



REGIONE LIGURIA



Autorità di Bacino Distrettuale
dell'Appennino Settentrionale

TORRENTE LAVAGNA

PIANO DI BACINO STRALCIO PER L'ASSETTO IDROGEOLOGICO

VERIFICHE IDRAULICHE AFFLUENTI

PRIMA APPROVAZIONE	Delibera del Consiglio Provinciale di Genova n. 29 del 09/04/2002
ULTIMA MODIFICA DELL'ELABORATO	Decreto del Direttore Generale n. 2461 del 22/04/2020
ENTRATA IN VIGORE	BURL n. 20 del 13/05/2020 – parte II

Piano di bacino torrente Lavagna

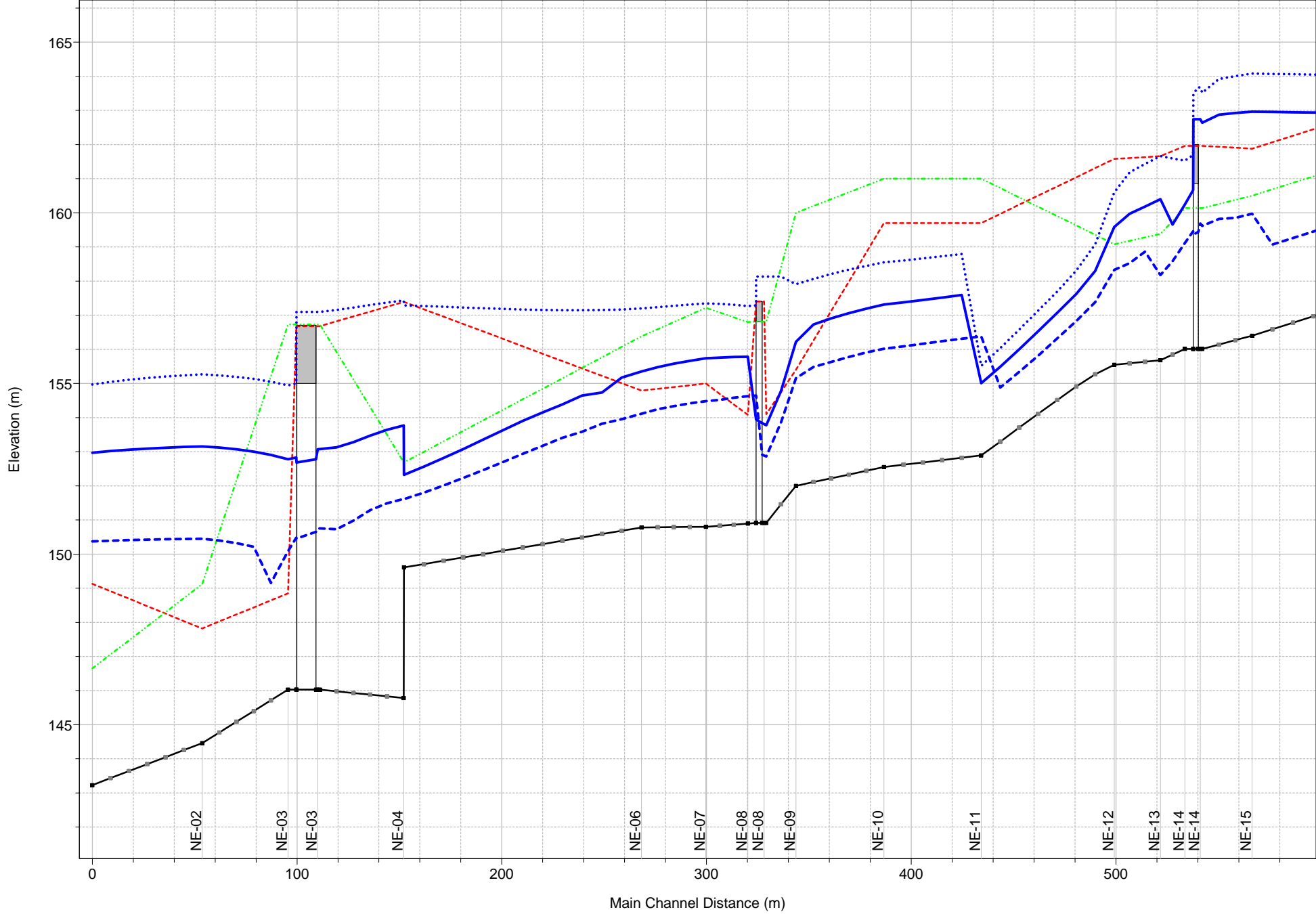
T. Neirone

tratto unico – dalla sez. NE15 alla NE1

- **Profili idraulici**
- **Sezioni**
- **Tabelle dei risultati**

Torrente Neirone Plan: Torrente Neirone

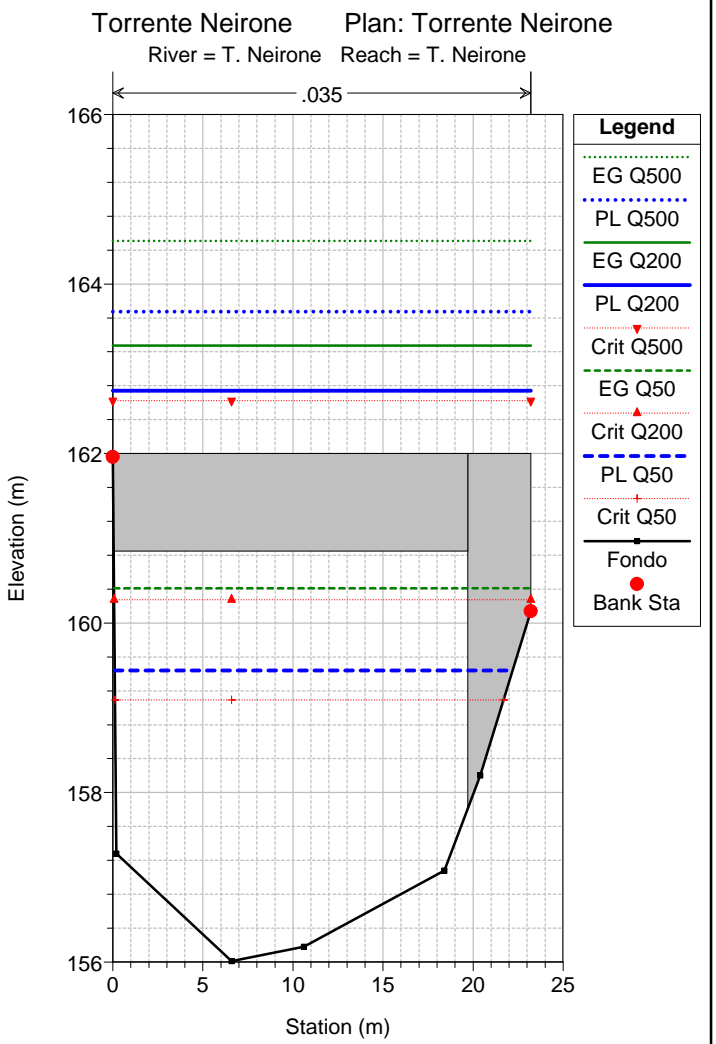
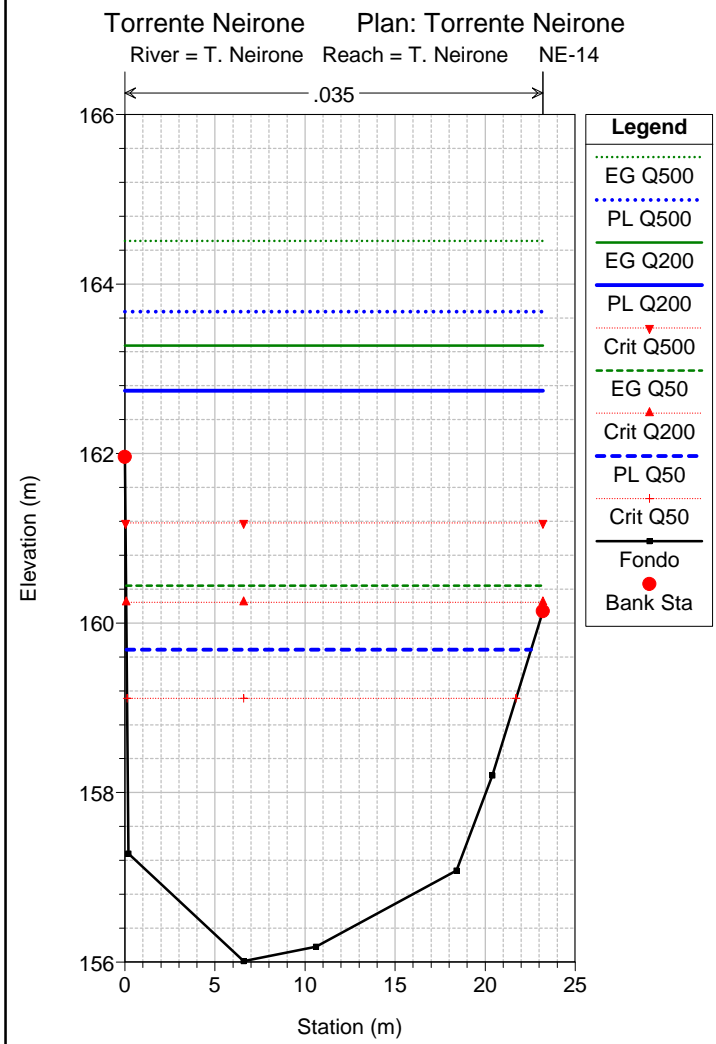
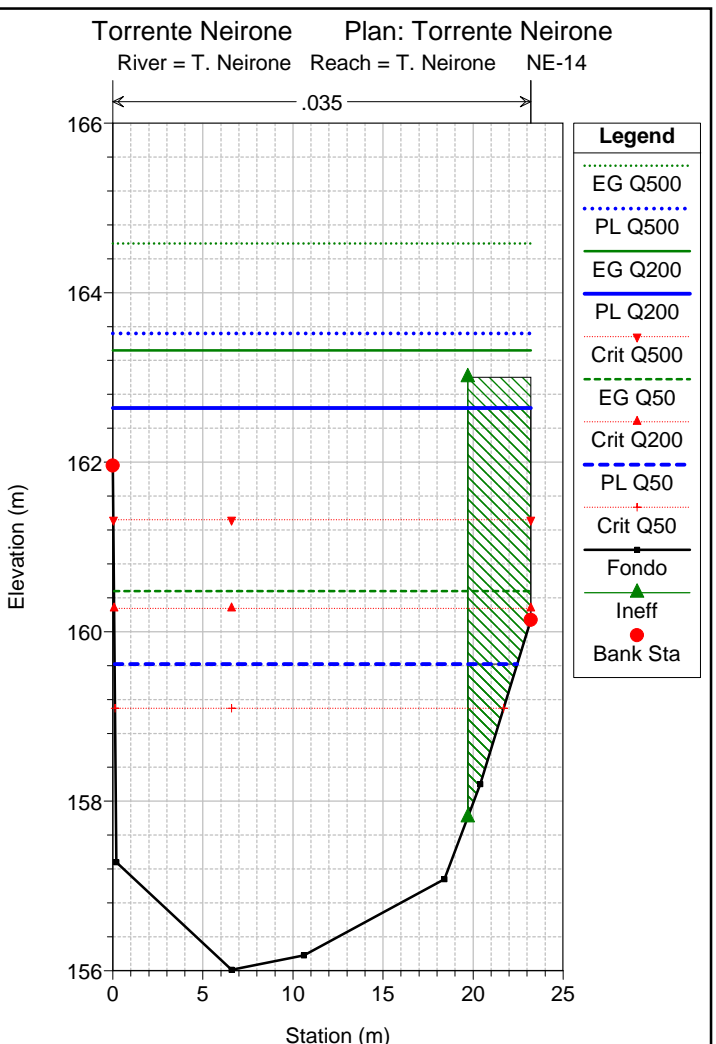
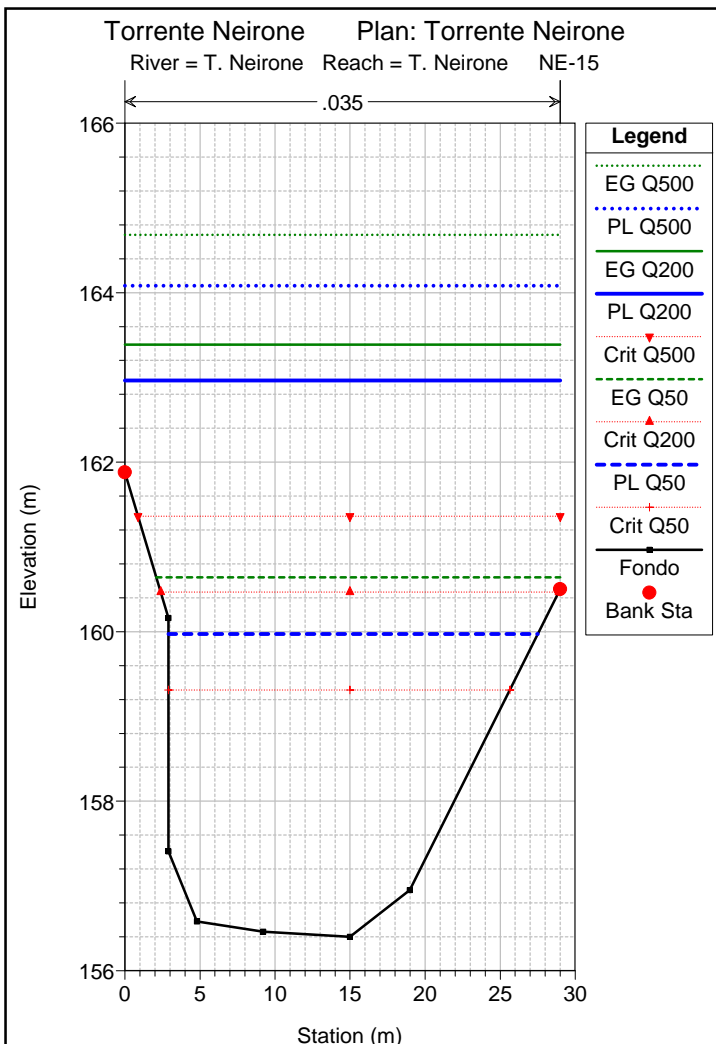
T. Neirone T. Neirone

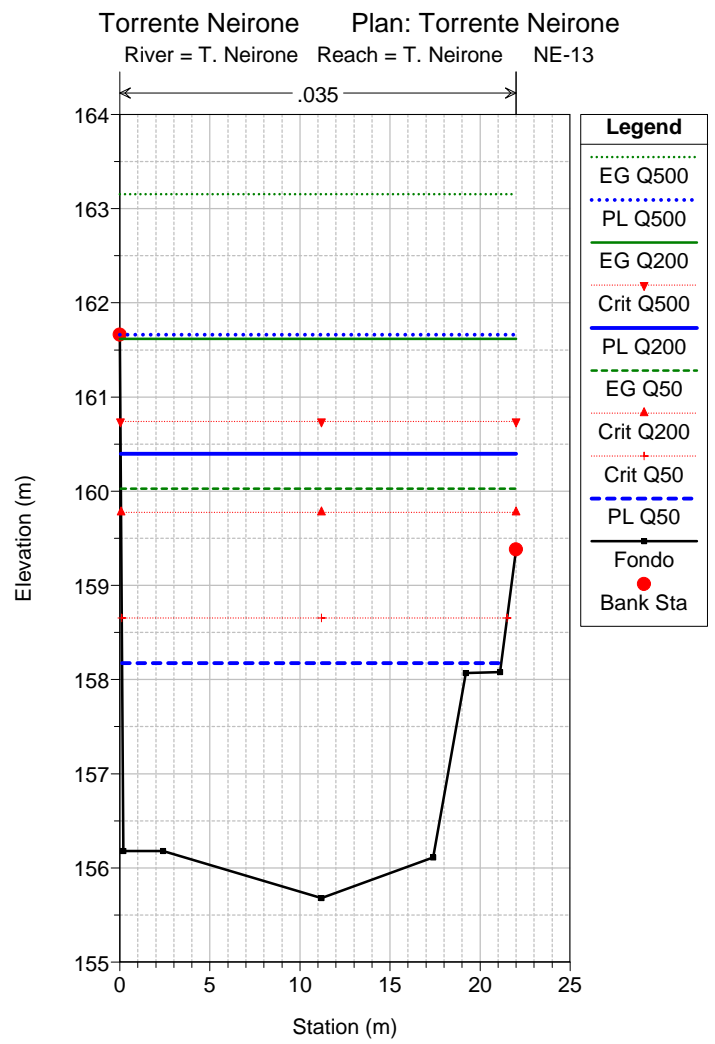
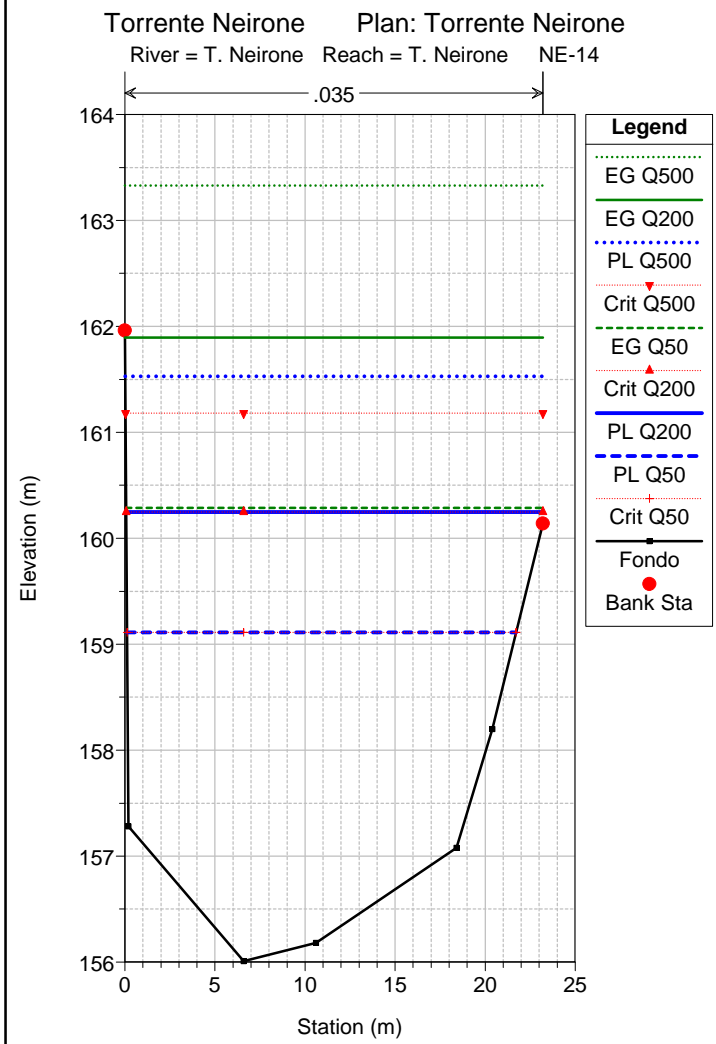
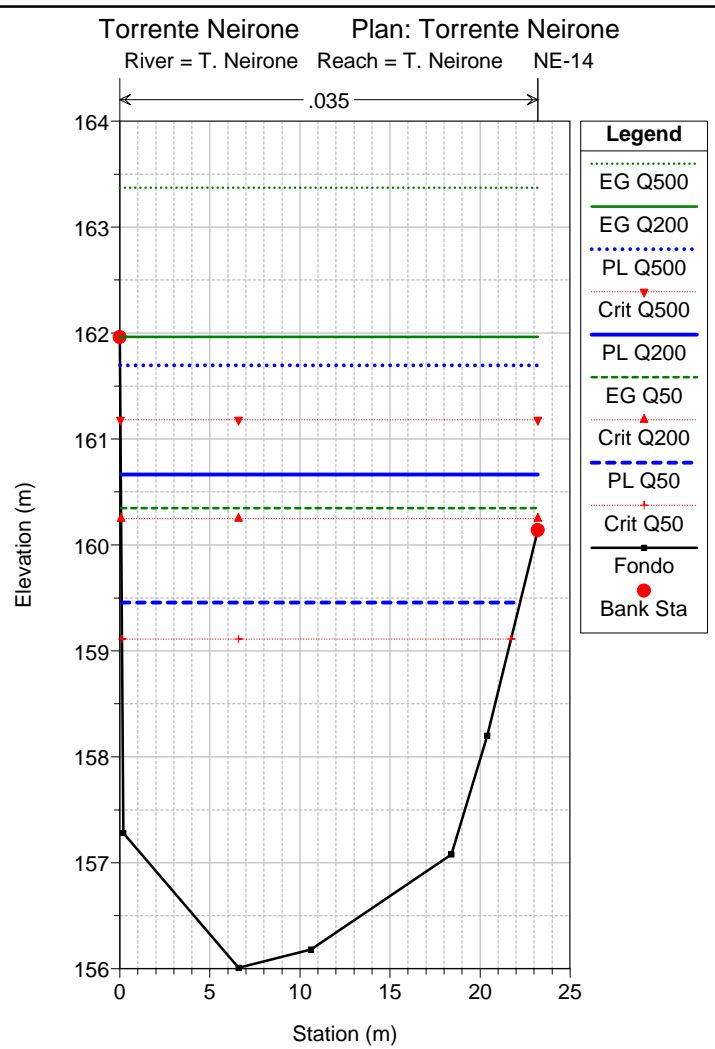
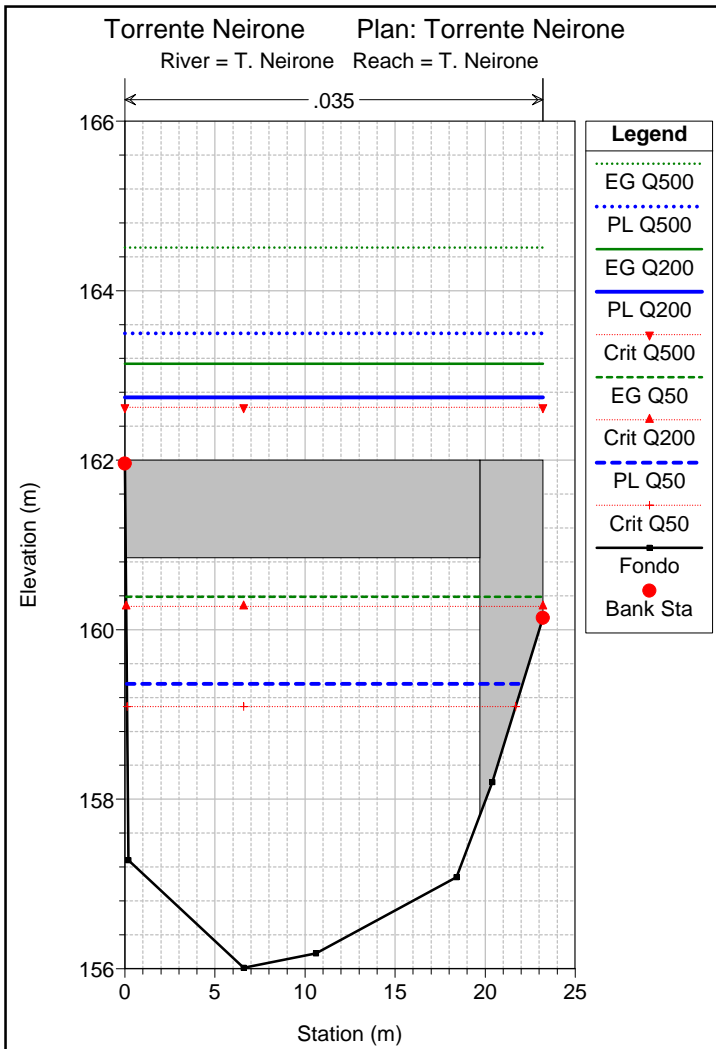


Legend

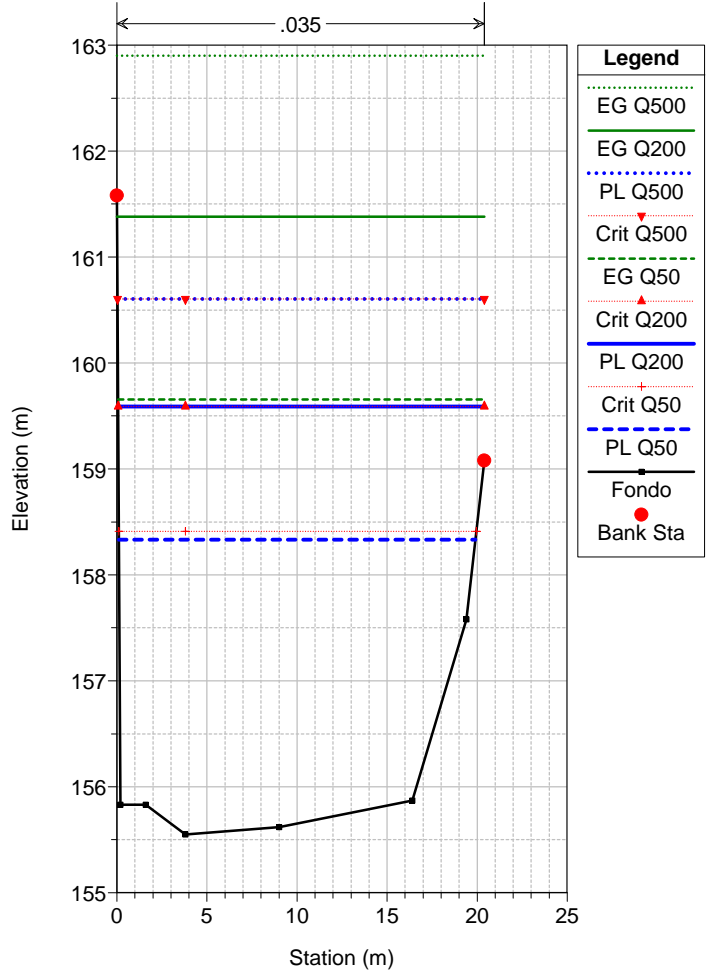
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- PL Q200 (Solid Blue Line)
- PL Q50 (Dashed Blue Line)
- Fondo (Solid Black Line with Markers)
- Sponda sx (Dashed Red Line)
- Sponda dx (Dotted Green Line)

1 cm Horiz. = 25 m 1 cm Vert. = 1.5 m

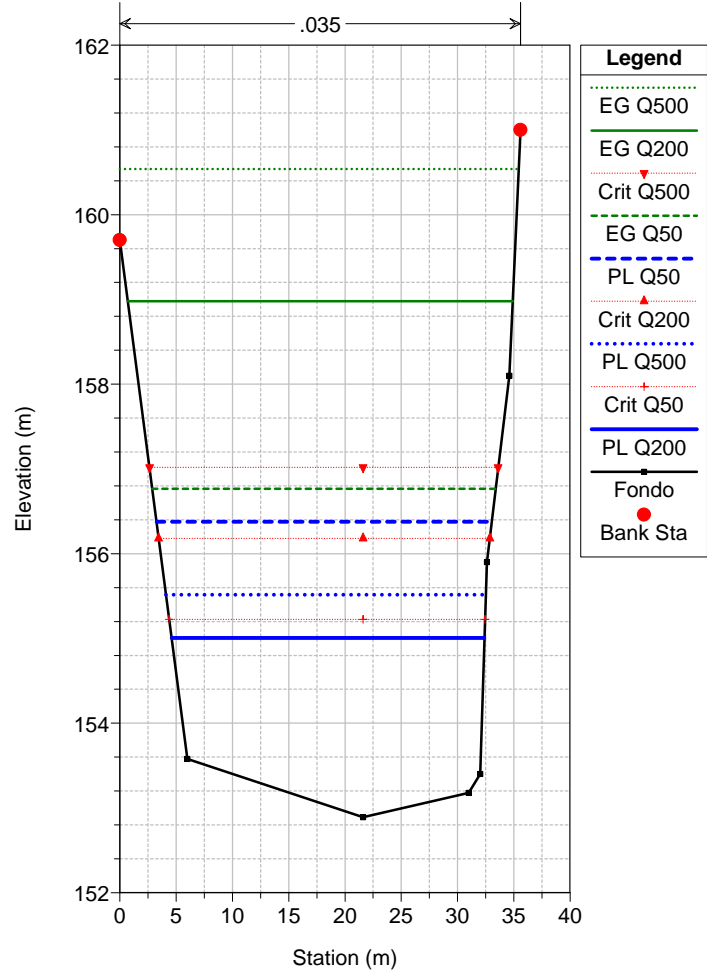




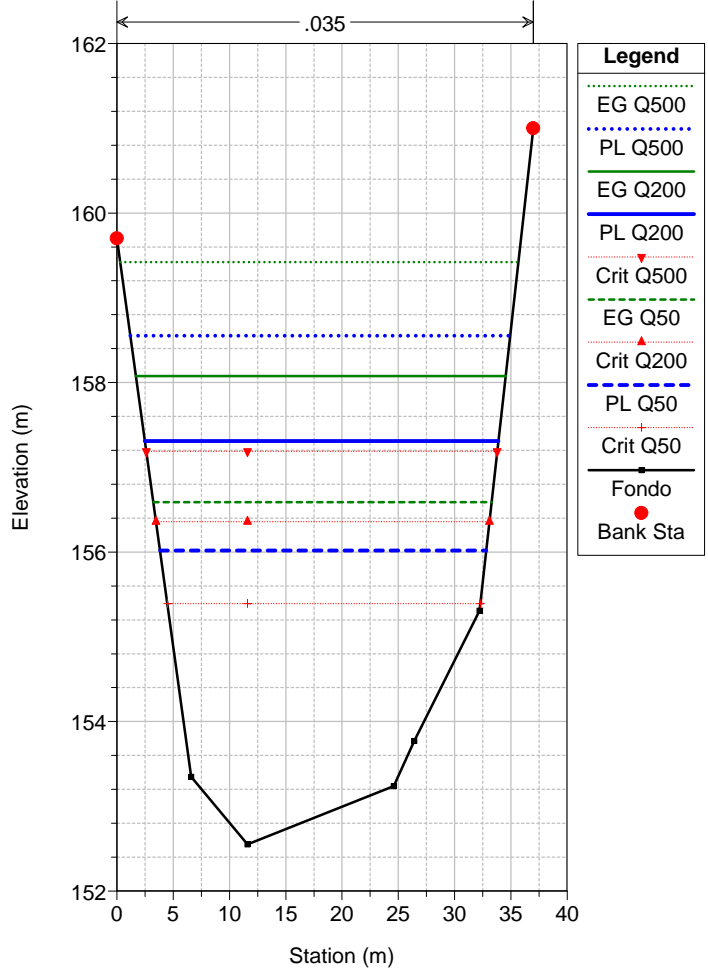
Torrente Neirone Plan: Torrente Neirone
 River = T. Neirone Reach = T. Neirone NE-12



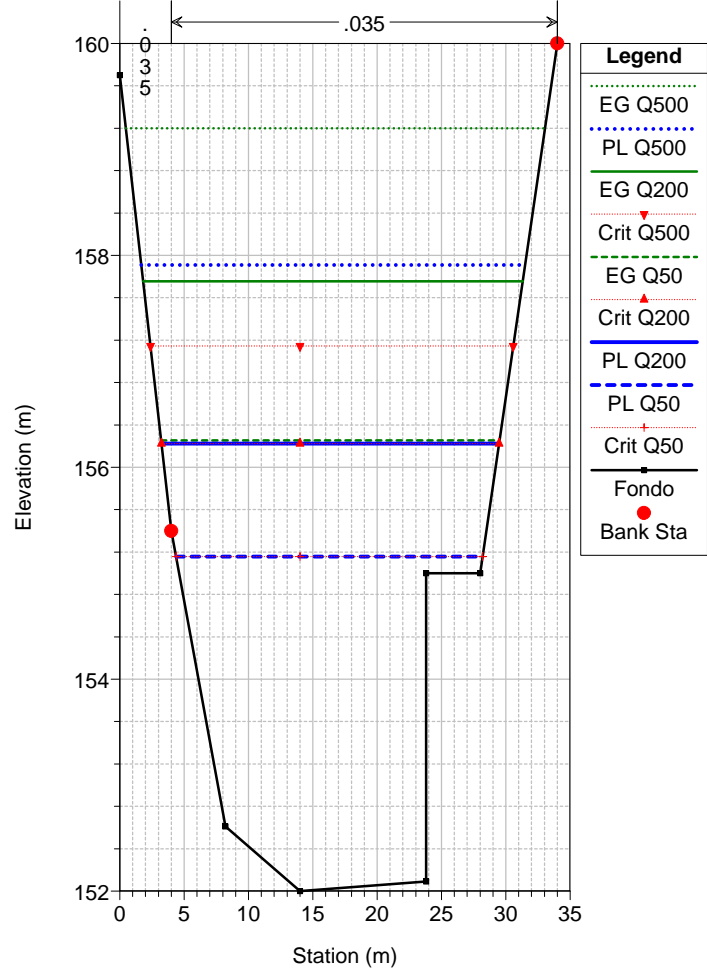
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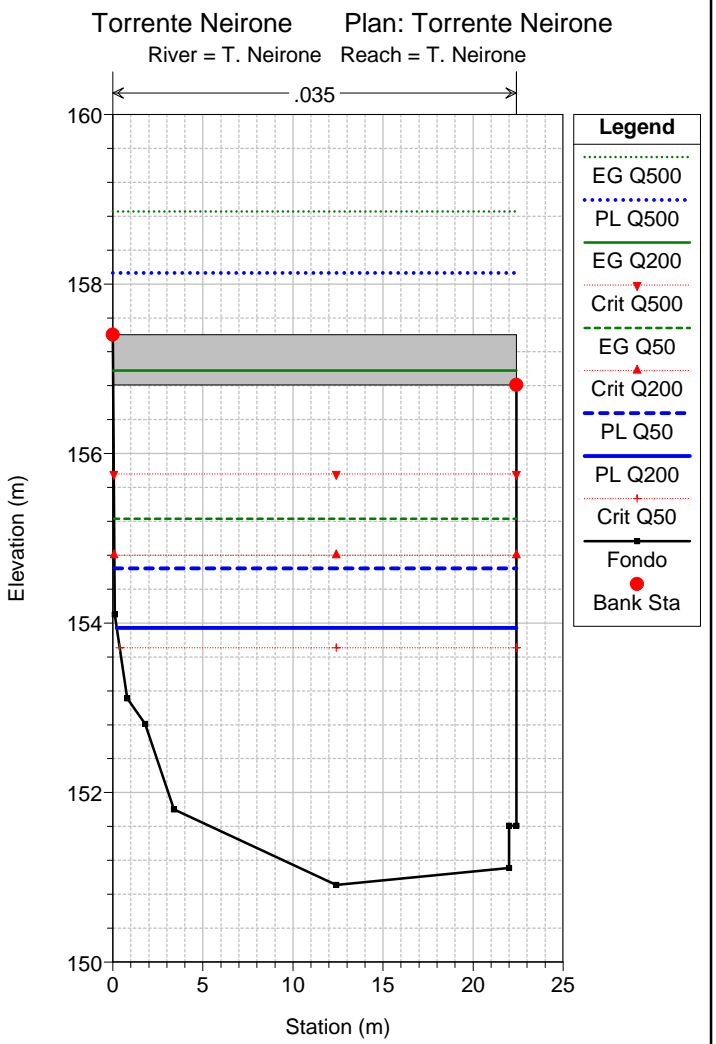
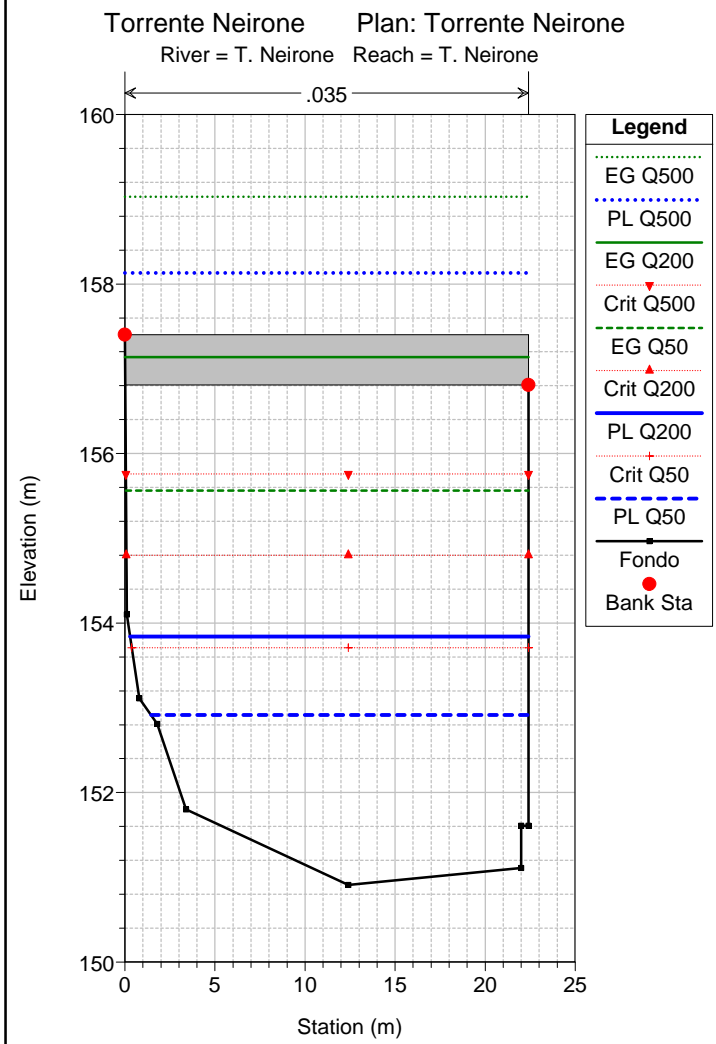
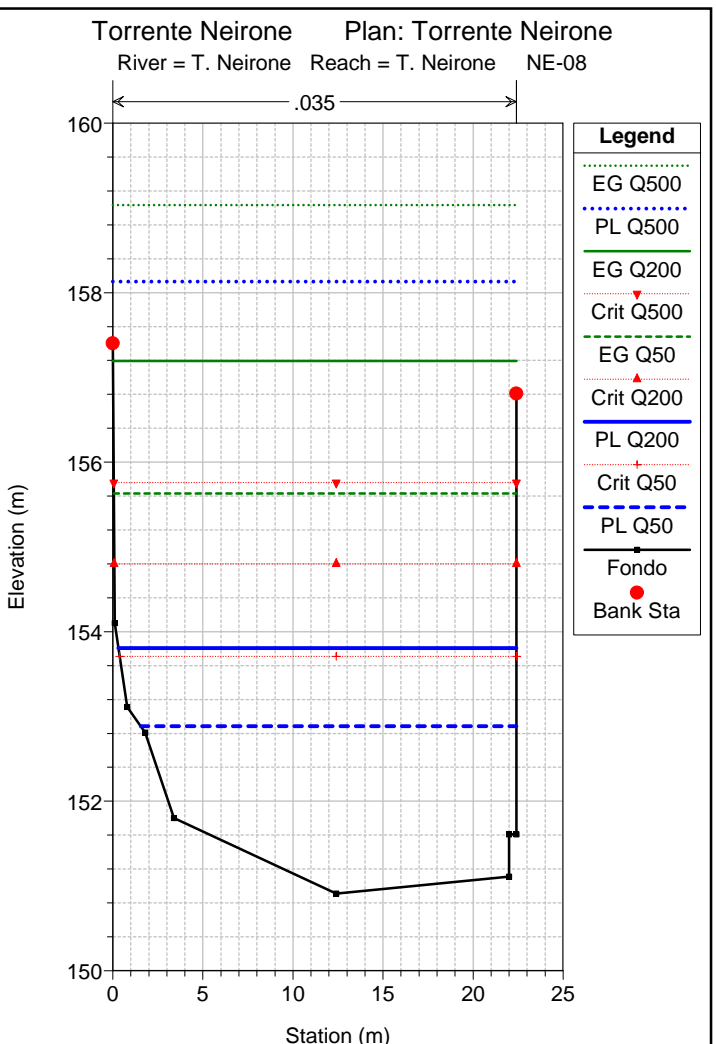
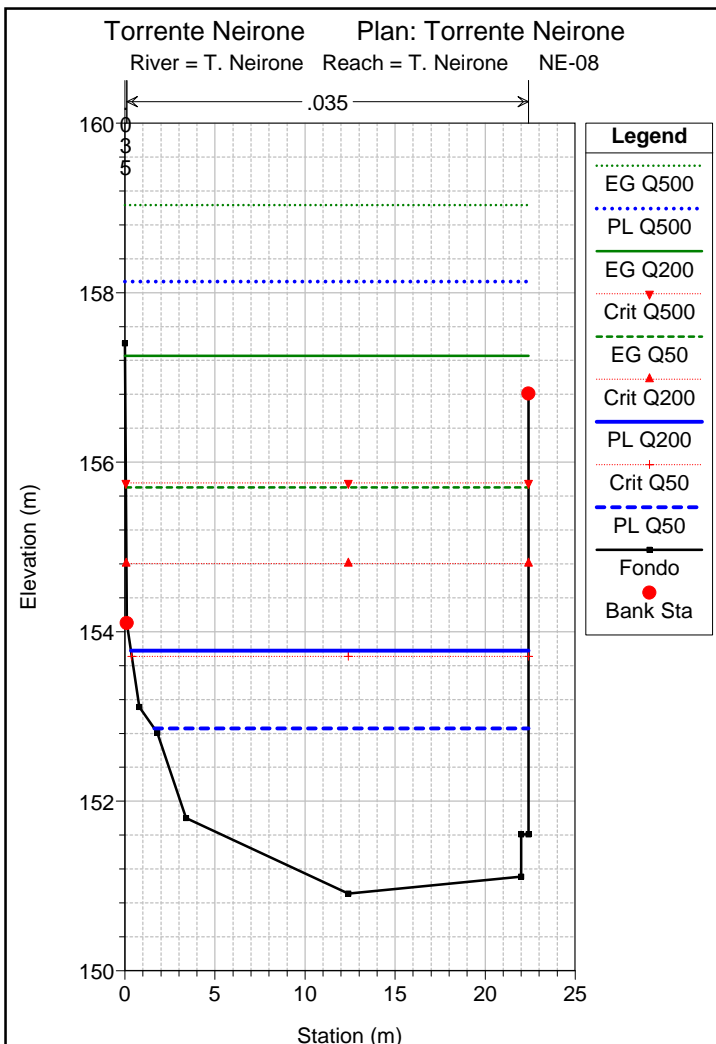


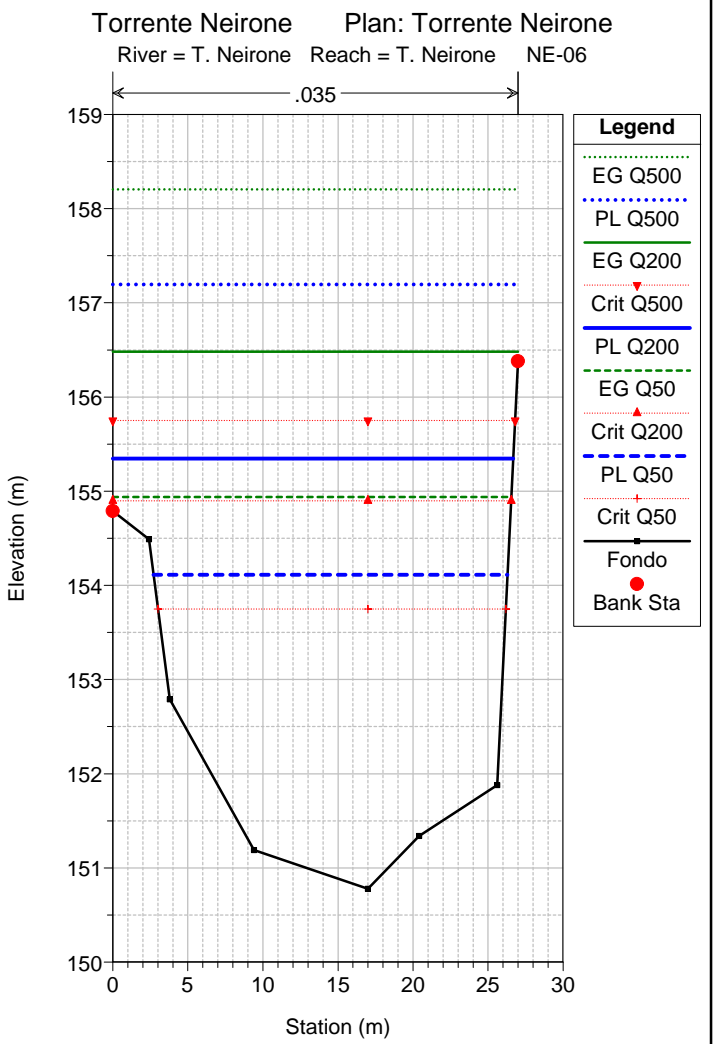
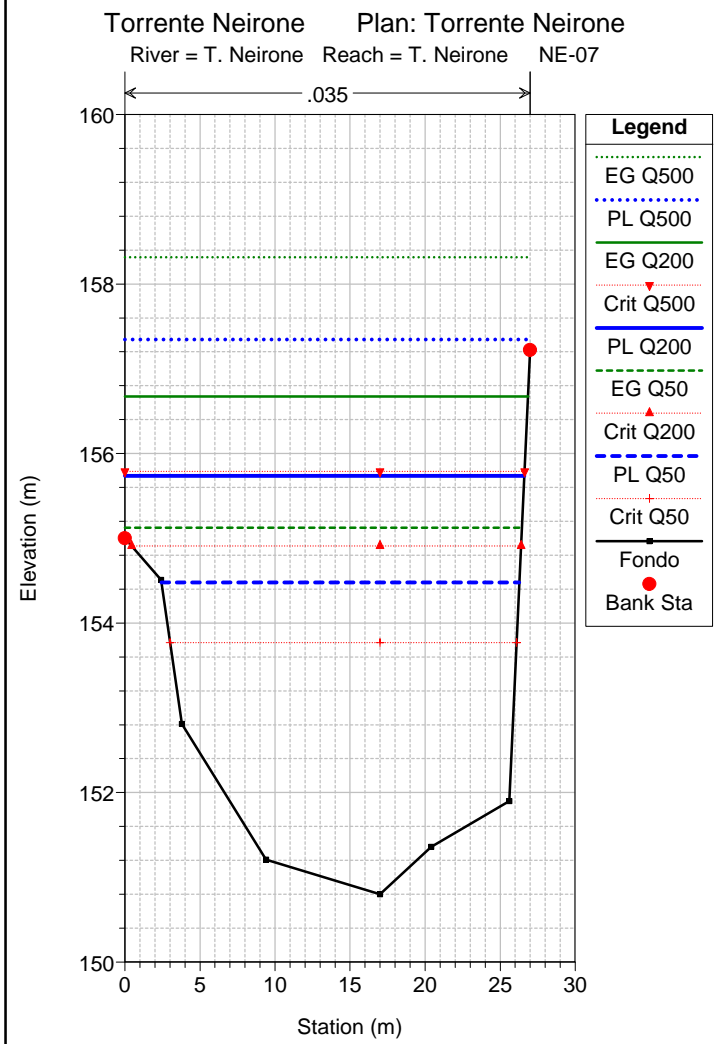
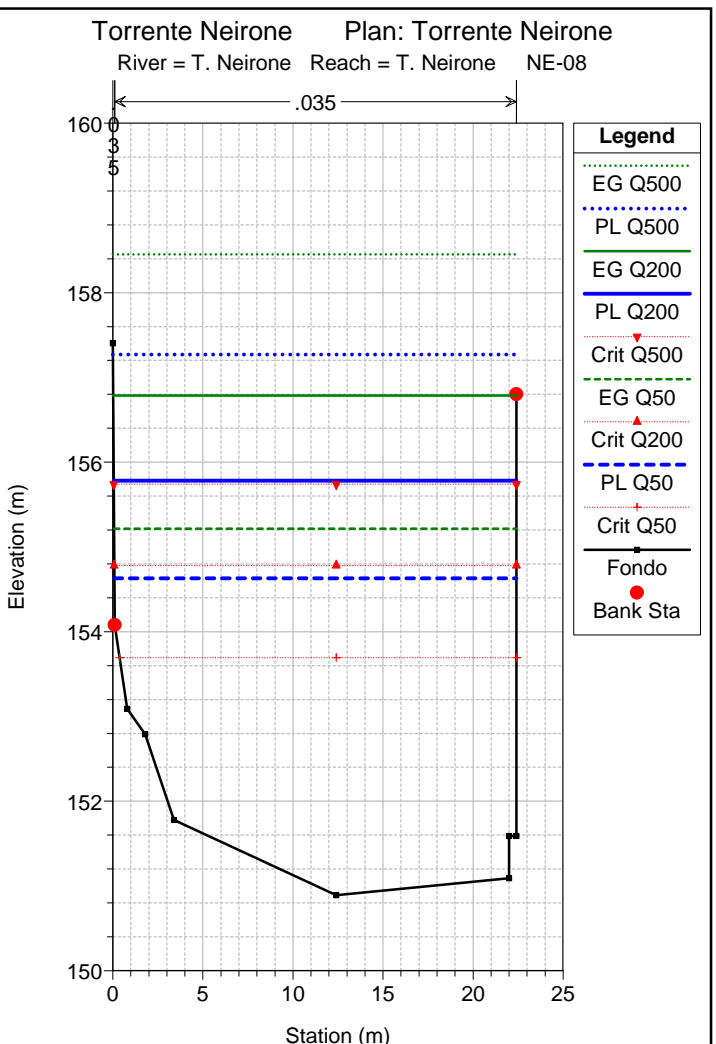
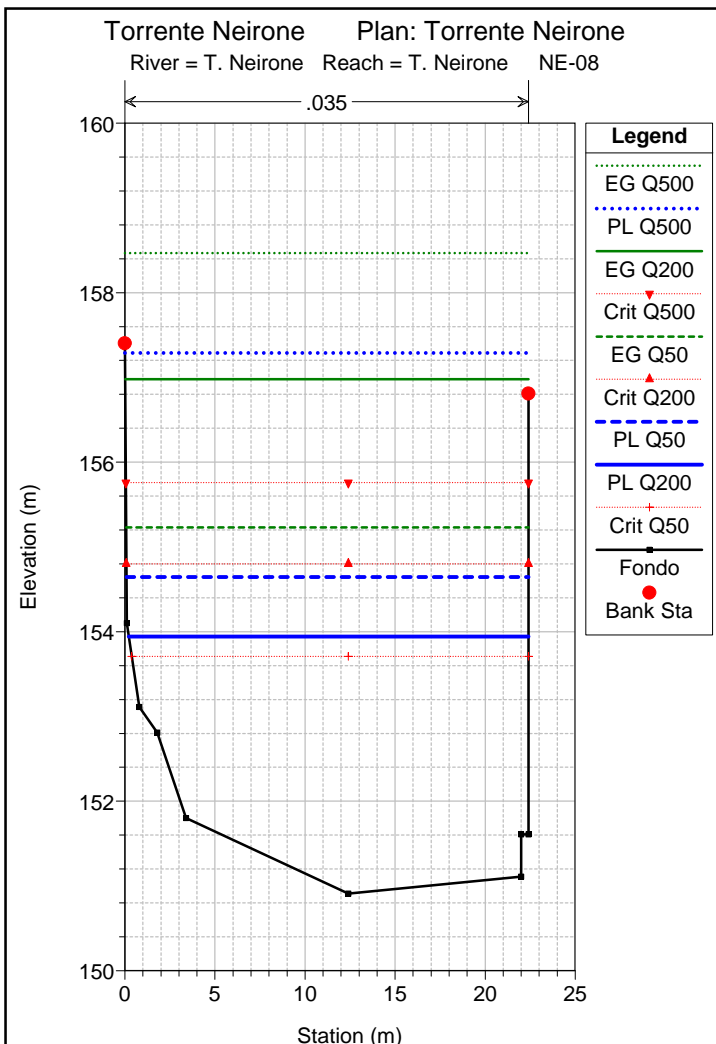
Torrente Neirone Plan: Torrente Neirone
 River = T. Neirone Reach = T. Neirone NE-10

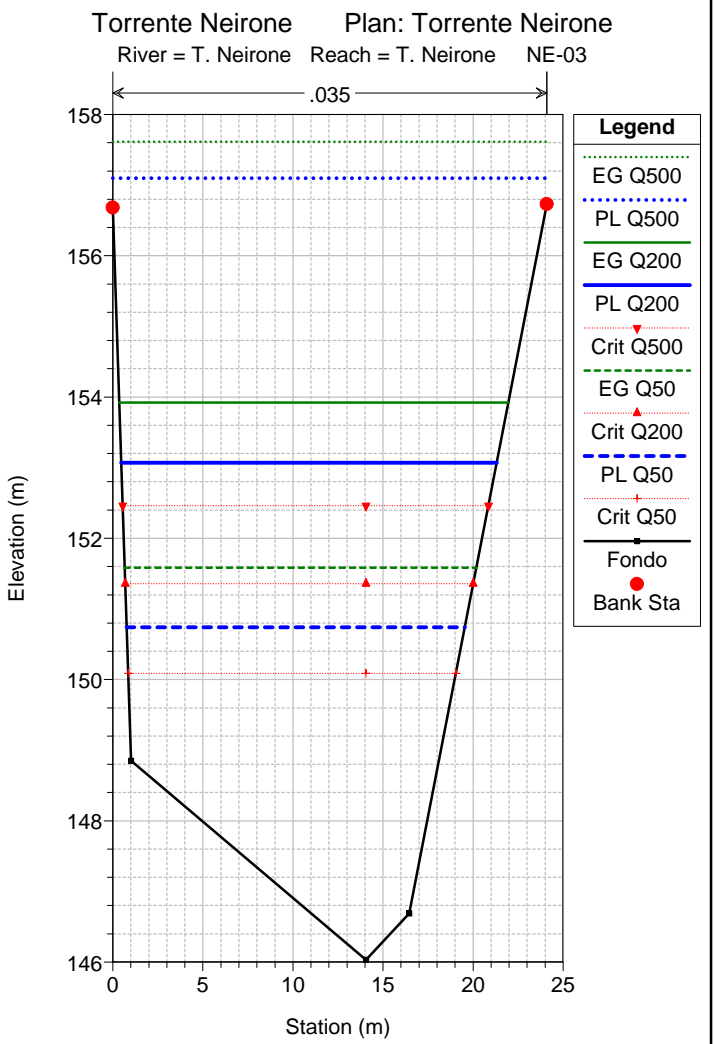
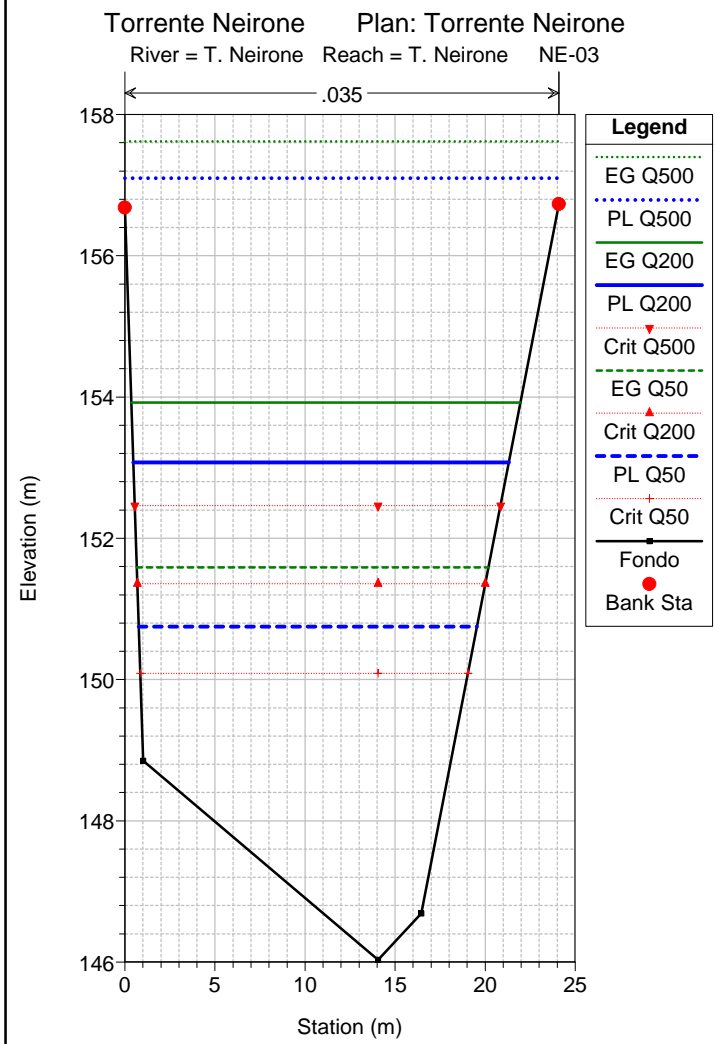
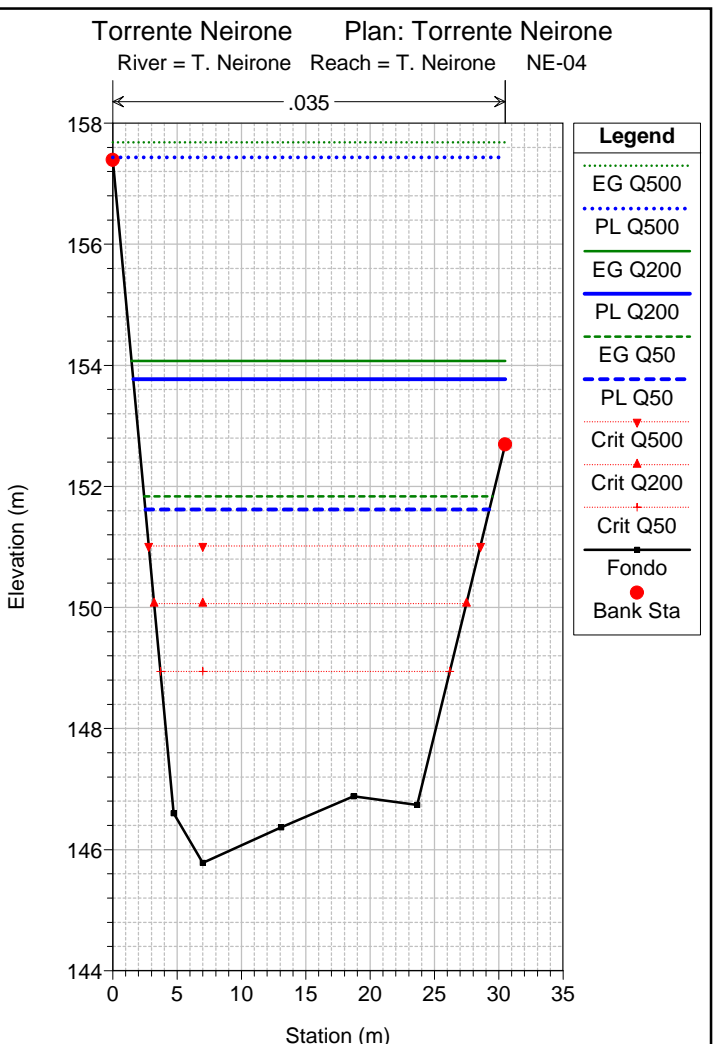
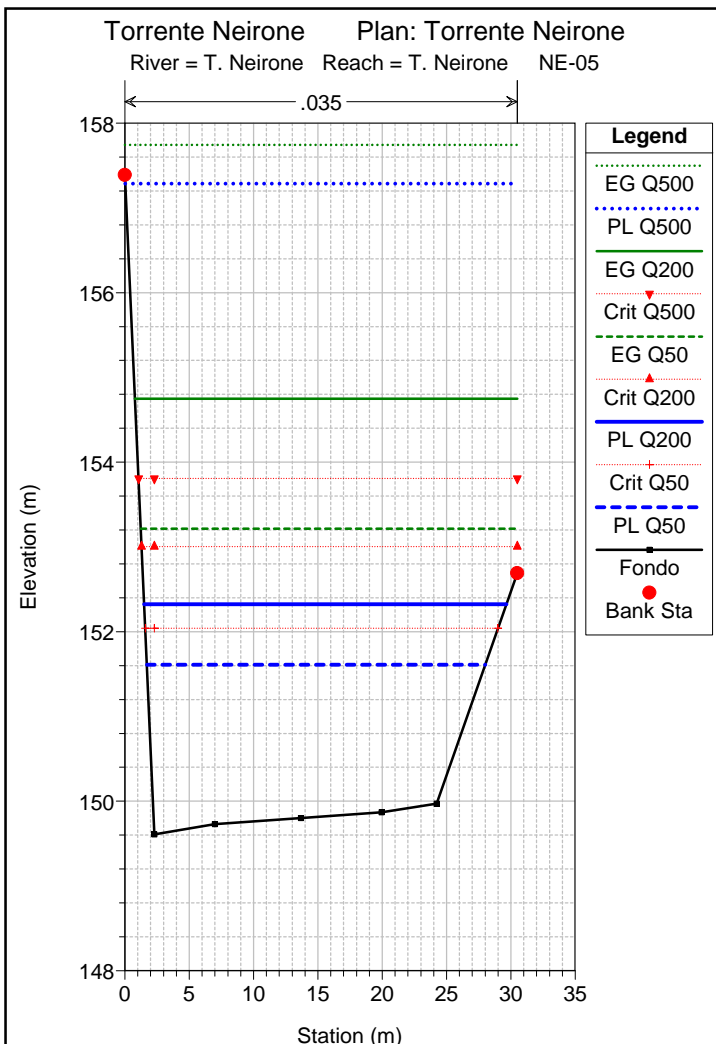


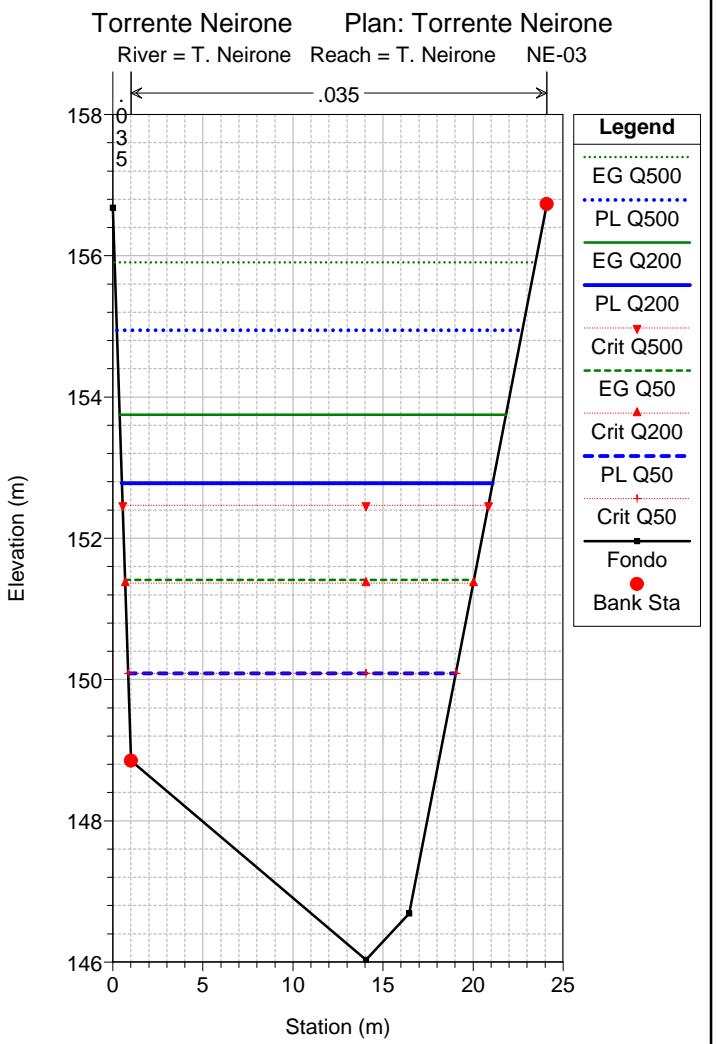
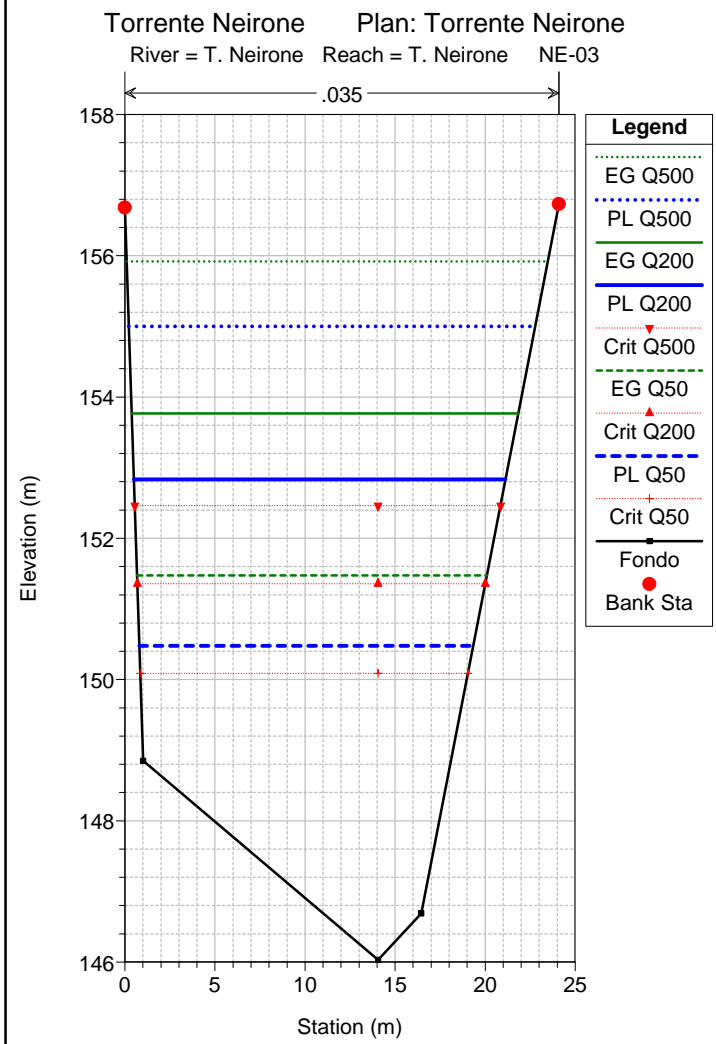
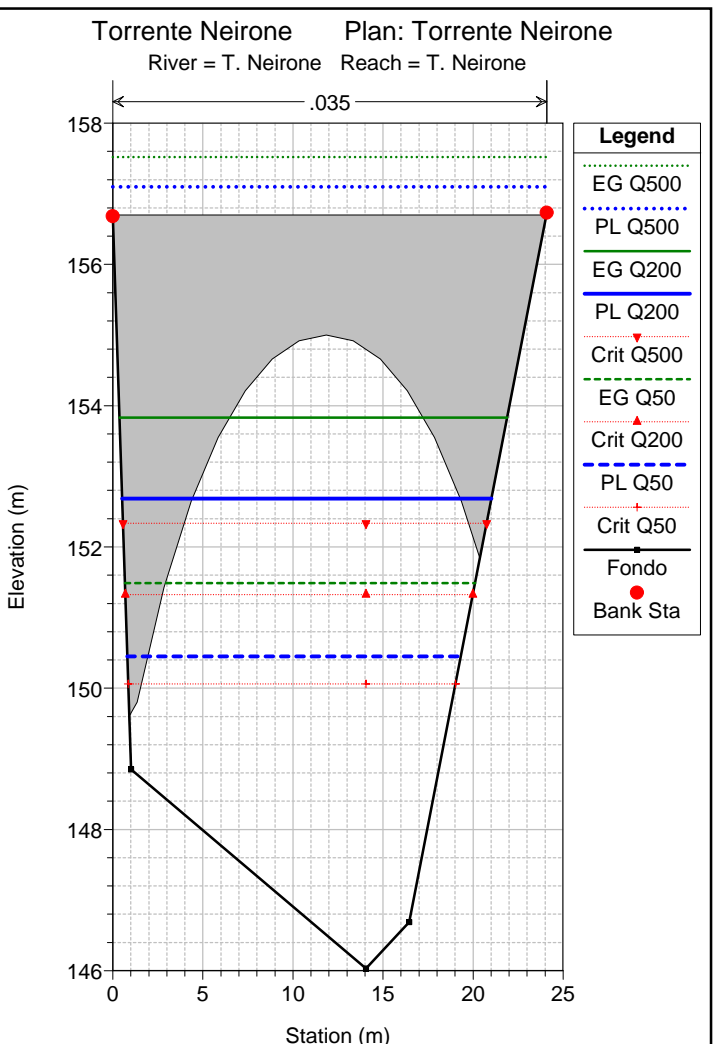
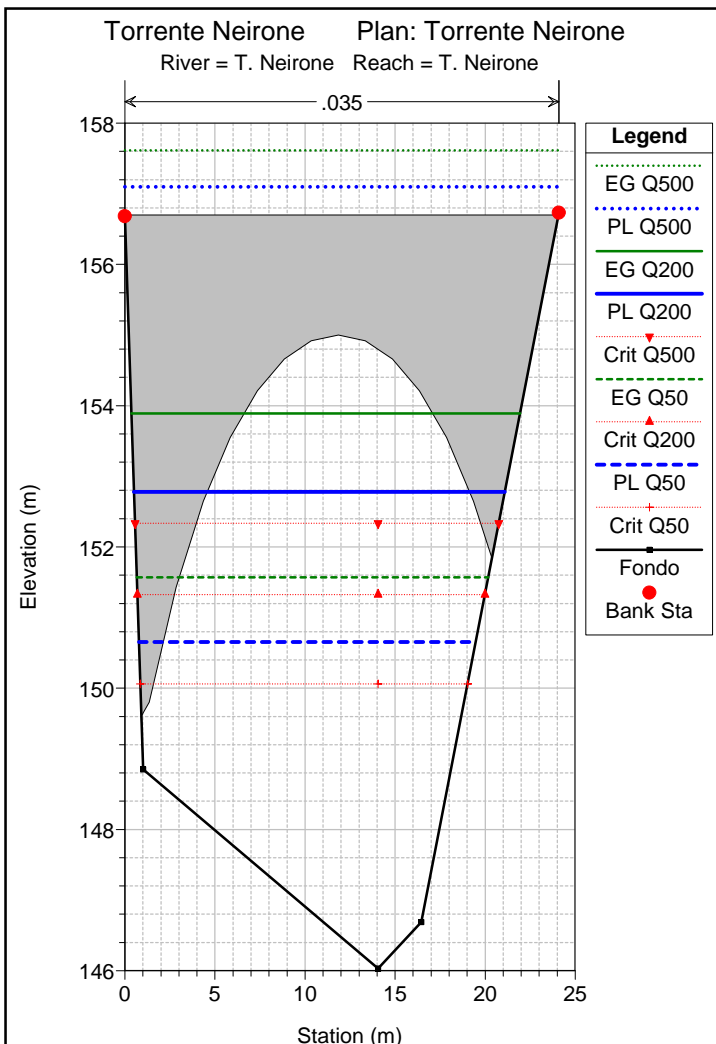
Torrente Neirone Plan: Torrente Neirone
 River = T. Neirone Reach = T. Neirone NE-09





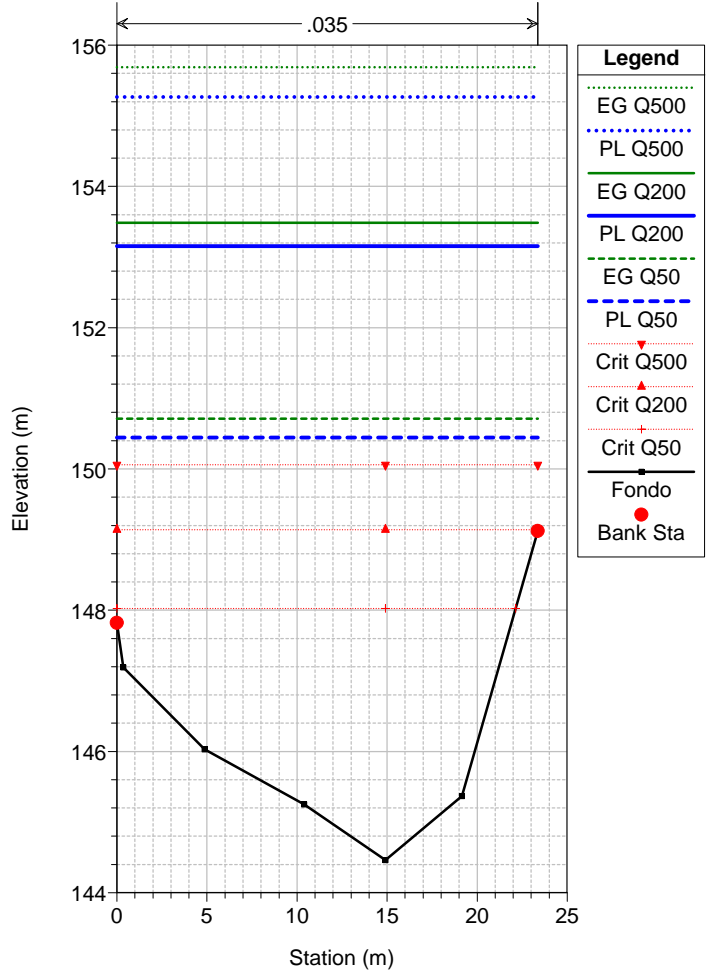






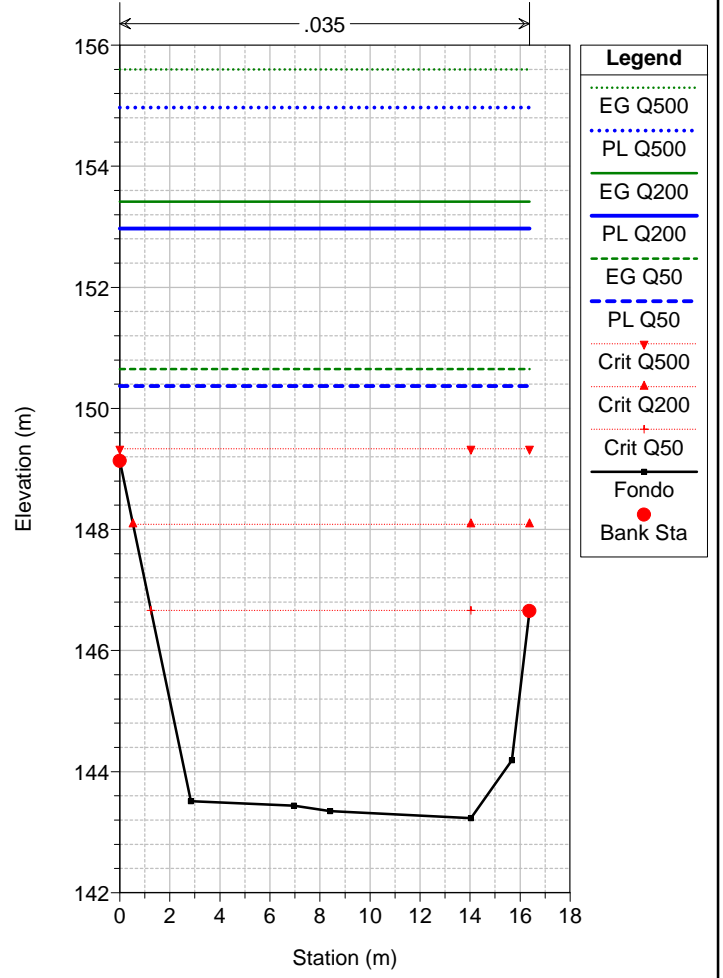
Torrente Neirone Plan: Torrente Neirone

River = T. Neirone Reach = T. Neirone NE-02



Torrente Neirone Plan: Torrente Neirone

River = T. Neirone Reach = T. Neirone NE-01



HEC-RAS Plan: T. Neirone River: T. Neirone Reach: T. Neirone (Continued)

Reach	River Sta		Profile	Q Total (m3/s)	Min Ch El (m)	W.S. Elev (m)	LOB Elev (m)	L. Freeboard (m)	ROB Elev (m)	R. Freeboard (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
T. Neirone	41	NE-08	Q50	244.00	150.91	154.64	157.40	2.76	156.81	2.17	153.71	155.23	0.003883	3.40	71.85	22.32	0.60
T. Neirone	41	NE-08	Q200	434.00	150.91	153.94	157.40	3.46	156.81	2.87	154.80	156.98	0.025910	7.72	56.20	22.19	1.55
T. Neirone	41	NE-08	Q500	630.00	150.91	157.29	157.40	0.11	156.81	-0.48	155.76	158.47	0.004427	4.81	131.02	22.40	0.63
T. Neirone	40	NE-08	Q50	244.00	150.89	154.63	154.08	-0.55	156.80	2.17	153.69	155.21	0.003761	3.39	71.97	22.32	0.60
T. Neirone	40	NE-08	Q200	434.00	150.89	155.78	154.08	-1.70	156.80	1.02	154.78	156.79	0.004552	4.45	97.68	22.35	0.68
T. Neirone	40	NE-08	Q500	630.00	150.89	157.27	154.08	-3.19	156.80	-0.47	155.74	158.45	0.003871	4.81	131.03	22.40	0.63
T. Neirone	39.9	NE-07	Q50	244.00	150.80	154.48	155.00	0.52	157.22	2.74	153.77	155.12	0.004445	3.55	68.66	23.85	0.67
T. Neirone	39.9	NE-07	Q200	434.00	150.80	155.74	155.00	-0.74	157.22	1.48	154.91	156.67	0.004741	4.29	101.23	26.61	0.70
T. Neirone	39.9	NE-07	Q500	630.00	150.80	157.35	155.00	-2.35	157.22	-0.13	155.79	158.32	0.003488	4.36	144.40	27.00	0.60
T. Neirone	39	NE-06	Q50	244.00	150.78	154.11	154.79	0.68	156.38	2.27	153.75	154.94	0.006497	4.03	60.55	23.58	0.80
T. Neirone	39	NE-06	Q200	434.00	150.78	155.35	154.79	-0.56	156.38	1.03	154.90	156.48	0.006388	4.72	91.92	26.68	0.81
T. Neirone	39	NE-06	Q500	630.00	150.78	157.20	154.79	-2.41	156.38	-0.82	155.75	158.20	0.003707	4.45	141.67	27.00	0.62
T. Neirone	30.1	NE-05	Q50	244.00	149.61	151.61	157.39	5.78	152.69	1.08	152.04	153.22	0.021629	5.62	43.45	26.29	1.39
T. Neirone	30.1	NE-05	Q200	434.00	149.61	152.32	157.39	5.07	152.69	0.37	153.00	154.75	0.022352	6.90	62.93	28.15	1.47
T. Neirone	30.1	NE-05	Q500	630.00	149.61	157.29	157.39	0.10	152.69	-4.60	153.81	157.75	0.001257	3.00	210.32	30.46	0.36
T. Neirone	30	NE-04	Q50	244.00	145.78	151.62	157.39	5.77	152.69	1.07	148.94	151.84	0.000944	2.08	117.12	26.73	0.32
T. Neirone	30	NE-04	Q200	434.00	145.78	153.77	157.39	3.62	152.69	-1.08	150.07	154.07	0.000906	2.44	177.67	28.91	0.31
T. Neirone	30	NE-04	Q500	630.00	145.78	157.44	157.39	-0.05	152.69	-4.75	151.02	157.68	0.000498	2.20	286.58	30.49	0.23
T. Neirone	20.3	NE-03	Q50	244.00	146.03	150.75	156.68	5.93	156.73	5.98	150.09	151.59	0.005520	4.05	60.24	18.78	0.72
T. Neirone	20.3	NE-03	Q200	434.00	146.03	153.07	156.68	3.61	156.73	3.66	151.36	153.92	0.003467	4.08	106.31	20.85	0.58
T. Neirone	20.3	NE-03	Q500	630.00	146.03	157.10	156.68	-0.42	156.73	-0.37	152.46	157.62	0.001346	3.19	197.35	24.10	0.36
T. Neirone	20.2	NE-03	Q50	244.00	146.03	150.74	156.68	5.94	156.73	5.99	150.09	151.58	0.005572	4.06	60.05	18.78	0.73
T. Neirone	20.2	NE-03	Q200	434.00	146.03	153.07	156.68	3.61	156.73	3.66	151.36	153.92	0.003477	4.09	106.20	20.85	0.58
T. Neirone	20.2	NE-03	Q500	630.00	146.03	157.10	156.68	-0.42	156.73	-0.37	152.46	157.62	0.001347	3.19	197.31	24.10	0.36
T. Neirone	20.15		Bridge														
T. Neirone	20.1	NE-03	Q50	244.00	146.03	150.48	156.68	6.20	156.73	6.25	150.09	151.48	0.007135	4.42	55.17	18.54	0.82
T. Neirone	20.1	NE-03	Q200	434.00	146.03	152.83	156.68	3.85	156.73	3.90	151.36	153.77	0.003970	4.29	101.27	20.64	0.62
T. Neirone	20.1	NE-03	Q500	630.00	146.03	155.00	156.68	1.68	156.73	1.73	152.46	155.92	0.002932	4.25	148.10	22.57	0.53
T. Neirone	20.0	NE-03	Q50	244.00	146.03	150.09	148.85	-1.24	156.73	6.64	150.09	151.41	0.010013	5.10	47.96	18.19	1.00
T. Neirone	20.0	NE-03	Q200	434.00	146.03	152.78	148.85	-3.93	156.73	3.95	151.36	153.75	0.003429	4.37	100.15	20.59	0.63
T. Neirone	20.0	NE-03	Q500	630.00	146.03	154.95	148.85	-6.10	156.73	1.78	152.47	155.91	0.002377	4.35	146.91	22.52	0.54
T. Neirone	10	NE-02	Q50	244.00	144.46	150.45	147.82	-2.63	149.12	-1.33	148.03	150.71	0.001138	2.28	107.12	23.37	0.34
T. Neirone	10	NE-02	Q200	434.00	144.46	153.16	147.82	-5.34	149.12	-4.04	149.14	153.49	0.000958	2.55	170.45	23.37	0.30
T. Neirone	10	NE-02	Q500	630.00	144.46	155.27	147.82	-7.45	149.12	-6.15	150.06	155.69	0.001007	2.87	219.82	23.37	0.30
T. Neirone	1	NE-01	Q50	244.00	143.23	150.37	149.13	-1.24	146.65	-3.72	146.66	150.65	0.001103	2.34	104.25	16.38	0.30
T. Neirone	1	NE-01	Q200	434.00	143.23	152.97	149.13	-3.84	146.65	-6.32	148.08	153.42	0.001410	2.96	146.84	16.38	0.32
T. Neirone	1	NE-01	Q500	630.00	143.23	154.97	149.13	-5.84	146.65	-8.32	149.33	155.60	0.001776	3.51	179.60	16.38	0.34

Piano di bacino torrente Lavagna

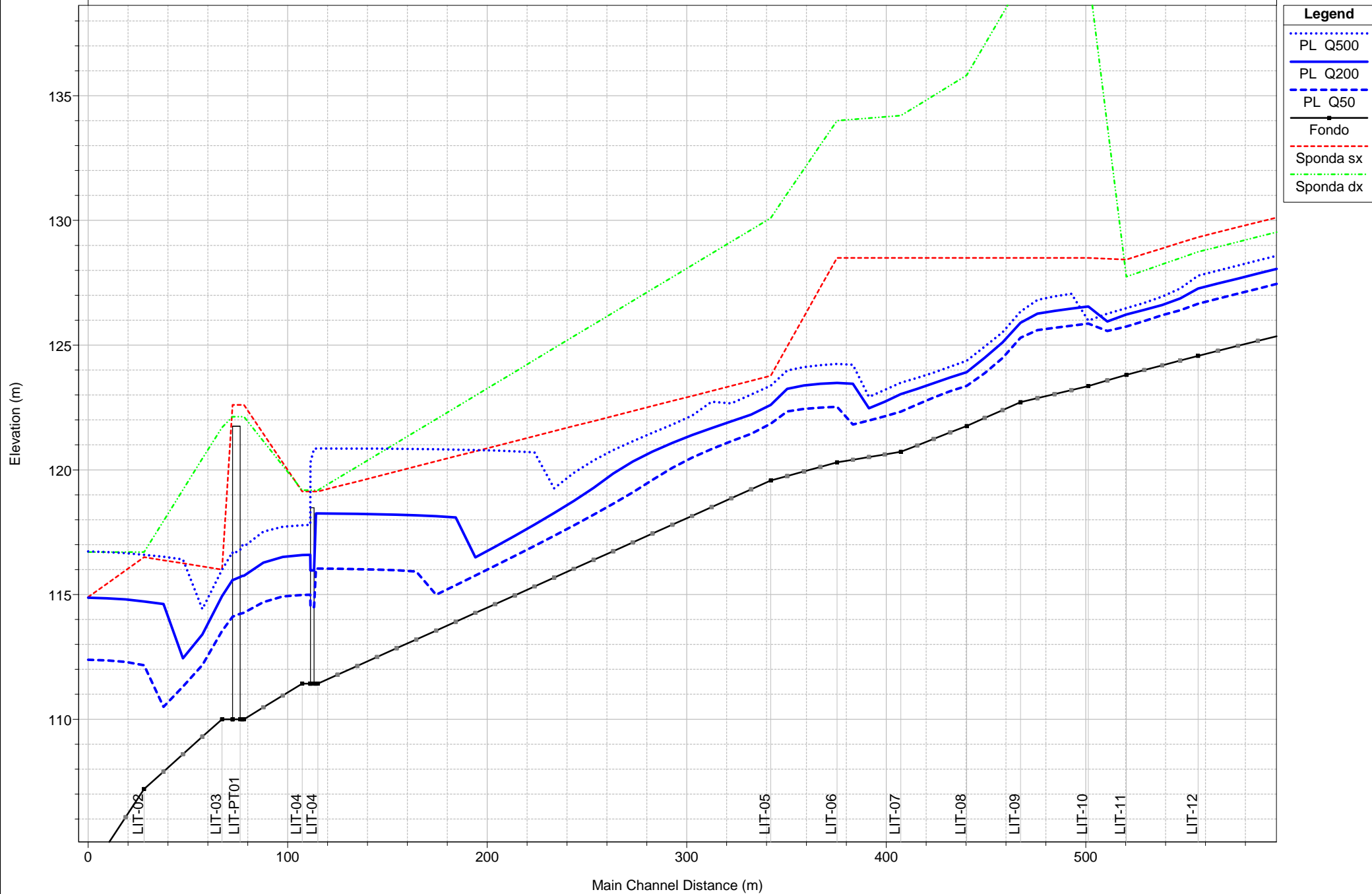
T. Litteglia

tratto unico – dalla sez. LIT12 alla LIT1

- **Profili idraulici**
- **Sezioni**
- **Tabelle dei risultati**

Torrente Litteglia Plan: Torrente Litteglia

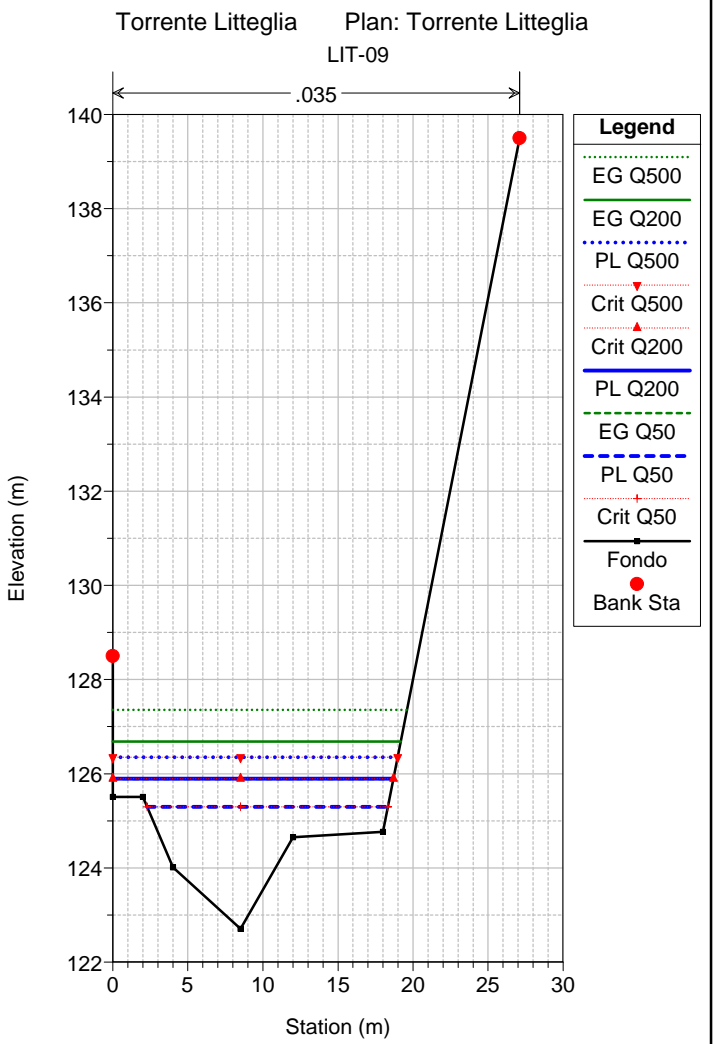
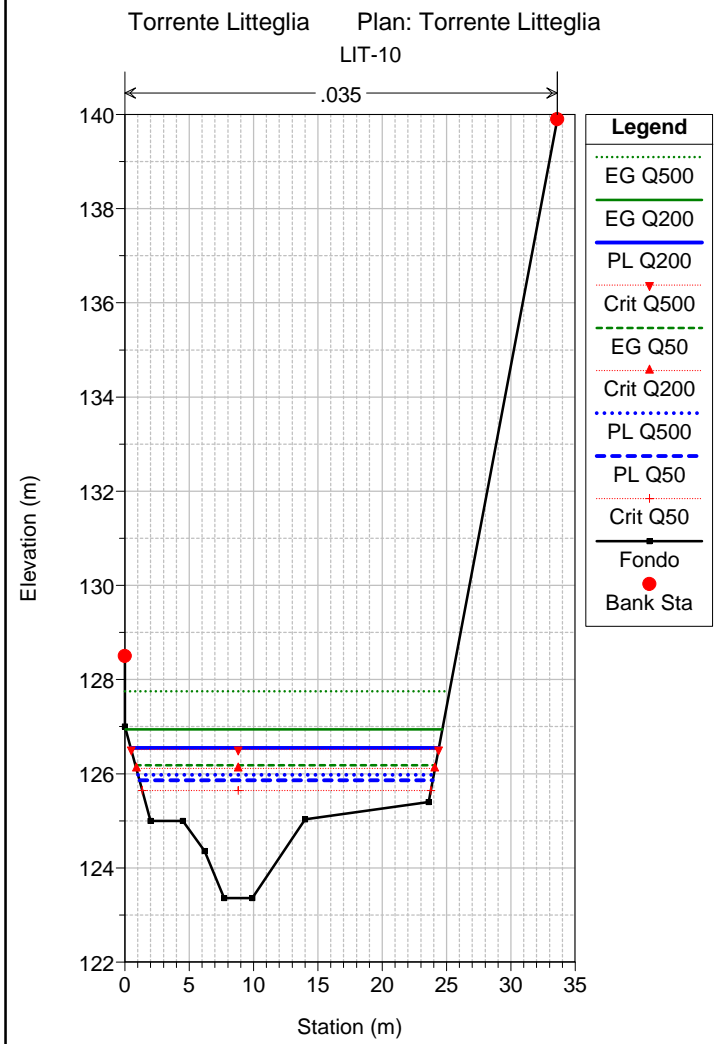
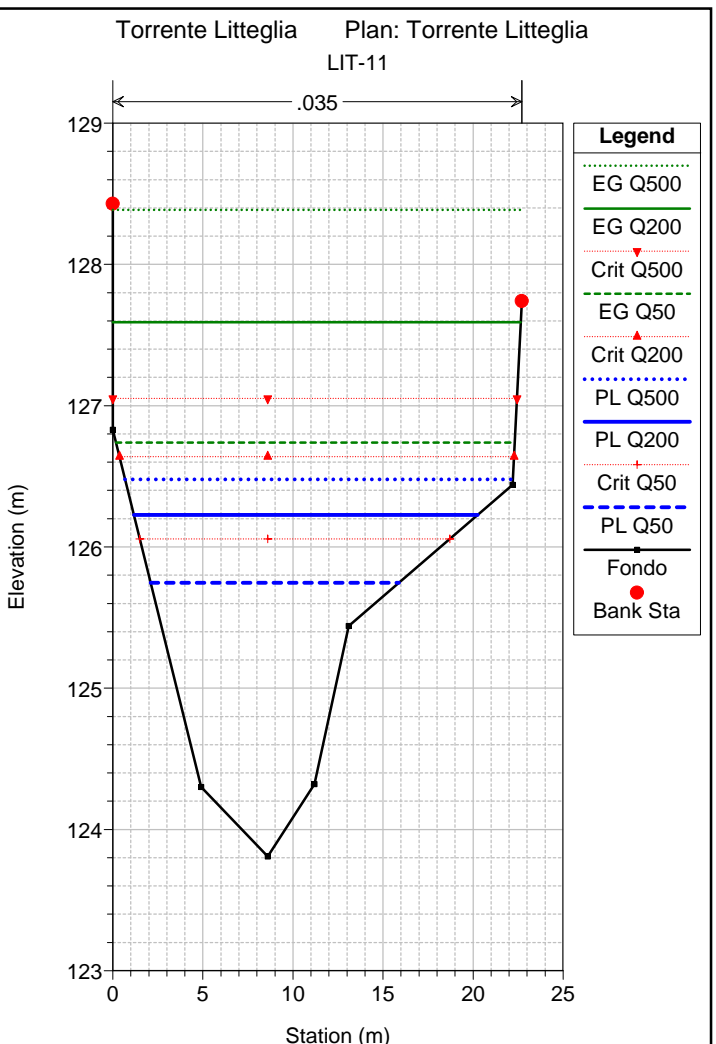
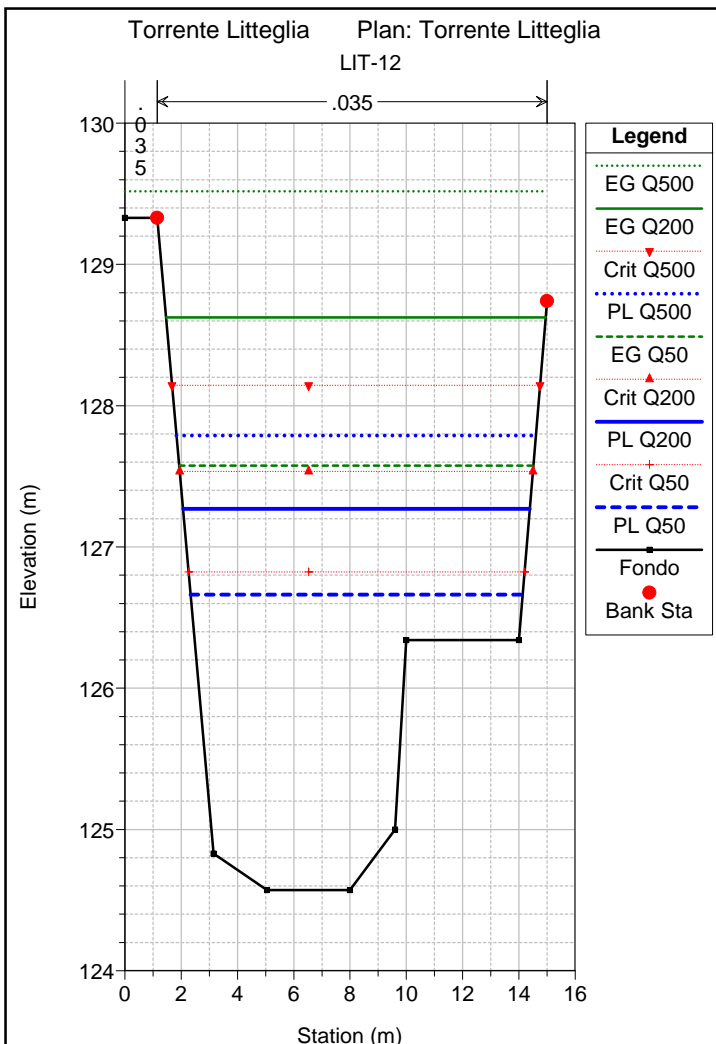
T. Litteglia T. Litteglia



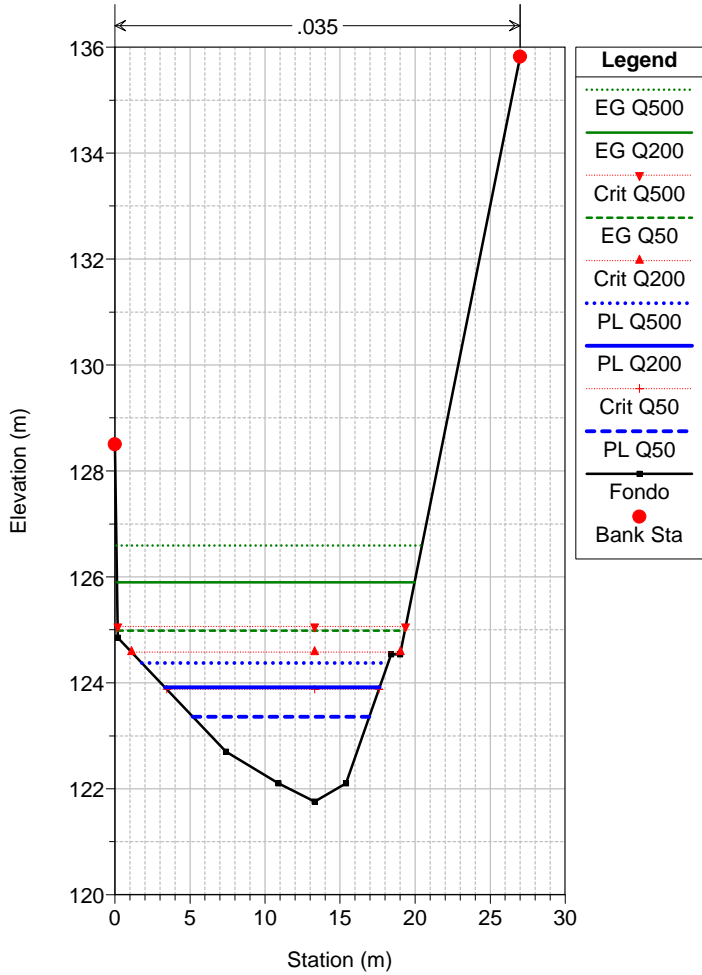
Legend

- PL Q500
- PL Q200
- PL Q50
- Fondo
- Sponda sx
- Sponda dx

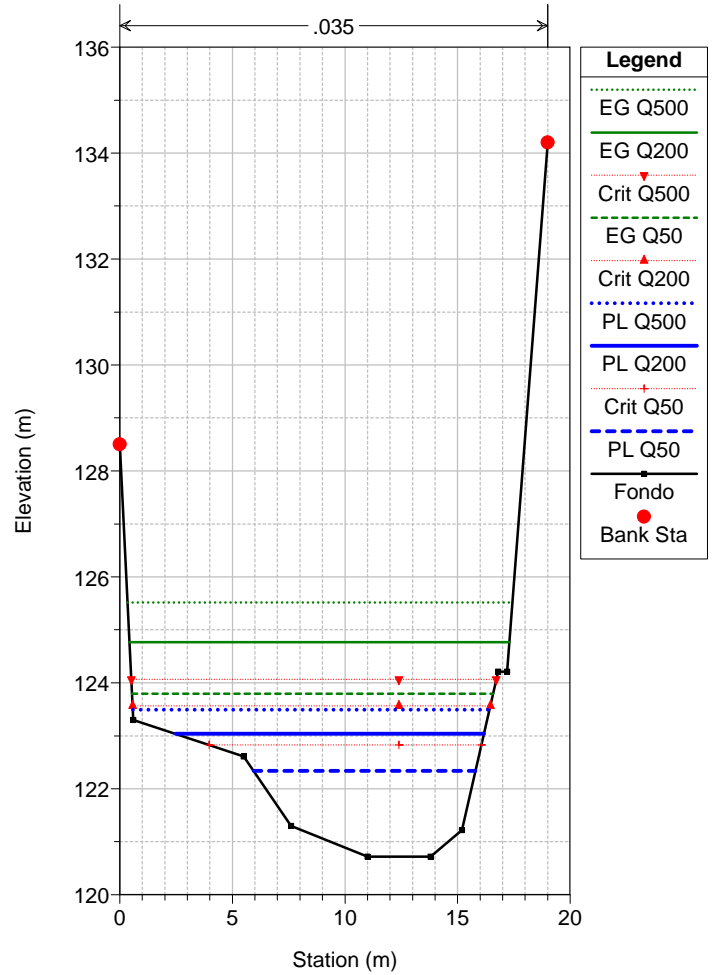
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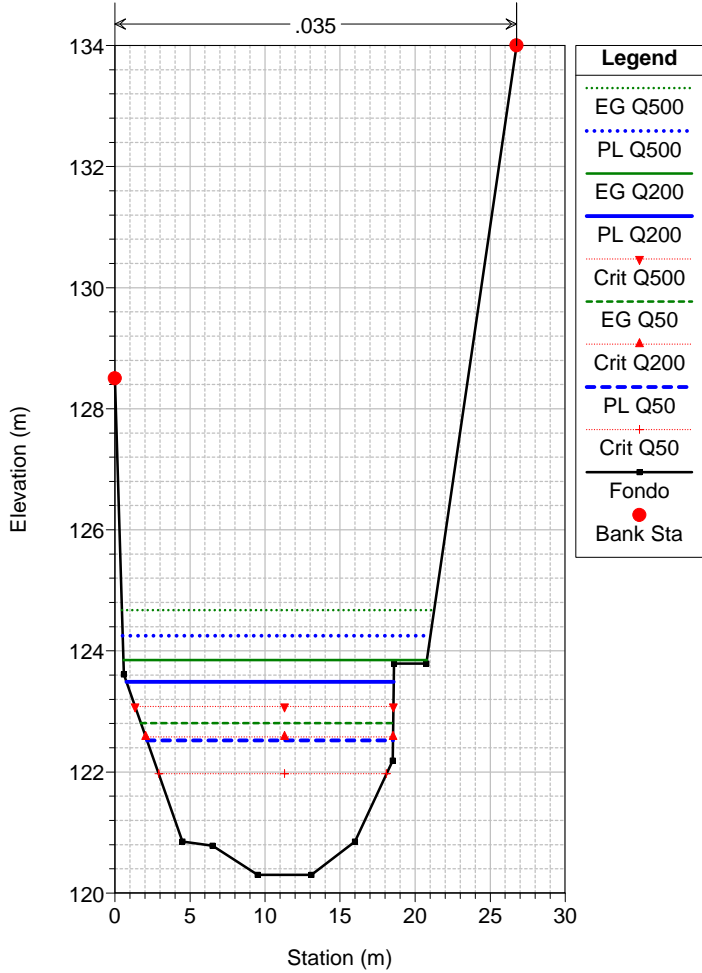
Torrente Litteglia Plan: Torrente Litteglia
LIT-08



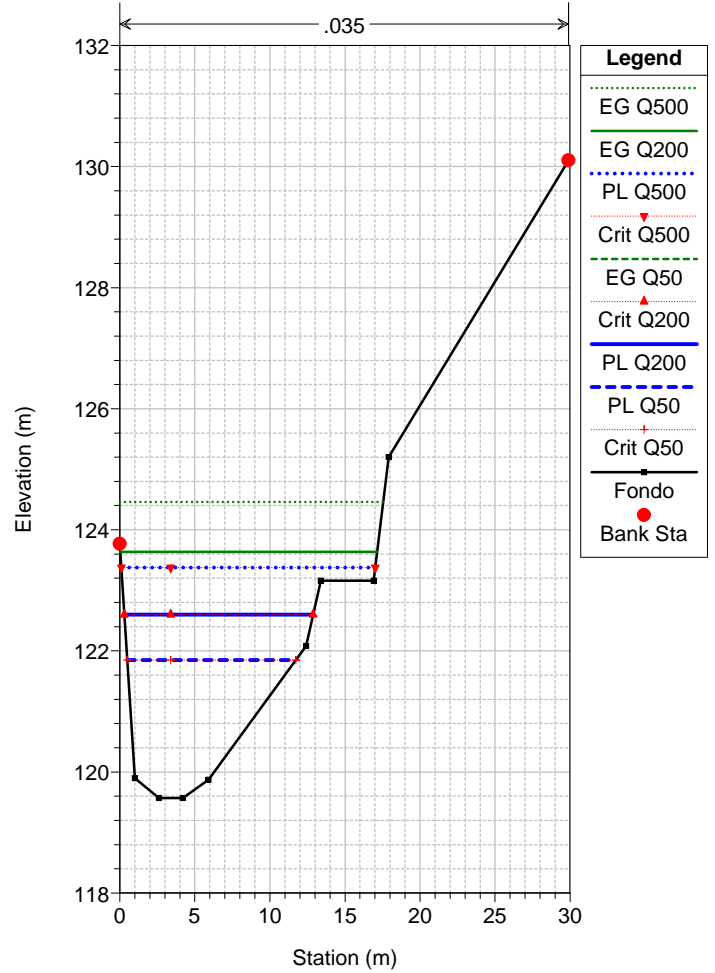
Torrente Litteglia Plan: Torrente Litteglia
LIT-07



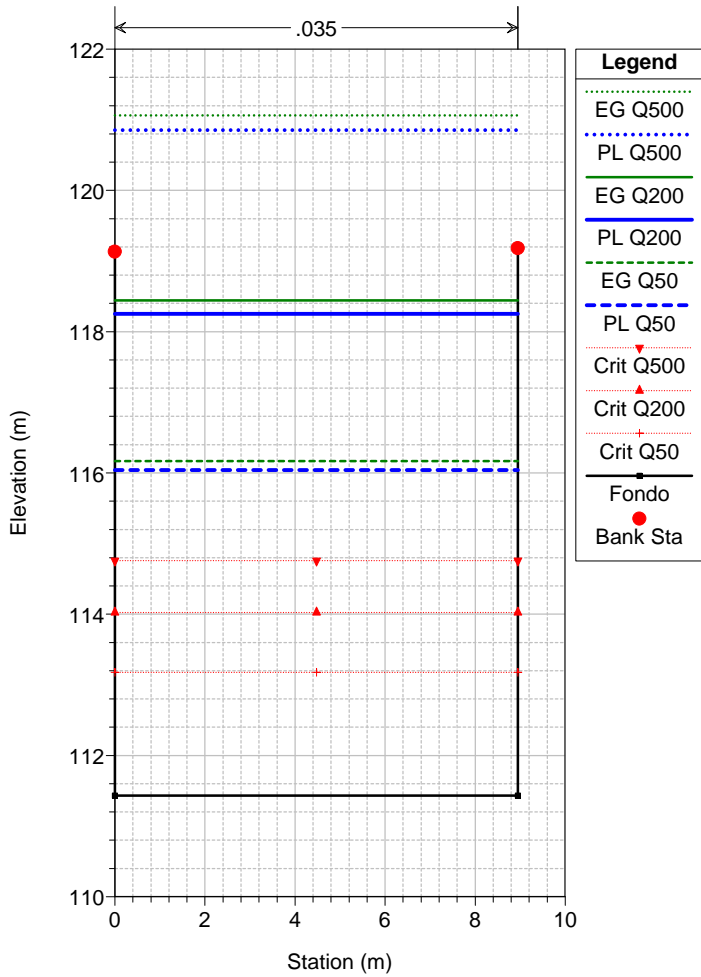
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LIT-06



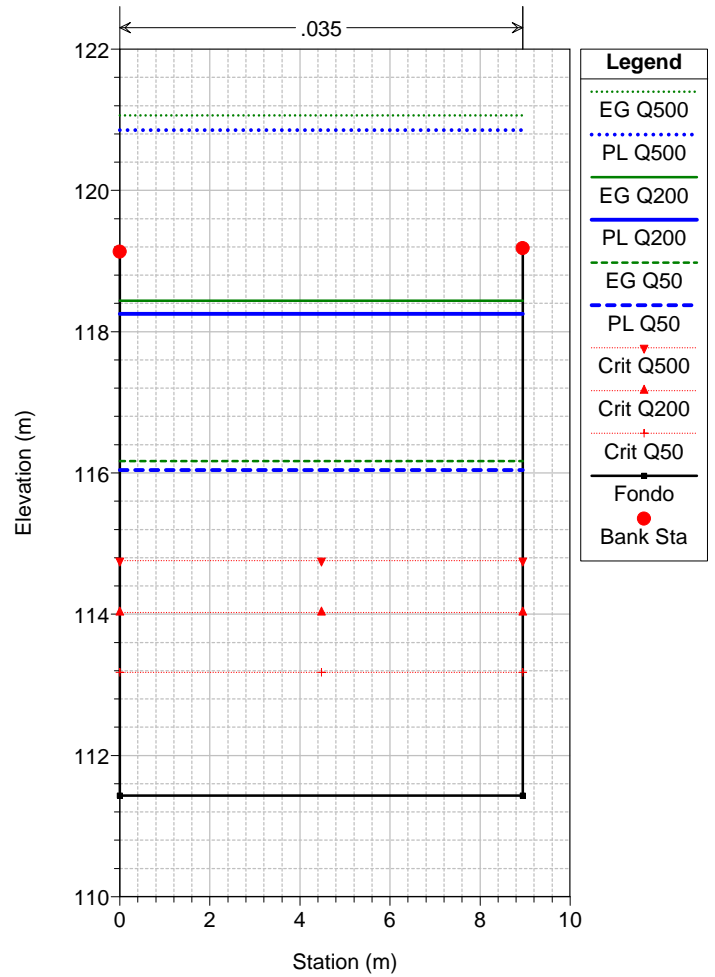
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LIT-05



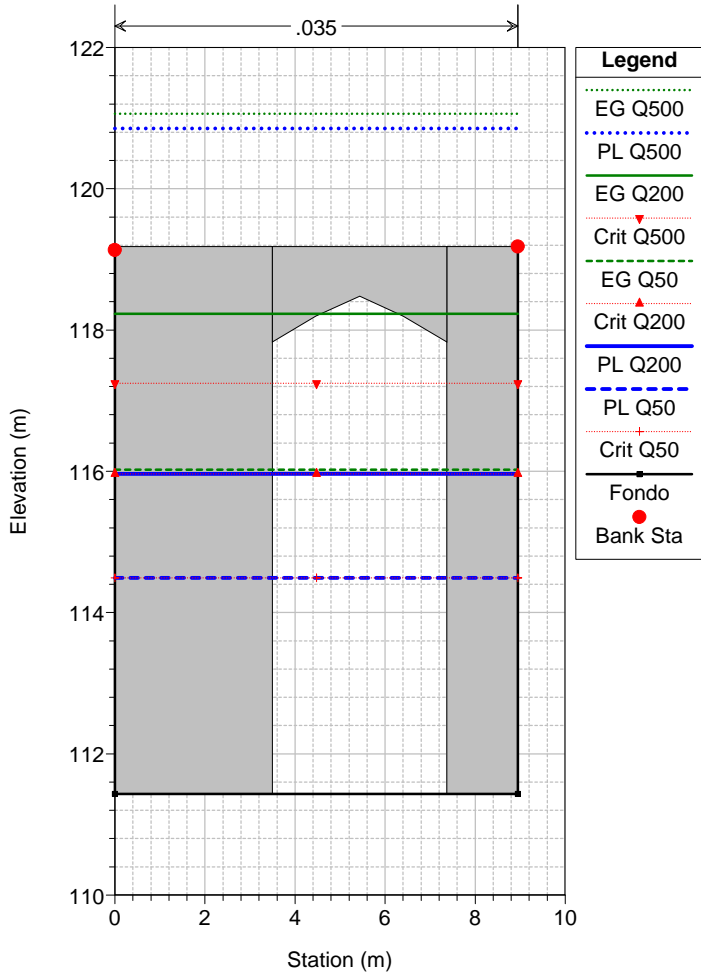
Torrente Litteglia Plan: Torrente Litteglia
LIT-04



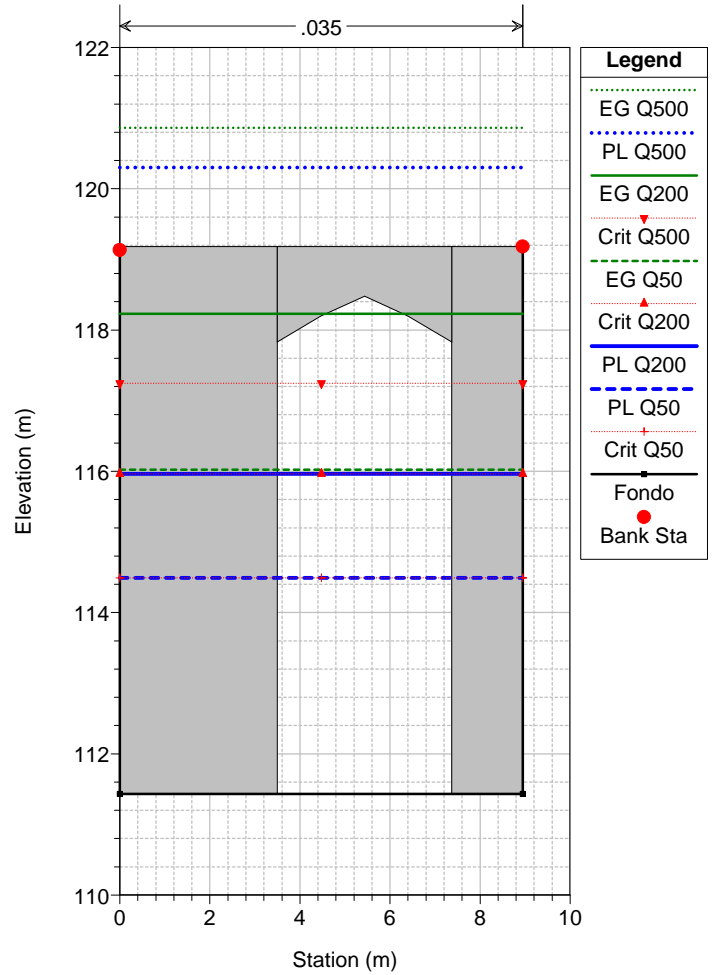
Torrente Litteglia Plan: Torrente Litteglia
LIT-04



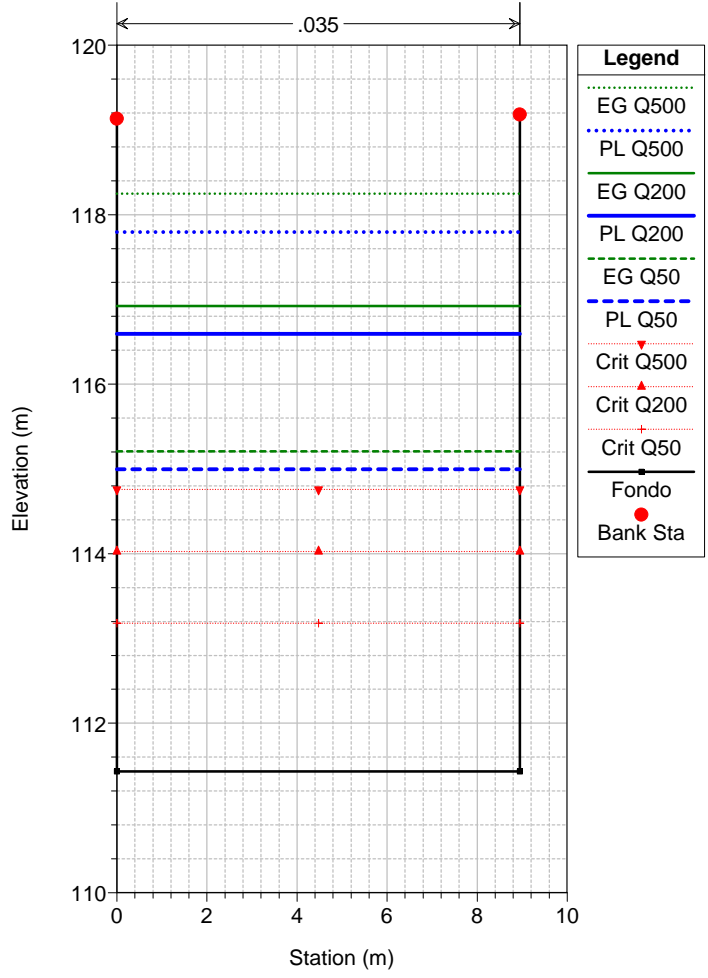
Torrente Litteglia Plan: Torrente Litteglia
LIT-PT02



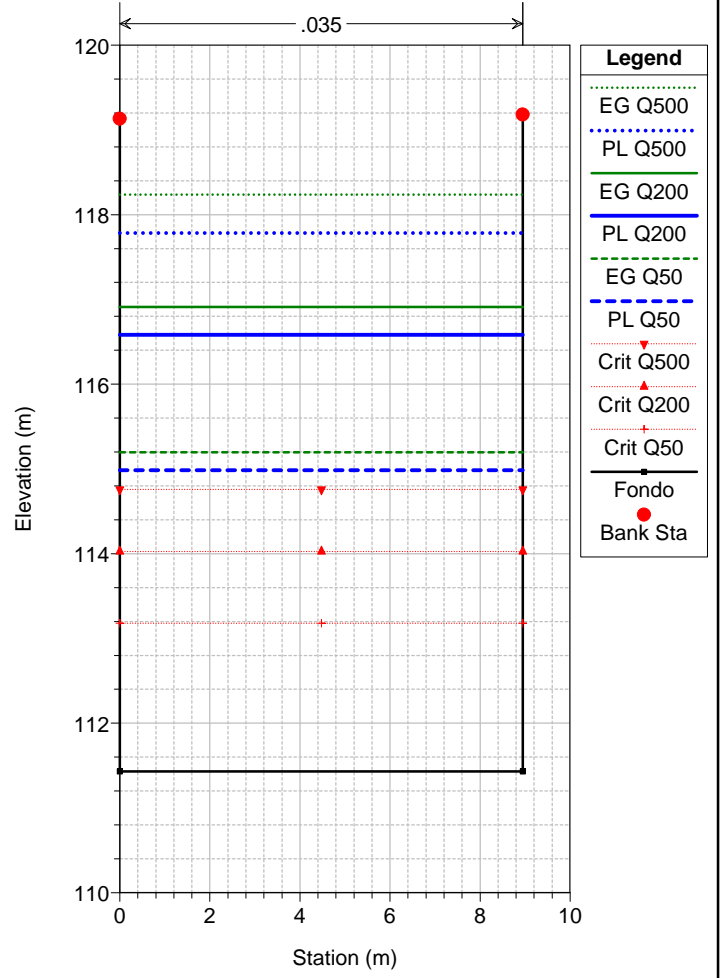
Torrente Litteglia Plan: Torrente Litteglia
LIT-PT02



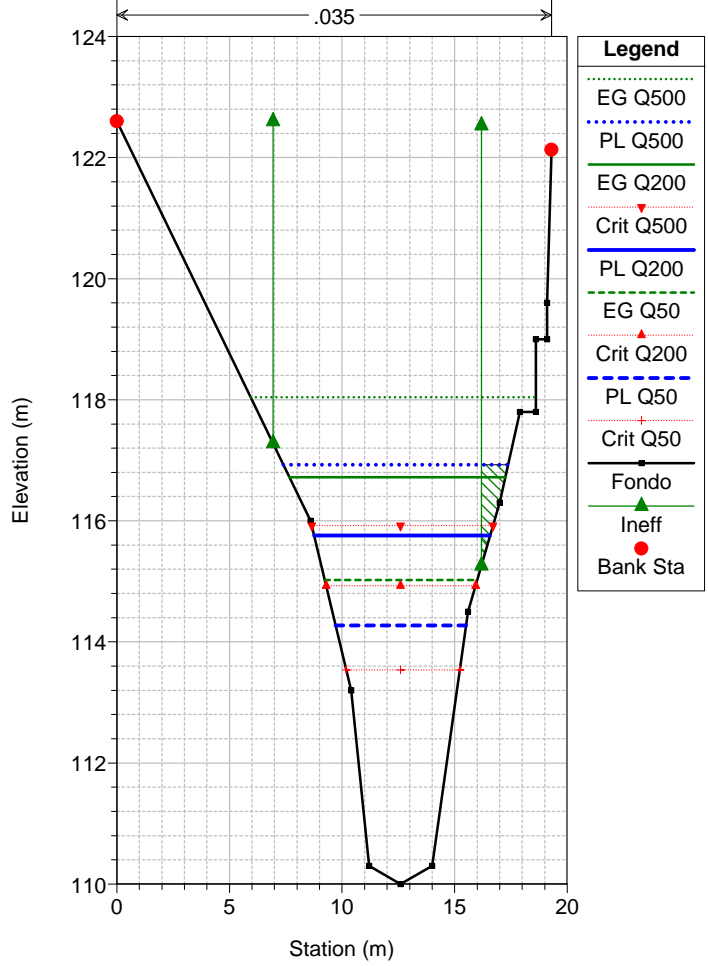
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LIT-04



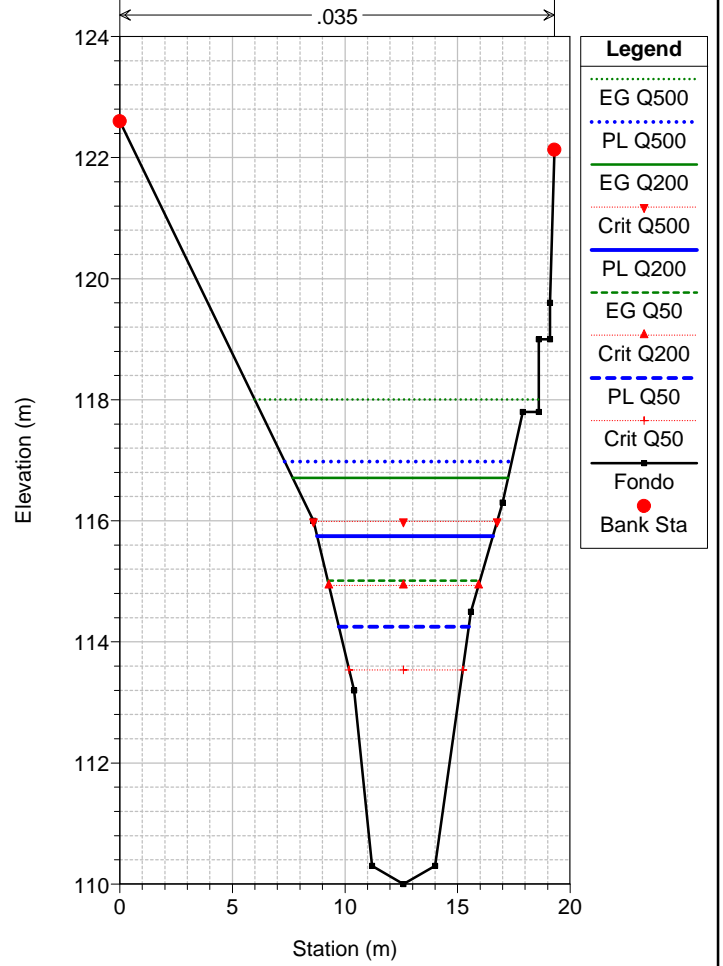
Torrente Litteglia Plan: Torrente Litteglia
LIT-04

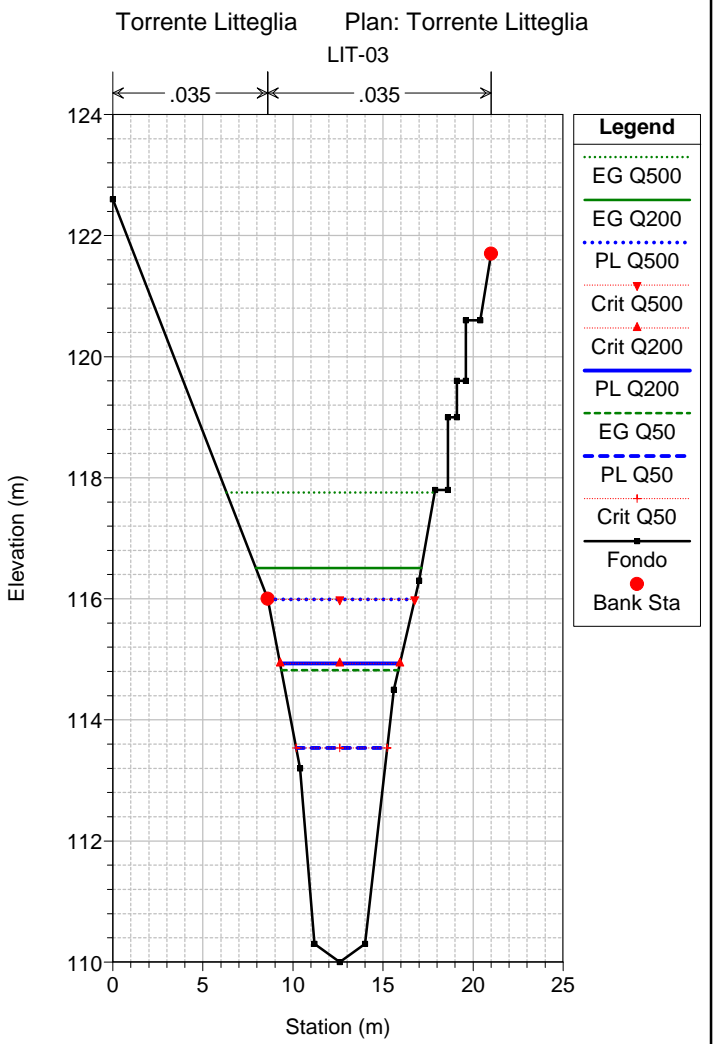
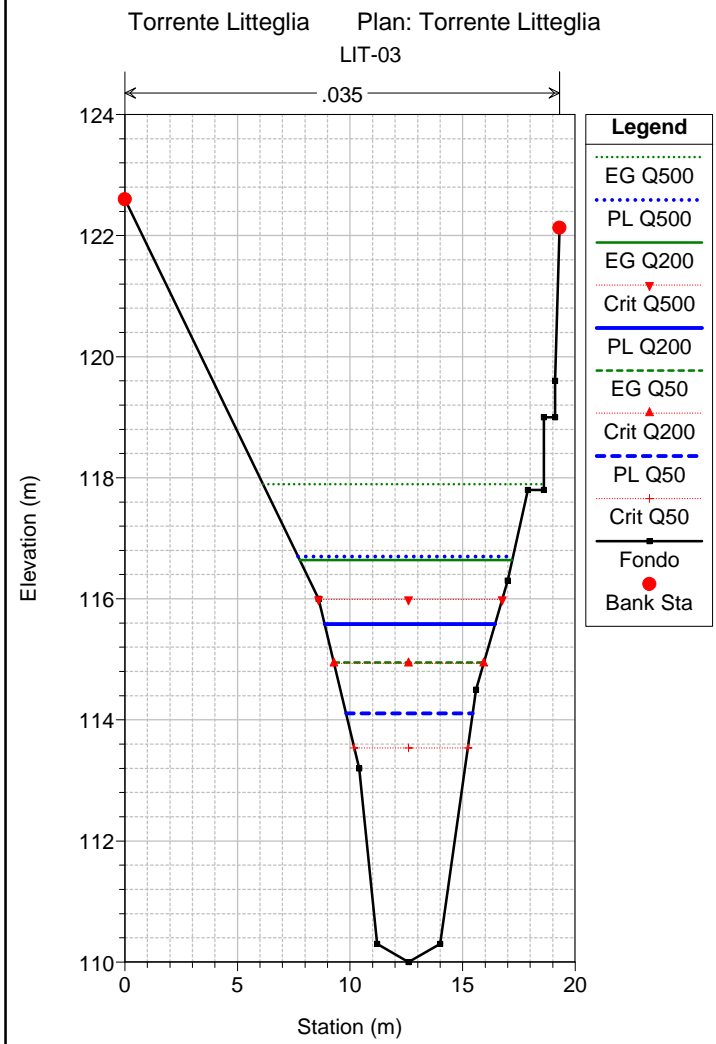
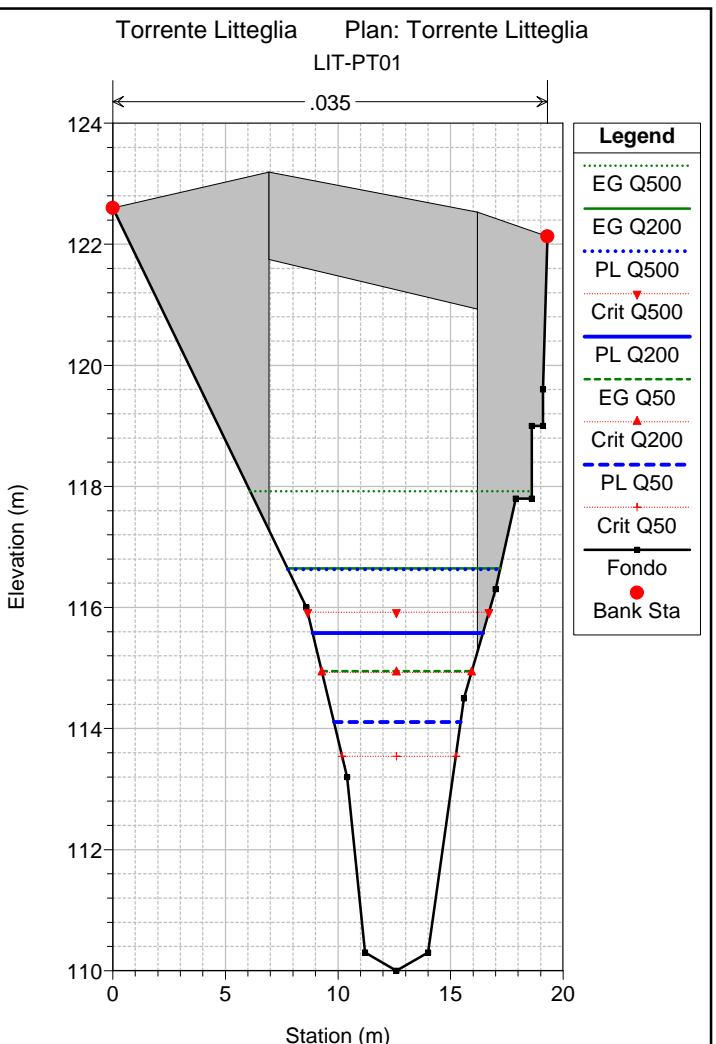
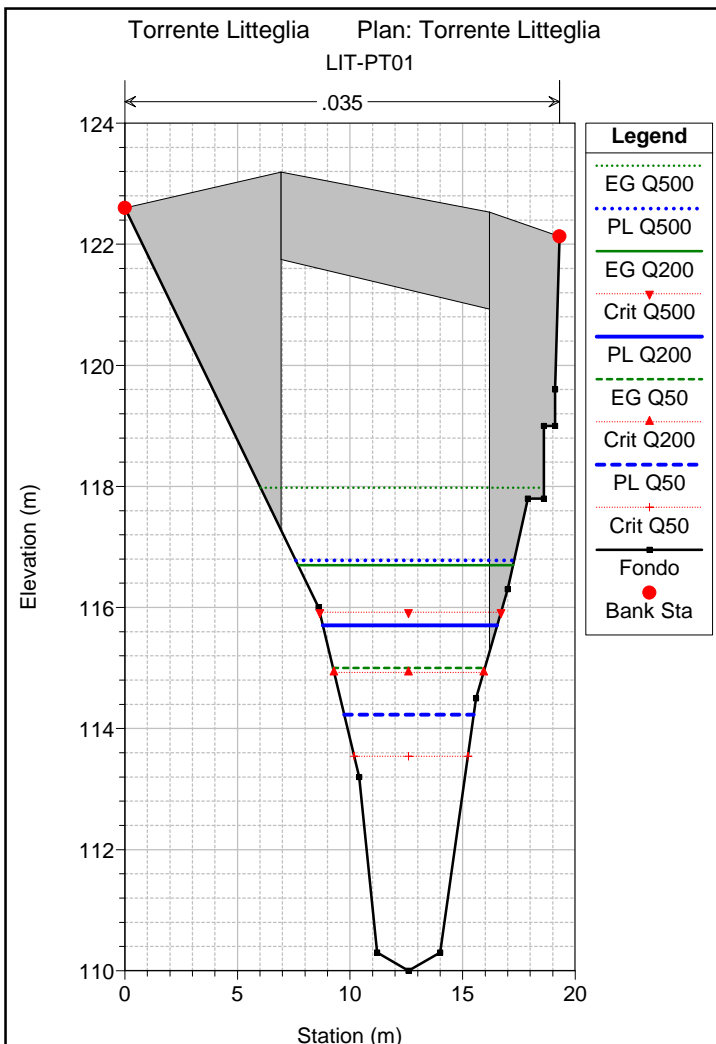


Torrente Litteglia Plan: Torrente Litteglia
LIT-03

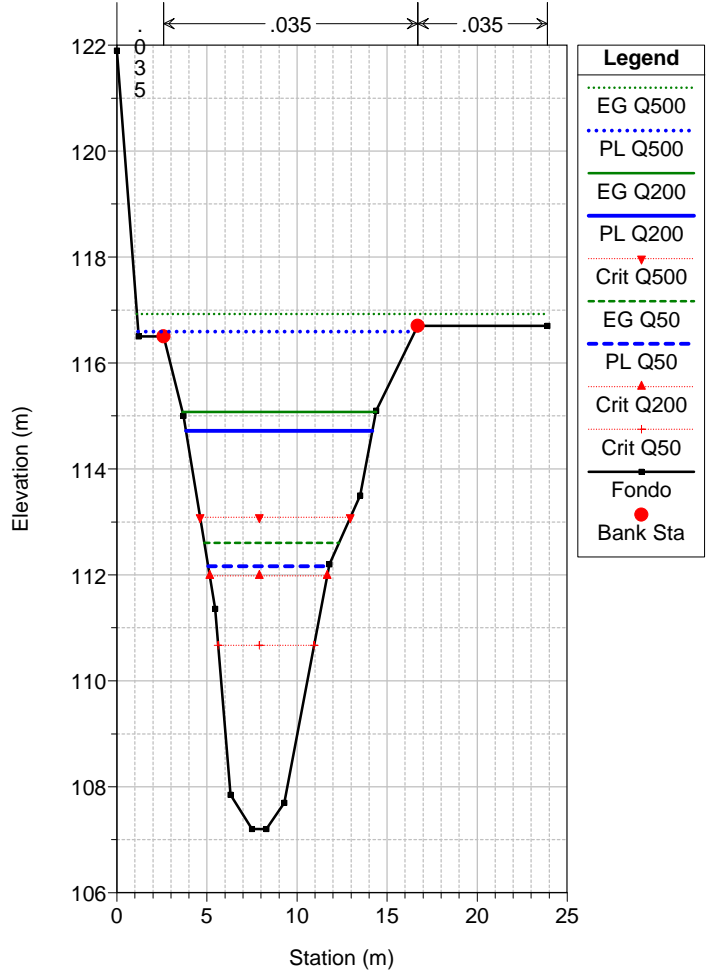


Torrente Litteglia Plan: Torrente Litteglia
LIT-03

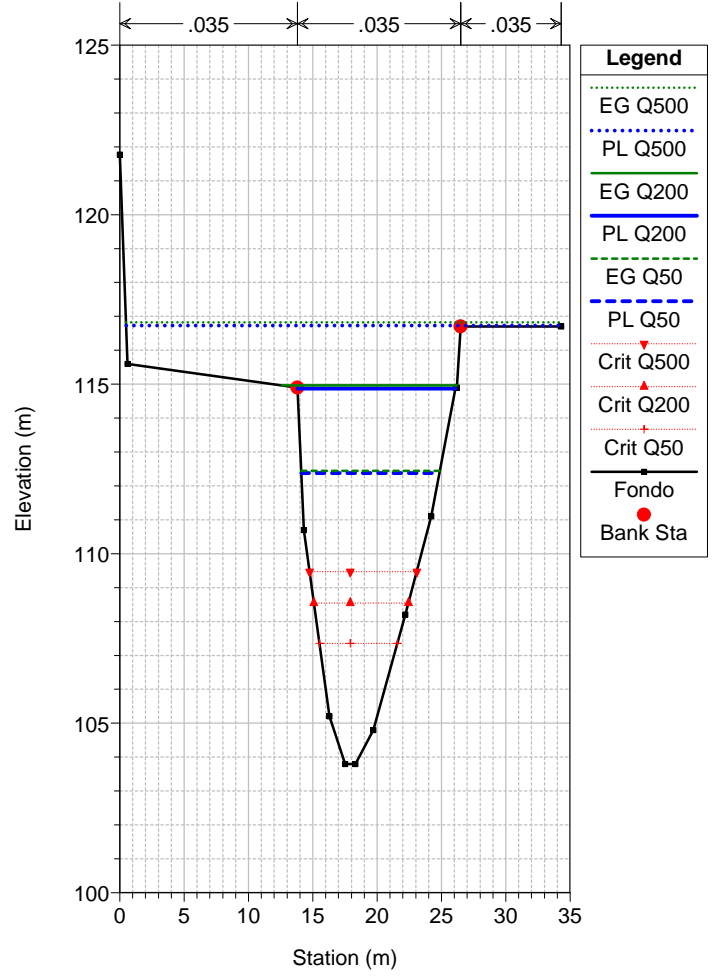




Torrente Litteglia Plan: Torrente Litteglia
LIT-02



Torrente Litteglia Plan: Torrente Litteglia
LIT-01



Reach	River Sta	Profile	Q Total (m3/s)	Min Ch El (m)	W.S. Elev (m)	LOB Elev (m)	L. Freeboard (m)	ROB Elev (m)	R. Freeboard (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	
T. Litteglia	11	Q50	65.00	126.57	128.66	131.33	2.67	130.74	2.08	128.82	129.58	0.020005	4.24	15.33	11.80	1.19	
T. Litteglia	11	Q200	117.00	126.57	129.26	131.33	2.07	130.74	1.48	129.53	130.63	0.020025	5.18	22.59	12.32	1.22	
T. Litteglia	11	Q500	170.00	126.57	129.78	131.33	1.55	130.74	0.96	130.15	131.52	0.020026	5.85	29.07	12.76	1.24	
T. Litteglia	10	LIT-12	Q50	65.00	124.57	126.66	129.33	2.67	128.74	2.08	126.82	127.57	0.019906	4.23	15.36	11.80	1.18
T. Litteglia	10	LIT-12	Q200	117.00	124.57	127.27	129.33	2.06	128.74	1.47	127.53	128.63	0.019801	5.16	22.68	12.32	1.21
T. Litteglia	10	LIT-12	Q500	170.00	124.57	127.79	129.33	1.54	128.74	0.95	128.14	129.52	0.019794	5.83	29.18	12.77	1.23
T. Litteglia	9	LIT-11	Q50	65.00	123.81	125.75	128.43	2.68	127.74	1.99	126.06	126.74	0.023461	4.41	14.73	13.79	1.36
T. Litteglia	9	LIT-11	Q200	117.00	123.81	126.23	128.43	2.20	127.74	1.51	126.64	127.59	0.027840	5.18	22.60	19.08	1.52
T. Litteglia	9	LIT-11	Q500	170.00	123.81	126.48	128.43	1.95	127.74	1.26	127.05	128.39	0.034675	6.12	27.79	21.54	1.72
T. Litteglia	8	LIT-10	Q50	65.00	123.36	125.86	128.50	2.64	139.90	14.04	125.64	126.18	0.006748	2.48	26.21	22.78	0.74
T. Litteglia	8	LIT-10	Q200	117.00	123.36	126.55	128.50	1.95	139.90	13.35	126.11	126.94	0.004920	2.77	42.20	23.94	0.67
T. Litteglia	8	LIT-10	Q500	170.00	123.36	125.98	128.50	2.52	139.90	13.92	126.51	127.75	0.034096	5.89	28.85	22.98	1.68
T. Litteglia	7	LIT-09	Q50	65.00	122.71	125.30	128.50	3.20	139.50	14.20	125.30	125.89	0.012657	3.41	19.06	16.04	1.00
T. Litteglia	7	LIT-09	Q200	117.00	122.71	125.89	128.50	2.61	139.50	13.61	125.89	126.69	0.011923	3.94	29.68	18.69	1.00
T. Litteglia	7	LIT-09	Q500	170.00	122.71	126.35	128.50	2.15	139.50	13.15	126.35	127.36	0.011474	4.44	38.27	18.98	1.00
T. Litteglia	6	LIT-08	Q50	65.00	121.76	123.36	128.50	5.14	135.82	12.46	123.88	124.98	0.043002	5.64	11.53	11.77	1.82
T. Litteglia	6	LIT-08	Q200	117.00	121.76	123.92	128.50	4.58	135.82	11.90	124.58	125.90	0.035997	6.23	18.78	14.32	1.74
T. Litteglia	6	LIT-08	Q500	170.00	121.76	124.37	128.50	4.13	135.82	11.45	125.06	126.59	0.032017	6.60	25.75	16.39	1.68
T. Litteglia	5	LIT-07	Q50	65.00	120.72	122.34	128.50	6.16	134.20	11.86	122.83	123.80	0.030675	5.36	12.14	9.86	1.54
T. Litteglia	5	LIT-07	Q200	117.00	120.72	123.04	128.50	5.46	134.20	11.16	123.57	124.77	0.029038	5.83	20.08	13.71	1.54
T. Litteglia	5	LIT-07	Q500	170.00	120.72	123.49	128.50	5.01	134.20	10.71	124.07	125.52	0.028328	6.31	26.94	15.84	1.54
T. Litteglia	4	LIT-06	Q50	65.00	120.30	122.52	128.50	5.98	134.00	11.48	121.97	122.81	0.003787	2.36	27.51	16.39	0.58
T. Litteglia	4	LIT-06	Q200	117.00	120.30	123.49	128.50	5.01	134.00	10.51	122.58	123.85	0.003090	2.66	43.99	17.81	0.54
T. Litteglia	4	LIT-06	Q500	170.00	120.30	124.25	128.50	4.25	134.00	9.75	123.08	124.68	0.003131	2.89	58.76	20.50	0.55
T. Litteglia	3	LIT-05	Q50	65.00	119.57	121.85	123.77	1.92	130.10	8.25	121.85	122.60	0.012891	3.84	16.92	11.23	1.00
T. Litteglia	3	LIT-05	Q200	117.00	119.57	122.60	123.77	1.17	130.10	7.50	122.60	123.64	0.012302	4.50	25.97	12.58	1.00
T. Litteglia	3	LIT-05	Q500	170.00	119.57	123.38	123.77	0.39	130.10	6.72	123.38	124.46	0.012051	4.62	36.83	16.90	1.00
T. Litteglia	2.8	LIT-04	Q50	65.00	111.43	116.04	119.13	3.09	119.18	3.14	113.18	116.17	0.001017	1.57	41.29	8.95	0.23
T. Litteglia	2.8	LIT-04	Q200	117.00	111.43	118.25	119.13	0.88	119.18	0.93	114.02	118.44	0.001194	1.92	61.08	8.95	0.23
T. Litteglia	2.8	LIT-04	Q500	170.00	111.43	120.86	119.13	-1.73	119.18	-1.68	114.76	121.06	0.001132	2.02	84.36	8.95	0.21
T. Litteglia	2.7	LIT-04	Q50	65.00	111.43	116.04	119.13	3.09	119.18	3.14	113.18	116.17	0.001018	1.57	41.28	8.95	0.23
T. Litteglia	2.7	LIT-04	Q200	117.00	111.43	118.25	119.13	0.88	119.18	0.93	114.02	118.44	0.001195	1.92	61.07	8.95	0.23
T. Litteglia	2.7	LIT-04	Q500	170.00	111.43	120.85	119.13	-1.72	119.18	-1.67	114.76	121.06	0.001133	2.02	84.35	8.95	0.21
T. Litteglia	2.65	LIT-PT02	Bridge														
T. Litteglia	2.6	LIT-04	Q50	65.00	111.43	114.99	119.13	4.14	119.18	4.19	113.18	115.21	0.002039	2.04	31.90	8.95	0.34
T. Litteglia	2.6	LIT-04	Q200	117.00	111.43	116.59	119.13	2.54	119.18	2.59	114.02	116.92	0.002446	2.53	46.22	8.95	0.36
T. Litteglia	2.6	LIT-04	Q500	170.00	111.43	117.80	119.13	1.33	119.18	1.38	114.76	118.25	0.003008	2.98	56.97	8.95	0.38
T. Litteglia	2.5	LIT-04	Q50	65.00	111.43	114.99	119.13	4.14	119.18	4.19	113.18	115.20	0.002054	2.04	31.82	8.95	0.35
T. Litteglia	2.5	LIT-04	Q200	117.00	111.43	116.58	119.13	2.55	119.18	2.60	114.02	116.91	0.002460	2.54	46.12	8.95	0.36
T. Litteglia	2.5	LIT-04	Q500	170.00	111.43	117.78	119.13	1.35	119.18	1.40	114.76	118.24	0.003025	2.99	56.85	8.95	0.38
T. Litteglia	2.3	LIT-03	Q50	65.00	110.00	114.27	122.60	8.33	122.13	7.86	113.54	115.02	0.010651	3.84	16.93	5.80	0.72

HEC-RAS Plan: pressure River: T. Litteglia Reach: T. Litteglia (Continued)

Reach	River Sta	Profile	Q Total (m3/s)	Min Ch El (m)	W.S. Elev (m)	LOB Elev (m)	L. Freeboard (m)	ROB Elev (m)	R. Freeboard (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
T. Litteglia	2.3 LIT-03	Q200	117.00	110.00	115.76	122.60	6.84	122.13	6.37	114.93	116.72	0.010047	4.35	26.90	7.82	0.73
T. Litteglia	2.3 LIT-03	Q500	170.00	110.00	116.92	122.60	5.68	122.13	5.21	115.92	118.04	0.009146	4.68	36.30	9.98	0.74
T. Litteglia	2.2 LIT-03	Q50	65.00	110.00	114.25	122.60	8.35	122.13	7.88	113.54	115.01	0.010852	3.87	16.81	5.78	0.72
T. Litteglia	2.2 LIT-03	Q200	117.00	110.00	115.75	122.60	6.85	122.13	6.38	114.93	116.71	0.010590	4.35	26.92	7.81	0.75
T. Litteglia	2.2 LIT-03	Q500	170.00	110.00	116.98	122.60	5.62	122.13	5.15	115.99	118.01	0.009392	4.49	37.90	10.08	0.74
T. Litteglia	2.15 LIT-PT01		Bridge													
T. Litteglia	2.1 LIT-03	Q50	65.00	110.00	114.11	122.60	8.49	122.13	8.02	113.54	114.95	0.012304	4.06	16.00	5.64	0.77
T. Litteglia	2.1 LIT-03	Q200	117.00	110.00	115.58	122.60	7.02	122.13	6.55	114.93	116.64	0.011992	4.56	25.65	7.57	0.79
T. Litteglia	2.1 LIT-03	Q500	170.00	110.00	116.70	122.60	5.90	122.13	5.43	115.99	117.89	0.011378	4.84	35.16	9.55	0.80
T. Litteglia	2 LIT-03	Q50	65.00	110.00	113.54	116.00	2.46	121.70	8.16	113.54	114.82	0.021110	5.02	12.95	5.05	1.00
T. Litteglia	2 LIT-03	Q200	117.00	110.00	114.93	116.00	1.07	121.70	6.77	114.93	116.51	0.019945	5.57	21.02	6.65	1.00
T. Litteglia	2 LIT-03	Q500	170.00	110.00	115.99	116.00	0.01	121.70	5.71	115.99	117.76	0.018663	5.89	28.87	8.15	1.00
T. Litteglia	1 LIT-02	Q50	65.00	107.20	112.16	116.50	4.34	116.70	4.54	110.67	112.60	0.005161	2.94	22.10	6.71	0.52
T. Litteglia	1 LIT-02	Q200	117.00	107.20	114.72	116.50	1.78	116.70	1.98	111.98	115.07	0.002779	2.63	44.52	10.35	0.40
T. Litteglia	1 LIT-02	Q500	170.00	107.20	116.60	116.50	-0.09	116.70	0.10	113.09	116.92	0.002061	2.54	67.18	15.37	0.37
T. Litteglia	0 LIT-01	Q50	65.00	103.80	112.38	114.90	2.52	116.70	4.32	107.35	112.45	0.000417	1.14	57.23	10.74	0.16
T. Litteglia	0 LIT-01	Q200	117.00	103.80	114.87	114.90	0.03	116.70	1.83	108.54	114.96	0.000471	1.36	85.89	12.28	0.16
T. Litteglia	0 LIT-01	Q500	170.00	103.80	116.73	114.90	-1.83	116.70	-0.03	109.47	116.83	0.000414	1.43	129.06	33.81	0.16

Piano di bacino torrente Lavagna

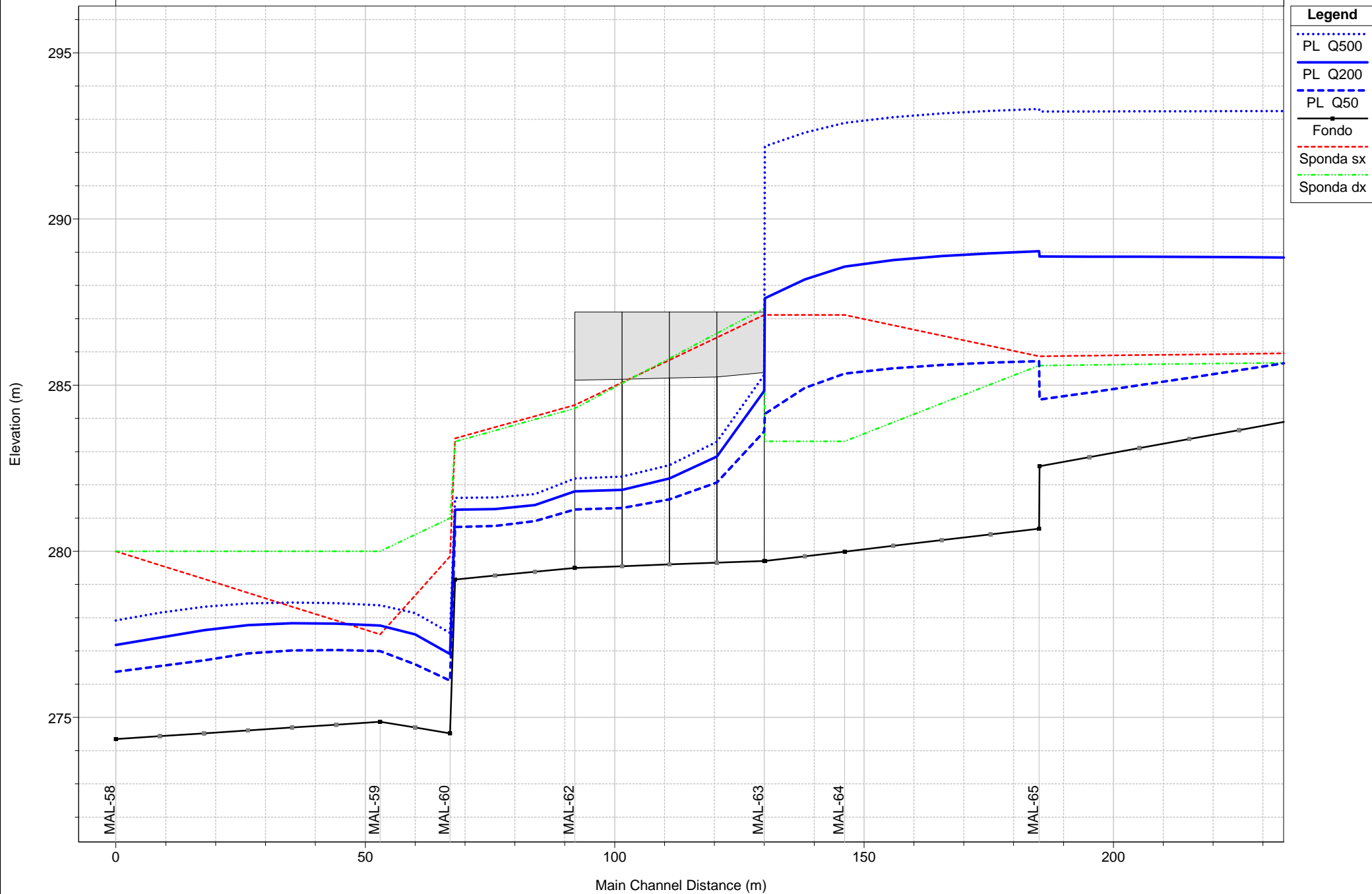
T. Malvaro

tratto loc. Colletta – dalla sez. MAL65 alla MAL58

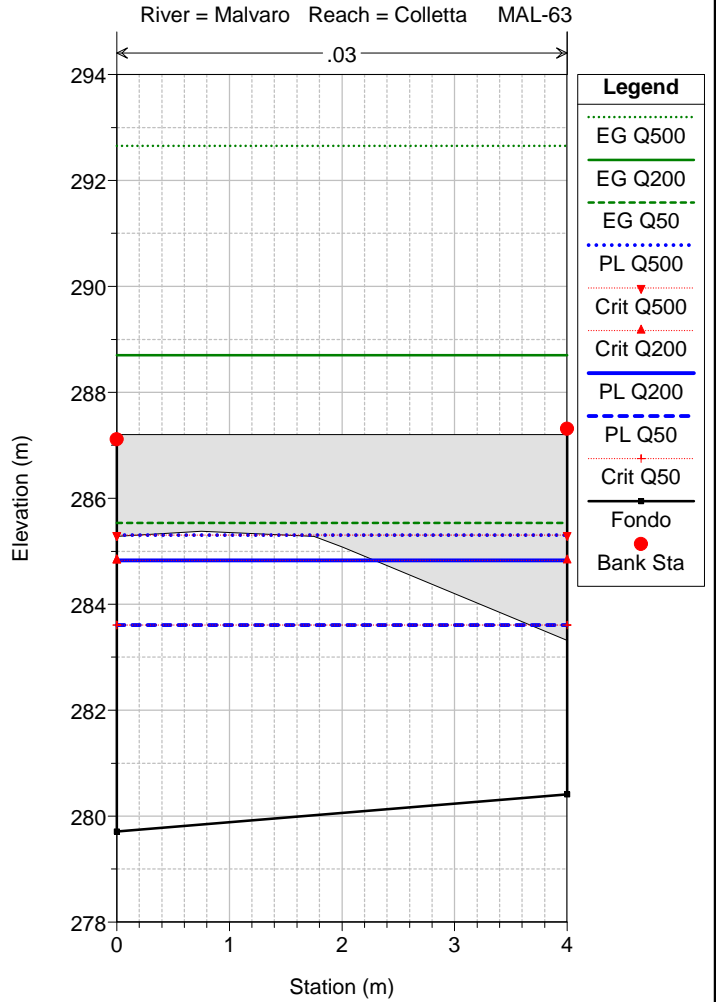
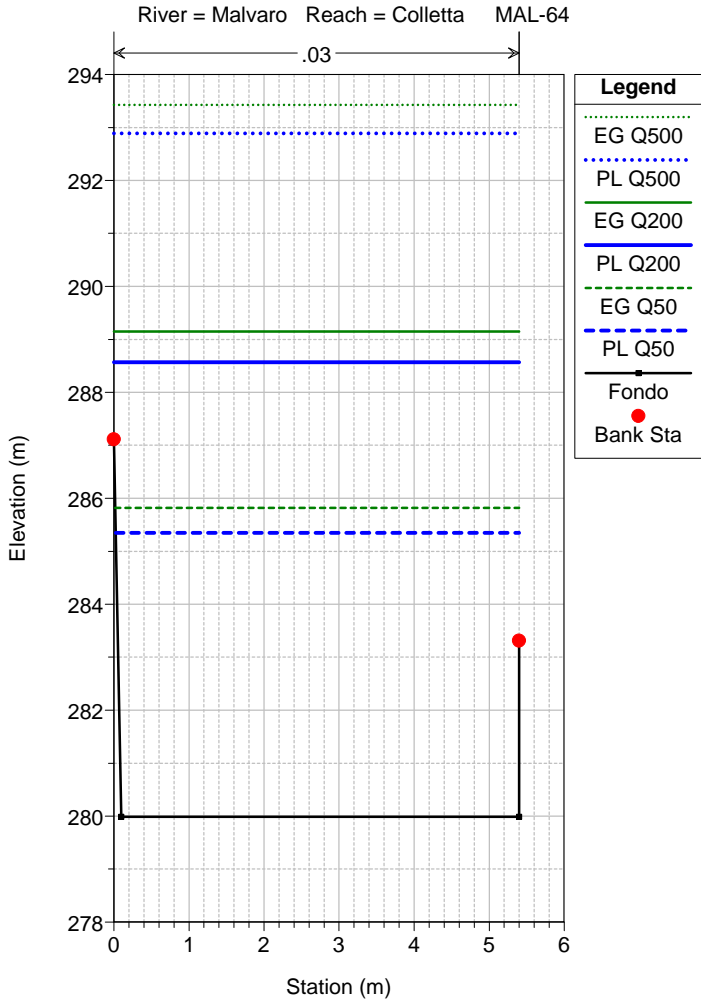
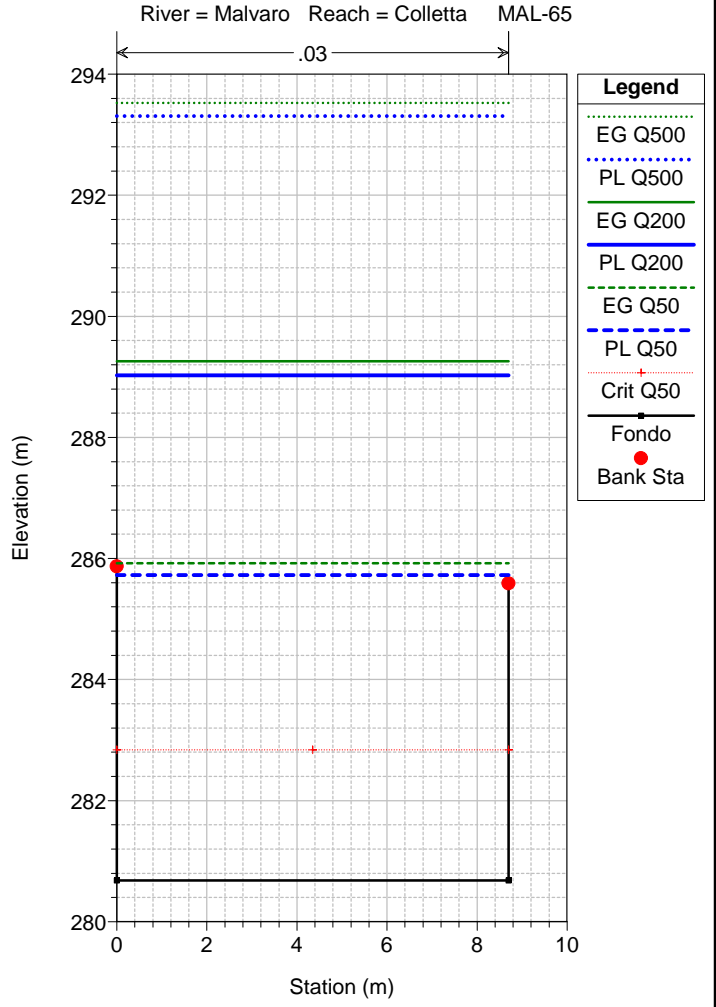
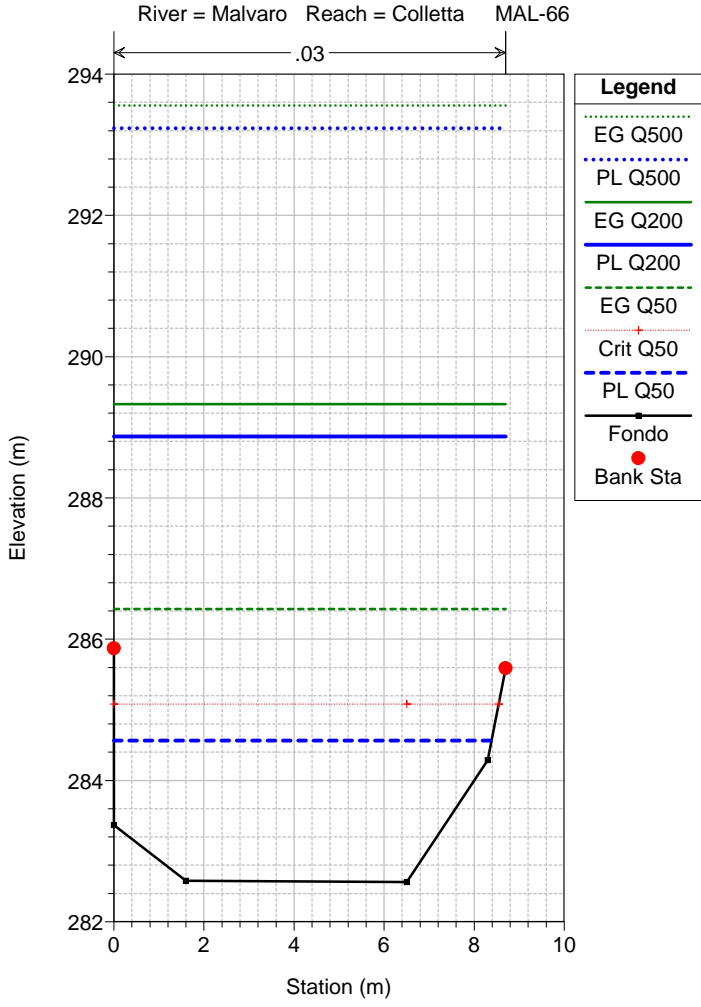
- **Profili idraulici**
- **Sezioni**
- **Tabelle dei risultati**

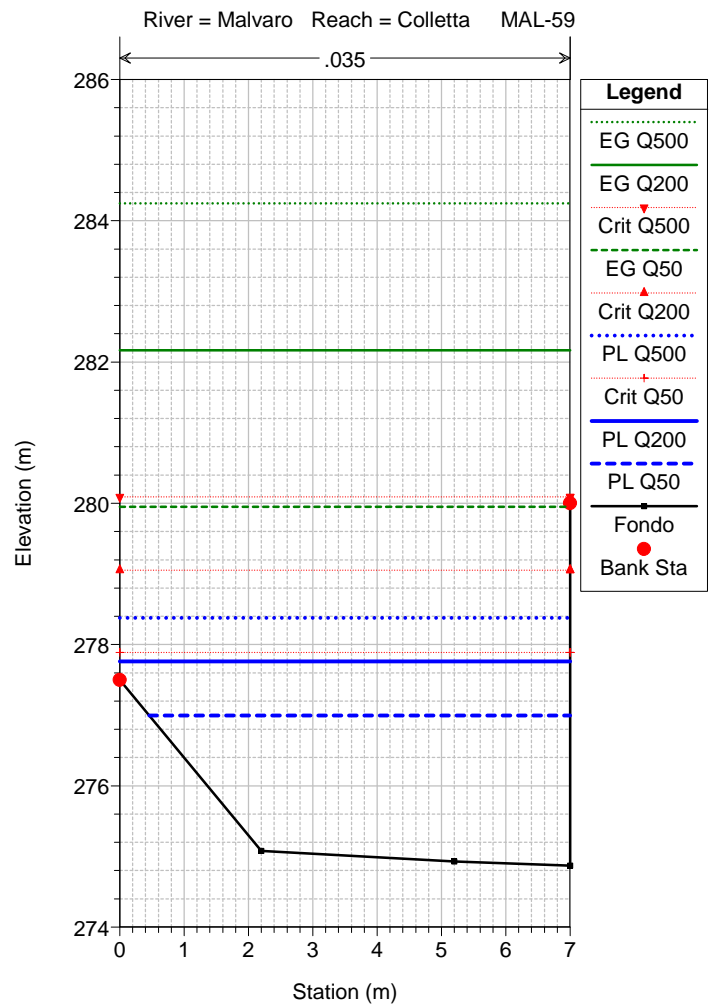
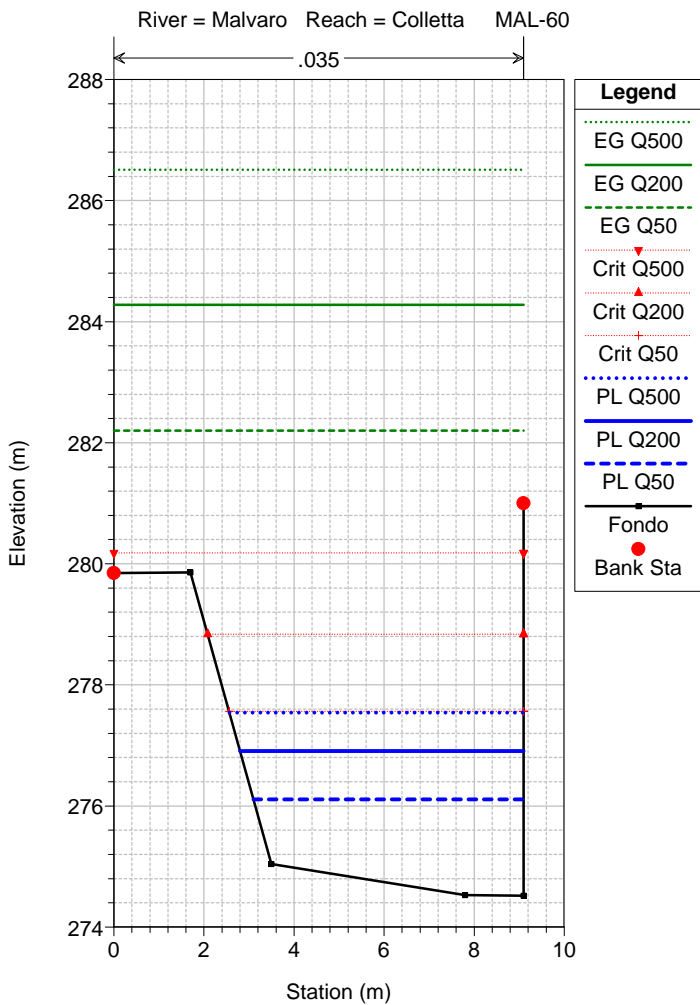
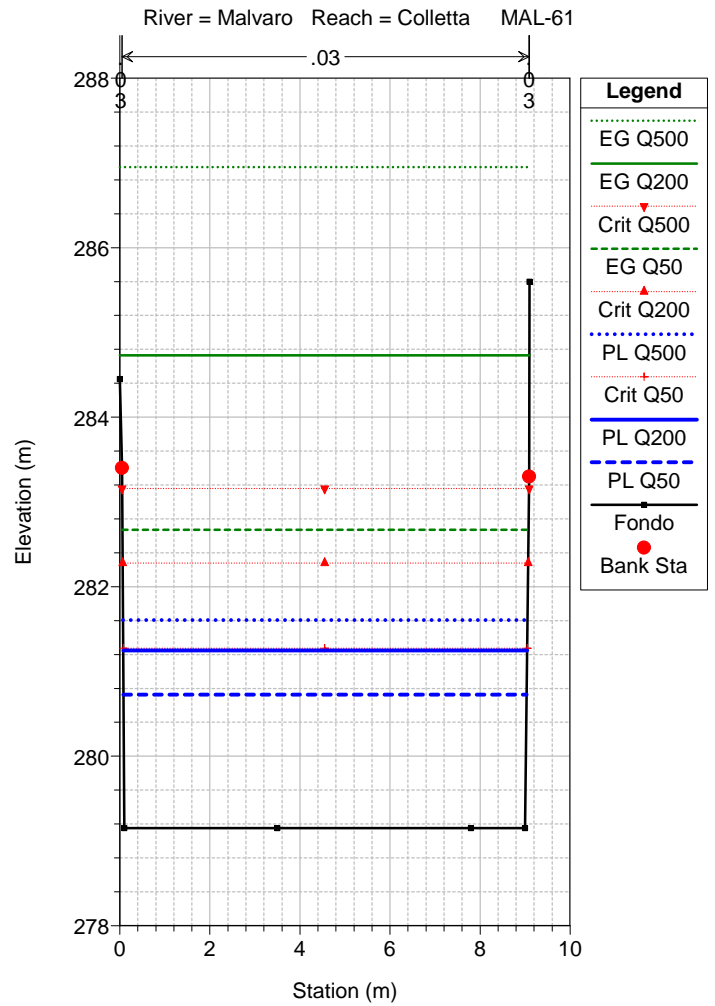
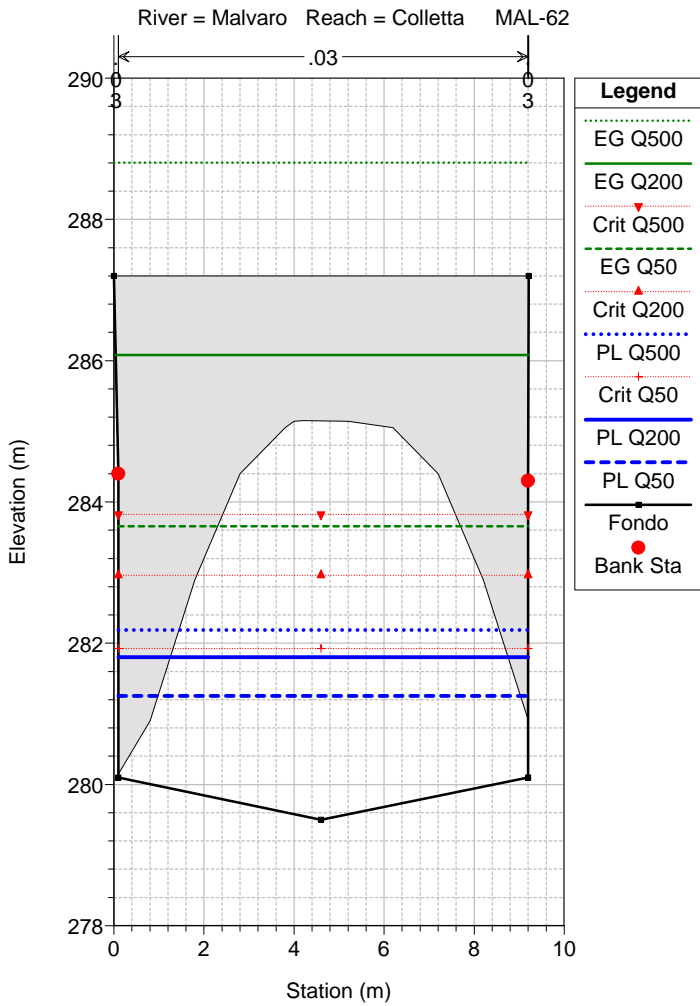
Torrente Malvaro Loc. Favale di Malvaro Plan: T-Malvaro Loc. Favale di Malvaro

Malvaro Colletta

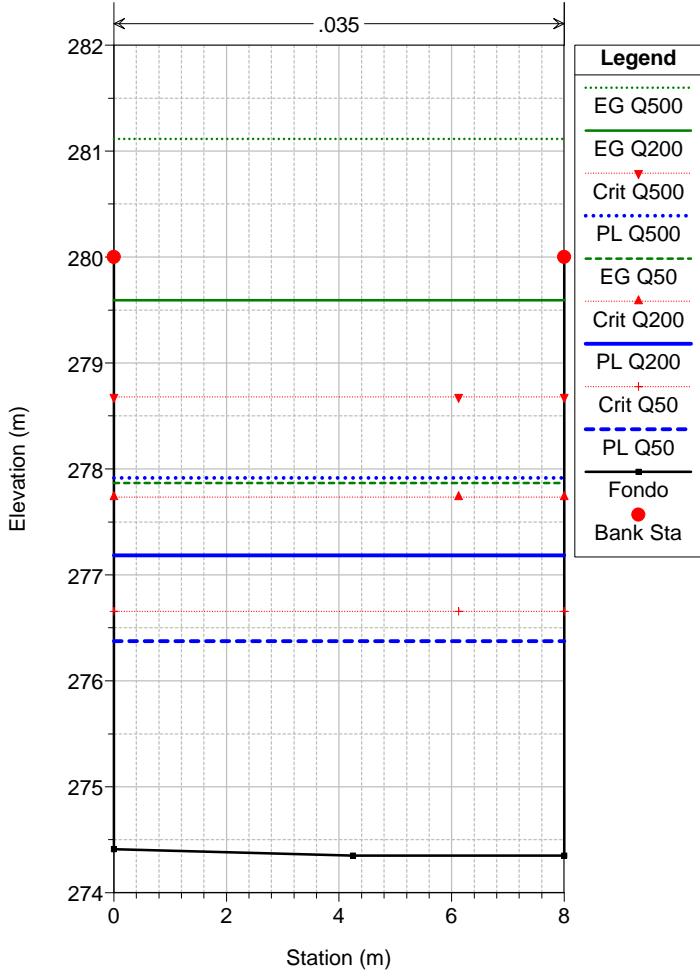


1 cm Horiz. = 10 m 1 cm Vert. = 1.5 m





River = Malvaro Reach = Colletta MAL-58



Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	LOB Elev	L. Freeboard	ROB Elev	R. Freeboard	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl	
			(m3/s)	(m)	(m)	(m)	(m)	(m)	(m)	(m)	(m)	(m/m)	(m/s)	(m2)	(m)		
Colletta	51	Q50	87.00	285.28	286.91	286.04	-0.87	285.76	-1.15	287.46	288.86	0.027006	6.19	14.05	8.70	1.55	
Colletta	51	Q200	155.00	285.28	287.69	286.04	-1.65	285.76	-1.93	288.48	290.49	0.027002	7.41	20.90	8.70	1.53	
Colletta	51	Q500	225.00	285.28	293.25	286.04	-7.21	285.76	-7.49	289.37	293.79	0.002366	3.25	69.22	8.70	0.37	
Colletta	50	MAL-66	Q50	87.00	282.56	284.56	285.87	1.31	285.59	1.03	285.08	286.43	0.022115	6.05	14.38	8.38	1.47
Colletta	50	MAL-66	Q200	155.00	282.56	288.87	285.87	-3.00	285.59	-3.28		289.33	0.002183	3.00	51.66	8.70	0.39
Colletta	50	MAL-66	Q500	225.00	282.56	293.23	285.87	-7.36	285.59	-7.64		293.55	0.001205	2.51	89.63	8.70	0.25
Colletta	49.9	MAL-65	Q50	87.00	280.68	285.72	285.87	0.15	285.59	-0.13	282.84	285.92	0.001142	1.98	43.88	8.70	0.28
Colletta	49.9	MAL-65	Q200	155.00	280.68	289.03	285.87	-3.16	285.59	-3.44		289.26	0.001010	2.13	72.62	8.70	0.24
Colletta	49.9	MAL-65	Q500	225.00	280.68	293.31	285.87	-7.44	285.59	-7.72		293.52	0.000789	2.05	109.86	8.70	0.18
Colletta	43	MAL-64	Q50	87.00	279.99	285.35	287.11	1.76	283.31	-2.04		285.82	0.003849	3.04	28.59	5.38	0.42
Colletta	43	MAL-64	Q200	155.00	279.99	288.57	287.11	-1.46	283.31	-5.26		289.15	0.003937	3.37	45.97	5.40	0.37
Colletta	43	MAL-64	Q500	225.00	279.99	292.89	287.11	-5.78	283.31	-9.58		293.43	0.003259	3.25	69.31	5.40	0.29
Colletta	42.1	Q50	87.00	279.71	284.13	287.11	2.98	283.31	-0.82	283.69	285.59	0.017449	5.34	16.30	4.00	0.84	
Colletta	42.1	Q200	155.00	279.71	287.62	287.11	-0.51	283.31	-4.30	285.40	288.96	0.012906	5.13	30.22	4.00	0.60	
Colletta	42.1	Q500	225.00	279.71	292.18	287.11	-5.07	283.31	-8.87	286.91	293.28	0.009450	4.64	48.50	4.00	0.43	
Colletta	42	MAL-63	Q50	87.00	279.71	283.61	285.28	1.67	283.32	-0.29	283.61	285.54	0.025232	6.15	14.15	3.67	1.04
Colletta	42	MAL-63	Q200	155.00	279.71	284.83	285.28	0.45	283.32	-1.51	284.83	288.70	0.051497	8.72	17.78	2.29	1.27
Colletta	42	MAL-63	Q500	225.00	279.71	285.31	285.28	-0.03	283.32	-1.99	285.31	292.65	0.105296	12.01	18.74	1.26	1.67
Colletta	41	MAL-62	Q50	87.00	279.50	281.25	280.15	-1.11	280.92	-0.33	281.92	283.66	0.038819	6.87	12.67	8.05	1.82
Colletta	41	MAL-62	Q200	155.00	279.50	281.80	280.15	-1.65	280.92	-0.88	282.96	286.08	0.053571	9.16	16.92	7.50	2.07
Colletta	41	MAL-62	Q500	225.00	279.50	282.19	280.15	-2.04	280.92	-1.27	283.83	288.80	0.073395	11.39	19.75	7.12	2.35
Colletta	40.1	MAL-61	Q50	87.00	279.15	280.73	283.40	2.67	283.30	2.57	281.28	282.67	0.027899	6.18	14.09	8.95	1.57
Colletta	40.1	MAL-61	Q200	155.00	279.15	281.25	283.40	2.15	283.30	2.05	282.28	284.73	0.038135	8.27	18.75	8.97	1.83
Colletta	40.1	MAL-61	Q500	225.00	279.15	281.61	283.40	1.79	283.30	1.69	283.16	286.95	0.050843	10.24	21.97	8.98	2.09
Colletta	40	MAL-60	Q50	87.00	274.52	276.11	279.85	3.74	281.00	4.89	277.56	282.20	0.156482	10.94	7.95	6.00	3.03
Colletta	40	MAL-60	Q200	155.00	274.52	276.91	279.85	2.94	281.00	4.09	278.84	284.28	0.126568	12.03	12.89	6.30	2.68
Colletta	40	MAL-60	Q500	225.00	274.52	277.54	279.85	2.31	281.00	3.46	280.18	286.51	0.125869	13.27	16.96	6.54	2.63
Colletta	39	MAL-59	Q50	87.00	274.87	277.00	277.50	0.50	280.00	3.00	277.89	279.95	0.055714	7.61	11.43	6.54	1.84
Colletta	39	MAL-59	Q200	155.00	274.87	277.76	277.50	-0.26	280.00	2.24	279.05	282.17	0.062579	9.30	16.67	7.00	1.92
Colletta	39	MAL-59	Q500	225.00	274.87	278.38	277.50	-0.88	280.00	1.62	280.09	284.25	0.070510	10.73	20.96	7.00	1.98
Colletta	38	MAL-58	Q50	87.00	274.35	276.37	280.00	3.63	280.00	3.63	276.66	277.87	0.024319	5.42	16.06	8.00	1.22
Colletta	38	MAL-58	Q200	155.00	274.35	277.18	280.00	2.82	280.00	2.82	277.73	279.59	0.029566	6.88	22.54	8.00	1.31
Colletta	38	MAL-58	Q500	225.00	274.35	277.92	280.00	2.08	280.00	2.08	278.68	281.11	0.033052	7.92	28.40	8.00	1.34

Piano di bacino torrente Lavagna

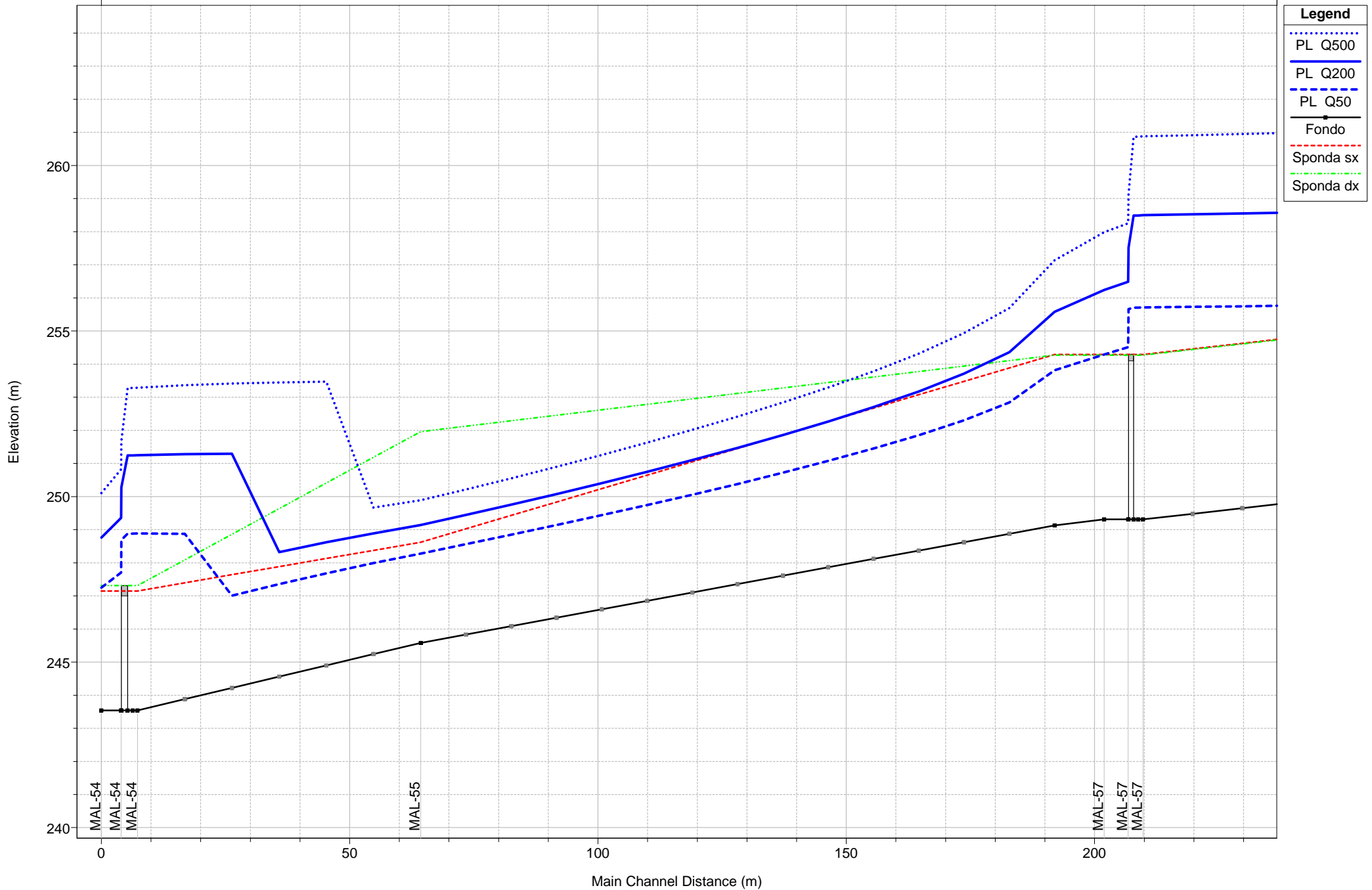
T. Malvaro

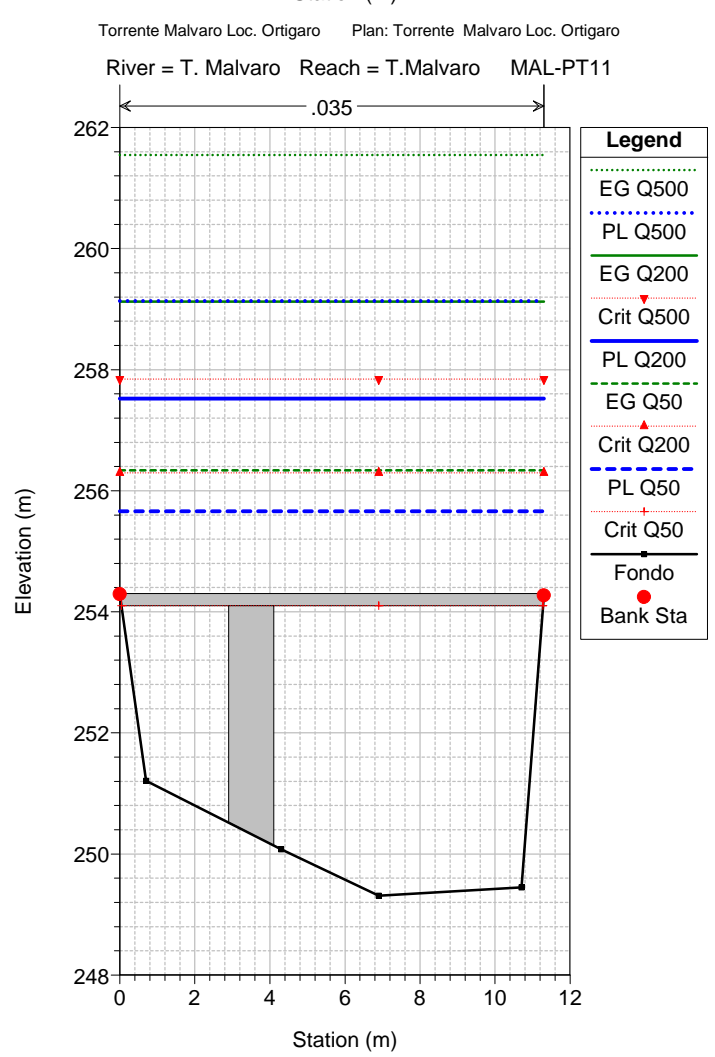
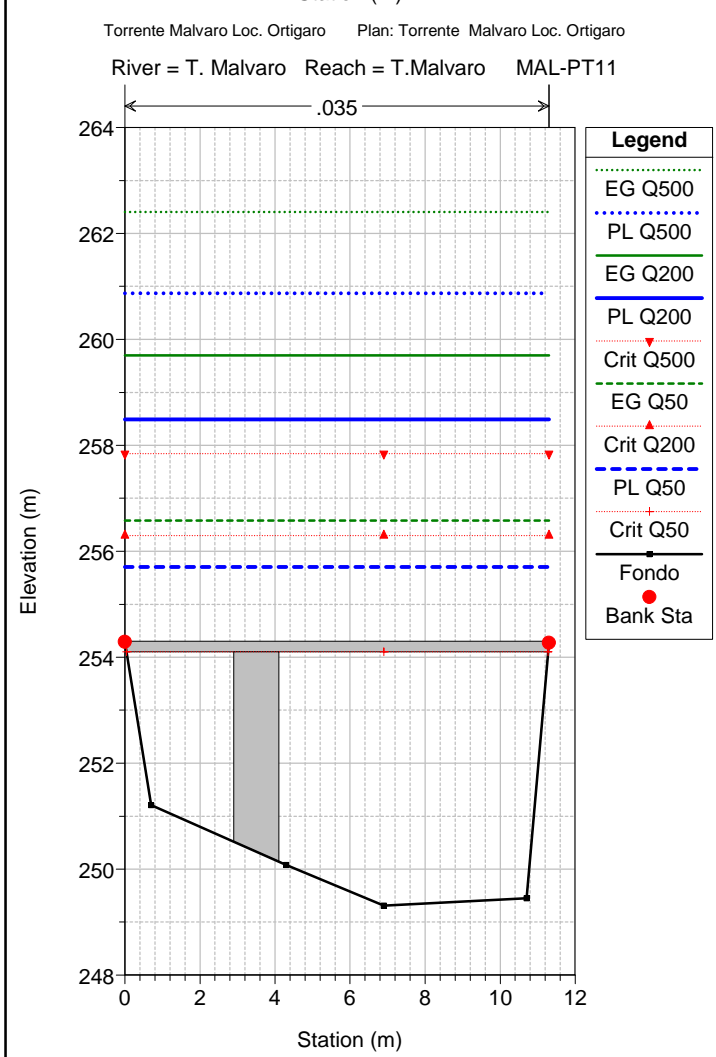
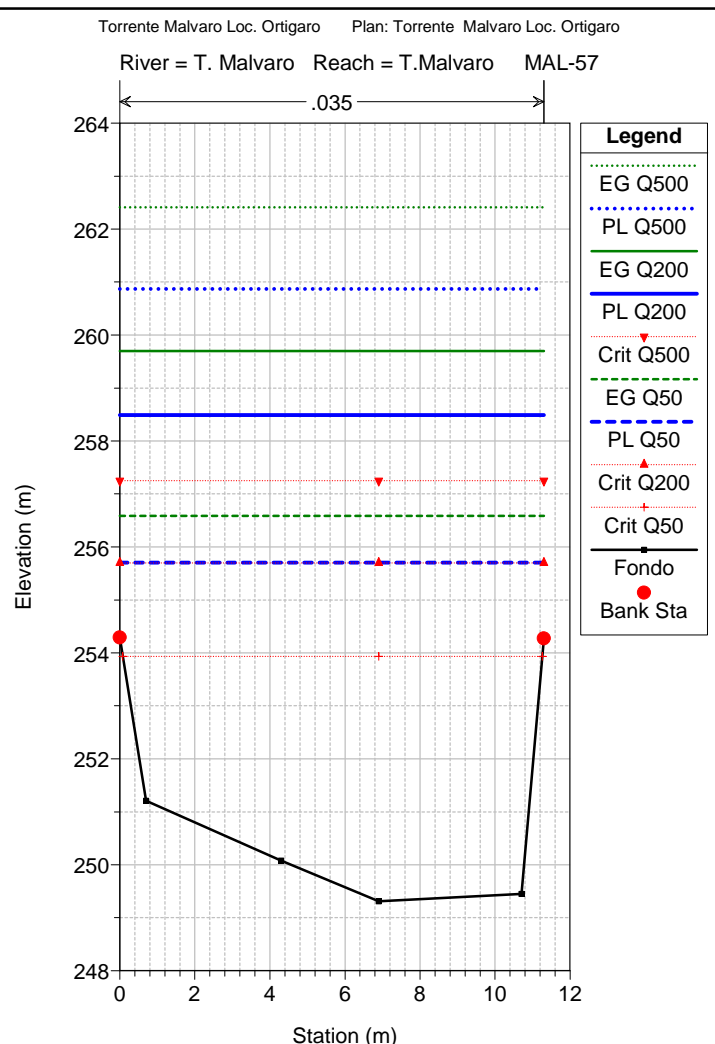
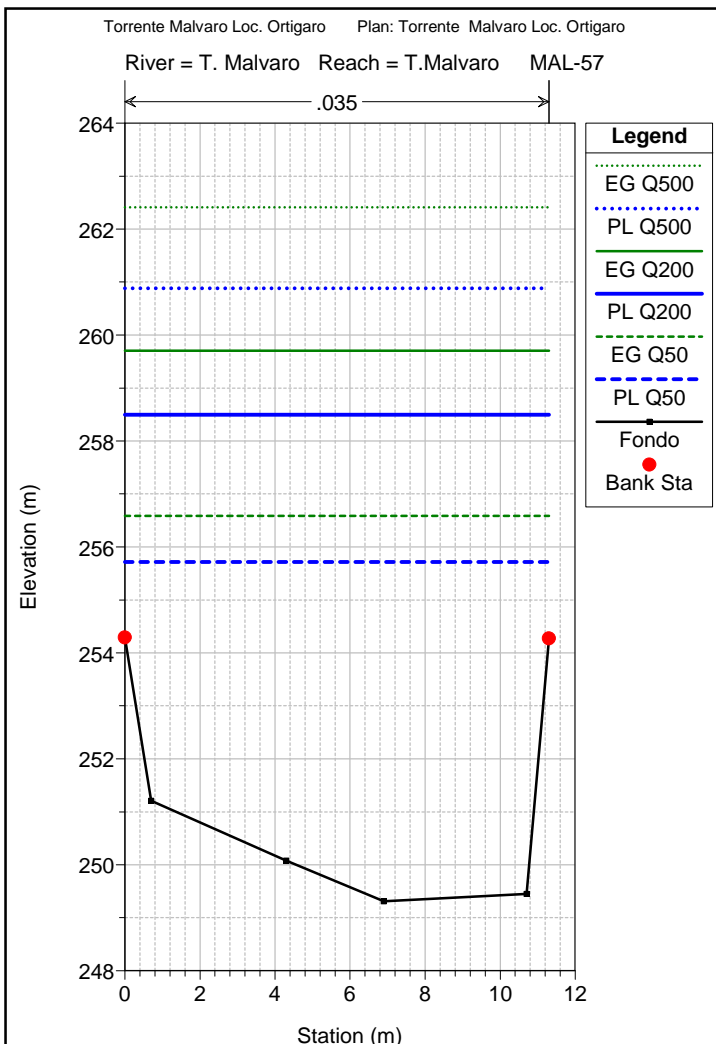
tratto loc. Ortigaro – dalla sez. MAL57 alla MAL54

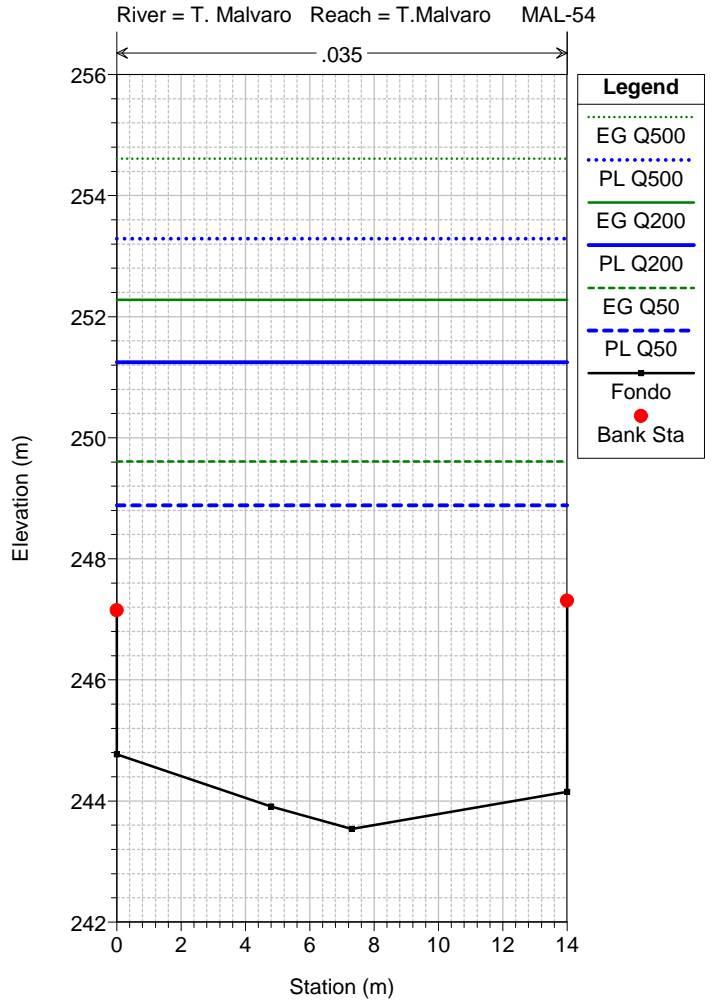
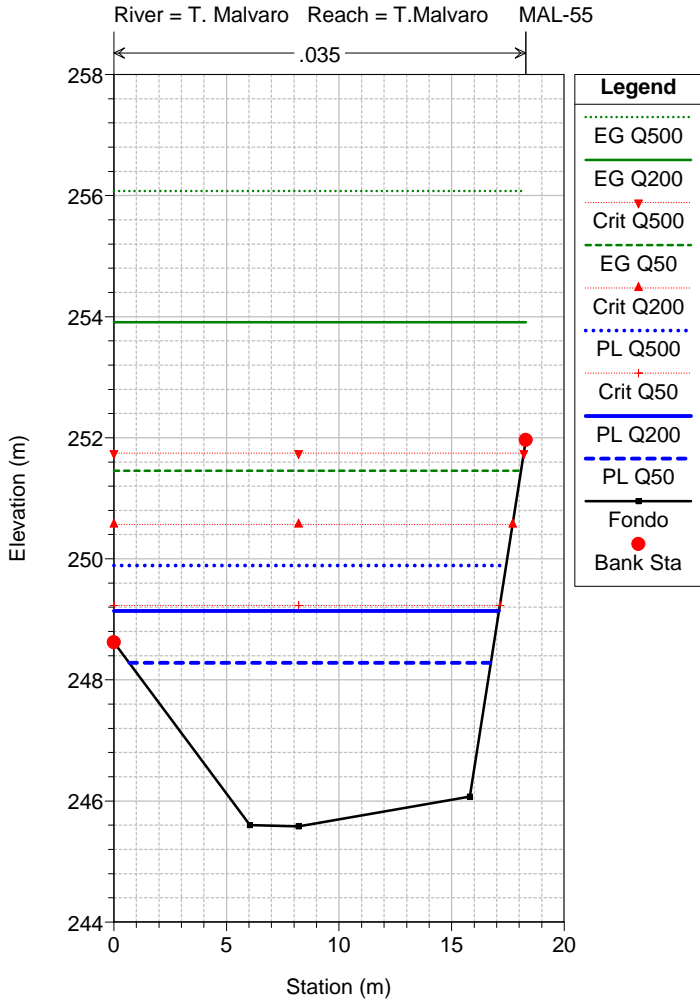
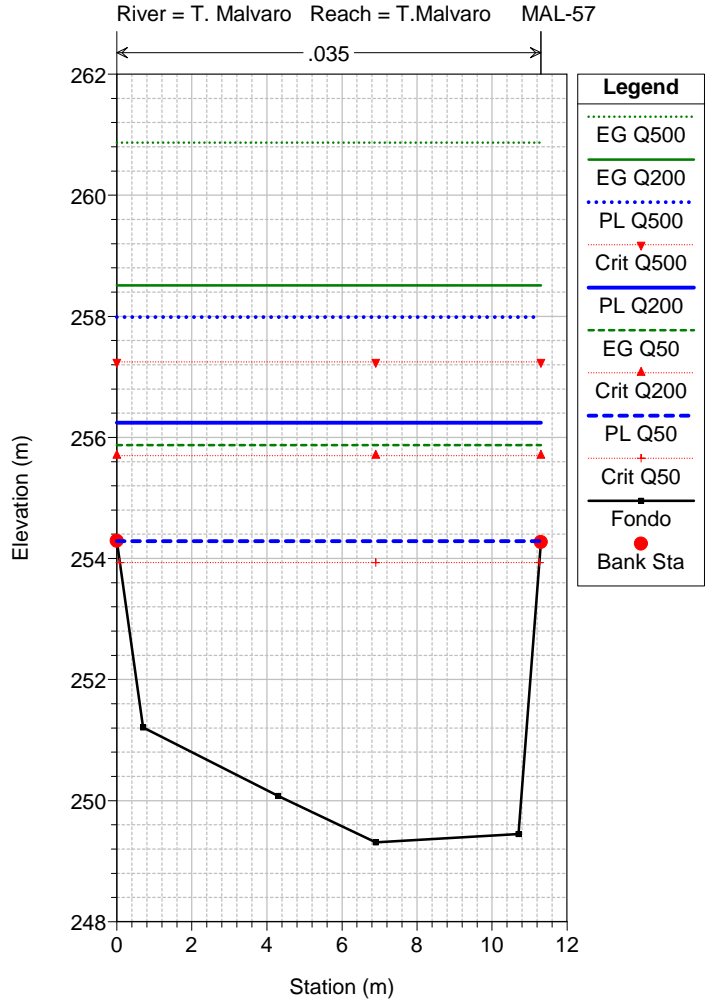
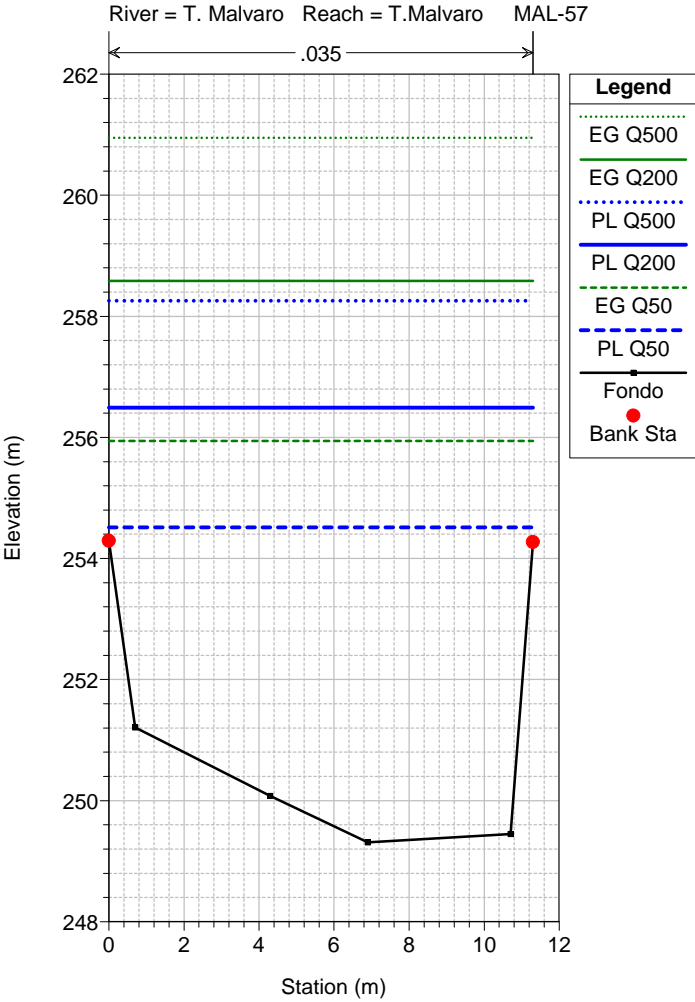
- **Profili idraulici**
- **Sezioni**
- **Tabelle dei risultati**

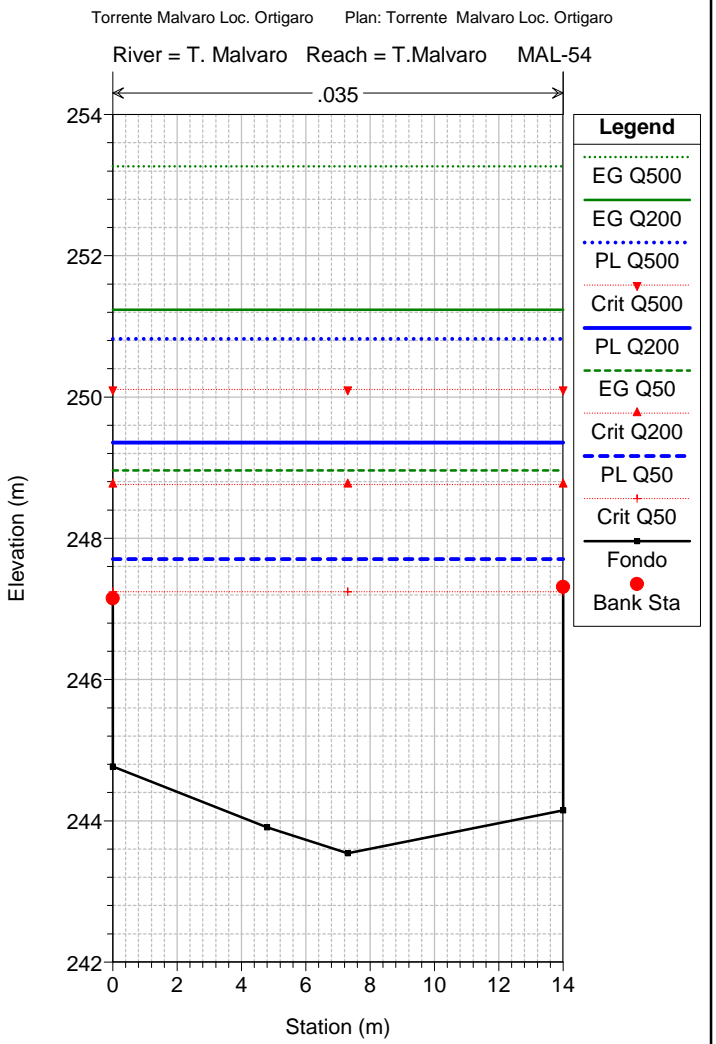
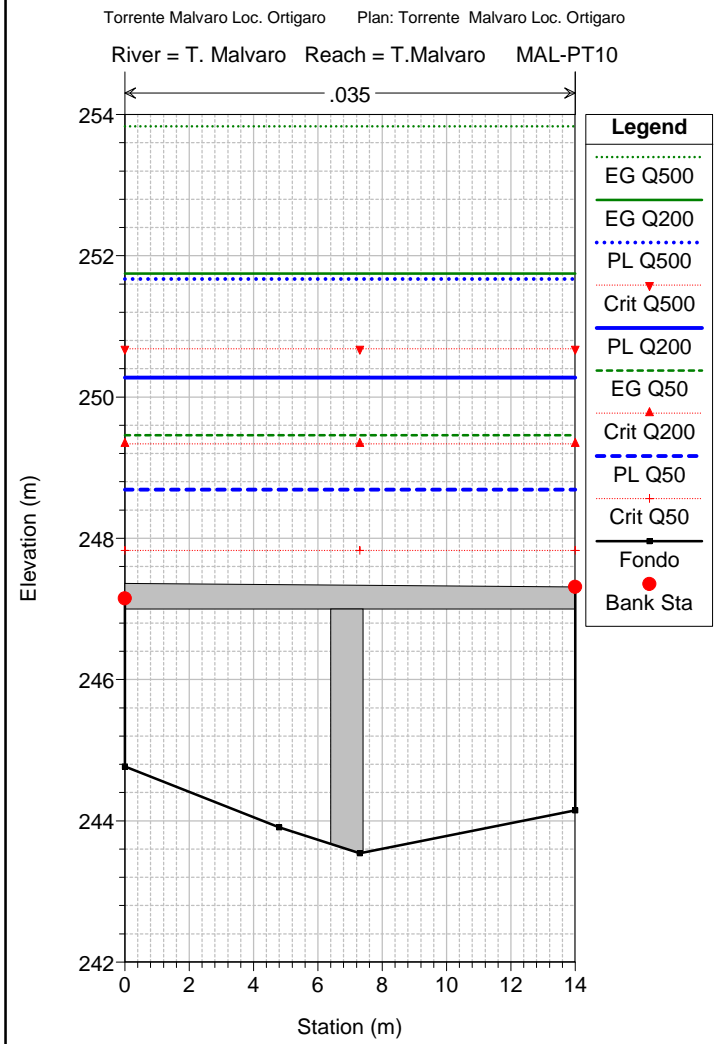
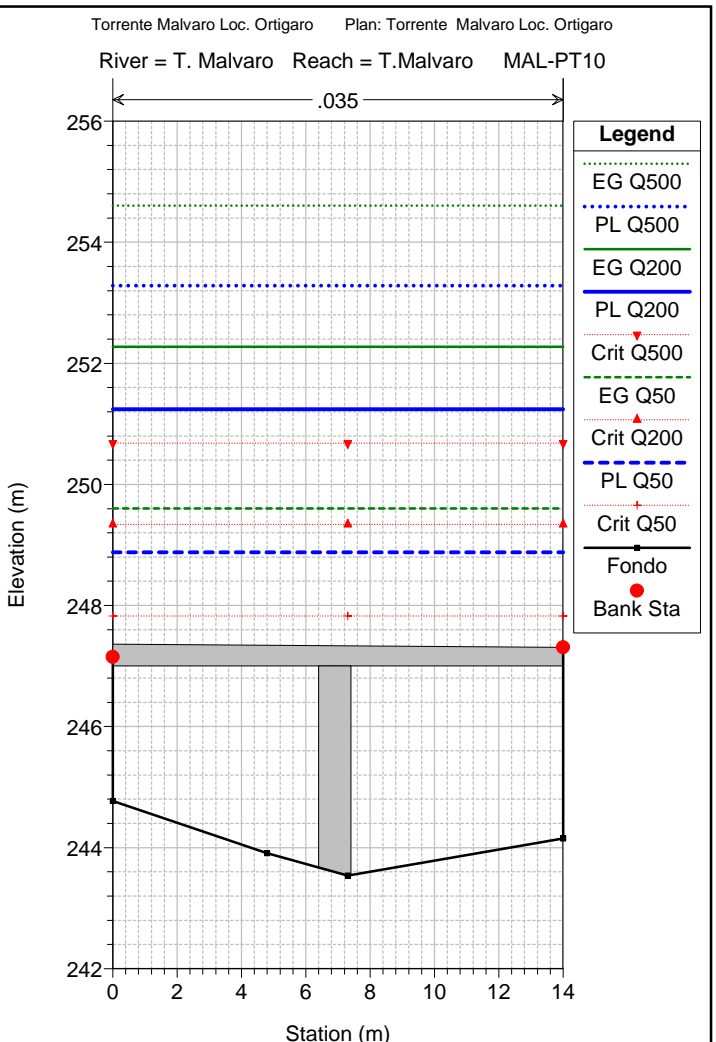
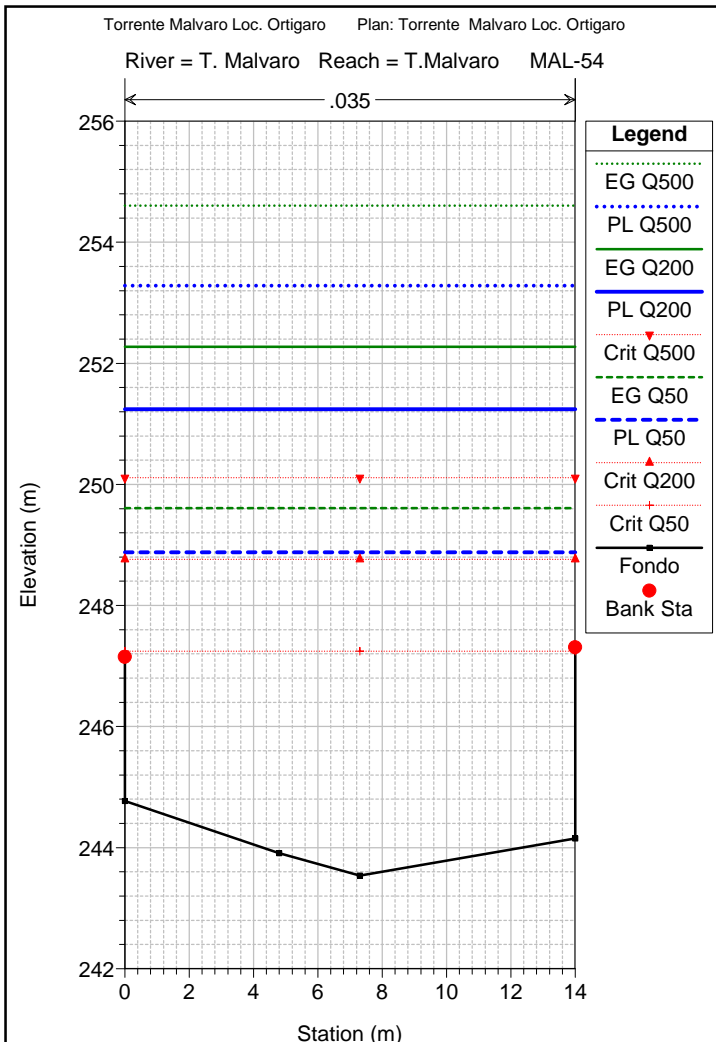
Torrente Malvaro Loc. Ortigaro Plan: Torrente Malvaro Loc. Ortigaro

T. Malvaro T.Malvaro

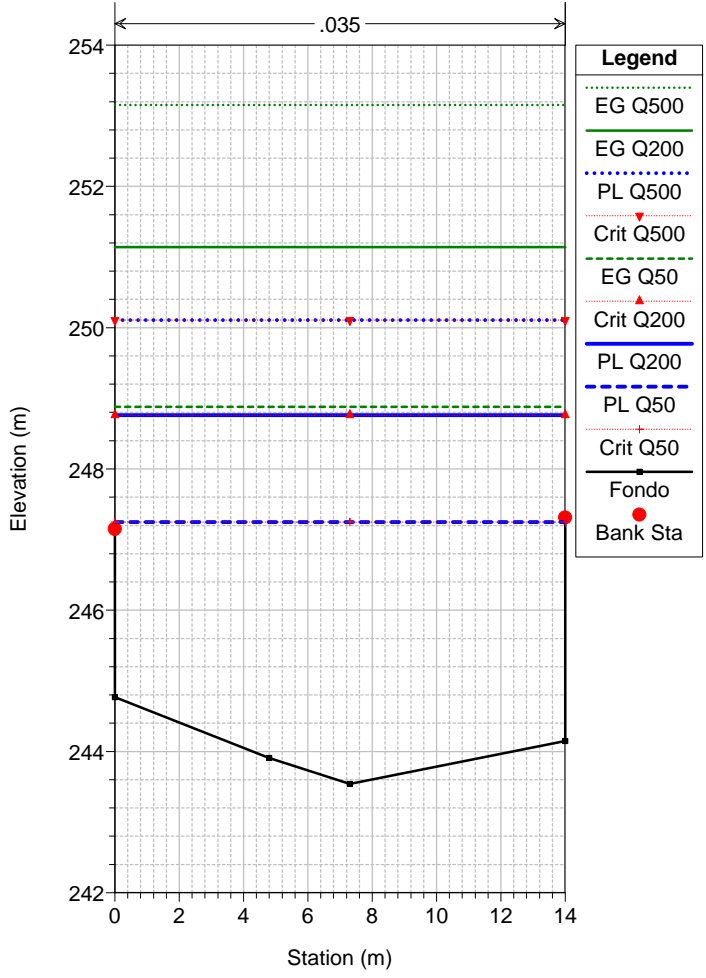








River = T. Malvaro Reach = T.Malvaro MAL-54



Reach	River Sta	Profile	Q Total (m3/s)	Min Ch El (m)	W.S. Elev (m)	LOB Elev (m)	L. Freeboard (m)	ROB Elev (m)	R. Freeboard (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
T.Malvaro	38	Q50	258.00	251.01	255.97	255.99	0.02	255.97	0.00	255.63	257.57	0.011246	5.61	46.01	11.29	0.89
T.Malvaro	38	Q200	456.00	251.01	258.82	255.99	-2.83	255.97	-2.85	257.40	260.55	0.008611	5.83	78.20	11.30	0.71
T.Malvaro	38	Q500	662.00	251.01	261.29	255.99	-5.30	255.97	-5.32	258.94	263.27	0.008422	6.24	106.12	11.30	0.65
T.Malvaro	37.2	MAL-57	Q50	258.00	249.31	255.71	254.29	-1.42	254.27	-1.44	256.59	0.004967	4.14	62.36	11.30	0.56
T.Malvaro	37.2	MAL-57	Q200	456.00	249.31	258.50	254.29	-4.21	254.27	-4.23	259.70	0.005429	4.86	93.81	11.30	0.54
T.Malvaro	37.2	MAL-57	Q500	662.00	249.31	260.88	254.29	-6.59	254.27	-6.61	262.41	0.006141	5.48	120.74	11.30	0.54
T.Malvaro	37.1	MAL-57	Q50	258.00	249.31	255.71	254.29	-1.42	254.27	-1.44	253.93	0.004985	4.14	62.27	11.30	0.56
T.Malvaro	37.1	MAL-57	Q200	456.00	249.31	258.49	254.29	-4.20	254.27	-4.22	259.70	0.005442	4.87	93.72	11.30	0.54
T.Malvaro	37.1	MAL-57	Q500	662.00	249.31	260.87	254.29	-6.58	254.27	-6.60	257.25	0.006153	5.49	120.64	11.30	0.54
T.Malvaro	37	MAL-PT11														
			Bridge													
T.Malvaro	36.9	MAL-57	Q50	258.00	249.31	254.52	254.29	-0.23	254.27	-0.25	255.94	0.009572	5.29	48.81	11.30	0.81
T.Malvaro	36.9	MAL-57	Q200	456.00	249.31	256.49	254.29	-2.20	254.27	-2.22	258.58	0.011002	6.41	71.11	11.30	0.82
T.Malvaro	36.9	MAL-57	Q500	662.00	249.31	258.26	254.29	-3.97	254.27	-3.99	260.95	0.012326	7.27	91.07	11.30	0.82
T.Malvaro	36.8	MAL-57	Q50	258.00	249.31	254.29	254.29	0.00	254.27	-0.02	253.93	0.011090	5.58	46.25	11.30	0.88
T.Malvaro	36.8	MAL-57	Q200	456.00	249.31	256.24	254.29	-1.95	254.27	-1.97	255.70	0.012217	6.68	68.31	11.30	0.87
T.Malvaro	36.8	MAL-57	Q500	662.00	249.31	257.98	254.29	-3.69	254.27	-3.71	257.25	0.013436	7.52	88.01	11.30	0.86
T.Malvaro	36		Q50	258.00	249.13	253.81	254.29	0.48	254.27	0.46	253.81	0.014420	6.12	42.18	11.14	1.00
T.Malvaro	36		Q200	456.00	249.13	255.58	254.29	-1.29	254.27	-1.31	255.58	0.015841	7.34	62.08	11.30	1.00
T.Malvaro	36		Q500	662.00	249.13	257.13	254.29	-2.84	254.27	-2.86	257.13	0.017448	8.31	79.66	11.30	1.00
T.Malvaro	33	MAL-55	Q50	258.00	245.58	248.28	248.62	0.34	251.96	3.68	249.23	0.034876	7.89	32.69	16.06	1.77
T.Malvaro	33	MAL-55	Q200	456.00	245.58	249.14	248.62	-0.52	251.96	2.82	250.57	0.037502	9.67	47.13	17.10	1.86
T.Malvaro	33	MAL-55	Q500	662.00	245.58	249.89	248.62	-1.27	251.96	2.07	251.74	0.038856	11.02	60.07	17.42	1.89
T.Malvaro	32.3	MAL-54	Q50	258.00	243.54	248.89	247.15	-1.74	247.31	-1.58	249.61	0.004053	3.77	68.49	14.00	0.54
T.Malvaro	32.3	MAL-54	Q200	456.00	243.54	251.25	247.15	-4.10	247.31	-3.94	252.28	0.004367	4.49	101.58	14.00	0.53
T.Malvaro	32.3	MAL-54	Q500	662.00	243.54	253.29	247.15	-6.14	247.31	-5.98	254.61	0.004841	5.09	130.14	14.00	0.53
T.Malvaro	32.2	MAL-54	Q50	258.00	243.54	248.88	247.15	-1.73	247.31	-1.57	247.24	0.004066	3.77	68.41	14.00	0.54
T.Malvaro	32.2	MAL-54	Q200	456.00	243.54	251.24	247.15	-4.09	247.31	-3.93	248.76	0.004378	4.49	101.49	14.00	0.53
T.Malvaro	32.2	MAL-54	Q500	662.00	243.54	253.28	247.15	-6.13	247.31	-5.97	250.11	0.004850	5.09	130.04	14.00	0.53
T.Malvaro	32.15	MAL-PT10														
			Bridge													
T.Malvaro	32.1	MAL-54	Q50	258.00	243.54	247.71	247.15	-0.56	247.31	-0.40	247.24	0.008797	4.96	51.98	14.00	0.82
T.Malvaro	32.1	MAL-54	Q200	456.00	243.54	249.35	247.15	-2.20	247.31	-2.04	248.76	0.009846	6.08	75.05	14.00	0.84
T.Malvaro	32.1	MAL-54	Q500	662.00	243.54	250.82	247.15	-3.67	247.31	-3.51	250.11	0.010800	6.92	95.62	14.00	0.85
T.Malvaro	32	MAL-54	Q50	258.00	243.54	247.25	247.15	-0.10	247.31	0.06	247.25	0.012835	5.66	45.58	14.00	1.00
T.Malvaro	32	MAL-54	Q200	456.00	243.54	248.76	247.15	-1.61	247.31	-1.45	248.76	0.013606	6.83	66.73	14.00	1.00
T.Malvaro	32	MAL-54	Q500	662.00	243.54	250.11	247.15	-2.96	247.31	-2.80	250.11	0.014516	7.73	85.61	14.00	1.00

Piano di bacino torrente Lavagna

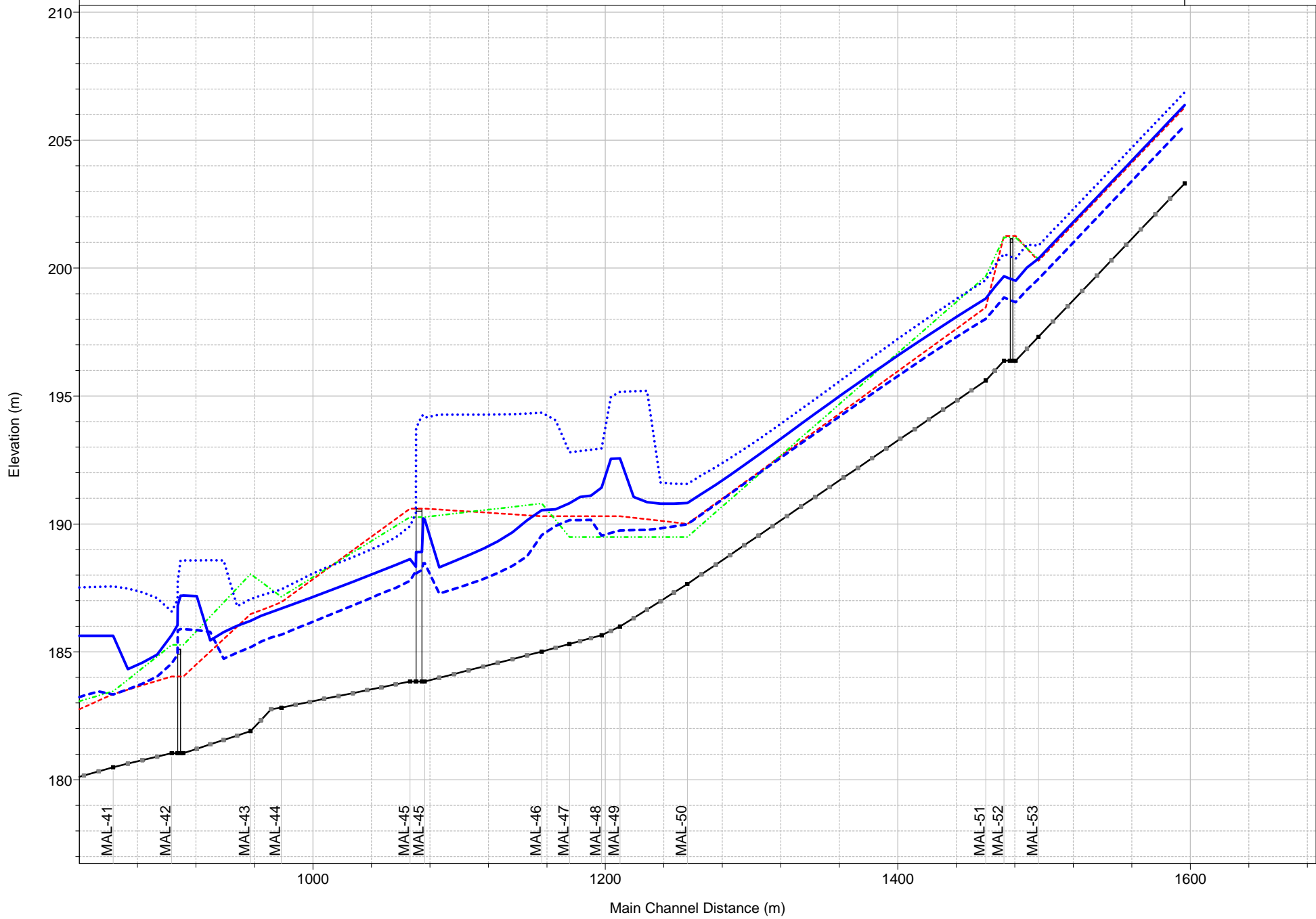
T. Malvaro

tratto loc. Castagnelo – dalla sez. MAL53 alla MAL33

- **Profili idraulici**
- **Sezioni**
- **Tabelle dei risultati**

Torrente Malvaro Loc. Castagnelo Plan: Torrente Malvaro Loc. Castagnelo

Torrente Malvaro Rio Malvaro

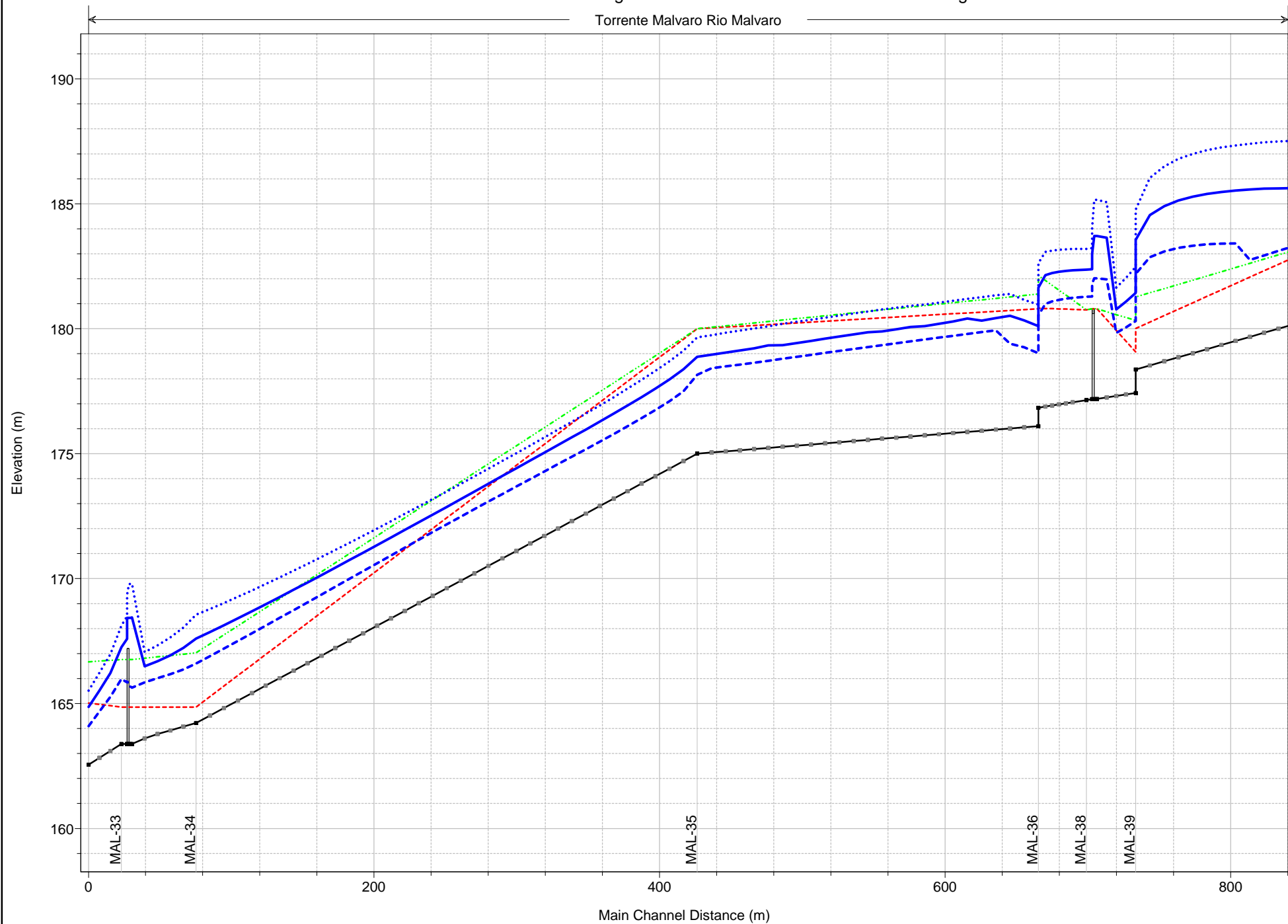


- Legend**
- PL Q500
 - PL Q200
 - PL Q50
 - Fondo
 - Sponda sx
 - Sponda dx

1 cm Horiz. = 35 m 1 cm Vert. = 2 m

Torrente Malvaro Loc. Castagnelo Plan: Torrente Malvaro Loc. Castagnelo

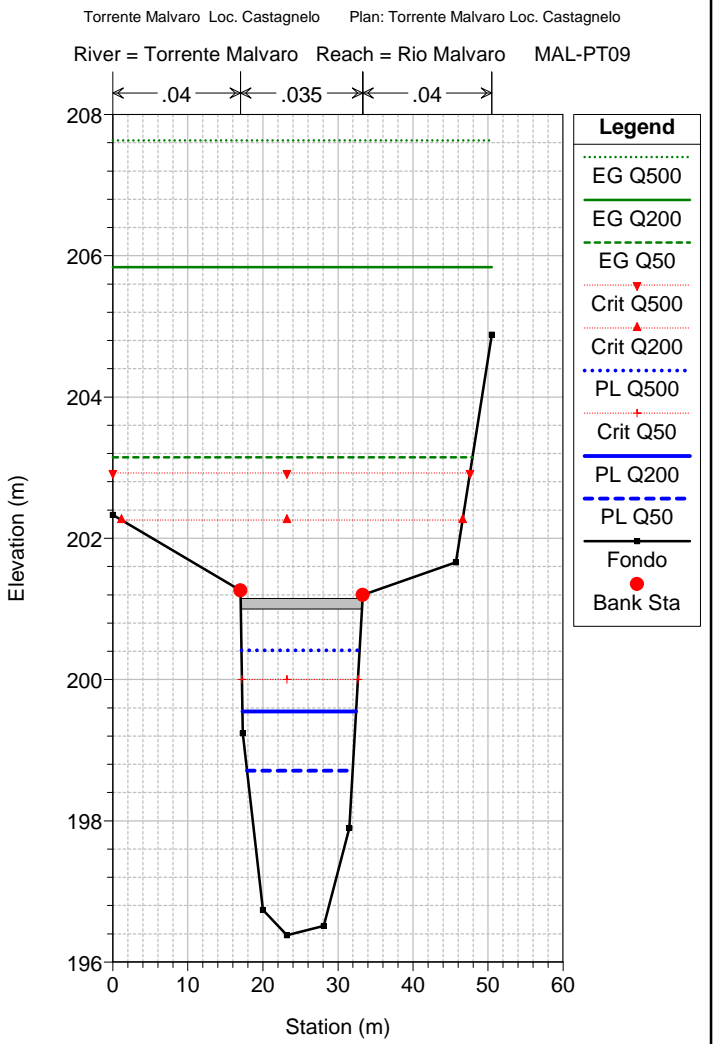
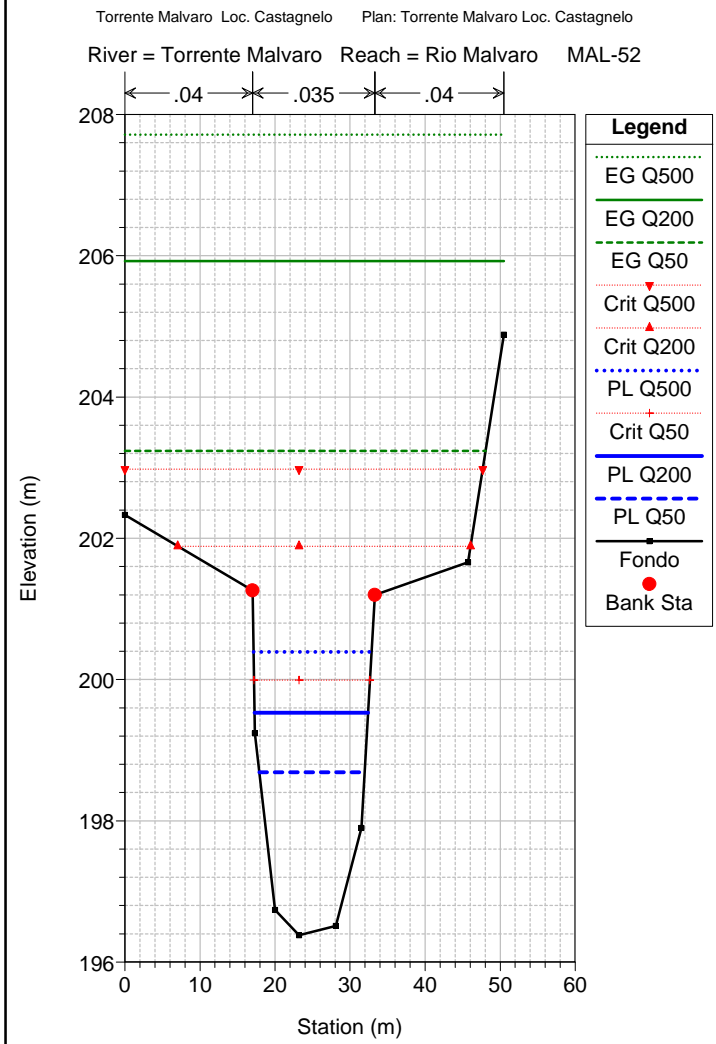
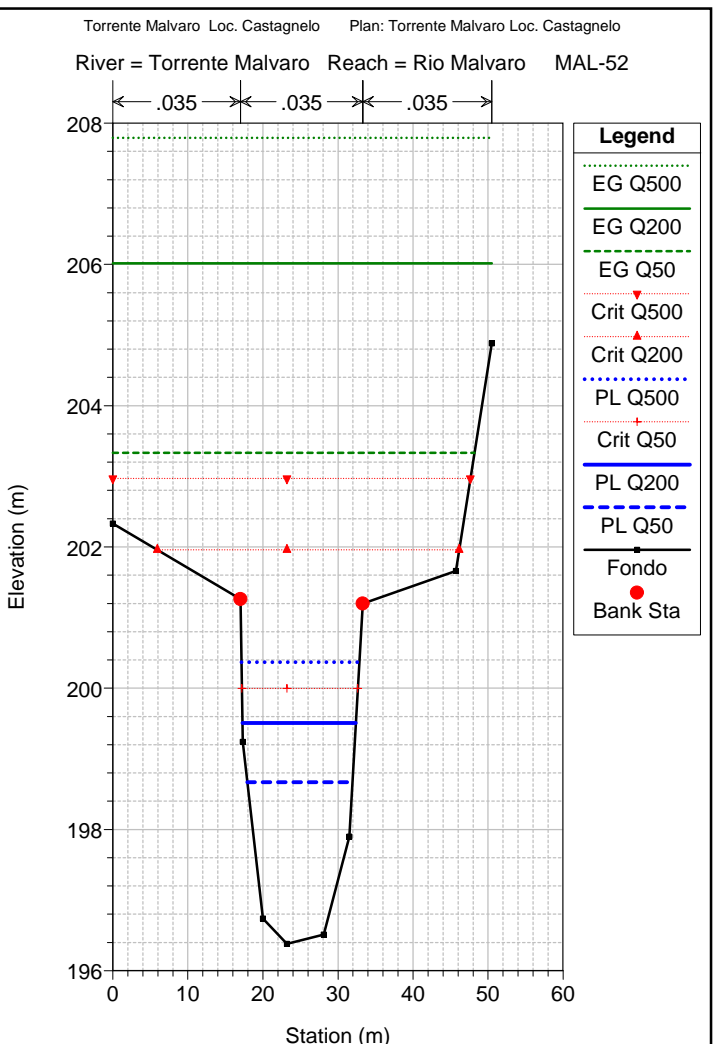
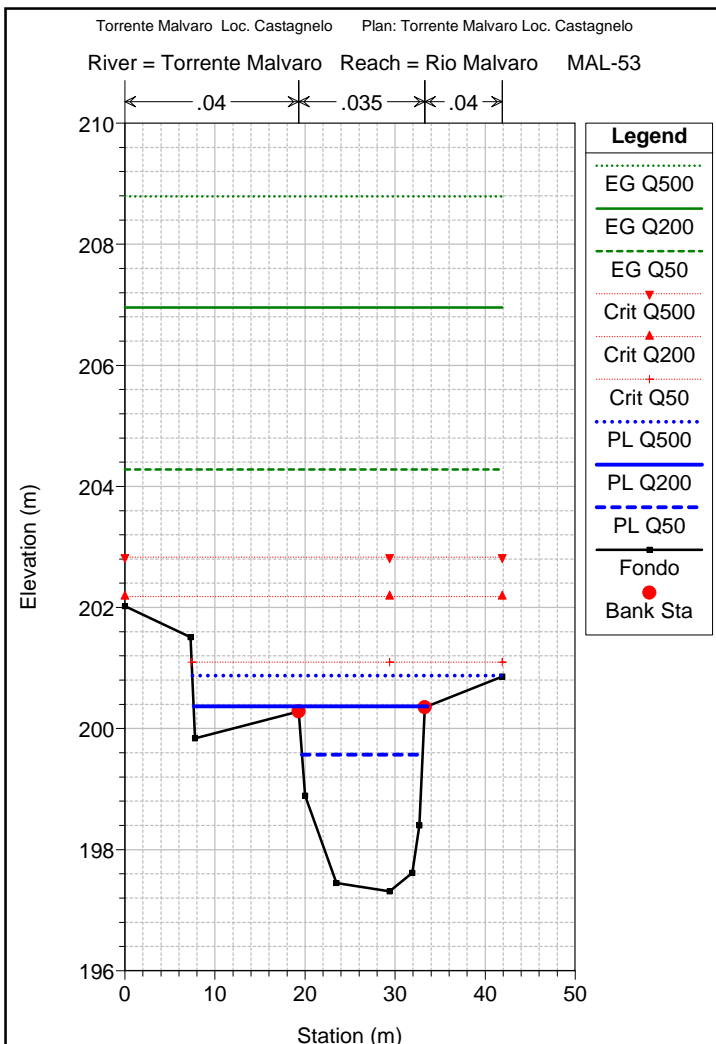
Torrente Malvaro Rio Malvaro

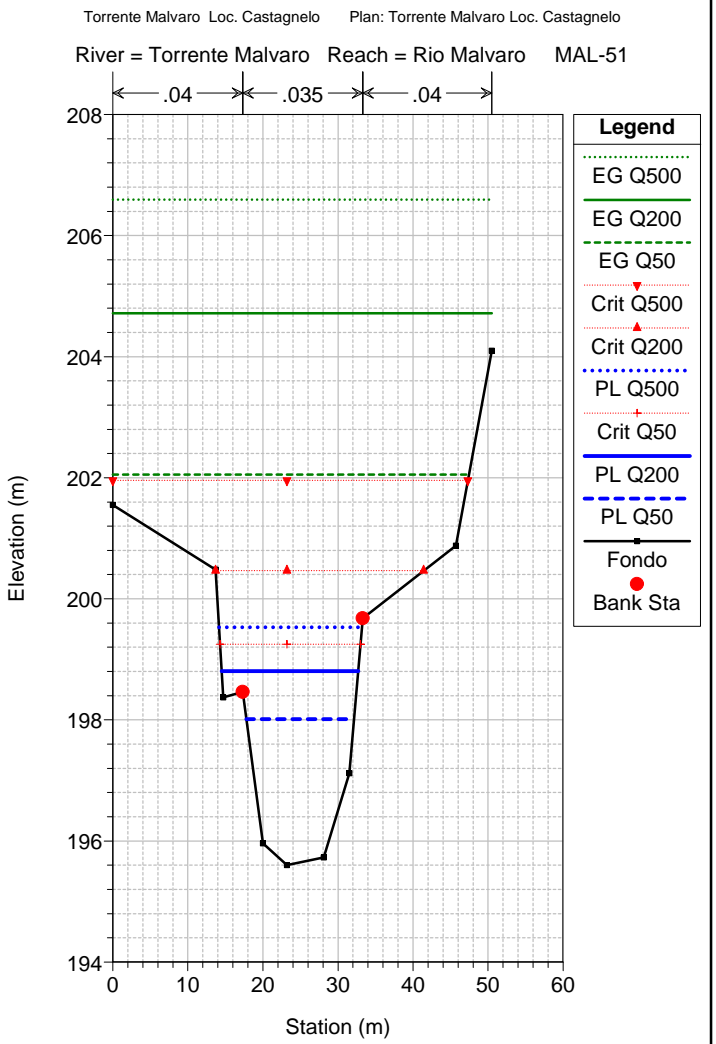
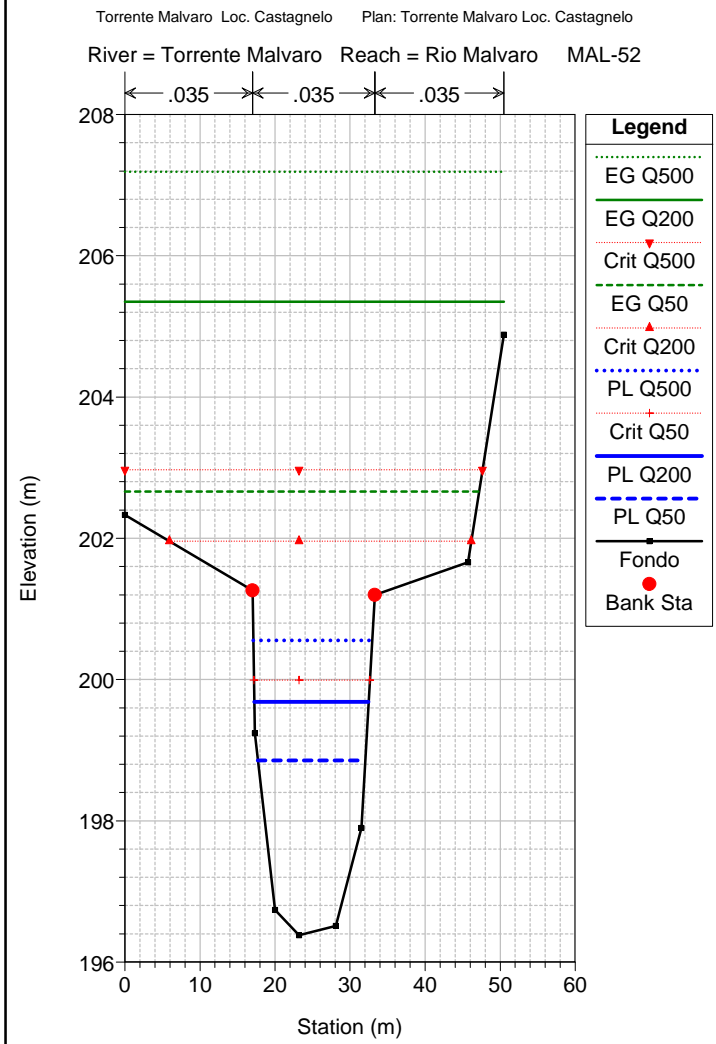
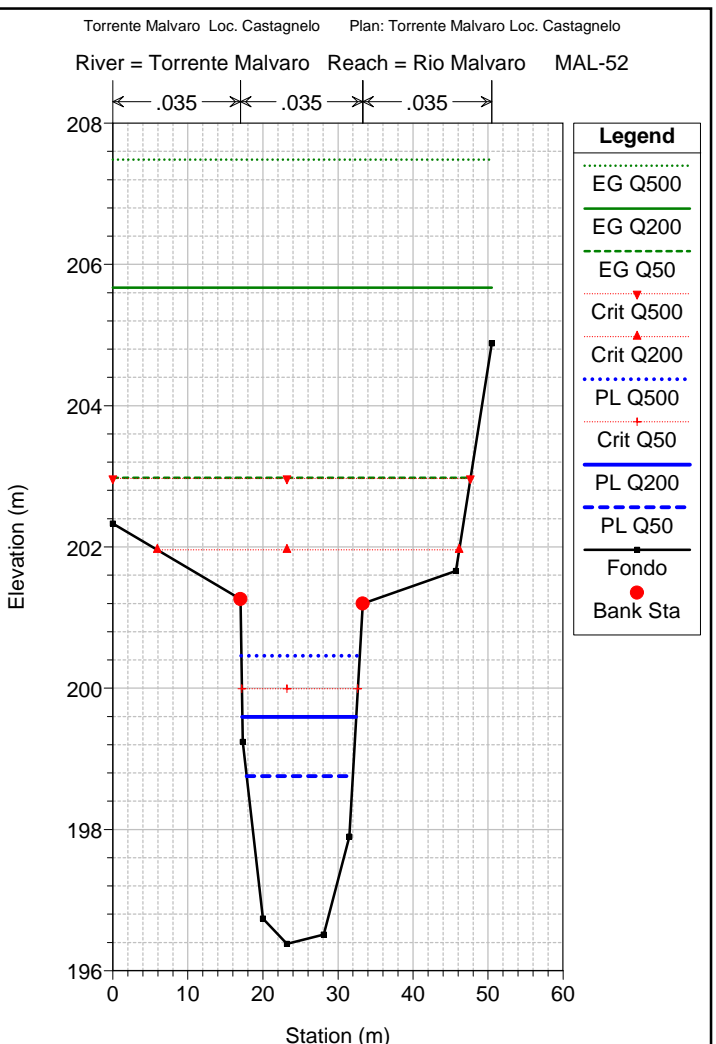
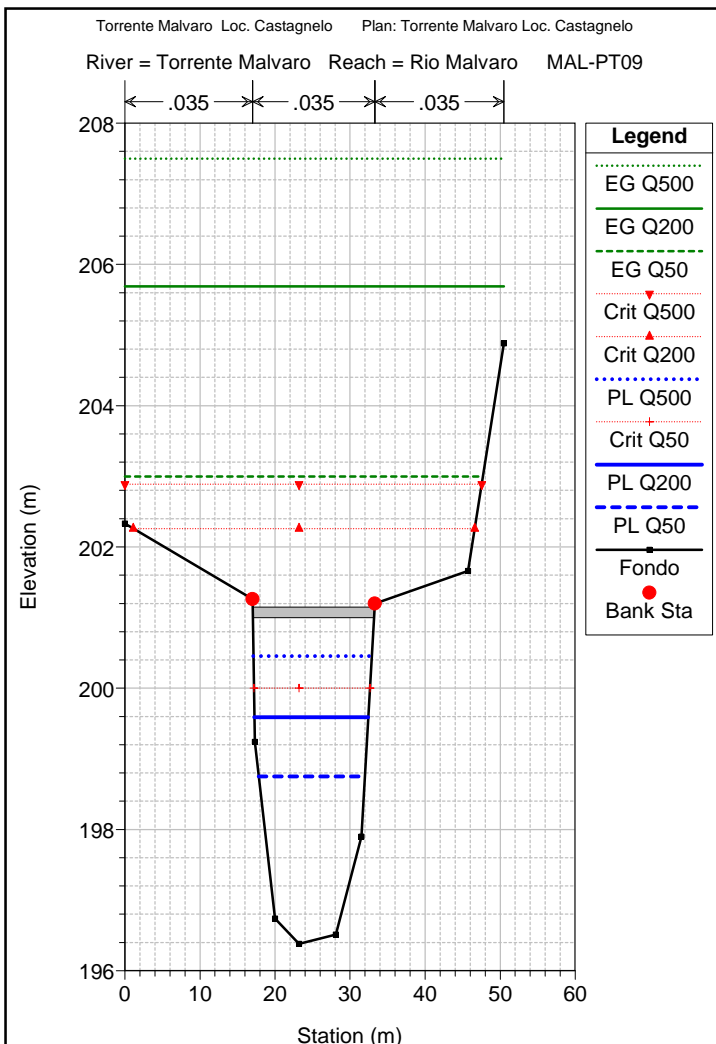


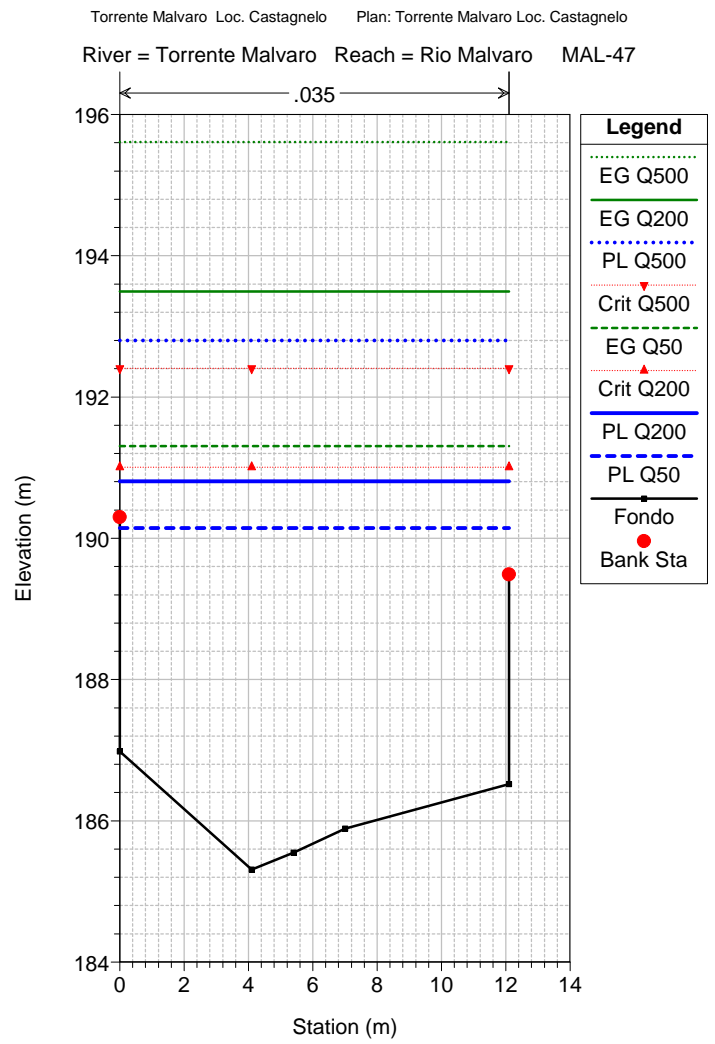
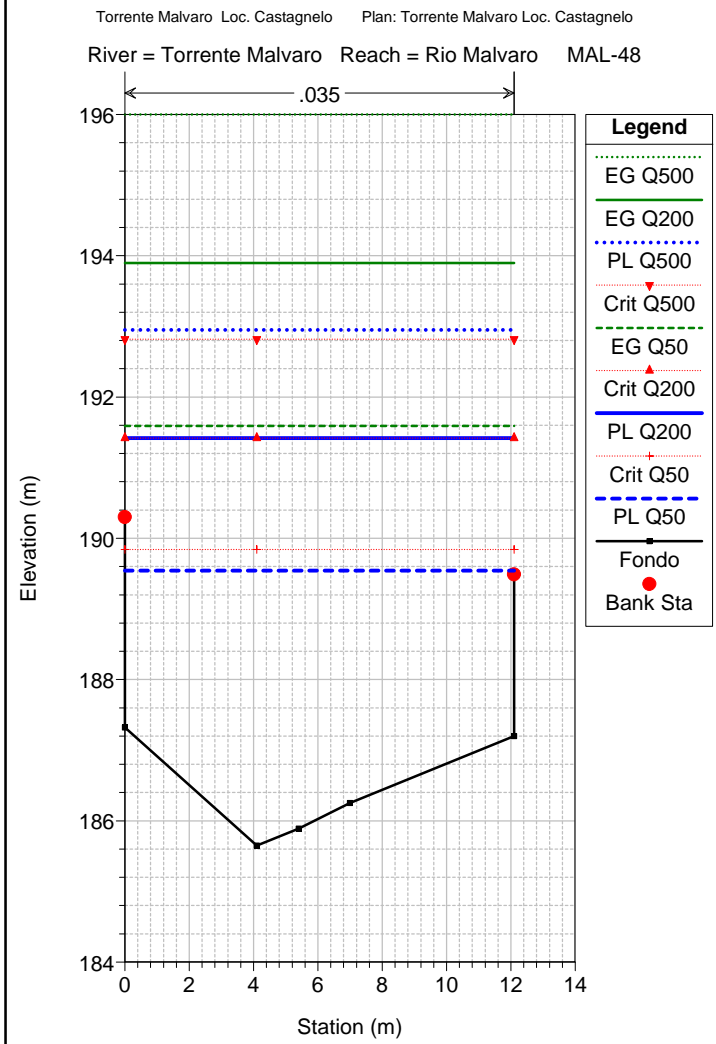
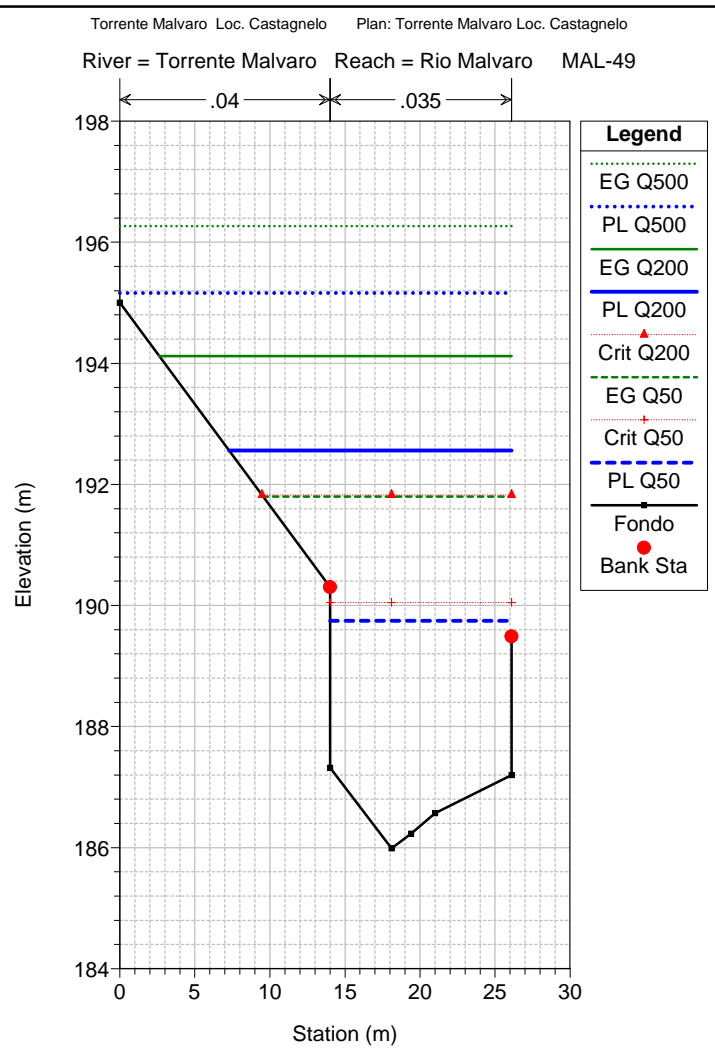
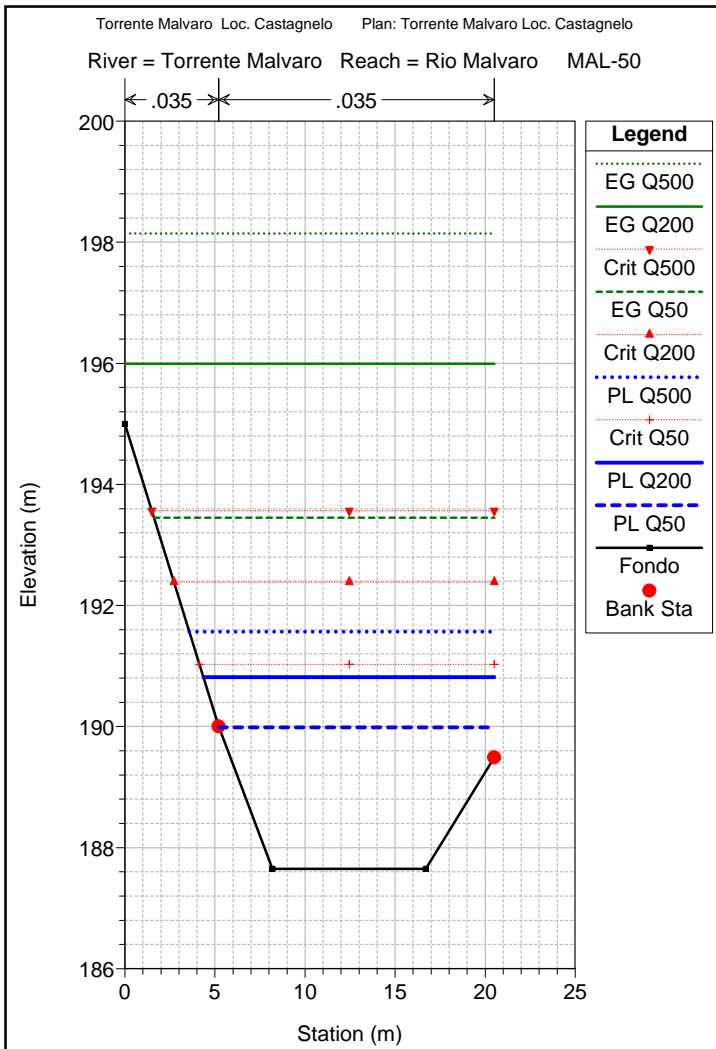
Legend

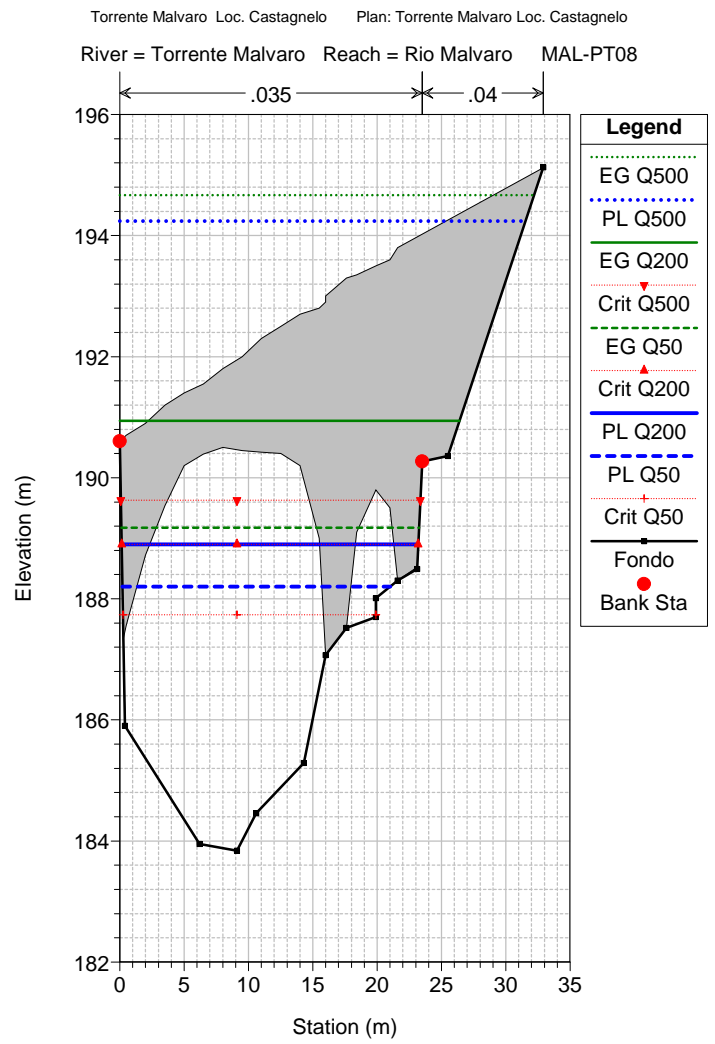
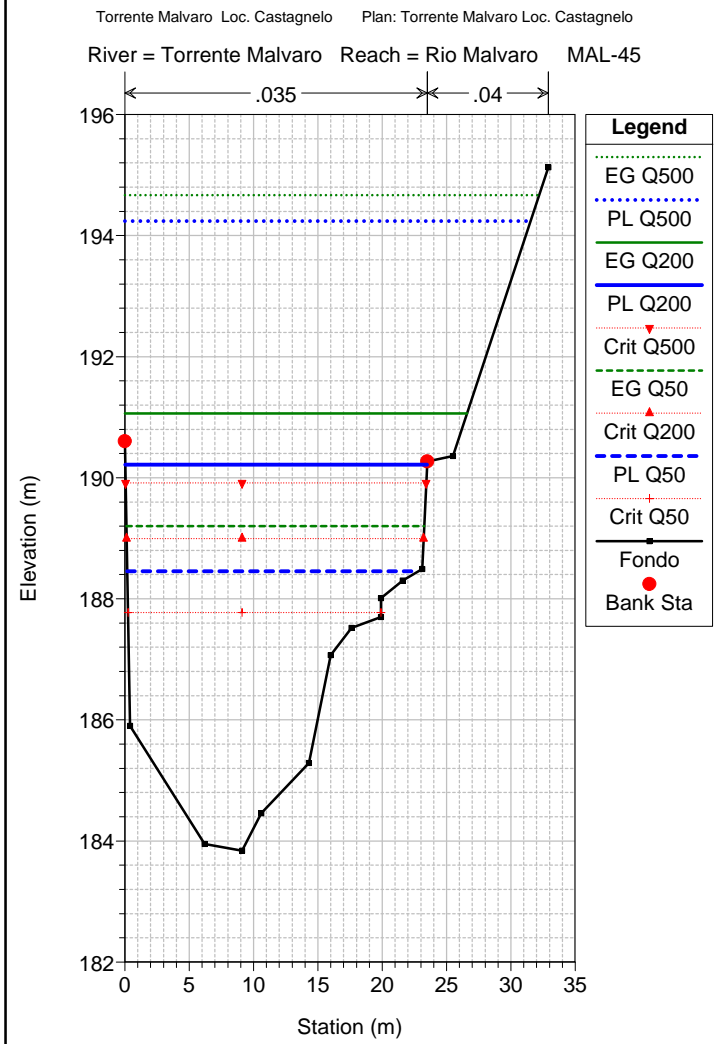
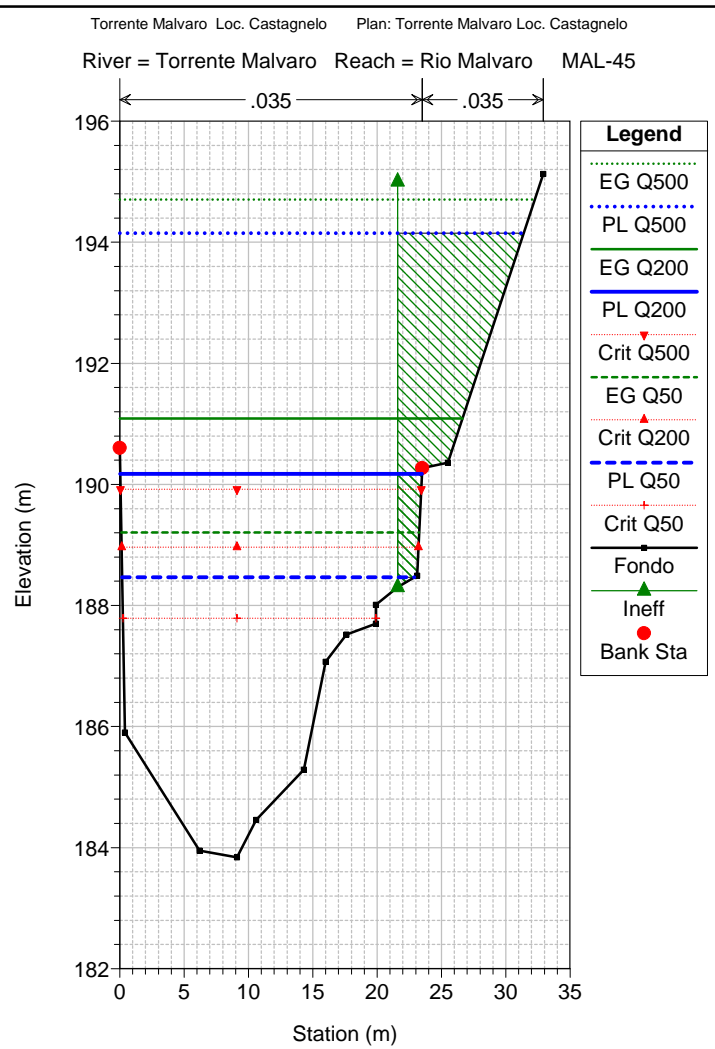
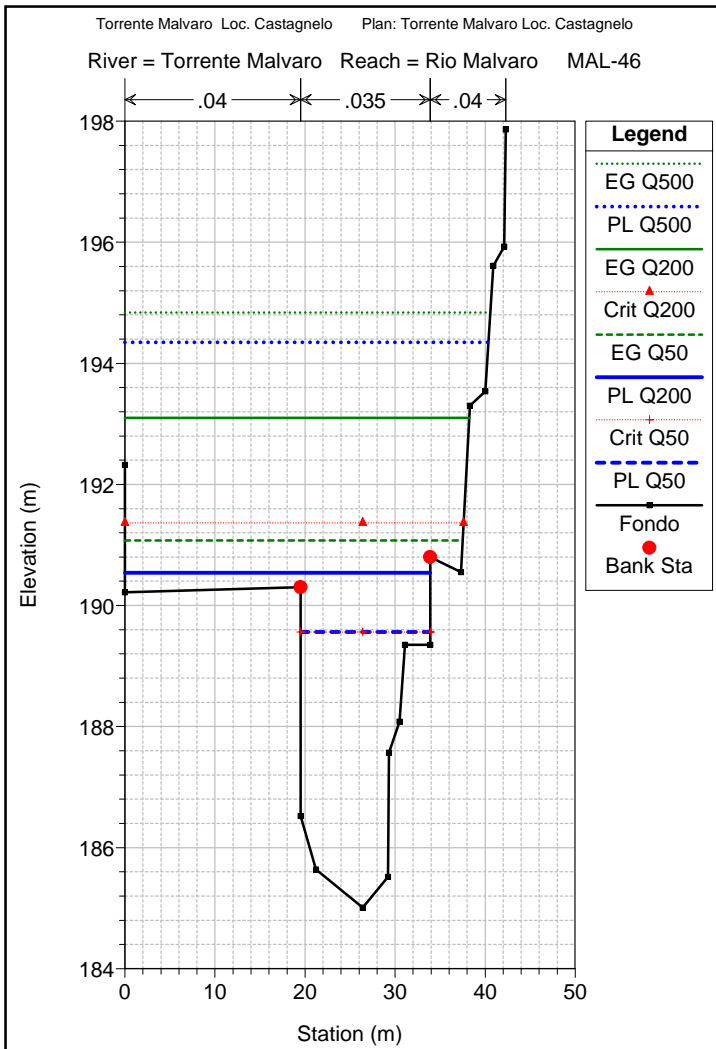
- PL Q500 (Dotted blue line)
- PL Q200 (Solid blue line)
- PL Q50 (Dashed blue line)
- Fondo (Solid black line with square markers)
- Sponda sx (Dashed red line)
- Sponda dx (Dotted green line)

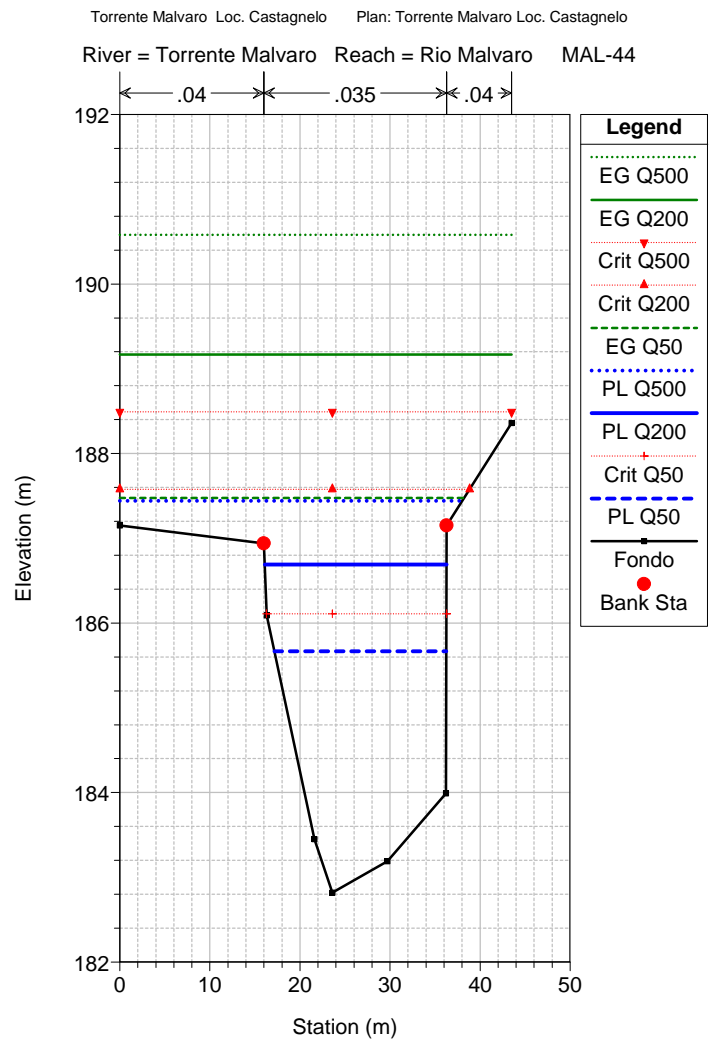
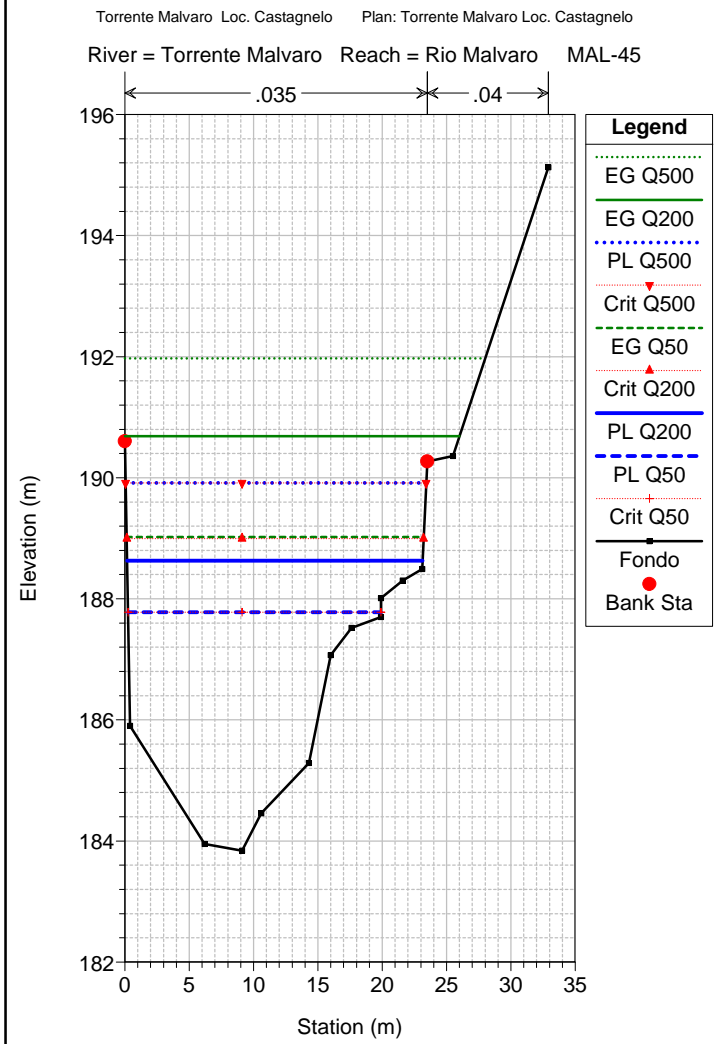
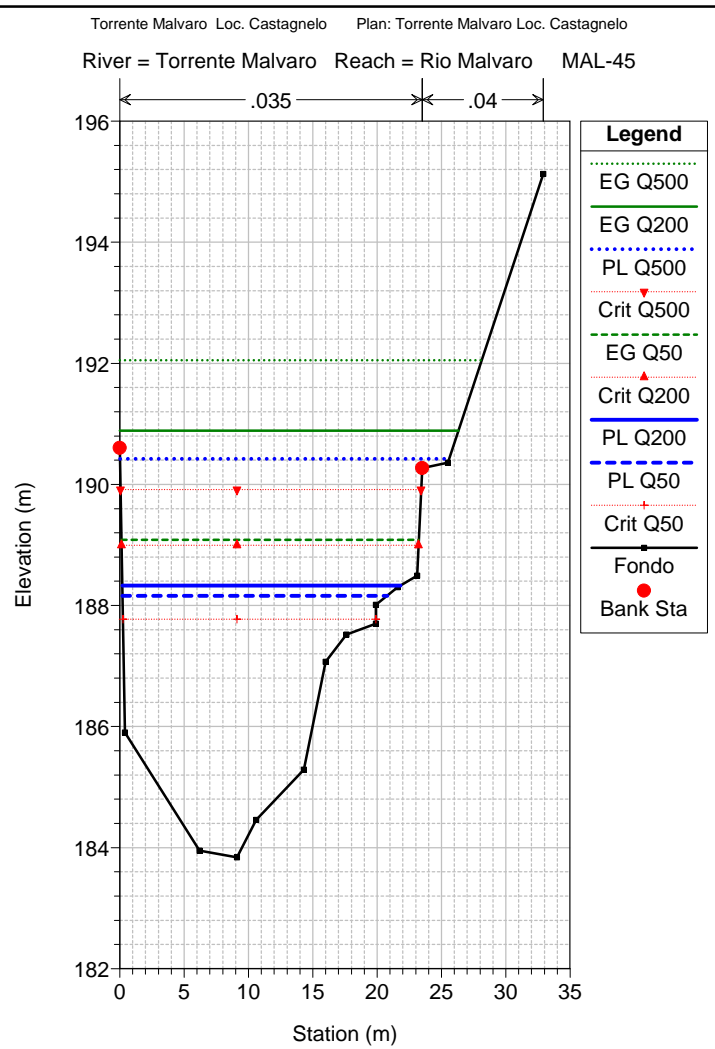
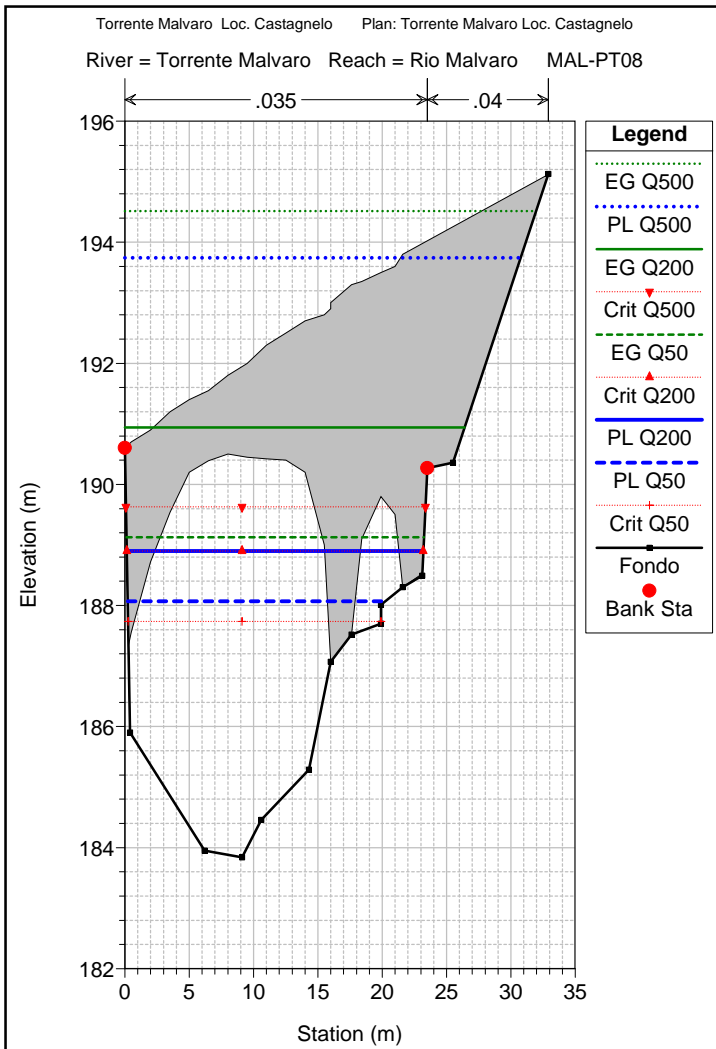
1 cm Horiz. = 35 m 1 cm Vert. = 2 m

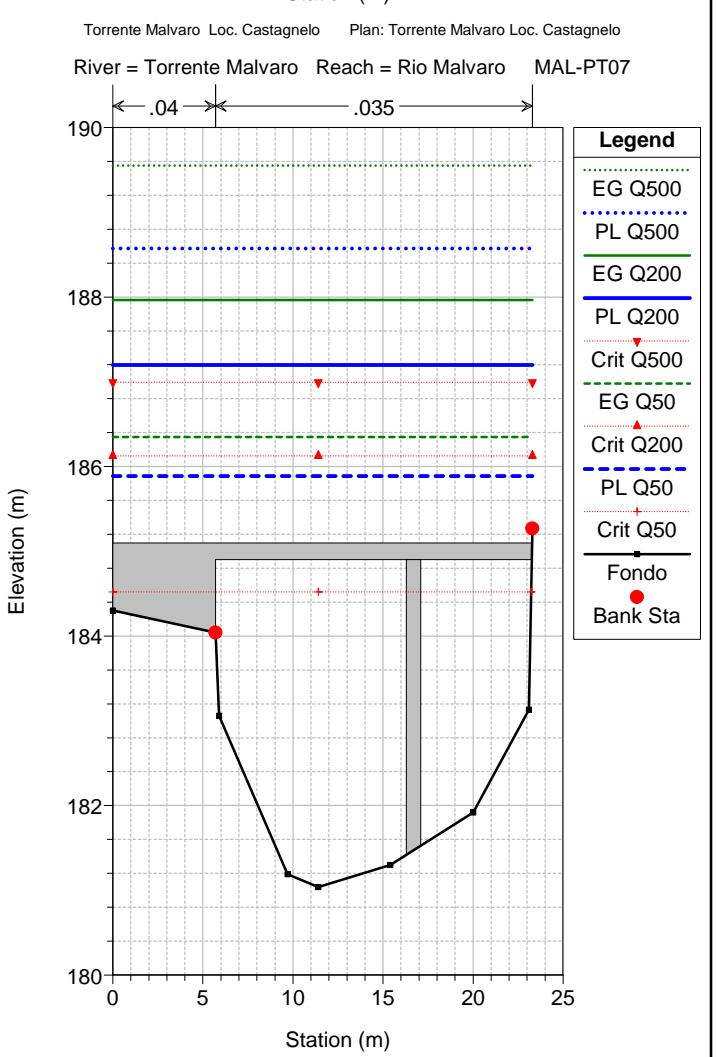
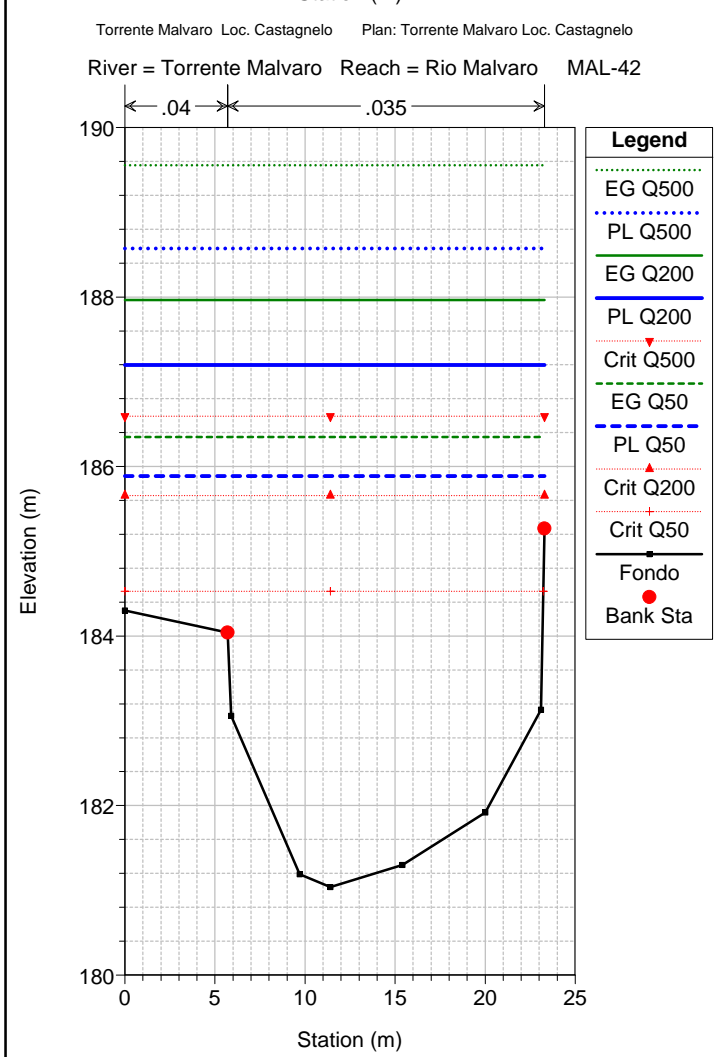
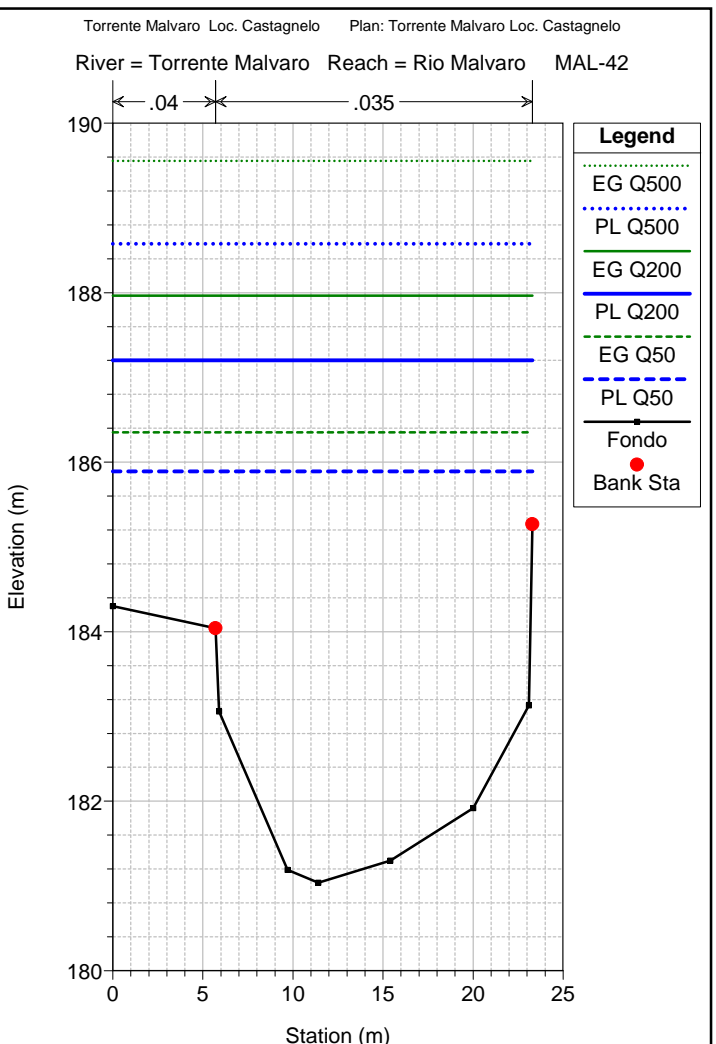
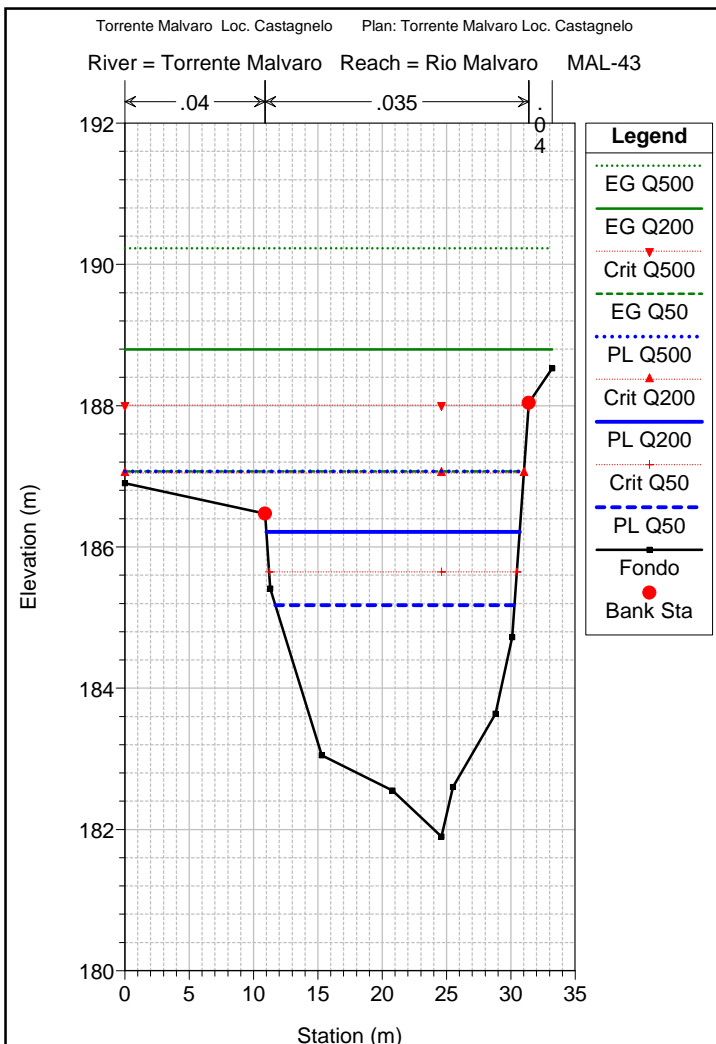


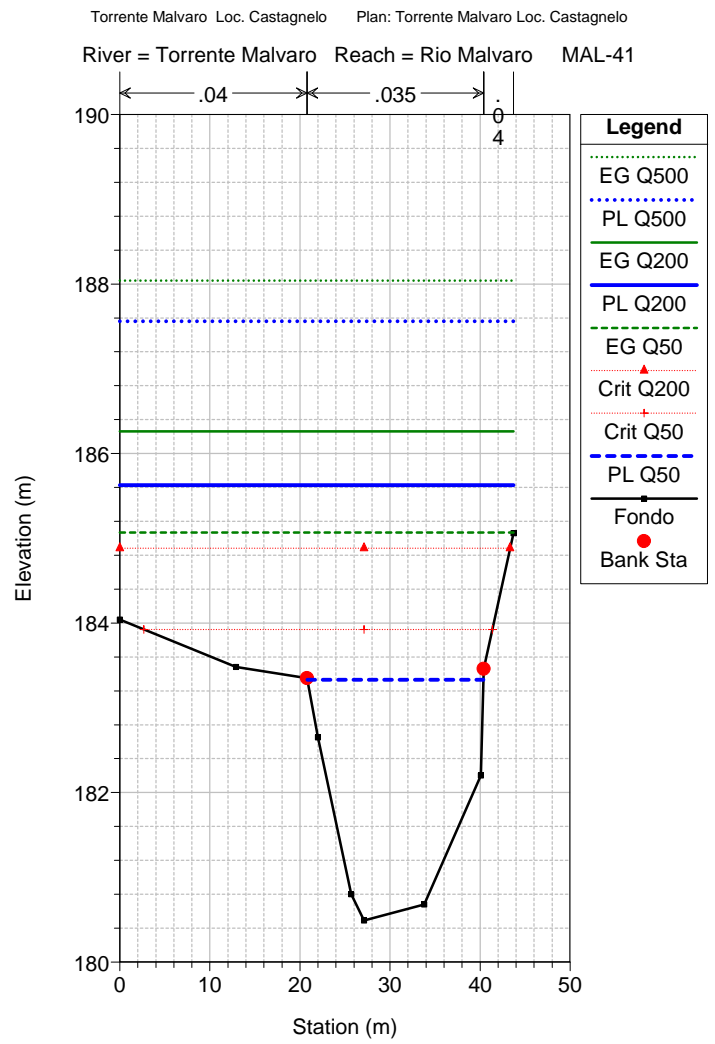
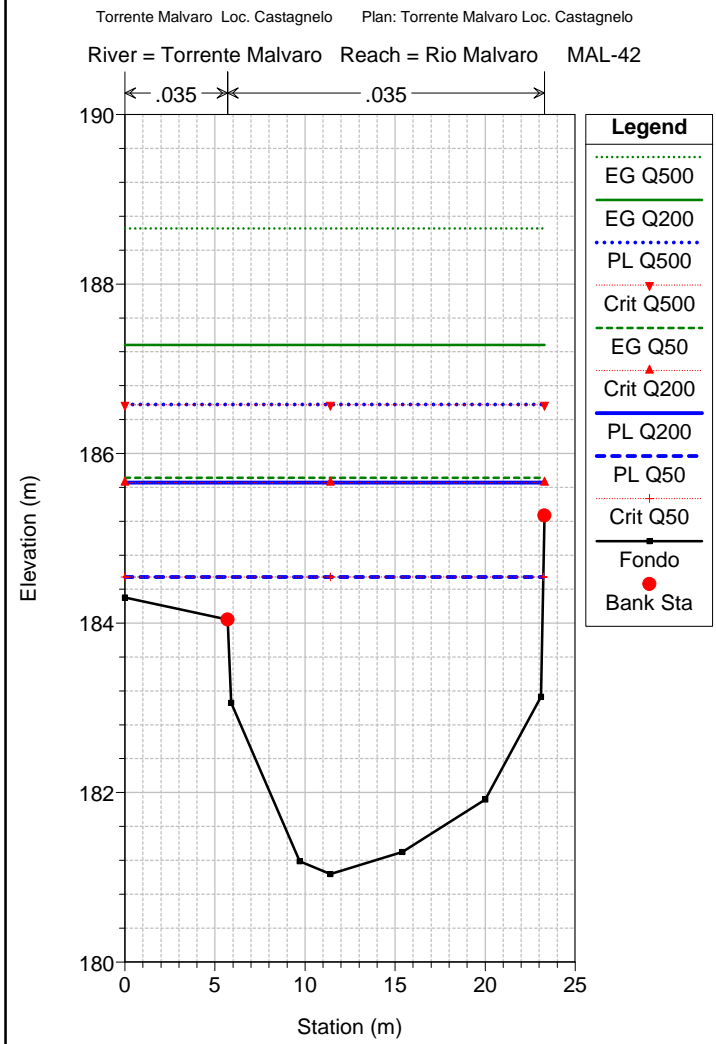
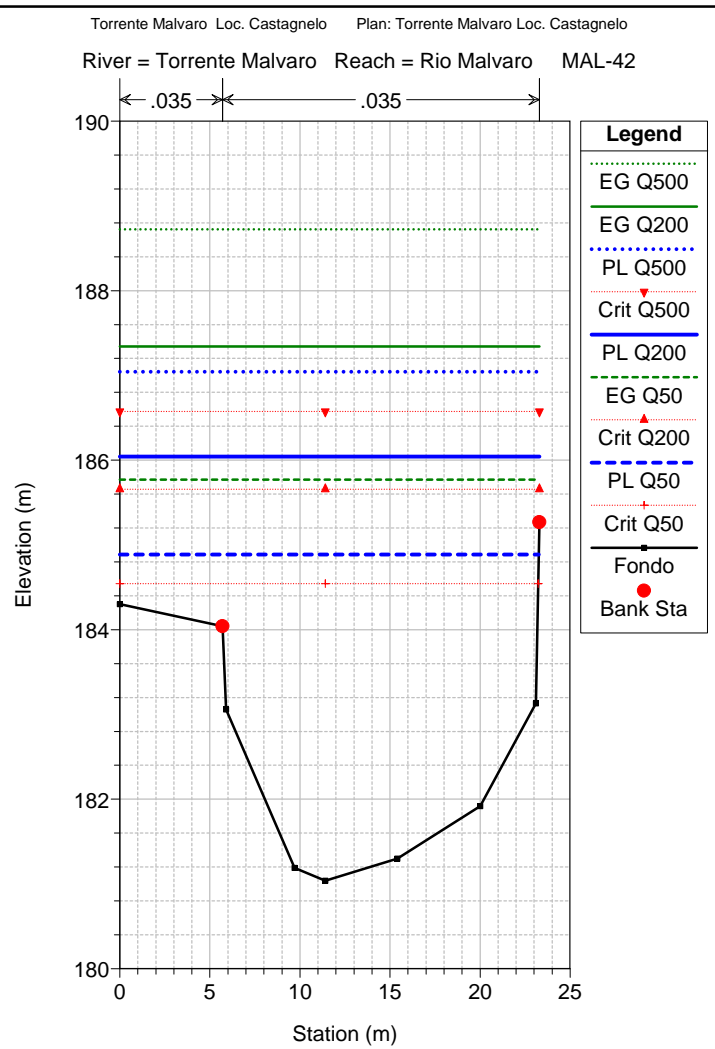
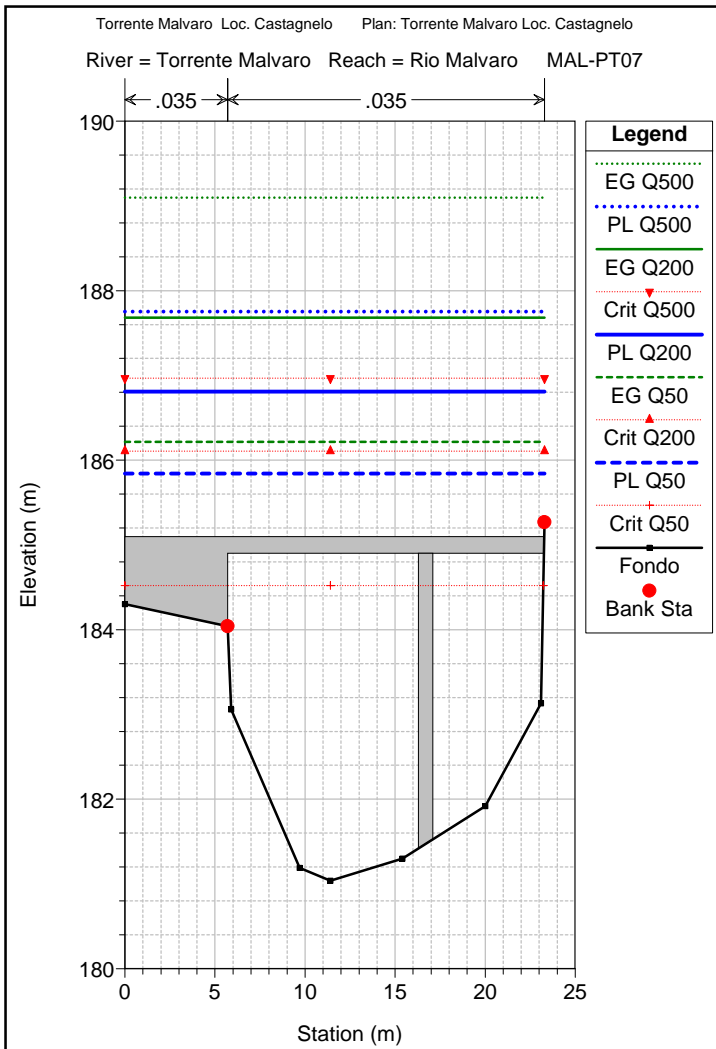


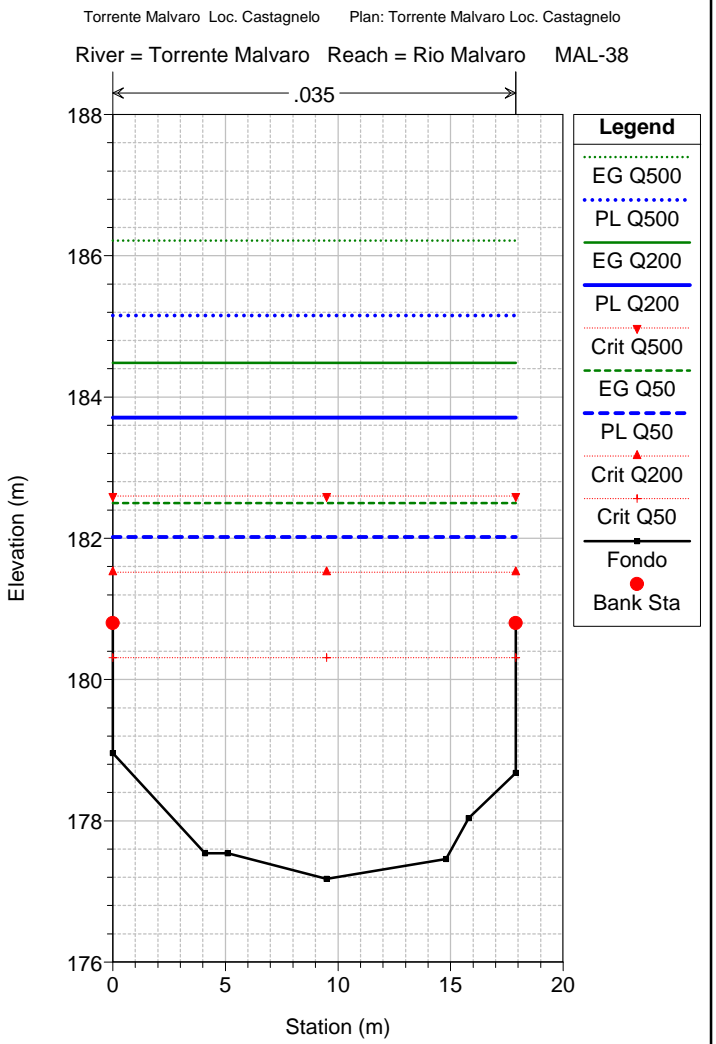
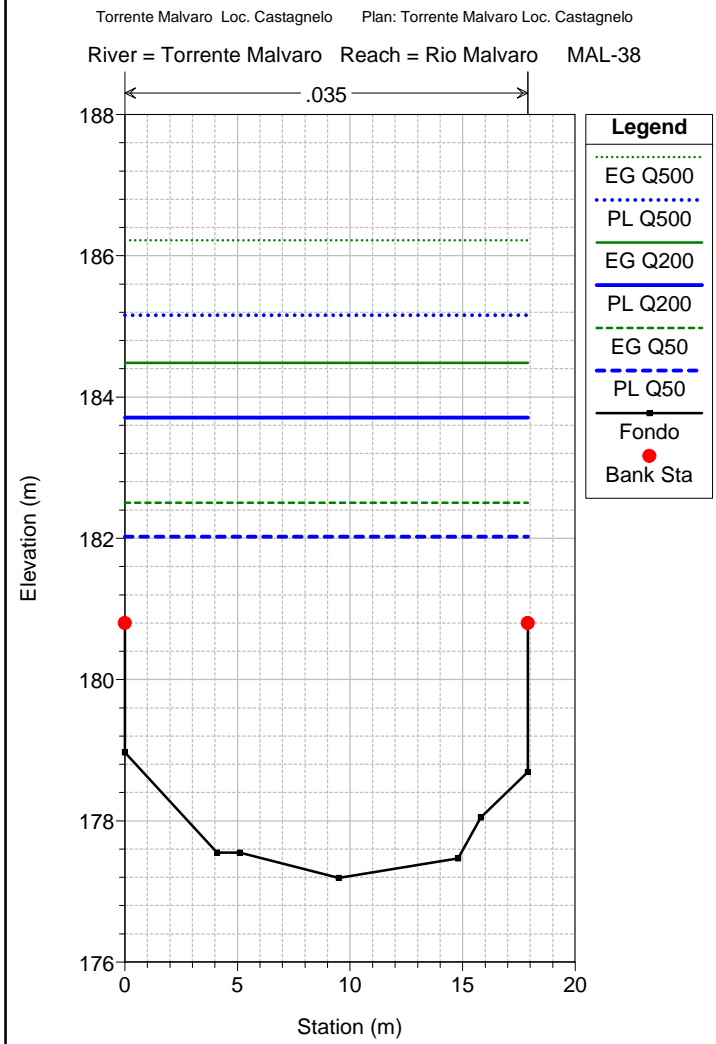
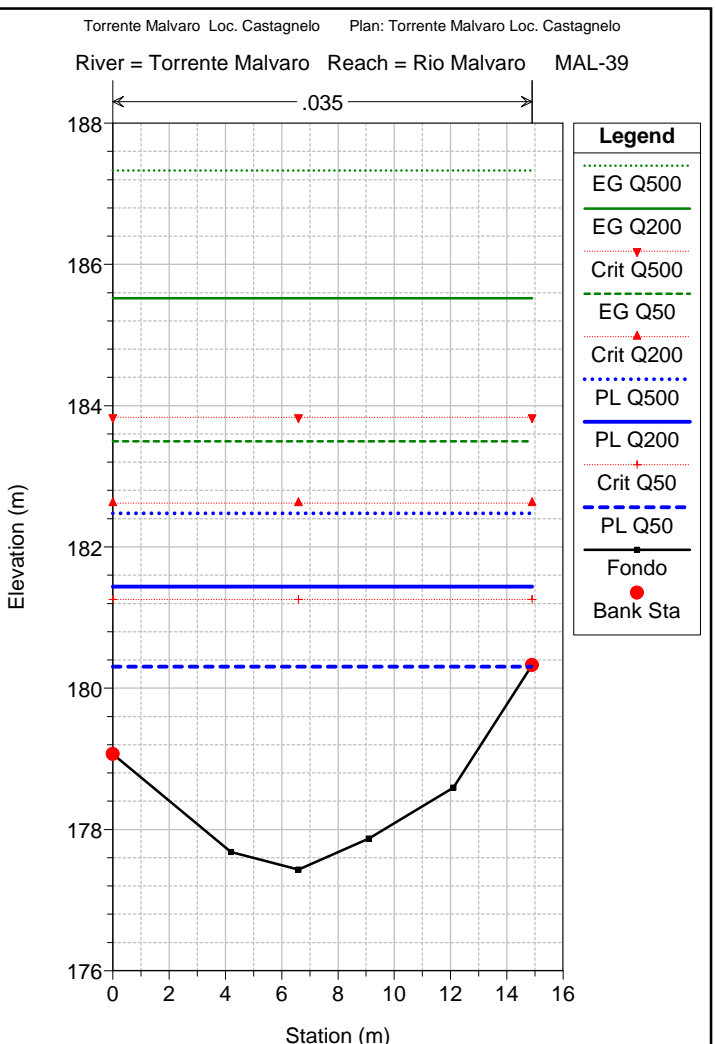
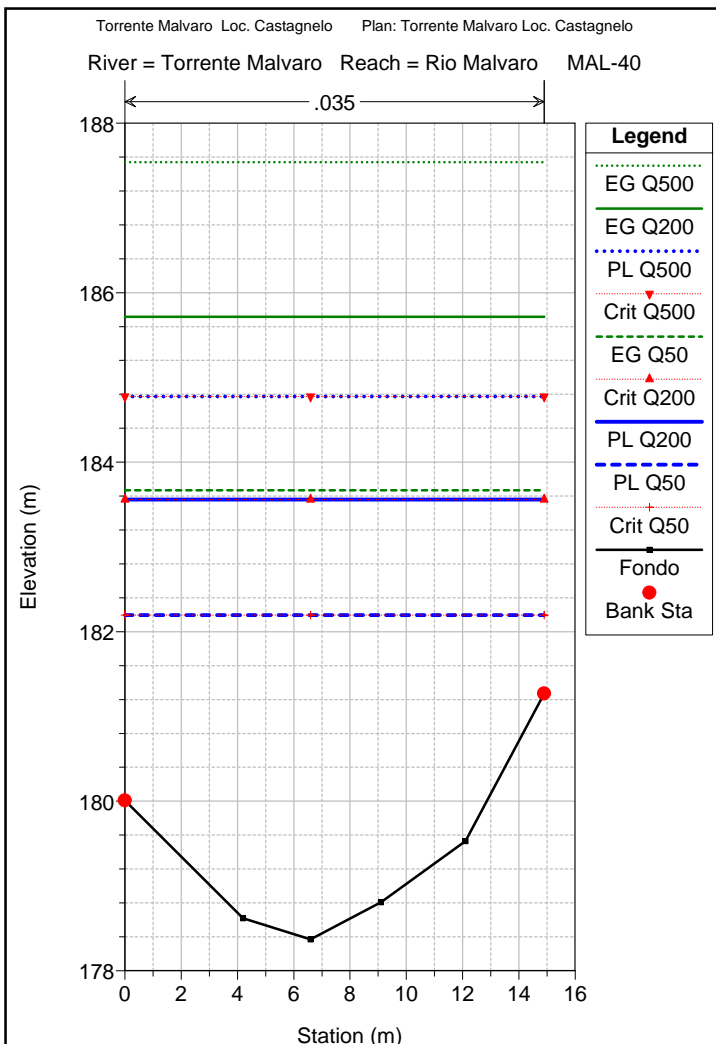


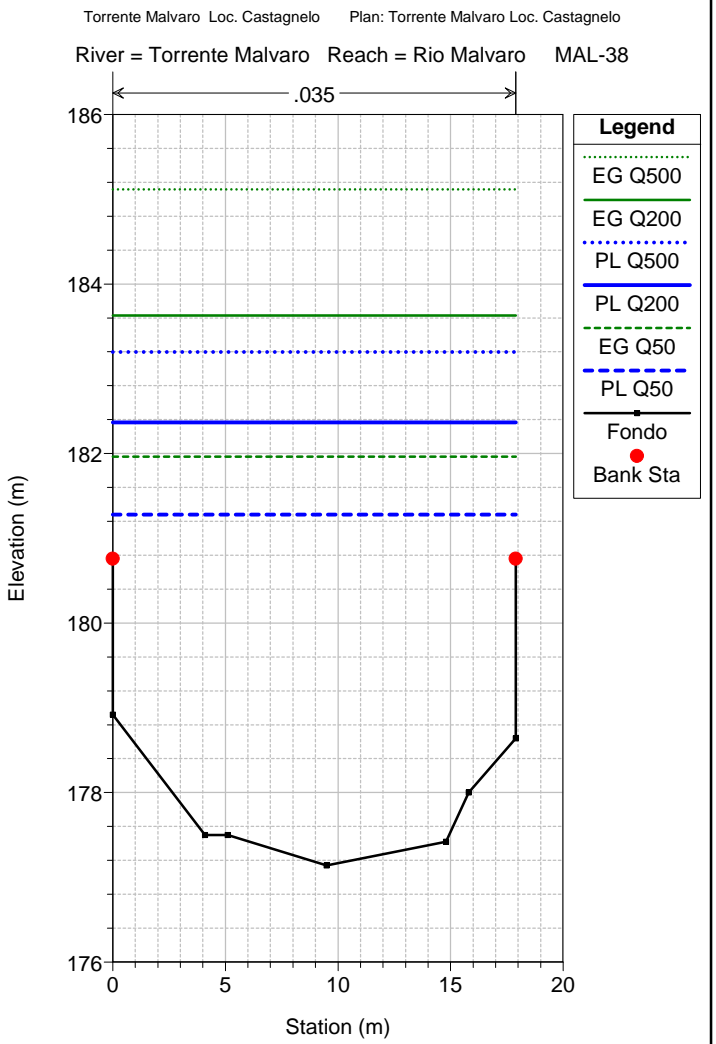
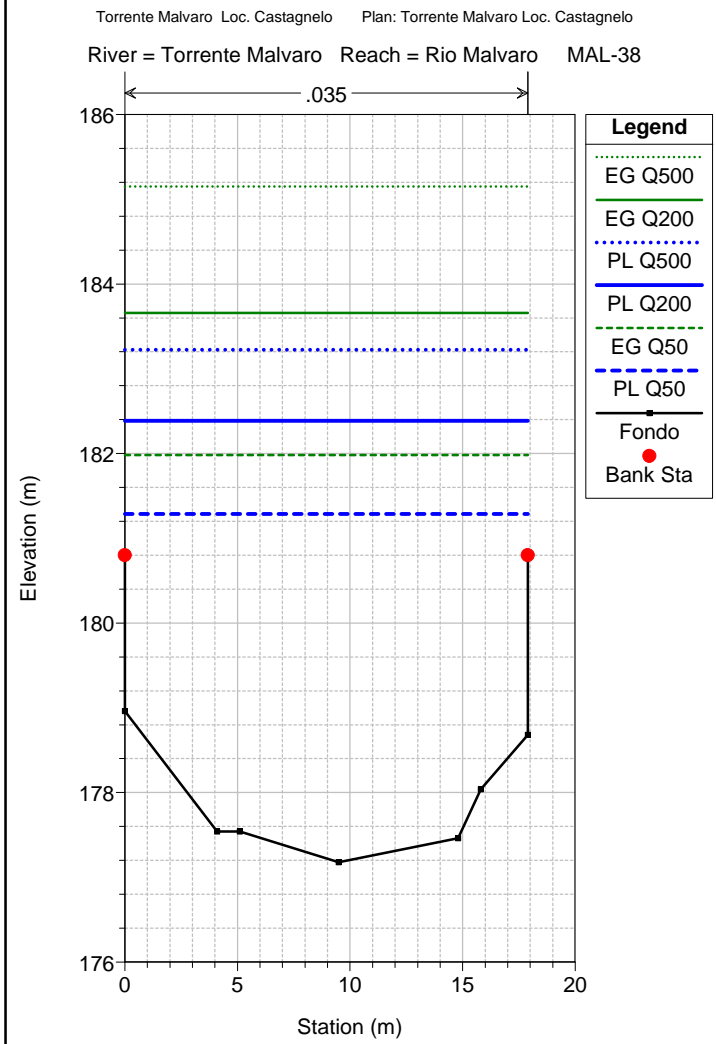
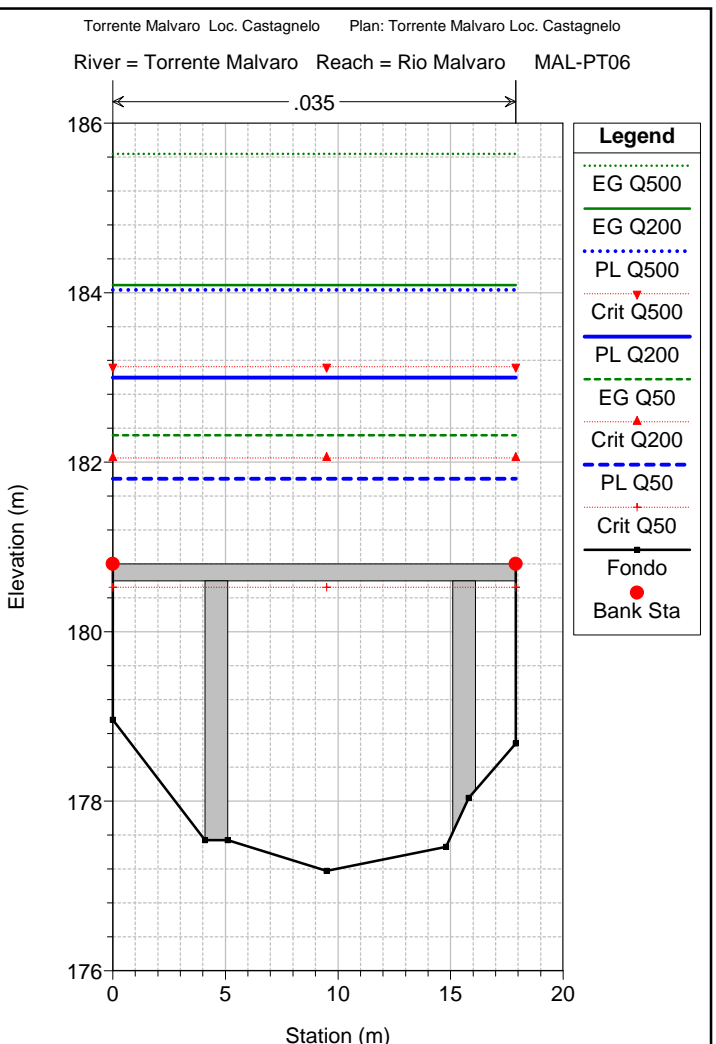
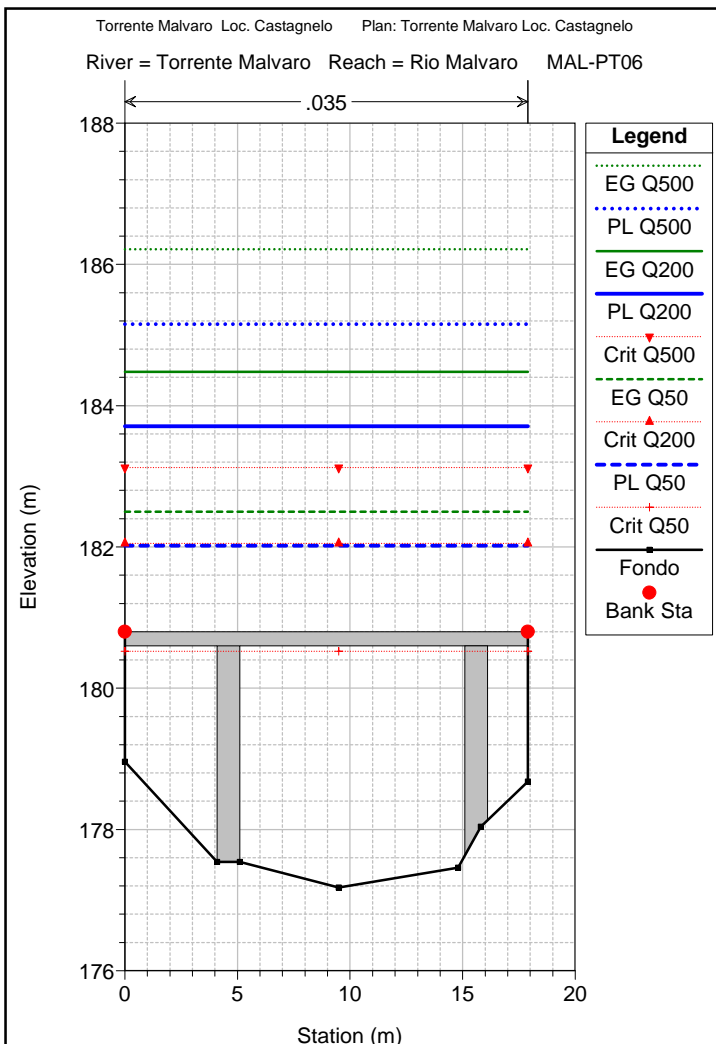


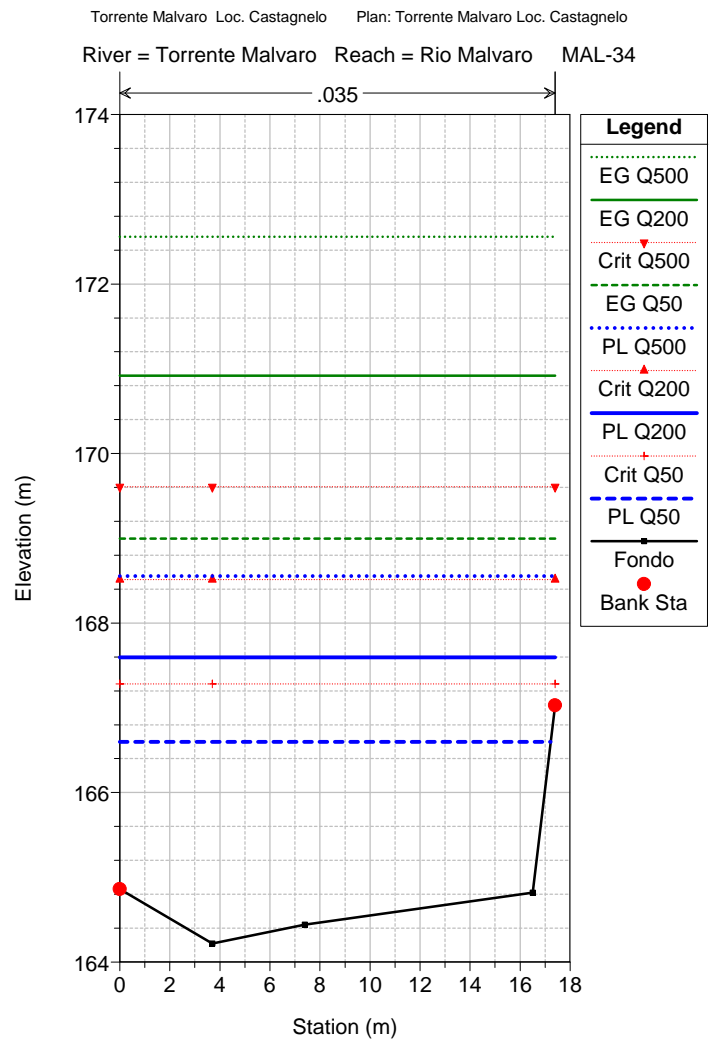
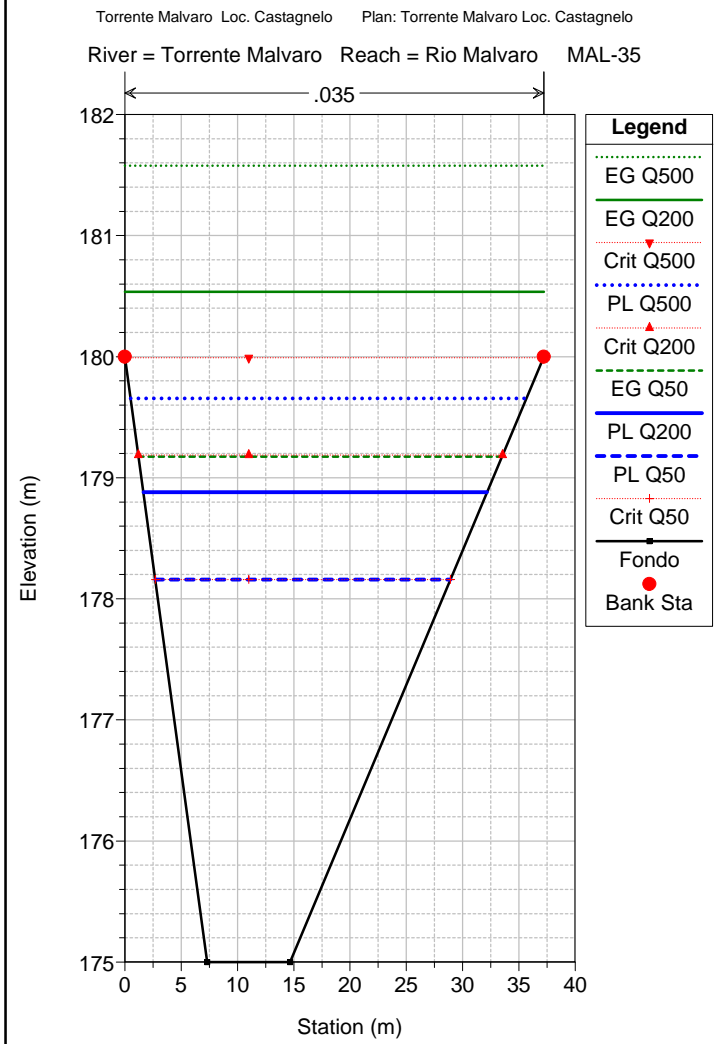
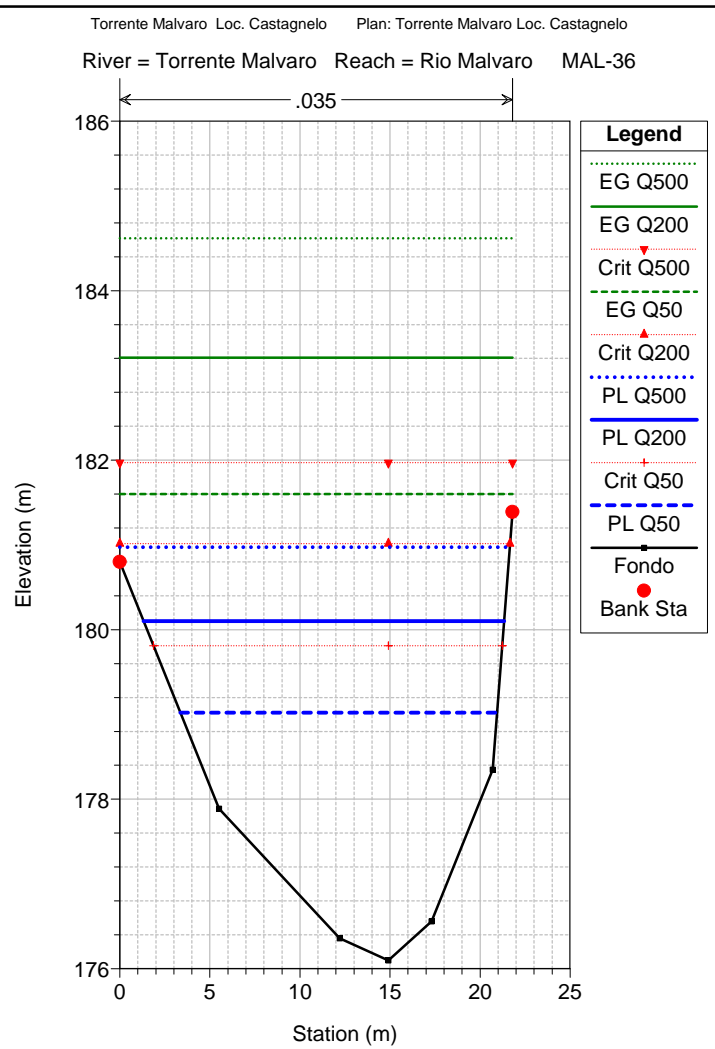
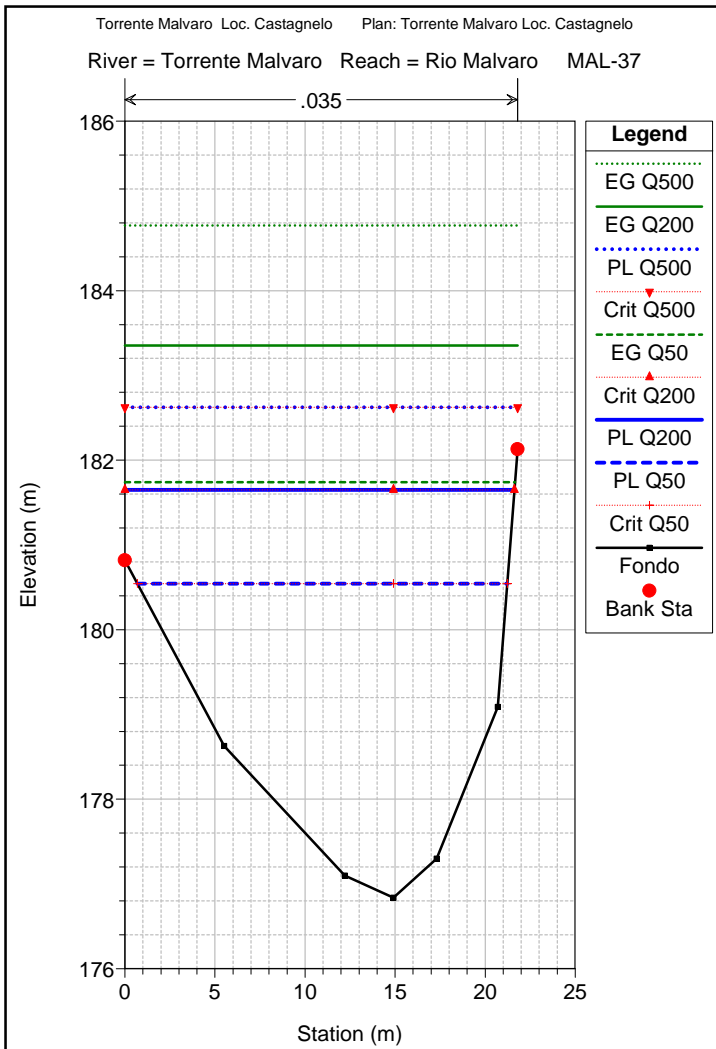


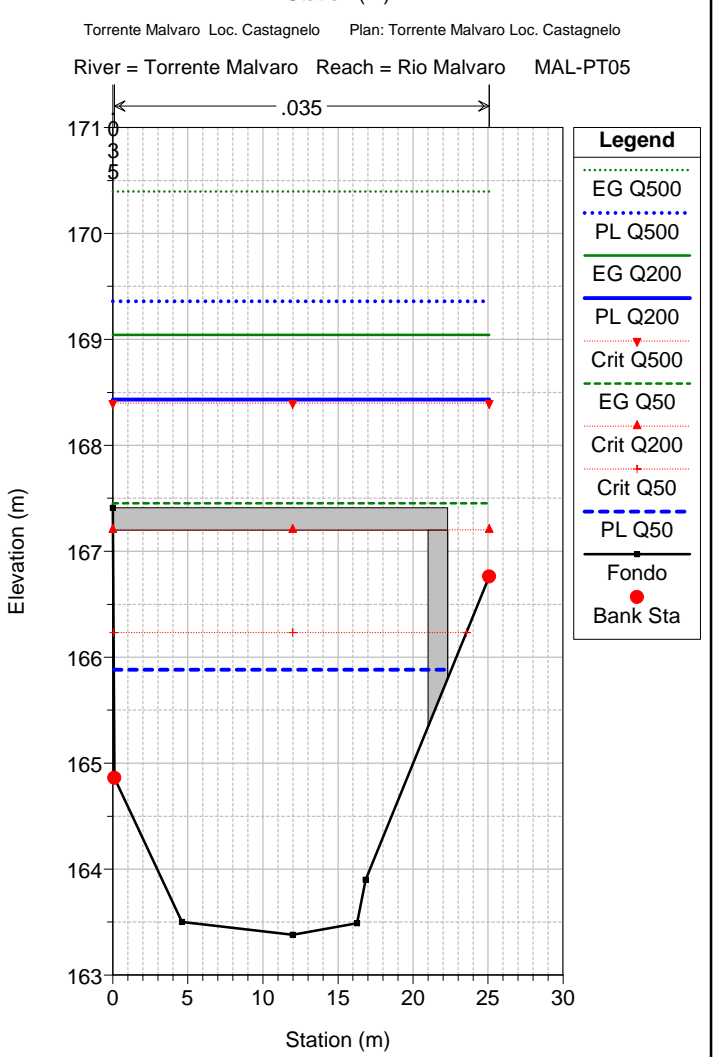
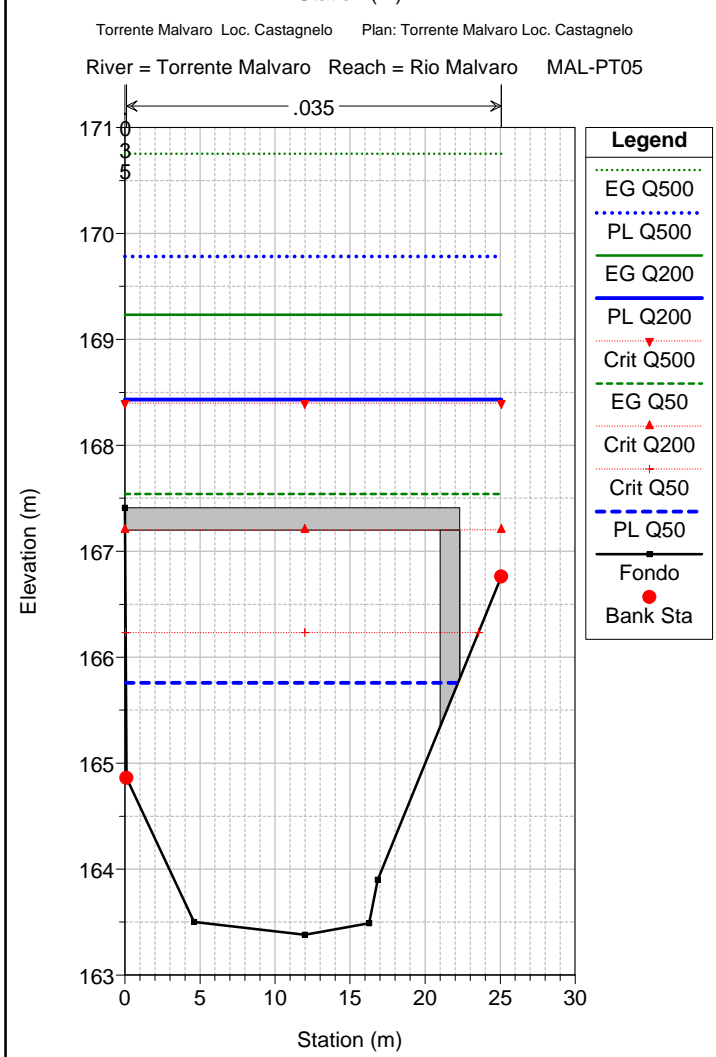
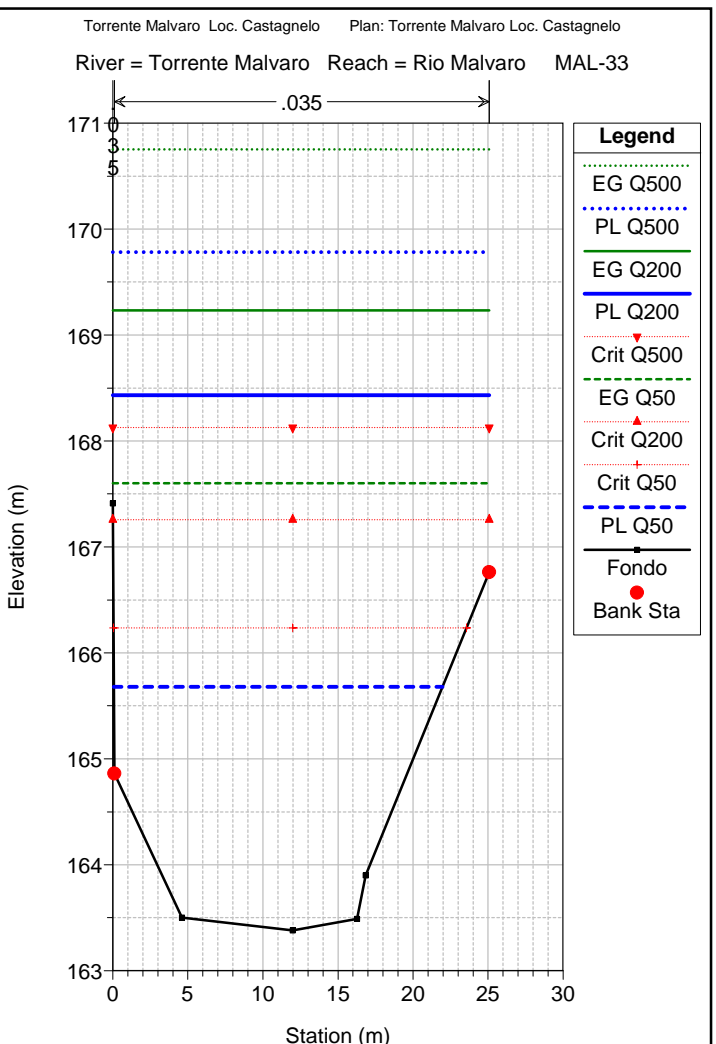
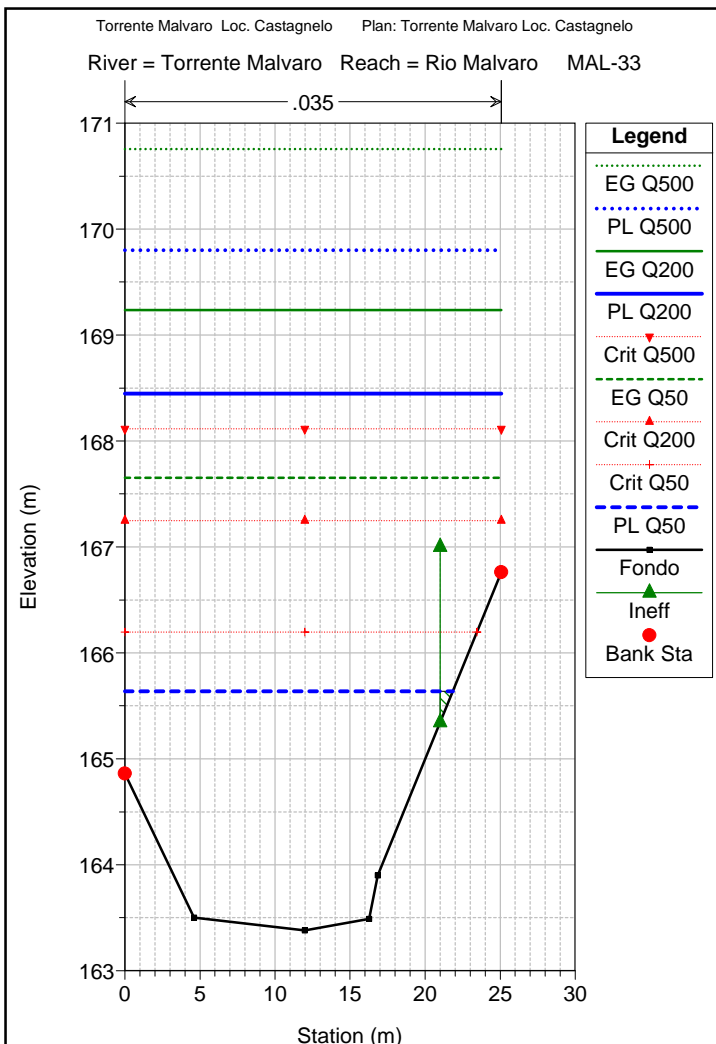


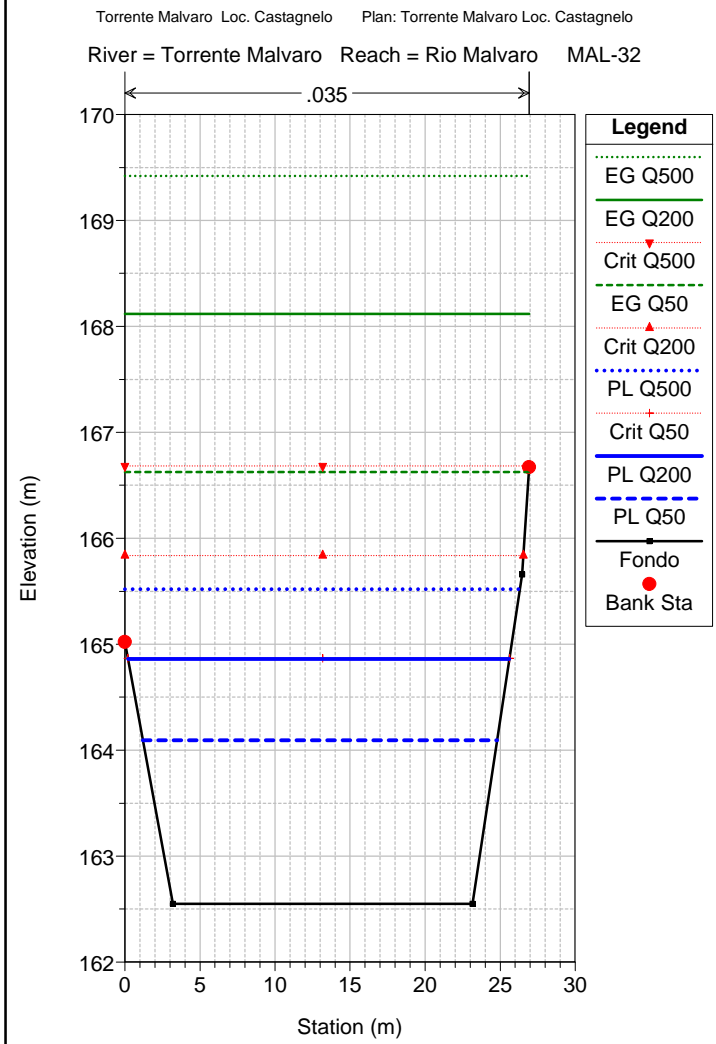
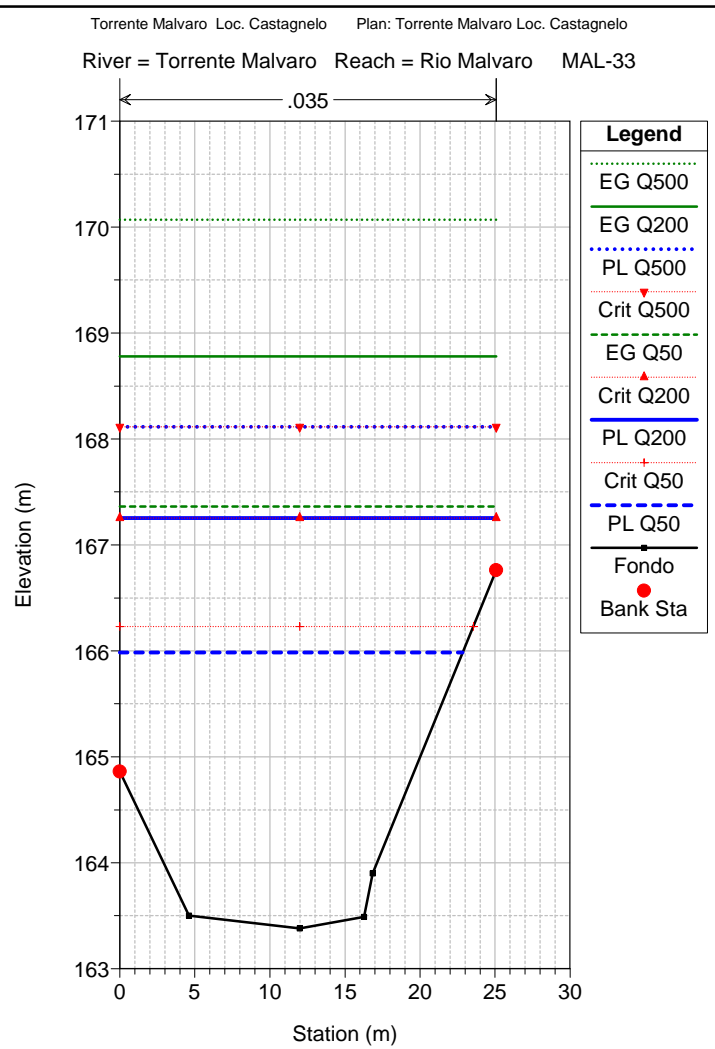
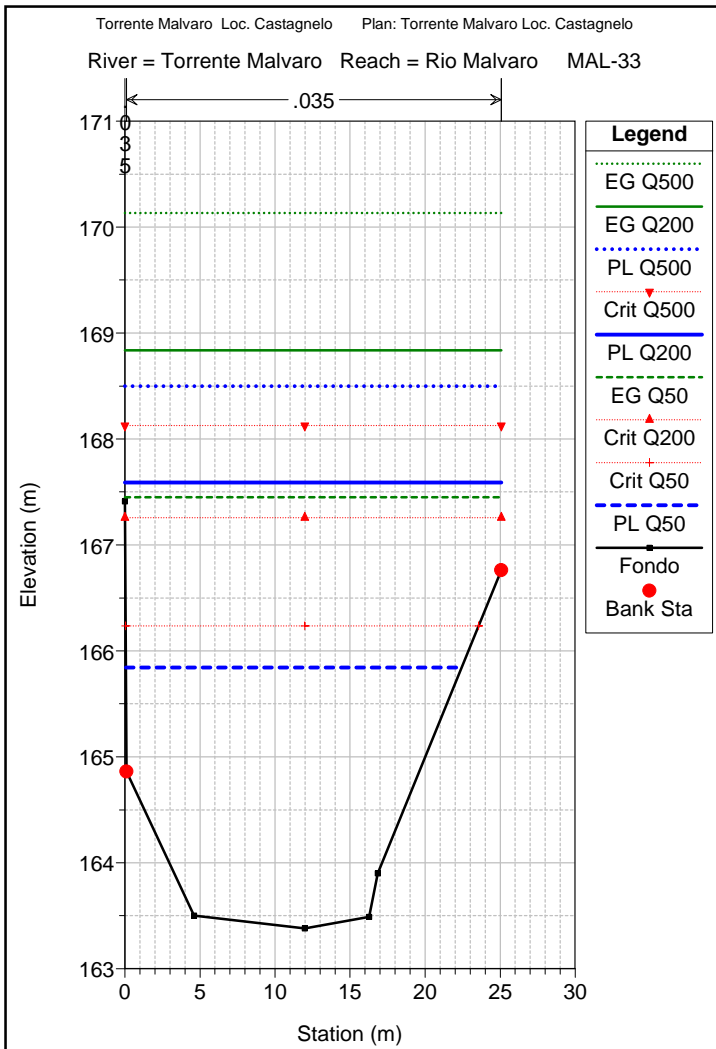












Reach	River Sta	Profile	Q Total (m3/s)	Min Ch El (m)	W.S. Elev (m)	LOB Elev (m)	L. Freeboard (m)	ROB Elev (m)	R. Freeboard (m)	Crit W.S. (m)	E.G. Elev (m)	E.G. Slope (m/m)	Vel Chnl (m/s)	Flow Area (m2)	Top Width (m)	Froude # Chl	
Rio Malvaro	37	Q50	237.00	203.31	205.57	206.28	0.71	206.35	0.78	207.10	210.28	0.060097	9.62	24.64	13.40	2.26	
Rio Malvaro	37	Q200	419.00	203.31	206.37	206.28	-0.09	206.35	-0.02	208.18	212.95	0.060073	11.50	39.17	25.95	2.30	
Rio Malvaro	37	Q500	608.00	203.31	206.87	206.28	-0.59	206.35	-0.52	208.83	214.79	0.060074	12.98	54.49	34.41	2.37	
Rio Malvaro	36	MAL-53	Q50	237.00	197.31	199.57	200.28	0.71	200.35	0.78	201.10	204.28	0.060035	9.62	24.64	13.40	2.26
Rio Malvaro	36	MAL-53	Q200	419.00	197.31	200.37	200.28	-0.09	200.35	-0.02	202.18	206.95	0.060059	11.50	39.17	25.95	2.30
Rio Malvaro	36	MAL-53	Q500	608.00	197.31	200.87	200.28	-0.59	200.35	-0.52	202.83	208.79	0.060028	12.97	54.51	34.41	2.37
Rio Malvaro	35.7	MAL-52	Q50	237.00	196.38	198.67	201.26	2.59	201.20	2.53	199.99	203.33	0.060073	9.57	24.77	14.00	2.30
Rio Malvaro	35.7	MAL-52	Q200	419.00	196.38	199.51	201.26	1.75	201.20	1.69	201.96	206.02	0.057864	11.30	37.07	15.12	2.30
Rio Malvaro	35.7	MAL-52	Q500	608.00	196.38	200.37	201.26	0.89	201.20	0.83	202.97	207.79	0.050123	12.07	50.37	15.72	2.15
Rio Malvaro	35.6	MAL-52	Q50	237.00	196.38	198.69	201.26	2.57	201.20	2.51	199.99	203.24	0.057893	9.45	25.08	14.04	2.26
Rio Malvaro	35.6	MAL-52	Q200	419.00	196.38	199.53	201.26	1.73	201.20	1.67	201.89	205.93	0.056410	11.21	37.39	15.13	2.28
Rio Malvaro	35.6	MAL-52	Q500	608.00	196.38	200.39	201.26	0.87	201.20	0.81	202.98	207.71	0.049134	11.99	50.72	15.73	2.13
Rio Malvaro	35.5	MAL-PT09		Bridge													
Rio Malvaro	35.4	MAL-52	Q50	237.00	196.38	198.76	201.26	2.50	201.20	2.44	199.99	202.98	0.051895	9.10	26.03	14.15	2.14
Rio Malvaro	35.4	MAL-52	Q200	419.00	196.38	199.59	201.26	1.67	201.20	1.61	201.96	205.67	0.052320	10.92	38.37	15.18	2.19
Rio Malvaro	35.4	MAL-52	Q500	608.00	196.38	200.46	201.26	0.80	201.20	0.74	202.97	207.48	0.046310	11.74	51.78	15.78	2.07
Rio Malvaro	35.3	MAL-52	Q50	237.00	196.38	198.85	201.26	2.41	201.20	2.35	199.99	202.66	0.044658	8.65	27.41	14.30	1.99
Rio Malvaro	35.3	MAL-52	Q200	419.00	196.38	199.68	201.26	1.58	201.20	1.52	201.96	205.35	0.047255	10.55	39.73	15.24	2.09
Rio Malvaro	35.3	MAL-52	Q500	608.00	196.38	200.55	201.26	0.71	201.20	0.65	202.97	207.19	0.042720	11.41	53.27	15.84	1.99
Rio Malvaro	35	MAL-51	Q50	237.00	195.60	198.01	198.46	0.45	199.68	1.67	199.25	202.05	0.048902	8.90	26.62	14.35	2.09
Rio Malvaro	35	MAL-51	Q200	419.00	195.60	198.81	198.46	-0.35	199.68	0.87	200.46	204.72	0.050107	10.80	39.58	18.19	2.18
Rio Malvaro	35	MAL-51	Q500	608.00	195.60	199.53	198.46	-1.07	199.68	0.15	201.96	206.60	0.046092	11.90	53.01	19.04	2.15
Rio Malvaro	34.2	MAL-50	Q50	237.00	187.65	189.99	190.00	0.01	189.49	-0.50	191.03	193.45	0.041385	8.25	28.74	15.28	1.92
Rio Malvaro	34.2	MAL-50	Q200	419.00	187.65	190.82	190.00	-0.82	189.49	-1.33	192.38	195.99	0.040609	10.09	41.78	16.15	1.96
Rio Malvaro	34.2	MAL-50	Q500	608.00	187.65	191.57	190.00	-1.57	189.49	-2.08	193.57	198.14	0.039580	11.40	54.15	16.93	1.96
Rio Malvaro	34.1	MAL-49	Q50	237.00	185.99	189.75	190.30	0.56	189.49	-0.26	190.05	191.80	0.017809	6.35	37.33	12.10	1.15
Rio Malvaro	34.1	MAL-49	Q200	419.00	185.99	192.56	190.30	-2.26	189.49	-3.07	191.82	194.12	0.007471	5.63	78.99	18.83	0.74
Rio Malvaro	34.1	MAL-49	Q500	608.00	185.99	195.16	190.30	-4.86	189.49	-5.67		196.27	0.004131	4.94	138.08	26.10	0.54
Rio Malvaro	34	MAL-48	Q50	237.00	185.65	189.54	190.30	0.76	189.49	-0.05	189.84	191.59	0.017471	6.35	37.34	12.10	1.15
Rio Malvaro	34	MAL-48	Q200	419.00	185.65	191.42	190.30	-1.12	189.49	-1.93	191.42	193.90	0.014580	6.98	60.07	12.10	1.00
Rio Malvaro	34	MAL-48	Q500	608.00	185.65	192.95	190.30	-2.65	189.49	-3.46	192.82	196.00	0.015026	7.73	78.62	12.10	0.97
Rio Malvaro	33.9	MAL-47	Q50	237.00	185.31	190.15	190.30	0.15	189.49	-0.66		191.30	0.007893	4.77	49.71	12.10	0.75
Rio Malvaro	33.9	MAL-47	Q200	419.00	185.31	190.81	190.30	-0.51	189.49	-1.32	191.00	193.49	0.016391	7.26	57.71	12.10	1.06
Rio Malvaro	33.9	MAL-47	Q500	608.00	185.31	192.80	190.30	-2.50	189.49	-3.31	192.40	195.61	0.013635	7.43	81.83	12.10	0.91
Rio Malvaro	33	MAL-46	Q50	237.00	185.01	189.56	190.30	0.74	190.80	1.24	189.56	191.08	0.013611	5.45	43.50	14.40	1.00
Rio Malvaro	33	MAL-46	Q200	419.00	185.01	190.54	190.30	-0.24	190.80	0.26	191.37	193.10	0.017951	7.15	62.94	33.90	1.14
Rio Malvaro	33	MAL-46	Q500	608.00	185.01	194.34	190.30	-4.04	190.80	-3.54		194.84	0.001783	3.49	208.59	40.35	0.40
Rio Malvaro	32.2	MAL-45	Q50	237.00	183.84	188.46	190.60	2.14	190.27	1.81	187.79	189.21	0.005455	3.82	62.04	22.71	0.72
Rio Malvaro	32.2	MAL-45	Q200	419.00	183.84	190.17	190.60	0.43	190.27	0.10	188.96	191.09	0.003949	4.24	98.76	23.44	0.63

HEC-RAS Plan: press River: Torrente Malvaro Reach: Rio Malvaro (Continued)

Reach	River Sta		Profile	Q Total	Min Ch El	W.S. Elev	LOB Elev	L. Freeboard	ROB Elev	R. Freeboard	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
				(m3/s)	(m)	(m)	(m)	(m)	(m)	(m)	(m)	(m)	(m/m)	(m/s)	(m2)	(m)	
Rio Malvaro	32.2	MAL-45	Q500	608.00	183.84	194.15	190.60	-3.55	190.27	-3.88	189.92	194.70	0.001238	3.29	184.71	31.38	0.36
Rio Malvaro	32.1	MAL-45	Q50	237.00	183.84	188.46	190.60	2.14	190.27	1.81	187.77	189.20	0.005828	3.82	61.99	22.65	0.74
Rio Malvaro	32.1	MAL-45	Q200	419.00	183.84	190.22	190.60	0.38	190.27	0.05	188.99	191.06	0.004028	4.08	102.82	23.46	0.62
Rio Malvaro	32.1	MAL-45	Q500	608.00	183.84	194.24	190.60	-3.64	190.27	-3.97	189.91	194.67	0.001046	2.95	216.77	31.52	0.32
Rio Malvaro	32	MAL-PT08		Bridge													
Rio Malvaro	31.9	MAL-45	Q50	237.00	183.84	188.16	190.60	2.44	190.27	2.11	187.78	189.09	0.007387	4.26	55.63	20.58	0.83
Rio Malvaro	31.9	MAL-45	Q200	419.00	183.84	188.33	190.60	2.27	190.27	1.94	189.00	190.89	0.020102	7.09	59.13	21.62	1.37
Rio Malvaro	31.9	MAL-45	Q500	608.00	183.84	190.42	190.60	0.18	190.27	-0.15	189.91	192.05	0.007356	5.65	107.88	25.58	0.84
Rio Malvaro	31.8	MAL-45	Q50	237.00	183.84	187.78	190.60	2.82	190.27	2.49	187.78	189.02	0.011098	4.94	47.98	19.66	1.01
Rio Malvaro	31.8	MAL-45	Q200	419.00	183.84	188.63	190.60	1.97	190.27	1.64	188.99	190.69	0.015265	6.36	65.93	22.96	1.20
Rio Malvaro	31.8	MAL-45	Q500	608.00	183.84	189.91	190.60	0.69	190.27	0.36	189.91	191.97	0.010493	6.36	95.67	23.36	1.00
Rio Malvaro	31	MAL-44	Q50	237.00	182.82	185.67	186.94	1.27	187.15	1.48	186.11	187.48	0.019041	5.96	39.77	19.10	1.32
Rio Malvaro	31	MAL-44	Q200	419.00	182.82	186.69	186.94	0.25	187.15	0.46	187.58	189.17	0.017513	6.97	60.11	20.20	1.29
Rio Malvaro	31	MAL-44	Q500	608.00	182.82	187.44	186.94	-0.50	187.15	-0.29	188.49	190.58	0.017435	7.92	81.88	38.03	1.31
Rio Malvaro	30	MAL-43	Q50	237.00	181.90	185.18	186.47	1.29	188.04	2.86	185.65	187.07	0.019209	6.10	38.87	18.58	1.35
Rio Malvaro	30	MAL-43	Q200	419.00	181.90	186.21	186.47	0.26	188.04	1.83	187.05	188.80	0.017532	7.12	58.83	19.69	1.32
Rio Malvaro	30	MAL-43	Q500	608.00	181.90	187.07	186.47	-0.60	188.04	0.97	188.01	190.23	0.016508	7.92	80.10	31.02	1.30
Rio Malvaro	29.2	MAL-42	Q50	237.00	181.04	185.89	184.04	-1.85	185.27	-0.62		186.35	0.002338	3.08	82.04	23.30	0.49
Rio Malvaro	29.2	MAL-42	Q200	419.00	181.04	187.20	184.04	-3.16	185.27	-1.93		187.97	0.002952	4.00	112.57	23.30	0.55
Rio Malvaro	29.2	MAL-42	Q500	608.00	181.04	188.58	184.04	-4.54	185.27	-3.31		189.56	0.003045	4.55	144.64	23.30	0.56
Rio Malvaro	29.1	MAL-42	Q50	237.00	181.04	185.89	184.04	-1.85	185.27	-0.62	184.53	186.35	0.002346	3.08	81.94	23.30	0.49
Rio Malvaro	29.1	MAL-42	Q200	419.00	181.04	187.20	184.04	-3.16	185.27	-1.93	185.66	187.97	0.002960	4.01	112.47	23.30	0.55
Rio Malvaro	29.1	MAL-42	Q500	608.00	181.04	188.57	184.04	-4.53	185.27	-3.30	186.59	189.55	0.003052	4.55	144.53	23.30	0.56
Rio Malvaro	29	MAL-PT07		Bridge													
Rio Malvaro	28.9	MAL-42	Q50	237.00	181.04	184.89	184.04	-0.85	185.27	0.38	184.54	185.77	0.005967	4.22	58.70	23.26	0.76
Rio Malvaro	28.9	MAL-42	Q200	419.00	181.04	186.04	184.04	-2.00	185.27	-0.77	185.66	187.34	0.006357	5.18	85.58	23.30	0.80
Rio Malvaro	28.9	MAL-42	Q500	608.00	181.04	187.04	184.04	-3.00	185.27	-1.77	186.58	188.72	0.006667	5.93	108.91	23.30	0.83
Rio Malvaro	28.8	MAL-42	Q50	237.00	181.04	184.54	184.04	-0.50	185.27	0.73	184.54	185.71	0.008936	4.82	50.66	23.23	0.93
Rio Malvaro	28.8	MAL-42	Q200	419.00	181.04	185.66	184.04	-1.62	185.27	-0.39	185.66	187.28	0.008760	5.78	76.58	23.30	0.94
Rio Malvaro	28.8	MAL-42	Q500	608.00	181.04	186.58	184.04	-2.54	185.27	-1.31	186.58	188.65	0.009028	6.57	98.07	23.30	0.96
Rio Malvaro	28	MAL-41	Q50	237.00	180.49	183.33	183.35	0.02	183.46	0.13	183.92	185.07	0.017650	5.84	40.59	19.54	1.29
Rio Malvaro	28	MAL-41	Q200	419.00	180.49	185.63	183.35	-2.28	183.46	-2.17	184.88	186.26	0.002863	3.85	131.56	43.70	0.59
Rio Malvaro	28	MAL-41	Q500	608.00	180.49	187.56	183.35	-4.21	183.46	-4.10		188.04	0.001388	3.42	216.17	43.70	0.43
Rio Malvaro	27	MAL-40	Q50	237.00	178.37	182.19	180.01	-2.18	181.27	-0.92	182.19	183.67	0.011417	5.38	44.09	14.90	1.00
Rio Malvaro	27	MAL-40	Q200	419.00	178.37	183.56	180.01	-3.55	181.27	-2.29	183.56	185.71	0.012074	6.51	64.41	14.90	1.00
Rio Malvaro	27	MAL-40	Q500	608.00	178.37	184.77	180.01	-4.76	181.27	-3.50	184.77	187.54	0.012838	7.37	82.51	14.90	1.00
Rio Malvaro	26	MAL-39	Q50	237.00	177.43	180.31	179.07	-1.24	180.33	0.02	181.25	183.49	0.035867	7.91	29.96	14.86	1.78
Rio Malvaro	26	MAL-39	Q200	419.00	177.43	181.44	179.07	-2.37	180.33	-1.11	182.62	185.52	0.030015	8.95	46.79	14.90	1.61

HEC-RAS Plan: press River: Torrente Malvaro Reach: Rio Malvaro (Continued)

Reach	River Sta		Profile	Q Total	Min Ch El	W.S. Elev	LOB Elev	L. Freeboard	ROB Elev	R. Freeboard	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
				(m3/s)	(m)	(m)	(m)	(m)	(m)	(m)	(m)	(m)	(m/m)	(m/s)	(m2)	(m)	
Rio Malvaro	26	MAL-39	Q500	608.00	177.43	182.48	179.07	-3.41	180.33	-2.15	183.83	187.33	0.027929	9.76	62.29	14.90	1.52
Rio Malvaro	25.2	MAL-38	Q50	237.00	177.19	182.02	180.80	-1.22	180.80	-1.22		182.50	0.002545	3.07	77.15	17.90	0.47
Rio Malvaro	25.2	MAL-38	Q200	419.00	177.19	183.71	180.80	-2.91	180.80	-2.91		184.48	0.003135	3.90	107.35	17.90	0.51
Rio Malvaro	25.2	MAL-38	Q500	608.00	177.19	185.16	180.80	-4.36	180.80	-4.36		186.22	0.003656	4.56	133.29	17.90	0.53
Rio Malvaro	25.1	MAL-38	Q50	237.00	177.18	182.02	180.80	-1.22	180.80	-1.22	180.31	182.50	0.002530	3.07	77.31	17.90	0.47
Rio Malvaro	25.1	MAL-38	Q200	419.00	177.18	183.71	180.80	-2.91	180.80	-2.91	181.52	184.48	0.003122	3.90	107.51	17.90	0.51
Rio Malvaro	25.1	MAL-38	Q500	608.00	177.18	185.16	180.80	-4.36	180.80	-4.36	182.60	186.22	0.003646	4.56	133.43	17.90	0.53
Rio Malvaro	25	MAL-PT06		Bridge													
Rio Malvaro	24.9	MAL-38	Q50	237.00	177.18	181.29	180.80	-0.49	180.80	-0.49		181.98	0.004332	3.69	64.21	17.90	0.62
Rio Malvaro	24.9	MAL-38	Q200	419.00	177.18	182.38	180.80	-1.58	180.80	-1.58		183.66	0.006274	5.00	83.83	17.90	0.74
Rio Malvaro	24.9	MAL-38	Q500	608.00	177.18	183.23	180.80	-2.43	180.80	-2.43		185.15	0.008293	6.15	98.89	17.90	0.83
Rio Malvaro	24.8	MAL-38	Q50	237.00	177.14	181.28	180.76	-0.52	180.76	-0.52		181.96	0.004224	3.66	64.76	17.90	0.61
Rio Malvaro	24.8	MAL-38	Q200	419.00	177.14	182.37	180.76	-1.61	180.76	-1.61		183.63	0.006183	4.97	84.26	17.90	0.73
Rio Malvaro	24.8	MAL-38	Q500	608.00	177.14	183.20	180.76	-2.44	180.76	-2.44		185.11	0.008249	6.14	99.08	17.90	0.83
Rio Malvaro	24	MAL-37	Q50	237.00	176.84	180.54	180.82	0.28	182.13	1.59	180.54	181.74	0.010287	4.85	48.88	20.53	1.00
Rio Malvaro	24	MAL-37	Q200	419.00	176.84	181.65	180.82	-0.83	182.13	0.48	181.65	183.35	0.010084	5.78	72.48	21.63	1.01
Rio Malvaro	24	MAL-37	Q500	608.00	176.84	182.62	180.82	-1.80	182.13	-0.49	182.62	184.77	0.009968	6.49	93.72	21.80	1.00
Rio Malvaro	23	MAL-36	Q50	237.00	176.10	179.02	180.80	1.78	181.39	2.37	179.81	181.60	0.029373	7.12	33.30	17.58	1.65
Rio Malvaro	23	MAL-36	Q200	419.00	176.10	180.10	180.80	0.70	181.39	1.29	181.02	183.21	0.023411	7.81	53.65	20.02	1.52
Rio Malvaro	23	MAL-36	Q500	608.00	176.10	180.97	180.80	-0.17	181.39	0.42	181.97	184.62	0.021507	8.46	71.87	21.65	1.48
Rio Malvaro	22.2	MAL-35	Q50	237.00	175.00	178.16	180.00	1.84	180.00	1.84	178.16	179.17	0.010203	4.47	53.04	26.21	1.00
Rio Malvaro	22.2	MAL-35	Q200	419.00	175.00	178.88	180.00	1.12	180.00	1.12	179.19	180.53	0.013199	5.70	73.53	30.52	1.17
Rio Malvaro	22.2	MAL-35	Q500	608.00	175.00	179.65	180.00	0.35	180.00	0.35	179.99	181.58	0.012498	6.14	98.96	35.14	1.17
Rio Malvaro	22	MAL-34	Q50	237.00	164.22	166.60	164.86	-1.74	167.03	0.43	167.28	169.00	0.028247	6.86	34.54	17.22	1.55
Rio Malvaro	22	MAL-34	Q200	419.00	164.22	167.60	164.86	-2.74	167.03	-0.57	168.51	170.92	0.025852	8.08	51.88	17.40	1.49
Rio Malvaro	22	MAL-34	Q500	608.00	164.22	168.56	164.86	-3.70	167.03	-1.53	169.61	172.56	0.023972	8.86	68.59	17.40	1.43
Rio Malvaro	21.3	MAL-33	Q50	237.00	163.38	165.64	164.86	-0.78	166.76	1.12	166.20	167.65	0.024125	6.29	37.69	21.85	1.50
Rio Malvaro	21.3	MAL-33	Q200	419.00	163.38	168.45	164.86	-3.59	166.76	-1.69	167.25	169.24	0.003689	3.94	106.45	25.08	0.61
Rio Malvaro	21.3	MAL-33	Q500	608.00	163.38	169.80	164.86	-4.94	166.76	-3.04	168.11	170.76	0.003447	4.33	140.44	25.08	0.58
Rio Malvaro	21.2	MAL-33	Q50	237.00	163.38	165.68	164.86	-0.82	166.76	1.08	166.24	167.60	0.022494	6.14	38.61	21.90	1.48
Rio Malvaro	21.2	MAL-33	Q200	419.00	163.38	168.43	164.86	-3.57	166.76	-1.67	167.26	169.23	0.003198	3.97	105.86	25.08	0.62
Rio Malvaro	21.2	MAL-33	Q500	608.00	163.38	169.78	164.86	-4.92	166.76	-3.02	168.13	170.75	0.002847	4.36	139.77	25.08	0.59
Rio Malvaro	21.15	MAL-PT05		Bridge													
Rio Malvaro	21.1	MAL-33	Q50	237.00	163.38	165.84	164.86	-0.98	166.76	0.92	166.24	167.45	0.017185	5.61	42.23	22.38	1.30
Rio Malvaro	21.1	MAL-33	Q200	419.00	163.38	167.59	164.86	-2.73	166.76	-0.83	167.26	168.84	0.006425	4.95	84.77	25.08	0.86
Rio Malvaro	21.1	MAL-33	Q500	608.00	163.38	168.50	164.86	-3.64	166.76	-1.74	168.13	170.13	0.006401	5.66	107.59	25.08	0.87
Rio Malvaro	21	MAL-33	Q50	237.00	163.38	165.98	164.86	-1.12	166.76	0.78	166.23	167.36	0.014599	5.20	45.58	22.85	1.18
Rio Malvaro	21	MAL-33	Q200	419.00	163.38	167.25	164.86	-2.39	166.76	-0.49	167.25	168.78	0.009962	5.47	76.54	25.08	1.00

HEC-RAS Plan: press River: Torrente Malvaro Reach: Rio Malvaro (Continued)

Reach	River Sta		Profile	Q Total (m3/s)	Min Ch El (m)	W.S. Elev (m)	LOB Elev (m)	L. Freeboard (m)	ROB Elev (m)	R. Freeboard (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
Rio Malvaro	21	MAL-33	Q500	608.00	163.38	168.12	164.86	-3.26	166.76	-1.36	168.12	170.07	0.009894	6.19	98.15	25.08	1.00
Rio Malvaro	20	MAL-32	Q50	237.00	162.55	164.09	165.02	0.93	166.67	2.58	164.87	166.63	0.040423	7.05	33.62	23.60	1.88
Rio Malvaro	20	MAL-32	Q200	419.00	162.55	164.86	165.02	0.16	166.67	1.81	165.84	168.12	0.032509	7.99	52.41	25.41	1.78
Rio Malvaro	20	MAL-32	Q500	608.00	162.55	165.52	165.02	-0.50	166.67	1.15	166.68	169.42	0.029055	8.75	69.46	26.31	1.72

Piano di bacino torrente Lavagna

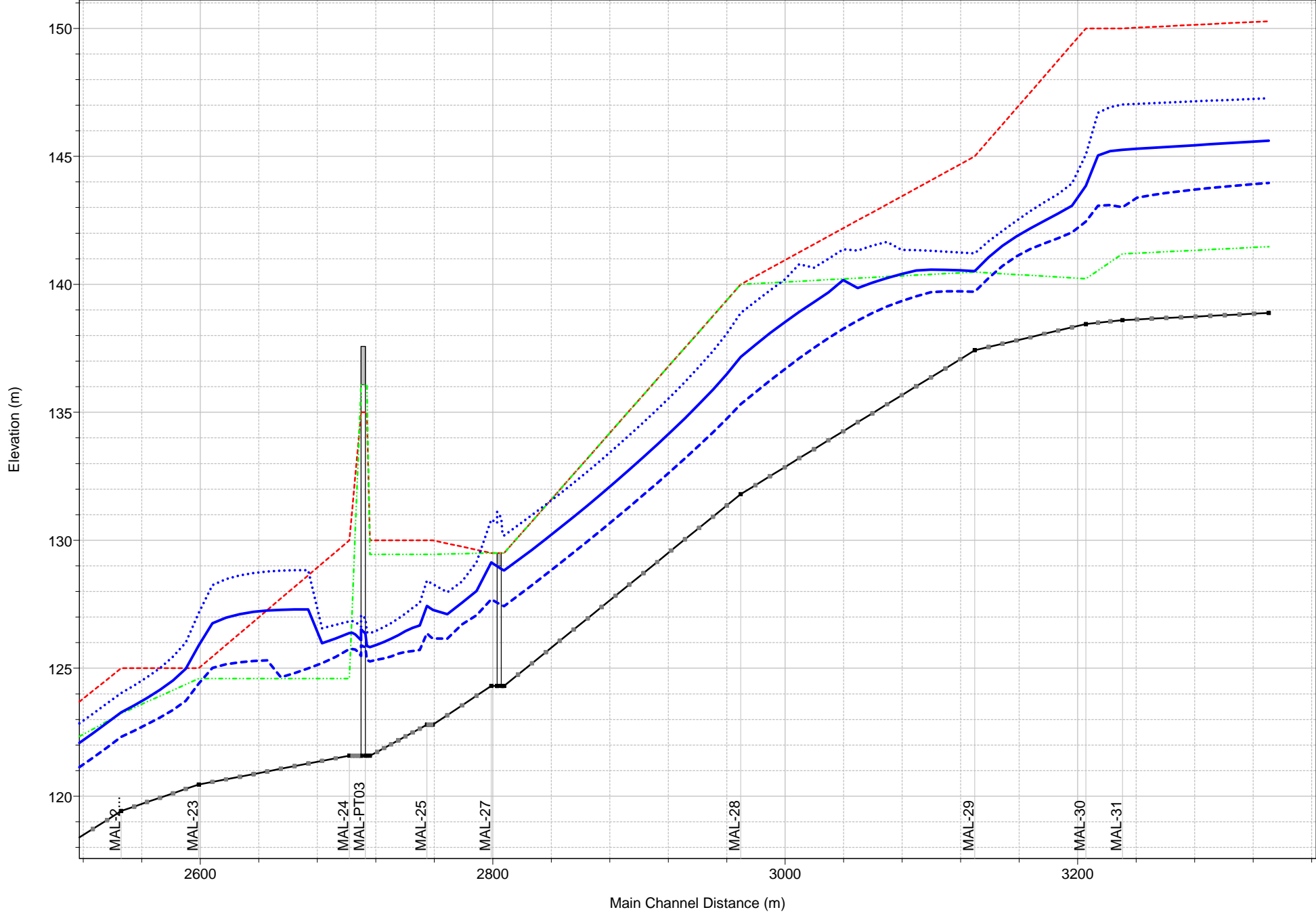
T. Malvaro

tratto di valle – dalla sez. MAL31 alla MAL1

- **Profili idraulici**
- **Sezioni**
- **Tabelle dei risultati**

Torrente Malvaro Plan: Torrente Malvaro

Malvaro valle



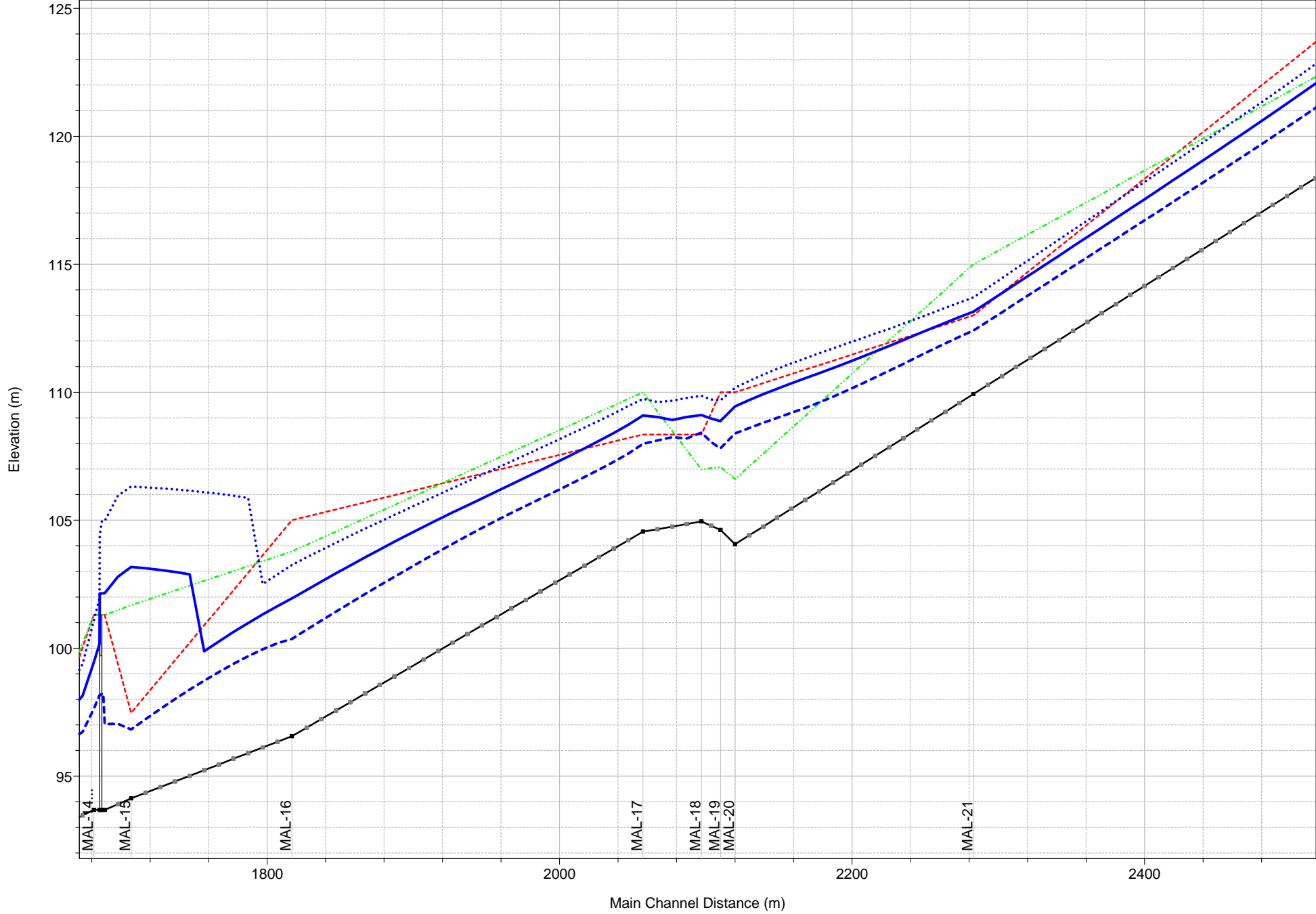
Legend

- PL Q500
- PL Q200
- PL Q50
- Fondo
- Sponda sx
- Sponda dx

1 cm Horiz. = 35 m 1 cm Vert. = 2 m

Torrente Malvaro Plan: Torrente Malvaro

Malvaro valle

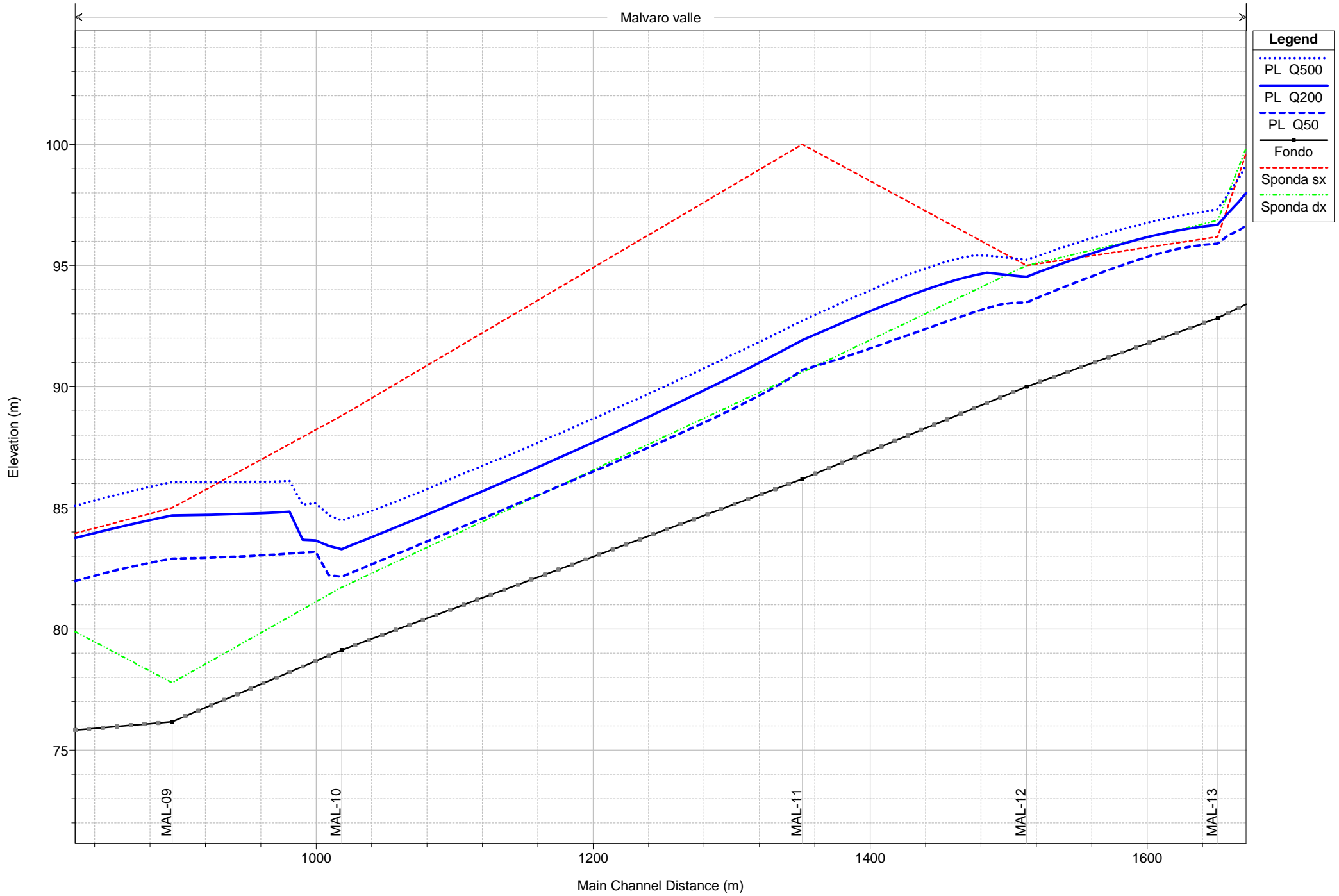


Legend	
PL Q500	(Blue dotted line)
PL Q200	(Solid blue line)
PL Q50	(Blue dashed line)
Fondo	(Black line with square markers)
Sponda sx	(Red dashed line)
Sponda dx	(Green dashed line)

1 cm Horiz. = 35 m 1 cm Vert. = 2 m

Torrente Malvaro Plan: Torrente Malvaro

Malvaro valle

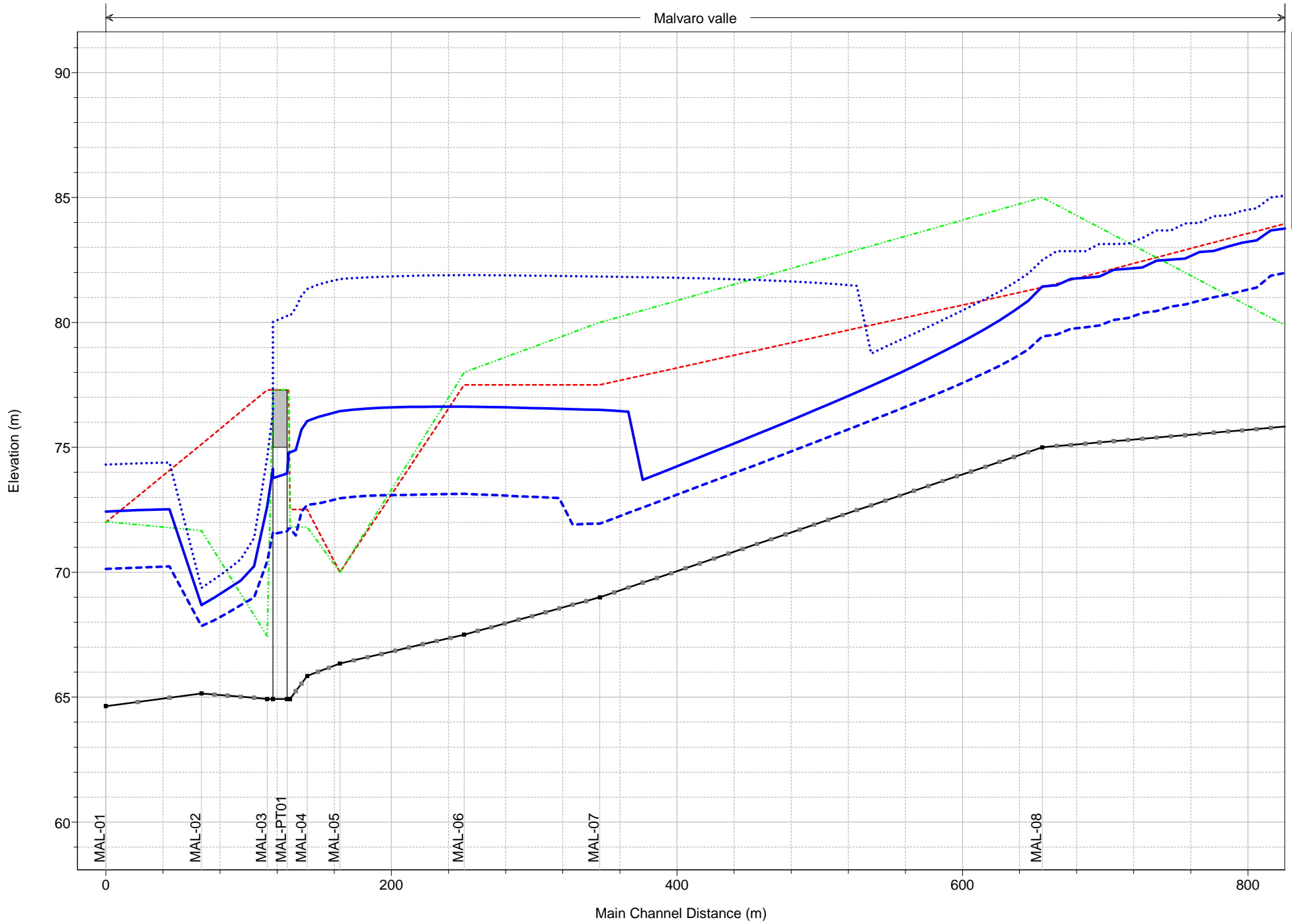


- Legend**
- PL Q500
 - PL Q200
 - PL Q50
 - Fondo
 - Sponda sx
 - Sponda dx

1 cm Horiz. = 35 m 1 cm Vert. = 2 m

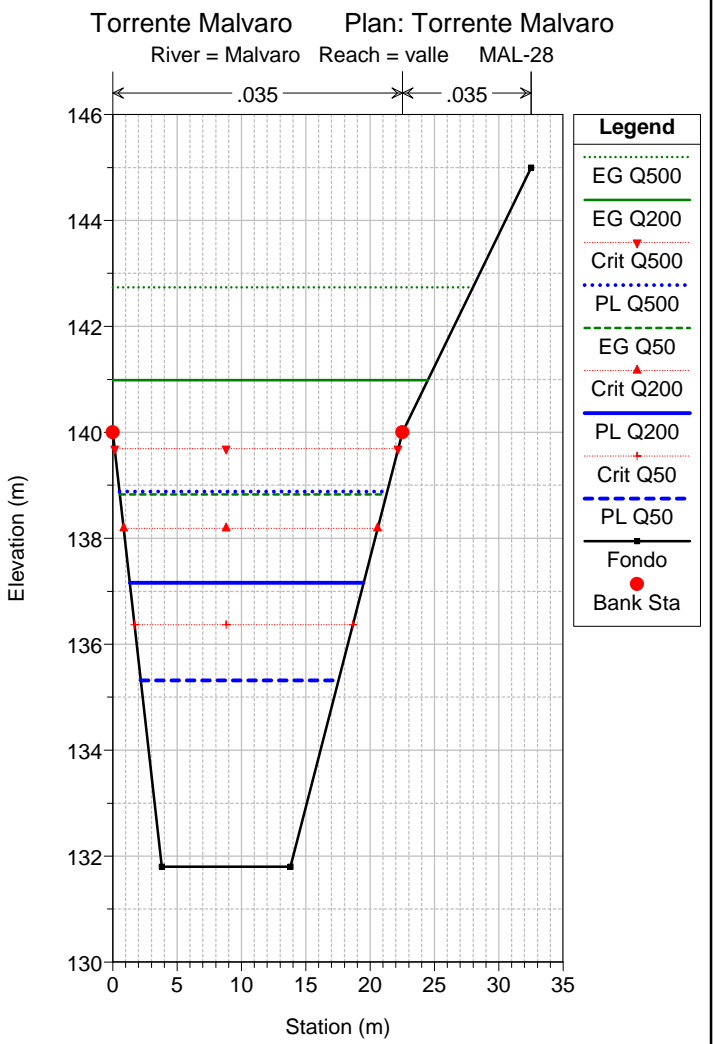
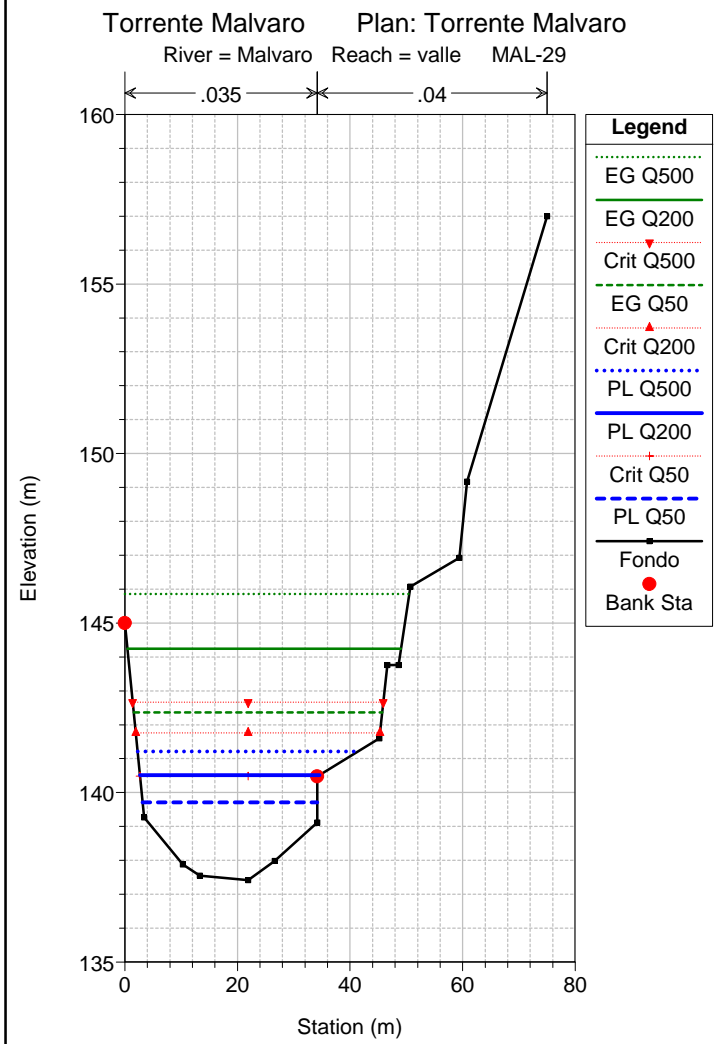
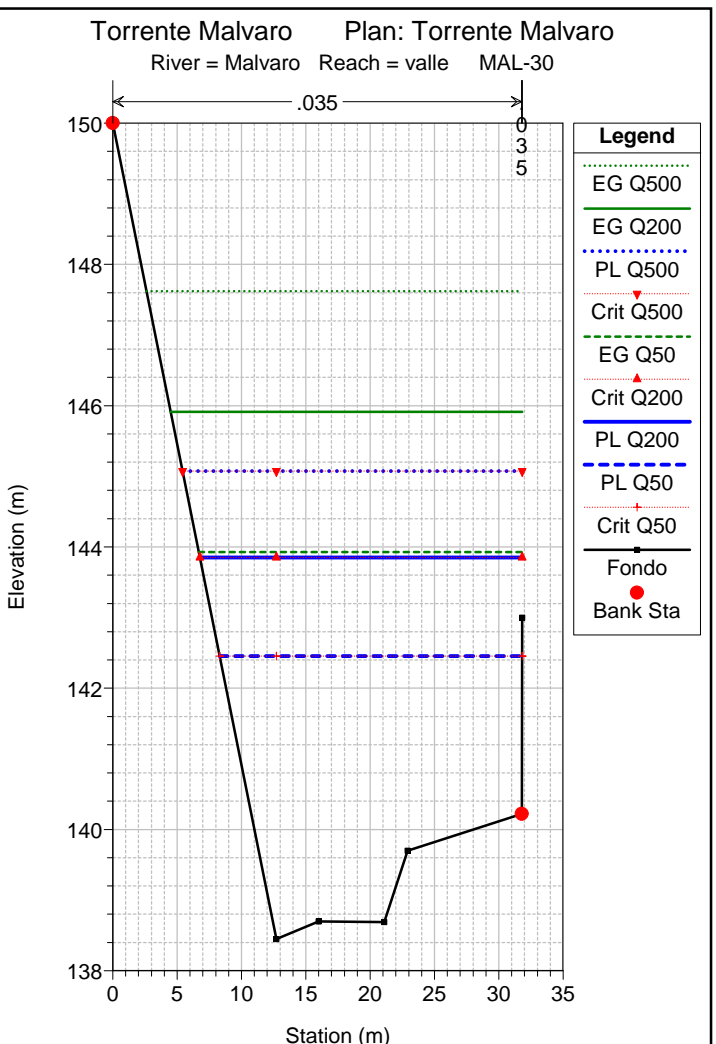
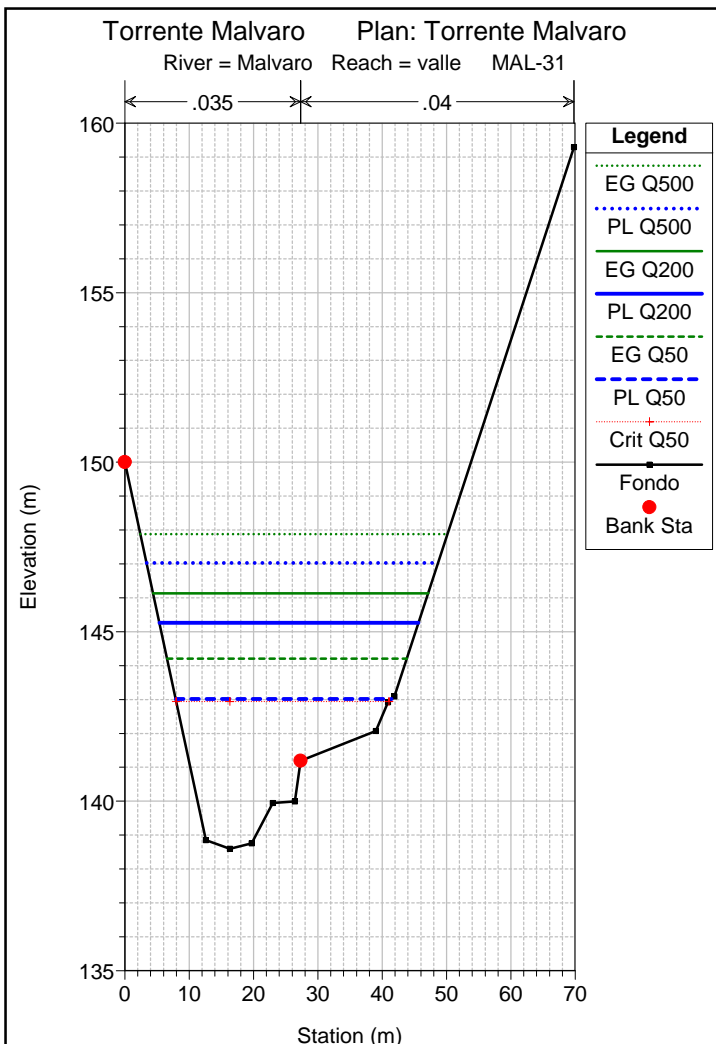
Torrente Malvaro Plan: Torrente Malvaro

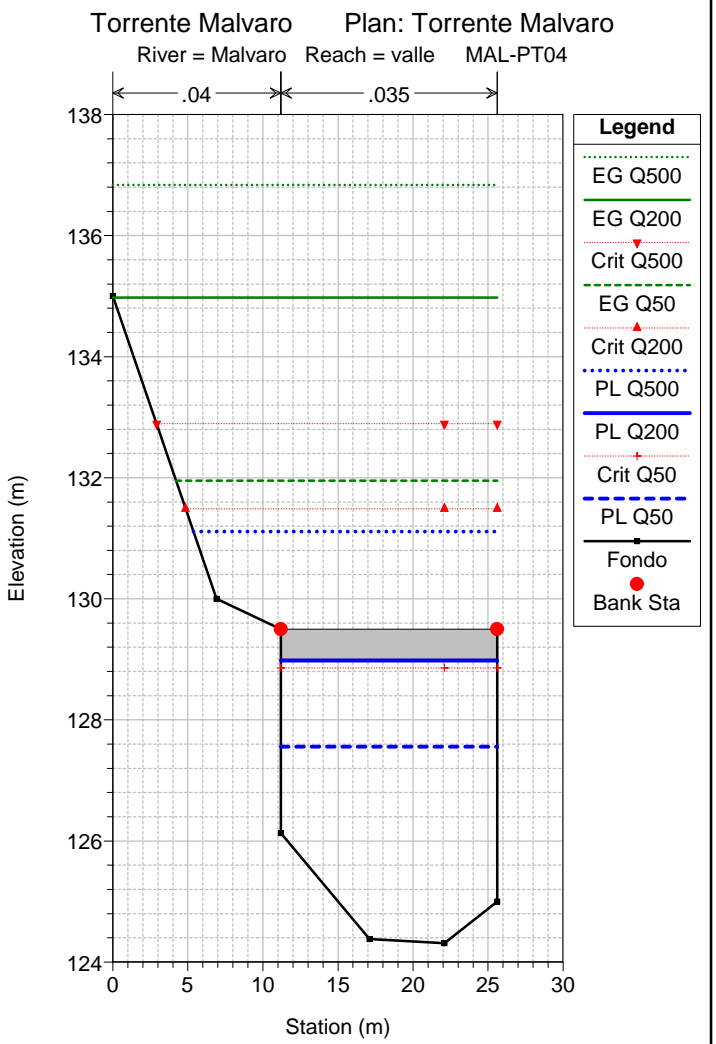
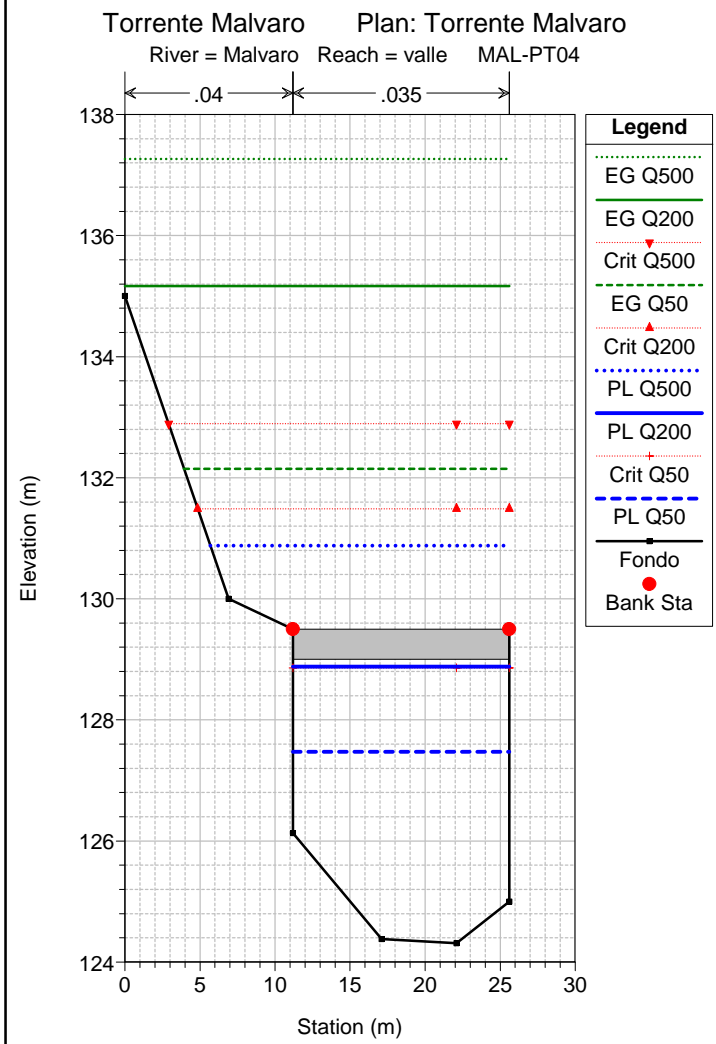
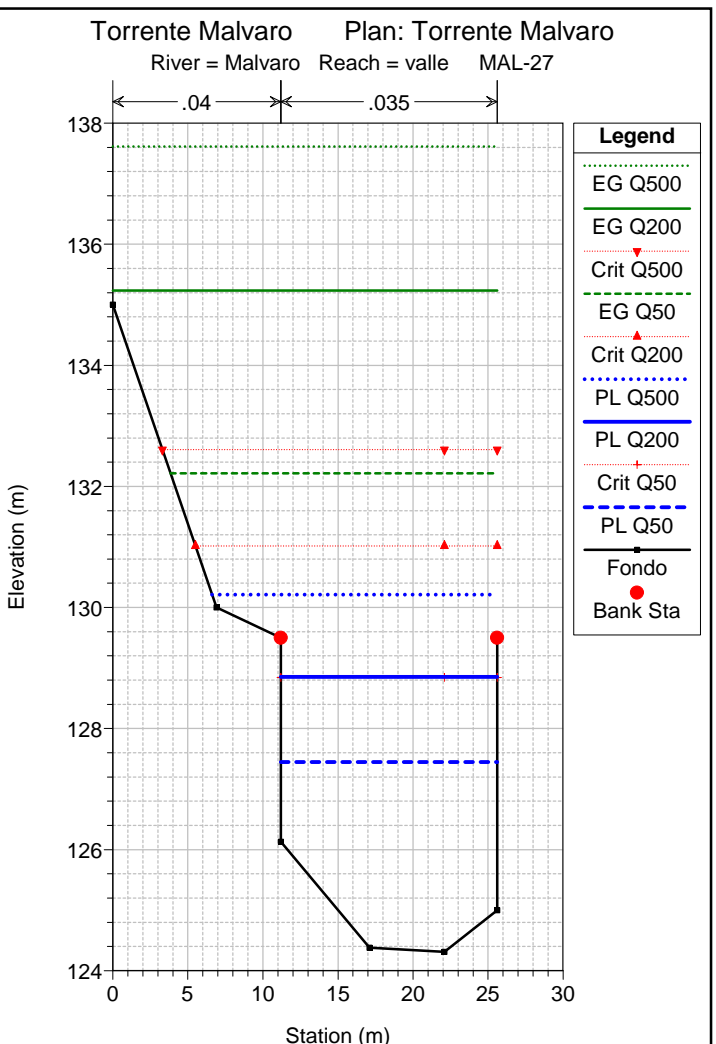
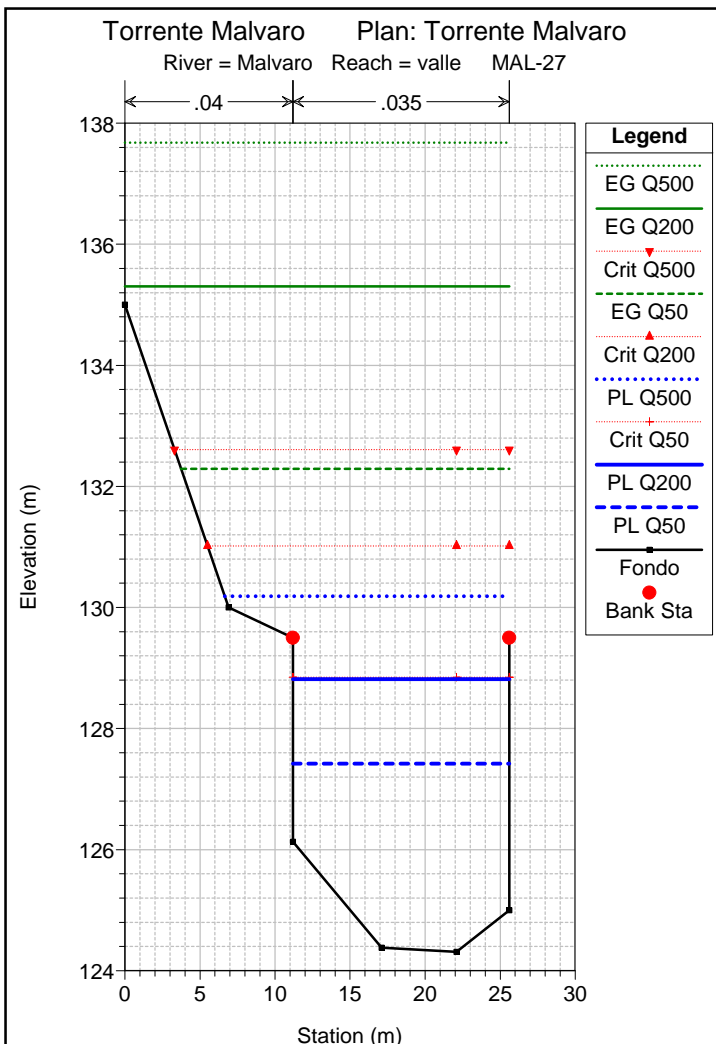
Malvaro valle

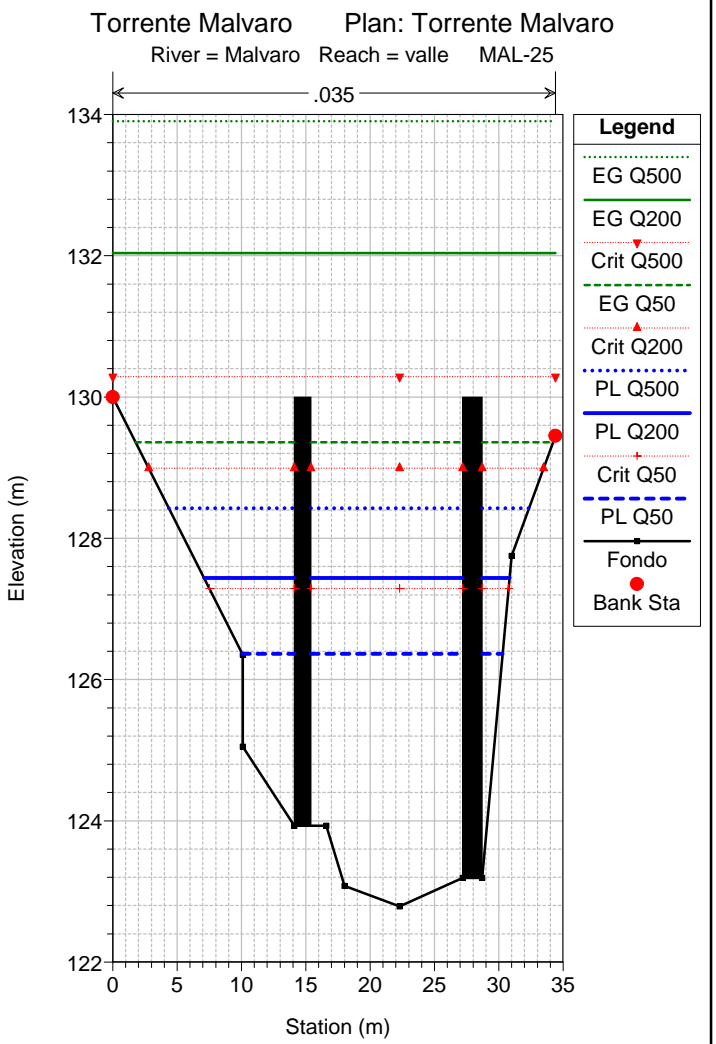
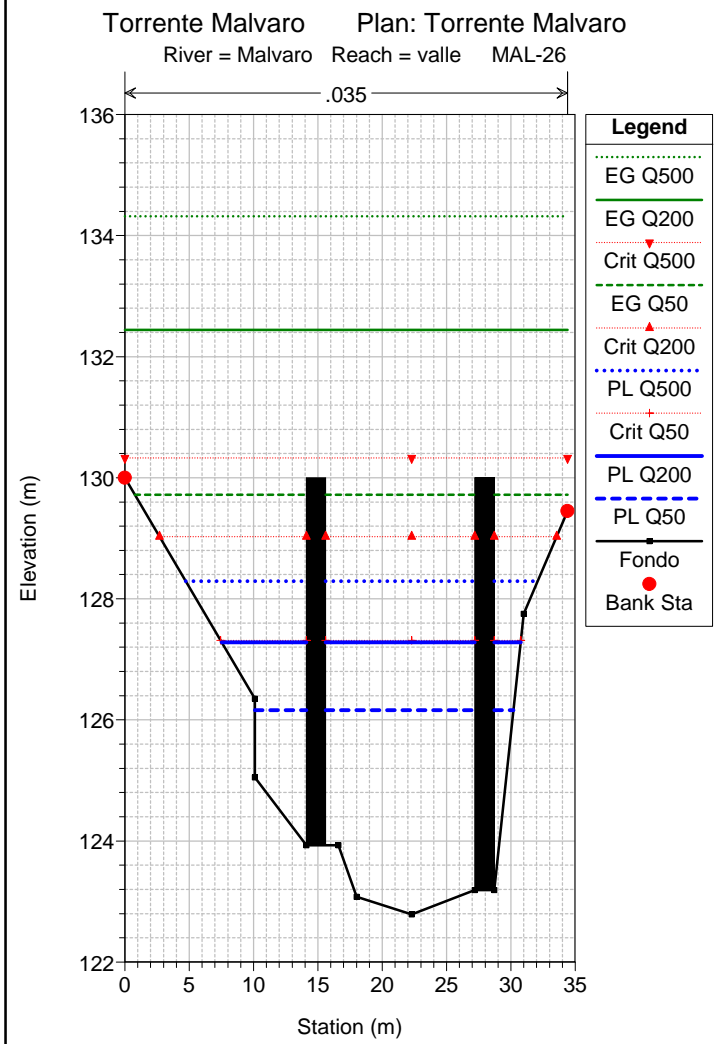
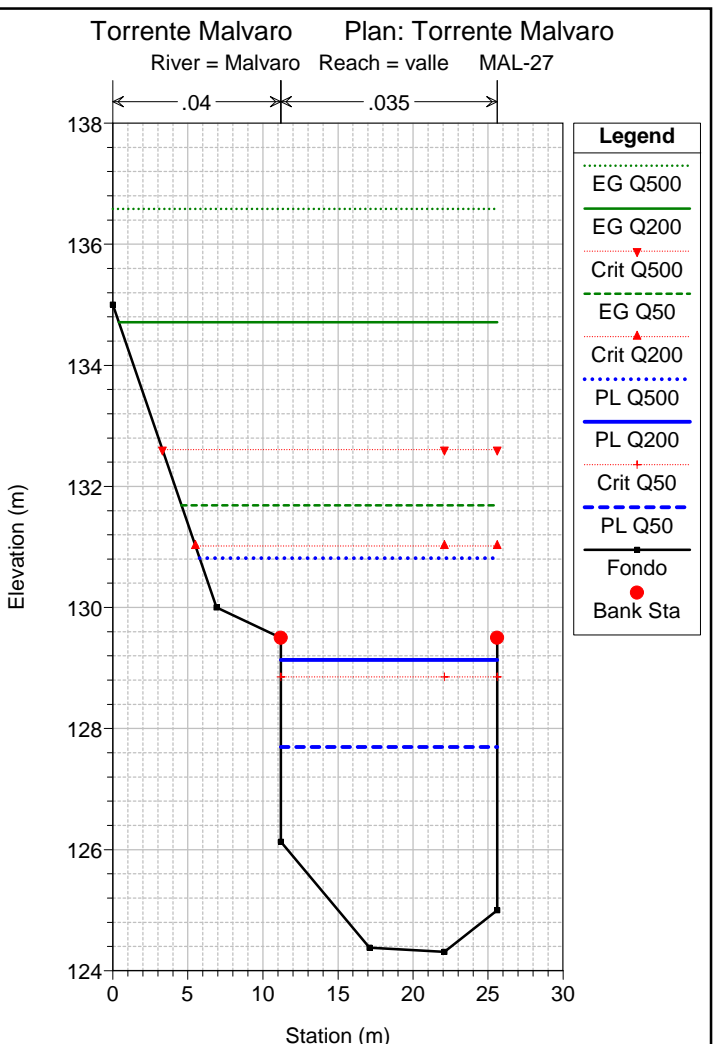
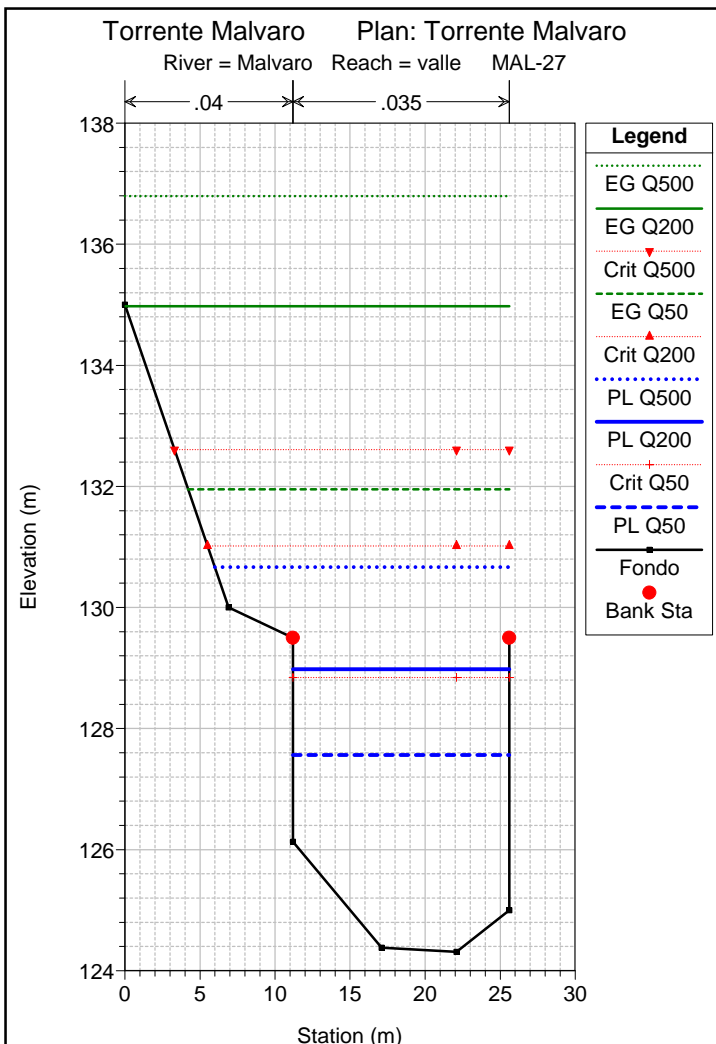


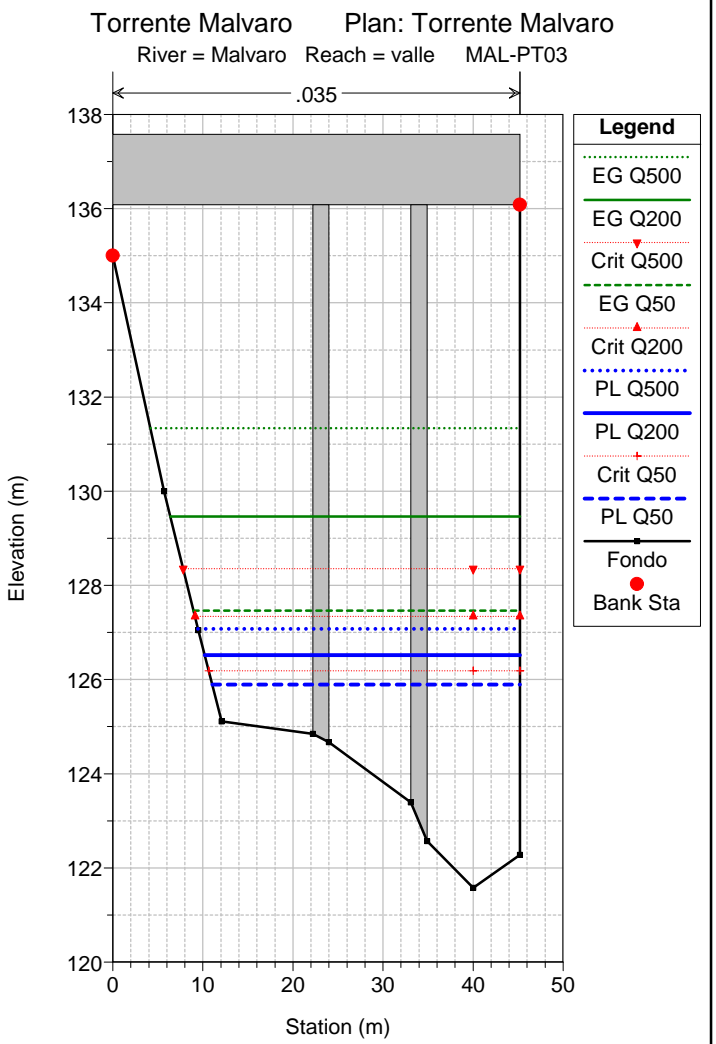
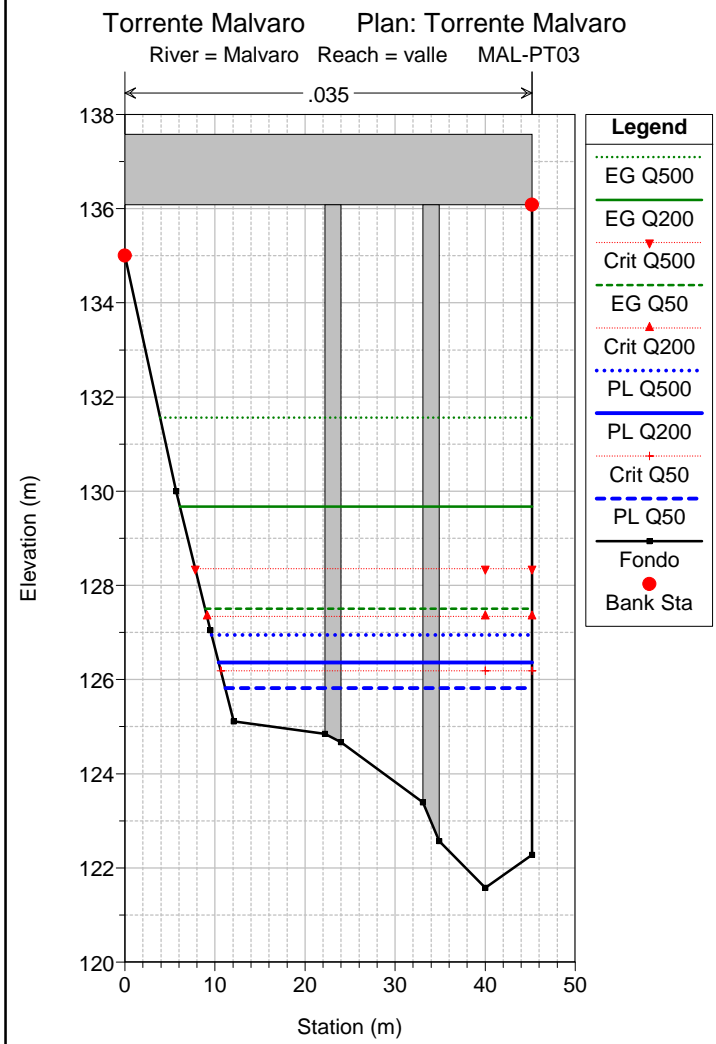
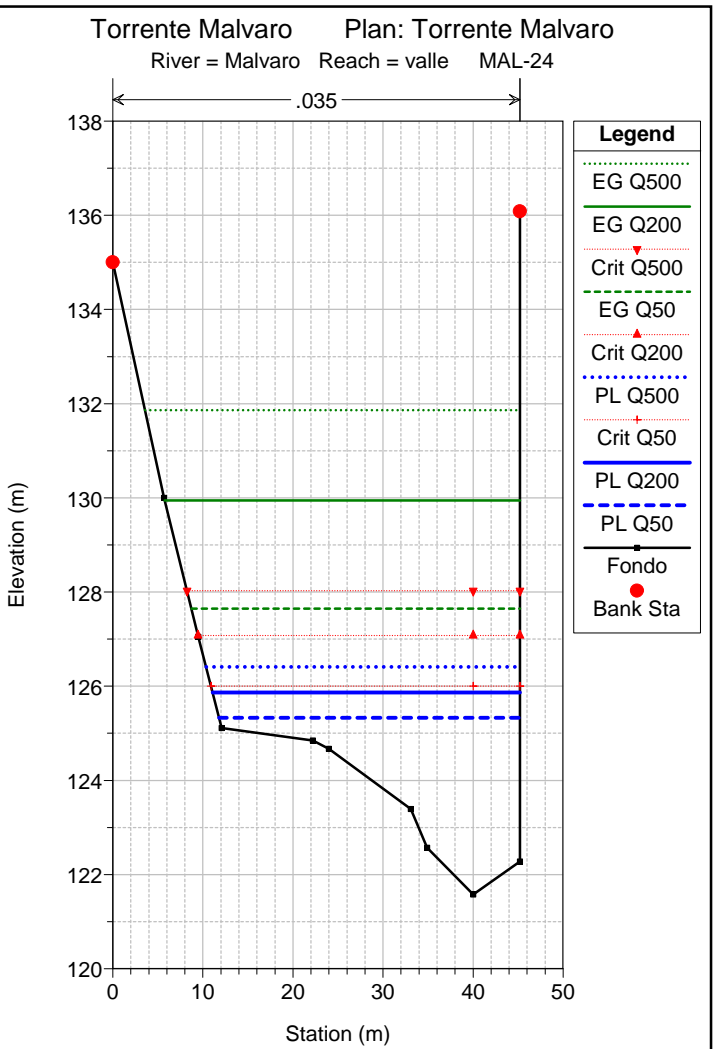
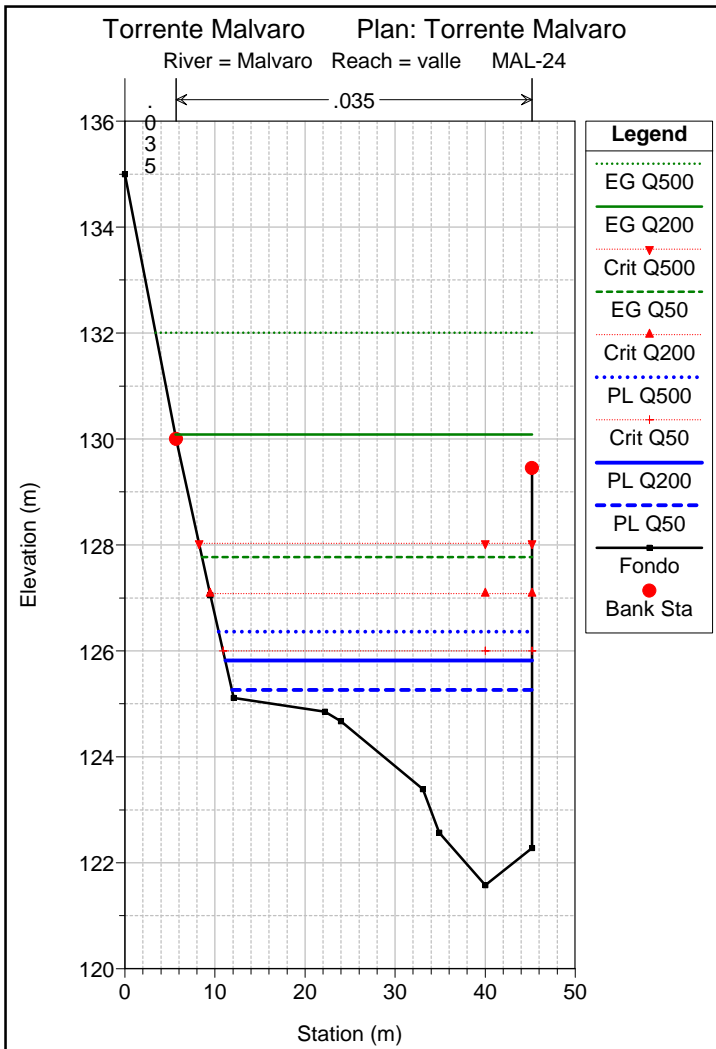
- Legend**
- PL Q500
 - PL Q200
 - PL Q50
 - Fondo
 - Sponda sx
 - Sponda dx

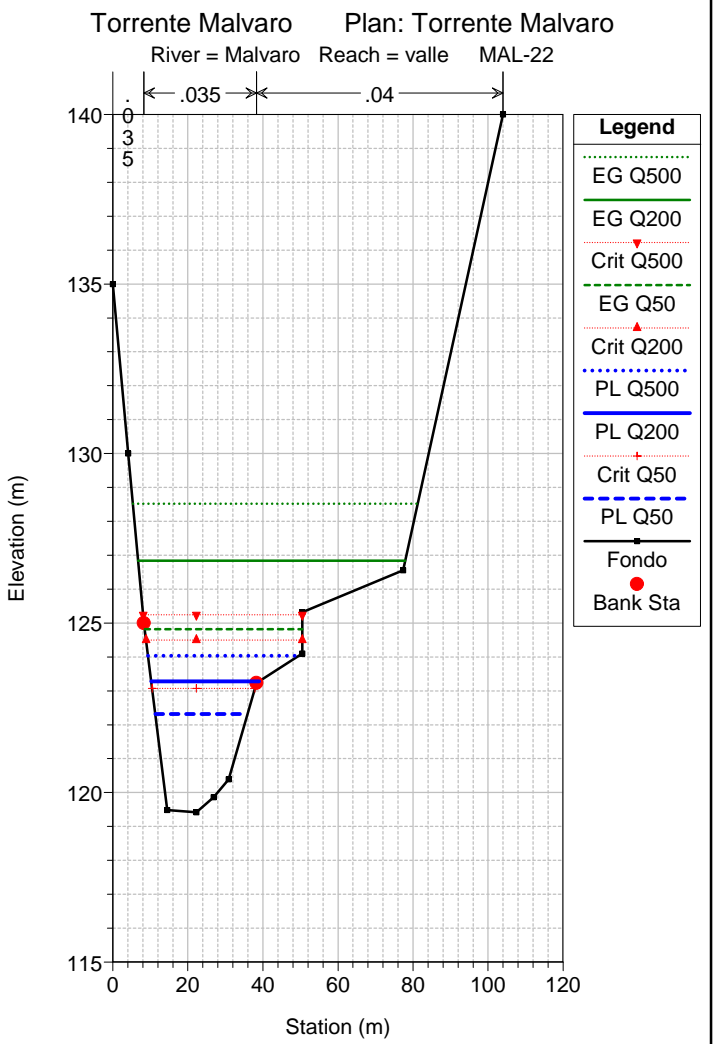
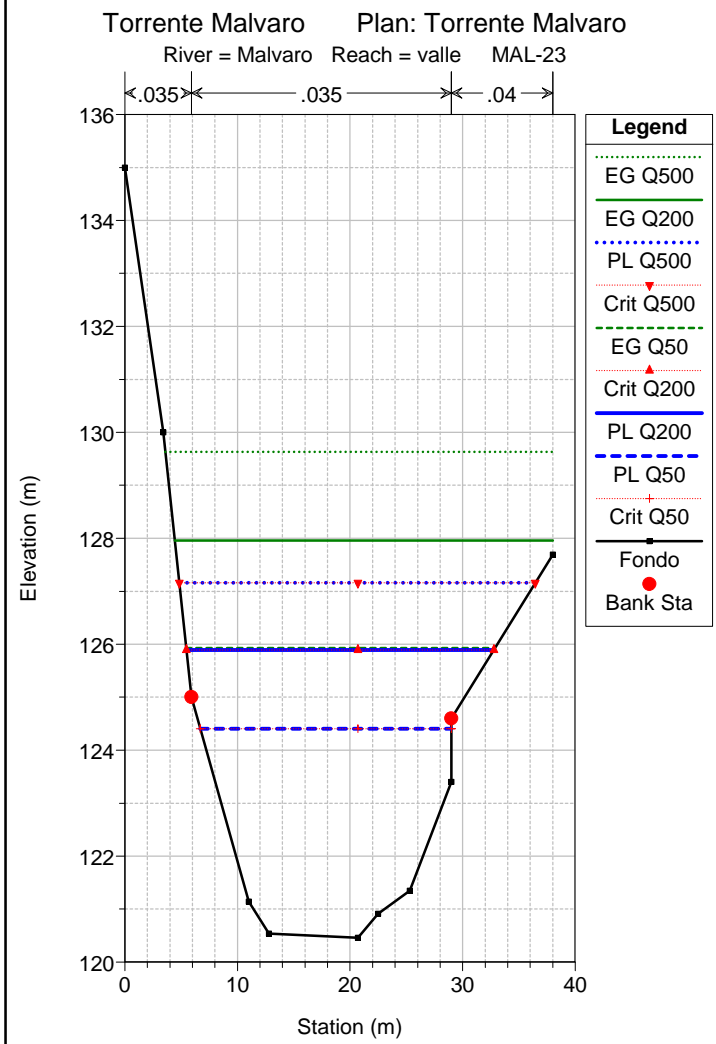
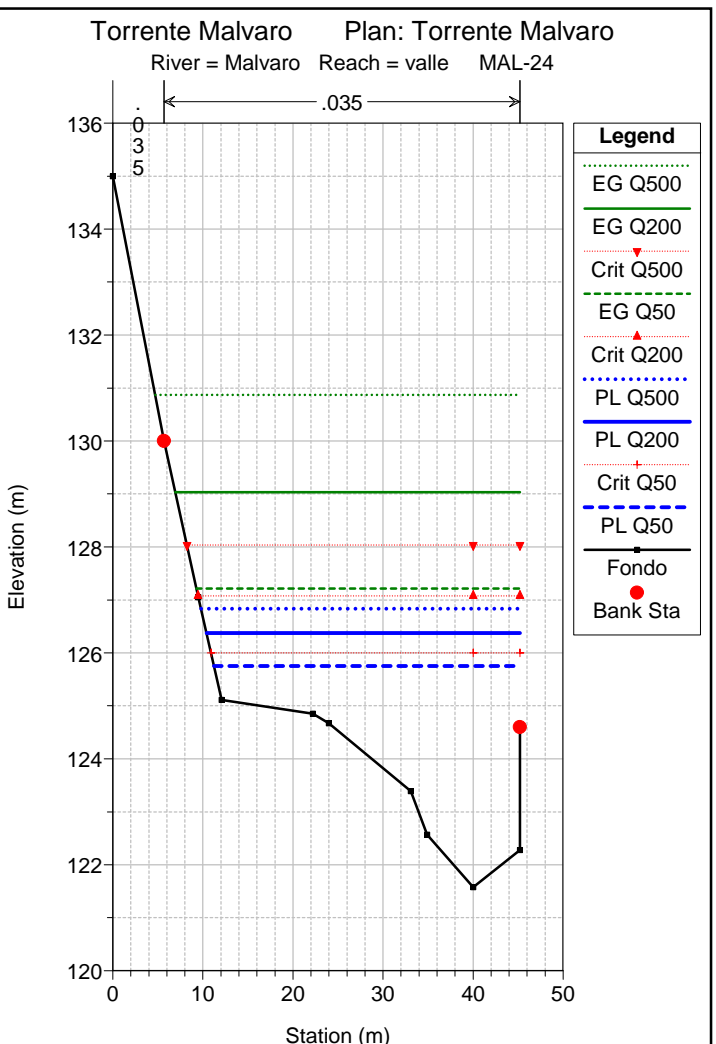
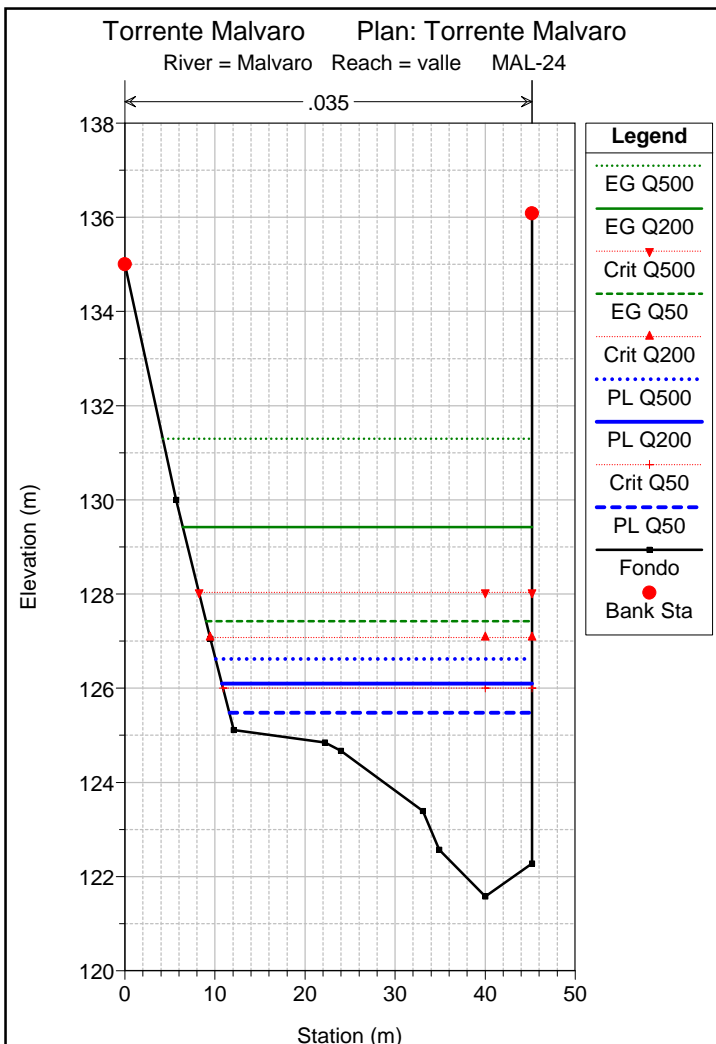
1 cm Horiz. = 35 m 1 cm Vert. = 2 m

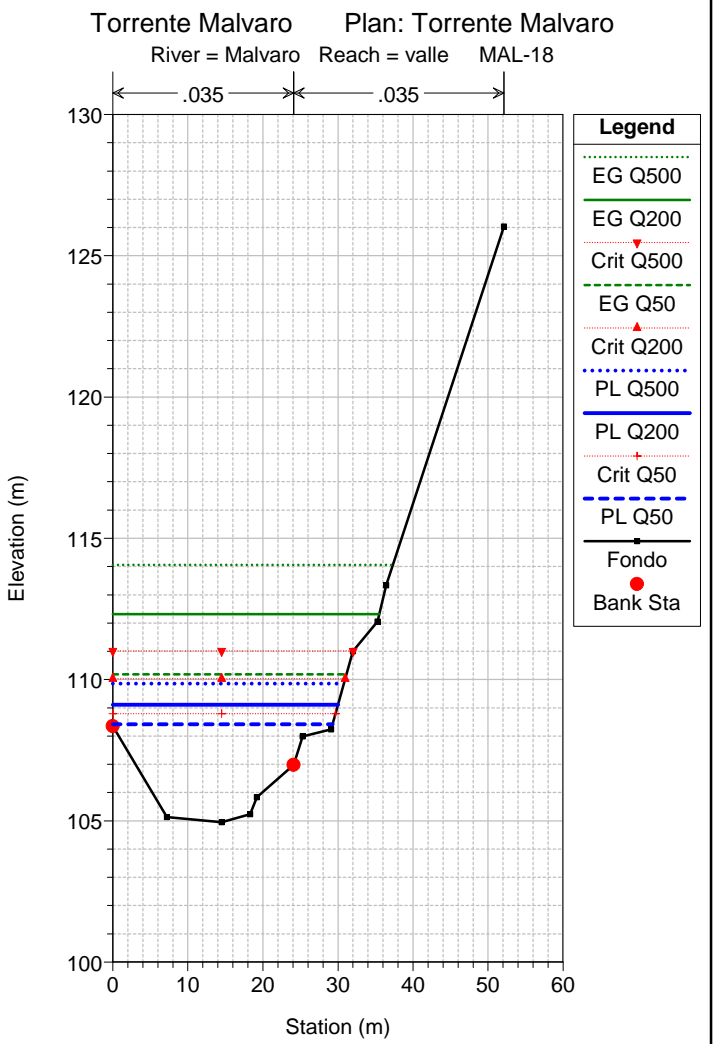
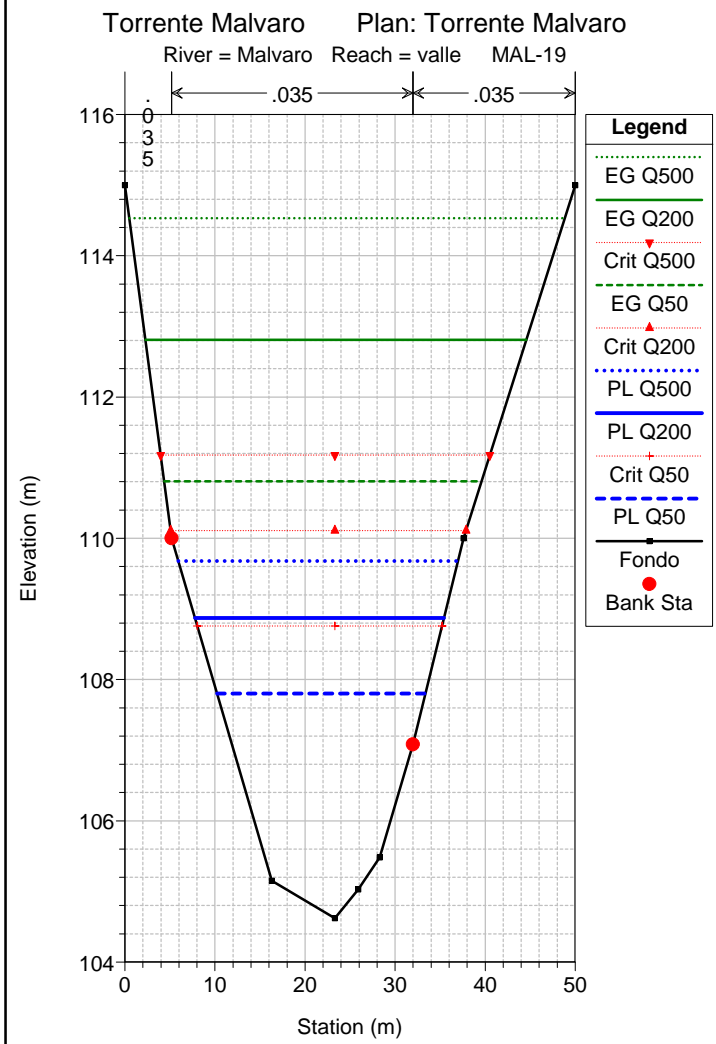
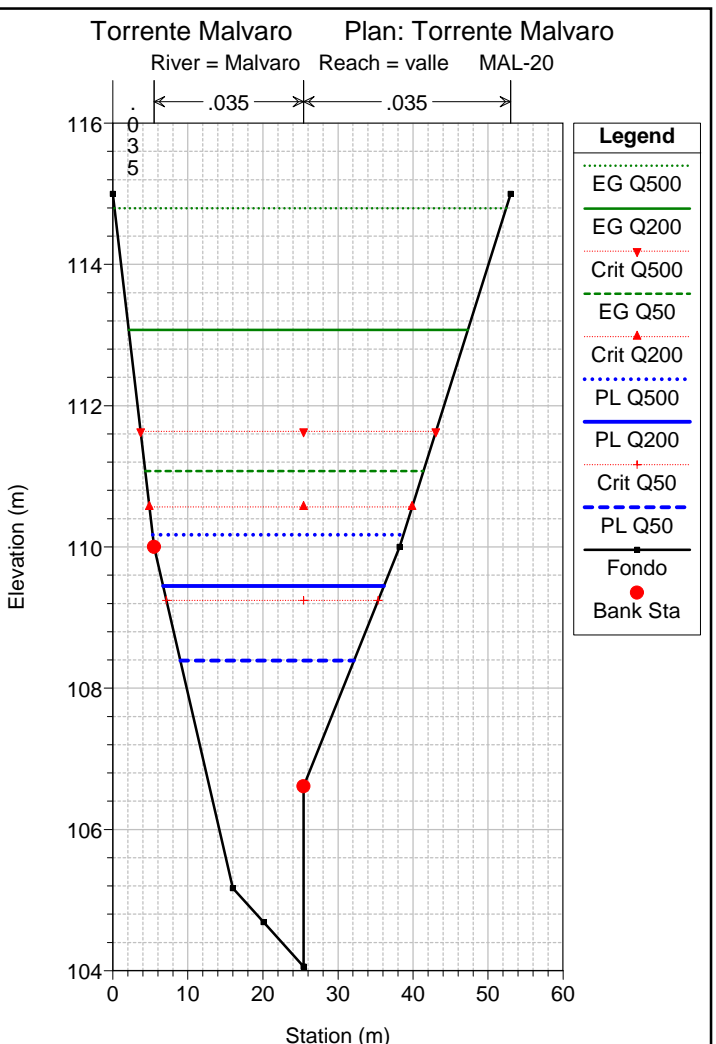
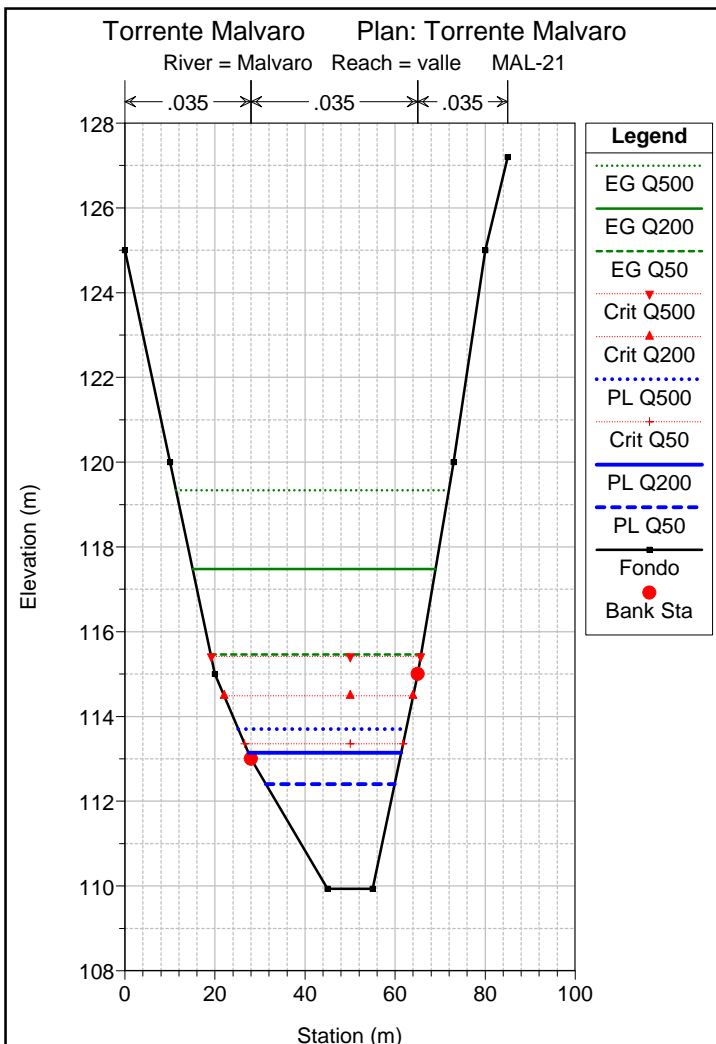


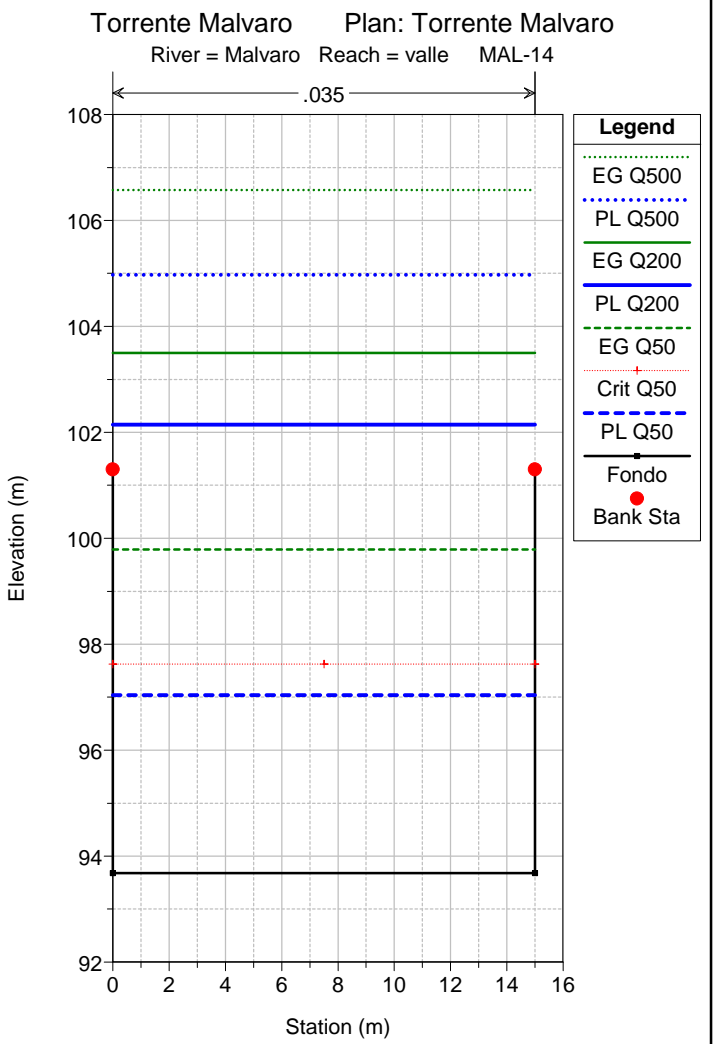
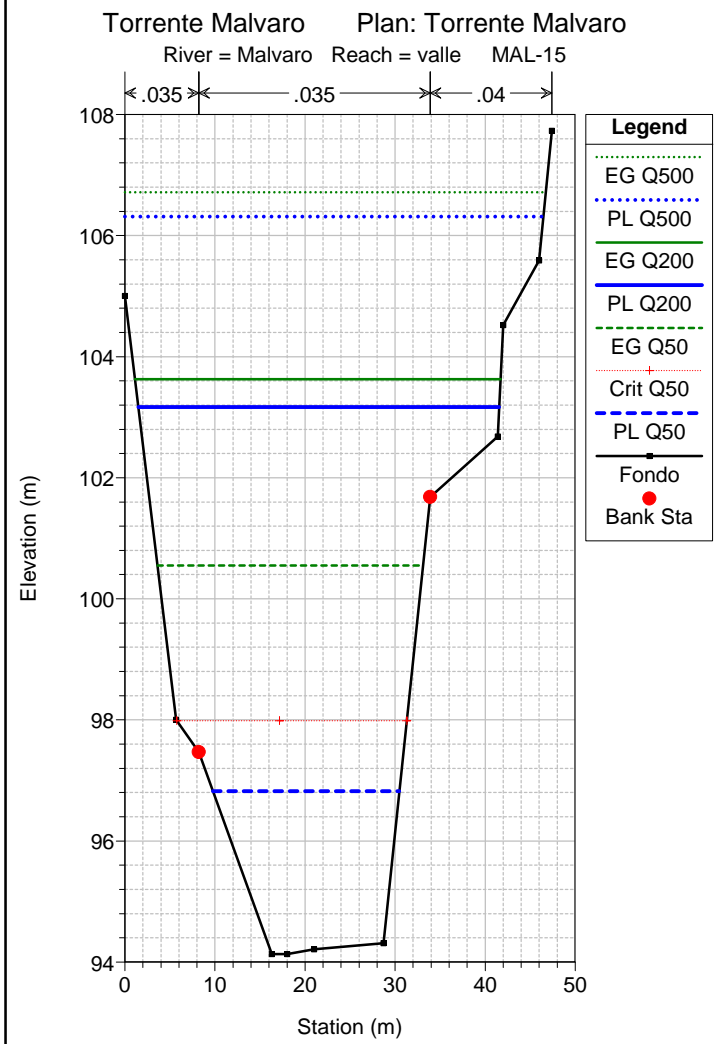
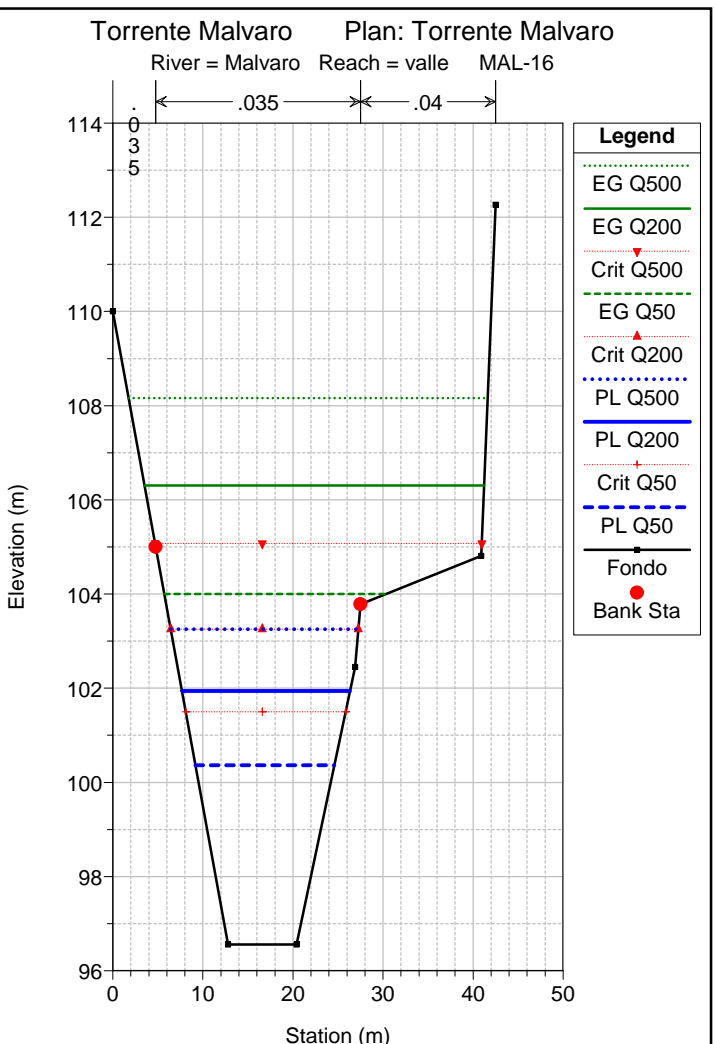
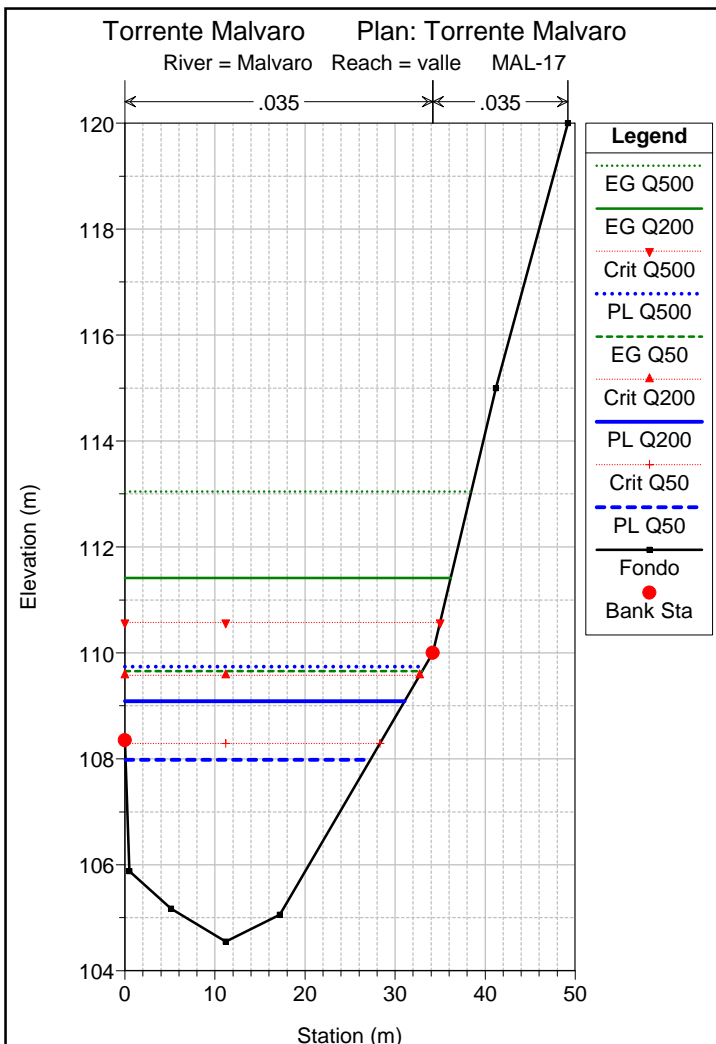


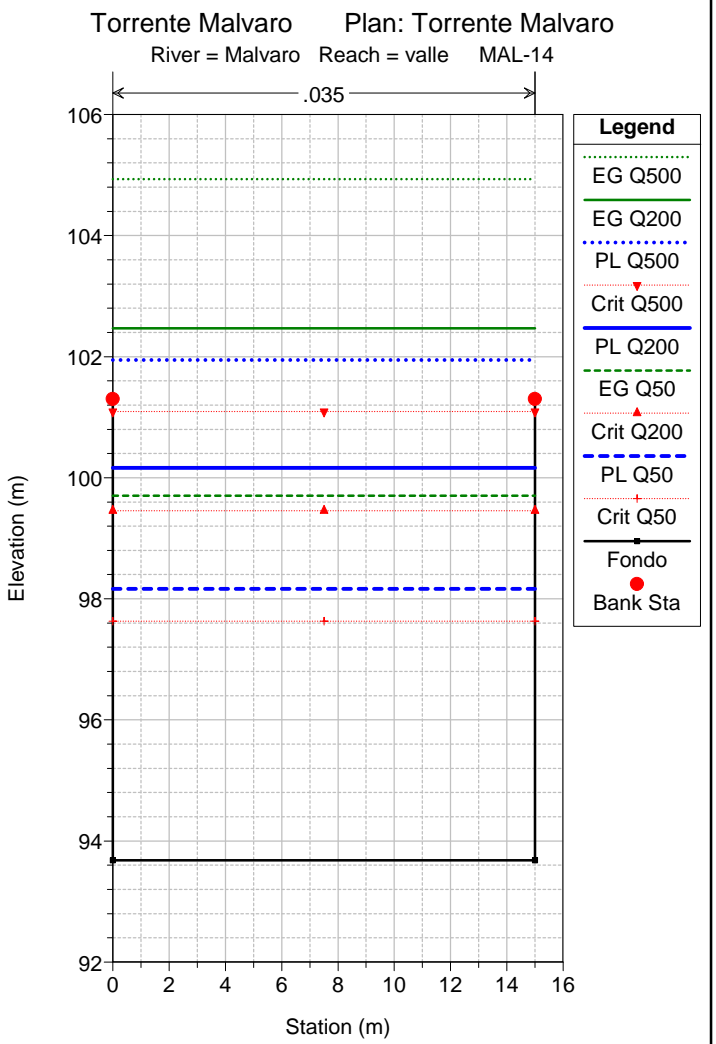
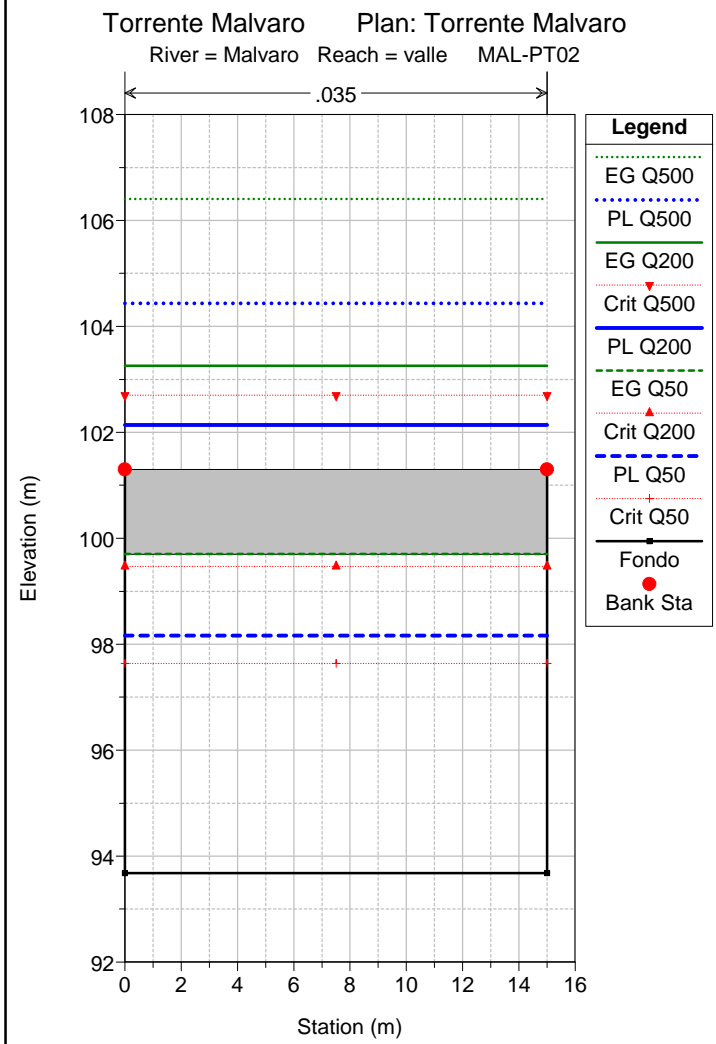
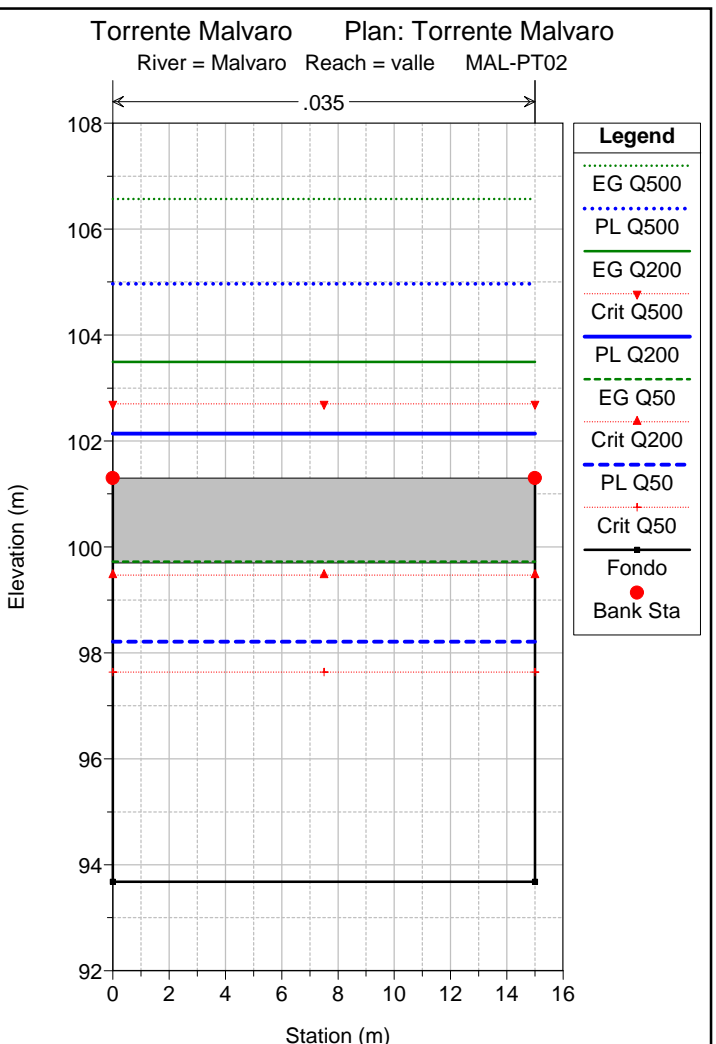
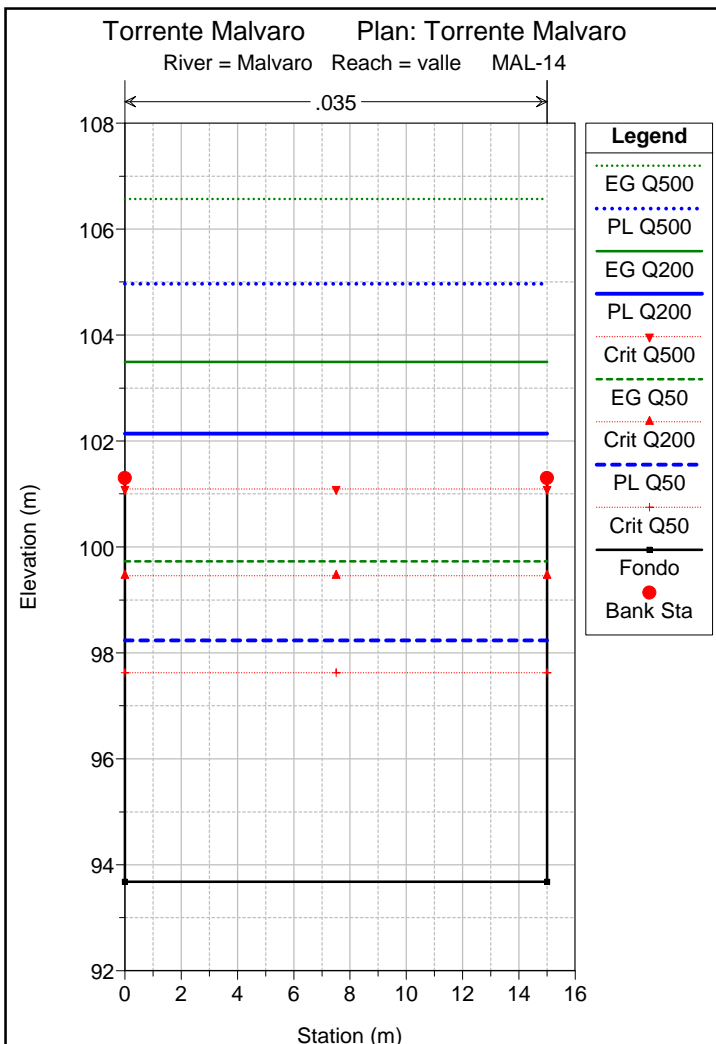


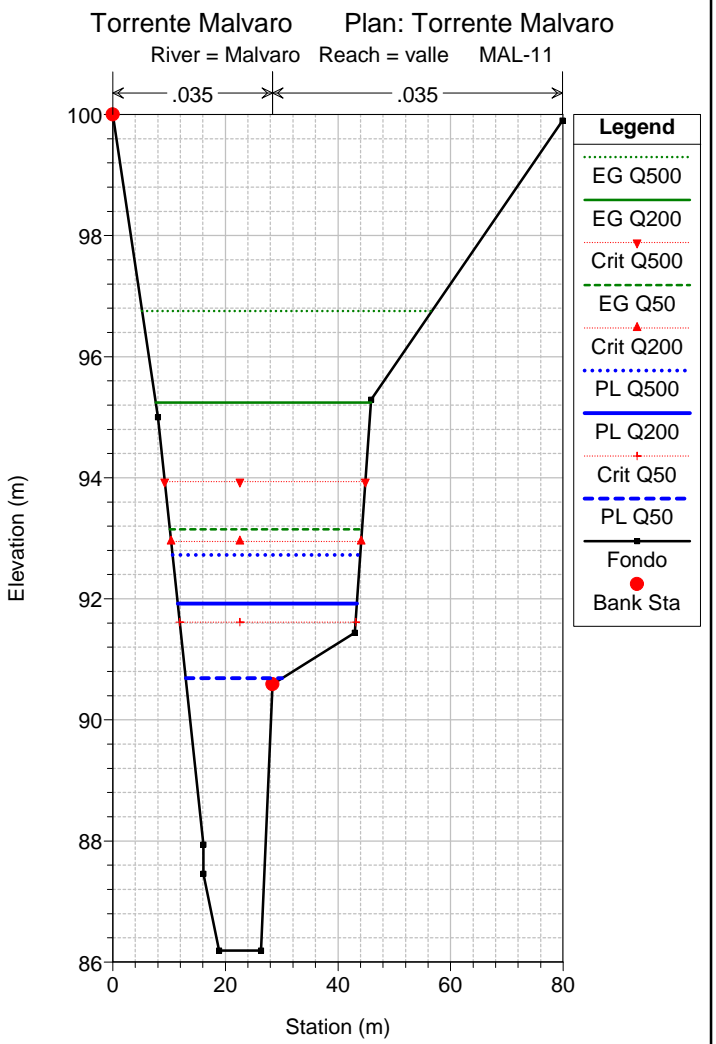
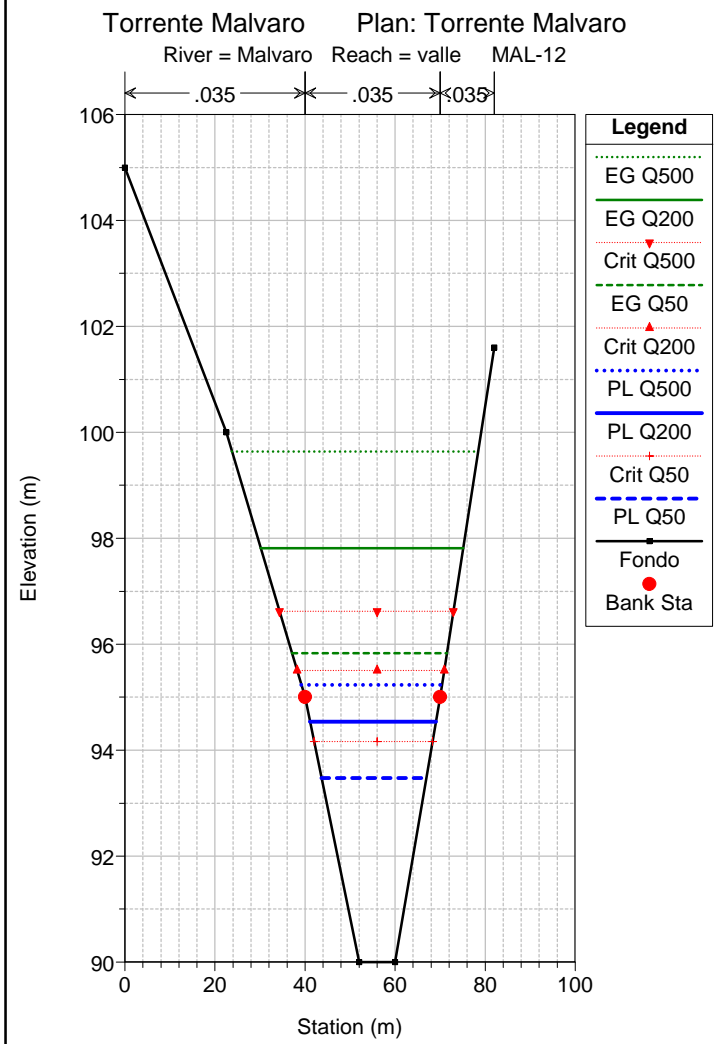
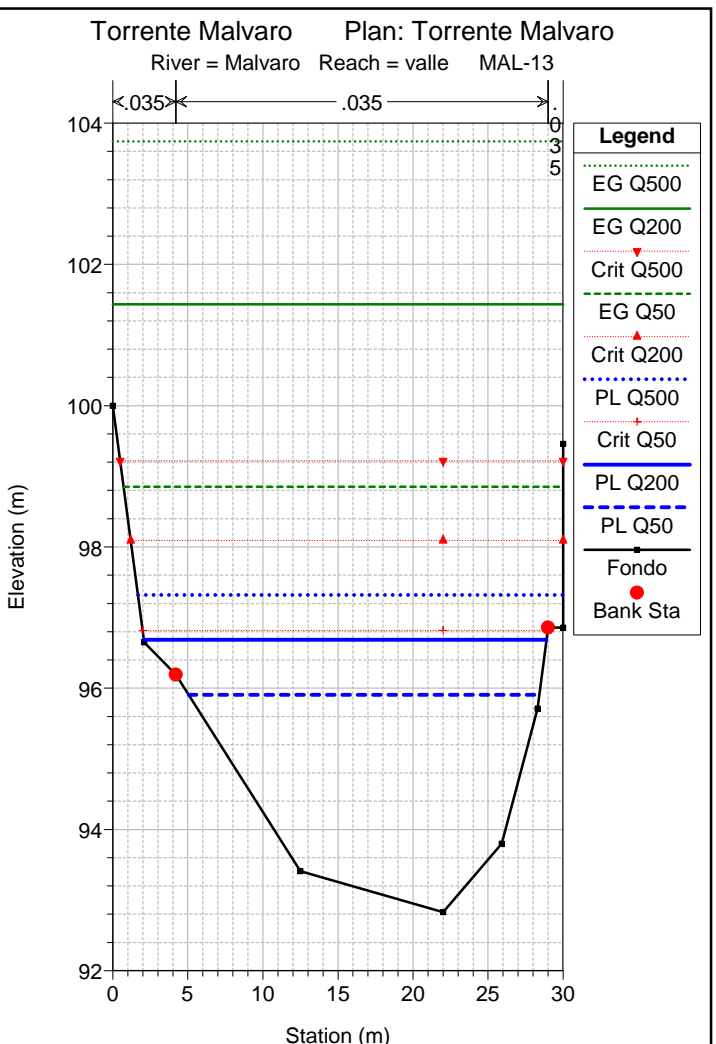
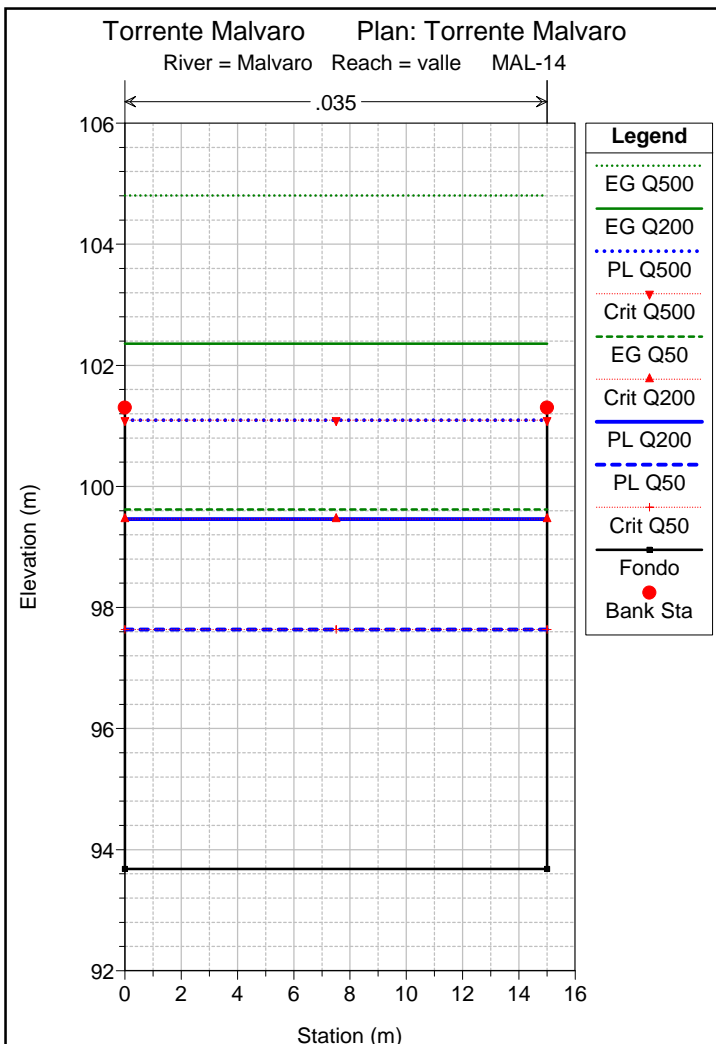






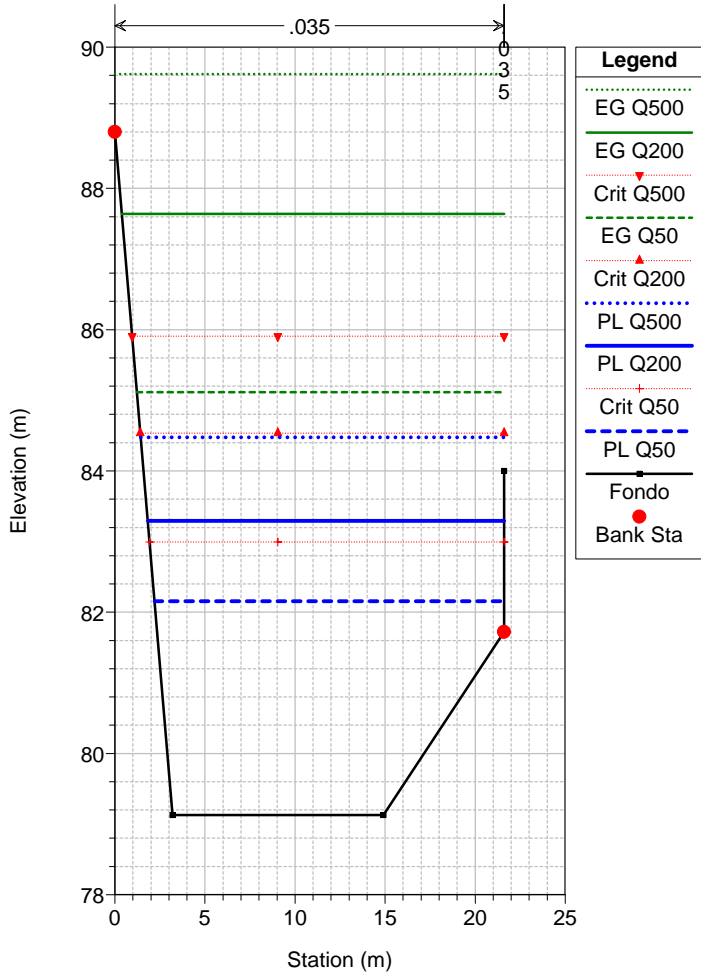






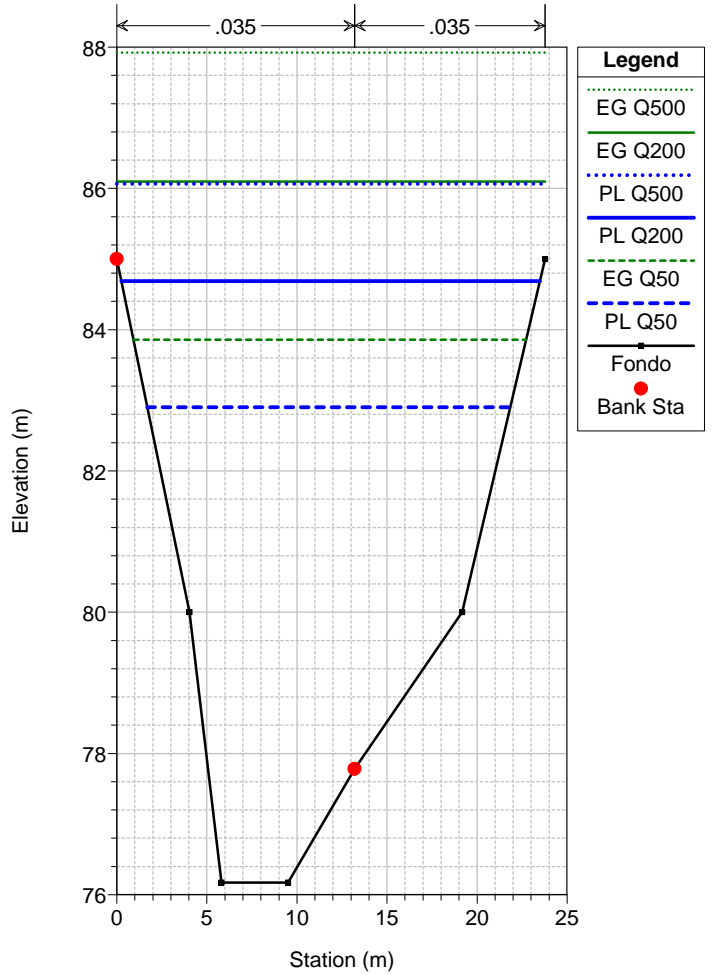
Torrente Malvaro Plan: Torrente Malvaro

River = Malvaro Reach = valle MAL-10



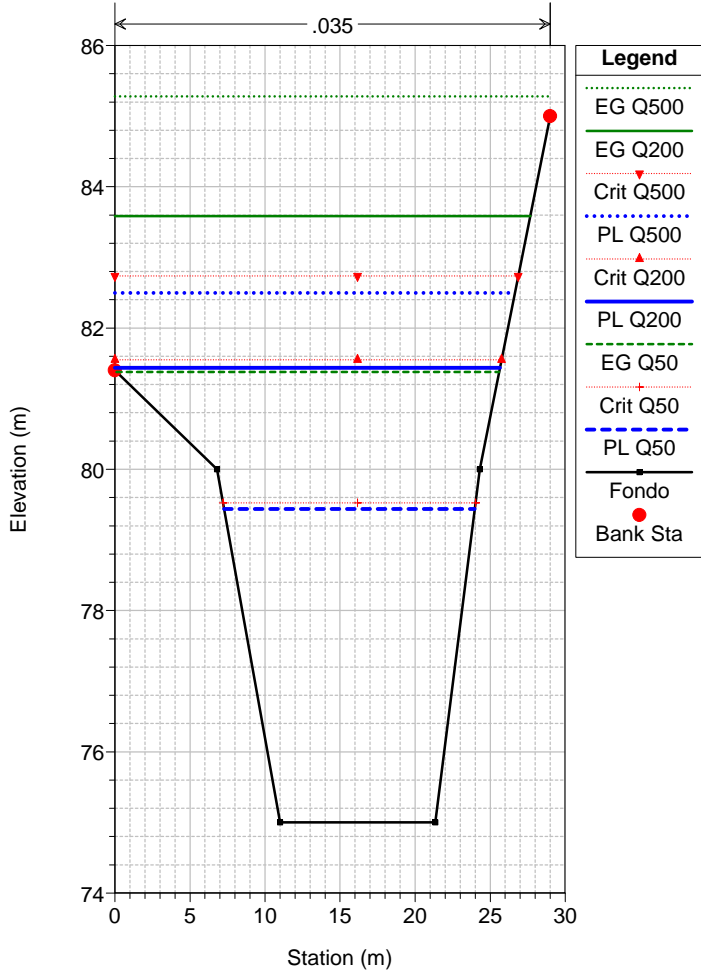
Torrente Malvaro Plan: Torrente Malvaro

River = Malvaro Reach = valle MAL-09



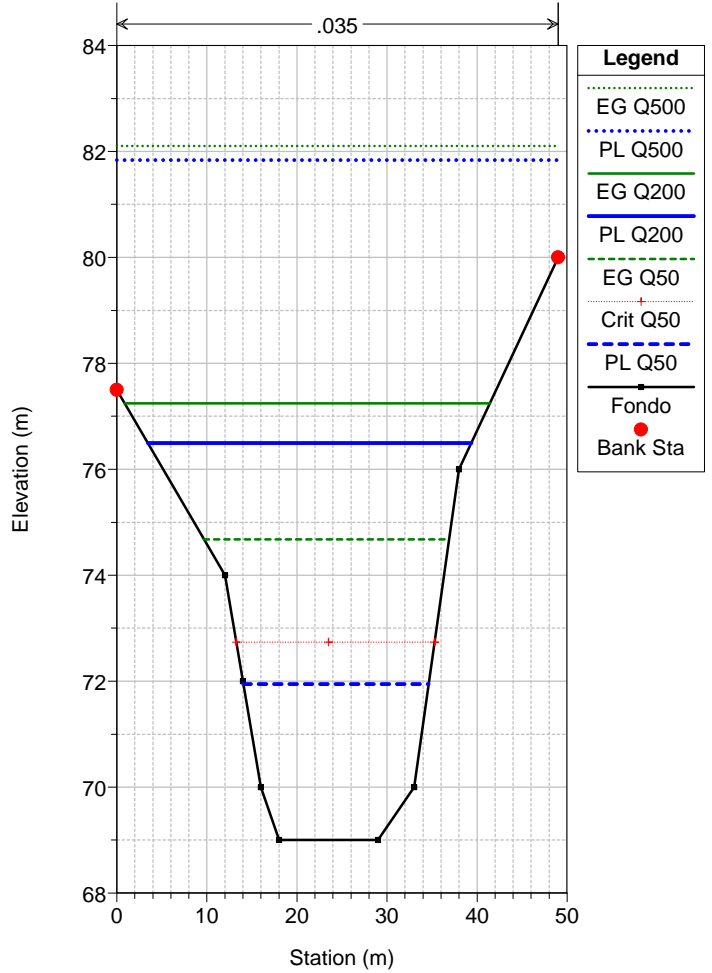
Torrente Malvaro Plan: Torrente Malvaro

River = Malvaro Reach = valle MAL-08



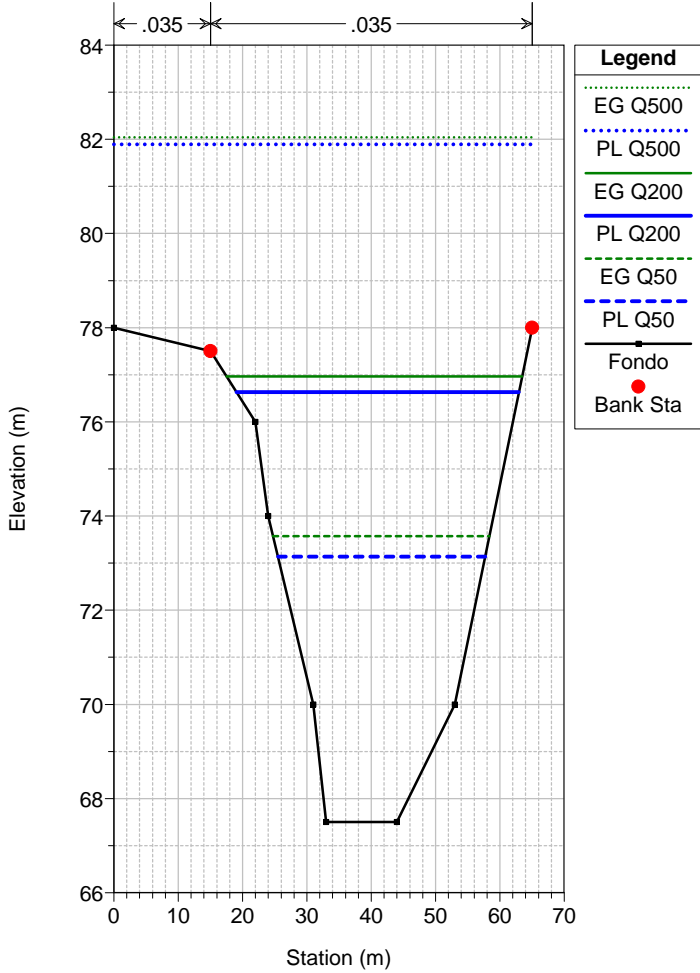
Torrente Malvaro Plan: Torrente Malvaro

River = Malvaro Reach = valle MAL-07



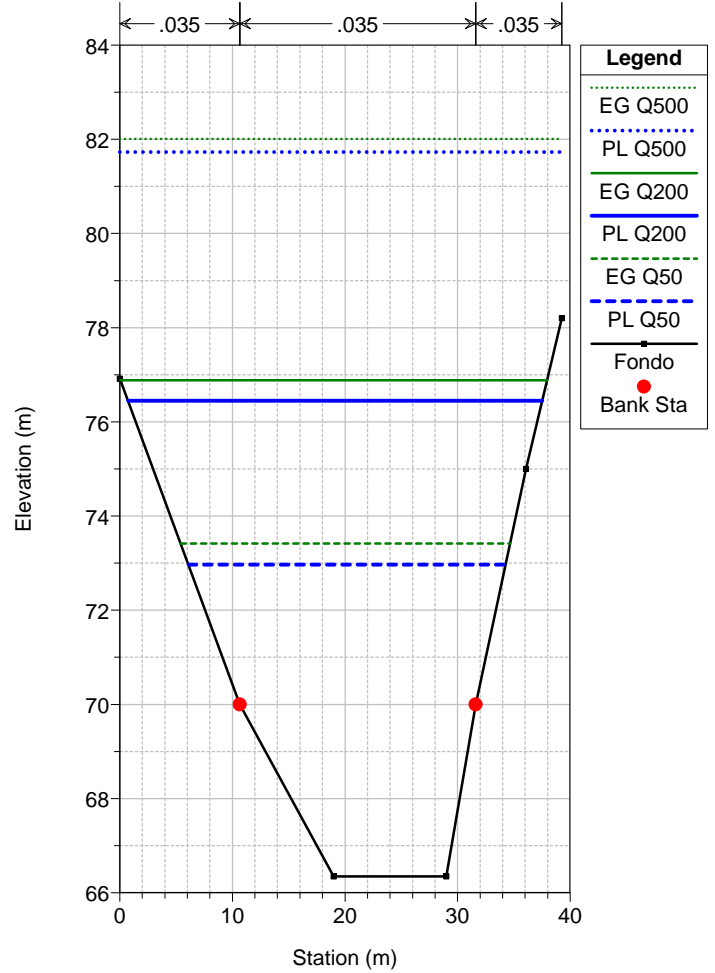
Torrente Malvaro Plan: Torrente Malvaro

River = Malvaro Reach = valle MAL-06



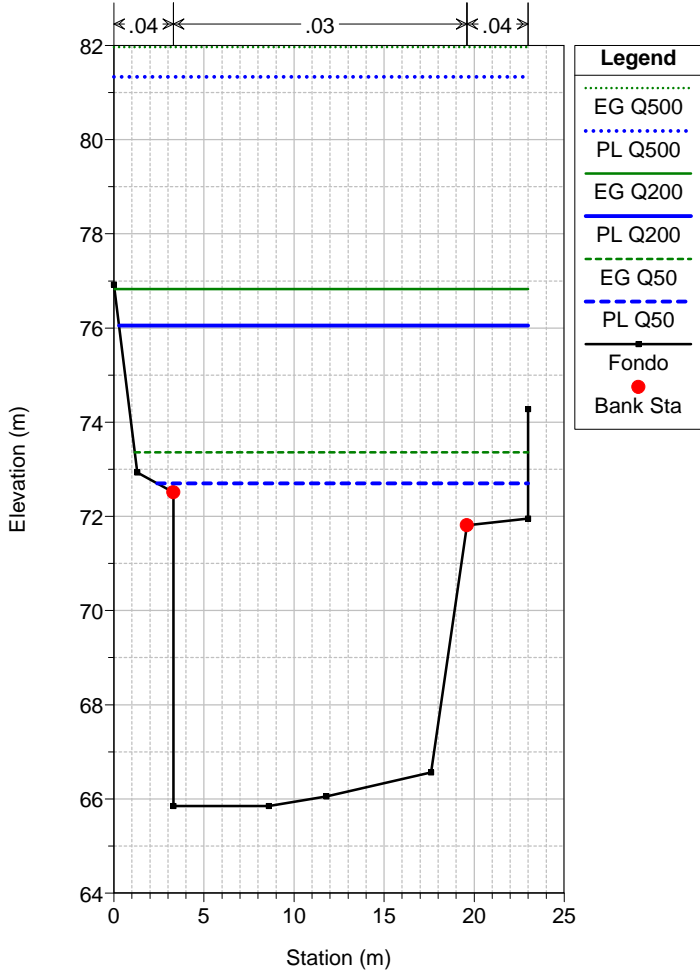
Torrente Malvaro Plan: Torrente Malvaro

River = Malvaro Reach = valle MAL-05



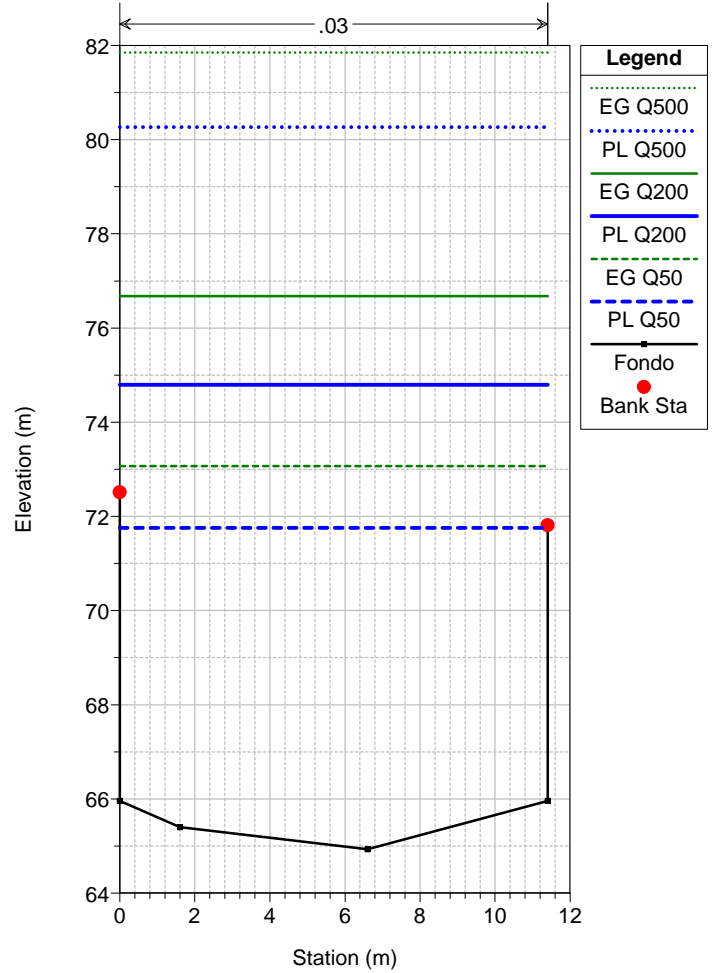
Torrente Malvaro Plan: Torrente Malvaro

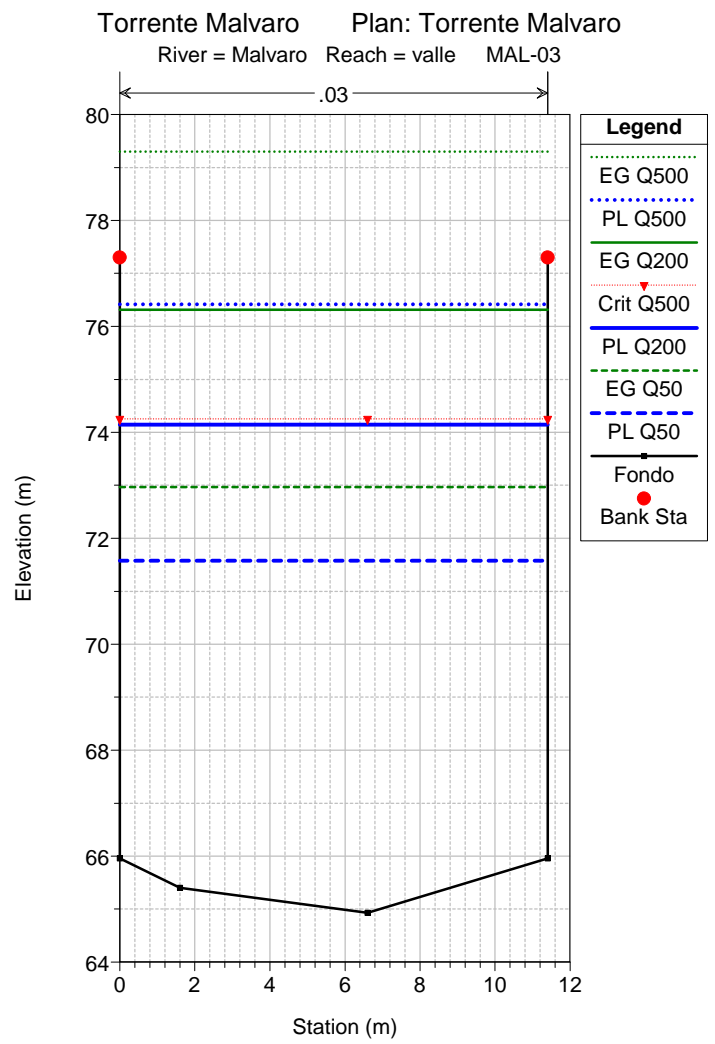
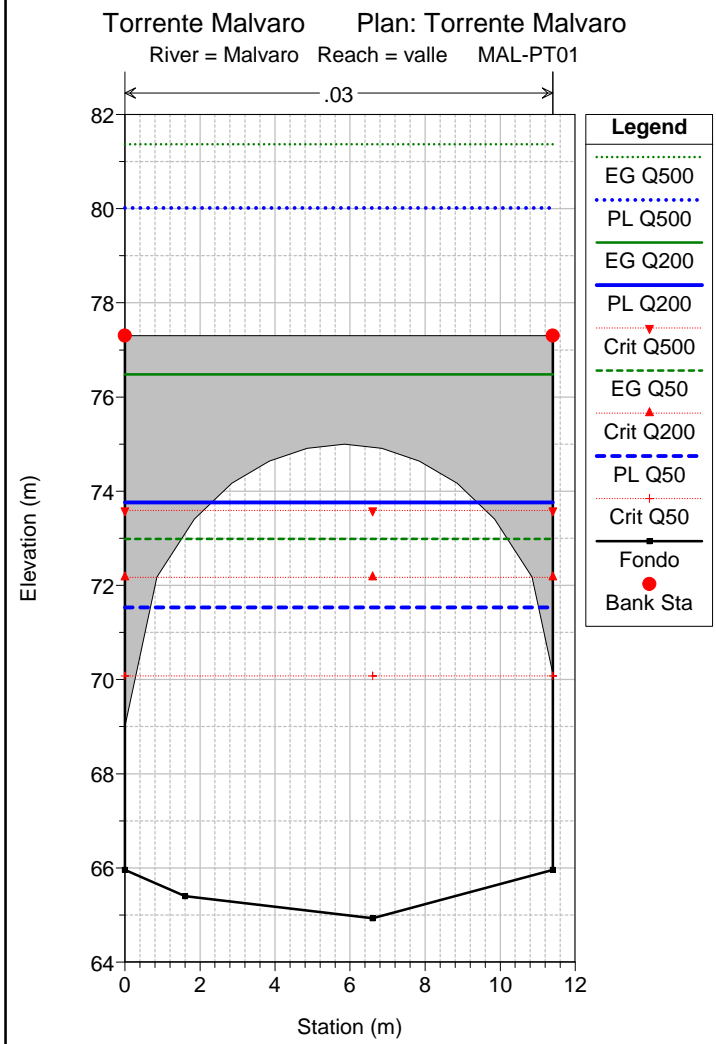
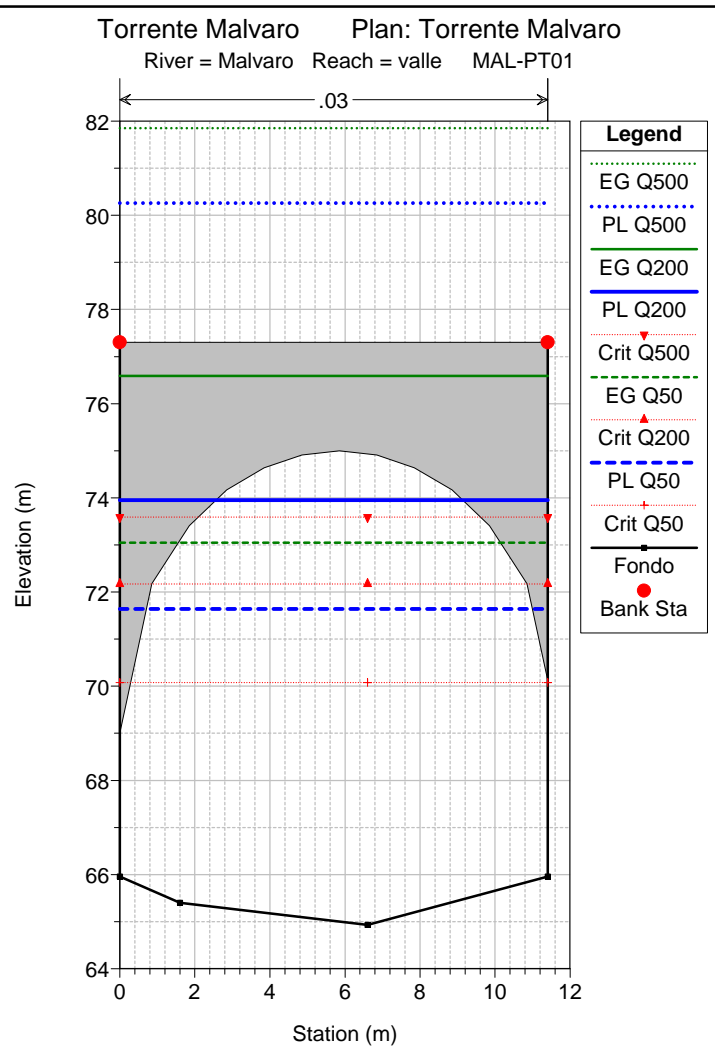
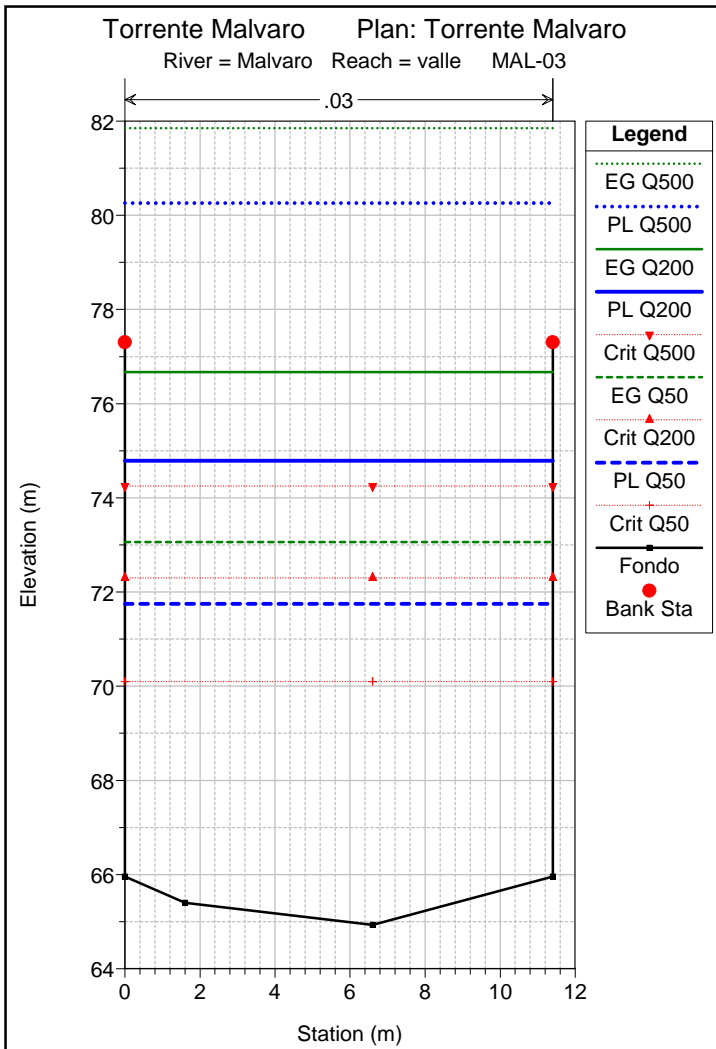
River = Malvaro Reach = valle MAL-04



Torrente Malvaro Plan: Torrente Malvaro

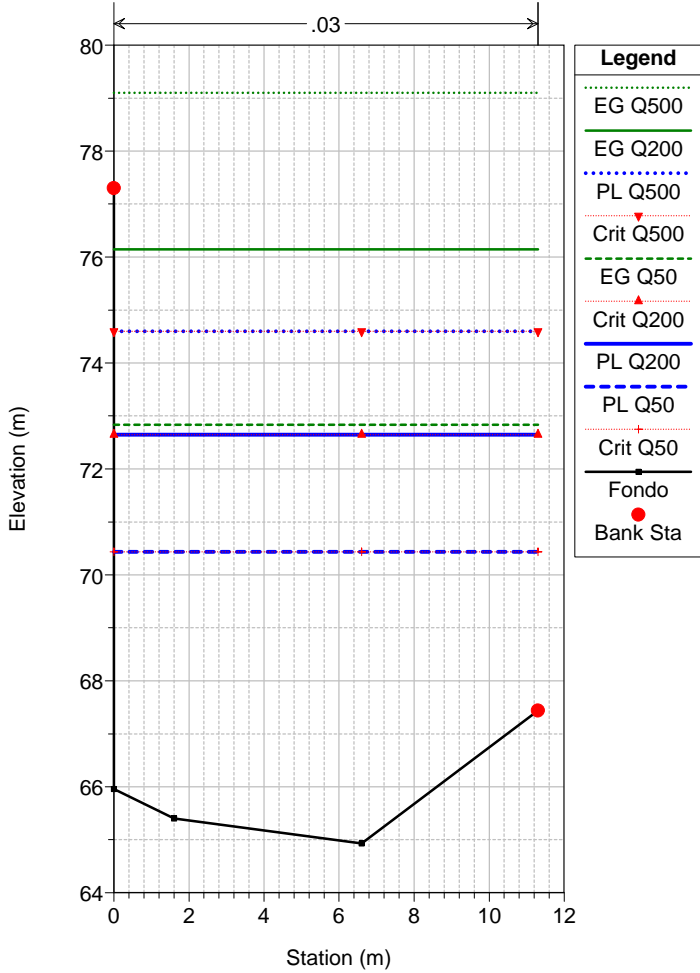
River = Malvaro Reach = valle MAL-03





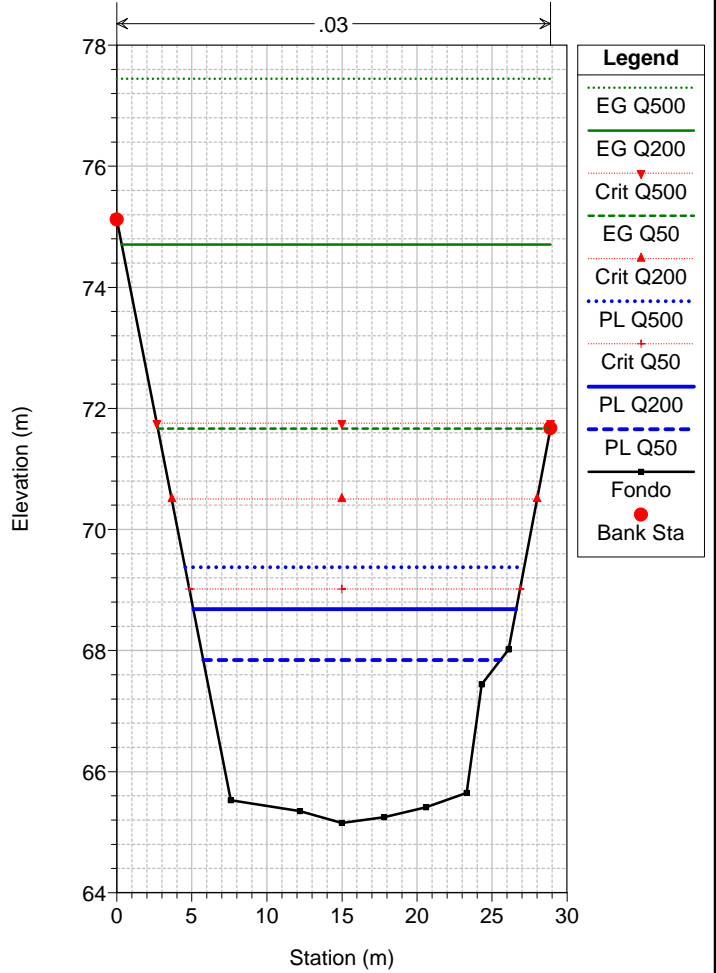
Torrente Malvaro Plan: Torrente Malvaro

River = Malvaro Reach = valle MAL-03



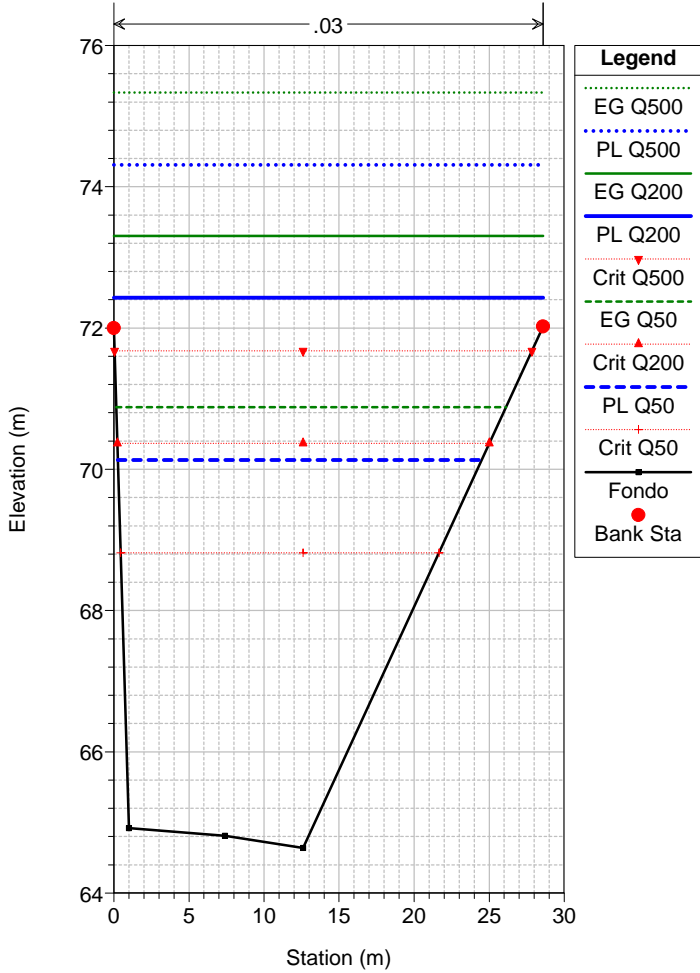
Torrente Malvaro Plan: Torrente Malvaro

River = Malvaro Reach = valle MAL-02



Torrente Malvaro Plan: Torrente Malvaro

River = Malvaro Reach = valle MAL-01



HEC-RAS Plan: pressure River: Malvaro Reach: valle

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	LOB Elev	L. Freeboard	ROB Elev	R. Freeboard	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl	
			(m3/s)	(m)	(m)	(m)	(m)	(m)	(m)	(m)	(m)	(m/m)	(m/s)	(m2)	(m)		
valle	27	Q50	370.00	138.88	143.96	150.28	6.32	141.47	-2.49	143.22	144.68	0.003733	3.97	105.51	35.78	0.64	
valle	27	Q200	654.00	138.88	145.61	150.28	4.67	141.47	-4.14	144.46	146.45	0.003208	4.39	168.31	40.48	0.62	
valle	27	Q500	949.00	138.88	147.27	150.28	3.01	141.47	-5.80	145.41	148.13	0.002535	4.45	239.64	45.23	0.56	
valle	26.	MAL-31	Q50	370.00	138.60	143.01	150.00	6.99	141.19	-1.82	142.94	144.20	0.007309	5.06	82.14	33.54	0.88
valle	26.	MAL-31	Q200	654.00	138.60	145.26	150.00	4.74	141.19	-4.07	146.13	0.003367	4.47	165.41	40.28	0.63	
valle	26.	MAL-31	Q500	949.00	138.60	147.02	150.00	2.98	141.19	-5.83	147.87	0.002497	4.42	240.97	45.31	0.56	
valle	25.	MAL-30	Q50	370.00	138.45	142.45	150.00	7.55	140.22	-2.23	142.45	143.93	0.009342	5.38	68.83	23.51	1.00
valle	25.	MAL-30	Q200	654.00	138.45	143.85	150.00	6.15	140.22	-3.63	143.85	145.91	0.008531	6.37	102.75	25.05	1.00
valle	25.	MAL-30	Q500	949.00	138.45	145.07	150.00	4.93	140.22	-4.85	145.07	147.62	0.008032	7.07	134.22	26.39	1.00
valle	24.	MAL-29	Q50	370.00	137.42	139.71	145.00	5.29	140.48	0.77	140.49	142.36	0.034197	7.21	51.31	31.06	1.79
valle	24.	MAL-29	Q200	654.00	137.42	140.52	145.00	4.48	140.48	-0.04	141.76	144.24	0.030266	8.55	76.48	31.88	1.75
valle	24.	MAL-29	Q500	949.00	137.42	141.21	145.00	3.79	140.48	-0.73	142.66	145.85	0.027912	9.57	101.16	39.12	1.74
valle	23.5	MAL-28	Q50	370.00	131.80	135.31	140.00	4.69	140.00	4.69	136.37	138.83	0.027100	8.30	44.56	15.36	1.56
valle	23.5	MAL-28	Q200	654.00	131.80	137.16	140.00	2.84	140.00	2.84	138.19	140.98	0.019650	8.66	75.48	18.17	1.36
valle	23.5	MAL-28	Q500	949.00	131.80	138.88	140.00	1.12	140.00	1.12	139.69	142.74	0.015220	8.70	109.09	20.80	1.21
valle	23.2	MAL-27	Q50	370.00	124.31	127.42	129.50	2.08	129.50	2.08	128.85	132.29	0.044881	9.78	37.84	14.40	1.93
valle	23.2	MAL-27	Q200	654.00	124.31	128.82	129.50	0.68	129.50	0.68	131.01	135.30	0.040866	11.28	57.96	14.40	1.80
valle	23.2	MAL-27	Q500	949.00	124.31	130.19	129.50	-0.68	129.50	-0.68	132.61	137.68	0.036335	12.16	79.54	18.96	1.67
valle	23.1	MAL-27	Q50	370.00	124.31	127.45	129.50	2.05	129.50	2.05	128.85	132.22	0.043481	9.67	38.25	14.40	1.89
valle	23.1	MAL-27	Q200	654.00	124.31	128.85	129.50	0.65	129.50	0.65	131.01	135.23	0.039939	11.19	58.44	14.40	1.77
valle	23.1	MAL-27	Q500	949.00	124.31	130.21	129.50	-0.71	129.50	-0.71	132.61	137.61	0.035696	12.09	80.10	19.00	1.66
valle	23.	MAL-PT04	Bridge														
valle	22.9	MAL-27	Q50	370.00	124.31	127.56	129.50	1.94	129.50	1.94	128.85	131.95	0.038516	9.28	39.86	14.40	1.78
valle	22.9	MAL-27	Q200	654.00	124.31	128.98	129.50	0.52	129.50	0.52	131.01	134.97	0.036563	10.85	60.29	14.40	1.69
valle	22.9	MAL-27	Q500	949.00	124.31	130.67	129.50	-1.16	129.50	-1.16	132.61	136.80	0.027515	11.05	88.79	19.62	1.46
valle	22.8	MAL-27	Q50	370.00	124.31	127.70	129.50	1.80	129.50	1.80	128.85	131.69	0.033522	8.85	41.79	14.40	1.66
valle	22.8	MAL-27	Q200	654.00	124.31	129.13	129.50	0.37	129.50	0.37	131.01	134.71	0.033085	10.47	62.48	14.40	1.60
valle	22.8	MAL-27	Q500	949.00	124.31	130.81	129.50	-1.31	129.50	-1.31	132.61	136.58	0.025334	10.73	91.72	19.82	1.40
valle	22.1	MAL-26	Q50	370.00	122.79	126.16	130.00	3.84	129.45	3.29	127.32	129.72	0.052805	8.35	44.30	17.10	1.66
valle	22.1	MAL-26	Q200	654.00	122.79	127.28	130.00	2.72	129.45	2.17	129.03	132.44	0.063950	10.06	64.99	20.25	1.79
valle	22.1	MAL-26	Q500	949.00	122.79	128.29	130.00	1.71	129.45	1.16	130.33	134.32	0.065788	10.88	87.26	24.35	1.83
valle	21.9	MAL-25	Q50	370.00	122.79	126.36	130.00	3.64	129.45	3.09	127.29	129.36	0.042243	7.67	48.25	17.44	1.47
valle	21.9	MAL-25	Q200	654.00	122.79	127.44	130.00	2.56	129.45	2.01	128.99	132.04	0.055399	9.50	68.83	20.95	1.67
valle	21.9	MAL-25	Q500	949.00	122.79	128.43	130.00	1.57	129.45	1.02	130.29	133.90	0.058362	10.37	91.53	25.20	1.74
valle	21.2	MAL-24	Q50	370.00	121.58	125.26	130.00	4.74	129.45	4.19	126.00	127.77	0.037294	7.02	52.73	33.31	1.78
valle	21.2	MAL-24	Q200	654.00	121.58	125.82	130.00	4.18	129.45	3.63	127.08	130.09	0.044555	9.15	71.48	34.05	2.02
valle	21.2	MAL-24	Q500	949.00	121.58	126.36	130.00	3.64	129.45	3.09	128.03	132.01	0.045426	10.52	90.19	34.78	2.09
valle	21.1	MAL-24	Q50	370.00	121.58	125.33	135.00	9.67	136.08	10.75	126.00	127.65	0.032947	6.75	54.82	33.39	1.68
valle	21.1	MAL-24	Q200	654.00	121.58	125.87	135.00	9.13	136.08	10.21	127.08	129.94	0.041455	8.94	73.14	34.12	1.95

HEC-RAS Plan: pressure River: Malvaro Reach: valle (Continued)

Reach	River Sta		Profile	Q Total	Min Ch El	W.S. Elev	LOB Elev	L. Freeboard	ROB Elev	R. Freeboard	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
				(m3/s)	(m)	(m)	(m)	(m)	(m)	(m)	(m)	(m)	(m/m)	(m/s)	(m2)	(m)	
valle	21.1	MAL-24	Q500	949.00	121.58	126.41	135.00	8.59	136.08	9.67	128.03	131.86	0.043080	10.34	91.74	34.84	2.03
valle	21.	MAL-PT03	Bridge														
valle	20.9	MAL-24	Q50	370.00	121.58	125.48	135.00	9.52	136.08	10.60	126.00	127.43	0.025011	6.19	59.81	33.59	1.48
valle	20.9	MAL-24	Q200	654.00	121.58	126.10	135.00	8.90	136.08	9.98	127.08	129.42	0.030197	8.08	80.94	34.42	1.68
valle	20.9	MAL-24	Q500	949.00	121.58	126.62	135.00	8.38	136.08	9.46	128.03	131.29	0.033998	9.58	99.05	35.12	1.82
valle	20.8	MAL-24	Q50	370.00	121.58	125.75	130.00	4.25	124.60	-1.15	126.00	127.21	0.015891	5.36	69.06	33.96	1.20
valle	20.8	MAL-24	Q200	654.00	121.58	126.37	130.00	3.63	124.60	-1.77	127.08	129.04	0.021381	7.23	90.45	34.79	1.43
valle	20.8	MAL-24	Q500	949.00	121.58	126.83	130.00	3.17	124.60	-2.23	128.03	130.87	0.027101	8.90	106.62	35.41	1.64
valle	20.	MAL-23	Q50	370.00	120.46	124.40	125.00	0.60	124.60	0.20	124.40	125.93	0.009787	5.47	67.64	22.31	1.00
valle	20.	MAL-23	Q200	654.00	120.46	125.89	125.00	-0.89	124.60	-1.29	125.89	127.96	0.008207	6.38	104.48	27.32	0.97
valle	20.	MAL-23	Q500	949.00	120.46	127.16	125.00	-2.16	124.60	-2.56	127.16	129.63	0.007166	7.05	141.75	31.63	0.95
valle	19.	MAL-22	Q50	370.00	119.42	122.32	125.00	2.68	123.23	0.91	123.08	124.82	0.023522	7.01	52.79	24.61	1.53
valle	19.	MAL-22	Q200	654.00	119.42	123.28	125.00	1.72	123.23	-0.05	124.49	126.84	0.023952	8.36	78.25	28.77	1.60
valle	19.	MAL-22	Q500	949.00	119.42	124.03	125.00	0.97	123.23	-0.80	125.24	128.52	0.023164	9.43	104.20	40.17	1.62
valle	18.5	MAL-21	Q50	370.00	109.93	112.41	113.00	0.59	115.00	2.59	113.36	115.46	0.038454	7.74	47.78	28.60	1.91
valle	18.5	MAL-21	Q200	654.00	109.93	113.14	113.00	-0.14	115.00	1.86	114.49	117.48	0.039740	9.23	70.92	33.92	2.02
valle	18.5	MAL-21	Q500	949.00	109.93	113.71	113.00	-0.71	115.00	1.29	115.42	119.33	0.039505	10.53	90.89	37.27	2.08
valle	18.	MAL-20	Q50	370.00	104.06	108.39	110.00	1.61	106.61	-1.78	109.25	111.08	0.021394	7.43	52.74	23.13	1.40
valle	18.	MAL-20	Q200	654.00	104.06	109.45	110.00	0.55	106.61	-2.84	110.57	113.07	0.022553	8.79	80.42	29.40	1.50
valle	18.	MAL-20	Q500	949.00	104.06	110.17	110.00	-0.17	106.61	-3.56	111.63	114.79	0.024345	10.01	103.32	33.40	1.60
valle	17.	MAL-19	Q50	370.00	104.62	107.80	110.00	2.20	107.08	-0.72	108.76	110.80	0.026737	7.68	48.51	23.16	1.65
valle	17.	MAL-19	Q200	654.00	104.62	108.87	110.00	1.13	107.08	-1.79	110.11	112.81	0.023780	8.86	75.56	27.64	1.63
valle	17.	MAL-19	Q500	949.00	104.62	109.68	110.00	0.32	107.08	-2.60	111.18	114.53	0.023564	9.89	99.32	31.05	1.67
valle	16.	MAL-18	Q50	370.00	104.95	108.42	108.35	-0.07	106.98	-1.44	108.79	110.18	0.012860	5.91	64.27	29.29	1.18
valle	16.	MAL-18	Q200	654.00	104.95	109.11	108.35	-0.76	106.98	-2.13	110.02	112.32	0.018040	8.05	84.65	30.01	1.42
valle	16.	MAL-18	Q500	949.00	104.95	109.86	108.35	-1.51	106.98	-2.88	111.01	114.06	0.018905	9.27	107.41	30.79	1.48
valle	15.	MAL-17	Q50	370.00	104.55	107.98	108.35	0.37	110.00	2.02	108.29	109.66	0.014159	5.74	64.49	27.17	1.19
valle	15.	MAL-17	Q200	654.00	104.55	109.09	108.35	-0.74	110.00	0.91	109.58	111.41	0.014115	6.75	96.84	31.07	1.22
valle	15.	MAL-17	Q500	949.00	104.55	109.74	108.35	-1.39	110.00	0.26	110.57	113.05	0.017262	8.05	117.84	33.31	1.37
valle	14.	MAL-16	Q50	370.00	96.56	100.37	105.00	4.63	103.78	3.41	101.50	104.00	0.027736	8.45	43.81	15.42	1.60
valle	14.	MAL-16	Q200	654.00	96.56	101.94	105.00	3.06	103.78	1.84	103.25	106.30	0.023543	9.25	70.68	18.67	1.52
valle	14.	MAL-16	Q500	949.00	96.56	103.25	105.00	1.75	103.78	0.53	105.07	108.16	0.021008	9.82	96.68	20.84	1.45
valle	13.	MAL-15	Q50	370.00	94.13	96.82	97.47	0.65	101.68	4.86	97.99	100.55	0.037580	8.55	43.25	20.70	1.89
valle	13.	MAL-15	Q200	654.00	94.13	103.17	97.47	-5.70	101.68	-1.49		103.63	0.000946	3.07	229.49	40.07	0.35
valle	13.	MAL-15	Q500	949.00	94.13	106.31	97.47	-8.84	101.68	-4.63		106.72	0.000559	2.97	364.98	46.47	0.29
valle	12.2	MAL-14	Q50	370.00	93.68	97.04	101.30	4.26	101.30	4.26	97.63	99.79	0.021541	7.35	50.36	15.00	1.28
valle	12.2	MAL-14	Q200	654.00	93.68	102.15	101.30	-0.85	101.30	-0.85		103.50	0.005155	5.15	127.00	15.00	0.56
valle	12.2	MAL-14	Q500	949.00	93.68	104.97	101.30	-3.67	101.30	-3.67		106.57	0.005166	5.60	169.38	15.00	0.53

HEC-RAS Plan: pressure River: Malvaro Reach: valle (Continued)

Reach	River Sta		Profile	Q Total	Min Ch El	W.S. Elev	LOB Elev	L. Freeboard	ROB Elev	R. Freeboard	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
				(m3/s)	(m)	(m)	(m)	(m)	(m)	(m)	(m)	(m)	(m/m)	(m/s)	(m2)	(m)	
valle	12.1	MAL-14	Q50	370.00	93.68	98.24	101.30	3.06	101.30	3.06	97.63	99.73	0.008949	5.41	68.35	15.00	0.81
valle	12.1	MAL-14	Q200	654.00	93.68	102.14	101.30	-0.84	101.30	-0.84	99.46	103.49	0.005170	5.16	126.87	15.00	0.57
valle	12.1	MAL-14	Q500	949.00	93.68	104.96	101.30	-3.66	101.30	-3.66	101.09	106.57	0.005175	5.61	169.27	15.00	0.53
valle	12.	MAL-PT02		Bridge													
valle	11.9	MAL-14	Q50	370.00	93.68	98.16	101.30	3.14	101.30	3.14	97.63	99.71	0.009366	5.50	67.26	15.00	0.83
valle	11.9	MAL-14	Q200	654.00	93.68	100.16	101.30	1.14	101.30	1.14	99.46	102.47	0.010509	6.72	97.27	15.00	0.84
valle	11.9	MAL-14	Q500	949.00	93.68	101.94	101.30	-0.64	101.30	-0.64	101.09	104.93	0.011569	7.66	123.96	15.00	0.85
valle	11.8	MAL-14	Q50	370.00	93.68	97.63	101.30	3.67	101.30	3.67	97.63	99.62	0.013414	6.24	59.30	15.00	1.00
valle	11.8	MAL-14	Q200	654.00	93.68	99.46	101.30	1.84	101.30	1.84	99.46	102.36	0.014406	7.55	86.67	15.00	1.00
valle	11.8	MAL-14	Q500	949.00	93.68	101.09	101.30	0.21	101.30	0.21	101.09	104.80	0.015441	8.54	111.18	15.00	1.00
valle	11.	MAL-13	Q50	370.00	92.83	95.91	96.19	0.28	96.86	0.95	96.82	98.85	0.028674	7.60	48.66	23.37	1.68
valle	11.	MAL-13	Q200	654.00	92.83	96.68	96.19	-0.49	96.86	0.18	98.09	101.43	0.032858	9.66	68.10	26.81	1.87
valle	11.	MAL-13	Q500	949.00	92.83	97.32	96.19	-1.13	96.86	-0.46	99.22	103.74	0.034156	11.28	85.81	28.32	1.96
valle	10.5	MAL-12	Q50	370.00	90.00	93.48	95.00	1.52	95.00	1.52	94.16	95.83	0.019896	6.80	54.40	23.30	1.42
valle	10.5	MAL-12	Q200	654.00	90.00	94.54	95.00	0.46	95.00	0.46	95.50	97.81	0.020692	8.02	81.57	27.96	1.50
valle	10.5	MAL-12	Q500	949.00	90.00	95.23	95.00	-0.23	95.00	-0.23	96.62	99.64	0.022748	9.30	102.17	31.25	1.61
valle	10.	MAL-11	Q50	370.00	86.19	90.69	100.00	9.31	90.59	-0.10	91.61	93.15	0.016021	6.95	53.35	17.15	1.19
valle	10.	MAL-11	Q200	654.00	86.19	91.92	100.00	8.08	90.59	-1.33	92.95	95.24	0.016958	8.32	86.48	31.83	1.27
valle	10.	MAL-11	Q500	949.00	86.19	92.72	100.00	7.28	90.59	-2.13	93.94	96.76	0.018314	9.36	112.63	33.35	1.35
valle	9.	MAL-10	Q50	370.00	79.13	82.16	88.80	6.64	81.72	-0.44	82.99	85.12	0.024875	7.62	48.55	19.40	1.54
valle	9.	MAL-10	Q200	654.00	79.13	83.29	88.80	5.51	81.72	-1.57	84.53	87.64	0.023686	9.23	70.82	19.78	1.56
valle	9.	MAL-10	Q500	949.00	79.13	84.48	88.80	4.32	81.72	-2.76	85.91	89.62	0.020484	10.05	94.45	20.18	1.48
valle	8	MAL-09	Q50	370.00	76.17	82.90	85.00	2.10	77.78	-5.12		83.86	0.004375	4.56	86.63	20.16	0.64
valle	8	MAL-09	Q200	654.00	76.17	84.69	85.00	0.31	77.78	-6.91		86.10	0.005038	5.51	125.33	23.24	0.71
valle	8	MAL-09	Q500	949.00	76.17	86.07	85.00	-1.07	77.78	-8.29		87.92	0.005565	6.30	158.03	23.78	0.74
valle	7	MAL-08	Q50	370.00	75.00	79.44	81.40	1.96	85.00	5.56	79.53	81.38	0.011722	6.17	59.97	16.69	1.04
valle	7	MAL-08	Q200	654.00	75.00	81.44	81.40	-0.04	85.00	3.56	81.55	83.58	0.011018	6.49	100.74	25.65	1.05
valle	7	MAL-08	Q500	949.00	75.00	82.50	81.40	-1.10	85.00	2.50	82.74	85.28	0.011430	7.39	128.45	26.65	1.07
valle	6	MAL-07	Q50	370.00	69.00	71.95	77.50	5.55	80.00	8.05	72.74	74.68	0.022505	7.32	50.54	20.57	1.49
valle	6	MAL-07	Q200	654.00	69.00	76.50	77.50	1.00	80.00	3.50		77.24	0.002688	3.83	170.97	35.93	0.56
valle	6	MAL-07	Q500	949.00	69.00	81.84	77.50	-4.34	80.00	-1.84		82.11	0.000503	2.29	414.06	49.00	0.25
valle	5	MAL-06	Q50	370.00	67.50	73.14	77.50	4.36	78.00	4.86		73.58	0.001937	2.93	126.31	32.20	0.47
valle	5	MAL-06	Q200	654.00	67.50	76.63	77.50	0.87	78.00	1.37		76.96	0.000883	2.55	256.72	43.89	0.34
valle	5	MAL-06	Q500	949.00	67.50	81.89	77.50	-4.39	78.00	-3.89		82.04	0.000207	1.73	578.86	65.00	0.17
valle	4.5	MAL-05	Q50	370.00	66.35	72.96	70.00	-2.96	70.00	-2.96		73.42	0.001297	3.02	129.25	28.17	0.41
valle	4.5	MAL-05	Q200	654.00	66.35	76.45	70.00	-6.45	70.00	-6.45		76.88	0.000697	3.05	242.31	36.80	0.32
valle	4.5	MAL-05	Q500	949.00	66.35	81.73	70.00	-11.73	70.00	-11.73		82.01	0.000261	2.53	448.04	39.27	0.21
valle	4	MAL-04	Q50	370.00	65.85	72.70	72.51	-0.19	71.81	-0.89		73.36	0.001947	3.60	104.90	20.61	0.46
valle	4	MAL-04	Q200	654.00	65.85	76.05	72.51	-3.54	71.81	-4.24		76.83	0.001344	3.98	179.05	22.72	0.41

HEC-RAS Plan: pressure River: Malvaro Reach: valle (Continued)

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	LOB Elev	L. Freeboard	ROB Elev	R. Freeboard	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(m3/s)	(m)	(m)	(m)	(m)	(m)	(m)	(m)	(m)	(m/m)	(m/s)	(m2)	(m)	
valle	4 MAL-04	Q500	949.00	65.85	81.33	72.51	-8.82	71.81	-9.52		81.96	0.000625	3.64	300.42	23.00	0.30
valle	3.2 MAL-03	Q50	370.00	64.93	71.76	72.51	0.75	71.81	0.05		73.07	0.005027	5.07	72.97	11.40	0.64
valle	3.2 MAL-03	Q200	654.00	64.93	74.80	72.51	-2.29	71.81	-2.99		76.68	0.005864	6.08	107.62	11.40	0.63
valle	3.2 MAL-03	Q500	949.00	64.93	80.26	72.51	-7.75	71.81	-8.45		81.85	0.004109	5.58	169.96	11.40	0.46
valle	3.1 MAL-03	Q50	370.00	64.93	71.75	77.30	5.55	77.30	5.55	70.10	73.06	0.005042	5.08	72.89	11.40	0.64
valle	3.1 MAL-03	Q200	654.00	64.93	74.79	77.30	2.51	77.30	2.51	72.30	76.67	0.005878	6.08	107.52	11.40	0.63
valle	3.1 MAL-03	Q500	949.00	64.93	80.26	77.30	-2.96	77.30	-2.96	74.25	81.85	0.004113	5.59	169.90	11.40	0.46
valle	3 MAL-PT01		Bridge													
valle	2.9 MAL-03	Q50	370.00	64.93	71.58	77.30	5.72	77.30	5.72		72.96	0.005409	5.22	70.95	11.40	0.67
valle	2.9 MAL-03	Q200	654.00	64.93	74.14	77.30	3.16	77.30	3.16		76.31	0.007004	6.53	100.19	11.40	0.70
valle	2.9 MAL-03	Q500	949.00	64.93	76.42	77.30	0.88	77.30	0.88	74.25	79.30	0.008374	7.53	126.10	11.40	0.72
valle	2.8 MAL-03	Q50	370.00	64.93	70.44	77.30	6.86	67.44	-3.00	70.44	72.83	0.010922	6.86	53.93	11.30	1.00
valle	2.8 MAL-03	Q200	654.00	64.93	72.64	77.30	4.66	67.44	-5.20	72.64	76.14	0.012605	8.29	78.90	11.30	1.00
valle	2.8 MAL-03	Q500	949.00	64.93	74.60	77.30	2.70	67.44	-7.16	74.60	79.10	0.014257	9.40	101.00	11.30	1.00
valle	2 MAL-02	Q50	370.00	65.15	67.85	75.12	7.27	71.67	3.82	69.02	71.67	0.027971	8.66	42.72	19.79	1.88
valle	2 MAL-02	Q200	654.00	65.15	68.68	75.12	6.44	71.67	2.99	70.50	74.71	0.032194	10.88	60.14	21.51	2.08
valle	2 MAL-02	Q500	949.00	65.15	69.38	75.12	5.74	71.67	2.29	71.76	77.44	0.034969	12.59	75.41	22.59	2.20
valle	1 MAL-01	Q50	370.00	64.64	70.13	72.00	1.87	72.02	1.89	68.82	70.88	0.002794	3.84	96.39	24.24	0.61
valle	1 MAL-01	Q200	654.00	64.64	72.43	72.00	-0.43	72.02	-0.41	70.37	73.30	0.002240	4.14	158.05	28.60	0.56
valle	1 MAL-01	Q500	949.00	64.64	74.31	72.00	-2.31	72.02	-2.29	71.68	75.33	0.002021	4.48	211.82	28.60	0.53

Piano di bacino torrente Lavagna

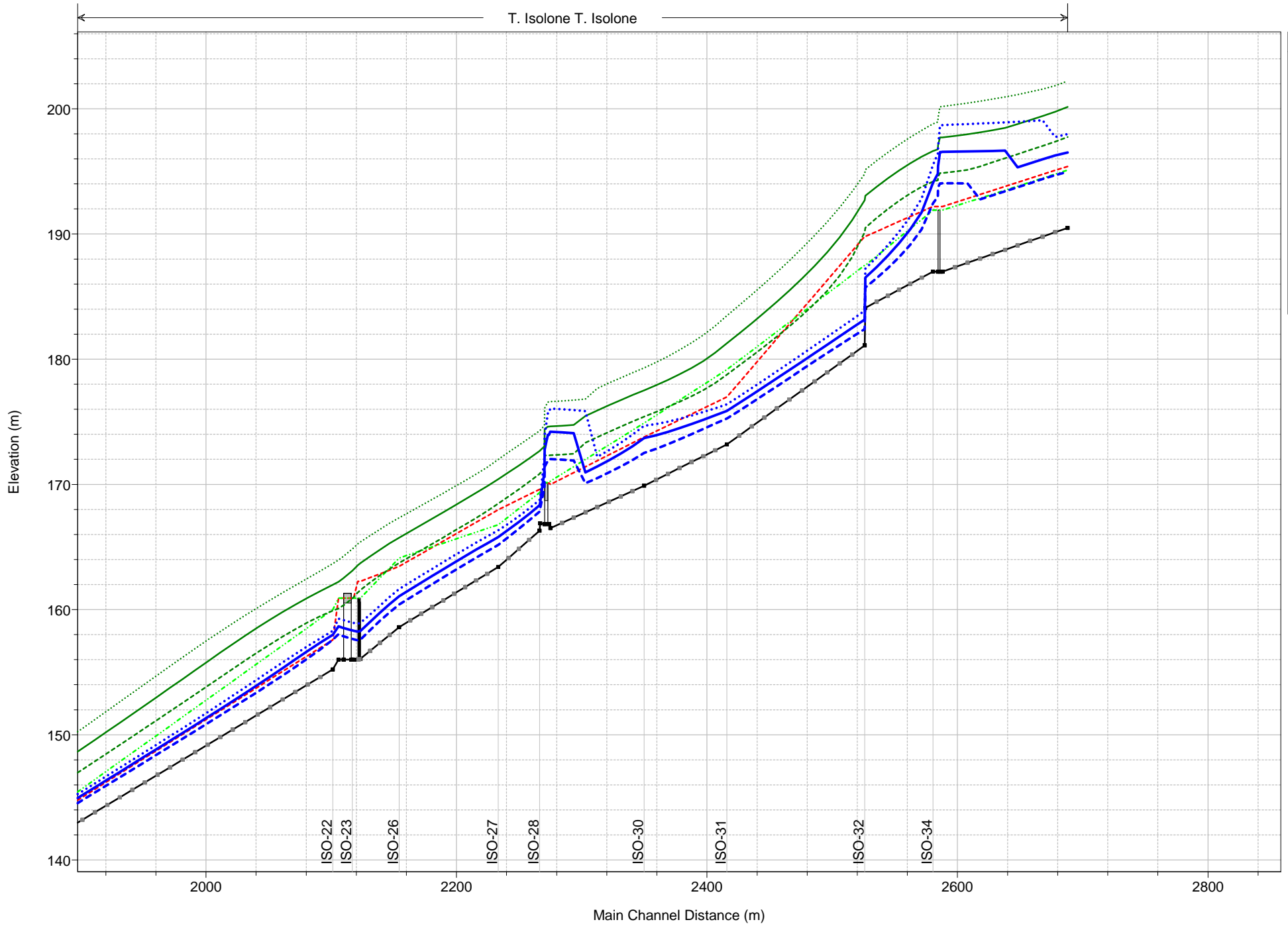
T. Isolone

tratto unico – dalla sez. ISO34 alla ISO1

- **Profili idraulici**
- **Sezioni**
- **Tabelle dei risultati**

Torrente Isolone Plan: Torrente Isolone

T. Isolone T. Isolone

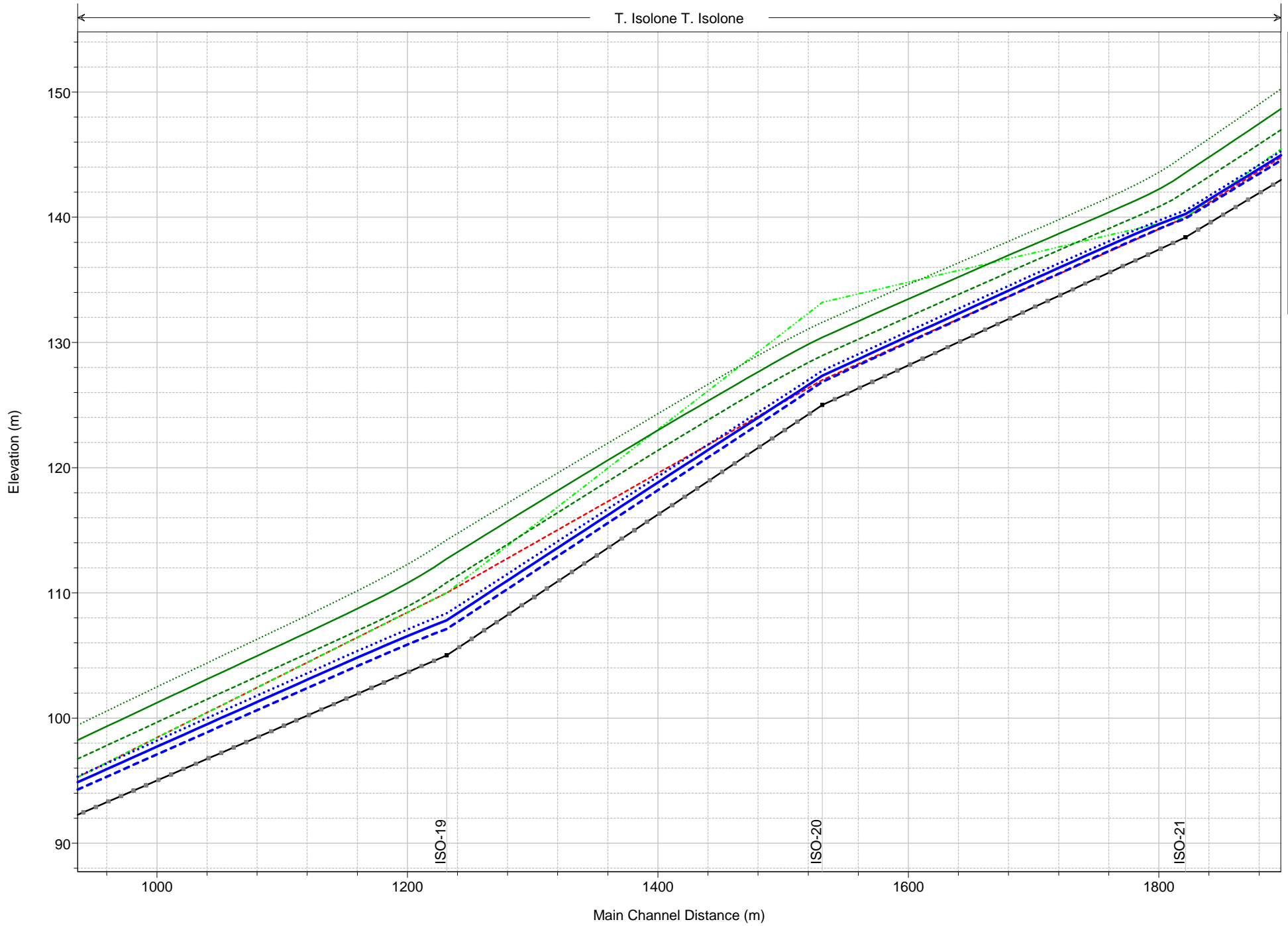


Legend	
EG Q500	(Dotted Green Line)
PL Q500	(Dotted Blue Line)
EG Q200	(Solid Green Line)
PL Q200	(Solid Blue Line)
EG Q50	(Dashed Green Line)
PL Q50	(Dashed Blue Line)
Fondo	(Solid Black Line with Square Markers)
Sponda sx	(Dashed Red Line)
Sponda dx	(Dashed Green Line)

1 cm Horiz. = 40 m 1 cm Vert. = 4 m

Torrente Isolone Plan: Torrente Isolone

T. Isolone T. Isolone

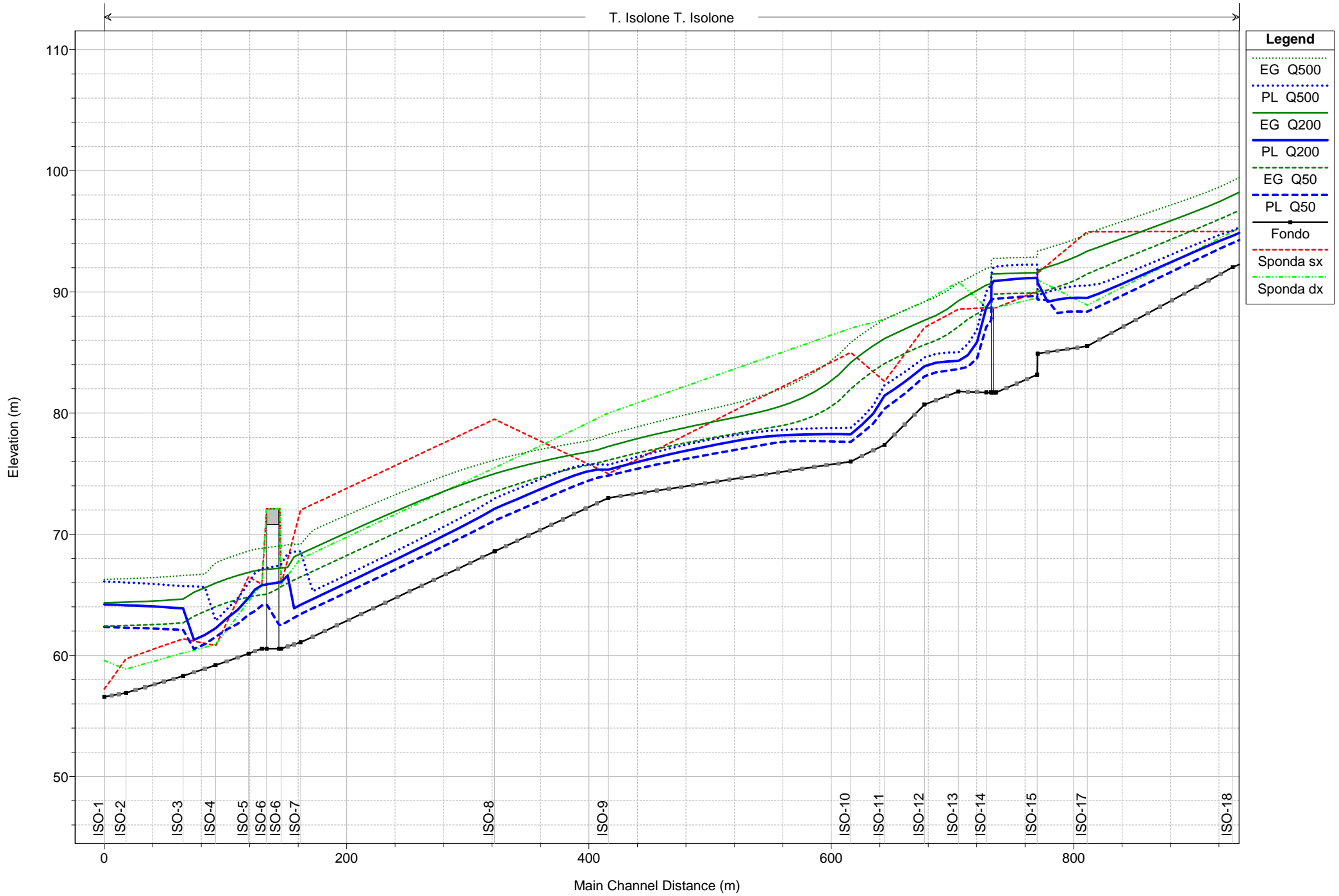


Legend	
EG Q500	Dotted green line
PL Q500	Dotted blue line
EG Q200	Solid green line
PL Q200	Solid blue line
EG Q50	Dashed green line
PL Q50	Dashed blue line
Fondo	Solid black line with square markers
Sponda sx	Dashed red line
Sponda dx	Dotted green line

1 cm Horiz. = 40 m 1 cm Vert. = 4 m

Torrente Isolone Plan: Torrente Isolone

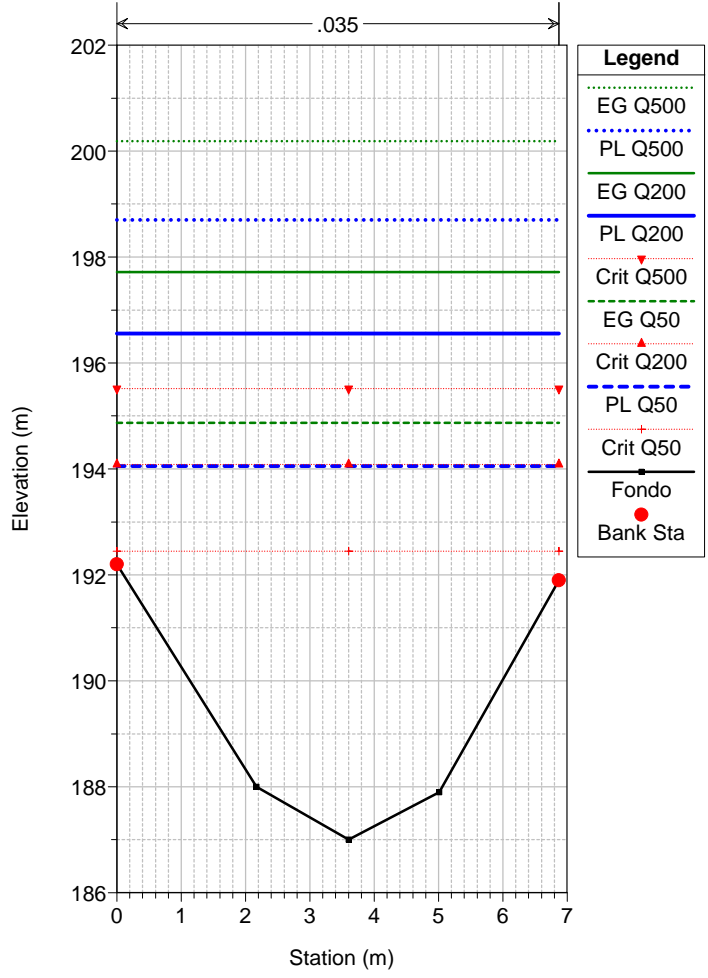
T. Isolone T. Isolone



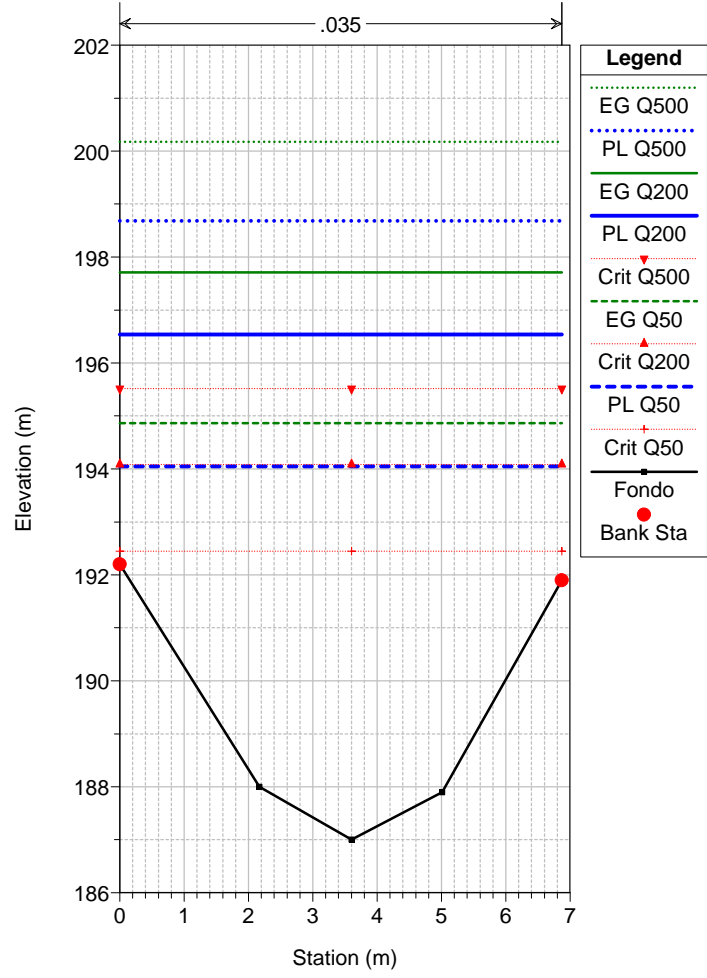
Legend	
EG Q500	(Dotted green line)
PL Q500	(Dotted blue line)
EG Q200	(Solid green line)
PL Q200	(Solid blue line)
EG Q50	(Dashed green line)
PL Q50	(Dashed blue line)
Fondo	(Solid black line with square markers)
Sponda sx	(Dashed red line)
Sponda dx	(Dashed light green line)

1 cm Horiz. = 40 m 1 cm Vert. = 4 m

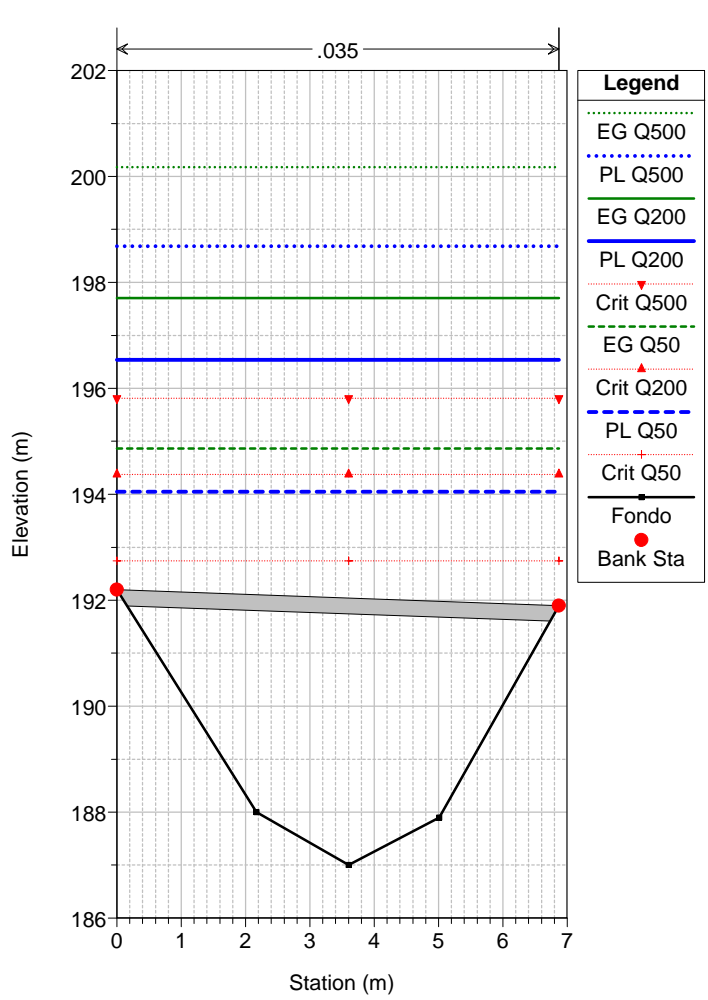
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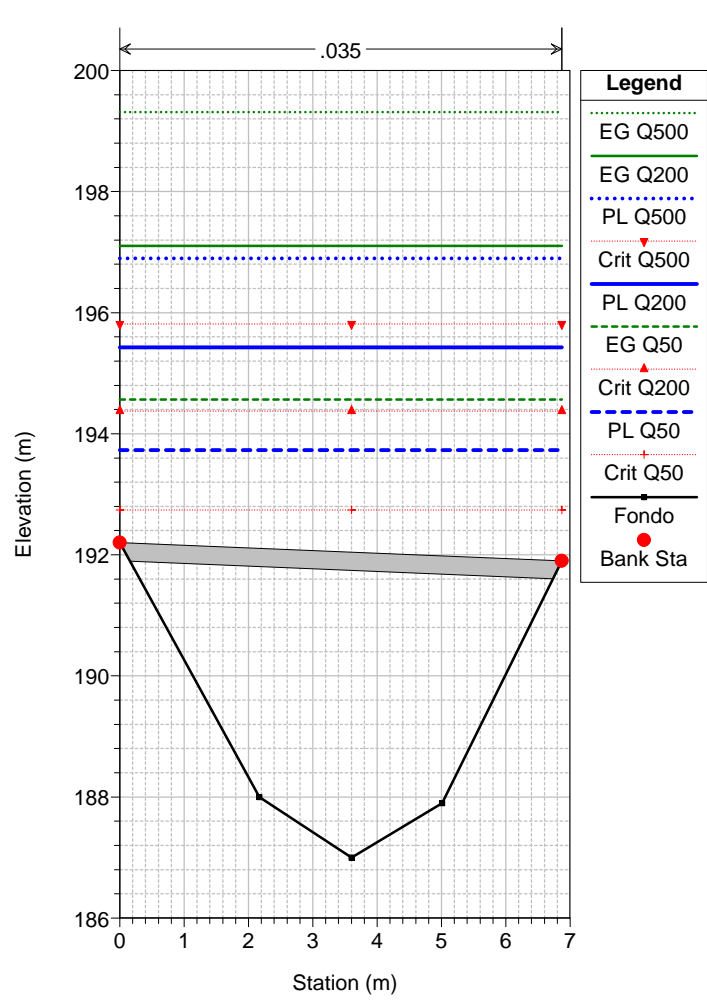
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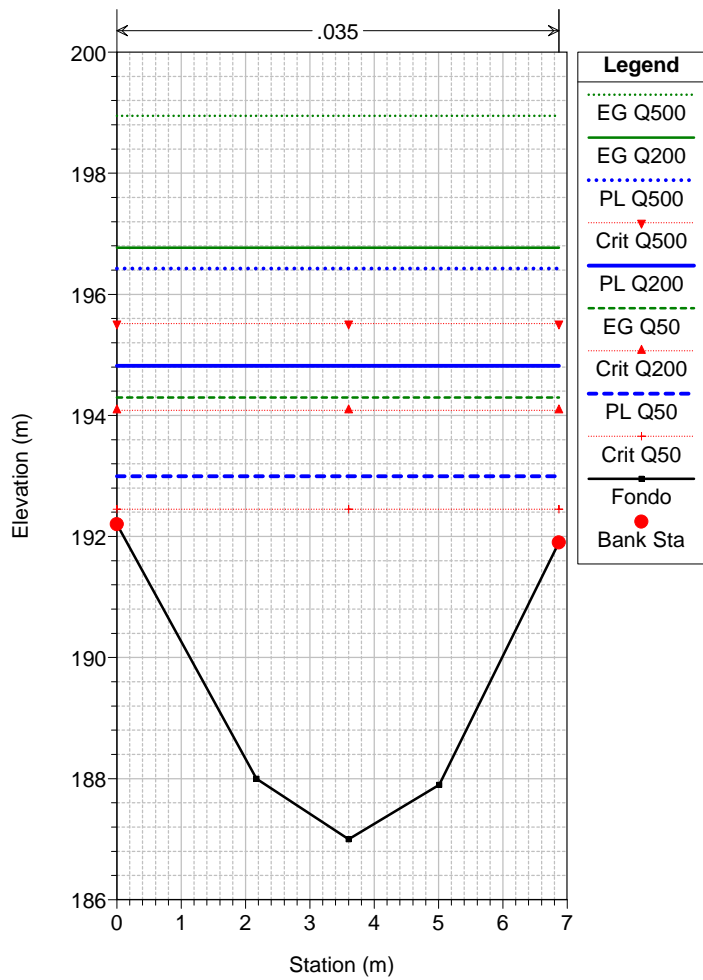
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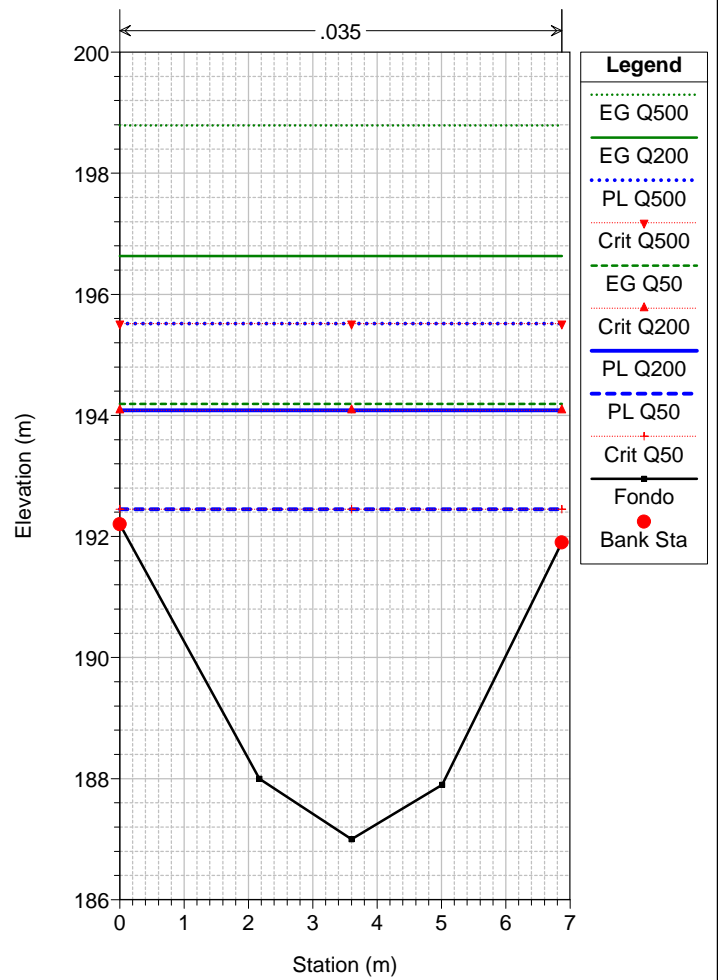
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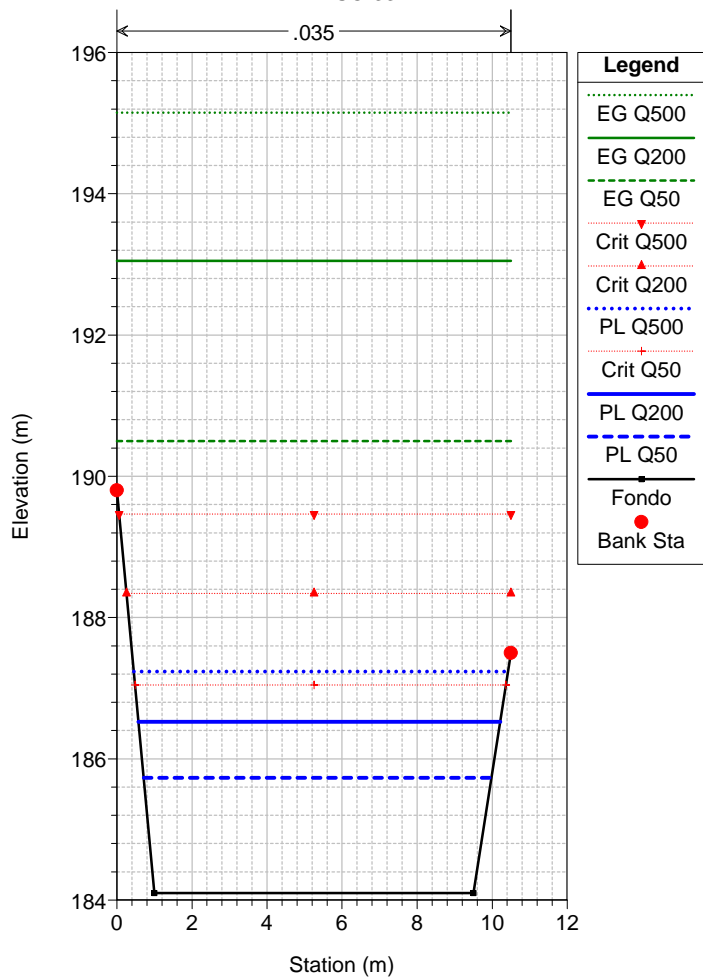
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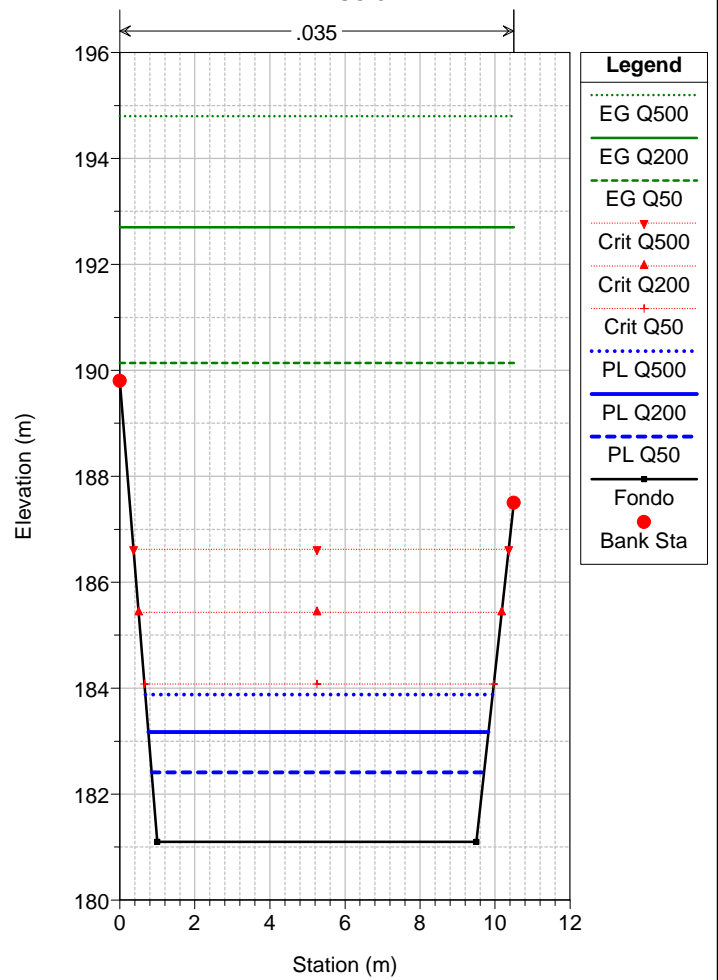
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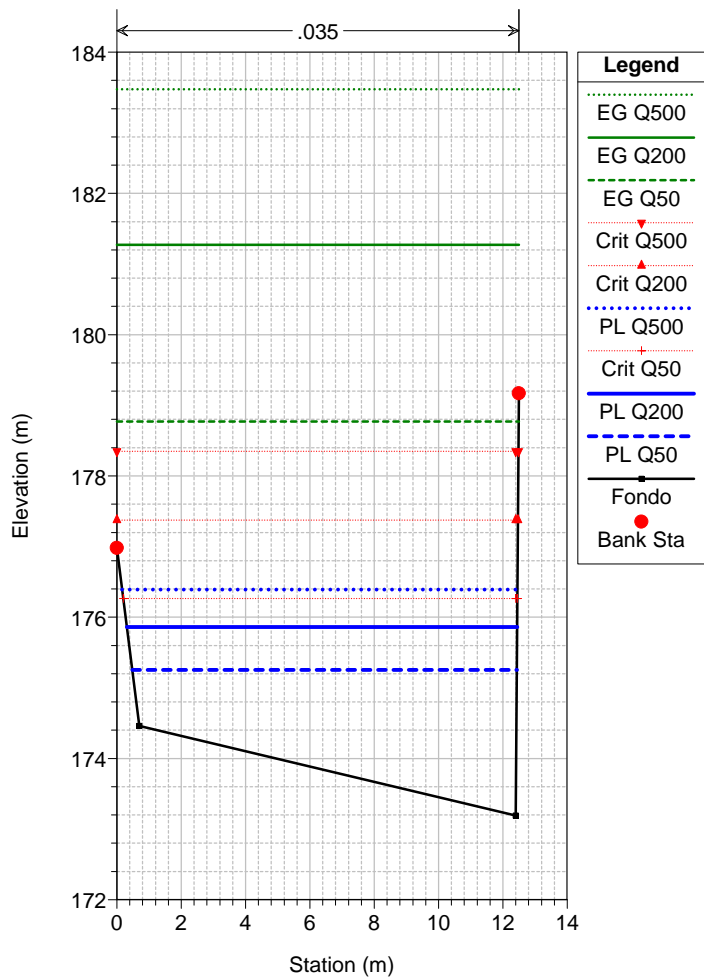
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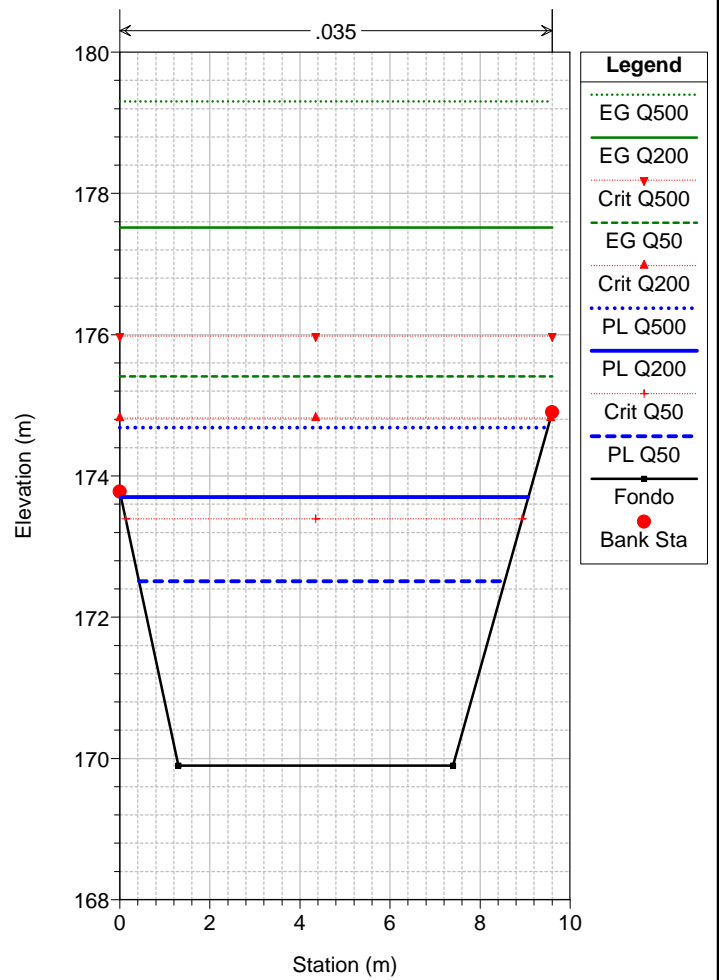
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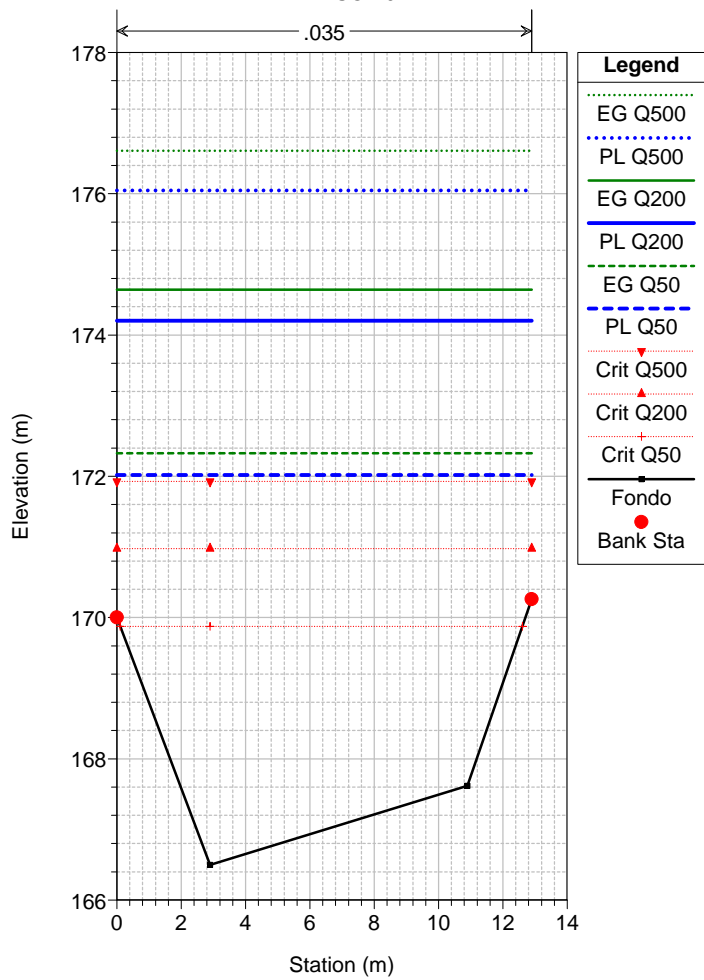
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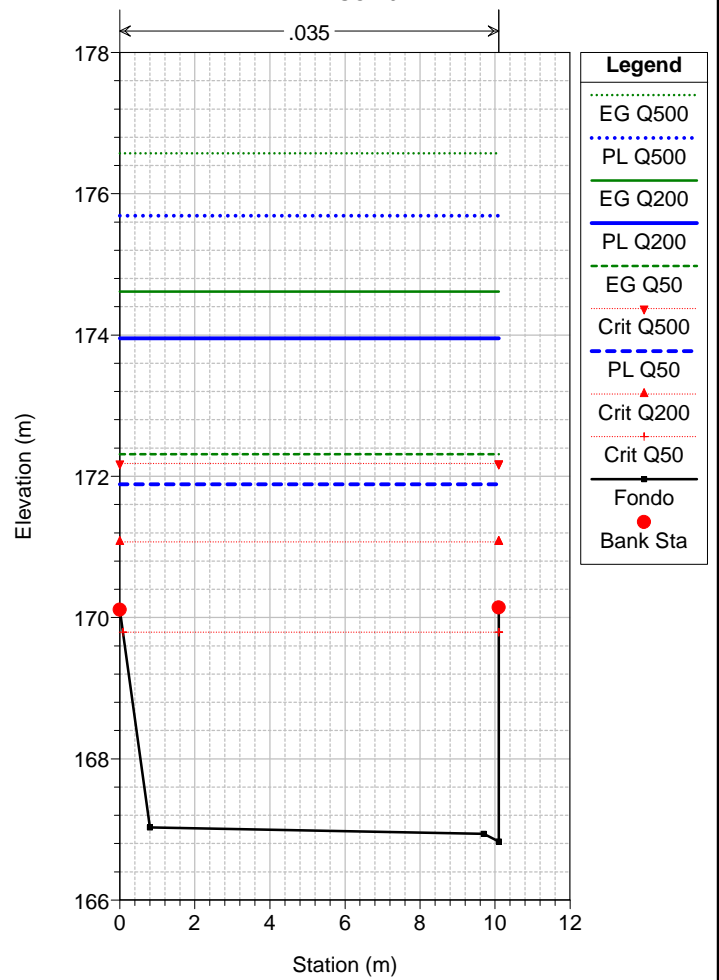
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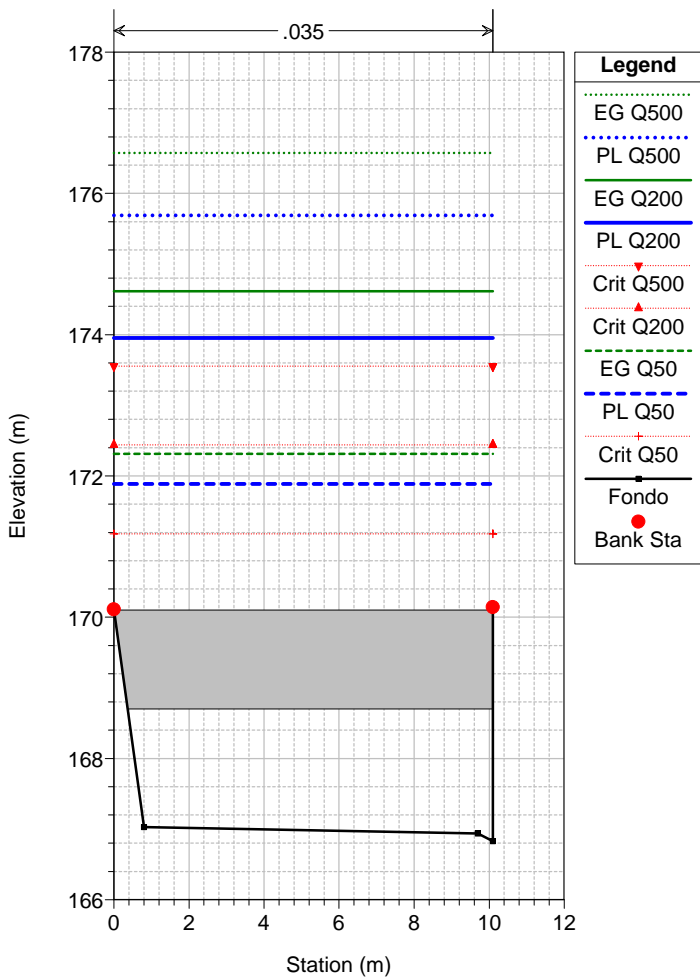
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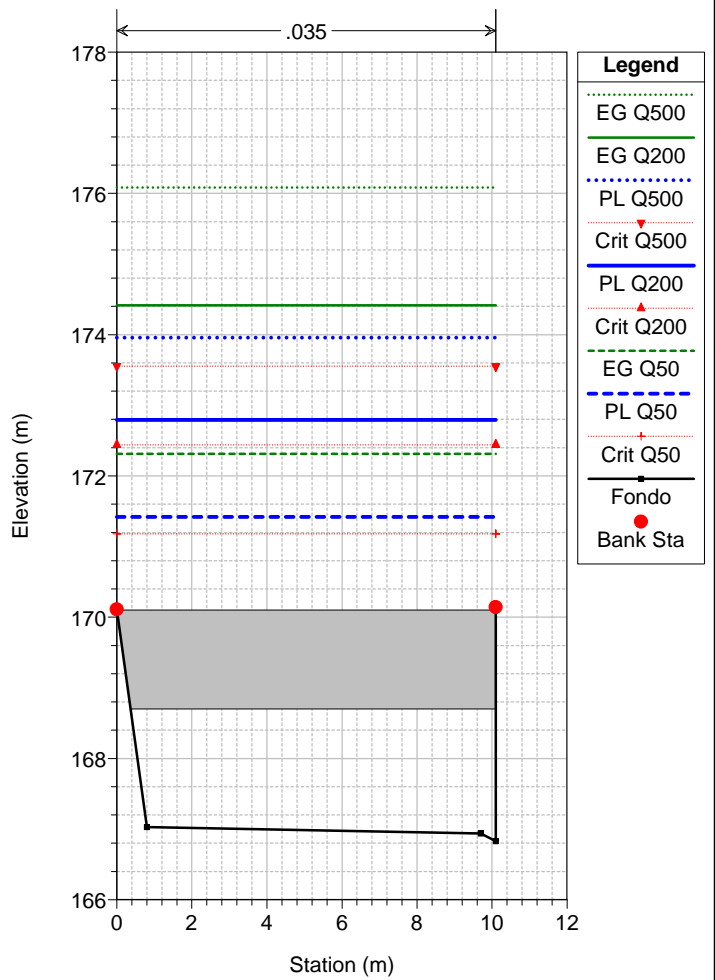
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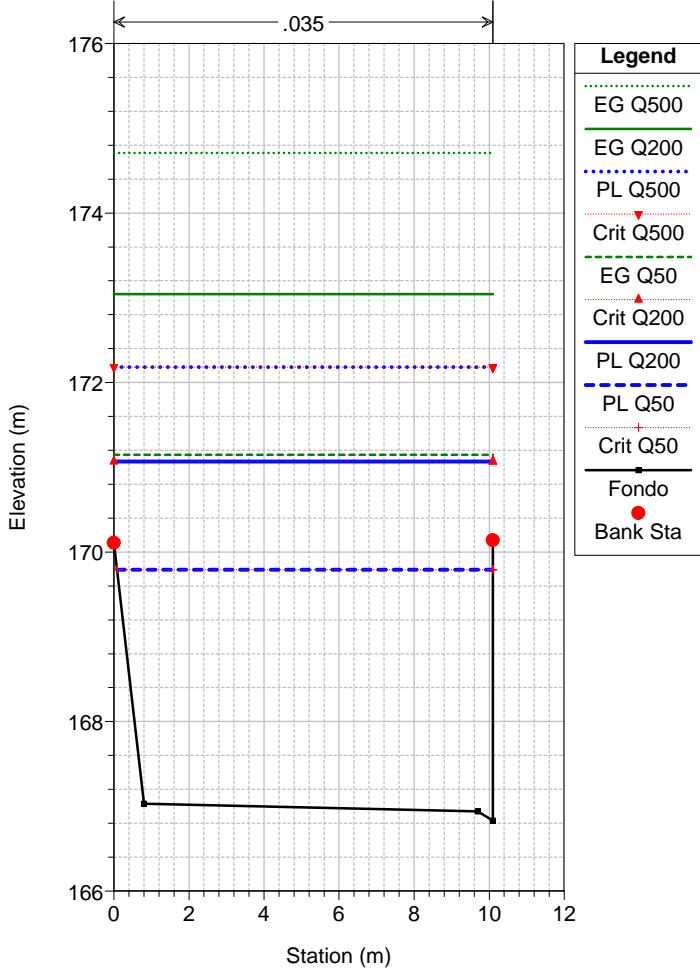
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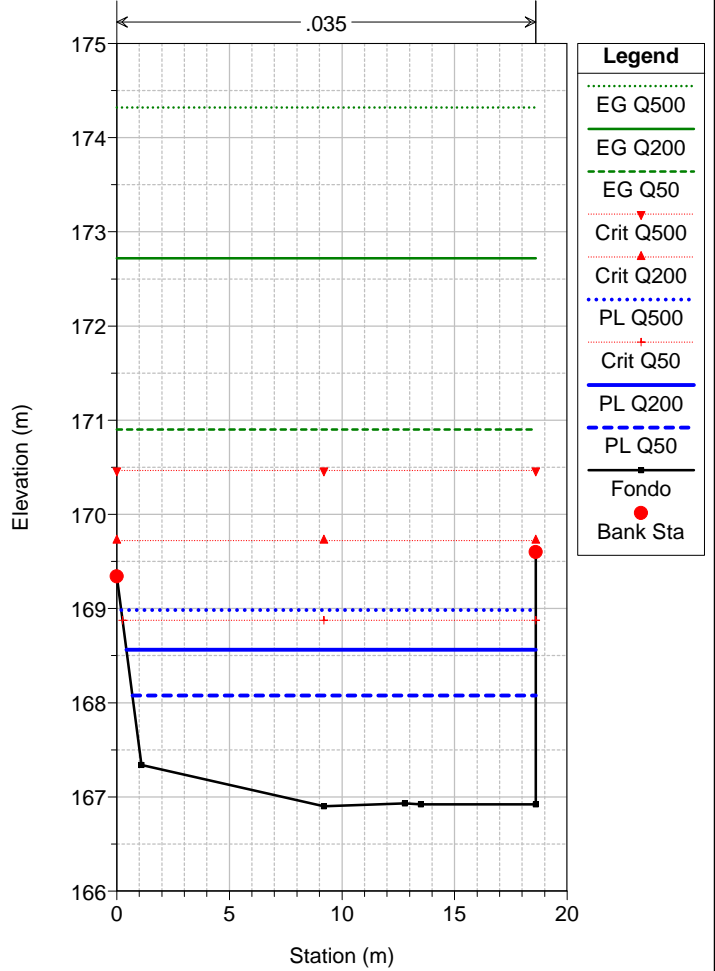
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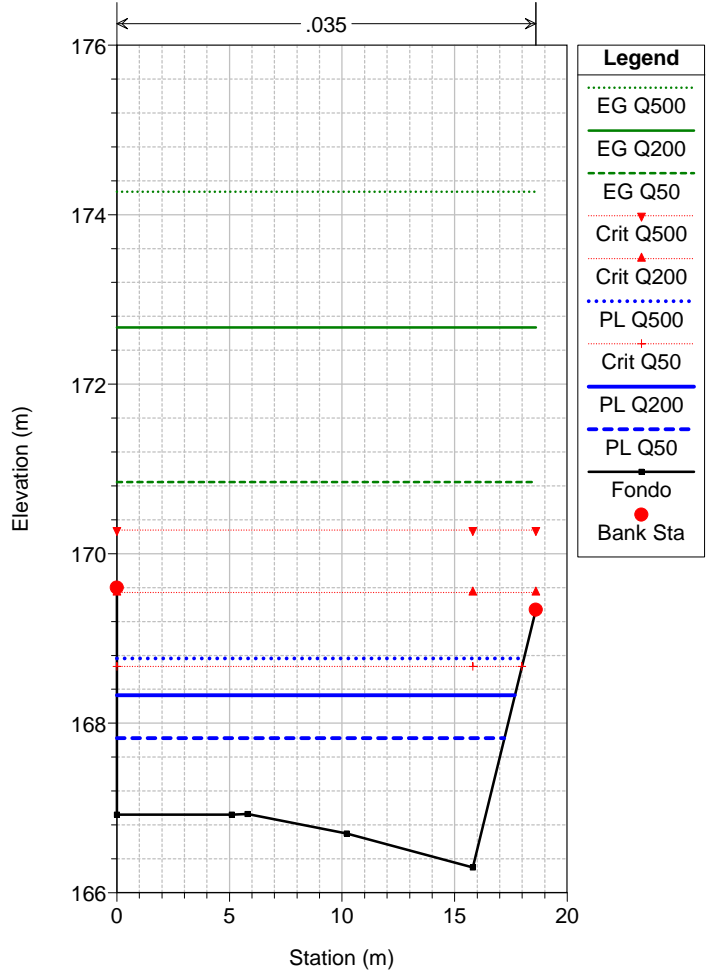
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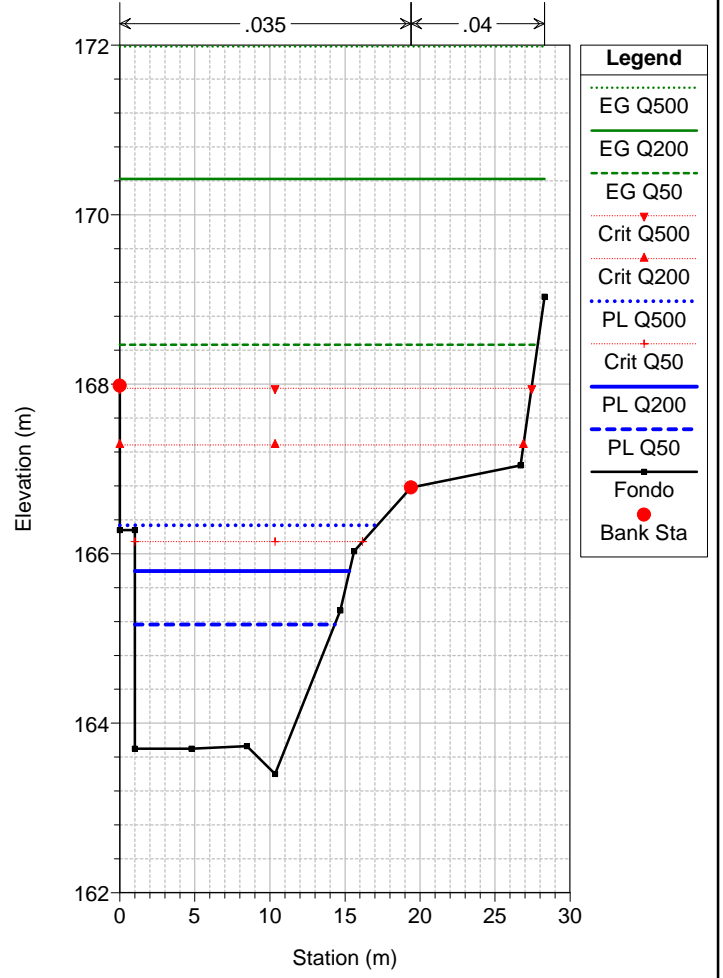
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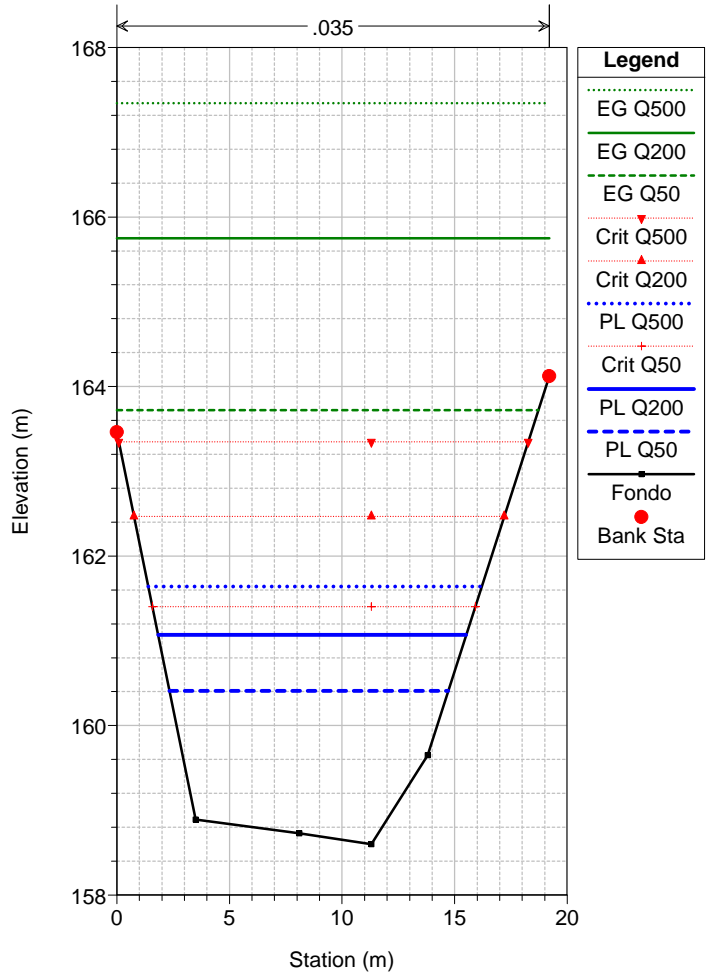
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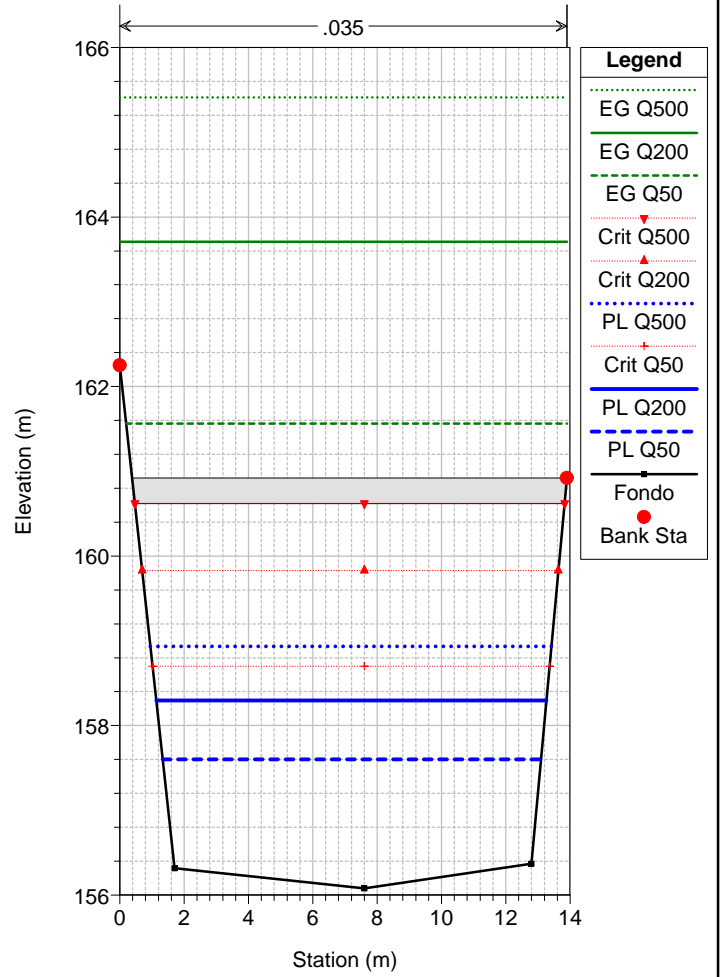
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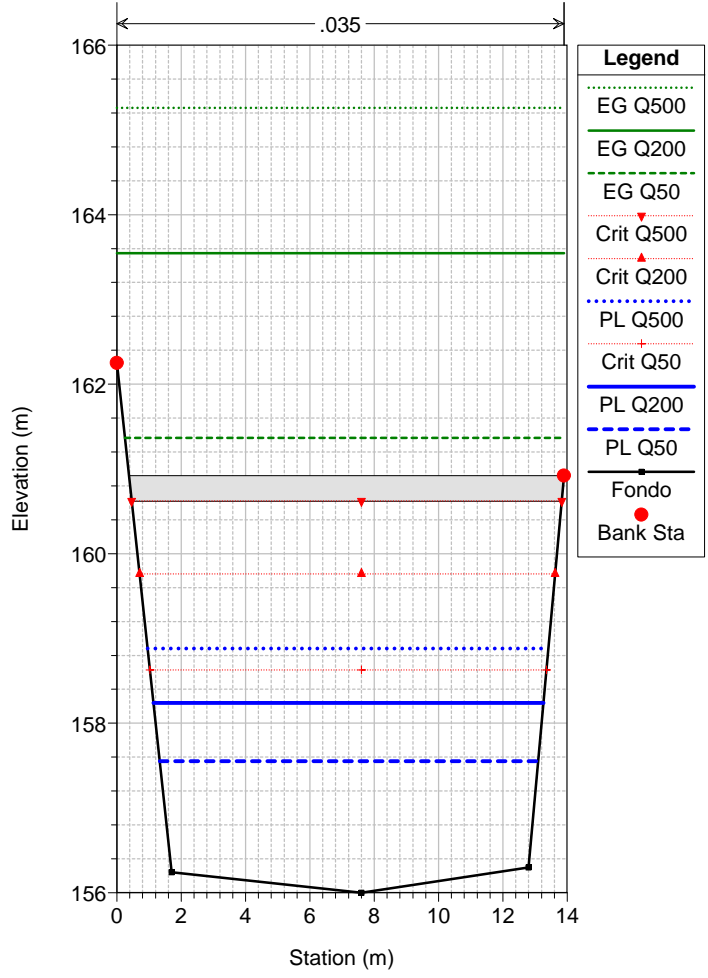
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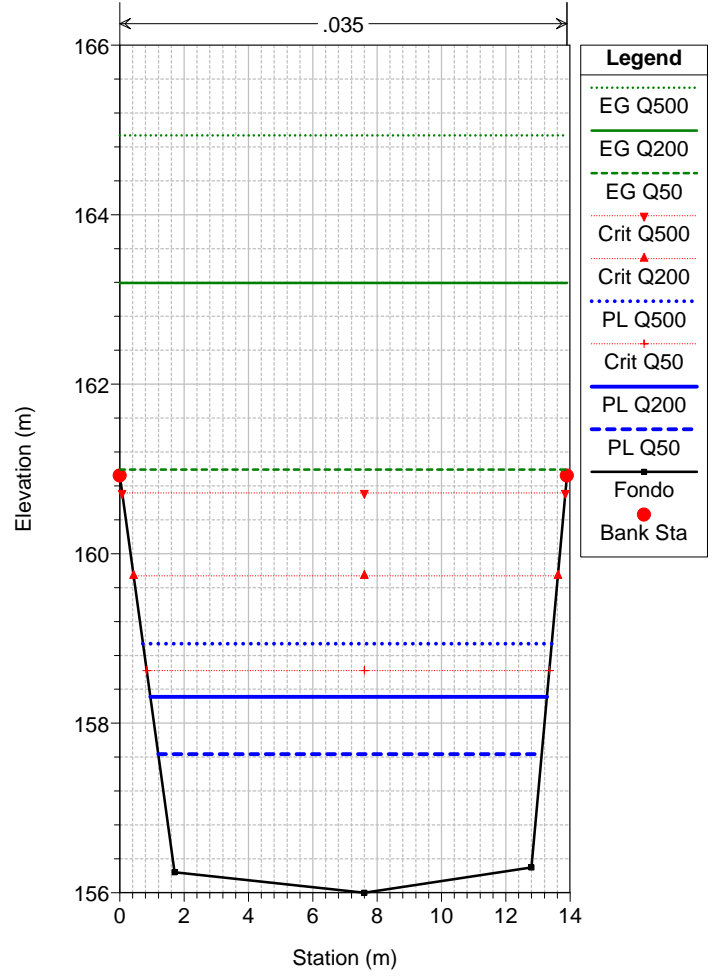
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ISO-25



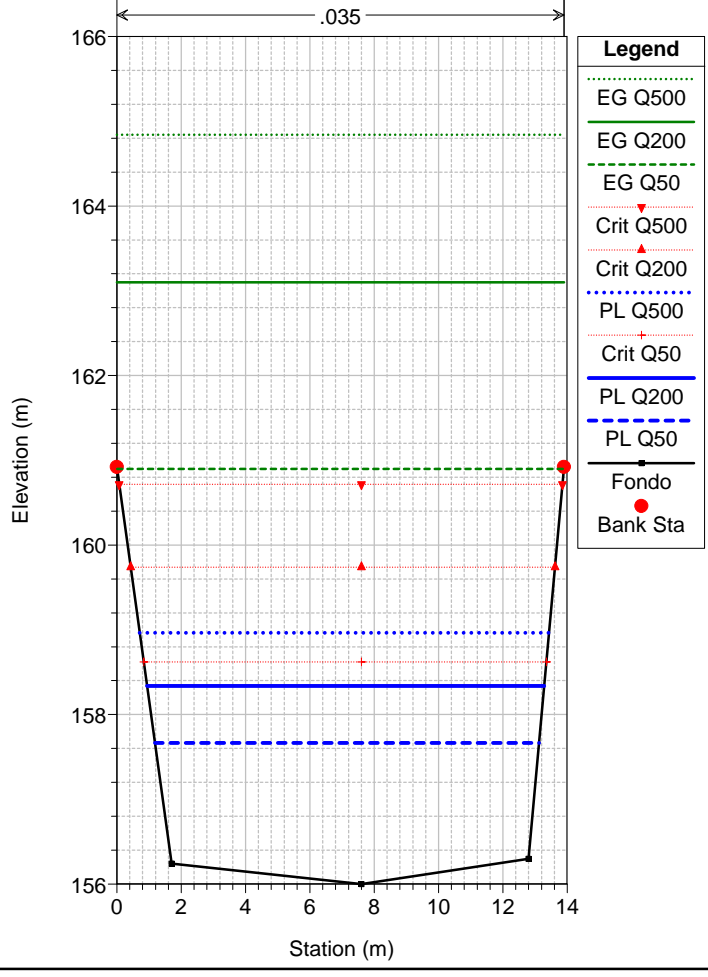
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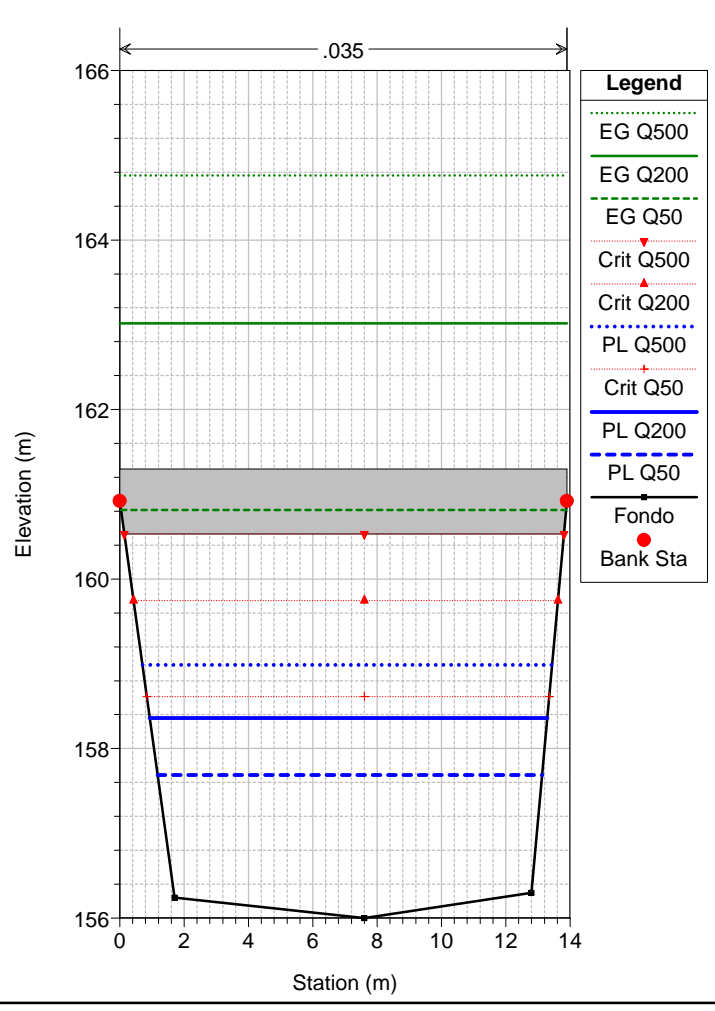
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ISO-23



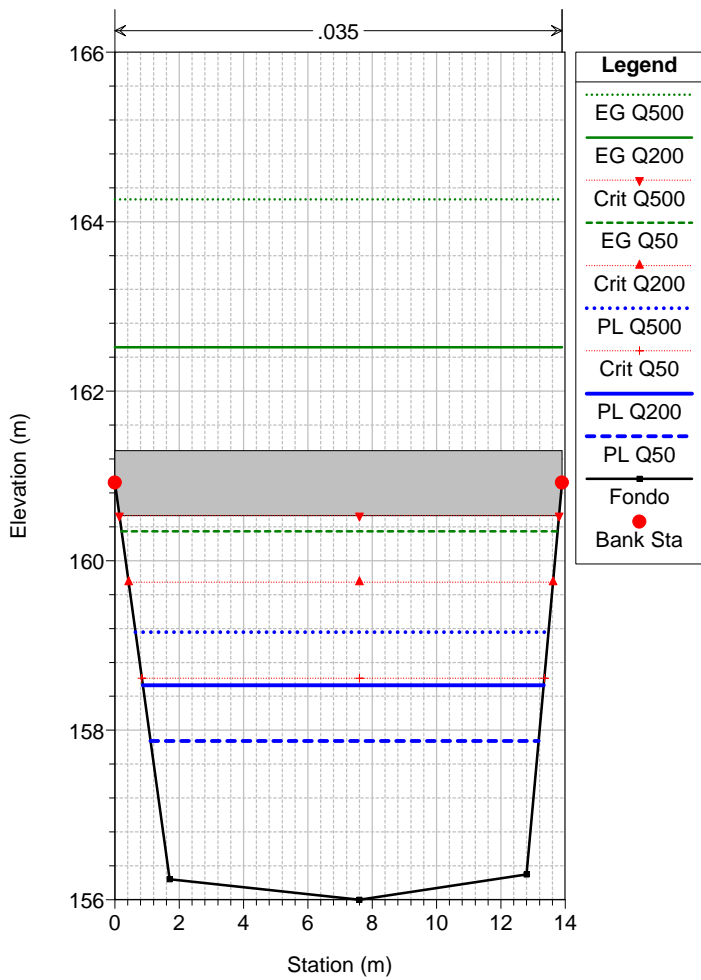
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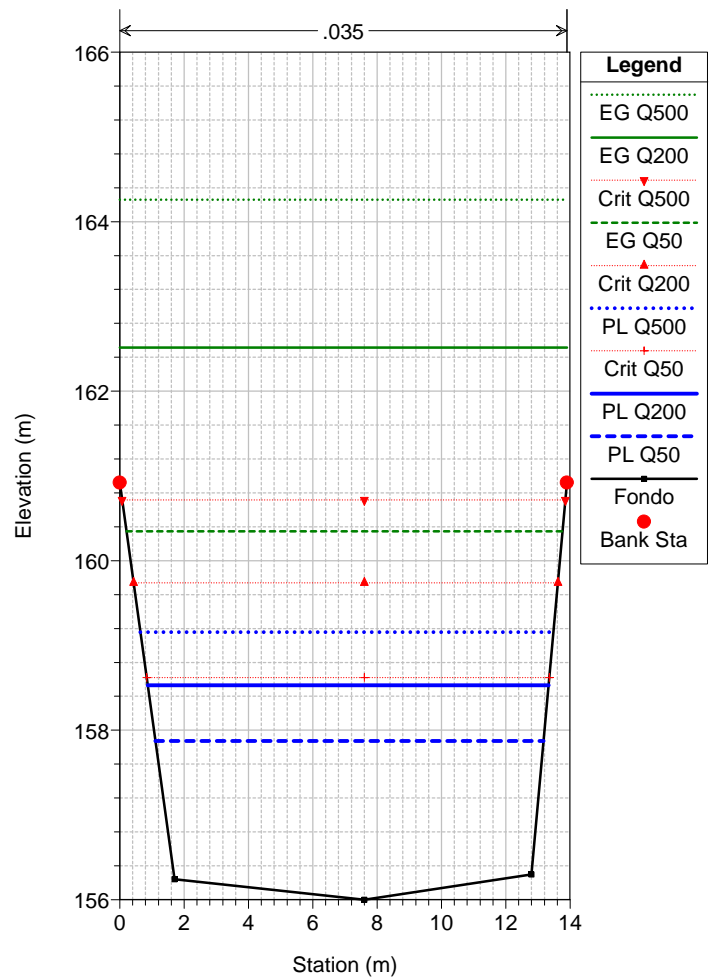
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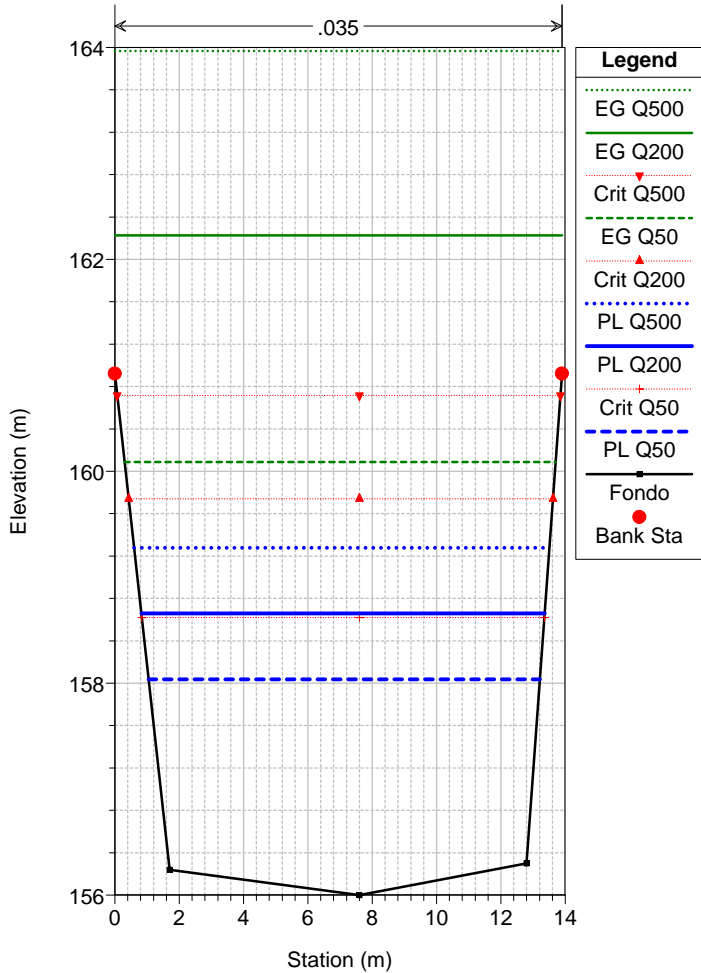
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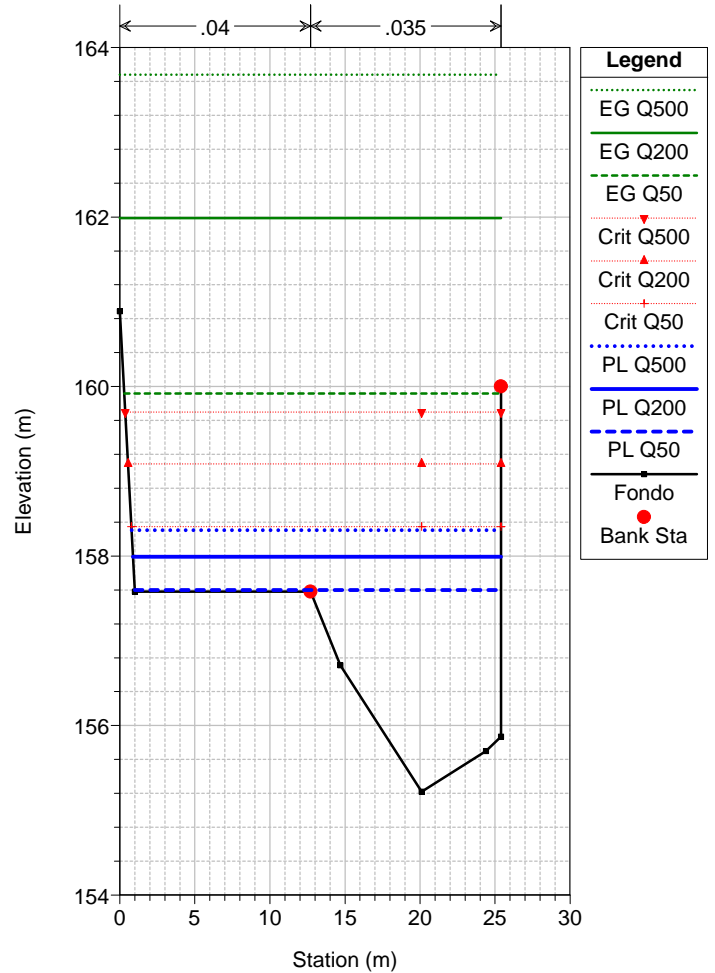
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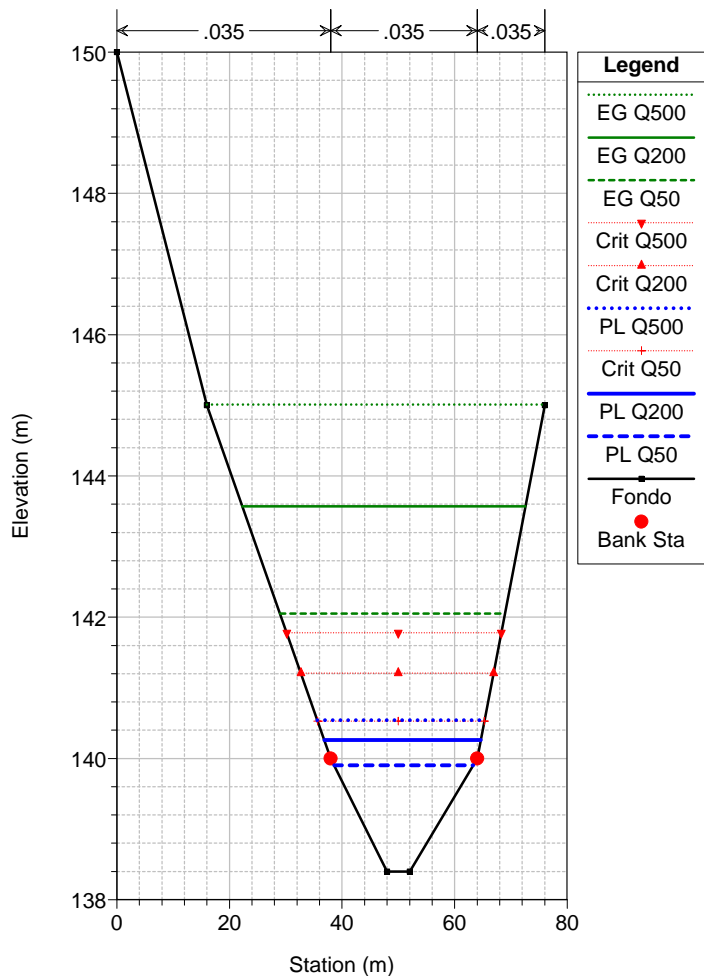
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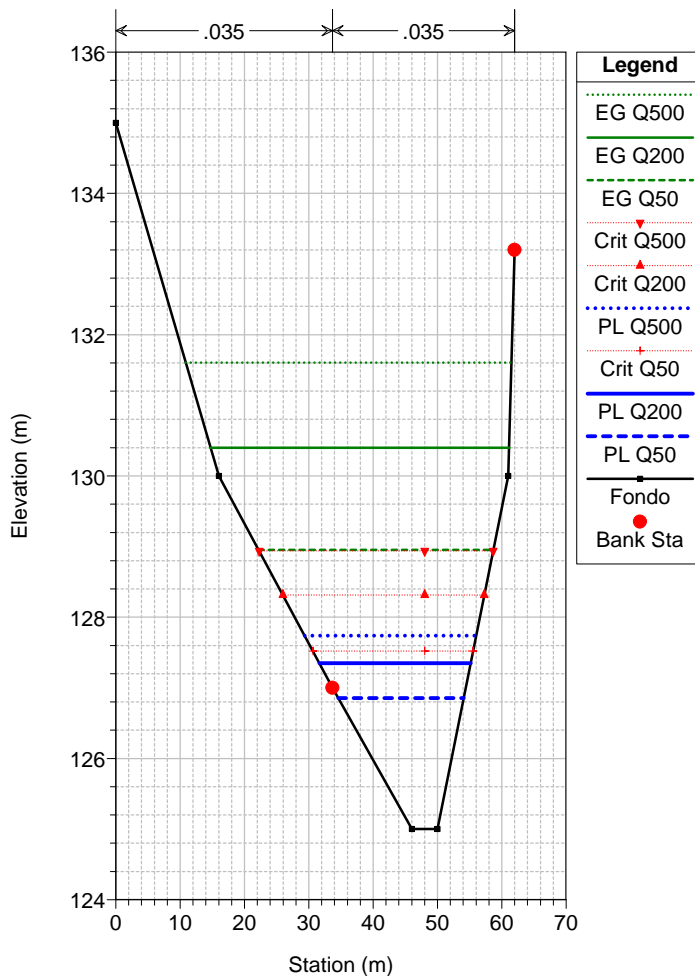
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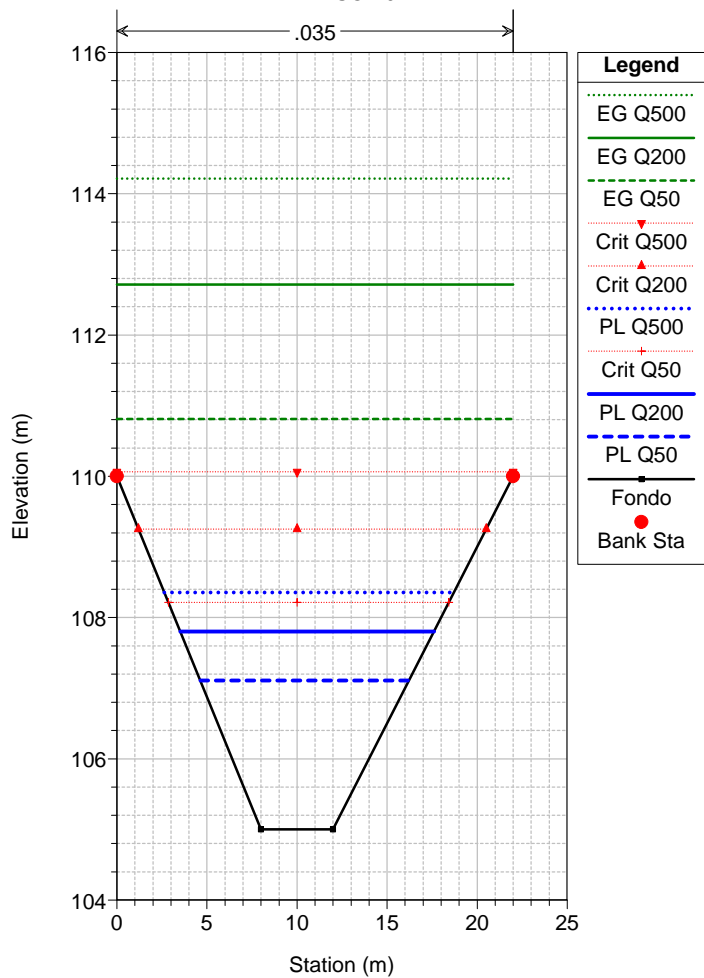
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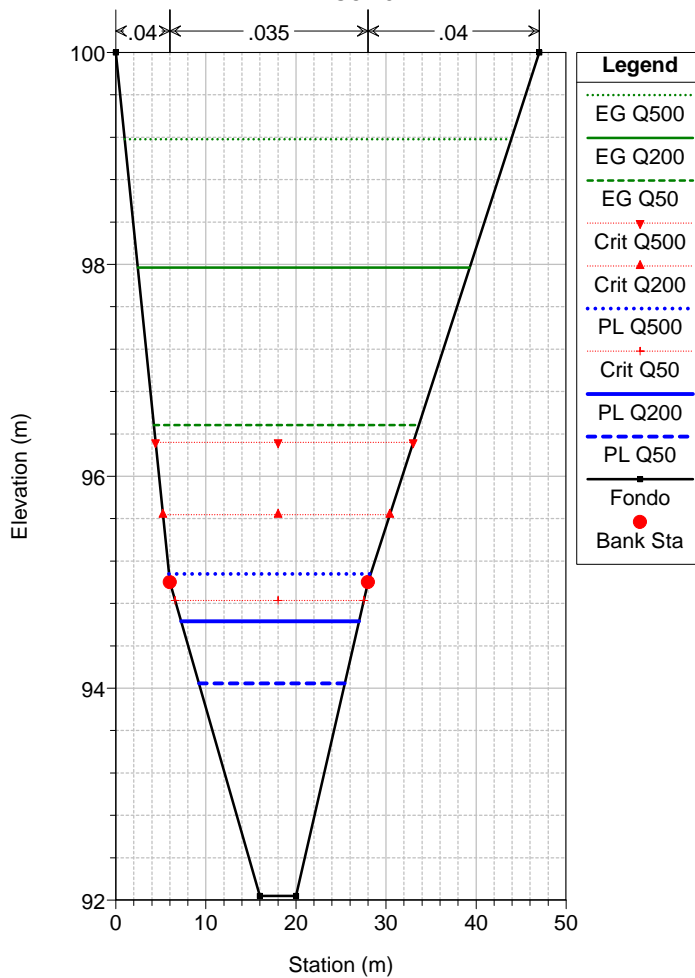
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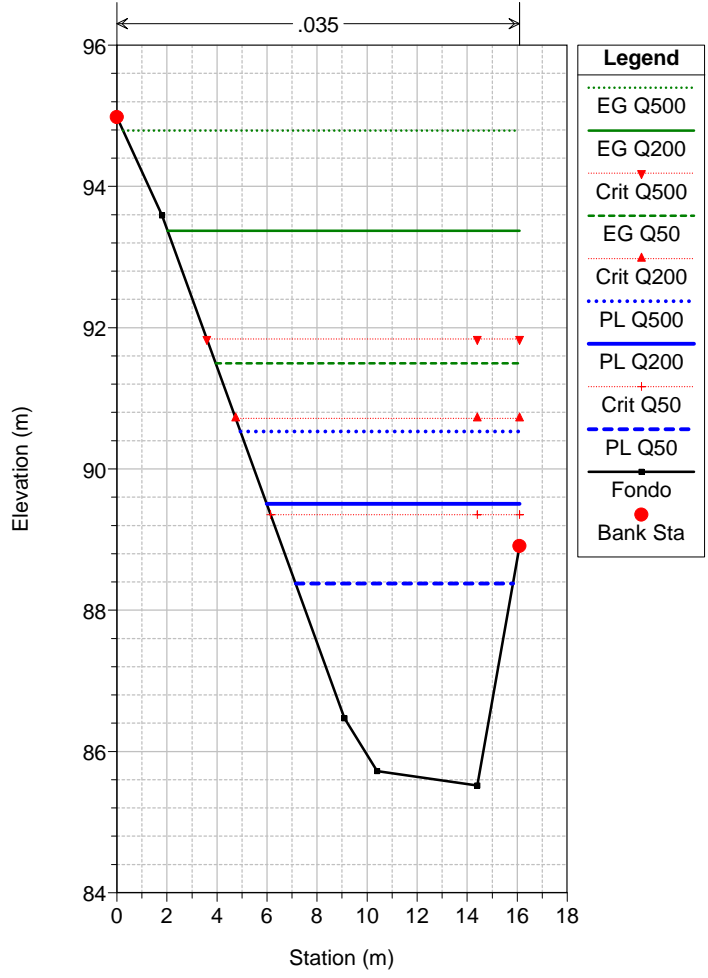
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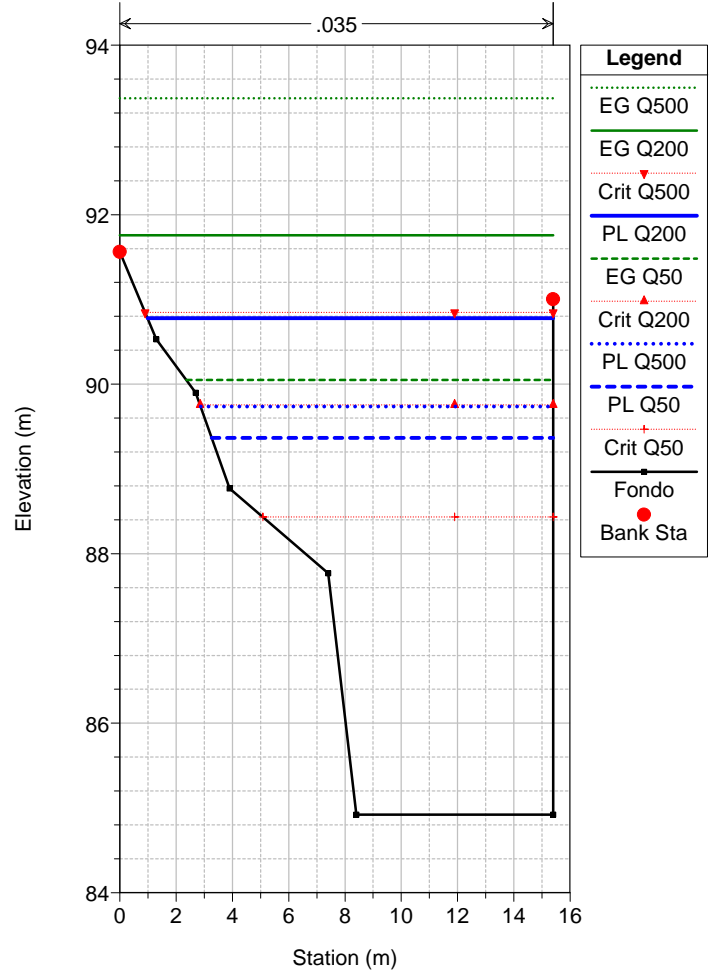
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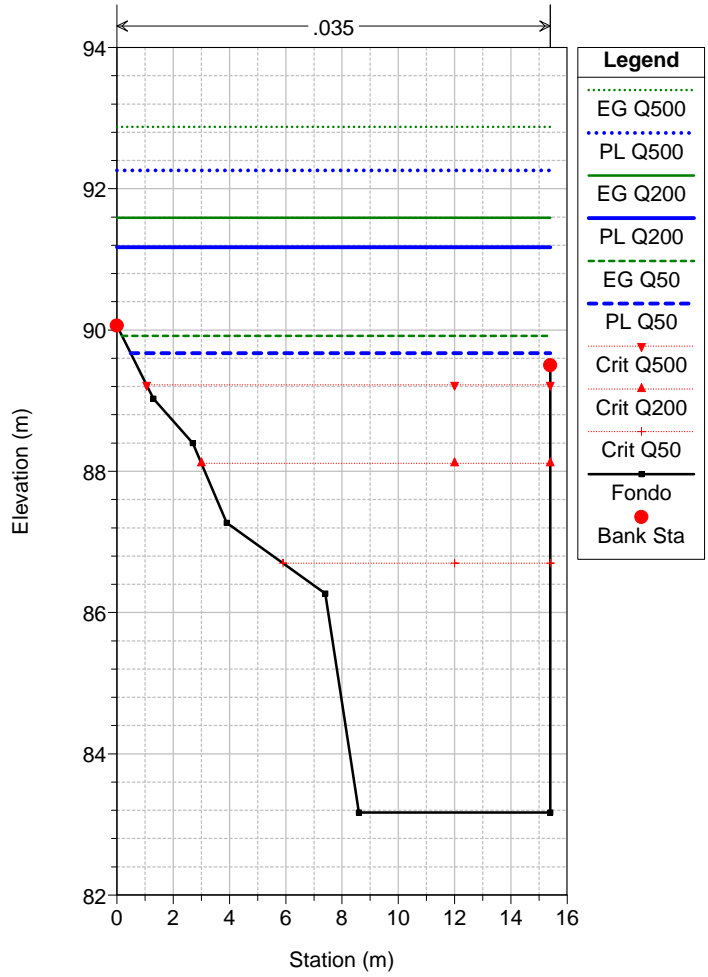
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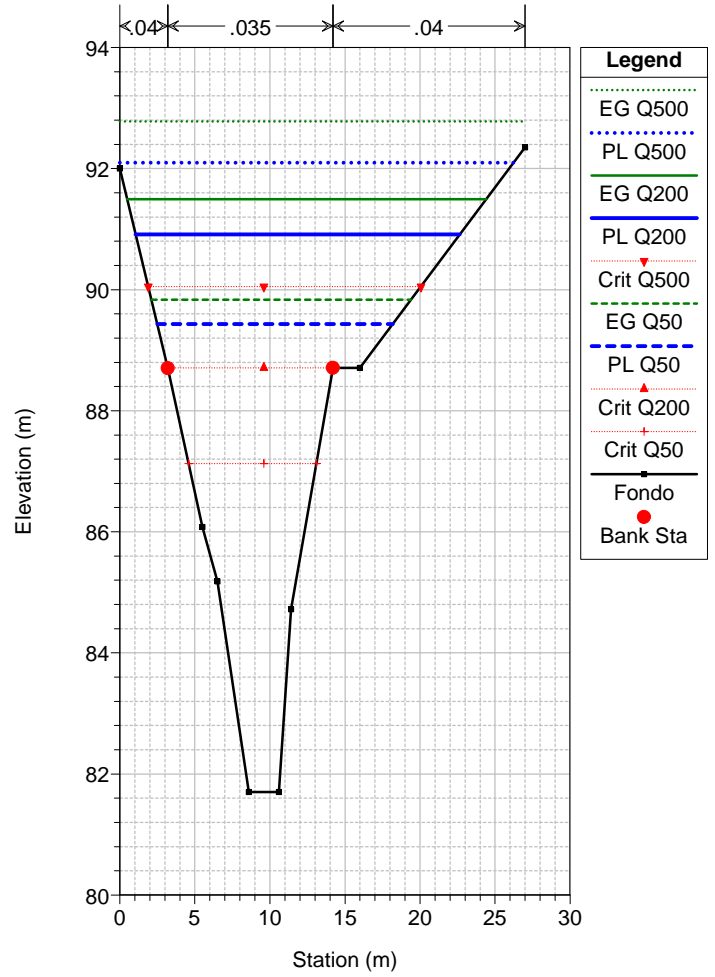
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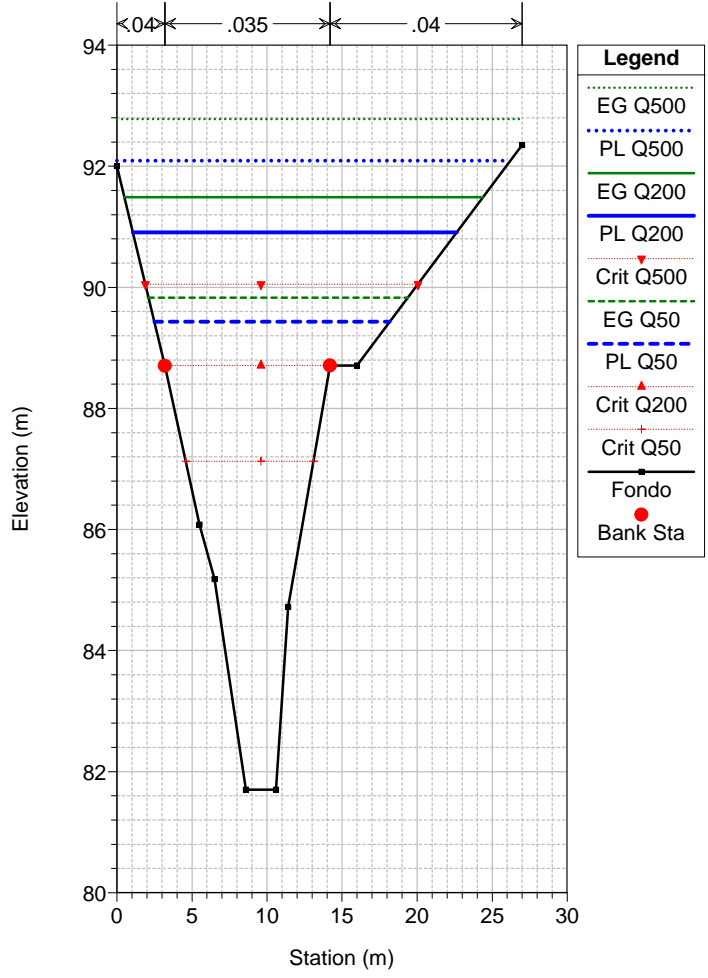
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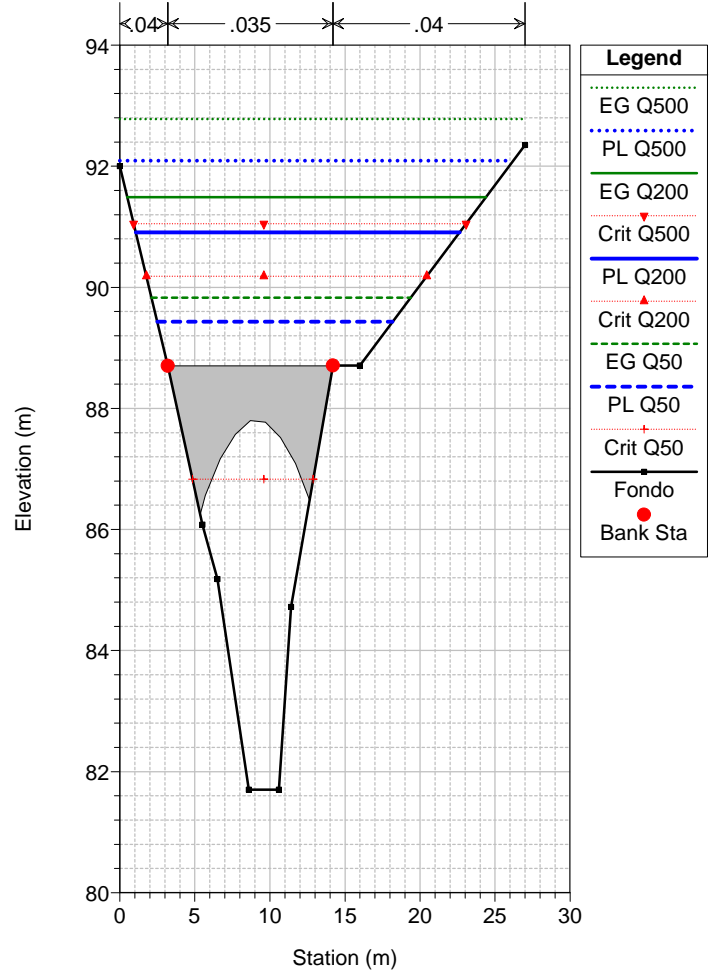
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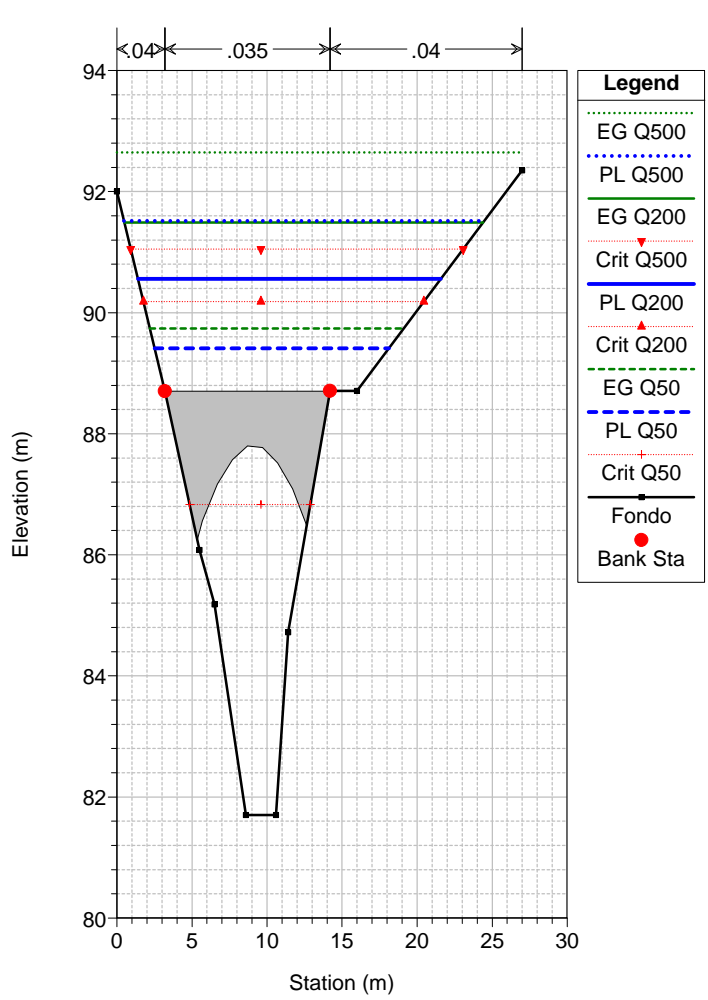
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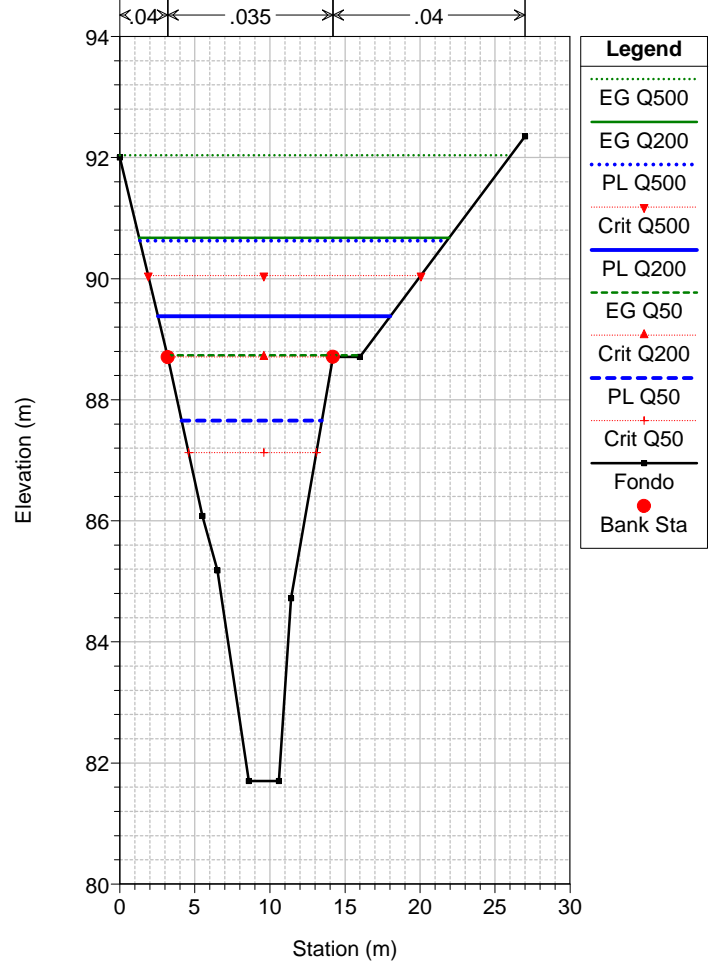
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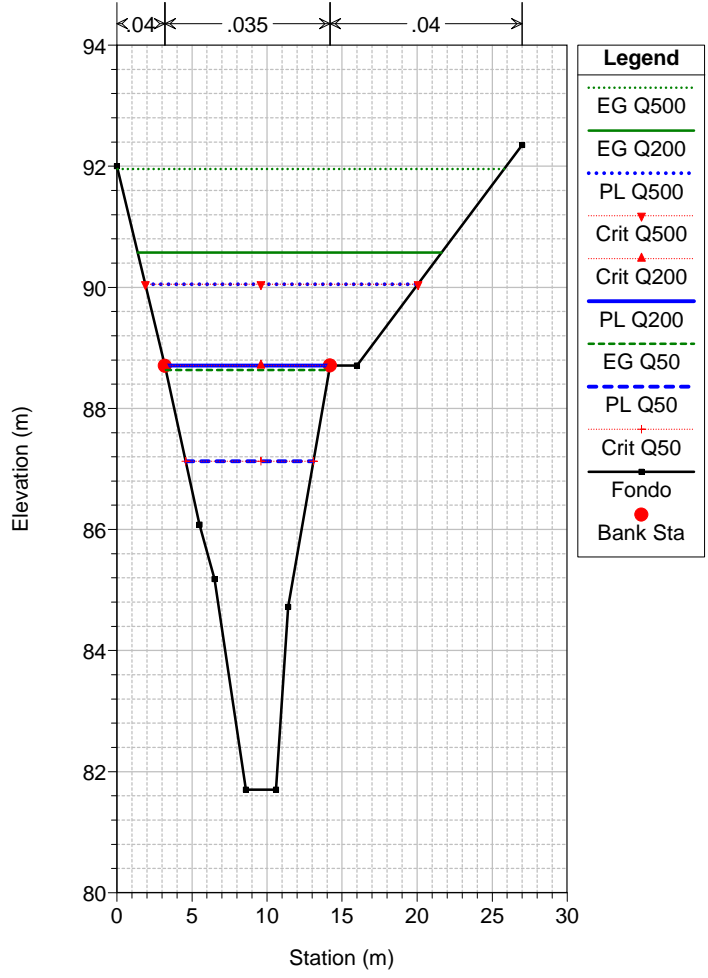
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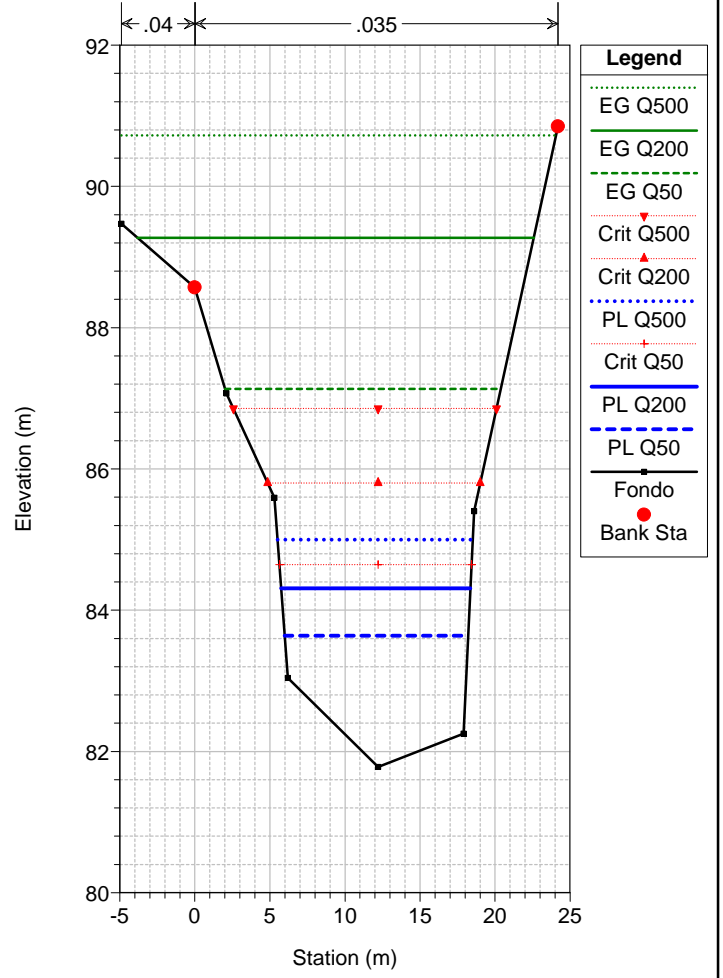
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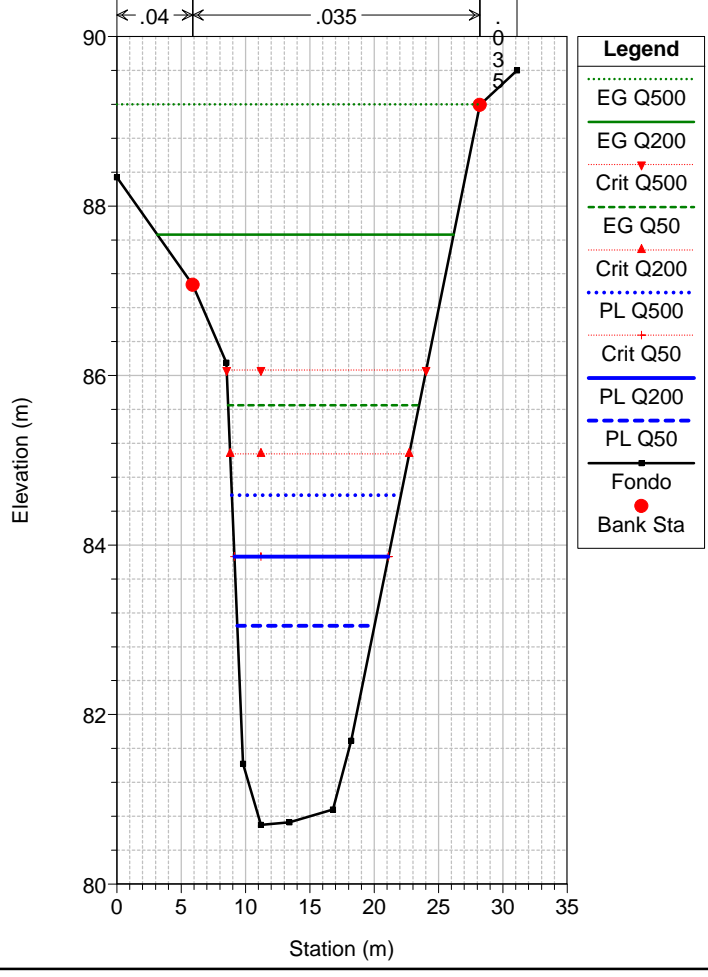
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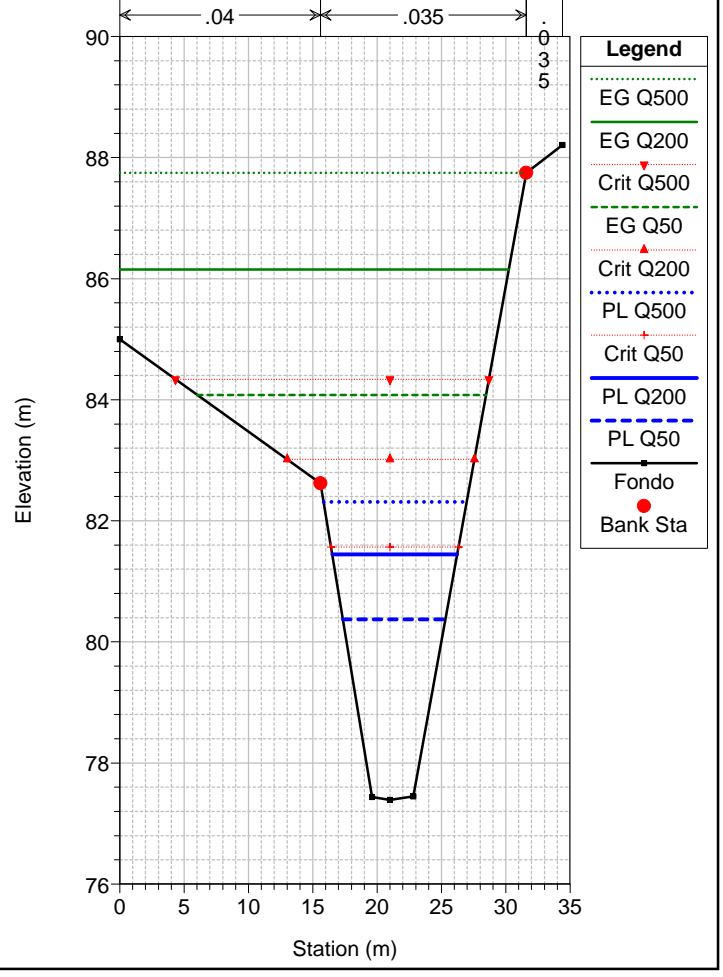
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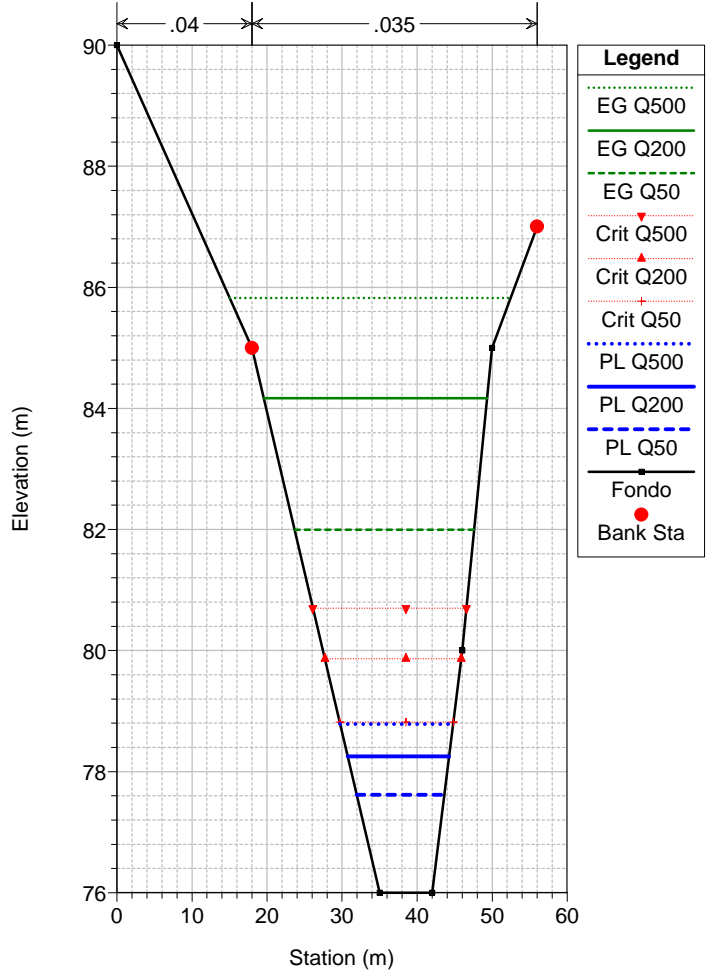
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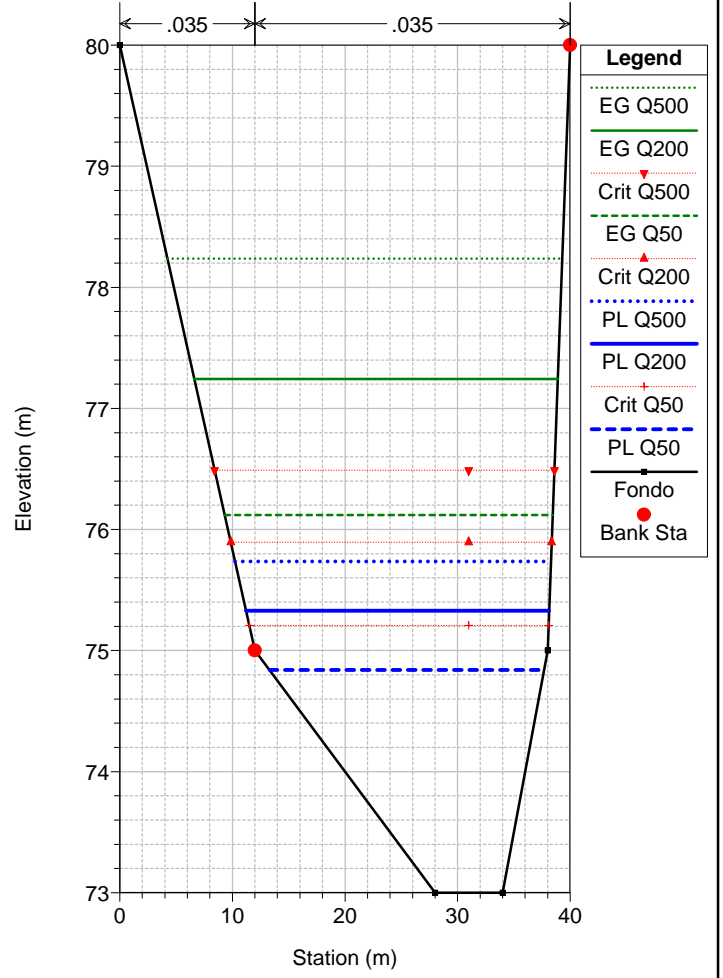
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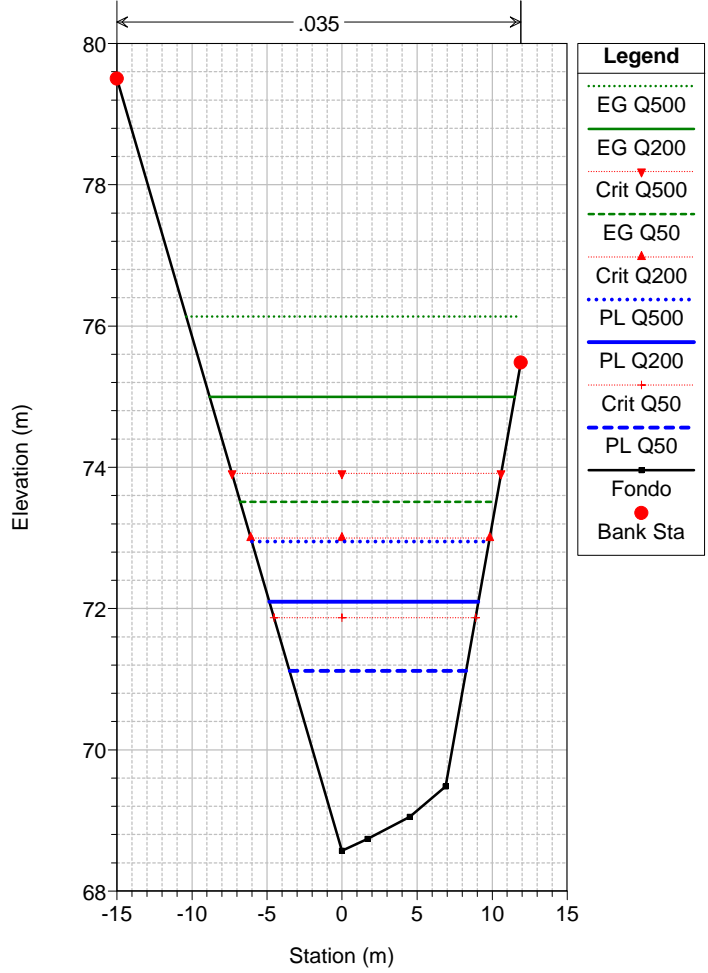
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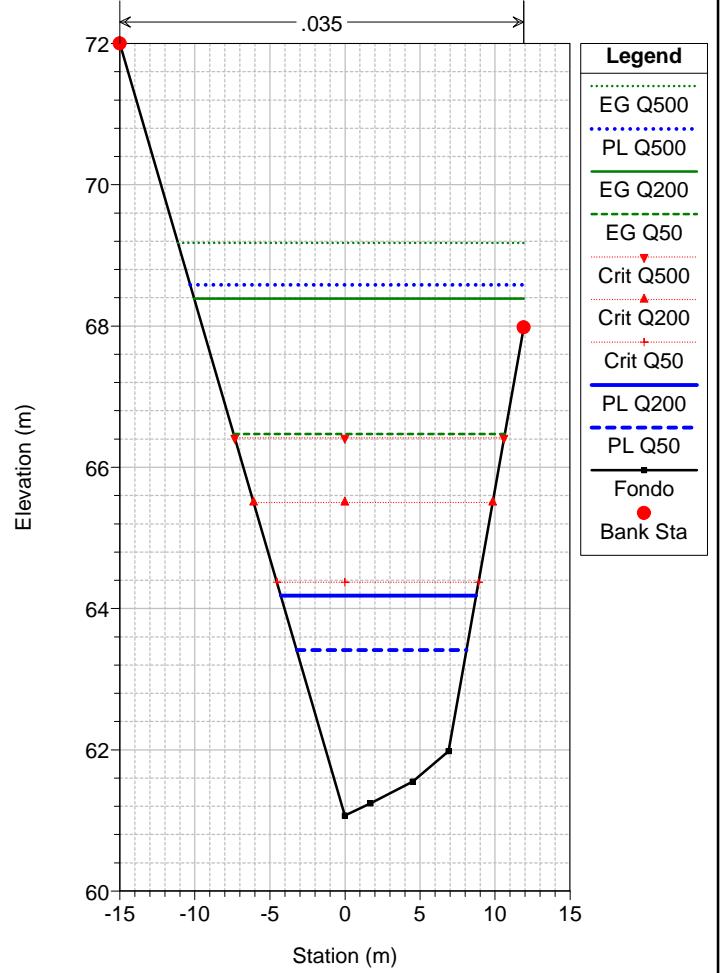
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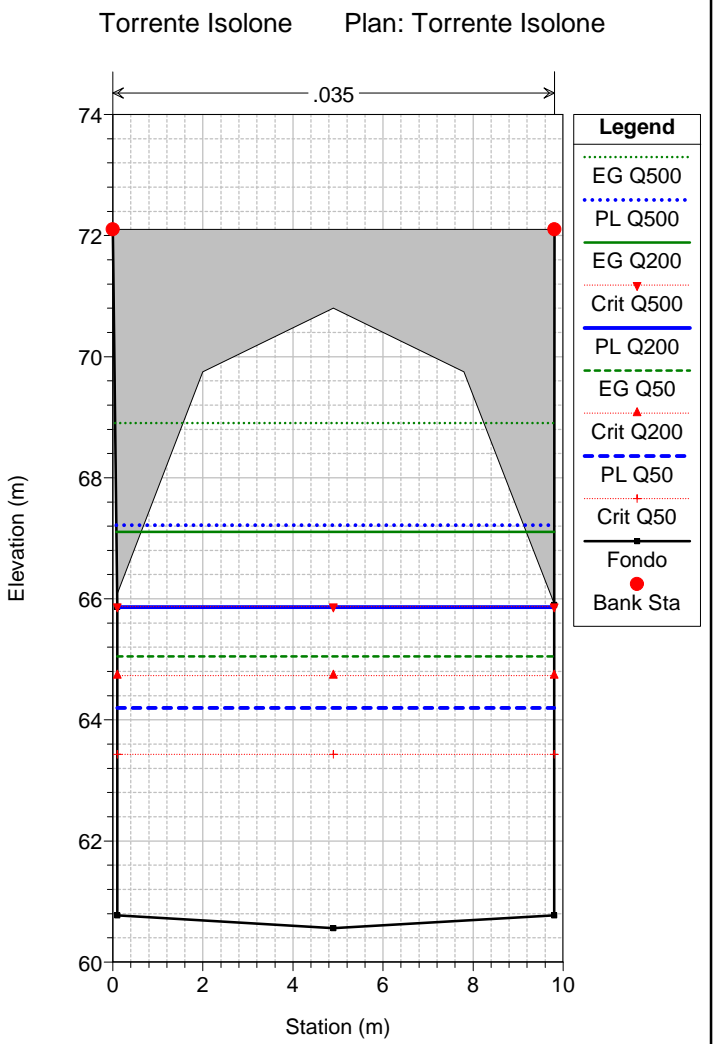
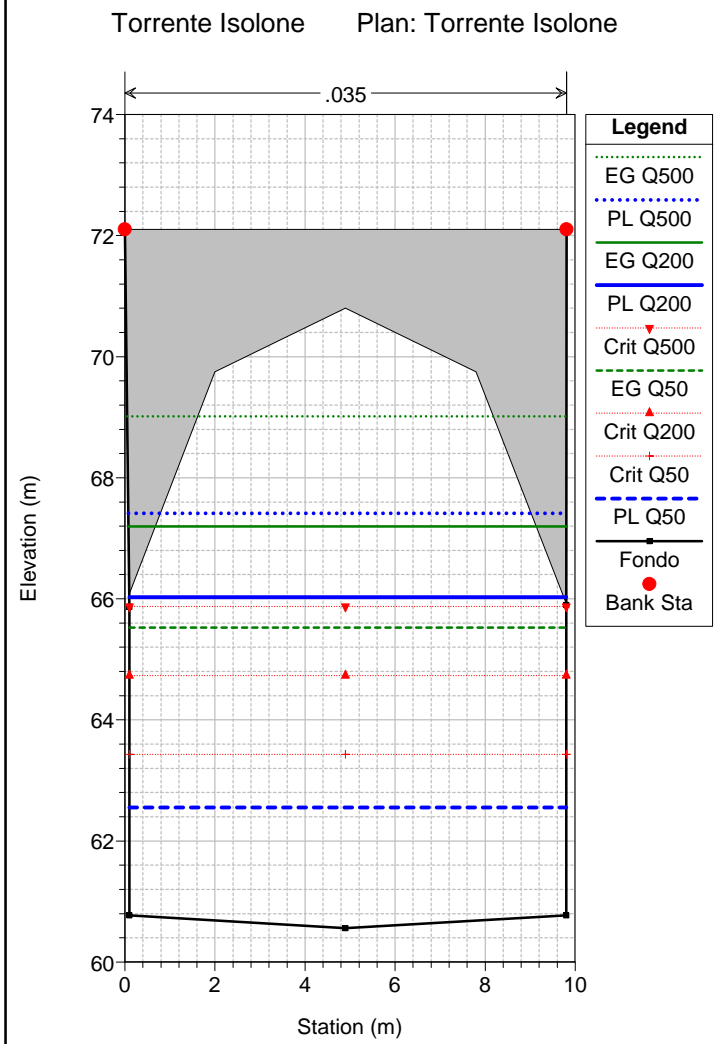
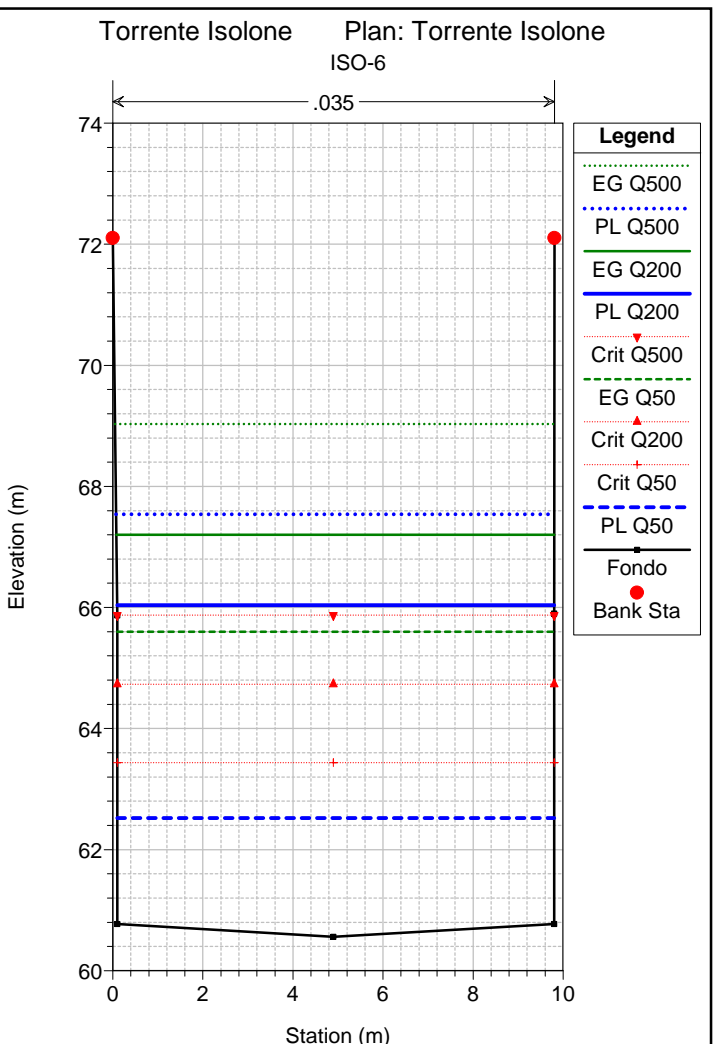
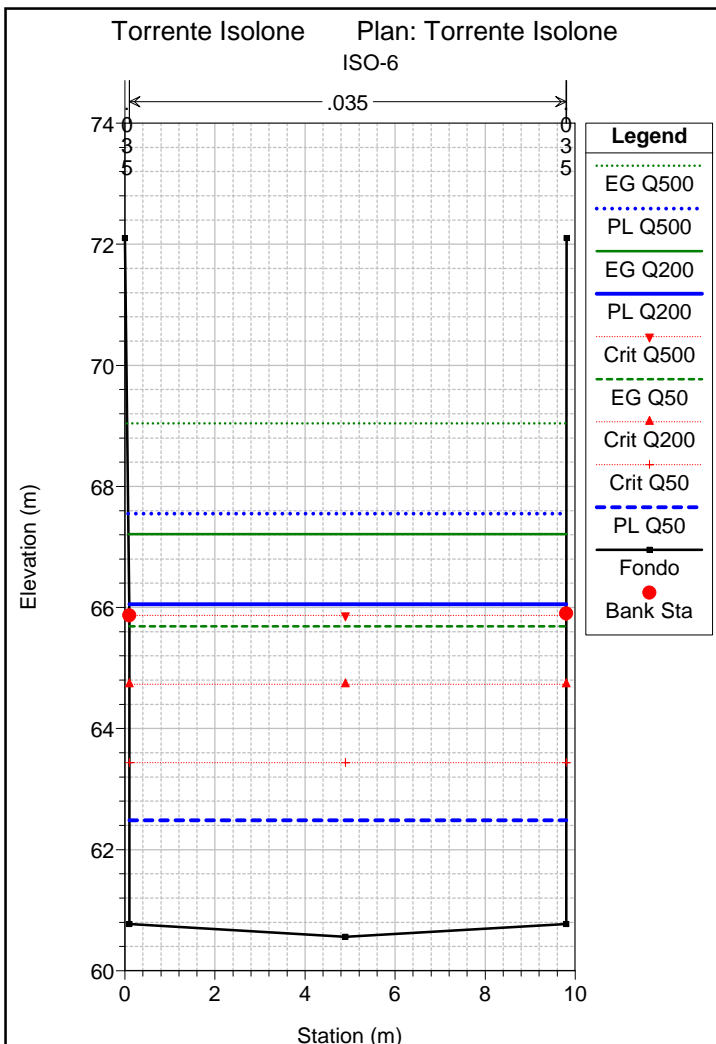


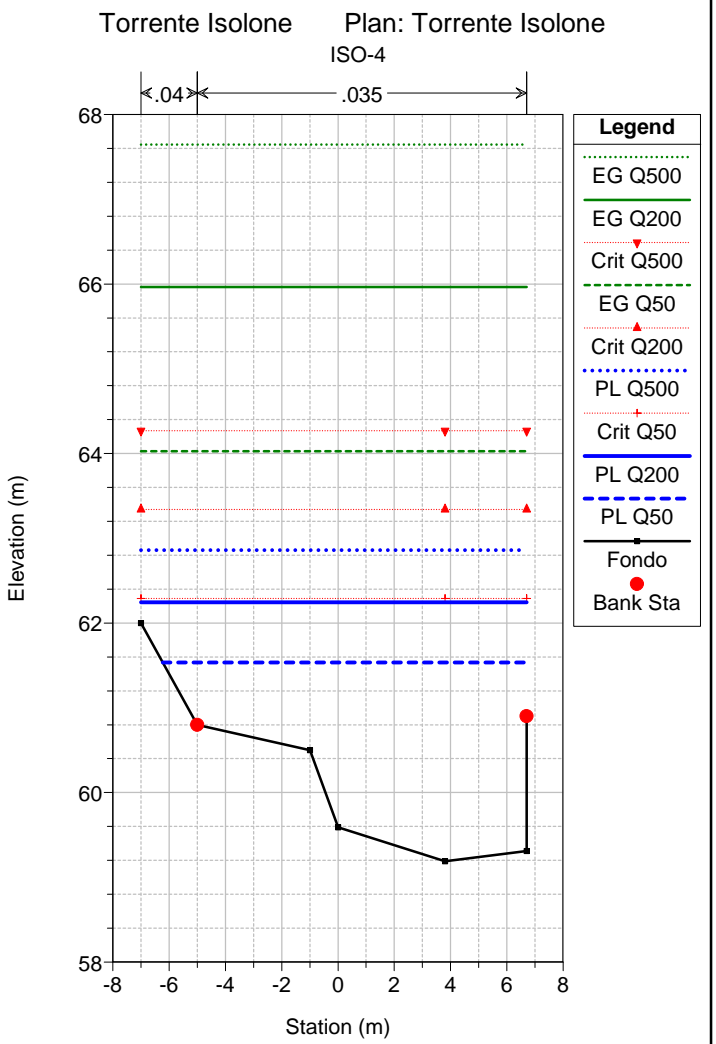
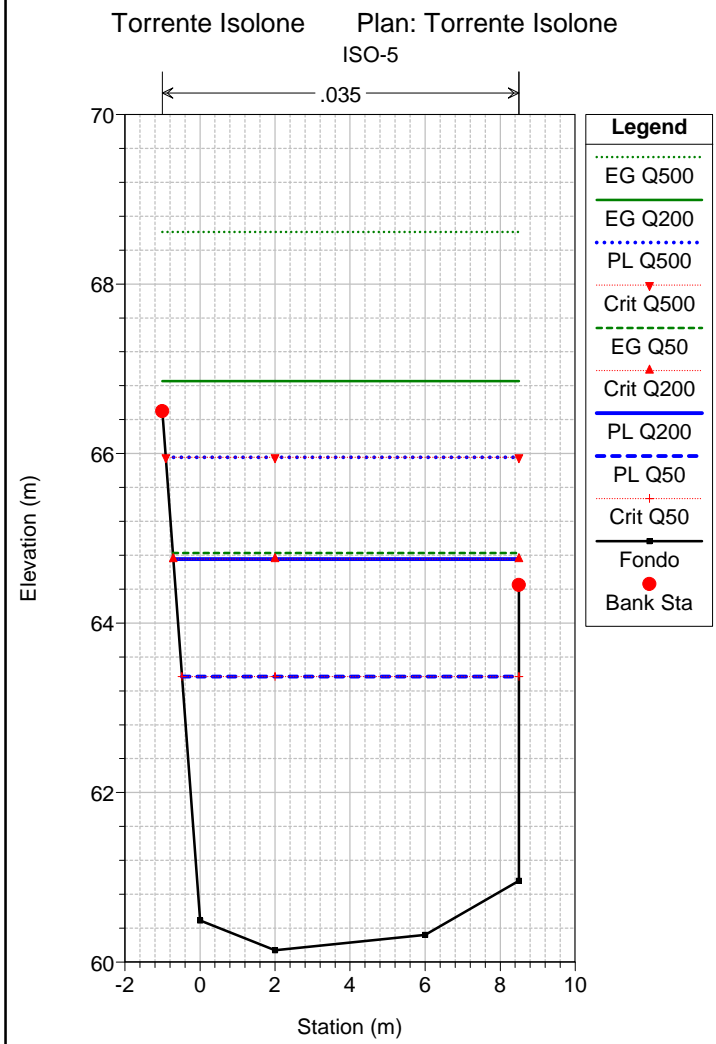
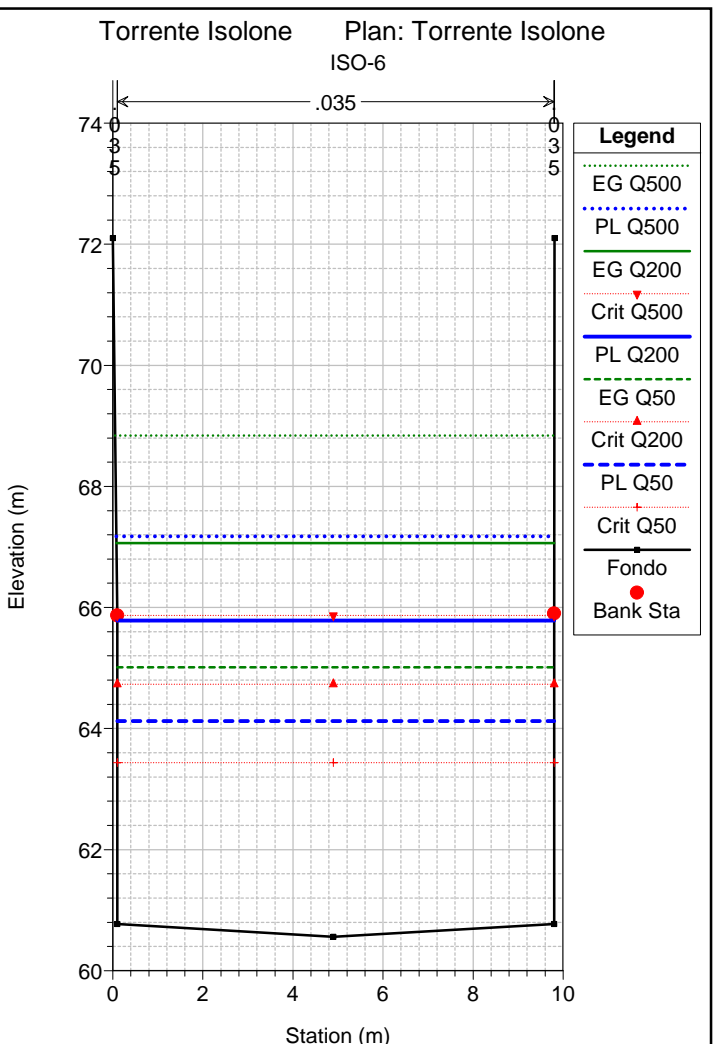
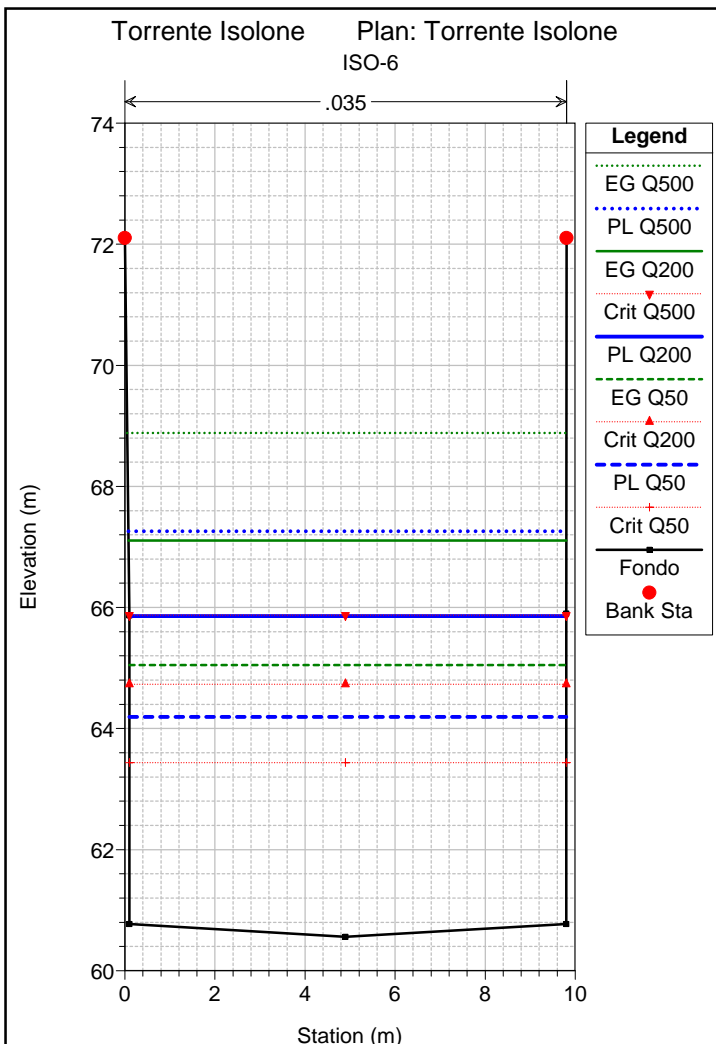
Torrente Isolone Plan: Torrente Isolone
ISO-8



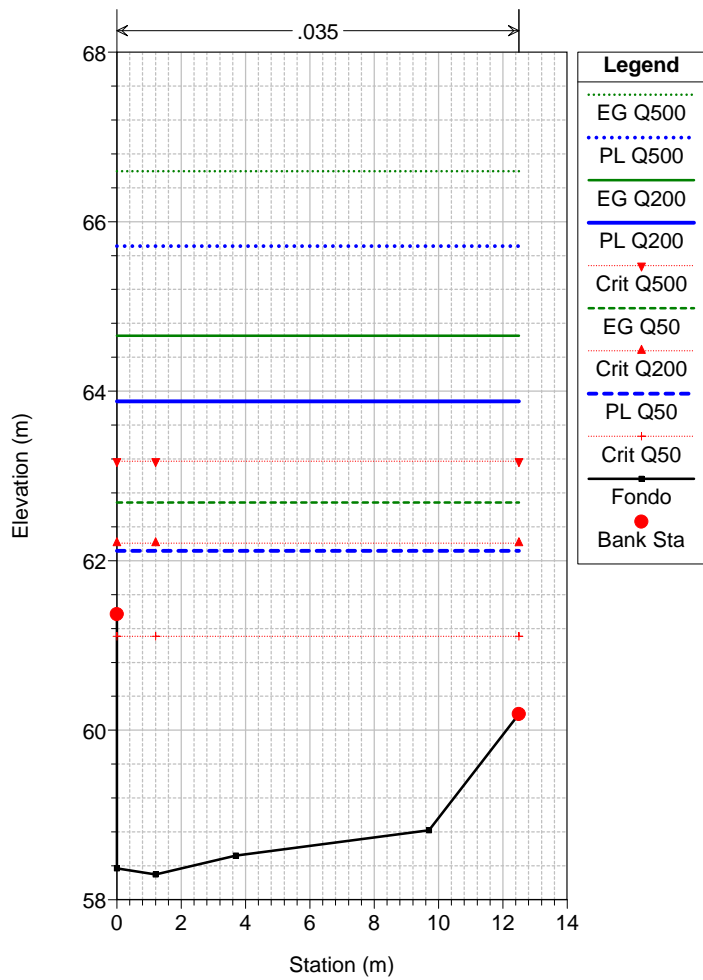
Torrente Isolone Plan: Torrente Isolone
ISO-7



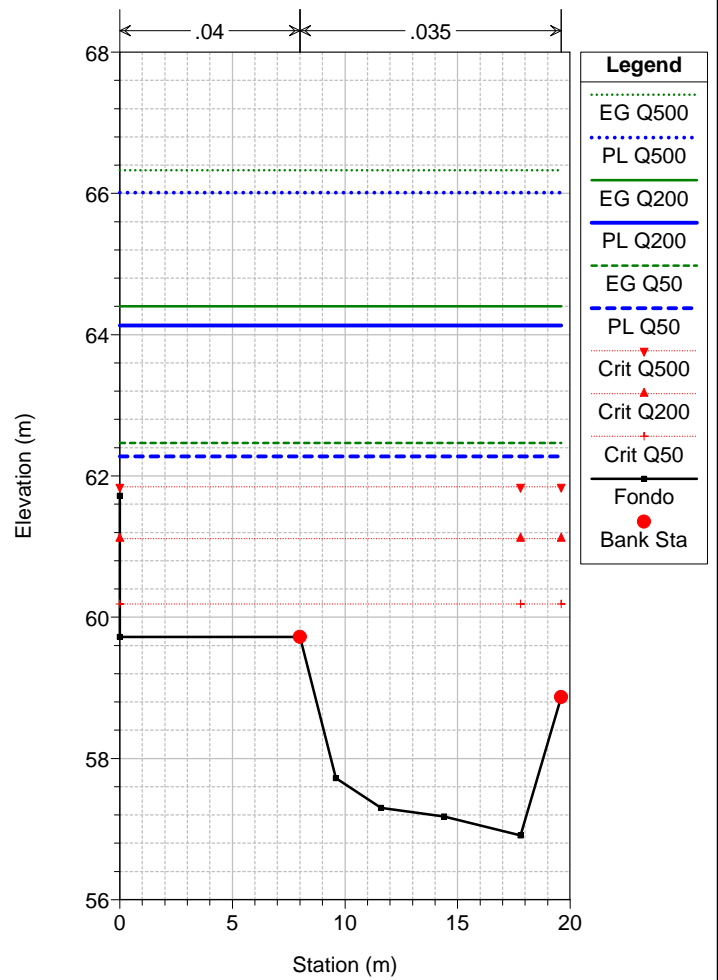




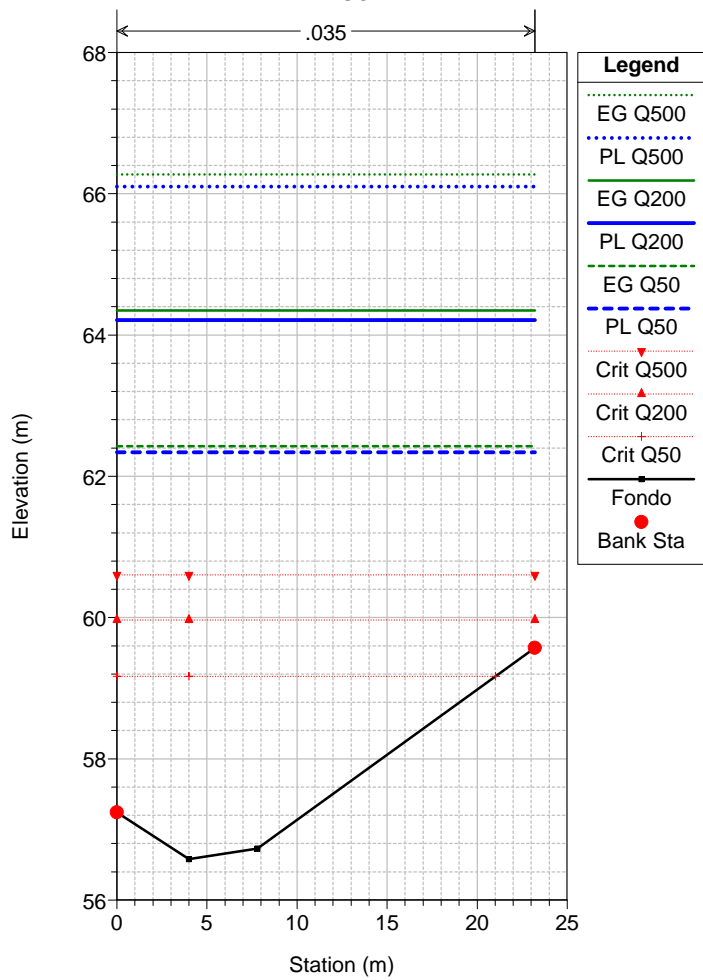
Torrente Isolone Plan: Torrente Isolone ISO-3



Torrente Isolone Plan: Torrente Isolone ISO-2



Torrente Isolone Plan: Torrente Isolone ISO-1



Reach	River Sta		Profile	Q Total	Min Ch El	W.S. Elev	LOB Elev	L. Freeboard	ROB Elev	R. Freeboard	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
				(m3/s)	(m)	(m)	(m)	(m)	(m)	(m)	(m)	(m)	(m/m)	(m/s)	(m2)	(m)	
T. Isolone	29		Q50	140.00	190.49	194.97	195.40	0.43	195.10	0.13	195.71	197.75	0.035009	7.39	18.94	6.59	1.39
T. Isolone	29		Q200	249.00	190.49	196.50	195.40	-1.10	195.10	-1.40	197.34	200.15	0.035004	8.46	29.43	6.87	1.30
T. Isolone	29		Q500	361.00	190.49	197.98	195.40	-2.58	195.10	-2.88	198.77	202.22	0.035001	9.13	39.55	6.87	1.21
T. Isolone	28.2	ISO-34	Q50	140.00	187.00	194.06	192.20	-1.86	191.90	-2.16	192.45	194.87	0.007225	4.00	35.01	6.87	0.57
T. Isolone	28.2	ISO-34	Q200	249.00	187.00	196.55	192.20	-4.35	191.90	-4.65	194.08	197.72	0.008594	4.77	52.17	6.87	0.55
T. Isolone	28.2	ISO-34	Q500	361.00	187.00	198.70	192.20	-6.50	191.90	-6.80	195.52	200.18	0.010034	5.39	66.92	6.87	0.55
T. Isolone	28.1	ISO-34	Q50	140.00	187.00	194.05	192.20	-1.85	191.90	-2.15	192.45	194.87	0.007265	4.01	34.93	6.87	0.57
T. Isolone	28.1	ISO-34	Q200	249.00	187.00	196.54	192.20	-4.34	191.90	-4.64	194.08	197.71	0.008632	4.78	52.07	6.87	0.55
T. Isolone	28.1	ISO-34	Q500	361.00	187.00	198.69	192.20	-6.49	191.90	-6.79	195.52	200.17	0.010073	5.40	66.81	6.87	0.55
T. Isolone	28			Bridge													
T. Isolone	27.9	ISO-34	Q50	140.00	187.00	192.99	192.20	-0.79	191.90	-1.09	192.45	194.29	0.013134	5.05	27.70	6.87	0.80
T. Isolone	27.9	ISO-34	Q200	249.00	187.00	194.82	192.20	-2.62	191.90	-2.92	194.08	196.77	0.016163	6.19	40.23	6.87	0.82
T. Isolone	27.9	ISO-34	Q500	361.00	187.00	196.43	192.20	-4.23	191.90	-4.53	195.52	198.95	0.018822	7.04	51.28	6.87	0.82
T. Isolone	27.8	ISO-34	Q50	140.00	187.00	192.45	192.20	-0.25	191.90	-0.55	192.45	194.19	0.019194	5.84	23.95	6.87	1.00
T. Isolone	27.8	ISO-34	Q200	249.00	187.00	194.08	192.20	-1.88	191.90	-2.18	194.08	196.63	0.022571	7.08	35.19	6.87	1.00
T. Isolone	27.8	ISO-34	Q500	361.00	187.00	195.52	192.20	-3.32	191.90	-3.62	195.52	198.79	0.025770	8.02	45.03	6.87	1.00
T. Isolone	27.1	ISO-33	Q50	140.00	184.10	185.73	189.80	4.07	187.50	1.77	187.04	190.50	0.087928	9.68	14.47	9.26	2.47
T. Isolone	27.1	ISO-33	Q200	249.00	184.10	186.53	189.80	3.27	187.50	0.97	188.34	193.05	0.081755	11.32	22.00	9.64	2.39
T. Isolone	27.1	ISO-33	Q500	361.00	184.10	187.24	189.80	2.56	187.50	0.26	189.47	195.15	0.078744	12.46	28.97	9.97	2.33
T. Isolone	27	ISO-32	Q50	140.00	181.10	182.41	189.80	7.39	187.50	5.09	184.08	190.14	0.181079	12.32	11.37	8.86	3.47
T. Isolone	27	ISO-32	Q200	249.00	181.10	183.17	189.80	6.63	187.50	4.33	185.43	192.70	0.141454	13.67	18.21	9.06	3.08
T. Isolone	27	ISO-32	Q500	361.00	181.10	183.88	189.80	5.92	187.50	3.62	186.62	194.80	0.124695	14.64	24.66	9.25	2.86
T. Isolone	26	ISO-31	Q50	140.00	173.19	175.26	176.98	1.72	179.17	3.91	176.26	178.77	0.070126	8.30	16.86	11.96	2.23
T. Isolone	26	ISO-31	Q200	249.00	173.19	175.86	176.98	1.12	179.17	3.31	177.38	181.27	0.074471	10.31	24.16	12.13	2.33
T. Isolone	26	ISO-31	Q500	361.00	173.19	176.39	176.98	0.59	179.17	2.78	178.35	183.47	0.077580	11.79	30.61	12.29	2.38
T. Isolone	25	ISO-30	Q50	140.00	169.90	172.51	173.78	1.27	174.90	2.39	173.39	175.41	0.037685	7.54	18.56	8.12	1.59
T. Isolone	25	ISO-30	Q200	249.00	169.90	173.70	173.78	0.08	174.90	1.20	174.82	177.52	0.035995	8.66	28.77	9.04	1.55
T. Isolone	25	ISO-30	Q500	361.00	169.90	174.68	173.78	-0.90	174.90	0.22	175.98	179.30	0.036084	9.52	37.92	9.51	1.52
T. Isolone	24	ISO-29	Q50	140.00	166.50	172.02	170.00	-2.02	170.26	-1.76	169.88	172.33	0.001821	2.47	56.74	12.90	0.38
T. Isolone	24	ISO-29	Q200	249.00	166.50	174.20	170.00	-4.20	170.26	-3.94	170.98	174.64	0.001962	2.93	84.92	12.90	0.36
T. Isolone	24	ISO-29	Q500	361.00	166.50	176.05	170.00	-6.05	170.26	-5.79	171.93	176.61	0.002189	3.32	108.72	12.90	0.37
T. Isolone	23.1	ISO-29	Q50	140.00	166.83	171.88	170.11	-1.77	170.14	-1.74	169.79	172.31	0.003043	2.90	48.26	10.10	0.42
T. Isolone	23.1	ISO-29	Q200	249.00	166.83	173.95	170.11	-3.84	170.14	-3.81	171.07	174.62	0.003757	3.60	69.16	10.10	0.44
T. Isolone	23.1	ISO-29	Q500	361.00	166.83	175.69	170.11	-5.58	170.14	-5.55	172.18	176.57	0.004471	4.16	86.69	10.10	0.45
T. Isolone	23			Bridge													
T. Isolone	22.9	ISO-29	Q50	140.00	166.83	169.79	170.11	0.32	170.14	0.35	169.79	171.15	0.014969	5.16	27.13	10.02	1.00
T. Isolone	22.9	ISO-29	Q200	249.00	166.83	171.07	170.11	-0.96	170.14	-0.93	171.07	173.04	0.015974	6.22	40.02	10.10	1.00
T. Isolone	22.9	ISO-29	Q500	361.00	166.83	172.18	170.11	-2.07	170.14	-2.04	172.18	174.71	0.017237	7.04	51.25	10.10	1.00

HEC-RAS Plan: T. Isolone River: T. Isolone Reach: T. Isolone (Continued)

Reach	River Sta		Profile	Q Total	Min Ch El	W.S. Elev	LOB Elev	L. Freeboard	ROB Elev	R. Freeboard	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
				(m3/s)	(m)	(m)	(m)	(m)	(m)	(m)	(m)	(m)	(m/m)	(m/s)	(m2)	(m)	
T. Isolone	22.1	ISO-29	Q50	140.00	166.90	168.08	169.34	1.26	169.60	1.52	168.88	170.90	0.071324	7.44	18.80	17.91	2.32
T. Isolone	22.1	ISO-29	Q200	249.00	166.90	168.56	169.34	0.78	169.60	1.04	169.72	172.72	0.067598	9.03	27.56	18.17	2.34
T. Isolone	22.1	ISO-29	Q500	361.00	166.90	168.98	169.34	0.36	169.60	0.62	170.47	174.32	0.066140	10.24	35.27	18.40	2.36
T. Isolone	21.9	ISO-28	Q50	140.00	166.30	167.83	169.60	1.77	169.34	1.51	168.67	170.84	0.075884	7.70	18.19	17.20	2.39
T. Isolone	21.9	ISO-28	Q200	249.00	166.30	168.33	169.60	1.27	169.34	1.01	169.54	172.67	0.069948	9.23	26.98	17.67	2.38
T. Isolone	21.9	ISO-28	Q500	361.00	166.30	168.76	169.60	0.84	169.34	0.58	170.28	174.27	0.067809	10.40	34.72	18.07	2.39
T. Isolone	21	ISO-27	Q50	140.00	163.40	165.16	167.98	2.82	166.78	1.62	166.14	168.47	0.066286	8.05	17.39	13.33	2.25
T. Isolone	21	ISO-27	Q200	249.00	163.40	165.79	167.98	2.19	166.78	0.99	167.28	170.42	0.062648	9.53	26.13	14.30	2.25
T. Isolone	21	ISO-27	Q500	361.00	163.40	166.33	167.98	1.65	166.78	0.45	167.95	171.99	0.068420	10.53	34.27	17.14	2.38
T. Isolone	19	ISO-26	Q50	140.00	158.60	160.41	163.46	3.05	164.12	3.71	161.40	163.72	0.057644	8.07	17.36	12.38	2.17
T. Isolone	19	ISO-26	Q200	249.00	158.60	161.07	163.46	2.39	164.12	3.05	162.47	165.75	0.056470	9.59	25.98	13.68	2.22
T. Isolone	19	ISO-26	Q500	361.00	158.60	161.64	163.46	1.82	164.12	2.48	163.35	167.34	0.054568	10.58	34.13	14.81	2.22
T. Isolone	18.1	ISO-25	Q50	140.00	156.08	157.60	160.62	3.02	160.62	3.02	158.70	161.56	0.078364	8.82	15.88	11.77	2.42
T. Isolone	18.1	ISO-25	Q200	249.00	156.08	158.30	160.62	2.32	160.62	2.32	159.83	163.71	0.069834	10.31	24.16	12.13	2.33
T. Isolone	18.1	ISO-25	Q500	361.00	156.08	158.93	160.62	1.69	160.62	1.69	160.62	165.41	0.064209	11.28	32.02	12.47	2.25
T. Isolone	18	ISO-24	Q50	140.00	156.00	157.55	160.62	3.07	160.62	3.07	158.63	161.37	0.073929	8.65	16.18	11.77	2.36
T. Isolone	18	ISO-24	Q200	249.00	156.00	158.24	160.62	2.38	160.62	2.38	159.76	163.54	0.067766	10.20	24.40	12.13	2.30
T. Isolone	18	ISO-24	Q500	361.00	156.00	158.88	160.62	1.74	160.62	1.74	160.62	165.26	0.062788	11.19	32.26	12.46	2.22
T. Isolone	17.2	ISO-23	Q50	140.00	156.00	157.64	160.92	3.28	160.92	3.28	158.62	160.99	0.060950	8.12	17.25	11.93	2.15
T. Isolone	17.2	ISO-23	Q200	249.00	156.00	158.31	160.92	2.61	160.92	2.61	159.74	163.19	0.060079	9.79	25.43	12.33	2.18
T. Isolone	17.2	ISO-23	Q500	361.00	156.00	158.94	160.92	1.98	160.92	1.98	160.72	164.93	0.057485	10.85	33.28	12.71	2.14
T. Isolone	17.1	ISO-23	Q50	140.00	156.00	157.66	160.92	3.26	160.92	3.26	158.62	160.90	0.057577	7.97	17.57	11.94	2.10
T. Isolone	17.1	ISO-23	Q200	249.00	156.00	158.34	160.92	2.58	160.92	2.58	159.74	163.10	0.057885	9.67	25.75	12.35	2.14
T. Isolone	17.1	ISO-23	Q500	361.00	156.00	158.96	160.92	1.96	160.92	1.96	160.72	164.84	0.055851	10.74	33.61	12.72	2.11
T. Isolone	17		Bridge														
T. Isolone	16.9	ISO-23	Q50	140.00	156.00	157.87	160.92	3.05	160.92	3.05	158.62	160.35	0.038316	6.96	20.11	12.07	1.72
T. Isolone	16.9	ISO-23	Q200	249.00	156.00	158.53	160.92	2.39	160.92	2.39	159.74	162.51	0.044485	8.84	28.16	12.46	1.88
T. Isolone	16.9	ISO-23	Q500	361.00	156.00	159.16	160.92	1.76	160.92	1.76	160.72	164.26	0.045544	10.01	36.07	12.84	1.91
T. Isolone	16.8	ISO-23	Q50	140.00	156.00	158.04	160.92	2.88	160.92	2.88	158.62	160.09	0.028982	6.34	22.07	12.17	1.50
T. Isolone	16.8	ISO-23	Q200	249.00	156.00	158.66	160.92	2.26	160.92	2.26	159.74	162.23	0.037838	8.37	29.76	12.54	1.73
T. Isolone	16.8	ISO-23	Q500	361.00	156.00	159.28	160.92	1.64	160.92	1.64	160.72	163.97	0.040336	9.59	37.63	12.91	1.79
T. Isolone	16	ISO-22	Q50	140.00	155.22	157.60	157.58	-0.02	160.00	2.40	158.35	159.92	0.035723	6.75	20.96	24.41	1.69
T. Isolone	16	ISO-22	Q200	249.00	155.22	157.99	157.58	-0.41	160.00	2.01	159.09	161.99	0.050420	9.10	30.60	24.52	2.04
T. Isolone	16	ISO-22	Q500	361.00	155.22	158.31	157.58	-0.73	160.00	1.69	159.70	163.68	0.059984	10.77	38.29	24.62	2.25
T. Isolone	14	ISO-21	Q50	140.00	138.40	139.90	140.00	0.10	140.00	0.10	140.53	142.05	0.062502	6.49	21.57	24.68	2.22
T. Isolone	14	ISO-21	Q200	249.00	138.40	140.26	140.00	-0.26	140.00	-0.26	141.21	143.57	0.064199	8.06	31.07	27.79	2.36
T. Isolone	14	ISO-21	Q500	361.00	138.40	140.54	140.00	-0.54	140.00	-0.54	141.78	145.01	0.065830	9.40	39.09	29.68	2.48
T. Isolone	13	ISO-20	Q50	140.00	125.00	126.86	127.00	0.14	133.20	6.34	127.52	128.96	0.045111	6.42	21.81	19.50	1.94
T. Isolone	13	ISO-20	Q200	249.00	125.00	127.35	127.00	-0.35	133.20	5.85	128.31	130.40	0.044947	7.75	32.40	23.52	2.03

HEC-RAS Plan: T. Isolone River: T. Isolone Reach: T. Isolone (Continued)

Reach	River Sta		Profile	Q Total	Min Ch El	W.S. Elev	LOB Elev	L. Freeboard	ROB Elev	R. Freeboard	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
				(m3/s)	(m)	(m)	(m)	(m)	(m)	(m)	(m)	(m)	(m/m)	(m/s)	(m2)	(m)	
T. Isolone	13	ISO-20	Q500	361.00	125.00	127.74	127.00	-0.74	133.20	5.46	128.94	131.60	0.044254	8.76	42.25	26.70	2.07
T. Isolone	12	ISO-19	Q50	140.00	105.00	107.11	110.00	2.89	110.00	2.89	108.21	110.81	0.063158	8.53	16.42	11.58	2.29
T. Isolone	12	ISO-19	Q200	249.00	105.00	107.80	110.00	2.20	110.00	2.20	109.25	112.71	0.061567	9.82	25.36	14.09	2.34
T. Isolone	12	ISO-19	Q500	361.00	105.00	108.35	110.00	1.65	110.00	1.65	110.06	114.22	0.060420	10.73	33.65	16.07	2.37
T. Isolone	11	ISO-18	Q50	140.00	92.04	94.04	95.00	0.96	95.00	0.96	94.83	96.48	0.045919	6.92	20.23	16.19	1.98
T. Isolone	11	ISO-18	Q200	249.00	92.04	94.63	95.00	0.37	95.00	0.37	95.64	97.97	0.047009	8.10	30.76	19.75	2.07
T. Isolone	11	ISO-18	Q500	361.00	92.04	95.08	95.00	-0.08	95.00	-0.08	96.32	99.18	0.046677	8.97	40.25	22.40	2.12
T. Isolone	10.6	ISO-17	Q50	140.00	85.52	88.38	94.98	6.60	88.91	0.53	89.35	91.49	0.041262	7.82	17.89	8.69	1.74
T. Isolone	10.6	ISO-17	Q200	249.00	85.52	89.50	94.98	5.47	88.91	-0.60	90.71	93.37	0.036694	8.71	28.59	10.11	1.65
T. Isolone	10.6	ISO-17	Q500	361.00	85.52	90.53	94.98	4.45	88.91	-1.62	91.84	94.79	0.032606	9.14	39.48	11.16	1.55
T. Isolone	10.5	ISO-16	Q50	140.00	84.92	89.37	91.56	2.20	91.00	1.63	88.43	90.05	0.006497	3.67	38.16	12.13	0.66
T. Isolone	10.5	ISO-16	Q200	249.00	84.92	90.78	91.56	0.78	91.00	0.22	89.75	91.76	0.007107	4.39	56.77	14.41	0.71
T. Isolone	10.5	ISO-16	Q500	361.00	84.92	89.74	91.56	1.82	91.00	1.26	90.85	93.37	0.031547	8.45	42.72	12.53	1.46
T. Isolone	10.49	ISO-15	Q50	140.00	83.17	89.67	90.06	0.39	89.50	-0.17	86.70	89.92	0.001615	2.18	64.15	14.91	0.34
T. Isolone	10.49	ISO-15	Q200	249.00	83.17	91.17	90.06	-1.11	89.50	-1.67	88.12	91.59	0.002174	2.86	87.11	15.40	0.38
T. Isolone	10.49	ISO-15	Q500	361.00	83.17	92.26	90.06	-2.20	89.50	-2.76	89.22	92.87	0.002812	3.48	103.87	15.40	0.43
T. Isolone	10.42	ISO-14	Q50	140.00	81.70	89.43	88.70	-0.73	88.71	-0.72	87.13	89.83	0.002703	2.81	51.51	15.70	0.42
T. Isolone	10.42	ISO-14	Q200	249.00	81.70	90.91	88.70	-2.21	88.71	-2.20	88.71	91.49	0.002856	3.49	79.07	21.60	0.46
T. Isolone	10.42	ISO-14	Q500	361.00	81.70	92.09	88.70	-3.39	88.71	-3.38	90.05	92.78	0.002796	3.90	107.39	26.23	0.47
T. Isolone	10.41	ISO-14	Q50	140.00	81.70	89.43	88.70	-0.73	88.71	-0.72	87.13	89.83	0.002713	2.81	51.44	15.68	0.43
T. Isolone	10.41	ISO-14	Q200	249.00	81.70	90.91	88.70	-2.21	88.71	-2.20	88.71	91.49	0.002864	3.50	78.98	21.58	0.46
T. Isolone	10.41	ISO-14	Q500	361.00	81.70	92.09	88.70	-3.39	88.71	-3.38	90.05	92.78	0.002803	3.91	107.28	26.21	0.47
T. Isolone	10.4		Bridge														
T. Isolone	10.39	ISO-14	Q50	140.00	81.70	87.66	88.70	1.04	88.71	1.05	87.13	88.73	0.011168	4.60	30.46	9.34	0.81
T. Isolone	10.39	ISO-14	Q200	249.00	81.70	89.38	88.70	-0.68	88.71	-0.67	88.71	90.67	0.008932	5.07	50.67	15.49	0.77
T. Isolone	10.39	ISO-14	Q500	361.00	81.70	90.63	88.70	-1.93	88.71	-1.92	90.05	92.04	0.007324	5.41	73.04	20.45	0.73
T. Isolone	10.38	ISO-14	Q50	140.00	81.70	87.13	88.70	1.57	88.71	1.58	87.13	88.63	0.017455	5.44	25.73	8.51	1.00
T. Isolone	10.38	ISO-14	Q200	249.00	81.70	88.71	88.70	-0.01	88.71	0.00	88.71	90.57	0.015887	6.05	41.15	11.00	1.00
T. Isolone	10.38	ISO-14	Q500	361.00	81.70	90.05	88.70	-1.35	88.71	-1.34	90.05	91.95	0.011112	6.21	61.97	18.17	0.88
T. Isolone	10.3	ISO-13	Q50	140.00	81.78	83.64	88.57	4.93	90.85	7.21	84.64	87.13	0.064715	8.28	16.91	12.22	2.25
T. Isolone	10.3	ISO-13	Q200	249.00	81.78	84.31	88.57	4.26	90.85	6.54	85.80	89.27	0.061330	9.87	25.22	12.61	2.23
T. Isolone	10.3	ISO-13	Q500	361.00	81.78	85.00	88.57	3.57	90.85	5.85	86.86	90.72	0.053368	10.60	34.07	13.00	2.09
T. Isolone	10.2	ISO-12	Q50	140.00	80.70	83.05	87.07	4.02	89.19	6.14	83.86	85.65	0.035247	7.15	19.59	10.66	1.68
T. Isolone	10.2	ISO-12	Q200	249.00	80.70	83.86	87.07	3.21	89.19	5.33	85.07	87.66	0.038085	8.64	28.83	11.97	1.78
T. Isolone	10.2	ISO-12	Q500	361.00	80.70	84.59	87.07	2.48	89.19	4.60	86.07	89.20	0.037749	9.51	37.95	13.14	1.79
T. Isolone	10.1	ISO-11	Q50	140.00	77.39	80.37	82.62	2.25	87.75	7.38	81.56	84.08	0.050768	8.54	16.40	7.96	1.90
T. Isolone	10.1	ISO-11	Q200	249.00	77.39	81.45	82.62	1.17	87.75	6.30	83.01	86.15	0.047563	9.61	25.90	9.71	1.88
T. Isolone	10.1	ISO-11	Q500	361.00	77.39	82.31	82.62	0.31	87.75	5.44	84.34	87.75	0.045166	10.33	34.96	11.12	1.86

HEC-RAS Plan: T. Isolone River: T. Isolone Reach: T. Isolone (Continued)

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	LOB Elev	L. Freeboard	ROB Elev	R. Freeboard	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl	
			(m3/s)	(m)	(m)	(m)	(m)	(m)	(m)	(m)	(m)	(m/m)	(m/s)	(m2)	(m)		
T. Isolone	9	ISO-10	Q50	140.00	76.00	77.62	85.00	7.38	87.00	9.38	78.82	82.00	0.083999	9.27	15.10	11.67	2.60
T. Isolone	9	ISO-10	Q200	249.00	76.00	78.25	85.00	6.75	87.00	8.75	79.86	84.17	0.079984	10.78	23.11	13.51	2.63
T. Isolone	9	ISO-10	Q500	361.00	76.00	78.79	85.00	6.21	87.00	8.21	80.70	85.82	0.076278	11.75	30.71	15.05	2.63
T. Isolone	8	ISO-9	Q50	140.00	73.00	74.84	75.00	0.16	80.00	5.16	75.21	76.12	0.026439	5.01	27.94	24.39	1.49
T. Isolone	8	ISO-9	Q200	249.00	73.00	75.33	75.00	-0.33	80.00	4.67	75.90	77.24	0.026692	6.13	40.71	26.92	1.57
T. Isolone	8	ISO-9	Q500	361.00	73.00	75.74	75.00	-0.74	80.00	4.26	76.49	78.24	0.026184	7.02	51.88	28.06	1.61
T. Isolone	7.5	ISO-8	Q50	140.00	68.57	71.12	79.50	8.38	75.48	4.36	71.87	73.51	0.032903	6.86	20.42	11.76	1.66
T. Isolone	7.5	ISO-8	Q200	249.00	68.57	72.10	79.50	7.40	75.48	3.38	73.00	75.00	0.027318	7.54	33.02	13.92	1.56
T. Isolone	7.5	ISO-8	Q500	361.00	68.57	72.95	79.50	6.55	75.48	2.53	73.91	76.13	0.023660	7.91	45.65	15.80	1.48
T. Isolone	7	ISO-7	Q50	140.00	61.07	63.41	72.00	8.59	67.98	4.57	64.37	66.47	0.046533	7.75	18.06	11.31	1.96
T. Isolone	7	ISO-7	Q200	249.00	61.07	64.18	72.00	7.82	67.98	3.80	65.50	68.39	0.045756	9.09	27.40	13.00	2.00
T. Isolone	7	ISO-7	Q500	361.00	61.07	68.59	72.00	3.41	67.98	-0.61	66.41	69.18	0.002431	3.41	105.91	22.21	0.50
T. Isolone	6.2	ISO-6	Q50	140.00	60.56	62.49	65.87	3.38	65.90	3.41	63.43	65.69	0.051872	7.93	17.66	9.70	1.87
T. Isolone	6.2	ISO-6	Q200	249.00	60.56	66.05	65.87	-0.18	65.90	-0.15	64.73	67.21	0.007696	4.76	52.26	9.70	0.66
T. Isolone	6.2	ISO-6	Q500	361.00	60.56	67.55	65.87	-1.68	65.90	-1.65	65.87	69.04	0.007136	5.40	66.82	9.73	0.66
T. Isolone	6.1	ISO-6	Q50	140.00	60.56	62.52	72.10	9.58	72.10	9.58	63.44	65.60	0.048946	7.77	18.01	9.70	1.82
T. Isolone	6.1	ISO-6	Q200	249.00	60.56	66.04	72.10	6.06	72.10	6.06	64.73	67.20	0.007918	4.78	52.14	9.70	0.66
T. Isolone	6.1	ISO-6	Q500	361.00	60.56	67.54	72.10	4.56	72.10	4.56	65.87	69.03	0.008796	5.41	66.72	9.73	0.66
T. Isolone	6		Bridge														
T. Isolone	5.9	ISO-6	Q50	140.00	60.56	64.20	72.10	7.91	72.10	7.91	63.44	65.05	0.007774	4.09	34.24	9.70	0.69
T. Isolone	5.9	ISO-6	Q200	249.00	60.56	65.86	72.10	6.24	72.10	6.24	64.73	67.10	0.008662	4.94	50.39	9.70	0.69
T. Isolone	5.9	ISO-6	Q500	361.00	60.56	67.26	72.10	4.84	72.10	4.84	65.87	68.88	0.009786	5.64	63.99	9.72	0.70
T. Isolone	5.8	ISO-6	Q50	140.00	60.56	64.12	65.87	1.75	65.90	1.78	63.43	65.01	0.008223	4.17	33.55	9.70	0.72
T. Isolone	5.8	ISO-6	Q200	249.00	60.56	65.78	65.87	0.09	65.90	0.12	64.73	67.06	0.009010	5.02	49.64	9.70	0.71
T. Isolone	5.8	ISO-6	Q500	361.00	60.56	67.18	65.87	-1.31	65.90	-1.28	65.87	68.84	0.008605	5.72	63.17	9.72	0.72
T. Isolone	5	ISO-5	Q50	140.00	60.14	63.37	66.50	3.13	64.45	1.08	63.37	64.83	0.015113	5.35	26.19	8.98	1.00
T. Isolone	5	ISO-5	Q200	249.00	60.14	64.75	66.50	1.75	64.45	-0.30	64.75	66.86	0.016489	6.42	38.76	9.21	1.00
T. Isolone	5	ISO-5	Q500	361.00	60.14	65.95	66.50	0.55	64.45	-1.50	65.95	68.62	0.017820	7.23	49.95	9.41	1.00
T. Isolone	4	ISO-4	Q50	140.00	59.19	61.53	60.80	-0.73	60.90	-0.63	62.29	64.03	0.039148	7.02	20.25	12.92	1.72
T. Isolone	4	ISO-4	Q200	249.00	59.19	62.24	60.80	-1.44	60.90	-1.34	63.34	65.96	0.039591	8.63	29.80	13.70	1.78
T. Isolone	4	ISO-4	Q500	361.00	59.19	62.86	60.80	-2.06	60.90	-1.96	64.27	67.65	0.040052	9.84	38.21	13.70	1.81
T. Isolone	3	ISO-3	Q50	140.00	58.30	62.12	61.37	-0.75	60.19	-1.93	61.11	62.69	0.004640	3.35	41.79	12.50	0.58
T. Isolone	3	ISO-3	Q200	249.00	58.30	63.88	61.37	-2.51	60.19	-3.69	62.21	64.65	0.004514	3.90	63.83	12.50	0.55
T. Isolone	3	ISO-3	Q500	361.00	58.30	65.71	61.37	-4.34	60.19	-5.52	63.17	66.59	0.004192	4.16	86.73	12.50	0.50
T. Isolone	2	ISO-2	Q50	140.00	56.91	62.27	59.72	-2.55	58.87	-3.40	60.19	62.47	0.001087	2.07	75.43	19.60	0.30
T. Isolone	2	ISO-2	Q200	249.00	56.91	64.13	59.72	-4.41	58.87	-5.26	61.11	64.40	0.001148	2.47	111.74	19.60	0.31
T. Isolone	2	ISO-2	Q500	361.00	56.91	66.01	59.72	-6.29	58.87	-7.14	61.84	66.33	0.001103	2.69	148.63	19.60	0.29
T. Isolone	1	ISO-1	Q50	140.00	56.58	62.34	57.24	-5.10	59.57	-2.77	59.17	62.43	0.000398	1.30	107.85	23.20	0.19
T. Isolone	1	ISO-1	Q200	249.00	56.58	64.21	57.24	-6.97	59.57	-4.64	59.96	64.35	0.000474	1.65	151.23	23.20	0.21

HEC-RAS Plan: T. Isolone River: T. Isolone Reach: T. Isolone (Continued)

Reach	River Sta		Profile	Q Total	Min Ch El	W.S. Elev	LOB Elev	L. Freeboard	ROB Elev	R. Freeboard	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
				(m3/s)	(m)	(m)	(m)	(m)	(m)	(m)	(m)	(m)	(m/m)	(m/s)	(m2)	(m)	
T. Isolone	1	ISO-1	Q500	361.00	56.58	66.10	57.24	-8.86	59.57	-6.53	60.61	66.27	0.000489	1.85	195.08	23.20	0.20

Piano di bacino torrente Lavagna

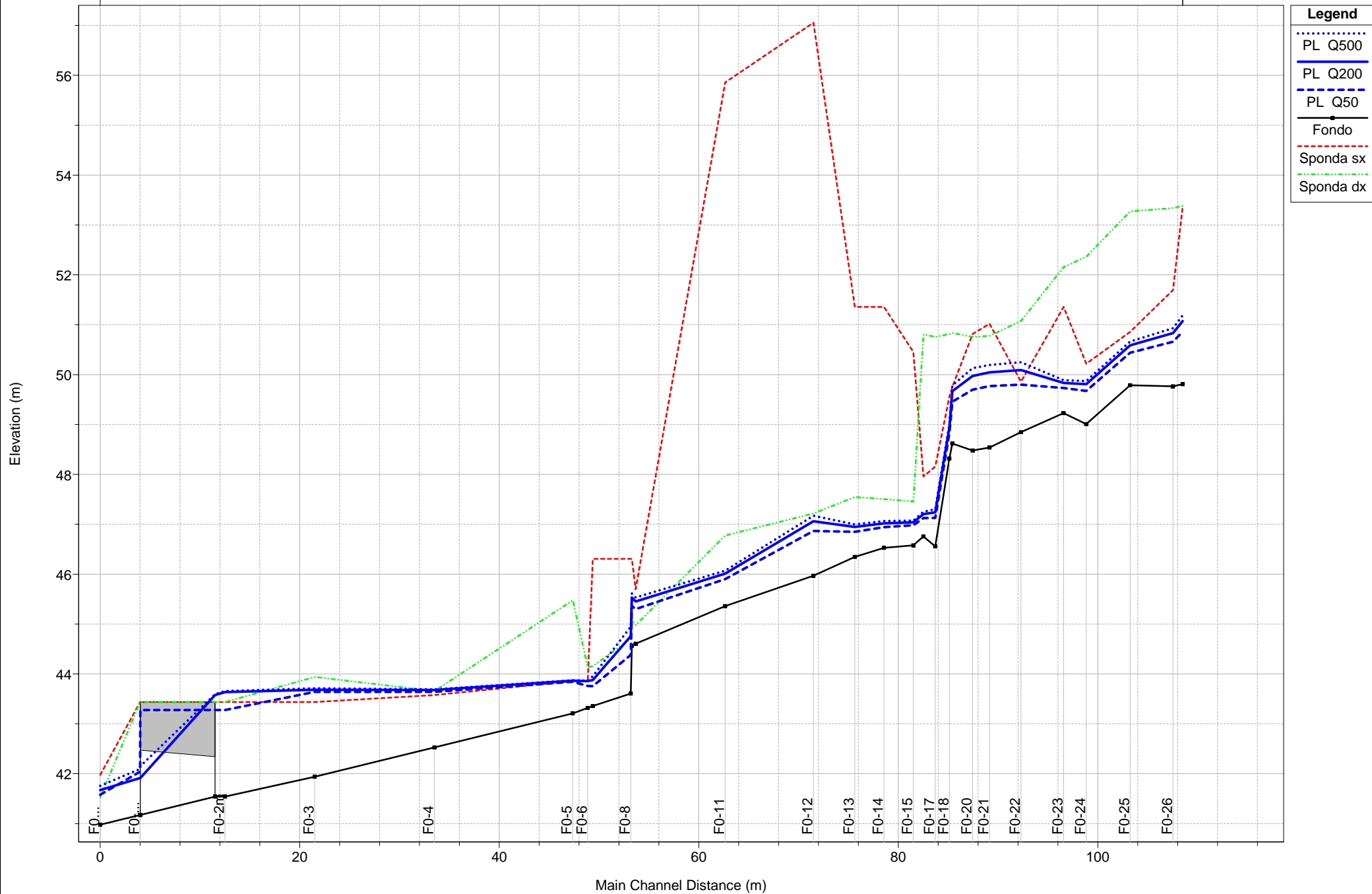
rio Fontana

tratto unico – dalla sez. FO27 alla FO1

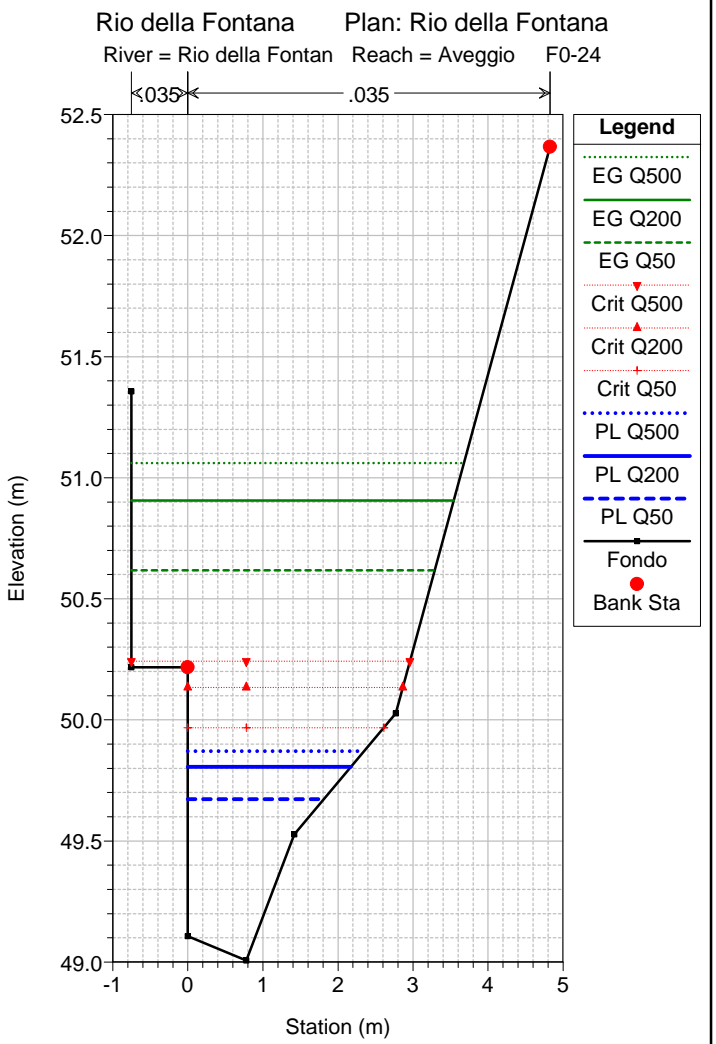
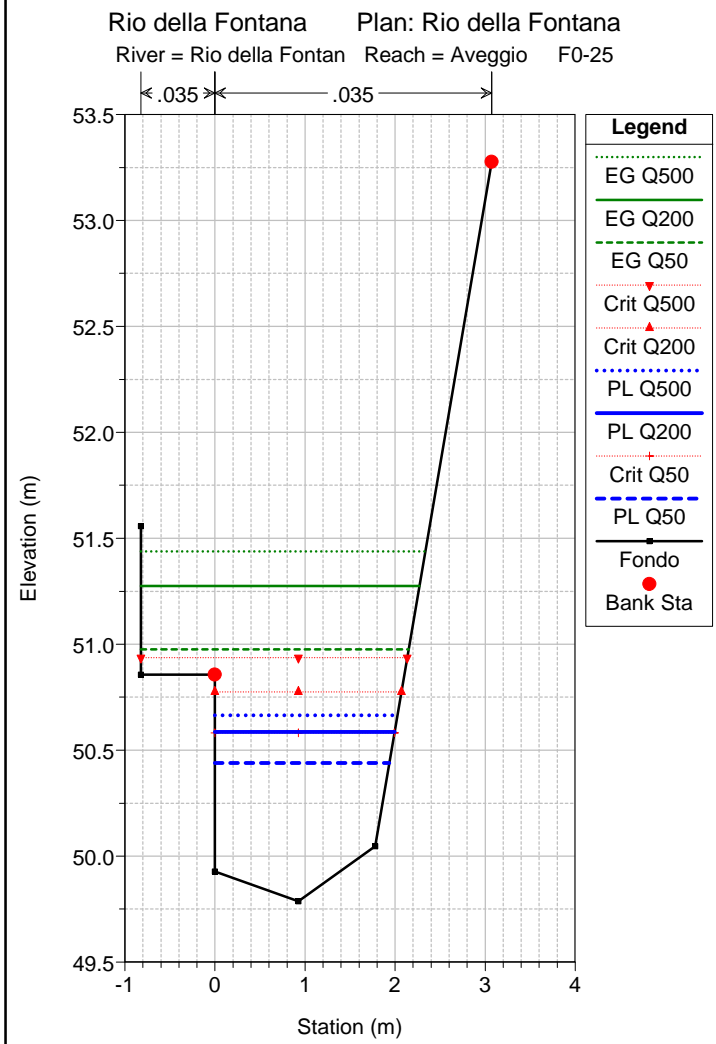
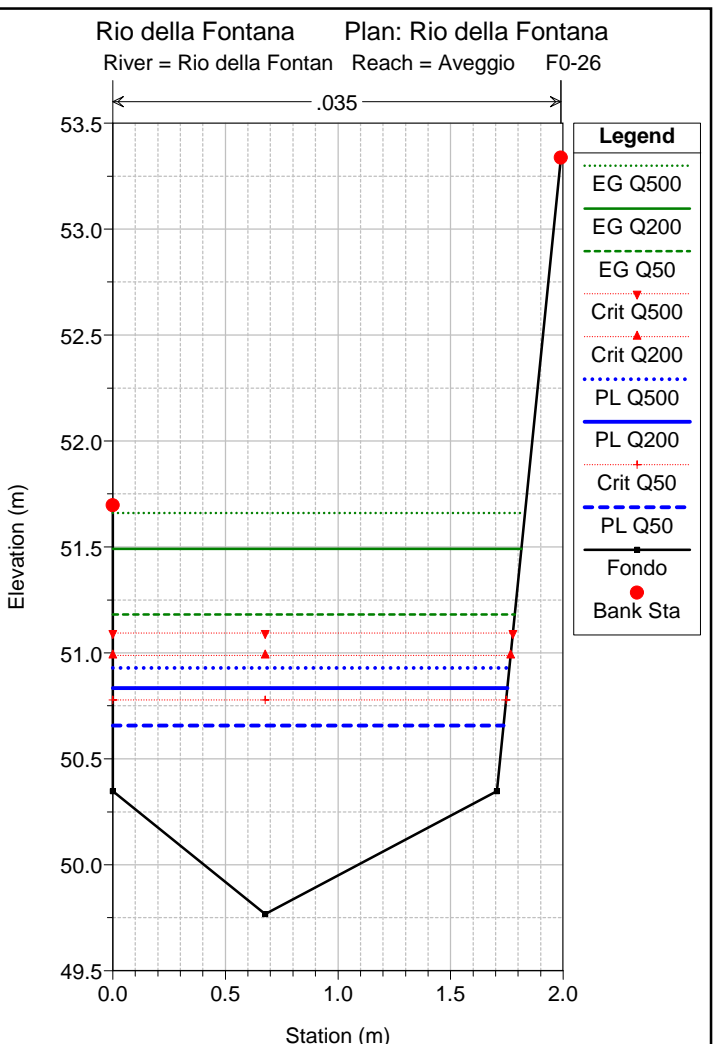
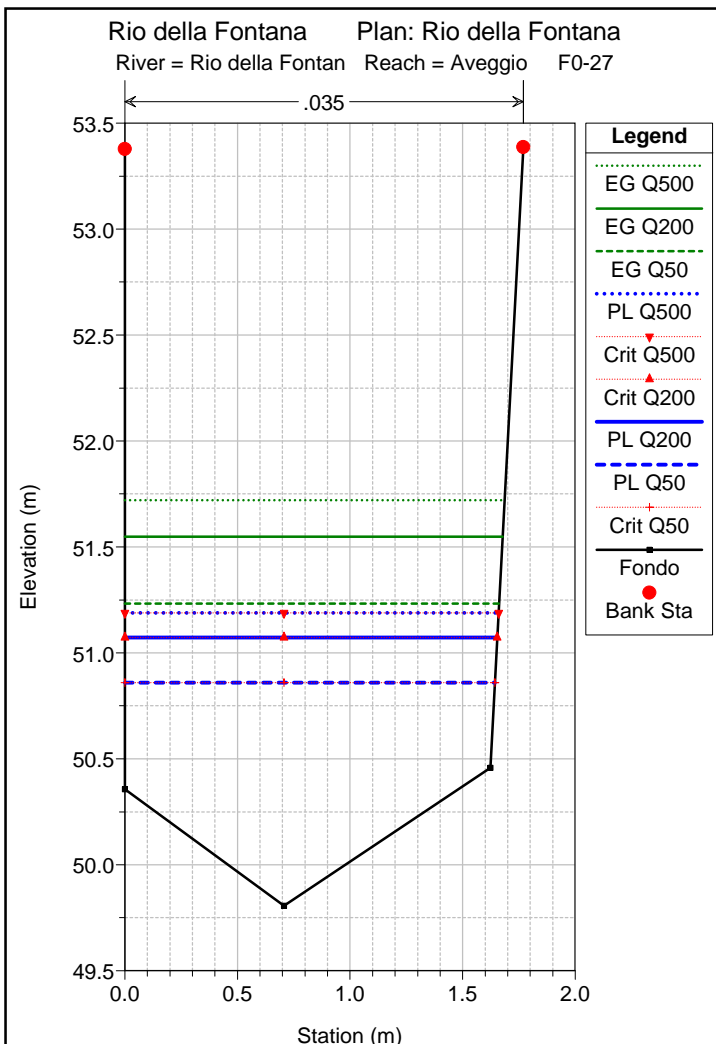
- **Profili idraulici**
- **Sezioni**
- **Tabelle dei risultati**

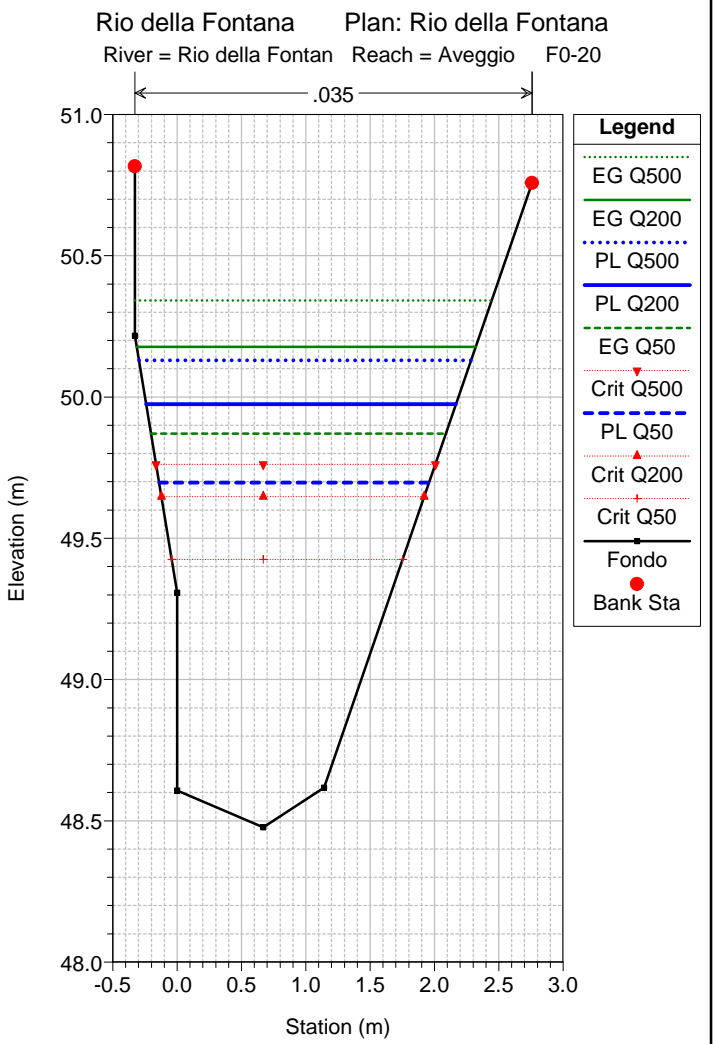
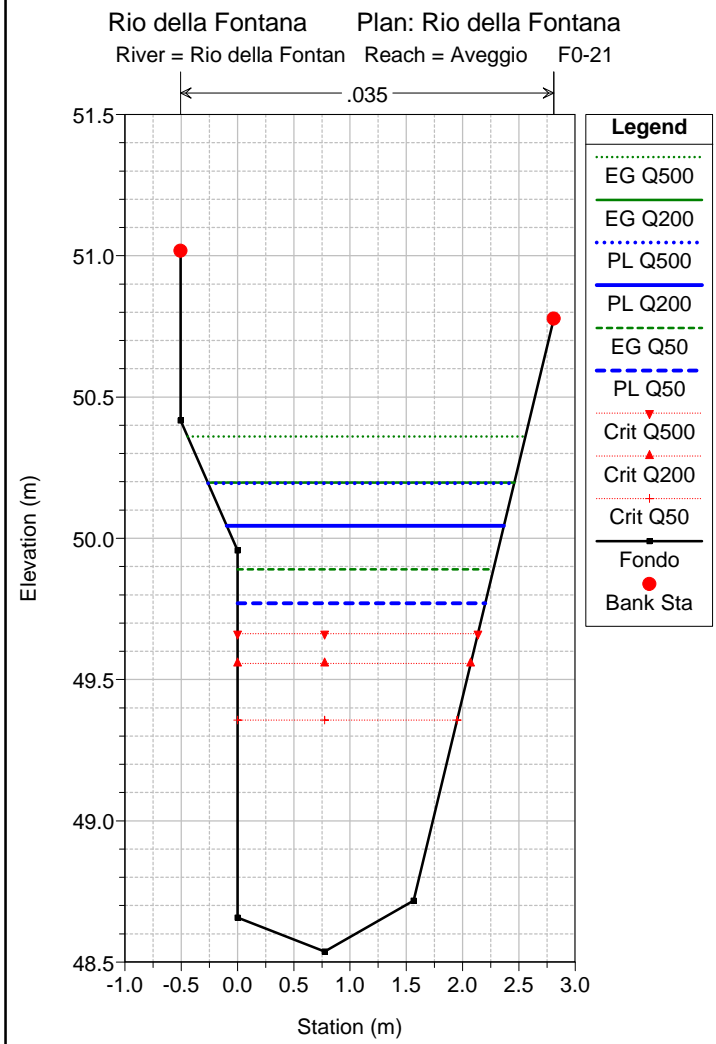
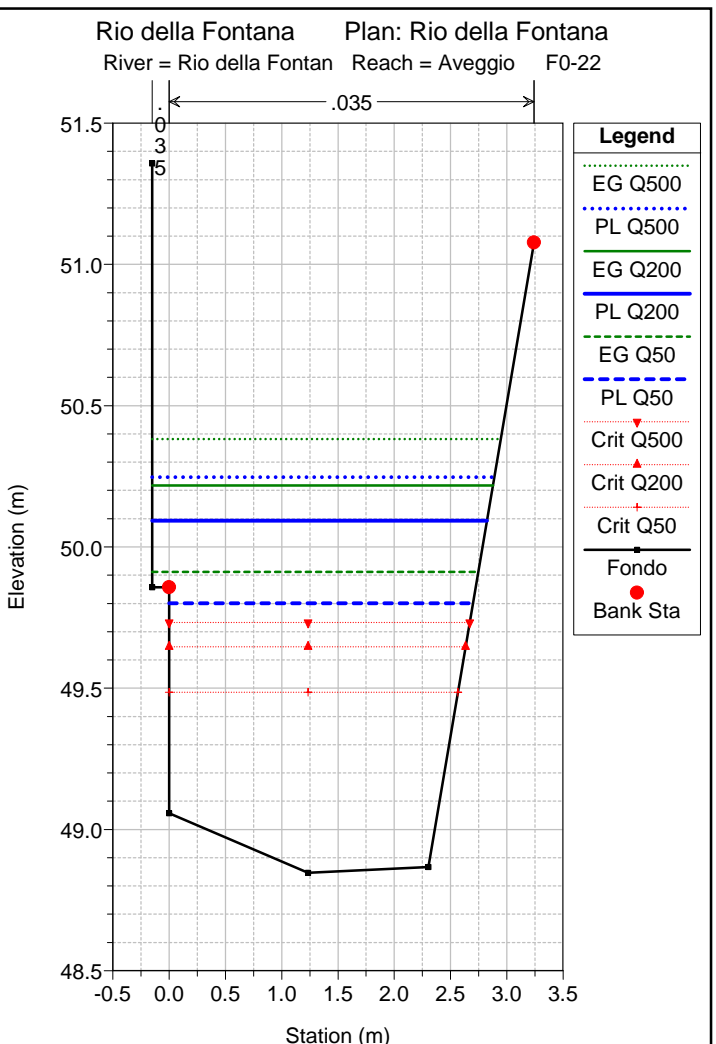
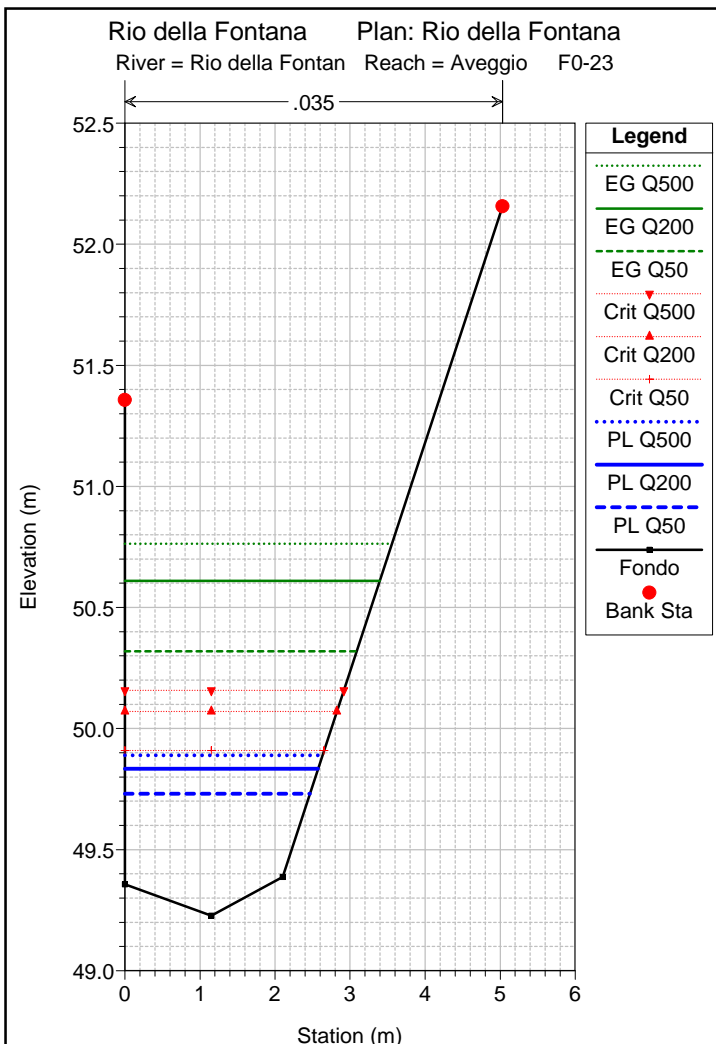
Rio della Fontana Plan: Rio della Fontana

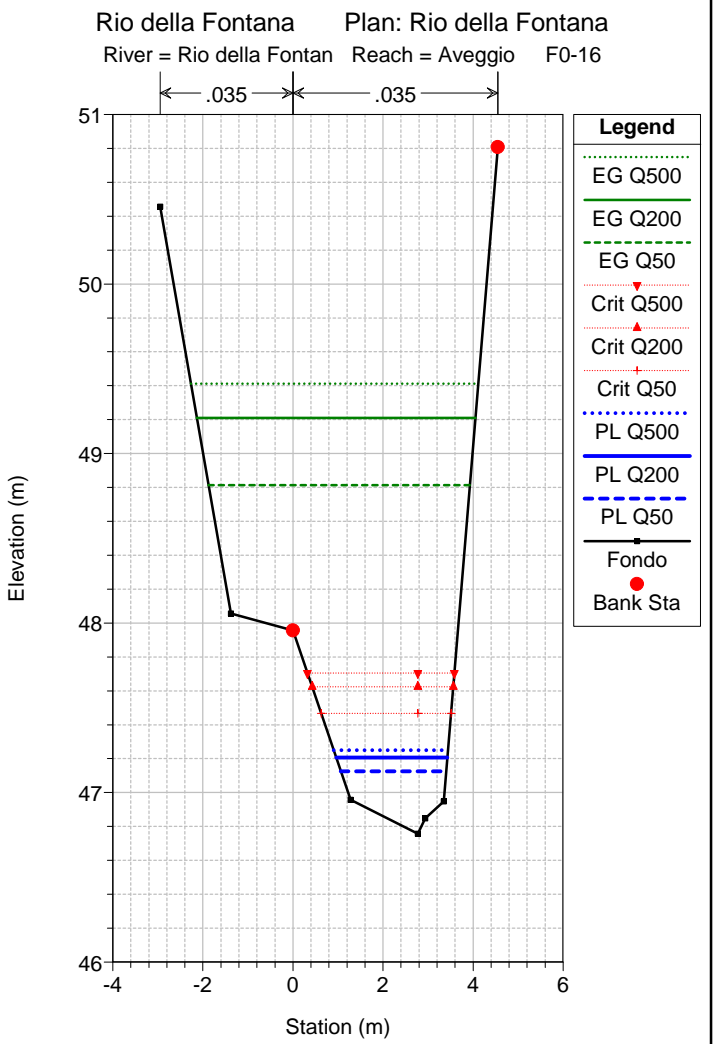
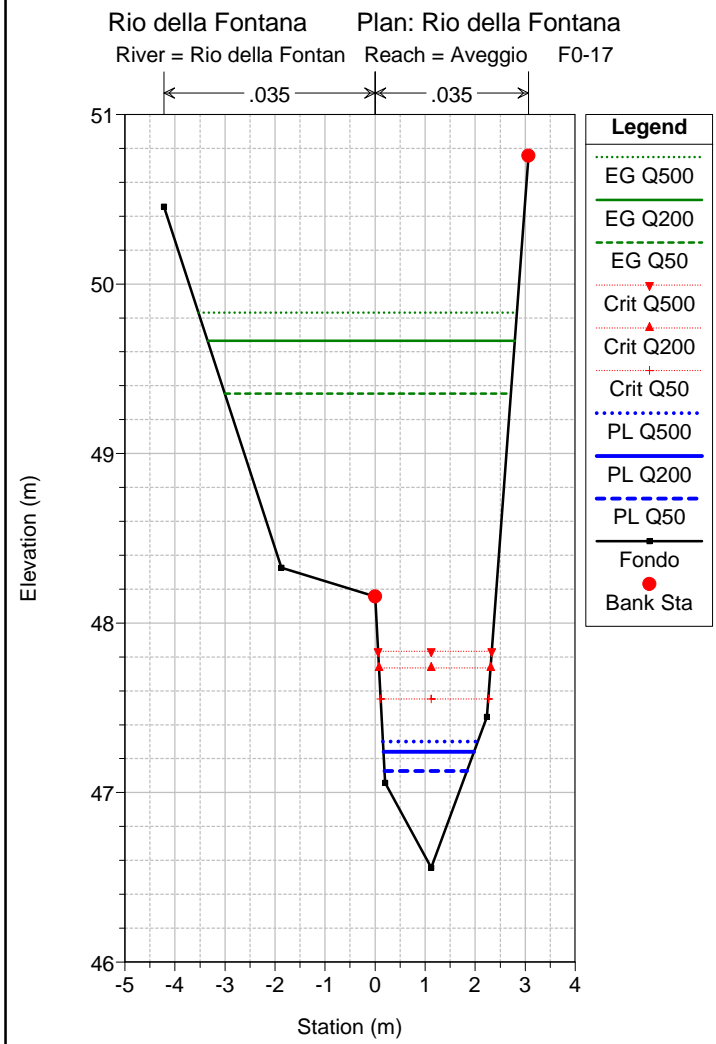
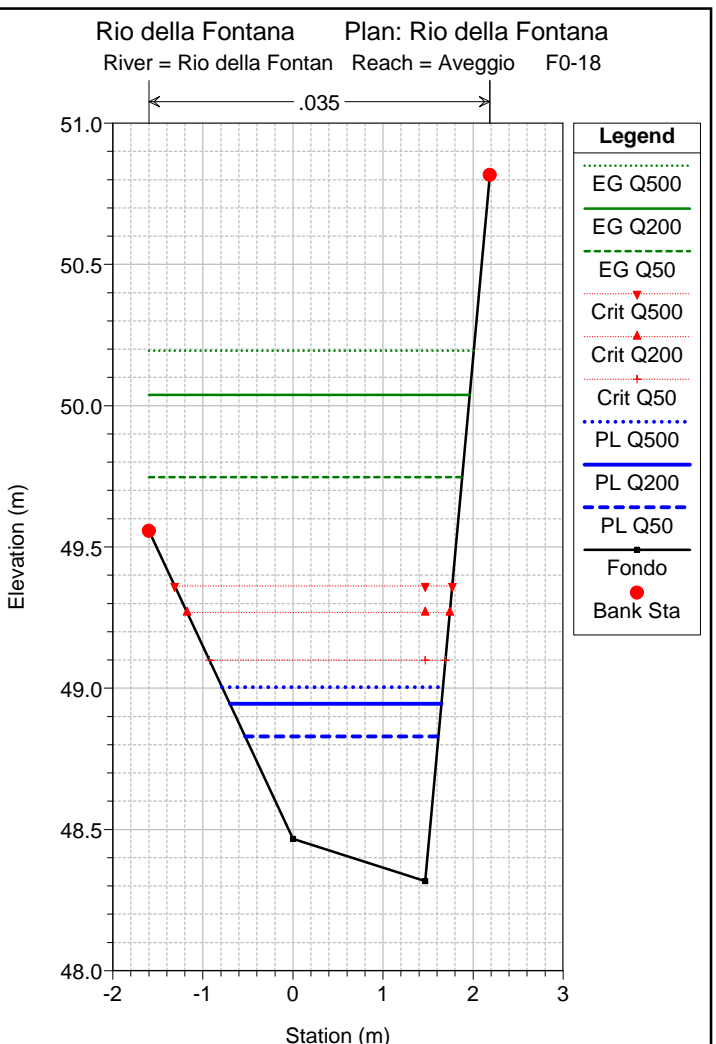
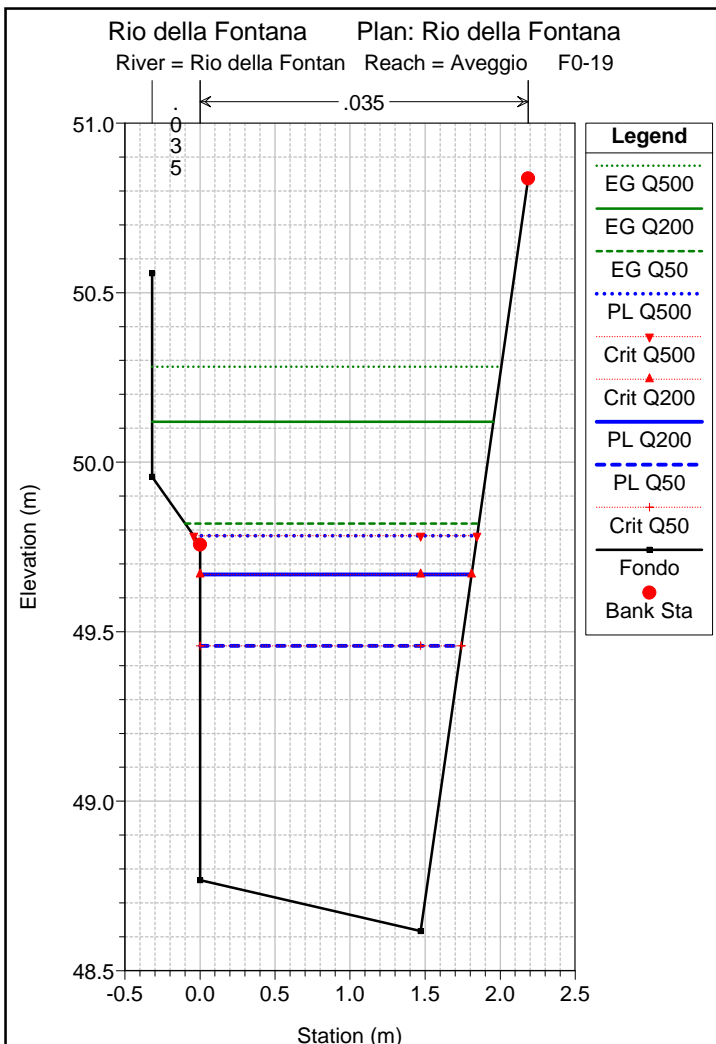
Rio della Fontan Aveggio

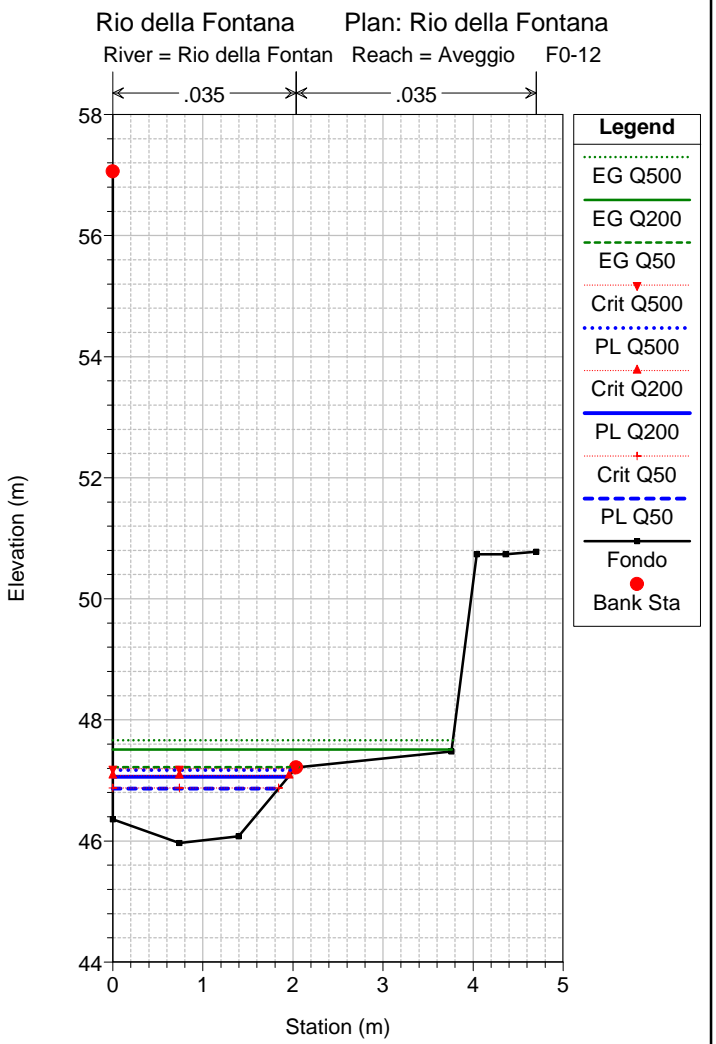
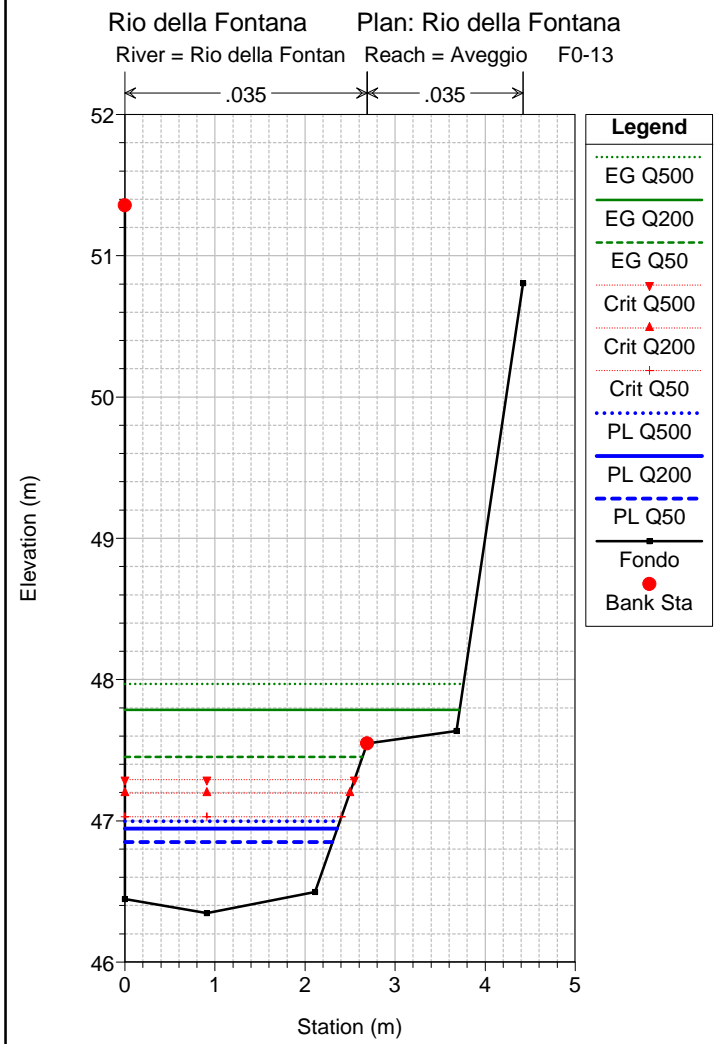
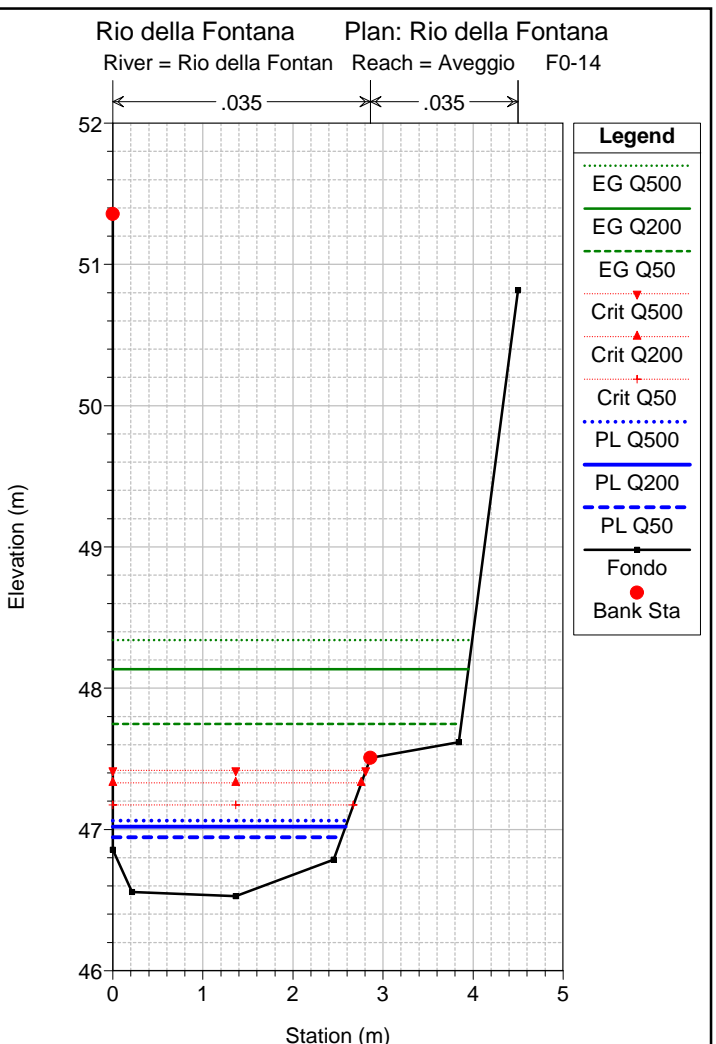
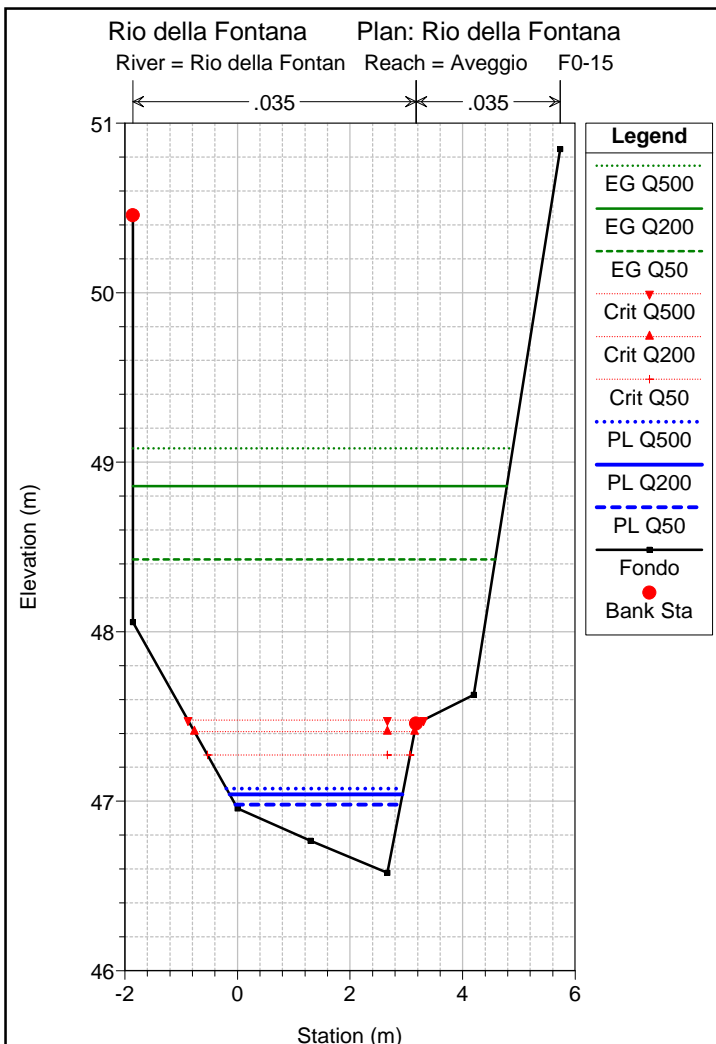


1 cm Horiz. = 5 m 1 cm Vert. = 1 m

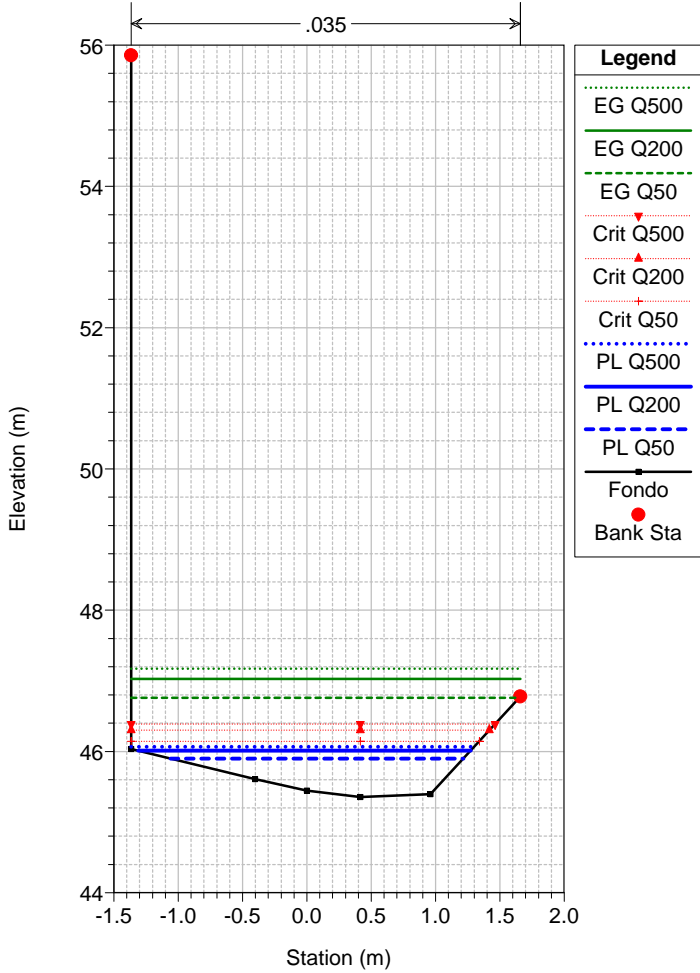




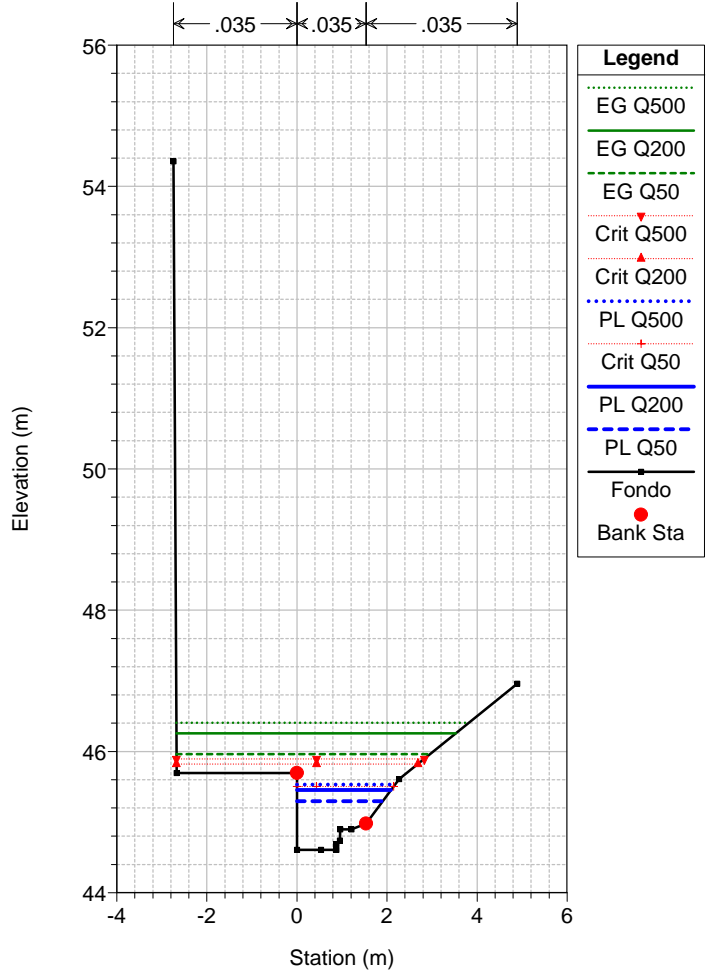




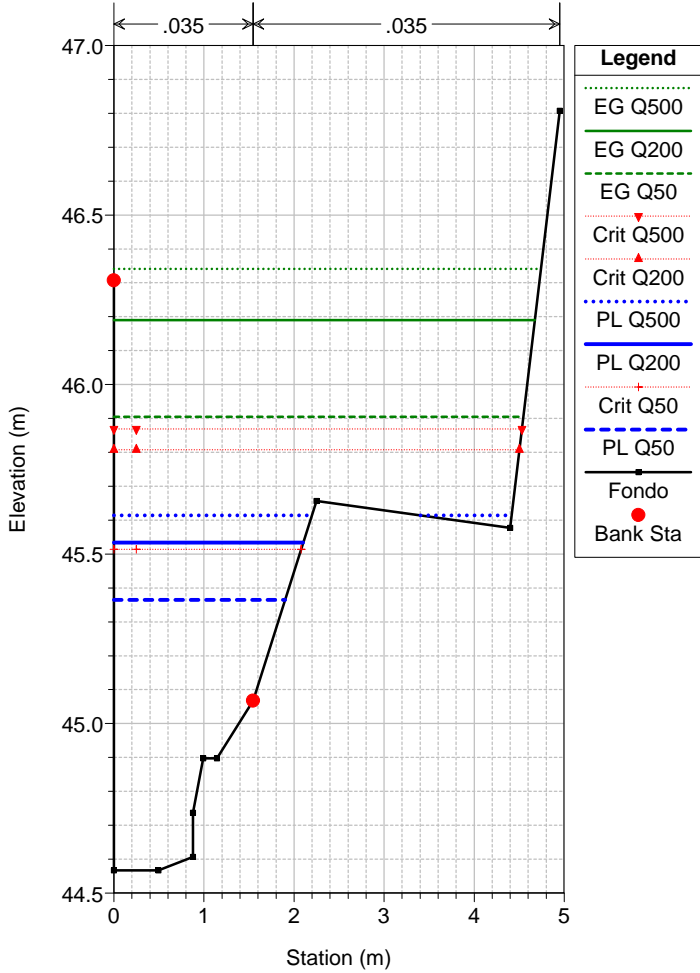
Rio della Fontana Plan: Rio della Fontana
 River = Rio della Fontan Reach = Aveggio F0-11



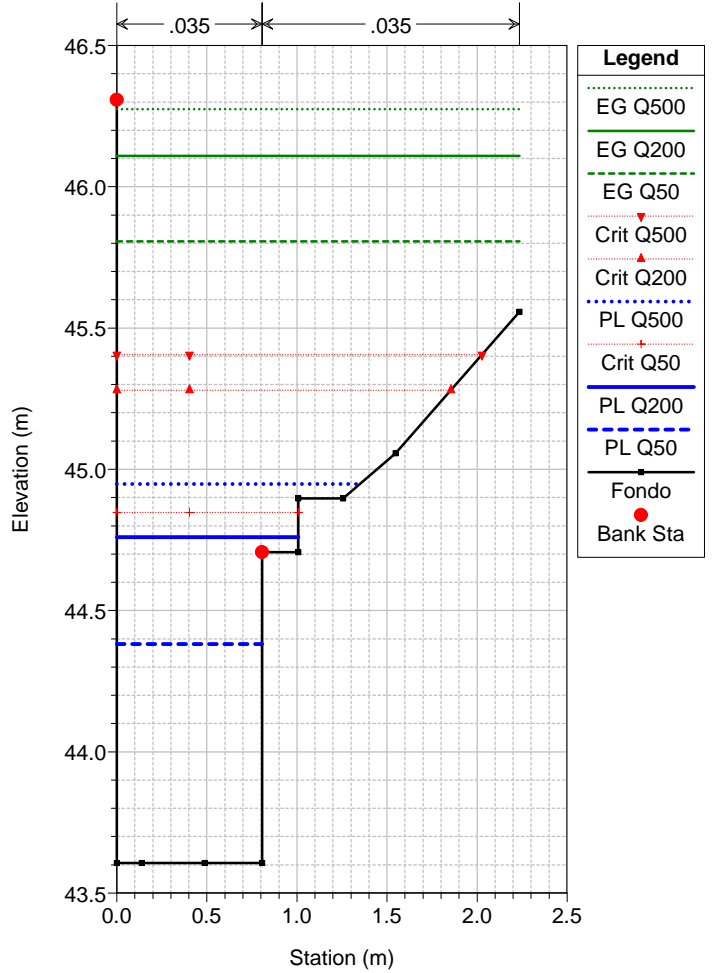
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 River = Rio della Fontan Reach = Aveggio F0-10

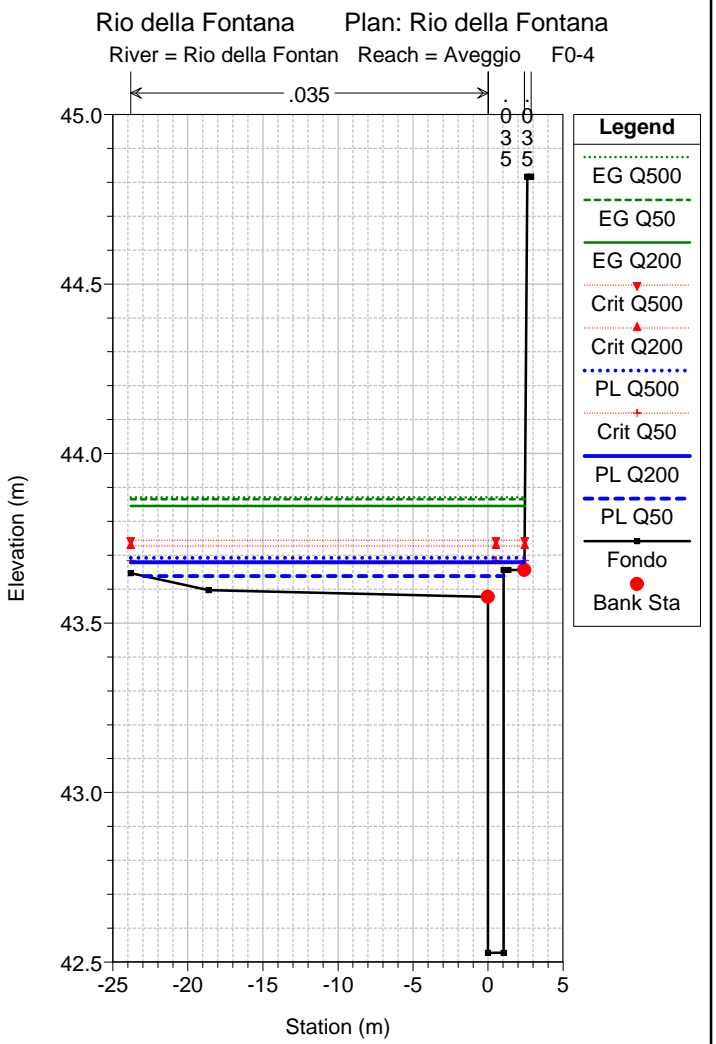
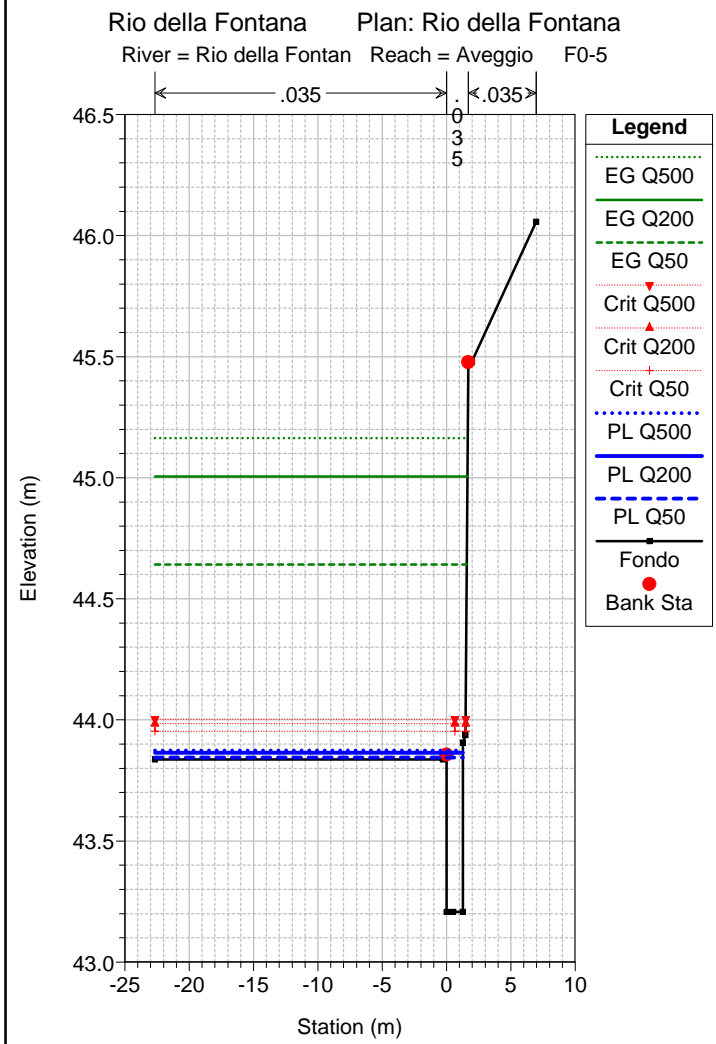
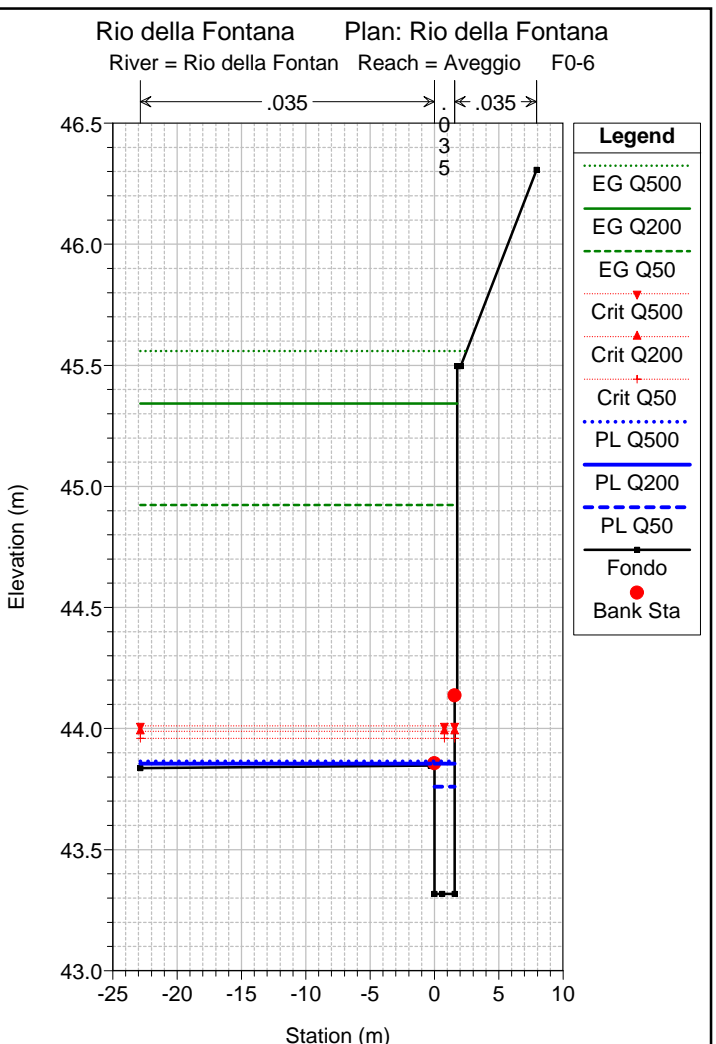
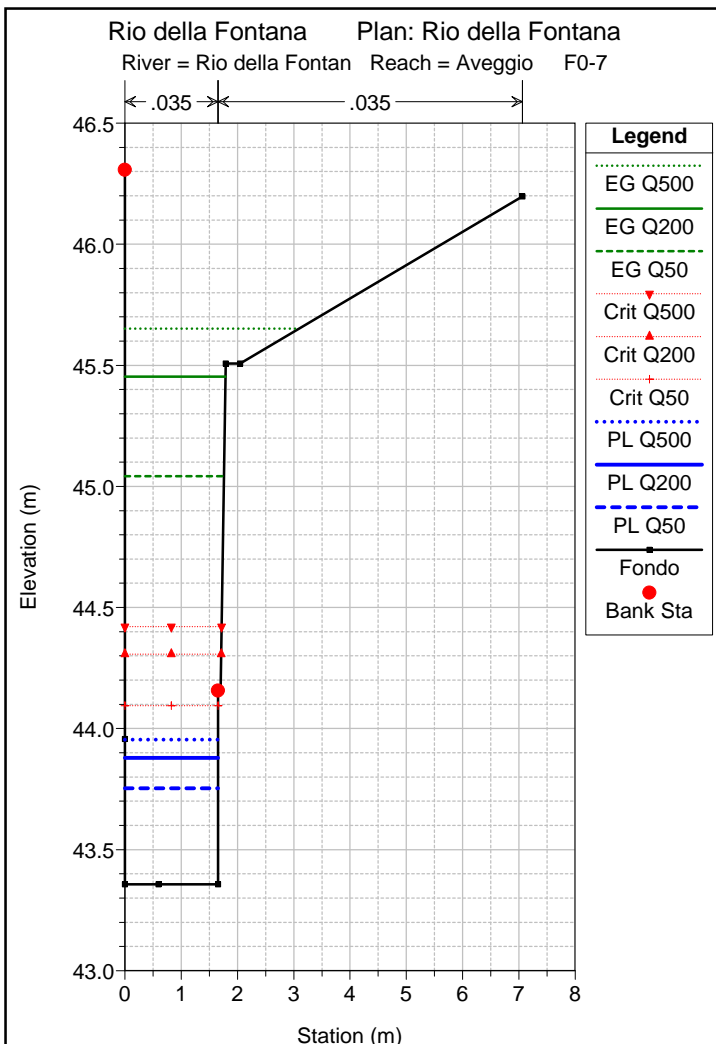


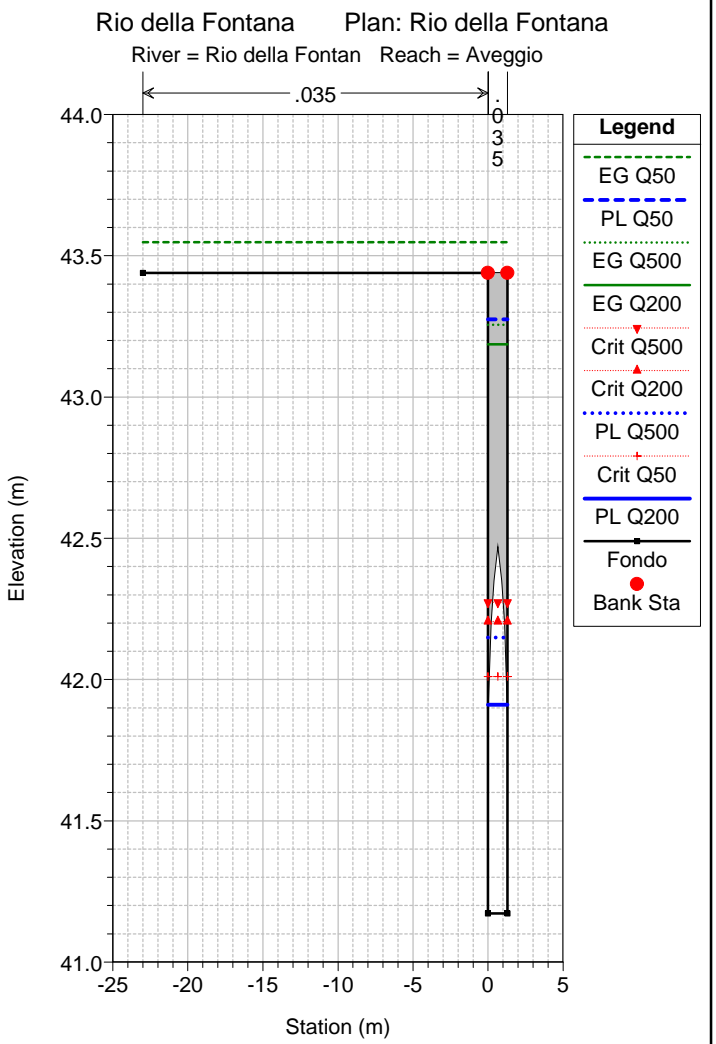
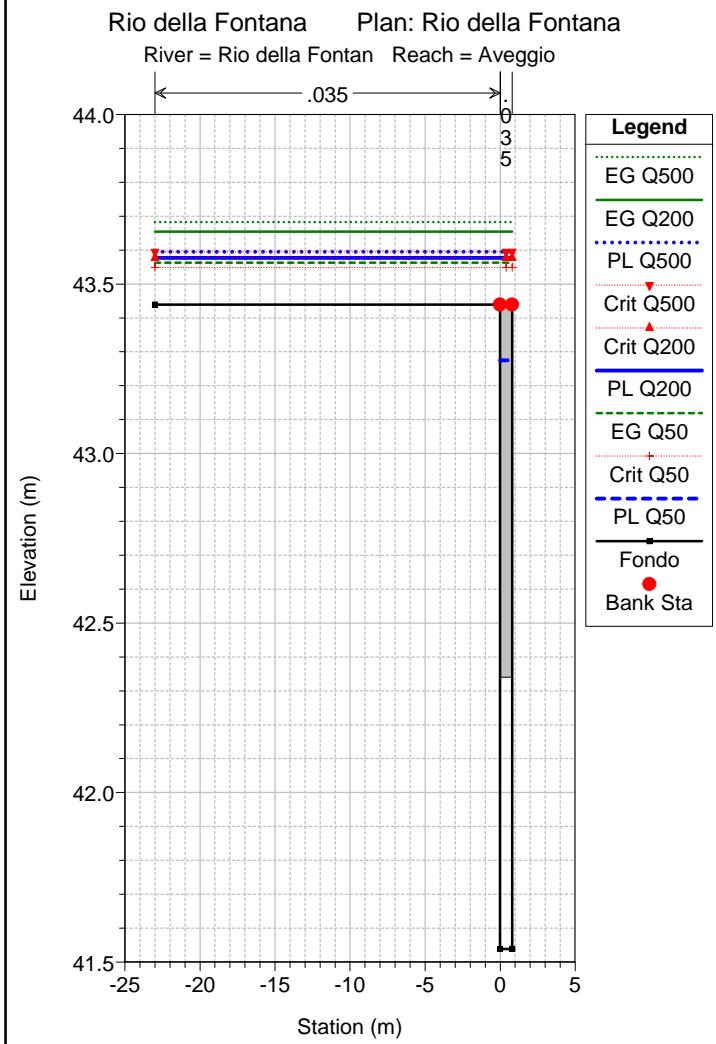
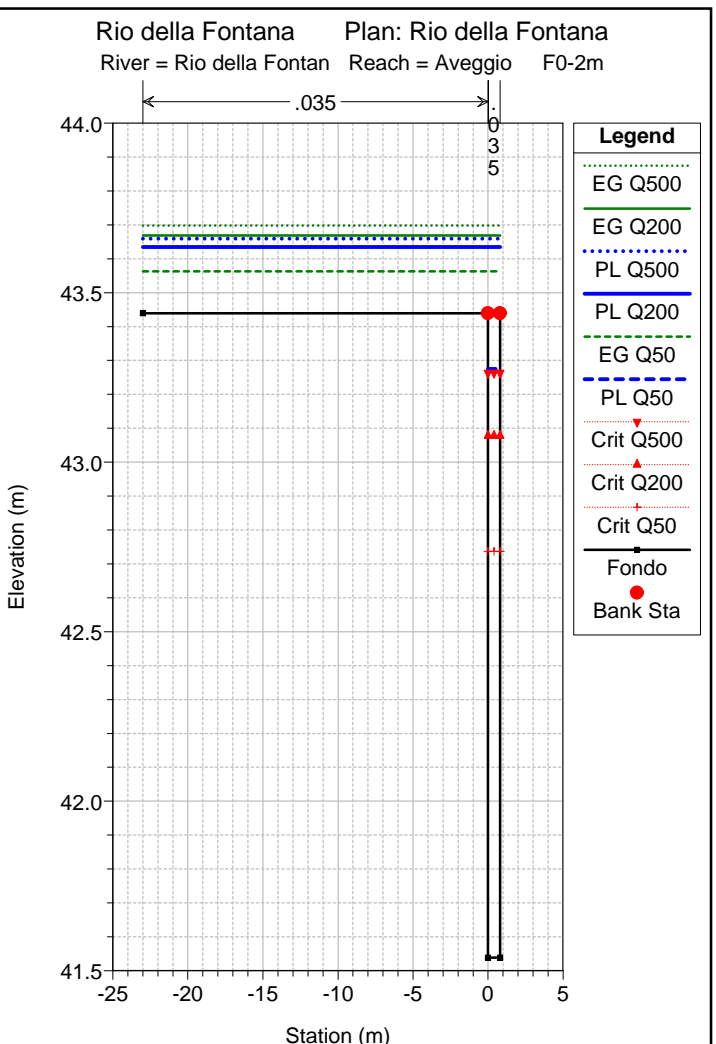
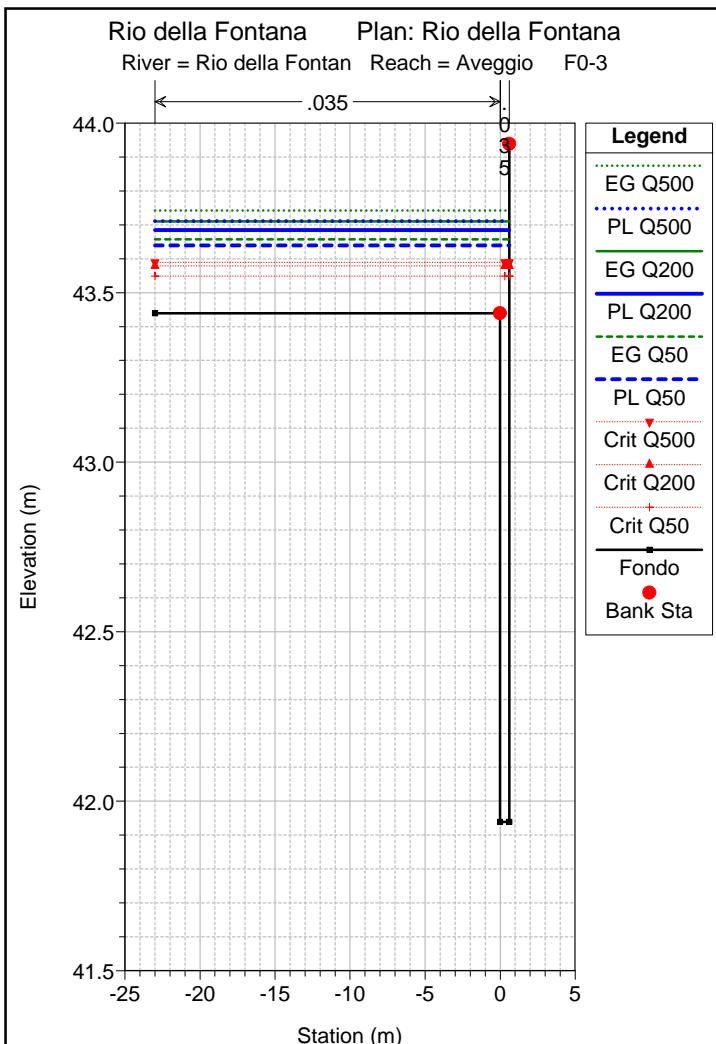
Rio della Fontana Plan: Rio della Fontana
 River = Rio della Fontan Reach = Aveggio F0-9



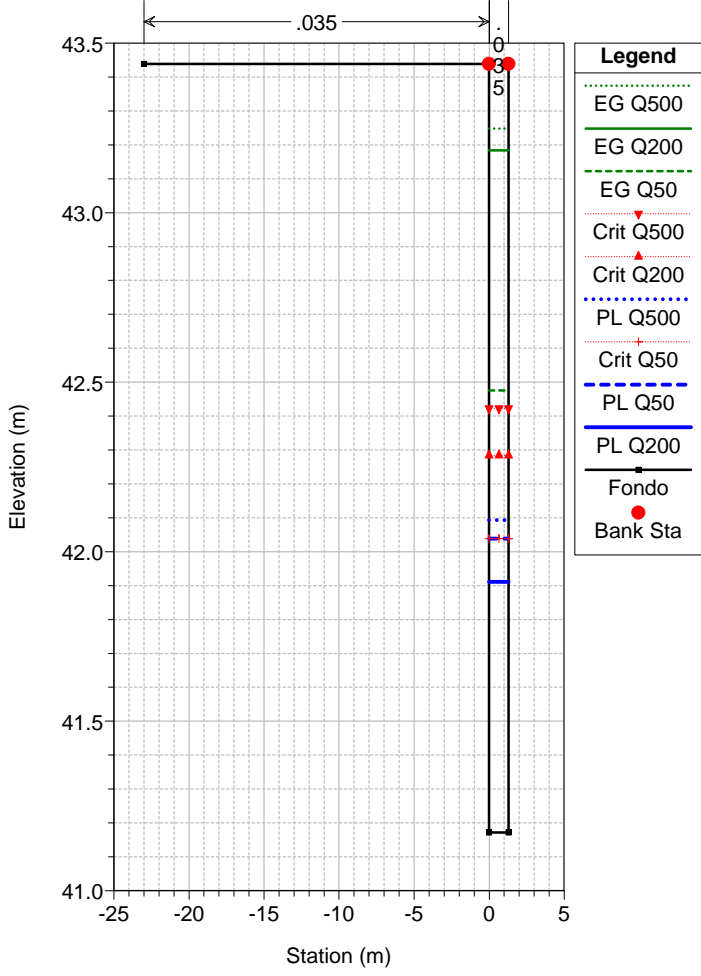
Rio della Fontana Plan: Rio della Fontana
 River = Rio della Fontan Reach = Aveggio F0-8



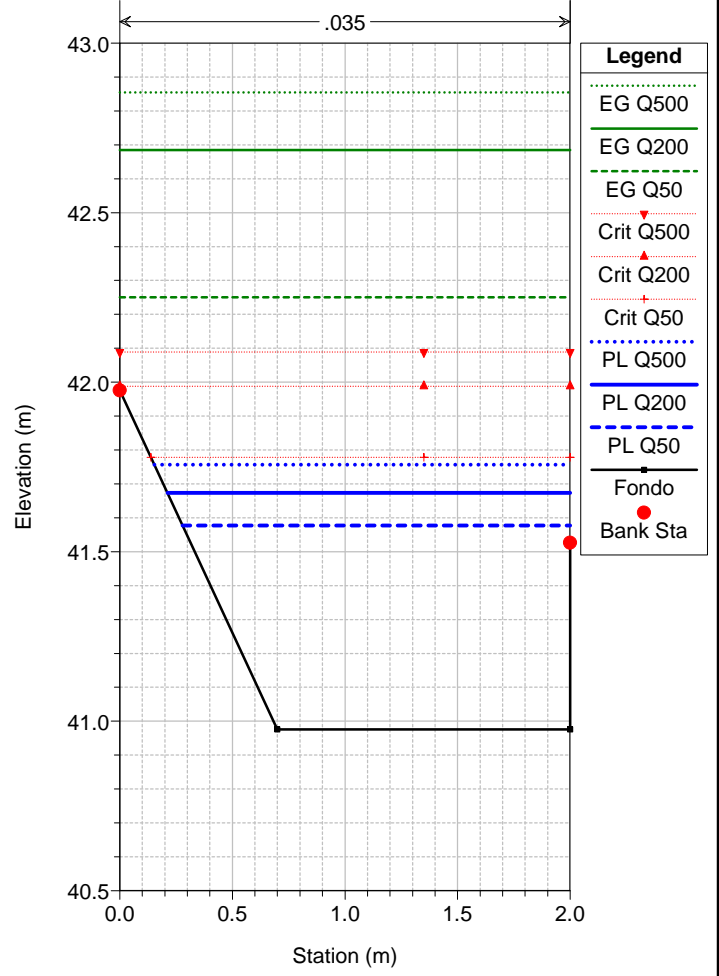




Rio della Fontana Plan: Rio della Fontana
 River = Rio della Fontan Reach = Aveggio F0-2v



Rio della Fontana Plan: Rio della Fontana
 River = Rio della Fontan Reach = Aveggio F0-1



Reach	River Sta	Profile	Q Total (m3/s)	Min Ch El (m)	W.S. Elev (m)	LOB Elev (m)	L. Freeboard (m)	ROB Elev (m)	R. Freeboard (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	
Aveggio	200	F0-27	Q50	3.30	49.81	50.86	53.38	2.52	53.39	2.53	50.86	51.23	0.028673	2.70	1.22	1.64	1.00
Aveggio	200	F0-27	Q200	4.80	49.81	51.07	53.38	2.30	53.39	2.31	51.07	51.55	0.031395	3.06	1.57	1.65	1.00
Aveggio	200	F0-27	Q500	5.70	49.81	51.19	53.38	2.19	53.39	2.20	51.19	51.72	0.032905	3.23	1.76	1.66	1.00
Aveggio	190	F0-26	Q50	3.30	49.77	50.66	51.70	1.04	53.34	2.68	50.78	51.18	0.045464	3.21	1.03	1.74	1.33
Aveggio	190	F0-26	Q200	4.80	49.77	50.83	51.70	0.86	53.34	2.50	50.99	51.49	0.047368	3.59	1.34	1.75	1.31
Aveggio	190	F0-26	Q500	5.70	49.77	50.93	51.70	0.77	53.34	2.41	51.09	51.66	0.048863	3.79	1.50	1.76	1.31
Aveggio	180	F0-25	Q50	3.30	49.79	50.44	50.86	0.42	53.28	2.84	50.58	50.98	0.048976	3.25	1.02	1.94	1.43
Aveggio	180	F0-25	Q200	4.80	49.79	50.59	50.86	0.27	53.28	2.69	50.78	51.27	0.051738	3.68	1.31	2.00	1.45
Aveggio	180	F0-25	Q500	5.70	49.79	50.67	50.86	0.19	53.28	2.61	50.94	51.44	0.053411	3.89	1.46	2.03	1.46
Aveggio	170	F0-24	Q50	3.30	49.01	49.67	50.22	0.54	52.37	2.69	49.97	50.62	0.115560	4.31	0.77	1.81	2.11
Aveggio	170	F0-24	Q200	4.80	49.01	49.81	50.22	0.41	52.37	2.56	50.13	50.91	0.115021	4.64	1.03	2.17	2.15
Aveggio	170	F0-24	Q500	5.70	49.01	49.87	50.22	0.35	52.37	2.50	50.24	51.06	0.115794	4.83	1.18	2.35	2.18
Aveggio	160	F0-23	Q50	3.30	49.23	49.73	51.36	1.63	52.16	2.43	49.91	50.32	0.063578	3.40	0.97	2.46	1.73
Aveggio	160	F0-23	Q200	4.80	49.23	49.83	51.36	1.52	52.16	2.32	50.07	50.61	0.068211	3.90	1.23	2.57	1.80
Aveggio	160	F0-23	Q500	5.70	49.23	49.89	51.36	1.47	52.16	2.27	50.16	50.76	0.069803	4.14	1.38	2.63	1.83
Aveggio	150	F0-22	Q50	3.30	48.85	49.80	49.86	0.06	51.08	1.28	49.49	49.91	0.005899	1.47	2.24	2.70	0.52
Aveggio	150	F0-22	Q200	4.80	48.85	50.09	49.86	-0.24	51.08	0.98	49.65	50.22	0.005005	1.57	3.08	2.97	0.48
Aveggio	150	F0-22	Q500	5.70	48.85	50.25	49.86	-0.39	51.08	0.83	49.73	50.38	0.004711	1.63	3.55	3.04	0.47
Aveggio	140	F0-21	Q50	3.30	48.54	49.77	51.02	1.25	50.78	1.01	49.36	49.89	0.006502	1.54	2.15	2.20	0.50
Aveggio	140	F0-21	Q200	4.80	48.54	50.04	51.02	0.97	50.78	0.73	49.56	50.20	0.007119	1.73	2.78	2.46	0.52
Aveggio	140	F0-21	Q500	5.70	48.54	50.20	51.02	0.82	50.78	0.58	49.66	50.36	0.007241	1.80	3.17	2.72	0.53
Aveggio	130	F0-20	Q50	3.30	48.48	49.70	50.82	1.12	50.76	1.06	49.43	49.87	0.010859	1.85	1.78	2.10	0.64
Aveggio	130	F0-20	Q200	4.80	48.48	49.98	50.82	0.84	50.76	0.78	49.65	50.18	0.010454	1.99	2.41	2.41	0.64
Aveggio	130	F0-20	Q500	5.70	48.48	50.13	50.82	0.69	50.76	0.63	49.76	50.34	0.009994	2.04	2.80	2.58	0.62
Aveggio	125	F0-19	Q50	3.30	48.62	49.46	49.76	0.30	50.84	1.38	49.46	49.82	0.028825	2.66	1.24	1.74	1.01
Aveggio	125	F0-19	Q200	4.80	48.62	49.67	49.76	0.09	50.84	1.17	49.67	50.12	0.030210	2.97	1.61	1.81	1.00
Aveggio	125	F0-19	Q500	5.70	48.62	49.78	49.76	-0.03	50.84	1.05	49.78	50.28	0.030687	3.13	1.82	1.89	1.00
Aveggio	120	F0-18	Q50	3.30	48.32	48.83	49.56	0.73	50.82	1.99	49.10	49.75	0.113370	4.24	0.78	2.15	2.25
Aveggio	120	F0-18	Q200	4.80	48.32	48.94	49.56	0.61	50.82	1.87	49.27	50.04	0.107530	4.63	1.04	2.35	2.23
Aveggio	120	F0-18	Q500	5.70	48.32	49.00	49.56	0.55	50.82	1.81	49.36	50.19	0.105994	4.83	1.18	2.45	2.23
Aveggio	110	F0-17	Q50	3.30	46.56	47.13	48.16	1.03	50.76	3.63	47.55	49.35	0.348483	6.61	0.50	1.65	3.84
Aveggio	110	F0-17	Q200	4.80	46.56	47.24	48.16	0.92	50.76	3.52	47.74	49.66	0.292321	6.90	0.70	1.81	3.55
Aveggio	110	F0-17	Q500	5.70	46.56	47.30	48.16	0.86	50.76	3.46	47.83	49.83	0.272483	7.05	0.81	1.90	3.45
Aveggio	100	F0-16	Q50	3.30	46.76	47.13	47.96	0.83	50.81	3.68	47.47	48.81	0.301188	5.75	0.57	2.34	3.71
Aveggio	100	F0-16	Q200	4.80	46.76	47.21	47.96	0.75	50.81	3.60	47.62	49.21	0.271011	6.27	0.77	2.47	3.60
Aveggio	100	F0-16	Q500	5.70	46.76	47.25	47.96	0.71	50.81	3.56	47.71	49.41	0.258178	6.51	0.87	2.54	3.54
Aveggio	90	F0-15	Q50	3.30	46.58	46.98	50.46	3.48	47.46	0.48	47.27	48.43	0.310395	5.33	0.62	2.93	3.70
Aveggio	90	F0-15	Q200	4.80	46.58	47.04	50.46	3.42	47.46	0.42	47.41	48.86	0.298100	5.97	0.80	3.07	3.73
Aveggio	90	F0-15	Q500	5.70	46.58	47.07	50.46	3.38	47.46	0.38	47.48	49.08	0.291180	6.28	0.91	3.15	3.73
Aveggio	80	F0-14	Q50	3.30	46.53	46.94	51.36	4.41	47.51	0.56	47.17	47.75	0.102314	3.97	0.83	2.54	2.21

HEC-RAS Plan: Fontana River: Rio della Fontan Reach: Aveggio (Continued)

Reach	River Sta	Profile	Q Total (m3/s)	Min Ch El (m)	W.S. Elev (m)	LOB Elev (m)	L. Freeboard (m)	ROB Elev (m)	R. Freeboard (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
Aveggio	7 F0-2v	Q50	3.30	41.17	42.04	43.44	1.40	43.44	1.40	42.04	42.48	0.039417	2.93	1.13	1.30	1.01
Aveggio	7 F0-2v	Q200	4.80	41.17	41.91	43.44	1.53	43.44	1.53	42.28	43.18	0.126076	5.00	0.96	1.30	1.86
Aveggio	7 F0-2v	Q500	5.70	41.17	42.09	43.44	1.35	43.44	1.35	42.42	43.25	0.100446	4.76	1.20	1.30	1.58
Aveggio	6 F0-1	Q50	3.30	40.98	41.58	41.98	0.40	41.53	-0.05	41.78	42.25	0.067051	3.64	0.91	1.72	1.60
Aveggio	6 F0-1	Q200	4.80	40.98	41.67	41.98	0.30	41.53	-0.15	41.99	42.69	0.088950	4.46	1.08	1.79	1.83
Aveggio	6 F0-1	Q500	5.70	40.98	41.76	41.98	0.22	41.53	-0.23	42.09	42.85	0.088221	4.64	1.23	1.85	1.82

MODELLO IDRAULICO MOTO PERMANENTE MONODIMENSIONALE

RIO VIGNALE - STATO ATTUALE

Piano di Bacino torrente Lavagna - L. 183/89 e ss.mm.ii.

rio_vignale_stato_attuale

- *tabella riassuntiva dati e risultati*
- *profilo in asse al corso d'acqua*
- *sezioni trasversali al corso d'acqua*

Chiavari, li marzo 2019

Il Tecnico

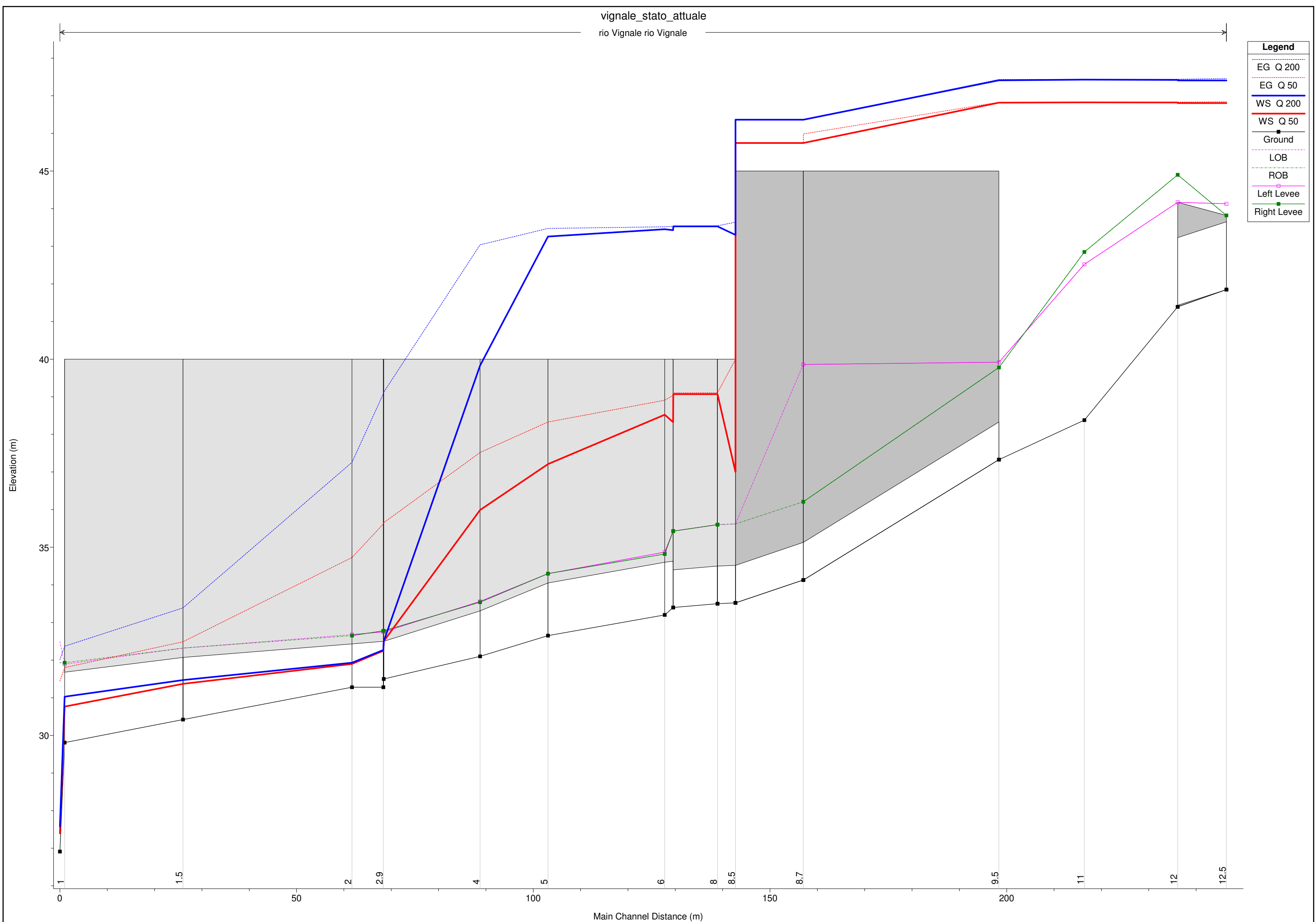
Ing. Sergio Brizzolara



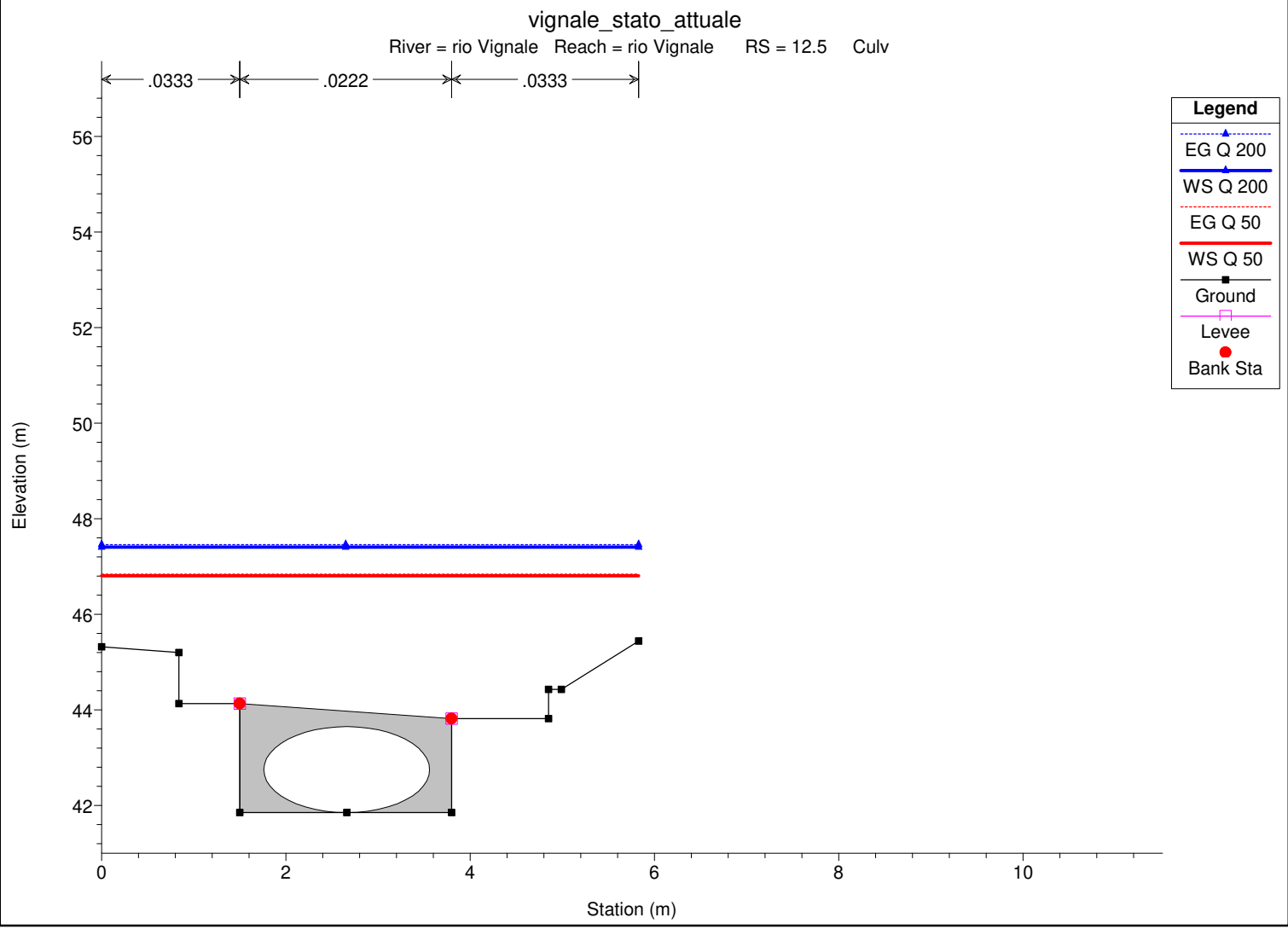
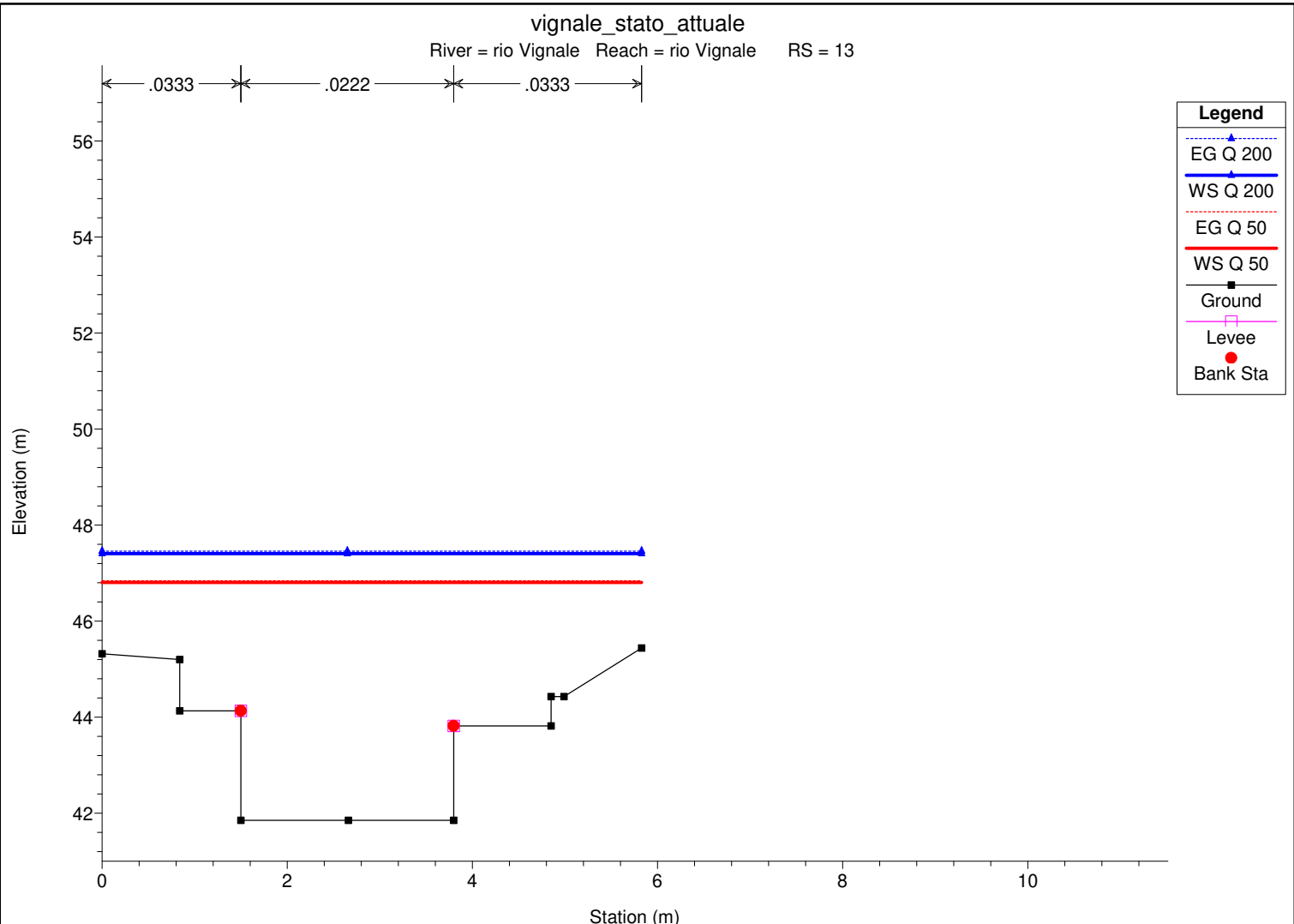
Reach	River Sta	Profile	Q Total (m3/s)	Min Ch El (m)	W.S. Elev (m)	Crit W.S. (m)	E.G. Elev (m)	E.G. Slope (m/m)	Vel Chnl (m/s)	Flow Area (m2)	Top Width (m)	Froude # Chl
rio Vignale	13	Q 50	13.80	41.85	46.81	43.39	46.84	0.000277	0.91	19.51	5.83	0.13
rio Vignale	13	Q 200	20.00	41.85	47.41	43.87	47.46	0.000373	1.14	23.01	5.83	0.15
rio Vignale	12.5		Culvert									
rio Vignale	12	Q 50	13.80	41.39	46.82	42.89	46.83	0.000103	0.54	29.89	10.31	0.07
rio Vignale	12	Q 200	20.00	41.39	47.42	43.27	47.44	0.000131	0.65	36.24	10.56	0.09
rio Vignale	11	Q 50	13.80	38.38	46.83	39.75	46.83	0.000020	0.27	56.58	10.88	0.03
rio Vignale	11	Q 200	20.00	38.38	47.43	40.12	47.44	0.000031	0.35	63.16	10.88	0.04
rio Vignale	10	Q 50	13.80	37.33	46.82	39.12	46.83	0.000123	0.47	29.44	3.35	0.05
rio Vignale	10	Q 200	20.00	37.33	47.41	39.52	47.43	0.000223	0.64	31.44	3.35	0.07
rio Vignale	9.5		Culvert									
rio Vignale	9	Q 50	13.80	34.13	45.74	34.87	45.75	0.000005	0.17	80.25	6.91	0.02
rio Vignale	9	Q 200	20.00	34.13	46.36	35.08	46.37	0.000010	0.24	84.55	6.91	0.02
rio Vignale	8.7		Culvert									
rio Vignale	8.5	Q 50	13.80	33.52	37.00	34.52	40.00	0.166788	7.67	1.80		1.31
rio Vignale	8.5	Q 200	20.00	33.52	43.30	41.33	43.64	0.003929	2.58	7.74	1.80	0.26
rio Vignale	8.01	Q 50	13.80	33.50	39.07	35.60	39.11	0.000160	0.83	16.72		0.11
rio Vignale	8.01	Q 200	20.00	33.50	43.53	35.60	43.54	0.000037	0.49	40.68	3.00	0.05
rio Vignale	8	Q 50	13.80	33.50	39.07	35.60	39.11	0.000134	0.83	16.72		0.11
rio Vignale	8	Q 200	20.00	33.50	43.53	35.60	43.54	0.000036	0.49	40.68	3.00	0.05
rio Vignale	7	Q 50	13.80	33.40	39.07	35.43	39.10	0.000126	0.81	17.01		0.11
rio Vignale	7	Q 200	20.00	33.40	43.53	35.43	43.54	0.000035	0.49	40.98	3.00	0.05
rio Vignale	6.99	Q 50	13.80	33.40	38.32	34.63	39.04	0.026432	3.74	3.69		0.54
rio Vignale	6.99	Q 200	20.00	33.40	43.43	34.63	43.53	0.001319	1.43	13.97	3.00	0.14
rio Vignale	6	Q 50	13.80	33.20	38.52	34.35	38.91	0.011759	2.75	5.03		0.38

HEC-RAS Plan: Plan 01 River: rio Vignale Reach: rio Vignale (Continued)

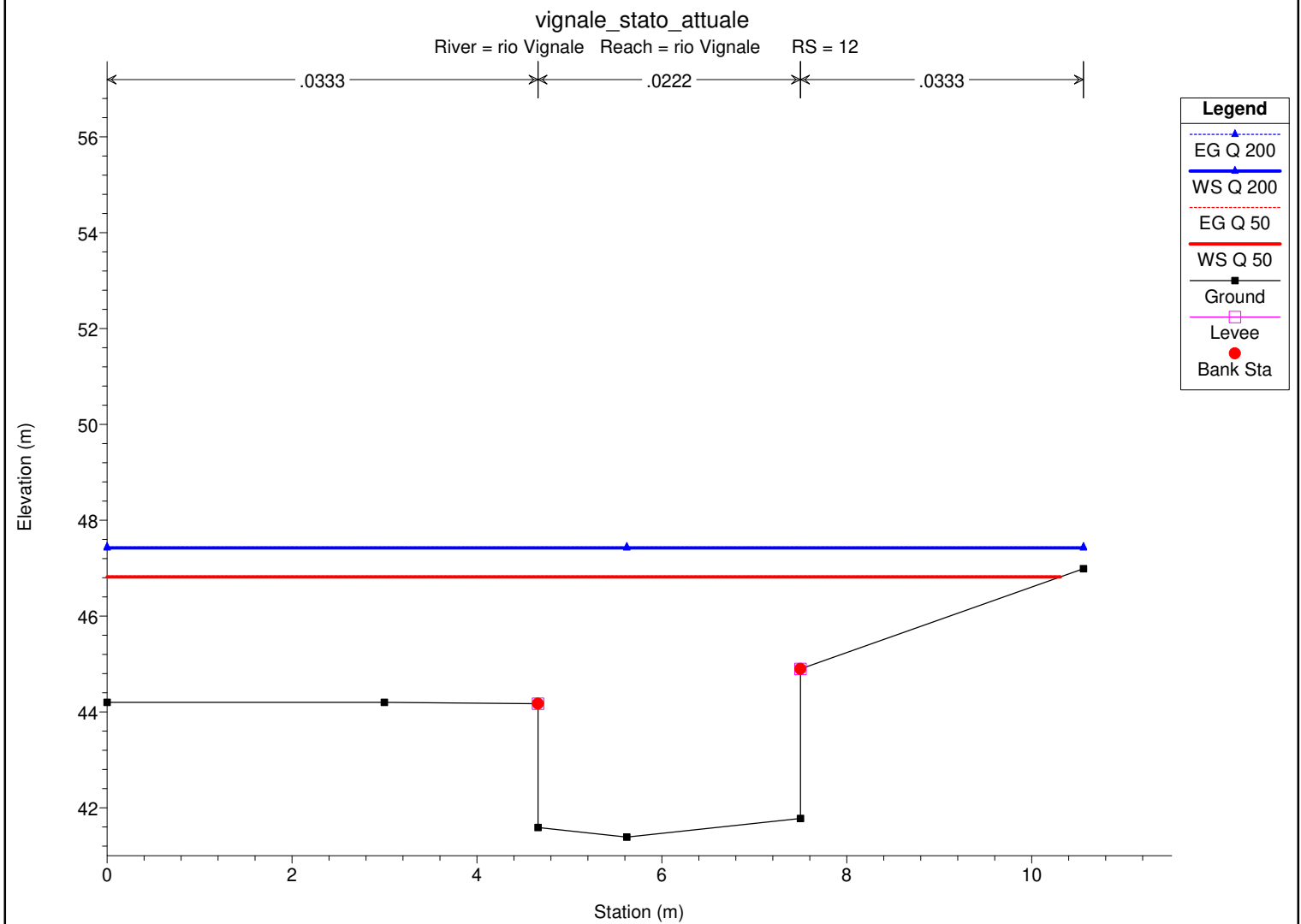
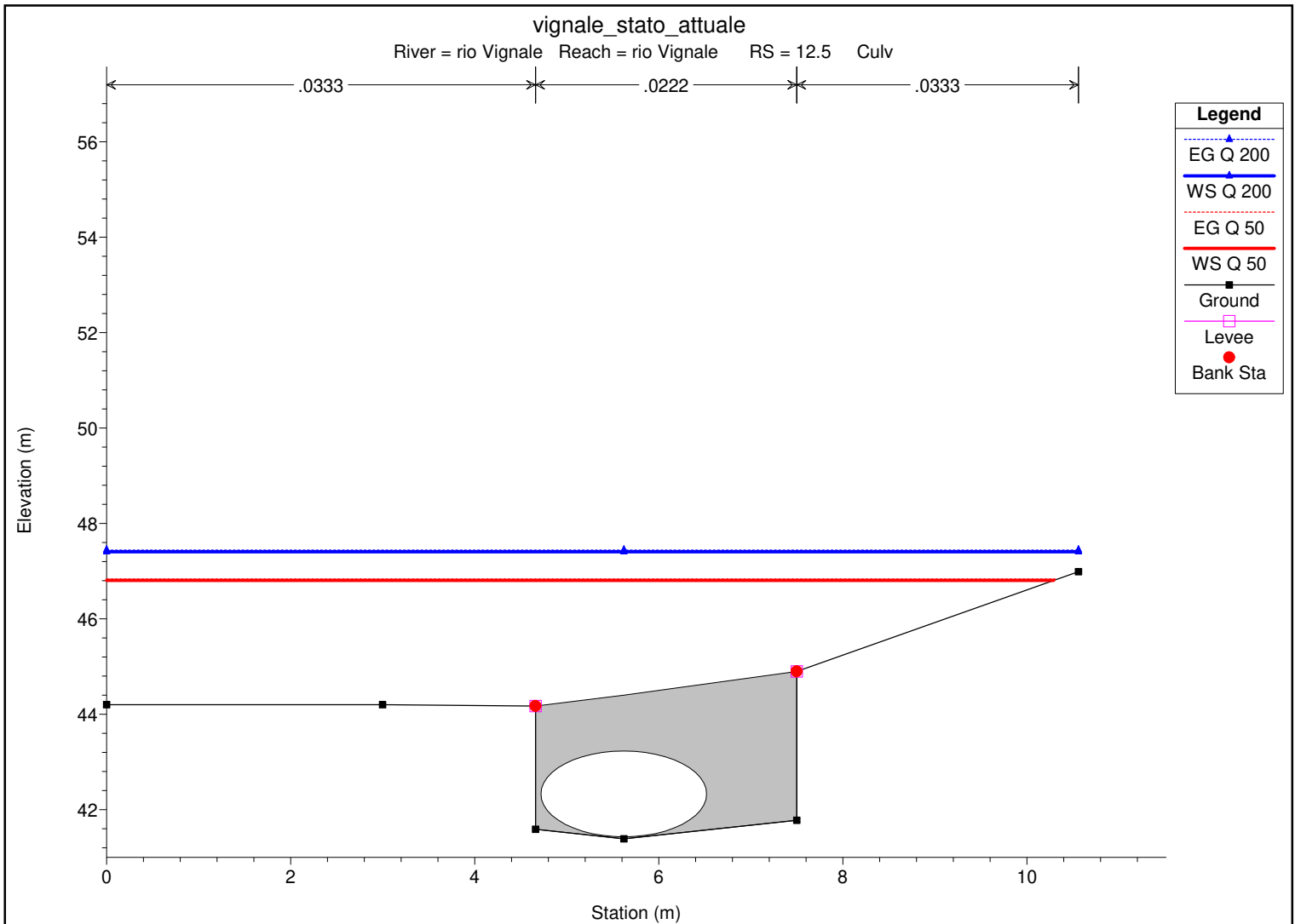
Reach	River Sta	Profile	Q Total (m3/s)	Min Ch El (m)	W.S. Elev (m)	Crit W.S. (m)	E.G. Elev (m)	E.G. Slope (m/m)	Vel Chnl (m/s)	Flow Area (m2)	Top Width (m)	Froude # Chl
rio Vignale	6	Q 200	20.00	33.20	43.45	34.60	43.52	0.000703	1.15	17.42	3.59	0.11
rio Vignale	5	Q 50	13.80	32.65	37.21	34.05	38.33	0.043755	4.69	2.94		0.70
rio Vignale	5	Q 200	20.00	32.65	43.26	34.05	43.47	0.003050	2.04	9.79	2.10	0.20
rio Vignale	4	Q 50	13.80	32.10	35.99	33.30	37.52	0.067685	5.48	2.52		0.89
rio Vignale	4	Q 200	20.00	32.10	39.83	33.31	43.04	0.142165	7.94	2.52		0.91
rio Vignale	3	Q 50	13.80	31.50	32.50	32.50	35.65	0.106410	7.86	1.75	1.75	2.51
rio Vignale	3	Q 200	20.00	31.50	32.50	32.50	39.12	0.223587	11.40	1.75	1.75	3.63
rio Vignale	2.9	Q 50	13.80	31.28	32.25	33.13	35.62	0.116501	8.13	1.70	1.75	2.64
rio Vignale	2.9	Q 200	20.00	31.28	32.27	33.65	39.08	0.232580	11.56	1.73	1.75	3.71
rio Vignale	2	Q 50	13.80	31.28	31.90	32.43	34.73	0.104530	7.45	1.85	3.00	3.03
rio Vignale	2	Q 200	20.00	31.28	31.93	32.43	37.26	0.186881	10.22	1.96	3.00	4.04
rio Vignale	1.5	Q 50	13.80	30.42	31.37	31.68	32.49	0.027763	4.68	2.95	3.10	1.53
rio Vignale	1.5	Q 200	20.00	30.42	31.47	32.04	33.39	0.043918	6.14	3.26	3.10	1.91
rio Vignale	1	Q 50	13.80	29.81	30.77	31.05	31.80	0.025224	4.51	3.06	3.20	1.47
rio Vignale	1	Q 200	20.00	29.81	31.03	31.39	32.37	0.026964	5.14	3.89	3.20	1.49
rio Vignale	0.5	Q 50	13.80	26.91	27.39	28.14	31.45	0.186296	8.92	1.55	3.20	4.09
rio Vignale	0.5	Q 200	20.00	26.91	27.58	28.49	32.01	0.147664	9.32	2.15	3.20	3.63

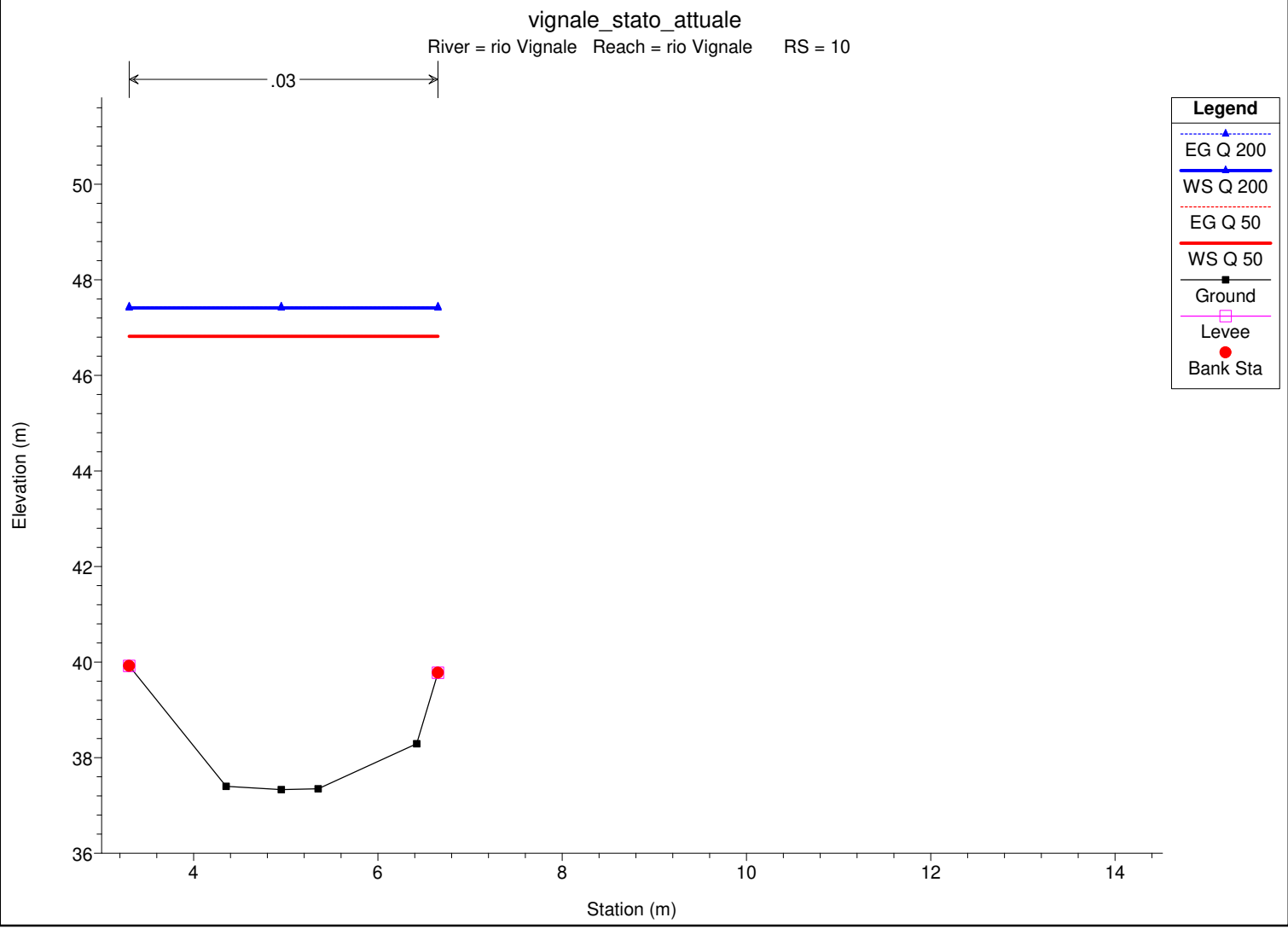
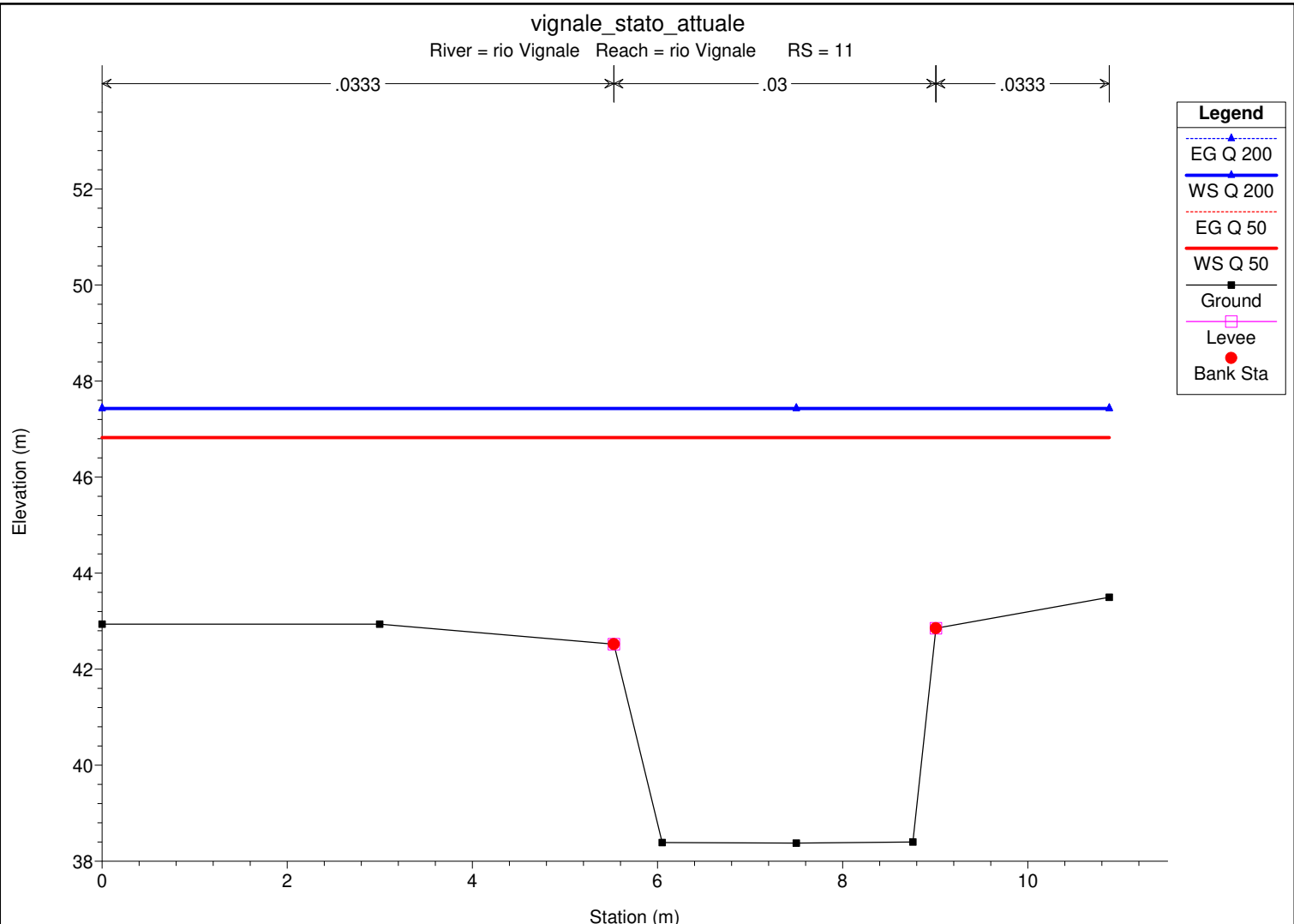


- Legend**
- EG Q 200
 - EG Q 50
 - WS Q 200
 - WS Q 50
 - Ground
 - LOB
 - ROB
 - Left Levee
 - Right Levee



1 cm Horiz. = 0.7 m 1 cm Vert. = 1.35 m

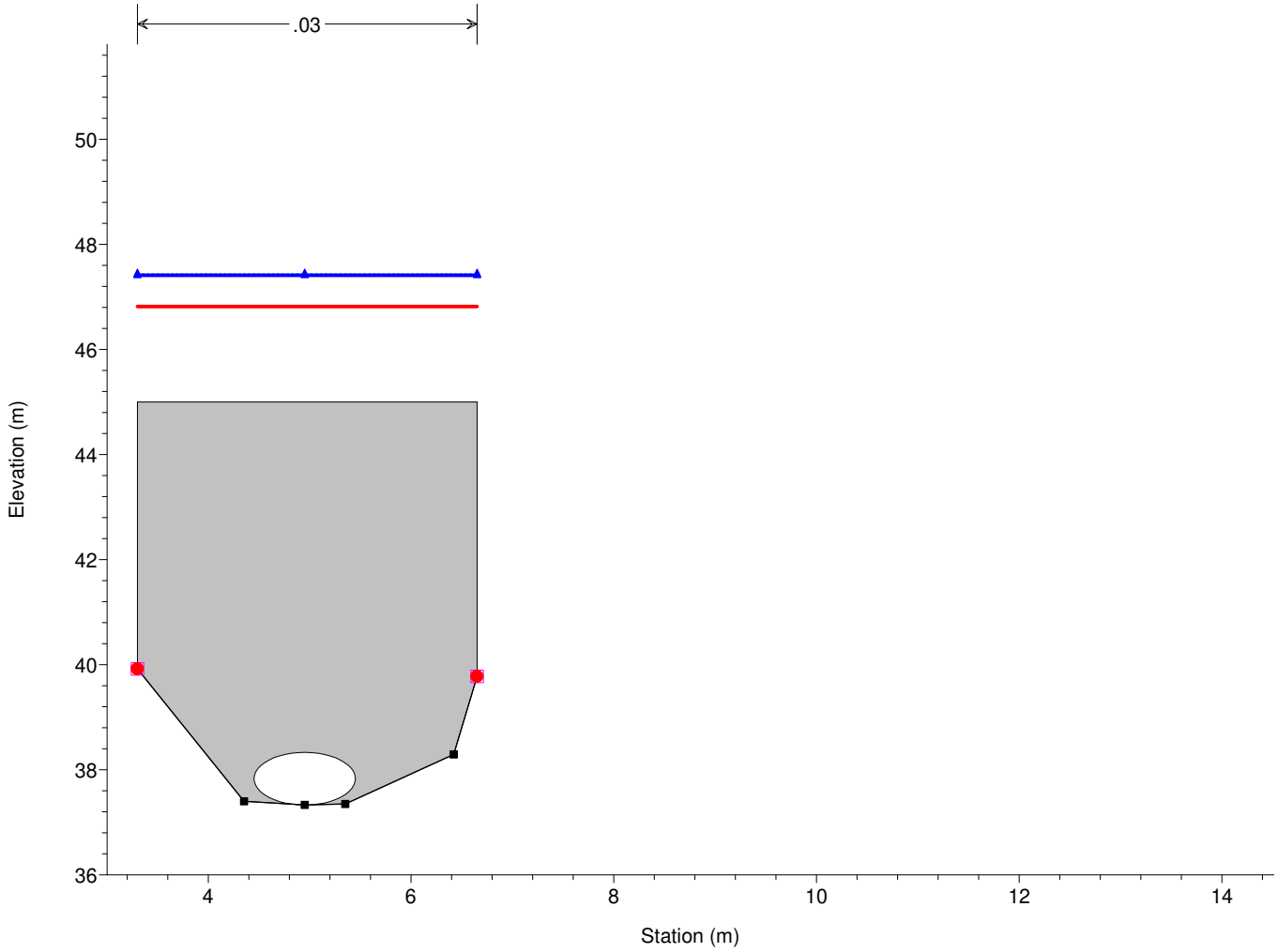




1 cm Horiz. = 0.7 m 1 cm Vert. = 1.35 m

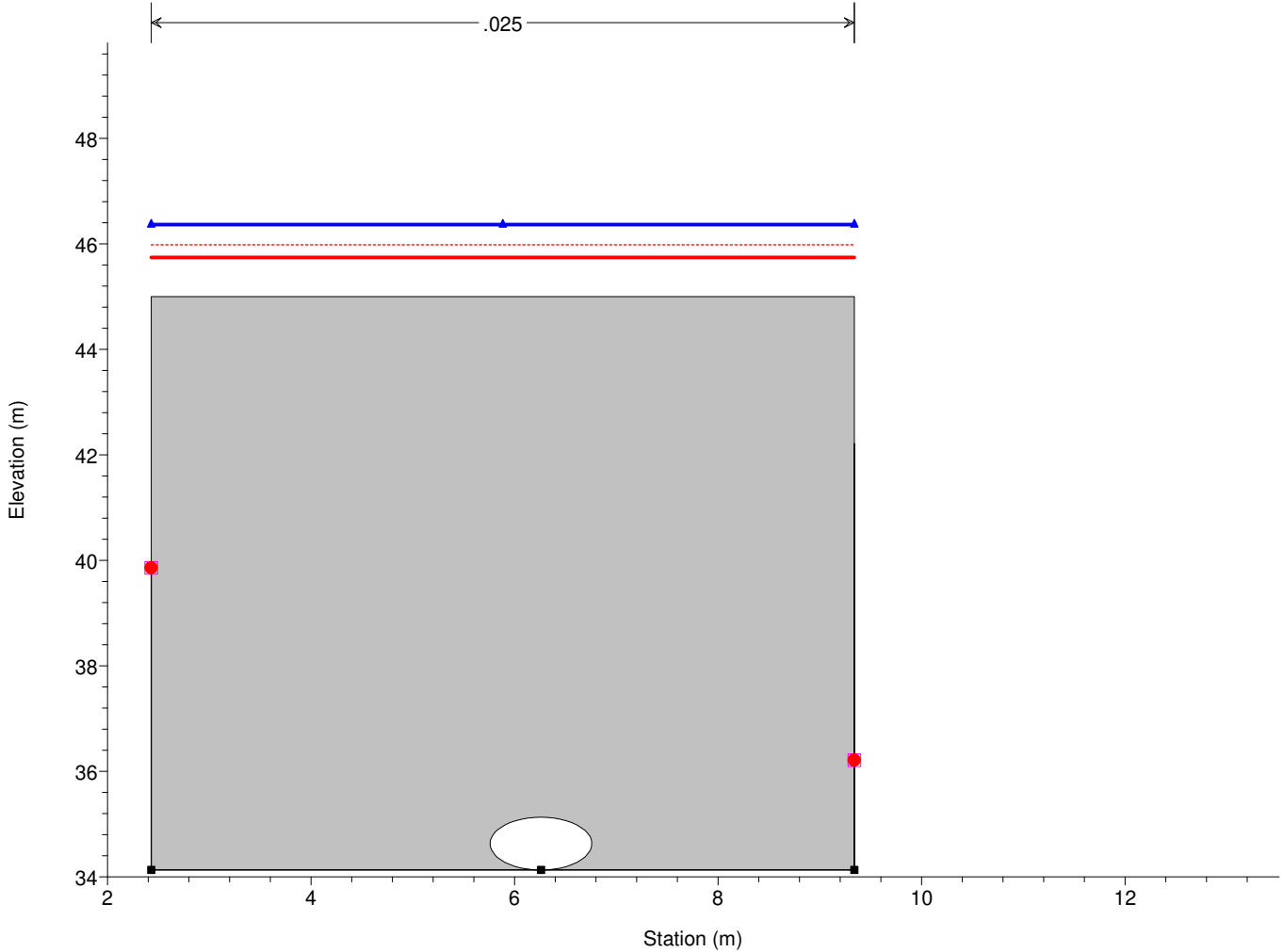
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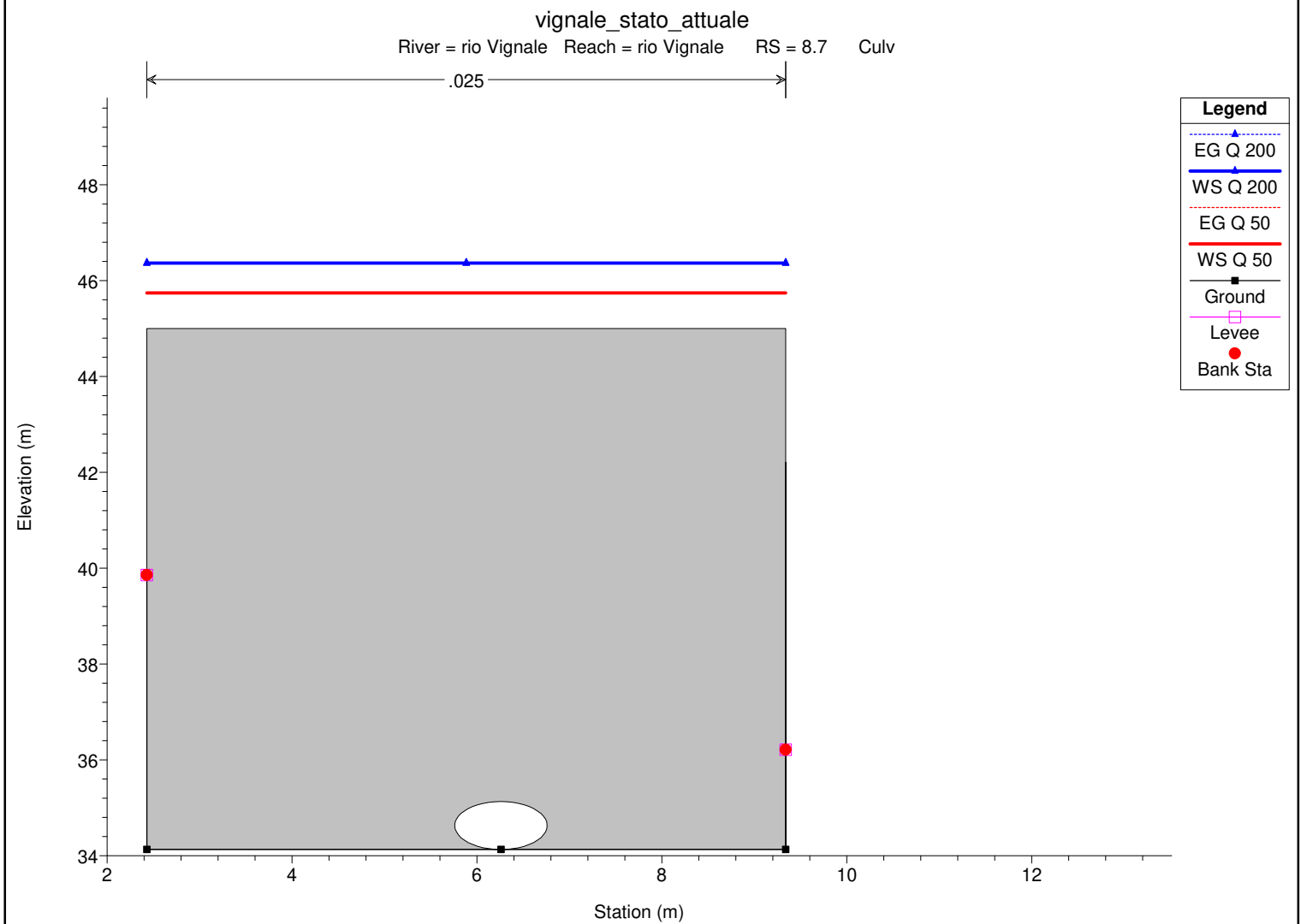
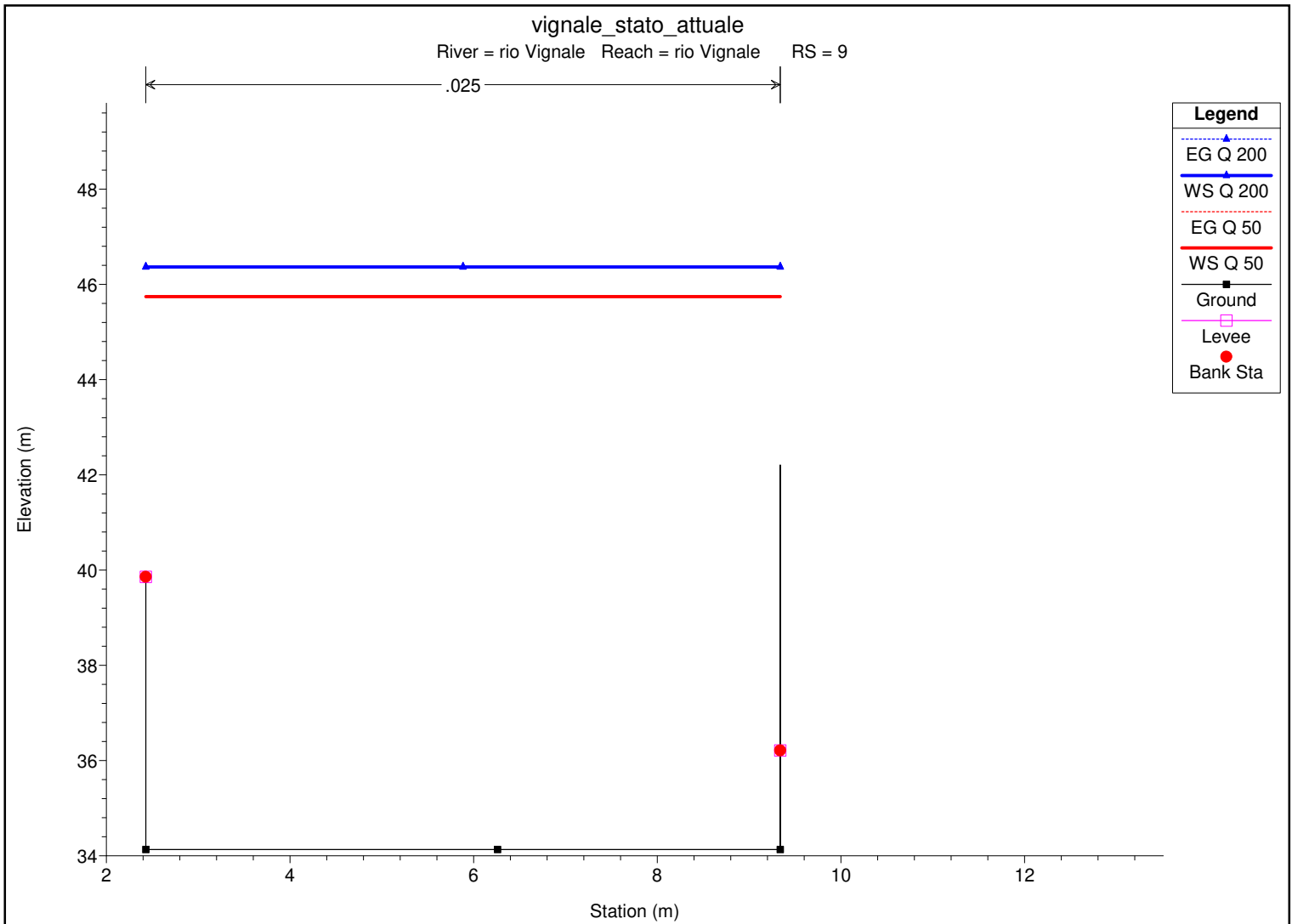
River = rio Vignale Reach = rio Vignale RS = 9.5 Culv



vignale_stato_attuale

River = rio Vignale Reach = rio Vignale RS = 9.5 Culv

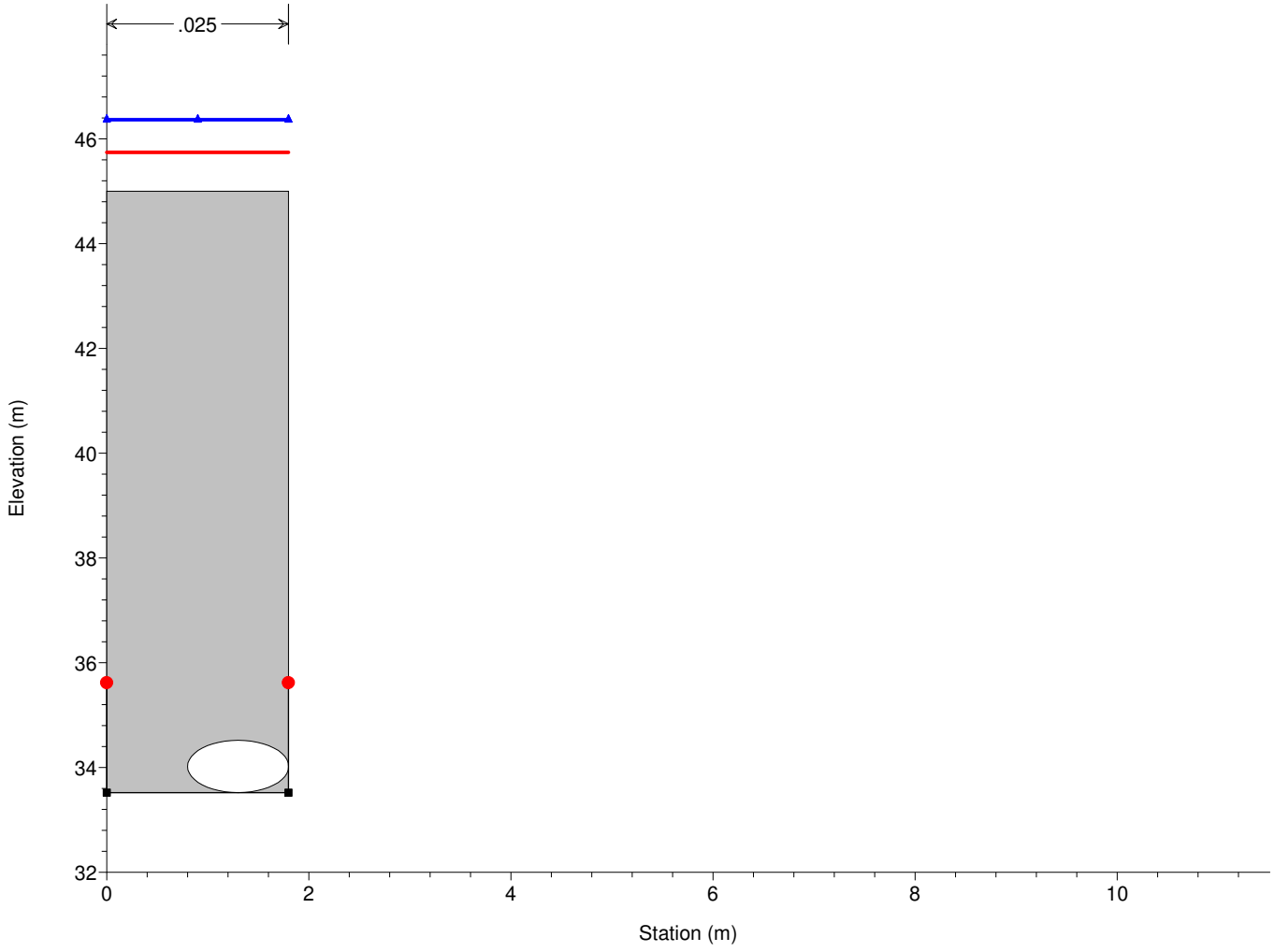




1 cm Horiz. = 0.7 m 1 cm Vert. = 1.35 m

vignale_stato_attuale

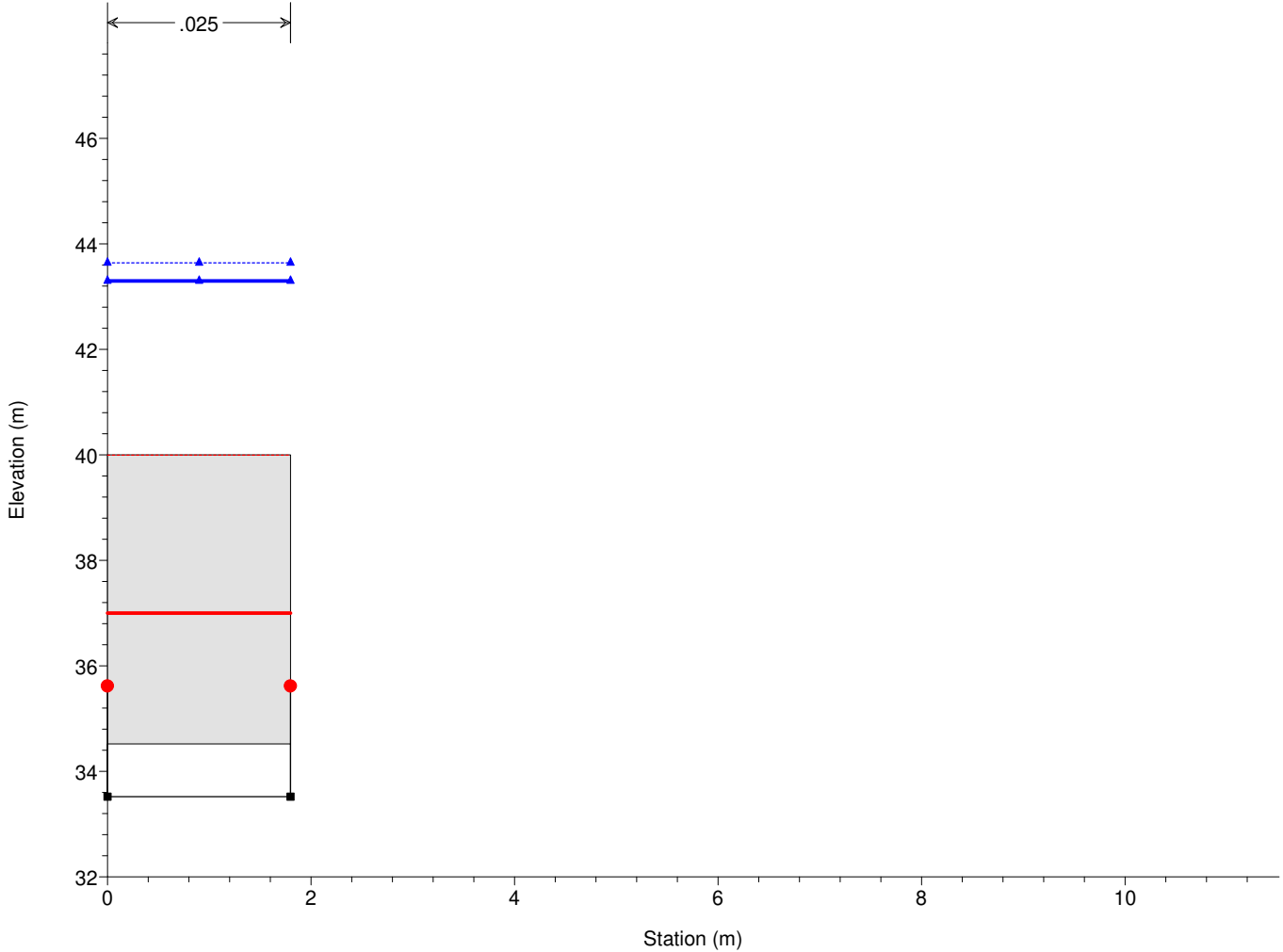
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Legend	
EG Q 200	
WS Q 200	
EG Q 50	
WS Q 50	
Ground	
Bank Sta	

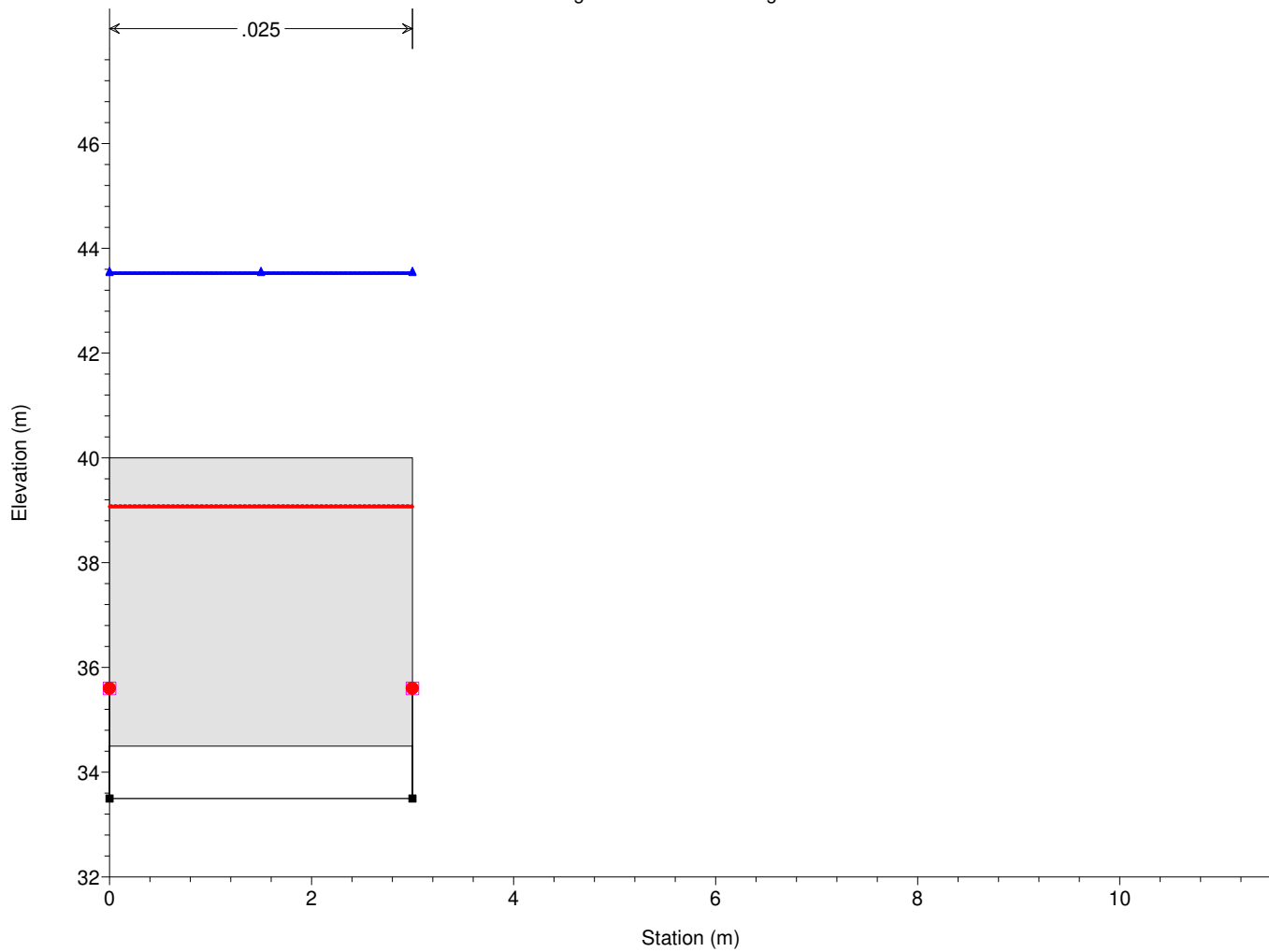
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River = rio Vignale Reach = rio Vignale RS = 8.5



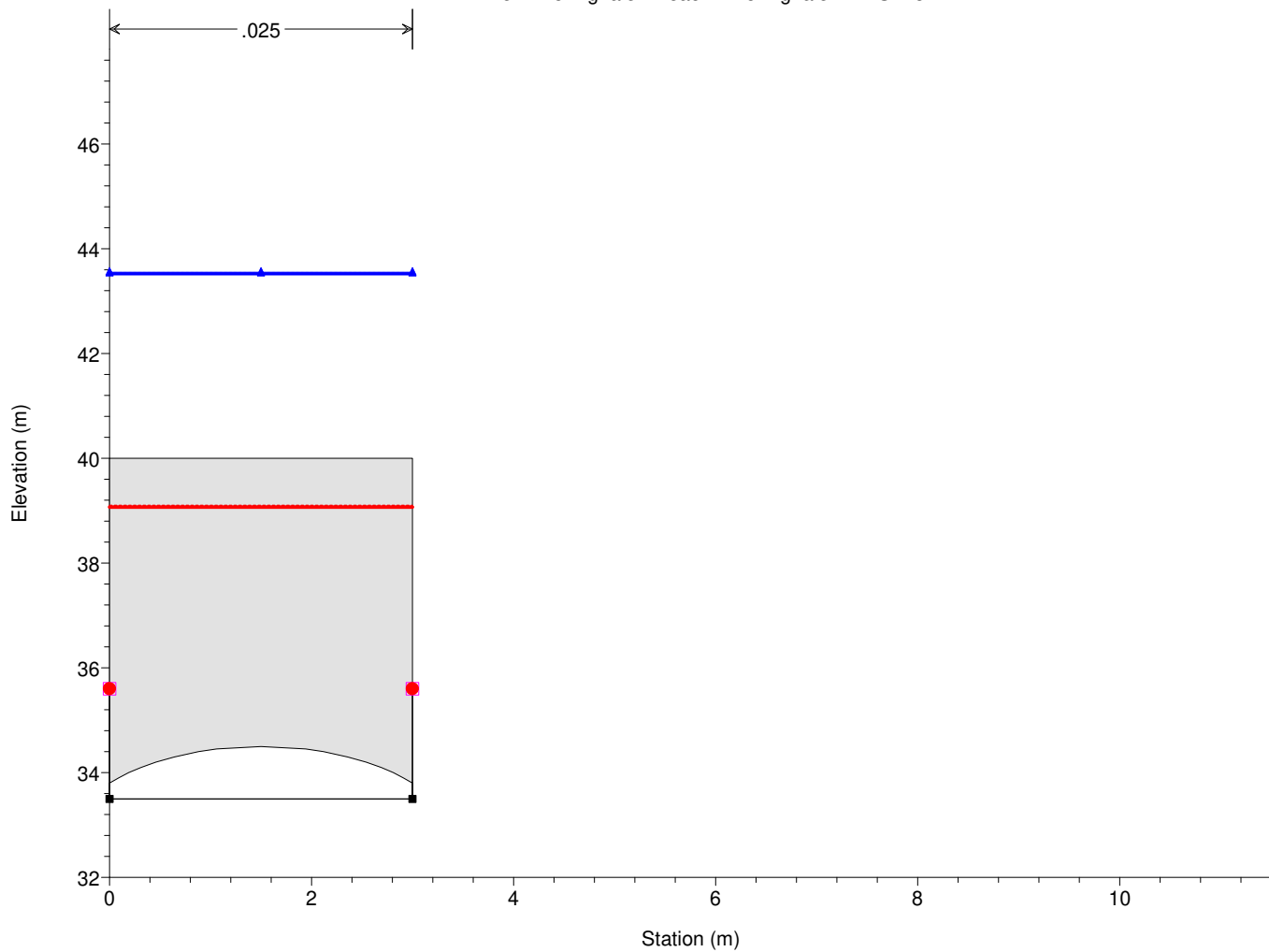
Legend	
EG Q 200	
WS Q 200	
EG Q 50	
WS Q 50	
Ground	
Bank Sta	

vignale_stato_attuale
 River = rio Vignale Reach = rio Vignale RS = 8.01



Legend	
EG Q 200	
WS Q 200	
EG Q 50	
WS Q 50	
Ground	
Levee	
Bank Sta	

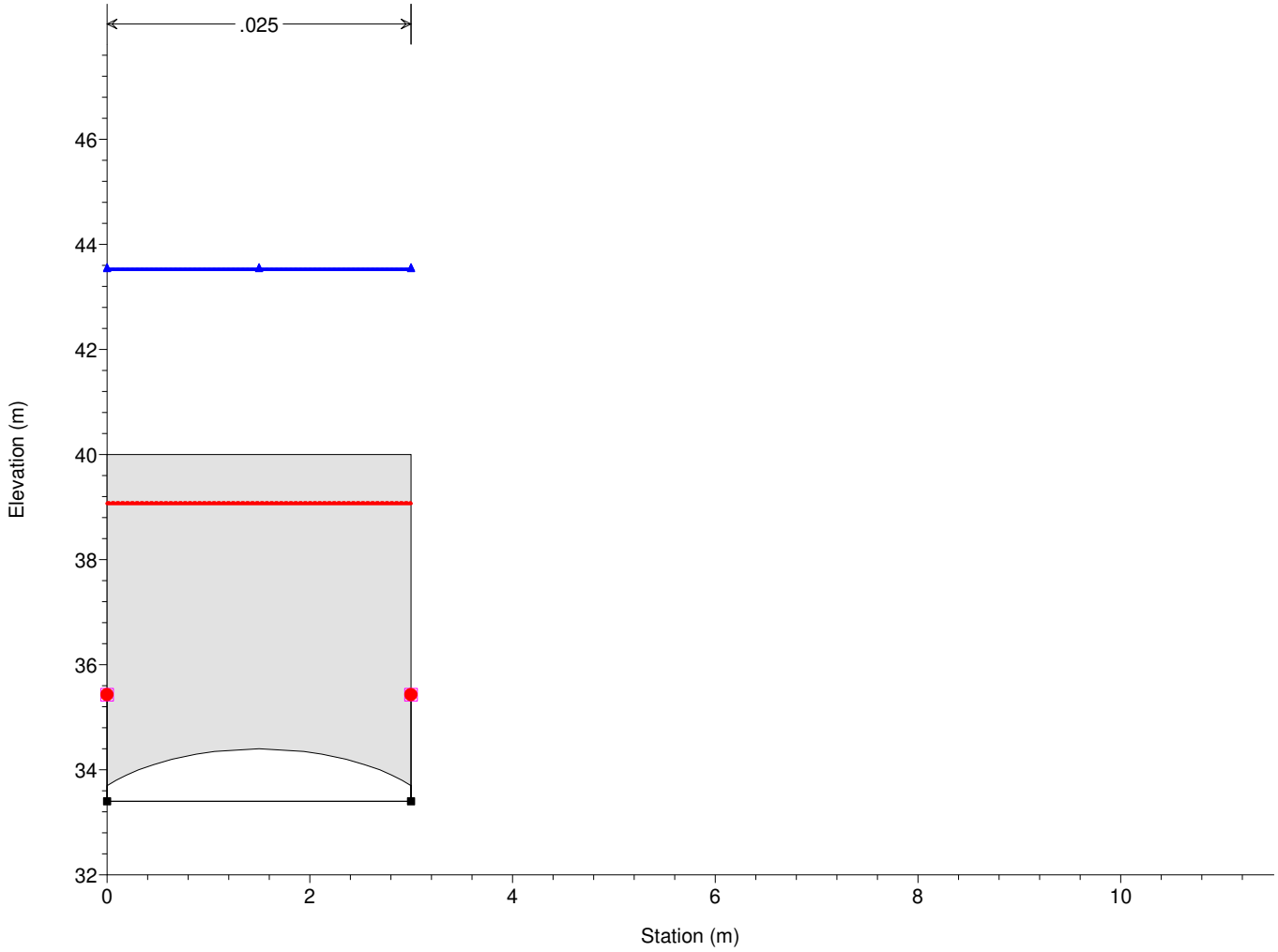
vignale_stato_attuale
 River = rio Vignale Reach = rio Vignale RS = 8



Legend	
EG Q 200	
WS Q 200	
EG Q 50	
WS Q 50	
Ground	
Levee	
Bank Sta	

vignale_stato_attuale

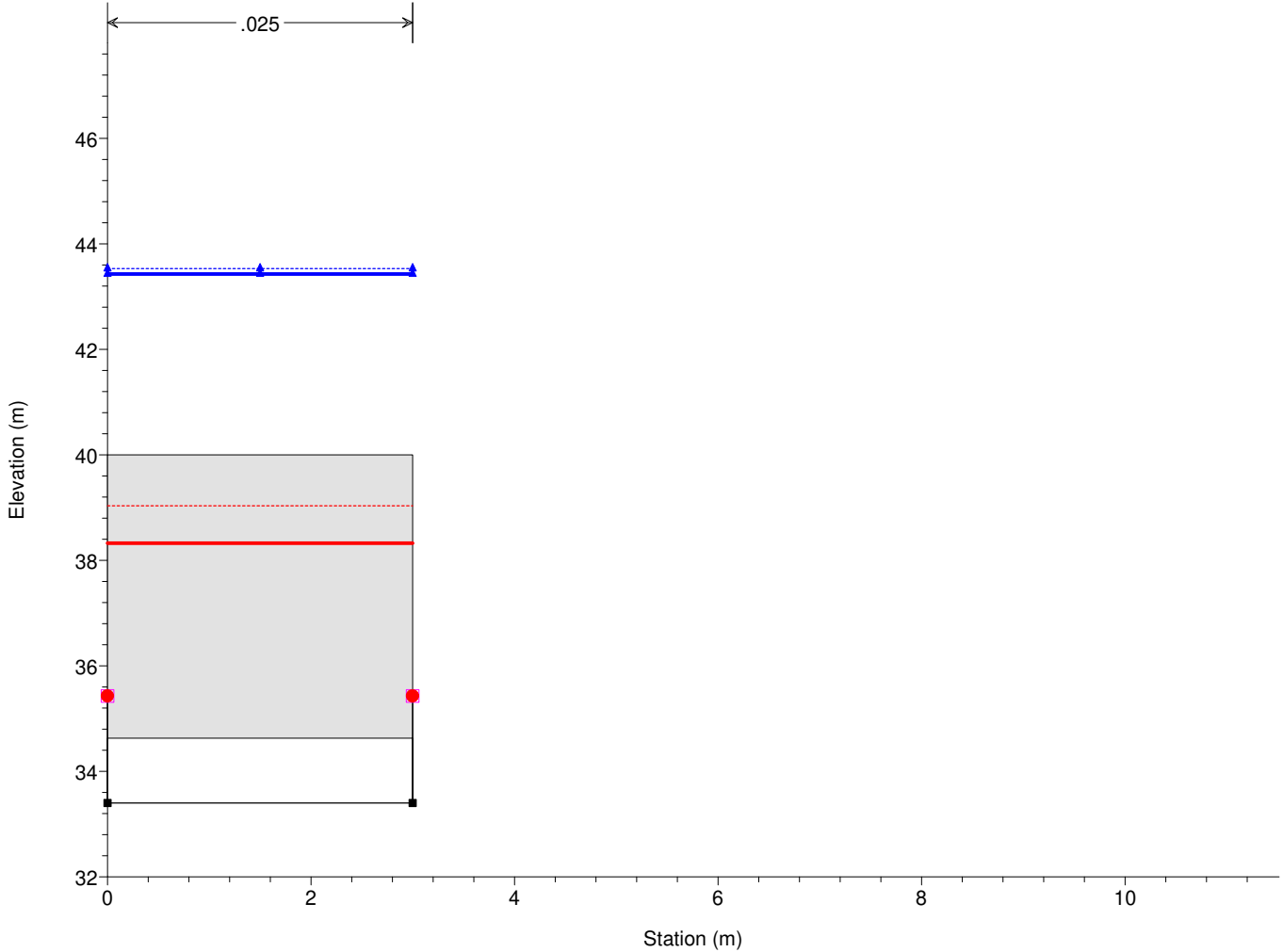
River = rio Vignale Reach = rio Vignale RS = 7



Legend	
EG Q 200	
WS Q 200	
EG Q 50	
WS Q 50	
Ground	
Levee	
Bank Sta	

vignale_stato_attuale

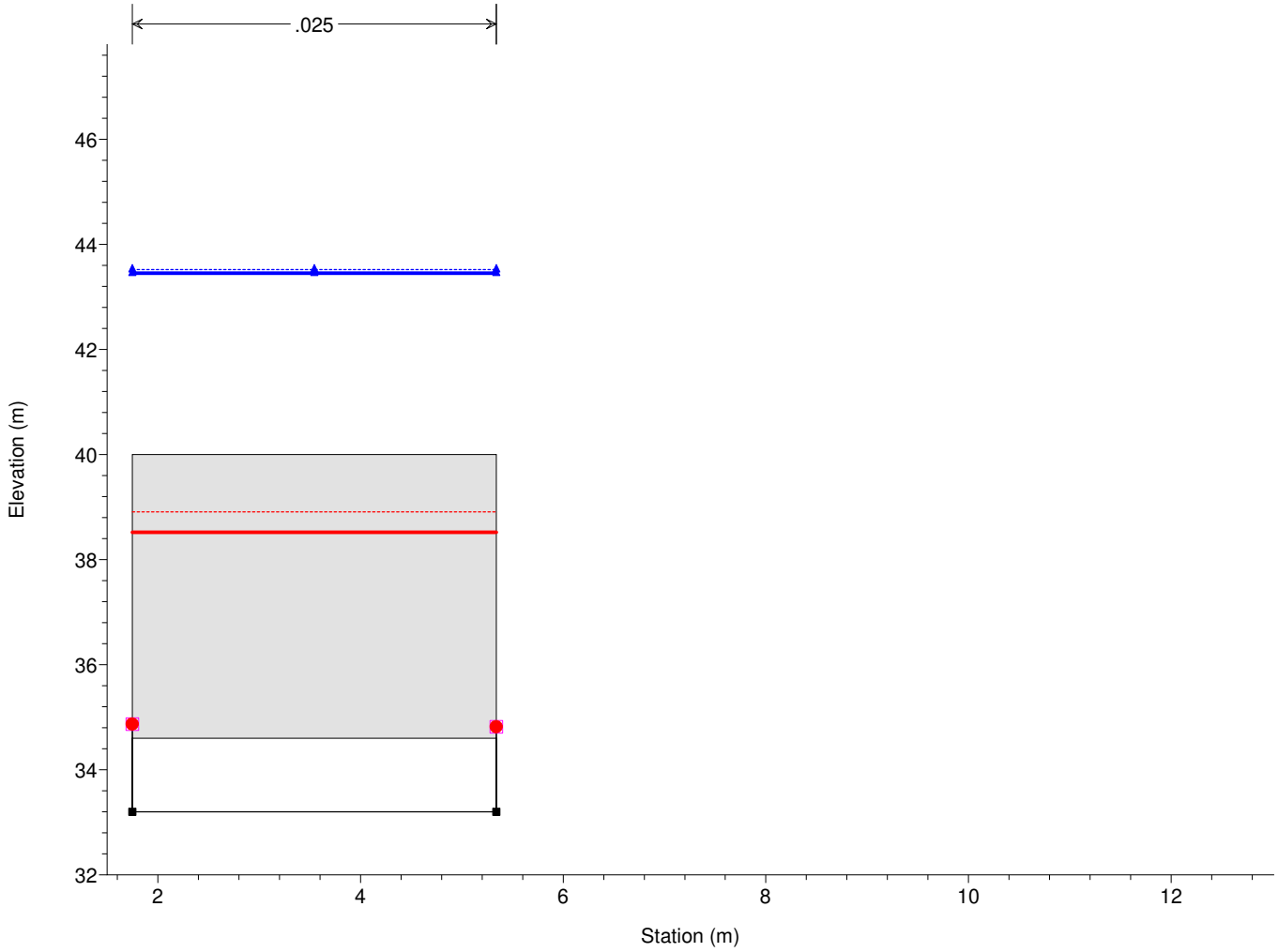
River = rio Vignale Reach = rio Vignale RS = 6.99



Legend	
EG Q 200	
WS Q 200	
EG Q 50	
WS Q 50	
Ground	
Levee	
Bank Sta	

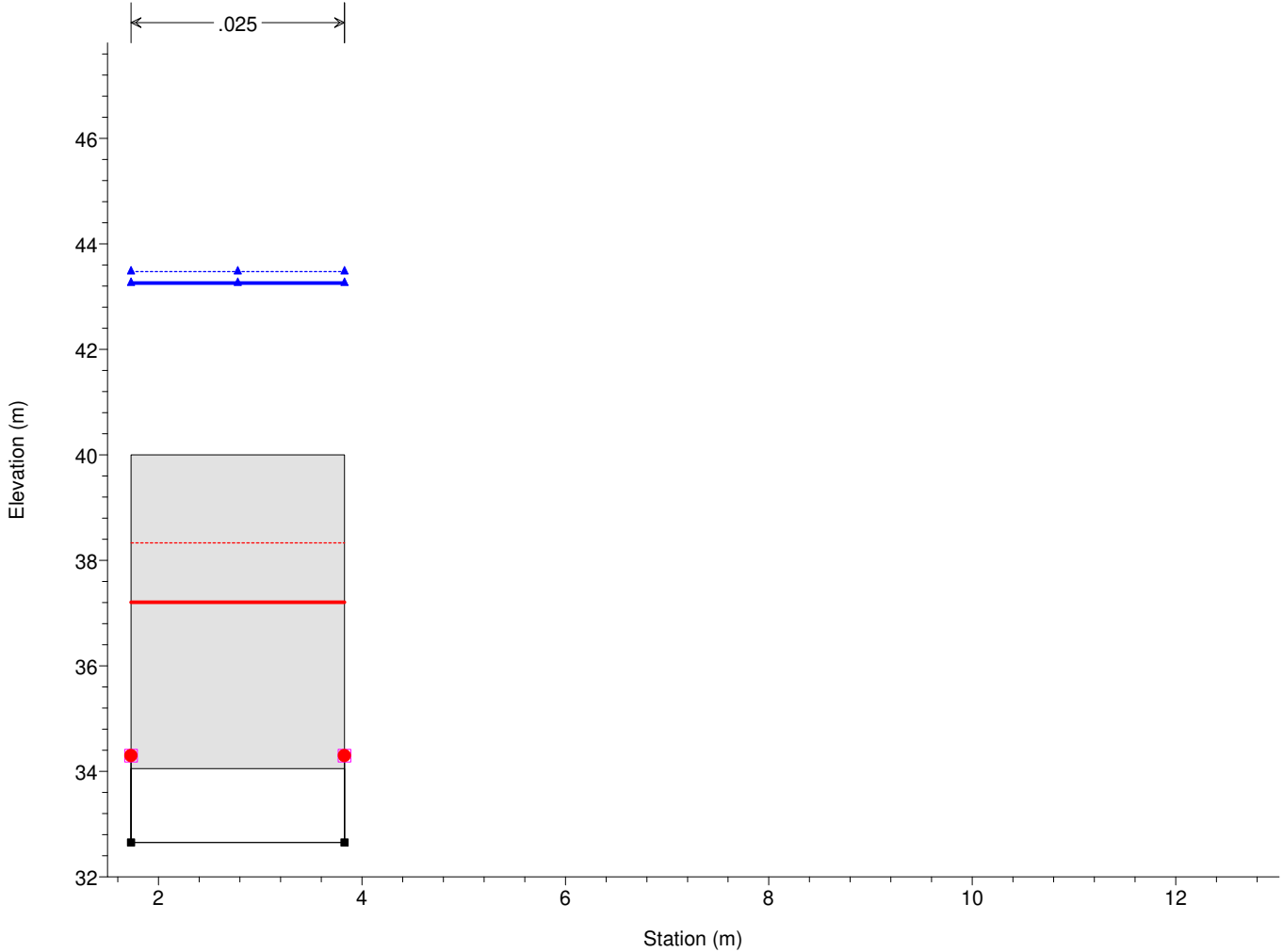
vignale_stato_attuale

River = rio Vignale Reach = rio Vignale RS = 6



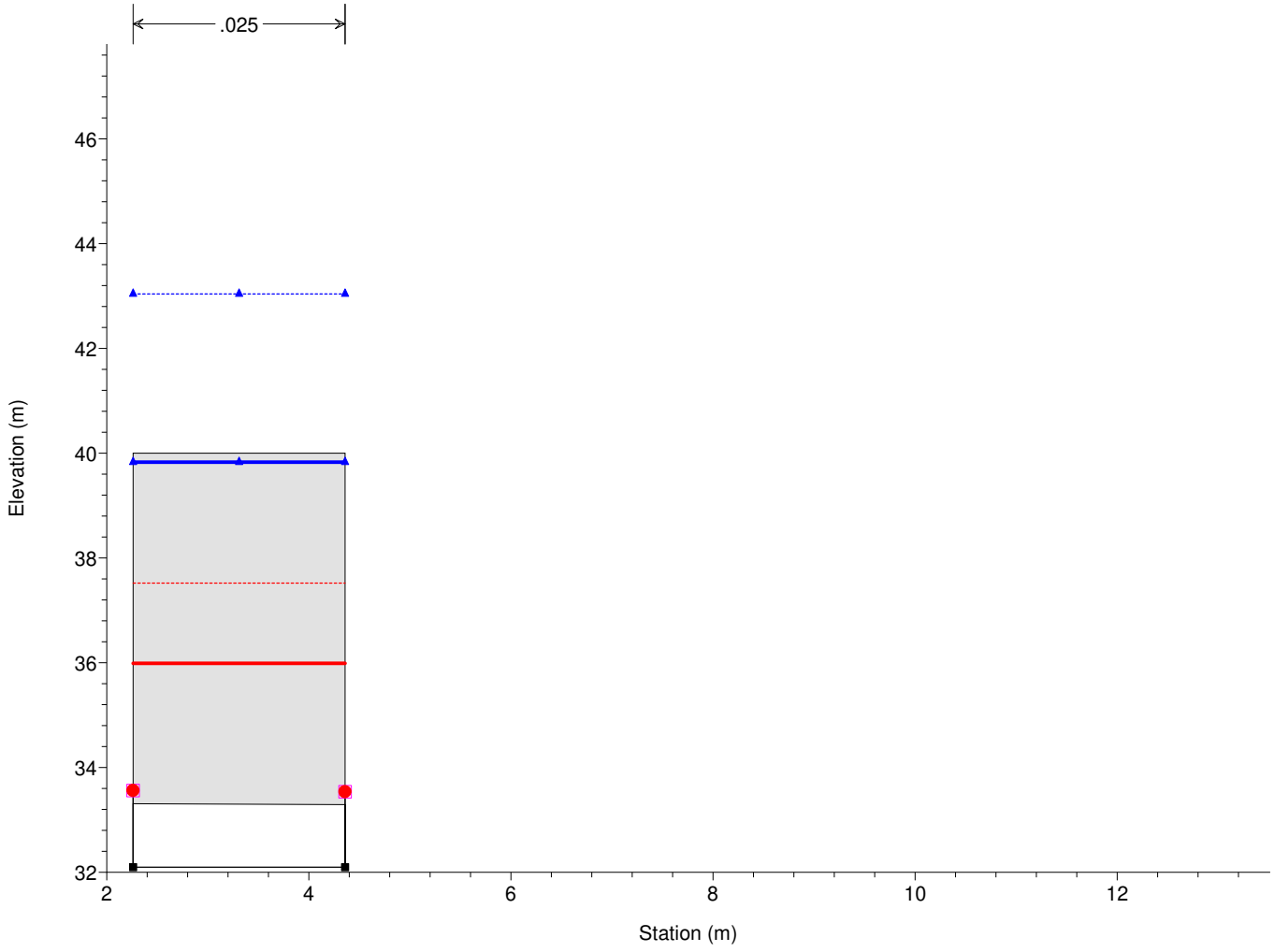
vignale_stato_attuale

River = rio Vignale Reach = rio Vignale RS = 5



vignale_stato_attuale

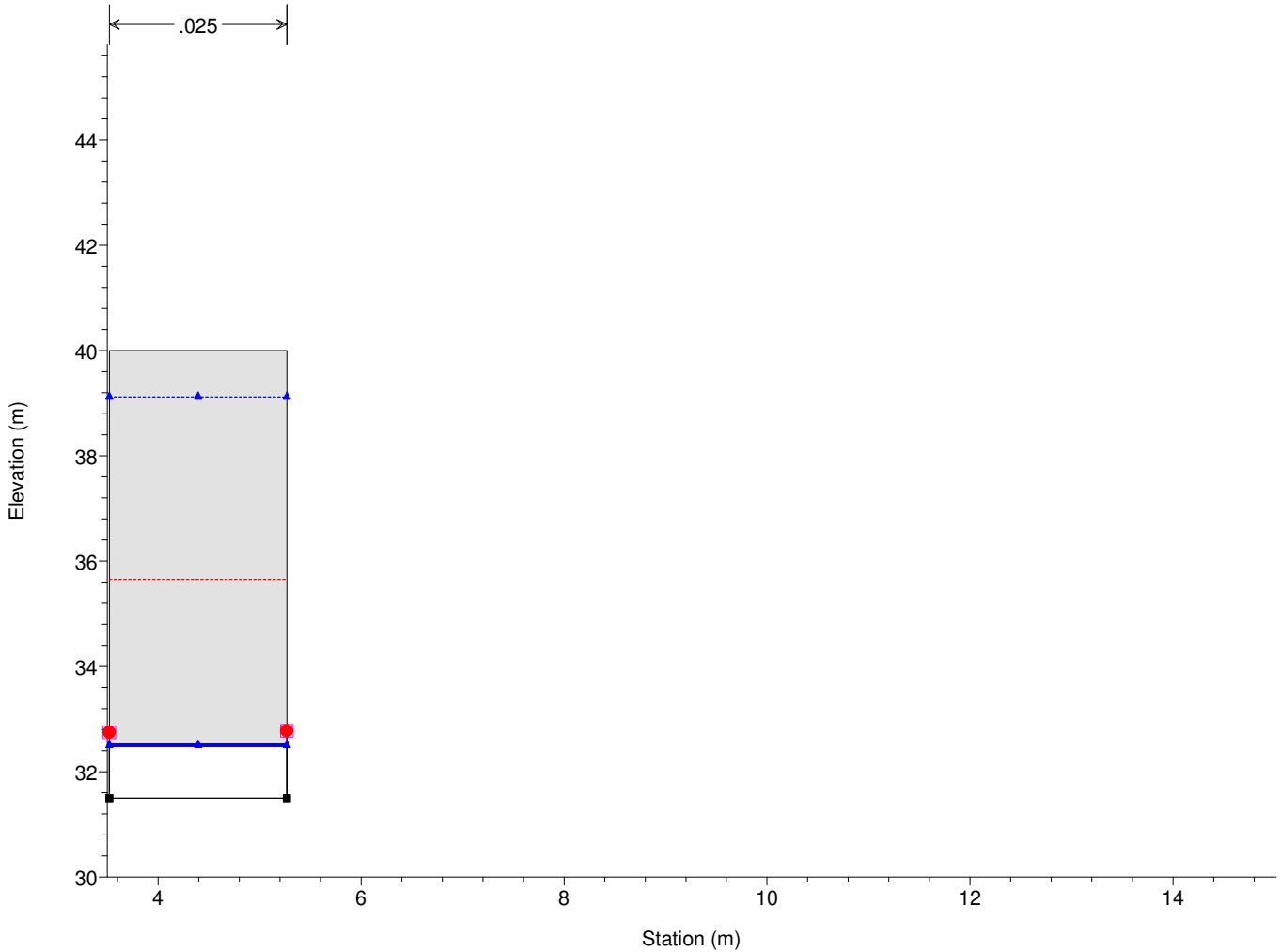
River = rio Vignale Reach = rio Vignale RS = 4



Legend	
	EG Q 200
	WS Q 200
	EG Q 50
	WS Q 50
	Ground
	Levee
	Bank Sta

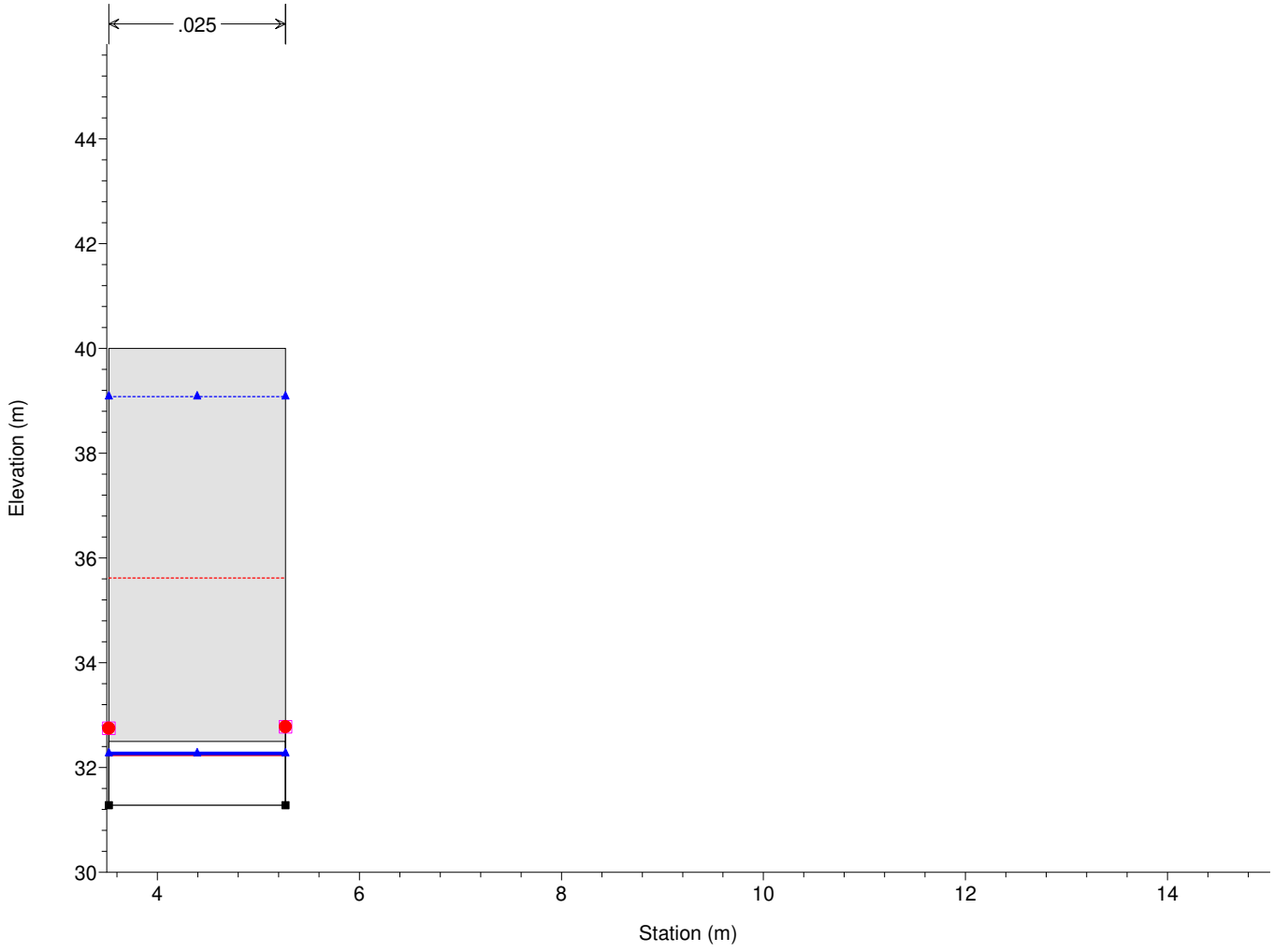
vignale_stato_attuale

River = rio Vignale Reach = rio Vignale RS = 3



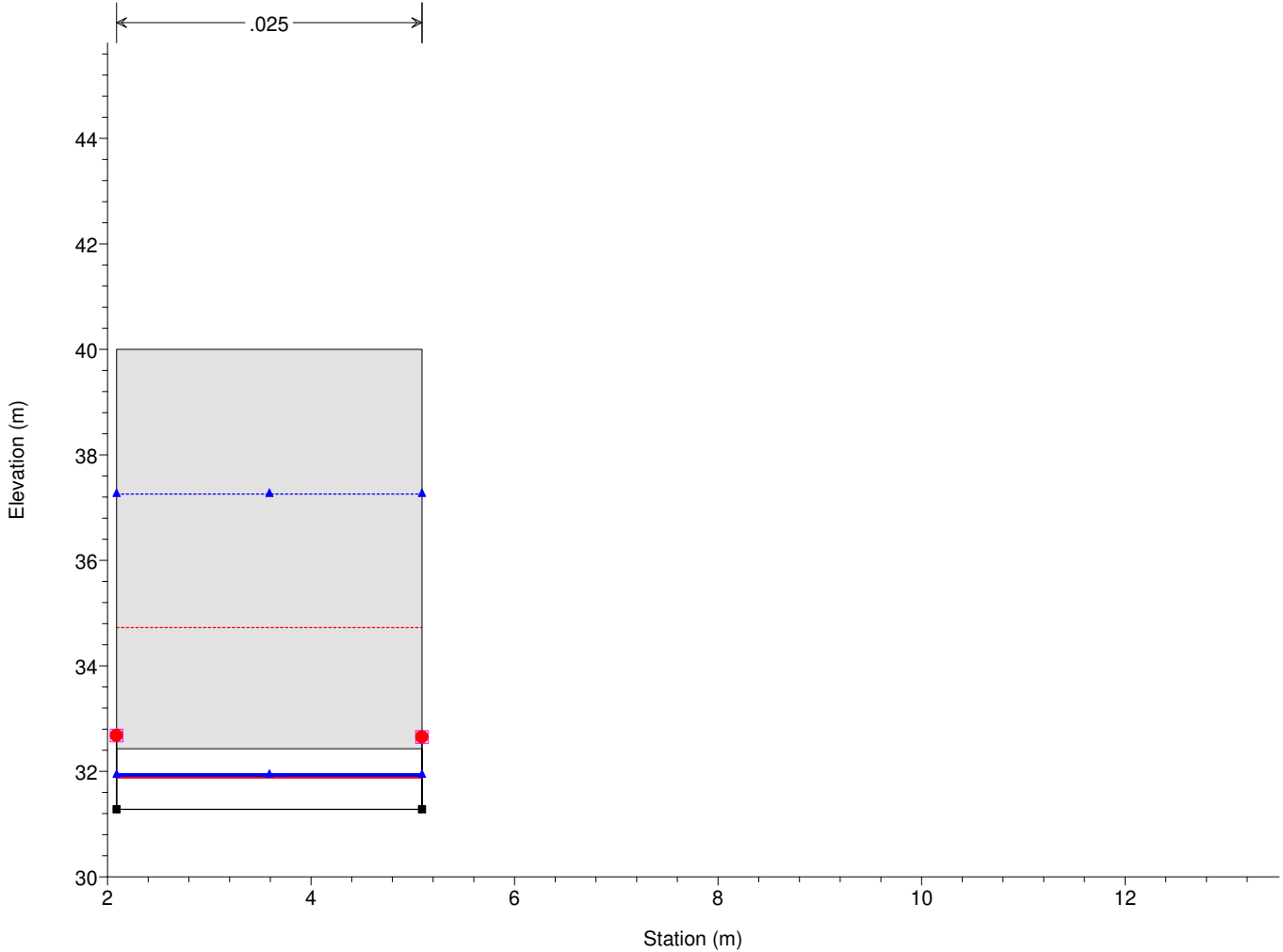
Legend	
	EG Q 200
	EG Q 50
	WS Q 50
	WS Q 200
	Ground
	Levee
	Bank Sta

vignale_stato_attuale
 River = rio Vignale Reach = rio Vignale RS = 2.9



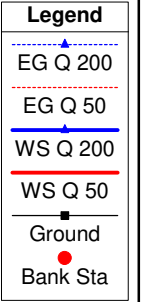
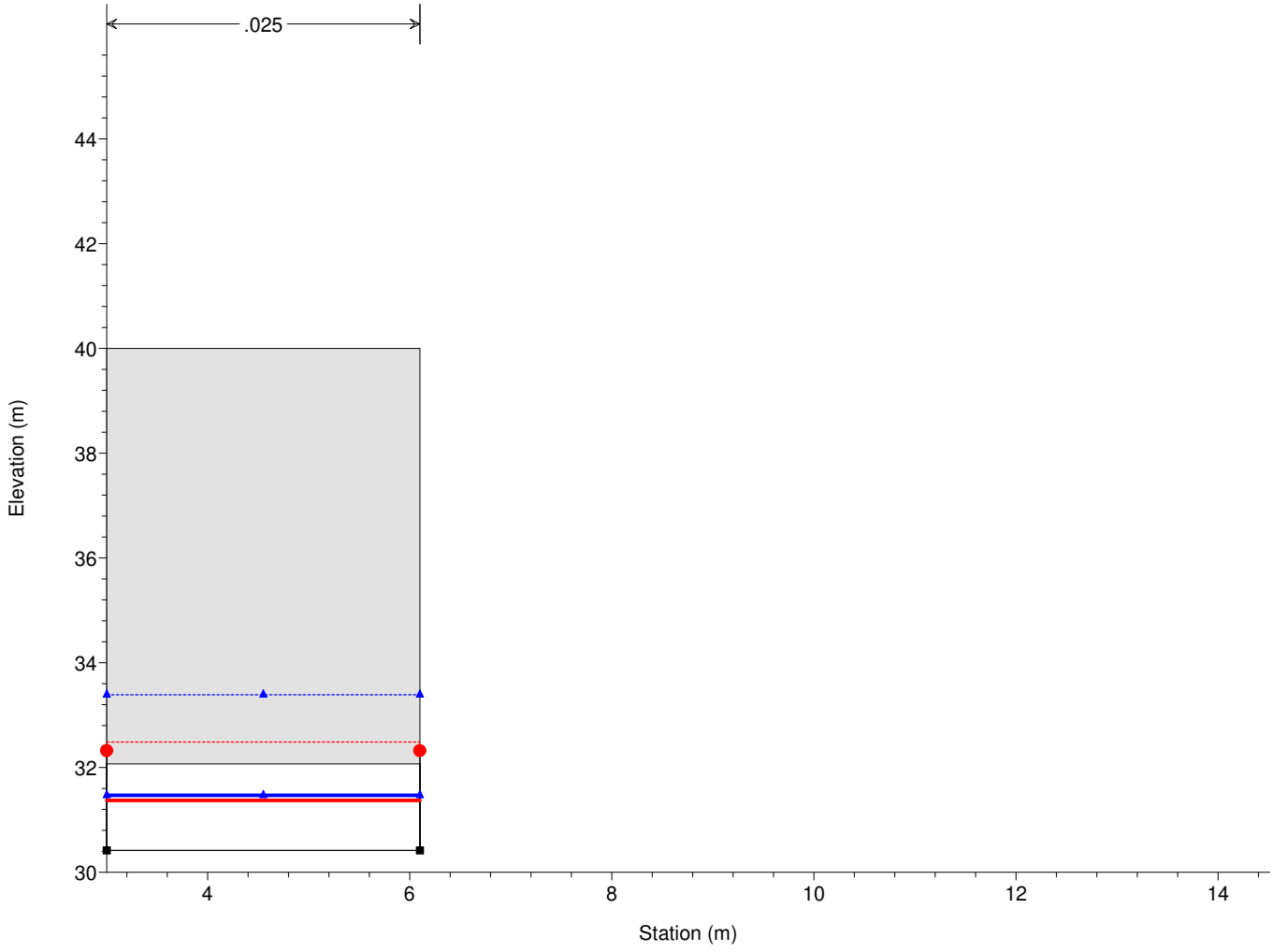
Legend	
EG Q 200	
EG Q 50	
WS Q 200	
WS Q 50	
Ground	
Levee	
Bank Sta	

vignale_stato_attuale
 River = rio Vignale Reach = rio Vignale RS = 2

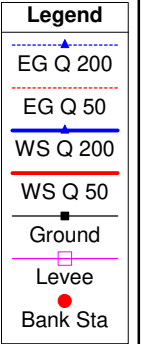
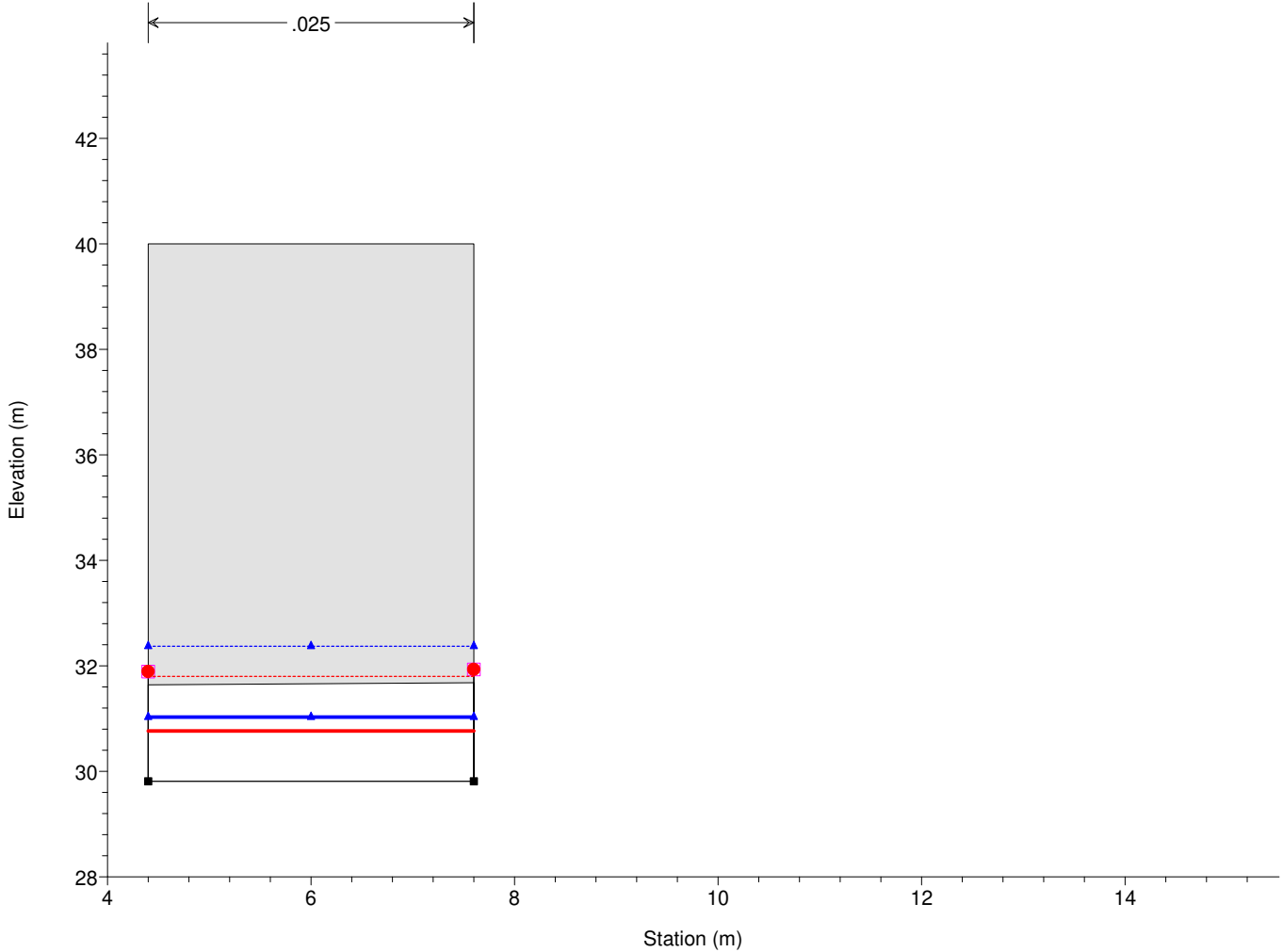


Legend	
EG Q 200	
EG Q 50	
WS Q 200	
WS Q 50	
Ground	
Levee	
Bank Sta	

vignale_stato_attuale
 River = rio Vignale Reach = rio Vignale RS = 1.5



vignale_stato_attuale
 River = rio Vignale Reach = rio Vignale RS = 1



vignale_stato_attuale

River = rio Vignale Reach = rio Vignale RS = 0.5

