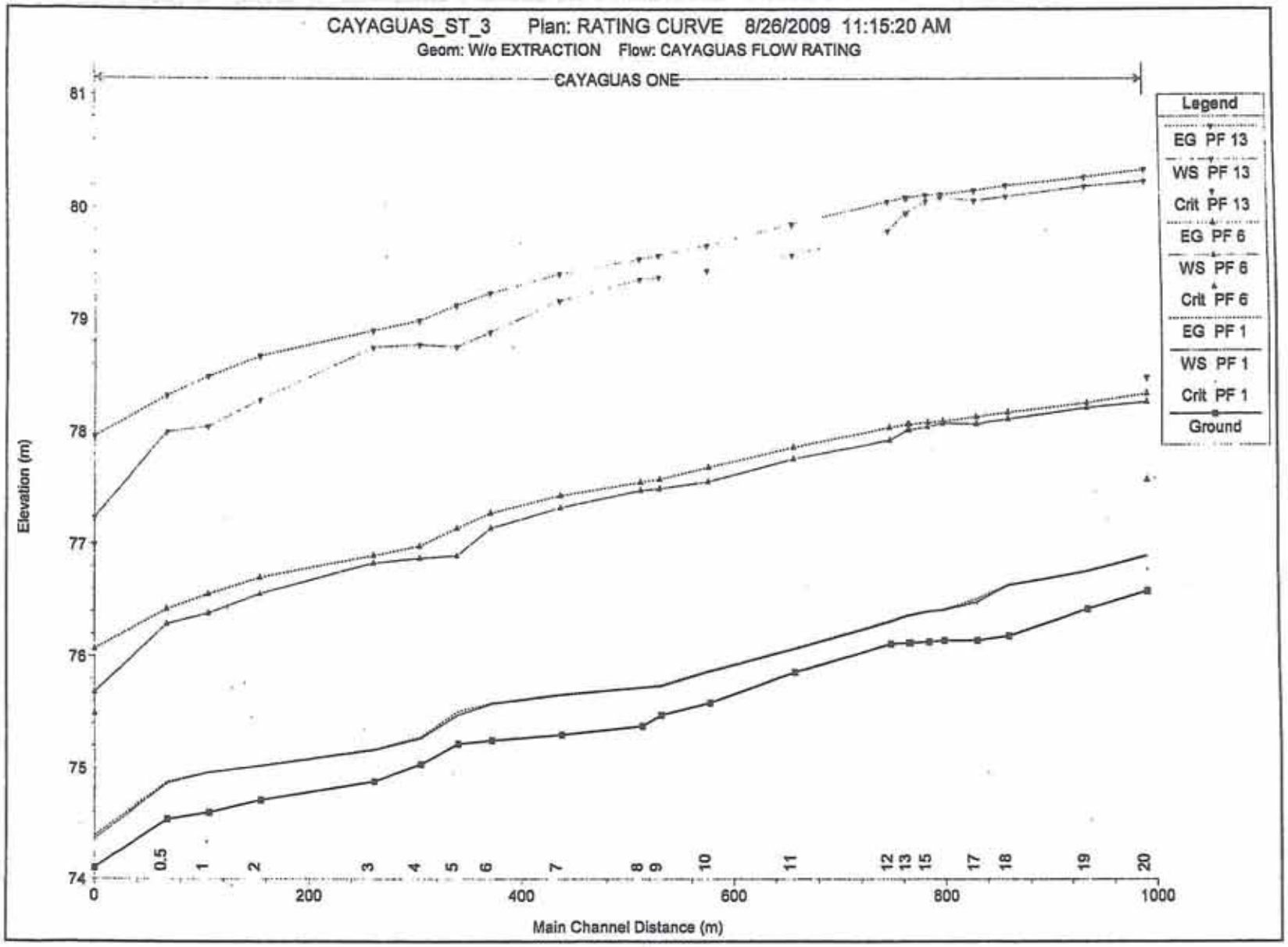
Reach	River Sta	Profile	Q Total (m3/s)	Min Ch El (m)	W.S. Elev (m)	Crit W.S. (m)	E.G. Elev (m)	E.G. Slope (m/m)	Vel Chnl (m/s)	Flow Area (m2)	Top Width (m)	Froude # Chl
CHE	20	PF 1	1.31	76.58	76.89	76.77	76.90	0.003802	0.45	2.89	18.01	0.36
CHE	20	PF 2	13.74	76.58	77.37	77.11	77.41	0.003438	0.91	15.03	30.08	0.41
CHE	20	PF 3	23.88	76.58	77.62	77.26	77.67	0.002864	1.05	22.79	32.18	0.40
CHE	20	PF 4	34.10	76.58	77.86	77.37	77.92	0.002363	1.11	30.69	34.17	0.37
CHE	20	PF 5	44.39	76.58	78.07	77.48	78.14	0.002073	1.16	38.18	35.73	0.36
CHE	20	PF 6	55.21	76.58	78.28	77.58	78.35	0.001889	1.21	45.78	37.71	0.35
CHE	20	PF 7	66.68	76.58	78.48	77.67	78.56	0.001742	1.24	53.66	39.61	0.34
CHE	20	PF 8	73.81	76.58	78.60	77.73	78.68	0.001666	1.26	58.50	40.73	0.34
CHE	20	PF 9	89.04	76.58	78.84	77.84	78.93	0.001513	1.30	68.56	42.52	0.32
CHE	20	PF 10	93.29	76.58	78.91	77.87	78.99	0.001483	1.31	71.25	42.49	0.32
CHE	20	PF 11	112.91	76.58	79.19	78.00	79.28	0.001371	1.35	83.33	44.08	0.31
CHE	20	PF 12	158.71	76.58	79.78	78.28	79.88	0.001193	1.44	110.45	47.25	0.30
CHE	20	PF 13	198.20	76.58	80.24	78.49	80.34	0.001701	1.41	140.61	82.28	0.35
CHE	19	PF 1	1.31	76.42	76.76		76.76	0.001724	0.31	4.21	25.42	0.24
CHE	19	PF 2	13.74	76.42	77.26		77.28	0.001576	0.67	20.63	36.77	0.26
CHE	19	PF 3	23.88	76.42	77.53		77.56	0.001327	0.77	30.93	38.54	0.28
CHE	19	PF 4	34.10	76.42	77.79		77.82	0.001125	0.83	41.04	40.20	0.26
CHE	19	PF 5	44.39	76.42	78.01		78.05	0.001037	0.88	50.27	42.91	0.26
CHE	19	PF 6	55.21	76.42	78.22		78.27	0.000980	0.93	59.38	43.87	0.26
CHE	19	PF 7	66.69	76.42	78.43		78.48	0.000931	0.97	68.78	45.90	0.25
CHE	19	PF 8	73.81	76.42	78.56		78.61	0.000892	0.99	74.49	46.33	0.25
CHE	19	PF 9	89.04	76.42	78.80		78.86	0.000840	1.03	86.11	47.60	0.25
CHE	19	PF 10	93.29	76.42	78.87		78.92	0.000830	1.05	89.20	47.96	0.24
CHE	19	PF 11	112.91	76.42	79.15		79.21	0.000796	1.10	103.00	49.55	0.24
CHE	19	PF 12	158.71	76.42	79.75		79.82	0.000735	1.19	133.70	52.84	0.24
CHE	19	PF 13	198.20	76.42	80.20		80.28	0.000701	1.26	157.60	54.20	0.24
CHE	18	PF 1	1.31	76.18	76.63		76.64	0.001617	0.32	4.07	21.92	0.24
CHE	18	PF 2	13.74	76.18	77.11		77.14	0.002182	0.79	17.47	30.25	0.32
CHE	18	PF 3	23.88	76.18	77.40		77.44	0.001735	0.90	26.67	31.94	0.31
CHE	18	PF 4	34.10	76.18	77.68		77.72	0.001470	0.96	35.61	33.40	[illegible]
CHE	18	PF 5	44.39	76.18	77.91		77.96	0.001366	1.02	43.38	34.00	0.29
CHE	18	PF 6	55.21	76.18	78.12		78.18	0.001310	1.08	50.97	36.75	0.29
CHE	18	PF 7	66.68	76.18	78.33		78.40	0.001261	1.14	58.71	37.48	0.29
CHE	18	PF 8	73.81	76.18	78.46		78.53	0.001231	1.16	63.45	38.30	0.29
CHE	18	PF 9	89.24	76.18	78.71		78.78	0.001183	1.22	73.22	39.98	0.29
CHE	18	PF 10	93.29	76.18	78.77		78.85	0.001174	1.23	75.82	40.43	0.29
CHE	18	PF 11	112.91	76.18	79.05		79.14	0.001139	1.29	87.56	42.41	0.29
CHE	18	PF 12	158.71	76.18	79.65		79.75	0.001215	1.39	114.89	51.09	0.30
CHE	18	PF 13	198.20	76.18	80.11		80.20	0.001417	1.38	143.11	71.24	[illegible]
[illegible]	17	PF 1	1.31	76.14	76.48	76.47	76.51	0.022258	0.74	1.78	20.11	[illegible]
[illegible]	17	PF 2	13.74	76.14	77.03		77.07	0.002527	0.84	16.32	29.21	[illegible]
[illegible]	17	PF 3	23.88	76.14	77.35		77.39	0.001863	0.93	25.63	30.52	[illegible]
[illegible]	17	PF 4	34.10	76.14	77.63		77.68	0.001525	0.99	34.49	[illegible]	[illegible]
[illegible]	17	PF 5	44.39	76.14	77.88		77.92	0.001417	1.06	42.01	33.06	[illegible]
[illegible]	17	PF 6	55.21	76.14	78.08		78.14	0.001357	1.12	49.26	34.09	[illegible]
[illegible]	17	PF 7	66.68	76.14	78.29		78.36	0.001323	1.18	56.57	35.47	0.30
[illegible]	17	PF 8	73.81	76.14	78.41		78.49	0.001303	1.21	61.09	36.44	[illegible]
[illegible]	17	PF 9	89.04	76.14	78.66		78.74	0.001267	1.26	70.44	38.28	[illegible]
[illegible]	17	PF 10	93.29	76.14	78.73		78.81	0.001260	1.28	72.95	38.89	[illegible]
[illegible]	17	PF 11	112.91	76.14	79.01		79.10	0.001232	1.34	84.32	41.15	[illegible]
[illegible]	17	PF 12	158.71	76.14	79.61		79.71	0.001502	1.37	115.46	63.91	0.31
[illegible]	17	PF 13	198.20	76.14	80.07		80.16	0.001449	1.33	148.87	84.85	0.32
[illegible]	16	PF 1	1.31	76.14	76.41		76.42	0.001007	0.24	5.36	[illegible]	[illegible]
[illegible]	16	PF 2	13.74	76.14	77.01		77.02	0.000746	0.51	26.82	40.55	[illegible]
[illegible]	16	PF 3	23.88	76.14	77.33		77.35	0.000658	0.59	40.05	[illegible]	[illegible]
[illegible]	16	PF 4	34.10	76.14	77.62		77.64	0.000769	0.60	57.21	[illegible]	[illegible]
[illegible]	16	PF 5	44.39	76.14	77.86		77.87	0.000705	0.58	76.80	[illegible]	[illegible]
[illegible]	16	PF 6	55.21	76.14	78.09		78.10	0.000508	0.56	99.15	[illegible]	[illegible]
[illegible]	16	PF 7	66.68	76.14	78.31		78.32	0.000185	0.55	121.00	[illegible]	[illegible]
[illegible]	16	PF 8	73.81	76.14	78.44		78.45	0.000337	0.55	[illegible]	[illegible]	[illegible]
[illegible]	16	PF 9	89.04	76.14	78.69		78.71	0.000276	0.56	159.51	[illegible]	[illegible]
[illegible]	16	PF 10	93.29	76.14	78.76		78.77	0.000265	0.56	166.11	[illegible]	[illegible]
[illegible]	16	PF 11	112.91	76.14	79.05		79.07	0.000229	0.58	195.01	[illegible]	[illegible]
[illegible]	16	PF 12	158.71	76.14	79.65		79.67	0.000188	0.62	255.05	99.17	[illegible]
[illegible]	16	PF 13	198.20	76.14	80.10		80.13	0.000173	0.66	299.90	[illegible]	[illegible]
[illegible]	15	PF 1	1.31	76.13	76.40		76.40	0.001251	0.24	4.71	[illegible]	[illegible]
[illegible]	15	PF 2	13.74	76.13	76.89		77.01	0.001028	0.60	[illegible]	[illegible]	[illegible]
[illegible]	15	PF 3	23.88	76.13	77.31		77.34	0.000893	0.70	34.05	[illegible]	[illegible]
[illegible]	15	PF 4	34.10	76.13	77.59		77.62	0.000808	0.77	44.55	[illegible]	[illegible]
[illegible]	15	PF 5	44.39	76.13	77.83		77.86	0.000782	0.83	53.72	40.07	[illegible]
[illegible]	15	PF 6	55.21	76.13	78.05		78.09	0.000761	0.88	62.94	[illegible]	[illegible]
[illegible]	15	PF 7	66.68	76.13	78.27		78.31	0.000714	0.91	72.03	[illegible]	[illegible]
[illegible]	15	PF 8	73.81	76.13	78.39		78.44	0.000900	0.95	78.01	[illegible]	[illegible]
[illegible]	15	PF 9	89.04	76.13	78.65		78.70	0.000968	0.94	[illegible]	[illegible]	[illegible]
[illegible]	15	PF 10	93.29	76.13	78.72		78.77	0.000812	0.94	98.87	[illegible]	[illegible]
[illegible]	15	PF 11	112.91	76.13	79.01		79.06	0.000715	0.95	118.49	[illegible]	[illegible]
[illegible]	15	PF 12	158.71	76.13	79.61		79.67	0.000553	0.99	159.64	[illegible]	[illegible]
[illegible]	15	PF 13	198.20	76.13	80.06		80.12	0.000490	1.04	190.10	[illegible]	[illegible]
[illegible]	14	PF 1	1.31	76.12	76.37		76.37	0.002410	0.36	3.59	21.94	[illegible]
[illegible]	14	PF 2	13.74	76.12	76.96		76.99	0.001541	0.71	19.43	31.12	[illegible]
[illegible]	14	PF 3	23.88	76.12	77.29		77.32	0.001206	0.80	30.04	[illegible]	[illegible]
[illegible]	14	PF 4	34.10	76.12	77.57		77.61	0.001015	0.88	39.53	[illegible]	[illegible]
[illegible]	14	PF 5	44.39	76.12	77.80		77.85	0.000960	0.94	47.34	[illegible]	[illegible]
[illegible]	14	PF 6	55.21	76.12	78.02		78.07	0.000926	1.00	55.06	[illegible]	[illegible]
[illegible]	14	PF 7	66.68	76.12	78.24		78.29	0.000905	1.07	62.50	[illegible]	[illegible]
[illegible]	14	PF 8	73.81	76.12	78.36		78.42	0.000895	1.10	66.83	[illegible]	[illegible]
[illegible]	14	PF 9	89.04	76.12	78.61		78.68	0.000883	1.18	75.51	[illegible]	[illegible]
[illegible]	14	PF 10	93.29	76.12	78.69		78.75	0.000882	1.20	[illegible]	[illegible]	[illegible]
[illegible]	14	PF 11	112.91	76.12	78.96		79.04	0.000886	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	14	PF 12	158.71	76.12	79.54		79.65	0.000909	1.47	[illegible]	[illegible]	[illegible]
[illegible]	14	PF 13	198.20	76.12	79.93		80.10	0.000945	1.61	122.94	[illegible]	[illegible]
[illegible]	13	PF 1	1.31	76.12	76.36		76.37	0.002371	0.34	3.85	[illegible]	[illegible]
[illegible]	13	PF 2	13.74	76.12	76.96		76.98	0.001180	0.66	20.89	[illegible]	[illegible]
[illegible]	13	PF 3	23.88	76.12	77.29		77.32	0.000998	0.77	31.11	[illegible]	[illegible]
[illegible]	13	PF 4	34.10	76.12	77.57		77.61	0.000900	0.85	40.16	32.34	[illegible]
[illegible]	13	PF 5	44.39	76.12	77.80		77.84	0.000884	0.93	47.71	[illegible]	[illegible]
[illegible]	13	PF 6	55.21	76.12	78.02		78.07	0.000874	1.00	54.99	[illegible]	[illegible]
[illegible]	13	PF 7	66.68	76.12	78.23		78.29	0.000872	1.07	62.11	[illegible]	[illegible]
[illegible]	13	PF 8	73.81	76.12	78.36		78.42	0.000870	1.11	66.27	[illegible]	[illegible]
[illegible]	13	PF 9	89.04	76.12	78.61		78.68	0.000869	1.19	74.69	[illegible]	[illegible]
[illegible]	13	PF 10	93.29	76.12	78.67		78.75	0.000871	1.22	76.78	[illegible]	[illegible]
[illegible]	13	PF 11	112.91	76.12	78.95		79.04	0.000884	1.31	86.27	[illegible]	[illegible]
[illegible]	13	PF 12	158.71	76.12	79.53		79.65	0.000923	1.50	[illegible]	[illegible]	[illegible]

ONE	14	PF 13	198.20	76.12	79.96	80.10	0.000969	1.65	120.11	33.64	0.28
ONE	12	PF 1	1.31	76.11	76.31	76.32	0.003565	0.46	2.84	16.42	0.35
ONE	12	PF 2	13.74	76.11	76.90	76.95	0.002468	0.97	14.21	20.09	0.37
ONE	12	PF 3	23.88	76.11	77.22	77.29	0.002298	1.15	20.73	21.22	0.37
ONE	12	PF 4	34.10	76.11	77.49	77.58	0.002161	1.28	26.88	22.19	0.37
ONE	12	PF 5	44.39	76.11	77.72	77.82	0.002172	1.40	31.69	22.95	0.38
ONE	12	PF 6	55.21	76.11	77.93	78.04	0.002174	1.51	36.64	23.74	0.39
ONE	12	PF 7	66.68	76.11	78.13	78.26	0.002177	1.60	41.57	24.47	0.39
ONE	12	PF 8	73.81	76.11	78.25	78.39	0.002181	1.66	44.49	24.90	0.40
ONE	12	PF 9	89.04	76.11	78.49	78.65	0.002182	1.76	50.53	25.75	0.40
ONE	12	PF 10	93.29	76.11	78.55	78.71	0.002185	1.79	52.13	25.97	0.40
ONE	12	PF 11	112.91	76.11	78.82	79.01	0.002201	1.90	59.27	26.93	0.41
ONE	12	PF 12	150.71	76.11	79.38	79.61	0.002209	2.12	74.93	28.93	0.42
ONE	12	PF 13	198.20	76.11	79.80	80.06	0.002227	2.27	87.29	30.42	0.43
ONE	11	PF 1	1.31	75.86	76.06	76.07	0.002138	0.39	3.32	16.45	0.28
ONE	11	PF 2	13.74	75.86	76.73	76.77	0.001695	0.85	16.26	21.17	0.31
ONE	11	PF 3	23.88	75.86	77.06	77.11	0.001631	1.03	23.29	21.79	0.32
ONE	11	PF 4	34.10	75.86	77.34	77.41	0.001576	1.15	29.53	22.32	0.32
ONE	11	PF 5	44.39	75.86	77.56	77.64	0.001658	1.29	34.41	22.72	0.33
ONE	11	PF 6	55.21	75.86	77.76	77.87	0.001717	1.41	39.18	23.11	0.35
ONE	11	PF 7	66.68	75.86	77.96	78.09	0.001778	1.52	43.85	23.58	0.36
ONE	11	PF 8	73.81	75.86	78.08	78.21	0.001813	1.58	46.60	23.86	0.36
ONE	11	PF 9	89.04	75.86	78.31	78.46	0.001872	1.70	52.22	24.43	0.37
ONE	11	PF 10	93.29	75.86	78.37	78.53	0.001890	1.74	53.73	24.57	0.37
ONE	11	PF 11	112.91	75.86	78.64	78.82	0.001965	1.87	60.21	25.21	0.39
ONE	11	PF 12	150.71	75.86	79.18	79.42	0.002086	2.13	74.42	26.53	0.41
ONE	11	PF 13	198.20	75.86	79.58	79.86	0.002184	2.33	85.22	27.49	0.42
ONE	10	PF 1	1.31	75.59	75.87	75.88	0.002841	0.46	2.84	13.88	0.32
ONE	10	PF 2	13.74	75.59	76.55	76.60	0.002321	1.02	13.52	16.85	0.36
ONE	10	PF 3	23.88	75.59	76.87	76.95	0.002452	1.26	18.91	17.50	0.39
ONE	10	PF 4	34.10	75.59	77.13	77.23	0.003095	1.39	24.59	22.61	0.42
ONE	10	PF 5	44.39	75.59	77.35	77.47	0.002860	1.49	29.85	24.19	0.43
ONE	10	PF 6	55.21	75.59	77.56	77.69	0.002797	1.58	35.05	25.60	0.43
ONE	10	PF 7	66.68	75.59	77.77	77.90	0.002730	1.65	40.40	26.97	0.43
ONE	10	PF 8	73.81	75.59	77.88	78.03	0.002690	1.69	43.65	27.77	0.43
ONE	10	PF 9	89.04	75.59	78.13	78.28	0.002589	1.76	50.58	29.40	0.43
ONE	10	PF 10	93.29	75.59	78.19	78.35	0.002570	1.78	52.43	29.83	0.43
ONE	10	PF 11	112.91	75.59	78.46	78.64	0.002490	1.86	60.82	31.67	0.43
ONE	10	PF 12	150.71	75.59	79.03	79.23	0.002238	1.99	79.81	34.27	0.42
ONE	10	PF 13	198.20	75.59	79.45	79.67	0.002066	2.11	94.12	34.64	0.41
ONE	9	PF 1	1.31	75.48	75.74	75.75	0.002826	0.46	2.87	14.24	0.32
ONE	9	PF 2	13.74	75.48	76.48	76.51	0.001658	0.78	17.43	22.83	0.29
ONE	9	PF 3	23.88	75.48	76.81	76.85	0.001429	0.96	24.98	23.96	0.30
ONE	9	PF 4	34.10	75.48	77.06	77.13	0.001431	1.09	31.31	24.87	0.31
ONE	9	PF 5	44.39	75.48	77.29	77.36	0.001483	1.20	36.94	25.65	0.32
ONE	9	PF 6	55.21	75.48	77.50	77.58	0.001512	1.30	42.39	26.38	0.33
ONE	9	PF 7	66.68	75.48	77.70	77.80	0.001542	1.39	47.83	27.21	0.34
ONE	9	PF 8	73.81	75.48	77.82	77.93	0.001558	1.44	51.08	27.73	0.34
ONE	9	PF 9	89.04	75.48	78.08	78.18	0.001596	1.54	57.99	30.47	0.36
ONE	9	PF 10	93.29	75.48	78.12	78.24	0.001605	1.56	59.43	31.00	0.36
ONE	9	PF 11	112.91	75.48	78.40	78.53	0.001651	1.65	68.57	31.75	0.36
ONE	9	PF 12	150.71	75.48	78.97	79.14	0.001588	1.82	87.10	33.31	0.36
ONE	9	PF 13	198.20	75.48	79.38	79.58	0.001599	1.96	101.29	34.54	0.36
ONE	8	PF 1	1.31	75.38	75.72	75.73	0.000532	0.25	5.25	18.15	0.15
ONE	8	PF 2	13.74	75.38	76.47	76.49	0.000817	0.66	20.77	22.84	0.22
ONE	8	PF 3	23.88	75.38	76.75	76.83	0.000856	0.84	28.34	24.23	0.25
ONE	8	PF 4	34.10	75.38	77.05	77.10	0.001056	0.98	34.76	25.35	0.27
ONE	8	PF 5	44.39	75.38	77.27	77.33	0.001135	1.10	40.51	26.32	0.28
ONE	8	PF 6	55.21	75.38	77.48	77.56	0.001197	1.20	46.11	27.23	0.29
ONE	8	PF 7	66.68	75.38	77.69	77.77	0.001247	1.29	51.37	28.11	0.30
ONE	8	PF 8	73.81	75.38	77.80	77.90	0.001272	1.34	55.05	28.62	0.31
ONE	8	PF 9	89.04	75.38	78.04	78.15	0.001314	1.44	62.06	29.65	0.32
ONE	8	PF 10	93.29	75.38	78.10	78.21	0.001324	1.46	63.87	29.92	0.32
ONE	8	PF 11	112.91	75.38	78.38	78.50	0.001360	1.56	72.24	31.11	0.34
ONE	8	PF 12	150.71	75.38	78.95	79.11	0.001404	1.75	90.74	33.59	0.34
ONE	8	PF 13	198.20	75.38	79.37	79.55	0.001417	1.89	105.04	34.59	0.35
ONE	7	PF 1	1.31	75.30	75.66	75.67	0.001384	0.40	3.32	11.86	0.23
ONE	7	PF 2	13.74	75.30	76.36	76.40	0.001856	0.88	15.69	21.02	0.1
ONE	7	PF 3	23.88	75.30	76.67	76.73	0.001883	1.07	22.32	22.29	0.18
ONE	7	PF 4	34.10	75.30	76.92	76.99	0.001939	1.22	27.84	23.29	0.20
ONE	7	PF 5	44.39	75.30	77.13	77.22	0.001995	1.35	32.97	24.16	0.1
ONE	7	PF 6	55.21	75.30	77.33	77.44	0.002035	1.46	37.99	24.98	0.23
ONE	7	PF 7	66.68	75.30	77.52	77.65	0.002059	1.56	42.97	25.79	0.24
ONE	7	PF 8	73.81	75.30	77.64	77.77	0.002069	1.61	45.86	26.26	0.25
ONE	7	PF 9	89.04	75.30	77.87	78.02	0.002080	1.71	52.02	27.26	0.25
ONE	7	PF 10	93.29	75.30	77.93	78.08	0.002083	1.74	53.66	27.15	0.26
ONE	7	PF 11	112.91	75.30	78.20	78.37	0.002065	1.84	61.20	28.55	0.26
ONE	7	PF 12	150.71	75.30	78.76	78.97	0.002055	2.04	77.94	30.87	0.41
ONE	7	PF 13	198.20	75.30	79.17	79.41	0.002084	2.18	89.97	32.55	0.42
ONE	6	PF 1	1.31	75.25	75.58	75.58	0.001022	0.32	4.02	15.16	0.24
ONE	6	PF 2	13.74	75.25	76.24	76.28	0.001766	0.90	15.29	18.73	0.12
ONE	6	PF 3	23.88	75.25	76.53	76.60	0.002049	1.15	20.85	19.72	0.16
ONE	6	PF 4	34.10	75.25	76.76	76.85	0.002269	1.34	25.48	20.91	0.18
ONE	6	PF 5	44.39	75.25	76.96	77.07	0.002451	1.50	29.59	21.12	0.21
ONE	6	PF 6	55.21	75.25	77.14	77.28	0.002583	1.64	33.62	21.62	0.22
ONE	6	PF 7	66.68	75.25	77.33	77.49	0.002644	1.77	37.71	22.45	0.23
ONE	6	PF 8	73.81	75.25	77.44	77.61	0.002728	1.84	40.18	22.83	0.24
ONE	6	PF 9	89.04	75.25	77.66	77.85	0.002796	1.97	45.27	23.59	0.25
ONE	6	PF 10	93.29	75.25	77.72	77.92	0.002806	2.00	46.65	23.71	0.26
ONE	6	PF 11	112.91	75.25	77.97	78.21	0.002839	2.14	52.80	24.21	0.26
ONE	6	PF 12	150.71	75.25	78.51	78.80	0.002886	2.40	66.12	25.25	0.27
ONE	6	PF 13	198.20	75.25	78.99	79.24	0.003009	2.61	75.90	25.99	0.40
ONE	5	PF 1	1.31	75.22	75.48	75.51	0.008539	0.70	1.71	8.43	[illegible]
ONE	5	PF 2	13.74	75.22	75.95	75.89	76.14	0.015280	1.93	7.11	14.16	[illegible]
ONE	5	PF 3	23.88	75.22	76.23		76.45	0.011953	2.06	11.57	17.33	[illegible]
ONE	5	PF 4	34.10	75.22	76.48		76.70	0.009774	2.11	14.15	18.67	[illegible]
ONE	5	PF 5	44.39	75.22	76.70		76.93	0.007971	2.14	20.74	21.60	[illegible]
ONE	5	PF 6	55.21	75.22	76.90		77.14	0.006758	2.19	29.23	22.42	[illegible]
ONE	5	PF 7	66.68	75.22	77.10		77.36	0.005945	2.24	29.80	23.21	[illegible]
ONE	5	PF 8	73.81	75.22	77.22		77.48	0.005610	2.27	32.54	23.84	[illegible]
ONE	5	PF 9	89.01	75.22	77.45		77.73	0.005055	2.33	38.21	24.47	[illegible]
ONE	5	PF 10	93.29	75.22	77.51		77.79	0.004934	2.35	39.76	24.87	[illegible]
ONE	5	PF 11	112.91	75.22	77.79		78.09	0.004490	2.42	46.72	25.96	[illegible]
ONE	5	PF 12	150.71	75.22	78.36		78.69	0.003821	2.55	61.34	28.19	[illegible]
ONE	5	PF 13	198.20	75.22	78.77		79.13	0.003586	2.64	73.39	29.44	[illegible]
ONE	4	PF 1	1.31	75.04	75.27		75.28	0.005056	0.49	2.70	11.4	[illegible]
ONE	4	PF 2	13.74	75.04	75.80		75.94	0.002084	0.90	15.26	16.82	[illegible]
ONE	4	PF 3	23.88	75.04	76.20		76.26	0.002076	1.09	21.82	22.67	[illegible]

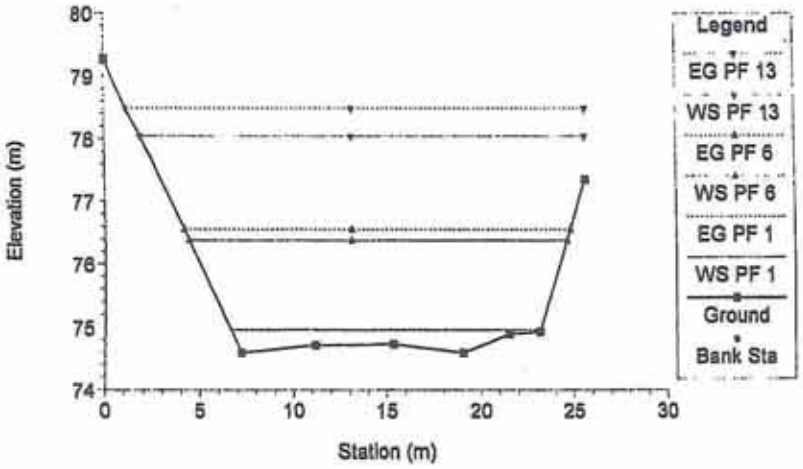
ONE	4	PF 4	34.10	75.04	76.45		76.52	0.002073	1.24	27.58	23.67	0.37
ONE	4	PF 5	44.39	75.04	76.67		76.76	0.002062	1.35	32.92	24.62	0.37
ONE	4	PF 6	55.21	75.04	76.88		76.98	0.002049	1.45	38.18	25.52	0.38
ONE	4	PF 7	66.68	75.04	77.08		77.20	0.002034	1.53	43.47	26.39	0.38
ONE	4	PF 8	73.81	75.04	77.20		77.33	0.002025	1.58	46.66	26.92	0.38
ONE	4	PF 9	89.04	75.04	77.44		77.58	0.002005	1.67	53.23	27.97	0.39
ONE	4	PF 10	93.29	75.04	77.50		77.65	0.002000	1.70	55.01	28.25	0.39
ONE	4	PF 11	112.91	75.04	77.78		77.94	0.002007	1.79	63.05	29.68	0.39
ONE	4	PF 12	158.71	75.04	78.37		78.56	0.002049	1.93	82.08	35.12	0.40
ONE	4	PF 13	198.20	75.04	78.78		78.99	0.002033	2.04	97.24	37.93	0.41
ONE	3	PF 1	1.31	74.88	75.17		75.17	0.001435	0.34	3.80	17.17	0.2[illegible]
ONE	3	PF 2	11.74	74.88	75.83		75.86	0.001467	0.74	18.56	26.41	0.28
ONE	3	PF 3	23.88	74.88	76.14		76.19	0.001371	0.89	26.89	27.97	0.29
ONE	3	PF 4	34.10	74.88	76.39		76.45	0.001335	1.00	34.15	29.13	0.29
ONE	3	PF 5	44.39	74.88	76.62		76.68	0.001310	1.09	40.84	30.15	0.30
ONE	3	PF 6	55.21	74.88	76.83		76.90	0.001287	1.16	47.39	31.05	0.30
ONE	3	PF 7	66.68	74.88	77.04		77.12	0.001267	1.24	53.95	31.91	0.30
ONE	3	PF 8	73.81	74.88	77.18		77.25	0.001258	1.28	57.86	32.41	0.30
ONE	3	PF 9	89.04	74.88	77.41		77.50	0.001241	1.35	65.88	33.41	0.31
ONE	3	PF 10	93.29	74.88	77.47		77.57	0.001237	1.37	68.04	33.67	0.31
ONE	3	PF 11	112.91	74.88	77.75		77.86	0.001222	1.45	77.69	34.82	0.31
ONE	3	PF 12	158.71	74.88	78.34		78.47	0.001256	1.59	99.76	39.69	0.32
ONE	3	PF 13	198.20	74.88	78.76		78.91	0.001204	1.70	116.37	39.69	0.32
ONE	2	PF 1	1.31	74.71	75.02		75.03	0.001294	0.34	3.90	16.89	0.22
ONE	2	PF 2	11.74	74.71	75.63		75.68	0.001949	0.93	14.77	18.41	0.33
ONE	2	PF 3	23.88	74.71	75.92		75.99	0.002230	1.19	20.13	19.05	0.37
ONE	2	PF 4	34.10	74.71	76.15		76.25	0.002430	1.38	24.64	19.57	0.39
ONE	2	PF 5	44.39	74.71	76.36		76.48	0.002565	1.54	28.75	20.08	0.41
ONE	2	PF 6	55.21	74.71	76.56		76.70	0.002671	1.69	32.74	20.48	0.43
ONE	2	PF 7	66.68	74.71	76.75		76.92	0.002759	1.82	36.70	20.91	0.44
ONE	2	PF 8	73.81	74.71	76.86		77.04	0.002806	1.89	39.05	21.16	0.44
ONE	2	PF 9	89.04	74.71	77.08		77.29	0.002892	2.03	43.82	21.66	0.46
ONE	2	PF 10	93.29	74.71	77.14		77.36	0.002914	2.07	45.10	21.79	0.46
ONE	2	PF 11	112.91	74.71	77.40		77.65	0.003008	2.22	50.75	22.36	0.47
ONE	2	PF 12	158.71	74.71	77.92		78.25	0.003190	2.53	62.70	23.39	0.49
ONE	2	PF 13	198.20	74.71	78.29		78.68	0.003407	2.78	71.39	23.98	0.51
ONE	1	PF 1	1.31	74.40	74.96		74.97	0.001242	0.34	3.91	16.53	0.22
ONE	1	PF 2	11.74	74.40	75.52		75.57	0.002479	1.01	13.57	17.97	0.37
ONE	1	PF 3	23.88	74.40	75.78		75.87	0.002892	1.30	18.39	18.65	0.42
ONE	1	PF 4	34.10	74.40	76.00		76.12	0.003165	1.52	22.48	19.20	0.45
ONE	1	PF 5	44.39	74.40	76.20		76.34	0.003318	1.69	26.29	19.71	0.47
ONE	1	PF 6	55.21	74.40	76.38		76.56	0.003420	1.84	30.05	20.19	0.48
ONE	1	PF 7	66.68	74.40	76.57		76.77	0.003494	1.97	33.81	20.66	0.49
ONE	1	PF 8	73.81	74.40	76.68		76.89	0.003530	2.05	36.05	20.94	0.50
ONE	1	PF 9	89.04	74.40	76.89		77.14	0.003593	2.19	40.64	21.50	0.51
ONE	1	PF 10	93.29	74.40	76.95		77.20	0.003609	2.23	41.89	21.64	0.51
ONE	1	PF 11	112.91	74.40	77.20		77.49	0.003676	2.38	47.35	22.28	0.53
ONE	1	PF 12	158.71	74.40	77.71		78.08	0.003797	2.69	58.94	23.23	0.54
ONE	1	PF 13	198.20	74.40	78.05		78.50	0.004053	2.96	67.04	23.78	0.56
ONE	0.5	PF 1	1.31	74.54	74.86		74.88	0.005473	0.52	2.50	16.56	0.43
ONE	0.5	PF 2	11.74	74.54	75.30		75.45	0.004249	1.11	12.42	21.96	0.4[illegible]
ONE	0.5	PF 3	23.88	74.54	75.66		75.74	0.003684	1.27	18.47	24.30	0.44
ONE	0.5	PF 4	34.10	74.54	75.89		75.98	0.003278	1.40	24.42	24.57	0.45
ONE	0.5	PF 5	44.39	74.54	76.09		76.21	0.003035	1.50	29.51	24.81	0.46
ONE	0.5	PF 6	55.21	74.54	76.29		76.42	0.002880	1.60	34.44	25.03	0.46
ONE	0.5	PF 7	66.68	74.54	76.48		76.63	0.002777	1.70	39.27	25.26	0.47
ONE	0.5	PF 8	73.81	74.54	76.59		76.75	0.002734	1.75	42.12	25.39	0.47
ONE	0.5	PF 9	89.04	74.54	76.82		76.99	0.002675	1.86	47.84	25.65	0.47
ONE	0.5	PF 10	93.29	74.54	76.88		77.06	0.002664	1.89	49.36	25.72	0.47
ONE	0.5	PF 11	112.91	74.54	77.13		77.34	0.002632	2.02	55.99	25.79	0.47
ONE	0.5	PF 12	158.71	74.54	77.65		77.92	0.002668	2.29	69.39	25.79	0.45
ONE	0.5	PF 13	198.20	74.54	78.00		78.33	0.002864	2.53	78.35	25.79	0.46
ONE	0	PF 1	1.31	74.10	74.36	74.31	74.39	0.010001	0.73	1.78	11.98	0.59
ONE	0	PF 2	11.74	74.10	74.86	74.73	75.02	0.010008	1.74	7.89	13.19	0.72
ONE	0	PF 3	23.88	74.10	75.12	74.96	75.34	0.010003	2.10	11.36	14.2[illegible]	0.77
ONE	0	PF 4	34.10	74.10	75.32	75.16	75.61	0.010017	2.36	14.42	15.1[illegible]	0.[illegible]
ONE	0	PF 5	44.39	74.10	75.51	75.33	75.84	0.010005	2.57	17.27	15.98	0.[illegible]
ONE	0	PF 6	55.21	74.10	75.68	75.49	76.07	0.010004	2.75	20.06	16.5[illegible]	0.[illegible]
ONE	0	PF 7	66.68	74.10	75.84	75.65	76.28	0.010003	2.92	22.65	17.1[illegible]	0.[illegible]
ONE	0	PF 8	73.81	74.10	75.94	75.74	76.40	0.010002	3.01	24.51	17.67	0.92
ONE	0	PF 9	89.04	74.10	76.13	75.92	76.65	0.010014	3.19	27.95	18.4[illegible]	0.9[illegible]
ONE	0	PF 10	93.29	74.10	76.18	75.97	76.71	0.010012	3.23	28.88	18.67	0.93
ONE	0	PF 11	112.91	74.10	76.40	76.18	76.99	0.009999	3.42	33.06	19.57	0.81
ONE	0	PF 12	158.71	74.10	76.93	76.65	77.57	0.010003	3.55	44.66	24.74	0.84
ONE	0	PF 13	198.20	74.10	77.24	77.00	77.96	0.010003	3.78	52.48	24.32	0.85

Flow Rating Curves

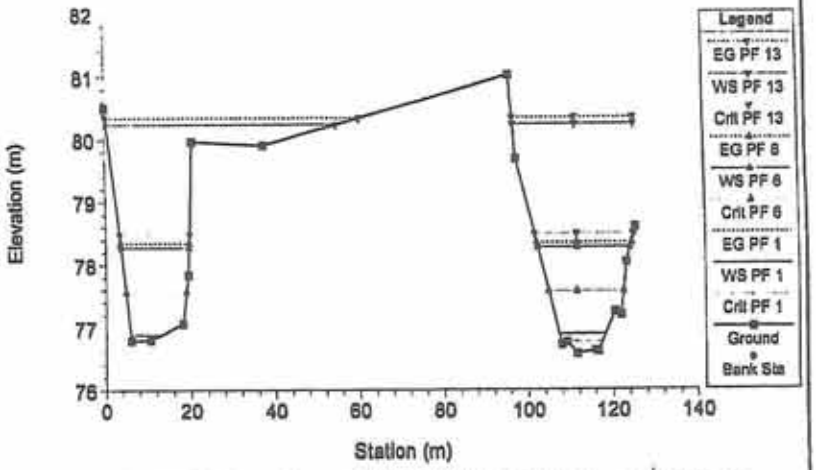



CAYAGUAS_ST_3 Plan: RATING CURVE 8/26/2009 11:15:20 AM
Geom: W/o EXTRACTION Flow: CAYAGUAS FLOW RATING
CAYAGUAS ONE
Legend
EG PF 13
WS PF 13
Crit PF 13
EG PF 6
WS PF 6
Crit PF 6
EG PF 1
WS PF 1
Crit PF 1
Ground
Elevation (m)
Main Channel Distance (m)
81
80
79
78
77
76
75
74
0
200
400
600
800
1000
0.5
1
2
3
4
5
6
7
8
9
10
11
12
13
15
17
18
19
20

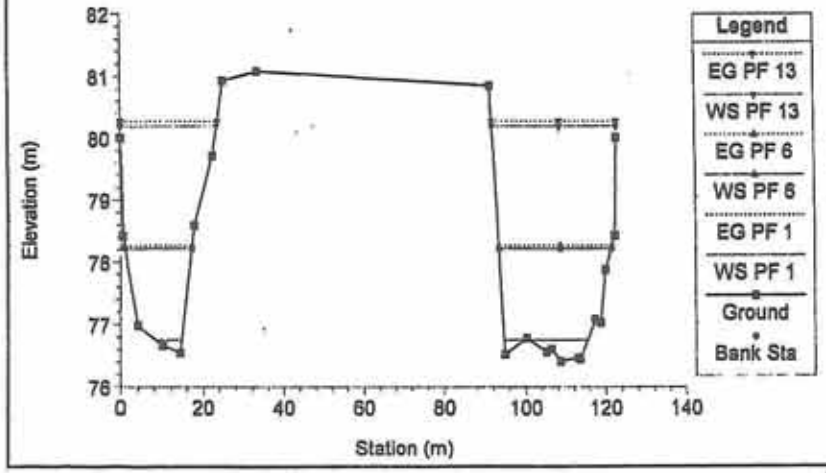
CAYAGUAS_ST_3 Plan: RATING CURVE 8/26/2009 11:15:20 AM
Geom: W/o EXTRACTION Flow: CAYAGUAS FLOW RATING
RS = 1



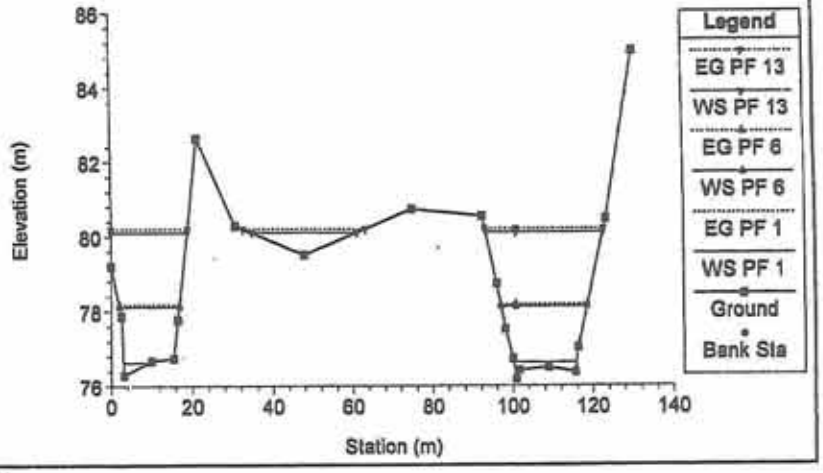
CAYAGUAS_ST_3 Plan: RATING CURVE 8/26/2009 11:15:20 AM
Geom: W/o EXTRACTION Flow: CAYAGUAS FLOW RATING
RS = 20



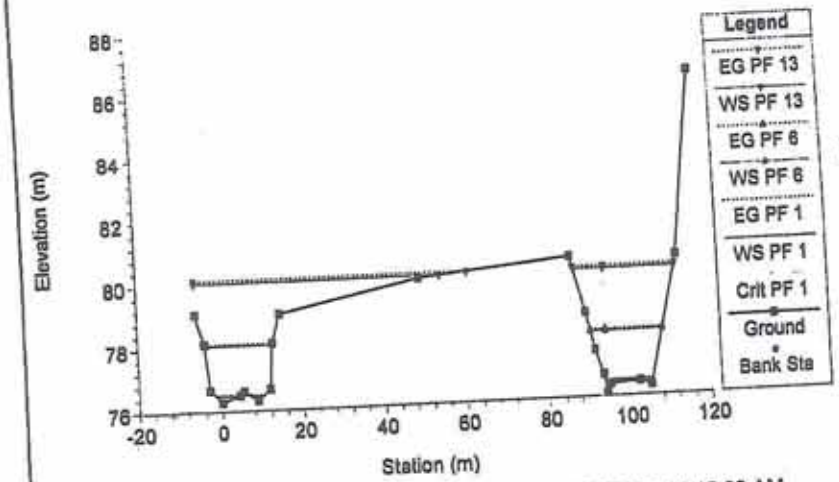
CAYAGUAS_ST_3 Plan: RATING CURVE 8/26/2009 11:15:20 AM
Geom: W/o EXTRACTION Flow: CAYAGUAS FLOW RATING
RS = 19



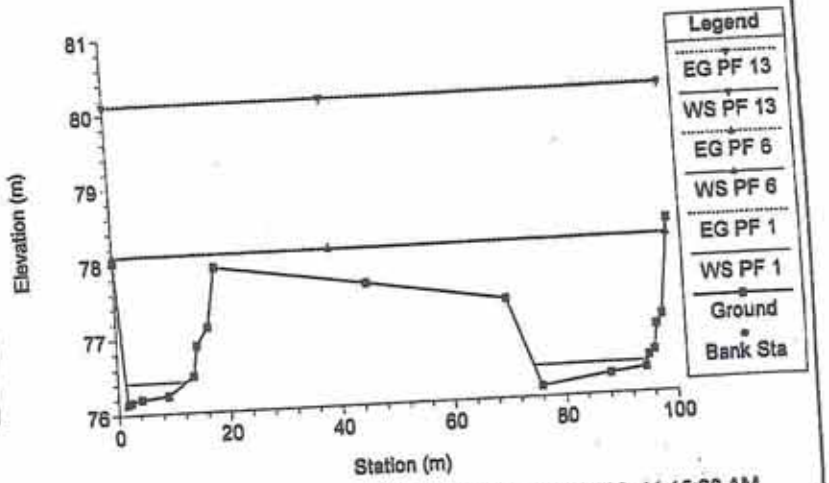
CAYAGUAS_ST_3 Plan: RATING CURVE 8/26/2009 11:15:20 AM
Geom: W/o EXTRACTION Flow: CAYAGUAS FLOW RATING
RS = 18



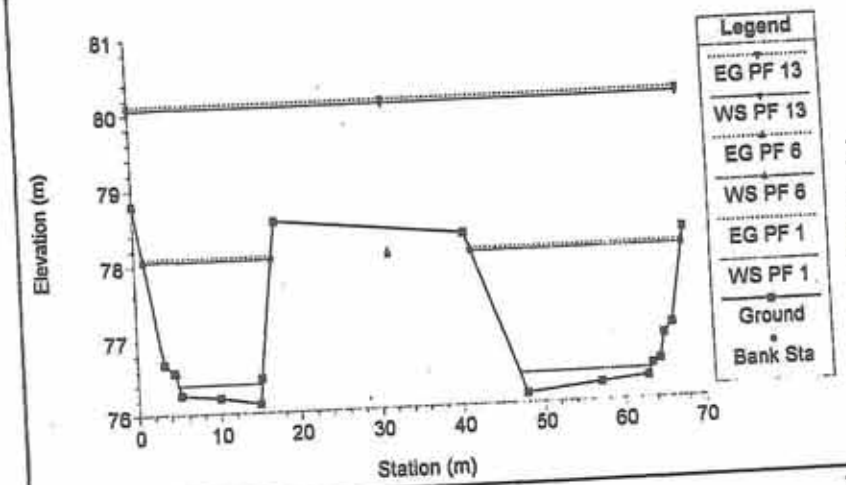
CAYAGUAS_ST_3 Plan: RATING CURVE 8/26/2009 11:15:20 AM
Geom: W/o EXTRACTION Flow: CAYAGUAS FLOW RATING
RS = 17



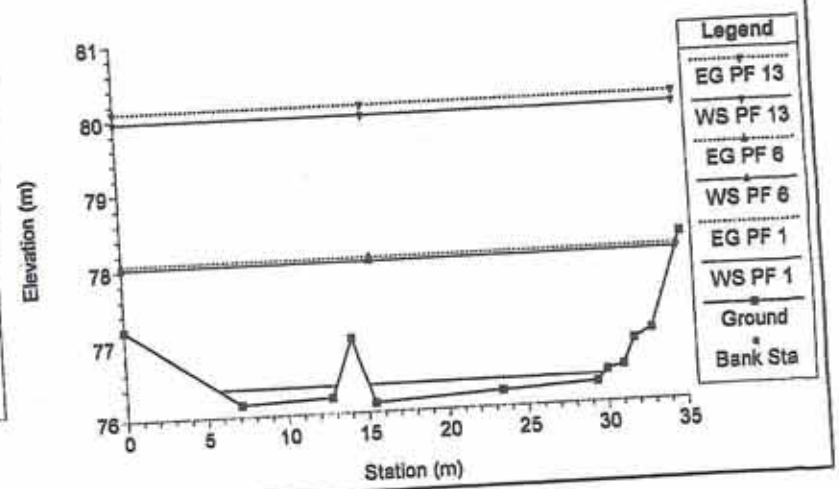
CAYAGUAS_ST_3 Plan: RATING CURVE 8/26/2009 11:15:20 AM
Geom: W/o EXTRACTION Flow: CAYAGUAS FLOW RATING
RS = 16



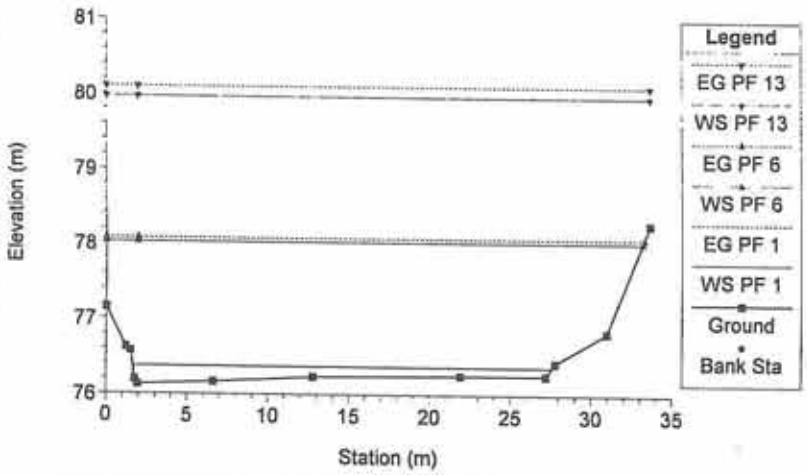
CAYAGUAS_ST_3 Plan: RATING CURVE 8/26/2009 11:15:20 AM
Geom: W/o EXTRACTION Flow: CAYAGUAS FLOW RATING
RS = 15



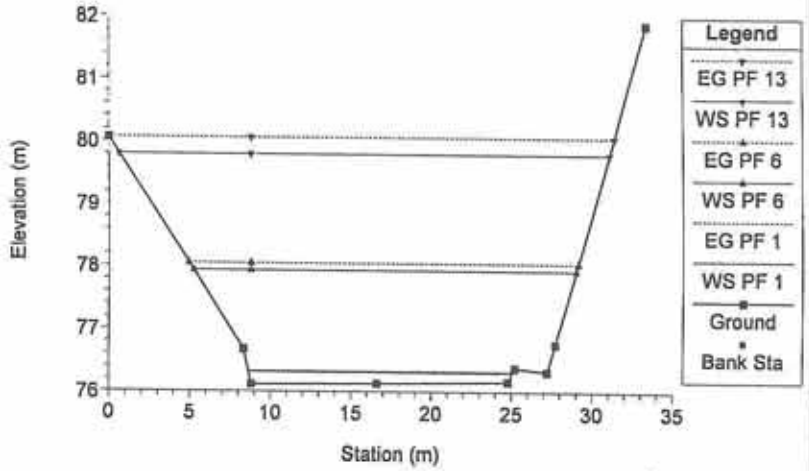
CAYAGUAS_ST_3 Plan: RATING CURVE 8/26/2009 11:15:20 AM
Geom: W/o EXTRACTION Flow: CAYAGUAS FLOW RATING
RS = 14



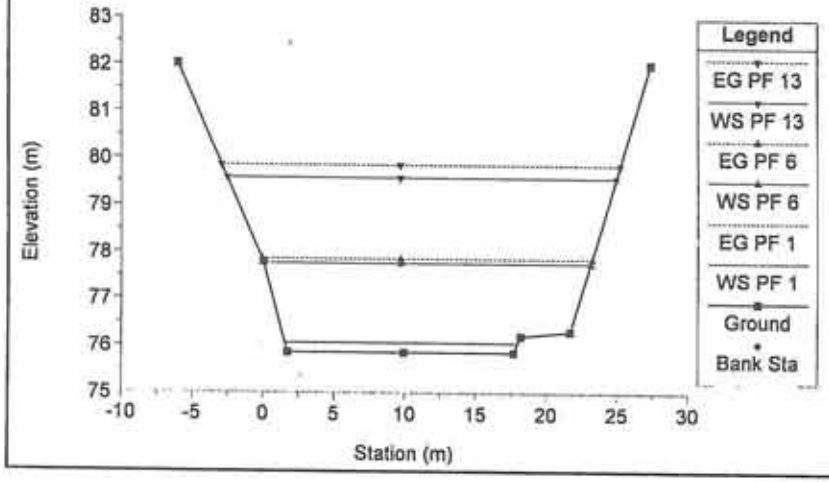
CAYAGUAS_ST_3 Plan: RATING CURVE 8/26/2009 11:15:20 AM
Geom: W/o EXTRACTION Flow: CAYAGUAS FLOW RATING
RS = 13



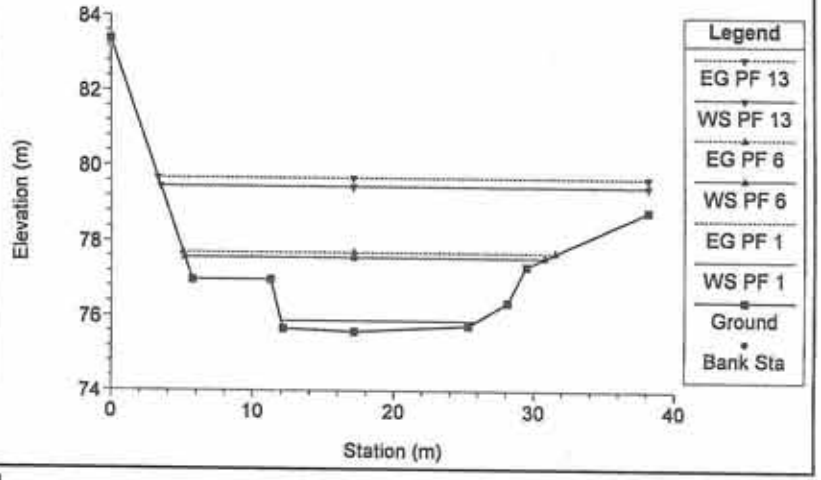
CAYAGUAS_ST_3 Plan: RATING CURVE 8/26/2009 11:15:20 AM
Geom: W/o EXTRACTION Flow: CAYAGUAS FLOW RATING
RS = 12



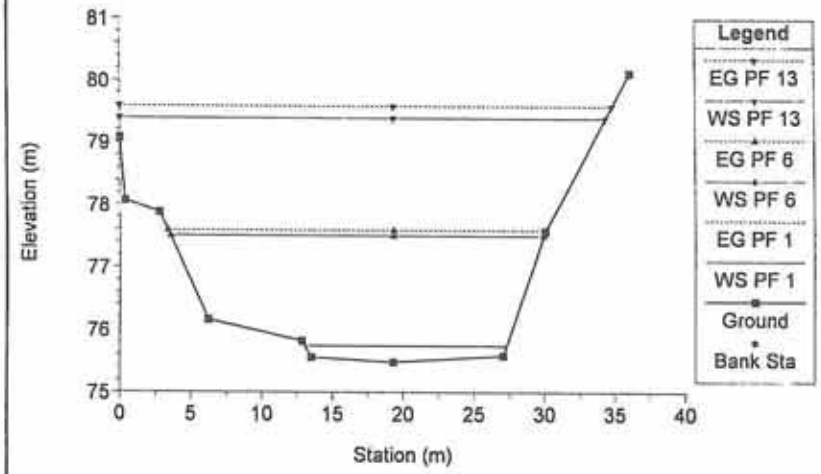
CAYAGUAS_ST_3 Plan: RATING CURVE 8/26/2009 11:15:20 AM
Geom: W/o EXTRACTION Flow: CAYAGUAS FLOW RATING
RS = 11



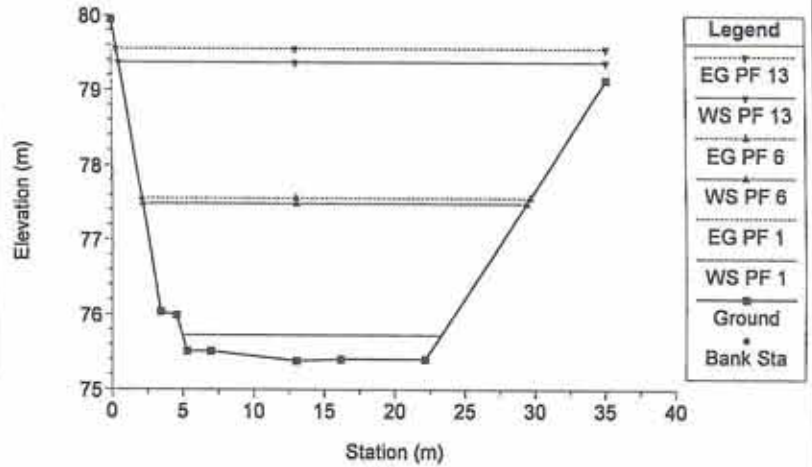
CAYAGUAS_ST_3 Plan: RATING CURVE 8/26/2009 11:15:20 AM
Geom: W/o EXTRACTION Flow: CAYAGUAS FLOW RATING
RS = 10



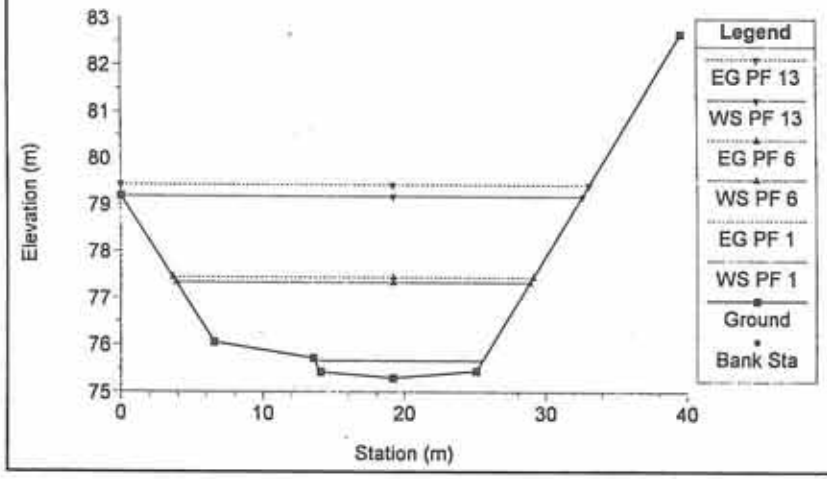
CAYAGUAS_ST_3 Plan: RATING CURVE 8/26/2009 11:15:20 AM
Geom: W/o EXTRACTION Flow: CAYAGUAS FLOW RATING
RS = 9



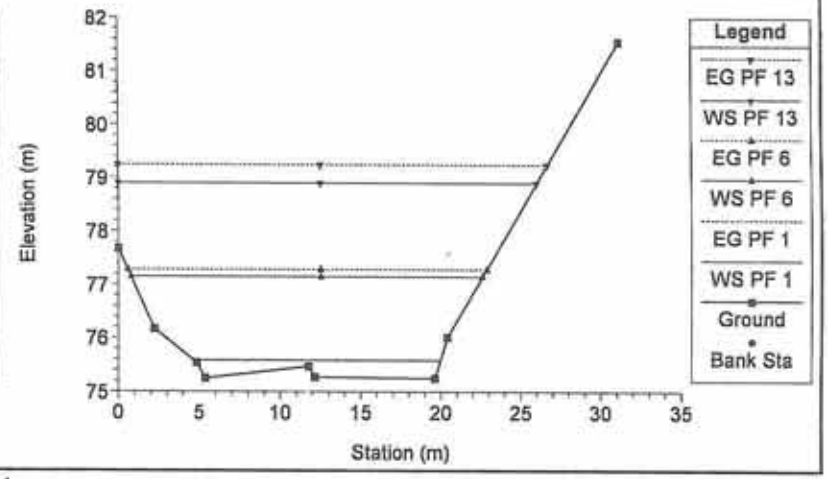
CAYAGUAS_ST_3 Plan: RATING CURVE 8/26/2009 11:15:20 AM
Geom: W/o EXTRACTION Flow: CAYAGUAS FLOW RATING
RS = 8



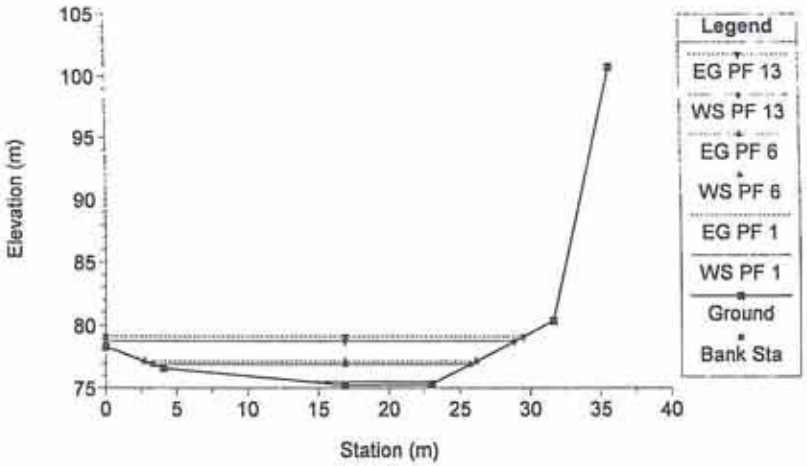
CAYAGUAS_ST_3 Plan: RATING CURVE 8/26/2009 11:15:20 AM
Geom: W/o EXTRACTION Flow: CAYAGUAS FLOW RATING
RS = 7



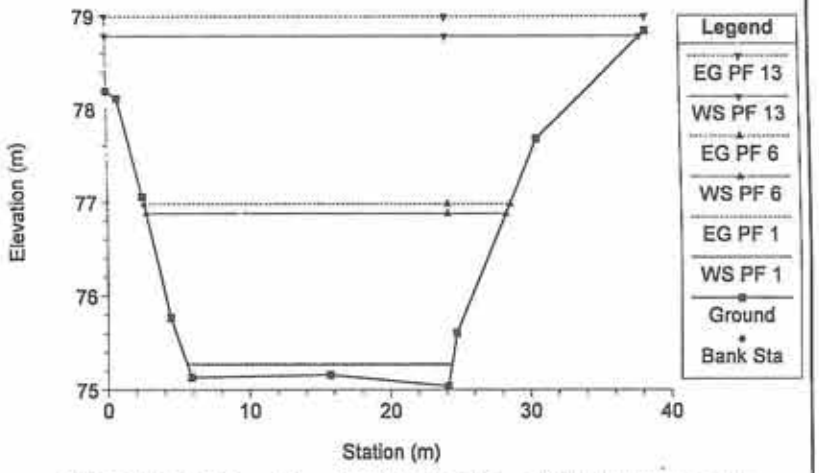
CAYAGUAS_ST_3 Plan: RATING CURVE 8/26/2009 11:15:20 AM
Geom: W/o EXTRACTION Flow: CAYAGUAS FLOW RATING
RS = 6



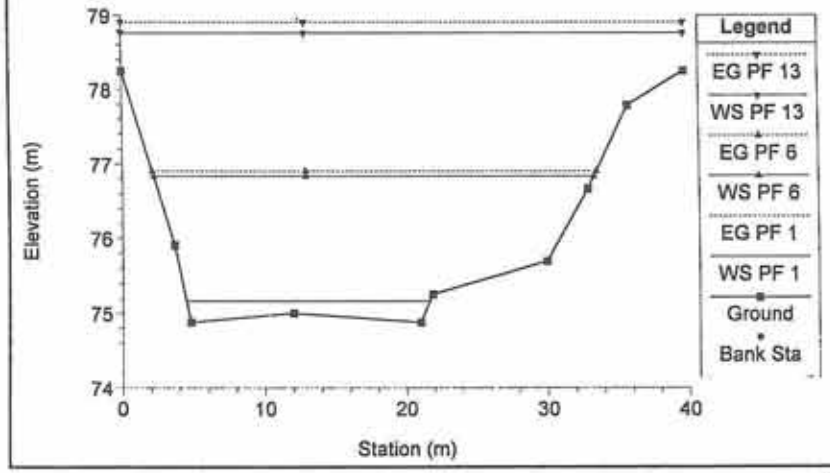
CAYAGUAS_ST_3 Plan: RATING CURVE 8/26/2009 11:15:20 AM
Geom: W/o EXTRACTION Flow: CAYAGUAS FLOW RATING
RS = 5



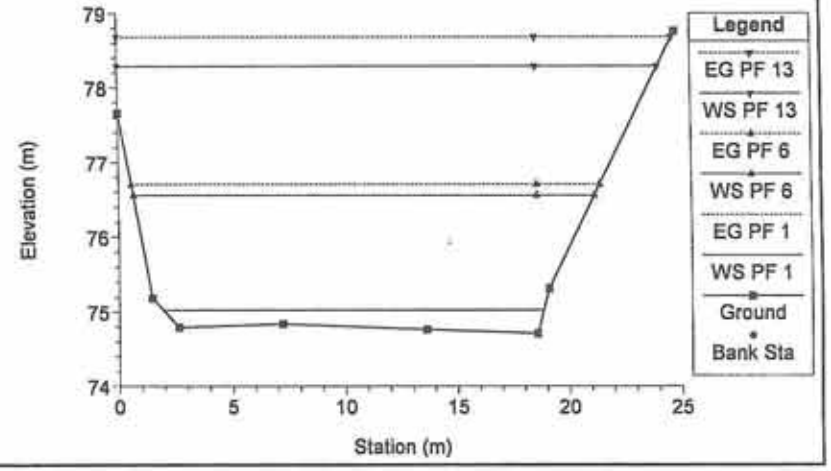
CAYAGUAS_ST_3 Plan: RATING CURVE 8/26/2009 11:15:20 AM
Geom: W/o EXTRACTION Flow: CAYAGUAS FLOW RATING
RS = 4



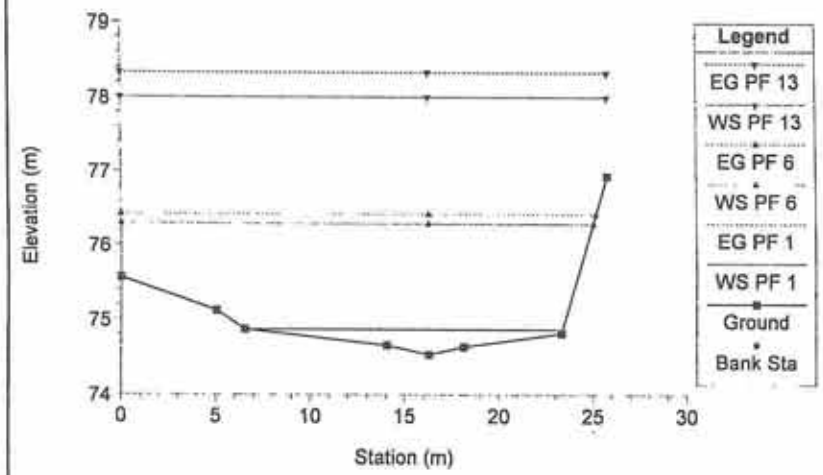
CAYAGUAS_ST_3 Plan: RATING CURVE 8/26/2009 11:15:20 AM
Geom: W/o EXTRACTION Flow: CAYAGUAS FLOW RATING
RS = 3



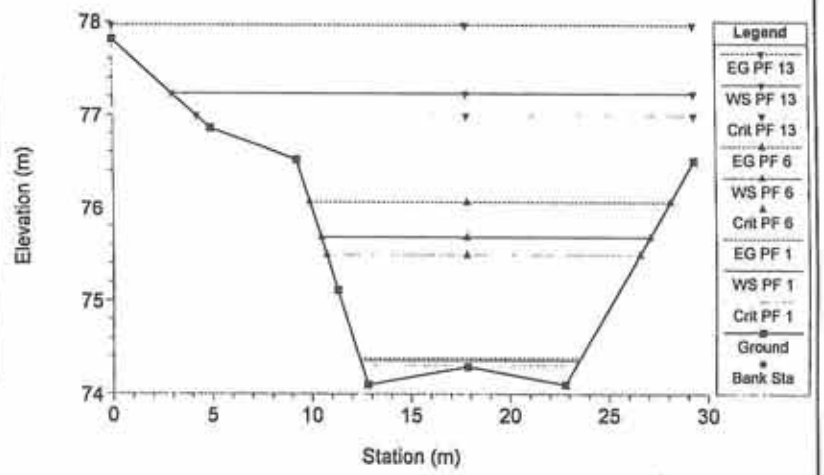
CAYAGUAS_ST_3 Plan: RATING CURVE 8/26/2009 11:15:20 AM
Geom: W/o EXTRACTION Flow: CAYAGUAS FLOW RATING
RS = 2



CAYAGUAS_ST_3 Plan: RATING CURVE 8/26/2009 11:15:20 AM
Geom: W/o EXTRACTION Flow: CAYAGUAS FLOW RATING
RS = 0.5



CAYAGUAS_ST_3 Plan: RATING CURVE 8/26/2009 11:15:20 AM
Geom: W/o EXTRACTION Flow: CAYAGUAS FLOW RATING
RS = 0



APPENDIX E

SEDIMENT YIELD CALCULATIONS

Total Sediment Yield, Cayaguas River at San Lorenzo, PR

Flow Mid Exceedence	Flow Exceedence	Duration Mid Ordinate	In Percent Increment	Water Discharge Qw[1] *cfs*	Sediment Discharge Qs[2] *tons/day*	Daily Average Qw *cfs*	Daily Suspended Qs *tons/day*
0.0	0						
0.05%	0.1	0.05	0.10	3965.07	19574.33	3.965	19.574
0.30%	0.5	0.30	0.40	1315.31	2203.80	5.261	8.815
1.00%	1.5	1.00	1.00	643.98	546.91	6.440	5.469
3.25%	5	3.25	3.50	252.94	93.08	8.853	3.258
10.00%	15	10.00	10.00	98.44	17.51	9.844	1.751
20.00%	25	20.00	10.00	60.16	7.86	6.016	0.786
30.00%	35	30.00	10.00	46.49	5.29	4.649	0.529
40.00%	45	40.00	10.00	38.28	3.97	3.828	0.397
50.00%	55	50.00	10.00	32.81	3.19	3.281	0.319
60.00%	65	60.00	10.00	28.71	2.64	2.871	0.264
70.00%	75	70.00	10.00	24.61	2.14	2.461	0.214
80.00%	85	80.00	10.00	20.51	1.68	2.051	0.168
90.00%	95	90.00	10.00	16.41	1.26	1.641	0.126
96.75%	98.5	96.75	3.50	13.67	1.01	0.479	0.035
99.00%	99.5	99.00	1.00	12.44	0.90	0.124	0.009
99.70%	99.9	99.70	0.40	11.49	0.81	0.046	0.003
		99.95	0.10	9.71	0.67	0.010	0.001
100.00%	100					61.82	41.72

Notes: (1) Stream Flow Record, 1977 to 2009
(2) Regression of the Suspended Sediment Sampling Record, October 1983 to September 1984 and October 1985 to September 1986.

Annual Water Yield (acr*ft/yr) =	44,677.66
Total Sediment Yield = (tons/yr)	16,750.43
Annual Suspended Sediment Yield (tons/yr) =	15,227.66
Unit Sediment Yield = (tons/square mile)	1,201.08

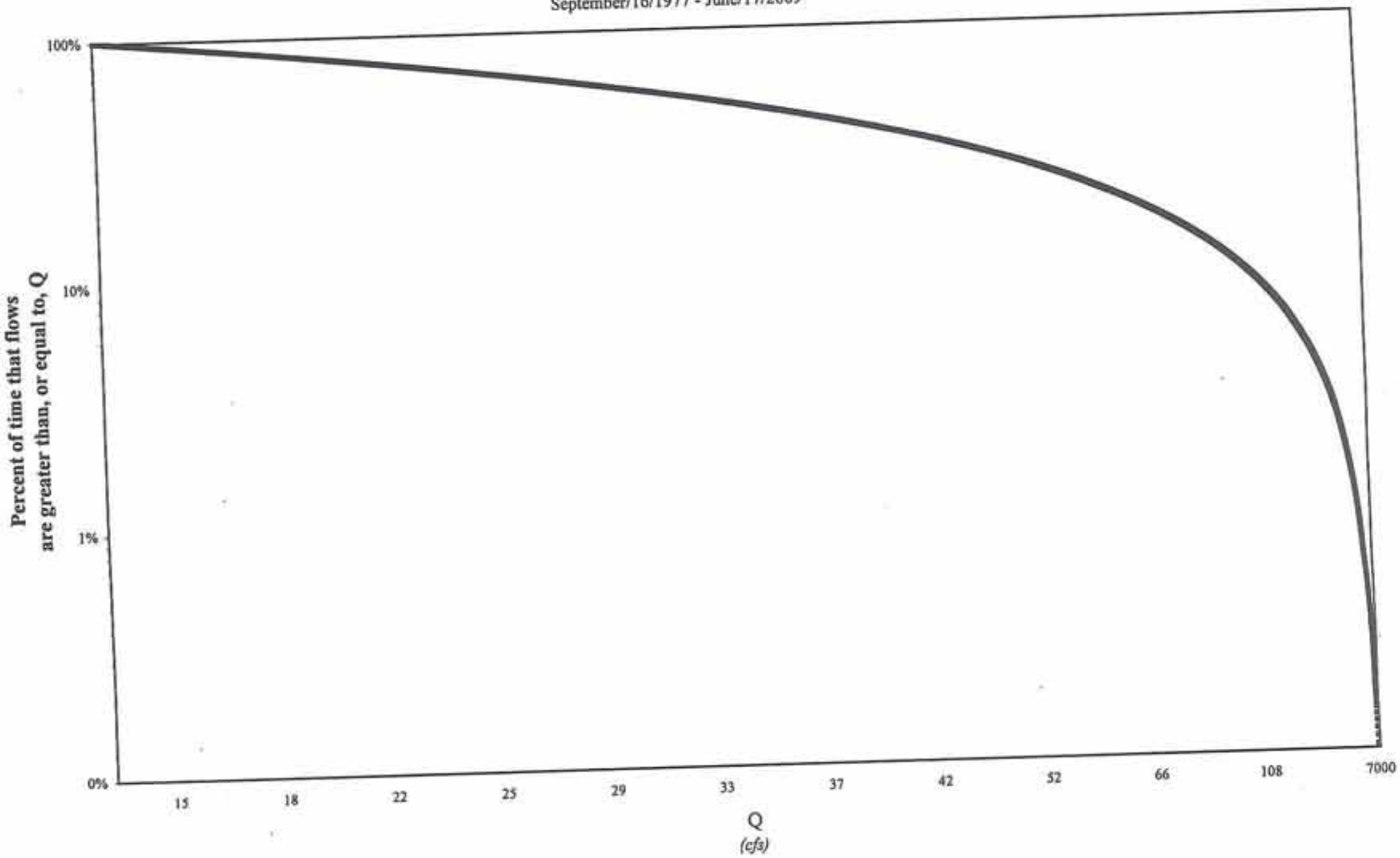
Flow Mid Exceedence	Water Discharge Qw *cfs*	Number of samples	Grain Size %>0.062mm
0.0			
0.05%	3965.07	3.00	16.64
0.30%	1326.25	28.00	16.11
1.00%	653.55	82.00	15.98
3.25%	254.31	261.00	15.90
10.00%	98.44	785.00	15.87
20.00%	60.16	1122.00	15.86
30.00%	46.49	1161.00	15.86
40.00%	38.28	1432.00	15.86
50.00%	32.81	1174.00	15.85
60.00%	28.71	1131.00	15.85
70.00%	24.61	1165.00	15.85
80.00%	20.51	811.00	15.85
90.00%	16.41	1198.00	15.85
96.75%	13.67	867.00	15.85
99.00%	12.44	242.00	15.85
99.70%	11.62	71.00	15.85
	9.71	34.00	15.85
100.00%		11567.00	270.73

Weighted Grain Size %>0.062mm =	15.86

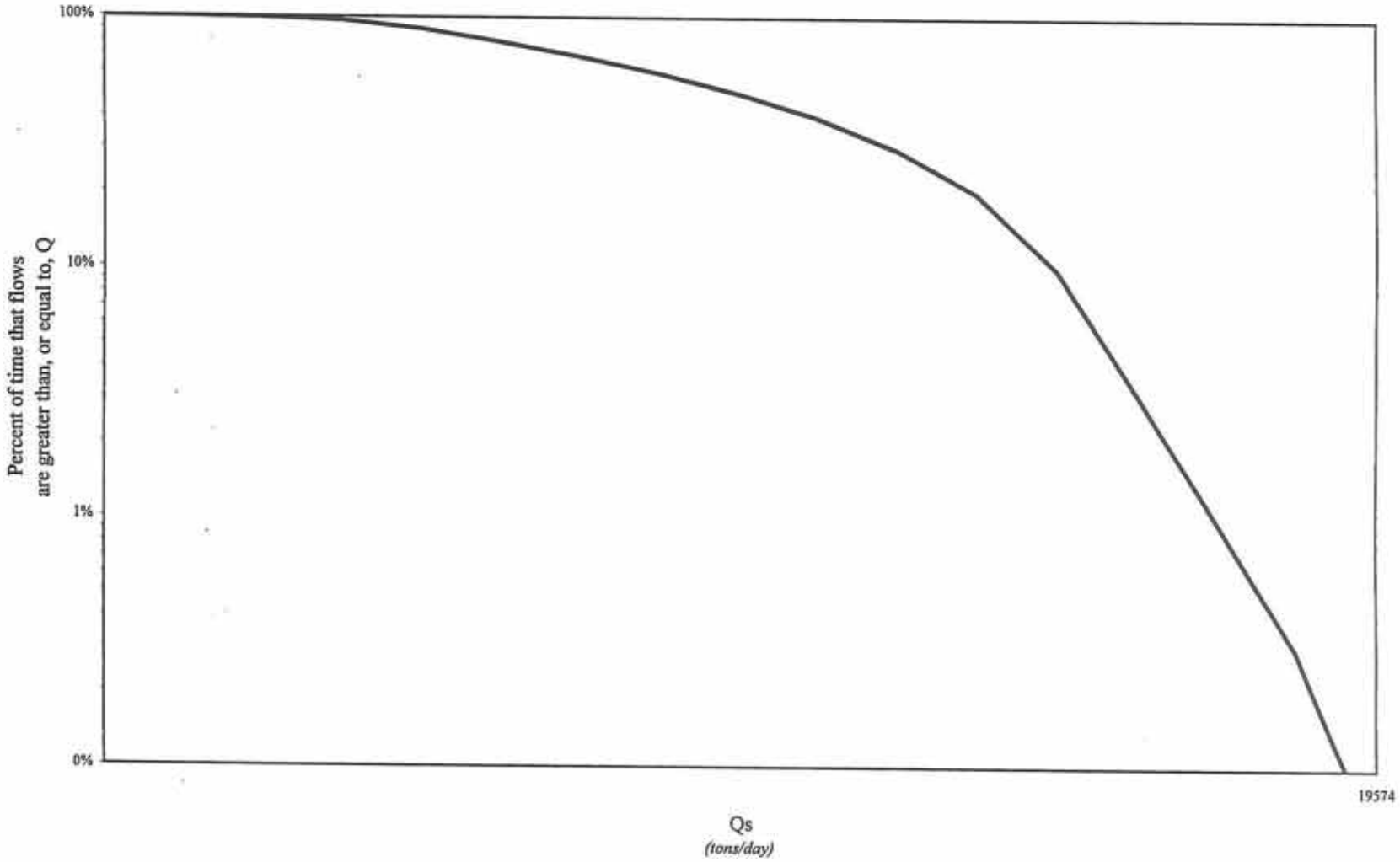
	Total Sediment Yield *tons/day*	Total Material Yield *tons/day*	Material Unit Weigth *tons cubic meter*	Total Material *cubic meter*
High	19,574.33	3104.03	1.47	768,071.15
Low	320.00	50.74	1.47	9,943.47

Flow Duration Curve

Based on USGS 50051310 (Rio Cayaguas) at San Lorenzo, PR
September/16/1977 - June/17/2009



Sediment Rating Curve-Flow Duration Curve



APPENDIX F

SEDIMENT TRANSPORT ANALYSIS W/O EXTRACTION

(EXISTING CONDITION)

```
                    HEC-RAS Version 4.0.0 March 2008
                      U.S. Army Corps 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
          XXXXXX  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: CAYAGUAS_ST_5
Project File : CAYAGUAS_ST_5.prj
Run Date and Time: 8/24/2009 1:01:19 PM

Units: US Units

Project Description:
Sediment transport Study for Cayaguas River at San Lorenzo, PR.
Surveyor: Jose
Villanova
Soil Testing: Eng. Saiges (GRD CIM)

*****************************************************************************

PLAN DATA

Plan Title: W/o EXTRACTION
Plan File : P:\526-Material Extraction at Rio Cayaguas\HEC-RAS\CAYAGUAS_ST_5.p02

          Geometry Title: W/o EXTRACTION
          Geometry File : P:\526-Material Extraction at Rio Cayaguas\HEC-RAS\CAYAGUAS_ST_5.g01

          Flow Title    : CAYAGUAS FLOW RATING
          Flow File     : P:\526-Material Extraction at Rio Cayaguas\HEC-RAS\CAYAGUAS_ST_5.f01

Plan Summary Information:
Number of: Cross Sections =  [illegible]    Multiple Openings   =   0
           Culverts       =  [illegible]    Inline Structures   =   0
           Bridges        =  [illegible]    Lateral Structures  =   0

Simulation Information
    Water surface calculation tolerance      [illegible]
    Critical depth calculation tolerance     [illegible]
    Maximum number of iterations             [illegible]
    Maximum difference tolerance             [illegible]
    Flow tolerance factor                    [illegible]

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

*****************************************************************************

GEOMETRY DATA

Geometry Title: W/o EXTRACTION
Geometry File : P:\526-Material Extraction at Rio Cayaguas\HEC-RAS\CAYAGUAS_ST_5.g01

CROSS SECTIONS

RIVER: CAYAGUAS
REACH: ZONE                    RS: [illegible]

[illegible]
Description:
Station Elevation Data    num =  [illegible]
    Sta    Elev    Sta    Elev    Sta    Elev    Sta    Elev    Sta    Elev
*****************************************************************************
    [illegible]   [illegible]   [illegible]   [illegible]   [illegible]   [illegible]   77.07   [illegible]   77.84
    [illegible]   [illegible]   [illegible]   [illegible]   [illegible]   [illegible]   39.69   107.8   76.73
    [illegible]   [illegible]   [illegible]   [illegible]   [illegible]   [illegible]   76.62   120.44   77.25
    [illegible]   [illegible]   [illegible]   [illegible]   [illegible]   [illegible]

Manning's n Values        num =  [illegible]
    Sta    n Val    Sta    n Val    Sta    n Val
*****************************************************************************
    [illegible]   [illegible]   [illegible]   [illegible]   [illegible]   [illegible]

Bank Sta: Left    Right    Lengths: Left  Channel  Right    Coeff Contr.    Expan.
          [illegible]  125.23          [illegible]  [illegible]  [illegible]      .1        .3

CROSS SECTION OUTPUT  Profile: [illegible]
*****************************************************************************
* Elev [illegible]   *  [illegible]   * Element                 *  Left OB *  Channel * Right OB *
* Vel Total [illegible]  *  [illegible]   * Wt. n-Val.              *          *   0.040 *          *
* Flow Area [illegible]  *  [illegible]   * Br. Sel Elev. [illegible]  *   39.56  *   56.58 *   58.50  *
* Hydr. Depth [illegible]  *  [illegible]   * Flow Area [illegible]     *          *   2.73  *          *
* Conv. [illegible]  *  [illegible]   * Area [illegible]          *          *   2.73  *          *
* Top Width [illegible]  *  [illegible]   * Flow [illegible]          *          *   1.31  *          *
* Q Total [illegible]  *  [illegible]   * Top Width [illegible]      *          *  18.73  *          *
* Max Chl Dpth [illegible]  *  [illegible]   * Avg. Vel. [illegible]       *          *   0.48  *          *
* Vel Total [illegible]  *  [illegible]   * Hydr. Depth [illegible]    *          *   0.15  *          *
* Wtd. n-Val [illegible]  *  [illegible]   * Conv. [illegible]         *          *   18.8  *          *
* Conv. Total [illegible]  *  [illegible]   * Wetted Perim [illegible]  *          *  18.79  *          *
* Length Wt. [illegible]  *  [illegible]   * Shear [illegible]         *          *   6.88  *          *
* Min Ch El [illegible]  *  [illegible]   * Stream Power [illegible]   *          *   1.30  *          *
* Alpha [illegible]  *  [illegible]   * Cum Volume [illegible]      *          *   3.24  *          *
* Frcn Loss [illegible]  *  [illegible]   * Cum Ch Area [illegible]     *          *  17.24  *          *
*****************************************************************************

Warning: Divided flow computed for this cross-section
```

CROSS SECTION OUTPUT Profile #18Jul1993 1400

E.G. Elev (m)	81.72	Element	Left OB	Channel	Right OB
Vel Head (m)	0.27	Wt. n-Val.		0.040	
W.S. Elev (m)	81.46	Reach Len. (m)	39.56	56.58	58.50
Crit W.S. (m)	81.46	Flow Area (m2)		68.40	
E.G. Slope (m/m)	0.020706	Area (m2)		68.40	
Q Total (m3/s)	158.71	Flow (m3/s)		158.71	
Top Width (m)	125.23	Top Width (m)		125.23	
Vel Total (m/s)	2.32	Avg. Vel. (m/s)		2.32	
Max Chl Dpth (m)	4.26	Hydr. Depth (m)		0.55	
Conv. Total (m3/s)	1102.9	Conv. (m3/s)		1102.9	
Length Wtd. (m)	56.58	Wetted Per. (m)		132.04	
Min Ch El (m)	77.20	Shear (N/m2)		105.20	
Alpha	1.00	Stream Power (N/m s)		244.10	
Frctn Loss (m)	0.20	Cum Volume (1000 m3)		83.77	
C & E Loss (m)	0.05	Cum SA (1000 m2)		37.76	

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

CROSS SECTION OUTPUT Profile #13Nov1993 0000

E.G. Elev (m)	78.25	Element	Left OB	Channel	Right OB
Vel Head (m)	0.16	Wt. n-Val.		0.040	
W.S. Elev (m)	78.08	Reach Len. (m)	39.56	56.58	58.50
Crit W.S. (m)	78.03	Flow Area (m2)		0.73	
E.G. Slope (m/m)	0.028510	Area (m2)		0.73	
Q Total (m3/s)	1.31	Flow (m3/s)		1.31	
Top Width (m)	1.74	Top Width (m)		1.74	
Vel Total (m/s)	1.80	Avg. Vel. (m/s)		1.80	
Max Chl Dpth (m)	0.88	Hydr. Depth (m)		0.42	
Conv. Total (m3/s)	7.8	Conv. (m3/s)		7.8	
Length Wtd. (m)	56.58	Wetted Per. (m)		2.63	
Min Ch El (m)	77.20	Shear (N/m2)		77.55	
Alpha	1.00	Stream Power (N/m s)		139.22	
Frctn Loss (m)	0.00	Cum Volume (1000 m3)		4.90	
C & E Loss (m)	0.05	Cum SA (1000 m2)		18.07	

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

WSPG SECTION

RIVER: CAYAGUAS
REACH: ZONE Rs: 19

INPUT
Descriptions:
Station Elevation Data num= 12

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
[illegible]	[illegible]	[illegible]	79.83	[illegible]	[illegible]	[illegible]	78.67	14.34	76.55
[illegible]	[illegible]	22.45	[illegible]	[illegible]	80.34	31.59	81.09	91.33	80.86
[illegible]	[illegible]	109.14	[illegible]	[illegible]	[illegible]	[illegible]	78.64	108.55	76.42
[illegible]	[illegible]	114.45	76.45	115.56	[illegible]	[illegible]	77.04	119.97	77.88
[illegible]	[illegible]	122.71	80.47						

Manning's n Values num= [illegible]

Sta	n Val	Sta	n Val	Sta	n Val
[illegible]	.045	0	.04	122.71	.045

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
[illegible]	122.71	[illegible]	[illegible]	[illegible]	.1	.3

CROSS SECTION OUTPUT Profile #13Sep1993 1700

E.G. Elev (m)	76.75	Element	Left OB	Channel	Right OB
Vel Head (m)	0.01	Wt. n-Val.		0.040	
W.S. Elev (m)	76.74	Reach Len. (m)	51.65	74.52	78.11
Crit W.S. (m)	[illegible]	Flow Area (m2)		1.86	
E.G. Slope (m/m)	0.002269	Area (m2)		1.86	
Q Total (m3/s)	1.31	Flow (m3/s)		1.31	
Top Width (m)	26.19	Top Width (m)		26.19	
Vel Total (m/s)	0.14	Avg. Vel. (m/s)		0.14	
Max Chl Dpth (m)	0.11	Hydr. Depth (m)		0.13	
Conv. Total (m3/s)	26.4	Conv. (m3/s)		26.4	
Length Wtd. (m)	74.52	Wetted Per. (m)		26.38	
Min Ch El (m)	76.43	Shear (N/m2)		1.43	
Alpha	1.00	Stream Power (N/m s)		1.16	
Frctn Loss (m)	0.18	Cum Volume (1000 m3)		3.05	
C & E Loss (m)	0.00	Cum SA (1000 m2)		15.06	

Warning: Divided flow computed for this cross-section.

CROSS SECTION OUTPUT Profile #13Jul1993 1000

E.G. Elev (m)	79.6[illegible]	Element	Left OB	Channel	Right OB
Vel Head (m)	0.11	Wt. n-Val.		0.040	
W.S. Elev (m)	79.5[illegible]	Reach Len. (m)	51.65	74.52	78.11
Crit W.S. (m)	[illegible]	Flow Area (m2)		110.20	
E.G. Slope (m/m)	0.001260	Area (m2)		110.20	
Q Total (m3/s)	158.71	Flow (m3/s)		158.71	
Top Width (m)	[illegible]	Top Width (m)		52.41	
Vel Total (m/s)	1.44	Avg. Vel. (m/s)		1.44	
Max Chl Dpth (m)	2.35	Hydr. Depth (m)		2.09	
Conv. Total (m3/s)	4303.1	Conv. (m3/s)		4303.1	

Length Wtd. (m)	74.52	Wetted Per. (m)	56.45	
Min Ch El (m)	76.99	Shear (N/m2)	26.04	
Alpha	1.00	Stream Power (N/m s)	37.50	
Frctn Loss (m)	0.12	Cum Volume (1000 m3)	78.72	
C & E Loss (m)	0.00	Cum SA (1000 m2)	32.73	

Warning: Divided flow computed for this cross-section.

CROSS SECTION OUTPUT Profile #17Nov1993 0000

			Left OB	Channel	Right OB
E.G. Elev (m)	78.20	Element		0.040	
Vel Head (m)	0.00	Wt. n-Val.	51.65	74.52	78.31
W.S. Elev (m)	78.20	Reach Len. (m)		31.69	
Crit W.S. (m)		Flow Area (m2)		31.69	
E.G. Slope (m/m)	0.000004	Area (m2)		1.31	
Q Total (m3/s)	1.31	Flow (m3/s)		42.81	
Top Width (m)	42.81	Top Width (m)		0.04	
Vel Total (m/s)	0.04	Avg. Vel. (m/s)		0.74	
Max Chl Dpth (m)	1.21	Hydr. Depth (m)		639.7	
Conv. Total (m3/s)	639.7	Conv. (m3/s)		43.68	
Length Wtd. (m)	74.52	Wetted Per. (m)		0.03	
Min Ch El (m)	76.99	Shear (N/m2)		0.00	
Alpha	1.00	Stream Power (N/m s)		3.98	
Frctn Loss (m)	0.00	Cum Volume (1000 m3)		16.81	
C & E Loss (m)	0.00	Cum SA (1000 m2)			

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

CROSS SECTION

RIVER: CAYAGUAS
REACH: ONE RS: 18

INPUT
Description:

Station Elevation Data				num= 21					
Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	79.21	2.57	77.48	3.11	76.29	13.11	76.68	15.5	76.75
16.45	77.78	21.37	82.62	30.62	80.29	47.97	79.51	74.9	80.74
92.32	80.54	96	78.74	98.09	77.53	99.98	76.74	100.76	76.18
101.55	76.42	108.54	76.2	115.55	76.17	116.21	77.04	123.23	80.47
130.54	84.97								

Manning's n Values		num= 3		
Sta	n Val	Sta	n Val	Sta	n Val
0	.045	0	.04	123.23	.045

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
0	123.23	35.03	30.24	14.86	.1	.3

CROSS SECTION OUTPUT Profile #16Sep1977 1700

			Left OB	Channel	Right OB
E.G. Elev (m)	76.61	Element		0.040	
Vel Head (m)	0.01	Wt. n-Val.	35.03	30.24	14.86
W.S. Elev (m)	76.60	Reach Len. (m)		3.59	
Crit W.S. (m)		Flow Area (m2)		3.59	
E.G. Slope (m/m)	0.000236	Area (m2)		1.31	
Q Total (m3/s)	1.31	Flow (m3/s)		21.39	
Top Width (m)	21.39	Top Width (m)		0.36	
Vel Total (m/s)	0.36	Avg. Vel. (m/s)		0.17	
Max Chl Dpth (m)	0.43	Hydr. Depth (m)		26.9	
Conv. Total (m3/s)	26.9	Conv. (m3/s)		21.90	
Length Wtd. (m)	99.24	Wetted Per. (m)		3.81	
Min Ch El (m)	76.17	Shear (N/m2)		1.39	
Alpha	1.00	Stream Power (N/m s)		2.77	
Frctn Loss (m)	0.11	Cum Volume (1000 m3)		14.19	
C & E Loss (m)	0.00	Cum SA (1000 m2)			

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 #18Nov1993 1900

			Left OB	Channel	Right OB
E.G. Elev (m)	79.11	Element		0.040	
Vel Head (m)	0.14	Wt. n-Val.	35.03	30.24	14.86
W.S. Elev (m)	78.96	Reach Len. (m)		94.68	
Crit W.S. (m)		Flow Area (m2)		94.68	
E.G. Slope (m/m)	0.001982	Area (m2)		158.71	
Q Total (m3/s)	158.71	Flow (m3/s)		47.52	
Top Width (m)	47.52	Top Width (m)		1.68	
Vel Total (m/s)	1.68	Avg. Vel. (m/s)		1.99	
Max Chl Dpth (m)	2.94	Hydr. Depth (m)		3564.7	
Conv. Total (m3/s)	3561.7	Conv. (m3/s)		51.24	
Length Wtd. (m)	98.24	Wetted Per. (m)		35.92	
Min Ch El (m)	76.05	Shear (N/m2)		60.22	
Alpha	1.00	Stream Power (N/m s)		71.09	
Frctn Loss (m)	0.15	Cum Volume (1000 m3)		29.00	
C & E Loss (m)	0.00	Cum SA (1000 m2)			

Warning: Divided flow computed for this cross-section.
Warning: The cross-section end points had to be extended vertically for the computed water surface.

CROSS SECTION OUTPUT Profile 01Nov1994 0000

			Left OB	Channel	Right OB
E.G. Elev (m)	[illegible]	Element		0.040	
Vel Head (m)	0.03	Wt. n-Val.	35.03	30.24	14.86
W.S. Elev (m)	78.12	Reach Len. (m)		1.74	
Crit W.S. (m)	78.17	Flow Area (m2)		1.74	
E.G. Slope (m/m)	0.045117	Area (m2)		1.31	
Q Total (m3/s)	1.31	Flow (m3/s)		32.61	
Top Width (m)	32.61	Top Width (m)		0.75	
Vel Total (m/s)	[illegible]	Avg. Vel. (m/s)		0.05	
Max Chl Dpth (m)	[illegible]	Hydr. Depth (m)		4.2	
Conv. Total (m3/s)	[illegible]	Conv. (m3/s)		32.79	
Length Wtd. (m)	30.24	Wetted Per. (m)		23.54	
Min Ch El (m)	[illegible]	Shear (N/m2)		17.68	
Alpha	[illegible]	Stream Power (N/m s)			

```
* Frctn Loss (m)        *    0.10  * Cum Volume (1000 m3) *          *    2.73  *          *
* C & E Loss (m)        *    0.01  * Cum SA (1000 m2)     *          *   14.00  *          *
*****************************************************************************************

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

CROSS SECTION

RIVER: CAYAGUAS
REACH: ONE                RS: 17

INPUT
Description:
Station Elevation Data     num=      21
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*****************************************************************************************
      -6    79.1      -4   78.16      -3   76.68       0   76.28    4.36   76.51
    5.36   76.62    8.75   76.33   11.73   78.68   12.63   79.16   14.56   79.06
      49      80   83.82    80.5   89.44    78.7   91.51   77.49   93.36    76.7
   94.14   76.14   94.51   76.38  102.12   76.40     105   76.33  112.21   80.43
  117.59   84.32

Manning's n Values         num=       2
     Sta   n Val     Sta   n Val
*****************************************************************************************
      -6     .04  112.21    .045

Bank Sta: Left   Right     Lengths: Left Channel   Right     Coeff Contr.   Expan.
           -6   112.21              45.55   31.67   32.65              .1       .3

CROSS SECTION OUTPUT  Profile #16Sep1977 1200
*****************************************************************************************
* E.G. Elev (m)         *   78.50  * Element              *  Left OB *  Channel * Right OB *
* Vel Head (m)          *    0.01  * Wt. n-Val.           *          *    0.040  *          *
* W.S. Elev (m)         *   78.49  * Reach Len. (m)       *   45.55  *   31.67  *   32.65  *
* Crit W.S. (m)         *          * Flow Area (m2)       *          *    2.69  *          *
* E.G. Slope (m/m)      *0.006010  * Area (m2)            *          *    2.69  *          *
* Q Total (m3/s)        *    1.31  * Flow (m3/s)          *          *    1.31  *          *
* Top Width (m)         *   21.14  * Top Width (m)        *          *   21.14  *          *
* Vel Total (m/s)       *    0.49  * Avg. Vel. (m/s)      *          *    0.49  *          *
* Max Chl Dpth (m)      *    0.46  * Hydr. Depth (m)      *          *    0.13  *          *
* Conv. Total (m3/s)    *   16.9   * Conv. (m3/s)         *          *   16.9   *          *
* Length Wtd. (m)       *   31.67  * Wetted Per. (m)      *          *   21.42  *          *
* Min Ch El (m)         *   78.10  * Shear (N/m2)         *          *    9.82  *          *
* Alpha                 *    1.00  * Stream Power (N/m s) *          *    3.61  *          *
* Frctn Loss (m)        *    0.11  * Cum Volume (1000 m3) *          *    2.68  *          *
* C & E Loss (m)        *    0.00  * Cum SA (1000 m2)     *          *   13.55  *          *
*****************************************************************************************

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

CROSS SECTION OUTPUT  Profile #16Sep1993 1900
*****************************************************************************************
* E.G. Elev (m)         *   79.67  * Element              *  Left OB *  Channel * Right OB *
* Vel Head (m)          *    0.11  * Wt. n-Val.           *          *    0.040  *          *
* W.S. Elev (m)         *   79.56  * Reach Len. (m)       *   45.55  *   31.67  *   32.65  *
* Crit W.S. (m)         *          * Flow Area (m2)       *          *  110.38  *          *
* E.G. Slope (m/m)      *0.001067  * Area (m2)            *          *  110.38  *          *
* Q Total (m3/s)        *  158.71  * Flow (m3/s)          *          *  158.71  *          *
* Top Width (m)         *   61.77  * Top Width (m)        *          *   61.77  *          *
* Vel Total (m/s)       *    1.44  * Avg. Vel. (m/s)      *          *    1.44  *          *
* Max Chl Dpth (m)      *    3.38  * Hydr. Depth (m)      *          *    1.79  *          *
* Conv. Total (m3/s)    *  3887.6  * Conv. (m3/s)         *          *  3887.6  *          *
* Length Wtd. (m)       *   31.67  * Wetted Per. (m)      *          *   66.01  *          *
* Min Ch El (m)         *   76.18  * Shear (N/m2)         *          *   27.33  *          *
* Alpha                 *    1.04  * Stream Power (N/m s) *          *   39.27  *          *
* Frctn Loss (m)        *    0.07  * Cum Volume (1000 m3) *          *   67.99  *          *
* C & E Loss (m)        *    0.02  * Cum SA (1000 m2)     *          *   27.34  *          *
*****************************************************************************************

Warning: Divided flow computed for this cross-section.
Warning: The cross-section end points had to be extended vertically for the computed water surface.
Warning: The conveyance ratio (upstream 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 #17Nov1993 0900
*****************************************************************************************
* E.G. Elev (m)         *   78.60  * Element              *  Left OB *  Channel * Right OB *
* Vel Head (m)          *    0.00  * Wt. n-Val.           *          *    0.040  *          *
* W.S. Elev (m)         *   78.60  * Reach Len. (m)       *   45.55  *   31.67  *   32.65  *
* Crit W.S. (m)         *          * Flow Area (m2)       *          *    4.67  *          *
* E.G. Slope (m/m)      *0.001167  * Area (m2)            *          *    4.67  *          *
* Q Total (m3/s)        *    1.31  * Flow (m3/s)          *          *    1.31  *          *
* Top Width (m)         *   24.40  * Top Width (m)        *          *   24.40  *          *
* Vel Total (m/s)       *    0.74  * Avg. Vel. (m/s)      *          *    0.28  *          *
* Max Chl Dpth (m)      *    0.49  * Hydr. Depth (m)      *          *    0.19  *          *
* Conv. Total (m3/s)    *   38.4   * Conv. (m3/s)         *          *   38.4   *          *
* Length Wtd. (m)       *   31.67  * Wetted Per. (m)      *          *   24.76  *          *
* Min Ch El (m)         *   76.11  * Shear (N/m2)         *          *    2.15  *          *
* Alpha                 *    1.00  * Stream Power (N/m s) *          *    0.40  *          *
* Frctn Loss (m)        *    0.00  * Cum Volume (1000 m3) *          *    2.64  *          *
* C & E Loss (m)        *    0.00  * Cum SA (1000 m2)     *          *   13.14  *          *
*****************************************************************************************

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

CROSS SECTION

RIVER: CAYAGUAS
REACH: ONE                RS: 16

INPUT
```

Description:
Station Elevation Data num= 19

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	79.03	1.64	76.14	2.28	76.16	4.14	76.2	8.98	76.24
13.63	76.49	14.38	76.89	16.43	77.13	18.07	77.92	45	77.62
70	77.32	75.75	76.14	88.07	76.27	94.44	76.33	95.03	76.49
95.99	76.55	96.61	76.89	97.66	77.02	99.47	78.29		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.045	0	.04	99.47	.045

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
0	99.47	35.24	14.38	14.83	.1	.3

CROSS SECTION OUTPUT Profile #16Sep1977 1200

			Left OB	Channel	Right OB
E.G. Elev (m)	76.40	Element		0.040	
Vel Head (m)	0.00	Wt. n-Val.	35.24	14.38	14.83
W.S. Elev (m)	76.39	Reach Len. (m)		4.24	
Crit W.S. (m)		Flow Area (m2)		4.24	
E.G. Slope (m/m)	+0.002111	Area (m2)		1.31	
Q Total (m3/s)	1.31	Flow (m3/s)		30.30	
Top Width (m)	30.30	Top Width (m)		0.31	
Vel Total (m/s)	0.31	Avg. Vel. (m/s)		0.14	
Max Chl Dpth (m)	0.24	Hydr. Depth (m)		28.5	
Conv. Total (m3/s)	29.5	Conv. (m3/s)		30.44	
Length Wtd. (m)	14.38	Wetted Per. (m)		2.89	
Min Ch El (m)	76.15	Shear (N/m2)		0.89	
Alpha	1.00	Stream Power (N/m s)		2.57	
Frctn Loss (m)	0.03	Cum Volume (1000 m3)		12.73	
C & E Loss (m)	0.00	Cum SA (1000 m2)			

Warning: Divided flow computed for this cross-section.

CROSS SECTION OUTPUT Profile #18Jul1993 1300

			Left OB	Channel	Right OB
E.G. Elev (m)	79.63	Element		0.040	
Vel Head (m)	0.02	Wt. n-Val.	35.24	14.38	14.83
W.S. Elev (m)	79.60	Reach Len. (m)		231.61	
Crit W.S. (m)		Flow Area (m2)		231.61	
E.G. Slope (m/m)	+0.000257	Area (m2)		158.71	
Q Total (m3/s)	158.71	Flow (m3/s)		99.47	
Top Width (m)	99.47	Top Width (m)		0.69	
Vel Total (m/s)	0.69	Avg. Vel. (m/s)		2.33	
Max Chl Dpth (m)	3.08	Hydr. Depth (m)		9897.0	
Conv. Total (m3/s)	9897.0	Conv. (m3/s)		103.64	
Length Wtd. (m)	14.38	Wetted Per. (m)		5.64	
Min Ch El (m)	76.52	Shear (N/m2)		3.86	
Alpha	1.00	Stream Power (N/m s)		62.57	
Frctn Loss (m)	0.01	Cum Volume (1000 m3)		24.79	
C & E Loss (m)	0.00	Cum SA (1000 m2)			

Warning: The cross-section end points had to be extended vertically for the computed water surface.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.

CROSS SECTION OUTPUT Profile #13Nov1993 0000

			Left OB	Channel	Right OB
E.G. Elev (m)	76.52	Element		0.040	
Vel Head (m)	0.02	Wt. n-Val.	35.24	14.38	14.83
W.S. Elev (m)	76.50	Reach Len. (m)		2.21	
Crit W.S. (m)		Flow Area (m2)		2.21	
E.G. Slope (m/m)	+0.011912	Area (m2)		1.31	
Q Total (m3/s)	1.31	Flow (m3/s)		21.66	
Top Width (m)	21.66	Top Width (m)		0.59	
Vel Total (m/s)	0.59	Avg. Vel. (m/s)		0.10	
Max Chl Dpth (m)	0.12	Hydr. Depth (m)		12.0	
Conv. Total (m3/s)	12.0	Conv. (m3/s)		21.76	
Length Wtd. (m)	14.38	Wetted Per. (m)		11.85	
Min Ch El (m)	76.13	Shear (N/m2)		7.03	
Alpha	1.00	Stream Power (N/m s)		2.53	
Frctn Loss (m)	0.10	Cum Volume (1000 m3)		12.41	
C & E Loss (m)	0.00	Cum SA (1000 m2)			

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

CROSS SECTION

RIVER: CAYAGUAS
REACH: ONE RS: 15

INPUT
Description:
Station Elevation Data num= 12

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	78.8	3.37	76.68	4.5	76.57	5.16	76.27	10.02	76.22
14.93	76.13	15.18	76.42	17.45	78.55	40.83	78.3	47.83	76.13
57.08	76.24	62.9	76.3	63.49	76.46	64.45	76.52	65.07	76.86
66.12	76.99	69.53	78.26						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.045	0	.04	69.53	.045

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
0	69.53	19.2	17.26	10.09	.1	.3

CROSS SECTION OUTPUT Profile #16Sep1977 1200

			Left OB	Channel	Right OB
E.G. Elev (m)	76.36	Element		0.040	
Vel Head (m)	0.01	Wt. n-Val.	29.20	17.26	10.09
W.S. Elev (m)	76.34	Reach Len. (m)		3.75	
Crit W.S. (m)		Flow Area (m2)		3.75	
E.G. Slope (m/m)	+0.002015	Area (m2)		1.31	
Q Total (m3/s)	1.31	Flow (m3/s)		26.16	
Top Width (m)	26.16	Top Width (m)			

* Vel Total (m/s)	* 0.35	* Avg. Vel. (m/s)	*	* 0.35	*
* Max Chl Depth (m)	* 0.21	* Hydr. Depth (m)	*	* 0.14	*
* Conv. Total (m3/s)	* 25.6	* Conv. (m3/s)	*	* 25.6	*
* Length Wtd. (m)	* 17.26	* Wetted Per. (m)	*	* 26.24	*
* Min Ch El (m)	* 76.12	* Shear (N/m2)	*	* 3.66	*
* Alpha	* 1.00	* Stream Power (N/m s)	*	* 1.28	*
* Frctn Loss (m)	* 0.01	* Cum Volume (1000 m3)	*	* 3.51	*
* C & E Loss (m)	* 0.00	* Cum SA (1000 m2)	*	* 12.33	*

Warning: Divided flow computed for this cross-section.

CROSS SECTION OUTPUT Profile #18Jul1993 1900

* E.G. Elev (m)	* 79.02	* Element	* Left OB	* Channel	* Right OB *
* Vel Head (m)	* 0.05	* Wt. n-Val.	*	* 0.040	*
* W.S. Elev (m)	* 79.57	* Reach Len. (m)	* 29.20	* 17.26	* 10.09 *
* Crit W.S. (m)	*	* Flow Area (m2)	*	* 158.69	*
* E.G. Slope (m/m)	*0.000564	* Area (m2)	*	* 158.69	*
* Q Total (m3/s)	* 158.71	* Flow (m3/s)	*	* 158.71	*
* Top Width (m)	* 67.93	* Top Width (m)	*	* 67.93	*
* Vel Total (m/s)	* 1.00	* Avg. Vel. (m/s)	*	* 1.00	*
* Max Chl Depth (m)	* 3.57	* Hydr. Depth (m)	*	* 2.34	*
* Conv. Total (m3/s)	* 6681.4	* Conv. (m3/s)	*	* 6681.4	*
* Length Wtd. (m)	* 17.26	* Wetted Per. (m)	*	* 72.61	*
* Min Ch El (m)	* 76.07	* Shear (N/m2)	*	* 12.09	*
* Alpha	* 1.00	* Stream Power (N/m s)	*	* 12.09	*
* Frctn Loss (m)	* 0.01	* Cum Volume (1000 m3)	*	* 59.77	*
* C & E Loss (m)	* 0.01	* Cum SA (1000 m2)	*	* 23.59	*

Warning: The cross-section end points had to be extended vertically for the computed water surface.

CROSS SECTION OUTPUT Profile #1Nov1993 0800

* E.G. Elev (m)	* 76.41	* Element	* Left OB	* Channel	* Right OB *
* Vel Head (m)	* 0.01	* Wt. n-Val.	*	* 0.040	*
* W.S. Elev (m)	* 76.41	* Reach Len. (m)	* 29.20	* 17.26	* 10.09 *
* Crit W.S. (m)	*	* Flow Area (m2)	*	* 3.21	*
* E.G. Slope (m/m)	*0.004189	* Area (m2)	*	* 3.21	*
* Q Total (m3/s)	* 1.31	* Flow (m3/s)	*	* 1.31	*
* Top Width (m)	* 26.11	* Top Width (m)	*	* 26.11	*
* Vel Total (m/s)	* 0.41	* Avg. Vel. (m/s)	*	* 0.41	*
* Max Chl Depth (m)	* 0.18	* Hydr. Depth (m)	*	* 0.12	*
* Conv. Total (m3/s)	* 19.4	* Conv. (m3/s)	*	* 19.8	*
* Length Wtd. (m)	* 17.26	* Wetted Per. (m)	*	* 26.27	*
* Min Ch El (m)	* 76.20	* Shear (N/m2)	*	* 5.26	*
* Alpha	* 1.00	* Stream Power (N/m s)	*	* 2.15	*
* Frctn Loss (m)	* 0.12	* Cum Volume (1000 m3)	*	* 2.49	*
* C & E Loss (m)	* 0.00	* Cum SA (1000 m2)	*	* 12.06	*

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

[illegible]

[illegible]

[illegible]

Manning's n Values num= 3

[illegible]	n Val.	[illegible]	n Val.	[illegible]	n Val.
[illegible]	.035	[illegible]	.040	[illegible]	.045

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
[illegible]	14.84	[illegible]	1.55	1.55	.1	.3

CROSS SECTION OUTPUT Profile #16Sep1993 [illegible]

* E.G. Elev (m)	* [illegible]	* Element	* Left OB	* Channel	* Right OB *
* Vel Head (m)	* [illegible]	* Wt. n-Val.	*	* 0.040	*
* W.S. Elev (m)	* [illegible]	* Reach Len. (m)	* 1.55	* 1.55	* 1.55 *
* Crit W.S. (m)	*	* Flow Area (m2)	*	* 4.31	*
* E.G. Slope (m/m)	*[illegible]	* Area (m2)	*	* 4.31	*
* Q Total (m3/s)	* 1.31	* Flow (m3/s)	*	* 1.31	*
* Top Width (m)	* 22.11	* Top Width (m)	*	* 22.11	*
* Vel Total (m/s)	* [illegible]	* Avg. Vel. (m/s)	*	* 0.30	*
* Max Chl Depth (m)	* [illegible]	* Hydr. Depth (m)	*	* 0.19	*
* Conv. Total (m3/s)	* [illegible]	* Conv. (m3/s)	*	* 35.9	*
* Length Wtd. (m)	* [illegible]	* Wetted Per. (m)	*	* 22.32	*
* Min Ch El (m)	* [illegible]	* Shear (N/m2)	*	* 2.51	*
* Alpha	* [illegible]	* Stream Power (N/m s)	*	* 0.76	*
* Frctn Loss (m)	* [illegible]	* Cum Volume (1000 m3)	*	* 2.44	*
* C & E Loss (m)	* [illegible]	* Cum SA (1000 m2)	*	* 11.91	*

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 #18Jul1993 [illegible]

* E.G. Elev (m)	* [illegible]	* Element	* Left OB	* Channel	* Right OB *
* Vel Head (m)	* [illegible]	* Wt. n-Val.	*	* 0.040	*
* W.S. Elev (m)	* [illegible]	* Reach Len. (m)	* 1.55	* 1.55	* 1.55 *
* Crit W.S. (m)	*	* Flow Area (m2)	*	* 103.04	*
* E.G. Slope (m/m)	*[illegible]	* Area (m2)	*	* 103.04	*
* Q Total (m3/s)	* 158.71	* Flow (m3/s)	*	* 158.71	*
* Top Width (m)	* 34.93	* Top Width (m)	*	* 34.93	*
* Vel Total (m/s)	* 1.54	* Avg. Vel. (m/s)	*	* 1.54	*
* Max Chl Depth (m)	* [illegible]	* Hydr. Depth (m)	*	* 2.95	*
* Conv. Total (m3/s)	* [illegible]	* Conv. (m3/s)	*	* 4883.2	*
* Length Wtd. (m)	* [illegible]	* Wetted Per. (m)	*	* 38.48	*
* Min Ch El (m)	* [illegible]	* Shear (N/m2)	*	* 27.04	*
* Alpha	* [illegible]	* Stream Power (N/m s)	*	* 41.85	*

* Frctn Loss (m)	* 0.00	* Cum Volume (1000 m3)	* 57.51 *
* C & E Loss (m)	* 0.00	* Cum DA (1000 m2)	* 22.70 *

Warning: The cross-section end points had to be extended vertically for the computed water surface.

CROSS SECTION OUTPUT Profile #17Nov1993 0000

* E.G. Elev (m)	* 76.30	* Element	* Left OB	* Channel	* Right OB *
* Vel Head (m)	* 0.02	* Wt. n-Val.	*	* 0.040	* *
* W.S. Elev (m)	* 76.27	* Reach Len. (m)	* 1.55	* 1.55	* 1.55 *
* Crit W.S. (m)	*	* Flow Area (m2)	*	* 1.93	* *
* E.G. Slope (m/m)	*0.012551	* Area (m2)	*	* 1.93	* *
* Q Total (m3/s)	* 1.31	* Flow (m3/s)	*	* 1.31	* *
* Top Width (m)	* 15.97	* Top Width (m)	*	* 15.97	* *
* Vel Total (m/s)	* 0.68	* Avg. Vel. (m/s)	*	* 0.68	* *
* Max Chl Dpth (m)	* 0.18	* Hydr. Depth (m)	*	* 0.12	* *
* Conv. Total (m3/s)	* 11.7	* Conv. (m3/s)	*	* 11.7	* *
* Length Wtd. (m)	* 1.55	* Wetted Per. (m)	*	* 16.08	* *
* Min Ch El (m)	* 76.09	* Shear (N/m2)	*	* 14.74	* *
* Alpha	* 1.03	* Stream Power (N/m s)	*	* 10.03	* *
* Frctn Loss (m)	* 0.01	* Cum Volume (1000 m3)	*	* 2.44	* *
* C & E Loss (m)	* 0.01	* Cum DA (1000 m2)	*	* 11.70	* *

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

CROSS SECTION

RIVER: CAYAGUAS
REACH: ONE RS: 12

INPUT
Descriptions:
Station Elevation Data num= 12

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
[illegible]	[illegible]	1.21	76.42	1.51	76.57	1.75	76.19	1.94	76.12
[illegible]	[illegible]	12.79	76.23	[illegible]	76.25	27.19	76.25	27.77	76.42
[illegible]	[illegible]	33.64	76.27						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
[illegible]	[illegible]	0	.04	[illegible]	.045

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
[illegible]	33.64		[illegible]	15.37	.1	.3

CROSS SECTION OUTPUT Profile #18Nov1993 1200

* E.G. Elev (m)	* 76.31	* Element	* Left OB	* Channel	* Right OB *
* Vel Head (m)	* [illegible]	* Wt. n-Val.	*	* 0.040	* *
* W.S. Elev (m)	* 76.3[illegible]	* Reach Len. (m)	* 16.80	* 17.03	* 15.23 *
* Crit W.S. (m)	*	* Flow Area (m2)	*	* 3.36	* *
* E.G. Slope (m/m)	*0.00[illegible]	* Area (m2)	*	* 3.36	* *
* Q Total (m3/s)	* 1.31	* Flow (m3/s)	*	* 1.31	* *
* Top Width (m)	* 25.81	* Top Width (m)	*	* 25.81	* *
* Vel Total (m/s)	* 0.39	* Avg. Vel. (m/s)	*	* 0.39	* *
* Max Chl Dpth (m)	* 0.22	* Hydr. Depth (m)	*	* 0.13	* *
* Conv. Total (m3/s)	* 21.9	* Conv. (m3/s)	*	* 21.6	* *
* Length Wtd. (m)	* 17.03	* Wetted Per. (m)	*	* 25.41	* *
* Min Ch El (m)	* 76.09	* Shear (N/m2)	*	* 4.70	* *
* Alpha	* 1.30	* Stream Power (N/m s)	*	* 1.93	* *
* Frctn Loss (m)	* 0.[illegible]	* Cum Volume (1000 m3)	*	* 2.44	* *
* C & E Loss (m)	* 0.00	* Cum DA (1000 m2)	*	* 11.87	* *

CROSS SECTION OUTPUT Profile #17Jul1994 1200

* E.G. Elev (m)	* [illegible]	* Element	* Left OB	* Channel	* Right OB *
* Vel Head (m)	* [illegible]	* Wt. n-Val.	*	* 0.040	* *
* W.S. Elev (m)	* 76.1[illegible]	* Reach Len. (m)	* 16.80	* 17.03	* 15.23 *
* Crit W.S. (m)	*	* Flow Area (m2)	*	* 106.16	* *
* E.G. Slope (m/m)	*0.00[illegible]	* Area (m2)	*	* 106.16	* *
* Q Total (m3/s)	* 158.[illegible]	* Flow (m3/s)	*	* 158.71	* *
* Top Width (m)	* 33.[illegible]	* Top Width (m)	*	* 33.64	* *
* Vel Total (m/s)	* 1.49	* Avg. Vel. (m/s)	*	* 1.49	* *
* Max Chl Dpth (m)	* 3.11	* Hydr. Depth (m)	*	* 3.16	* *
* Conv. Total (m3/s)	* 5267.[illegible]	* Conv. (m3/s)	*	* 5262.7	* *
* Length Wtd. (m)	* 17.[illegible]	* Wetted Per. (m)	*	* 38.02	* *
* Min Ch El (m)	* 73.[illegible]	* Shear (N/m2)	*	* 24.94	* *
* Alpha	* [illegible]	* Stream Power (N/m s)	*	* 37.23	* *
* Frctn Loss (m)	* 0.[illegible]	* Cum Volume (1000 m3)	*	* 57.34	* *
* C & E Loss (m)	* 0.01	* Cum DA (1000 m2)	*	* 22.65	* *

Warning: The cross-section end points had to be extended vertically for the computed water surface.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.

CROSS SECTION OUTPUT Profile #18Jul1994 1200

* E.G. Elev (m)	* 76.[illegible]	* Element	* Left OB	* Channel	* Right OB *
* Vel Head (m)	* [illegible]	* Wt. n-Val.	*	* 0.040	* *
* W.S. Elev (m)	* 76.[illegible]	* Reach Len. (m)	* 16.80	* 17.03	* 15.23 *
* Crit W.S. (m)	* 76.[illegible]	* Flow Area (m2)	*	* 3.95	* *
* E.G. Slope (m/m)	*0.0[illegible]	* Area (m2)	*	* 3.95	* *
* Q Total (m3/s)	* 1.31	* Flow (m3/s)	*	* 1.31	* *
* Top Width (m)	* 25.87	* Top Width (m)	*	* 25.87	* *
* Vel Total (m/s)	* 0.31	* Avg. Vel. (m/s)	*	* 0.33	* *
* Max Chl Dpth (m)	* 0.25	* Hydr. Depth (m)	*	* 0.15	* *
* Conv. Total (m3/s)	* 28.1	* Conv. (m3/s)	*	* 28.1	* *
* Length Wtd. (m)	* 17.[illegible]	* Wetted Per. (m)	*	* 26.01	* *
* Min Ch El (m)	* 76.[illegible]	* Shear (N/m2)	*	* 3.23	* *
* Alpha	* 1.[illegible]	* Stream Power (N/m s)	*	* 1.07	* *
* Frctn Loss (m)	* 0.00	* Cum Volume (1000 m3)	*	* 2.44	* *
* C & E Loss (m)	* 0.[illegible]	* Cum DA (1000 m2)	*	* 11.87	* *

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

```
RIVER: CAYAGUAS
REACH: ONE                    RS: 12

INPUT
Description:
Station Elevation Data      num=      3
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
 ----------------------------------------------------------------------------------
       0   80.66    8.34   76.67     9.8   76.11   16.62   78.13   24.77   76.16
   25.19   76.38   27.21   76.32   27.69   76.76   33.36   81.87

Manning's n Values          num=      3
     Sta   n Val     Sta   n Val     Sta   n Val
 ----------------------------------------------
       0    .045       8     .04    11.36    .045

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.    Expan.
             8   33.36             87.69   90.67   95.98              .1        .3

CROSS SECTION OUTPUT  Profile #16Sep1977 1200
 ------------------------------------------------------------------------------------
 * E.G. Elev (m)          *   76.26  * Element              *  Left OB *  Channel * Right OB *
 * Vel Head (m)           *    0.01  * Wt. n-Vel.           *          *    0.040 *          *
 * W.S. Elev (m)          *   76.25  * Reach Len. (m)       *   87.69  *   90.67 *   95.98  *
 * Crit W.S. (m)          *          * Flow Area (m2)       *          *    3.36 *          *
 * E.G. Slope (m/m)       *0.002015 * Area (m2)            *          *    3.36 *          *
 * Q Total (m3/s)         *    1.31  * Flow (m3/s)          *          *    1.31 *          *
 * Top Width (m)          *   16.40  * Top Width (m)        *          *   16.40 *          *
 * Vel Total (m/s)        *    0.39  * Avg. Vel. (m/s)      *          *    0.39 *          *
 * Max Chl Dpth (m)       *    0.21  * Hydr. Depth (m)      *          *    0.21 *          *
 * Conv. Total (m3/s)     *   29.1   * Conv. (m3/s)         *          *   29.1  *          *
 * Length Wtd. (m)        *   90.67  * Wetted Per. (m)      *          *   16.58 *          *
 * Min Ch El (m)          *   76.04  * Shear (N/m2)         *          *    4.05 *          *
 * Alpha                  *    1.00  * Stream Power (N/m s) *          *    1.58 *          *
 * Frctn Loss (m)         *    0.20  * Cum Volume (1000 m3) *          *    2.38 *          *
 * C & E Loss (m)         *    0.00  * Cum Area (1000 m2)   *          *   11.52 *          *
 ------------------------------------------------------------------------------------

CROSS SECTION OUTPUT  Profile #18Jul1993 1800
 ------------------------------------------------------------------------------------
 * E.G. Elev (m)          *   78.38  * Element              *  Left OB *  Channel * Right OB *
 * Vel Head (m)           *    0.51  * Wt. n-Vel.           *          *    0.040 *          *
 * W.S. Elev (m)          *   78.13  * Reach Len. (m)       *   87.69  *   90.67 *   95.98  *
 * Crit W.S. (m)          *          * Flow Area (m2)       *          *   74.91 *          *
 * E.G. Slope (m/m)       *0.002,41  * Area (m2)            *          *   74.91 *          *
 * Q Total (m3/s)         *  158.71  * Flow (m3/s)          *          *  158.71 *          *
 * Top Width (m)          *   28.75  * Top Width (m)        *          *   28.75 *          *
 * Vel Total (m/s)        *    2.12  * Avg. Vel. (m/s)      *          *    2.12 *          *
 * Max Chl Dpth (m)       *    2.61  * Hydr. Depth (m)      *          *    2.61 *          *
 * Conv. Total (m3/s)     *  3383.1  * Conv. (m3/s)         *          *  3383.1 *          *
 * Length Wtd. (m)        *   90.67  * Wetted Per. (m)      *          *   30.86 *          *
 * Min Ch El (m)          *   76.52  * Shear (N/m2)         *          *   52.40 *          *
 * Alpha                  *    1.00  * Stream Power (N/m s) *          *  111.01 *          *
 * Frctn Loss (m)         *    0.19  * Cum Volume (1000 m3) *          *   55.80 *          *
 * C & E Loss (m)         *    0.00  * Cum Area (1000 m2)   *          *   22.11 *          *
 ------------------------------------------------------------------------------------

CROSS SECTION OUTPUT  Profile #19Nov1993 0600
 ------------------------------------------------------------------------------------
 * E.G. Elev (m)          *   78.22  * Element              *  Left OB *  Channel * Right OB *
 * Vel Head (m)           *    0.03  * Wt. n-Vel.           *          *    0.040 *          *
 * W.S. Elev (m)          *   78.17  * Reach Len. (m)       *   87.69  *   90.67 *   95.98  *
 * Crit W.S. (m)          *          * Flow Area (m2)       *          *    1.74 *          *
 * E.G. Slope (m/m)       *0.002[illegible] * Area (m2)     *          *    1.74 *          *
 * Q Total (m3/s)         *    1.31  * Flow (m3/s)          *          *    1.31 *          *
 * Top Width (m)          *   16.11  * Top Width (m)        *          *   16.11 *          *
 * Vel Total (m/s)        *    0.75  * Avg. Vel. (m/s)      *          *    0.75 *          *
 * Max Chl Dpth (m)       *    0.11  * Hydr. Depth (m)      *          *    0.11 *          *
 * Conv. Total (m3/s)     *    9.9   * Conv. (m3/s)         *          *    9.9  *          *
 * Length Wtd. (m)        *   90.67  * Wetted Per. (m)      *          *   16.23 *          *
 * Min Ch El (m)          *   76.94  * Shear (N/m2)         *          *   18.69 *          *
 * Alpha                  *    1.00  * Stream Power (N/m s) *          *   13.96 *          *
 * Frctn Loss (m)         *    0.07  * Cum Volume (1000 m3) *          *    2.39 *          *
 * C & E Loss (m)         *    0.00  * Cum Area (1000 m2)   *          *   11.31 *          *
 ------------------------------------------------------------------------------------

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than
         .7 or greater than 1.3.  This may indicate the need for additional cross sections.

[illegible]

[illegible]
RIVER: [illegible]                    RS: 11

INPUT
Description:
Station Elevation Data      num=      [illegible]
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
 ----------------------------------------------------------------------------------
       [illegible]      0   [illegible]   [illegible]   [illegible]   [illegible]   [illegible]   17.09   [illegible]
   [illegible]   [illegible]   [illegible]   [illegible]   [illegible]   [illegible]   [illegible]   [illegible]

Manning's n Values          num=      [illegible]
     Sta   n Val     Sta   n Val     Sta   n Val
 ----------------------------------------------
       [illegible]    [illegible]     .04    [illegible]    .045

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.    Expan.
             [illegible]   [illegible]   [illegible]   [illegible]   [illegible]              .1        .3

CROSS SECTION OUTPUT  Profile [illegible]
 ------------------------------------------------------------------------------------
 * E.G. Elev (m)          *   [illegible]  * Element              *  Left OB *  Channel * Right OB *
 * Vel Head (m)           *   [illegible]  * Wt. n-Vel.           *          *    0.040 *          *
 * W.S. Elev (m)          *   [illegible]  * Reach Len. (m)       *   [illegible]  *   90.54 *   76.15  *
 * Crit W.S. (m)          *          * Flow Area (m2)       *          *    3.18 *          *
 * E.G. Slope (m/m)       *[illegible] * Area (m2)           *          *    3.18 *          *
 * Q Total (m3/s)         *    1.31  * Flow (m3/s)          *          *    1.31 *          *
 * Top Width (m)          *   16.45  * Top Width (m)        *          *   16.45 *          *
 * Vel Total (m/s)        *    0.41  * Avg. Vel. (m/s)      *          *    0.41 *          *
 * Max Chl Dpth (m)       *    0.19  * Hydr. Depth (m)      *          *    0.19 *          *
 * Conv. Total (m3/s)     *   26.5   * Conv. (m3/s)         *          *   26.5  *          *
 * Length Wtd. (m)        *   90.54  * Wetted Per. (m)      *          *   16.60 *          *
 * Min Ch El (m)          *   75.86  * Shear (N/m2)         *          *    4.61 *          *
```

Alpha	1.00	Stream Power (N/m s)	1.90	
Frctn Loss (m)	0.21	Cum Volume (1000 m3)	2.08	
C & E Loss (m)	0.00	Cum SA (1000 m2)	10.03	

CROSS SECTION OUTPUT Profile #18Jul1993 1600

			Left OB	Channel	Right OB
E.G. Elev (m)	79.37	Element		0.040	
Vel Head (m)	0.22	Wt. n-Val.	81.16	80.54	76.15
W.S. Elev (m)	79.15	Reach Len. (m)		76.29	
Crit W.S. (m)		Flow Area (m2)		76.29	
E.G. Slope (m/m)	+0.001912	Area (m2)		158.71	
Q Total (m3/s)	158.71	Flow (m3/s)		26.45	
Top Width (m)	26.45	Top Width (m)		2.08	
Vel Total (m/s)	2.08	Avg. Vel. (m/s)		2.88	
Max Chl Dpth (m)	3.48	Hydr. Depth (m)		3630.1	
Conv. Total (m3/s)	3630.1	Conv. (m3/s)		29.05	
Length Wtd. (m)	80.54	Wetted Per. (m)		49.23	
Min Ch El (m)	75.67	Shear (N/m2)		102.41	
Alpha	1.00	Stream Power (N/m s)		48.95	
Frctn Loss (m)	0.17	Cum Volume (1000 m3)		19.61	
C & E Loss (m)	0.00	Cum SA (1000 m2)			

CROSS SECTION OUTPUT Profile #17Nov1993 0000

			Left OB	Channel	Right OB
E.G. Elev (m)	76.12	Element		0.040	
Vel Head (m)	0.08	Wt. n-Val.	81.16	80.54	76.15
W.S. Elev (m)	76.1[illegible]	Reach Len. (m)		6.53	
Crit W.S. (m)		Flow Area (m2)		6.53	
E.G. Slope (m/m)	+0.000251	Area (m2)		1.31	
Q Total (m3/s)	1.31	Flow (m3/s)		17.87	
Top Width (m)	17.87	Top Width (m)		0.20	
Vel Total (m/s)	0.20	Avg. Vel. (m/s)		0.37	
Max Chl Dpth (m)	0.44	Hydr. Depth (m)		82.7	
Conv. Total (m3/s)	82.7	Conv. (m3/s)		18.10	
Length Wtd. (m)	80.54	Wetted Per. (m)		0.89	
Min Ch El (m)	75.67	Shear (N/m2)		0.18	
Alpha	1.00	Stream Power (N/m s)		2.02	
Frctn Loss (m)	0.07	Cum Volume (1000 m3)		9.77	
C & E Loss (m)	0.00	Cum SA (1000 m2)			

Warning: The conveyance ratio (upstream 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: CAYAGUAS
REACH: 2BR RS: 1

INPUT
Description:

Station Elevation Data											
Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	88.38	5.72	76.46	11.[illegible]	76.[illegible]	12.13	75.67	17.15	75.59		
18.36	79.75	28.13	[illegible]	[illegible]	[illegible]	38.14	78.82				

Manning's n Values

Sta	n Val	Sta	n Val	Sta	n Val
0	.045	6	.04	38.13	.045

Bank Stat Left	Right	Lengths Left	Channel	Right	Coeff Contr.	Expan.
3	38.14	[illegible]	[illegible]	54.9	.1	.3

CROSS SECTION OUTPUT Profile #[illegible] 1200

			Left OB	Channel	Right OB
E.G. Elev (m)	[illegible]	Element		0.040	
Vel Head (m)	0.01	Wt. n-Val.	38.75	46.36	54.90
W.S. Elev (m)	[illegible]	Reach Len. (m)		2.89	
Crit W.S. (m)		Flow Area (m2)		2.89	
E.G. Slope (m/m)	+0.00[illegible]	Area (m2)		1.31	
Q Total (m3/s)	1.31	Flow (m3/s)		13.90	
Top Width (m)	[illegible]	Top Width (m)		0.45	
Vel Total (m/s)	0.45	Avg. Vel. (m/s)		0.21	
Max Chl Dpth (m)	[illegible]	Hydr. Depth (m)		25.3	
Conv. Total (m3/s)	[illegible]	Conv. (m3/s)		14.01	
Length Wtd. (m)	[illegible]	Wetted Per. (m)		5.44	
Min Ch El (m)	[illegible]	Shear (N/m2)		2.46	
Alpha	1.00	Stream Power (N/m s)		1.84	
Frctn Loss (m)	0.14	Cum Volume (1000 m3)		8.80	
C & E Loss (m)	[illegible]	Cum SA (1000 m2)			

CROSS SECTION OUTPUT Profile #[illegible] 1800

			Left OB	Channel	Right OB
E.G. Elev (m)	[illegible]	Element		0.040	
Vel Head (m)	[illegible]	Wt. n-Val.	38.75	46.36	54.90
W.S. Elev (m)	[illegible]	Reach Len. (m)		78.65	
Crit W.S. (m)		Flow Area (m2)		78.65	
E.G. Slope (m/m)	[illegible]	Area (m2)		158.71	
Q Total (m3/s)	[illegible]	Flow (m3/s)		34.23	
Top Width (m)	[illegible]	Top Width (m)		2.02	
Vel Total (m/s)	[illegible]	Avg. Vel. (m/s)		2.30	
Max Chl Dpth (m)	[illegible]	Hydr. Depth (m)		3279.8	
Conv. Total (m3/s)	[illegible]	Conv. (m3/s)		36.51	
Length Wtd. (m)	[illegible]	Wetted Per. (m)		49.47	
Min Ch El (m)	[illegible]	Shear (N/m2)		99.81	
Alpha	[illegible]	Stream Power (N/m s)		42.71	
Frctn Loss (m)	[illegible]	Cum Volume (1000 m3)		17.17	
C & E Loss (m)	[illegible]	Cum SA (1000 m2)			

Warning: The cross section top width and elevations had to be extended vertically for the computed water surface.

CROSS SECTION OUTPUT Profile #[illegible]

			Left OB	Channel	Right OB
E.G. Elev (m)	[illegible]	Element		0.040	
Vel Head (m)	[illegible]	Wt. n-Val.	38.75	46.36	54.90
W.S. Elev (m)	[illegible]	Reach Len. (m)		1.40	
Crit W.S. (m)	[illegible]	Flow Area (m2)		1.40	
E.G. Slope (m/m)	[illegible]	Area (m2)		1.31	
Q Total (m3/s)	[illegible]	Flow (m3/s)		13.67	
Top Width (m)	[illegible]	Top Width (m)			

Vel Total (m/s)	0.94	Avg. Vel. (m/s)	0.94	
Max Chl Dpth (m)	0.33	Hydr. Depth (m)	0.10	
Conv. Total (m3/s)	7.6	Conv. (m3/s)	7.6	
Length Wtd. (m)	46.36	Wetted Per. (m)	13.86	
Min Ch El (m)	75.67	Shear (N/m2)	29.52	
Alpha	1.00	Stream Power (N/m s)	27.63	
Frctn Loss (m)	0.05	Cum Volume (1000 m3)	1.70	
C & E Loss (m)	0.01	Cum SA (1000 m2)	8.50	

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

CROSS SECTION

RIVER: CAYAGUAS
REACH: ONE RS: 9

INPUT
Description:
Station Elevation Data num= 19

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	79.07	.36	78.97	2.78	77.88	6.23	76.16	12.84	75.82
13.49	75.56	19.29	75.48	27.07	75.59	30.04	77.57	36.08	80.12

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.045	0	.04	36.08	.045

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
0	36.08	14.03	17.58	18.72	.1	.3

CROSS SECTION OUTPUT Profile #16Sep1977 1200

			Left OB	Channel	Right OB
E.G. Elev (m)	75.74	Element		0.040	
Vel Head (m)	0.01	Wt. n-Val.	14.03	17.58	18.72
W.S. Elev (m)	75.73	Reach Len. (m)		2.78	
Crit W.S. (m)		Flow Area (m2)		2.78	
E.G. Slope (m/m)	+0.003149	Area (m2)		1.31	
Q Total (m3/s)	1.31	Flow (m3/s)		14.20	
Top Width (m)	14.20	Top Width (m)		0.47	
Vel Total (m/s)	0.47	Avg. Vel. (m/s)		0.20	
Max Chl Dpth (m)	0.25	Hydr. Depth (m)		23.3	
Conv. Total (m3/s)	23.3	Conv. (m3/s)		14.28	
Length Wtd. (m)	17.58	Wetted Per. (m)		6.01	
Min Ch El (m)	75.47	Shear (N/m2)		2.83	
Alpha	1.00	Stream Power (N/m s)		1.71	
Frctn Loss (m)	0.02	Cum Volume (1000 m3)		8.15	
C & E Loss (m)	0.00	Cum SA (1000 m2)			

Warning: The conveyance ratio (upstream 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 #18Jul1993 1800

			Left OB	Channel	Right OB
E.G. Elev (m)	79.09	Element		0.040	
Vel Head (m)	0.14	Wt. n-Val.	14.03	17.58	18.72
W.S. Elev (m)	78.94	Reach Len. (m)		82.50	
Crit W.S. (m)		Flow Area (m2)		82.50	
E.G. Slope (m/m)	+0.001890	Area (m2)		158.71	
Q Total (m3/s)	158.71	Flow (m3/s)		33.15	
Top Width (m)	33.15	Top Width (m)		1.92	
Vel Total (m/s)	1.92	Avg. Vel. (m/s)		2.49	
Max Chl Dpth (m)	3.32	Hydr. Depth (m)		3651.1	
Conv. Total (m3/s)	3651.1	Conv. (m3/s)		35.03	
Length Wtd. (m)	[illegible]	Wetted Per. (m)		43.64	
Min Ch El (m)	[illegible]	Shear (N/m2)		83.96	
Alpha	1.00	Stream Power (N/m s)		38.97	
Frctn Loss (m)	[illegible]	Cum Volume (1000 m3)		15.61	
C & E Loss (m)	[illegible]	Cum SA (1000 m2)			

CROSS SECTION OUTPUT Profile #17Nov1981 0000

			Left OB	Channel	Right OB
E.G. Elev (m)	[illegible]	Element		0.040	
Vel Head (m)	0.24	Wt. n-Val.	14.03	17.58	18.72
W.S. Elev (m)	[illegible]	Reach Len. (m)		6.00	
Crit W.S. (m)		Flow Area (m2)		6.00	
E.G. Slope (m/m)	+0.000333	Area (m2)		1.31	
Q Total (m3/s)	1.31	Flow (m3/s)		17.92	
Top Width (m)	17.92	Top Width (m)		0.22	
Vel Total (m/s)	0.22	Avg. Vel. (m/s)		0.33	
Max Chl Dpth (m)	0.33	Hydr. Depth (m)		71.4	
Conv. Total (m3/s)	[illegible]	Conv. (m3/s)		18.07	
Length Wtd. (m)	[illegible]	Wetted Per. (m)		1.08	
Min Ch El (m)	5.55	Shear (N/m2)		0.24	
Alpha	1.03	Stream Power (N/m s)		1.53	
Frctn Loss (m)	.02	Cum Volume (1000 m3)		7.77	
C & E Loss (m)	[illegible]	Cum SA (1000 m2)			

Warning: The conveyance ratio (upstream 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: CAYAGUAS
REACH: ONE RS: 8

INPUT
Description:
Station Elevation Data num= 8

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
[illegible]	79.55	3.12	[illegible]	4.52	[illegible]	5.28	79.51	6.95	79.51
13.03	79.39	16.1[illegible]	[illegible]	[illegible]	[illegible]	35.09	79.13		

Manning's n Values num= 1

Sta	n Val
0	.04

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
[illegible]	[illegible]	[illegible]	[illegible]	80.01	[illegible]	[illegible]

CROSS SECTION OUTPUT Profile #16Sep1997 1200

* E.G. Elev (m)	* 75.71	* Element	* Left OB	* Channel	* Right OB *
* Vel Head (m)	* [illegible]	* Wt. n-Vel.	*	* 0.040	*
* W.S. Elev (m)	* 75.71	* Reach Len. (m)	* 68.76	* 75.61	* 80.01 *
* Crit W.S. (m)	*	* Flow Area (m2)	*	* 4.73	*
* E.G. Slope (m/m)	* [illegible]	* Area (m2)	*	* 4.73	*
* Q Total (m3/s)	* [illegible]	* Flow (m3/s)	*	* 1.31	*
* Top Width (m)	* [illegible]	* Top Width (m)	*	* 18.21	*
* Vel Total (m/s)	* [illegible]	* Avg. Vel. (m/s)	*	* 0.28	*
* Max Chl Dpth (m)	* [illegible]	* Hydr. Depth (m)	*	* 0.26	*
* Conv. Total (m3/s)	* [illegible]	* Conv. (m3/s)	*	* 47.9	*
* Length Wtd. (m)	* [illegible]	* Wetted Per. (m)	*	* 18.31	*
* Min Ch El (m)	* [illegible]	* Shear (N/m2)	*	* 1.89	*
* Alpha	* [illegible]	* Stream Power (N/m s)	*	* 0.52	*
* Frctn Loss (m)	* [illegible]	* Cum Volume (1000 m3)	*	* 1.64	*
* C & E Loss (m)	* [illegible]	* Cum CA (1000 m2)	*	* 7.87	*

Warning: The conveyance ratio (upstream 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 #15Jul1997 1800

* E.G. Elev (m)	* [illegible]	* Element	* Left OB	* Channel	* Right OB *
* Vel Head (m)	* [illegible]	* Wt. n-Vel.	*	* 0.040	*
* W.S. Elev (m)	* [illegible]	* Reach Len. (m)	* 68.76	* 75.61	* 80.01 *
* Crit W.S. (m)	*	* Flow Area (m2)	*	* 85.03	*
* E.G. Slope (m/m)	* [illegible]	* Area (m2)	*	* 85.03	*
* Q Total (m3/s)	* 158.71	* Flow (m3/s)	*	* 158.71	*
* Top Width (m)	* [illegible]	* Top Width (m)	*	* 33.24	*
* Vel Total (m/s)	* [illegible]	* Avg. Vel. (m/s)	*	* 1.87	*
* Max Chl Dpth (m)	* [illegible]	* Hydr. Depth (m)	*	* 2.56	*
* Conv. Total (m3/s)	* 3836.[illegible]	* Conv. (m3/s)	*	* 3836.[illegible]	*
* Length Wtd. (m)	* [illegible]	* Wetted Per. (m)	*	* 35.09	*
* Min Ch El (m)	* [illegible]	* Shear (N/m2)	*	* 40.66	*
* Alpha	* [illegible]	* Stream Power (N/m s)	*	* 75.94	*
* Frctn Loss (m)	* [illegible]	* Cum Volume (1000 m3)	*	* 37.50	*
* C & E Loss (m)	* [illegible]	* Cum CA (1000 m2)	*	* 15.02	*

CROSS SECTION OUTPUT Profile #15Jul1997 2000

* E.G. Elev (m)	* [illegible]	* Element	* Left OB	* Channel	* Right OB *
* Vel Head (m)	* [illegible]	* Wt. n-Vel.	*	* 0.040	*
* W.S. Elev (m)	* [illegible]	* Reach Len. (m)	* 68.76	* 75.61	* 80.01 *
* Crit W.S. (m)	*	* Flow Area (m2)	*	* 1.62	*
* E.G. Slope (m/m)	* [illegible]	* Area (m2)	*	* 1.62	*
* Q Total (m3/s)	* [illegible]	* Flow (m3/s)	*	* 1.31	*
* Top Width (m)	* [illegible]	* Top Width (m)	*	* 17.45	*
* Vel Total (m/s)	* [illegible]	* Avg. Vel. (m/s)	*	* 0.81	*
* Max Chl Dpth (m)	* [illegible]	* Hydr. Depth (m)	*	* 0.16	*
* Conv. Total (m3/s)	* [illegible]	* Conv. (m3/s)	*	* [illegible]	*
* Length Wtd. (m)	* [illegible]	* Wetted Per. (m)	*	* 17.47	*
* Min Ch El (m)	* [illegible]	* Shear (N/m2)	*	* 22.69	*
* Alpha	* [illegible]	* Stream Power (N/m s)	*	* 18.30	*
* Frctn Loss (m)	* [illegible]	* Cum Volume (1000 m3)	*	* 1.46	*
* C & E Loss (m)	* [illegible]	* Cum CA (1000 m2)	*	* 7.46	*

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

[illegible]

[illegible]

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

CROSS SECTION OUTPUT Profile [illegible]

* E.G. Elev (m)	* [illegible]	* Element	* Left OB	* Channel	* Right OB *
* Vel Head (m)	* [illegible]	* Wt. n-Vel.	*	* 0.040	*
* W.S. Elev (m)	* [illegible]	* Reach Len. (m)	* 56.97	* [illegible]	* 66.[illegible] *
* Crit W.S. (m)	*	* Flow Area (m2)	*	* [illegible]	*
* E.G. Slope (m/m)	* [illegible]	* Area (m2)	*	* [illegible]	*
* Q Total (m3/s)	* [illegible]	* Flow (m3/s)	*	* [illegible]	*
* Top Width (m)	* [illegible]	* Top Width (m)	*	* 11.[illegible]	*
* Vel Total (m/s)	* [illegible]	* Avg. Vel. (m/s)	*	* [illegible]	*
* Max Chl Dpth (m)	* [illegible]	* Hydr. Depth (m)	*	* [illegible]	*
* Conv. Total (m3/s)	* [illegible]	* Conv. (m3/s)	*	* [illegible]	*
* Length Wtd. (m)	* [illegible]	* Wetted Per. (m)	*	* [illegible]	*
* Min Ch El (m)	* [illegible]	* Shear (N/m2)	*	* [illegible]	*
* Alpha	* [illegible]	* Stream Power (N/m s)	*	* [illegible]	*
* Frctn Loss (m)	* [illegible]	* Cum Volume (1000 m3)	*	* [illegible]	*
* C & E Loss (m)	* [illegible]	* Cum CA (1000 m2)	*	* [illegible]	*

CROSS SECTION OUTPUT Profile [illegible]

* E.G. Elev (m)	* [illegible]	* Element	* Left OB	* Channel	* Right OB *
* Vel Head (m)	* [illegible]	* Wt. n-Vel.	*	* [illegible]	*
* W.S. Elev (m)	* [illegible]	* Reach Len. (m)	* 56.97	* [illegible]	* 66.[illegible] *
* Crit W.S. (m)	*	* Flow Area (m2)	*	* [illegible]	*
* E.G. Slope (m/m)	* [illegible]	* Area (m2)	*	* [illegible]	*
* Q Total (m3/s)	* [illegible]	* Flow (m3/s)	*	* 158.[illegible]	*
* Top Width (m)	* [illegible]	* Top Width (m)	*	* [illegible]	*

* Max Chl Depth (m)	* 1.53	* Hydr. Depth (m)	*	* 2.56	*
* Conv. Total (m3/s)	* 3554.1	* Conv. (m3/s)	*	* 3554.7	*
* Length Wtd. (m)	* 26.61	* Wetted Per. (m)	*	* 32.20	*
Min Ch El (m)	* 75.16	* Shear (N/m2)	*	* 47.65	*
* Alpha	* 1.00	* Stream Power (N/m s)	*	* 56.34	*
* Frctn Loss (m)	* 0.15	* Cum Volume (1000 m3)	*	* 31.32	*
* C & E Loss (m)	* 0.01	* Cum SA (1000 m2)	*	* 12.61	*

CROSS SECTION OUTPUT Profile #1(Revised) (cont)

* E.G. Elev (m)	* 75.80	* Element	* Left OB	* Channel	* Right OB	*
* Vel Head (m)	* 0.00	* Wt. n-Val.	*	* 0.040	*	*
* W.S. Elev (m)	* 75.80	* Reach Len. (m)	* 56.97	* 66.61	* 66.64	*
* Crit W.S. (m)	*	* Flow Area (m2)	*	* 4.42	*	*
* E.G. Slope (m/m)	*0.000674	* Area (m2)	*	* 4.42	*	*
* Q Total (m3/s)	* 1.31	* Flow (m3/s)	*	* 1.31	*	*
* Top Width (m)	* 14.22	* Top Width (m)	*	* 14.22	*	*
* Vel Total (m/s)	* 0.30	* Avg. Vel. (m/s)	*	* 0.30	*	*
* Max Chl Dpth (m)	* 0.42	* Hydr. Depth (m)	*	* 0.31	*	*
* Conv. Total (m3/s)	* 50.5	* Conv. (m3/s)	*	* 50.5	*	*
* Length Wtd. (m)	* 0.61	* Wetted Per. (m)	*	* 14.35	*	*
* Min Ch El (m)	* 75.38	* Shear (N/m2)	*	* 2.04	*	*
* Alpha	* 1.00	* Stream Power (N/m s)	*	* 0.60	*	*
* Frctn Loss (m)	* 0.17	* Cum Volume (1000 m3)	*	* 1.22	*	*
* C & E Loss (m)	* 0.00	* Cum SA (1000 m2)	*	* 0.28	*	*

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

CROSS SECTION

RIVER: CAYMONAS
REACH: ONE RS: 6

INPUT
Description:
Station Elevation Data num= 9

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	75.47	2.23	76.16	4.83	75.54	5.37	75.23	11.75	75.47
12.14	75.27	19.63	75.75	[illegible]	[illegible]	11.13	81.54		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.045	0	.04	[illegible]	.045

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
0 [illegible] [illegible] .1 .3

CROSS SECTION OUTPUT Profile #1(Revised) (cont)

* E.G. Elev (m)	* 75.44	* Element	* Left OB	* Channel	* Right OB	*
* Vel Head (m)	* [illegible]	* Wt. n-Val.	*	* 0.040	*	*
* W.S. Elev (m)	* 75.43	* Reach Len. (m)	* [illegible]	* 32.05	* 28.03	*
* Crit W.S. (m)	*	* Flow Area (m2)	*	* 2.08	*	*
* E.G. Slope (m/m)	*0.002404	* Area (m2)	*	* 2.08	*	*
* Q Total (m3/s)	* 1.31	* Flow (m3/s)	*	* 1.31	*	*
* Top Width (m)	* 14.39	* Top Width (m)	*	* 14.39	*	*
* Vel Total (m/s)	* 0.44	* Avg. Vel. (m/s)	*	* 0.44	*	*
* Max Chl Dpth (m)	* 0.21	* Hydr. Depth (m)	*	* 0.21	*	*
* Conv. Total (m3/s)	* [illegible]	* Conv. (m3/s)	*	* 25.7	*	*
* Length Wtd. (m)	* 12.05	* Wetted Per. (m)	*	* 14.71	*	*
* Min Ch El (m)	* 75.10	* Shear (N/m2)	*	* 5.13	*	*
* Alpha	* 1.05	* Stream Power (N/m s)	*	* 2.27	*	*
* Frctn Loss (m)	* 0.04	* Cum Volume (1000 m3)	*	* 1.17	*	*
* C & E Loss (m)	* 0.00	* Cum SA (1000 m2)	*	* 5.87	*	*

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 #1(Revised) (cont)

* E.G. Elev (m)	* [illegible]	* Element	* Left OB	* Channel	* Right OB	*
* Vel Head (m)	* [illegible]	* Wt. n-Val.	*	* 0.040	*	*
* W.S. Elev (m)	* [illegible]	* Reach Len. (m)	* [illegible]	* 32.05	* 28.03	*
* Crit W.S. (m)	*	* Flow Area (m2)	*	* 49.81	*	*
* E.G. Slope (m/m)	*0.000[illegible]	* Area (m2)	*	* 49.81	*	*
* Q Total (m3/s)	* 158.71	* Flow (m3/s)	*	* 158.71	*	*
* Top Width (m)	* [illegible]	* Top Width (m)	*	* 25.22	*	*
* Vel Total (m/s)	* [illegible]	* Avg. Vel. (m/s)	*	* 3.29	*	*
* Max Chl Dpth (m)	* [illegible]	* Hydr. Depth (m)	*	* 2.75	*	*
* Conv. Total (m3/s)	* 3173.7	* Conv. (m3/s)	*	* 3173.7	*	*
* Length Wtd. (m)	* 32.[illegible]	* Wetted Per. (m)	*	* 27.50	*	*
* Min Ch El (m)	* [illegible]	* Shear (N/m2)	*	* 69.79	*	*
* Alpha	* [illegible]	* Stream Power (N/m s)	*	* 139.19	*	*
* Frctn Loss (m)	* [illegible]	* Cum Volume (1000 m3)	*	* 28.39	*	*
* C & E Loss (m)	* [illegible]	* Cum SA (1000 m2)	*	* 19.74	*	*

Warning: Critical depth could not be calculated properly for the computed water surface.

CROSS SECTION OUTPUT Profile #1(Revised) (cont)

* E.G. Elev (m)	* [illegible]	* Element	* Left OB	* Channel	* Right OB	*
* Vel Head (m)	* [illegible]	* Wt. n-Val.	*	* 0.040	*	*
* W.S. Elev (m)	* [illegible]	* Reach Len. (m)	* [illegible]	* 32.05	* 28.03	*
* Crit W.S. (m)	*	* Flow Area (m2)	*	* 1.54	*	*
* E.G. Slope (m/m)	*0.01[illegible]	* Area (m2)	*	* 1.54	*	*
* Q Total (m3/s)	* 1.[illegible]	* Flow (m3/s)	*	* 1.31	*	*
* Top Width (m)	* [illegible]	* Top Width (m)	*	* 8.47	*	*
* Vel Total (m/s)	* [illegible]	* Avg. Vel. (m/s)	*	* 0.85	*	*
* Max Chl Dpth (m)	* [illegible]	* Hydr. Depth (m)	*	* 0.18	*	*
* Conv. Total (m3/s)	* [illegible]	* Conv. (m3/s)	*	* 12.2	*	*
* Length Wtd. (m)	* 22.[illegible]	* Wetted Per. (m)	*	* 8.[illegible]	*	*
* Min Ch El (m)	* 75.25	* Shear (N/m2)	*	* 20.07	*	*
* Alpha	* 1.[illegible]	* Stream Power (N/m s)	*	* 17.01	*	*
* Frctn Loss (m)	* [illegible]	* Cum Volume (1000 m3)	*	* 1.03	*	*
* C & E Loss (m)	* [illegible]	* Cum SA (1000 m2)	*	* 8.5[illegible]	*	*

Warning: Divided flow computed for this cross section.

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

CROSS SECTION

RIVER: CAYAGUAS
REACH: ONE RS: 3

INPUT
Description:
Station Elevation Data num= 6

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
[illegible]	78.24	4.06	76.57	16.67	75.22	23.01	75.3	31.62	80.38
35.7	80.78								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.045	0	.04	35.7	.045

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
0	35.7	39.18	34.8	30.66	.1	.3

CROSS SECTION OUTPUT Profile #16Sep1977 1200

		Element	Left OB	Channel	Right OB
E.G. Elev (m)	75.43				
Vel Head (m)	0.01	Wt. n-Val.		0.040	
W.S. Elev (m)	75.42	Reach Len. (m)	39.18	34.80	30.66
Crit W.S. (m)		Flow Area (m2)		4.00	
E.G. Slope (m/m)	[illegible]	Area (m2)		4.00	
Q Total (m3/s)	1.31	Flow (m3/s)		1.31	
Top Width (m)	11.01	Top Width (m)		11.01	
Vel Total (m/s)	0.32	Avg. Vel. (m/s)		0.33	
Hyd Depth (m)	0.36	Hydr. Depth (m)		0.36	
Conv. Total (m3/s)	50.5	Conv. (m3/s)		50.5	
Length Wtd. (m)	34.80	Wetted Per. (m)		11.11	
Min Ch El (m)	74.22	Shear (N/m2)		2.37	
Alpha	1.00	Stream Power (N/m s)		0.78	
Frctn Loss (m)	0.00	Cum Volume (1000 m3)		1.05	
C & E Loss (m)	0.00	Cum SA (1000 m2)		5.46	

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

CROSS SECTION OUTPUT Profile #16Sep1977 1200

		Element	Left OB	Channel	Right OB
E.G. Elev (m)	78.46				
Vel Head (m)	0.21	Wt. n-Val.		0.040	
W.S. Elev (m)	78.43	Reach Len. (m)	39.18	34.80	30.66
Crit W.S. (m)		Flow Area (m2)		28.03	
E.G. Slope (m/m)	[illegible]	Area (m2)		68.03	
Q Total (m3/s)	158.71	Flow (m3/s)		158.71	
Top Width (m)	28.26	Top Width (m)		28.26	
Vel Total (m/s)	2.33	Avg. Vel. (m/s)		2.33	
Hyd Depth (m)	2.41	Hydr. Depth (m)		2.41	
Conv. Total (m3/s)	2855.3	Conv. (m3/s)		2855.3	
Length Wtd. (m)	34.80	Wetted Per. (m)		29.72	
Min Ch El (m)	74.22	Shear (N/m2)		64.79	
Alpha	1.20	Stream Power (N/m s)		151.16	
Frctn Loss (m)	0.04	Cum Volume (1000 m3)		24.17	
C & E Loss (m)	0.02	Cum SA (1000 m2)		9.89	

Warning: The cross-section end points had to be extended vertically for the computed water surface.

CROSS SECTION OUTPUT Profile #16Sep1977 1200

		Element	Left OB	Channel	Right OB
E.G. Elev (m)	[illegible]				
Vel Head (m)	[illegible]	Wt. n-Val.		0.040	
W.S. Elev (m)	[illegible]	Reach Len. (m)	39.18	34.80	30.66
Crit W.S. (m)		Flow Area (m2)		3.31	
E.G. Slope (m/m)	[illegible]	Area (m2)		3.31	
Q Total (m3/s)	[illegible]	Flow (m3/s)		1.31	
Top Width (m)	[illegible]	Top Width (m)		10.71	
Vel Total (m/s)	[illegible]	Avg. Vel. (m/s)		0.40	
Hyd Depth (m)	[illegible]	Hydr. Depth (m)		0.31	
Conv. Total (m3/s)	[illegible]	Conv. (m3/s)		17.4	
Length Wtd. (m)	[illegible]	Wetted Per. (m)		15.72	
Min Ch El (m)	[illegible]	Shear (N/m2)		5.65	
Alpha	[illegible]	Stream Power (N/m s)		1.44	
Frctn Loss (m)	[illegible]	Cum Volume (1000 m3)		0.55	
C & E Loss (m)	[illegible]	Cum SA (1000 m2)		5.20	

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

CROSS SECTION

RIVER: CAYAGUAS
REACH: ONE RS: 4

INPUT
Description:
Station Elevation Data num= [illegible]

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

Manning's n Values num= [illegible]

Sta	n Val	Sta	n Val	Sta	n Val
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

CROSS SECTION OUTPUT Profile #[illegible]

		Element	Left OB	Channel	Right OB
E.G. Elev (m)	[illegible]				
Vel Head (m)	[illegible]	Wt. n-Val.		[illegible]	
W.S. Elev (m)	[illegible]	Reach Len. (m)	36.65	43.24	32.92

Crit W.S. (m)		Flow Area (m2)	2.42	
E.G. Slope (m/m)	0.007297	Area (m2)	2.42	
Q Total (m3/s)	1.31	Flow (m3/s)	1.31	
Top Width (m)	18.82	Top Width (m)	18.82	
Vel Total (m/s)	0.54	Avg. Vel. (m/s)	0.54	
Max Chl Dpth (m)	0.29	Hydr. Depth (m)	0.13	
Conv. Total (m3/s)	15.3	Conv. (m3/s)	15.3	
Length Wtd. (m)	43.34	Wetted Per. (m)	18.95	
Min Ch El (m)	75.04	Shear (N/m2)	9.13	
Alpha	1.00	Stream Power (N/m s)	4.95	
Frctn Loss (m)	0.10	Cum Volume (1000 m3)	0.94	
C & E Loss (m)	0.00	Cum DA (1000 m2)	4.94	

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

CROSS SECTION OUTPUT Profile #18Jul1993 1900

			Left OB	Channel	Right OB
E.G. Elev (m)	78.56	Element		0.040	
Vel Head (m)	0.21	Wt. n-Val.	56.65	43.34	32.92
W.S. Elev (m)	78.36	Reach Len. (m)		78.72	
Crit W.S. (m)		Flow Area (m2)		78.72	
E.G. Slope (m/m)	0.002344	Area (m2)		158.71	
Q Total (m3/s)	158.71	Flow (m3/s)		35.06	
Top Width (m)	35.06	Top Width (m)		2.02	
Vel Total (m/s)	2.02	Avg. Vel. (m/s)		2.25	
Max Chl Dpth (m)	1.32	Hydr. Depth (m)		3278.3	
Conv. Total (m3/s)	3278.3	Conv. (m3/s)		36.61	
Length Wtd. (m)	43.34	Wetted Per. (m)		49.42	
Min Ch El (m)	75.04	Shear (N/m2)		99.64	
Alpha	1.00	Stream Power (N/m s)		21.64	
Frctn Loss (m)	0.08	Cum Volume (1000 m3)		8.78	
C & E Loss (m)	0.02	Cum DA (1000 m2)			

Warning: The cross-section end points had to be extended vertically for the computed water surface.

CROSS SECTION OUTPUT Profile 17Nov1993 0000

			Left OB	Channel	Right OB
E.G. Elev (m)	75.50	Element		0.040	
Vel Head (m)	0.03	Wt. n-Val.	56.65	43.34	32.92
W.S. Elev (m)	75.47	Reach Len. (m)		1.82	
Crit W.S. (m)		Flow Area (m2)		1.82	
E.G. Slope (m/m)	0.006491	Area (m2)		1.31	
Q Total (m3/s)	1.31	Flow (m3/s)		8.39	
Top Width (m)	8.39	Top Width (m)		0.72	
Vel Total (m/s)	0.72	Avg. Vel. (m/s)		0.22	
Max Chl Dpth (m)	0.41	Hydr. Depth (m)		16.3	
Conv. Total (m3/s)	16.3	Conv. (m3/s)		8.57	
Length Wtd. (m)	43.34	Wetted Per. (m)		13.55	
Min Ch El (m)	75.04	Shear (N/m2)		9.73	
Alpha	1.00	Stream Power (N/m s)		0.86	
Frctn Loss (m)	0.11	Cum Volume (1000 m3)		4.86	
C & E Loss (m)	0.01	Cum DA (1000 m2)			

Warning: The conveyance ratio (upstream 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: CA:A/BAS
REACH: ONE RS: 3

INPUT
Descriptions:

Station Elevation Data			num=		10					
Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	
0	78.29	3.64	75.91	4.76	74.88	12	75	20.99	74.08	
21.81	75.26	29.44	75.7	37.84	76.67	35.6*	77.39	39.69	78.25	

Manning's n Values		num=		1	
Sta	n Val	Sta	n Val	Sta	n Val
0	.045	0	.04	19.69	.045

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
0	39.69	123.52	107.15	97.07	.1	.3

CROSS SECTION OUTPUT Profile 21Sep1993 1200

			Left OB	Channel	Right OB
E.G. Elev (m)	75.25	Element		0.040	
Vel Head (m)	0.01	Wt. n-Val.	123.52	107.15	97.07
W.S. Elev (m)	75.24	Reach Len. (m)		4.17	
Crit W.S. (m)		Flow Area (m2)		4.17	
E.G. Slope (m/m)	0.001074	Area (m2)		1.31	
Q Total (m3/s)	1.31	Flow (m3/s)		17.42	
Top Width (m)	17.42	Top Width (m)		0.31	
Vel Total (m/s)	0.31	Avg. Vel. (m/s)		0.24	
Max Chl Dpth (m)	0.35	Hydr. Depth (m)		39.9	
Conv. Total (m3/s)	39.9	Conv. (m3/s)		17.61	
Length Wtd. (m)	107.15	Wetted Per. (m)		2.50	
Min Ch El (m)	74.26	Shear (N/m2)		0.79	
Alpha	1.00	Stream Power (N/m s)		0.80	
Frctn Loss (m)	0.19	Cum Volume (1000 m3)		4.16	
C & E Loss (m)	0.00	Cum DA (1000 m2)			

Warning: The conveyance ratio (upstream 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 01Jul1993 1800

			Left OB	Channel	Right OB
E.G. Elev (m)	78.47	Element		0.040	
Vel Head (m)	0.14	Wt. n-Val.	123.52	107.15	97.07
W.S. Elev (m)	78.33	Reach Len. (m)		96.65	
Crit W.S. (m)		Flow Area (m2)		96.65	
E.G. Slope (m/m)	0.001392	Area (m2)		158.71	
Q Total (m3/s)	158.71	Flow (m3/s)		39.69	
Top Width (m)	39.69	Top Width (m)		1.64	
Vel Total (m/s)	1.64	Avg. Vel. (m/s)		2.44	
Max Chl Dpth (m)	1.45	Hydr. Depth (m)		4254.3	
Conv. Total (m3/s)	4254.3	Conv. (m3/s)		41.37	
Length Wtd. (m)	107.15	Wetted Per. (m)			

[illegible]	[illegible]	[illegible]	31.88	[illegible]
Alpha	[illegible]	[illegible]	52.35	[illegible]
[illegible]	[illegible]	[illegible]	17.84	[illegible]
[illegible]	[illegible]	[illegible]	7.16	[illegible]

Warning: The cross-section end points had to be extended vertically for the computed water surface.
Warning: The velocity head has changed by more than [illegible] ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream 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 [illegible]

			Left OB	Channel	Right OB
E.G. Elev (m)	75.38	Element		0.040	
Vel. Head (m)	[illegible]	Wt. n-Val.	123.52	107.15	97.07
W.S. Elev (m)	75.38	Reach Len. (m)		4.05	
Crit W.S. (m)		Flow Area (m2)		4.05	
E.G. Slope (m/m)	[illegible]	Area (m2)		1.31	
Q Total (m3/s)	3.71	Flow (m3/s)		19.75	
Top Width (m)	19.75	Top Width (m)		0.32	
Total Area (m2)	0.32	Avg. Vel. (m/s)		0.21	
Max Chl Dpth (m)	0.50	Hydr. Depth (m)		35.0	
Conv. Total (m3/s)	19.3	Conv. (m3/s)		18.97	
Length Wtd. (m)	107.15	Wetted Per. (m)		2.79	
Min Ch El (m)	74.88	Shear (N/m2)		0.90	
Alpha	1.08	Stream Power (N/m s)		0.74	
Prev Loss (m)	0.13	Cum Volume (1000 m3)		4.25	
C & E Loss (m)	0.09	Cum DA (1000 m2)			

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

[illegible]

[illegible]

[illegible]

[illegible]	Elev	Sta	Elev	Sta	Elev	Sta	Elev
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	74.88	14.62	74.76
[illegible]	[illegible]	14.09	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

[illegible]	n Val	Sta	n Val	Sta
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

[illegible]	Right	[illegible]	[illegible]	[illegible]	Coeff Contr.	Expan.
	14.96	[illegible]	[illegible]	[illegible]	.1	.3

CROSS SECTION OUTPUT Profile [illegible]

			Left OB	Channel	Right OB
[illegible]	[illegible]	[illegible]		0.040	
[illegible]	[illegible]	[illegible]	46.59	48.26	51.31
[illegible]	[illegible]	[illegible]		2.93	
[illegible]	[illegible]	[illegible]		2.93	
[illegible]	[illegible]	[illegible]		1.31	
[illegible]	[illegible]	[illegible]		16.84	
[illegible]	[illegible]	[illegible]		0.45	
[illegible]	[illegible]	[illegible]		0.17	
[illegible]	[illegible]	[illegible]		22.7	
[illegible]	[illegible]	[illegible]		16.97	
[illegible]	[illegible]	[illegible]		5.64	
[illegible]	[illegible]	[illegible]		2.52	
[illegible]	[illegible]	[illegible]		0.42	
[illegible]	[illegible]	[illegible]		2.42	

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

CROSS SECTION OUTPUT Profile [illegible]

			Left OB	Channel	Right OB
[illegible]	[illegible]	[illegible]		0.040	
[illegible]	[illegible]	[illegible]	46.98	48.26	51.31
[illegible]	[illegible]	[illegible]		42.31	
[illegible]	[illegible]	[illegible]		42.31	
[illegible]	[illegible]	[illegible]		159.71	
[illegible]	[illegible]	[illegible]		23.33	
[illegible]	[illegible]	[illegible]		2.55	
[illegible]	[illegible]	[illegible]		1.07	
[illegible]	[illegible]	[illegible]		2584.9	
[illegible]	[illegible]	[illegible]		30.07	
[illegible]	[illegible]	[illegible]		38.11	
[illegible]	[illegible]	[illegible]		153.91	
Alpha	[illegible]	[illegible]		4.32	
[illegible]	[illegible]	[illegible]		3.79	

[illegible] The cross-section end points had to be extended vertically for the computed water surface.

CROSS SECTION OUTPUT Profile [illegible]

			Left OB	Channel	Right OB
[illegible]	[illegible]	[illegible]		0.040	
[illegible]	[illegible]	[illegible]	46.98	48.26	51.31
[illegible]	[illegible]	[illegible]		2.12	
[illegible]	[illegible]	[illegible]		2.12	
[illegible]	[illegible]	[illegible]		1.31	
[illegible]	[illegible]	[illegible]		16.70	
[illegible]	[illegible]	[illegible]		0.62	
[illegible]	[illegible]	[illegible]		0.13	
[illegible]	[illegible]	[illegible]		13.2	
[illegible]	[illegible]	[illegible]		16.79	
[illegible]	[illegible]	[illegible]		12.01	
[illegible]	[illegible]	[illegible]		[illegible]	
[illegible]	[illegible]	[illegible]		3.41	

[illegible]

Warning: The conveyance ratio (upstream 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: CAYAGUAS
REACH: ONE RS: 1

INPUT
Description:
Station Elevation Data num= 8

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	78.27	7.19	74.6	11.16	74.32	15.35	74.74	19.04	74.8
21.22	74.9	23.15	74.92	25.04	77.36				

Manning's n Values num= 1

sta	n Val
0	.24

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
	23.04	41.18	39.31	38.64	.1	.3

CROSS SECTION OUTPUT Profile Elev=Q1977 1,200

			Left OB	Channel	Right OB
E.G. Elev (m)	74.94	Elev=WP		0.040	
Vel Head (m)	[illegible]	Wt. n-Val.	38.38	39.31	38.64
W.S. Elev (m)	74.[illegible]	Reach Len. (m)		3.81	
Crit W.S. (m)		Flow Area (m2)		3.81	
E.G. Slope (m/m)	0.001296	Area (m2)		1.31	
Q Total (m3/s)	1.31	Flow (m3/s)		16.52	
Top Width (m)	16.52	Top Width (m)		0.34	
Vel Total (m/s)	0.18	Avg. Vel. (m/s)		0.23	
Max Chl Dpth (m)	0.18	Hyd. Depth (m)		35.6	
Conv. Total (m3/s)	[illegible]	Conv. (m3/s)		16.65	
Length Wtd. (m)	39.31	Wetted Per. (m)		3.04	
Min Ch El (m)	74.[illegible]	Shear (N/m2)		1.05	
Alpha	[illegible]	Stream Power (N/m s)		0.26	
Frctn Loss (m)	[illegible]	Cum Volume (1000 m3)		1.52	
C & E Loss (m)	[illegible]	Cum CA (1000 m2)			

Warning: The conveyance ratio (upstream 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 [illegible]

			Left OB	Channel	Right OB
E.G. Elev (m)	[illegible]	Elev=WP		0.040	
Vel Head (m)	0.27	Wt. n-Val.	38.38	39.31	38.64
W.S. Elev (m)	[illegible]	Reach Len. (m)		59.17	
Crit W.S. (m)		Flow Area (m2)		59.17	
E.G. Slope (m/m)	0.001[illegible]	Area (m2)		158.71	
Q Total (m3/s)	158.71	Flow (m3/s)		23.21	
Top Width (m)	23.21	Top Width (m)		2.68	
Vel Total (m/s)	[illegible]	Avg. Vel. (m/s)		2.55	
Max Chl Dpth (m)	[illegible]	Hyd. Depth (m)		2555.0	
Conv. Total (m3/s)	[illegible]	Conv. (m3/s)		25.46	
Length Wtd. (m)	[illegible]	Wetted Per. (m)		85.21	
Min Ch El (m)	[illegible]	Shear (N/m2)		228.64	
Alpha	[illegible]	Stream Power (N/m s)		6.39	
Frctn Loss (m)	[illegible]	Cum Volume (1000 m3)		2.86	
C & E Loss (m)	[illegible]	Cum CA (1000 m2)			

Warning: The [illegible] has to be extended vertically for the computed water surface.

CROSS SECTION OUTPUT Profile [illegible]

			Left OB	Channel	Right OB
E.G. Elev (m)	[illegible]	Elev=WP		0.040	
Vel Head (m)	[illegible]	Wt. n-Val.	38.38	39.31	38.64
W.S. Elev (m)	[illegible]	Reach Len. (m)		3.85	
Crit W.S. (m)		Flow Area (m2)		3.85	
E.G. Slope (m/m)	[illegible]	Area (m2)		1.31	
Q Total (m3/s)	[illegible]	Flow (m3/s)		16.10	
Top Width (m)	[illegible]	Top Width (m)		0.34	
Vel Total (m/s)	[illegible]	Avg. Vel. (m/s)		0.24	
Max Chl Dpth (m)	[illegible]	Hyd. Depth (m)		38.9	
Conv. Total (m3/s)	[illegible]	Conv. (m3/s)		16.22	
Length Wtd. (m)	[illegible]	Wetted Per. (m)		2.94	
Min Ch El (m)	[illegible]	Shear (N/m2)		1.00	
Alpha	[illegible]	Stream Power (N/m s)		0.26	
Frctn Loss (m)	[illegible]	Cum Volume (1000 m3)		1.51	
C & E Loss (m)	[illegible]	Cum CA (1000 m2)			

Warning: The conveyance ratio (upstream 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: CAYAGUAS
REACH: ONE RS: [illegible]

INPUT
Description:
Station Elevation Data num= [illegible]

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
[illegible]		[illegible]		[illegible]		14.[illegible]	74.86	17.29	74.54
[illegible]	[illegible]	21.3	[illegible]	[illegible]					

Manning's n Values num= [illegible]

sta	n Val
[illegible]	[illegible]
[illegible]	.3

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
[illegible]	[illegible]	[illegible]	[illegible]	41.18	.1	.3

CROSS SECTION OUTPUT Profile [illegible]

			Left OB	Channel	Right OB
E.G. Elev (m)	[illegible]	Elev=WP		0.040	
Vel Head (m)	[illegible]	Wt. n-Val.	69.57	67.32	64.26
W.S. Elev (m)	[illegible]	Reach Len. (m)			

Crit W.S. (m)		Flow Area (m2)		2.08	
E.G. Slope (m/m)	*0.004117	Area (m2)		2.08	
Q Total (m3/s)	1.31	Flow (m3/s)		1.31	
Top Width (m)	15.37	Top Width (m)		15.37	
Vel Total (m/s)	0.63	Avg. Vel. (m/s)		0.63	
Max Ch Dpth (m)	0.14	Hydr. Depth (m)		0.14	
Conv. Total (m3/s)	13.7	Conv. (m3/s)		13.7	
Length Wtd. (m)	67.32	Wetted Per. (m)		15.39	
Min Ch El (m)	74.53	Shear (N/m2)		12.09	
Alpha	1.00	Stream Power (N/m s)		7.61	
Frctn Loss (m)	0.47	Cum Volume (1000 m3)		0.14	
C & E Loss (m)	0.00	Cum DA (1000 m2)		0.89	

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

CROSS SECTION OUTPUT Profile #163w11*93 1*60

			Left OB	Channel	Right OB
E.G. Elev (m)	77.51	Element			
Vel Head (m)	0.26	Wt. n-Val.		0.040	
W.S. Elev (m)	77.04	Reach Len. (m)	69.57	67.32	64.36
Crit W.S. (m)		Flow Area (m2)		69.63	
E.G. Slope (m/m)	*0.002636	Area (m2)		69.63	
Q Total (m3/s)	158.71	Flow (m3/s)		158.71	
Top Width (m)	25.79	Top Width (m)		25.79	
Vel Total (m/s)	2.28	Avg. Vel. (m/s)		2.28	
Max Ch Dpth (m)	3.14	Hydr. Depth (m)		2.70	
Conv. Total (m3/s)	3091.5	Conv. (m3/s)		3091.5	
Length Wtd. (m)	67.32	Wetted Per. (m)		29.42	
Min Ch El (m)	74.50	Shear (N/m2)		61.17	
Alpha	1.00	Stream Power (N/m s)		139.44	
Frctn Loss (m)	0.31	Cum Volume (1000 m3)		3.86	
C & E Loss (m)	0.04	Cum DA (1000 m2)		1.70	

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

CROSS SECTION OUTPUT Profile #17Nov1*93 [illegible]

			Left OB	Channel	Right OB
E.G. Elev (m)	[illegible]	Element			
Vel Head (m)	[illegible]	Wt. n-Val.		0.040	
W.S. Elev (m)	[illegible]	Reach Len. (m)	69.57	67.32	64.36
Crit W.S. (m)		Flow Area (m2)		2.17	
E.G. Slope (m/m)	*0.002737	Area (m2)		2.17	
Q Total (m3/s)	1.31	Flow (m3/s)		1.31	
Top Width (m)	15.36	Top Width (m)		15.36	
Vel Total (m/s)	[illegible]	Avg. Vel. (m/s)		0.60	
Max Ch Dpth (m)	0.15	Hydr. Depth (m)		0.14	
Conv. Total (m3/s)	14.*	Conv. (m3/s)		14.8	
Length Wtd. (m)	[illegible]	Wetted Per. (m)		15.37	
Min Ch El (m)	74.50	Shear (N/m2)		10.93	
Alpha	1.00	Stream Power (N/m s)		6.59	
Frctn Loss (m)	[illegible]	Cum Volume (1000 m3)		0.14	
C & E Loss (m)	0.00	Cum DA (1000 m2)		0.89	

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

[illegible] CROSS SECTION

RIVER: [illegible]
[illegible] CHP [illegible]

[illegible]
Description
Station Elevation Data [illegible]

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
[illegible]		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

Manning's n Values [illegible]

Sta	n Val	Sta	n Val	Sta	n Val
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

Bank Sta: Left [illegible] Right [illegible] Lengths: Left [illegible] Channel [illegible] Right [illegible] Coeff Contr. .1 Expan. .3

[illegible] CROSS SECTION OUTPUT Profile #[illegible]

			Left OB	Channel	Right OB
E.G. Elev (m)	[illegible]	Element			
Vel Head (m)	[illegible]	Wt. n-Val.		0.040	
W.S. Elev (m)	[illegible]	Reach Len. (m)			
Crit W.S. (m)	[illegible]	Flow Area (m2)		2.14	
E.G. Slope (m/m)	[illegible]	Area (m2)		2.14	
Q Total (m3/s)	[illegible]	Flow (m3/s)		1.31	
Top Width (m)	[illegible]	Top Width (m)		11.11	
Vel Total (m/s)	[illegible]	Avg. Vel. (m/s)		0.61	
Max Ch Dpth (m)	[illegible]	Hydr. Depth (m)		0.19	
Conv. Total (m3/s)	[illegible]	Conv. (m3/s)		17.6	
Length Wtd. (m)		Wetted Per. (m)		11.27	
Min Ch El (m)	74.[illegible]	Shear (N/m2)		16.27	
Alpha	[illegible]	Stream Power (N/m s)		4.50	
Frctn Loss (m)		Cum Volume (1000 m3)			
C & E Loss (m)		Cum DA (1000 m2)			

[illegible] CROSS SECTION OUTPUT Profile #[illegible]

			Left OB	Channel	Right OB
E.G. Elev (m)	[illegible]	Element			
Vel Head (m)	[illegible]	Wt. n-Val.		0.040	
W.S. Elev (m)	[illegible]	Reach Len. (m)			
Crit W.S. (m)	[illegible]	Flow Area (m2)		45.08	
E.G. Slope (m/m)	[illegible]	Area (m2)		45.08	
Q Total (m3/s)	158.7[illegible]	Flow (m3/s)		158.71	
Top Width (m)	[illegible]	Top Width (m)		24.75	
Vel Total (m/s)	[illegible]	Avg. Vel. (m/s)		3.52	
Max Ch Dpth (m)	[illegible]	Hydr. Depth (m)		1.82	
Conv. Total (m3/s)	[illegible]	Conv. (m3/s)		1210.8	
Length Wtd. (m)		Wetted Per. (m)		26.4[illegible]	
Min Ch El (m)	74.[illegible]	Shear (N/m2)		162.72	
Alpha	[illegible]	Stream Power (N/m s)		572.94	
Frctn Loss (m)		Cum Volume (1000 m3)			
C & E Loss (m)		Cum DA (1000 m2)			

CROSS SECTION OUTPUT Profile 8(Nov1981 0000)

			Left OB	Channel	Right OB
E.G. Elev (m)	74.39	Element		0.040	
Vel Head (m)	0.02	Wt. n-Val.			
W.S. Elev (m)	74.38	Reach Len. (m)		2.11	
Crit W.S. (m)	74.28	Flow Area (m2)		2.11	
E.G. Slope (m/m)	0.005714	Area (m2)		1.31	
Q Total (m3/s)	1.31	Flow (m3/s)		11.12	
Top Width (m)	11.12	Top Width (m)		0.62	
Vel Total (m/s)	0.62	Avg. Vel. (m/s)		0.19	
Max Chl Dpth (m)	0.30	Hydr. Depth (m)		17.3	
Conv. Total (m3/s)	17.3	Conv. (m3/s)		11.27	
Length Wtd. (m)		Wetted Per. (m)		10.52	
Min Ch El (m)	74.06	Shear (N/m2)		6.52	
Alpha	1.99	Stream Power (N/m s)			
Frcn Loss (m)		Cum Volume (1000 m3)			
C & E Loss (m)		Cum AA (1000 m2)			

Profile Output Table - Standard Table 1

Reach	River Sta	Profile	Q Total (m3/s)	Min Ch El (m)	W.S. Elev (m)	Crit W.S. (m)	E.G. Elev (m)	E.G. Slope (m/m)	Vel Chnl (m/s)	Flow Area (m2)	Top Width (m)	Froude # Chl
ONE	20	18Sep1977 1200	1.31	76.67	76.98		76.98	0.004832	0.48	2.73	18.73	[illegible]
ONE	20	18Jul1981 1800	158.71	77.20	81.48	81.46	81.73	0.020708	2.32	88.40	125.23	[illegible]
ONE	20	1Nov1981 0000	1.31	77.20	78.08	78.03	78.25	0.028510	1.80	0.73	1.74	[illegible]
ONE	19	18Sep1977 1200	1.31	76.47	76.78		76.79	0.002389	0.34	3.86	26.17	[illegible]
ONE	19	18Jul1981 1800	158.71	76.98	79.75		79.86	0.001368	1.44	110.20	52.61	[illegible]
ONE	19	1Nov1981 0000	1.31	76.99	78.20		78.20	0.000004	0.04	31.69	42.31	[illegible]
ONE	18	18Sep1977 1200	1.31	76.17	76.60		76.61	0.002365	0.26	5.13	21.89	[illegible]
ONE	18	18Jul1981 1800	158.71	76.65	79.59		79.73	0.001982	1.48	84.68	47.52	[illegible]
ONE	18	1Nov1981 0000	1.31	77.88	78.17	78.17	78.19	0.045117	0.75	1.74	12.01	[illegible]
ONE	17	18Sep1977 1200	1.31	76.10	76.49		76.50	0.006016	0.49	2.69	21.18	[illegible]
ONE	17	18Jul1981 1800	158.71	76.19	79.56		79.67	0.001667	1.44	110.38	41.77	[illegible]
ONE	17	1Nov1981 0000	1.31	76.12	76.60		76.60	0.001162	0.28	4.67	24.40	[illegible]
ONE	16	18Sep1977 1200	1.31	76.15	76.38		76.40	0.002111	0.31	4.24	20.40	[illegible]
ONE	16	18Jul1981 1800	158.71	76.22	79.60		79.63	0.000257	0.69	231.61	99.47	[illegible]
ONE	16	1Nov1981 0000	1.31	76.33	76.50		76.52	0.011912	0.59	2.21	21.46	[illegible]
ONE	15	18Sep1977 1200	1.31	76.12	76.36		76.36	0.002615	0.35	3.75	26.16	[illegible]
ONE	15	18Jul1981 1800	158.71	76.05	79.57		79.62	0.000584	1.00	158.49	67.43	[illegible]
ONE	15	1Nov1981 0000	1.31	76.20	76.41		76.41	0.004389	0.41	3.21	26.11	[illegible]
ONE	14	18Sep1977 1200	1.31	76.05	76.33		76.33	0.001328	0.30	4.41	23.11	[illegible]
ONE	14	18Jul1981 1800	158.71	76.21	79.49		79.60	0.001056	1.54	103.04	34.91	[illegible]
ONE	14	1Nov1981 0000	1.31	76.09	76.27		76.30	0.012551	0.64	1.75	19.97	[illegible]
ONE	13	18Sep1977 1200	1.31	76.10	76.32		76.33	0.003882	0.39	3.36	[illegible]	[illegible]
ONE	13	18Jul1981 1800	158.71	76.04	79.48		79.59	0.000909	1.49	106.16	33.61	[illegible]
ONE	13	1Nov1981 0000	1.31	76.03	76.28	76.19	76.28	0.002172	0.32	3.95	25.83	[illegible]
ONE	12	18Sep1977 1200	1.31	76.04	76.27		76.28	0.002033	0.39	3.36	19.40	[illegible]
ONE	12	18Jul1981 1800	158.71	76.02	79.33		79.56	0.002201	2.12	74.91	25.35	[illegible]
ONE	12	1Nov1981 0000	1.31	76.04	76.17		76.20	0.017638	0.75	1.74	16.18	[illegible]
ONE	11	18Sep1977 1200	1.31	75.86	76.07		76.08	0.002452	0.41	3.18	16.45	[illegible]
ONE	11	18Jul1981 1800	158.71	75.67	79.15		79.37	0.001912	2.08	76.29	26.45	[illegible]
ONE	11	1Nov1981 0000	1.31	75.67	76.12		76.12	0.000251	0.20	6.53	17.87	[illegible]
ONE	10	18Sep1977 1200	1.31	75.58	75.86		75.87	0.002685	0.45	2.89	13.56	[illegible]
ONE	10	18Jul1981 1800	158.71	75.57	78.98		79.20	0.002342	2.02	78.65	34.21	[illegible]
ONE	10	1Nov1981 0000	1.31	75.67	76.00	75.99	76.05	0.029806	0.94	1.40	11.67	[illegible]
ONE	9	18Sep1977 1200	1.31	75.47	75.73		75.74	0.003149	0.47	2.78	14.17	[illegible]
ONE	9	18Jul1981 1800	158.71	75.53	78.91		79.09	0.001899	1.92	82.59	[illegible]	[illegible]
ONE	9	1Nov1981 0000	1.31	75.55	75.98		75.98	0.000133	[illegible]	[illegible]	[illegible]	[illegible]
ONE	8	18Sep1977 1200	1.31	75.38	75.71		75.71	0.000748	0.26	5.01	[illegible]	[illegible]
ONE	8	18Jul1981 1800	158.71	75.52	78.88		79.06	0.001312	1.91	[illegible]	[illegible]	[illegible]
ONE	8	1Nov1981 0000	1.31	75.79	75.93		75.96	0.024944	0.61	1.02	[illegible]	[illegible]
ONE	7	18Sep1977 1200	1.31	75.28	75.60		75.62	0.002544	0.48	2.74	[illegible]	[illegible]
ONE	7	18Jul1981 1800	158.71	75.16	78.71		78.92	0.001993	2.02	78.50	[illegible]	[illegible]
ONE	7	1Nov1981 0000	1.31	75.38	75.80		75.80	0.000674	0.30	4.42	18.12	[illegible]
ONE	6	18Sep1977 1200	1.31	75.10	75.43		75.44	0.002604	0.44	2.94	13.15	[illegible]
ONE	6	18Jul1981 1800	158.71	74.88	78.50		78.76	0.002501	2.29	69.31	25.72	[illegible]
ONE	6	1Nov1981 0000	1.31	75.25	75.65		75.69	0.011487	0.85	1.54	8.43	[illegible]
ONE	5	18Sep1977 1200	1.31	74.77	75.40		75.40	0.000672	0.33	4.00	31.01	[illegible]
ONE	5	18Jul1981 1800	158.71	74.72	78.40		78.68	0.002984	2.33	68.03	28.49	[illegible]
ONE	5	1Nov1981 0000	1.31	75.11	75.58		75.58	0.001214	0.49	1.15	13.71	[illegible]
ONE	4	18Sep1977 1200	1.31	74.94	75.33		75.35	0.001297	0.54	[illegible]	[illegible]	[illegible]
ONE	4	18Jul1981 1800	158.71	75.04	78.36		78.56	0.002344	2.02	78.75	[illegible]	[illegible]
ONE	4	1Nov1981 0000	1.31	75.04	75.47		75.50	0.006491	0.72	1.42	[illegible]	[illegible]
ONE	3	18Sep1977 1200	1.31	74.85	75.24		75.25	0.001034	0.31	4.17	[illegible]	[illegible]
ONE	3	18Jul1981 1800	158.71	74.87	78.33		78.47	0.001392	1.48	[illegible]	[illegible]	[illegible]
ONE	3	1Nov1981 0000	1.31	74.88	75.18		75.38	0.001492	0.52	4.05	[illegible]	[illegible]
ONE	2	18Sep1977 1200	1.31	74.80	75.05		75.06	0.003320	0.45	2.93	16.88	[illegible]
ONE	2	18Jul1981 1800	158.71	74.70	77.90		78.23	0.003248	2.55	62.31	[illegible]	[illegible]
ONE	2	1Nov1981 0000	1.31	74.84	75.04		75.06	0.004721	0.82	2.12	[illegible]	[illegible]
ONE	1	18Sep1977 1200	1.31	74.60	74.85		74.96	0.001356	0.34	3.81	[illegible]	[illegible]
ONE	1	18Jul1981 1800	158.71	74.50	77.65		78.08	0.003741	2.68	56.17	[illegible]	[illegible]
ONE	1	1Nov1981 0000	1.31	74.56	74.82		74.93	0.001262	0.24	3.85	[illegible]	[illegible]
ONE	0.5	18Sep1977 1200	1.31	74.53	74.83		74.85	0.004112	0.43	2.98	[illegible]	[illegible]
ONE	0.5	18Jul1981 1800	158.71	74.50	77.64		77.91	0.002238	2.28	[illegible]	[illegible]	[illegible]
ONE	0.5	1Nov1981 0000	1.31	74.59	74.81		74.83	0.007839	0.60	2.11	[illegible]	[illegible]
ONE	0	18Sep1977 1200	1.31	74.06	74.36	74.28	74.38	0.005529	0.61	2.14	[illegible]	[illegible]
ONE	0	18Jul1981 1800	158.71	74.06	76.93	76.42	77.56	0.009717	1.52	45.38	[illegible]	[illegible]
ONE	0	1Nov1981 0000	1.31	74.06	74.36	74.28	74.38	0.005519	0.62	[illegible]	[illegible]	[illegible]

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Geom: W/o EXTRACTION Flow: CAYAGUAS FLOW RATING
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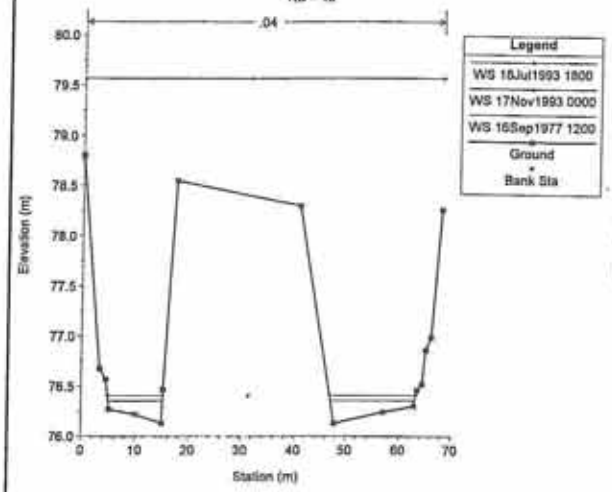

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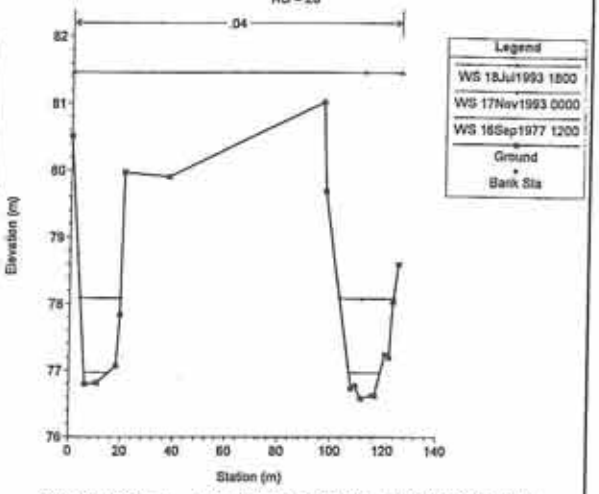

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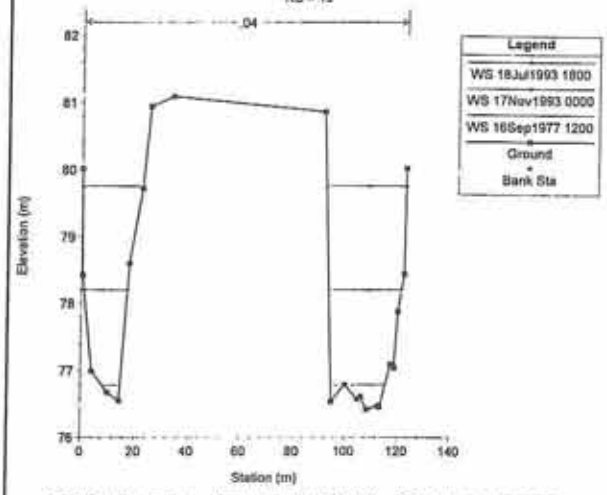

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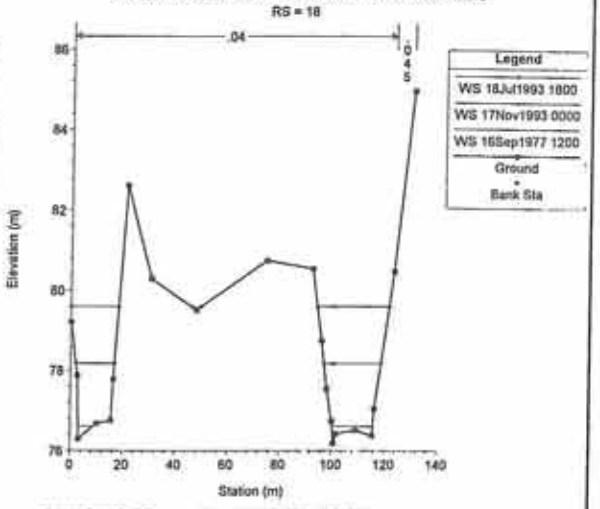

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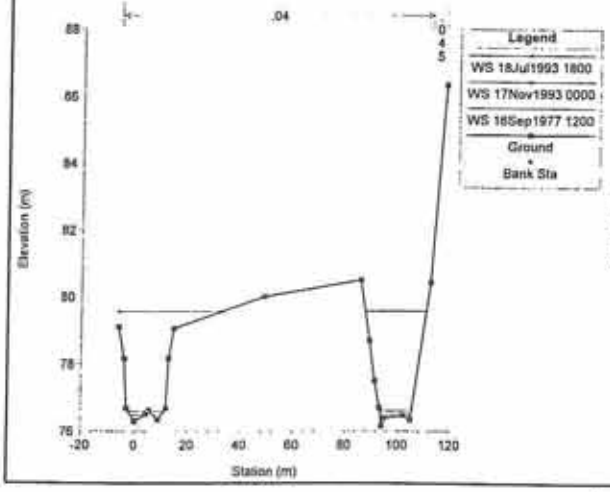

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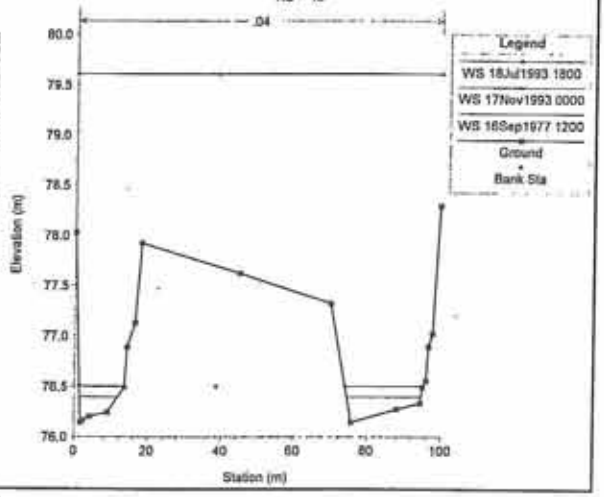

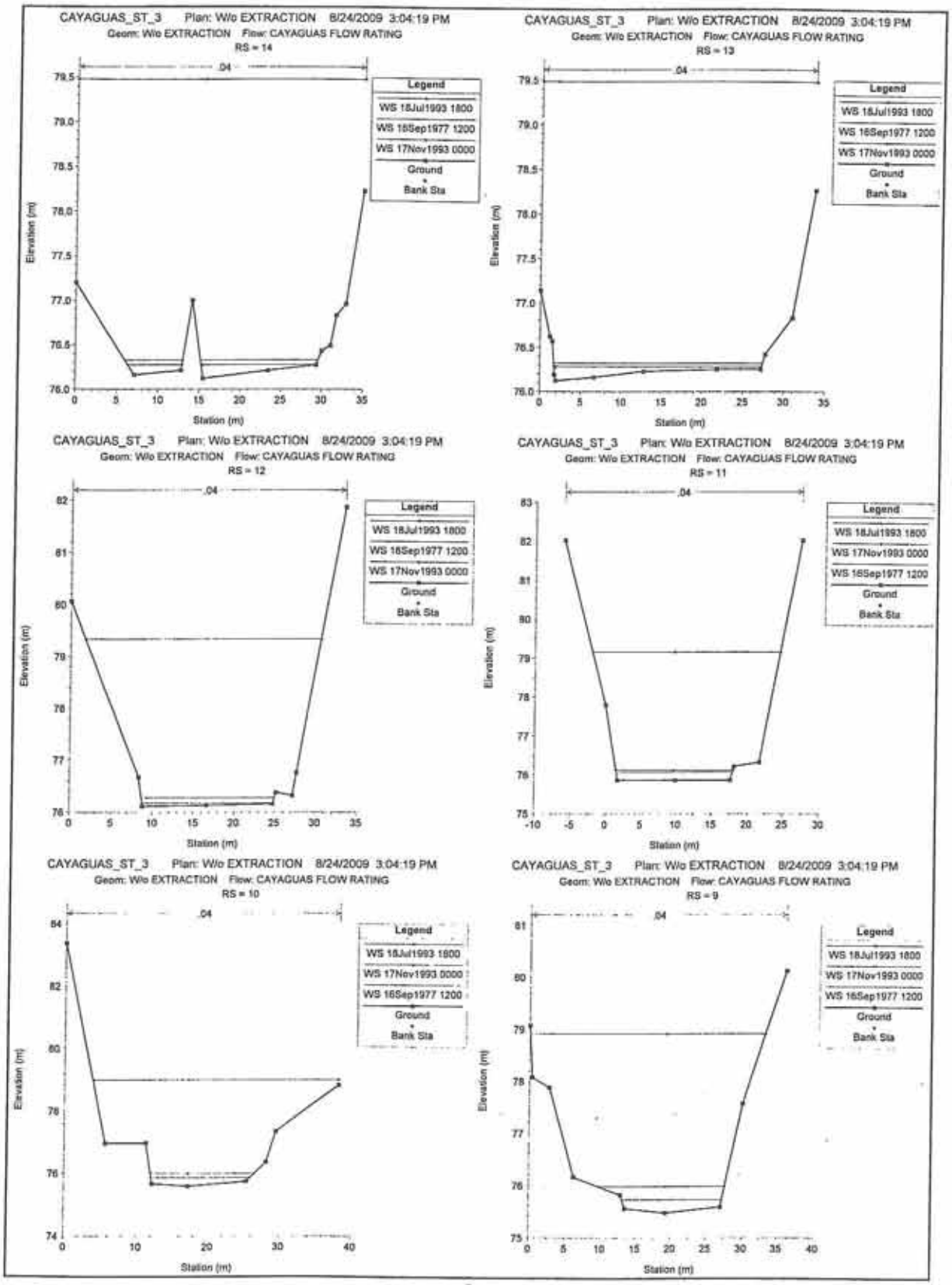
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Geom: W/o EXTRACTION Flow: CAYAGUAS FLOW RATING
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RS = 12
RS = 11
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.04
Legend
WS 18Jul1993 1800
WS 16Sep1977 1200
WS 17Nov1993 0000
Ground
Bank Sta
Elevation (m)
Station (m)

CAYAGUAS_ST_3 Plan: W/o EXTRACTION 8/24/2009 3:04:19 PM
Geom: W/o EXTRACTION Flow: CAYAGUAS FLOW RATING
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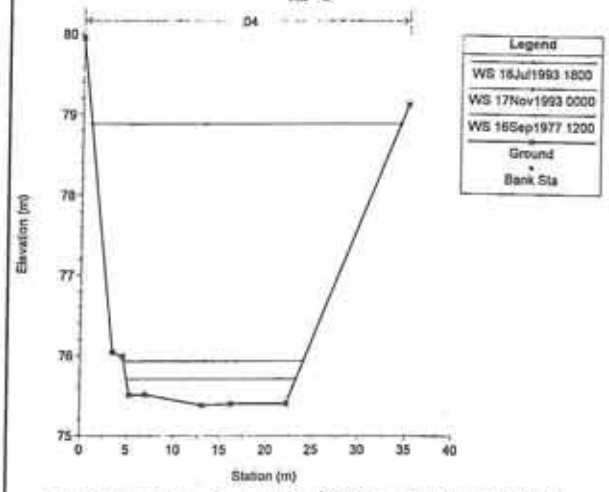

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Geom: W/o EXTRACTION Flow: CAYAGUAS FLOW RATING
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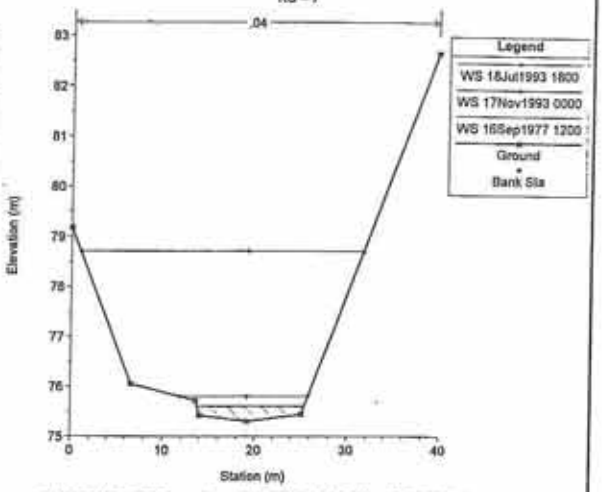

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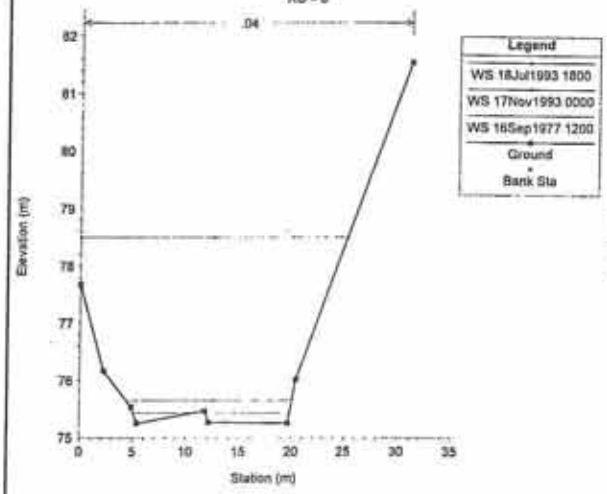
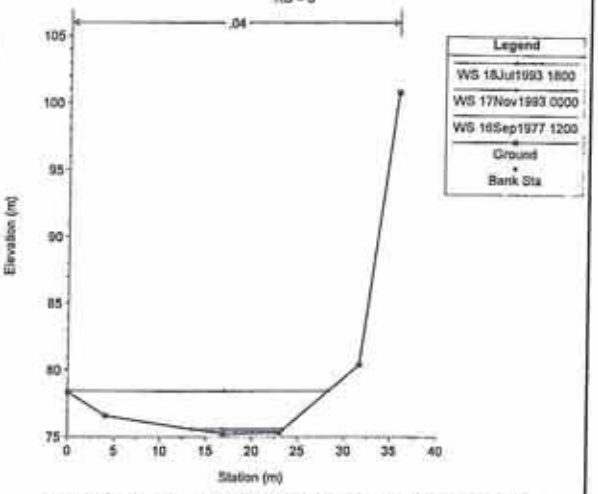
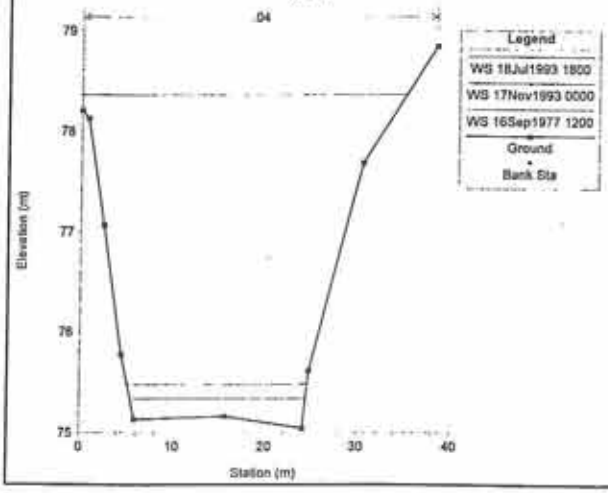
RS = 6



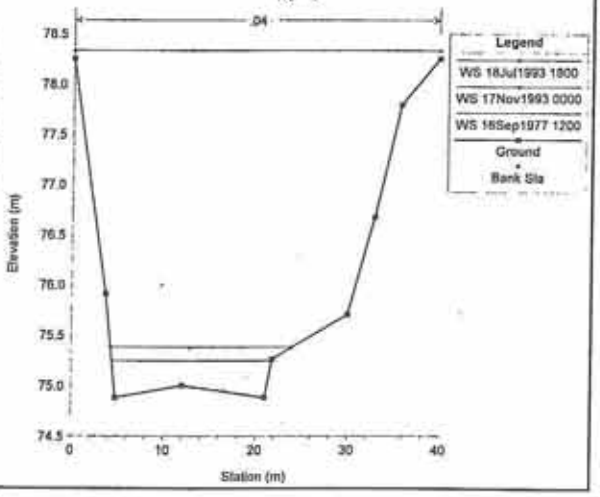
CAYAGUAS_ST_3 Plan: W/o EXTRACTION 8/24/2009 3:04:19 PM
Geom: W/o EXTRACTION Flow: CAYAGUAS FLOW RATING
RS = 5



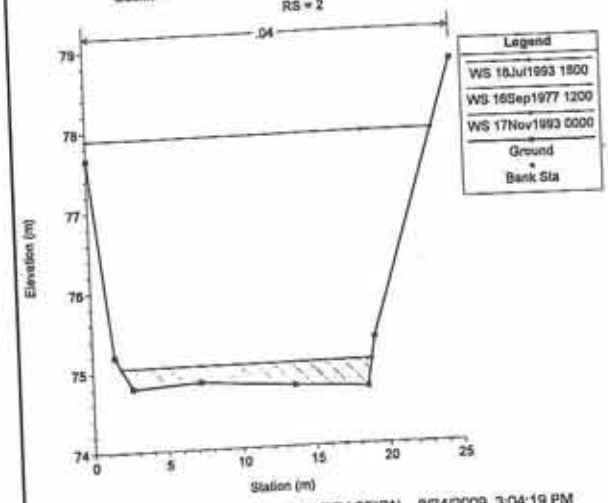
CAYAGUAS_ST_3 Plan: W/o EXTRACTION 8/24/2009 3:04:19 PM
Geom: W/o EXTRACTION Flow: CAYAGUAS FLOW RATING
RS = 4



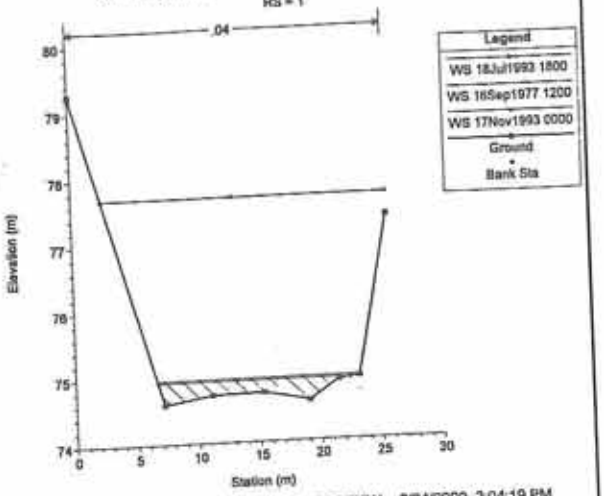
CAYAGUAS_ST_3 Plan: W/o EXTRACTION 8/24/2009 3:04:19 PM
Geom: W/o EXTRACTION Flow: CAYAGUAS FLOW RATING
RS = 3



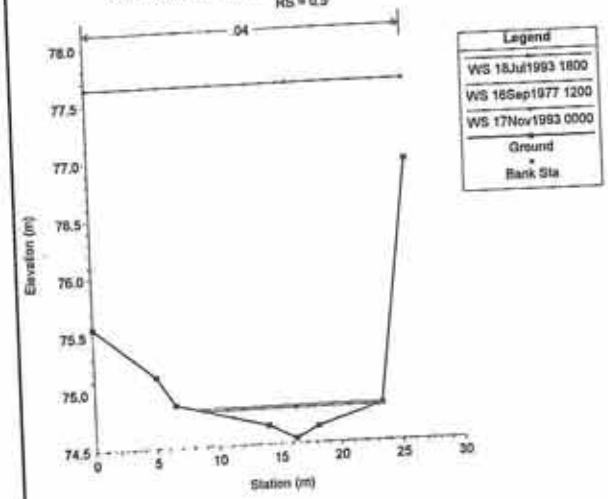
CAYAGUAS_ST_3 Plan: W/o EXTRACTION 8/24/2009 3:04:19 PM
Geom: W/o EXTRACTION Flow: CAYAGUAS FLOW RATING
RS = 2



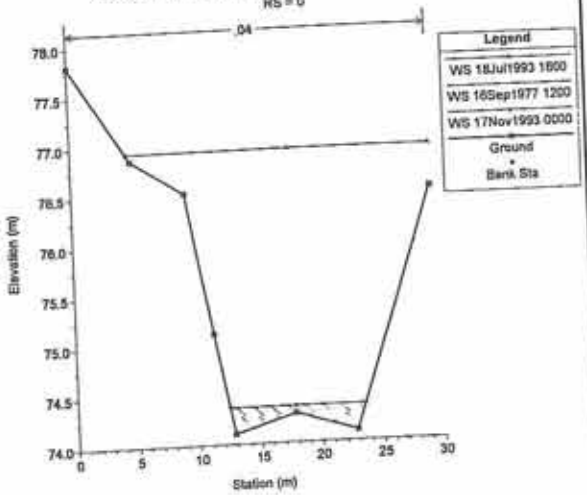
CAYAGUAS_ST_3 Plan: W/o EXTRACTION 8/24/2009 3:04:19 PM
Geom: W/o EXTRACTION Flow: CAYAGUAS FLOW RATING
RS = 1



CAYAGUAS_ST_3 Plan: W/o EXTRACTION 8/24/2009 3:04:19 PM
Geom: W/o EXTRACTION Flow: CAYAGUAS FLOW RATING
RS = 0.5



CAYAGUAS_ST_3 Plan: W/o EXTRACTION 8/24/2009 3:04:19 PM
Geom: W/o EXTRACTION Flow: CAYAGUAS FLOW RATING
RS = 0



Sedime[illegible] - W/o EXTRACTION

File Options View Help

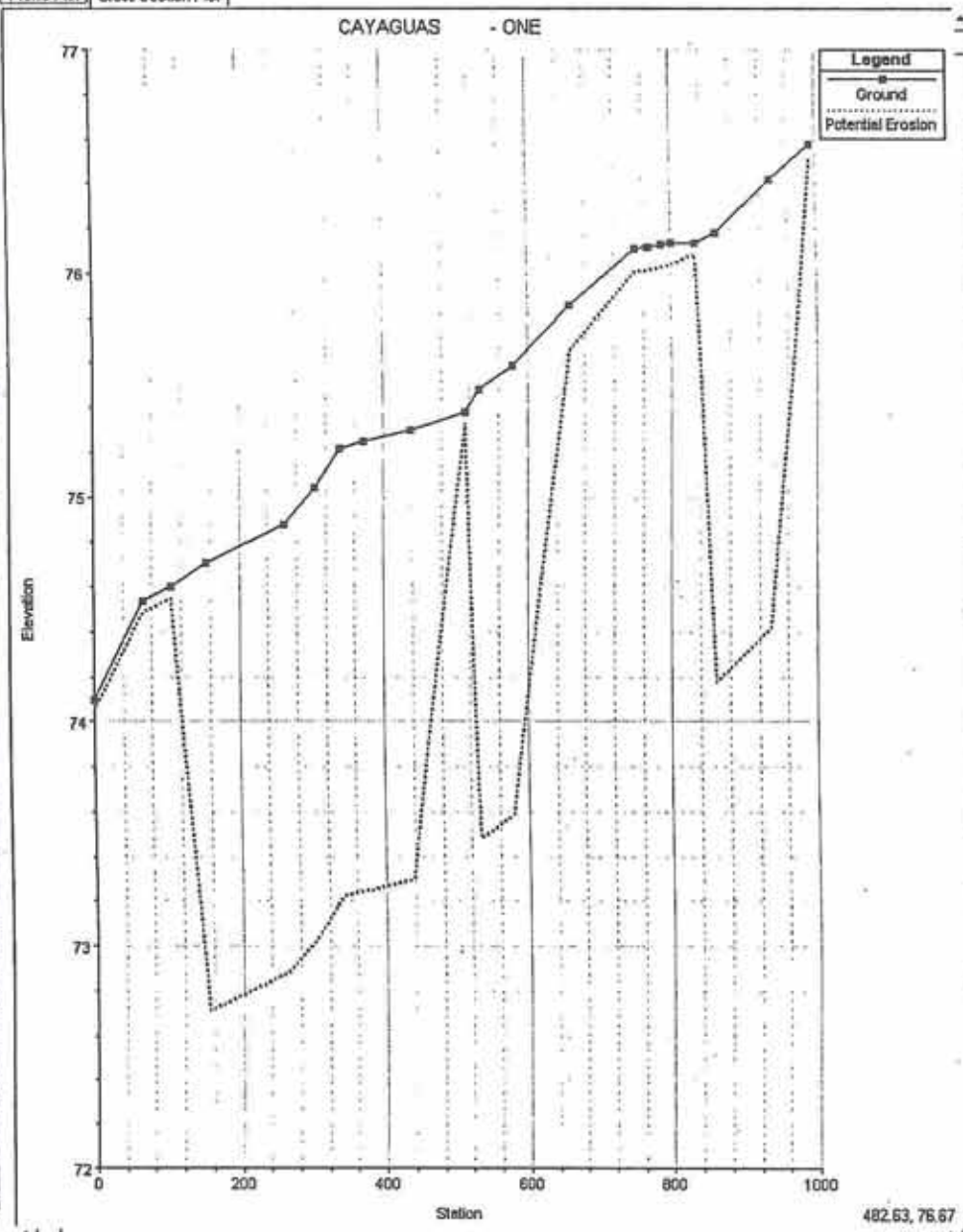
Initial Conditions and Transport Parameters | Boundary Conditions

River: CAYAGUAS
Reach: ONE
Transport Function: Meyer Peter Muller
Sorting Method: Exner 5
Fall Velocity Method: Report 12
Define/Edit Bed Gradation ...

	River	Reach	RS	Invert	Max Depth	Min Elev	Sta Left	Sta Right	Bed Gradation
1	CAYAGUAS	ONE	20	76.58	0.05		6.06	121.33	GS-5
2	CAYAGUAS	ONE	19	76.42	2		4.13	118.67	Interpolated
3	CAYAGUAS	ONE	18	76.18	2		3.11	116.21	Interpolated
4	CAYAGUAS	ONE	17	76.14	0.05		-3	105	Interpolated
5	CAYAGUAS	ONE	16	76.14	0.1		1.64	95.99	Interpolated
6	CAYAGUAS	ONE	15	76.13	0.1		5.16	64.45	Interpolated
7	CAYAGUAS	ONE	14	76.12	0.1		7.1	31.04	Interpolated
8	CAYAGUAS	ONE	13	76.12	0.1		1.75	27.77	GS-4
9	CAYAGUAS	ONE	12	76.11	0.1		8.8	27.21	Interpolated
10	CAYAGUAS	ONE	11	75.86	0.2		1.7	21.7	Interpolated
11	CAYAGUAS	ONE	10	75.59	2		12.13	28.13	Interpolated
12	CAYAGUAS	ONE	9	75.48	2		12.84	27.07	Interpolated
13	CAYAGUAS	ONE	8	75.38	0.05		5.28	22.17	GS-3
14	CAYAGUAS	ONE	7	75.3	2		6.56	25.07	Interpolated
15	CAYAGUAS	ONE	6	75.25	2		4.83	19.63	Interpolated
16	CAYAGUAS	ONE	5	75.22	2		4.06	23.01	Interpolated
17	CAYAGUAS	ONE	4	75.04	2		5.89	24.11	Interpolated
18	CAYAGUAS	ONE	3	74.88	2		4.76	21.83	GS-2
19	CAYAGUAS	ONE	2	74.71	2		1.46	19.09	Interpolated
20	CAYAGUAS	ONE	1	74.6	0.05		7.19	23.15	Interpolated
21	CAYAGUAS	ONE	0.5	74.54	0.05		6.53	23.33	GS-1
22	CAYAGUAS	ONE	0	74.1	0.05		12.8	22.79	Copy GS-1

Use Banks for Extents | Interpolate Gradations

Profile Plot | Cross Section Plot



start | Microsoft Excel | HEC-RAS 4.0 | Sediment Data - W/o | 11:41 AM

Load Specification for CAYAGUAS ONE 20

Number of flow-load points: 20 sets

	Flow (m3/s)	9.91	19.82	29.73	39.64	49.55	59.46	69.37	79.28	89.19	99.09	109	118.91	128.82	138.73	148.64
	Total Load (tonnes/day)	659.22	5296.37	15347.03	22202.45	22202.45	22202.45	22202.45	22202.45	22202.45	22202.45	22202.45	22202.45	22202.45	22202.45	22202.45
1	Clay															
2	VFM															
3	FM															
4	MM															
5	CM	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004
6	VFS	0.007	0.007	0.007	0.007	0.007	0.007	0.007	0.007	0.007	0.007	0.007	0.007	0.007	0.007	0.007
7	FS	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
8	MS	0.059	0.059	0.059	0.059	0.059	0.059	0.059	0.059	0.059	0.059	0.059	0.059	0.059	0.059	0.059
9	CS	0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.23
10	VCS	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44
11	VFG	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21
12	FG	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04
13	MG															
14	CG															
15	VCG															
16	SC															
17	LC															
18	SB															
19	MB															
20	LB															

Plot ... OK Cancel

start | P:\526-Material Ex... | Microsoft Excel - H... | HEC-RAS 4.0 | Title pages.rtf - M... | Sediment Data - W... | Clipboard01 - Infen... | Load Specification ... | 11:45 AM

Page [redacted] Vication for CAYAGUAS ONE 20

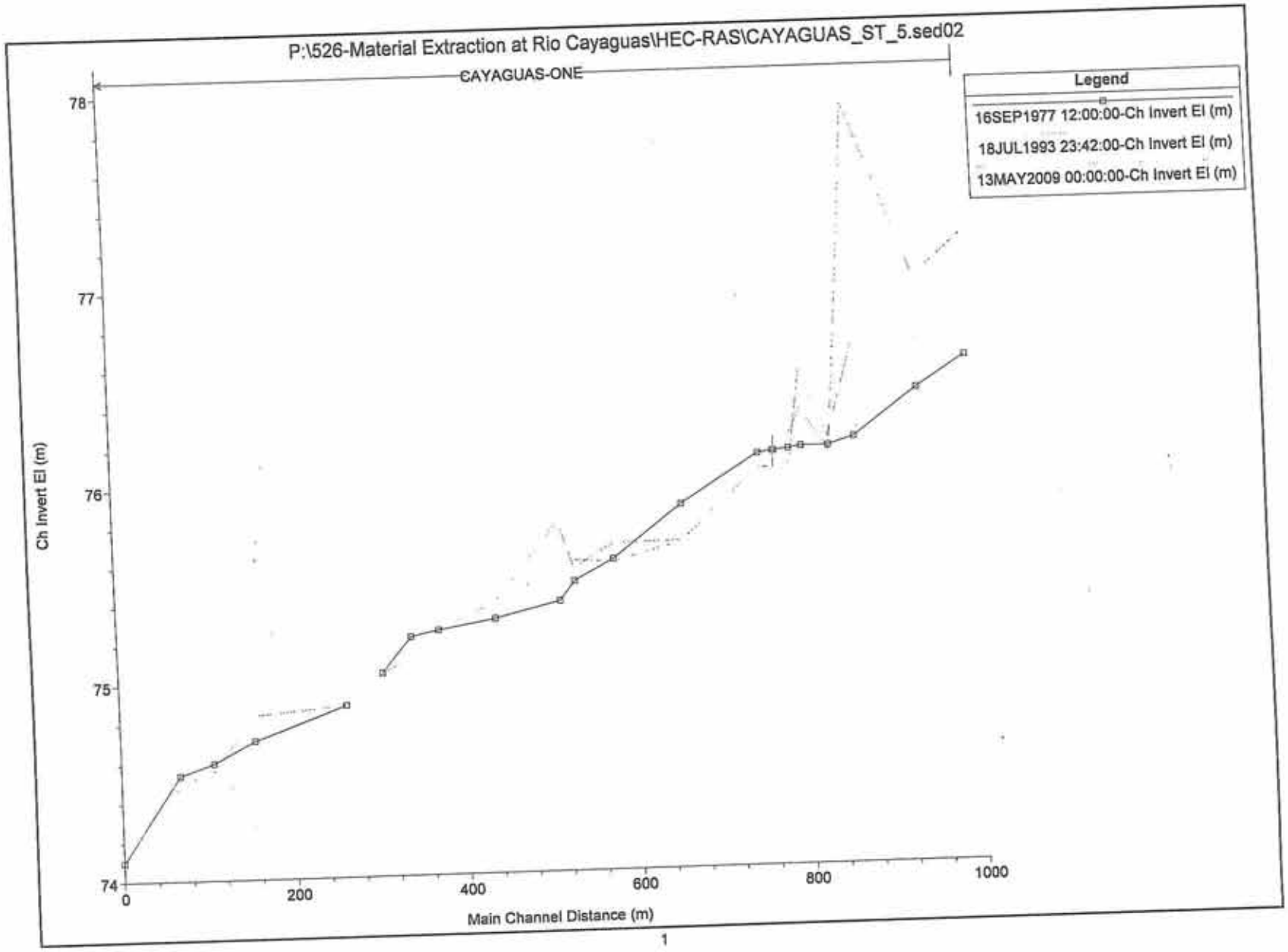
Number of flow-load points 20 sets

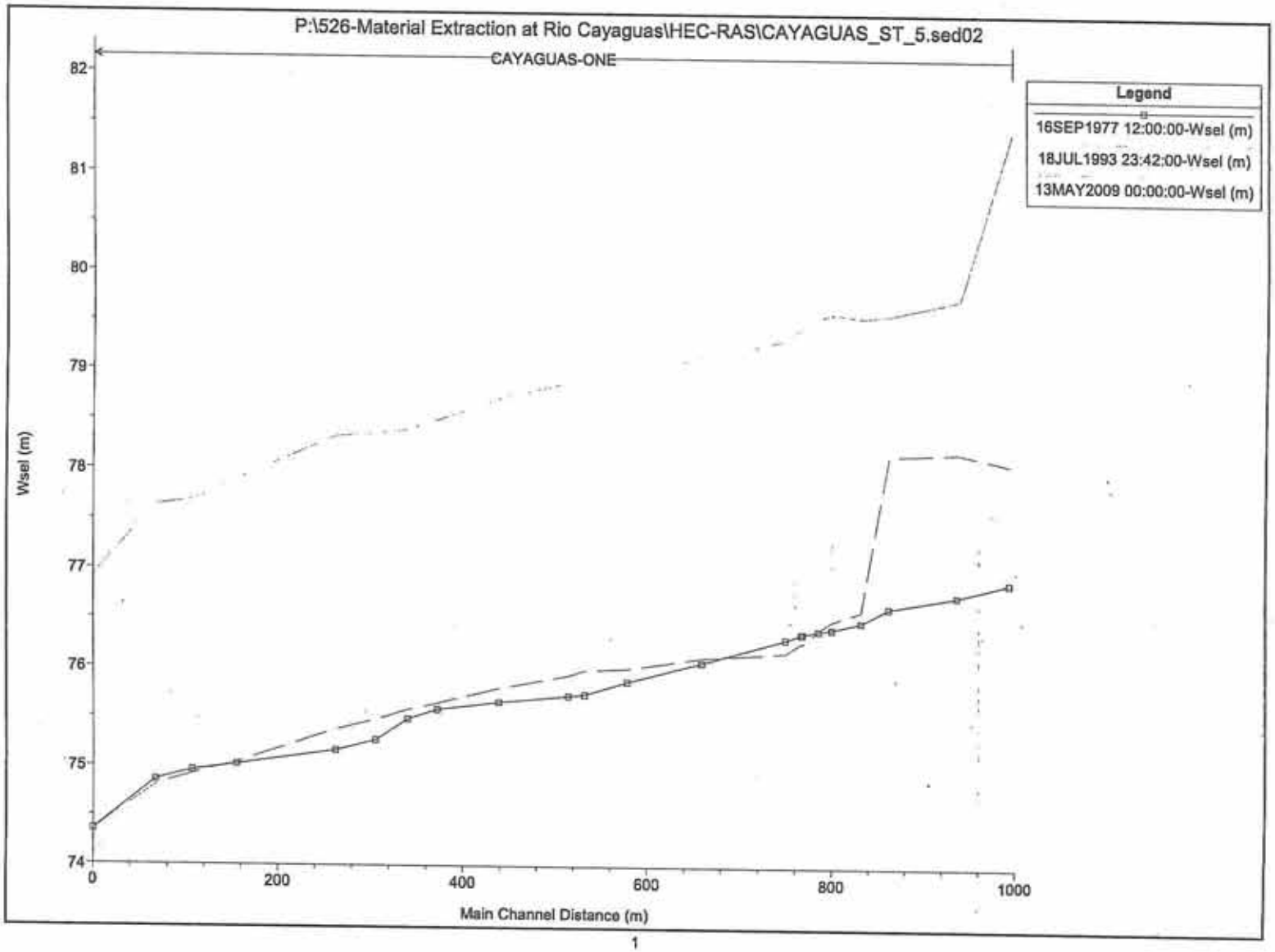
	Flow (m3/s)	59.46	69.37	79.28	89.19	99.09	109	118.91	128.82	138.73	148.64	158.55	168.46	178.37	188.28	198.19
	Total Load (tonnes/day)	22202.45	22202.45	22202.45	22202.45	22202.45	22202.45	22202.45	22202.45	22202.45	22202.45	22202.45	22202.45	22202.45	22202.45	22202.45
1	Clay															
2	VFM															
3	FM															
4	MM															
5	CM	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004
6	VFS	0.007	0.007	0.007	0.007	0.007	0.007	0.007	0.007	0.007	0.007	0.007	0.007	0.007	0.007	0.007
7	FS	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
8	MS	0.059	0.059	0.059	0.059	0.059	0.059	0.059	0.059	0.059	0.059	0.059	0.059	0.059	0.059	0.059
9	CS	0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.23
10	VCS	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44
11	VFG	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21
12	FG	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04
13	MG															
14	CG															
15	VCG															
16	SC															
17	LC															
18	SB															
19	MB															
20	LB															

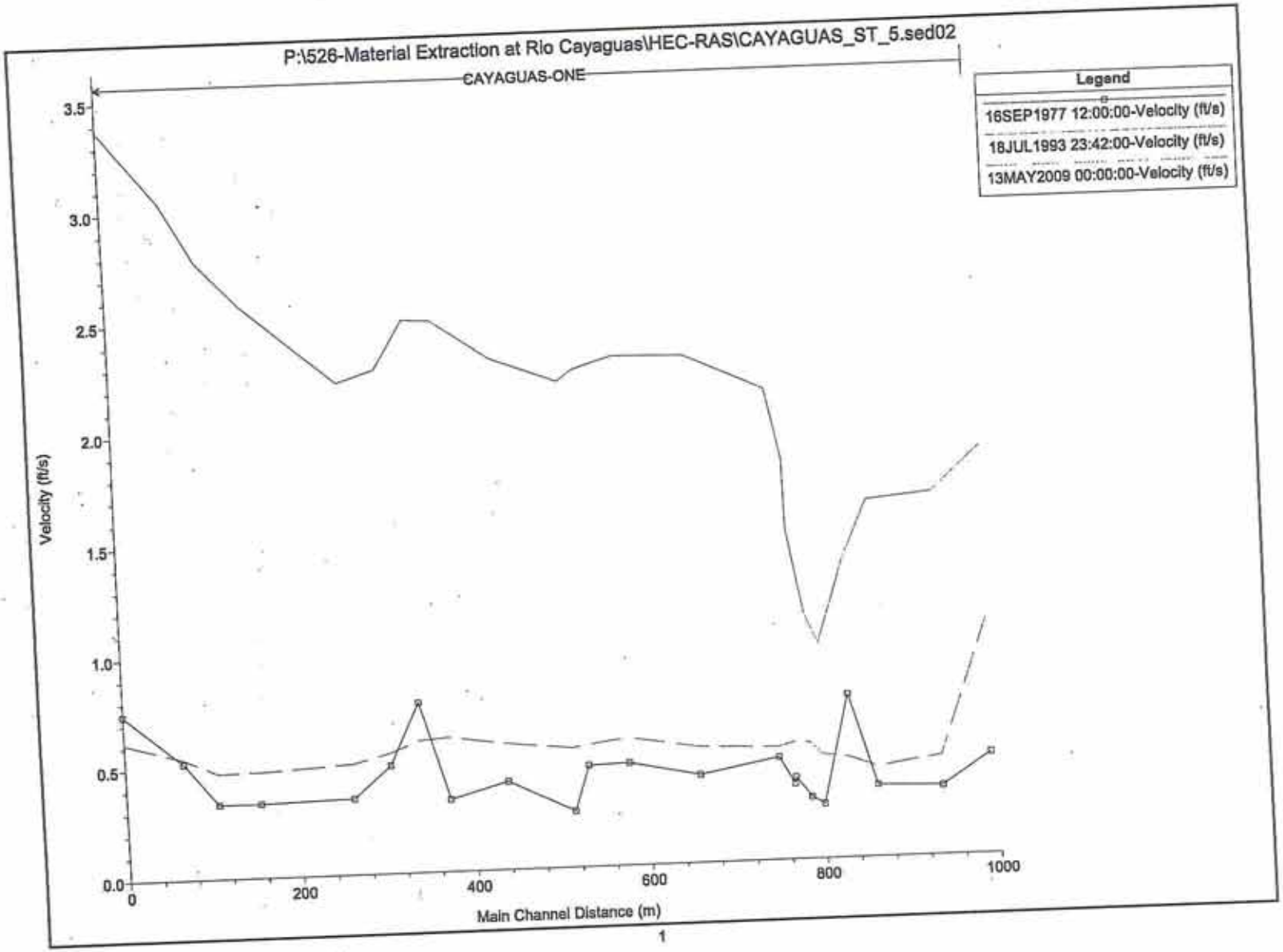
Plot ...

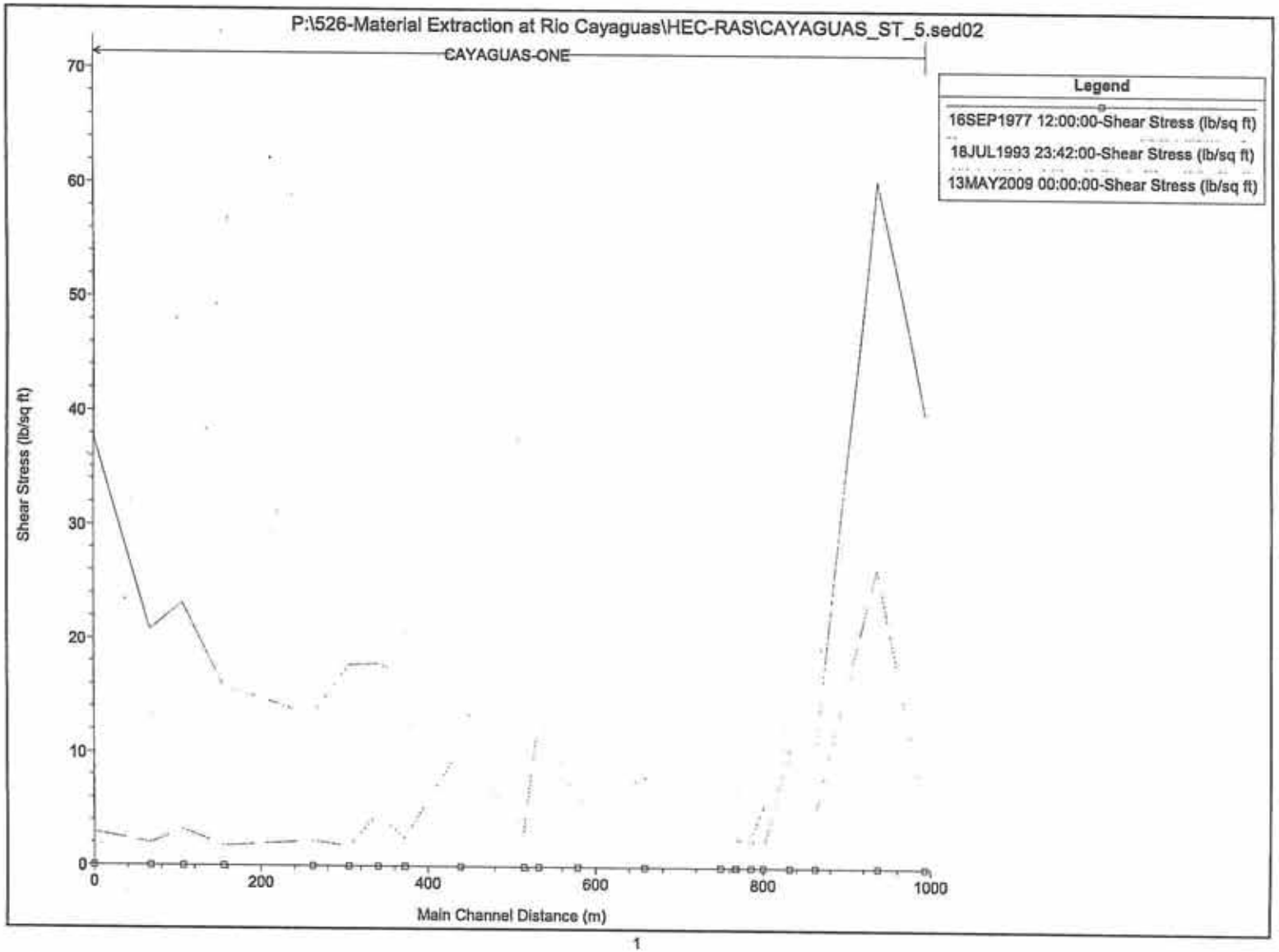
OK Cancel

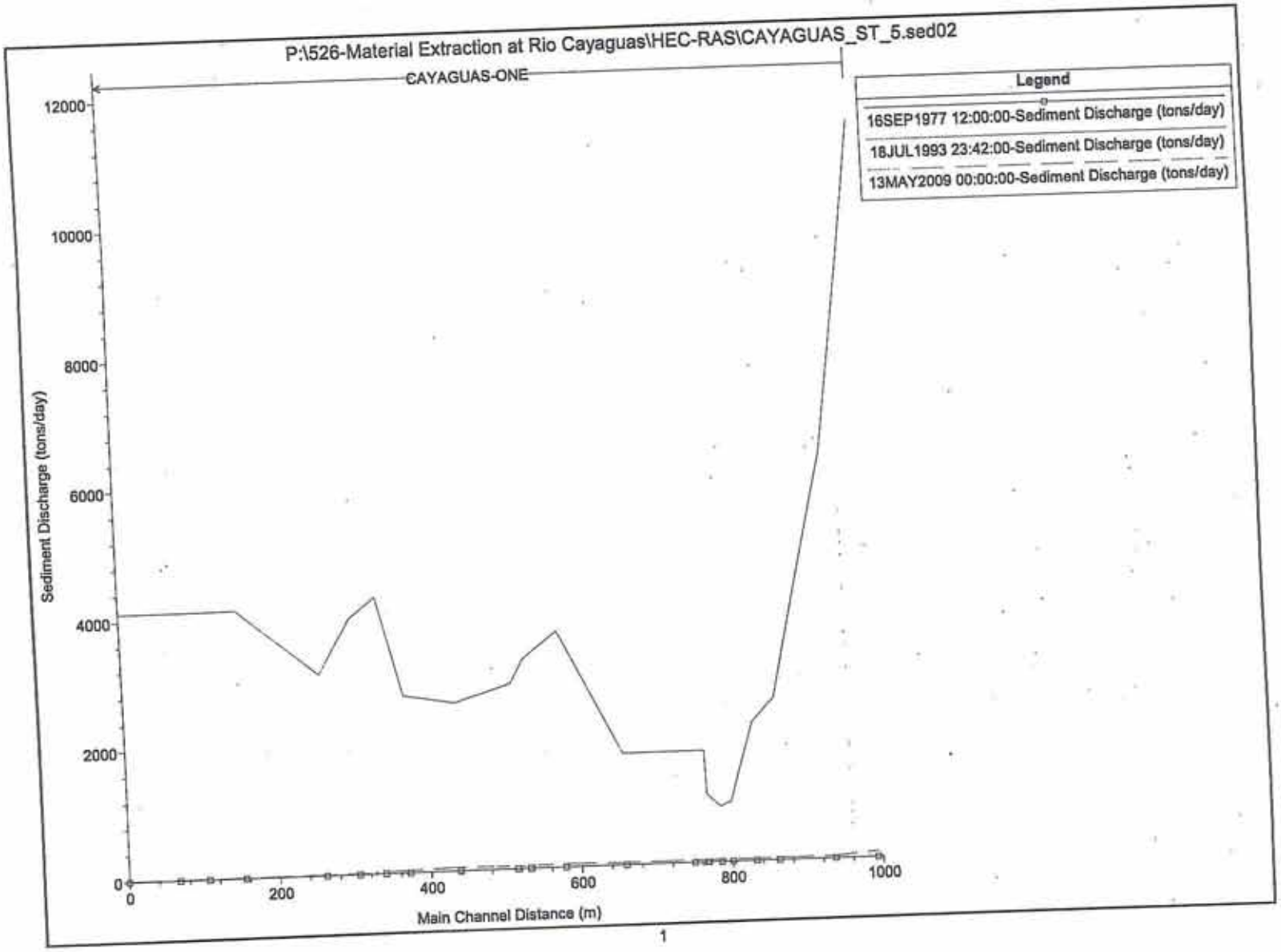
start P:\526-Maten... Microsoft Exce... HEC-RAS 4.0 Title pages.rtf ... Sediment Data... Clipboard02 - ... Load Specifica... W02.pdf - Ado... 11:45 AM

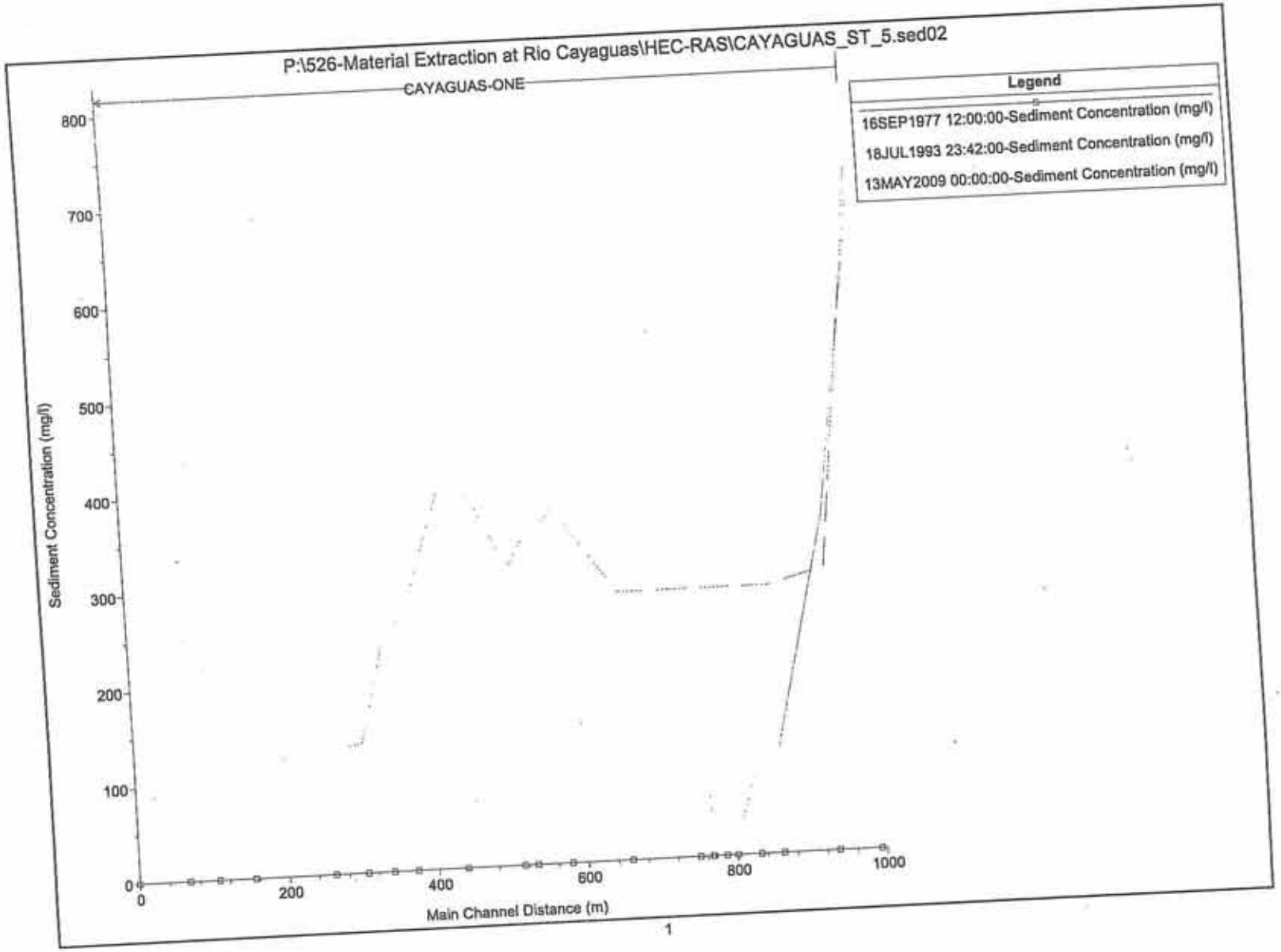

P:\526-Material Extraction at Rio Cayaguas\HEC-RAS\CAYAGUAS_ST_5.sed02
CAYAGUAS-ONE
Legend
16SEP1977 12:00:00-Ch Invert El (m)
18JUL1993 23:42:00-Ch Invert El (m)
13MAY2009 00:00:00-Ch Invert El (m)
Ch Invert El (m)
78
77
76
75
74
0
200
400
600
800
1000
Main Channel Distance (m)


P:\526-Material Extraction at Rio Cayaguas\HEC-RAS\CAYAGUAS_ST_5.sed02
CAYAGUAS-ONE
Legend
16SEP1977 12:00:00-Wsel (m)
18JUL1993 23:42:00-Wsel (m)
13MAY2009 00:00:00-Wsel (m)
Wsel (m)
82
81
80
79
78
77
76
75
74
0
200
400
600
800
1000
Main Channel Distance (m)


P:\526-Material Extraction at Rio Cayaguas\HEC-RAS\CAYAGUAS_ST_5.sed02
CAYAGUAS-ONE
Legend
16SEP1977 12:00:00-Velocity (ft/s)
18JUL1993 23:42:00-Velocity (ft/s)
13MAY2009 00:00:00-Velocity (ft/s)
Velocity (ft/s)
3.5
3.0
2.5
2.0
1.5
1.0
0.5
0.0
0
200
400
600
800
1000
Main Channel Distance (m)


P:\526-Material Extraction at Rio Cayaguas\HEC-RAS\CAYAGUAS_ST_5.sed02
CAYAGUAS-ONE
Legend
16SEP1977 12:00:00-Shear Stress (lb/sq ft)
18JUL1993 23:42:00-Shear Stress (lb/sq ft)
13MAY2009 00:00:00-Shear Stress (lb/sq ft)
Shear Stress (lb/sq ft)
0
10
20
30
40
50
60
70
0
200
400
600
800
1000
Main Channel Distance (m)


P:\526-Material Extraction at Rio Cayaguas\HEC-RAS\CAYAGUAS_ST_5.sed02
CAYAGUAS-ONE
Legend
16SEP1977 12:00:00-Sediment Discharge (tons/day)
18JUL1993 23:42:00-Sediment Discharge (tons/day)
13MAY2009 00:00:00-Sediment Discharge (tons/day)
Sediment Discharge (tons/day)
12000
10000
8000
6000
4000
2000
0
0
200
400
600
800
1000
Main Channel Distance (m)


P:\526-Material Extraction at Rio Cayaguas\HEC-RAS\CAYAGUAS_ST_5.sed02
CAYAGUAS-ONE
Legend
16SEP1977 12:00:00-Sediment Concentration (mg/l)
18JUL1993 23:42:00-Sediment Concentration (mg/l)
13MAY2009 00:00:00-Sediment Concentration (mg/l)
Sediment Concentration (mg/l)
0
100
200
300
400
500
600
700
800
0
200
400
600
800
1000
Main Channel Distance (m)

APPENDIX G

SEDIMENT TRANSPORT ANALYSIS WITH EXTRACTION

(PROPOSED CONDITION)

```
                    HEC-RAS Version 4.0.0 March 2008
                      U.S. Army Corps 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: CAYAGUAS_ST_5
Project File : CAYAGUAS_ST_5.prj
Run Date and Time: 6/24/2009 4:19:12 PM

Project in SI units

Project Description:
Sediment transport Study for Cayaguas River at San Lorenzo, PR.
Surveyor: José
Villanova
Roll Tearing: Eng. Saigas (CEO Cim)

*****************************************************************************

PLAN DATA

Plan Title: W EXTRACTION
Plan File : P:\526-Material Extraction at Rio Cayaguas\HEC-RAS\CAYAGUAS_ST_5.p03

          Geometry Title: W/ EXTRACTION
          Geometry File : P:\526-Material Extraction at Rio Cayaguas\HEC-RAS\CAYAGUAS_ST_5.g02

          Flow Title    : CAYAGUAS FLOW RATING
          Flow File     : P:\526-Material Extraction at Rio Cayaguas\HEC-RAS\CAYAGUAS_ST_5.f01

Plan Summary Information:
Number of:  Cross Sections =   22    Multiple Openings  =   0
            Culverts       =    0    Inline Structures  =   0
            Bridges        =    0    Lateral Structures =   0

Computational Information
    Water surface calculation tolerance  =  0.003
    Critical depth calculation tolerance =  0.003
    Maximum number of iterations         =  20
    Maximum difference tolerance         =  0.1
    Flow tolerance factor                =  0.001

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

*****************************************************************************

GEOMETRY DATA

Geometry Title: W/ EXTRACTION
Geometry File : P:\526-Material Extraction at Rio Cayaguas\HEC-RAS\CAYAGUAS_ST_5.g02

CROSS SECTION


RIVER: CAYAGUAS
REACH: ONE                RS: 20

INPUT
Description:
Station Elevation Data    num=      19
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*****************************************************************************
       0   80.51    6.06    76.8   10.66   76.81   18.06   77.07   19.41   77.84
   20.41   74.97   17.19   75.91   46.08   81.02   97.58   79.69   107.8   76.73
  109.12   76.77  111.47   76.56  115.93   76.63  116.51   78.42  120.44   77.25
  121.83   77.2   125.21   78.84  126.21   78.5

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
*****************************************************
       0    .045       0     .04  126.21    .045

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
             0  125.21             19.56   56.58   58.5          .1          .3

CROSS SECTION OUTPUT  Profile #1:Sep1977 1200
*****************************************************************************
* E.G. Elev (m)       *   76.96 * Element                 * Left OB * Channel * Right OB *
* Vel Head (m)        *    0.61 * Wt. n-Val               *        *   0.040 *         *
* W.S. Elev (m)       *   76.36 * Reach Len. (m)          *  39.56 *   56.58 *   58.50 *
* Crit W.S. (m)       *         * Flow Area (m2)          *        *    3.73 *         *
* E.G. Slope (m/m)    *0.004528 * Area (m2)               *        *    2.73 *         *
* Q Total (m3/s)      *    1.71 * Flow (m3/s)             *        *    1.31 *         *
* Top Width (m)       *   18.73 * Top Width (m)           *        *   18.73 *         *
* Vel Total (m/s)     *    0.48 * Avg. Vel. (m/s)         *        *    0.48 *         *
* Max Chl Dpth (m)    *    0.16 * Hyd. Depth (m)          *        *    0.15 *         *
* Conv. Total (m3/s)  *   18 * * Conv. (m3/s)             *        *   18.9 *         *
* Length Wtd. (m)     *   56.58 * Wetted Per. (m)         *        *   18.80 *         *
* Min Ch El (m)       *   76.47 * Shear (N/m2)            *        *    6.88 *         *
* Alpha               *    1.55 * Stream Power (N/m s)    *        *    3.38 *         *
* Critic Loss (m)     *    0.19 * Cum Volume (1000 m3)    *        *    3.61 *         *
* C & E Loss (m)      *    0.04 * Cum WA (1000 m2)        *        *   20.57 *         *
*****************************************************************************

Warning: Divided flow computed for this cross-section.
```

CROSS SECTION OUTPUT Profile #16Jul1993 1600

			Left OB	Channel	Right OB
E.G. Elev (m)	81.73	Element		0.040	
Vel Head (m)	0.23	Wt. n-Val			
W.S. Elev (m)	81.46	Reach Len. (m)	39.56	56.58	58.50
Crit W.S. (m)	81.48	Flow Area (m2)		48.49	
E.G. Slope (m/m)	+0.020617	Area (m2)		48.49	
Q Total (m3/s)	158.71	Flow (m3/s)		158.71	
Top Width (m)	125.23	Top Width (m)		125.23	
Vel Total (m/s)	2.32	Avg. Vel. (m/s)		3.32	
Max Chl Dpth (m)	4.26	Hydr. Depth (m)		0.55	
Conv. Total (m3/s)	1195.3	Conv. (m3/s)		1105.3	
Length Wtd. (m)	56.58	Wetted Per. (m)		132.03	
Min Ch El (m)	77.28	Shear (N/m2)		104.87	
Alpha	1.00	Stream Power (N/m s)		243.04	
Froth Loss (m)	0.22	Cum Volume (1000 m3)		85.05	
C & E Loss (m)	0.01	Cum EA (1000 m2)		37.37	

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

CROSS SECTION OUTPUT Profile 17Nov1993 0000

			Left OB	Channel	Right OB
E.G. Elev (m)	78.24	Element		0.040	
Vel Head (m)	0.58	Wt. n-Val.			
W.S. Elev (m)	78.07	Reach Len. (m)	39.56	56.58	58.50
Crit W.S. (m)	78.03	Flow Area (m2)		0.78	
E.G. Slope (m/m)	+0.031311	Area (m2)		1.31	
Q Total (m3/s)	1.91	Flow (m3/s)		1.67	
Top Width (m)	1.87	Top Width (m)		1.87	
Vel Total (m/s)	1.47	Avg. Vel. (m/s)		0.42	
Max Chl Dpth (m)	0.97	Hydr. Depth (m)		7.4	
Conv. Total (m3/s)	7.4	Conv. (m3/s)		2.55	
Length Wtd. (m)	56.58	Wetted Per. (m)		84.52	
Min Ch El (m)	77.10	Shear (N/m2)		157.61	
Alpha	1.00	Stream Power (N/m s)		5.27	
Froth Loss (m)	0.02	Cum Volume (1000 m3)		28.45	
C & E Loss (m)	0.01	Cum EA (1000 m2)			

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream 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: CAYAGUAS
REACH: ONE RS: 19

INPUT
Description:
Station Elevation Data num= 20

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
[illegible]	80.01	[illegible]	78.83	[illegible]	[illegible]	10.04	76.67	14.94	76.45
[illegible]	78.6	22.45	[illegible]	[illegible]	80.94	31.58	81.05	91.13	80.84
98.47	76.53	106.14	[illegible]	[illegible]	[illegible]	106.28	78.61	108.55	76.42
112.2	76.47	113.47	76.45	113.48	77.05	118.87	77.04	119.87	77.88
[illegible]	78.44	122.71	[illegible]						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
[illegible]	.045	[illegible]	[illegible]	[illegible]	.045

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

[illegible]	122.71	[illegible]	54.52	78.31	.1	.3

CROSS SECTION OUTPUT Profile 21Dec1993 1200

			Left OB	Channel	Right OB
E.G. Elev (m)	[illegible]	Element		0.040	
Vel Head (m)	[illegible]	Wt. n-Val.			
W.S. Elev (m)	[illegible]	Reach Len. (m)	51.65	54.52	78.31
Crit W.S. (m)	[illegible]	Flow Area (m2)		3.86	
E.G. Slope (m/m)	[illegible]	Area (m2)		3.86	
Q Total (m3/s)	[illegible]	Flow (m3/s)		1.21	
Top Width (m)	[illegible]	Top Width (m)		26.18	
Vel Total (m/s)	[illegible]	Avg. Vel. (m/s)		0.34	
Max Chl Dpth (m)	[illegible]	Hydr. Depth (m)		0.15	
Conv. Total (m3/s)	[illegible]	Conv. (m3/s)		26.8	
Length Wtd. (m)	[illegible]	Wetted Per. (m)		26.37	
Min Ch El (m)	[illegible]	Shear (N/m2)		3.43	
Alpha	[illegible]	Stream Power (N/m s)		1.17	
Froth Loss (m)	[illegible]	Cum Volume (1000 m3)		3.42	
C & E Loss (m)	[illegible]	Cum EA (1000 m2)		19.32	

Warning: Divided flow computed for this cross section.

CROSS SECTION OUTPUT Profile 24Jul1994 1800

			Left OB	Channel	Right OB
E.G. Elev (m)	[illegible]	Element		0.040	
Vel Head (m)	[illegible]	Wt. n-Val.			
W.S. Elev (m)	[illegible]	Reach Len. (m)	51.65	54.52	78.31
Crit W.S. (m)	[illegible]	Flow Area (m2)		103.81	
E.G. Slope (m/m)	[illegible]	Area (m2)		103.81	
Q Total (m3/s)	[illegible]	Flow (m3/s)		158.71	
Top Width (m)	[illegible]	Top Width (m)		51.98	
Vel Total (m/s)	[illegible]	Avg. Vel. (m/s)		1.53	
Max Chl Dpth (m)	[illegible]	Hydr. Depth (m)		2.00	
Conv. Total (m3/s)	[illegible]	Conv. (m3/s)		1945.2	

```
* Length Wtd. (m)      *   74.52 * Wetted Per. (m)      *          *   55.39 *          *
* Min Ch El (m)        *   76.39 * Shear (N/m2)         *          *   29.75 *          *
* Alpha                *    1.00 * Stream Power (N/m s) *          *   45.48 *          *
* Frctn Loss (m)       *    0.14 * Cum Volume (1000 m3) *          *   80.18 *          *
* C & E Loss (m)       *    0.00 * Cum EA (1000 m2)     *          *   32.37 *          *
*****************************************************************************************

Warning: Divided flow computed for this cross-section.

CROSS SECTION OUTPUT  Profile #17Nov1994 0000
*****************************************************************************************
* E.G. Elev (m)        *   78.19 * Element              * Left OB * Channel * Right OB *
* Vel Head (m)         *    0.00 * Wt. n-Val.           *          *   0.040 *          *
* W.S. Elev (m)        *   78.19 * Reach Len. (m)       *   51.65 *   74.52 *   78.31  *
* Crit W.S. (m)        *         * Flow Area (m2)       *         *   31.48 *          *
* E.G. Slope (m/m)     *0.000004 * Area (m2)            *         *   31.48 *          *
* Q Total (m3/s)       *    1.31 * Flow (m3/s)          *         *    1.31 *          *
* Top Width (m)        *   42.72 * Top Width (m)        *         *   42.72 *          *
* Vel Total (m/s)      *    0.04 * Avg. Vel. (m/s)      *         *    0.04 *          *
* Max Chl Dpth (m)     *    1.20 * Hydr. Depth (m)      *         *    0.74 *          *
* Conv. Total (m3/s)   *  633.6 * Conv. (m3/s)          *         *  633.6 *          *
* Length Wtd. (m)      *   74.52 * Wetted Per. (m)      *         *   43.53 *          *
* Min Ch El (m)        *   76.39 * Shear (N/m2)         *         *    0.03 *          *
* Alpha                *    1.00 * Stream Power (N/m s) *         *    0.00 *          *
* Frctn Loss (m)       *    0.00 * Cum Volume (1000 m3) *         *    4.36 *          *
* C & E Loss (m)       *    0.05 * Cum EA (1000 m2)     *         *   19.20 *          *
*****************************************************************************************

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

CROSS SECTION

RIVER: CAYAGUAS
REACH: ONE                    RS: 18

INPUT
Description:
Station Elevation Data    num=      21
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*****************************************************************************************
       0   79.21    2.57   77.88    4.11   76.29   10.11   76.68   15.5   76.75
   14.45   77.78   21.33   67.63   40.62   60.78   47.87   78.51   74.9   80.74
   92.39   99.04      96   78.74   98.19   77.53   99.98   76.74  100.76   76.18
  107.75   76.43  108.96   76.5  115.46   76.17  116.21   77.04  123.23   80.47
  123.34   84.97

Manning's n Values        num=      3
     Sta   n Val     Sta   n Val     Sta   n Val
*****************************************************************************************
       0    .045       0     .04  123.23    .045

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
             0  123.23             15.91   19.24   14.86            .1        .3

CROSS SECTION OUTPUT  Profile #16Sep1977 1200
*****************************************************************************************
* E.G. Elev (m)        *   76.41 * Element              * Left OB * Channel * Right OB *
* Vel Head (m)         *    0.01 * Wt. n-Val.           *         *   0.040 *          *
* W.S. Elev (m)        *   76.40 * Reach Len. (m)       *   35.03 *   30.24 *   14.86  *
* Crit W.S. (m)        *         * Flow Area (m2)       *         *    3.60 *          *
* E.G. Slope (m/m)     *0.000763 * Area (m2)            *         *    3.60 *          *
* Q Total (m3/s)       *    1.31 * Flow (m3/s)          *         *    1.31 *          *
* Top Width (m)        *   21.19 * Top Width (m)        *         *   21.19 *          *
* Vel Total (m/s)      *    0.36 * Avg. Vel. (m/s)      *         *    0.36 *          *
* Max Chl Dpth (m)     *    0.41 * Hydr. Depth (m)      *         *    0.17 *          *
* Conv. Total (m3/s)   *   27.9 * Conv. (m3/s)          *         *   27.9 *          *
* Length Wtd. (m)      *   19.24 * Wetted Per. (m)      *         *   21.31 *          *
* Min Ch El (m)        *   74.77 * Shear (N/m2)         *         *    1.78 *          *
* Alpha                *    1.00 * Stream Power (N/m s) *         *    1.38 *          *
* Frctn Loss (m)       *    0.11 * Cum Volume (1000 m3) *         *    3.14 *          *
* C & E Loss (m)       *    0.00 * Cum EA (1000 m2)     *         *   17.53 *          *
*****************************************************************************************

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

CROSS SECTION OUTPUT  Profile #16Jul1981 1600
*****************************************************************************************
* E.G. Elev (m)        *   78.34 * Element              * Left OB * Channel * Right OB *
* Vel Head (m)         *    0.15 * Wt. n-Val.           *         *   0.040 *          *
* W.S. Elev (m)        *   78.41 * Reach Len. (m)       *   35.03 *   30.24 *   14.86  *
* Crit W.S. (m)        *         * Flow Area (m2)       *         *   88.41 *          *
* E.G. Slope (m/m)     *0.000224 * Area (m2)            *         *   88.41 *          *
* Q Total (m3/s)       *  158.71 * Flow (m3/s)          *         *  158.71 *          *
* Top Width (m)        *   44.17 * Top Width (m)        *         *   44.17 *          *
* Vel Total (m/s)      *    1.80 * Avg. Vel. (m/s)      *         *    1.80 *          *
* Max Chl Dpth (m)     *    2.88 * Hydr. Depth (m)      *         *    2.08 *          *
* Conv. Total (m3/s)   *  1117.4 * Conv. (m3/s)          *         *  1117.4 *          *
* Length Wtd. (m)      *   19.24 * Wetted Per. (m)      *         *   47.65 *          *
* Min Ch El (m)        *   74.77 * Shear (N/m2)         *         *   41.15 *          *
* Alpha                *    1.00 * Stream Power (N/m s) *         *   75.86 *          *
* Frctn Loss (m)       *    0.06 * Cum Volume (1000 m3) *         *   71.01 *          *
* C & E Loss (m)       *    0.21 * Cum EA (1000 m2)     *         *   28.79 *          *
*****************************************************************************************

Warning: Divided flow computed for this cross section.
Warning: The cross section end points HAVE to be extended vertically for the computed water surface.

CROSS SECTION OUTPUT  Profile #1Nov1993 0000
*****************************************************************************************
* E.G. Elev (m)        *   78.12 * Element              * Left OB * Channel * Right OB *
* Vel Head (m)         *    0.03 * Wt. n-Val.           *         *   0.040 *          *
* W.S. Elev (m)        *   78.16 * Reach Len. (m)       *   35.03 *   30.24 *   14.86  *
* Crit W.S. (m)        *   78.16 * Flow Area (m2)       *         *    1.34 *          *
* E.G. Slope (m/m)     *0.045446 * Area (m2)            *         *    1.34 *          *
* Q Total (m3/s)       *    1.31 * Flow (m3/s)          *         *    1.31 *          *
* Top Width (m)        *   12.60 * Top Width (m)        *         *   12.60 *          *
* Vel Total (m/s)      *    0.75 * Avg. Vel. (m/s)      *         *    0.75 *          *
* Max Chl Dpth (m)     *    1.21 * Hydr. Depth (m)      *         *    0.05 *          *
* Conv. Total (m3/s)   *      [illegible] * Conv. (m3/s)          *         *    6.2 *          *
* Length Wtd. (m)      *   15.24 * Wetted Per. (m)      *         *   12.77 *          *
* Min Ch El (m)        *   77.45 * Shear (N/m2)         *         *   22.52 *          *
* Alpha                *    1.00 * Stream Power (N/m s) *         *   17.66 *          *
```

Frctn Loss (m)	0.13	Cum Volume (1000 m3)	3.12	
C & E Loss (m)	0.01	Cum SA (1000 m2)	16.39	

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

CROSS SECTION

RIVER: CAYAGUAS
REACH: ONE RS: 17

INPUT
Description:
Station Elevation Data num= 21

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
6	79.1	14	78.16	3	76.49	0	76.28	4.36	76.51
5.36	76.42	8.75	76.53	11.73	76.68	12.63	78.16	14.56	79.06
43	88	45.92	89.5	49.44	78.7	91.51	77.49	93.36	76.7
94.14	78.14	94.91	76.18	103.12	76.46	105	78.33	112.21	80.43
117.59	80.32								

Manning's n Values num=

Sta	n Val	Sta	n Val
-9	.04	112.21	.045

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
14	112.21	45.55	31.67	32.65	.1	.3

CROSS SECTION OUTPUT Profile #Sep1977 1200

Element	Left OB	Channel	Right OB
Wt. n-Val.		0.040	
Reach Len. (m)	45.55	31.67	32.65
Flow Area (m2)		2.69	
Area (m2)		2.69	
Flow (m3/s)		1.31	
Top Width (m)		21.14	
Avg. Vel. (m/s)		0.49	
Hydr. Depth (m)		0.13	
Conv. (m3/s)		16.8	
Wetted Per. (m)		21.42	
Shear (N/m2)		7.46	
Stream Power (N/m s)		3.64	
Cum Volume (1000 m3)		3.05	
Cum SA (1000 m2)		16.89	

E.G. Elev (m)	[illegible]
Vel Head (m)	0.01
W.S. Elev (m)	[illegible]
Crit W.S. (m)	
E.G. Slope (m/m)	[illegible]
Q Total (m3/s)	1.31
Top Width (m)	21.14
Vel Total (m/s)	[illegible]
Max Chl Dpth (m)	[illegible]
Conv. Total (m3/s)	[illegible]
Length Wtd. (m)	[illegible]
Min Ch El (m)	[illegible]
Alpha	1.00
Frctn Loss (m)	0.11
C & E Loss (m)	0.01

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

CROSS SECTION OUTPUT Profile #16Sep1977 1200

Element	Left OB	Channel	Right OB
Wt. n-Val.		0.040	
Reach Len. (m)	45.55	31.67	32.65
Flow Area (m2)		102.42	
Area (m2)		102.42	
Flow (m3/s)		154.71	
Top Width (m)		54.96	
Avg. Vel. (m/s)		1.55	
Hydr. Depth (m)		1.88	
Conv. (m3/s)		1712.1	
Wetted Per. (m)		58.67	
Shear (N/m2)		31.29	
Stream Power (N/m s)		48.49	
Cum Volume (1000 m3)		70.13	
Cum SA (1000 m2)		27.38	

E.G. Elev (m)	[illegible]
Vel Head (m)	[illegible]
W.S. Elev (m)	[illegible]
Crit W.S. (m)	
E.G. Slope (m/m)	[illegible]
Q Total (m3/s)	[illegible]
Top Width (m)	[illegible]
Vel Total (m/s)	[illegible]
Max Chl Dpth (m)	[illegible]
Conv. Total (m3/s)	[illegible]
Length Wtd. (m)	[illegible]
Min Ch El (m)	[illegible]
Alpha	[illegible]
Frctn Loss (m)	[illegible]
C & E Loss (m)	[illegible]

Warning: Divided flow computed for this cross section.
Warning: The cross section end points had to be extended vertically for the computed water surface.
Warning: The conveyance ratio (upstream 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 #: Sep1977 1200

Element	Left OB	Channel	Right OB
Wt. n-Val.		0.040	
Reach Len. (m)	45.55	31.67	32.65
Flow Area (m2)		4.27	
Area (m2)		4.27	
Flow (m3/s)		1.31	
Top Width (m)		23.88	
Avg. Vel. (m/s)		0.31	
Hydr. Depth (m)		0.18	
Conv. (m3/s)		33.4	
Wetted Per. (m)		24.21	
Shear (N/m2)		1.63	
Stream Power (N/m s)		0.61	
Cum Volume (1000 m3)		3.02	
Cum SA (1000 m2)		15.94	

E.G. Elev (m)	[illegible]
Vel Head (m)	[illegible]
W.S. Elev (m)	[illegible]
Crit W.S. (m)	
E.G. Slope (m/m)	[illegible]
Q Total (m3/s)	[illegible]
Top Width (m)	[illegible]
Vel Total (m/s)	[illegible]
Max Chl Dpth (m)	[illegible]
Conv. Total (m3/s)	[illegible]
Length Wtd. (m)	[illegible]
Min Ch El (m)	[illegible]
Alpha	[illegible]
Frctn Loss (m)	[illegible]
C & E Loss (m)	[illegible]

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

CROSS SECTION

RIVER: CAYAGUAS
REACH: ONE RS: 16

INPUT

Description:
Station Elevation Data num= 18

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	78.03	1.64	76.16	2.28	76.16	4.14	76.2	8.98	76.24
12.63	76.49	14.38	76.89	16.43	77.13	18.07	77.82	45	77.62
70	77.32	75.75	76.14	88.07	76.27	94.44	76.33	95.03	76.49
99.39	76.55	86.61	76.89	97.66	77.02	99.47	78.23		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.045	0	.04	99.47	.045

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
0	99.47	35.24	14.38	14.83	.1	.3

CROSS SECTION OUTPUT Profile #16Sep1977 1200

E.G. Elev (m)	76.40	Element	Left OB	Channel	Right OB
Vel Head (m)	0.00	Wt. n-Val.		0.040	
W.S. Elev (m)	76.39	Reach Len. (m)	35.24	14.38	14.83
Crit W.S. (m)		Flow Area (m2)		4.23	
E.G. Slope (m/m)	+0.00212%	Area (m2)		4.23	
Q Total (m3/s)	1.31	Flow (m3/s)		1.31	
Top Width (m)	30.29	Top Width (m)		30.29	
Vel Total (m/s)	0.31	Avg. Vel. (m/s)		0.31	
Max Chl Dpth (m)	0.24	Hydr. Depth (m)		0.14	
Conv. Total (m3/s)	38.4	Conv. (m3/s)		38.4	
Length Wtd. (m)	14.38	Wetted Per. (m)		30.43	
Min Ch El (m)	76.15	Shear (N/m2)		2.99	
Alpha	1.00	Stream Power (N/m s)		0.00	
Prevs Loss (m)	0.03	Cum Volume (1000 m3)		2.94	
C & E Loss (m)	0.00	Cum CA (1000 m2)		16.07	

Warning: Divided flow computed for this cross-section.

CROSS SECTION OUTPUT Profile #16Jul1981 1800

E.G. Elev (m)	79.45	Element	Left OB	Channel	Right OB
Vel Head (m)	0.03	Wt. n-Val.		0.040	
W.S. Elev (m)	79.42	Reach Len. (m)	35.24	14.38	14.83
Crit W.S. (m)		Flow Area (m2)		207.62	
E.G. Slope (m/m)	+0.00066%	Area (m2)		207.62	
Q Total (m3/s)	158.71	Flow (m3/s)		158.71	
Top Width (m)	99.47	Top Width (m)		99.47	
Vel Total (m/s)	0.76	Avg. Vel. (m/s)		0.76	
Max Chl Dpth (m)	2.88	Hydr. Depth (m)		2.08	
Conv. Total (m3/s)	8285.3	Conv. (m3/s)		8285.3	
Length Wtd. (m)	14.38	Wetted Per. (m)		103.20	
Min Ch El (m)	76.53	Shear (N/m2)		7.25	
Alpha	1.00	Stream Power (N/m s)		5.53	
Prevs Loss (m)	0.02	Cum Volume (1000 m3)		69.21	
C & E Loss (m)	0.00	Cum CA (1000 m2)		24.86	

Warning: The cross-section end points had to be extended vertically for the computed water surface.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.

CROSS SECTION OUTPUT Profile #17Nov1981 0600

E.G. Elev (m)	76.47	Element	Left OB	Channel	Right OB
Vel Head (m)	0.07	Wt. n-Val.		0.040	
W.S. Elev (m)	76.45	Reach Len. (m)	35.24	14.38	14.83
Crit W.S. (m)		Flow Area (m2)		2.32	
E.G. Slope (m/m)	+0.01917%	Area (m2)		2.32	
Q Total (m3/s)	1.31	Flow (m3/s)		1.31	
Top Width (m)	21.77	Top Width (m)		21.77	
Vel Total (m/s)	0.56	Avg. Vel. (m/s)		0.56	
Max Chl Dpth (m)	0.18	Hydr. Depth (m)		0.11	
Conv. Total (m3/s)	13.8	Conv. (m3/s)		13.8	
Length Wtd. (m)	14.38	Wetted Per. (m)		21.87	
Min Ch El (m)	76.28	Shear (N/m2)		10.56	
Alpha	1.00	Stream Power (N/m s)		5.96	
Prevs Loss (m)	0.01	Cum Volume (1000 m3)		2.32	
C & E Loss (m)	0.00	Cum CA (1000 m2)		14.82	

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

CROSS SECTION

[illegible]

[illegible]

Description:
Station Elevation Data num= [illegible]

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	76.27	10.02	76.22
[illegible]	76.14	15.18	[illegible]	[illegible]	[illegible]	40.83	78.3	47.83	76.13
[illegible]	76.14	62.9	[illegible]	[illegible]	[illegible]	64.45	76.52	65.07	76.86
[illegible]	[illegible]	87.91	[illegible]						

Manning's n Values num= [illegible]

Sta	n Val	Sta	n Val	Sta	n Val
0	.045	0	[illegible]	[illegible]	.045

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
0	43.91	[illegible]	[illegible]	10.99	.1	.3

CROSS SECTION OUTPUT Profile #16Sep1977 1200

E.G. Elev (m)	[illegible]	Element	Left OB	Channel	Right OB
Vel Head (m)	[illegible]	Wt. n-Val.		0.040	
W.S. Elev (m)	[illegible]	Reach Len. (m)	28.28	17.26	10.99
Crit W.S. (m)		Flow Area (m2)		3.72	
E.G. Slope (m/m)	[illegible]	Area (m2)		3.72	
Q Total (m3/s)	1.31	Flow (m3/s)		1.31	
Top Width (m)	[illegible]	Top Width (m)		26.15	

Vel Total (m/s)	0.35	Avg. Vel. (m/s)		0.35	
Max Chl Dpth (m)	0.21	Hydr. Depth (m)		0.14	
Conv. Total (m3/s)	25.2	Conv. (m3/s)		25.2	
Length Wtd. (m)	17.26	Wetted Per. (m)		26.33	
Min Ch El (m)	76.12	Shear (N/m2)		3.74	
Alpha	1.00	Stream Power (N m s)		1.32	
Frctn Loss (m)	0.03	Cum Volume (1000 m3)		2.88	
C & E Loss (m)	0.00	Cum SA (1000 m2)		15.47	

Warning: Divided flow computed for this cross-section.

CROSS SECTION OUTPUT Profile #1 Jul1993 1800

			Left OB	Channel	Right OB
E.G. Elev (m)	79.44	Element		0.040	
Vel Head (m)	0.06	Wt. n-Val.			
W.S. Elev (m)	79.38	Reach Len. (m)	28.30	17.26	10.09
Crit W.S. (m)		Flow Area (m2)		146.21	
E.G. Slope (m/m)	+0.000737	Area (m2)		146.21	
Q Total (m3/s)	158.71	Flow (m3/s)		158.71	
Top Width (m)	67.93	Top Width (m)		67.93	
Vel Total (m/s)	1.09	Avg. Vel. (m/s)		1.09	
Max Chl Dpth (m)	3.34	Hydr. Depth (m)		2.15	
Conv. Total (m3/s)	5848.0	Conv. (m3/s)		5848.0	
Length Wtd. (m)	17.26	Wetted Per. (m)		72.24	
Min Ch El (m)	76.05	Shear (N/m2)		14.62	
Alpha	1.00	Stream Power (N m s)		15.47	
Frctn Loss (m)	0.02	Cum Volume (1000 m3)		62.67	
C & E Loss (m)	0.01	Cum SA (1000 m2)		33.65	

Warning: The cross section end points had to be extended vertically for the computed water surface.

CROSS SECTION OUTPUT Profile #1 Nov1993 2000

			Left OB	Channel	Right OB
E.G. Elev (m)	76.46	Element		0.040	
Vel Head (m)	0.00	Wt. n-Val.			
W.S. Elev (m)	76.46	Reach Len. (m)	28.30	17.26	10.09
Crit W.S. (m)		Flow Area (m2)		8.53	
E.G. Slope (m/m)	+0.000187	Area (m2)		8.53	
Q Total (m3/s)	1.31	Flow (m3/s)		1.31	
Top Width (m)	27.98	Top Width (m)		27.98	
Vel Total (m/s)	0.15	Avg. Vel. (m/s)		0.15	
Max Chl Dpth (m)	0.42	Hydr. Depth (m)		0.30	
Conv. Total (m3/s)	25.2	Conv. (m3/s)		25.2	
Length Wtd. (m)	17.26	Wetted Per. (m)		28.33	
Min Ch El (m)	76.04	Shear (N/m2)		0.55	
Alpha	1.00	Stream Power (N m s)		0.08	
Frctn Loss (m)	0.01	Cum Volume (1000 m3)		2.85	
C & E Loss (m)	0.00	Cum SA (1000 m2)		14.46	

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

LOOP SECTION

PROJ: CAYAGUAS
REACH: MAIN RUN: 14

INPUT
Description:
Station Elevation Data num= 12

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
[illegible]	77.2	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	77	15.44	76.12		
3.48	76.21	28.73	[illegible]	[illegible]	[illegible]	76.49	11.74	76.83			
[illegible]	76.90	34.91	58.21								

Manning's n Values num= [illegible]

Sta	n Val	Sta	n Val	Sta	n Val
[illegible]	.045	[illegible]	04	[illegible]	[illegible]

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
[illegible]	34.91	[illegible]	[illegible]	[illegible]	.1	.3

CROSS SECTION OUTPUT Profile #1Sep1[illegible]

			Left OB	Channel	Right OB
E.G. Elev (m)	[illegible]	Element		0.040	
Vel Head (m)	[illegible]	Wt. n-Val.			
W.S. Elev (m)	[illegible]	Reach Len. (m)	1.55	1.55	1.55
Crit W.S. (m)		Flow Area (m2)		4.28	
E.G. Slope (m/m)	[illegible]	Area (m2)		4.28	
Q Total (m3/s)	[illegible]	Flow (m3/s)		1.31	
Top Width (m)	22.11	Top Width (m)		22.11	
Vel Total (m/s)	[illegible]	Avg. Vel. (m/s)		0.31	
Max Chl Dpth (m)	[illegible]	Hydr. Depth (m)		0.19	
Conv. Total (m3/s)	[illegible]	Conv. (m3/s)		35.6	
Length Wtd. (m)	[illegible]	Wetted Per. (m)		22.30	
Min Ch El (m)	[illegible]	Shear (N/m2)		2.55	
Alpha	1.00	Stream Power (N m s)		0.78	
Frctn Loss (m)	[illegible]	Cum Volume (1000 m3)		2.81	
C & E Loss (m)	1.00	Cum SA (1000 m2)		15.25	

Warning: Divided flow computed for this cross section.

CROSS SECTION OUTPUT Profile #1Nov1[illegible]

			Left OB	Channel	Right OB
E.G. Elev (m)	[illegible]	Element		0.040	
Vel Head (m)	[illegible]	Wt. n-Val.			
W.S. Elev (m)	[illegible]	Reach Len. (m)	1.55	1.55	1.55
Crit W.S. (m)		Flow Area (m2)		95.19	
E.G. Slope (m/m)	[illegible]	Area (m2)		95.19	
Q Total (m3/s)	[illegible]	Flow (m3/s)		158.71	
Top Width (m)	[illegible]	Top Width (m)		34.93	
Vel Total (m/s)	[illegible]	Avg. Vel. (m/s)		1.67	
Max Chl Dpth (m)	[illegible]	Hydr. Depth (m)		2.73	
Conv. Total (m3/s)	[illegible]	Conv. (m3/s)		4313.3	
Length Wtd. (m)	[illegible]	Wetted Per. (m)		39.80	
Min Ch El (m)	[illegible]	Shear (N/m2)		22.40	
Alpha	[illegible]	Stream Power (N m s)		54.03	
Frctn Loss (m)	[illegible]	Cum Volume (1000 m3)		60.53	
C & E Loss (m)	[illegible]	Cum SA (1000 m2)		22.77	

```
*****************************************************************************

Warning: The cross section end points had to be extended vertically for the computed water surface.

CROSS SECTION OUTPUT  Profile #17Nov1993 0000
*****************************************************************************
* E.G. Elev (m)        *   76.44  * Element                 *  Left OB *  Channel * Right OB *
* Vel Head (m)         *    0.03  * Wt. n-Val.              *          *   0.040  *          *
* W.S. Elev (m)        *   76.42  * Reach Len. (m)          *    1.55  *    1.55  *    1.55  *
* Crit W.S. (m)        *          * Flow Area (m2)          *          *   1.86   *          *
* E.G. Slope (m/m)     *+0.020168  * Area (m2)               *          *   1.86   *          *
* Q Total (m3/s)       *    1.31  * Flow (m3/s)              *          *   1.31   *          *
* Top Width (m)        *   20.88  * Top Width (m)            *          *  20.88   *          *
* Vel Total (m/s)      *    0.71  * Avg. Vel. (m/s)          *          *   0.71   *          *
* Max Chl Depth (m)    *    0.18  * Hydr. Depth (m)          *          *   0.89   *          *
* Conv. Total (m3/s)   *     8.2  * Conv. (m3/s)             *          *    8.2   *          *
* Length Wtd. (m)      *    1.55  * Wetted Per. (m)          *          *  20.97   *          *
* Min Ch El (m)        *   76.24  * Shear (N/m2)             *          *  17.32   *          *
* Alpha                *    1.00  * Stream Power (N/m s)     *          *  12.34   *          *
* Prior Loss (m)       *    0.00  * Cum Volume (1000 m3)     *          *   2.76   *          *
* C & E Loss (m)       *    0.01  * Cum WA (1000 m2)         *          *  14.04   *          *
*****************************************************************************

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

RIVER: CAYAGUAS
REACH: ONE                    RS: 11

INPUT
Description:
Station Elevation Data    num=      1
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*****************************************************************************
       1   77.14    1.21   76.62    1.41   76.57    1.75   76.18    1.94   76.12
    8.61   76.16   22.78   76.23   23.19   76.25   27.18   76.25   27.77   76.42
   28.97   76.83   33.64   78.27

Manning's n Values        num=      1
     Sta   n Val     Sta   n Val     Sta   n Val
*****************************************************
       0    .045       0     .04   33.64    .045

Bank Sta: Left   Right    Lengths: Left  Channel   Right     Coeff Contr.   Expan.
             8   33.64             1.4    17.03   15.37            .1          .3

CROSS SECTION OUTPUT  Profile 01Dec1993 1600
*****************************************************************************
* E.G. Elev (m)        *   76.34  * Element                 *  Left OB *  Channel * Right OB *
* Vel Head (m)         *    0.00  * Wt. n-Val.              *          *   0.040  *          *
* W.S. Elev (m)        *   76.32  * Reach Len. (m)          *   14.80  *   17.03  *   15.37  *
* Crit W.S. (m)        *          * Flow Area (m2)          *          *   4.56   *          *
* E.G. Slope (m/m)     *+0.001701  * Area (m2)               *          *   4.56   *          *
* Q Total (m3/s)       *    1.31  * Flow (m3/s)              *          *   1.31   *          *
* Top Width (m)        *   25.89  * Top Width (m)            *          *  25.89   *          *
* Vel Total (m/s)      *    0.29  * Avg. Vel. (m/s)          *          *   0.29   *          *
* Max Chl Depth (m)    *    0.17  * Hydr. Depth (m)          *          *   0.18   *          *
* Conv. Total (m3/s)   *   35.6   * Conv. (m3/s)             *          *  35.6    *          *
* Length Wtd. (m)      *   15.41  * Wetted Per. (m)          *          *  26.05   *          *
* Min Ch El (m)        *   76.07  * Shear (N/m2)             *          *   3.32   *          *
* Alpha                *    1.04  * Stream Power (N/m s)     *          *   0.97   *          *
* Prior Loss (m)       *    0.02  * Cum Volume (1000 m3)     *          *   2.81   *          *
* C & E Loss (m)       *    0.01  * Cum WA (1000 m2)         *          *  15.21   *          *
*****************************************************************************

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

CROSS SECTION OUTPUT  Profile 01Dec1993 1600
*****************************************************************************
* E.G. Elev (m)        *   76.41  * Element                 *  Left OB *  Channel * Right OB *
* Vel Head (m)         *    0.11  * Wt. n-Val.              *          *   0.040  *          *
* W.S. Elev (m)        *   76.30  * Reach Len. (m)          *   16.80  *   17.03  *   15.37  *
* Crit W.S. (m)        *          * Flow Area (m2)          *          *  99.70   *          *
* E.G. Slope (m/m)     *+0.001181  * Area (m2)               *          *  99.70   *          *
* Q Total (m3/s)       *  158.71  * Flow (m3/s)              *          * 158.71   *          *
* Top Width (m)        *   33.64  * Top Width (m)            *          *  33.64   *          *
* Vel Total (m/s)      *    1.59  * Avg. Vel. (m/s)          *          *   1.59   *          *
* Max Chl Depth (m)    *    3.26  * Hydr. Depth (m)          *          *   3.96   *          *
* Conv. Total (m3/s)   *  4771.1  * Conv. (m3/s)             *          *4771.1   *          *
* Length Wtd. (m)      *   17.45  * Wetted Per. (m)          *          *  37.65   *          *
* Min Ch El (m)        *   73.07  * Shear (N/m2)             *          *  28.74   *          *
* Alpha                *    1.09  * Stream Power (N/m s)     *          *  45.75   *          *
* Prior Loss (m)       *    0.01  * Cum Volume (1000 m3)     *          *  80.44   *          *
* C & E Loss (m)       *    0.01  * Cum WA (1000 m2)         *          *  22.71   *          *
*****************************************************************************

Warning: The cross section end points had to be extended vertically for the computed water surface.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than
         0.7 or greater than 1.4.  This may indicate the need for additional cross sections.

CROSS SECTION OUTPUT  Profile 01Dec1993 1600
*****************************************************************************
* E.G. Elev (m)        *   76.44  * Element                 *  Left OB *  Channel * Right OB *
* Vel Head (m)         *    0.00  * Wt. n-Val.              *          *   0.040  *          *
* W.S. Elev (m)        *   76.43  * Reach Len. (m)          *   16.80  *   17.03  *   15.37  *
* Crit W.S. (m)        *          * Flow Area (m2)          *          *   7.97   *          *
* E.G. Slope (m/m)     *+0.000257  * Area (m2)               *          *   7.97   *          *
* Q Total (m3/s)       *    1.31  * Flow (m3/s)              *          *   1.31   *          *
* Top Width (m)        *   26.43  * Top Width (m)            *          *  26.43   *          *
* Vel Total (m/s)      *    0.16  * Avg. Vel. (m/s)          *          *   0.16   *          *
* Max Chl Depth (m)    *    0.40  * Hydr. Depth (m)          *          *   0.30   *          *
* Conv. Total (m3/s)   *   88.8   * Conv. (m3/s)             *          *  88.8    *          *
* Length Wtd. (m)      *   17.03  * Wetted Per. (m)          *          *  28.09   *          *
* Min Ch El (m)        *   76.03  * Shear (N/m2)             *          *   0.64   *          *
* Alpha                *    1.00  * Stream Power (N/m s)     *          *   0.10   *          *
* Prior Loss (m)       *    0.01  * Cum Volume (1000 m3)     *          *   2.75   *          *
* C & E Loss (m)       *    0.01  * Cum WA (1000 m2)         *          *  14.00   *          *
*****************************************************************************

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

RIVER: CAYAGUAS
REACH: CRE RS: [illegible]

INPUT
Description:
Station Elevation Data num= [illegible]

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	80.06	8.14	76.67	8.8	76.12	26.9	76.11	27.21	76.32
27.69	76.76	33.36	81.97						

Manning's n Values num= [illegible]

Sta	n Val	Sta	n Val	Sta	n Val
0	.045	0	.04	[illegible]	.045

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
0	33.36	87.69	90.67	95.98	.1	.3

CROSS SECTION OUTPUT Profile #16Sep1977 1500

			Left OB	Channel	Right OB
E.G. Elev (m)	76.39	Element			
Vel Head (m)	0.01	Wt. n Val.		0.040	
W.S. Elev (m)	76.28	Reach Len. (m)	87.69	90.67	95.98
Crit W.S. (m)		Flow Area (m2)		3.18	
E.G. Slope (m/m)	0.003117	Area (m2)		3.18	
Q Total (m3/s)	1.11	Flow (m3/s)		1.31	
Top Width (m)	18.49	Top Width (m)		18.49	
Vel Total (m/s)	0.42	Avg. Vel. (m/s)		0.42	
Max Chl Dpth (m)	0.17	Hyd. Depth (m)		0.17	
Conv. Total (m3/s)	23.5	Conv. (m3/s)		23.5	
Length Wtd. (m)	90.67	Wetted Per. (m)		18.62	
Min Ch El (m)	76.11	Shear (N/m2)		5.09	
Alpha	1.05	Stream Power (N/m s)		2.15	
Friction Loss (m)	0.00	Cum Volume (1000 m3)		2.74	
C & K Loss (m)	0.00	Cum CA (1000 m2)		14.84	

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

CROSS SECTION OUTPUT Profile [illegible]

			Left OB	Channel	Right OB
E.G. Elev (m)	[illegible]	Element			
Vel Head (m)	[illegible]	Wt. n Val.		0.040	
W.S. Elev (m)	[illegible]	Reach Len. (m)	87.69	90.67	95.98
Crit W.S. (m)		Flow Area (m2)		68.47	
E.G. Slope (m/m)	[illegible]	Area (m2)		68.47	
Q Total (m3/s)	[illegible]	Flow (m3/s)		158.71	
Top Width (m)	[illegible]	Top Width (m)		27.91	
Vel Total (m/s)	[illegible]	Avg. Vel. (m/s)		2.32	
Max Chl Dpth (m)	[illegible]	Hyd. Depth (m)		2.45	
Conv. Total (m3/s)	[illegible]	Conv. (m3/s)		2877.4	
Length Wtd. (m)	[illegible]	Wetted Per. (m)		29.85	
Min Ch El (m)	[illegible]	Shear (N/m2)		43.92	
Alpha	[illegible]	Stream Power (N/m s)		148.16	
Friction Loss (m)	[illegible]	Cum Volume (1000 m3)		59.00	
C & K Loss (m)	[illegible]	Cum CA (1000 m2)		22.19	

CROSS SECTION OUTPUT Profile [illegible]

			Left OB	Channel	Right OB
E.G. Elev (m)	[illegible]	Element			
Vel Head (m)	[illegible]	Wt. n Val.		0.040	
W.S. Elev (m)	[illegible]	Reach Len. (m)	87.69	90.67	95.98
Crit W.S. (m)	[illegible]	Flow Area (m2)		1.18	
E.G. Slope (m/m)	[illegible]	Area (m2)		1.18	
Q Total (m3/s)	[illegible]	Flow (m3/s)		1.31	
Top Width (m)	[illegible]	Top Width (m)		9.66	
Vel Total (m/s)	[illegible]	Avg. Vel. (m/s)		1.11	
Max Chl Dpth (m)	[illegible]	Hyd. Depth (m)		0.12	
Conv. Total (m3/s)	[illegible]	Conv. (m3/s)		7.2	
Length Wtd. (m)	[illegible]	Wetted Per. (m)		9.74	
Min Ch El (m)	[illegible]	Shear (N/m2)		10.12	
Alpha	[illegible]	Stream Power (N/m s)		41.45	
Friction Loss (m)	[illegible]	Cum Volume (1000 m3)		2.67	
C & K Loss (m)	[illegible]	Cum CA (1000 m2)		13.69	

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

CROSS SECTION

RIVER: CAYAGUAS
REACH: CRE RS: [illegible]

INPUT
Description:
Station Elevation Data num= [illegible]

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
[illegible]	80.02	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	76.81	[illegible]	76.32
[illegible]	82.02								

Manning's n Values num= [illegible]

Sta	n Val	Sta	n Val	Sta	n Val
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

CROSS SECTION OUTPUT Profile [illegible]

			Left OB	Channel	Right OB
E.G. Elev (m)	[illegible]	Element			

Vel Head (m)	0.01	Wt. n-Vel.			0.040			
W.S. Elev (m)	75.95	Reach Len. (m)		81.16	80.54		76.15	
Crit W.S. (m)		Flow Area (m2)			2.87			
E.G. Slope (m/m)	0.004976	Area (m2)			2.87			
Q Total (m3/s)	1.31	Flow (m3/s)			1.31			
Top Width (m)	19.63	Top Width (m)			19.63			
Vel Total (m/s)	0.46	Avg. Vel. (m/s)			0.46			
Max Chl Dpth (m)	0.15	Hydr. Depth (m)			0.15			
Conv. Total (m3/s)	19.8	Conv. (m3/s)			19.8			
Length Wtd. (m)	80.54	Wetted Per. (m)			19.75			
Min Ch El (m)	75.80	Shear (N/m2)			6.23			
Alpha	1.00	Stream Power (N/m s)			2.85			
Frctn Loss (m)	0.27	Cum Volume (1000 m3)			2.47			
C & E Loss (m)	0.00	Cum SA (1000 m2)			13.11			

CROSS SECTION OUTPUT Profile #18Jul1993 1800

				Left OB	Channel	Right OB
E.G. Elev (m)	79.13	Element			0.040	
Vel Head (m)	0.26	Wt. n-Vel.			80.54	
W.S. Elev (m)	78.87	Reach Len. (m)		81.16		76.15
Crit W.S. (m)		Flow Area (m2)			70.49	
E.G. Slope (m/m)	0.002418	Area (m2)			70.49	
Q Total (m3/s)	158.71	Flow (m3/s)			158.71	
Top Width (m)	25.77	Top Width (m)			25.77	
Vel Total (m/s)	2.25	Avg. Vel. (m/s)			2.25	
Max Chl Dpth (m)	3.25	Hydr. Depth (m)			2.74	
Conv. Total (m3/s)	1212.7	Conv. (m3/s)			1212.7	
Length Wtd. (m)	80.54	Wetted Per. (m)			28.17	
Min Ch El (m)	75.62	Shear (N/m2)			58.73	
Alpha	1.00	Stream Power (N/m s)			132.22	
Frctn Loss (m)	0.15	Cum Volume (1000 m3)			52.70	
C & E Loss (m)	0.04	Cum SA (1000 m2)			19.76	

CROSS SECTION OUTPUT Profile #17Nov1993 0000

				Left OB	Channel	Right OB
E.G. Elev (m)	75.88	Element			0.040	
Vel Head (m)	0.05	Wt. n-Vel.			80.54	
W.S. Elev (m)	75.83	Reach Len. (m)		81.16		76.15
Crit W.S. (m)		Flow Area (m2)			4.97	
E.G. Slope (m/m)	0.000415	Area (m2)			4.97	
Q Total (m3/s)	1.31	Flow (m3/s)			1.31	
Top Width (m)	19.79	Top Width (m)			19.79	
Vel Total (m/s)	0.26	Avg. Vel. (m/s)			0.26	
Max Chl Dpth (m)	0.34	Hydr. Depth (m)			0.25	
Conv. Total (m3/s)	49.0	Conv. (m3/s)			49.0	
Length Wtd. (m)	80.54	Wetted Per. (m)			20.01	
Min Ch El (m)	75.65	Shear (N/m2)			1.74	
Alpha	1.00	Stream Power (N/m s)			0.46	
Frctn Loss (m)	0.15	Cum Volume (1000 m3)			3.39	
C & E Loss (m)	0.00	Cum SA (1000 m2)			12.16	

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: CAYAGUAS
REACH: ONE RS: 19

INPUT
Description:
Station Elevation Data num= 5
Sta Elev Sta Elev Sta Elev Sta Elev Sta Elev
[illegible] 81.16 [illegible] 75.94 38.14 78.82

Manning's n Values num= 3
Sta n Val Sta n Val Sta n Val
[illegible] .045 [illegible] .034 [illegible] .045

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
[illegible] 38.14 [illegible] 44.96 54.9 .1 .3

CROSS SECTION OUTPUT Profile #[illegible]

				Left OB	Channel	Right OB
E.G. Elev (m)	[illegible]	Element			0.040	
Vel Head (m)	[illegible]	Wt. n-Vel.			46.36	
W.S. Elev (m)	[illegible]	Reach Len. (m)		38.75		54.90
Crit W.S. (m)		Flow Area (m2)			3.75	
E.G. Slope (m/m)	[illegible]	Area (m2)			3.75	
Q Total (m3/s)	[illegible]	Flow (m3/s)			1.31	
Top Width (m)	[illegible]	Top Width (m)			25.95	
Vel Total (m/s)	[illegible]	Avg. Vel. (m/s)			0.35	
Max Chl Dpth (m)	[illegible]	Hydr. Depth (m)			0.14	
Conv. Total (m3/s)	[illegible]	Conv. (m3/s)			25.8	
Length Wtd. (m)	[illegible]	Wetted Per. (m)			26.04	
Min Ch El (m)	[illegible]	Shear (N/m2)			1.45	
Alpha	[illegible]	Stream Power (N/m s)			1.28	
Frctn Loss (m)	[illegible]	Cum Volume (1000 m3)			7.20	
C & E Loss (m)	[illegible]	Cum SA (1000 m2)			11.27	

Warning: The conveyance ratio (upstream 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 [illegible]

				Left OB	Channel	Right OB
E.G. Elev (m)	[illegible]	Element			0.040	
Vel Head (m)	[illegible]	Wt. n-Vel.			46.36	
W.S. Elev (m)	[illegible]	Reach Len. (m)		38.75		54.90
Crit W.S. (m)		Flow Area (m2)			95.38	
E.G. Slope (m/m)	[illegible]	Area (m2)			95.38	
Q Total (m3/s)	[illegible]	Flow (m3/s)			158.71	
Top Width (m)	[illegible]	Top Width (m)			34.07	
Vel Total (m/s)	[illegible]	Avg. Vel. (m/s)			1.66	
Max Chl Dpth (m)	[illegible]	Hydr. Depth (m)			2.80	
Conv. Total (m3/s)	[illegible]	Conv. (m3/s)			4544.4	
Length Wtd. (m)	[illegible]	Wetted Per. (m)			56.23	
Min Ch El (m)	[illegible]	Shear (N/m2)			31.44	
Alpha	[illegible]	Stream Power (N/m s)			52.34	
Frctn Loss (m)	[illegible]	Cum Volume (1000 m3)			46.02	
C & E Loss (m)	[illegible]	Cum SA (1000 m2)			17.35	

CROSS SECTION OUTPUT Profile #17Nov1993 0000

			Left OB	Channel	Right OB
E.G. Elev (m)	75.82	Element		0.040	
Vel Head (m)	0.02	Wt. n-Val.			
W.S. Elev (m)	75.80	Reach Len. (m)	38.75	46.36	54.90
Crit W.S. (m)		Flow Area (m2)		1.88	
E.G. Slope (m/m)	+0.011919	Area (m2)		1.88	
Q Total (m3/s)	1.31	Flow (m3/s)		1.31	
Top Width (m)	14.59	Top Width (m)		14.50	
Vel Total (m/s)	0.70	Avg. Vel. (m/s)		0.70	
Max Chl Dpth (m)	0.26	Hydr. Depth (m)		0.13	
Conv. Total (m3/s)	12.0	Conv. (m3/s)		13.0	
Length Wtd. (m)	46.36	Wetted Per. (m)		14.58	
Min Ch El (m)	75.54	Shear (N/m2)		15.07	
Alpha	1.00	Stream Power (N/m s)		10.50	
Frctn Loss (m)	0.04	Cum Volume (1000 m3)		2.12	
C & E Loss (m)	0.01	Cum SA (1000 m2)		10.98	

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

CROSS SECTION

RIVER: CAYAGUAS
REACH: ONE RS: 4

INPUT
Description:
Station Elevation Data num= 9

Sta	Elev	SLA	Sta	Elev	Sta	Elev	Sta	Elev
5	79.07	.36	9.07	4.24	75.43	28.12	75.43	36.08
								86.12

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.045	0	.04	36.08	.045

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
0 36.08 14.03 17.58 18.72 .1 .3

CROSS SECTION OUTPUT Profile #16Nov1993 1200

			Left OB	Channel	Right OB
E.G. Elev (m)	[illegible]	Element		0.040	
Vel Head (m)	[illegible]	Wt. n-Val.			
W.S. Elev (m)	[illegible]	Reach Len. (m)	14.03	17.58	18.72
Crit W.S. (m)		Flow Area (m2)		4.76	
E.G. Slope (m/m)	[illegible]	Area (m2)		4.76	
Q Total (m3/s)	[illegible]	Flow (m3/s)		1.31	
Top Width (m)	[illegible]	Top Width (m)		25.43	
Vel Total (m/s)	[illegible]	Avg. Vel. (m/s)		0.28	
Max Chl Dpth (m)	[illegible]	Hydr. Depth (m)		0.19	
Conv. Total (m3/s)	[illegible]	Conv. (m3/s)		38.8	
Length Wtd. (m)	[illegible]	Wetted Per. (m)		25.54	
Min Ch El (m)	[illegible]	Shear (N/m2)		2.08	
Alpha	[illegible]	Stream Power (N/m s)		0.57	
Frctn Loss (m)	[illegible]	Cum Volume (1000 m3)		2.01	
C & E Loss (m)	[illegible]	Cum SA (1000 m2)		10.88	

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

CROSS SECTION OUTPUT Profile #16Nov1993 1800

			Left OB	Channel	Right OB
E.G. Elev (m)	[illegible]	Element		0.040	
Vel Head (m)	[illegible]	Wt. n-Val.			
W.S. Elev (m)	[illegible]	Reach Len. (m)	14.03	17.58	18.72
Crit W.S. (m)		Flow Area (m2)		94.55	
E.G. Slope (m/m)	[illegible]	Area (m2)		94.55	
Q Total (m3/s)	[illegible]	Flow (m3/s)		158.91	
Top Width (m)	[illegible]	Top Width (m)		33.88	
Vel Total (m/s)	[illegible]	Avg. Vel. (m/s)		1.68	
Max Chl Dpth (m)	[illegible]	Hydr. Depth (m)		2.79	
Conv. Total (m3/s)	[illegible]	Conv. (m3/s)		4495.5	
Length Wtd. (m)	[illegible]	Wetted Per. (m)		36.04	
Min Ch El (m)	[illegible]	Shear (N/m2)		32.06	
Alpha	[illegible]	Stream Power (N/m s)		53.81	
Frctn Loss (m)	[illegible]	Cum Volume (1000 m3)		41.62	
C & E Loss (m)	[illegible]	Cum SA (1000 m2)		15.77	

CROSS SECTION OUTPUT Profile #17Nov1993 0000

			Left OB	Channel	Right OB
E.G. Elev (m)	[illegible]	Element		0.040	
Vel Head (m)	[illegible]	Wt. n-Val.			
W.S. Elev (m)	[illegible]	Reach Len. (m)	14.03	17.58	18.72
Crit W.S. (m)		Flow Area (m2)		7.37	
E.G. Slope (m/m)	[illegible]	Area (m2)		7.37	
Q Total (m3/s)	[illegible]	Flow (m3/s)		1.31	
Top Width (m)	[illegible]	Top Width (m)		25.75	
Vel Total (m/s)	[illegible]	Avg. Vel. (m/s)		0.18	
Max Chl Dpth (m)	[illegible]	Hydr. Depth (m)		0.29	
Conv. Total (m3/s)	[illegible]	Conv. (m3/s)		79.7	
Length Wtd. (m)	[illegible]	Wetted Per. (m)		25.92	
Min Ch El (m)	[illegible]	Shear (N/m2)		0.75	
Alpha	[illegible]	Stream Power (N/m s)		0.12	
Frctn Loss (m)	[illegible]	Cum Volume (1000 m3)		1.98	
C & E Loss (m)	[illegible]	Cum SA (1000 m2)		10.84	

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

CROSS SECTION

RIVER: CAYAGUAS
REACH: ONE RS: 4

INPUT
Description:
Station Elevation Data num= 9

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	73.35	3.42	74.04	4.52	75.99	5.28	75.51	6.95	75.51
11.03	75.28	16.17	75.4	22.17	75.4	30.08	79.11		

Manning's n Values num= 1

Sta	n Val
0	.04

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
6	35.09	68.76	75.41	80.01	.1	.3

CROSS SECTION OUTPUT Profile #16Sep1977 1200

E.G. Elev (m)	75.58	Element	Left OB	Channel	Right OB
Vel Head (m)	0.01	Wt. n-Val.		0.040	
W.S. Elev (m)	75.57	Reach Len. (m)	68.76	75.41	80.01
Crit W.S. (m)		Flow Area (m2)		2.69	
E.G. Slope (m/m)	0.004679	Area (m2)		3.69	
Q Total (m3/s)	1.11	Flow (m3/s)		1.31	
Top Width (m)	17.62	Top Width (m)		17.62	
Vel Total (m/s)	0.49	Avg. Vel. (m/s)		0.49	
Max Chl Dpth (m)	0.20	Hydr. Depth (m)		0.15	
Conv. Total (m3/s)	[illegible]	Conv. (m3/s)		19.2	
Length Wtd. (m)	[illegible]	Wetted Per. (m)		17.47	
Min Ch El (m)	[illegible]	Shear (N/m2)		6.98	
Alpha	1.20	Stream Power (N/m s)		3.40	
Frctn Loss (m)	0.17	Cum Volume (1000 m3)		1.94	
C & E Loss (m)	0.00	Cum BA (1000 m2)		9.70	

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

CROSS SECTION OUTPUT Profile [illegible]2Jul1994 1400

E.G. Elev (m)	[illegible]	Element	Left OB	Channel	Right OB
Vel Head (m)	[illegible]	Wt. n-Val.		0.040	
W.S. Elev (m)	[illegible]	Reach Len. (m)	68.76	75.41	80.01
Crit W.S. (m)		Flow Area (m2)		82.77	
E.G. Slope (m/m)	[illegible]	Area (m2)		82.77	
Q Total (m3/s)	[illegible]	Flow (m3/s)		158.71	
Top Width (m)	[illegible]	Top Width (m)		32.45	
Vel Total (m/s)	[illegible]	Avg. Vel. (m/s)		1.92	
Max Chl Dpth (m)	[illegible]	Hydr. Depth (m)		3.55	
Conv. Total (m3/s)	[illegible]	Conv. (m3/s)		3723.8	
Length Wtd. (m)	[illegible]	Wetted Per. (m)		34.28	
Min Ch El (m)	[illegible]	Shear (N/m2)		43.91	
Alpha	[illegible]	Stream Power (N/m s)		82.47	
Frctn Loss (m)	[illegible]	Cum Volume (1000 m3)		40.06	
C & E Loss (m)	[illegible]	Cum BA (1000 m2)		15.19	

CROSS SECTION OUTPUT Profile [illegible]7Nov1993 0000

E.G. Elev (m)	[illegible]	Element	Left OB	Channel	Right OB
Vel Head (m)	[illegible]	Wt. n-Val.		0.040	
W.S. Elev (m)	[illegible]	Reach Len. (m)	68.76	75.41	80.01
Crit W.S. (m)		Flow Area (m2)		2.00	
E.G. Slope (m/m)	[illegible]	Area (m2)		2.00	
Q Total (m3/s)	[illegible]	Flow (m3/s)		1.31	
Top Width (m)	[illegible]	Top Width (m)		17.48	
Vel Total (m/s)	[illegible]	Avg. Vel. (m/s)		0.65	
Max Chl Dpth (m)	[illegible]	Hydr. Depth (m)		0.11	
Conv. Total (m3/s)	[illegible]	Conv. (m3/s)		11.8	
Length Wtd. (m)	[illegible]	Wetted Per. (m)		17.53	
Min Ch El (m)	[illegible]	Shear (N/m2)		13.85	
Alpha	[illegible]	Stream Power (N/m s)		9.06	
Frctn Loss (m)	[illegible]	Cum Volume (1000 m3)		1.82	
C & E Loss (m)	[illegible]	Cum BA (1000 m2)		8.66	

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

CROSS SECTION

[illegible]
[illegible]

[illegible]
[illegible]
Starting Elevation Data num= 4

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	82.66

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
[illegible]	.045	[illegible]	[illegible]	[illegible]	.045

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
[illegible]	73.57	[illegible]	[illegible]	66.64	1	3

CROSS SECTION OUTPUT Profile [illegible]

E.G. Elev (m)	[illegible]	Element	Left OB	Channel	Right OB
Vel Head (m)	[illegible]	Wt. n-Val.		0.040	
W.S. Elev (m)	[illegible]	Reach Len. (m)	54.99	66.61	66.64
Crit W.S. (m)		Flow Area (m2)		4.27	
E.G. Slope (m/m)	[illegible]	Area (m2)		4.27	
Q Total (m3/s)	[illegible]	Flow (m3/s)		1.31	
Top Width (m)	[illegible]	Top Width (m)		21.53	
Vel Total (m/s)	[illegible]	Avg. Vel. (m/s)		0.31	
Max Chl Dpth (m)	[illegible]	Hydr. Depth (m)		0.20	
Conv. Total (m3/s)	[illegible]	Conv. (m3/s)		16.2	
Length Wtd. (m)	[illegible]	Wetted Per. (m)		21.44	
Min Ch El (m)	[illegible]	Shear (N/m2)		2.54	
Alpha	[illegible]	Stream Power (N/m s)		0.79	
Frctn Loss (m)	[illegible]	Cum Volume (1000 m3)		1.68	
C & E Loss (m)	[illegible]	Cum BA (1000 m2)		8.22	

CROSS SECTION OUTPUT Profile #18Jul1993 1800

			Left OB	Channel	Right OB
E.G. Elev (m)	78.74	Element		0.040	
Vel Head (m)	0.15	Wt. n-Val.			
W.S. Elev (m)	78.59	Reach Len. (m)	56.97	66.61	66.64
Crit W.S. (m)		Flow Area (m2)		91.25	
E.G. Slope (m/m)	+0.001314	Area (m2)		91.25	
Q Total (m3/s)	158.71	Flow (m3/s)		158.71	
Top Width (m)	32.43	Top Width (m)		33.43	
Vel Total (m/s)	1.74	Avg. Vel. (m/s)		1.74	
Max Chl Dpth (m)	3.46	Hydr Depth (m)		2.81	
Conv. Total (m3/s)	4378.6	Conv. (m3/s)		4378.6	
Length Wtd. (m)	66.61	Wetted Per. (m)		34.32	
Min Ch El (m)	75.13	Shear (N/m2)		34.26	
Alpha	1.00	Stream Power (N/m s)		59.58	
Frctn Loss (m)	0.11	Cum Volume (1000 m3)		33.48	
C & E Loss (m)	0.01	Cum SA (1000 m2)		12.74	

CROSS SECTION OUTPUT Profile #17Nov1993 0000

			Left OB	Channel	Right OB
E.G. Elev (m)	75.44	Element		0.040	
Vel Head (m)	0.01	Wt. n-Val.			
W.S. Elev (m)	75.43	Reach Len. (m)	56.97	66.61	66.64
Crit W.S. (m)		Flow Area (m2)		3.69	
E.G. Slope (m/m)	+0.002116	Area (m2)		3.69	
Q Total (m3/s)	1.31	Flow (m3/s)		1.31	
Top Width (m)	31.42	Top Width (m)		31.42	
Vel Total (m/s)	0.35	Avg. Vel. (m/s)		0.35	
Max Chl Dpth (m)	0.23	Hydr. Depth (m)		0.17	
Conv. Total (m3/s)	28.5	Conv. (m3/s)		28.5	
Length Wtd. (m)	66.61	Wetted Per. (m)		21.51	
Min Ch El (m)	75.20	Shear (N/m2)		3.56	
Alpha	1.00	Stream Power (N/m s)		1.26	
Frctn Loss (m)	0.14	Cum Volume (1000 m3)		1.40	
C & E Loss (m)	0.00	Cum SA (1000 m2)		8.19	

CROSS SECTION

RIVER: CAYAGUAS
REACH: ONE RS: 6

INPUT
Description:
Station Elevation Data num= 4

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	77.47	3.63	75.1	21.7	75.1	31.13	81.54

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.045	0	.04	31.13	.045

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
0	31.13	36.04	32.05	28.03	.1	.3

CROSS SECTION OUTPUT Profile #16Sep1977 1200

			Left OB	Channel	Right OB
E.G. Elev (m)	75.23	Element		0.040	
Vel Head (m)	0.01	Wt. n-Val.			
W.S. Elev (m)	75.22	Reach Len. (m)	36.04	32.05	28.03
Crit W.S. (m)		Flow Area (m2)		3.37	
E.G. Slope (m/m)	+0.002386	Area (m2)		3.37	
Q Total (m3/s)	1.31	Flow (m3/s)		1.31	
Top Width (m)	18.60	Top Width (m)		18.60	
Vel Total (m/s)	0.39	Avg. Vel. (m/s)		0.39	
Max Chl Dpth (m)	0.18	Hydr. Depth (m)		0.18	
Conv. Total (m3/s)	26.8	Conv. (m3/s)		26.8	
Length Wtd. (m)	32.05	Wetted Per. (m)		18.71	
Min Ch El (m)	75.10	Shear (N/m2)		4.21	
Alpha	1.00	Stream Power (N/m s)		1.64	
Frctn Loss (m)	0.07	Cum Volume (1000 m3)		1.42	
C & E Loss (m)	0.00	Cum SA (1000 m2)		6.88	

CROSS SECTION OUTPUT Profile #16Jul1993 1800

			Left OB	Channel	Right OB
E.G. Elev (m)	78.63	Element		0.040	
Vel Head (m)	0.23	Wt. n-Val.			
W.S. Elev (m)	78.40	Reach Len. (m)	36.04	32.05	28.03
Crit W.S. (m)		Flow Area (m2)		74.92	
E.G. Slope (m/m)	+0.002894	Area (m2)		74.92	
Q Total (m3/s)	158.71	Flow (m3/s)		158.71	
Top Width (m)	26.53	Top Width (m)		26.53	
Vel Total (m/s)	2.12	Avg. Vel. (m/s)		2.12	
Max Chl Dpth (m)	3.30	Hydr. Depth (m)		2.82	
Conv. Total (m3/s)	3518.6	Conv. (m3/s)		3518.6	
Length Wtd. (m)	32.05	Wetted Per. (m)		29.10	
Min Ch El (m)	75.10	Shear (N/m2)		51.37	
Alpha	1.06	Stream Power (N/m s)		108.82	
Frctn Loss (m)	0.06	Cum Volume (1000 m3)		27.95	
C & E Loss (m)	0.01	Cum SA (1000 m2)		10.77	

Warning: The cross-section end points had to be extended vertically for the computed water surface.

CROSS SECTION OUTPUT Profile #17Nov1993 0000

			Left OB	Channel	Right OB
E.G. Elev (m)	75.30	Element		0.040	
Vel Head (m)	0.01	Wt. n-Val.			
W.S. Elev (m)	75.29	Reach Len. (m)	36.04	32.05	28.03
Crit W.S. (m)		Flow Area (m2)		3.45	
E.G. Slope (m/m)	+0.002193	Area (m2)		3.45	
Q Total (m3/s)	1.31	Flow (m3/s)		1.31	
Top Width (m)	18.61	Top Width (m)		18.61	
Vel Total (m/s)	0.38	Avg. Vel. (m/s)		0.38	
Max Chl Dpth (m)	0.19	Hydr. Depth (m)		0.19	
Conv. Total (m3/s)	28.5	Conv. (m3/s)		28.5	
Length Wtd. (m)	32.05	Wetted Per. (m)		18.73	
Min Ch El (m)	75.10	Shear (N/m2)		3.86	
Alpha	1.00	Stream Power (N/m s)		1.56	
Frctn Loss (m)	0.04	Cum Volume (1000 m3)		1.37	
C & E Loss (m)	0.00	Cum SA (1000 m2)		6.86	

```
*****************************************************************************

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

CROSS SECTION

PTITLE: CATAGUAS
REACH: ONE                    RS: 5

INPUT
Description:
Station Elevation Data      num=          *
    Sta    Elev     Sta     Elev      Sta    Elev     Sta    Elev     Sta    Elev
*****************************************************************************
      0   78.34    4.68    75.02    23.88   75.02   31.62   40.38    35.7  100.78

Manning's n Values          num=          *
    Sta    n Val     Sta    n Val      Sta    n Val
*****************************************************************************
      0     .045       0      .04     35.7     .045

Bank Sta: Left   Right     Lengths: Left Channel   Right      Coeff Contr.    Expan.
             0    35.7                 39.18   34.8   30.66              .1        .3

CROSS SECTION OUTPUT  Profile #1ESep1977 1200
*****************************************************************************
                                                    * Left OB *  Channel * Right OB *
* K.G. Elev (m)          *   75.22  * Element                  *         *  0.040  *         *
* Vel Head (m)           *    0.01  * Wt. n Val.               *         *        *         *
* W.S. Elev (m)          *   75.22  * Reach Len. (m)           *  39.18  *  34.80  *   30.66 *
* Crit W.S. (m)          *          * Flow Area (m2)           *         *   3.72  *         *
* E.G. Slope (m/m)       *+0.001860  * Area (m2)               *         *   3.72  *         *
* Q Total (m3/s)         *    1.31  * Flow (m3/s)               *         *   1.31  *         *
* Top Width (m)          *   19.75  * Top Width (m)            *         *  19.75  *         *
* Vel Total (m/s)        *    0.35  * Avg. Vel. (m/s)          *         *   0.35  *         *
* Max Chl Dpth (m)       *    0.19  * Hydr. Depth (m)          *         *   0.19  *         *
* Conv. Total (m3/s)     *    30.4  * Conv. (m3/s)             *         *   30.4  *         *
* Length Wtd. (m)        *   34.89  * Wetted Per. (m)          *         *  19.07  *         *
* Min Ch El (m)          *   75.03  * Shear (N/m2)             *         *   1.41  *         *
* Alpha                  *    1.00  * Stream Power (N/m s)     *         *   1.20  *         *
* Frctn Loss (m)         *    0.02  * Cum Volume (1000 m3)     *         *   1.31  *         *
* C & E Loss (m)         *    0.00  * Cum SA (1000 m2)         *         *   6.27  *         *
*****************************************************************************

CROSS SECTION OUTPUT  Profile #1AJul1981 1800
*****************************************************************************
                                                    * Left OB *  Channel * Right OB *
* E.G. Elev (m)          *   78.56  * Element                  *         *  0.040  *         *
* Vel Head (m)           *    0.19  * Wt. n Val.               *         *        *         *
* W.S. Elev (m)          *   78.37  * Reach Len. (m)           *  39.18  *  34.80  *   30.66 *
* Crit W.S. (m)          *          * Flow Area (m2)           *         *  83.07  *         *
* E.G. Slope (m/m)       *+0.001471  * Area (m2)               *         *  83.07  *         *
* Q Total (m3/s)         *  158.71  * Flow (m3/s)               *         * 158.71  *         *
* Top Width (m)          *   28.78  * Top Width (m)            *         *  28.78  *         *
* Vel Total (m/s)        *    1.91  * Avg. Vel. (m/s)          *         *   1.91  *         *
* Max Chl Dpth (m)       *    2.46  * Hydr. Depth (m)          *         *   2.89  *         *
* Conv. Total (m3/s)     *  4001.7  * Conv. (m3/s)             *         *4001.7  *         *
* Length Wtd. (m)        *   34.80  * Wetted Per. (m)          *         *  31.03  *         *
* Min Ch El (m)          *   74.91  * Shear (N/m2)             *         *  41.25  *         *
* Alpha                  *    1.09  * Stream Power (N/m s)     *         *  78.82  *         *
* Frctn Loss (m)         *    0.08  * Cum Volume (1000 m3)     *         *  35.42  *         *
* C & E Loss (m)         *    0.00  * Cum SA (1000 m2)         *         *   3.89  *         *
*****************************************************************************

Warning: The cross-section end points had to be extended vertically for the computed water surface.

CROSS SECTION OUTPUT  Profile #1Nov1981 0000
*****************************************************************************
                                                    * Left OB *  Channel * Right OB *
* E.G. Elev (m)          *   75.25  * Element                  *         *  0.040  *         *
* Vel Head (m)           *    0.00  * Wt. n Val.               *         *        *         *
* W.S. Elev (m)          *   75.25  * Reach Len. (m)           *  39.18  *  34.80  *   30.66 *
* Crit W.S. (m)          *          * Flow Area (m2)           *         *   4.51  *         *
* E.G. Slope (m/m)       *+0.000967  * Area (m2)               *         *   4.51  *         *
* Q Total (m3/s)         *    1.41  * Flow (m3/s)               *         *   1.31  *         *
* Top Width (m)          *   19.86  * Top Width (m)            *         *  19.66  *         *
* Vel Total (m/s)        *    0.29  * Avg. Vel. (m/s)          *         *   0.29  *         *
* Max Chl Dpth (m)       *    0.24  * Hydr. Depth (m)          *         *   0.23  *         *
* Conv. Total (m3/s)     *    42.1  * Conv. (m3/s)             *         *   42.1  *         *
* Length Wtd. (m)        *   34.83  * Wetted Per. (m)          *         *  20.01  *         *
* Min Ch El (m)          *   74.91  * Shear (N/m2)             *         *   2.15  *         *
* Alpha                  *    1.00  * Stream Power (N/m s)     *         *   0.67  *         *
* Frctn Loss (m)         *    0.07  * Cum Volume (1000 m3)     *         *   1.24  *         *
* C & E Loss (m)         *    0.00  * Cum SA (1000 m2)         *         *   6.24  *         *
*****************************************************************************

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.

CROSS SECTION

PTITLE: CATAGUAS
REACH: ONE                    RS: 4

INPUT
Description:
Station Elevation Data      num=          *
    Sta    Elev     Sta     Elev      Sta    Elev     Sta    Elev     Sta    Elev
*****************************************************************************
      0   78.2      74    78.12    [illegible]   [illegible]   74.94   28.52   74.94
   [illegible]   77.68   [illegible]   78.44

Manning's n Values          num=          *
    Sta    n Val     Sta    n Val      Sta    n Val
*****************************************************************************
      0     .045       [illegible]      74    [illegible]    [illegible]

Bank Sta: Left   Right     Lengths: Left Channel   Right      Coeff Contr.    Expan.
             0    38.32                [illegible]   [illegible]   [illegible]              .1        .3

CROSS SECTION OUTPUT  Profile #1Sep1977 1200
*****************************************************************************
                                                    * Left OB *  Channel * Right OB *
* E.G. Elev (m)          *   75.35  * Element                  *         *  0.040  *         *
* Vel Head (m)           *    0.03  * Wt. n Val.               *         *        *         *
* W.S. Elev (m)          *   75.33  * Reach Len. (m)           *  58.65  *  43.24  *   32.33 *
* Crit W.S. (m)          *          * Flow Area (m2)           *         *   3.49  *         *
* E.G. Slope (m/m)       *+0.002577  * Area (m2)               *         *   3.49  *         *
```

* Q Total (m3/s)	* 1.31	* Flow (m3/s)	*	* 1.31 *
* Top Width (m)	* 21.51	* Top Width (m)	*	* 21.51 *
* Vel Total (m/s)	* 0.38	* Avg. Vel. (m/s)	*	* 0.38 *
* Max Chl Dpth (m)	* 0.16	* Hydr. Depth (m)	*	* 0.16 *
* Conv. Total (m3/s)	* 25.9	* Conv. (m3/s)	*	* 25.9 *
* Length Wtd. (m)	* 43.34	* Wetted Per. (m)	*	* 21.61 *
* Min Ch El (m)	* 74.98	* Shear (N/m2)	*	* 4.07 *
* Alpha	* 1.00	* Stream Power (N/m s)	*	* 1.53 *
* Frctn Loss (m)	* 0.08	* Cum Volume (1000 m3)	*	* 1.18 *
* C & E Loss (m)	* 0.00	* Cum SA (1000 m2)	*	* 5.55 *

CROSS SECTION OUTPUT Profile #18Jul1993 1800

* E.G. Elev (m)	* 78.50	* Element	* Left OB	* Channel	* Right OB *
* Vel Head (m)	* 0.18	* Wt. n-Val.	*	* 0.040 *	*
* W.S. Elev (m)	* 78.32	* Reach Len. (m)	* 56.65	* 43.34 *	32.92 *
* Crit W.S. (m)	*	* Flow Area (m2)	*	* 84.88 *	*
* E.G. Slope (m/m)	*0.001979	* Area (m2)	*	* 84.88 *	*
* Q Total (m3/s)	* 158.71	* Flow (m3/s)	*	* 158.71 *	*
* Top Width (m)	* 34.78	* Top Width (m)	*	* 34.78 *	*
* Vel Total (m/s)	* 1.89	* Avg. Vel. (m/s)	*	* 1.89 *	*
* Max Chl Dpth (m)	* 3.18	* Hydr. Depth (m)	*	* 2.42 *	*
* Conv. Total (m3/s)	* 3661.8	* Conv. (m3/s)	*	* 3661.8 *	*
* Length Wtd. (m)	* 43.34	* Wetted Per. (m)	*	* 38.56 *	*
* Min Ch El (m)	* 75.18	* Shear (N/m2)	*	* 42.36 *	*
* Alpha	* 1.00	* Stream Power (N/m s)	*	* 79.97 *	*
* Frctn Loss (m)	* 0.06	* Cum Volume (1000 m3)	*	* 23.51 *	*
* C & E Loss (m)	* 0.02	* Cum SA (1000 m2)	*	* 8.78 *	*

Warning: The cross-section end points had to be extended vertically for the computed water surface.

CROSS SECTION OUTPUT Profile #17Nov1993 0000

* E.G. Elev (m)	* 75.18	* Element	* Left OB	* Channel	* Right OB *
* Vel Head (m)	* 0.71	* Wt. n-Val.	*	* 0.040 *	*
* W.S. Elev (m)	* 75.16	* Reach Len. (m)	* 56.65	* 43.34 *	32.92 *
* Crit W.S. (m)	*	* Flow Area (m2)	*	* 2.65 *	*
* E.G. Slope (m/m)	*0.004146	* Area (m2)	*	* 2.65 *	*
* Q Total (m3/s)	* 1.31	* Flow (m3/s)	*	* 1.31 *	*
* Top Width (m)	* 21.48	* Top Width (m)	*	* 21.48 *	*
* Vel Total (m/s)	* 0.49	* Avg. Vel. (m/s)	*	* 0.49 *	*
* Max Chl Dpth (m)	* 0.12	* Hydr. Depth (m)	*	* 0.12 *	*
* Conv. Total (m3/s)	* 16.4	* Conv. (m3/s)	*	* 16.4 *	*
* Length Wtd. (m)	* 43.34	* Wetted Per. (m)	*	* 21.48 *	*
* Min Ch El (m)	* 75.04	* Shear (N/m2)	*	* 7.78 *	*
* Alpha	* 1.00	* Stream Power (N/m s)	*	* 3.81 *	*
* Frctn Loss (m)	* 0.10	* Cum Volume (1000 m3)	*	* 1.11 *	*
* C & E Loss (m)	* 0.00	* Cum SA (1000 m2)	*	* 5.52 *	*

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

TRIBUTARY SECTION

RIO CAYAGUAS
REACH: ONE PSU: 3

INPUT
Description:
Ineffective Elevation Data

	[illegible]	[illegible]	Sta	Elev	[illegible]	Elev	[illegible]	Elev	Sta	Elev	
	[illegible]	78.25	3.44	75.91	4.76	74.88	24.[illegible]	74.88	29.34	75.7	
[illegible]	[illegible]	[illegible]	35.69	77.[illegible]	39.69	78.2[illegible]					

Manning's n Values

	[illegible]	[illegible]	n Val	[illegible]	n Val
	[illegible]	0	[illegible]	[illegible]	[illegible]

Sort Stations

[illegible]	Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
	0	39.69	[illegible]	[illegible]	[illegible]	.1	.1

CROSS SECTION OUTPUT Profile [illegible] 1200

* E.G. Elev (m)	* 95.97	* Element	* Left OB	* Channel	* Right OB *
* Vel Head (m)	* 0.00	* Wt. n-Val.	*	* 0.040 *	*
* W.S. Elev (m)	* 95.96	* Reach Len. (m)	* 127.52	* 107.15 *	97.07 *
* Crit W.S. (m)	*	* Flow Area (m2)	*	* 4.42 *	*
* E.G. Slope (m/m)	*0.001384	* Area (m2)	*	* 4.42 *	*
* Q Total (m3/s)	* 1.31	* Flow (m3/s)	*	* 1.31 *	*
* Top Width (m)	* 24.42	* Top Width (m)	*	* 24.42 *	*
* Vel Total (m/s)	* 0.30	* Avg. Vel. (m/s)	*	* 0.30 *	*
* Max Chl Dpth (m)	* 0.18	* Hydr. Depth (m)	*	* 0.18 *	*
* Conv. Total (m3/s)	* 15.2	* Conv. (m3/s)	*	* 15.2 *	*
* Length Wtd. (m)	* 107.15	* Wetted Per. (m)	*	* 24.55 *	*
* Min Ch El (m)	* 94.48	* Shear (N/m2)	*	* 2.44 *	*
* Alpha	* 1.00	* Stream Power (N/m s)	*	* 0.72 *	*
* Frctn Loss (m)	* 0.08	* Cum Volume (1000 m3)	*	* 1.01 *	*
* C & E Loss (m)	* 0.00	* Cum SA (1000 m2)	*	* 4.54 *	*

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

CROSS SECTION OUTPUT Profile 18Jul1993 1800

* E.G. Elev (m)	* 98.42	* Element	* Left OB	* Channel	* Right OB *
* Vel Head (m)	* 0.12	* Wt. n-Val.	*	* 0.040 *	*
* W.S. Elev (m)	* 98.30	* Reach Len. (m)	* 123.52	* 107.15 *	97.07 *
* Crit W.S. (m)	*	* Flow Area (m2)	*	* 109.53 *	*
* E.G. Slope (m/m)	*0.001111	* Area (m2)	*	* 109.53 *	*
* Q Total (m3/s)	* 158.71	* Flow (m3/s)	*	* 158.71 *	*
* Top Width (m)	* 39.69	* Top Width (m)	*	* 39.69 *	*
* Vel Total (m/s)	* 1.53	* Avg. Vel. (m/s)	*	* 1.53 *	*
* Max Chl Dpth (m)	* 3.42	* Hydr. Depth (m)	*	* 2.81 *	*
* Conv. Total (m3/s)	* 4759.5	* Conv. (m3/s)	*	* 4759.5 *	*
* Length Wtd. (m)	* 107.15	* Wetted Per. (m)	*	* 41.52 *	*
* Min Ch El (m)	* 94.48	* Shear (N/m2)	*	* 27.13 *	*
* Alpha	* 1.00	* Stream Power (N/m s)	*	* 41.68 *	*
* Frctn Loss (m)	* 0.19	* Cum Volume (1000 m3)	*	* 18.44 *	*
* C & E Loss (m)	* 0.02	* Cum SA (1000 m2)	*	* 7.17 *	*

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

CROSS SECTION OUTPUT Profile #17Nov1993 0000

E.G. Elev (m)	75.06	Element	Left OB	Channel	Right OB
Vel Head (m)	0.00	Wt. n-Val.		0.040	
W.S. Elev (m)	75.07	Reach Len. (m)	123.52	107.15	97.07
Crit W.S. (m)		Flow Area (m2)		4.70	
E.G. Slope (m/m)	*0.001129	Area (m2)		4.70	
Q Total (m3/s)	1.31	Flow (m3/s)		1.31	
Top Width (m)	24.45	Top Width (m)		24.45	
Vel Total (m/s)	0.28	Avg. Vel. (m/s)		0.28	
Max Chl Dpth (m)	0.19	Hydr. Depth (m)		0.19	
Conv. Total (m3/s)	39.0	Conv. (m3/s)		39.0	
Length Wtd. (m)	107.15	Wetted Per. (m)		24.59	
Min Ch El (m)	74.88	Shear (N/m2)		2.12	
Alpha	1.00	Stream Power (N/m s)		0.59	
Frctn Loss (m)	0.10	Cum Volume (1000 m3)		0.95	
C & E Loss (m)	0.00	Cum DA (1000 m2)		4.53	

CROSS SECTION

RIVER: CAYAGUAS
REACH: ONE RS: 2

INPUT
Description:
Station Elevation Data num= 6

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	77.66	1.46	75.19	2.36	74.66	18.57	74.88	19.09	75.32
24.76	78.76								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.045	0	.04	24.76	.045

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
0 24.76 46.48 48.26 51.31 .1 .3

CROSS SECTION OUTPUT Profile #16Sep1993 1200

E.G. Elev (m)	74.98	Element	Left OB	Channel	Right OB
Vel Head (m)	0.07	Wt. n-Val.		0.040	
W.S. Elev (m)	74.92	Reach Len. (m)	46.88	48.26	51.31
Crit W.S. (m)		Flow Area (m2)		5.47	
E.G. Slope (m/m)	*0.000428	Area (m2)		5.47	
Q Total (m3/s)	1.31	Flow (m3/s)		1.31	
Top Width (m)	17.14	Top Width (m)		17.14	
Vel Total (m/s)	0.24	Avg. Vel. (m/s)		0.24	
Max Chl Dpth (m)	0.11	Hydr. Depth (m)		0.32	
Conv. Total (m3/s)	63.2	Conv. (m3/s)		63.2	
Length Wtd. (m)	48.26	Wetted Per. (m)		17.42	
Min Ch El (m)	74.46	Shear (N/m2)		1.32	
Alpha	1.00	Stream Power (N/m s)		0.32	
Frctn Loss (m)	0.05	Cum Volume (1000 m3)		0.48	
C & E Loss (m)	0.00	Cum DA (1000 m2)		2.33	

Warning: The conveyance ratio (upstream 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 4,5Jul1993 1800

E.G. Elev (m)	78.27	Element	Left OB	Channel	Right OB
Vel Head (m)	0.12	Wt. n-Val.		0.040	
W.S. Elev (m)	77.92	Reach Len. (m)	46.88	48.26	51.31
Crit W.S. (m)		Flow Area (m2)		65.30	
E.G. Slope (m/m)	*0.002611	Area (m2)		65.30	
Q Total (m3/s)	158.71	Flow (m3/s)		158.71	
Top Width (m)	23.37	Top Width (m)		23.37	
Vel Total (m/s)	2.43	Avg. Vel. (m/s)		2.43	
Max Chl Dpth (m)	3.31	Hydr. Depth (m)		2.79	
Conv. Total (m3/s)	2991.1	Conv. (m3/s)		2991.1	
Length Wtd. (m)	48.26	Wetted Per. (m)		28.33	
Min Ch El (m)	74.61	Shear (N/m2)		68.47	
Alpha	1.00	Stream Power (N/m s)		166.42	
Frctn Loss (m)	0.16	Cum Volume (1000 m3)		9.48	
C & E Loss (m)	0.01	Cum DA (1000 m2)		3.79	

Warning: The cross section end points had to be extended vertically for the computed water surface.

CROSS SECTION OUTPUT Profile #17Nov1993 0000

E.G. Elev (m)	74.98	Element	Left OB	Channel	Right OB
Vel Head (m)	0.07	Wt. n-Val.		0.040	
W.S. Elev (m)	74.91	Reach Len. (m)	46.88	48.26	51.31
Crit W.S. (m)		Flow Area (m2)		4.45	
E.G. Slope (m/m)	*0.000844	Area (m2)		4.45	
Q Total (m3/s)	1.31	Flow (m3/s)		1.31	
Top Width (m)	17.06	Top Width (m)		17.06	
Vel Total (m/s)	0.29	Avg. Vel. (m/s)		0.29	
Max Chl Dpth (m)	0.51	Hydr. Depth (m)		0.26	
Conv. Total (m3/s)	45.1	Conv. (m3/s)		45.1	
Length Wtd. (m)	48.26	Wetted Per. (m)		17.28	
Min Ch El (m)	74.40	Shear (N/m2)		2.13	
Alpha	1.00	Stream Power (N/m s)		0.63	
Frctn Loss (m)	0.09	Cum Volume (1000 m3)		0.46	
C & E Loss (m)	0.00	Cum DA (1000 m2)		2.33	

CROSS SECTION

RIVER: CAYAGUAS
REACH: ONE RS: 1

INPUT

Description:
Station Elevation Data num= 8

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	79.37	7.19	74.6	11.18	74.72	15.35	74.74	19.04	74.6
21.52	74.8	23.15	74.94	25.44	77.56				

Manning's n Values num= 1

Sta	n Val
0	.04

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
0	25.64	34.38	39.31	38.64	.1	.3

CROSS SECTION OUTPUT Profile #18Sep1977 1200

			Left OB	Channel	Right OB
E.G. Elev (m)	74.96	Element		0.040	
Vel Head (m)	0.01	Wt. n-Val.	34.38	39.31	38.64
W.S. Elev (m)	74.95	Reach Len. (m)		3.84	
Crit W.S. (m)		Flow Area (m2)		3.84	
E.G. Slope (m/m)	0.001311	Area (m2)		1.31	
Q Total (m3/s)	1.31	Flow (m3/s)		16.51	
Top Width (m)	16.51	Top Width (m)		0.34	
Vel Total (m/s)	0.34	Avg. Vel. (m/s)		0.23	
Max Chl Dpth (m)	0.36	Hydr. Depth (m)		16.2	
Conv. Total (m3/s)	16.2	Conv. (m3/s)		16.64	
Length Wtd. (m)	39.31	Wetted Per. (m)		2.97	
Min Ch El (m)	74.52	Shear (N/m2)		1.91	
Alpha	1.00	Stream Power (N/m s)		0.24	
Frctn Loss (m)	0.11	Cum Volume (1000 m3)		1.52	
C & E Loss (m)	0.00	Cum DA (1000 m2)			

Warning: The conveyance ratio (upstream 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 #18Jul1981 1800

			Left OB	Channel	Right OB
E.G. Elev (m)	78.06	Element		0.040	
Vel Head (m)	0.37	Wt. n-Val.	34.38	39.31	38.64
W.S. Elev (m)	77.69	Reach Len. (m)		59.17	
Crit W.S. (m)		Flow Area (m2)		59.17	
E.G. Slope (m/m)	0.001738	Area (m2)		158.71	
Q Total (m3/s)	158.71	Flow (m3/s)		22.21	
Top Width (m)	23.21	Top Width (m)		2.68	
Vel Total (m/s)	2.68	Avg. Vel. (m/s)		2.55	
Max Chl Dpth (m)	3.14	Hydr. Depth (m)		2595.4	
Conv. Total (m3/s)	2595.4	Conv. (m3/s)		25.46	
Length Wtd. (m)	59.11	Wetted Per. (m)		85.21	
Min Ch El (m)	74.94	Shear (N/m2)		238.53	
Alpha	1.00	Stream Power (N/m s)		6.38	
Frctn Loss (m)	0.12	Cum Volume (1000 m3)		2.66	
C & E Loss (m)	0.01	Cum DA (1000 m2)			

Warning: The cross-section end points had to be extended vertically for the computed water surface.

CROSS SECTION OUTPUT Profile #19Jul1981 0600

			Left OB	Channel	Right OB
E.G. Elev (m)	78.94	Element		0.040	
Vel Head (m)	0.81	Wt. n-Val.	34.38	39.31	38.64
W.S. Elev (m)	78.13	Reach Len. (m)		3.84	
Crit W.S. (m)		Flow Area (m2)		3.84	
E.G. Slope (m/m)	0.001268	Area (m2)		1.31	
Q Total (m3/s)	1.31	Flow (m3/s)		16.07	
Top Width (m)	16.07	Top Width (m)		0.34	
Vel Total (m/s)	0.34	Avg. Vel. (m/s)		0.24	
Max Chl Dpth (m)	0.36	Hydr. Depth (m)		16.8	
Conv. Total (m3/s)	16.8	Conv. (m3/s)		16.19	
Length Wtd. (m)	39.11	Wetted Per. (m)		2.95	
Min Ch El (m)	74.94	Shear (N/m2)		1.91	
Alpha	1.00	Stream Power (N/m s)		0.24	
Frctn Loss (m)	0.10	Cum Volume (1000 m3)		1.51	
C & E Loss (m)	0.00	Cum DA (1000 m2)			

Warning: The conveyance ratio (upstream 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: LAYADERO
REACH: DRA

INPUT
Description:
Station Elevation Data num= 8

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	75.56	5.85	75.12	8.53	74.67	14.06	74.66	16.28	74.54
19.14	74.84	23.11	74.82	25.28	76.98				

Manning's n Values num= 1

Sta	n Val
0	.04

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
0	25.79	48.54	47.12	64.34	.1	.3

CROSS SECTION OUTPUT Profile #19Sep1977 1200

			Left OB	Channel	Right OB
E.G. Elev (m)	77.85	Element		0.040	
Vel Head (m)	0.96	Wt. n-Val.	69.57	47.12	64.34
W.S. Elev (m)	76.89	Reach Len. (m)		2.08	
Crit W.S. (m)		Flow Area (m2)		2.08	
E.G. Slope (m/m)	0.001278	Area (m2)		1.31	
Q Total (m3/s)	1.31	Flow (m3/s)		15.38	
Top Width (m)	15.38	Top Width (m)		0.63	
Vel Total (m/s)	0.63	Avg. Vel. (m/s)		0.14	
Max Chl Dpth (m)	1.10	Hydr. Depth (m)		11.7	
Conv. Total (m3/s)	11.7	Conv. (m3/s)		15.19	
Length Wtd. (m)	47.57	Wetted Per. (m)		12.06	
Min Ch El (m)	74.53	Shear (N/m2)		9.98	
Alpha	1.00	Stream Power (N/m s)			

```
* Frctn Loss (m)        *    0.43  * Cum Volume (1000 m3) *          *    0.14  *          *
* C & E Loss (m)        *    0.00  * Cum EA (1000 m2)     *          *    0.88  *          *
*******************************************************************************************

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

CROSS SECTION OUTPUT  Profile 21aJul1993 1800
*******************************************************************************************
* E.G. Elev (m)         *   77.80  * Element              * Left OB * Channel * Right OB *
* Vel Head (m)          *    0.26  * Wt. n-Val.           *         *   0.040 *          *
* W.S. Elev (m)         *   77.54  * Reach Len. (m)       *   49.57 *   47.32 *   64.36  *
* Crit W.S. (m)         *          * Flow Area (m2)       *         *   69.66 *          *
* E.G. Slope (m/m)      *+0.000013 * Area (m2)            *         *   69.66 *          *
* Q Total (m3/s)        *  158.71  * Flow (m3/s)          *         *  158.71 *          *
* Top Width (m)         *   25.79  * Top Width (m)        *         *   25.79 *          *
* Vel Total (m/s)       *    2.28  * Avg. Vel. (m/s)      *         *    2.28 *          *
* Max Chl Dpth (m)      *    3.15  * Hydr. Depth (m)      *         *    2.70 *          *
* Conv. Total (m3/s)    *  1093.8  * Conv. (m3/s)         *         *  1093.8 *          *
* Length Wtd. (m)       *   67.32  * Wetted Per. (m)      *         *   28.42 *          *
* Min Ch El (m)         *   74.49  * Shear (N/m2)         *         *   61.11 *          *
* Alpha                 *    1.08  * Stream Power (N/m s) *         *  139.25 *          *
* Frctn Loss (m)        *    0.37  * Cum Volume (1000 m3) *         *    3.86 *          *
* C & E Loss (m)        *    0.04  * Cum EA (1000 m2)     *         *    1.70 *          *
*******************************************************************************************

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

CROSS SECTION OUTPUT  Profile 21Nov1993 0900
*******************************************************************************************
* E.G. Elev (m)         *   74.82  * Element              * Left OB * Channel * Right OB *
* Vel Head (m)          *    0.02  * Wt. n-Val.           *         *   0.040 *          *
* W.S. Elev (m)         *   74.81  * Reach Len. (m)       *   49.57 *   47.32 *   64.36  *
* Crit W.S. (m)         *          * Flow Area (m2)       *         *    2.17 *          *
* E.G. Slope (m/m)      *+0.000872 * Area (m2)            *         *    2.17 *          *
* Q Total (m3/s)        *    1.31  * Flow (m3/s)          *         *    1.31 *          *
* Top Width (m)         *   15.31  * Top Width (m)        *         *   15.31 *          *
* Vel Total (m/s)       *    0.60  * Avg. Vel. (m/s)      *         *    0.60 *          *
* Max Chl Dpth (m)      *    0.31  * Hydr. Depth (m)      *         *    0.14 *          *
* Conv. Total (m3/s)    *   14.8   * Conv. (m3/s)         *         *   14.8  *          *
* Length Wtd. (m)       *   67.32  * Wetted Per. (m)      *         *   15.33 *          *
* Min Ch El (m)         *   74.49  * Shear (N/m2)         *         *   10.94 *          *
* Alpha                 *    1.00  * Stream Power (N/m s) *         *    6.60 *          *
* Frctn Loss (m)        *    0.45  * Cum Volume (1000 m3) *         *    0.14 *          *
* C & E Loss (m)        *    0.00  * Cum EA (1000 m2)     *         *    0.88 *          *
*******************************************************************************************

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

CROSS SECTION

FLOW: CONTROL
PROFILE                    Elev. m

INPUT
Description:
Station Elevation Data    num=        *
    Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*******************************************************************************************
      0   77.81     4.9   76.46    9.24   74.52   11.29   75.11    12.8   74.1
   17.45   74.29   22.98   74.1   29.10   74.27

Manning's n Values        num=        *
    Sta   n Val     Sta   n Val     Sta   n Val
*******************************************************************************************
      0    .040      0     .04    29.29    .040

Bank Sta: Left    Right    Lengths: Left  Channel   Right     Coeff Contr.   Expan.
                    0      29.29          *         *         *     .1        .1

CROSS SECTION OUTPUT  Profile 21aug1993 1.00
*******************************************************************************************
* E.G. Elev (m)         *   74.14  * Element              * Left OB * Channel * Right OB *
* Vel Head (m)          *    0.01  * Wt. n-Val.           *         *   0.040 *          *
* W.S. Elev (m)         *   74.13  * Reach Len. (m)       *         *         *          *
* Crit W.S. (m)         *   74.28  * Flow Area (m2)       *         *    2.13 *          *
* E.G. Slope (m/m)      *+0.000147 * Area (m2)            *         *    2.13 *          *
* Q Total (m3/s)        *    1.31  * Flow (m3/s)          *         *    1.31 *          *
* Top Width (m)         *   11.13  * Top Width (m)        *         *   11.13 *          *
* Vel Total (m/s)       *    0.61  * Avg. Vel. (m/s)      *         *    0.61 *          *
* Max Chl Dpth (m)      *    0.19  * Hydr. Depth (m)      *         *    0.19 *          *
* Conv. Total (m3/s)    *   17.4   * Conv. (m3/s)         *         *   17.4  *          *
* Length Wtd. (m)       *          * Wetted Per. (m)      *         *   11.27 *          *
* Min Ch El (m)         *   73.84  * Shear (N/m2)         *         *   10.10 *          *
* Alpha                 *    1.00  * Stream Power (N/m s) *         *    6.22 *          *
* Frctn Loss (m)        *          * Cum Volume (1000 m3) *         *         *          *
* C & E Loss (m)        *          * Cum EA (1000 m2)     *         *         *          *
*******************************************************************************************

CROSS SECTION OUTPUT  Profile 21aug1993 1600
*******************************************************************************************
* E.G. Elev (m)         *   77.[illegible] * Element              * Left OB * Channel * Right OB *
* Vel Head (m)          *    0.43  * Wt. n-Val.           *         *   0.040 *          *
* W.S. Elev (m)         *   76.93  * Reach Len. (m)       *         *         *          *
* Crit W.S. (m)         *   78.62  * Flow Area (m2)       *         *   45.08 *          *
* E.G. Slope (m/m)      *+0.000[illegible] * Area (m2)            *         *   45.08 *          *
* Q Total (m3/s)        *  158.71  * Flow (m3/s)          *         *  158.71 *          *
* Top Width (m)         *   24.75  * Top Width (m)        *         *   24.75 *          *
* Vel Total (m/s)       *    3.52  * Avg. Vel. (m/s)      *         *    3.52 *          *
* Max Ch. Dpth (m)      *    2.47  * Hydr. Depth (m)      *         *    1.82 *          *
* Conv. Total (m3/s)    *  1610.4  * Conv. (m3/s)         *         *  1610.4 *          *
* Length Wtd. (m)       *          * Wetted Per. (m)      *         *   24.40 *          *
* Min Ch El (m)         *   74.[illegible] * Shear (N/m2)         *         *  142.67 *          *
* Alpha                 *    1.00  * Stream Power (N/m s) *         *  572.67 *          *
* Frctn Loss (m)        *          * Cum Volume (1000 m3) *         *         *          *
* C & E Loss (m)        *          * Cum EA (1000 m2)     *         *         *          *
*******************************************************************************************

CROSS SECTION OUTPUT  Profile 21 Nov1993 [illegible]
```

E.G. Elev (m)	74.38	Element	Left OB	Channel	Right OB
Vel Head (m)	0.02	Wt. n-Val.		0.040	
W.S. Elev (m)	74.36	Reach Len. (m)			
Crit W.S. (m)	74.28	Flow Area (m2)		2.12	
E.G. Slope (m/m)	[illegible]	Area (m2)		2.12	
Q Total (m3/s)	1.31	Flow (m3/s)		1.31	
Top Width (m)	11.17	Top Width (m)		11.12	
Vel Total (m/s)	0.62	Avg. Vel. (m/s)		0.62	
Max Chl Dpth (m)	0.30	Hydr. Depth (m)		0.19	
Conv. Total (m3/s)	17.4	Conv. (m3/s)		17.4	
Length Wtd. (m)		Wetted Per. (m)		11.27	
Min Ch El (m)	74.06	Shear (N/m2)		10.46	
Alpha	1.00	Stream Power (N/m s)		6.46	
Frctn Loss (m)		Cum Volume (1000 m3)			
C & E Loss (m)		Cum SA (1000 m2)			

Profile Output Table - Standard Table 1

Reach	River Sta	Profile	Q Total (m3/s)	Min Ch El (m)	W.S. Elev (m)	Crit W.S. (m)	E.G. Elev (m)	E.G. Slope (m/m)	Vel Chnl (m/s)	Flow Area (m2)	Top Width (m)	Froude # Chl
[illegible]	20	[illegible]	1.31	76.67	76.96		76.98	0.004828	0.48	2.71	18.73	0.49
[illegible]	20	[illegible]	158.71	77.20	81.46	81.46	81.73	0.020617	2.33	68.49	125.23	1.70
[illegible]	20	[illegible]	1.31	77.20	78.07	78.03	78.25	0.031271	1.87	0.70	1.47	[illegible]
[illegible]	19	[illegible]	1.31	76.47	76.78		76.79	0.002393	0.34	3.88	36.18	[illegible]
[illegible]	19	[illegible]	158.71	76.99	79.60		79.72	0.001618	1.53	103.81	51.80	[illegible]
[illegible]	19	[illegible]	1.31	76.99	78.19		78.19	0.000004	0.04	31.48	42.70	[illegible]
[illegible]	18	[illegible]	1.31	76.17	76.60		76.61	0.002351	0.36	3.60	21.39	0.28
[illegible]	18	[illegible]	158.71	76.61	79.41		79.58	0.002361	1.80	88.41	44.17	0.40
[illegible]	18	[illegible]	1.31	77.87	78.16	78.16	78.19	0.045044	0.75	1.74	32.60	[illegible]
[illegible]	17	[illegible]	1.31	76.10	76.49		76.50	0.006070	0.49	2.68	31.14	0.44
[illegible]	17	[illegible]	158.71	76.10	79.38		79.50	0.001820	1.55	103.42	64.56	[illegible]
[illegible]	17	[illegible]	1.31	76.10	76.57		76.57	0.001521	0.31	4.27	33.88	[illegible]
[illegible]	16	[illegible]	1.31	76.15	76.39		76.40	0.002125	0.31	4.23	30.29	[illegible]
[illegible]	16	[illegible]	158.71	76.63	79.43		79.45	0.000367	0.76	207.82	90.47	[illegible]
[illegible]	16	[illegible]	1.31	76.28	76.45		76.47	0.010155	0.56	2.32	21.77	[illegible]
[illegible]	15	[illegible]	1.31	76.12	76.35		76.36	0.002696	0.35	3.72	36.15	[illegible]
[illegible]	15	[illegible]	158.71	76.05	79.38		79.44	0.000737	1.09	146.21	47.43	[illegible]
[illegible]	15	[illegible]	1.31	76.04	76.46		76.46	0.000187	0.15	8.53	27.96	[illegible]
[illegible]	14	[illegible]	1.31	76.05	76.32		76.33	0.001352	0.31	4.28	22.21	[illegible]
[illegible]	14	[illegible]	158.71	76.25	79.38		79.42	0.001354	1.67	95.19	34.89	[illegible]
[illegible]	14	[illegible]	1.31	76.26	76.42		76.44	0.030169	0.71	1.86	30.85	[illegible]
[illegible]	13	[illegible]	1.31	76.05	76.32		76.33	0.001351	0.29	4.56	35.90	[illegible]
[illegible]	13	[illegible]	158.71	76.03	79.28		79.41	0.001107	1.58	99.70	13.64	[illegible]
[illegible]	13	[illegible]	1.31	76.03	76.43		76.44	0.000217	0.16	7.87	26.45	[illegible]
[illegible]	12	[illegible]	1.31	76.11	76.28		76.29	0.003117	0.42	3.10	18.49	[illegible]
[illegible]	12	[illegible]	158.71	76.02	79.09		79.37	0.002841	2.32	68.47	27.93	[illegible]
[illegible]	12	[illegible]	1.31	76.11	76.35	76.35	76.42	0.032953	1.11	1.18	9.16	[illegible]
[illegible]	11	[illegible]	1.31	75.80	75.95		75.96	0.004376	0.46	2.87	19.64	[illegible]
[illegible]	11	[illegible]	158.71	75.82	78.87		79.13	0.002410	2.25	70.40	35.77	[illegible]
[illegible]	11	[illegible]	1.31	75.83	75.97		75.98	0.000713	0.26	4.97	18.75	[illegible]
[illegible]	10	[illegible]	1.31	75.54	75.69		75.70	0.002586	0.35	3.75	25.95	[illegible]
[illegible]	10	[illegible]	158.71	75.54	78.82		78.96	0.001219	1.66	95.79	46.07	[illegible]
[illegible]	10	[illegible]	1.31	75.54	75.80		75.82	0.011919	0.70	1.88	14.50	[illegible]
[illegible]	9	[illegible]	1.31	75.42	75.61		75.62	0.001139	0.28	4.76	25.43	[illegible]
[illegible]	9	[illegible]	158.71	75.57	78.76		78.90	0.001246	1.68	94.55	33.88	[illegible]
[illegible]	9	[illegible]	1.31	75.49	75.78		75.78	0.000270	0.18	7.37	26.75	[illegible]
[illegible]	8	[illegible]	1.31	75.17	75.57		75.58	0.004679	0.49	2.67	19.62	[illegible]
[illegible]	8	[illegible]	158.71	75.34	78.68		78.87	0.001817	1.92	82.77	42.45	[illegible]
[illegible]	8	[illegible]	1.31	75.58	75.74		75.76	0.012359	0.65	2.00	17.45	[illegible]
[illegible]	7	[illegible]	1.31	75.20	75.40		75.41	0.001311	0.31	4.23	28.51	[illegible]
[illegible]	7	[illegible]	158.71	75.11	78.59		78.74	0.001314	1.74	91.25	37.44	[illegible]
[illegible]	7	[illegible]	1.31	75.20	75.43		75.44	0.003116	0.35	3.69	21.47	[illegible]
[illegible]	6	[illegible]	1.31	75.10	75.28		75.29	0.002406	0.39	3.37	18.68	[illegible]
[illegible]	6	[illegible]	158.71	75.10	78.40		78.63	0.002035	2.12	74.92	26.51	[illegible]
[illegible]	6	[illegible]	1.31	75.10	75.28		75.30	0.002101	0.38	3.45	19.61	[illegible]
[illegible]	5	[illegible]	1.31	75.01	75.22		75.22	0.001860	0.25	5.32	32.76	[illegible]
[illegible]	5	[illegible]	158.71	74.91	78.37		78.56	0.001571	1.91	83.07	38.78	[illegible]
[illegible]	5	[illegible]	1.31	75.01	75.25		75.25	0.000967	0.29	4.51	19.96	[illegible]
[illegible]	4	[illegible]	1.31	74.98	75.14		75.15	0.002573	0.38	3.49	21.51	[illegible]
[illegible]	4	[illegible]	158.71	75.13	78.33		78.50	0.001879	1.89	84.08	34.78	[illegible]
[illegible]	4	[illegible]	1.31	75.04	75.16		75.18	0.036366	0.49	2.65	21.40	[illegible]
[illegible]	3	[illegible]	1.31	74.88	75.06		75.07	0.001384	0.30	4.42	24.42	[illegible]
[illegible]	3	[illegible]	158.71	74.88	78.30		78.42	0.001112	1.53	101.55	38.65	[illegible]
[illegible]	3	[illegible]	1.31	74.88	75.07		75.08	0.001129	0.28	4.70	26.45	[illegible]
[illegible]	2	[illegible]	1.31	74.66	74.98		74.99	0.000429	0.26	5.67	17.34	[illegible]
[illegible]	2	[illegible]	158.71	74.61	77.92		78.33	0.003815	2.43	65.10	[illegible]	[illegible]
[illegible]	2	[illegible]	1.31	74.66	74.97		74.98	0.000894	0.29	4.45	[illegible]	[illegible]
[illegible]	1	[illegible]	1.31	74.52	74.95		74.96	0.001311	0.34	3.84	[illegible]	[illegible]
[illegible]	1	[illegible]	158.71	74.56	77.69		78.06	0.003732	2.68	[illegible]	[illegible]	[illegible]
[illegible]	1	[illegible]	1.31	74.56	74.92		74.93	0.001268	0.34	3.84	[illegible]	[illegible]
[illegible]	0.5	[illegible]	1.31	74.51	74.83		74.85	0.003078	0.62	2.09	15.18	[illegible]
[illegible]	0.5	[illegible]	158.71	74.43	77.64		77.90	0.002632	2.28	69.66	25.79	[illegible]
[illegible]	0.5	[illegible]	1.31	74.43	74.81		74.82	0.007872	0.60	2.17	15.11	[illegible]
[illegible]	0	[illegible]	1.31	74.06	74.36	74.28	74.38	0.005547	0.61	2.13	11.13	[illegible]
[illegible]	0	[illegible]	158.71	74.06	76.93	76.62	77.56	0.009713	3.52	45.08	[illegible]	[illegible]
[illegible]	0	[illegible]	1.31	74.06	74.36	74.28	74.38	0.005670	0.62	2.12	11.12	[illegible]

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Geom: W/ EXTRACTION Flow: CAYAGUAS FLOW RATING
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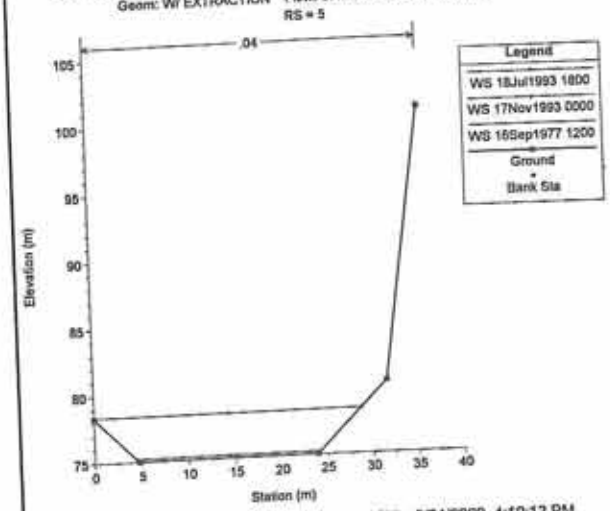

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Geom: W/ EXTRACTION Flow: CAYAGUAS FLOW RATING
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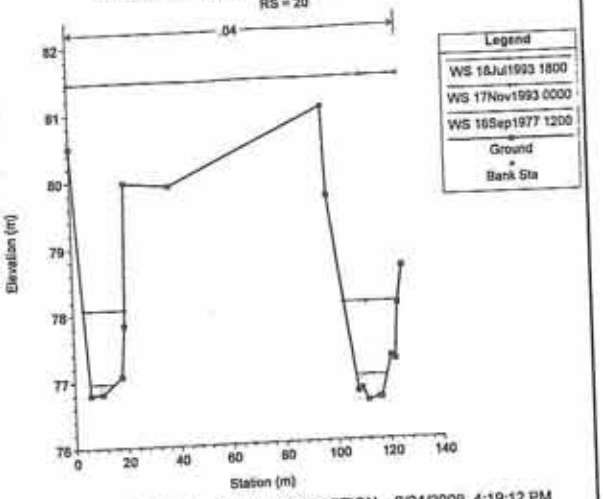

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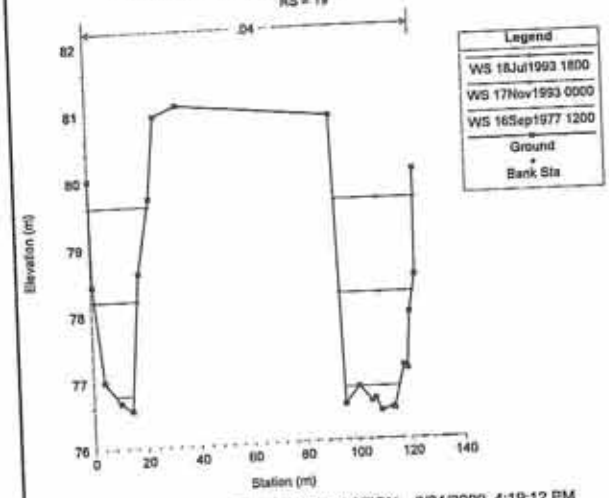

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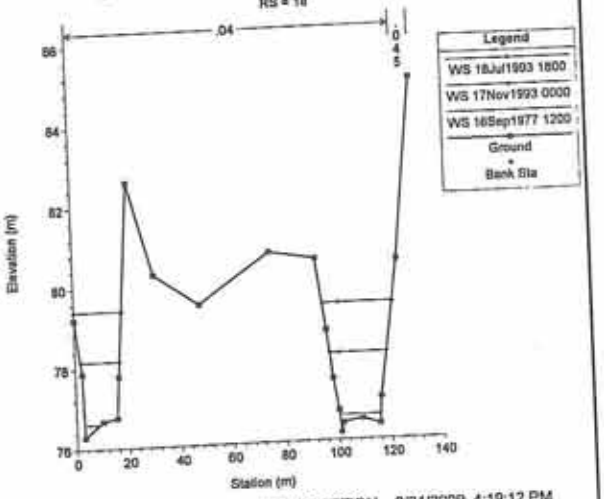

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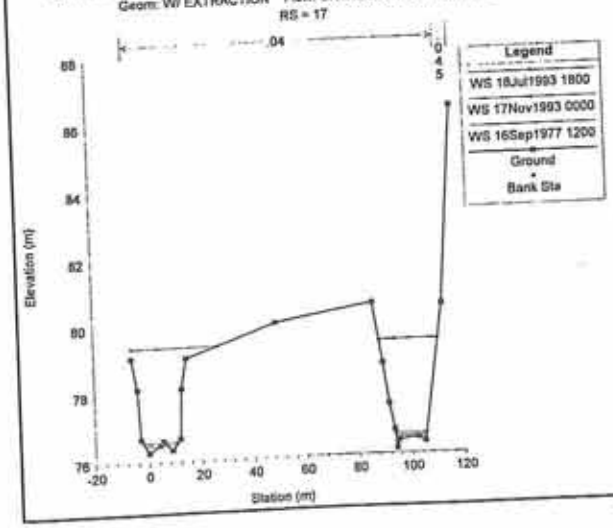
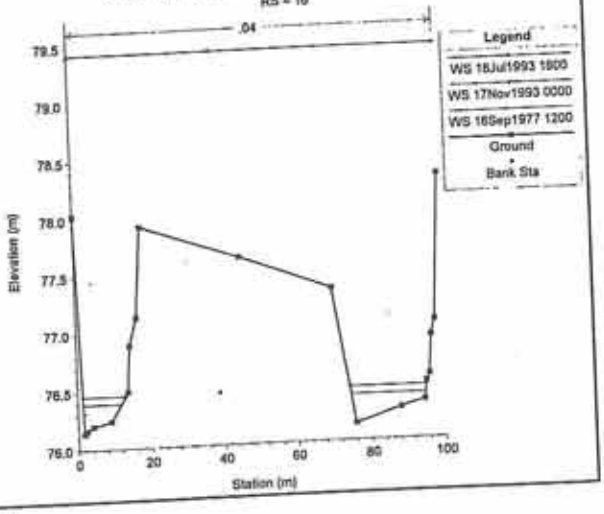
Geom: W/ EXTRACTION Flow: CAYAGUAS FLOW RATING
RS = 17



CAYAGUAS_ST_3 Plan: W EXTRACTION 8/24/2009 4:19:12 PM
Geom: W/ EXTRACTION Flow: CAYAGUAS FLOW RATING
RS = 16