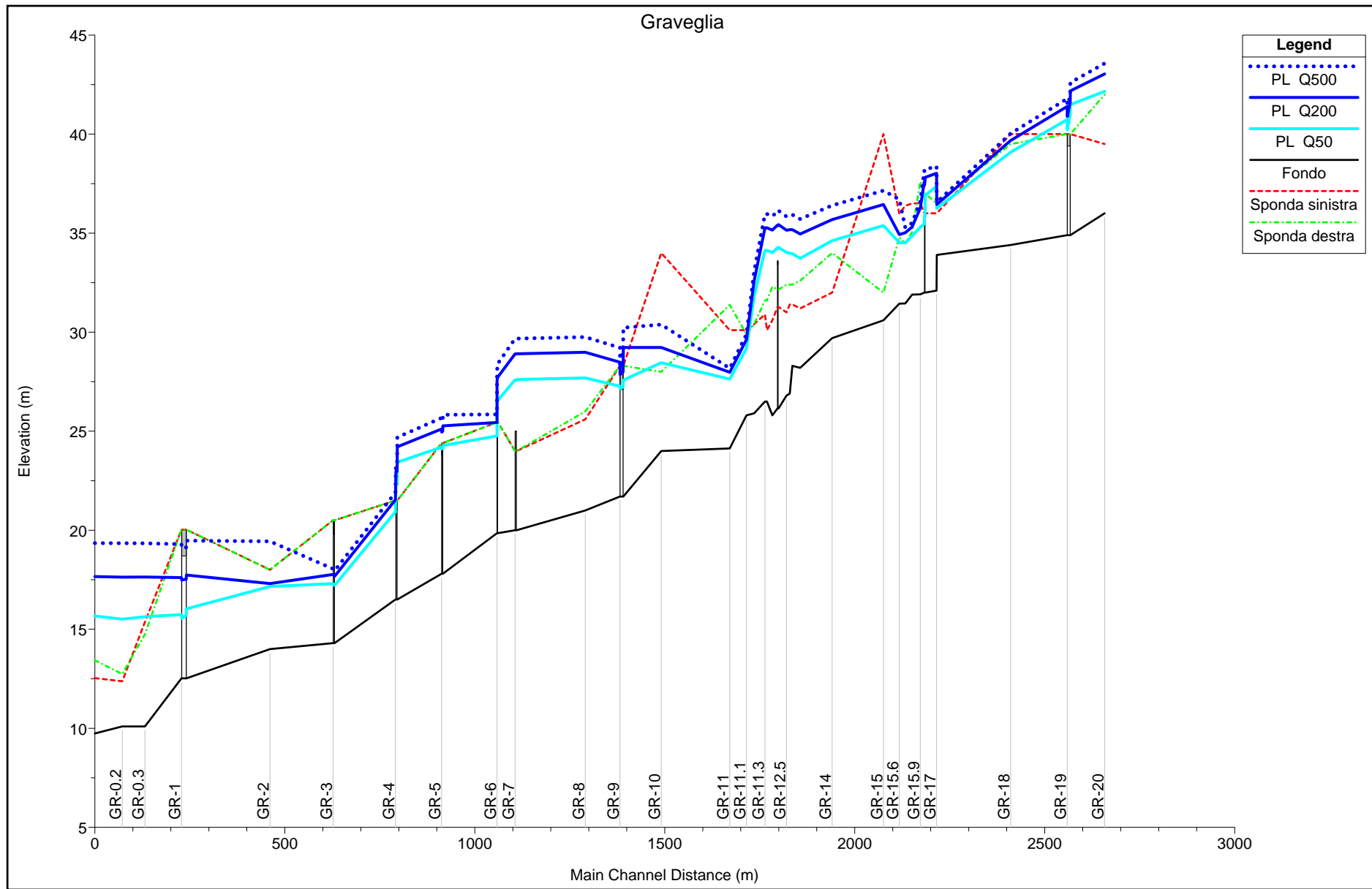
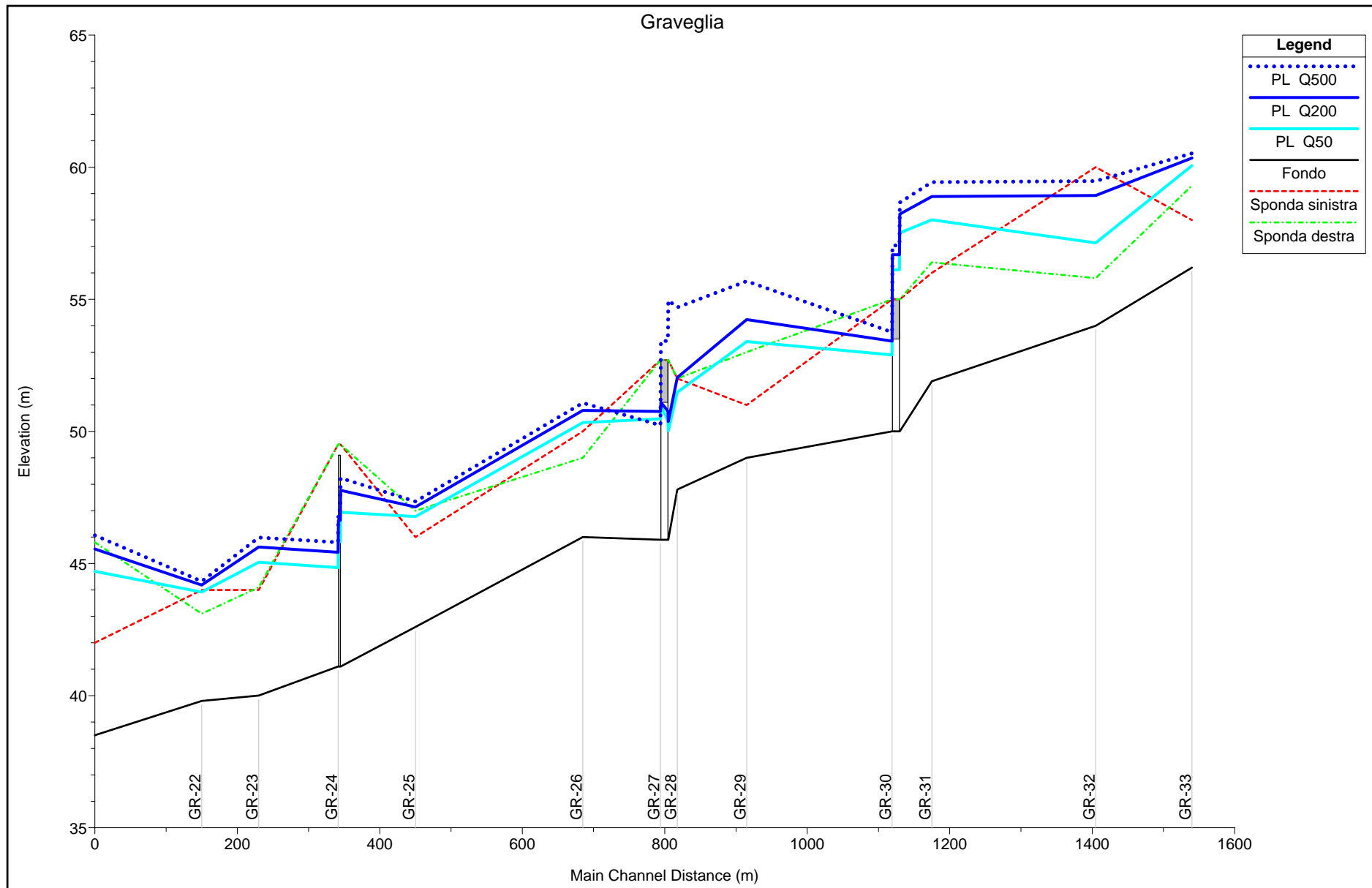
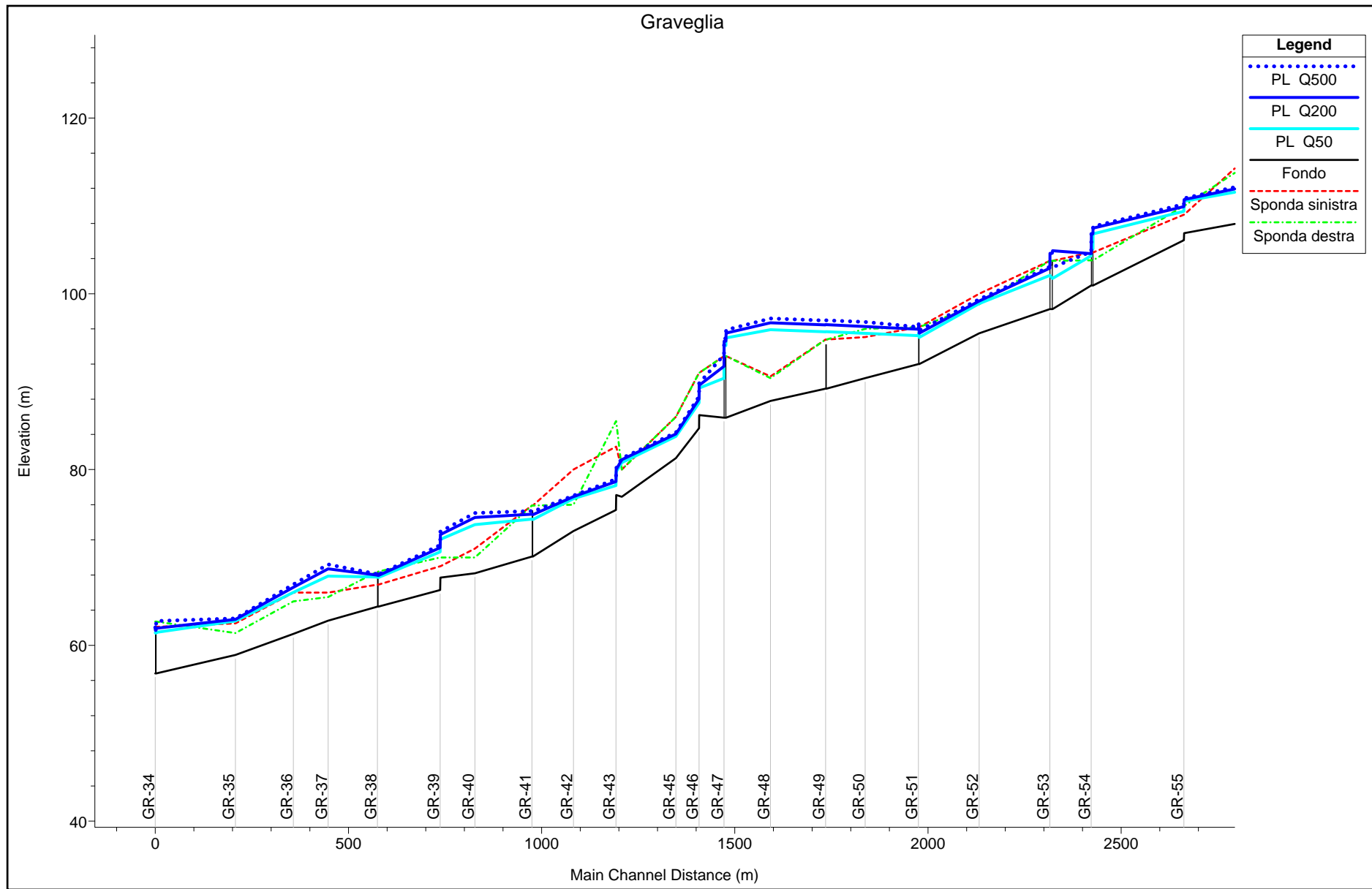


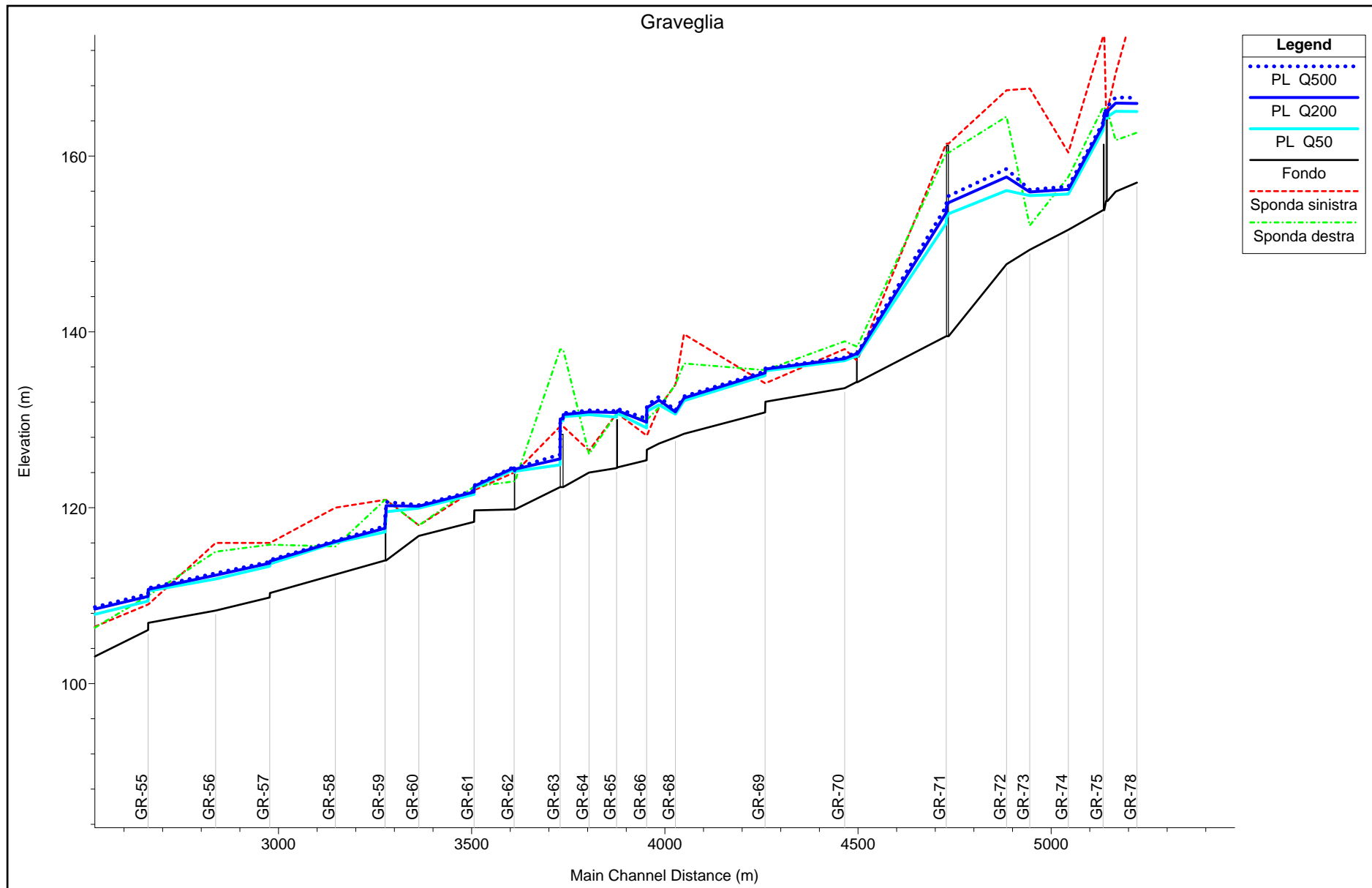
Torrente Graveglia

VERIFICHE IDRAULICHE









HEC-RAS Plan: Graveglia

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
Graveglia	78 GR-78	Q50	532.70	156.97	178.07	13.02	162.66	-2.39	165.05	162.95	165.75	0.001797	3.76	147.50	29.19	0.50
Graveglia	78 GR-78	Q200	654.20	156.97	178.07	12.10	162.66	-3.31	165.97	163.61	166.71	0.001678	3.91	176.44	32.39	0.49
Graveglia	78 GR-78	Q500	733.60	156.97	178.07	11.46	162.66	-3.95	166.61	163.97	167.36	0.001543	3.92	197.53	33.18	0.48
Graveglia	77 GR-77	Q50	532.70	155.94	169.39	4.31	161.79	-3.29	165.08	161.80	165.62	0.001170	3.37	170.36	35.18	0.41
Graveglia	77 GR-77	Q200	654.20	155.94	169.39	3.39	161.79	-4.22	166.00	162.73	166.59	0.001143	3.53	204.06	36.89	0.41
Graveglia	77 GR-77	Q500	733.60	155.94	169.39	2.73	161.79	-4.87	166.66	163.14	167.24	0.001067	3.54	228.33	37.52	0.40
Graveglia	76.2	Q50	532.70	154.88	165.30	0.84	165.09	0.62	164.46	161.75	165.54	0.002903	4.59	116.12	15.85	0.54
Graveglia	76.2	Q200	654.20	154.88	165.30	0.19	165.09	-0.02	165.11	162.57	166.47	0.003495	5.17	126.95	19.39	0.59
Graveglia	76.2	Q500	733.60	154.88	165.30	-0.33	165.09	-0.55	165.64	163.07	167.11	0.003529	5.40	141.04	38.30	0.59
Graveglia	76.1	Bridge														
Graveglia	76 GR-76	Q50	532.70	154.88	165.30	0.94	165.09	0.72	164.36	161.75	165.47	0.003009	4.65	114.55	15.85	0.55
Graveglia	76 GR-76	Q200	654.20	154.88	165.30	0.49	165.09	0.27	164.82	162.57	166.29	0.003867	5.38	121.71	16.17	0.62
Graveglia	76 GR-76	Q500	733.60	154.88	165.30	0.21	165.09	-0.01	165.09	163.07	166.82	0.004424	5.81	126.62	19.19	0.66
Graveglia	75.2 GR-75	Q50	532.70	153.84	173.59	9.32	165.54	1.27	164.27	163.41	165.44	0.005137	4.80	111.08	25.53	0.73
Graveglia	75.2 GR-75	Q200	654.20	153.84	173.59	8.72	165.54	0.66	164.87	163.96	166.23	0.005228	5.16	126.68	26.05	0.75
Graveglia	75.2 GR-75	Q500	733.60	153.84	173.59	8.35	165.54	0.29	165.25	164.31	166.72	0.005277	5.38	136.40	26.37	0.75
Graveglia	75.1	Bridge														
Graveglia	75 GR-75	Q50	532.70	153.84	173.59	10.65	165.54	2.60	162.94	163.41	165.31	0.014336	6.82	78.06	22.95	1.18
Graveglia	75 GR-75	Q200	654.20	153.84	173.59	10.10	165.54	2.05	163.49	163.96	166.10	0.013972	7.16	91.42	24.86	1.19
Graveglia	75 GR-75	Q500	733.60	153.84	173.59	9.78	165.54	1.72	163.82	164.31	166.58	0.013550	7.37	99.58	25.14	1.18
Graveglia	74 GR-74	Q50	532.70	151.61	160.40	4.73	157.62	1.96	155.66	157.74	162.45	0.039365	11.54	46.14	16.47	2.20
Graveglia	74 GR-74	Q200	654.20	151.61	160.40	4.20	157.62	1.43	156.19	158.60	163.41	0.035625	11.90	54.98	16.81	2.10
Graveglia	74 GR-74	Q500	733.60	151.61	160.40	3.87	157.62	1.09	156.53	158.98	163.98	0.033763	12.10	60.65	17.03	2.05
Graveglia	73 GR-73	Q50	532.70	149.33	167.68	12.19	152.09	-3.40	155.49	156.47	158.90	0.016366	8.60	67.38	19.94	1.34
Graveglia	73 GR-73	Q200	654.20	149.33	167.68	11.77	152.09	-3.82	155.91	157.10	159.92	0.017852	9.34	75.88	20.58	1.42
Graveglia	73 GR-73	Q500	733.60	149.33	167.68	11.52	152.09	-4.07	156.16	157.47	160.55	0.018710	9.77	81.08	20.97	1.46
Graveglia	72 GR-72	Q50	532.70	147.69	167.47	11.40	164.48	8.42	156.07	154.00	156.78	0.001841	3.75	142.04	27.65	0.53
Graveglia	72 GR-72	Q200	654.20	147.69	167.47	9.86	164.48	6.88	157.61	154.60	158.23	0.001313	3.51	186.64	30.28	0.45
Graveglia	72 GR-72	Q500	733.60	147.69	167.47	8.94	164.48	5.95	158.53	154.95	159.12	0.001119	3.41	215.33	31.85	0.42
Graveglia	71.5 GR-71.5	Q50	532.70	139.51	161.40	7.97	160.38	6.95	153.43	152.34	156.10	0.014134	7.24	73.56	9.50	0.83
Graveglia	71.5 GR-71.5	Q200	654.20	139.51	161.40	6.70	160.38	5.68	154.70	153.54	157.64	0.014120	7.60	86.14	10.23	0.84
Graveglia	71.5 GR-71.5	Q500	733.60	139.51	161.40	5.94	160.38	4.92	155.46	154.28	158.56	0.014107	7.80	94.07	10.67	0.84
Graveglia	71.1	Bridge														
Graveglia	71 GR-71	Q50	532.70	139.51	161.40	9.06	160.38	8.04	152.34	152.34	155.92	0.020678	8.38	63.58	8.87	1.00
Graveglia	71 GR-71	Q200	654.20	139.51	161.40	7.86	160.38	6.84	153.54	153.54	157.45	0.020529	8.77	74.63	9.56	1.00
Graveglia	71 GR-71	Q500	733.60	139.51	161.40	7.12	160.38	6.10	154.28	154.28	158.37	0.020263	8.96	81.89	9.99	1.00
Graveglia	70.7	Q50	532.70	134.28	136.81	-0.38	138.36	1.17	137.19	139.28	145.54	0.065390	12.82	42.09	24.44	2.90
Graveglia	70.7	Q200	654.20	134.28	136.81	-0.65	138.36	0.90	137.46	139.74	147.03	0.065152	13.79	48.71	25.61	2.93

HEC-RAS Plan: Graveglia (Continued)

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	
Graveglia	70.7	Q500	733.60	134.28	136.81	-0.80	138.36	0.75	137.61	140.03	147.93	0.065094	14.35	52.75	25.76	2.95	
Graveglia	70.6	GR-70.5	Bridge														
Graveglia	70.5	Q50	532.70	134.28	136.81	-0.43	138.36	1.12	137.24	139.28	145.16	0.060264	12.50	43.31	24.91	2.79	
Graveglia	70.5	Q200	654.20	134.28	136.81	-0.70	138.36	0.85	137.51	139.74	146.61	0.060409	13.46	50.01	25.66	2.83	
Graveglia	70.5	Q500	733.60	134.28	136.81	-0.86	138.36	0.69	137.67	140.03	147.49	0.060499	14.02	54.10	25.81	2.85	
Graveglia	70	GR-70	Q50	532.70	133.60	138.05	1.32	138.92	2.18	136.73	138.42	142.92	0.054775	11.02	48.34	27.58	2.66
Graveglia	70	GR-70	Q200	654.20	133.60	138.05	1.10	138.92	1.97	136.95	138.84	144.30	0.058848	12.01	54.47	28.74	2.78
Graveglia	70	GR-70	Q500	733.60	133.60	138.05	0.97	138.92	1.84	137.08	139.09	145.16	0.059904	12.59	58.26	28.85	2.83
Graveglia	69.1	GR-69	Q50	532.70	132.06	134.15	-1.42	135.65	0.08	135.57	135.95	137.10	0.008491	5.57	101.11	49.28	1.10
Graveglia	69.1	GR-69	Q200	654.20	132.06	134.15	-1.61	135.65	-0.11	135.76	136.30	137.72	0.009949	6.32	111.36	57.55	1.20
Graveglia	69.1	GR-69	Q500	733.60	132.06	134.15	-1.70	135.65	-0.20	135.85	136.50	138.11	0.011159	6.82	116.22	57.59	1.28
Graveglia	69	GR-69	Q50	532.70	130.84	134.15	-0.88	135.65	0.63	135.03	135.58	137.04	0.012748	6.35	86.30	41.19	1.32
Graveglia	69	GR-69	Q200	654.20	130.84	134.15	-1.18	135.65	0.32	135.33	136.12	137.67	0.012726	6.85	99.03	43.09	1.34
Graveglia	69	GR-69	Q500	733.60	130.84	134.15	-1.36	135.65	0.14	135.52	136.34	138.07	0.012876	7.18	107.32	47.84	1.36
Graveglia	68.5	Q50	532.70	128.40	139.74	7.56	136.41	4.24	132.17	132.73	134.26	0.013747	6.40	83.28	38.58	1.39	
Graveglia	68.5	Q200	654.20	128.40	139.74	7.26	136.41	3.93	132.48	133.14	134.88	0.013772	6.86	95.32	39.54	1.41	
Graveglia	68.5	Q500	733.60	128.40	139.74	7.07	136.41	3.74	132.67	133.39	135.26	0.013824	7.14	102.72	40.12	1.42	
Graveglia	68	GR-68	Q50	532.70	128.00	134.00	3.36	134.00	3.36	130.64	131.55	133.68	0.029474	7.73	68.94	42.30	1.93
Graveglia	68	GR-68	Q200	654.20	128.00	134.00	3.10	134.00	3.10	130.90	131.92	134.32	0.027833	8.20	79.82	42.62	1.91
Graveglia	68	GR-68	Q500	733.60	128.00	134.00	2.94	134.00	2.94	131.06	132.16	134.71	0.026931	8.46	86.67	42.82	1.90
Graveglia	67	GR-67	Q50	532.70	127.30	131.40	-0.31	131.40	-0.31	131.71	130.52	132.49	0.002724	3.91	138.77	49.53	0.61
Graveglia	67	GR-67	Q200	654.20	127.30	131.40	-0.84	131.40	-0.84	132.24	130.97	133.09	0.002632	4.16	170.43	66.10	0.61
Graveglia	67	GR-67	Q500	733.60	127.30	131.40	-1.23	131.40	-1.23	132.63	131.24	133.46	0.002377	4.17	197.12	70.40	0.59
Graveglia	66.1	GR-66.1	Q50	532.70	126.60	128.20	-2.76	130.00	-0.96	130.96	130.96	132.32	0.005028	5.46	111.17	41.00	0.88
Graveglia	66.1	GR-66.1	Q200	654.20	126.60	128.20	-3.18	130.00	-1.38	131.38	131.38	132.91	0.005061	5.86	128.43	41.00	0.89
Graveglia	66.1	GR-66.1	Q500	733.60	126.60	128.20	-3.43	130.00	-1.63	131.63	131.63	133.28	0.005115	6.11	138.56	41.00	0.91
Graveglia	66	GR-66	Q50	532.70	125.40	128.20	-0.87	130.00	0.93	129.07	129.94	132.14	0.014603	7.86	70.31	24.99	1.38
Graveglia	66	GR-66	Q200	654.20	125.40	128.20	-1.52	130.00	0.28	129.72	130.75	132.76	0.012070	7.87	86.86	25.70	1.28
Graveglia	66	GR-66	Q500	733.60	125.40	128.20	-1.94	130.00	-0.14	130.14	131.05	133.14	0.010685	7.85	99.67	41.00	1.22
Graveglia	65.5	GR-65.5	Q50	532.70	124.60	130.70	-0.03	130.70	-0.03	130.73	127.96	130.91	0.000719	2.13	304.67	97.33	0.27
Graveglia	65.5	GR-65.5	Q200	654.20	124.60	130.70	-0.34	130.70	-0.34	131.04	128.46	131.26	0.000831	2.37	335.13	98.62	0.30
Graveglia	65.5	GR-65.5	Q500	733.60	124.60	130.70	-0.55	130.70	-0.55	131.25	128.76	131.49	0.000883	2.49	355.69	99.48	0.31
Graveglia	65.11		Bridge														
Graveglia	65	GR-65	Q50	532.70	124.50	130.70	0.39	130.70	0.39	130.31	127.86	130.87	0.001518	3.32	160.39	27.60	0.44
Graveglia	65	GR-65	Q200	654.20	124.50	130.70	-0.12	130.70	-0.12	130.82	128.35	131.08	0.000969	2.52	316.67	97.73	0.32
Graveglia	65	GR-65	Q500	733.60	124.50	130.70	-0.30	130.70	-0.30	131.00	128.65	131.29	0.001046	2.66	334.51	98.48	0.33
Graveglia	64	GR-64	Q50	556.70	124.00	126.50	-4.09	126.10	-4.49	130.59	127.63	130.67	0.000184	1.43	478.32	111.00	0.18
Graveglia	64	GR-64	Q200	684.40	124.00	126.50	-4.39	126.10	-4.79	130.89	127.86	130.99	0.000225	1.63	511.54	111.00	0.20

HEC-RAS Plan: Graveglia (Continued)

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
Graveglia	64 GR-64	Q500	768.30	124.00	126.50	-4.58	126.10	-4.98	131.08	128.00	131.19	0.000251	1.75	532.40	111.00	0.21
Graveglia	63.5 GR-63.5	Q50	556.70	122.35	129.25	-1.10	138.00	7.65	130.35	126.41	130.63	0.000738	2.56	281.22	96.75	0.29
Graveglia	63.5 GR-63.5	Q200	684.40	122.35	129.25	-1.34	138.00	7.41	130.59	127.01	130.94	0.000929	2.91	304.41	96.75	0.32
Graveglia	63.5 GR-63.5	Q500	768.30	122.35	129.25	-1.49	138.00	7.26	130.74	127.38	131.14	0.001045	3.12	319.14	96.75	0.34
Graveglia	63.11	Bridge														
Graveglia	63 GR-63	Q50	556.70	122.35	129.25	4.38	138.00	13.13	124.87	126.41	130.12	0.035644	10.15	54.86	21.75	2.04
Graveglia	63 GR-63	Q200	684.40	122.35	129.25	3.70	138.00	12.45	125.55	127.01	130.48	0.026017	9.83	69.61	21.75	1.75
Graveglia	63 GR-63	Q500	768.30	122.35	129.25	3.21	138.00	11.96	126.04	127.38	130.70	0.021283	9.56	80.35	21.75	1.59
Graveglia	62.5 GR-62.5	Q50	556.70	119.80	124.00	-0.15	123.00	-1.15	124.15	124.98	126.83	0.012983	7.58	85.35	41.46	1.19
Graveglia	62.5 GR-62.5	Q200	684.40	119.80	124.00	-0.38	123.00	-1.38	124.38	125.38	127.66	0.015172	8.49	94.84	41.55	1.30
Graveglia	62.5 GR-62.5	Q500	768.30	119.80	124.00	-0.50	123.00	-1.50	124.50	125.63	128.21	0.016758	9.09	99.88	41.60	1.37
Graveglia	62.11	Bridge														
Graveglia	62 GR-62	Q50	556.70	119.80	124.00	-0.36	123.00	-1.36	124.36	124.98	126.56	0.010226	6.95	94.15	41.55	1.06
Graveglia	62 GR-62	Q200	684.40	119.80	124.00	-0.55	123.00	-1.55	124.55	125.38	127.37	0.012605	7.94	101.96	41.62	1.19
Graveglia	62 GR-62	Q500	768.30	119.80	124.00	-0.65	123.00	-1.65	124.65	125.63	127.91	0.014264	8.57	106.22	41.66	1.27
Graveglia	61.1 GR-61.1	Q50	556.70	119.70	122.00	-0.26	122.40	0.14	122.26	123.10	124.74	0.024540	6.99	79.69	50.34	1.77
Graveglia	61.1 GR-61.1	Q200	684.40	119.70	122.00	-0.45	122.40	-0.05	122.45	123.36	125.41	0.025096	7.63	91.64	87.60	1.82
Graveglia	61.1 GR-61.1	Q500	768.30	119.70	122.00	-0.55	122.40	-0.15	122.55	123.51	125.82	0.026162	8.06	99.95	87.73	1.87
Graveglia	61 GR-61	Q50	556.70	118.40	122.00	0.48	122.40	0.88	121.52	122.69	124.66	0.026802	7.86	70.84	38.65	1.85
Graveglia	61 GR-61	Q200	684.40	118.40	122.00	0.22	122.40	0.62	121.78	123.03	125.34	0.030252	8.35	81.97	44.92	1.97
Graveglia	61 GR-61	Q500	768.30	118.40	122.00	0.07	122.40	0.47	121.93	123.20	125.75	0.032222	8.66	88.69	48.32	2.04
Graveglia	60 GR-60	Q50	556.70	116.80	118.00	-1.95	118.00	-1.95	119.95	120.52	121.85	0.010907	7.07	105.66	68.82	1.30
Graveglia	60 GR-60	Q200	684.40	116.80	118.00	-2.17	118.00	-2.17	120.17	120.80	122.27	0.011191	7.52	121.59	69.85	1.34
Graveglia	60 GR-60	Q500	768.30	116.80	118.00	-2.31	118.00	-2.31	120.31	120.96	122.53	0.011377	7.79	131.08	70.12	1.36
Graveglia	59.5 GR-59.5	Q50	556.70	114.00	120.90	1.37	120.90	1.37	119.53	118.04	120.33	0.002391	3.96	140.47	30.19	0.59
Graveglia	59.5 GR-59.5	Q200	684.40	114.00	120.90	0.67	120.90	0.67	120.23	118.56	121.14	0.002392	4.23	161.66	30.60	0.59
Graveglia	59.5 GR-59.5	Q500	768.30	114.00	120.90	0.25	120.90	0.25	120.65	118.88	121.64	0.002399	4.40	174.62	30.60	0.59
Graveglia	59.11	Bridge														
Graveglia	59 GR-59	Q50	556.70	114.00	120.90	3.67	120.90	3.67	117.23	118.04	120.12	0.016167	7.52	74.00	27.61	1.47
Graveglia	59 GR-59	Q200	684.40	114.00	120.90	3.24	120.90	3.24	117.66	118.56	120.90	0.015618	7.98	85.77	28.08	1.46
Graveglia	59 GR-59	Q500	768.30	114.00	120.90	2.98	120.90	2.98	117.92	118.88	121.38	0.015336	8.25	93.18	28.37	1.45
Graveglia	58 GR-58	Q50	556.70	112.40	120.00	3.98	115.60	-0.42	116.02	116.68	117.86	0.014195	6.11	97.46	64.44	1.36
Graveglia	58 GR-58	Q200	684.40	112.40	120.00	3.86	115.60	-0.54	116.14	116.95	118.52	0.017352	7.00	105.13	64.53	1.52
Graveglia	58 GR-58	Q500	768.30	112.40	120.00	3.74	115.60	-0.66	116.26	117.10	118.98	0.018657	7.49	113.78	89.62	1.59
Graveglia	57.1 GR-57.1	Q50	556.70	110.30	116.00	2.39	115.80	2.19	113.61	114.07	115.30	0.015442	5.76	96.68	57.67	1.42
Graveglia	57.1 GR-57.1	Q200	684.40	110.30	116.00	2.08	115.80	1.88	113.92	114.40	115.73	0.013775	5.96	114.92	59.54	1.37
Graveglia	57.1 GR-57.1	Q500	768.30	110.30	116.00	1.93	115.80	1.73	114.07	114.60	116.03	0.013766	6.20	124.00	60.42	1.38

HEC-RAS Plan: Graveglia (Continued)

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
Graveglia	57 GR-57	Q50	556.70	109.80	116.00	2.65	115.80	2.45	113.35	113.94	115.27	0.014397	6.15	90.56	46.07	1.40
Graveglia	57 GR-57	Q200	684.40	109.80	116.00	2.30	115.80	2.10	113.70	114.27	115.70	0.015949	6.27	109.13	58.19	1.46
Graveglia	57 GR-57	Q500	768.30	109.80	116.00	2.15	115.80	1.95	113.85	114.47	116.01	0.015806	6.50	118.14	59.11	1.47
Graveglia	56 GR-56	Q50	556.70	108.30	116.00	4.10	115.00	3.10	111.90	112.16	113.38	0.010921	5.39	103.29	49.00	1.19
Graveglia	56 GR-56	Q200	684.40	108.30	116.00	3.67	115.00	2.67	112.33	112.51	113.88	0.009113	5.51	124.22	49.00	1.10
Graveglia	56 GR-56	Q500	768.30	108.30	116.00	3.46	115.00	2.46	112.54	112.72	114.20	0.008853	5.70	134.72	49.00	1.10
Graveglia	55.1 GR-55.1	Q50	556.70	106.90	109.00	-1.52	110.00	-0.52	110.52	110.79	111.89	0.006423	5.30	115.99	64.24	0.99
Graveglia	55.1 GR-55.1	Q200	684.40	106.90	109.00	-1.71	110.00	-0.71	110.71	111.14	112.42	0.007496	5.98	128.37	65.06	1.08
Graveglia	55.1 GR-55.1	Q500	768.30	106.90	109.00	-1.86	110.00	-0.86	110.86	111.48	112.73	0.007835	6.30	137.85	65.68	1.11
Graveglia	55 GR-55	Q50	556.70	106.10	109.00	-0.38	110.00	0.62	109.38	110.31	111.78	0.013142	6.87	81.25	32.90	1.37
Graveglia	55 GR-55	Q200	684.40	106.10	109.00	-0.92	110.00	0.08	109.92	110.75	112.34	0.011052	6.91	99.96	36.45	1.29
Graveglia	55 GR-55	Q500	768.30	106.10	109.00	-1.20	110.00	-0.20	110.20	110.98	112.66	0.010163	7.00	115.27	62.84	1.25
Graveglia	54.5 GR-54.5	Q50	556.70	100.95	104.70	-2.11	103.80	-3.01	106.81	105.18	107.11	0.000867	2.75	255.89	82.50	0.38
Graveglia	54.5 GR-54.5	Q200	684.40	100.95	104.70	-2.77	103.80	-3.67	107.47	105.51	107.76	0.000749	2.76	311.15	84.00	0.36
Graveglia	54.5 GR-54.5	Q500	768.30	100.95	104.70	-2.95	103.80	-3.85	107.65	105.71	107.98	0.000822	2.95	326.00	84.00	0.38
Graveglia	54.1		Bridge													
Graveglia	54 GR-54	Q50	556.70	100.95	104.70	0.37	103.80	-0.53	104.33	105.18	106.88	0.013416	7.24	85.87	55.00	1.35
Graveglia	54 GR-54	Q200	684.40	100.95	104.70	0.13	103.80	-0.77	104.57	105.51	107.49	0.014450	7.88	99.24	55.00	1.41
Graveglia	54 GR-54	Q500	768.30	100.95	104.70	-0.09	103.80	-0.99	104.79	105.71	107.71	0.013677	7.98	111.14	57.55	1.39
Graveglia	53.5 GR-53.5	Q50	556.70	98.25	103.75	2.01	103.75	2.01	101.74	102.67	105.17	0.019021	8.20	67.87	21.50	1.47
Graveglia	53.5 GR-53.5	Q200	684.40	98.25	103.75	-1.15	103.75	-1.15	104.90	103.28	105.93	0.002895	4.65	165.12	49.00	0.59
Graveglia	53.5 GR-53.5	Q500	768.30	98.25	103.75	0.75	103.75	0.75	103.00	104.45	106.33	0.013189	8.08	95.09	21.50	1.23
Graveglia	53.11		Bridge													
Graveglia	53 GR-53	Q50	556.70	98.25	103.75	1.65	103.75	1.65	102.10	102.67	104.86	0.013748	7.37	75.56	21.50	1.25
Graveglia	53 GR-53	Q200	684.40	98.25	103.75	0.83	103.75	0.83	102.92	103.28	105.66	0.011080	7.34	93.27	21.50	1.12
Graveglia	53 GR-53	Q500	768.30	98.25	103.75	0.67	103.75	0.67	103.08	104.45	106.30	0.012555	7.95	96.69	21.50	1.20
Graveglia	52 GR-52	Q50	556.70	95.50	100.00	1.12	98.80	-0.08	98.88	100.11	102.07	0.016224	7.92	71.20	37.66	1.50
Graveglia	52 GR-52	Q200	684.40	95.50	100.00	0.82	98.80	-0.38	99.18	100.54	102.96	0.017338	8.68	82.50	37.88	1.57
Graveglia	52 GR-52	Q500	768.30	95.50	100.00	0.63	98.80	-0.57	99.37	100.78	103.45	0.017638	9.06	89.80	38.03	1.59
Graveglia	51.5 GR-51.5	Q50	556.70	92.00	96.20	1.17	96.20	1.17	95.03	96.60	98.99	0.022549	8.81	63.16	22.20	1.67
Graveglia	51.5 GR-51.5	Q200	684.40	92.00	96.20	0.69	96.20	0.69	95.51	97.23	99.90	0.021324	9.28	73.71	22.20	1.63
Graveglia	51.5 GR-51.5	Q500	768.30	92.00	96.20	0.37	96.20	0.37	95.83	97.56	100.44	0.020437	9.52	80.74	22.20	1.59
Graveglia	51.11		Bridge													
Graveglia	51 GR-51	Q50	556.70	92.00	96.20	0.96	96.20	0.96	95.24	96.60	98.69	0.018289	8.23	67.66	22.20	1.50
Graveglia	51 GR-51	Q200	684.40	92.00	96.20	0.23	96.20	0.23	95.97	97.23	99.36	0.014450	8.16	83.92	22.20	1.34
Graveglia	51 GR-51	Q500	768.30	92.00	96.20	-0.02	96.20	-0.02	96.22	97.56	99.96	0.014972	8.57	90.96	38.28	1.36
Graveglia	50 GR-50	Q50	556.70	90.40	95.08	-0.41	96.00	0.51	95.49	95.38	96.80	0.006367	5.07	111.16	43.45	0.92
Graveglia	50 GR-50	Q200	684.40	90.40	95.08	-1.20	96.00	-0.28	96.28	96.03	97.42	0.004297	4.80	151.78	56.50	0.78

HEC-RAS Plan: Graveglia (Continued)

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
Graveglia	50 GR-50	Q500	768.30	90.40	95.08	-1.72	96.00	-0.80	96.80	96.29	97.81	0.003319	4.59	181.03	56.50	0.70
Graveglia	49.5 GR-49.5	Q50	556.70	89.20	94.80	-0.89	94.80	-0.89	95.69	93.29	96.16	0.001396	3.21	200.59	62.00	0.41
Graveglia	49.5 GR-49.5	Q200	684.40	89.20	94.80	-1.68	94.80	-1.68	96.48	93.84	96.94	0.001195	3.22	249.77	62.00	0.39
Graveglia	49.5 GR-49.5	Q500	768.30	89.20	94.80	-2.17	94.80	-2.17	96.97	94.80	97.42	0.001097	3.23	280.06	62.00	0.38
Graveglia	49.11	Bridge														
Graveglia	49 GR-49	Q50	631.20	89.20	94.80	-0.87	94.80	-0.87	95.67	93.64	96.29	0.001661	3.69	199.17	62.00	0.47
Graveglia	49 GR-49	Q200	779.80	89.20	94.80	-1.66	94.80	-1.66	96.46	94.55	97.06	0.001438	3.72	248.18	62.00	0.45
Graveglia	49 GR-49	Q500	876.80	89.20	94.80	-2.15	94.80	-2.15	96.95	95.17	97.55	0.001322	3.73	278.69	62.00	0.44
Graveglia	48 GR-48	Q50	631.20	87.80	90.60	-5.32	90.40	-5.52	95.92	92.00	96.00	0.000149	1.44	523.02	97.50	0.17
Graveglia	48 GR-48	Q200	779.80	87.80	90.60	-6.10	90.40	-6.30	96.70	92.31	96.79	0.000148	1.54	599.65	97.50	0.18
Graveglia	48 GR-48	Q500	876.80	87.80	90.60	-6.59	90.40	-6.79	97.19	92.40	97.29	0.000148	1.60	647.44	97.50	0.18
Graveglia	47.5 GR-47.5	Q50	631.20	85.90	92.90	-2.08	92.90	-2.08	94.98	91.79	95.88	0.002309	4.40	159.16	30.10	0.47
Graveglia	47.5 GR-47.5	Q200	779.80	85.90	92.90	-2.63	92.90	-2.63	95.53	93.72	96.66	0.002696	4.95	175.95	30.10	0.51
Graveglia	47.5 GR-47.5	Q500	876.80	85.90	92.90	-2.98	92.90	-2.98	95.88	94.25	97.14	0.002912	5.27	186.39	30.10	0.53
Graveglia	47.11	Bridge														
Graveglia	47 GR-47	Q50	631.20	85.90	92.90	2.51	92.90	2.51	90.39	91.79	95.45	0.023301	9.97	63.31	14.10	1.50
Graveglia	47 GR-47	Q200	779.80	85.90	92.90	1.16	92.90	1.16	91.74	93.72	96.31	0.017120	9.46	82.41	14.10	1.25
Graveglia	47 GR-47	Q500	876.80	85.90	92.90	-0.15	92.90	-0.15	93.05	94.25	96.88	0.012363	8.68	102.46	24.04	1.04
Graveglia	46.5 GR-46.5	Q50	631.20	86.20	91.00	1.73	91.00	1.73	89.27	90.59	93.60	0.027700	9.22	68.50	27.84	1.88
Graveglia	46.5 GR-46.5	Q200	779.80	86.20	91.00	1.41	91.00	1.41	89.59	91.25	94.76	0.029105	10.08	77.40	28.24	1.94
Graveglia	46.5 GR-46.5	Q500	876.80	86.20	91.00	1.18	91.00	1.18	89.82	91.61	95.39	0.028808	10.45	83.90	28.53	1.95
Graveglia	46 GR-46	Q50	631.20	84.70	91.00	3.41	91.00	3.41	87.59	89.49	93.43	0.035777	10.71	58.92	21.73	2.08
Graveglia	46 GR-46	Q200	779.80	84.70	91.00	2.97	91.00	2.97	88.03	90.08	94.61	0.034760	11.36	68.62	22.28	2.07
Graveglia	46 GR-46	Q500	876.80	84.70	91.00	2.68	91.00	2.68	88.32	90.45	95.23	0.033476	11.65	75.28	22.65	2.04
Graveglia	45 GR-45	Q50	631.20	81.30	86.00	2.23	86.00	2.23	83.77	85.51	90.52	0.058315	11.51	54.86	31.33	2.78
Graveglia	45 GR-45	Q200	779.80	81.30	86.00	1.95	86.00	1.95	84.05	86.02	91.70	0.058646	12.25	63.64	33.16	2.82
Graveglia	45 GR-45	Q500	876.80	81.30	86.00	1.79	86.00	1.79	84.21	86.36	92.38	0.057457	12.66	69.25	33.75	2.82
Graveglia	44 GR-44	Q50	631.20	76.90	80.00	-0.80	80.00	-0.80	80.80	82.06	85.05	0.019513	9.32	73.93	37.13	1.61
Graveglia	44 GR-44	Q200	779.80	76.90	80.00	-1.12	80.00	-1.12	81.12	82.59	86.01	0.020502	10.15	86.62	40.56	1.68
Graveglia	44 GR-44	Q500	876.80	76.90	80.00	-1.29	80.00	-1.29	81.29	82.90	86.62	0.021396	10.68	93.47	40.64	1.73
Graveglia	43.1 GR-43.1	Q50	631.20	77.10	82.60	2.85	85.50	5.75	79.75	81.07	84.54	0.043235	9.70	65.08	36.91	2.33
Graveglia	43.1 GR-43.1	Q200	779.80	77.10	82.60	2.59	85.50	5.49	80.01	81.50	85.47	0.046427	10.36	75.29	41.00	2.44
Graveglia	43.1 GR-43.1	Q500	876.80	77.10	82.60	2.44	85.50	5.34	80.16	81.78	86.08	0.045821	10.78	81.33	41.06	2.45
Graveglia	43 GR-43	Q50	631.20	75.40	82.60	4.42	85.50	7.32	78.18	80.21	84.38	0.038961	11.03	57.22	22.59	2.21
Graveglia	43 GR-43	Q200	779.80	75.40	82.60	3.96	85.50	6.86	78.64	80.65	85.33	0.036847	11.46	68.05	24.08	2.18
Graveglia	43 GR-43	Q500	876.80	75.40	82.60	3.69	85.50	6.59	78.91	80.93	85.95	0.035753	11.75	74.60	24.66	2.16
Graveglia	42 GR-42	Q50	631.20	73.00	80.00	3.30	76.00	-0.70	76.70	77.82	80.42	0.021925	8.80	80.78	50.84	1.66
Graveglia	42 GR-42	Q200	779.80	73.00	80.00	3.09	76.00	-0.91	76.91	78.16	81.34	0.024614	9.73	91.76	51.31	1.77

HEC-RAS Plan: Graveglia (Continued)

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
Graveglia	42 GR-42	Q500	876.80	73.00	80.00	2.97	76.00	-1.03	77.03	78.43	81.92	0.026338	10.30	98.02	51.57	1.84
Graveglia	41.5 GR-41.5	Q50	631.20	70.10	75.90	1.60	75.90	1.60	74.31	75.52	78.20	0.019983	8.74	72.18	24.30	1.62
Graveglia	41.5 GR-41.5	Q200	779.80	70.10	75.90	1.03	75.90	1.03	74.87	76.30	79.01	0.018542	9.01	86.55	26.41	1.59
Graveglia	41.5 GR-41.5	Q500	876.80	70.10	75.90	0.68	75.90	0.68	75.22	76.56	79.47	0.017638	9.13	96.04	27.71	1.57
Graveglia	41.11	Bridge														
Graveglia	41 GR-41	Q50	631.20	70.10	75.90	1.54	75.90	1.54	74.36	75.52	78.12	0.019036	8.59	73.47	24.49	1.58
Graveglia	41 GR-41	Q200	779.80	70.10	75.90	0.98	75.90	0.98	74.92	76.30	78.93	0.017740	8.87	87.96	26.60	1.56
Graveglia	41 GR-41	Q500	876.80	70.10	75.90	0.62	75.90	0.62	75.28	76.56	79.39	0.016905	8.99	97.55	27.91	1.53
Graveglia	40 GR-40	Q50	631.20	68.20	71.00	-2.74	70.00	-3.74	73.74	71.80	74.17	0.001431	3.42	232.11	71.50	0.50
Graveglia	40 GR-40	Q200	779.80	68.20	71.00	-3.55	70.00	-4.55	74.55	71.80	74.96	0.001096	3.33	290.46	71.50	0.45
Graveglia	40 GR-40	Q500	876.80	68.20	71.00	-4.05	70.00	-5.05	75.05	71.80	75.46	0.000966	3.30	326.21	71.50	0.43
Graveglia	39.1 GR-39.1	Q50	631.20	67.70	69.00	-3.06	70.00	-2.06	72.06	72.06	73.83	0.006157	6.37	110.48	31.37	1.00
Graveglia	39.1 GR-39.1	Q200	779.80	67.70	69.00	-3.60	70.00	-2.60	72.60	72.60	74.64	0.006045	6.84	127.44	31.73	1.01
Graveglia	39.1 GR-39.1	Q500	876.80	67.70	69.00	-3.93	70.00	-2.93	72.93	72.93	75.13	0.005974	7.12	138.05	31.96	1.02
Graveglia	39 GR-39	Q50	631.20	66.30	69.00	-1.64	70.00	-0.64	70.64	71.49	73.70	0.012848	8.24	86.08	30.43	1.33
Graveglia	39 GR-39	Q200	779.80	66.30	69.00	-2.11	70.00	-1.11	71.11	72.03	74.50	0.012388	8.72	100.45	30.74	1.33
Graveglia	39 GR-39	Q500	876.80	66.30	69.00	-2.40	70.00	-1.40	71.40	72.36	74.99	0.012108	9.00	109.45	30.93	1.33
Graveglia	38.5 GR-38.5	Q50	631.20	64.40	66.90	-0.82	68.40	0.68	67.72	68.74	71.09	0.019372	8.28	85.65	70.34	1.54
Graveglia	38.5 GR-38.5	Q200	779.80	64.40	66.90	-1.05	68.40	0.45	67.95	69.21	71.78	0.021060	9.02	101.49	70.69	1.62
Graveglia	38.5 GR-38.5	Q500	876.80	64.40	66.90	-1.17	68.40	0.33	68.07	69.38	72.19	0.022171	9.47	110.21	70.88	1.67
Graveglia	38.11	Bridge														
Graveglia	38 GR-38	Q50	631.20	64.40	66.90	-0.87	68.40	0.63	67.77	68.74	70.94	0.018061	8.07	88.92	70.41	1.49
Graveglia	38 GR-38	Q200	779.80	64.40	66.90	-1.09	68.40	0.41	67.99	69.21	71.62	0.019838	8.82	104.32	70.75	1.57
Graveglia	38 GR-38	Q500	876.80	64.40	66.90	-1.21	68.40	0.29	68.11	69.38	72.03	0.020954	9.27	112.94	70.94	1.62
Graveglia	37 GR-37	Q50	631.20	62.80	66.00	-1.87	65.50	-2.37	67.87	66.80	68.14	0.001011	2.68	297.52	113.78	0.41
Graveglia	37 GR-37	Q200	779.80	62.80	66.00	-2.70	65.50	-3.20	68.70	67.05	68.92	0.000668	2.45	393.75	117.11	0.34
Graveglia	37 GR-37	Q500	876.80	62.80	66.00	-3.21	65.50	-3.71	69.21	67.20	69.42	0.000548	2.36	454.02	118.64	0.31
Graveglia	36 GR-36	Q50	631.20	61.30	66.00	-0.02	65.00	-1.02	66.02	66.02	67.83	0.006253	5.97	107.19	32.00	0.98
Graveglia	36 GR-36	Q200	779.80	61.30	66.00	-0.60	65.00	-1.59	66.60	66.60	68.64	0.005884	6.36	125.49	32.00	0.98
Graveglia	36 GR-36	Q500	876.80	61.30	66.00	-0.93	65.00	-1.93	66.93	66.93	69.13	0.005770	6.62	136.19	32.00	0.98
Graveglia	35 GR-35	Q50	631.20	58.90	62.50	-0.27	61.40	-1.37	62.77	63.70	65.98	0.016436	8.51	94.81	76.27	1.56
Graveglia	35 GR-35	Q200	779.80	58.90	62.50	-0.45	61.40	-1.55	62.95	64.00	66.65	0.018311	9.33	108.61	77.11	1.67
Graveglia	35 GR-35	Q500	876.80	58.90	62.50	-0.56	61.40	-1.66	63.06	64.18	67.07	0.019406	9.82	116.74	77.60	1.73
Graveglia	34.5 GR-34.5	Q50	631.20	56.80	62.10	0.63	62.70	1.23	61.47	60.19	61.98	0.002080	3.16	199.47	54.80	0.53
Graveglia	34.5 GR-34.5	Q200	779.80	56.80	62.10	0.15	62.70	0.75	61.95	60.58	62.56	0.002153	3.46	225.39	54.80	0.54
Graveglia	34.5 GR-34.5	Q500	876.80	56.80	62.10	-0.66	62.70	-0.06	62.76	60.80	62.98	0.000746	2.19	441.13	122.52	0.31
Graveglia	34.11	Bridge														

HEC-RAS Plan: Graveglia (Continued)

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
Graveglia	34 GR-34	Q50	631.20	56.80	62.10	0.67	62.70	1.27	61.43	60.19	61.95	0.002159	3.20	197.15	54.80	0.54
Graveglia	34 GR-34	Q200	779.80	56.80	62.10	0.29	62.70	0.89	61.81	60.58	62.46	0.002395	3.58	217.95	54.80	0.57
Graveglia	34 GR-34	Q500	876.80	56.80	62.10	0.06	62.70	0.66	62.04	60.80	62.78	0.002535	3.80	230.51	54.80	0.59
Grav+Chiesa	33 GR-33	Q50	649.60	56.20	58.00	-2.06	59.30	-0.76	60.06	60.06	60.97	0.003957	4.57	170.95	87.00	0.80
Grav+Chiesa	33 GR-33	Q200	801.60	56.20	58.00	-2.35	59.30	-1.05	60.35	60.35	61.38	0.004101	4.92	196.24	87.00	0.83
Grav+Chiesa	33 GR-33	Q500	901.30	56.20	58.00	-2.52	59.30	-1.22	60.52	60.52	61.64	0.004188	5.13	211.38	87.00	0.84
Grav+Chiesa	32 GR-32	Q50	649.60	54.00	60.00	2.86	55.80	-1.34	57.14	57.79	59.37	0.017887	7.78	105.15	67.57	1.57
Grav+Chiesa	32 GR-32	Q200	801.60	54.00	60.00	1.07	55.80	-3.13	58.93	58.10	59.58	0.002473	3.91	227.26	68.47	0.61
Grav+Chiesa	32 GR-32	Q500	901.30	54.00	60.00	0.52	55.80	-3.68	59.48	58.29	60.08	0.002205	3.94	268.00	80.74	0.59
Grav+Chiesa	31 GR-31	Q50	649.60	51.90	56.00	-2.01	56.40	-1.61	58.01	55.70	58.22	0.000596	2.26	326.68	80.53	0.32
Grav+Chiesa	31 GR-31	Q200	801.60	51.90	56.00	-2.89	56.40	-2.49	58.89	56.00	59.11	0.000491	2.28	399.11	84.05	0.30
Grav+Chiesa	31 GR-31	Q500	901.30	51.90	56.00	-3.44	56.40	-3.04	59.44	56.20	59.66	0.000443	2.30	445.80	86.25	0.29
Grav+Chiesa	30.5 GR-30.5	Q50	649.60	50.00	55.00	-2.52	55.00	-2.52	57.52	54.32	58.15	0.001174	3.54	189.07	28.00	0.42
Grav+Chiesa	30.5 GR-30.5	Q200	801.60	50.00	55.00	-3.23	55.00	-3.23	58.23	54.95	59.02	0.001308	3.98	208.94	28.00	0.45
Grav+Chiesa	30.5 GR-30.5	Q500	901.30	50.00	55.00	-3.66	55.00	-3.66	58.66	55.42	59.56	0.001382	4.24	221.19	28.00	0.46
Grav+Chiesa	30.11		Bridge													
Grav+Chiesa	30 GR-30	Q50	649.60	50.00	55.00	2.11	55.00	2.11	52.89	54.32	57.71	0.027775	9.73	66.78	24.60	1.88
Grav+Chiesa	30 GR-30	Q200	801.60	50.00	55.00	1.58	55.00	1.58	53.42	54.95	58.57	0.024573	10.05	79.73	24.60	1.78
Grav+Chiesa	30 GR-30	Q500	901.30	50.00	55.00	1.25	55.00	1.25	53.75	55.42	59.10	0.023063	10.25	87.96	24.60	1.73
Grav+Chiesa	29 GR-29	Q50	649.60	49.00	51.00	-2.40	53.00	-0.40	53.40	52.47	53.73	0.001513	2.93	265.09	99.00	0.50
Grav+Chiesa	29 GR-29	Q200	801.60	49.00	51.00	-3.23	53.00	-1.23	54.23	52.71	54.52	0.001024	2.78	351.16	107.00	0.42
Grav+Chiesa	29 GR-29	Q500	901.30	49.00	51.00	-4.69	53.00	-2.69	55.69	52.86	55.86	0.000400	2.10	506.73	107.00	0.28
Grav+Chiesa	28 GR-28	Q50	649.60	47.80	52.00	0.52	52.00	0.52	51.48	51.48	53.33	0.007745	6.02	107.86	29.30	1.00
Grav+Chiesa	28 GR-28	Q200	801.60	47.80	52.00	-0.04	52.00	-0.04	52.04	52.04	54.16	0.007670	6.45	124.20	29.30	1.00
Grav+Chiesa	28 GR-28	Q500	901.30	47.80	52.00	-2.69	52.00	-2.69	54.69	52.39	55.71	0.002286	4.46	201.94	29.30	0.54
Grav+Chiesa	27.5 GR-27.5	Q50	649.60	45.90	52.70	2.68	52.70	2.68	50.02	50.89	53.03	0.022334	7.68	84.63	36.00	1.60
Grav+Chiesa	27.5 GR-27.5	Q200	801.60	45.90	52.70	2.33	52.70	2.33	50.37	51.37	53.84	0.021910	8.25	97.17	36.00	1.60
Grav+Chiesa	27.5 GR-27.5	Q500	901.30	45.90	52.70	-2.26	52.70	-2.26	54.96	51.67	55.56	0.001296	3.44	262.24	36.00	0.41
Grav+Chiesa	27.11		Bridge													
Grav+Chiesa	27 GR-27	Q50	649.60	45.90	52.70	2.22	52.70	2.22	50.48	50.89	52.59	0.012788	6.44	100.85	36.00	1.23
Grav+Chiesa	27 GR-27	Q200	801.60	45.90	52.70	1.95	52.70	1.95	50.75	51.37	53.42	0.014435	7.23	110.87	36.00	1.32
Grav+Chiesa	27 GR-27	Q500	901.30	45.90	52.70	2.47	52.70	2.47	50.23	51.67	55.11	0.032865	9.79	92.08	36.00	1.95
Grav+Chiesa	26 GR-26	Q50	649.60	46.00	50.00	-0.33	49.00	-1.33	50.33	50.33	51.82	0.005374	5.49	124.07	42.27	0.93
Grav+Chiesa	26 GR-26	Q200	801.60	46.00	50.00	-0.79	49.00	-1.79	50.79	50.79	52.49	0.005268	5.89	143.62	42.64	0.94
Grav+Chiesa	26 GR-26	Q500	901.30	46.00	50.00	-1.08	49.00	-2.08	51.08	51.08	52.91	0.005204	6.13	155.77	42.86	0.94
Grav+Chiesa	25 GR-25	Q50	649.60	42.60	46.00	-0.78	47.00	0.22	46.78	47.71	49.54	0.013004	7.52	92.93	42.56	1.39
Grav+Chiesa	25 GR-25	Q200	801.60	42.60	46.00	-1.14	47.00	-0.14	47.14	48.24	50.22	0.012927	8.02	108.76	46.66	1.41
Grav+Chiesa	25 GR-25	Q500	901.30	42.60	46.00	-1.35	47.00	-0.35	47.35	48.48	50.64	0.012863	8.33	119.06	52.09	1.42

HEC-RAS Plan: Graveglia (Continued)

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
Grav+Chiesa	24.5 GR-24.5	Q50	649.60	41.10	49.50	2.56	49.50	2.56	46.94	45.58	48.10	0.003478	4.77	136.14	27.00	0.68
Grav+Chiesa	24.5 GR-24.5	Q200	801.60	41.10	49.50	1.73	49.50	1.73	47.77	46.23	49.07	0.003391	5.06	158.45	27.00	0.67
Grav+Chiesa	24.5 GR-24.5	Q500	901.30	41.10	49.50	1.27	49.50	1.27	48.24	46.74	49.65	0.003432	5.27	171.04	27.00	0.67
Grav+Chiesa	24.11	Bridge														
Grav+Chiesa	24 GR-24	Q50	649.60	41.10	49.50	4.66	49.50	4.66	44.84	45.58	47.90	0.013373	7.75	83.82	23.77	1.32
Grav+Chiesa	24 GR-24	Q200	801.60	41.10	49.50	4.07	49.50	4.07	45.43	46.23	48.85	0.012921	8.20	97.76	24.20	1.30
Grav+Chiesa	24 GR-24	Q500	901.30	41.10	49.50	3.70	49.50	3.70	45.80	46.74	49.42	0.012550	8.43	106.96	24.48	1.29
Grav+Chiesa	23 GR-23	Q50	649.60	40.00	44.00	-1.05	44.10	-0.95	45.05	45.05	46.97	0.007325	6.14	105.78	27.50	1.00
Grav+Chiesa	23 GR-23	Q200	801.60	40.00	44.00	-1.63	44.10	-1.53	45.63	45.63	47.84	0.007315	6.59	121.70	27.50	1.00
Grav+Chiesa	23 GR-23	Q500	901.30	40.00	44.00	-1.98	44.10	-1.88	45.98	45.98	48.38	0.007341	6.85	131.49	27.50	1.00
Grav+Chiesa	22 GR-22	Q50	649.60	39.80	44.00	0.08	43.10	-0.82	43.92	44.63	46.24	0.009758	6.99	103.75	46.94	1.20
Grav+Chiesa	22 GR-22	Q200	801.60	39.80	44.00	-0.19	43.10	-1.09	44.19	45.04	47.03	0.011179	7.81	116.49	50.00	1.30
Grav+Chiesa	22 GR-22	Q500	901.30	39.80	44.00	-0.33	43.10	-1.23	44.33	45.28	47.52	0.012127	8.31	123.50	50.00	1.35
Grav+Chiesa	21 GR-21	Q50	649.60	38.50	42.00	-2.70	45.80	1.10	44.70	42.53	44.98	0.000733	2.41	293.33	80.50	0.35
Grav+Chiesa	21 GR-21	Q200	801.60	38.50	42.00	-3.55	45.80	0.25	45.55	42.96	45.82	0.000602	2.41	361.44	80.50	0.33
Grav+Chiesa	21 GR-21	Q500	901.30	38.50	42.00	-4.07	45.80	-0.27	46.07	43.21	46.34	0.000545	2.42	403.52	82.00	0.31
Gra+Ne	20 GR-20	Q50	653.10	36.00	39.50	-2.66	42.00	-0.16	42.16	40.77	42.48	0.001244	2.78	271.54	77.00	0.40
Gra+Ne	20 GR-20	Q200	809.10	36.00	39.50	-3.54	42.00	-1.04	43.04	41.08	43.34	0.000963	2.69	339.38	77.00	0.35
Gra+Ne	20 GR-20	Q500	909.90	36.00	39.50	-4.07	42.00	-1.57	43.57	41.26	43.87	0.000854	2.66	380.65	77.00	0.34
Gra+Ne	19.5 GR-19.5	Q50	653.10	34.90	40.00	-1.49	40.00	-1.49	41.49	39.45	42.28	0.002568	3.93	166.23	28.70	0.52
Gra+Ne	19.5 GR-19.5	Q200	809.10	34.90	40.00	-2.18	40.00	-2.18	42.18	40.03	43.15	0.002832	4.35	186.04	28.70	0.55
Gra+Ne	19.5 GR-19.5	Q500	909.90	34.90	40.00	-2.60	40.00	-2.60	42.60	40.38	43.68	0.002981	4.59	198.14	28.70	0.56
Gra+Ne	19.11	Bridge														
Gra+Ne	19 GR-19	Q50	653.10	34.90	40.00	-0.73	40.00	-0.73	40.73	39.45	41.77	0.003898	4.52	144.46	28.70	0.64
Gra+Ne	19 GR-19	Q200	809.10	34.90	40.00	-1.40	40.00	-1.40	41.40	40.03	42.64	0.004139	4.95	163.50	28.70	0.66
Gra+Ne	19 GR-19	Q500	909.90	34.90	40.00	-1.79	40.00	-1.79	41.79	40.38	43.17	0.004306	5.21	174.70	28.70	0.67
Gra+Ne	18 GR-18	Q50	653.10	34.40	40.00	0.92	39.50	0.42	39.08	39.08	40.92	0.007928	6.00	108.86	29.63	1.00
Gra+Ne	18 GR-18	Q200	809.10	34.40	40.00	0.32	39.50	-0.18	39.68	39.68	41.76	0.007843	6.39	126.66	30.52	1.00
Gra+Ne	18 GR-18	Q500	909.90	34.40	40.00	-0.03	39.50	-0.53	40.03	40.03	42.26	0.007799	6.61	137.66	31.00	1.00
Gra+Ne	17.1 GR-17.1	Q50	653.10	33.90	36.00	-0.25	36.50	0.25	36.25	36.84	38.19	0.020045	6.17	106.45	64.01	1.47
Gra+Ne	17.1 GR-17.1	Q200	809.10	33.90	36.00	-0.45	36.50	0.05	36.45	37.22	38.84	0.021777	6.87	119.30	67.86	1.55
Gra+Ne	17.1 GR-17.1	Q500	909.90	33.90	36.00	-0.57	36.50	-0.07	36.57	37.44	39.25	0.022702	7.28	127.36	70.16	1.60
Gra+Ne	17 GR-17	Q50	653.10	32.10	36.00	-1.37	36.50	-0.87	37.37	35.89	37.77	0.001402	2.85	242.41	87.47	0.47
Gra+Ne	17 GR-17	Q200	809.10	32.10	36.00	-2.02	36.50	-1.52	38.02	36.29	38.43	0.001178	2.91	304.23	100.00	0.44
Gra+Ne	17 GR-17	Q500	909.90	32.10	36.00	-2.38	36.50	-1.88	38.38	36.54	38.79	0.001098	2.95	339.48	100.00	0.43
Gra+Ne	16.5 GR-16.5	Q50	653.10	32.00	36.00	-0.90	37.00	0.10	36.90	35.78	37.68	0.002523	4.03	183.66	74.32	0.60
Gra+Ne	16.5 GR-16.5	Q200	809.10	32.00	36.00	-1.82	37.00	-0.82	37.82	37.00	38.37	0.001732	3.59	273.96	97.73	0.49
Gra+Ne	16.5 GR-16.5	Q500	909.90	32.00	36.00	-2.21	37.00	-1.21	38.21	37.14	38.74	0.001548	3.55	312.73	99.93	0.47

HEC-RAS Plan: Graveglia (Continued)

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
Gra+Ne	16.11		Bridge													
Gra+Ne	16 GR-16	Q50	653.10	32.00	36.00	0.54	37.00	1.54	35.46	35.78	37.54	0.009843	6.38	102.34	33.00	1.16
Gra+Ne	16 GR-16	Q200	809.10	32.00	36.00	-1.58	37.00	-0.58	37.58	37.00	38.25	0.002160	3.89	250.79	95.66	0.54
Gra+Ne	16 GR-16	Q500	909.90	32.00	36.00	-2.15	37.00	-1.15	38.15	37.14	38.70	0.001629	3.62	306.90	99.75	0.48
Gra+Ne	15.9 GR-15.9	Q50	653.10	31.91	36.51	1.20	37.60	2.29	35.31	35.69	37.43	0.010076	6.46	101.14	33.61	1.19
Gra+Ne	15.9 GR-15.9	Q200	809.10	31.91	36.51	0.24	37.60	1.33	36.27	36.27	38.09	0.006868	5.98	135.22	37.08	1.00
Gra+Ne	15.9 GR-15.9	Q500	909.90	31.91	36.51	-0.08	37.60	1.01	36.59	36.59	38.54	0.006721	6.18	147.41	39.26	1.00
Gra+Ne	15.8 GR-15.8	Q50	653.10	31.90	36.50	1.64	35.05	0.19	34.86	35.54	37.16	0.012841	6.73	97.06	37.66	1.34
Gra+Ne	15.8 GR-15.8	Q200	809.10	31.90	36.50	1.19	35.05	-0.26	35.31	36.01	37.83	0.011680	7.04	116.84	48.43	1.30
Gra+Ne	15.8 GR-15.8	Q500	909.90	31.90	36.50	0.99	35.05	-0.47	35.52	36.28	38.26	0.011854	7.37	126.62	48.72	1.33
Gra+Ne	15.7 GR-15.7	Q50	653.10	31.45	36.38	1.87	34.49	-0.02	34.51	35.23	36.92	0.012588	6.88	94.89	35.48	1.34
Gra+Ne	15.7 GR-15.7	Q200	809.10	31.45	36.38	1.36	34.49	-0.53	35.02	35.77	37.62	0.011058	7.14	113.90	39.06	1.29
Gra+Ne	15.7 GR-15.7	Q500	909.90	31.45	36.38	1.11	34.49	-0.78	35.27	36.05	38.05	0.010848	7.40	125.54	47.84	1.29
Gra+Ne	15.6 GR-15.6	Q50	653.10	31.44	35.98	1.46	34.80	0.28	34.52	35.08	36.66	0.011057	6.48	100.78	36.26	1.24
Gra+Ne	15.6 GR-15.6	Q200	809.10	31.44	35.98	1.05	34.80	-0.13	34.93	35.59	37.41	0.011002	6.98	117.06	47.25	1.26
Gra+Ne	15.6 GR-15.6	Q500	909.90	31.44	35.98	-0.72	34.80	-1.90	36.70	35.88	37.76	0.002843	4.68	208.30	57.60	0.68
Gra+Ne	15 GR-15	Q50	653.10	30.60	40.00	4.62	32.00	-3.38	35.38	34.64	35.85	0.001714	3.44	228.82	81.28	0.53
Gra+Ne	15 GR-15	Q200	809.10	30.60	40.00	3.55	32.00	-4.45	36.45	34.94	36.80	0.000993	2.97	316.21	82.50	0.41
Gra+Ne	15 GR-15	Q500	909.90	30.60	40.00	2.85	32.00	-5.15	37.15	35.12	37.46	0.000749	2.76	374.08	82.90	0.36
Gra+Ne	14 GR-14	Q50	653.10	29.70	32.00	-2.62	34.00	-0.62	34.62	33.57	35.52	0.002774	4.22	154.91	37.00	0.66
Gra+Ne	14 GR-14	Q200	809.10	29.70	32.00	-3.69	34.00	-1.69	35.69	34.08	36.57	0.002137	4.16	194.35	37.00	0.58
Gra+Ne	14 GR-14	Q500	909.90	29.70	32.00	-4.40	34.00	-2.40	36.40	34.38	37.26	0.001846	4.12	220.69	37.00	0.54
Gra+Ne	13.9 GR-13.5	Q50	653.10	28.20	31.20	-2.53	32.60	-1.13	33.73	33.21	35.18	0.004615	5.34	122.32	28.56	0.82
Gra+Ne	13.9 GR-13.5	Q200	809.10	28.20	31.20	-3.76	32.60	-2.36	34.96	33.79	36.30	0.003350	5.14	157.50	28.56	0.70
Gra+Ne	13.9 GR-13.5	Q500	909.90	28.20	31.20	-4.51	32.60	-3.11	35.71	34.14	37.03	0.002918	5.08	179.03	28.56	0.65
Gra+Ne	13 GR-13	Q50	653.10	28.30	31.40	-2.56	32.40	-1.56	33.96	32.95	34.97	0.002995	4.44	146.93	33.37	0.68
Gra+Ne	13 GR-13	Q200	809.10	28.30	31.40	-3.78	32.40	-2.78	35.18	33.47	36.13	0.002210	4.31	187.57	33.37	0.58
Gra+Ne	13 GR-13	Q500	909.90	28.30	31.40	-4.53	32.40	-3.53	35.93	33.79	36.86	0.001929	4.28	212.68	33.37	0.54
Gra+Ne	12.9 GR-12.9	Q50	653.10	26.90	31.40	-2.59	32.40	-1.59	33.99	32.65	34.93	0.002664	4.29	152.40	31.18	0.62
Gra+Ne	12.9 GR-12.9	Q200	809.10	26.90	31.40	-3.77	32.40	-2.77	35.17	33.20	36.10	0.002146	4.27	189.35	31.18	0.55
Gra+Ne	12.9 GR-12.9	Q500	909.90	26.90	31.40	-4.51	32.40	-3.51	35.91	33.53	36.85	0.001941	4.28	212.36	31.18	0.52
Gra+Ne	12.8 GR-12.5	Q50	653.10	26.80	31.00	-3.02	32.40	-1.62	34.02	31.91	34.88	0.002032	4.11	159.09	26.13	0.53
Gra+Ne	12.8 GR-12.5	Q200	809.10	26.80	31.00	-4.15	32.40	-2.75	35.15	32.54	36.09	0.001925	4.29	188.46	26.13	0.51
Gra+Ne	12.8 GR-12.5	Q500	909.90	26.80	31.00	-4.84	32.40	-3.44	35.84	32.91	36.83	0.001885	4.41	206.47	26.13	0.50
Gra+Ne	12.5 GR-12 m	Q50	653.10	26.15	31.27	-3.01	32.15	-2.13	34.28	30.66	34.73	0.000816	2.99	226.94	34.23	0.35
Gra+Ne	12.5 GR-12 m	Q200	809.10	26.15	31.27	-4.16	32.15	-3.28	35.43	31.25	35.92	0.000788	3.17	266.14	34.23	0.35
Gra+Ne	12.5 GR-12 m	Q500	909.90	26.15	31.27	-4.86	32.15	-3.98	36.13	31.75	36.66	0.000776	3.28	290.18	34.23	0.35
Gra+Ne	12.11		Bridge													

HEC-RAS Plan: Graveglia (Continued)

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
Gra+Ne	12 GR-12 v	Q50	653.10	26.15	31.27	-2.98	32.15	-2.10	34.25	30.66	34.70	0.000828	3.00	225.88	34.23	0.35
Gra+Ne	12 GR-12 v	Q200	809.10	26.15	31.27	-4.14	32.15	-3.26	35.41	31.25	35.90	0.000796	3.18	265.29	34.23	0.35
Gra+Ne	12 GR-12 v	Q500	909.90	26.15	31.27	-4.84	32.15	-3.96	36.11	31.75	36.64	0.000782	3.29	289.44	34.23	0.35
Gra+Ne	11.9 GR-11.5	Q50	653.10	25.80	30.60	-3.42	32.30	-1.72	34.02	31.14	34.67	0.001312	3.59	185.84	30.00	0.44
Gra+Ne	11.9 GR-11.5	Q200	809.10	25.80	30.60	-4.55	32.30	-2.85	35.15	31.78	35.87	0.001236	3.78	219.88	30.00	0.43
Gra+Ne	11.9 GR-11.5	Q500	909.90	25.80	30.60	-5.25	32.30	-3.55	35.85	32.17	36.60	0.001202	3.89	240.72	30.00	0.42
Gra+Ne	11.89 GR-11.4	Q50	653.10	26.50	30.10	-4.03	31.60	-2.53	34.13	30.68	34.60	0.000920	3.03	215.84	30.85	0.37
Gra+Ne	11.89 GR-11.4	Q200	809.10	26.50	30.10	-5.17	31.60	-3.67	35.27	31.24	35.80	0.000917	3.22	250.95	30.85	0.36
Gra+Ne	11.89 GR-11.4	Q500	909.90	26.50	30.10	-5.86	31.60	-4.36	35.96	31.59	36.53	0.000919	3.34	272.46	30.85	0.36
Gra+Ne	11.8 GR-11.3	Q50	653.10	26.50	30.90	-3.23	31.60	-2.53	34.13	30.53	34.59	0.000947	3.00	217.54	30.07	0.36
Gra+Ne	11.8 GR-11.3	Q200	809.10	26.50	30.90	-4.36	31.60	-3.66	35.26	31.09	35.79	0.000957	3.21	251.67	30.07	0.35
Gra+Ne	11.8 GR-11.3	Q500	909.90	26.50	30.90	-5.06	31.60	-4.36	35.96	31.43	36.53	0.000966	3.34	272.58	30.07	0.35
Gra+Ne	11.7 GR-11.2	Q50	653.10	25.90	30.40	-1.39	30.40	-1.39	31.79	31.79	34.33	0.008109	7.08	93.60	18.85	0.98
Gra+Ne	11.7 GR-11.2	Q200	809.10	25.90	30.40	-2.17	30.40	-2.17	32.57	32.57	35.50	0.008142	7.62	108.26	18.85	0.99
Gra+Ne	11.7 GR-11.2	Q500	909.90	25.90	30.40	-2.65	30.40	-2.65	33.05	33.05	36.22	0.008174	7.94	117.22	18.85	0.99
Gra+Ne	11.6 GR-11.1	Q50	653.10	25.80	30.10	0.92	29.90	0.72	29.18	30.56	33.79	0.024492	9.51	68.65	23.66	1.78
Gra+Ne	11.6 GR-11.1	Q200	809.10	25.80	30.10	0.47	29.90	0.27	29.63	31.20	34.93	0.024549	10.21	79.27	24.20	1.80
Gra+Ne	11.6 GR-11.1	Q500	909.90	25.80	30.10	0.21	29.90	0.01	29.89	31.59	35.63	0.024656	10.61	85.74	24.52	1.81
Gra+Ne	11 GR-11	Q50	653.10	24.13	30.10	2.47	31.38	3.75	27.63	29.10	32.53	0.031583	9.81	66.60	29.00	2.07
Gra+Ne	11 GR-11	Q200	809.10	24.13	30.10	2.13	31.38	3.41	27.97	29.68	33.66	0.031684	10.56	76.59	29.59	2.10
Gra+Ne	11 GR-11	Q500	909.90	24.13	30.10	1.92	31.38	3.20	28.18	30.01	34.35	0.031774	11.00	82.70	29.94	2.11
Gra+Ne	10 GR-10	Q50	653.10	24.00	34.00	5.54	28.00	-0.46	28.46	28.46	29.83	0.005498	5.22	128.60	51.53	0.93
Gra+Ne	10 GR-10	Q200	809.10	24.00	34.00	4.78	28.00	-1.22	29.22	28.95	30.47	0.004077	5.03	168.95	53.61	0.83
Gra+Ne	10 GR-10	Q500	909.90	24.00	34.00	3.62	28.00	-2.38	30.38	29.23	31.20	0.002097	4.12	232.81	56.73	0.61
Gra+Ne	9.5 GR-9.5	Q50	653.10	21.70	28.30	0.72	28.30	0.72	27.58	26.22	28.54	0.002569	4.34	150.45	30.20	0.62
Gra+Ne	9.5 GR-9.5	Q200	809.10	21.70	28.30	-0.93	28.30	-0.93	29.23	26.78	30.06	0.001708	4.04	200.16	30.20	0.50
Gra+Ne	9.5 GR-9.5	Q500	909.90	21.70	28.30	-1.92	28.30	-1.92	30.22	27.12	31.02	0.001444	3.95	230.31	30.20	0.46
Gra+Ne	9.11	Bridge														
Gra+Ne	9 GR-9	Q50	653.10	21.70	28.30	1.03	28.30	1.03	27.27	26.22	28.36	0.003106	4.63	141.16	30.20	0.68
Gra+Ne	9 GR-9	Q200	809.10	21.70	28.30	-0.18	28.30	-0.18	28.48	26.78	29.54	0.002413	4.55	177.72	30.20	0.60
Gra+Ne	9 GR-9	Q500	909.90	21.70	28.30	-0.92	28.30	-0.92	29.22	27.12	30.27	0.002167	4.55	199.93	30.20	0.56
Gra+Ne	8 GR-8	Q50	653.10	21.00	25.60	-2.09	26.00	-1.69	27.69	26.52	27.93	0.000714	2.52	339.87	124.00	0.35
Gra+Ne	8 GR-8	Q200	809.10	21.00	25.60	-3.39	26.00	-2.99	28.99	26.83	29.14	0.000351	2.05	500.74	124.00	0.25
Gra+Ne	8 GR-8	Q500	909.90	21.00	25.60	-4.15	26.00	-3.75	29.75	26.99	29.89	0.000261	1.90	595.63	124.00	0.22
Gra+Ne	7.5 GR-7.5	Q50	653.10	20.00	24.00	-3.61	24.00	-3.61	27.61	25.33	27.82	0.000432	2.33	358.33	90.00	0.29
Gra+Ne	7.5 GR-7.5	Q200	809.10	20.00	24.00	-4.91	24.00	-4.91	28.91	25.77	29.08	0.000285	2.13	475.36	90.00	0.24
Gra+Ne	7.5 GR-7.5	Q500	909.90	20.00	24.00	-5.68	24.00	-5.68	29.68	26.11	29.84	0.000238	2.07	544.20	90.00	0.22
Gra+Ne	7.11	Bridge														

HEC-RAS Plan: Graveglia (Continued)

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
Gra+Ne	7 GR-7	Q50	653.10	20.00	24.00	-3.59	24.00	-3.59	27.59	25.33	27.80	0.000439	2.34	356.55	90.00	0.29
Gra+Ne	7 GR-7	Q200	809.10	20.00	24.00	-4.90	24.00	-4.90	28.90	25.77	29.07	0.000287	2.13	474.60	90.00	0.24
Gra+Ne	7 GR-7	Q500	909.90	20.00	24.00	-5.67	24.00	-5.67	29.67	26.11	29.83	0.000239	2.07	543.65	90.00	0.22
Gra+Ne	6.5 GR-6.5	Q50	653.10	19.85	25.45	-1.12	25.45	-1.12	26.57	24.76	27.68	0.002876	4.67	139.92	22.50	0.60
Gra+Ne	6.5 GR-6.5	Q200	809.10	19.85	25.45	-2.29	25.45	-2.29	27.74	25.44	28.95	0.002717	4.86	166.33	22.50	0.57
Gra+Ne	6.5 GR-6.5	Q500	909.90	19.85	25.45	-2.97	25.45	-2.97	28.42	25.85	29.70	0.002696	5.01	181.61	22.50	0.56
Gra+Ne	6.11	Bridge														
Gra+Ne	6 GR-6	Q50	653.10	19.85	25.45	0.69	25.45	0.69	24.76	24.76	26.97	0.007746	6.58	99.26	22.50	1.00
Gra+Ne	6 GR-6	Q200	809.10	19.85	25.45	0.01	25.45	0.01	25.44	25.44	27.98	0.007832	7.06	114.54	22.50	1.00
Gra+Ne	6 GR-6	Q500	909.90	19.85	25.45	-0.40	25.45	-0.40	25.85	25.85	28.60	0.007922	7.35	123.76	22.50	1.00
Gra+Ne	5.5 GR-5.5	Q50	653.10	17.80	24.40	0.12	24.40	0.12	24.28	21.64	24.94	0.001581	3.61	180.98	28.10	0.45
Gra+Ne	5.5 GR-5.5	Q200	809.10	17.80	24.40	-0.87	24.40	-0.87	25.27	22.22	26.03	0.001606	3.87	208.83	28.10	0.45
Gra+Ne	5.5 GR-5.5	Q500	909.90	17.80	24.40	-1.43	24.40	-1.43	25.83	22.58	26.66	0.001650	4.05	224.60	28.10	0.46
Gra+Ne	5.11	Bridge														
Gra+Ne	5 GR-5	Q50	653.10	17.80	24.40	0.21	24.40	0.21	24.19	21.64	24.87	0.001643	3.66	178.60	28.10	0.46
Gra+Ne	5 GR-5	Q200	809.10	17.80	24.40	-0.71	24.40	-0.71	25.11	22.22	25.91	0.001707	3.96	204.44	28.10	0.47
Gra+Ne	5 GR-5	Q500	909.90	17.80	24.40	-1.27	24.40	-1.27	25.67	22.58	26.54	0.001744	4.13	220.24	28.10	0.47
Gra+Ne	4.5 GR-4.5	Q50	653.10	16.50	21.50	-1.93	21.50	-1.93	23.43	21.80	24.58	0.002877	4.75	137.42	23.00	0.62
Gra+Ne	4.5 GR-4.5	Q200	809.10	16.50	21.50	-2.71	21.50	-2.71	24.21	22.47	25.59	0.003127	5.21	155.37	23.00	0.64
Gra+Ne	4.5 GR-4.5	Q500	909.90	16.50	21.50	-3.19	21.50	-3.19	24.69	22.88	26.21	0.003273	5.47	166.31	23.00	0.65
Gra+Ne	4.11	Bridge														
Gra+Ne	4 GR-4	Q50	653.10	16.50	21.50	0.56	21.50	0.56	20.94	21.80	24.33	0.013894	8.16	80.01	23.00	1.40
Gra+Ne	4 GR-4	Q200	809.10	16.50	21.50	-0.04	21.50	-0.04	21.54	22.47	25.32	0.013293	8.62	93.84	23.00	1.36
Gra+Ne	4 GR-4	Q500	909.90	16.50	21.50	-0.41	21.50	-0.41	21.91	22.88	25.93	0.013037	8.89	102.34	23.00	1.35
Gra+Ne	3.5 GR-3.5	Q50	653.10	14.30	20.50	3.29	20.50	3.29	17.21	18.41	21.31	0.022987	8.97	72.84	25.00	1.68
Gra+Ne	3.5 GR-3.5	Q200	809.10	14.30	20.50	2.83	20.50	2.83	17.67	19.04	22.36	0.022537	9.60	84.31	25.00	1.67
Gra+Ne	3.5 GR-3.5	Q500	909.90	14.30	20.50	2.54	20.50	2.54	17.96	19.43	23.00	0.022289	9.95	91.41	25.00	1.66
Gra+Ne	3.11	Bridge														
Gra+Ne	3 GR-3	Q50	653.10	14.30	20.50	3.19	20.50	3.19	17.31	18.41	21.15	0.020866	8.69	75.17	25.00	1.60
Gra+Ne	3 GR-3	Q200	809.10	14.30	20.50	2.73	20.50	2.73	17.77	19.04	22.21	0.020748	9.34	86.63	25.00	1.60
Gra+Ne	3 GR-3	Q500	909.90	14.30	20.50	2.45	20.50	2.45	18.05	19.43	22.85	0.020655	9.71	93.74	25.00	1.60
Gra+Ne	2 GR-2	Q50	653.10	14.00	18.00	0.84	18.00	0.84	17.16	17.22	18.48	0.007203	5.10	128.17	51.95	1.04
Gra+Ne	2 GR-2	Q200	809.10	14.00	18.00	0.69	18.00	0.69	17.31	17.65	19.11	0.009293	5.95	135.98	52.85	1.18
Gra+Ne	2 GR-2	Q500	909.90	14.00	18.00	-1.44	18.00	-1.44	19.44	17.90	20.08	0.001689	3.56	255.93	57.00	0.54
Gra+Ne	1.5 GR-1.5	Q50	653.10	12.52	20.03	4.00	20.03	4.00	16.03	14.89	16.55	0.002013	3.20	204.06	58.90	0.55
Gra+Ne	1.5 GR-1.5	Q200	809.10	12.52	20.03	2.30	20.03	2.30	17.73	15.24	18.09	0.000871	2.66	304.47	58.90	0.37
Gra+Ne	1.5 GR-1.5	Q500	909.90	12.52	20.03	0.56	20.03	0.56	19.47	15.46	19.73	0.000447	2.24	406.97	58.90	0.27

HEC-RAS Plan: Graveglia (Continued)

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
Gra+Ne	1.11		Bridge													
Gra+Ne	1.0 GR-1	Q50	653.10	12.52	20.03	4.29	20.03	4.29	15.74	14.89	16.36	0.002667	3.50	186.86	58.90	0.63
Gra+Ne	1.0 GR-1	Q200	809.10	12.52	20.03	2.42	20.03	2.42	17.61	15.25	17.99	0.000944	2.73	296.74	58.90	0.39
Gra+Ne	1.0 GR-1	Q500	909.90	12.52	20.03	0.73	20.03	0.73	19.30	15.47	19.56	0.000486	2.30	396.13	58.90	0.28
Gra+Ne	0.3 GR-0.3	Q50	653.10	10.09	15.37	-0.26	14.75	-0.88	15.63	14.33	16.11	0.001692	3.08	219.17	83.68	0.51
Gra+Ne	0.3 GR-0.3	Q200	809.10	10.09	15.37	-2.27	14.75	-2.89	17.64	14.70	17.87	0.000502	2.24	394.80	88.78	0.30
Gra+Ne	0.3 GR-0.3	Q500	909.90	10.09	15.37	-3.97	14.75	-4.59	19.34	14.94	19.50	0.000236	1.83	545.98	88.80	0.22
Gra+Ne	0.2 GR-0.2	Q50	653.10	10.09	12.37	-3.14	12.74	-2.77	15.51	14.12	16.02	0.001354	3.39	237.89	94.62	0.49
Gra+Ne	0.2 GR-0.2	Q200	809.10	10.09	12.37	-5.26	12.74	-4.89	17.63	14.58	17.84	0.000385	2.30	438.50	94.70	0.28
Gra+Ne	0.2 GR-0.2	Q500	909.90	10.09	12.37	-6.97	12.74	-6.60	19.34	14.81	19.48	0.000188	1.86	600.50	94.70	0.20
Gra+Ne	0.1 GR-0.1	Q50	653.10	9.74	12.53	-3.14	13.43	-2.24	15.67	12.87	15.86	0.000442	1.98	351.62	82.37	0.28
Gra+Ne	0.1 GR-0.1	Q200	809.10	9.74	12.53	-5.13	13.43	-4.23	17.66	13.22	17.80	0.000206	1.69	515.75	82.37	0.20
Gra+Ne	0.1 GR-0.1	Q500	909.90	9.74	12.53	-6.82	13.43	-5.92	19.35	13.45	19.46	0.000123	1.50	654.89	82.37	0.16

