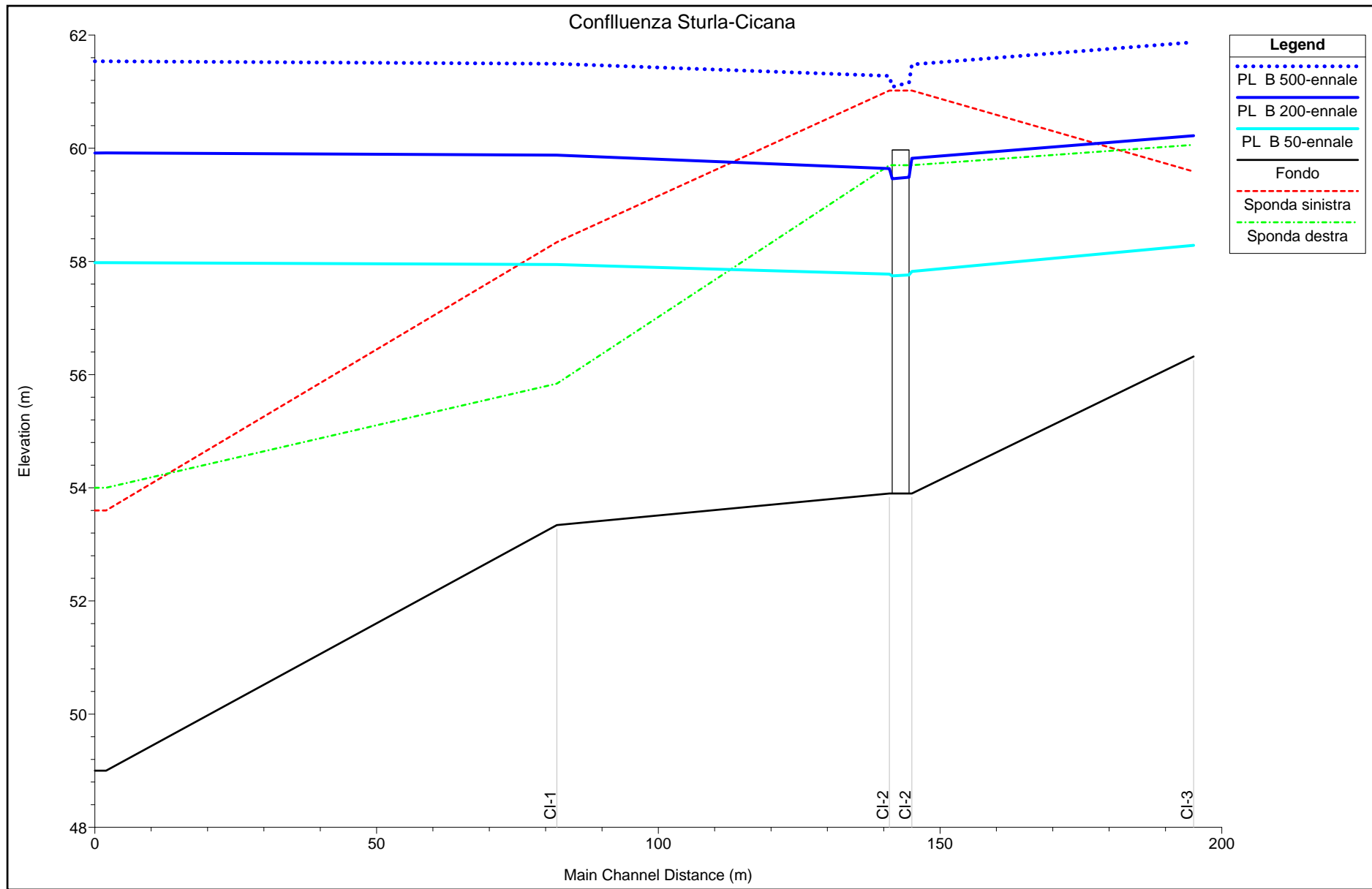


Torrente Sturla

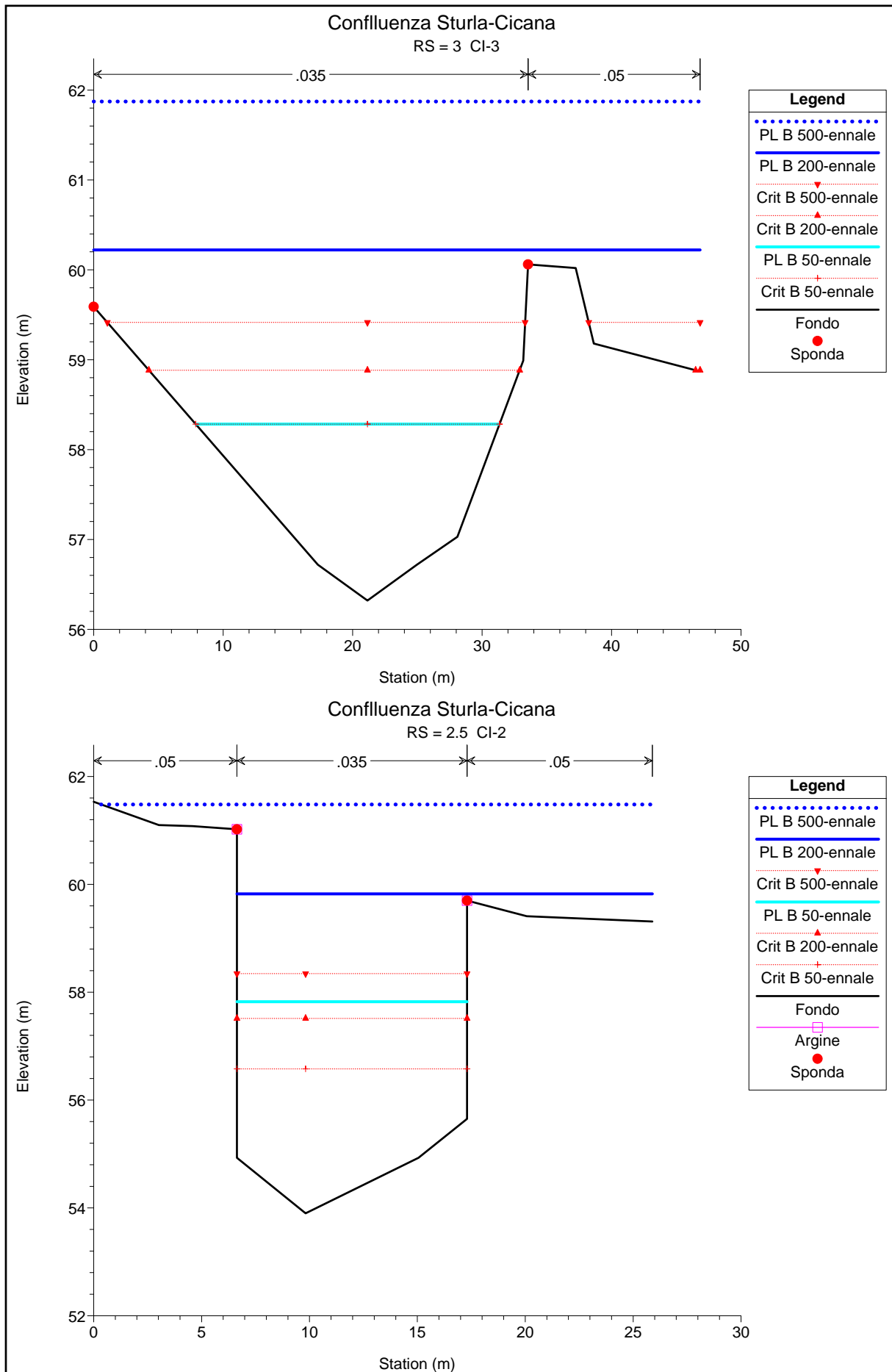
Affluente Torrente Cicana

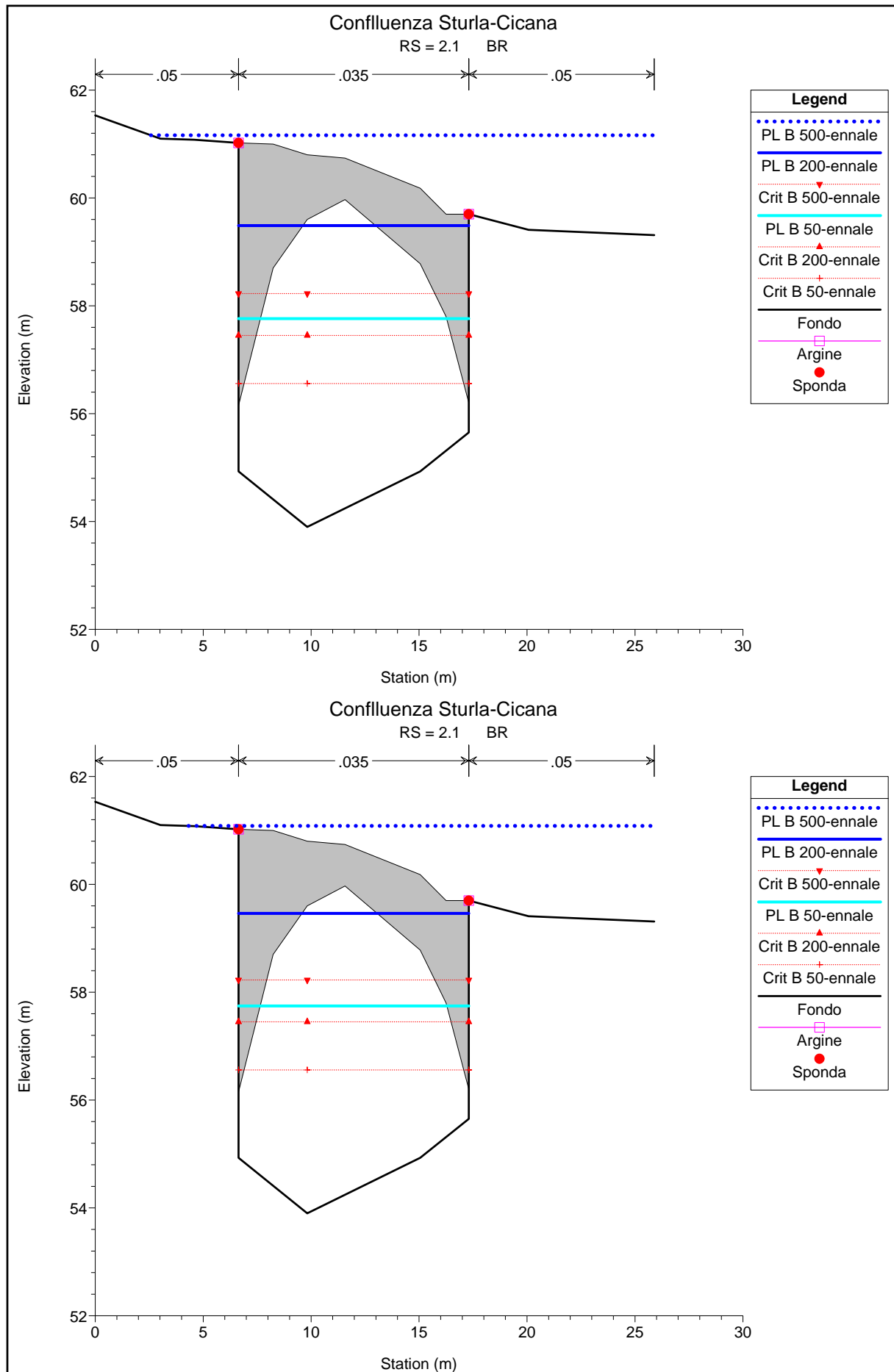
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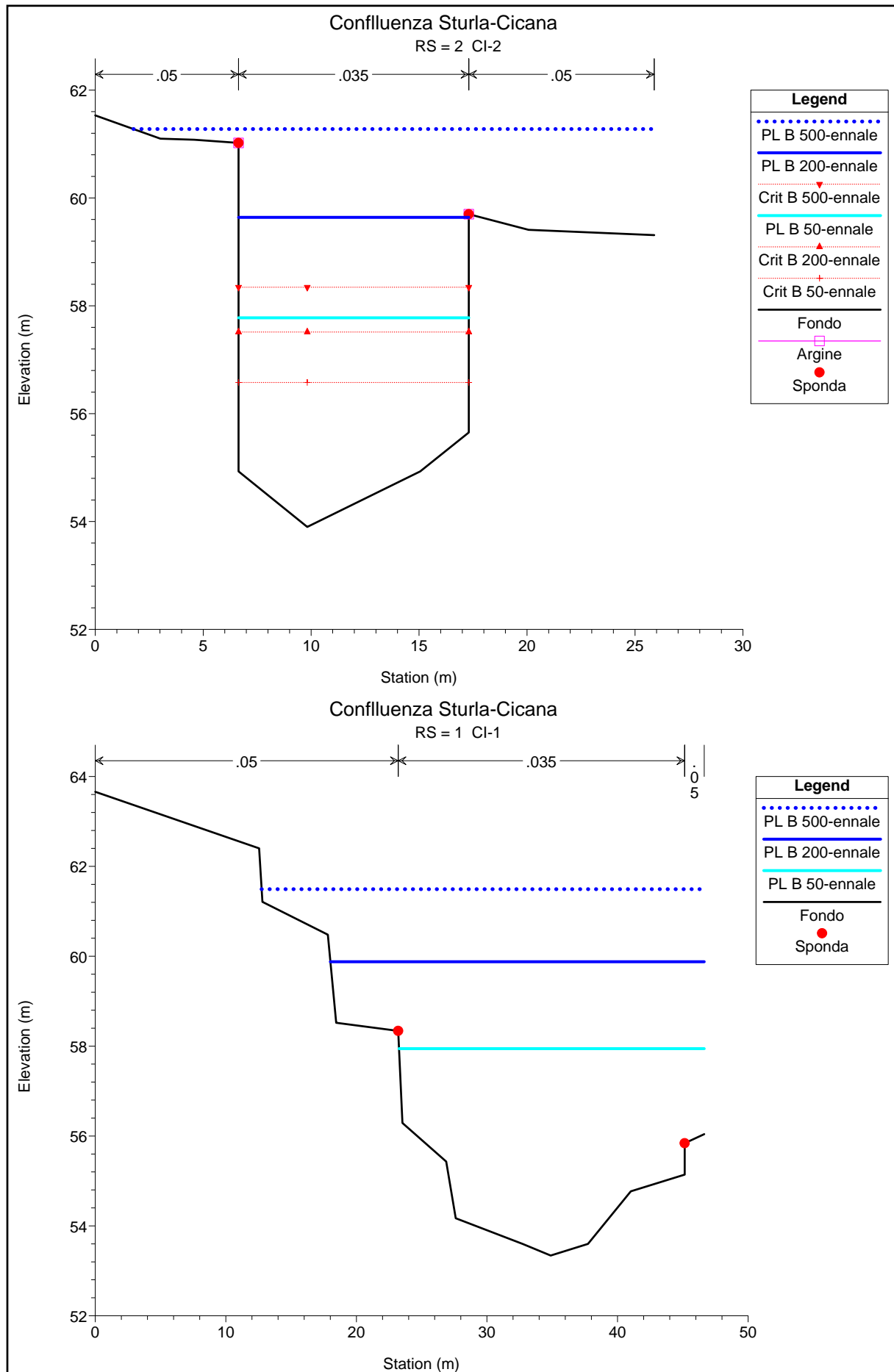


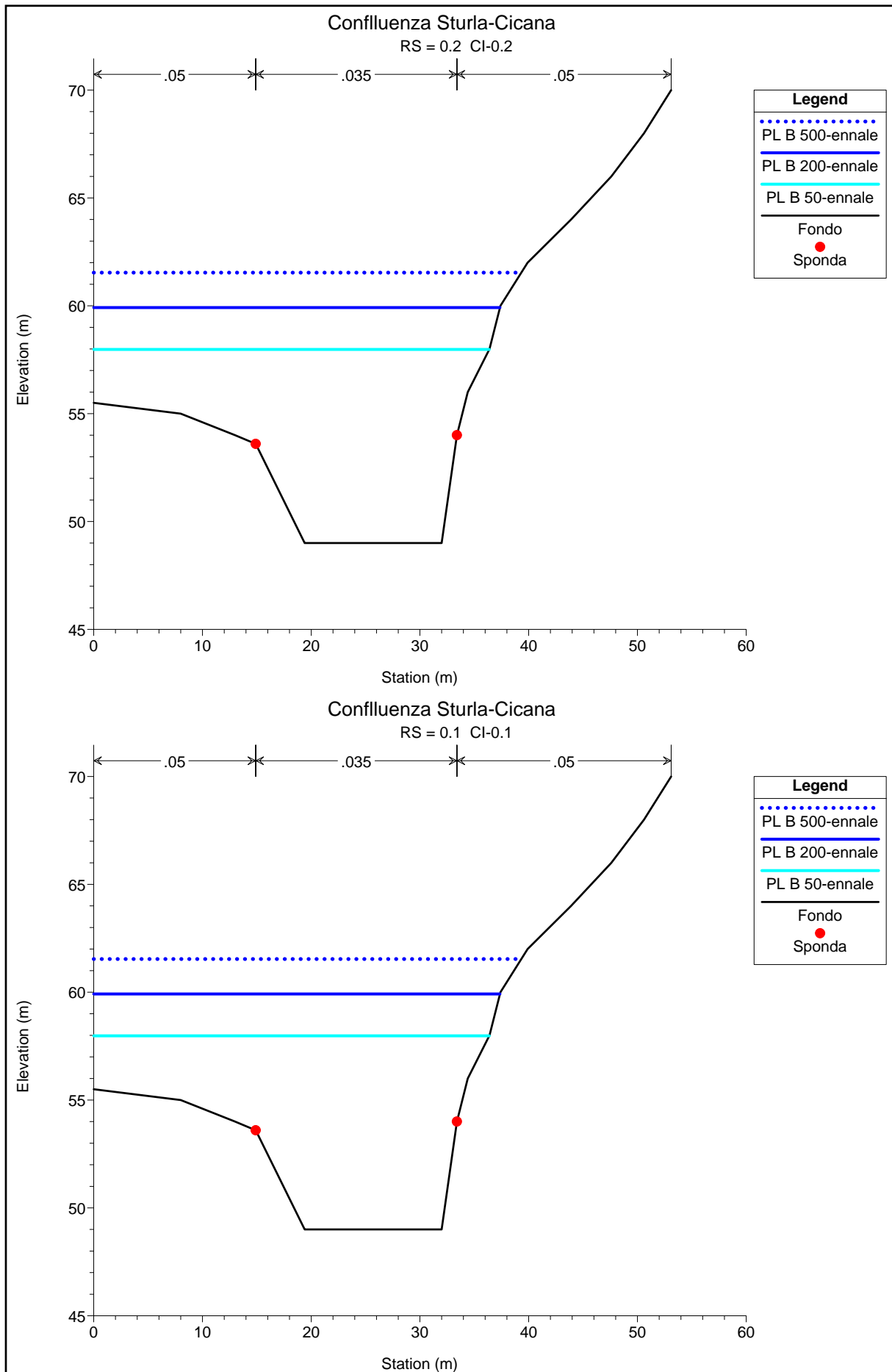
HEC-RAS Plan: constccB River: Cicana Reach: cc

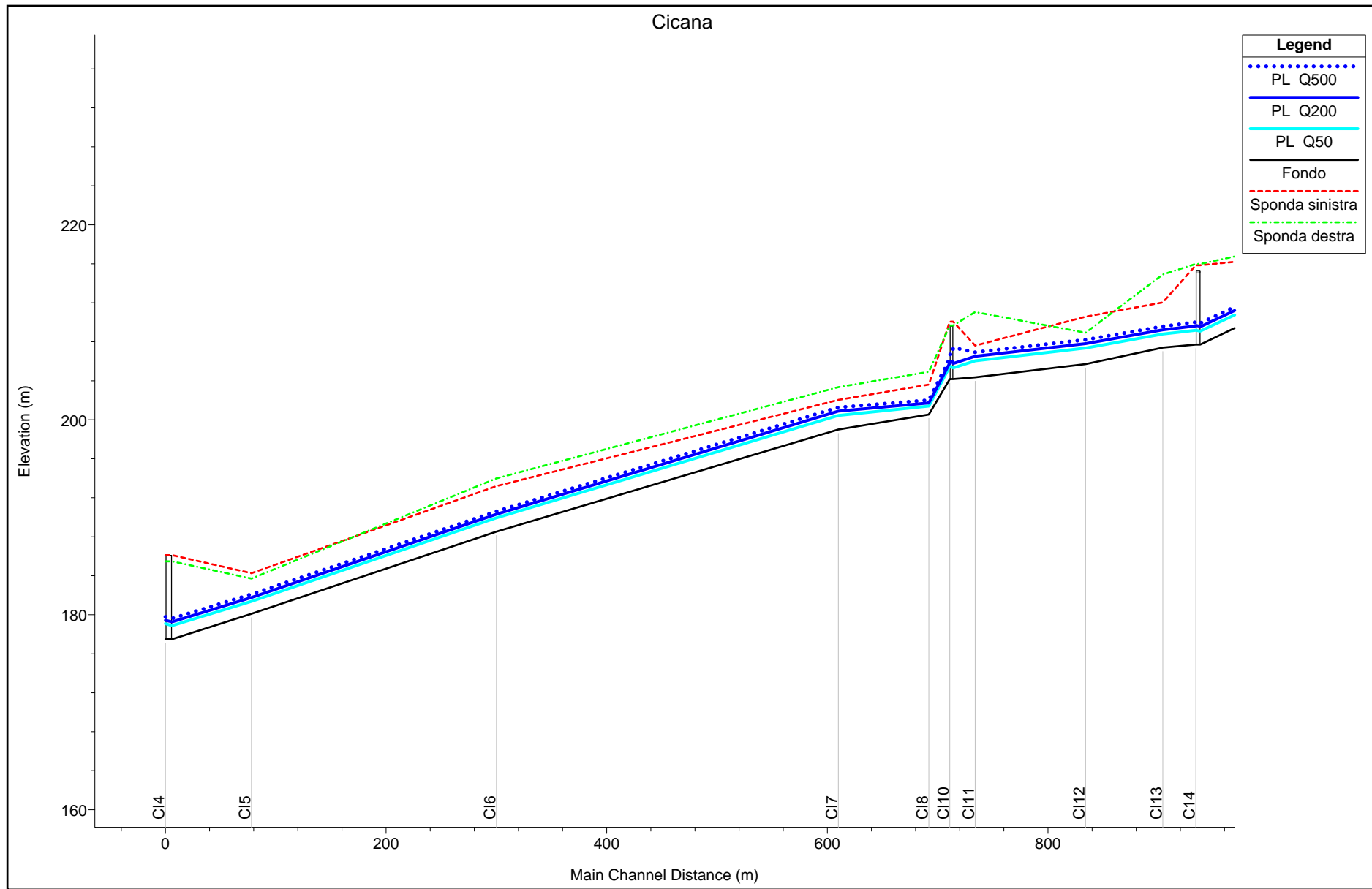
Reach	River Sta	Profile	Q Total (m3/s)	Min Ch El (m)	LOB Elev (m)	L. Freeboard (m)	ROB Elev (m)	R. Freeboard (m)	W.S. Elev (m)	Crit W.S. (m)	E.G. Elev (m)	E.G. Slope (m/m)	Vel Chnl (m/s)	Flow Area (m2)	Top Width (m)	Froude # Chl
cc	3	B 50-ennale	93.00	56.32	59.59	1.31	60.06	1.78	58.28	58.28	58.87	0.011863	3.40	27.32	23.47	1.01
cc	3	B 200-ennale	166.00	56.32	59.59	-0.63	60.06	-0.16	60.22	58.88	60.39	0.001291	1.85	97.45	46.84	0.37
cc	3	B 500-ennale	242.00	56.32	59.59	-2.28	60.06	-1.81	61.87	59.42	61.99	0.000492	1.54	174.83	46.84	0.24
cc	2.5	B 50-ennale	93.00	53.90	61.02	3.20	59.70	1.88	57.82	56.58	58.20	0.003263	2.71	34.37	10.66	0.48
cc	2.5	B 200-ennale	166.00	53.90	61.02	1.20	59.70	-0.12	59.82	57.51	60.26	0.003480	2.95	59.12	19.25	0.41
cc	2.5	B 500-ennale	242.00	53.90	61.02	-0.46	59.70	-1.78	61.48	58.34	61.91	0.002667	3.01	93.04	25.54	0.37
cc	2.1	Bridge														
cc	2	B 50-ennale	93.00	53.90	61.02	3.24	59.70	1.92	57.78	56.58	58.16	0.003401	2.75	33.87	10.66	0.49
cc	2	B 200-ennale	166.00	53.90	61.02	1.38	59.70	0.06	59.64	57.51	60.13	0.003076	3.09	53.73	10.66	0.44
cc	2	B 500-ennale	242.00	53.90	61.02	-0.26	59.70	-1.58	61.28	58.34	61.74	0.003019	3.13	87.99	24.12	0.39
cc	1	B 50-ennale	93.00	53.34	58.34	0.40	55.84	-2.10	57.94		58.02	0.000386	1.19	80.36	23.38	0.20
cc	1	B 200-ennale	166.00	53.34	58.34	-1.54	55.84	-4.04	59.88		59.97	0.000282	1.35	132.85	28.63	0.18
cc	1	B 500-ennale	242.00	53.34	58.34	-3.15	55.84	-5.65	61.49		61.60	0.000244	1.49	182.62	33.90	0.18
cc	0.2	B 50-ennale	93.00	49.00	53.60	-4.38	54.00	-3.98	57.98		57.99	0.000031	0.54	204.38	36.38	0.06
cc	0.2	B 200-ennale	166.00	49.00	53.60	-6.32	54.00	-5.92	59.92		59.94	0.000044	0.74	275.83	37.36	0.07
cc	0.2	B 500-ennale	242.00	49.00	53.60	-7.94	54.00	-7.54	61.54		61.57	0.000053	0.90	337.89	39.32	0.08
cc	0.1	B 50-ennale	93.00	49.00	53.60	-4.38	54.00	-3.98	57.98		57.99	0.000031	0.54	204.37	36.38	0.06
cc	0.1	B 200-ennale	166.00	49.00	53.60	-6.32	54.00	-5.92	59.92		59.94	0.000044	0.74	275.82	37.36	0.07
cc	0.1	B 500-ennale	242.00	49.00	53.60	-7.94	54.00	-7.54	61.54		61.57	0.000053	0.90	337.89	39.32	0.08

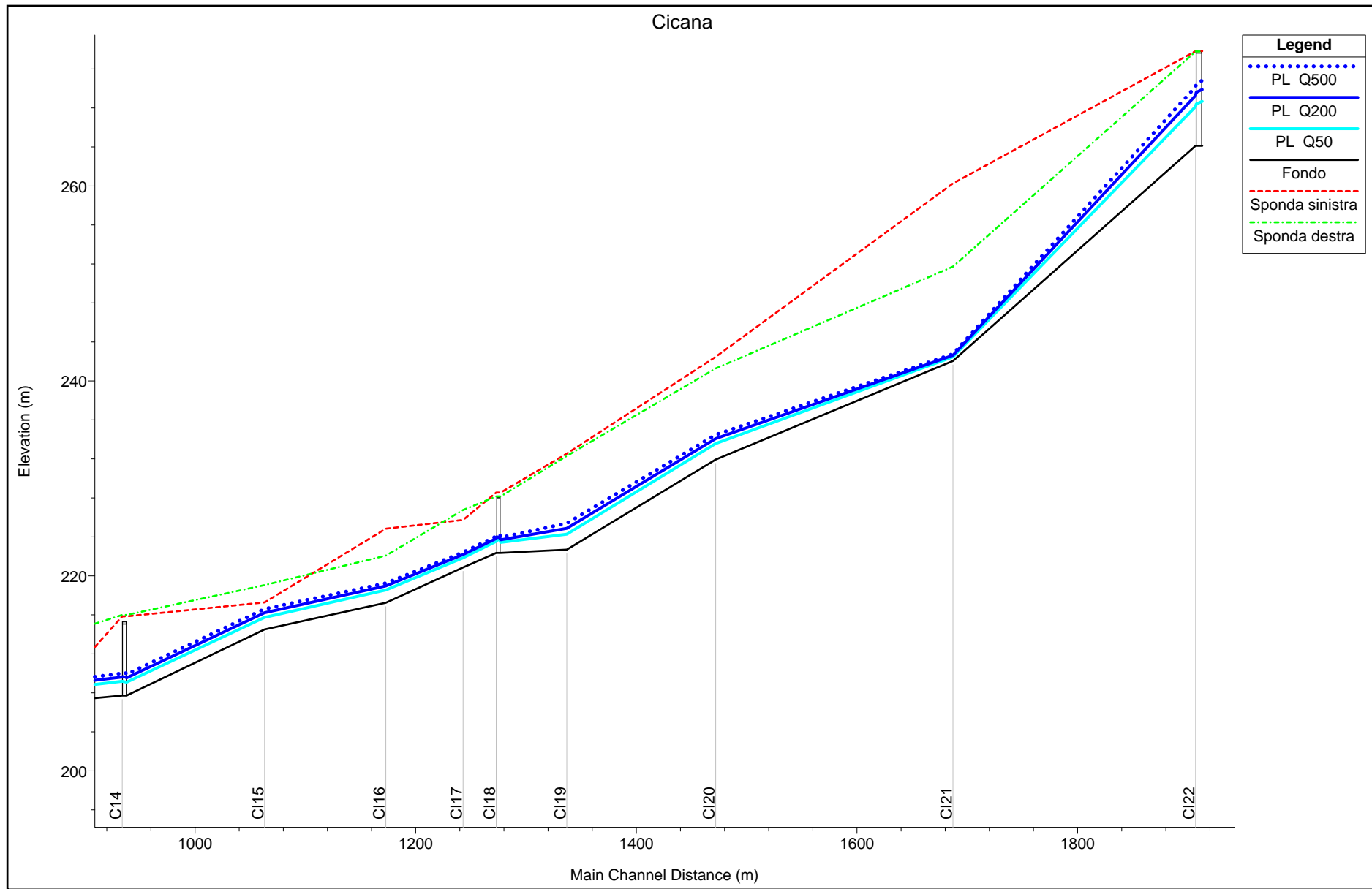


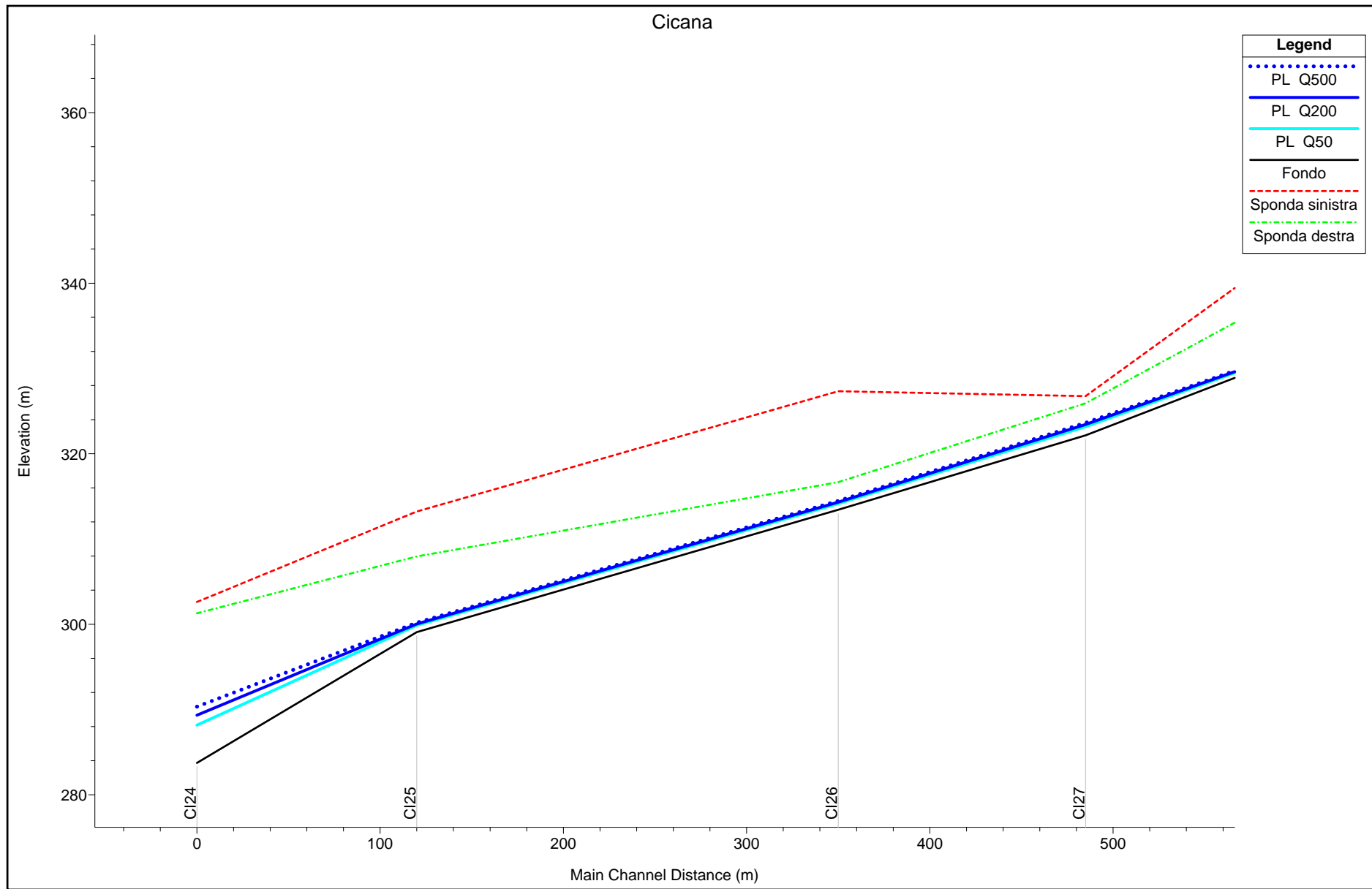


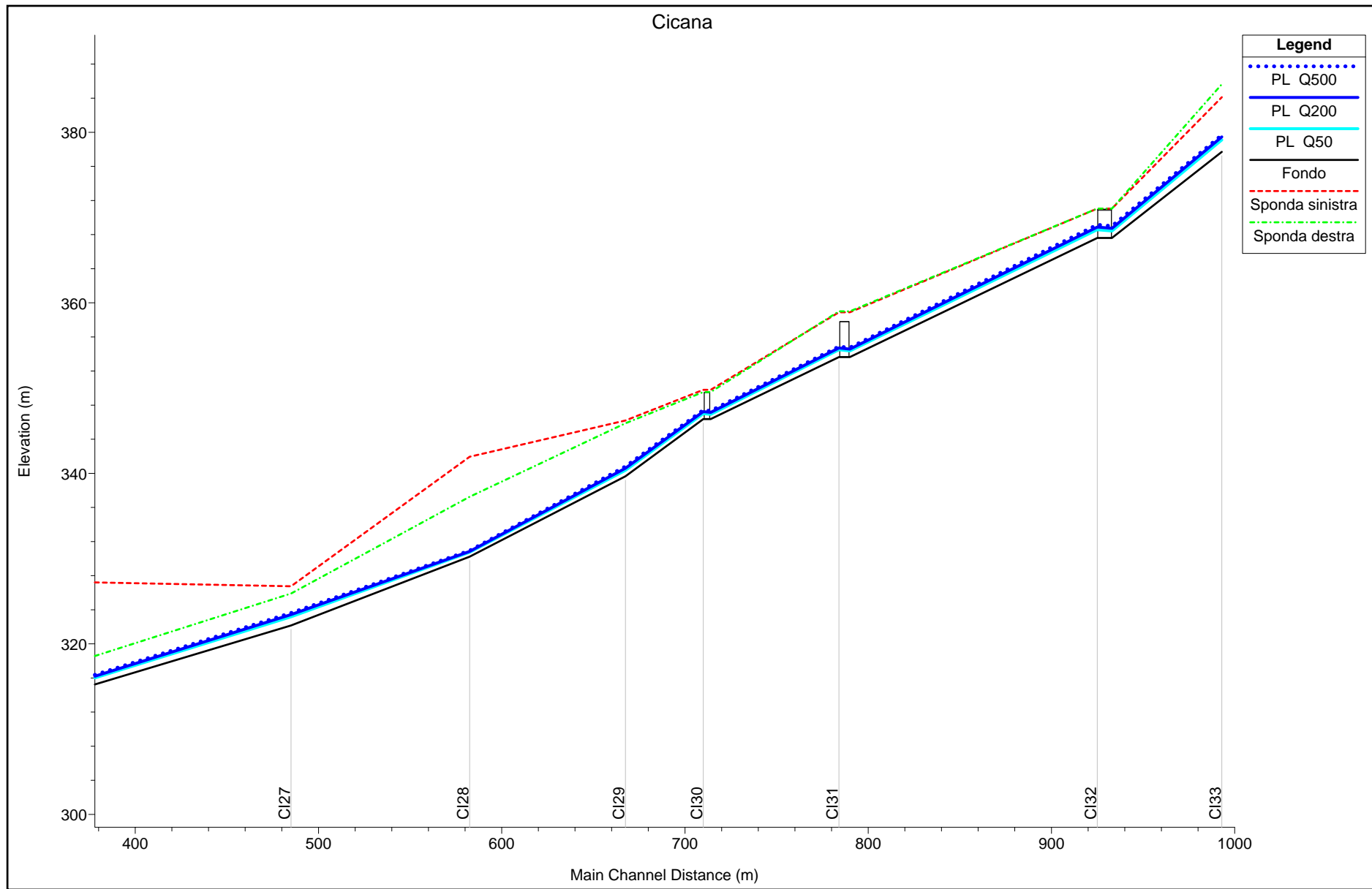












HEC-RAS Plan: cicana

Reach	River Sta	Q Total (m3/s)	Min Ch El (m)	LOB Elev (m)	L. Freeboard (m)	ROB Elev (m)	R. Freeboard (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
cicana	29	19.00	377.70	384.11	5.01	385.64	6.54	379.10	379.10	379.43	0.011787	2.52	7.53	11.73	1.01
cicana	29	34.00	377.70	384.11	4.66	385.64	6.19	379.45	379.45	379.83	0.011184	2.72	12.48	16.77	1.01
cicana	29	50.00	377.70	384.11	4.43	385.64	5.96	379.68	379.68	380.16	0.010415	3.07	16.27	17.10	1.01
cicana	28.5	19.00	367.61	371.05	2.63	371.05	2.63	368.42	369.40	376.54	0.472562	12.63	1.50	3.16	5.84
cicana	28.5	34.00	367.61	371.05	2.31	371.05	2.31	368.74	369.92	377.12	0.328493	12.83	2.65	4.04	5.06
cicana	28.5	50.00	367.61	371.05	2.04	371.05	2.04	369.01	370.37	377.61	0.262964	12.99	3.85	4.82	4.64
cicana	28.1	Bridge													
cicana	28	19.00	367.61	371.05	2.48	371.05	2.48	368.57	369.40	373.00	0.207973	9.32	2.04	3.60	3.95
cicana	28	34.00	367.61	371.05	2.16	371.05	2.16	368.89	369.92	374.30	0.182685	10.30	3.30	4.46	3.83
cicana	28	50.00	367.61	371.05	1.90	371.05	1.90	369.15	370.37	375.22	0.161154	10.91	4.58	5.10	3.68
cicana	27.5	19.00	353.63	358.89	4.54	359.00	4.65	354.35	354.80	355.95	0.078010	5.61	3.39	6.60	2.50
cicana	27.5	34.00	353.63	358.89	4.32	359.00	4.43	354.57	355.17	356.97	0.086807	6.86	4.96	7.60	2.71
cicana	27.5	50.00	353.63	358.89	4.15	359.00	4.26	354.74	355.51	357.91	0.095243	7.88	6.34	8.39	2.89
cicana	27.1	Bridge													
cicana	27	19.00	353.63	358.89	4.39	359.00	4.50	354.50	354.80	355.43	0.036544	4.27	4.45	7.29	1.75
cicana	27	34.00	353.63	358.89	4.19	359.00	4.30	354.70	355.17	356.34	0.051578	5.68	5.99	8.19	2.12
cicana	27	50.00	353.63	358.89	4.02	359.00	4.13	354.87	355.51	357.20	0.062811	6.77	7.39	8.93	2.37
cicana	26.5	19.00	346.36	349.79	2.88	349.53	2.62	346.91	347.44	349.93	0.240061	7.69	2.47	6.77	4.07
cicana	26.5	34.00	346.36	349.79	2.64	349.53	2.38	347.15	347.80	350.18	0.171330	7.71	4.41	9.06	3.53
cicana	26.5	50.00	346.36	349.79	2.46	349.53	2.20	347.33	348.15	350.78	0.140147	8.22	6.08	9.41	3.27
cicana	26.1	Bridge													
cicana	26	19.00	346.36	349.79	2.78	349.53	2.52	347.01	347.44	348.88	0.136130	6.06	3.14	7.99	3.08
cicana	26	34.00	346.36	349.79	2.55	349.53	2.29	347.24	347.81	349.39	0.101891	6.50	5.23	9.23	2.76
cicana	26	50.00	346.36	349.79	2.37	349.53	2.11	347.42	348.15	350.08	0.095434	7.23	6.92	9.57	2.71
cicana	25	19.00	339.65	346.20	5.84	345.87	5.51	340.36	340.94	342.88	0.143348	7.03	2.70	5.53	3.21
cicana	25	34.00	339.65	346.20	5.61	345.87	5.28	340.59	341.39	344.13	0.144978	8.33	4.08	6.18	3.27
cicana	25	50.00	339.65	346.20	5.39	345.87	5.06	340.81	341.80	345.06	0.139963	9.13	5.48	6.77	3.24
cicana	24	19.00	330.23	341.95	11.21	337.25	6.51	330.74	331.01	331.80	0.110132	4.56	4.16	15.64	2.82
cicana	24	34.00	330.23	341.95	11.10	337.25	6.40	330.85	331.25	332.57	0.116527	5.81	5.85	15.87	3.06
cicana	24	50.00	330.23	341.95	11.01	337.25	6.31	330.94	331.49	333.33	0.123562	6.86	7.29	16.07	3.25
cicana	23	19.00	322.16	326.75	3.58	325.91	2.74	323.17	323.53	324.38	0.055537	4.88	3.89	7.40	2.15
cicana	23	34.00	322.16	326.75	3.32	325.91	2.48	323.43	323.90	325.04	0.054456	5.63	6.04	9.01	2.19
cicana	23	50.00	322.16	326.75	3.12	325.91	2.28	323.63	324.25	325.69	0.052913	6.37	7.85	9.34	2.22

HEC-RAS Plan: cicana (Continued)

Reach	River Sta	Q Total (m3/s)	Min Ch El (m)	LOB Elev (m)	L. Freeboard (m)	ROB Elev (m)	R. Freeboard (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
cicana	22	19.00	313.43	327.33	13.18	316.66	2.51	314.15	314.49	315.40	0.081059	4.96	3.83	9.98	2.56
cicana	22	34.00	313.43	327.33	13.01	316.66	2.34	314.32	314.80	316.16	0.080627	6.01	5.66	10.94	2.67
cicana	22	50.00	313.43	327.33	12.86	316.66	2.19	314.47	315.07	316.86	0.082401	6.84	7.31	11.74	2.77
cicana	21	19.00	299.08	313.22	13.35	307.95	8.08	299.87	300.10	300.68	0.051014	3.99	4.76	12.14	2.03
cicana	21	34.00	299.08	313.22	13.18	307.95	7.91	300.04	300.38	301.23	0.052120	4.85	7.02	13.49	2.14
cicana	21	50.00	299.08	313.22	13.04	307.95	7.77	300.18	300.64	301.77	0.051930	5.58	8.96	13.79	2.21
cicana	20	19.00	283.73	302.62	14.45	301.28	13.11	288.17	285.64	288.20	0.000347	0.84	22.66	9.92	0.18
cicana	20	34.00	283.73	302.62	13.28	301.28	11.94	289.34	286.24	289.38	0.000330	0.97	35.15	11.44	0.18
cicana	20	50.00	283.73	302.62	12.29	301.28	10.95	290.33	286.76	290.38	0.000374	1.03	48.67	17.34	0.20
cicana valle	18.5	37.00	264.13	273.83	5.16	273.80	5.13	268.67	268.14	269.35	0.012267	3.66	10.10	4.19	0.75
cicana valle	18.5	67.00	264.13	273.83	3.94	273.80	3.91	269.89	269.29	270.80	0.012293	4.23	15.82	5.16	0.77
cicana valle	18.5	99.00	264.13	273.83	2.99	273.80	2.96	270.84	270.18	271.98	0.012837	4.74	20.88	5.53	0.78
cicana valle	18.1	Bridge													
cicana valle	18	37.00	264.13	273.83	5.69	273.80	5.66	268.14	268.14	269.23	0.022611	4.62	8.00	3.74	1.01
cicana valle	18	67.00	264.13	273.83	4.54	273.80	4.51	269.29	269.29	270.67	0.021383	5.22	12.83	4.71	1.01
cicana valle	18	99.00	264.13	273.83	3.65	273.80	3.62	270.18	270.18	271.84	0.020914	5.70	17.36	5.26	1.00
cicana valle	17	48.00	242.05	260.26	17.78	251.73	9.25	242.48	243.22	250.85	0.789861	12.82	3.74	13.09	7.65
cicana valle	17	86.00	242.05	260.26	17.64	251.73	9.11	242.62	243.65	253.41	0.713067	14.55	5.91	15.80	7.60
cicana valle	17	126.00	242.05	260.26	17.50	251.73	8.97	242.76	244.03	255.19	0.577355	15.62	8.07	16.48	7.13
cicana valle	16	48.00	231.93	242.47	8.89	241.28	7.70	233.58	233.95	234.84	0.021964	4.98	9.63	8.34	1.48
cicana valle	16	86.00	231.93	242.47	8.38	241.28	7.19	234.09	234.65	235.95	0.024094	6.05	14.20	9.63	1.59
cicana valle	16	126.00	231.93	242.47	7.99	241.28	6.80	234.48	235.23	236.93	0.026110	6.93	18.18	10.50	1.68
cicana valle	15	48.00	222.69	232.55	8.27	232.30	8.02	224.28	225.37	228.86	0.109368	9.48	5.06	5.33	3.10
cicana valle	15	86.00	222.69	232.55	7.68	232.30	7.43	224.87	226.24	230.12	0.083075	10.15	8.48	6.17	2.76
cicana valle	15	126.00	222.69	232.55	7.16	232.30	6.91	225.39	226.96	231.13	0.070994	10.62	11.87	6.91	2.59
cicana valle	14.5	48.00	222.35	228.55	5.11	228.15	4.71	223.44	223.77	224.57	0.032325	4.71	10.19	13.04	1.70
cicana valle	14.5	86.00	222.35	228.55	4.85	228.15	4.45	223.70	224.30	225.73	0.041567	6.32	13.60	13.09	1.98
cicana valle	14.5	126.00	222.35	228.55	4.62	228.15	4.22	223.93	224.80	226.84	0.047300	7.56	16.66	13.19	2.15
cicana valle	14.1	Bridge													
cicana valle	14	48.00	222.35	228.55	5.01	228.15	4.61	223.54	223.77	224.42	0.021608	4.15	11.57	13.06	1.41
cicana valle	14	86.00	222.35	228.55	4.71	228.15	4.31	223.84	224.30	225.42	0.028056	5.58	15.42	13.15	1.64
cicana valle	14	126.00	222.35	228.55	4.50	228.15	4.10	224.05	224.80	226.48	0.035687	6.90	18.25	13.24	1.88
cicana valle	13	48.00	220.87	225.74	3.89	226.76	4.91	221.85	222.32	223.42	0.048704	5.55	8.65	12.98	2.17
cicana valle	13	86.00	220.87	225.74	3.56	226.76	4.58	222.18	222.81	224.31	0.045427	6.46	13.31	15.02	2.19

HEC-RAS Plan: cicana (Continued)

Reach	River Sta	Q Total (m3/s)	Min Ch El (m)	LOB Elev (m)	L. Freeboard (m)	ROB Elev (m)	R. Freeboard (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
cicana valle	13	126.00	220.87	225.74	3.32	226.76	4.34	222.42	223.22	225.20	0.048540	7.39	17.04	16.47	2.32
cicana valle	12	48.00	217.24	224.84	6.29	222.08	3.53	218.55	219.12	220.28	0.040891	5.83	8.23	9.71	2.02
cicana valle	12	86.00	217.24	224.84	5.87	222.08	3.11	218.97	219.60	221.11	0.046082	6.48	13.26	14.65	2.18
cicana valle	12	126.00	217.24	224.84	5.60	222.08	2.84	219.24	219.99	221.83	0.046280	7.12	17.69	17.01	2.23
cicana valle	11	48.00	214.50	217.28	1.54	219.06	3.32	215.74	216.05	216.81	0.022639	4.60	10.44	11.25	1.52
cicana valle	11	86.00	214.50	217.28	1.06	219.06	2.84	216.22	216.65	217.65	0.020540	5.29	16.26	12.88	1.50
cicana valle	11	126.00	214.50	217.28	0.67	219.06	2.45	216.61	217.10	218.35	0.020195	5.85	21.55	14.26	1.52
cicana valle	10.5	48.00	207.72	215.85	6.75	215.99	6.89	209.10	209.84	212.02	0.070135	7.58	6.33	6.75	2.50
cicana valle	10.5	86.00	207.72	215.85	6.31	215.99	6.45	209.54	210.50	213.08	0.071275	8.34	10.31	9.65	2.57
cicana valle	10.5	126.00	207.72	215.85	5.94	215.99	6.08	209.91	211.06	214.03	0.061469	8.99	14.01	10.25	2.45
cicana valle	10.1	Bridge													
cicana valle	10	48.00	207.72	215.85	6.67	215.99	6.81	209.18	209.84	211.61	0.068228	6.90	6.96	8.50	2.43
cicana valle	10	86.00	207.72	215.85	6.22	215.99	6.36	209.63	210.50	212.67	0.056831	7.73	11.12	9.78	2.31
cicana valle	10	126.00	207.72	215.85	5.84	215.99	5.98	210.01	211.06	213.62	0.050646	8.42	14.97	10.39	2.24
cicana valle	9	48.00	207.41	212.04	3.25	214.91	6.12	208.79	209.19	210.10	0.025304	5.06	9.49	9.43	1.61
cicana valle	9	86.00	207.41	212.04	2.81	214.91	5.68	209.23	209.85	211.20	0.027433	6.22	13.83	10.45	1.73
cicana valle	9	126.00	207.41	212.04	2.46	214.91	5.33	209.58	210.39	212.16	0.029762	7.11	17.71	11.54	1.83
cicana valle	8	48.00	205.71	210.58	3.22	208.93	1.57	207.36	207.66	208.43	0.020684	4.58	10.49	10.46	1.46
cicana valle	8	86.00	205.71	210.58	2.77	208.93	1.12	207.81	208.28	209.41	0.021224	5.59	15.37	11.23	1.53
cicana valle	8	126.00	205.71	210.58	2.38	208.93	0.73	208.20	208.82	210.24	0.021499	6.32	19.93	12.03	1.57
cicana valle	7	48.00	204.36	207.61	1.56	211.05	5.00	206.05	206.15	206.76	0.012227	3.72	12.91	11.88	1.14
cicana valle	7	86.00	204.36	207.61	1.09	211.05	4.53	206.52	206.72	207.61	0.013130	4.64	18.53	12.35	1.21
cicana valle	7	126.00	204.36	207.61	0.69	211.05	4.13	206.92	207.23	208.37	0.013707	5.33	23.63	12.76	1.25
cicana valle	6.5	48.00	204.18	210.07	4.75	209.67	4.35	205.32	205.62	206.38	0.025225	4.56	10.53	12.03	1.56
cicana valle	6.5	86.00	204.18	210.07	4.29	209.67	3.89	205.78	206.18	207.24	0.021799	5.36	16.03	12.03	1.48
cicana valle	6.5	126.00	204.18	210.07	2.67	209.67	2.27	207.40	206.67	208.04	0.004338	3.54	35.56	12.03	0.66
cicana valle	6.1	Bridge													
cicana valle	6	48.00	204.18	210.07	4.60	209.67	4.20	205.47	205.61	206.24	0.015457	3.90	12.31	12.03	1.23
cicana valle	6	86.00	204.18	210.07	4.23	209.67	3.83	205.84	206.18	207.18	0.019041	5.13	16.76	12.03	1.39
cicana valle	6	126.00	204.18	210.07	3.78	209.67	3.38	206.29	206.68	207.93	0.017463	5.69	22.16	12.03	1.34
cicana valle	5	48.00	200.54	203.61	2.21	204.92	3.52	201.40	202.16	205.25	0.164836	8.69	5.52	10.50	3.82
cicana valle	5	86.00	200.54	203.61	1.88	204.92	3.19	201.73	202.68	206.14	0.116141	9.30	9.25	12.03	3.39
cicana valle	5	126.00	200.54	203.61	1.60	204.92	2.91	202.01	203.14	206.95	0.097861	9.84	12.80	13.32	3.20

HEC-RAS Plan: cicana (Continued)

Reach	River Sta	Q Total (m3/s)	Min Ch El (m)	LOB Elev (m)	L. Freeboard (m)	ROB Elev (m)	R. Freeboard (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
cicana valle	4	48.00	199.00	202.04	1.59	203.35	2.90	200.45	200.64	201.30	0.015994	4.10	11.71	11.11	1.27
cicana valle	4	86.00	199.00	202.04	1.15	203.35	2.46	200.89	201.23	202.23	0.017617	5.13	16.78	11.82	1.37
cicana valle	4	126.00	199.00	202.04	0.77	203.35	2.08	201.27	201.76	203.04	0.018632	5.89	21.39	12.43	1.43
cicana valle	3	48.00	188.52	193.19	3.25	193.99	4.05	189.94	190.55	192.14	0.068886	6.56	7.31	10.88	2.55
cicana valle	3	86.00	188.52	193.19	2.87	193.99	3.67	190.32	191.03	192.94	0.059525	7.17	12.00	14.04	2.47
cicana valle	3	126.00	188.52	193.19	2.59	193.99	3.39	190.60	191.42	193.65	0.055490	7.73	16.30	16.08	2.45
cicana valle	2	48.00	180.10	184.27	2.90	183.71	2.34	181.37	181.76	182.62	0.027808	4.96	9.67	10.72	1.67
cicana valle	2	86.00	180.10	184.27	2.50	183.71	1.94	181.77	182.36	183.64	0.029788	6.06	14.20	11.98	1.78
cicana valle	2	126.00	180.10	184.27	2.16	183.71	1.60	182.11	182.86	184.49	0.030686	6.83	18.44	13.05	1.83
cicana valle	1.5	48.00	177.49	186.11	7.22	185.48	6.59	178.89	179.29	180.28	0.038216	5.22	9.19	11.83	1.89
cicana valle	1.5	86.00	177.49	186.11	6.84	185.48	6.21	179.27	179.86	181.29	0.035415	6.30	13.65	11.83	1.87
cicana valle	1.5	126.00	177.49	186.11	6.49	185.48	5.86	179.62	180.37	182.17	0.033427	7.07	17.82	11.83	1.84
cicana valle	1.1	Bridge													
cicana valle	1	48.00	177.49	186.11	7.02	185.48	6.39	179.09	179.29	179.96	0.018211	4.13	11.62	11.83	1.33
cicana valle	1	86.00	177.49	186.11	6.67	185.48	6.04	179.44	179.86	180.97	0.023141	5.49	15.66	11.83	1.52
cicana valle	1	126.00	177.49	186.11	6.33	185.48	5.70	179.78	180.37	181.85	0.024322	6.37	19.79	11.83	1.57

