



# **AMBITO 19 Cinque Terre**

## **PIANO DI BACINO STRALCIO PER LA TUTELA DAL RISCHIO IDROGEOLOGICO**

**(ai sensi dell'art. 1, comma 1, del D.L. 180/1998 convertito con L. 267/1998)**

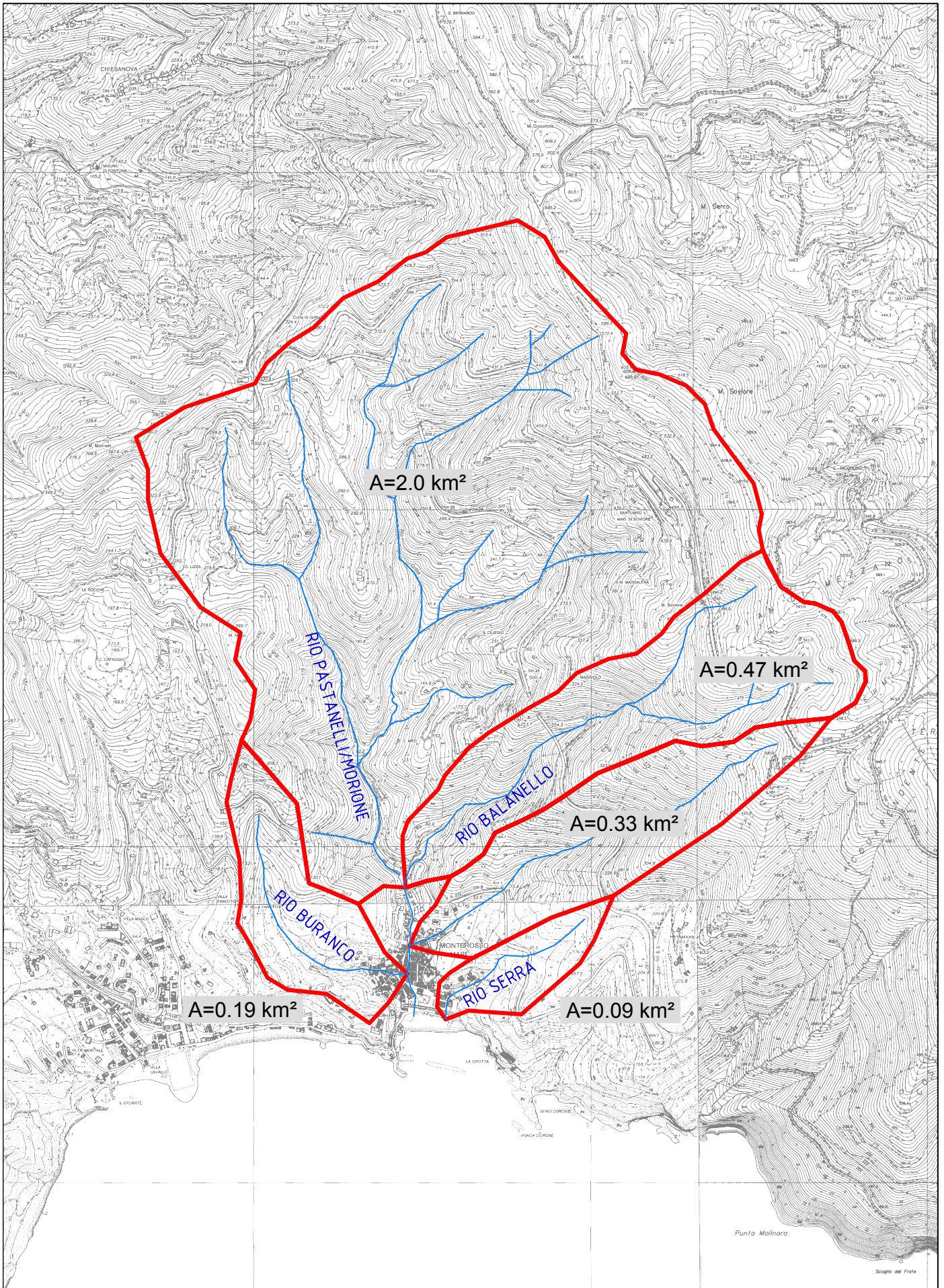


## **VERIFICHE IDRAULICHE**

**Rio Pastanelli - Rio Morione - Rio Balanello - Rio Buranco  
Rio senza nome - Rio Serra  
(Monterosso al Mare)**

<b>APPROVAZIONE</b>	<b>Delibera del Consiglio Provinciale della Spezia n. 17 del 05/02/2003</b>
<b>ULTIMA MODIFICA DELL'ELABORATO</b>	<b>Decreto del Direttore Generale n. 2118 del 31/03/2020</b>
<b>ENTRATA IN VIGORE</b>	<b>Pubblicazione sul BURL n. 16 del 15/04/2020</b>





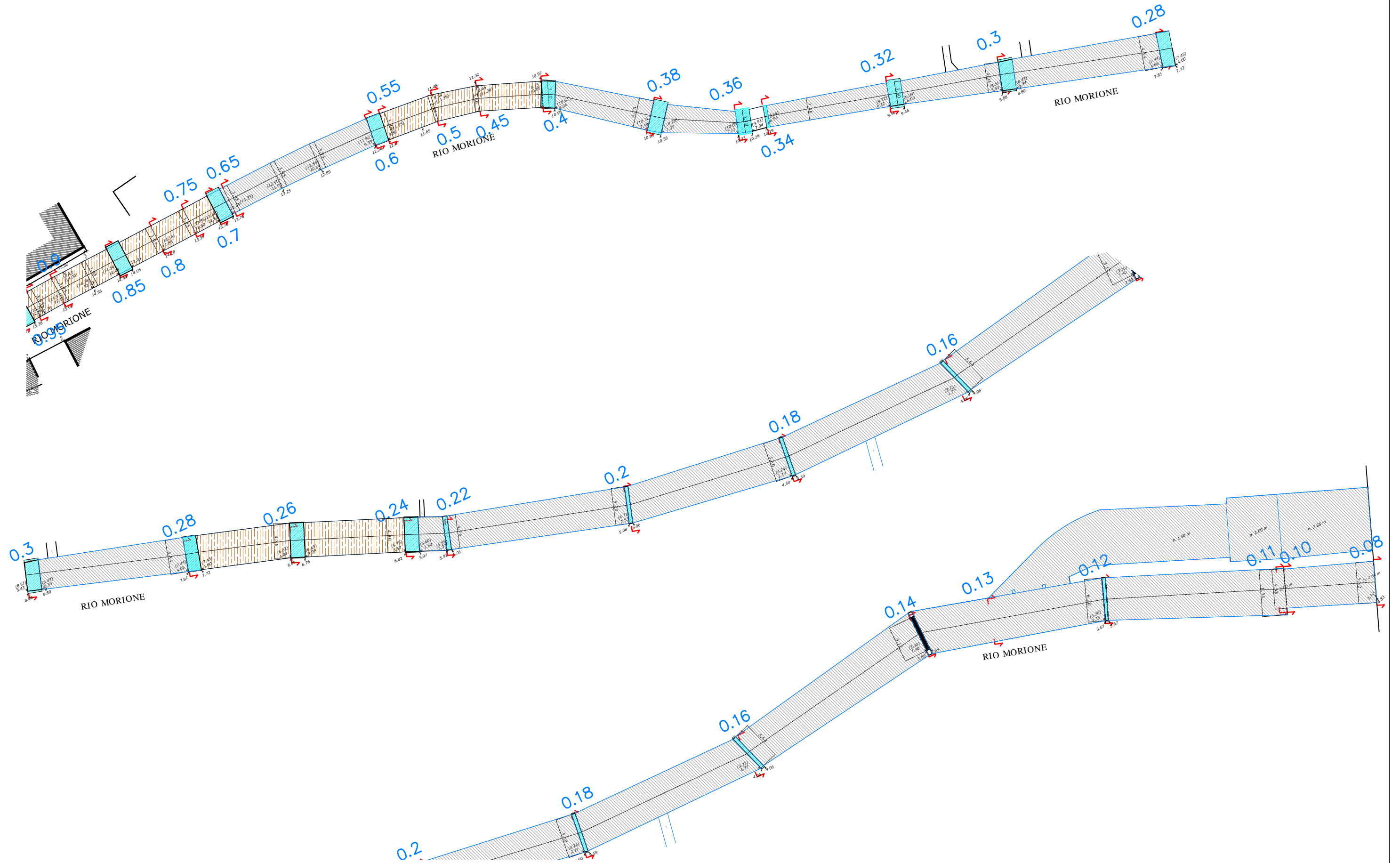
COROGRAFIA BACINO RIO PASTANELLI -  
MORIONE E AFFLUENTI  
scala 1:15.000

## **RIO PASTANELLI – RIO MORIONE**

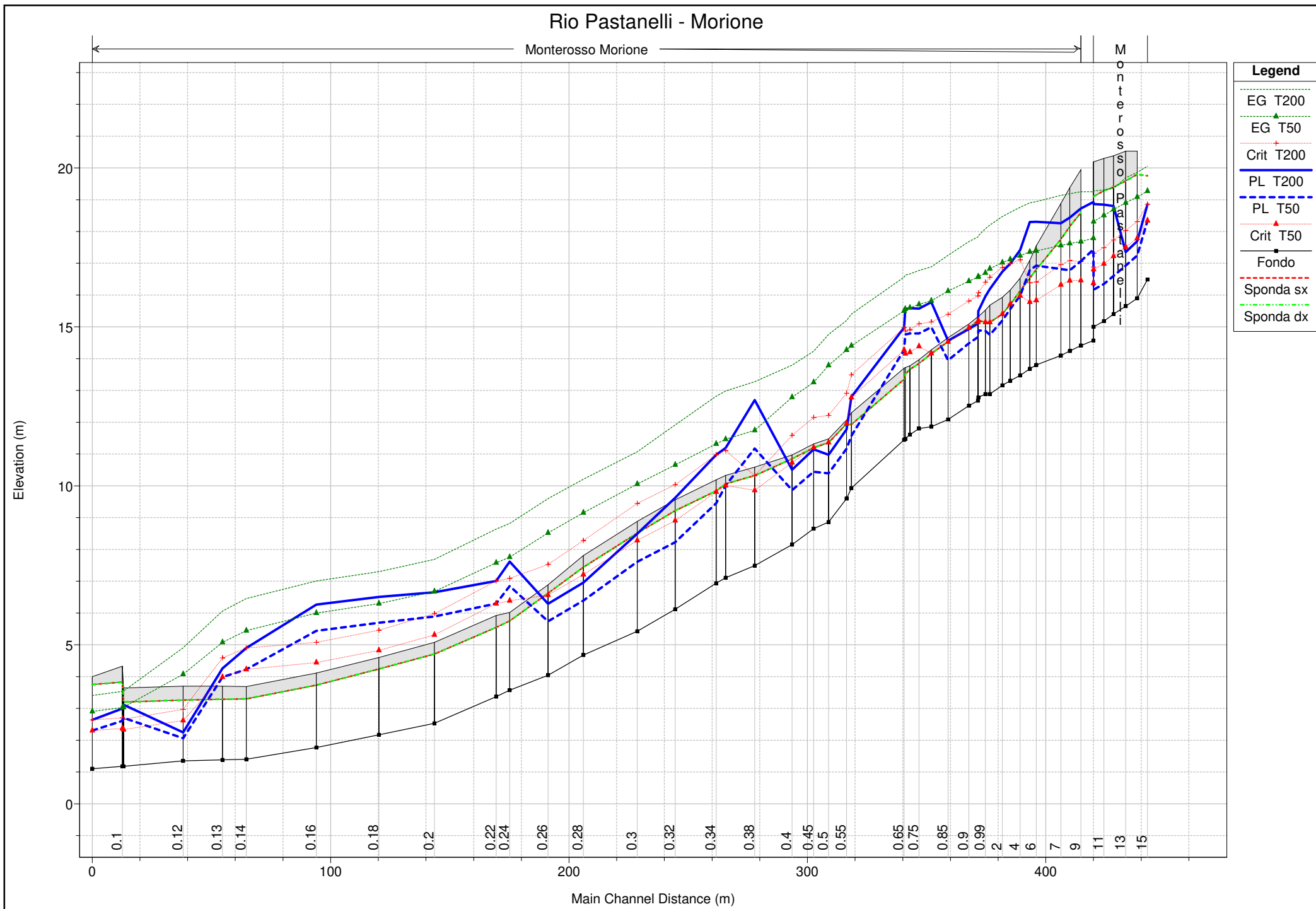




UBICAZIONE SEZIONI CALCOLO  
IDRAULICO 1/2  
scala 1:500

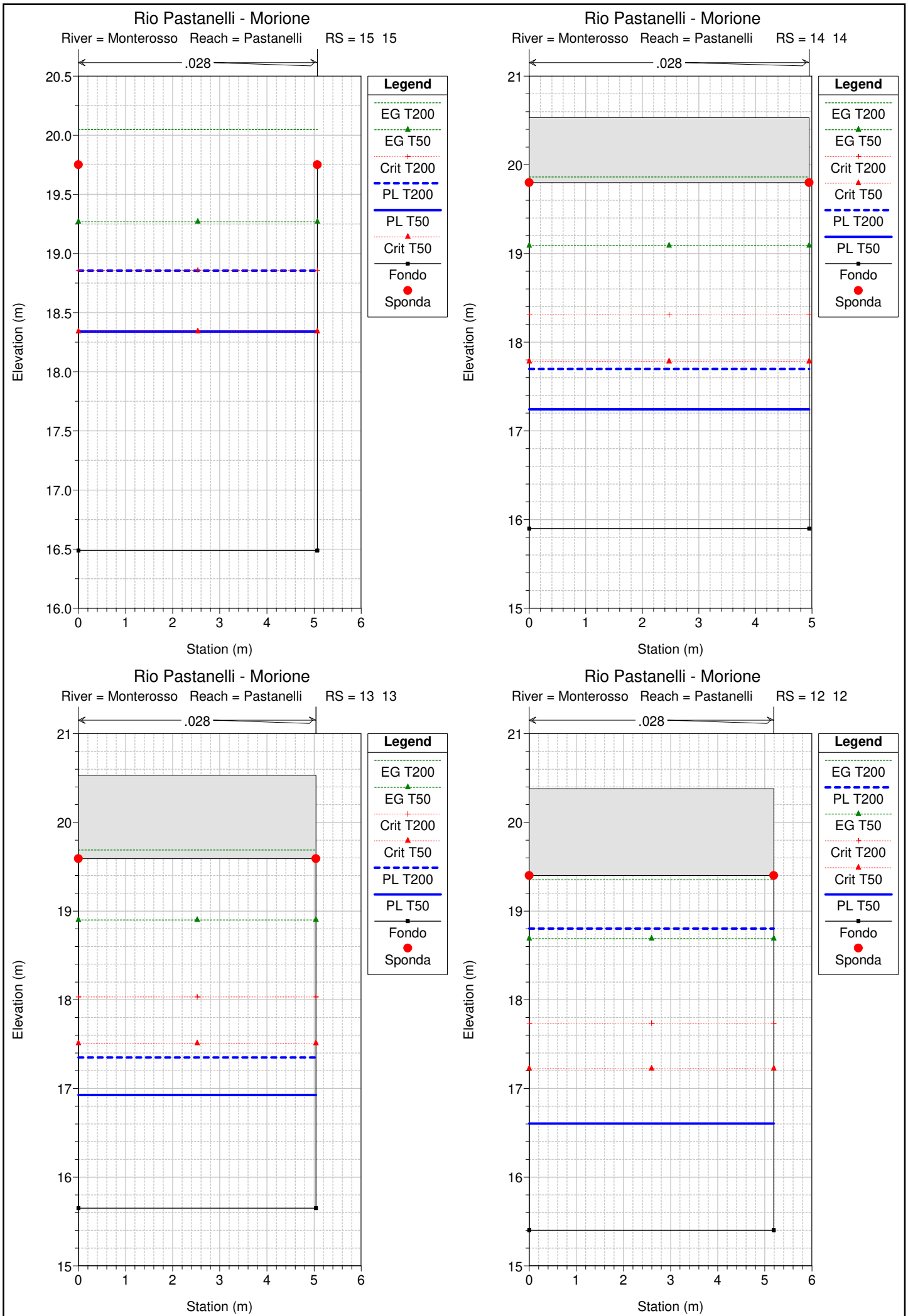


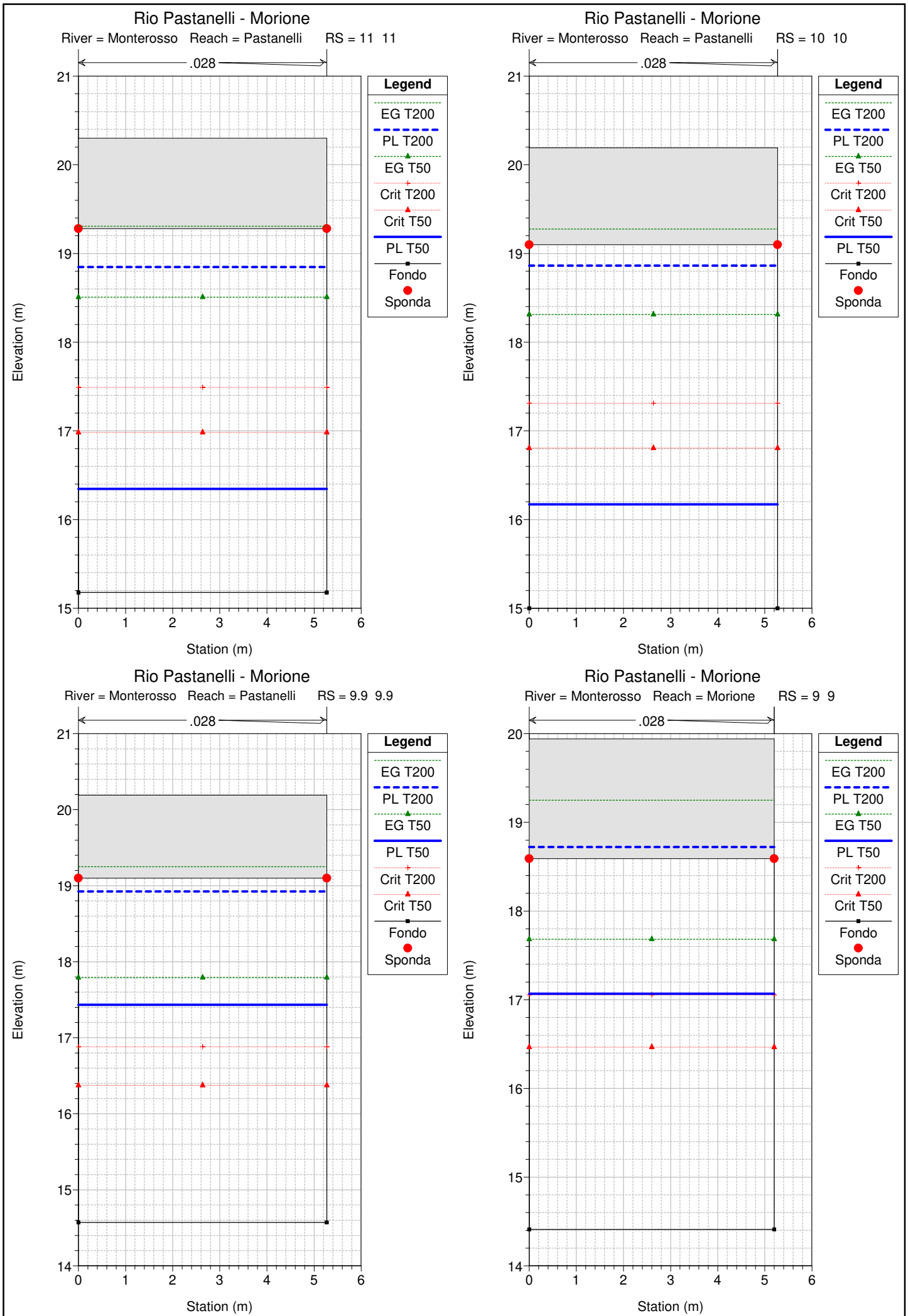
UBICAZIONE SEZIONI CALCOLO  
IDRAULICO 2/2  
scala 1:500



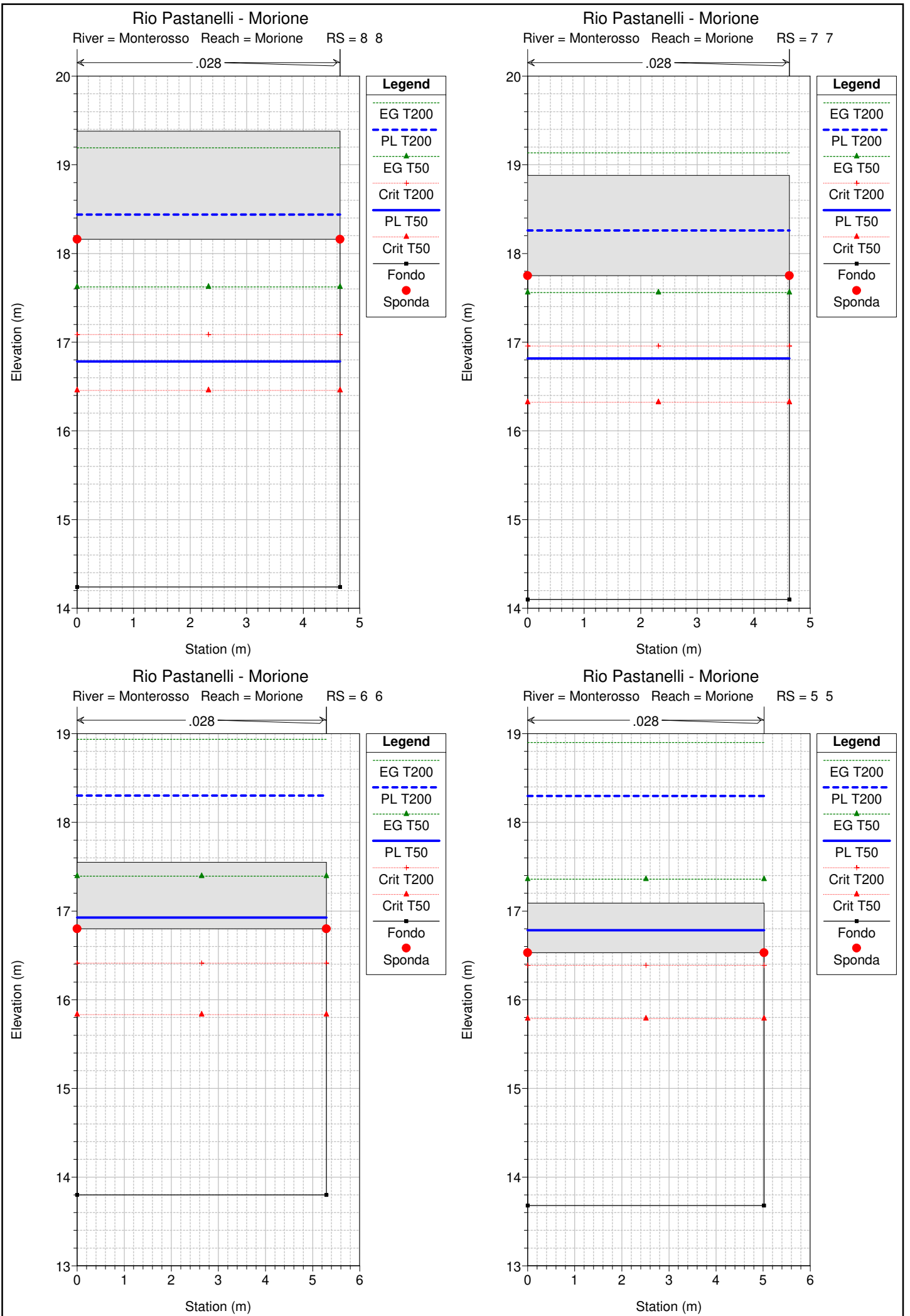
1 cm Horiz. = 20 m 1 cm Vert. = 1.5 m

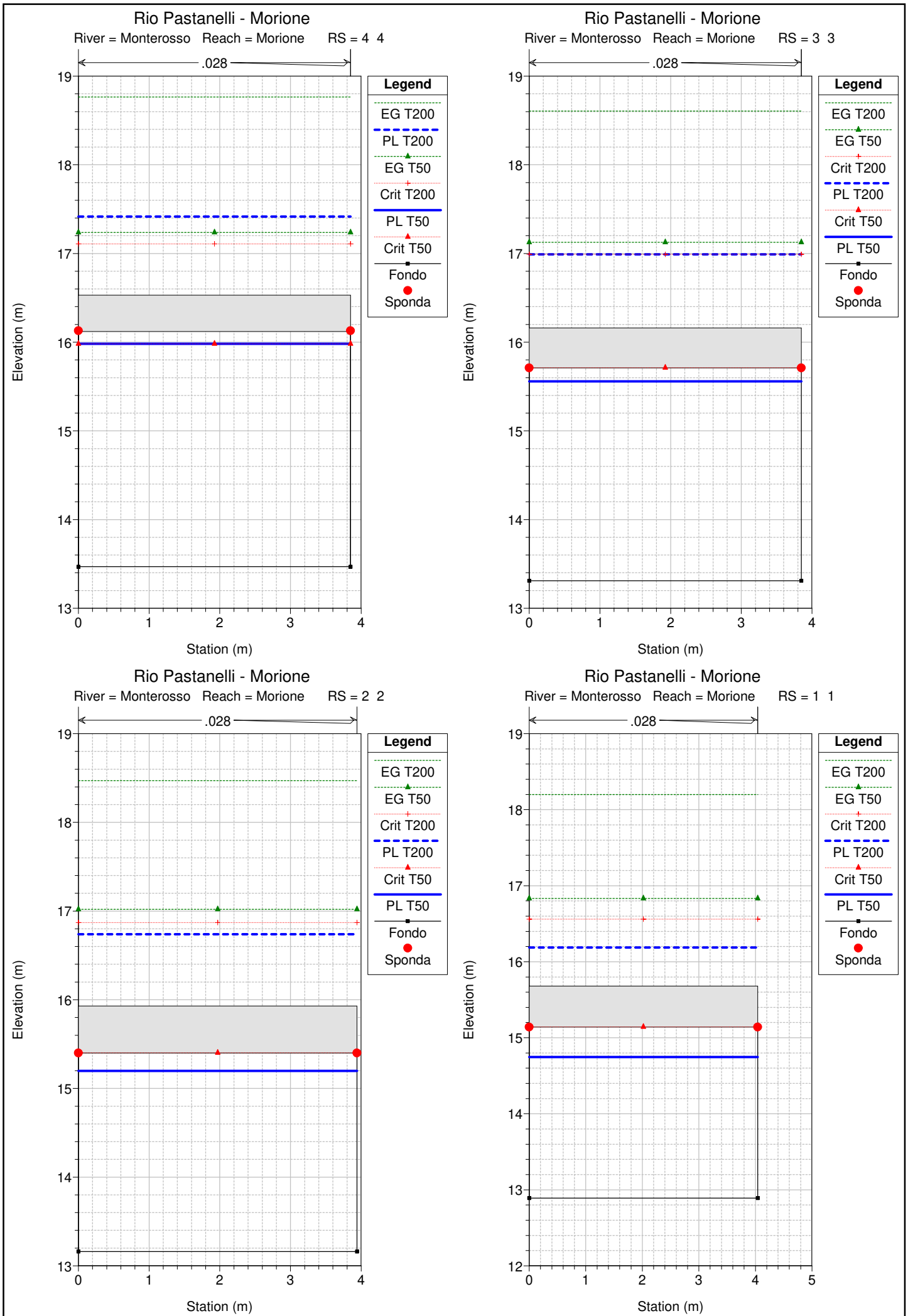
Approvato con DDG n. 2118 del 31/03/2020

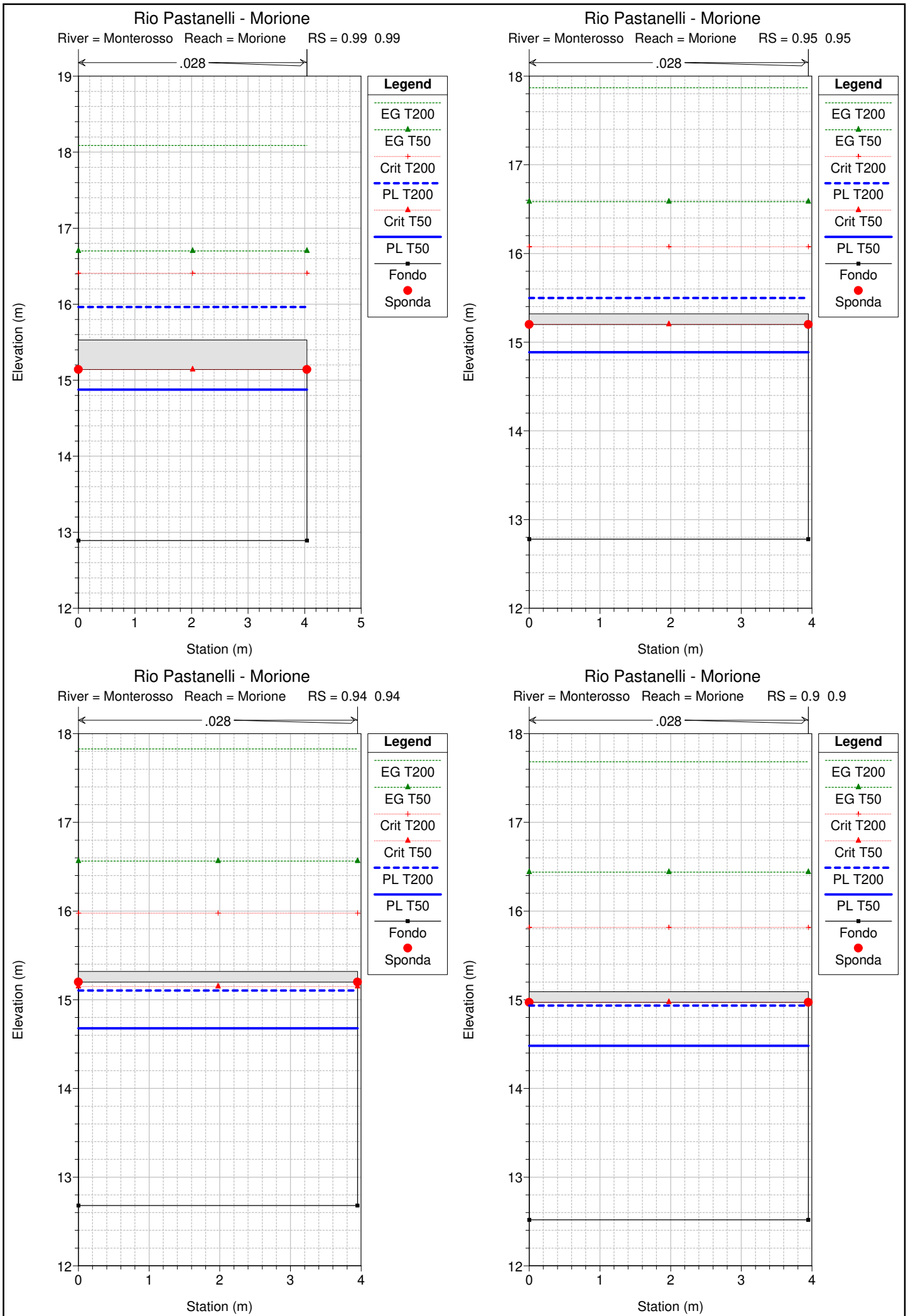




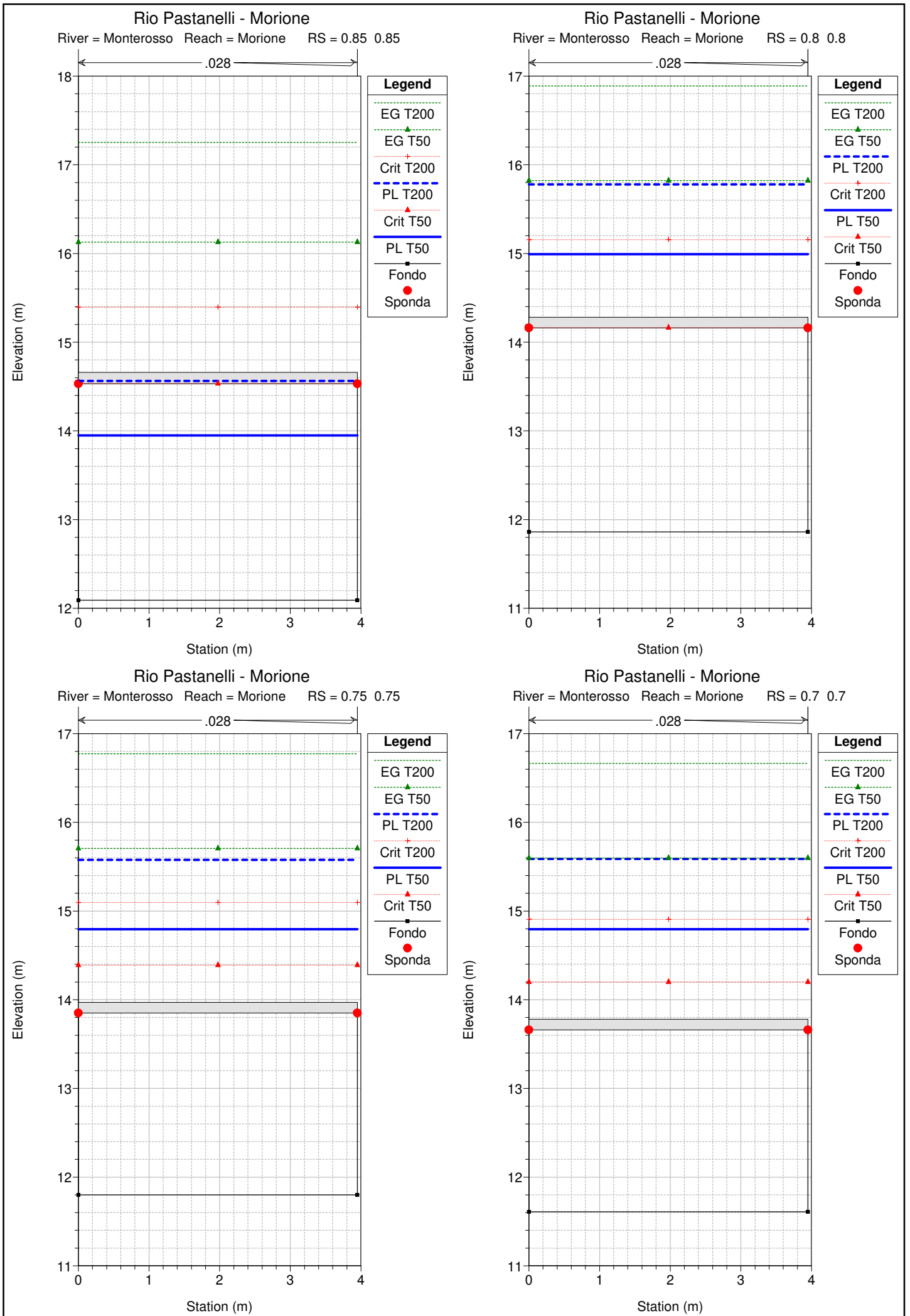


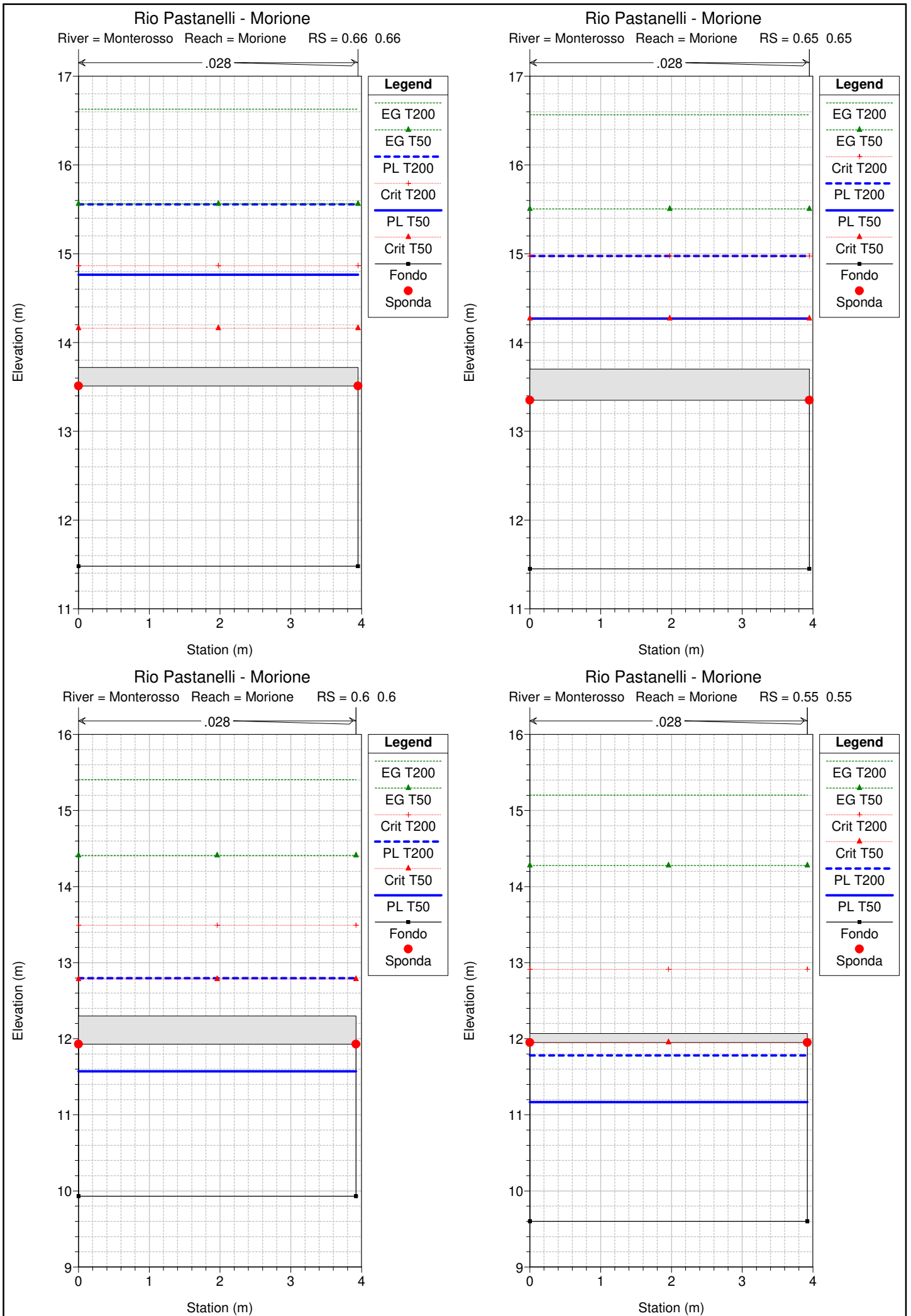


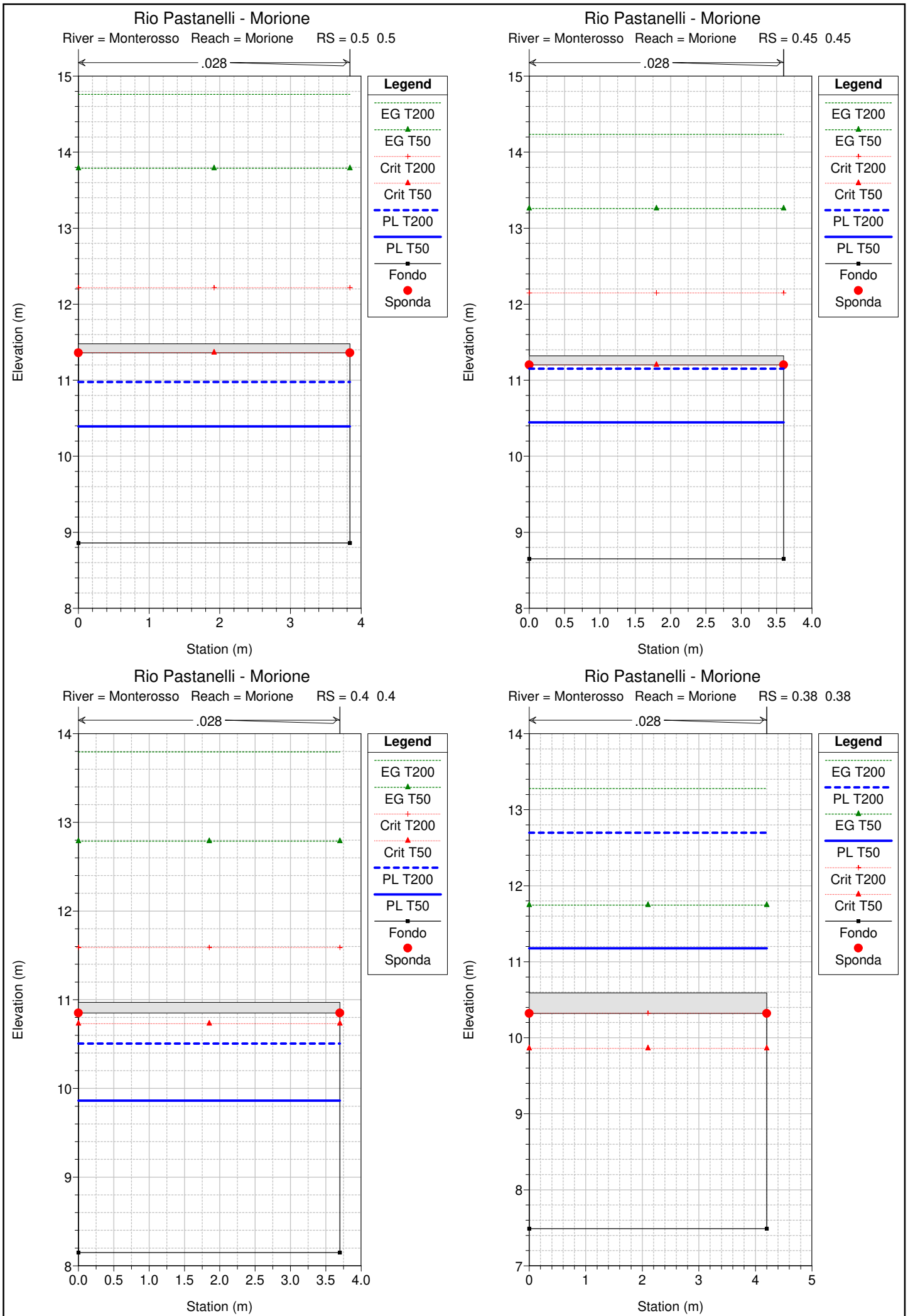




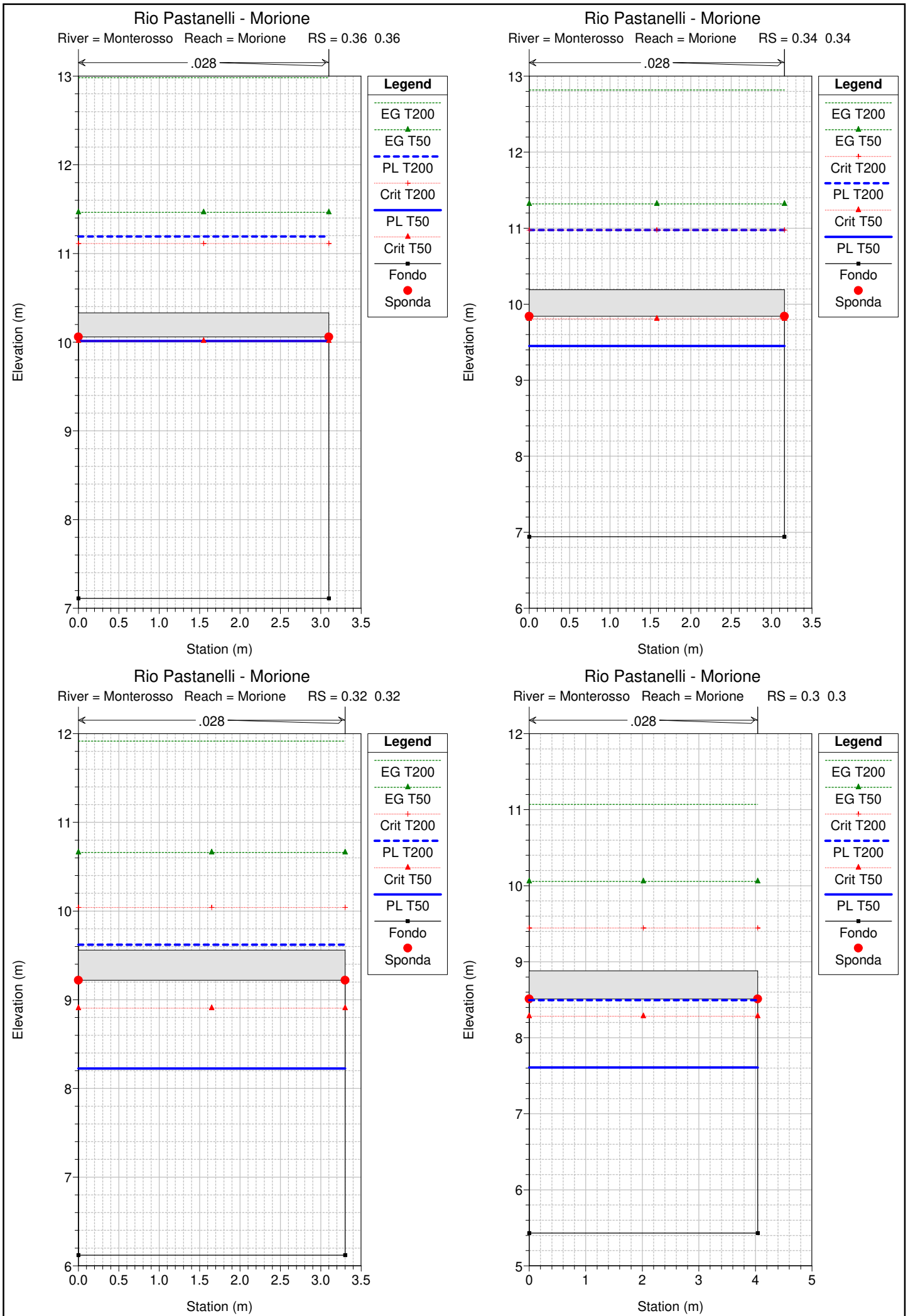


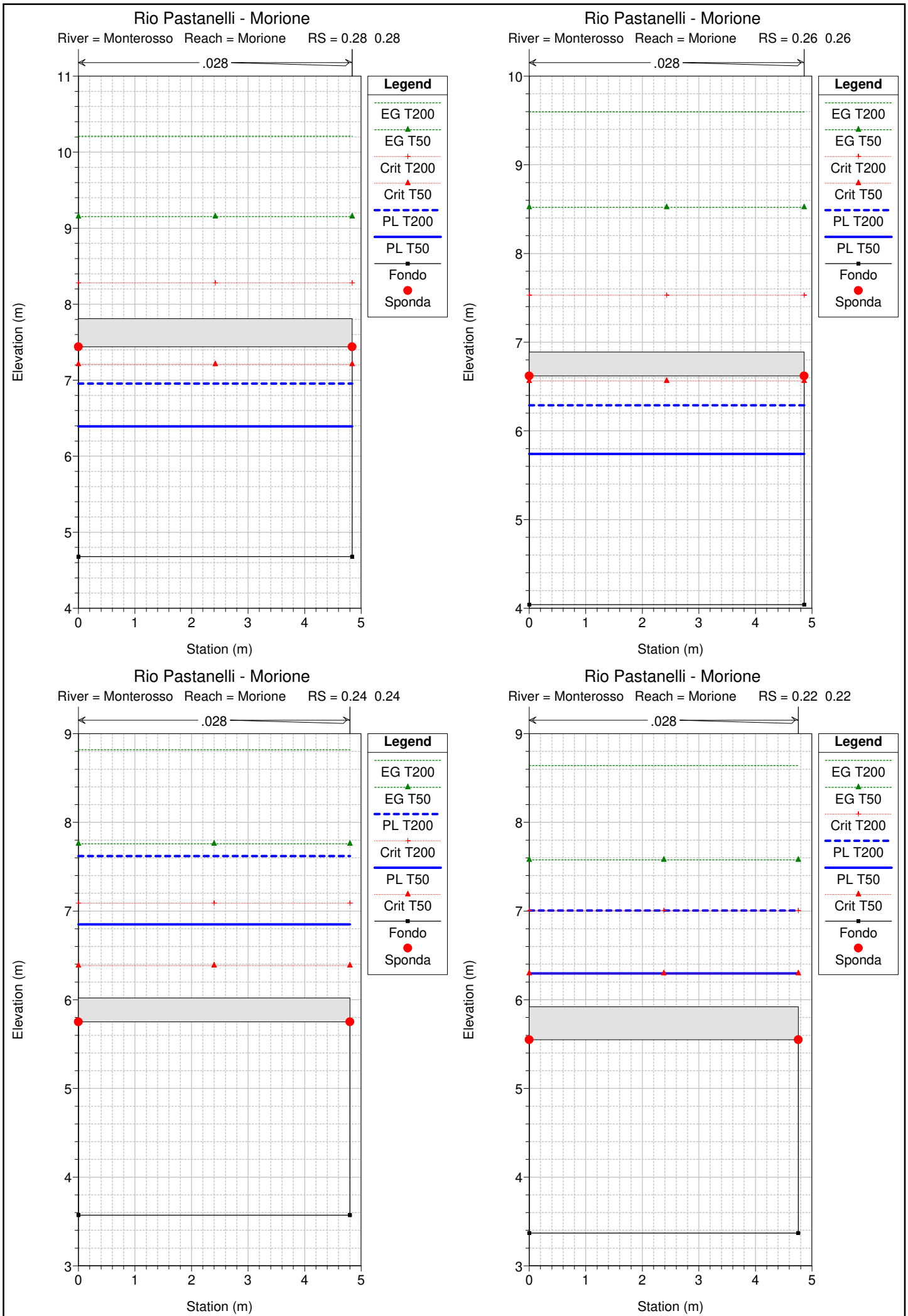


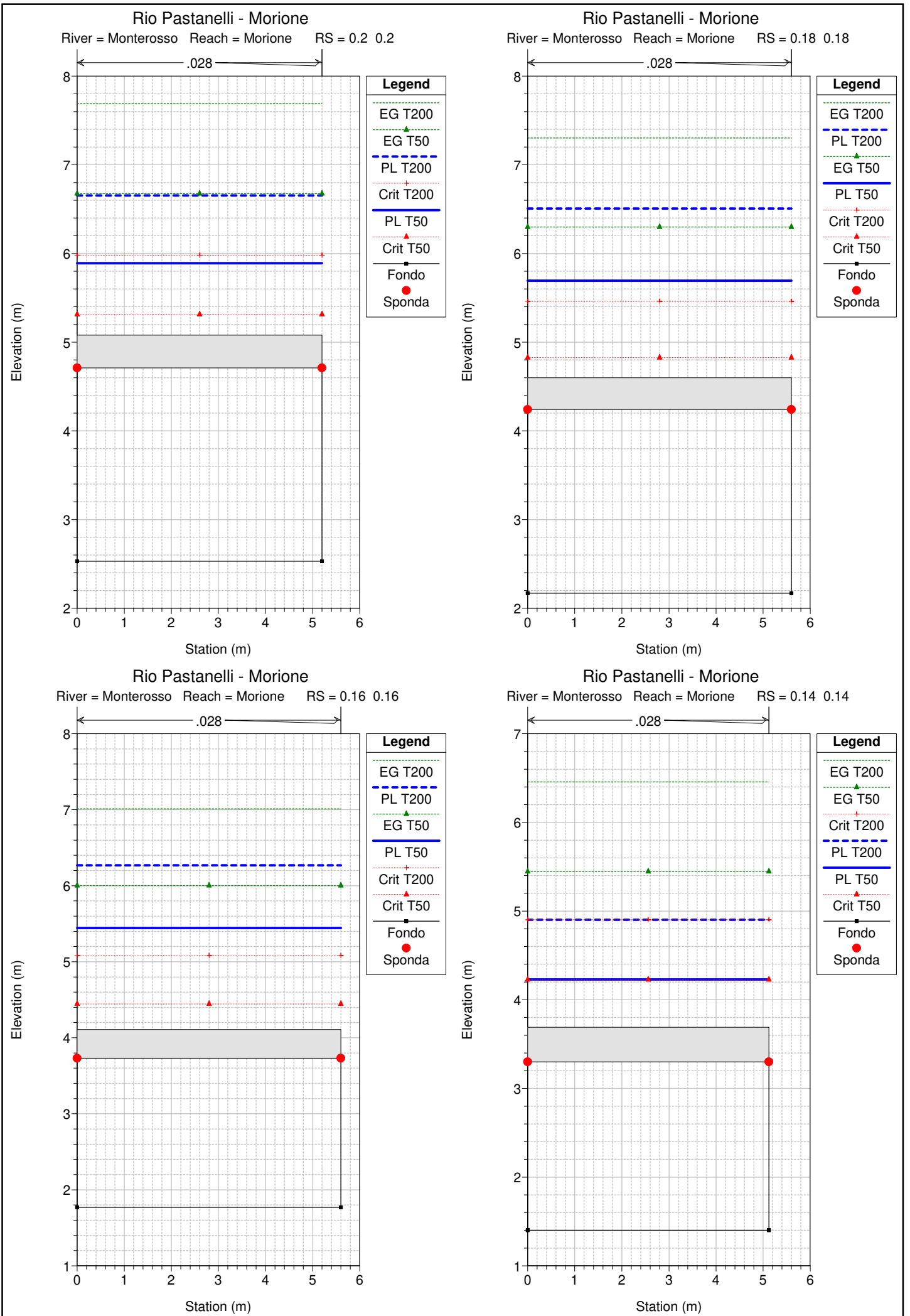




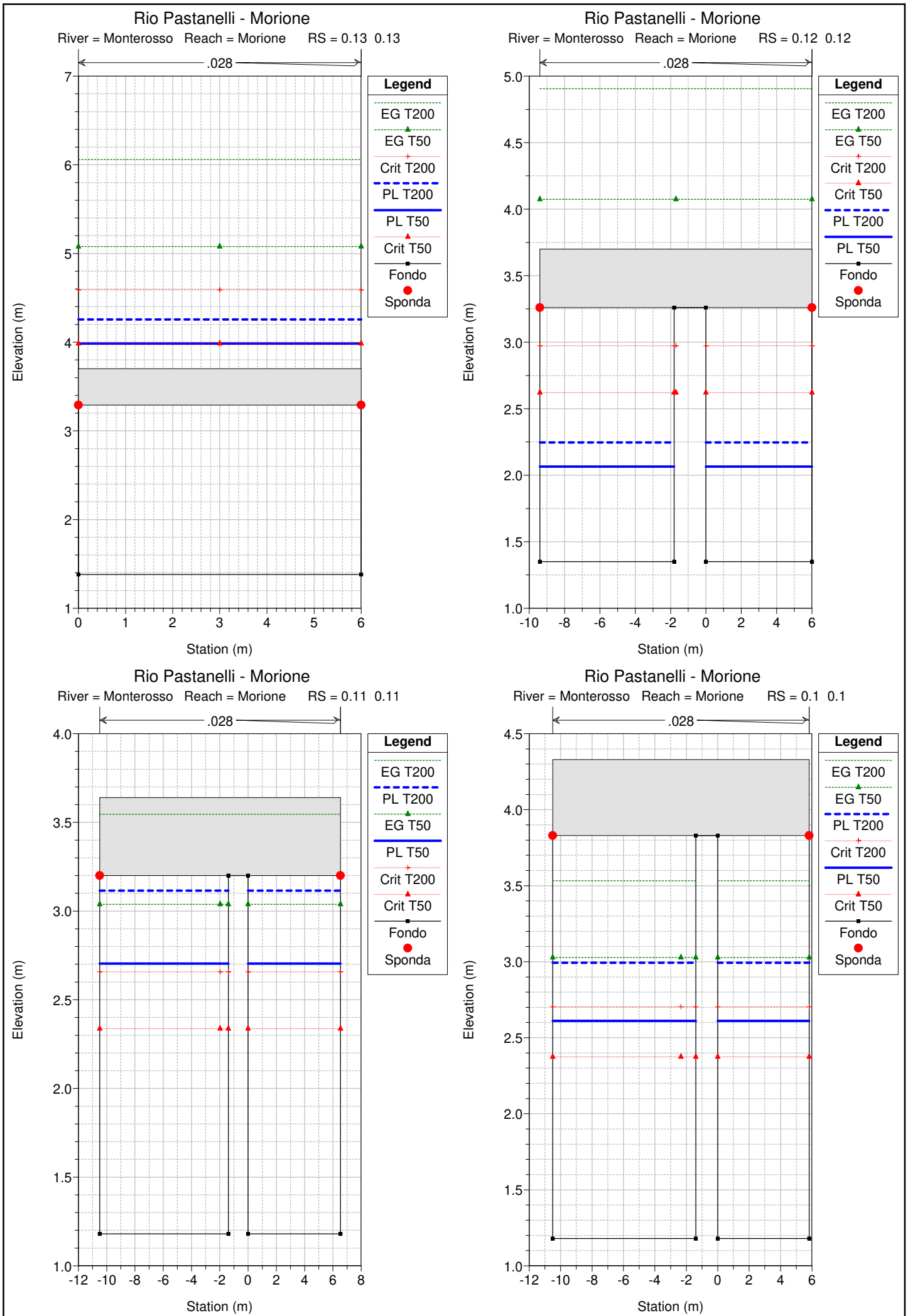


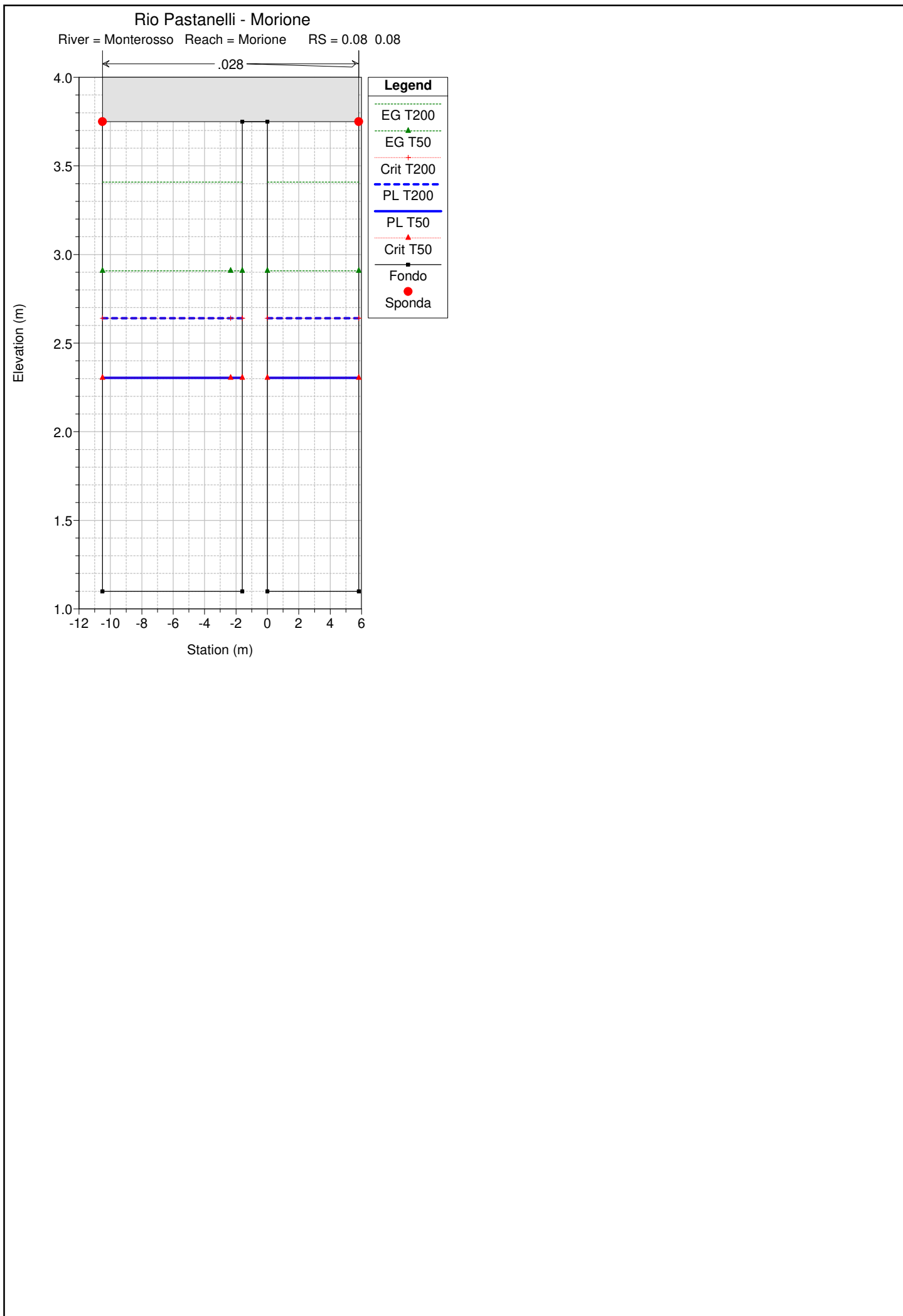












HEC-RAS Plan: att

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
Pastanelli	15	T200	58.00	16.49	18.85	19.75	0.90	19.75	0.90	18.86	20.05	0.014018	4.84	11.99	5.07	1.00
Pastanelli	15	T50	40.00	16.49	18.34	19.75	1.41	19.75	1.41	18.34	19.27	0.013037	4.26	9.38	5.07	1.00
Pastanelli	14	T200	58.00	15.90	17.70	19.80	2.10	19.80	2.10	18.31	19.86	0.031525	6.52	8.90	4.95	1.55
Pastanelli	14	T50	40.00	15.90	17.24	19.80	2.56	19.80	2.56	17.78	19.09	0.034132	6.02	6.65	4.95	1.66
Pastanelli	13	T200	58.00	15.65	17.35	19.59	2.24	19.59	2.24	18.03	19.69	0.035236	6.77	8.57	5.04	1.66
Pastanelli	13	T50	40.00	15.65	16.93	19.59	2.66	19.59	2.66	17.51	18.90	0.037910	6.22	6.43	5.04	1.76
Pastanelli	12	T200	58.00	15.40	18.80	19.40	0.60	19.40	0.60	17.74	19.35	0.005049	3.28	17.66	5.19	0.57
Pastanelli	12	T50	40.00	15.40	16.61	19.40	2.79	19.40	2.79	17.22	18.69	0.041557	6.39	6.26	5.19	1.86
Pastanelli	11	T200	58.00	15.18	18.85	19.28	0.43	19.28	0.43	17.49	19.31	0.003994	3.00	19.33	5.27	0.50
Pastanelli	11	T50	40.00	15.18	16.35	19.28	2.93	19.28	2.93	16.98	18.51	0.044121	6.51	6.14	5.27	1.93
Pastanelli	10	T200	58.00	15.00	18.86	19.10	0.24	19.10	0.24	17.31	19.28	0.003499	2.85	20.36	5.27	0.46
Pastanelli	10	T50	40.00	15.00	16.17	19.10	2.93	19.10	2.93	16.81	18.31	0.043561	6.48	6.17	5.27	1.91
Pastanelli	9.9	T200	58.00	14.57	18.92	19.10	0.18	19.10	0.18	16.88	19.25	0.002587	2.53	22.95	5.27	0.39
Pastanelli	9.9	T50	40.00	14.57	17.43	19.10	1.67	19.10	1.67	16.37	17.79	0.003612	2.65	15.09	5.27	0.50
Morione	9	T200	70.00	14.41	18.72	18.59	-0.13	18.59	-0.13	17.05	19.25	0.006682	3.22	21.74		0.50
Morione	9	T50	48.00	14.41	17.07	18.59	1.52	18.59	1.52	16.47	17.68	0.006572	3.47	13.82	5.20	0.68
Morione	8	T200	70.00	14.24	18.44	18.16	-0.28	18.16	-0.28	17.09	19.19	0.010651	3.84	18.23		0.60
Morione	8	T50	48.00	14.24	16.78	18.16	1.38	18.16	1.38	16.46	17.62	0.009974	4.06	11.82	4.65	0.81
Morione	7	T200	70.00	14.10	18.26	17.75	-0.51	17.75	-0.51	16.96	19.13	0.013093	4.14	16.90		0.65
Morione	7	T50	48.00	14.10	16.82	17.75	0.93	17.75	0.93	16.32	17.56	0.008483	3.82	12.58	4.63	0.74
Morione	6	T200	70.00	13.80	18.30	16.80	-1.50	16.80	-1.50	16.41	18.94	0.011088	3.53	19.85	5.29	0.53
Morione	6	T50	48.00	13.80	16.93	16.80	-0.13	16.80	-0.13	15.83	17.39	0.007604	3.02	15.87		0.55
Morione	5	T200	70.00	13.68	18.30	16.53	-1.77	16.53	-1.77	16.39	18.90	0.009497	3.44	20.37	5.02	0.51
Morione	5	T50	48.00	13.68	16.78	16.53	-0.25	16.53	-0.25	15.79	17.36	0.010023	3.36	14.31		0.61
Morione	4	T200	70.00	13.47	17.42	16.12	-1.30	16.12	-1.30	17.11	18.76	0.027533	5.14	13.62	3.85	0.83
Morione	4	T50	48.00	13.47	15.98	16.12	0.14	16.12	0.14	15.98	17.24	0.017218	4.96	9.67	3.85	1.00
Morione	3	T200	70.00	13.31	16.99	15.71	-1.28	15.71	-1.28	16.99	18.61	0.035759	5.63	12.44	3.85	0.94
Morione	3	T50	48.00	13.31	15.56	15.71	0.15	15.71	0.15	15.71	17.13	0.022963	5.54	8.66	3.85	1.18
Morione	2	T200	70.00	13.16	16.74	15.40	-1.34	15.40	-1.34	16.87	18.47	0.039993	5.83	12.01	3.94	0.98
Morione	2	T50	48.00	13.16	15.20	15.40	0.20	15.40	0.20	15.40	17.02	0.027948	5.98	8.03	3.94	1.34
Morione	1	T200	70.00	12.89	16.19	15.14	-1.05	15.14	-1.05	16.56	18.20	0.052724	6.28	11.14	4.04	1.10
Morione	1	T50	48.00	12.89	14.75	15.14	0.39	15.14	0.39	15.14	16.83	0.033517	6.40	7.50	4.04	1.50
Morione	0.99	T200	70.00	12.89	15.96	15.14	-0.82	15.14	-0.82	16.41	18.09	0.057740	6.46	10.84	4.04	1.18

HEC-RAS Plan: att (Continued)

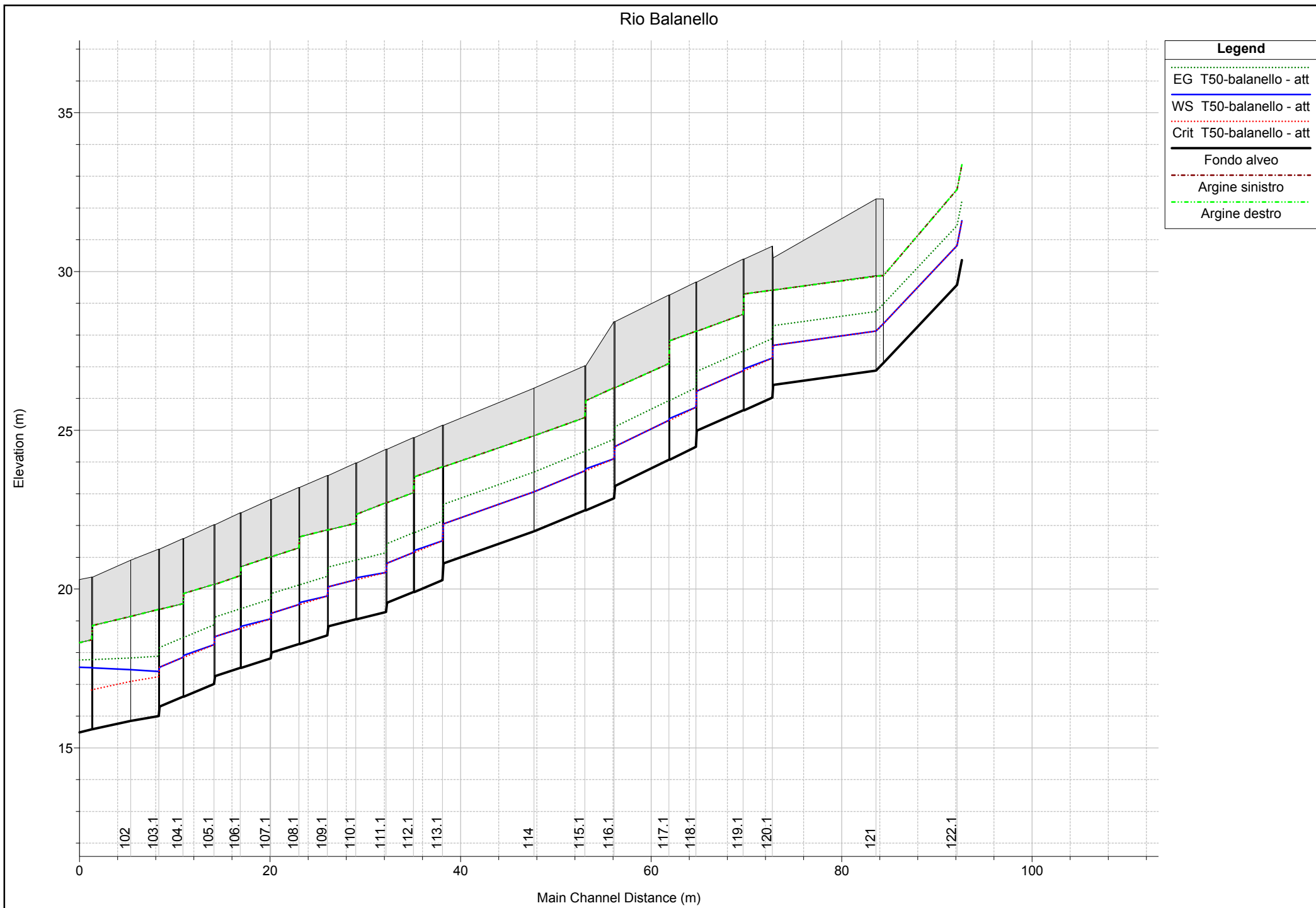
Reach	River Sta	Profile	Q Total (m3/s)	Min Ch El (m)	W.S. Elev (m)	LOB Elev (m)	L. Freeboard (m)	ROB Elev (m)	R. Freeboard (m)	Crit W.S. (m)	E.G. Elev (m)	E.G. Slope (m/m)	Vel Chnl (m/s)	Flow Area (m2)	Top Width (m)	Froude # Chl
Morione	0.99	T50	48.00	12.89	14.88	15.14	0.26	15.14	0.26	15.14	16.70	0.027968	5.98	8.03	4.04	1.35
Morione	0.95	T200	70.00	12.78	15.50	15.20	-0.30	15.20	-0.30	16.08	17.87	0.069649	6.82	10.27	3.95	1.32
Morione	0.95	T50	48.00	12.78	14.89	15.20	0.31	15.20	0.31	15.20	16.58	0.025428	5.77	8.32	3.95	1.27
Morione	0.94	T200	70.00	12.68	15.10	15.20	0.10	15.20	0.10	15.98	17.83	0.037420	7.31	9.58	3.95	1.50
Morione	0.94	T50	48.00	12.68	14.68	15.20	0.52	15.20	0.52	15.15	16.56	0.029239	6.08	7.89	3.95	1.37
Morione	0.9	T200	70.00	12.52	14.93	14.97	0.04	14.97	0.04	15.82	17.68	0.037868	7.34	9.53	3.95	1.51
Morione	0.9	T50	48.00	12.52	14.48	14.97	0.49	14.97	0.49	14.97	16.44	0.030783	6.20	7.74	3.95	1.41
Morione	0.85	T200	70.00	12.09	14.56	14.53	-0.03	14.53	-0.03	15.39	17.25	0.060234	7.26	9.64		1.47
Morione	0.85	T50	48.00	12.09	13.95	14.53	0.58	14.53	0.58	14.53	16.13	0.035487	6.54	7.34	3.95	1.53
Morione	0.8	T200	70.00	11.86	15.78	14.16	-1.62	14.16	-1.62	15.16	16.89	0.019300	4.67	15.00	3.95	0.75
Morione	0.8	T50	48.00	11.86	14.99	14.16	-0.83	14.16	-0.83	14.16	15.82	0.019640	4.03	11.90	3.95	0.73
Morione	0.75	T200	70.00	11.80	15.58	13.85	-1.73	13.85	-1.73	15.10	16.77	0.021015	4.85	14.44	3.95	0.80
Morione	0.75	T50	48.00	11.80	14.79	13.85	-0.94	13.85	-0.94	14.39	15.71	0.022045	4.23	11.35	3.95	0.78
Morione	0.7	T200	70.00	11.61	15.59	13.66	-1.93	13.66	-1.93	14.91	16.66	0.017578	4.59	15.24	3.95	0.74
Morione	0.7	T50	48.00	11.61	14.80	13.66	-1.14	13.66	-1.14	14.20	15.60	0.017792	3.96	12.11	3.95	0.71
Morione	0.66	T200	70.00	11.48	15.56	13.51	-2.05	13.51	-2.05	14.87	16.63	0.017379	4.58	15.28	3.95	0.72
Morione	0.66	T50	48.00	11.48	14.76	13.51	-1.25	13.51	-1.25	14.16	15.56	0.017581	3.95	12.14	3.95	0.70
Morione	0.65	T200	70.00	11.45	14.98	13.35	-1.63	13.35	-1.63	14.98	16.56	0.032819	5.58	12.54	3.95	0.95
Morione	0.65	T50	48.00	11.45	14.27	13.35	-0.92	13.35	-0.92	14.27	15.50	0.035628	4.92	9.76	3.95	0.94
Morione	0.6	T200	70.00	9.93	12.80	11.93	-0.87	11.93	-0.87	13.49	15.41	0.075732	7.15	9.79	3.92	1.35
Morione	0.6	T50	48.00	9.93	11.57	11.93	0.36	11.93	0.36	12.78	14.41	0.050713	7.46	6.43	3.92	1.86
Morione	0.55	T200	70.00	9.60	11.78	11.95	0.17	11.95	0.17	12.91	15.20	0.050447	8.19	8.54	3.92	1.77
Morione	0.55	T50	48.00	9.60	11.17	11.95	0.78	11.95	0.78	11.95	14.28	0.057411	7.81	6.15	3.92	1.99
Morione	0.5	T200	70.00	8.86	10.98	11.36	0.38	11.36	0.38	12.22	14.76	0.057643	8.61	8.13	3.84	1.89
Morione	0.5	T50	48.00	8.86	10.39	11.36	0.97	11.36	0.97	11.36	13.79	0.064635	8.16	5.88	3.84	2.11
Morione	0.45	T200	70.00	8.65	11.15	11.20	0.05	11.20	0.05	12.15	14.23	0.044590	7.77	9.00	3.60	1.57
Morione	0.45	T50	48.00	8.65	10.44	11.20	0.75	11.20	0.75	11.20	13.26	0.049874	7.43	6.46	3.60	1.77
Morione	0.4	T200	70.00	8.15	10.51	10.85	0.34	10.85	0.34	11.59	13.79	0.048195	8.03	8.72	3.70	1.67
Morione	0.4	T50	48.00	8.15	9.86	10.85	0.99	10.85	0.99	10.73	12.79	0.052563	7.57	6.34	3.70	1.85
Morione	0.38	T200	70.00	7.49	12.70	10.32	-2.38	10.32	-2.38	10.32	13.28	0.007542	3.38	20.74	4.20	0.47
Morione	0.38	T50	48.00	7.49	11.18	10.32	-0.86	10.32	-0.86	9.86	11.75	0.012108	3.35	14.35	4.20	0.56
Morione	0.36	T200	70.00	7.11	11.19	10.06	-1.13	10.06	-1.13	11.11	12.98	0.038463	5.92	11.82	3.10	0.94
Morione	0.36	T50	48.00	7.11	10.01	10.06	0.05	10.06	0.05	10.01	11.46	0.021992	5.33	9.00	3.10	1.00



HEC-RAS Plan: att (Continued)

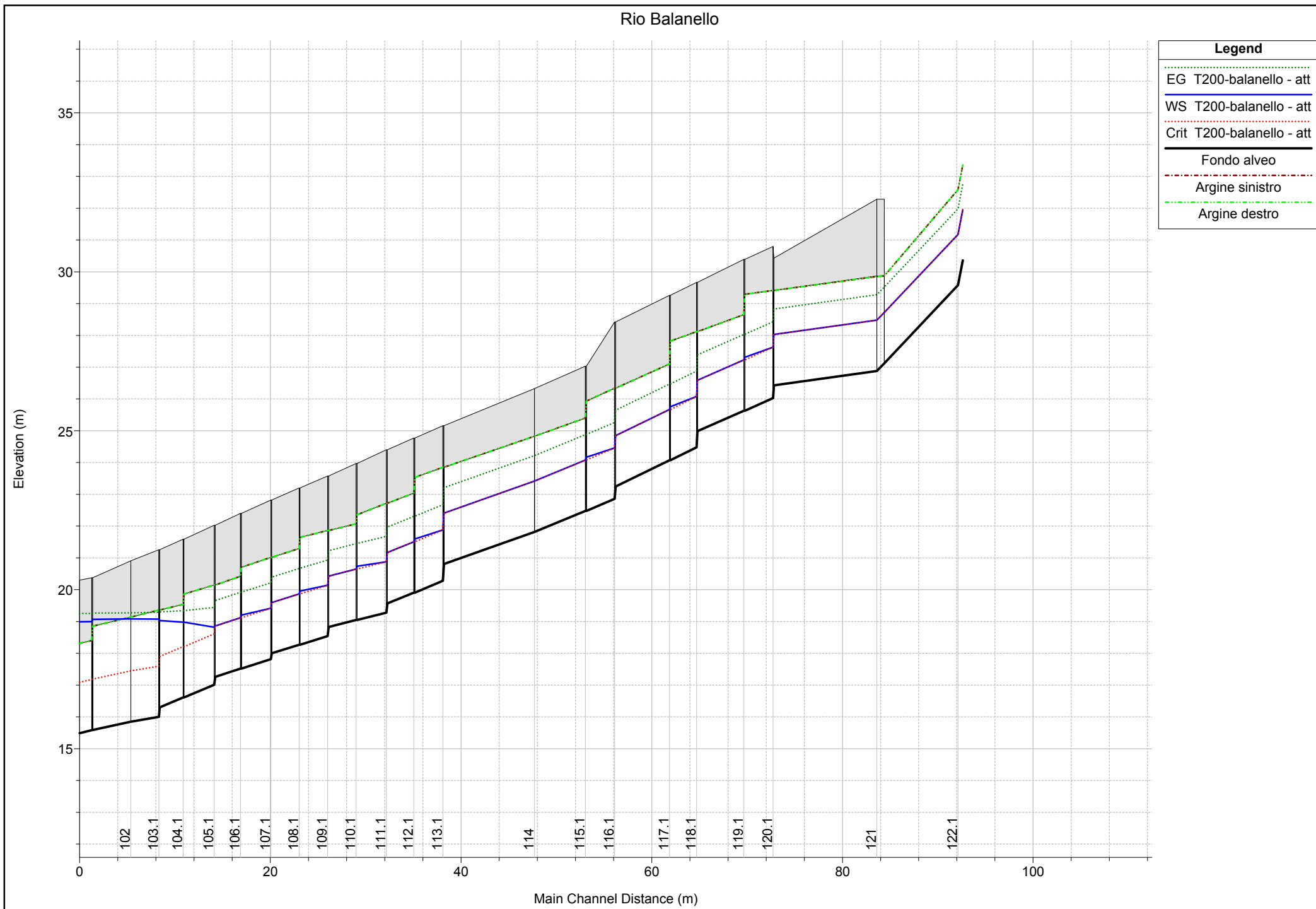
Reach	River Sta	Profile	Q Total (m3/s)	Min Ch El (m)	W.S. Elev (m)	LOB Elev (m)	L. Freeboard (m)	ROB Elev (m)	R. Freeboard (m)	Crit W.S. (m)	E.G. Elev (m)	E.G. Slope (m/m)	Vel Chnl (m/s)	Flow Area (m2)	Top Width (m)	Froude # Chl
Morione	0.34	T200	70.00	6.94	10.98	9.84	-1.14	9.84	-1.14	10.98	12.82	0.040700	6.01	11.64	3.16	0.96
Morione	0.34	T50	48.00	6.94	9.45	9.84	0.39	9.84	0.39	9.81	11.32	0.029928	6.05	7.93	3.16	1.22
Morione	0.32	T200	70.00	6.12	9.62	9.22	-0.40	9.22	-0.40	10.04	11.92	0.062922	6.71	10.43	3.30	1.14
Morione	0.32	T50	48.00	6.12	8.22	9.22	1.00	9.22	1.00	8.90	10.66	0.041574	6.91	6.94	3.30	1.52
Morione	0.3	T200	88.00	5.43	8.49	8.51	0.02	8.51	0.02	9.44	11.07	0.030465	7.11	12.38	4.04	1.30
Morione	0.3	T50	61.00	5.43	7.61	8.51	0.90	8.51	0.90	8.28	10.06	0.035360	6.93	8.80	4.04	1.50
Morione	0.28	T200	88.00	4.68	6.96	7.44	0.48	7.44	0.48	8.28	10.21	0.040480	7.99	11.01	4.84	1.69
Morione	0.28	T50	61.00	4.68	6.39	7.44	1.05	7.44	1.05	7.21	9.15	0.042258	7.36	8.29	4.84	1.79
Morione	0.26	T200	88.00	4.04	6.29	6.62	0.33	6.62	0.33	7.53	9.60	0.041373	8.06	10.92	4.86	1.72
Morione	0.26	T50	61.00	4.04	5.74	6.62	0.88	6.62	0.88	6.56	8.52	0.042744	7.38	8.26	4.86	1.81
Morione	0.24	T200	88.00	3.57	7.62	5.75	-1.87	5.75	-1.87	7.09	8.82	0.019282	4.85	18.14	4.80	0.77
Morione	0.24	T50	61.00	3.57	6.85	5.75	-1.10	5.75	-1.10	6.38	7.76	0.019798	4.22	14.45	4.80	0.74
Morione	0.22	T200	88.00	3.37	7.01	5.55	-1.46	5.55	-1.46	7.01	8.64	0.031989	5.66	15.55	4.76	0.95
Morione	0.22	T50	61.00	3.37	6.30	5.55	-0.75	5.55	-0.75	6.30	7.58	0.034753	5.01	12.17	4.76	0.94
Morione	0.2	T200	88.00	2.53	6.65	4.71	-1.94	4.71	-1.94	5.98	7.69	0.016421	4.51	19.52	5.20	0.71
Morione	0.2	T50	61.00	2.53	5.89	4.71	-1.18	4.71	-1.18	5.31	6.68	0.016837	3.92	15.55	5.20	0.68
Morione	0.18	T200	88.00	2.17	6.51	4.24	-2.27	4.24	-2.27	5.46	7.30	0.011272	3.95	22.27	5.60	0.61
Morione	0.18	T50	61.00	2.17	5.69	4.24	-1.45	4.24	-1.45	4.83	6.30	0.011625	3.44	17.71	5.60	0.59
Morione	0.16	T200	88.00	1.77	6.27	3.73	-2.54	3.73	-2.54	5.08	7.01	0.009898	3.82	23.06	5.60	0.57
Morione	0.16	T50	61.00	1.77	5.44	3.73	-1.71	3.73	-1.71	4.44	6.00	0.010020	3.31	18.44	5.60	0.55
Morione	0.14	T200	88.00	1.40	4.90	3.30	-1.60	3.30	-1.60	4.90	6.46	0.030547	5.52	15.94	5.12	0.94
Morione	0.14	T50	61.00	1.40	4.23	3.30	-0.93	3.30	-0.93	4.23	5.45	0.033053	4.88	12.49	5.12	0.93
Morione	0.13	T200	88.00	1.38	4.26	3.29	-0.97	3.29	-0.97	4.59	6.06	0.046531	5.95	14.80	6.00	1.12
Morione	0.13	T50	61.00	1.38	3.98	3.29	-0.69	3.29	-0.69	3.98	5.08	0.033023	4.63	13.16	6.00	0.92
Morione	0.12	T200	88.00	1.35	2.25	3.26	1.01	3.26	1.01	2.97	4.90	0.064644	7.22	12.19	13.60	2.44
Morione	0.12	T50	61.00	1.35	2.06	3.26	1.20	3.26	1.20	2.62	4.07	0.062392	6.28	9.72	13.60	2.37
Morione	0.11	T200	88.00	1.18	3.12	3.20	0.08	3.20	0.08	2.66	3.55	0.004697	2.91	30.27	15.64	0.67
Morione	0.11	T50	61.00	1.18	2.70	3.20	0.50	3.20	0.50	2.34	3.04	0.004542	2.56	23.83	15.64	0.66
Morione	0.1	T200	88.00	1.18	2.99	3.83	0.84	3.83	0.84	2.70	3.53	0.006360	3.25	27.06	14.92	0.77
Morione	0.1	T50	61.00	1.18	2.61	3.83	1.22	3.83	1.22	2.38	3.03	0.006122	2.86	21.35	14.92	0.76
Morione	0.08	T200	88.00	1.10	2.64	3.75	1.11	3.75	1.11	2.64	3.41	0.010585	3.88	22.67	14.72	1.00
Morione	0.08	T50	61.00	1.10	2.30	3.75	1.45	3.75	1.45	2.30	2.91	0.010574	3.44	17.72	14.72	1.00

## **RIO BALANELLO**



1 cm Horiz. = 5 m 1 cm Vert. = 1.5 m

Approvato con DDG n. 2118 del 31/03/2020



1 cm Horiz. = 5 m 1 cm Vert. = 1.5 m

Approvato con DDG n. 2118 del 31/03/2020



HEC-RAS River: Monterosso Reach: Balanello

Reach	River Sta	Profile	Plan	Cum Ch Len	Q Total	Min Ch El	LOB Elev	ROB Elev	W.S. Elev	Hydr Depth	Max Chl Dpth	E.G. Elev	Vel Chnl	Flow Area	Top Width	Froude # Chl
				(m)	(m3/s)	(m)	(m)	(m)	(m)	(m)	(m)	(m)	(m/s)	(m2)	(m)	
Balanello	122.2	T200-balanello	att	94.62	19.00	30.36	33.36	33.36	31.95	1.59	1.59	32.76	3.97	4.78	3.00	1.00
Balanello	122.2	T50-balanello	att	94.62	13.00	30.36	33.36	33.36	31.60	1.24	1.24	32.22	3.50	3.71	3.00	1.00
Balanello	122.1	T200-balanello	att	94.12	19.00	29.58	32.58	32.58	31.17	1.59	1.59	31.98	3.97	4.78	3.00	1.00
Balanello	122.1	T50-balanello	att	94.12	13.00	29.58	32.58	32.58	30.82	1.24	1.24	31.44	3.50	3.71	3.00	1.01
Balanello	121.1	T200-balanello	att	86.39	19.00	27.12	29.87	29.87	28.72	1.60	1.60	29.52	3.96	4.80	3.00	1.00
Balanello	121.1	T50-balanello	att	86.39	13.00	27.12	29.87	29.87	28.36	1.24	1.24	28.98	3.49	3.72	3.00	1.00
Balanello	121	T200-balanello	att	85.61	19.00	26.88	29.87	29.87	28.48	1.60	1.60	29.28	3.96	4.80	3.00	1.00
Balanello	121	T50-balanello	att	85.61	13.00	26.88	29.87	29.87	28.12	1.24	1.24	28.74	3.49	3.72	3.00	1.00
Balanello	120.2	T200-balanello	att	74.82	19.00	26.43	29.41	29.41	28.03	1.60	1.60	28.83	3.96	4.80	3.00	1.00
Balanello	120.2	T50-balanello	att	74.82	13.00	26.43	29.41	29.41	27.67	1.24	1.24	28.29	3.49	3.72	3.00	1.00
Balanello	120.1	T200-balanello	att	74.72	19.00	26.03	29.41	29.41	27.63	1.60	1.60	28.43	3.96	4.80	3.00	1.00
Balanello	120.1	T50-balanello	att	74.72	13.00	26.03	29.41	29.41	27.27	1.24	1.24	27.89	3.49	3.73	3.00	1.00
Balanello	119.2	T200-balanello	att	71.77	19.00	25.63	29.29	29.29	27.31	1.68	1.68	28.03	3.76	5.05	3.00	0.93
Balanello	119.2	T50-balanello	att	71.77	13.00	25.63	29.29	29.29	26.94	1.31	1.31	27.50	3.32	3.92	3.00	0.93
Balanello	119.1	T200-balanello	att	71.67	19.00	25.63	28.65	28.65	27.23	1.60	1.60	28.03	3.96	4.80	3.00	1.00
Balanello	119.1	T50-balanello	att	71.67	13.00	25.63	28.65	28.65	26.87	1.24	1.24	27.49	3.49	3.72	3.00	1.00
Balanello	118.2	T200-balanello	att	66.80	19.00	24.99	28.12	28.12	26.59	1.60	1.60	27.39	3.96	4.80	3.00	1.00
Balanello	118.2	T50-balanello	att	66.80	13.00	24.99	28.12	28.12	26.23	1.24	1.24	26.85	3.49	3.72	3.00	1.00
Balanello	118.1	T200-balanello	att	66.70	19.00	24.48	28.12	28.12	26.08	1.60	1.60	26.88	3.96	4.80	3.00	1.00
Balanello	118.1	T50-balanello	att	66.70	13.00	24.48	28.12	28.12	25.72	1.24	1.24	26.34	3.49	3.72	3.00	1.00
Balanello	117.2	T200-balanello	att	63.96	19.00	24.07	27.82	27.82	25.76	1.69	1.69	26.47	3.76	5.06	3.00	0.92
Balanello	117.2	T50-balanello	att	63.96	13.00	24.07	27.82	27.82	25.38	1.31	1.31	25.94	3.32	3.92	3.00	0.93
Balanello	117.1	T200-balanello	att	63.86	19.00	24.07	27.10	27.10	25.67	1.60	1.60	26.47	3.96	4.80	3.00	1.00
Balanello	117.1	T50-balanello	att	63.86	13.00	24.07	27.10	27.10	25.31	1.24	1.24	25.93	3.49	3.72	3.00	1.00
Balanello	116.2	T200-balanello	att	58.21	19.00	23.25	26.34	26.34	24.85	1.60	1.60	25.65	3.96	4.80	3.00	1.00
Balanello	116.2	T50-balanello	att	58.21	13.00	23.25	26.34	26.34	24.49	1.24	1.24	25.11	3.49	3.72	3.00	1.00
Balanello	116.1	T200-balanello	att	58.11	19.00	22.86	26.34	26.34	24.46	1.60	1.60	25.26	3.96	4.80	3.00	1.00
Balanello	116.1	T50-balanello	att	58.11	13.00	22.86	26.34	26.34	24.10	1.24	1.24	24.72	3.49	3.72	3.00	1.00
Balanello	115.2	T200-balanello	att	55.14	19.00	22.48	25.93	25.93	24.17	1.69	1.69	24.88	3.76	5.06	3.00	0.92
Balanello	115.2	T50-balanello	att	55.14	13.00	22.48	25.93	25.93	23.79	1.31	1.31	24.35	3.32	3.92	3.00	0.93
Balanello	115.1	T200-balanello	att	55.04	19.00	22.48	25.40	25.40	24.08	1.60	1.60	24.88	3.96	4.80	3.00	1.00
Balanello	115.1	T50-balanello	att	55.04	13.00	22.48	25.40	25.40	23.72	1.24	1.24	24.34	3.49	3.73	3.00	1.00
Balanello	114	T200-balanello	att	49.70	19.00	21.82	24.83	24.83	23.42	1.60	1.60	24.22	3.96	4.80	3.00	1.00
Balanello	114	T50-balanello	att	49.70	13.00	21.82	24.83	24.83	23.06	1.24	1.24	23.68	3.49	3.72	3.00	1.00
Balanello	113.2	T200-balanello	att	40.21	19.00	20.81	23.85	23.85	22.41	1.60	1.60	23.21	3.95	4.80	3.00	1.00

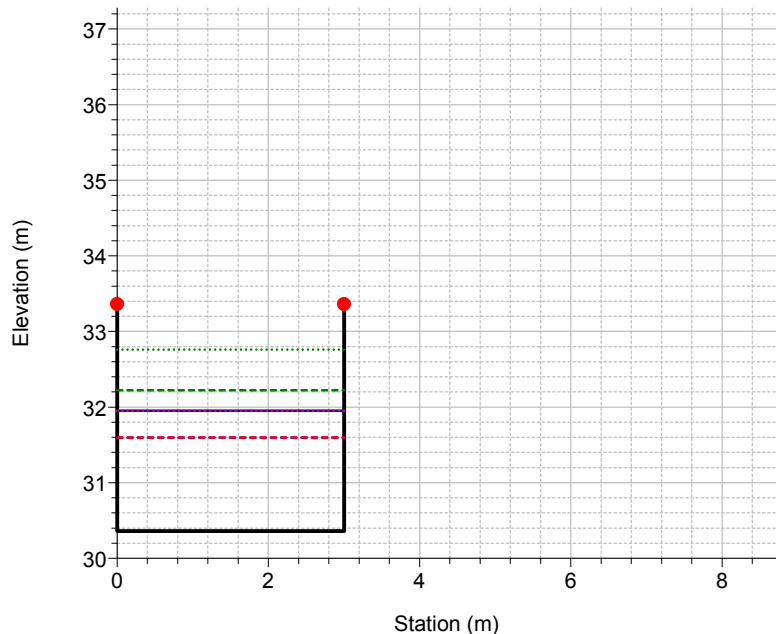
HEC-RAS River: Monterosso Reach: Balanello (Continued)

Reach	River Sta	Profile	Plan	Cum Ch Len	Q Total	Min Ch El	LOB Elev	ROB Elev	W.S. Elev	Hydr Depth	Max Chl Dpth	E.G. Elev	Vel Chnl	Flow Area	Top Width	Froude # Chl
				(m)	(m3/s)	(m)	(m)	(m)	(m)	(m)	(m)	(m)	(m/s)	(m2)	(m)	
Balanello	113.2	T50-balanello	att	40.21	13.00	20.81	23.85	23.85	22.05	1.24	1.24	22.67	3.49	3.72	3.00	1.00
Balanello	113.1	T200-balanello	att	40.11	19.00	20.28	23.85	23.85	21.88	1.60	1.60	22.68	3.96	4.80	3.00	1.00
Balanello	113.1	T50-balanello	att	40.11	13.00	20.28	23.85	23.85	21.52	1.24	1.24	22.14	3.49	3.73	3.00	1.00
Balanello	112.2	T200-balanello	att	37.15	19.00	19.91	23.53	23.53	21.60	1.69	1.69	22.31	3.76	5.06	3.00	0.92
Balanello	112.2	T50-balanello	att	37.15	13.00	19.91	23.53	23.53	21.21	1.30	1.30	21.78	3.32	3.91	3.00	0.93
Balanello	112.1	T200-balanello	att	37.05	19.00	19.91	23.04	23.04	21.51	1.60	1.60	22.31	3.96	4.80	3.00	1.00
Balanello	112.1	T50-balanello	att	37.05	13.00	19.91	23.04	23.04	21.15	1.24	1.24	21.77	3.49	3.72	3.00	1.00
Balanello	111.2	T200-balanello	att	34.28	19.00	19.57	22.72	22.72	21.17	1.60	1.60	21.97	3.96	4.80	3.00	1.00
Balanello	111.2	T50-balanello	att	34.28	13.00	19.57	22.72	22.72	20.81	1.24	1.24	21.43	3.49	3.73	3.00	1.00
Balanello	111.1	T200-balanello	att	34.18	19.00	19.28	22.72	22.72	20.88	1.60	1.60	21.68	3.96	4.80	3.00	1.00
Balanello	111.1	T50-balanello	att	34.18	13.00	19.28	22.72	22.72	20.52	1.24	1.24	21.14	3.49	3.72	3.00	1.00
Balanello	110.2	T200-balanello	att	31.10	19.00	19.05	22.36	22.36	20.74	1.69	1.69	21.45	3.76	5.06	3.00	0.92
Balanello	110.2	T50-balanello	att	31.10	13.00	19.05	22.36	22.36	20.36	1.31	1.31	20.92	3.32	3.92	3.00	0.93
Balanello	110.1	T200-balanello	att	31.00	19.00	19.05	22.07	22.07	20.65	1.60	1.60	21.45	3.96	4.79	3.00	1.00
Balanello	110.1	T50-balanello	att	31.00	13.00	19.05	22.07	22.07	20.29	1.24	1.24	20.91	3.49	3.72	3.00	1.00
Balanello	109.2	T200-balanello	att	28.12	19.00	18.83	21.86	21.86	20.43	1.60	1.60	21.23	3.96	4.80	3.00	1.00
Balanello	109.2	T50-balanello	att	28.12	13.00	18.83	21.86	21.86	20.07	1.24	1.24	20.69	3.49	3.72	3.00	1.00
Balanello	109.1	T200-balanello	att	28.02	19.00	18.54	21.86	21.86	20.14	1.60	1.60	20.94	3.96	4.80	3.00	1.00
Balanello	109.1	T50-balanello	att	28.02	13.00	18.54	21.86	21.86	19.78	1.24	1.24	20.40	3.49	3.72	3.00	1.00
Balanello	108.2	T200-balanello	att	25.12	19.00	18.27	21.65	21.65	19.96	1.69	1.69	20.67	3.76	5.06	3.00	0.92
Balanello	108.2	T50-balanello	att	25.12	13.00	18.27	21.65	21.65	19.58	1.31	1.31	20.14	3.32	3.92	3.00	0.93
Balanello	108.1	T200-balanello	att	25.02	19.00	18.27	21.30	21.30	19.87	1.60	1.60	20.67	3.96	4.80	3.00	1.00
Balanello	108.1	T50-balanello	att	25.02	13.00	18.27	21.30	21.30	19.51	1.24	1.24	20.13	3.49	3.72	3.00	1.00
Balanello	107.2	T200-balanello	att	22.16	19.00	18.00	21.02	21.02	19.60	1.60	1.60	20.40	3.96	4.79	3.00	1.00
Balanello	107.2	T50-balanello	att	22.16	13.00	18.00	21.02	21.02	19.24	1.24	1.24	19.86	3.49	3.72	3.00	1.00
Balanello	107.1	T200-balanello	att	22.06	19.00	17.82	21.02	21.02	19.42	1.60	1.60	20.22	3.96	4.80	3.00	1.00
Balanello	107.1	T50-balanello	att	22.06	13.00	17.82	21.02	21.02	19.06	1.24	1.24	19.68	3.49	3.72	3.00	1.00
Balanello	106.2	T200-balanello	att	18.98	19.00	17.52	20.71	20.71	19.20	1.68	1.68	19.92	3.76	5.05	3.00	0.93
Balanello	106.2	T50-balanello	att	18.98	13.00	17.52	20.71	20.71	18.82	1.31	1.31	19.39	3.32	3.92	3.00	0.93
Balanello	106.1	T200-balanello	att	18.88	19.00	17.52	20.42	20.42	19.12	1.60	1.60	19.92	3.96	4.80	3.00	1.00
Balanello	106.1	T50-balanello	att	18.88	13.00	17.52	20.42	20.42	18.76	1.24	1.24	19.38	3.49	3.72	3.00	1.00
Balanello	105.2	T200-balanello	att	16.22	19.00	17.26	20.15	20.15	18.86	1.60	1.60	19.66	3.96	4.79	3.00	1.00
Balanello	105.2	T50-balanello	att	16.22	13.00	17.26	20.15	20.15	18.50	1.24	1.24	19.12	3.49	3.72	3.00	1.00
Balanello	105.1	T200-balanello	att	16.12	19.00	17.01	20.15	20.15	18.82	1.81	1.81	19.44	3.50	5.43	3.00	0.83
Balanello	105.1	T50-balanello	att	16.12	13.00	17.01	20.15	20.15	18.25	1.24	1.24	18.87	3.49	3.72	3.00	1.00

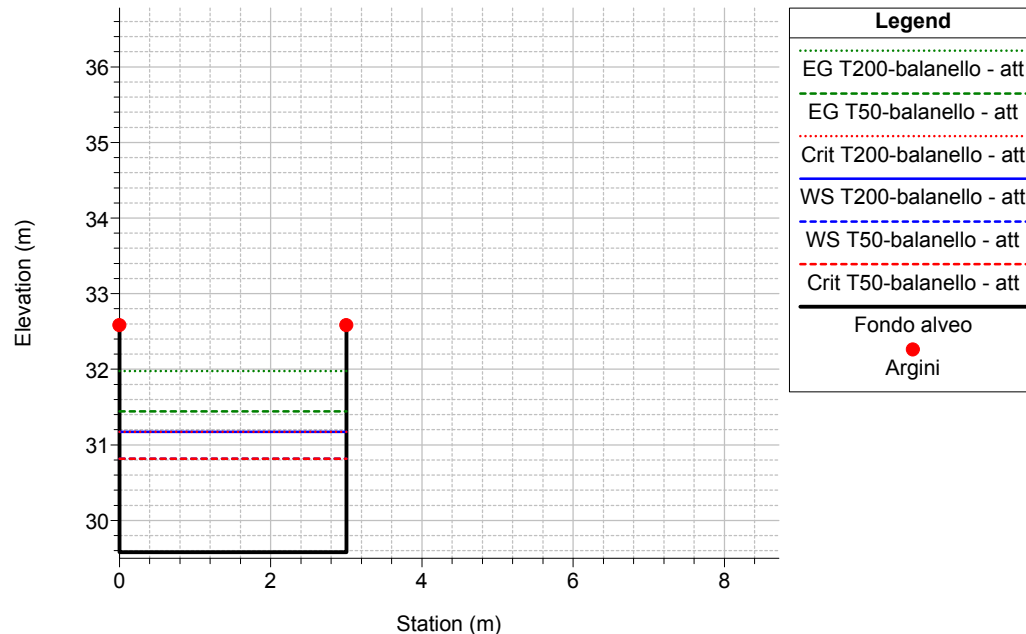
HEC-RAS River: Monterosso Reach: Balanello (Continued)

Reach	River Sta	Profile	Plan	Cum Ch Len (m)	Q Total (m3/s)	Min Ch El (m)	LOB Elev (m)	ROB Elev (m)	W.S. Elev (m)	Hydr Depth (m)	Max Chl Dpth (m)	E.G. Elev (m)	Vel Chnl (m/s)	Flow Area (m2)	Top Width (m)	Froude # Chl
Balanello	104.2	T200-balanello	att	12.95	19.00	16.61	19.86	19.86	18.98	2.37	2.37	19.34	2.67	7.11	3.00	0.55
Balanello	104.2	T50-balanello	att	12.95	13.00	16.61	19.86	19.86	17.91	1.30	1.30	18.48	3.32	3.91	3.00	0.93
Balanello	104.1	T200-balanello	att	12.85	19.00	16.61	19.54	19.54	18.98	2.37	2.37	19.34	2.67	7.11	3.00	0.55
Balanello	104.1	T50-balanello	att	12.85	13.00	16.61	19.54	19.54	17.85	1.24	1.24	18.47	3.49	3.73	3.00	1.00
Balanello	103.2	T200-balanello	att	10.41	19.00	16.30	19.36	19.36	19.03	2.73	2.73	19.31	2.32	8.20	3.00	0.45
Balanello	103.2	T50-balanello	att	10.41	13.00	16.30	19.36	19.36	17.54	1.24	1.24	18.16	3.49	3.72	3.00	1.00
Balanello	103.1	T200-balanello	att	10.31	19.00	16.00	19.36	19.36	19.07	3.07	3.07	19.29	2.06	9.22	3.00	0.38
Balanello	103.1	T50-balanello	att	10.31	13.00	16.00	19.36	19.36	17.40	1.40	1.40	17.89	3.08	4.21	3.00	0.83
Balanello	102	T200-balanello	att	7.37	19.00	15.85	19.14	19.14	19.08	3.23	3.23	19.27	1.96	9.69	3.00	0.35
Balanello	102	T50-balanello	att	7.37	13.00	15.85	19.14	19.14	17.46	1.61	1.61	17.83	2.68	4.84	3.00	0.67
Balanello	101.2	T200-balanello	att	3.37	19.00	15.59	18.85	18.85	19.07		3.48	19.26	1.94	9.78		0.33
Balanello	101.2	T50-balanello	att	3.37	13.00	15.59	18.85	18.85	17.52	1.93	1.93	17.78	2.24	5.80	3.00	0.51
Balanello	101.1	T200-balanello	att	3.27	19.00	15.58	18.40	18.40	19.00		3.42	19.26	2.25	8.46		0.39
Balanello	101.1	T50-balanello	att	3.27	13.00	15.58	18.40	18.40	17.52	1.94	1.94	17.78	2.23	5.83	3.00	0.51
Balanello	101	T200-balanello	att	2.00	19.00	15.49	18.31	18.31	18.99		3.50	19.25	2.25	8.46		0.38
Balanello	101	T50-balanello	att	2.00	13.00	15.49	18.31	18.31	17.54	2.05	2.05	17.77	2.12	6.14	3.00	0.47

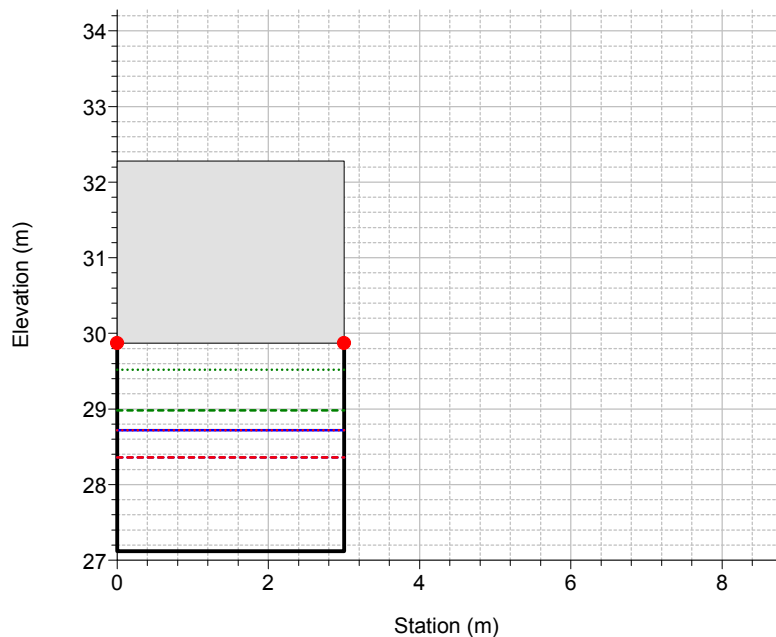
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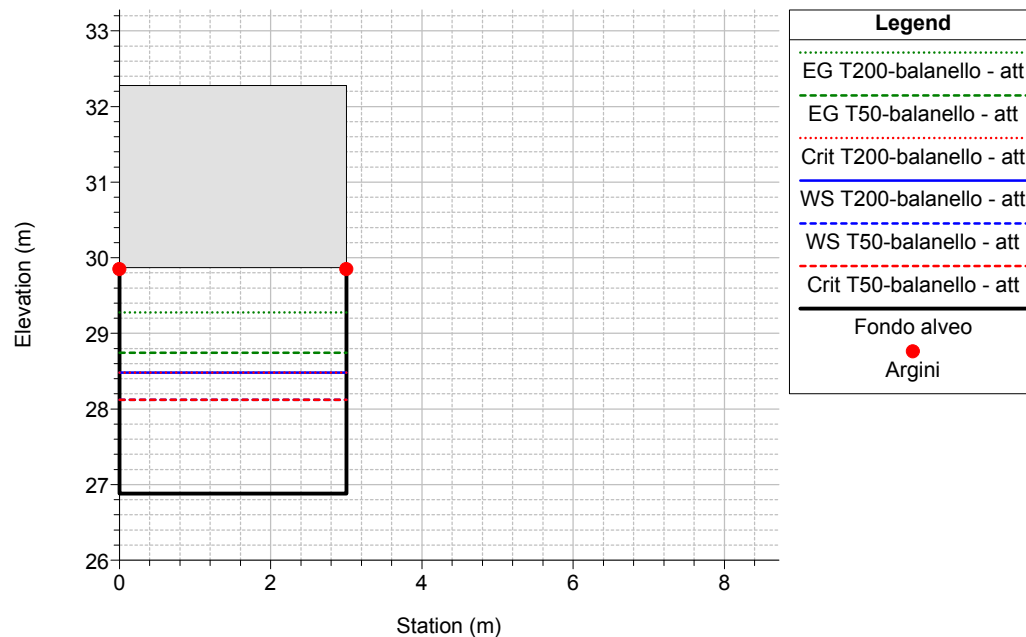
RS = 122.1 Rio Balanello



RS = 121.1 Rio Balanello

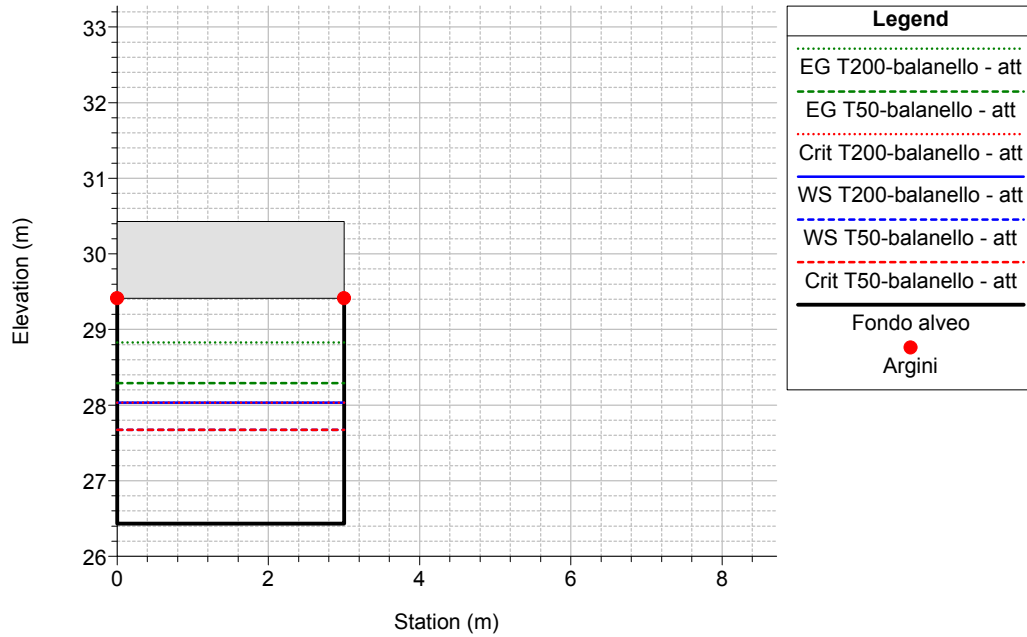


RS = 121 Rio Balanello

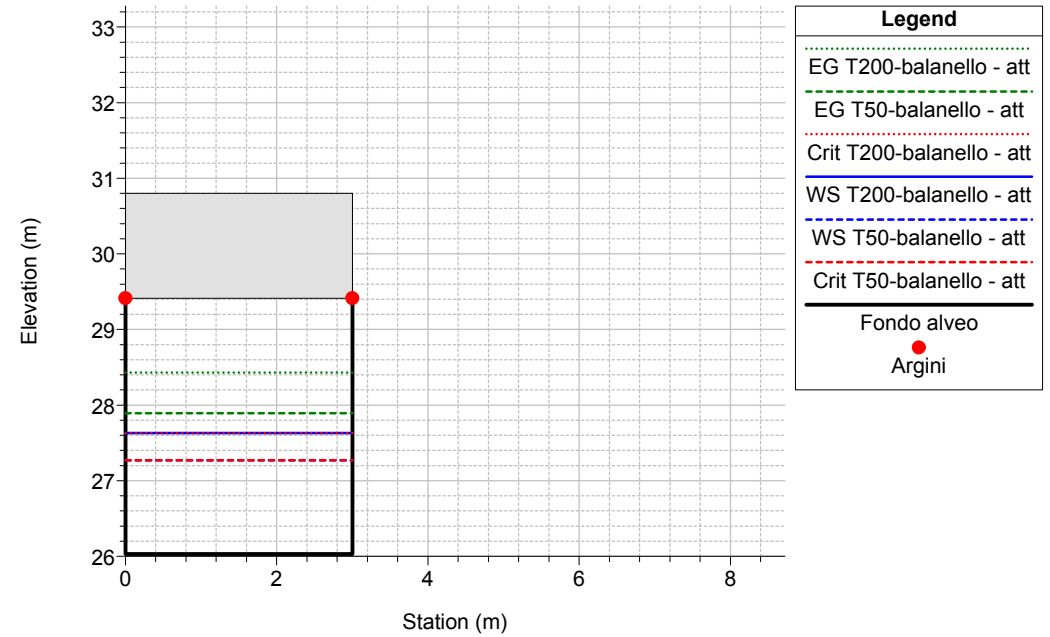




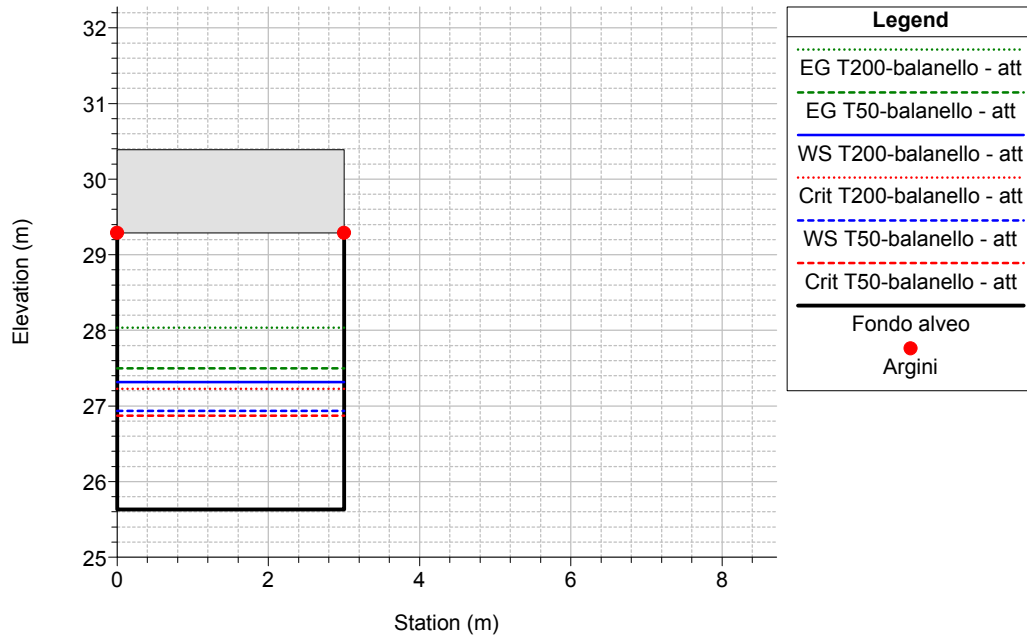
RS = 120.2 Rio Balanello



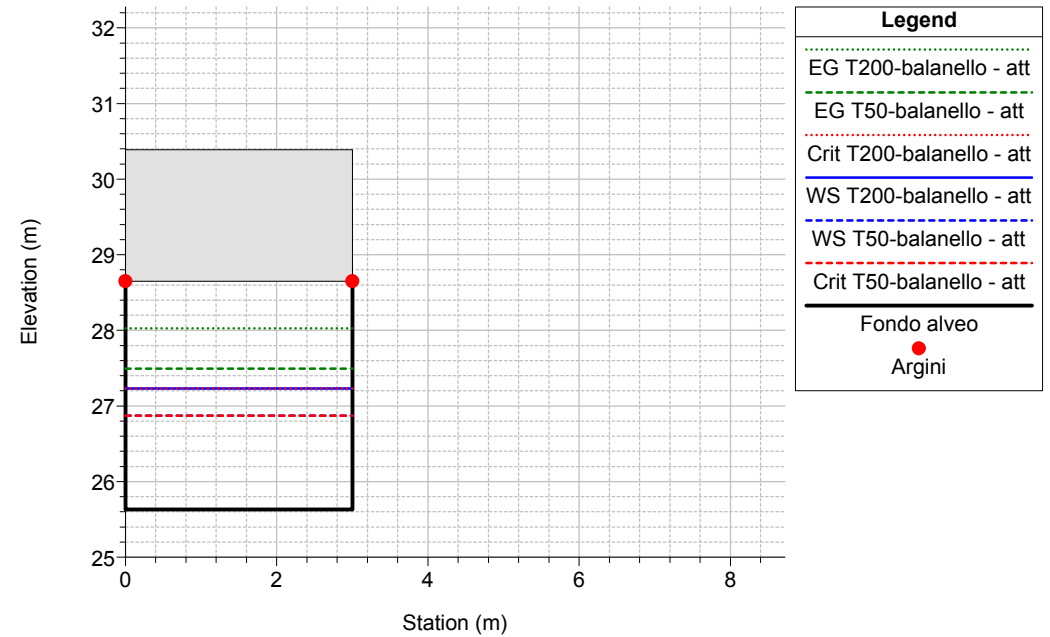
RS = 120.1 Rio Balanello



RS = 119.2 Rio Balanello

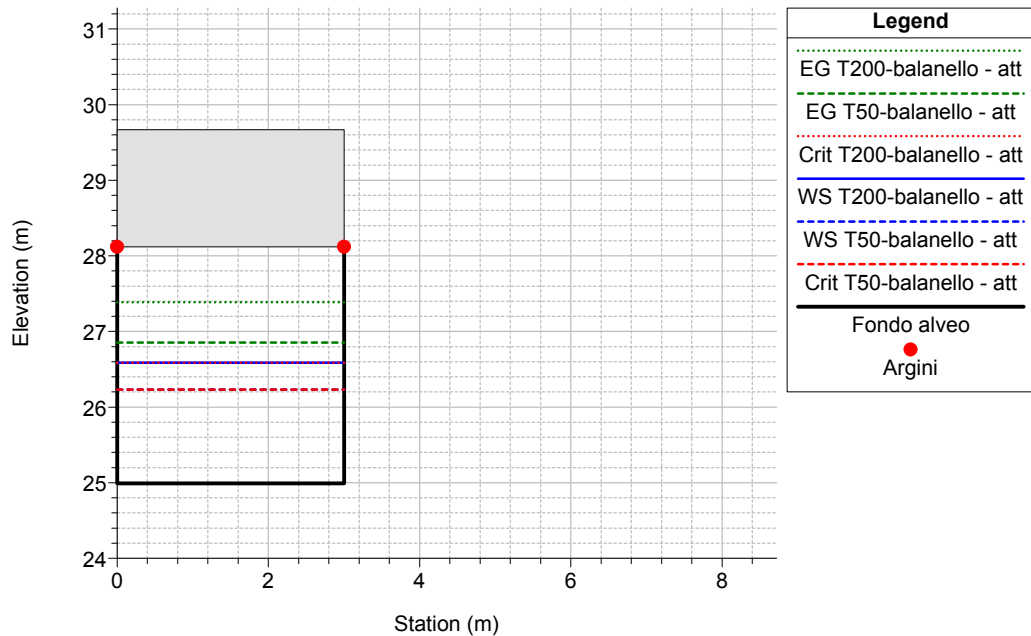


RS = 119.1 Rio Balanello

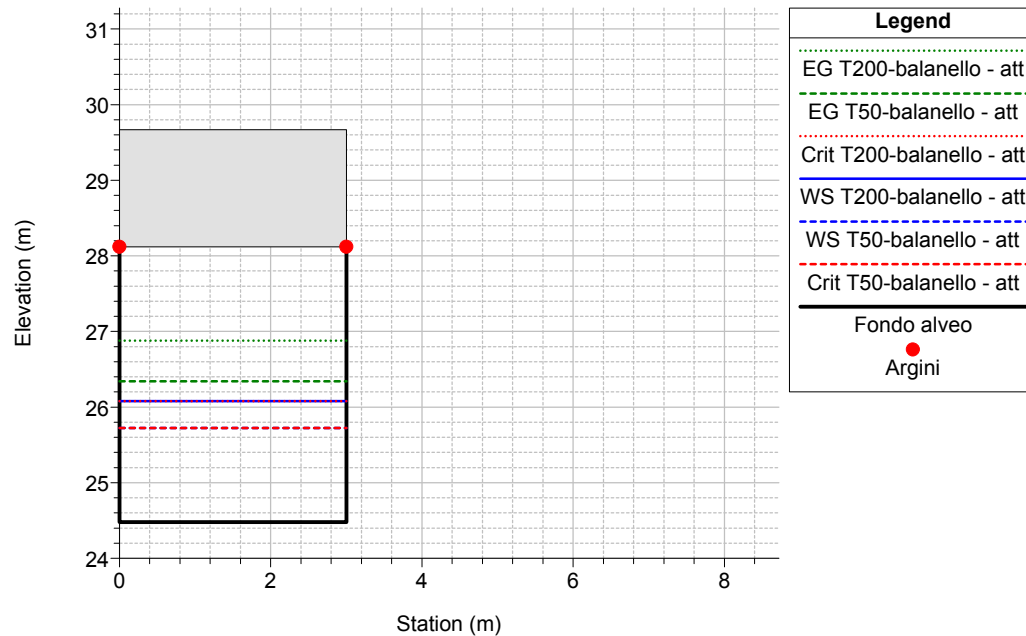


1 cm Horiz. = 1 m 1 cm Vert. = 1 m

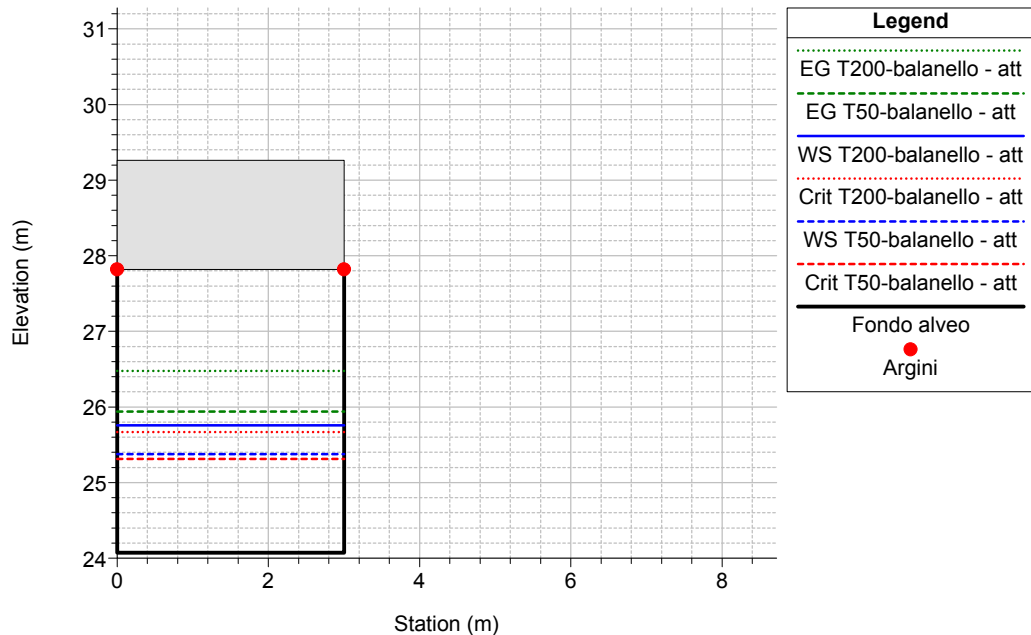
RS = 118.2 Rio Balanello



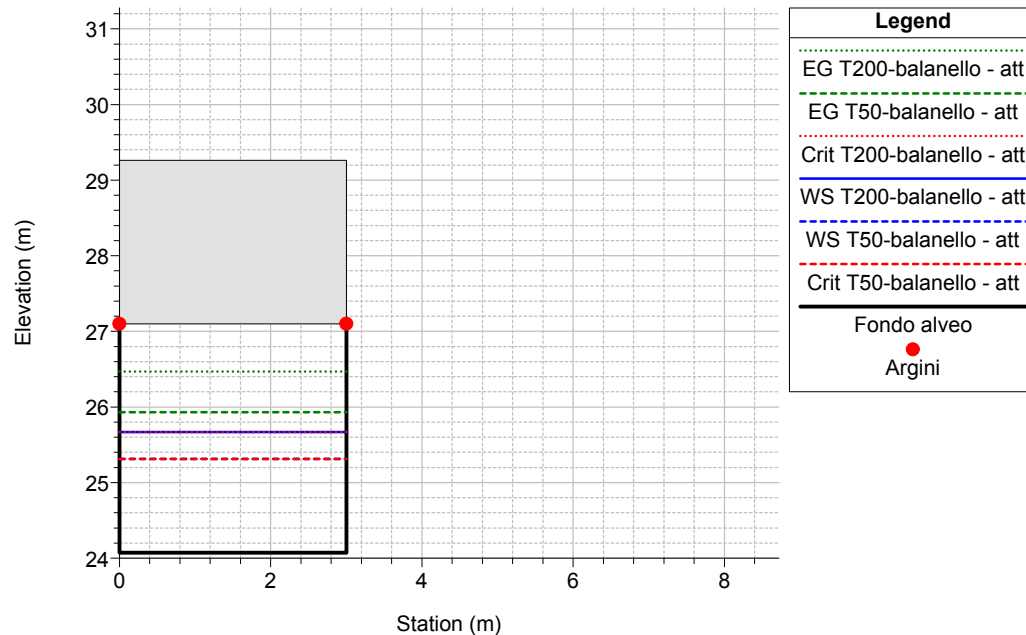
RS = 118.1 Rio Balanello



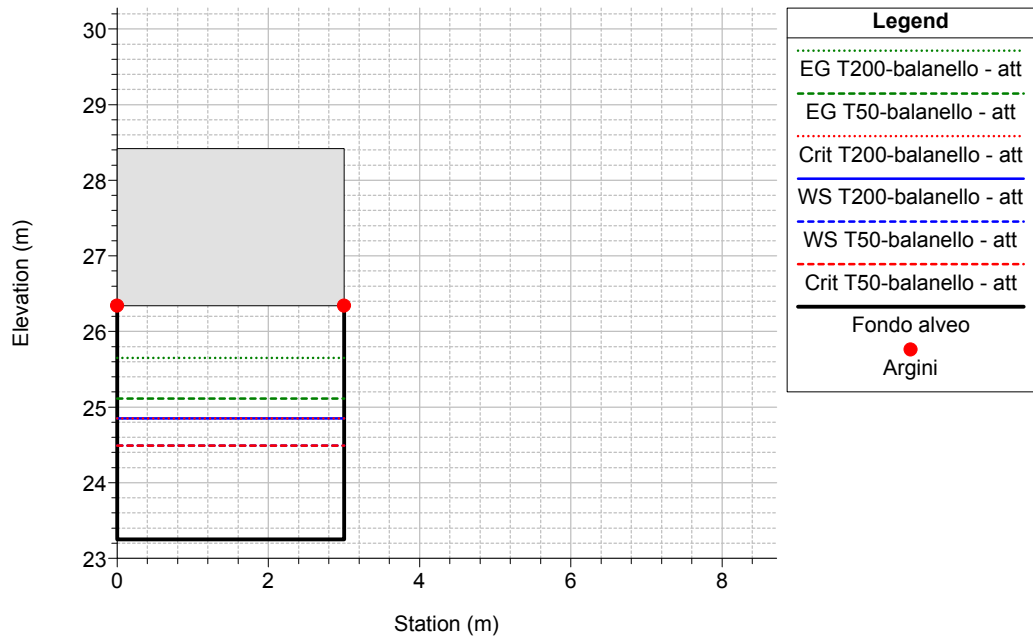
RS = 117.2 Rio Balanello



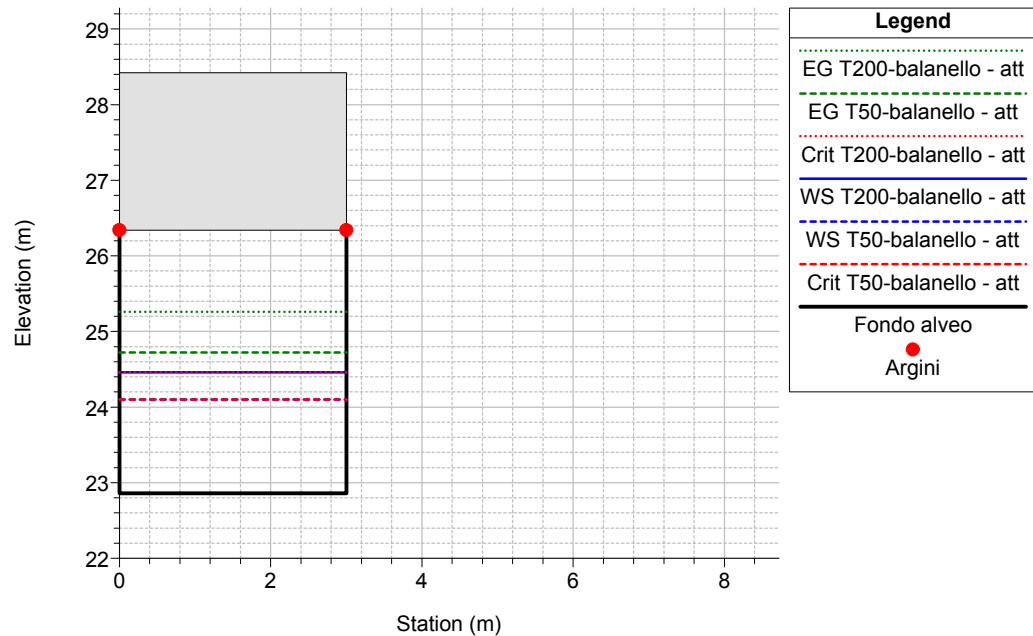
RS = 117.1 Rio Balanello



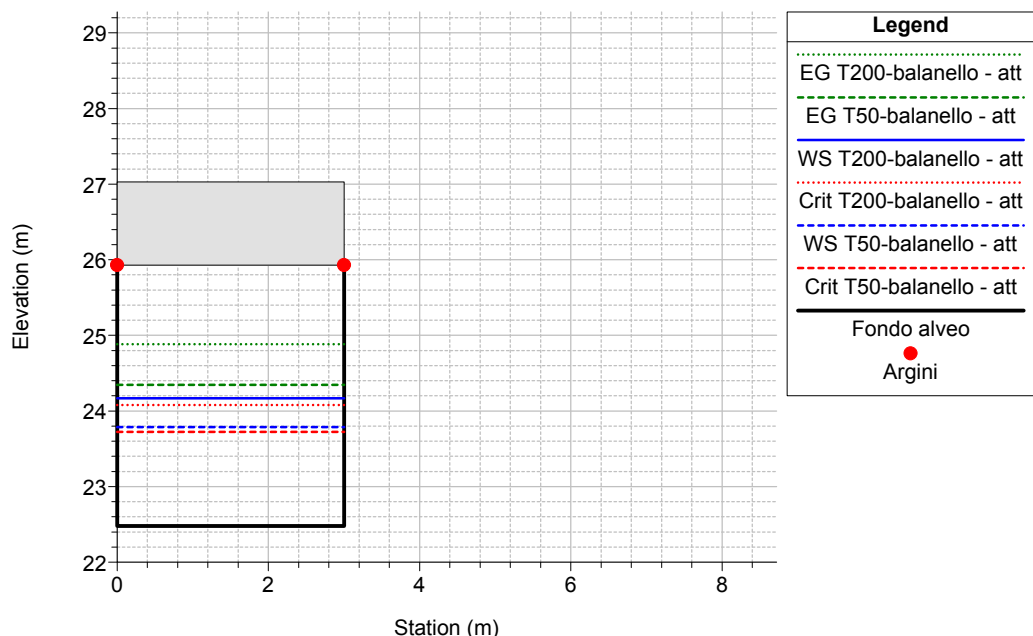
RS = 116.2 Rio Balanello



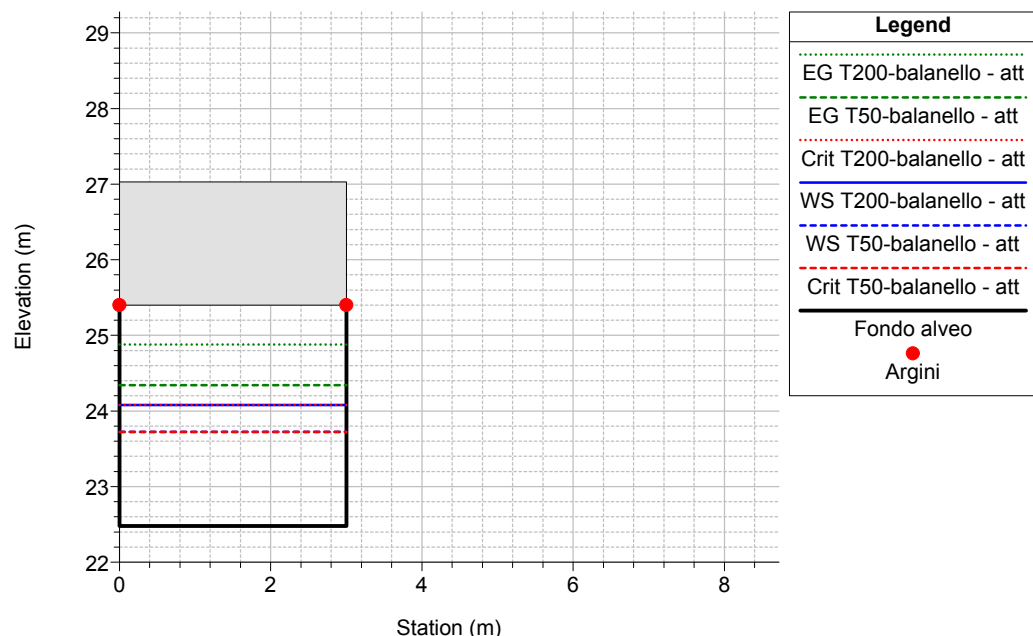
RS = 116.1 Rio Balanello



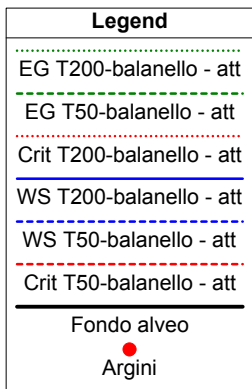
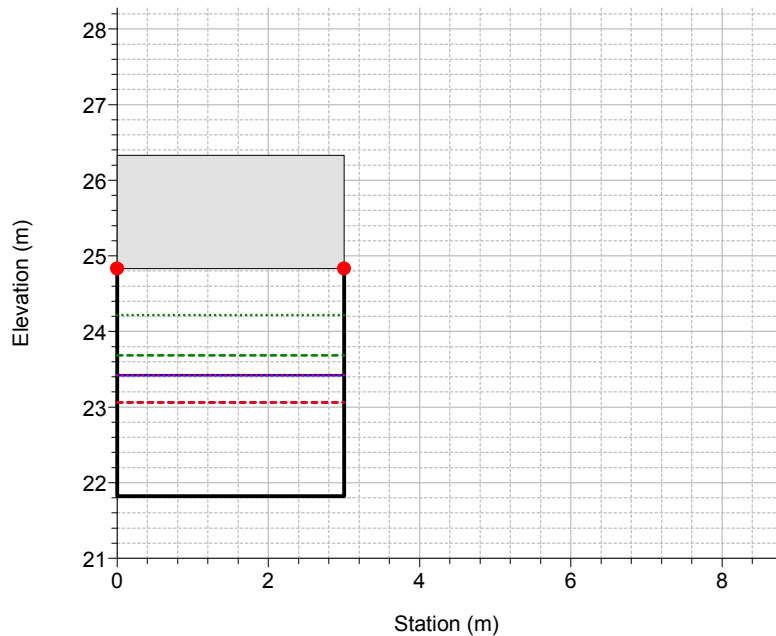
RS = 115.2 Rio Balanello



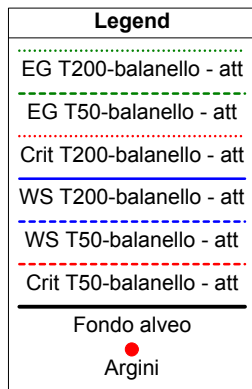
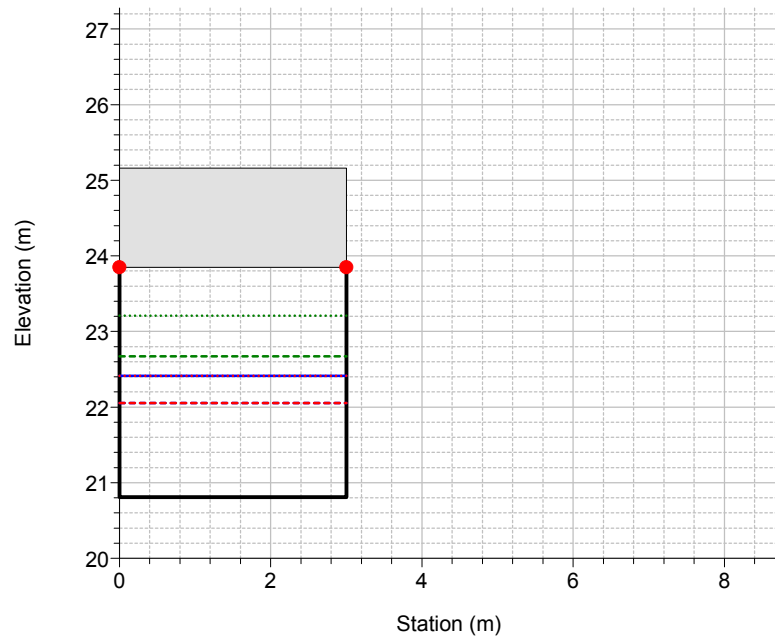
RS = 115.1 Rio Balanello



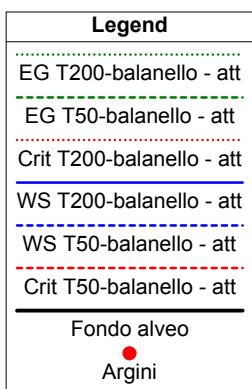
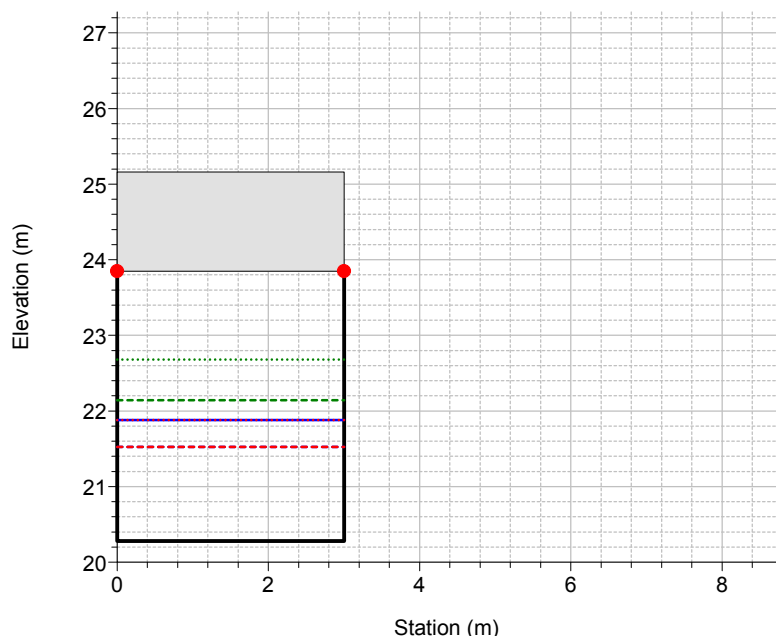
RS = 114 Rio Balanello



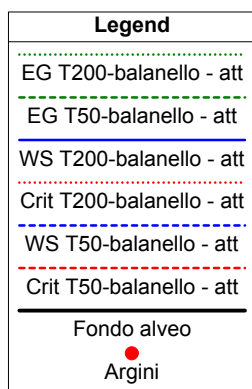
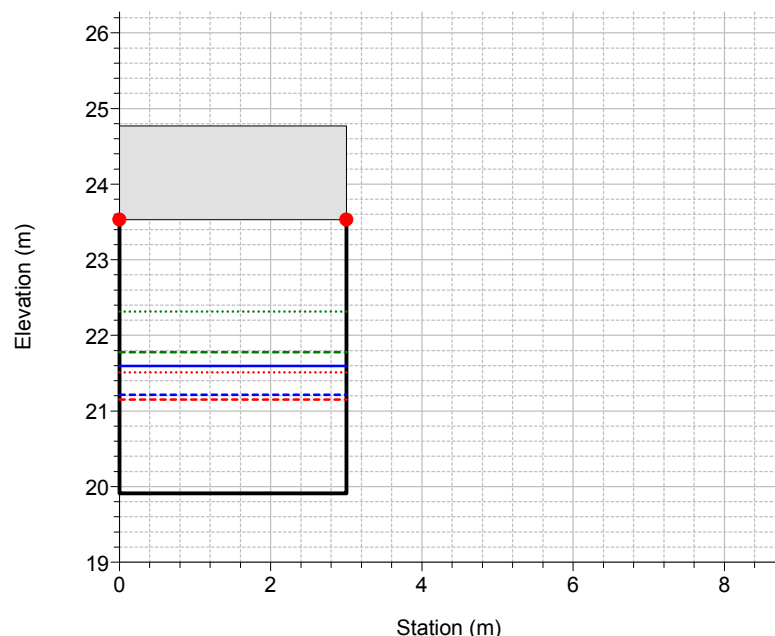
RS = 113.2 Rio Balanello



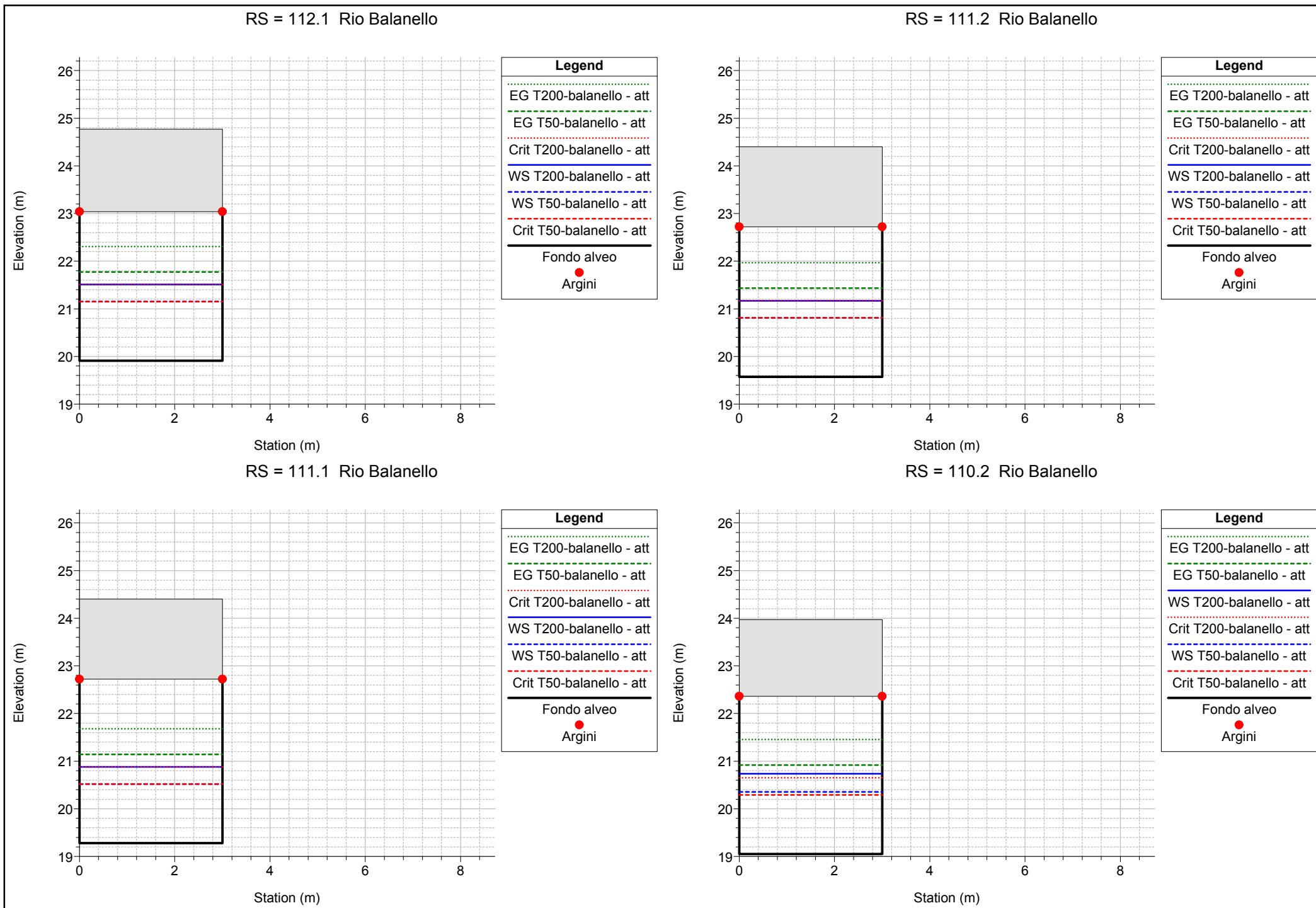
RS = 113.1 Rio Balanello



RS = 112.2 Rio Balanello



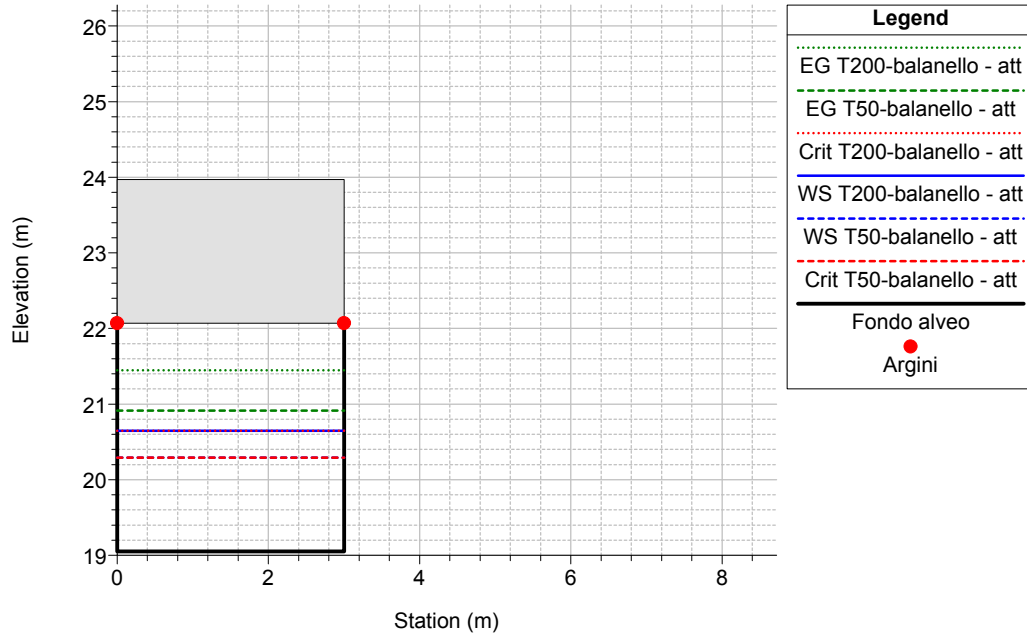




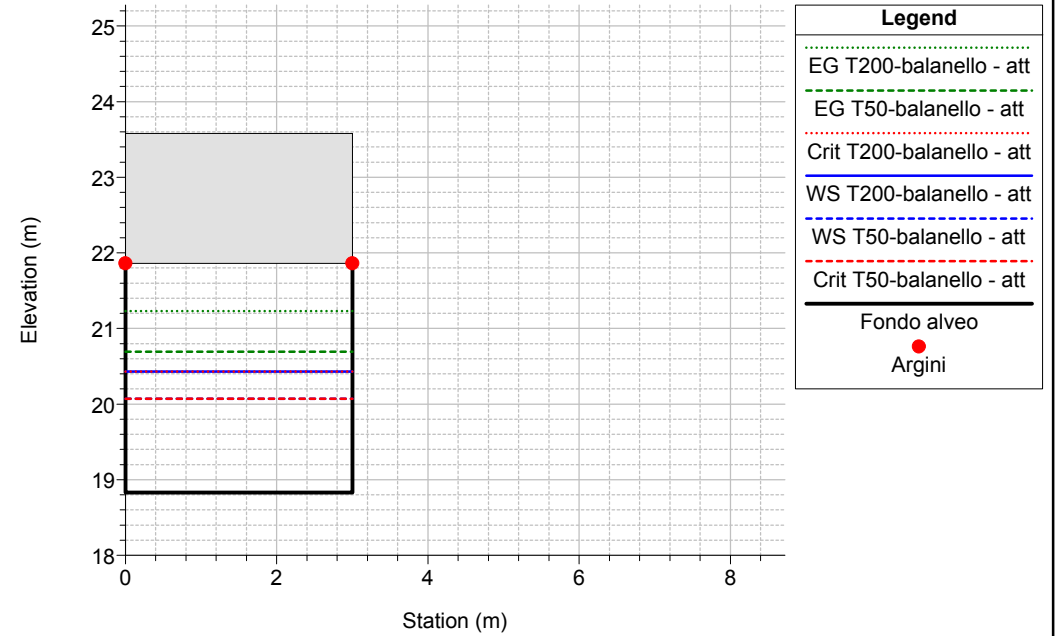
1 cm Horiz. = 1 m 1 cm Vert. = 1 m

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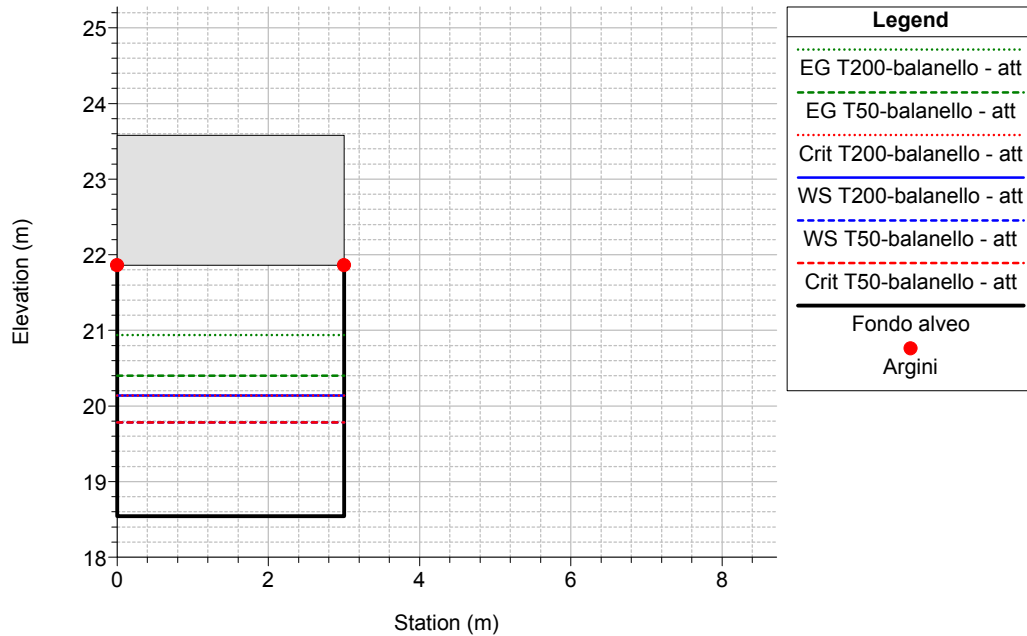
RS = 110.1 Rio Balanello



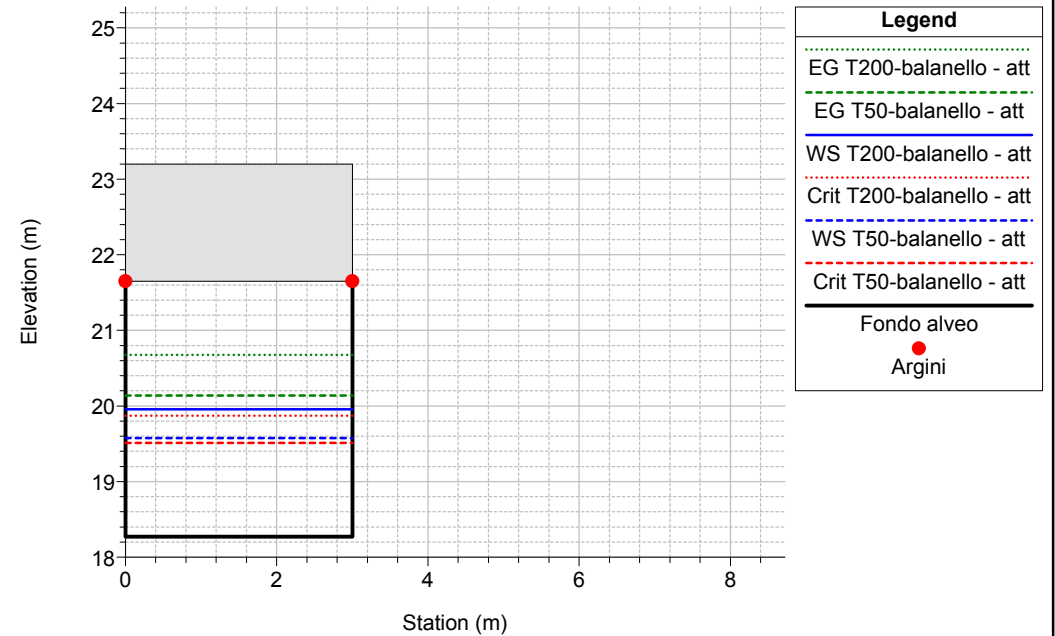
RS = 109.2 Rio Balanello



RS = 109.1 Rio Balanello

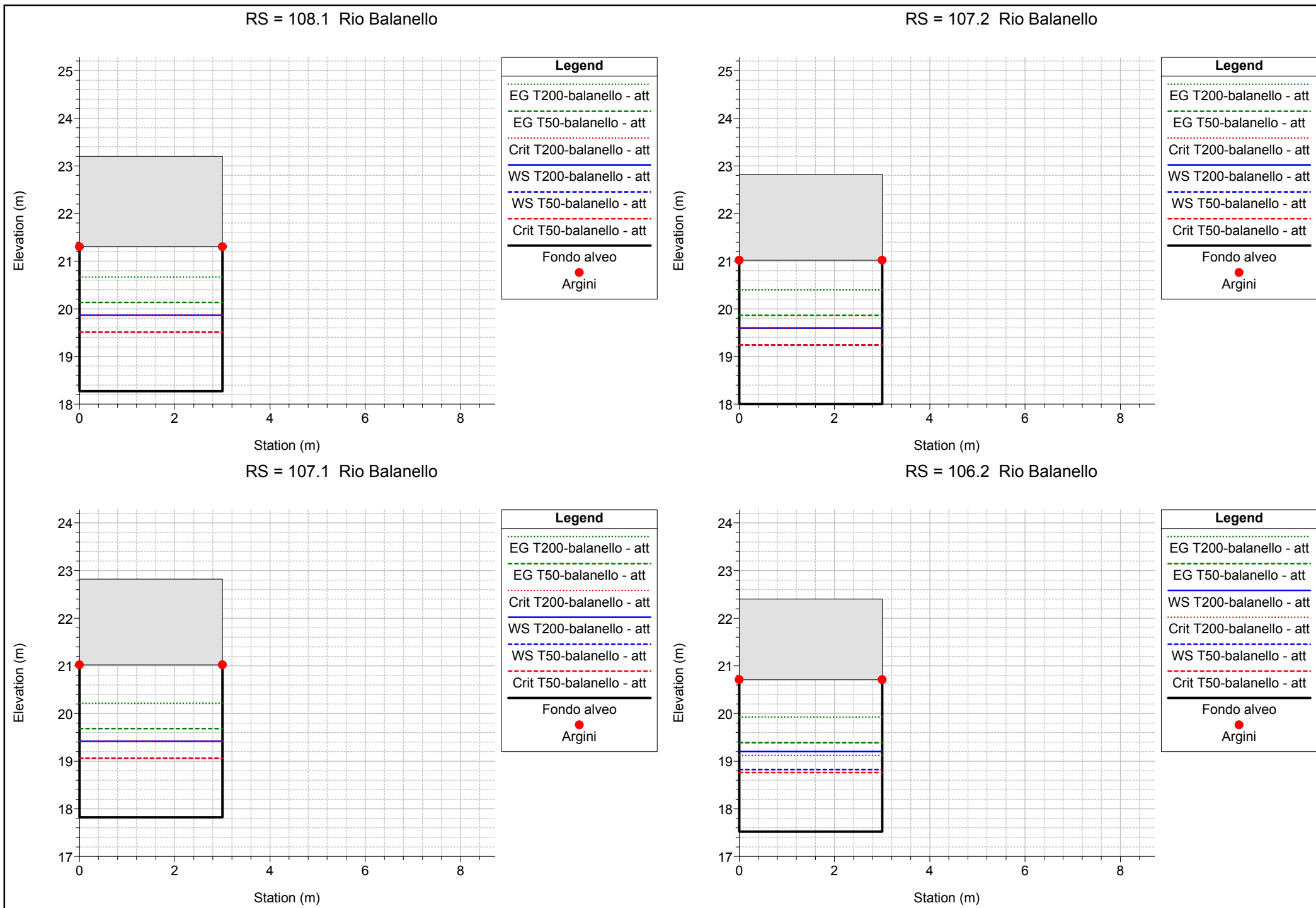


RS = 108.2 Rio Balanello



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

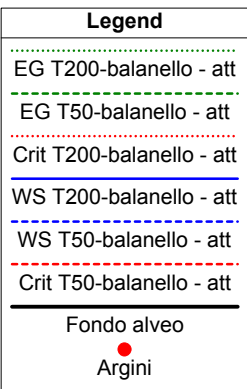
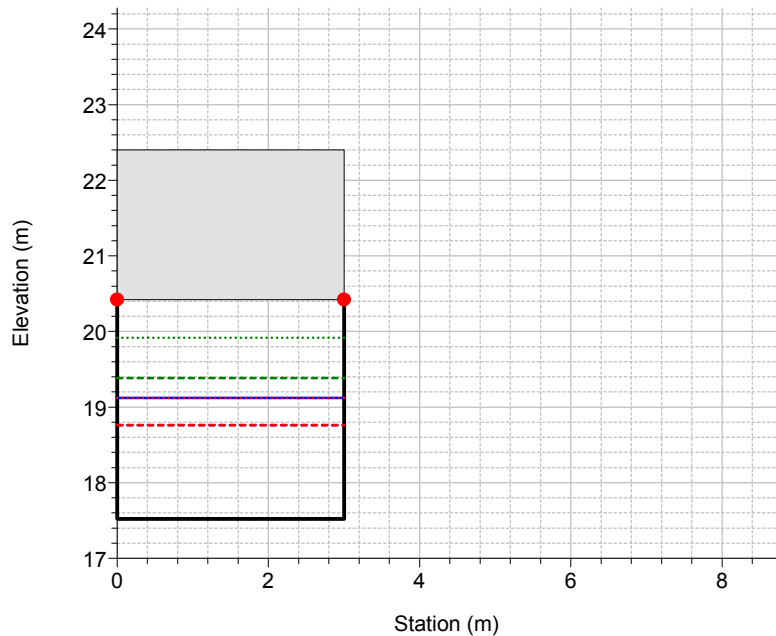
Approvato con DDG n. 2118 del 31/03/2020



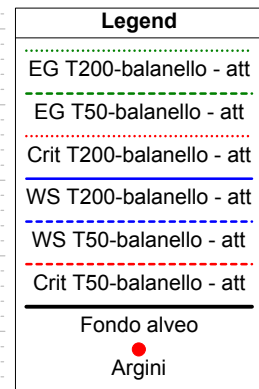
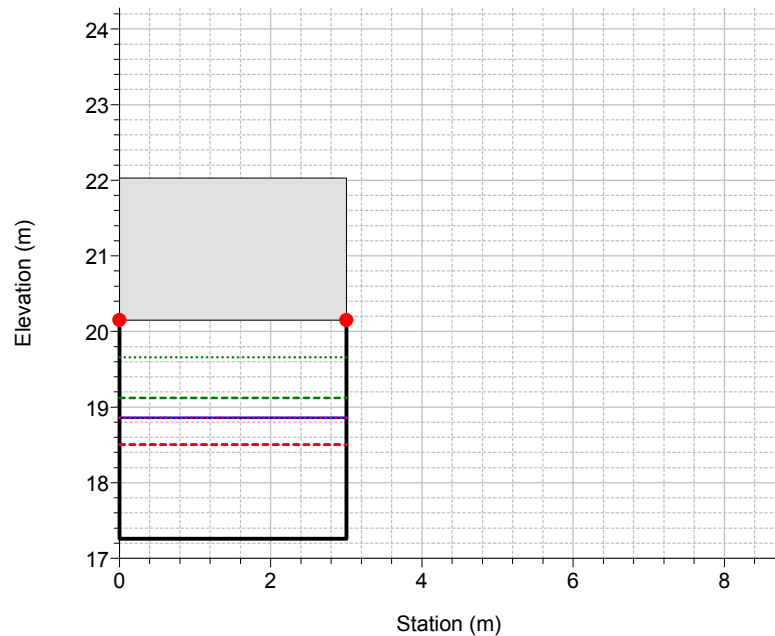
1 cm Horiz. = 1 m 1 cm Vert. = 1 m

Approvato con DDG n. 2118 del 31/03/2020

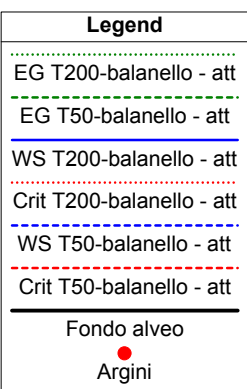
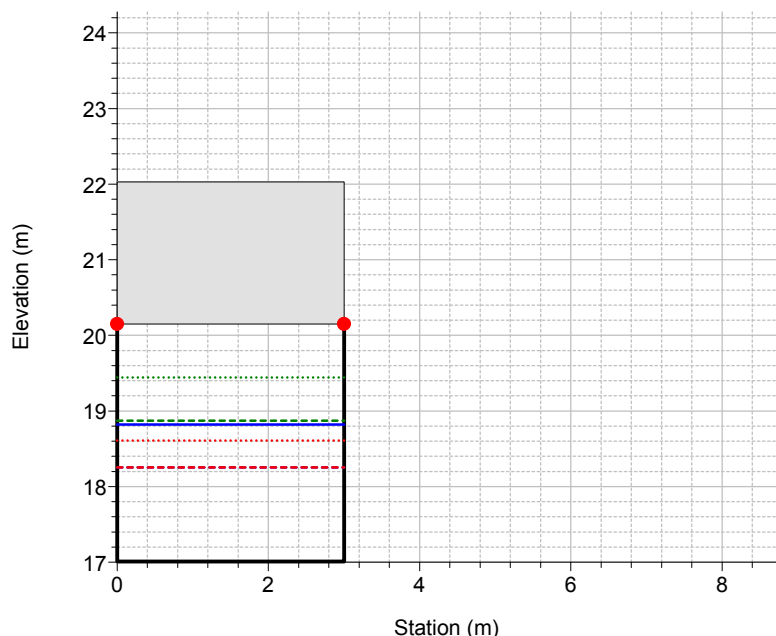
RS = 106.1 Rio Balanello



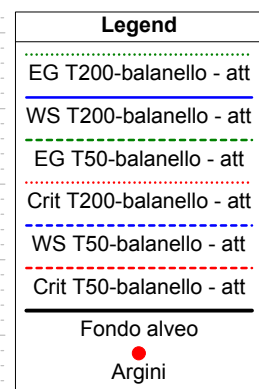
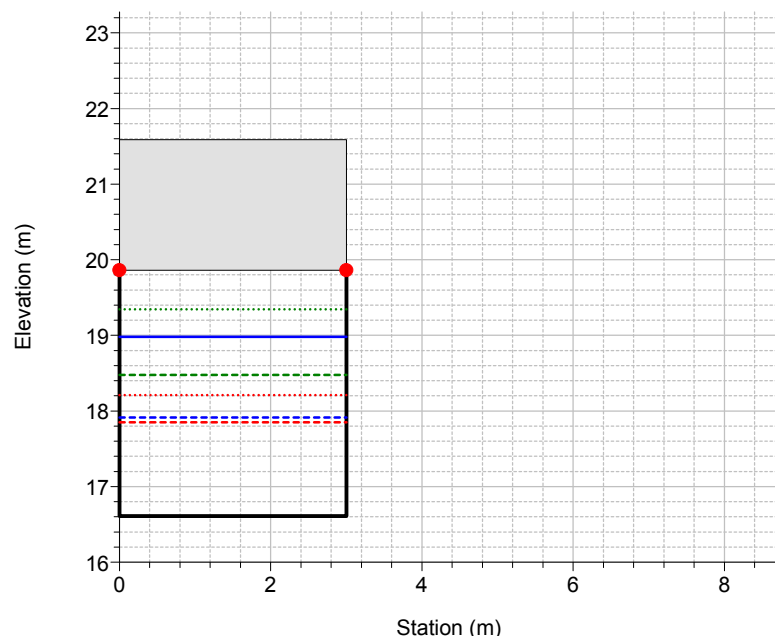
RS = 105.2 Rio Balanello

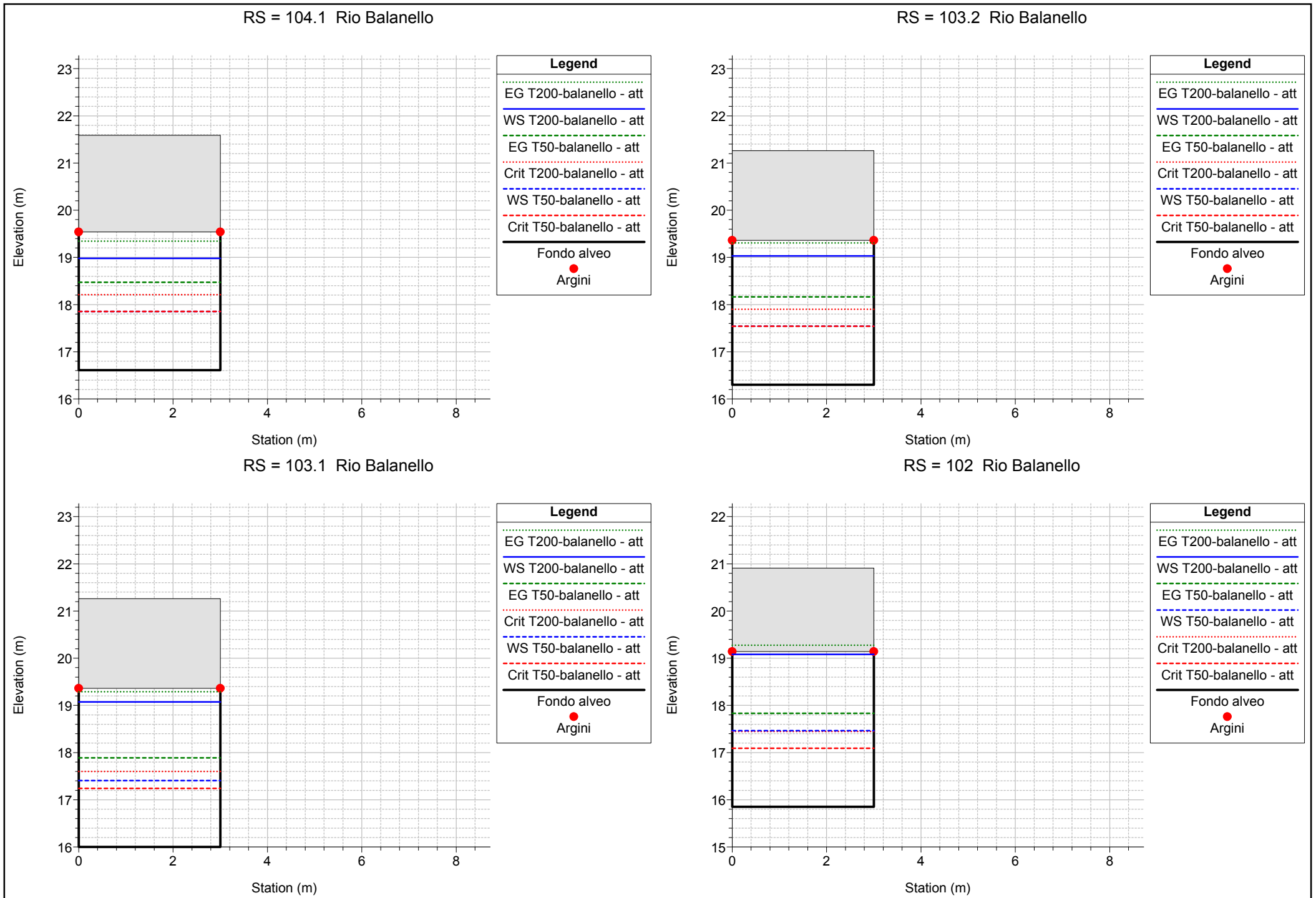


RS = 105.1 Rio Balanello



RS = 104.2 Rio Balanello

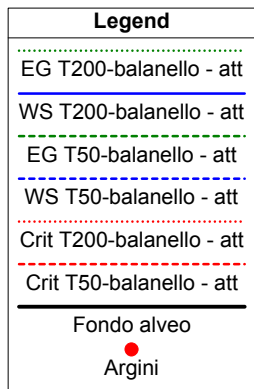
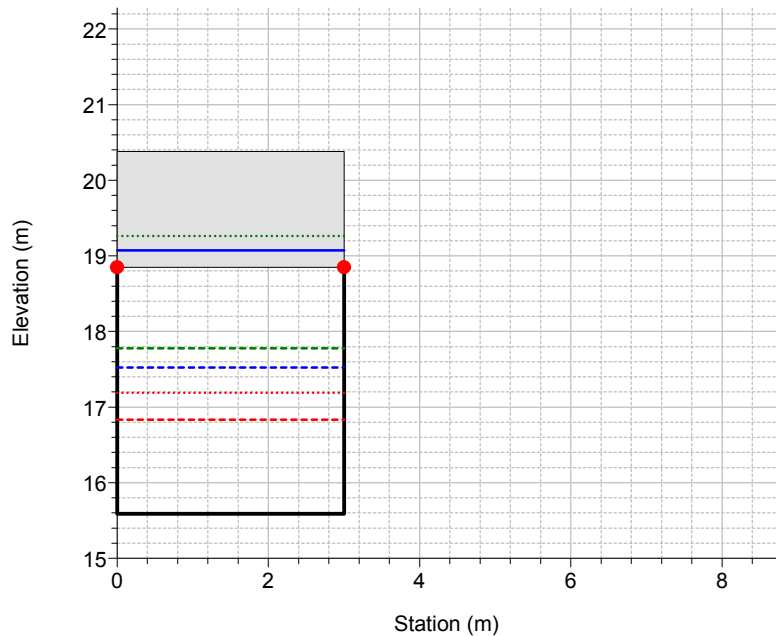




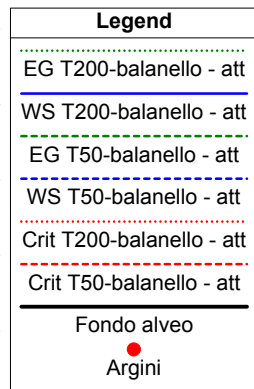
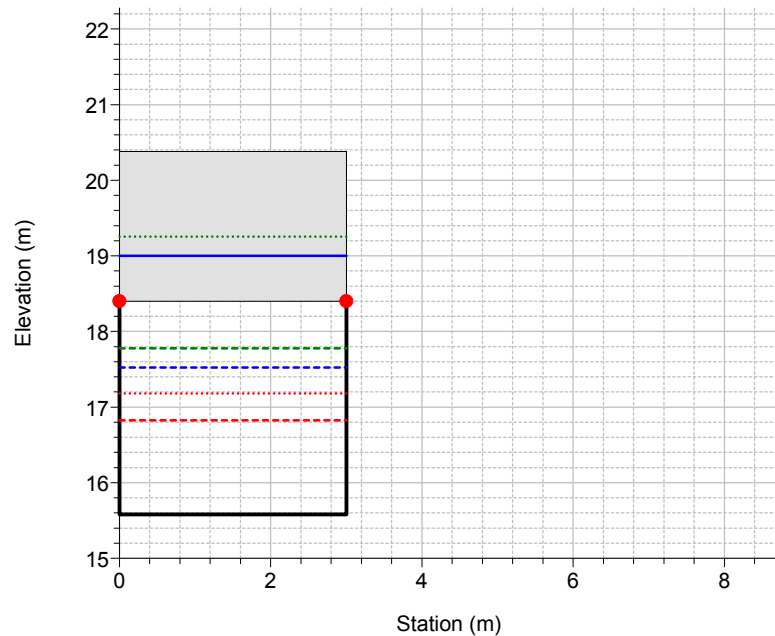
1 cm Horiz. = 1 m 1 cm Vert. = 1 m

Approvato con DDG n. 2118 del 31/03/2020

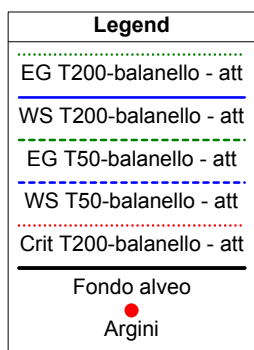
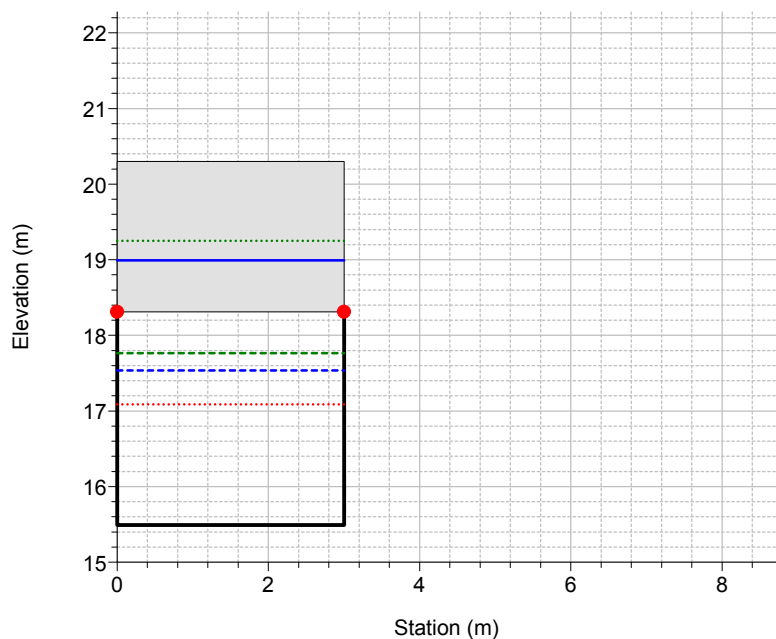
RS = 101.2 Rio Balanello



RS = 101.1 Rio Balanello

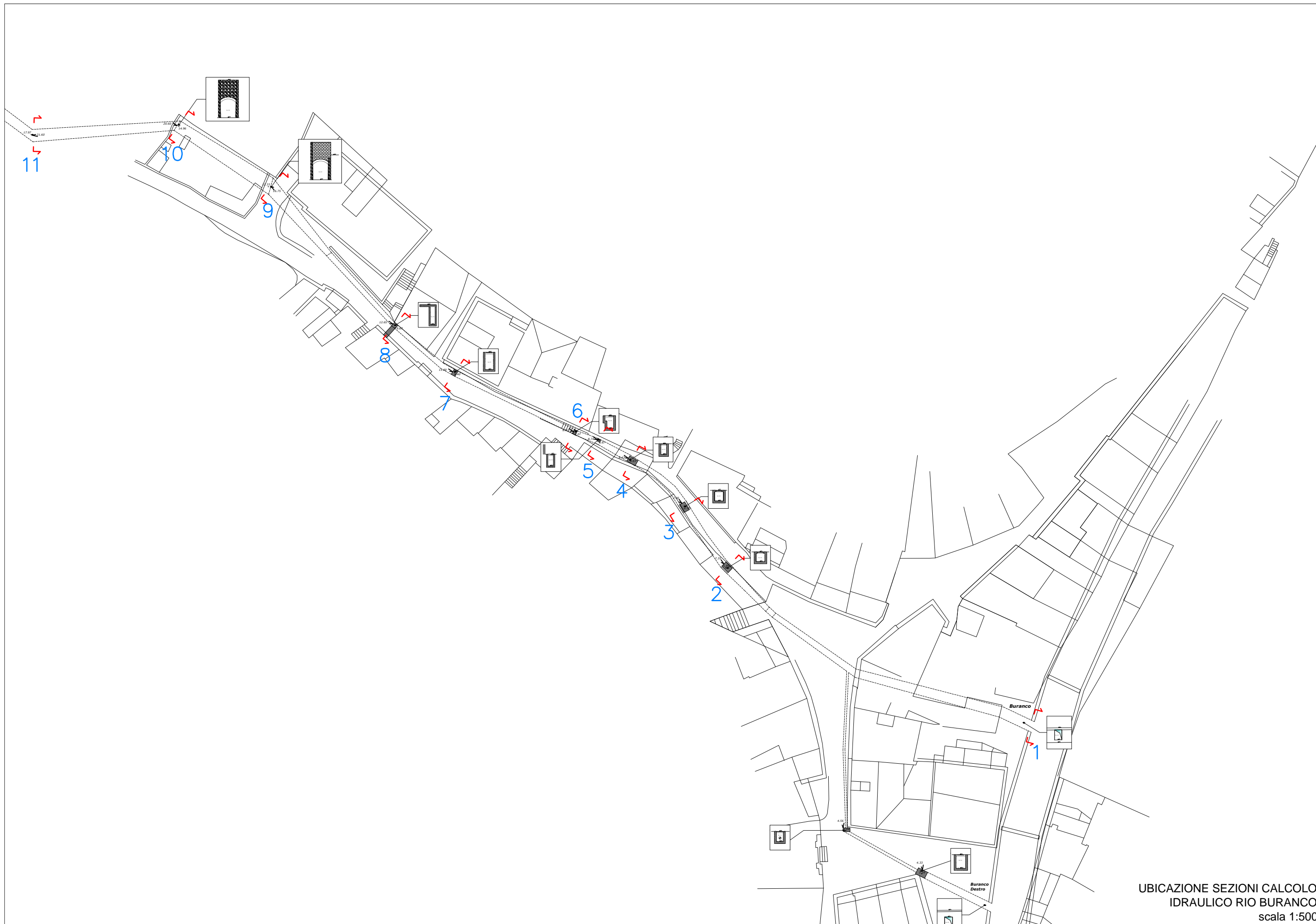


RS = 101 Rio Balanello



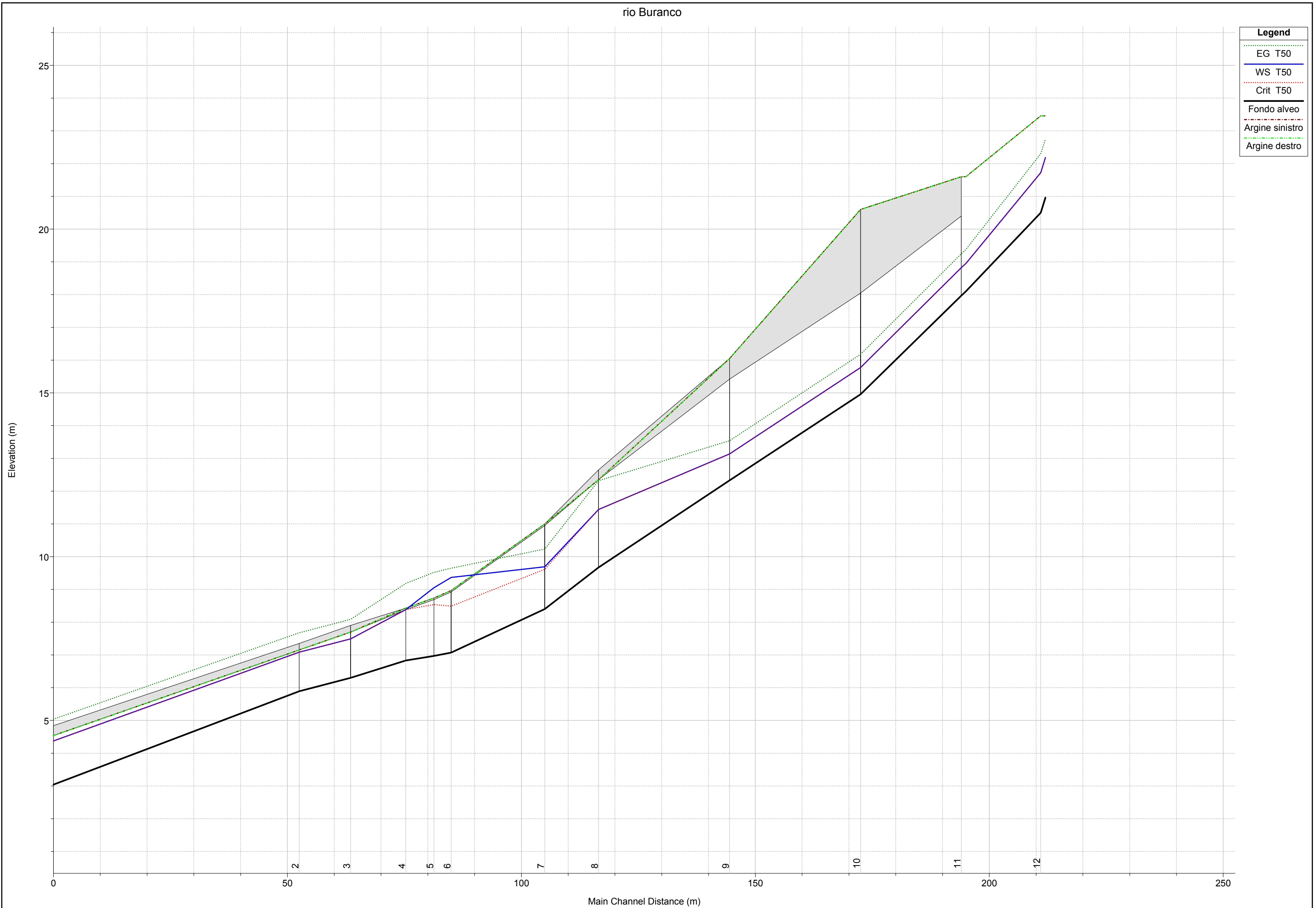


## **RIO BURANCO**



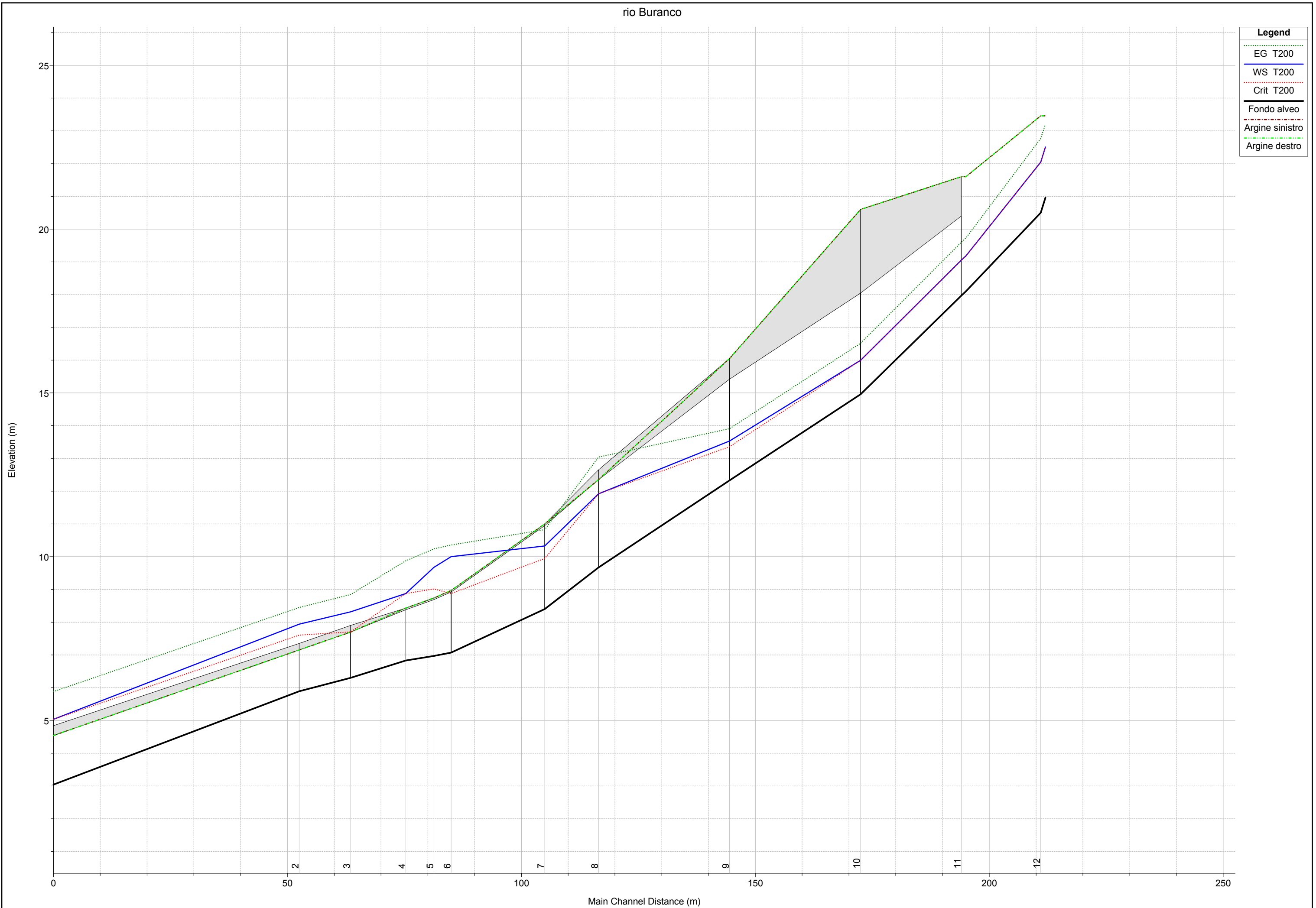
UBICAZIONE SEZIONI CALCOLO  
IDRAULICO RIO BURANCO  
scala 1:500

rio Buranco



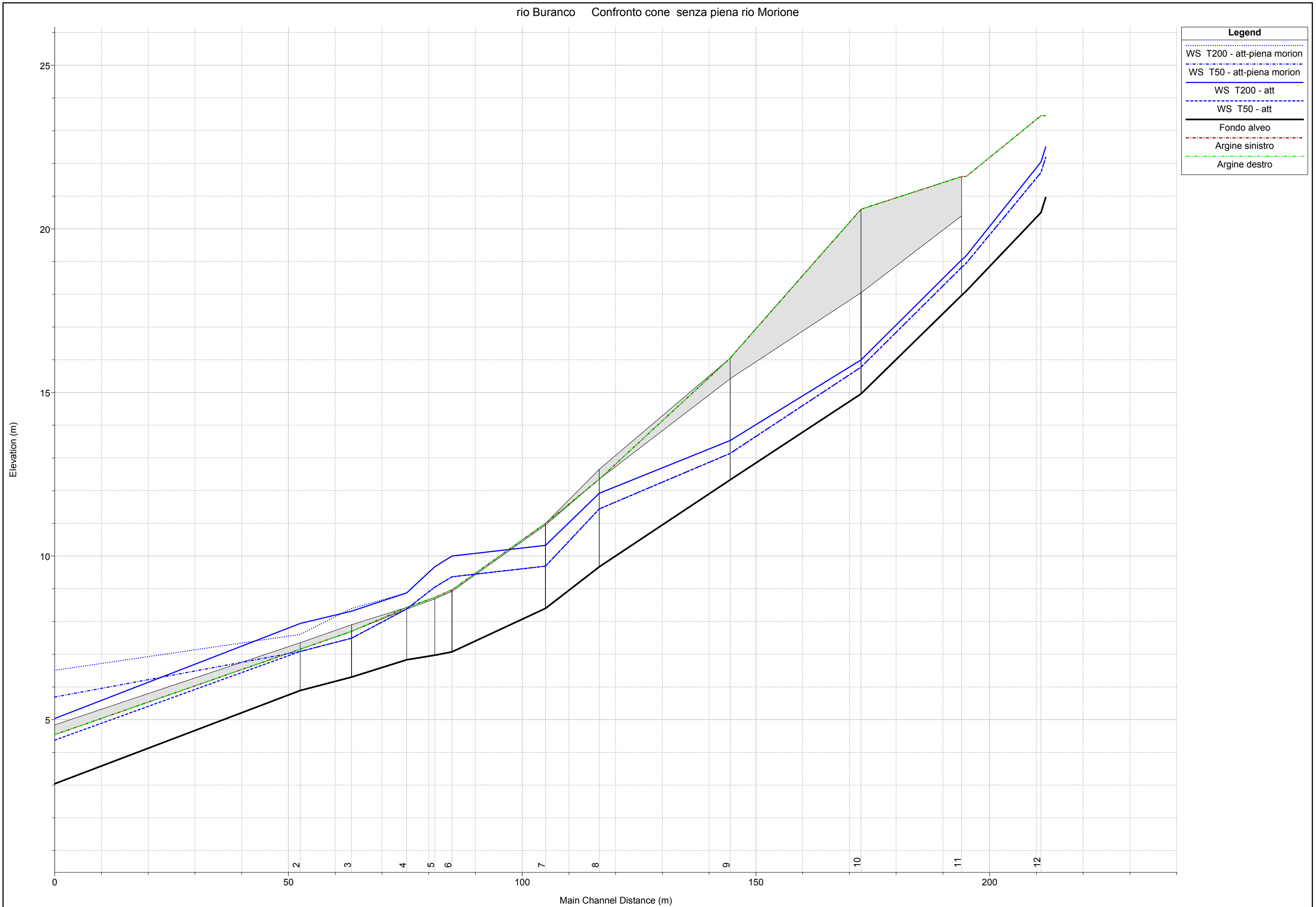
Legend	
EG T50	(Dotted Green Line)
WS T50	(Solid Blue Line)
Crit T50	(Dotted Red Line)
Fondo alveo	(Solid Black Line)
Argine sinistro	(Solid Purple Line)
Argine destro	(Solid Green Line)

rio Buranco



Legend	
EG T200	(Green dotted line)
WS T200	(Blue solid line)
Crit T200	(Red dotted line)
Fondo alveo	(Black solid line)
Argine sinistro	(Red dashed line)
Argine destro	(Green dashed line)

rio Buranco Confronto con senza piena rio Morione



**Legend**

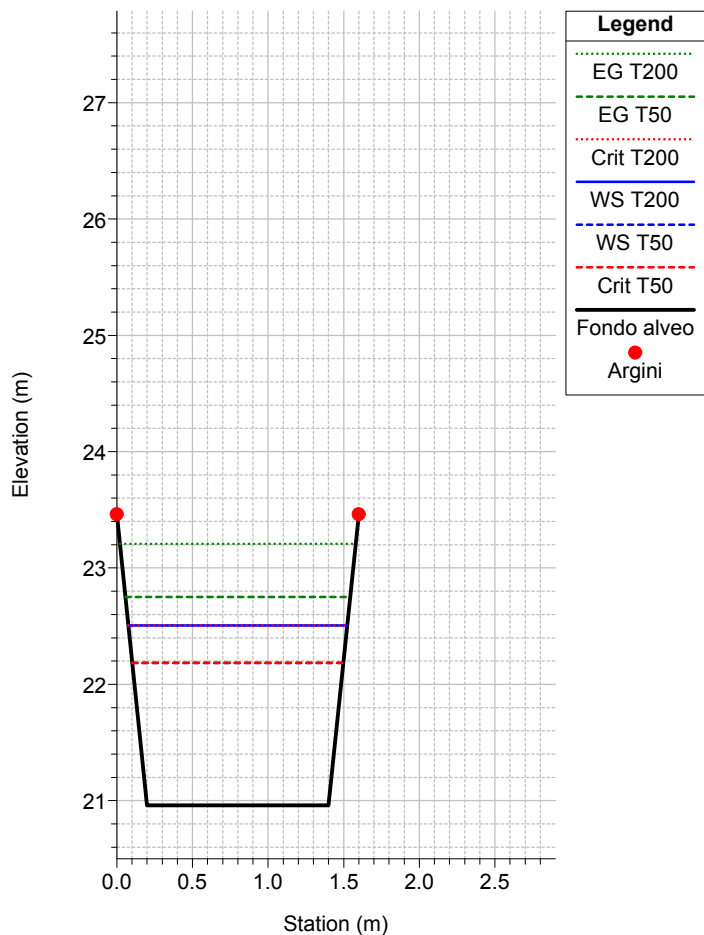
- WS T200 - att-piena morion
- WS T50 - att-piena morion
- WS T200 - att
- WS T50 - att
- Fondo alveo
- Argine sinistro
- Argine destro

HEC-RAS Plan: att River: BURANCO Reach: BURANCO

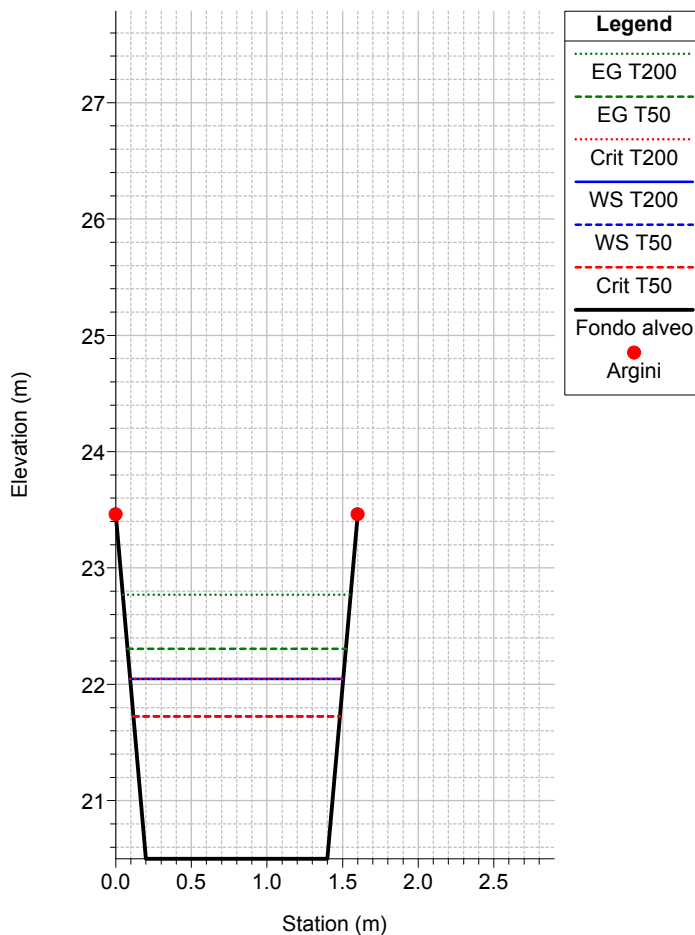
Reach	River Sta	Profile	Cum Ch Len	Q Total	Min Ch El	LOB Elev	ROB Elev	W.S. Elev	Hydr Depth	Max Chl Dpth	E.G. Elev	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(m)	(m3/s)	(m)	(m)	(m)	(m)	(m)	(m)	(m)	(m/s)	(m2)	(m)	
BURANCO	13	T200	212.00	7.60	20.96	23.46	23.46	22.51	1.41	1.55	23.21	3.71	2.05	1.45	1.00
BURANCO	13	T50	212.00	5.30	20.96	23.46	23.46	22.18	1.14	1.22	22.75	3.34	1.59	1.40	1.00
BURANCO	12	T200	211.00	7.60	20.50	23.46	23.46	22.05	1.43	1.55	22.77	3.77	2.02	1.41	1.00
BURANCO	12	T50	211.00	5.30	20.50	23.46	23.46	21.72	1.15	1.22	22.30	3.38	1.57	1.37	1.00
BURANCO	11.1	T200	195.00	7.60	18.10	21.60	21.60	19.18	1.08	1.08	19.73	3.27	2.32	2.15	1.01
BURANCO	11.1	T50	195.00	5.30	18.10	21.60	21.60	18.95	0.85	0.85	19.38	2.90	1.83	2.15	1.01
BURANCO	11	T200	194.00	7.60	17.97	19.87	19.87	19.05	1.08	1.08	19.60	3.27	2.33	2.15	1.00
BURANCO	11	T50	194.00	5.30	17.97	19.87	19.87	18.82	0.85	0.85	19.25	2.89	1.83	2.15	1.00
BURANCO	10	T200	172.50	7.60	14.96	17.59	17.59	16.00	1.04	1.04	16.51	3.19	2.38	2.30	1.00
BURANCO	10	T50	172.50	5.30	14.96	17.59	17.59	15.77	0.81	0.81	16.18	2.83	1.87	2.30	1.00
BURANCO	9	T200	144.50	7.60	12.33	14.96	14.96	13.53	1.20	1.20	13.91	2.72	2.80	2.33	0.79
BURANCO	9	T50	144.50	5.30	12.33	14.96	14.96	13.14	0.81	0.81	13.54	2.81	1.89	2.33	1.00
BURANCO	8	T200	116.50	7.60	9.67	12.35	12.35	11.92	2.25	2.25	13.04	4.70	1.62	0.72	1.00
BURANCO	8	T50	116.50	5.30	9.67	12.35	12.35	11.44	1.77	1.77	12.32	4.16	1.27	0.72	1.00
BURANCO	7	T200	105.00	7.60	8.40	10.95	10.95	10.33	1.93	1.93	10.83	3.13	2.43	1.26	0.72
BURANCO	7	T50	105.00	5.30	8.40	10.95	10.95	9.69	1.29	1.29	10.23	3.26	1.63	1.26	0.92
BURANCO	6	T200	85.00	7.60	7.07	8.92	8.92	10.00	2.88	2.93	10.36	2.64	2.88	1.00	0.49
BURANCO	6	T50	85.00	5.30	7.07	8.92	8.92	9.37	2.25	2.30	9.65	2.36	2.25	1.00	0.50
BURANCO	5	T200	81.30	7.60	6.97	8.69	8.69	9.67	2.65	2.70	10.24	3.33	2.28	0.86	0.65
BURANCO	5	T50	81.30	5.30	6.97	8.69	8.69	9.05	2.03	2.08	9.52	3.03	1.75	0.86	0.67
BURANCO	4	T200	75.30	7.60	6.83	8.38	8.38	8.88	2.00	2.05	9.87	4.43	1.72	0.86	0.99
BURANCO	4	T50	75.30	5.30	6.83	8.38	8.38	8.38	1.55	1.55	9.18	3.97	1.33	0.86	1.02
BURANCO	3	T200	63.50	7.60	6.30	7.70	7.70	8.31	1.81	2.01	8.84	3.22	2.36	1.30	0.72
BURANCO	3	T50	63.50	5.30	6.30	7.70	7.70	7.49	1.19	1.19	8.09	3.42	1.55	1.30	1.00
BURANCO	2	T200	52.50	7.60	5.89	7.15	7.15	7.94	1.85	2.05	8.45	3.16	2.40	1.30	0.71
BURANCO	2	T50	52.50	5.30	5.89	7.15	7.15	7.08	1.19	1.19	7.68	3.42	1.55	1.30	1.00
BURANCO	1	T200		7.60	3.04	4.54	4.54	5.03	1.69	1.99	5.88	4.08	1.86	1.10	0.92
BURANCO	1	T50		5.30	3.04	4.54	4.54	4.37	1.33	1.33	5.04	3.61	1.47	1.10	1.00



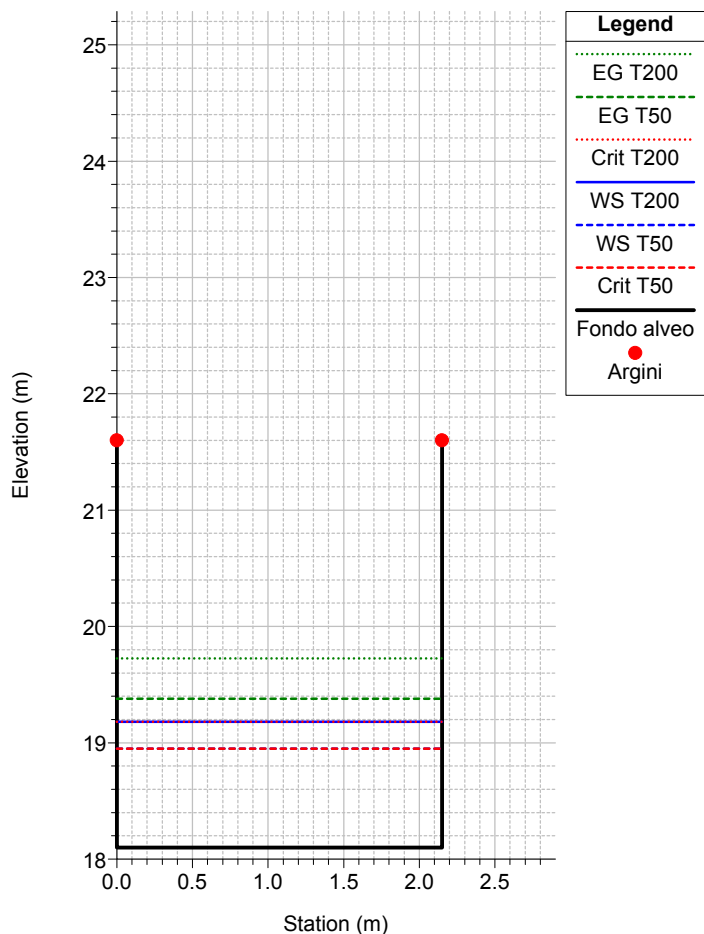
rio Buranco  
RS = 13



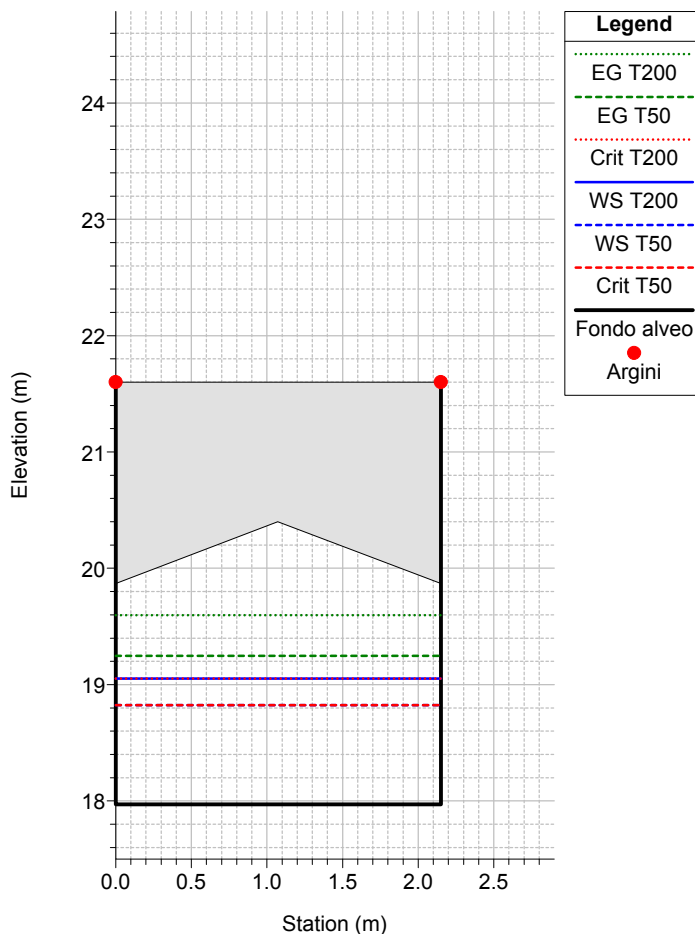
rio Buranco  
RS = 12



rio Buranco  
RS = 11.1



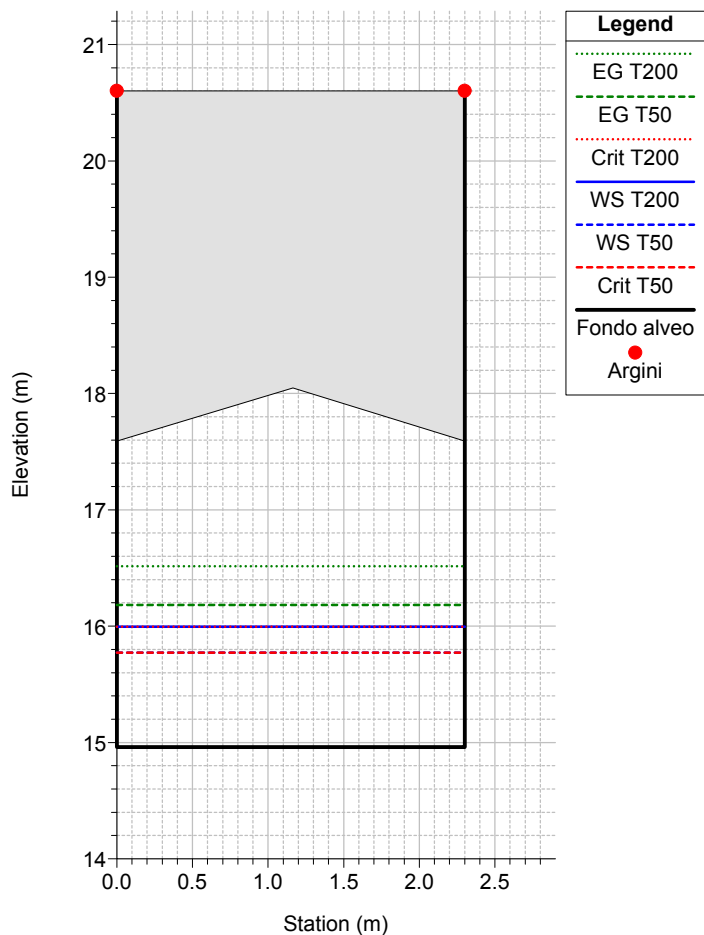
rio Buranco  
RS = 11



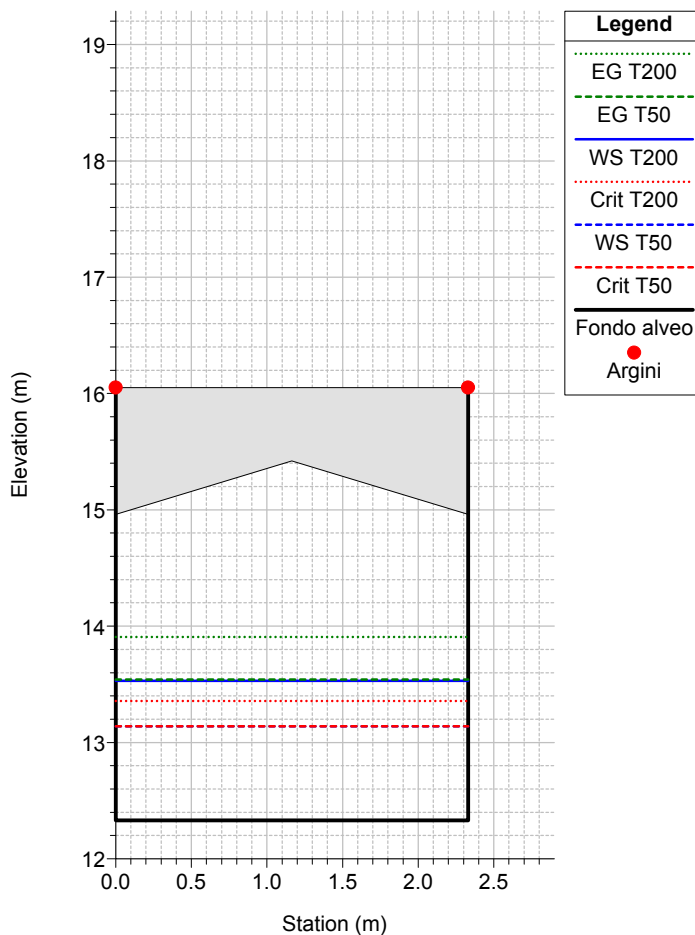
1 cm Horiz. = 0.5 m 1 cm Vert. = 0.65 m

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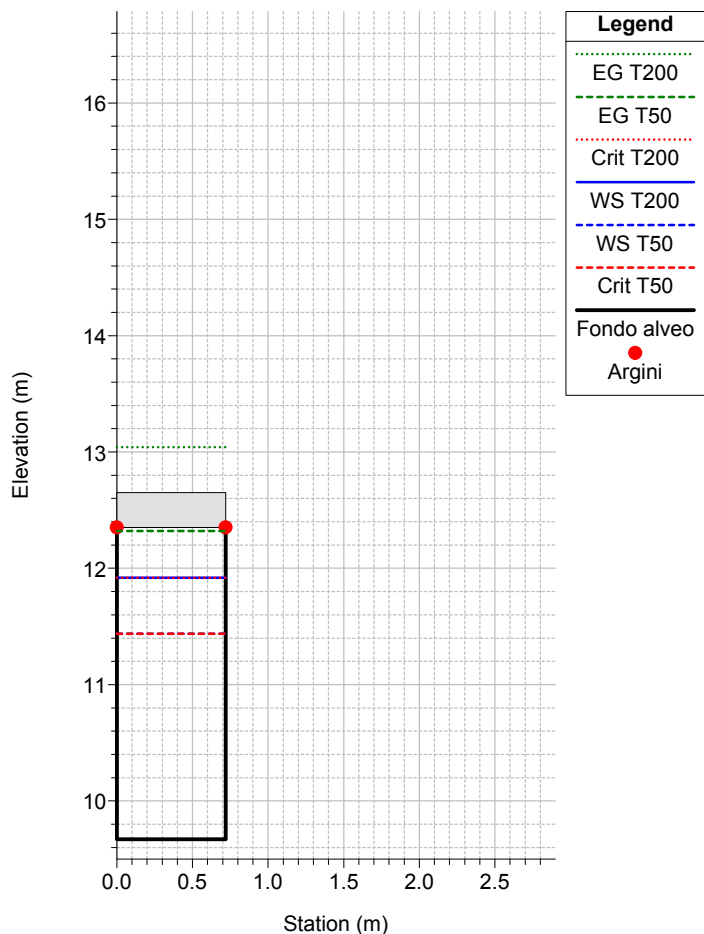
rio Buranco  
RS = 10



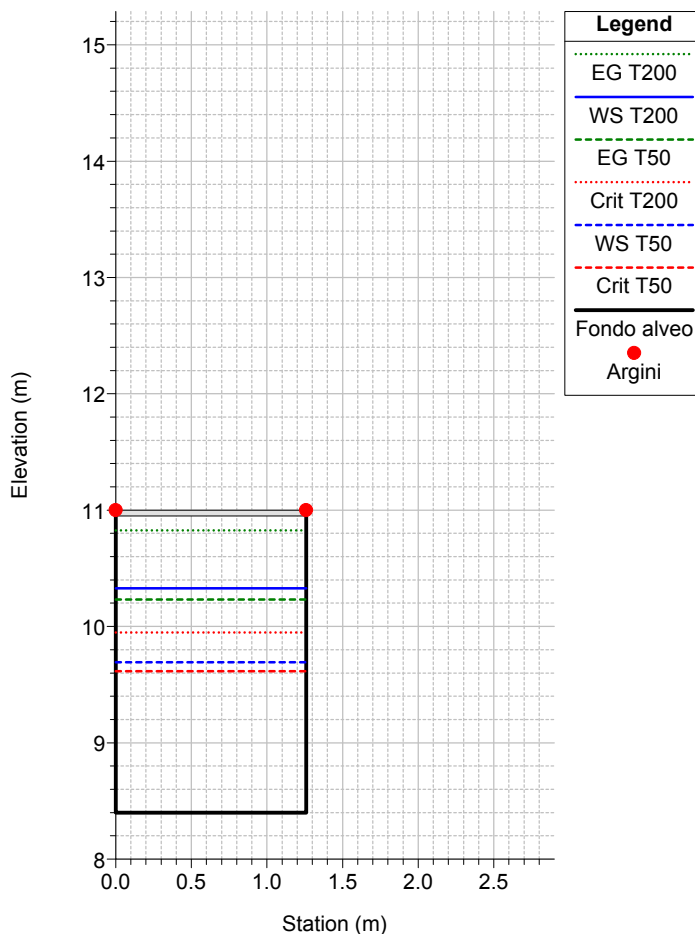
rio Buranco  
RS = 9



rio Buranco  
RS = 8



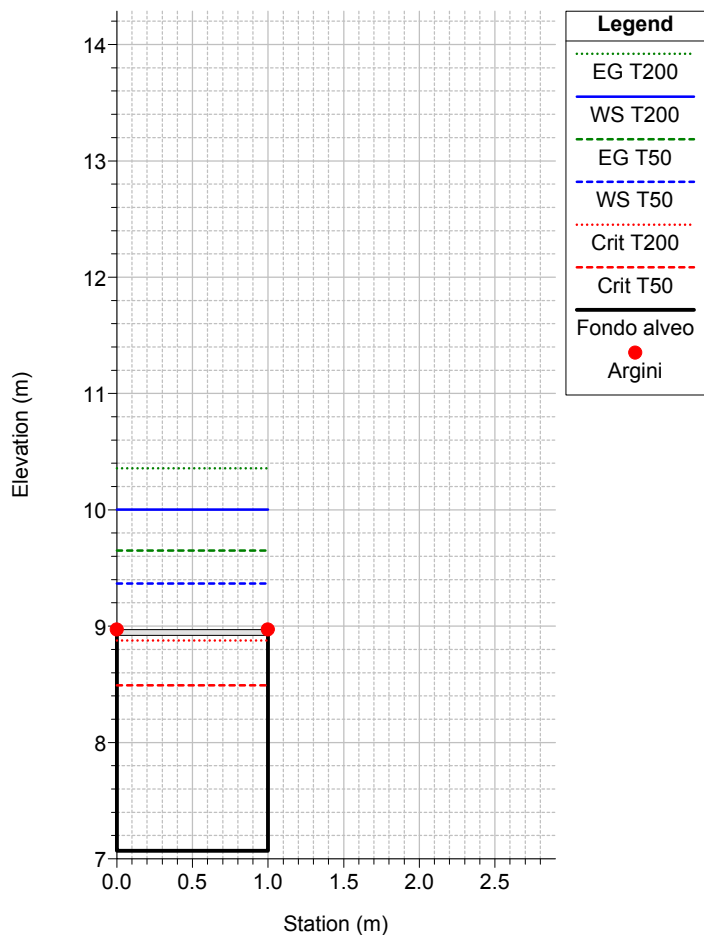
rio Buranco  
RS = 7



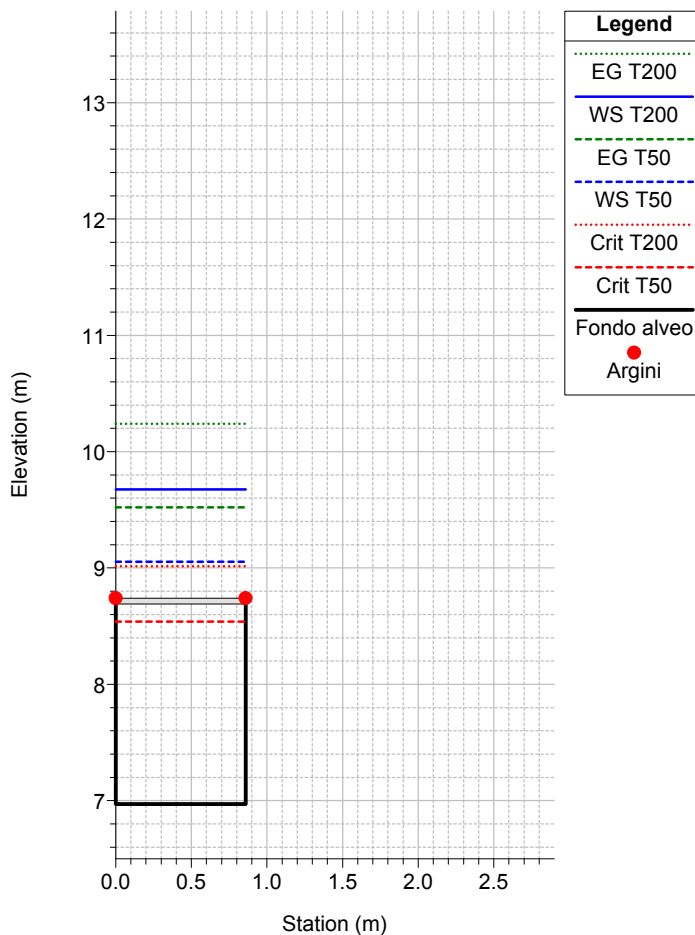
1 cm Horiz. = 0.5 m 1 cm Vert. = 0.65 m

Approvato con DDG n. 2118 del 31/03/2020

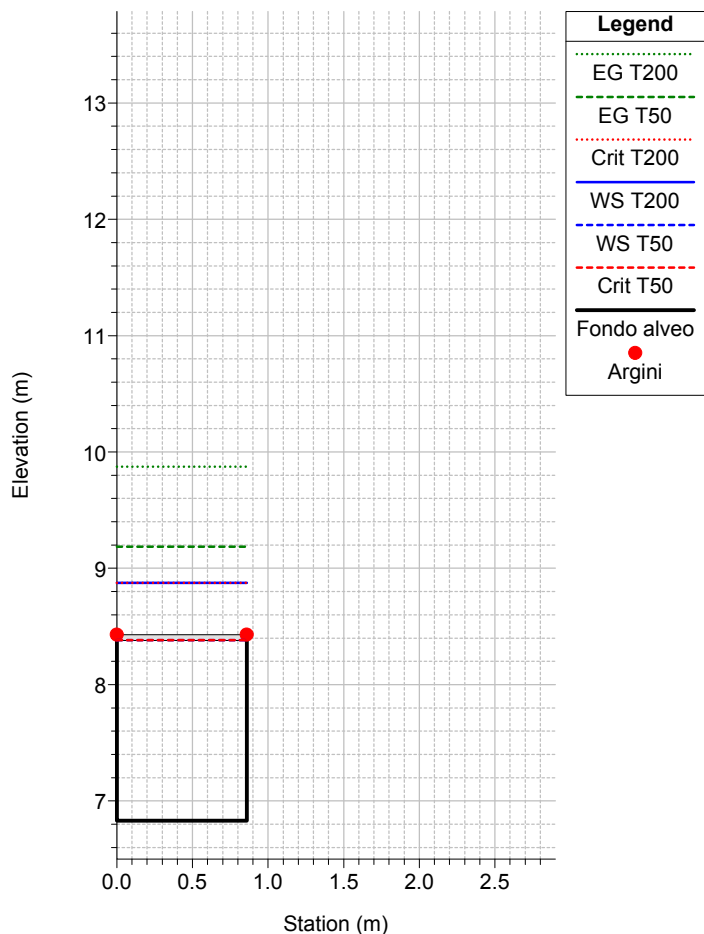
rio Buranco  
RS = 6



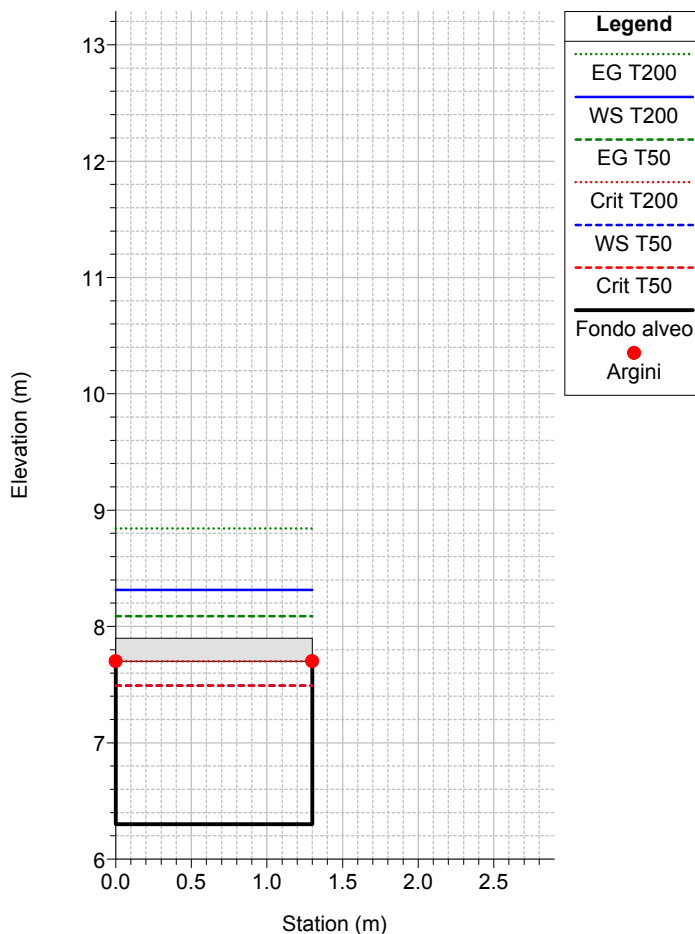
rio Buranco  
RS = 5



rio Buranco  
RS = 4



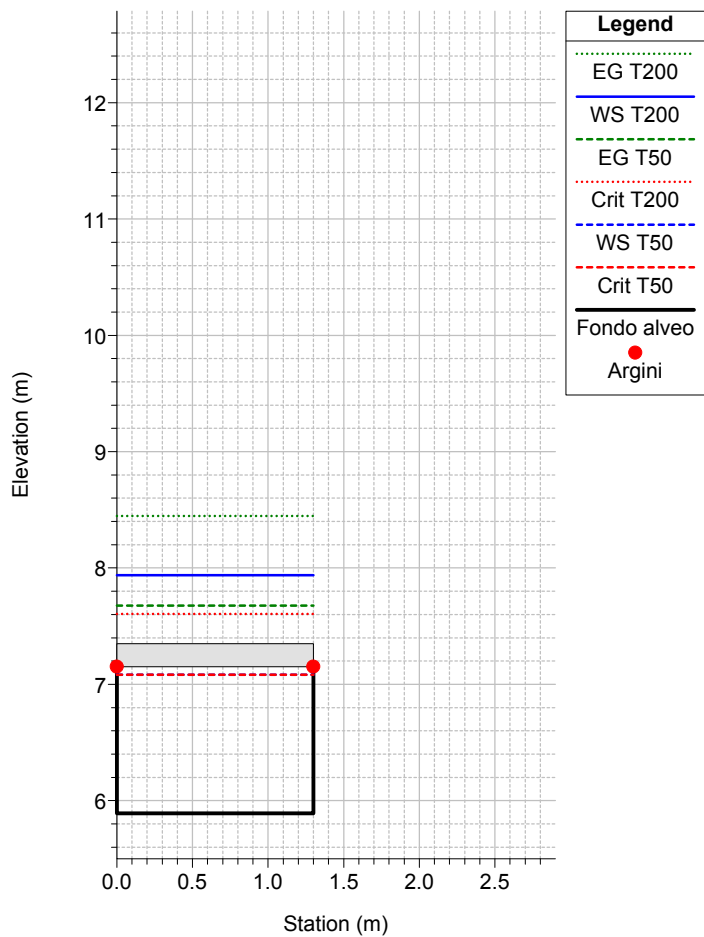
rio Buranco  
RS = 3



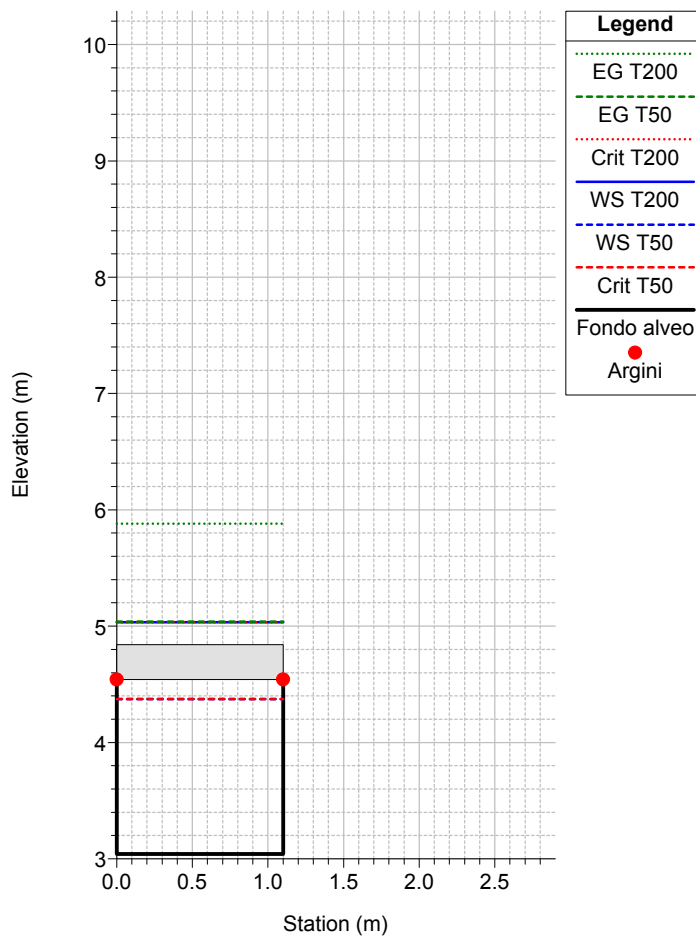
1 cm Horiz. = 0.5 m 1 cm Vert. = 0.65 m

Approvato con DDG n. 2118 del 31/03/2020

rio Buranco  
RS = 2



rio Buranco  
RS = 1



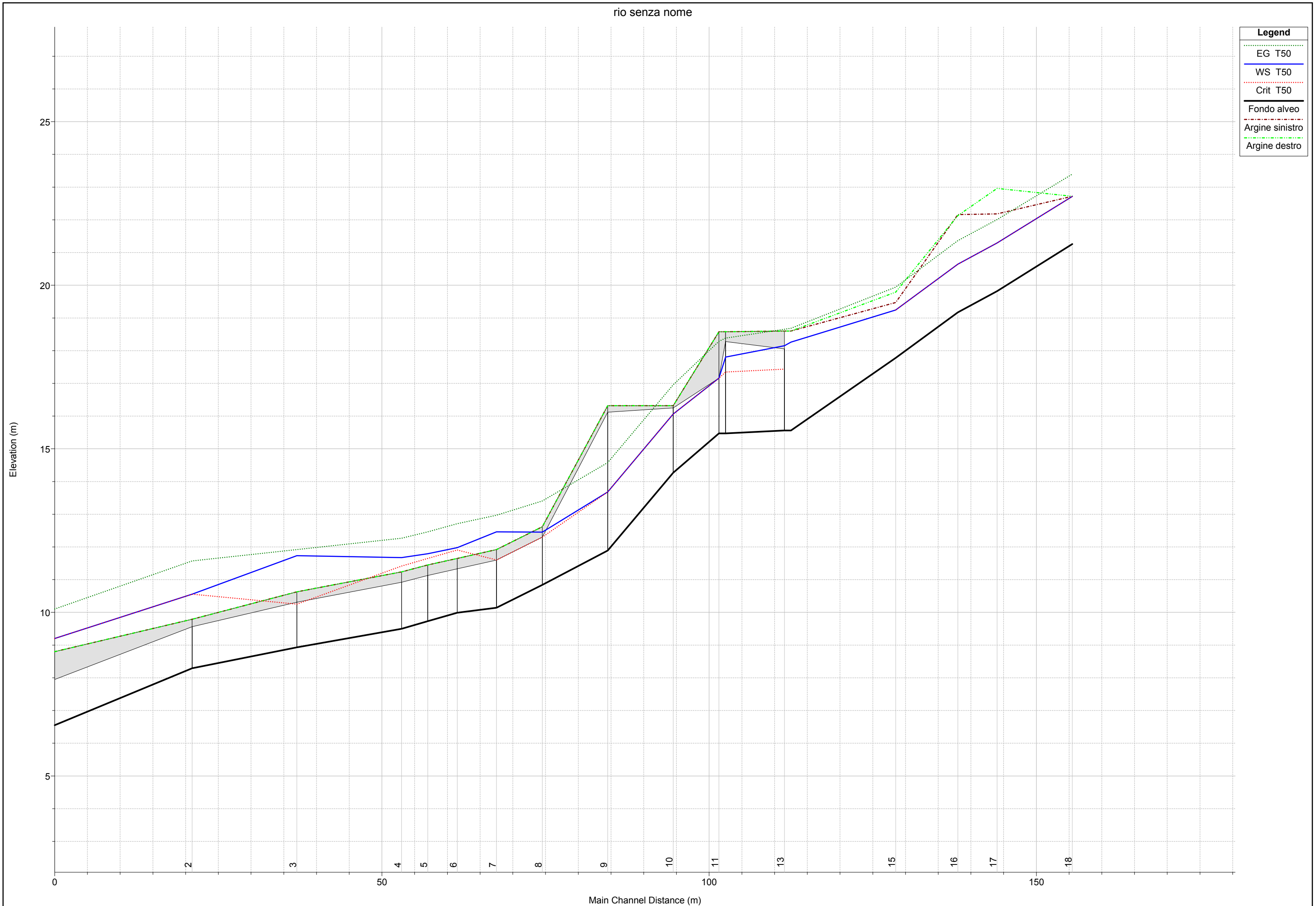
## **RIO SENZA NOME**



UBICAZIONE SEZIONI CALCOLO  
IDRAULICO RIO SENZA NOME  
scala 1:500



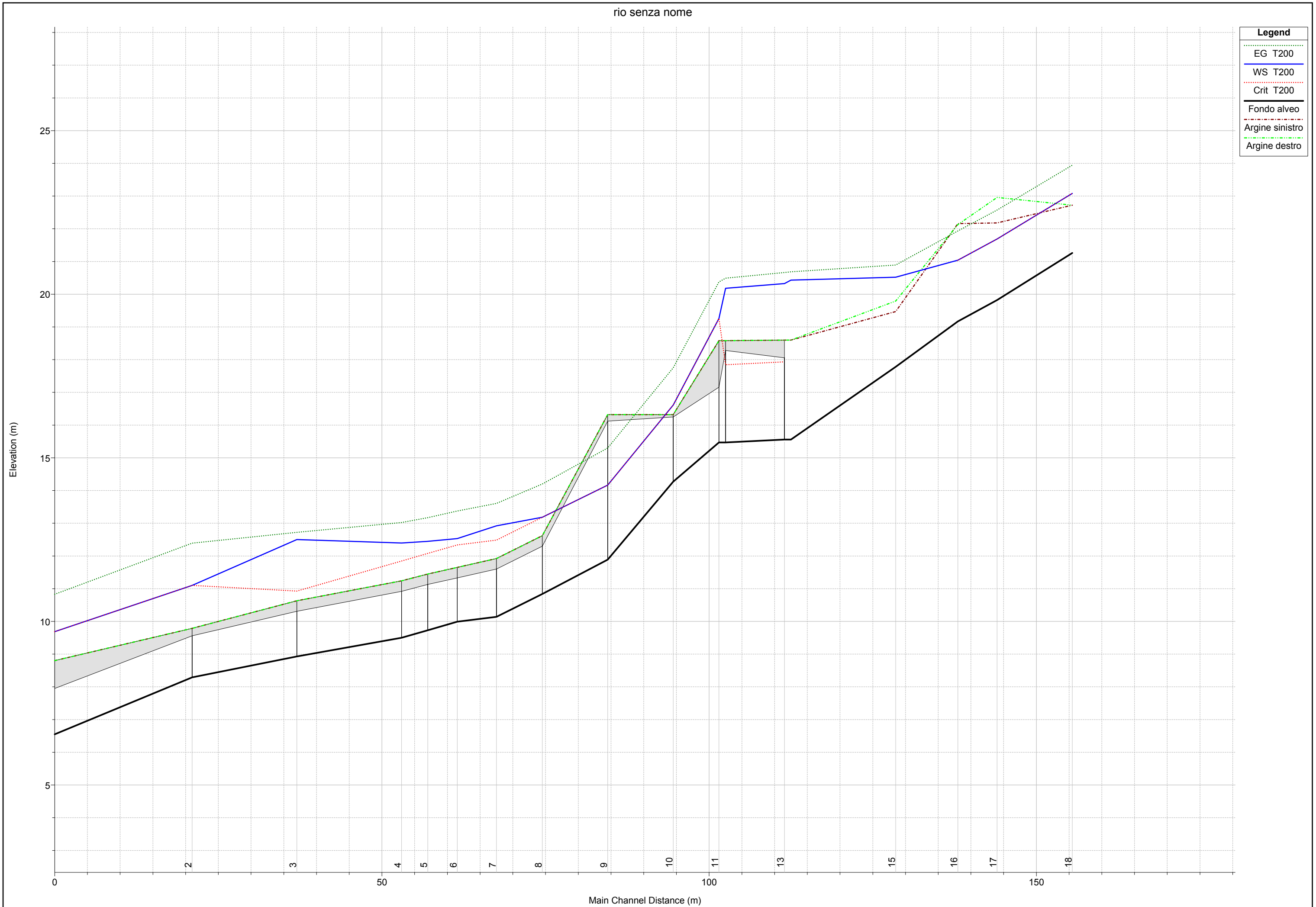
rio senza nome



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

Approvato con DDG n. 2118 del 31/03/2020

rio senza nome



Legend	
EG T200	(dotted green line)
WS T200	(solid blue line)
Crit T200	(dotted red line)
Fondo alveo	(solid black line)
Argine sinistro	(dashed green line)
Argine destro	(dotted green line)

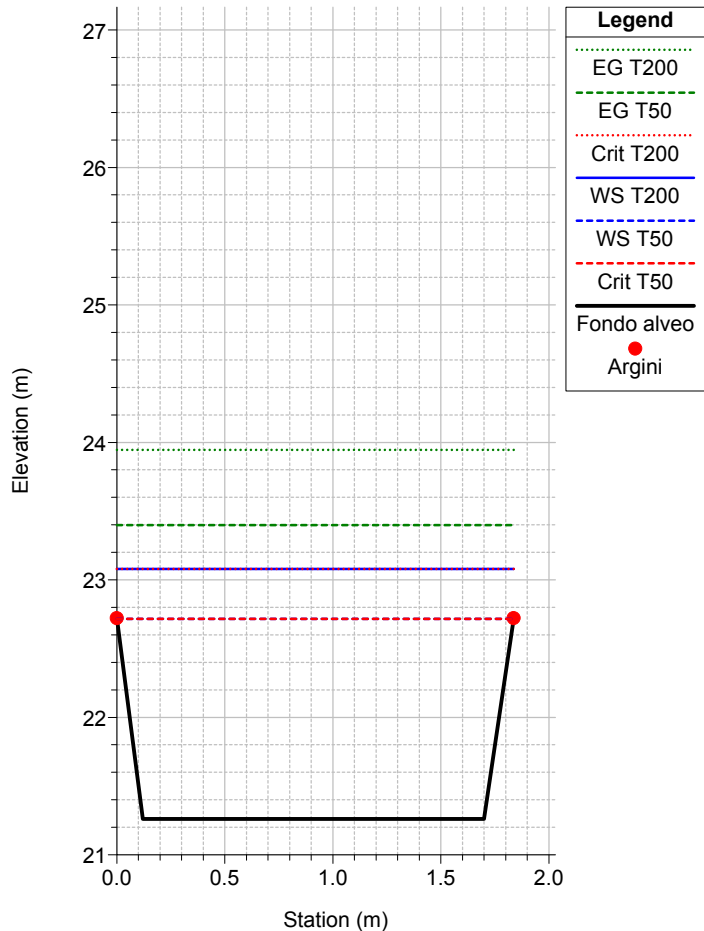
HEC-RAS Plan: att River: senza nome Reach: senza nome

Reach	River Sta	Profile	Cum Ch Len	Q Total	Min Ch El	LOB Elev	ROB Elev	W.S. Elev	Hydr Depth	Max Chl Dpth	E.G. Elev	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(m)	(m3/s)	(m)	(m)	(m)	(m)	(m)	(m)	(m)	(m/s)	(m2)	(m)	
senza nome	18	T200	155.50	13.00	21.26	22.72	22.72	23.08	1.72	1.82	23.94	4.12	3.15	1.84	1.00
senza nome	18	T50	155.50	9.10	21.26	22.72	22.72	22.72	1.35	1.46	23.40	3.66	2.49	1.84	1.00
senza nome	17	T200	144.00	13.00	19.82	22.18	22.96	21.69	1.78	1.87	22.57	4.17	3.12	1.76	1.00
senza nome	17	T50	144.00	9.10	19.82	22.18	22.96	21.29	1.41	1.47	22.01	3.74	2.43	1.72	1.01
senza nome	16	T200	138.00	13.00	19.17	22.16	22.13	21.04	1.78	1.87	21.93	4.18	3.11	1.74	1.00
senza nome	16	T50	138.00	9.10	19.17	22.16	22.13	20.65	1.42	1.48	21.36	3.75	2.43	1.71	1.00
senza nome	15	T200	128.50	13.00	17.78	19.47	19.79	20.52	2.61	2.74	20.89	2.71	4.79	1.84	0.54
senza nome	15	T50	128.50	9.10	17.78	19.47	19.79	19.24	1.38	1.46	19.94	3.70	2.46	1.78	1.01
senza nome	14	T200	112.50	13.00	15.56	18.60	18.60	20.43	4.72	4.87	20.69	2.23	5.83	1.24	0.33
senza nome	14	T50	112.50	9.10	15.56	18.60	18.60	18.26	2.58	2.70	18.69	2.89	3.15	1.22	0.57
senza nome	13	T200	111.50	13.00	15.56	18.06	18.06	20.32	4.07	4.76	20.66	2.58	5.03	1.24	0.38
senza nome	13	T50	111.50	9.10	15.56	18.06	18.06	18.15		2.59	18.65	3.14	2.90		0.62
senza nome	12	T200	102.50	13.00	15.47	18.28	18.28	20.18	4.25	4.71	20.49	2.47	5.26	1.24	0.36
senza nome	12	T50	102.50	9.10	15.47	18.28	18.28	17.81	2.24	2.34	18.38	3.36	2.70	1.21	0.72
senza nome	11	T200	101.50	13.00	15.47	17.16	17.16	19.26	2.24	3.79	20.38	4.69	2.77	1.24	0.77
senza nome	11	T50	101.50	9.10	15.47	17.16	17.16	17.16	1.64	1.69	18.29	4.70	1.93	1.18	1.17
senza nome	10	T200	94.50	13.00	14.27	16.25	16.25	16.61	2.27	2.34	17.75	4.72	2.75	1.21	0.98
senza nome	10	T50	94.50	9.10	14.27	16.25	16.25	16.06	1.79	1.79	16.96	4.20	2.17	1.21	1.00
senza nome	9	T200	84.50	13.00	11.89	16.12	16.12	14.17	2.28	2.28	15.30	4.72	2.75	1.21	1.00
senza nome	9	T50	84.50	9.10	11.89	16.12	16.12	13.68	1.79	1.79	14.58	4.20	2.17	1.21	1.00
senza nome	8	T200	74.50	13.00	10.84	12.30	12.30	13.18	2.02	2.34	14.20	4.46	2.92	1.44	0.93
senza nome	8	T50	74.50	9.10	10.84	12.30	12.30	12.45		1.61	13.41	4.33	2.10		1.09
senza nome	7	T200	67.50	13.00	10.14	11.60	11.60	12.92	2.46	2.78	13.61	3.67	3.54	1.44	0.70
senza nome	7	T50	67.50	9.10	10.14	11.60	11.60	12.46	2.00	2.32	12.97	3.15	2.88	1.44	0.66
senza nome	6	T200	61.50	13.00	9.99	11.33	11.33	12.53	2.22	2.54	13.37	4.06	3.20	1.44	0.81
senza nome	6	T50	61.50	9.10	9.99	11.33	11.33	11.98	1.67	1.99	12.71	3.79	2.40	1.44	0.86
senza nome	5	T200	57.00	13.00	9.73	11.13	11.13	12.45	2.40	2.72	13.17	3.77	3.45	1.44	0.73
senza nome	5	T50	57.00	9.10	9.73	11.13	11.13	11.79	1.74	2.06	12.46	3.63	2.51	1.44	0.81
senza nome	4	T200	53.00	13.00	9.50	10.92	10.92	12.40	2.58	2.90	13.02	3.51	3.71	1.44	0.66
senza nome	4	T50	53.00	9.10	9.50	10.92	10.92	11.68	1.86	2.18	12.27	3.41	2.67	1.44	0.74
senza nome	3	T200	37.00	13.00	8.93	10.31	10.31	12.50	3.25	3.57	12.72	2.09	6.21	1.91	0.35
senza nome	3	T50	37.00	9.10	8.93	10.31	10.31	11.73	2.48	2.80	11.92	1.92	4.74	1.91	0.37

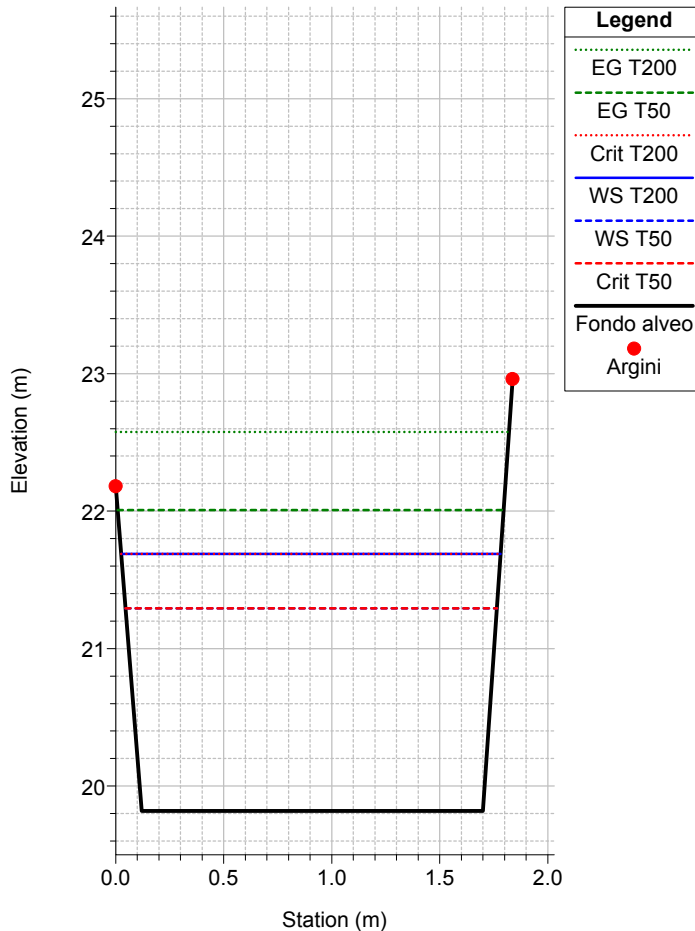
HEC-RAS Plan: att River: senza nome Reach: senza nome (Continued)

Reach	River Sta	Profile	Cum Ch Len	Q Total	Min Ch El	LOB Elev	ROB Elev	W.S. Elev	Hydr Depth	Max Chl Dpth	E.G. Elev	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(m)	(m3/s)	(m)	(m)	(m)	(m)	(m)	(m)	(m)	(m/s)	(m2)	(m)	
senza nome	2	T200	21.00	13.00	8.29	9.56	9.56	11.10	2.58	2.81	12.39	5.04	2.58	1.00	0.96
senza nome	2	T50	21.00	9.10	8.29	9.56	9.56	10.55	2.04	2.27	11.57	4.47	2.04	1.00	0.95
senza nome	1	T200		13.00	6.55	7.95	7.95	9.69	2.29	3.14	10.83	4.73	2.75	1.20	0.85
senza nome	1	T50		9.10	6.55	7.95	7.95	9.20	1.80	2.65	10.10	4.20	2.16	1.20	0.82

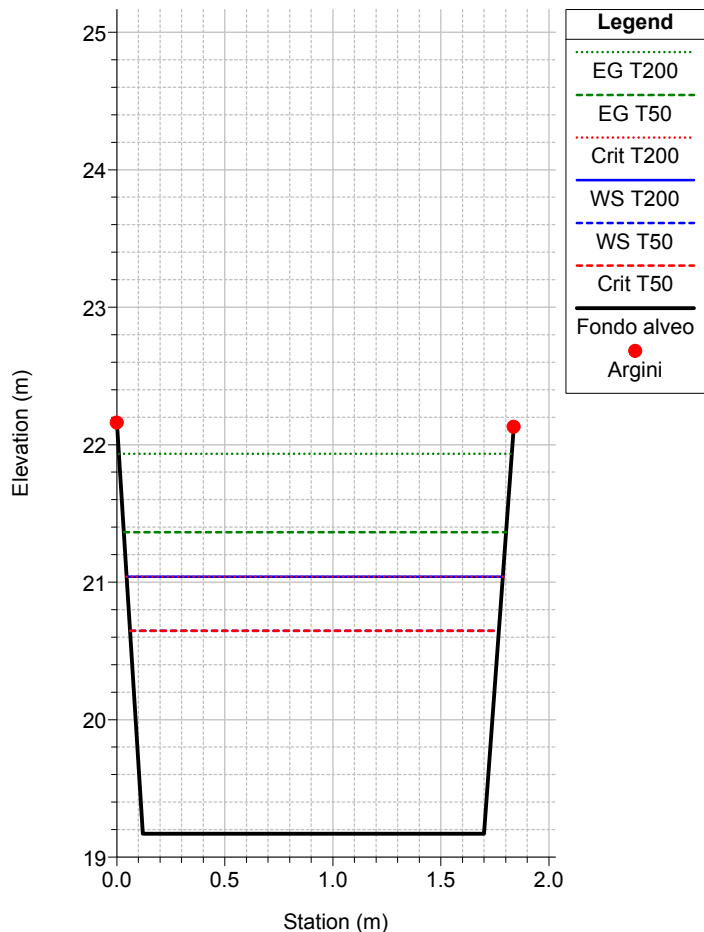
rio senza nome  
RS = 18



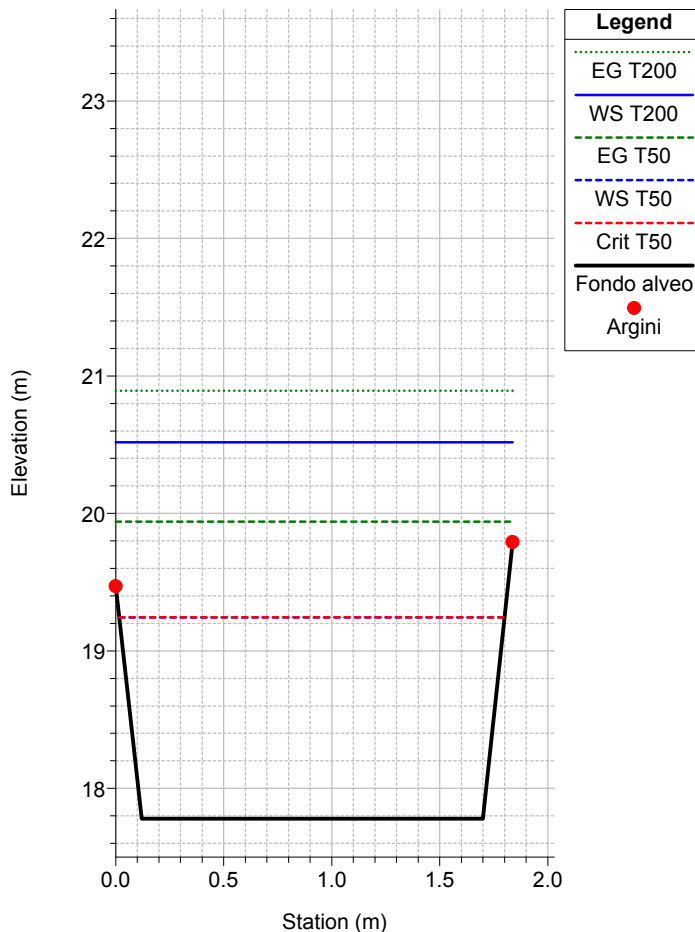
rio senza nome  
RS = 17



rio senza nome  
RS = 16



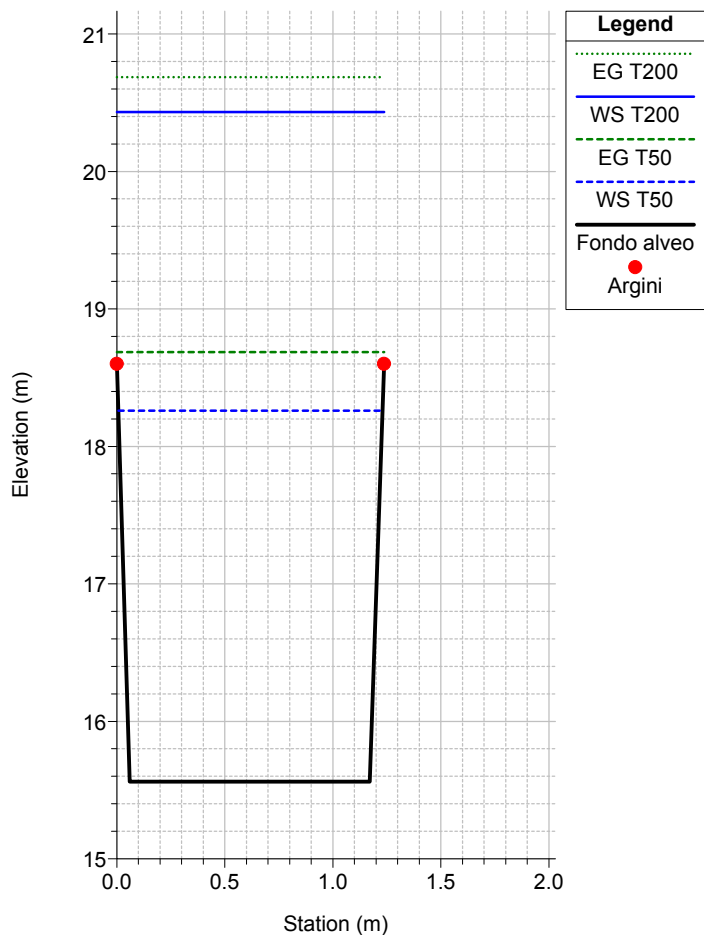
rio senza nome  
RS = 15



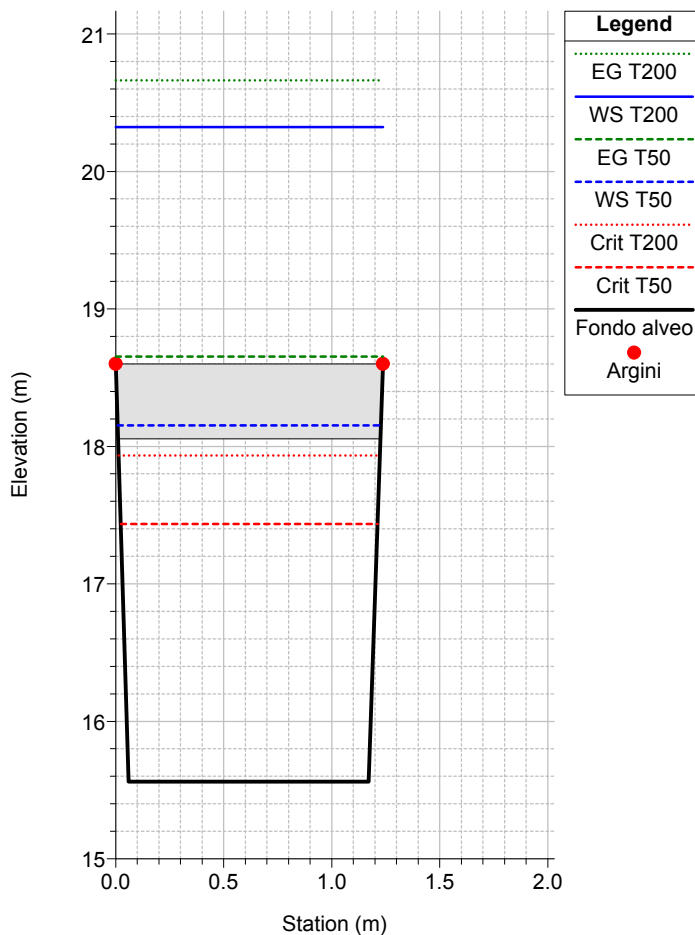
1 cm Horiz. = 0.35 m 1 cm Vert. = 0.55 m

Approvato con DDG n. 2118 del 31/03/2020

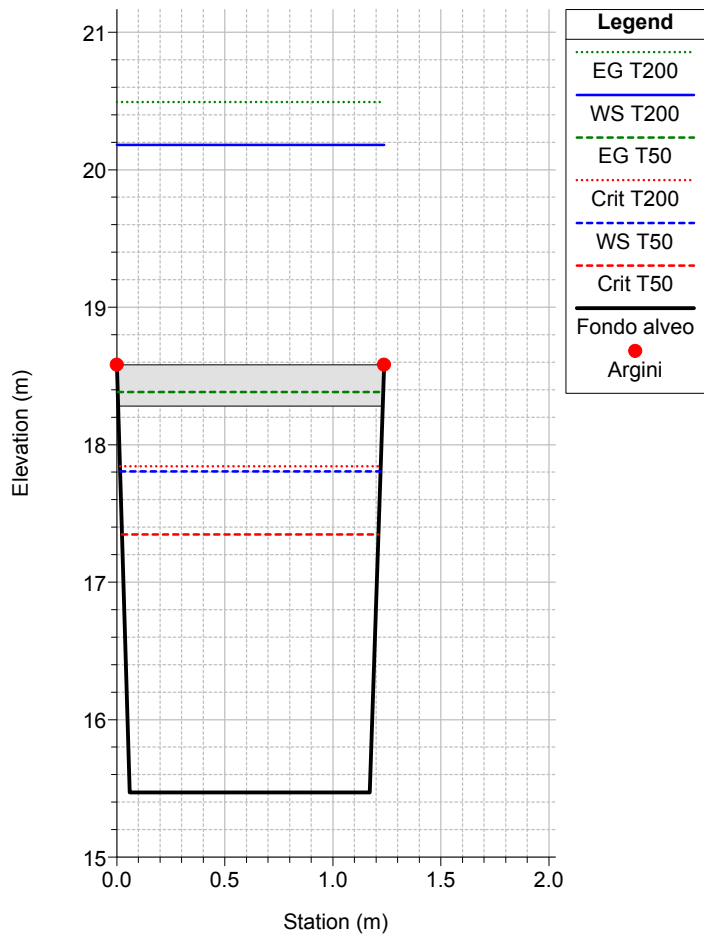
rio senza nome  
RS = 14



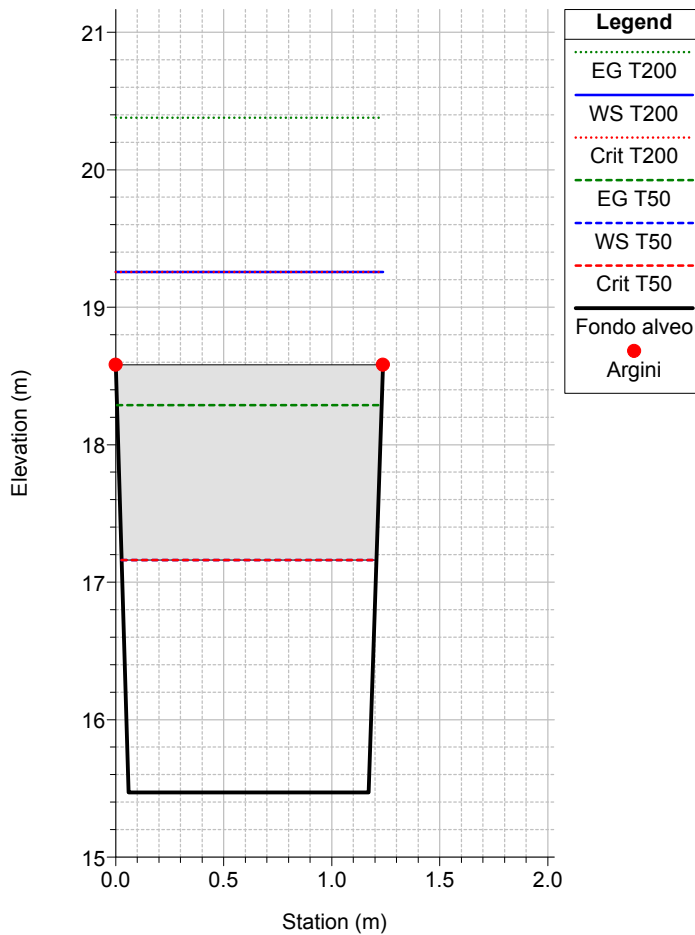
rio senza nome  
RS = 13



rio senza nome  
RS = 12



rio senza nome  
RS = 11

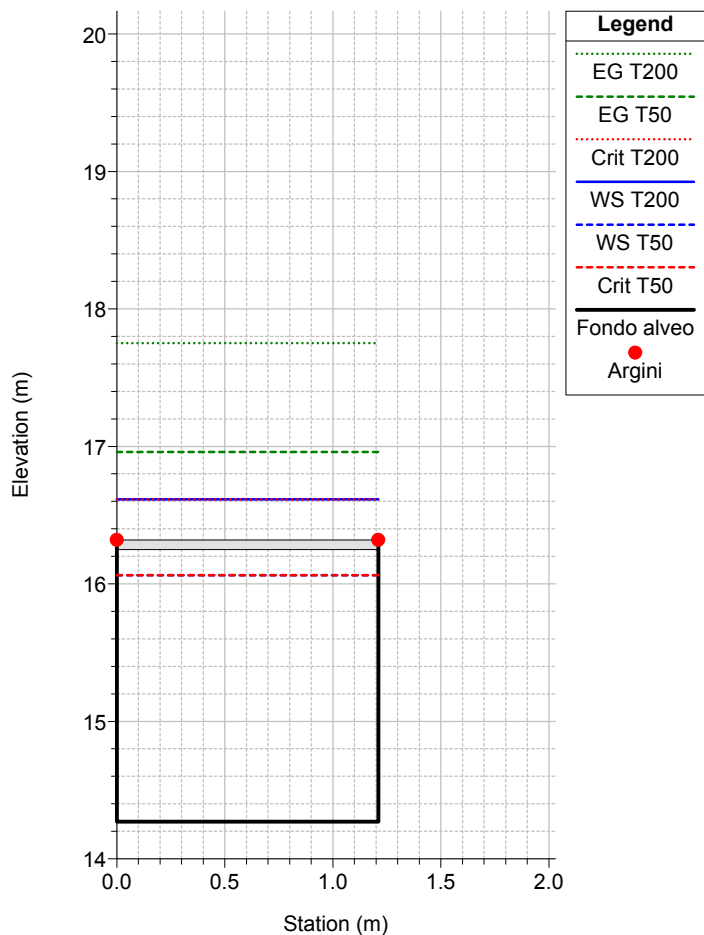


1 cm Horiz. = 0.35 m 1 cm Vert. = 0.55 m

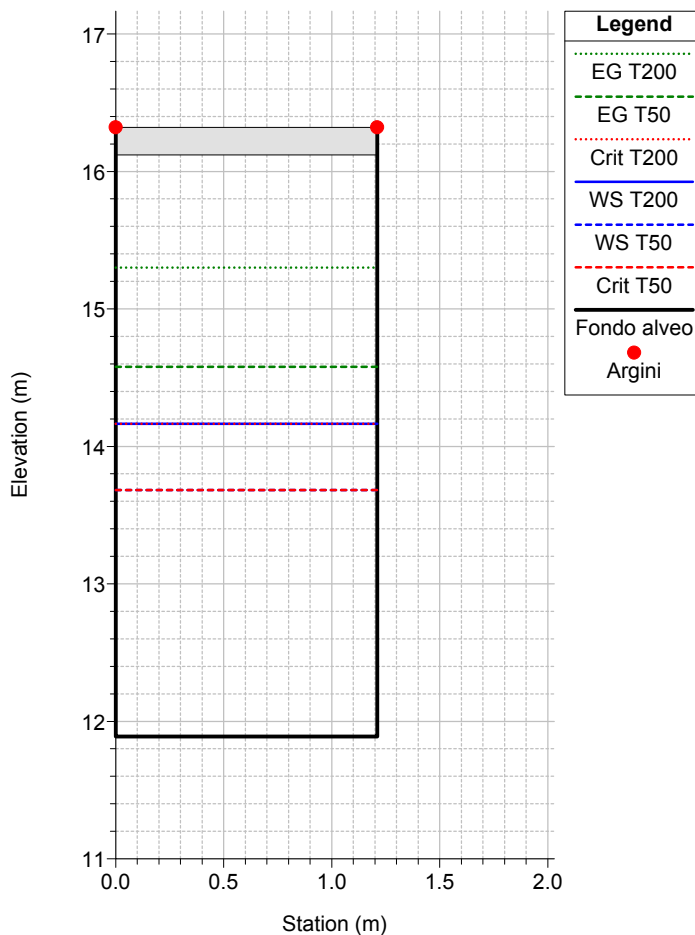
Approvato con DDG n. 2118 del 31/03/2020



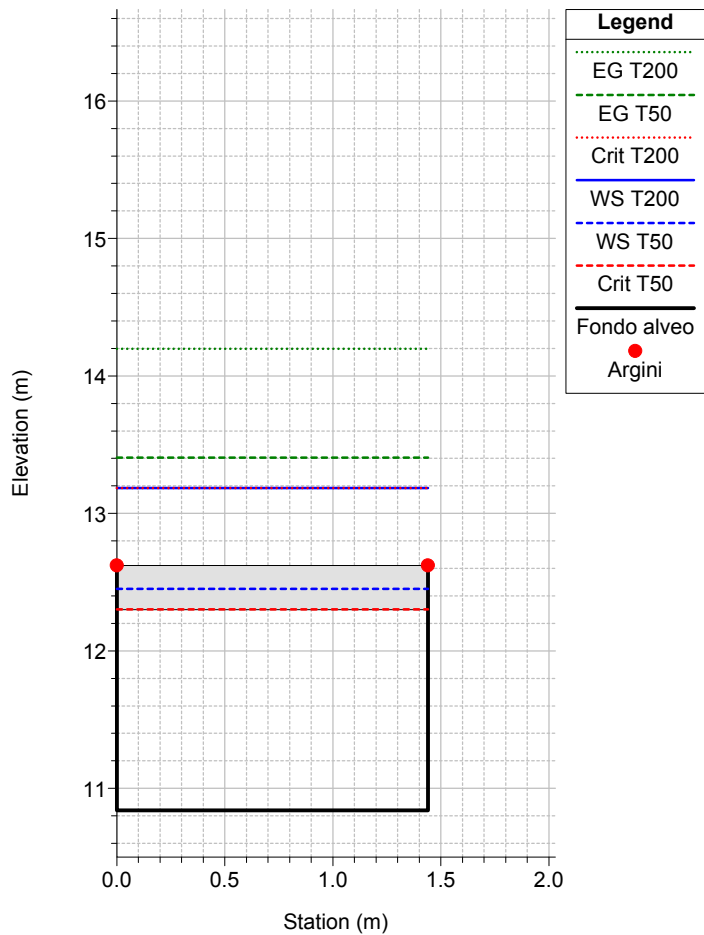
rio senza nome  
RS = 10



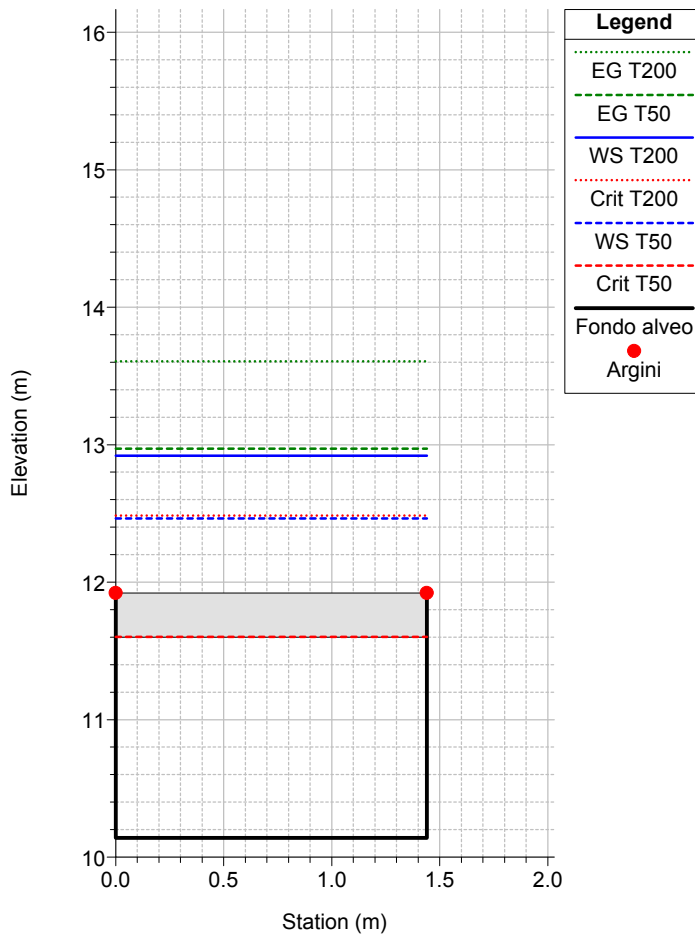
rio senza nome  
RS = 9



rio senza nome  
RS = 8



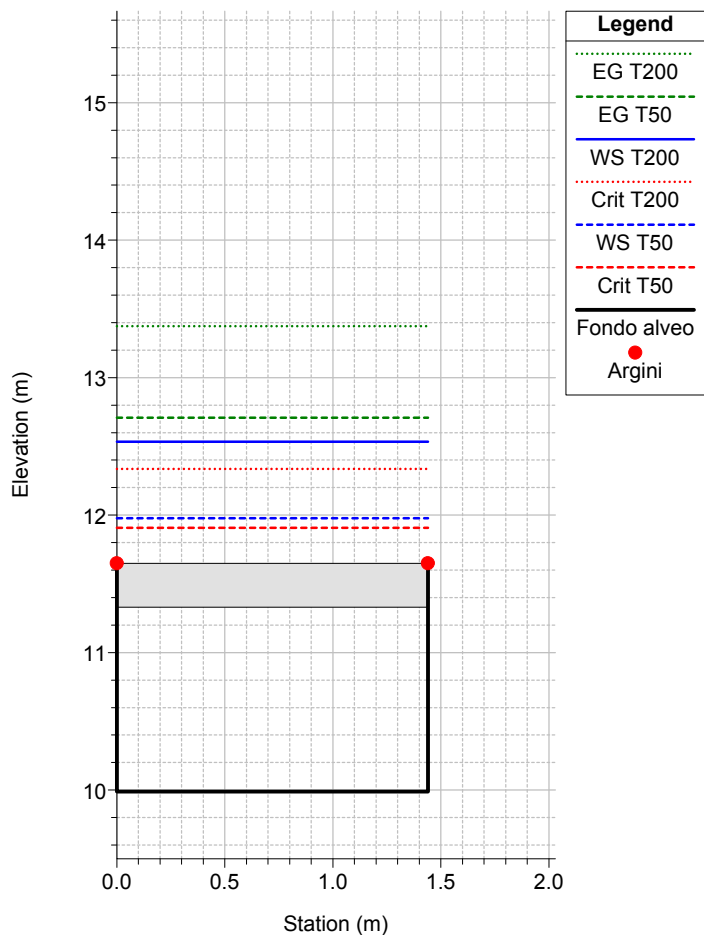
rio senza nome  
RS = 7



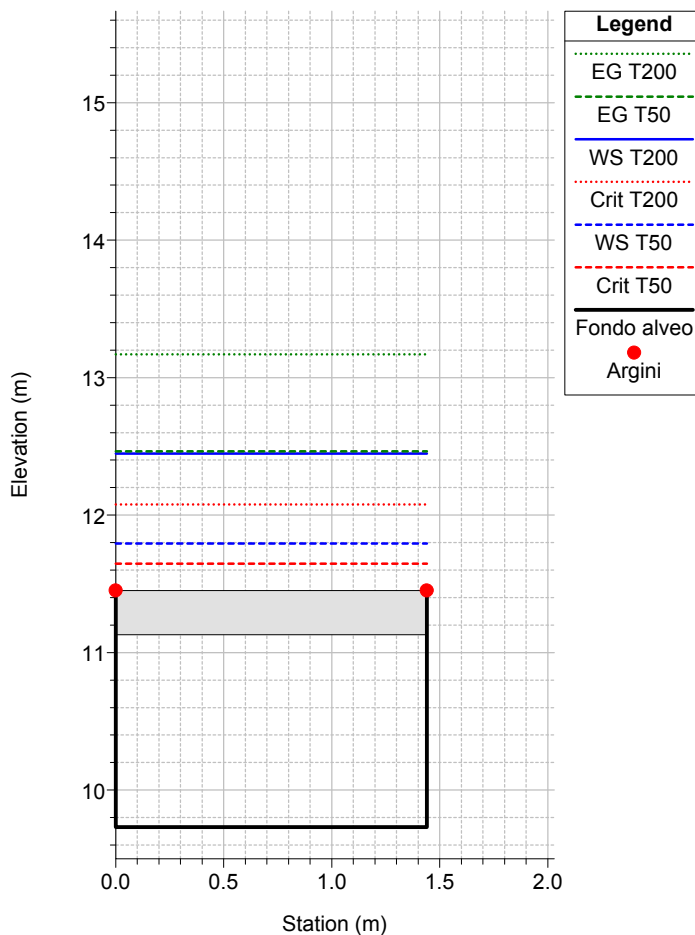
1 cm Horiz. = 0.35 m 1 cm Vert. = 0.55 m

Approvato con DDG n. 2118 del 31/03/2020

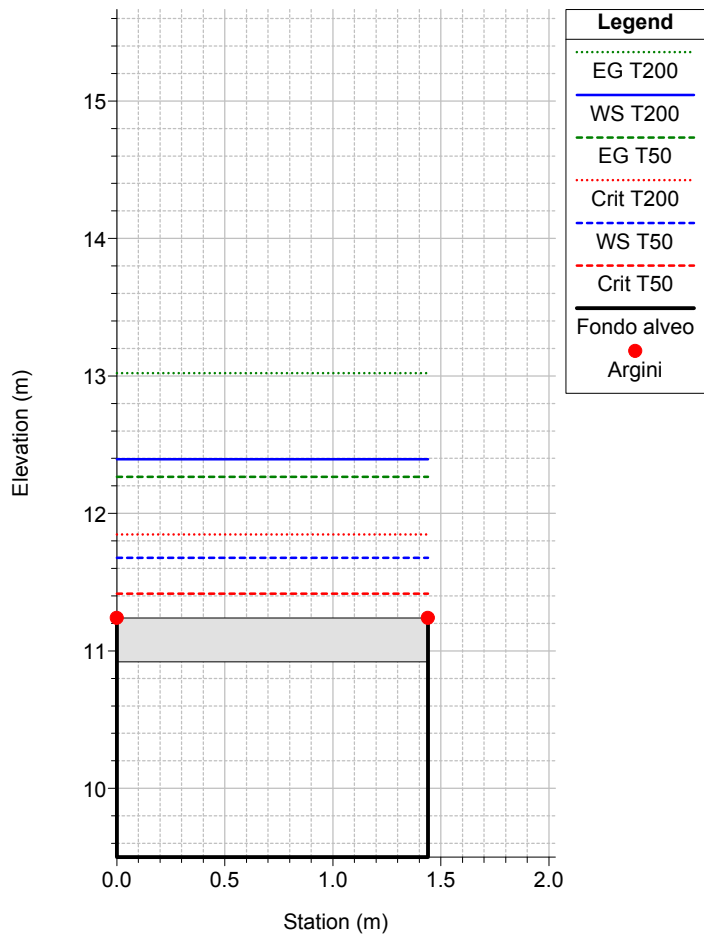
rio senza nome  
RS = 6



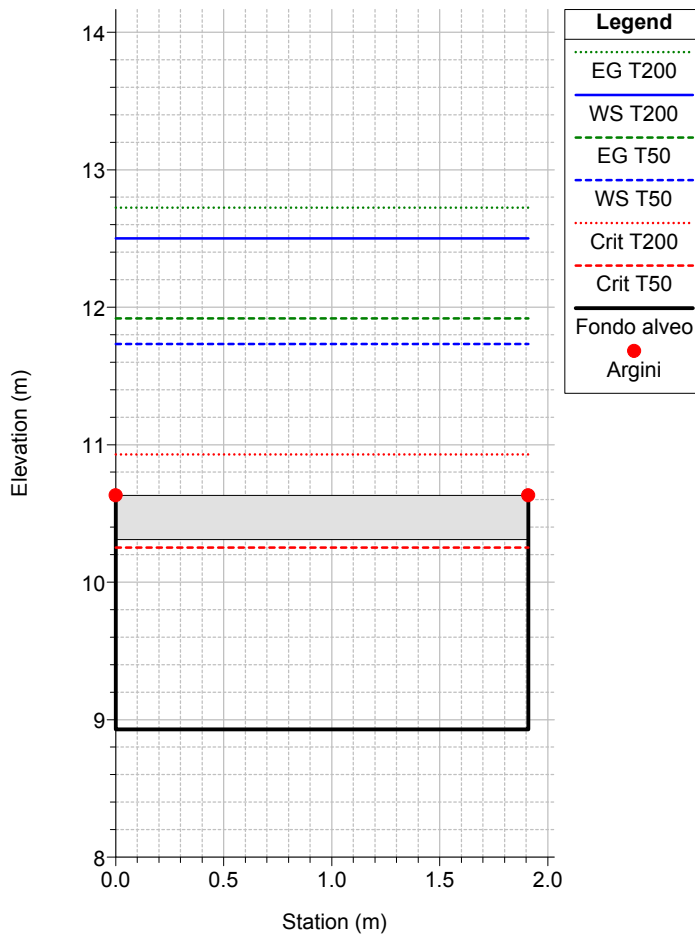
rio senza nome  
RS = 5



rio senza nome  
RS = 4



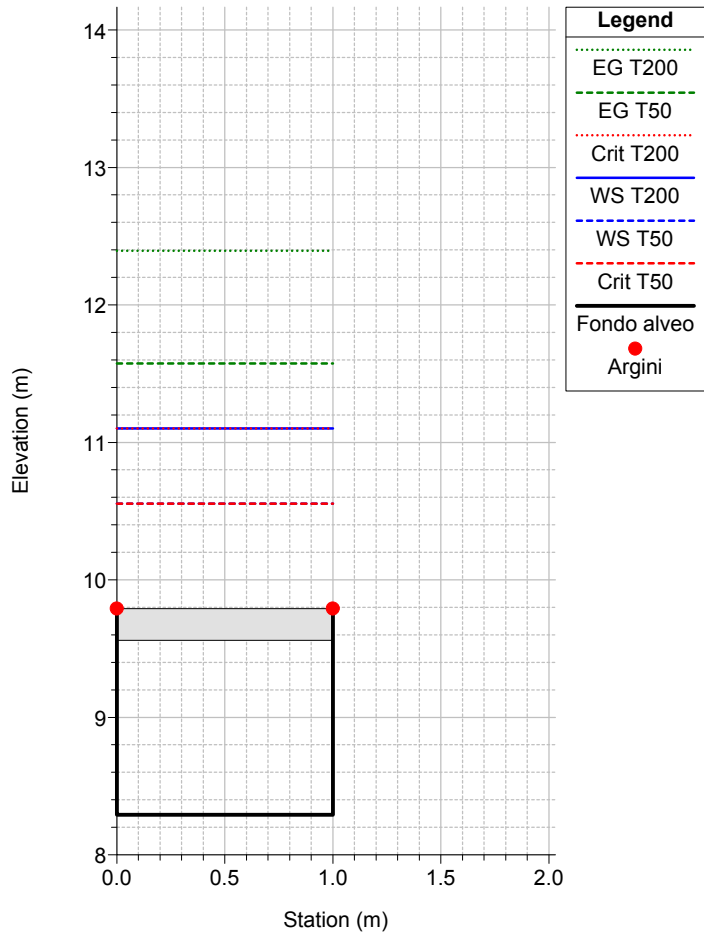
rio senza nome  
RS = 3



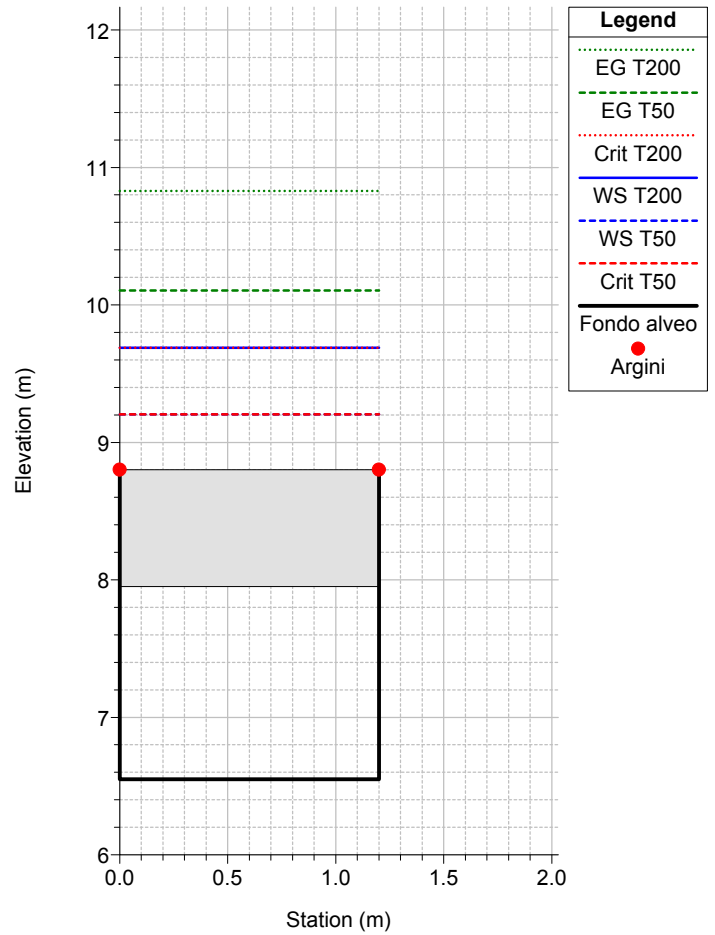
1 cm Horiz. = 0.35 m 1 cm Vert. = 0.55 m

Approvato con DDG n. 2118 del 31/03/2020

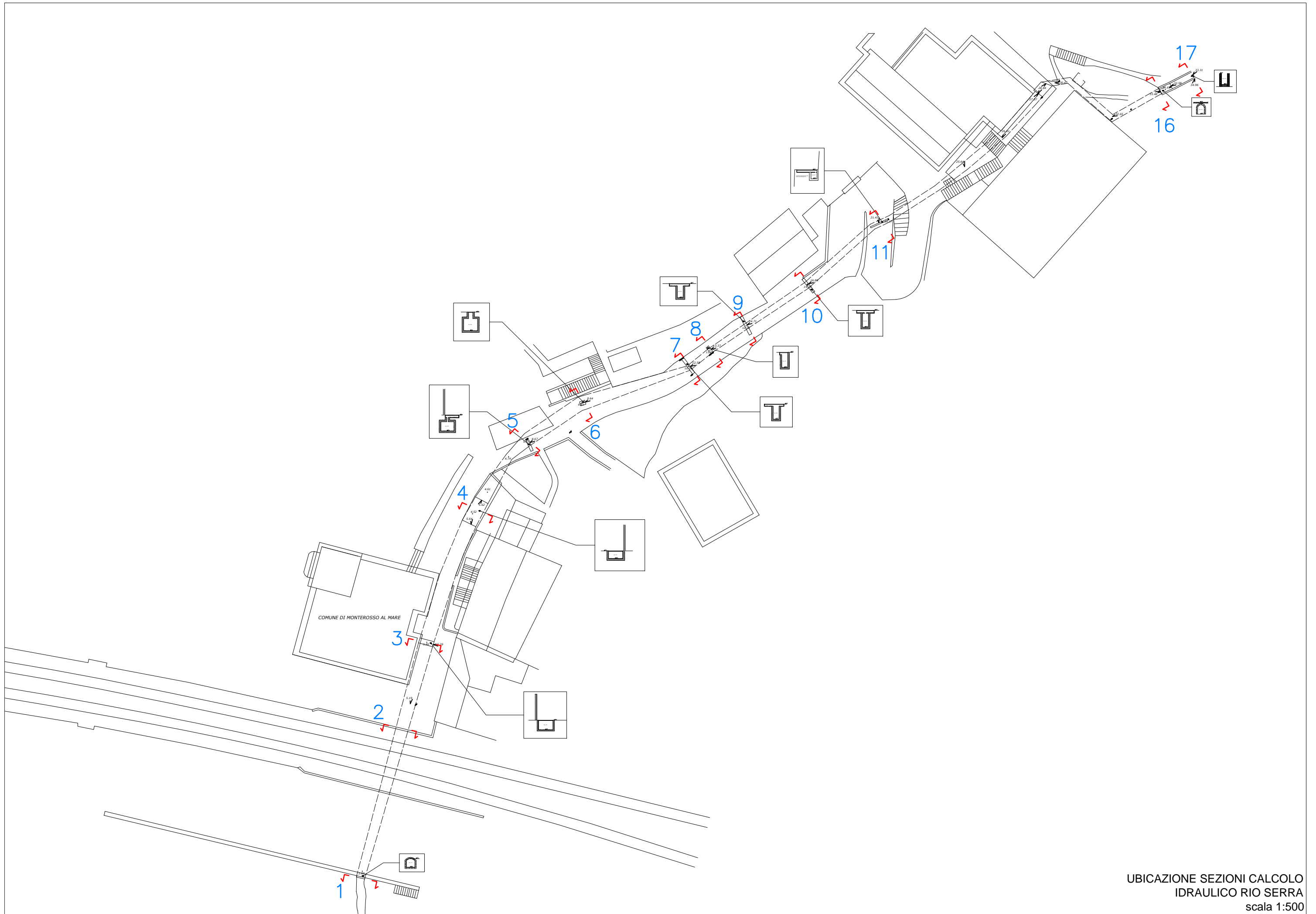
rio senza nome  
RS = 2



rio senza nome  
RS = 1



## **RIO SERRA**



COMUNE DI MONTEROSSO AL MARE

UBICAZIONE SEZIONI CALCOLO  
IDRAULICO RIO SERRA  
scala 1:500

### Valletto Serra



1 cm Horiz. = 6 m 1 cm Vert. = 1.5 m

Approvato con DDG n. 2118 del 31/03/2020





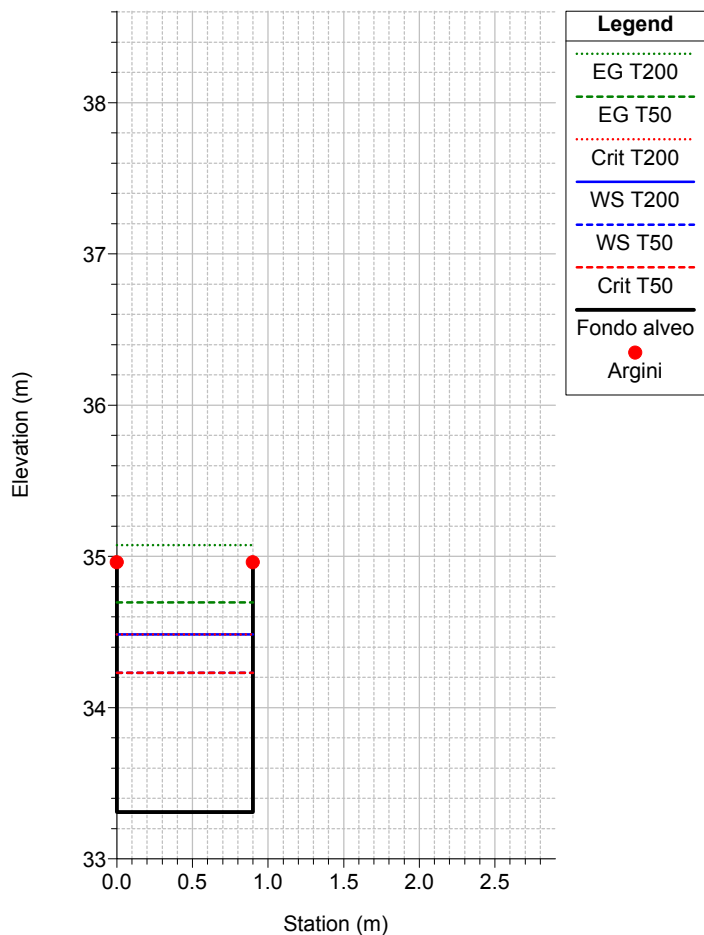
HEC-RAS Plan: att River: Serra Reach: Serra

Reach	River Sta	Profile	Cum Ch Len (m)	Q Total (m3/s)	Min Ch El (m)	LOB Elev (m)	ROB Elev (m)	W.S. Elev (m)	Hydr Depth (m)	Max Chl Dpth (m)	E.G. Elev (m)	Vel Chnl (m/s)	Flow Area (m2)	Top Width (m)	Froude # Chl
Serra	17	T200	187.00	3.60	33.31	34.96	34.96	34.48	1.17	1.17	35.08	3.41	1.06	0.90	1.00
Serra	17	T50	187.00	2.50	33.31	34.96	34.96	34.23	0.92	0.92	34.69	3.02	0.83	0.90	1.01
Serra	16.2	T200	184.00	3.60	32.58	33.48	33.48	33.75	1.17	1.17	34.35	3.41	1.06	0.90	1.01
Serra	16.2	T50	184.00	2.50	32.58	33.48	33.48	33.50	0.92	0.92	33.96	3.02	0.83	0.90	1.00
Serra	16.1	T200	182.00	3.60	31.69	33.48	33.48	33.78	2.09	2.09	33.93	1.72	2.09	1.00	0.38
Serra	16.1	T50	182.00	2.50	31.69	33.48	33.48	32.84	1.15	1.15	33.08	2.18	1.15	1.00	0.65
Serra	16	T200	181.50	3.60	31.69	32.64	32.64	33.47		1.78	33.89	2.90	1.24		0.69
Serra	16	T50	181.50	2.50	31.69	32.64	32.64	32.80	1.40	1.11	33.07	2.29	1.09	0.78	0.69
Serra	15	T200	173.50	3.60	31.44	32.40	32.40	32.87	1.18	1.43	33.46	3.40	1.06	0.90	0.91
Serra	15	T50	173.50	2.50	31.44	32.40	32.40	32.36	0.92	0.92	32.82	3.01	0.83	0.90	1.00
Serra	14.1	T200	161.50	3.60	27.40	28.40	28.40	28.78	1.18	1.38	29.37	3.40	1.06	0.90	0.93
Serra	14.1	T50	161.50	2.50	27.40	28.40	28.40	28.32	0.92	0.92	28.78	3.01	0.83	0.90	1.00
Serra	14	T200	159.50	3.60	25.77	26.70	26.70	27.35	1.18	1.58	27.94	3.40	1.06	0.90	0.86
Serra	14	T50	159.50	2.50	25.77	26.70	26.70	26.69	0.93	0.93	27.15	3.00	0.83	0.90	1.00
Serra	13	T200	152.80	3.60	24.48	25.40	25.40	25.40	0.92	0.92	26.36	4.34	0.83	0.90	1.44
Serra	13	T50	152.80	2.50	24.48	25.40	25.40	25.40	0.92	0.92	25.86	3.01	0.83	0.90	1.00
Serra	12	T200	134.80	3.60	21.05	21.97	21.97	21.97	0.92	0.92	22.93	4.34	0.83	0.90	1.44
Serra	12	T50	134.80	2.50	21.05	21.97	21.97	21.97	0.92	0.92	22.43	3.01	0.83	0.90	1.00
Serra	11.1	T200	129.00	3.60	19.90	21.00	21.00	21.00	1.10	1.10	21.67	3.63	0.99	0.90	1.10
Serra	11.1	T50	129.00	2.50	19.90	21.00	21.00	20.82	0.92	0.92	21.28	3.01	0.83	0.90	1.00
Serra	11	T200	128.50	3.60	17.43	21.00	21.00	18.61	1.18	1.18	19.20	3.40	1.06	0.90	1.00
Serra	11	T50	128.50	2.50	17.43	21.00	21.00	18.35	0.92	0.92	18.81	3.01	0.83	0.90	1.00
Serra	10	T200	113.50	3.60	14.30	16.41	16.41	15.48	1.18	1.18	16.07	3.40	1.06	0.90	1.00
Serra	10	T50	113.50	2.50	14.30	16.41	16.41	15.22	0.92	0.92	15.68	3.01	0.83	0.90	1.00
Serra	9	T200	102.50	3.60	12.55	14.36	14.36	13.73	1.18	1.18	14.32	3.40	1.06	0.90	1.00
Serra	9	T50	102.50	2.50	12.55	14.36	14.36	13.47	0.92	0.92	13.93	3.01	0.83	0.90	1.00
Serra	8	T200	96.00	3.60	11.07	13.02	13.02	12.25	1.18	1.18	12.84	3.39	1.06	0.90	1.00
Serra	8	T50	96.00	2.50	11.07	13.02	13.02	11.99	0.92	0.92	12.45	3.01	0.83	0.90	1.00
Serra	7	T200	92.00	3.60	10.28	12.28	12.28	11.46	1.18	1.18	12.05	3.39	1.06	0.90	1.00
Serra	7	T50	92.00	2.50	10.28	12.28	12.28	11.20	0.92	0.92	11.66	3.01	0.83	0.90	1.00
Serra	6	T200	82.00	3.60	6.81	8.64	8.64	7.99	1.18	1.18	8.58	3.40	1.06	0.90	1.00
Serra	6	T50	82.00	2.50	6.81	8.64	8.64	7.73	0.92	0.92	8.19	3.01	0.83	0.90	1.00
Serra	5	T200	72.00	3.60	5.15	6.55	6.55	5.84	0.69	0.69	6.19	2.61	1.38	2.00	1.00

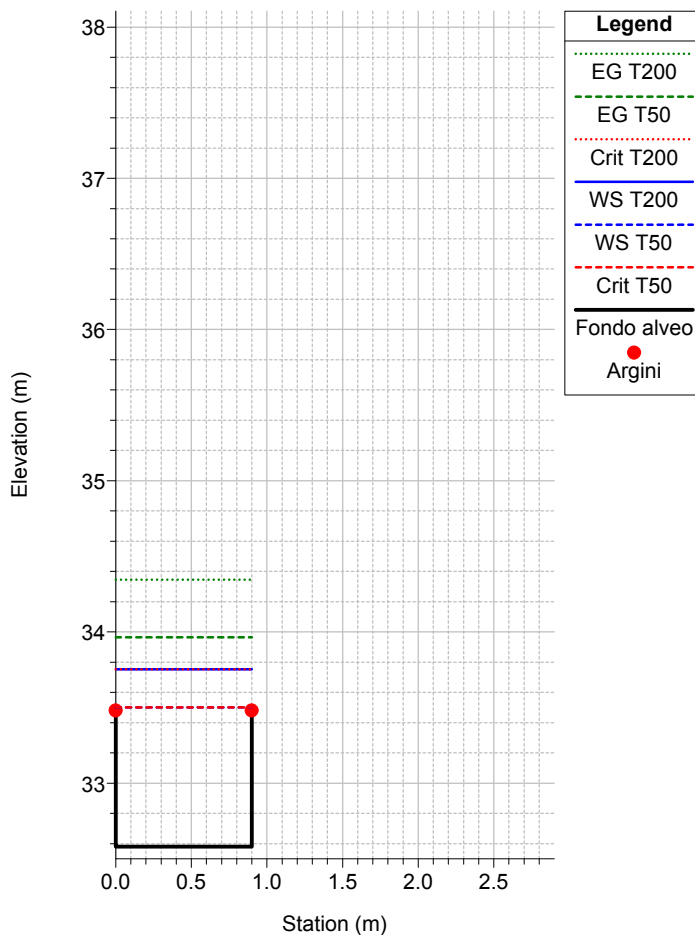
HEC-RAS Plan: att River: Serra Reach: Serra (Continued)

Reach	River Sta	Profile	Cum Ch Len (m)	Q Total (m3/s)	Min Ch El (m)	LOB Elev (m)	ROB Elev (m)	W.S. Elev (m)	Hydr Depth (m)	Max Chl Dpth (m)	E.G. Elev (m)	Vel Chnl (m/s)	Flow Area (m2)	Top Width (m)	Froude # Chl
Serra	5	T50	72.00	2.50	5.15	6.55	6.55	5.69	0.54	0.54	5.96	2.30	1.09	2.00	1.00
Serra	4	T200	59.00	3.60	4.52	5.58	5.58	5.18	0.66	0.66	5.51	2.55	1.41	2.15	1.00
Serra	4	T50	59.00	2.50	4.52	5.58	5.58	5.04	0.52	0.52	5.29	2.25	1.11	2.15	1.00
Serra	3	T200	37.00	3.60	3.89	5.24	5.24	4.88	0.99	0.99	5.02	1.64	2.19	2.21	0.53
Serra	3	T50	37.00	2.50	3.89	5.24	5.24	4.60	0.71	0.71	4.73	1.59	1.57	2.21	0.60
Serra	2	T200	23.50	3.60	3.46	4.46	4.46	4.42	0.96	0.96	4.84	2.89	1.24	1.30	0.94
Serra	2	T50	23.50	2.50	3.46	4.46	4.46	4.18	0.72	0.72	4.54	2.66	0.94	1.30	1.00
Serra	1	T200		3.60	2.80	3.80	3.80	3.72	0.92	0.92	4.18	3.01	1.20	1.30	1.00
Serra	1	T50		2.50	2.80	3.80	3.80	3.52	0.72	0.72	3.88	2.66	0.94	1.30	1.00

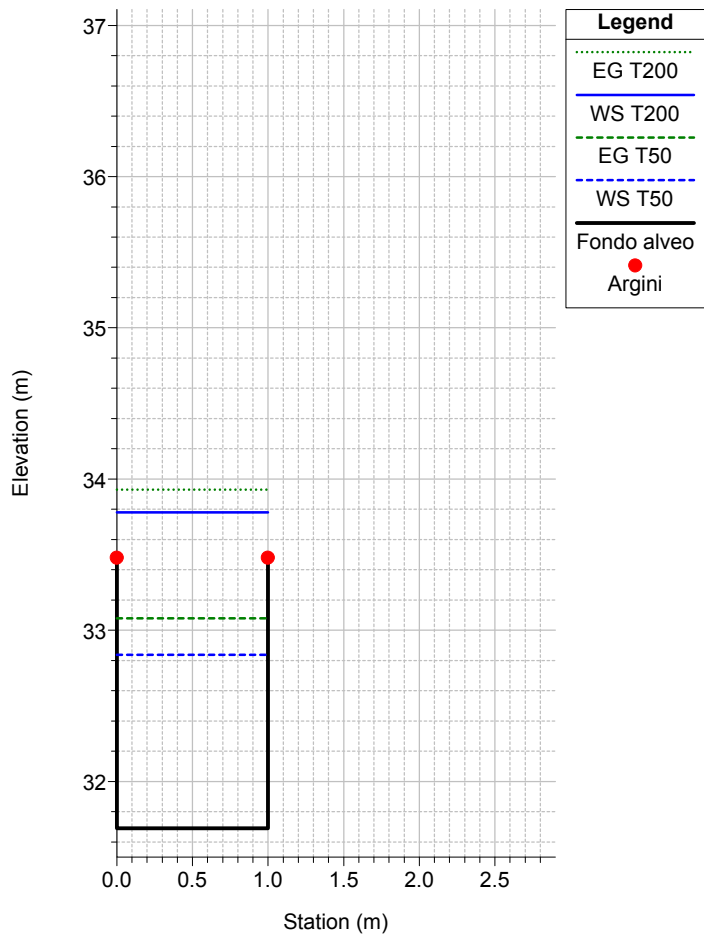
Valletto Serra  
RS = 17



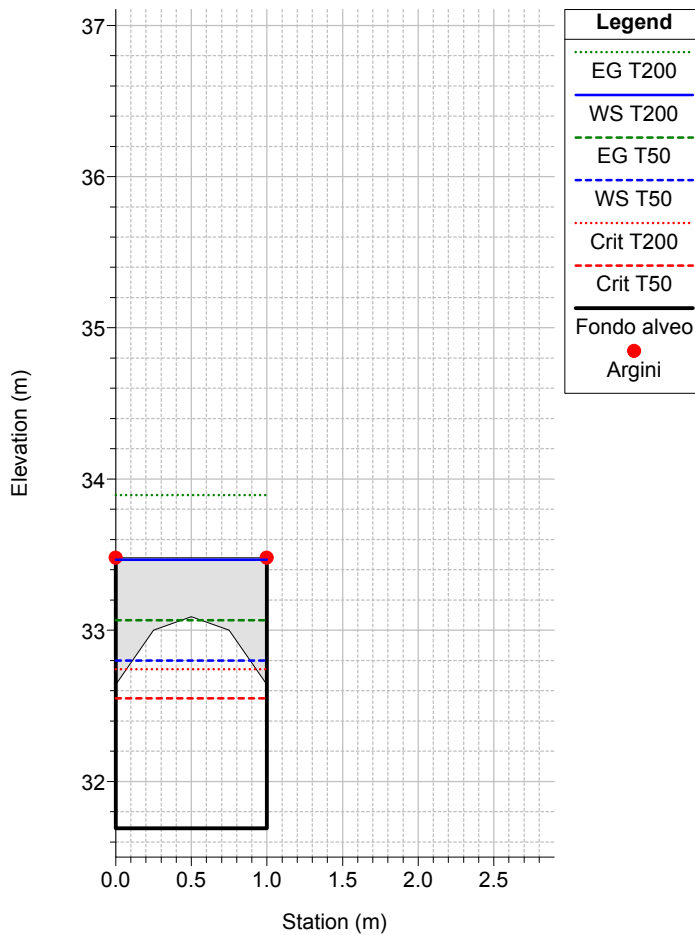
Valletto Serra  
RS = 16.2



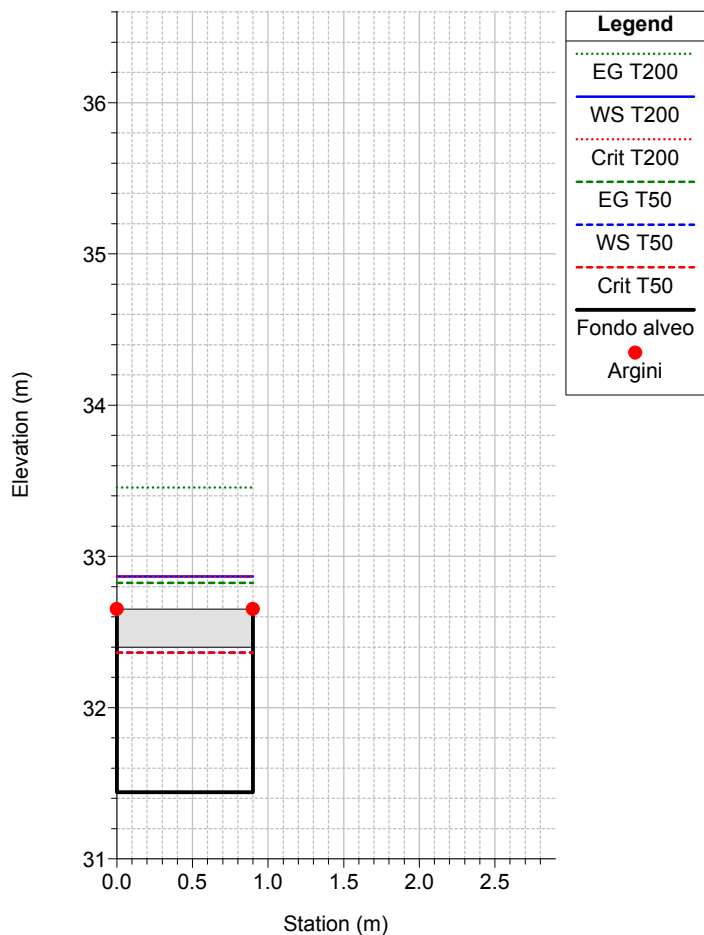
Valletto Serra  
RS = 16.1



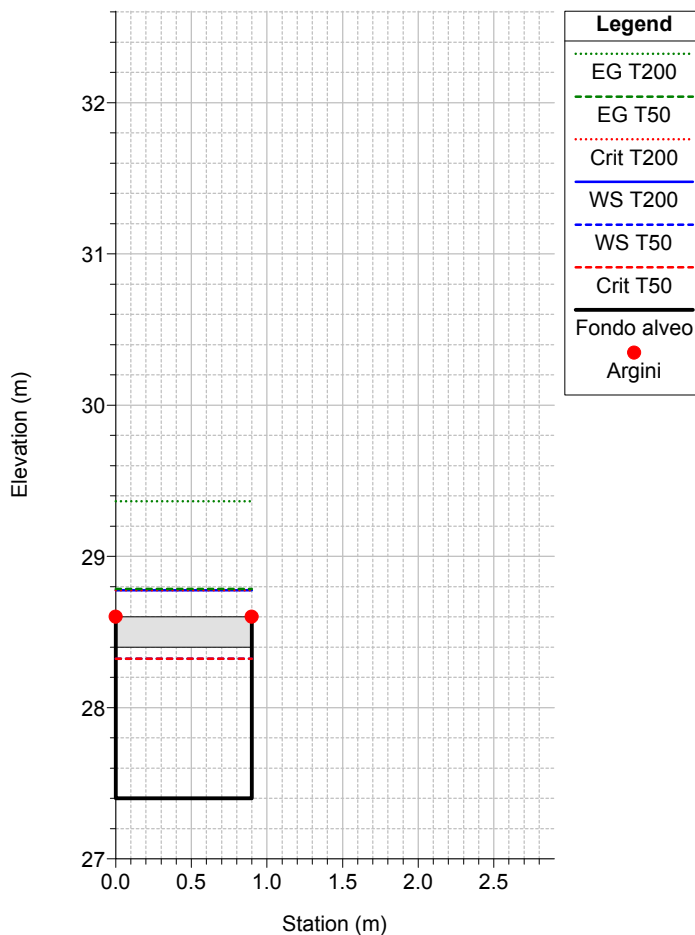
Valletto Serra  
RS = 16



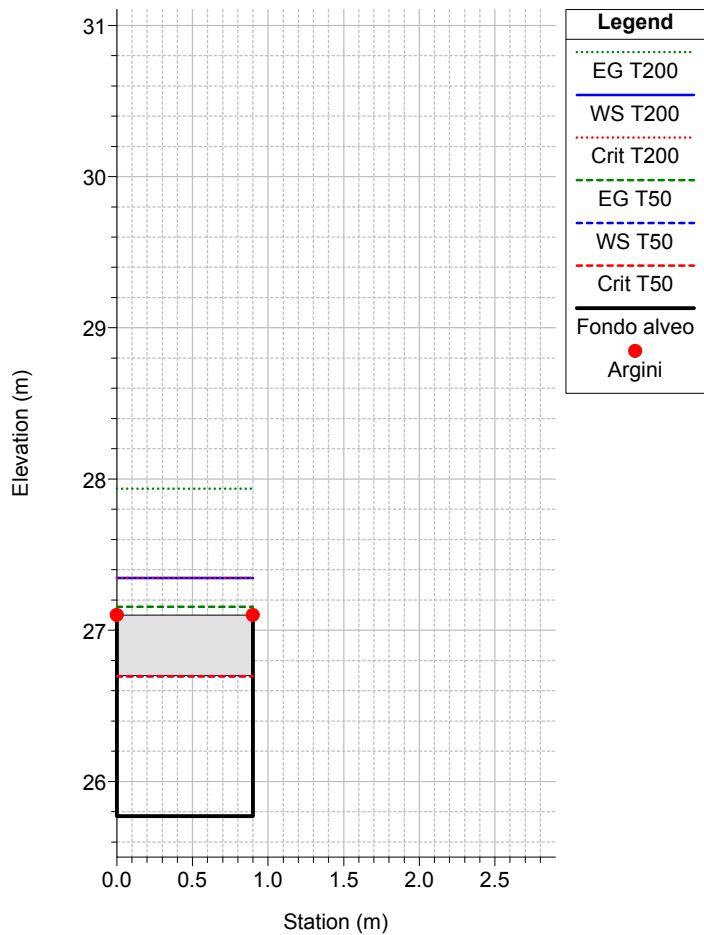
Valletto Serra  
RS = 15



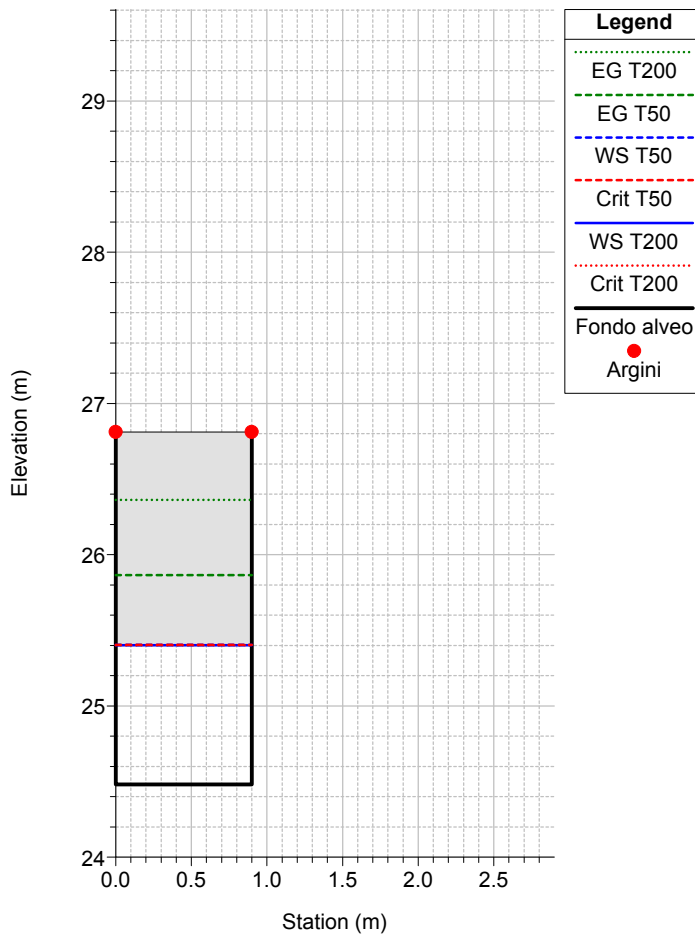
Valletto Serra  
RS = 14.1



Valletto Serra  
RS = 14



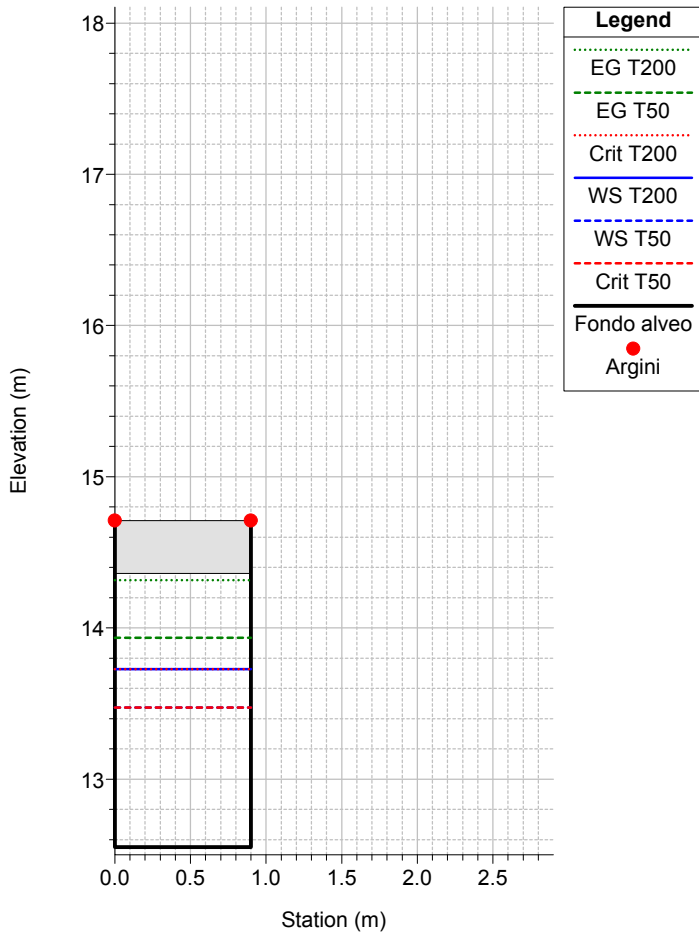
Valletto Serra  
RS = 13



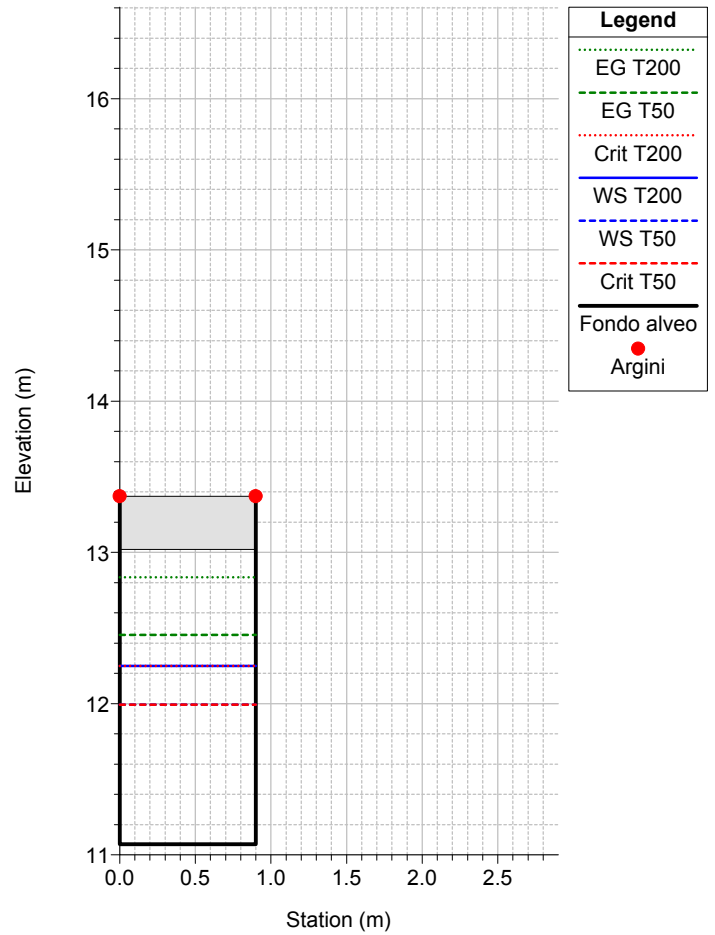
1 cm Horiz. = 0.5 m 1 cm Vert. = 0.5 m



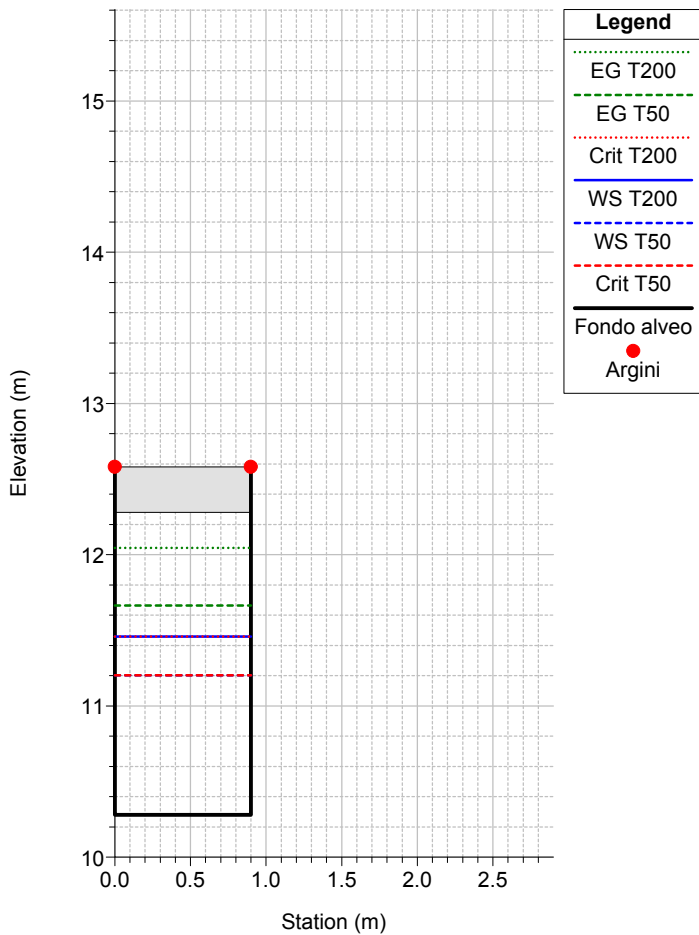
Valletto Serra  
RS = 9



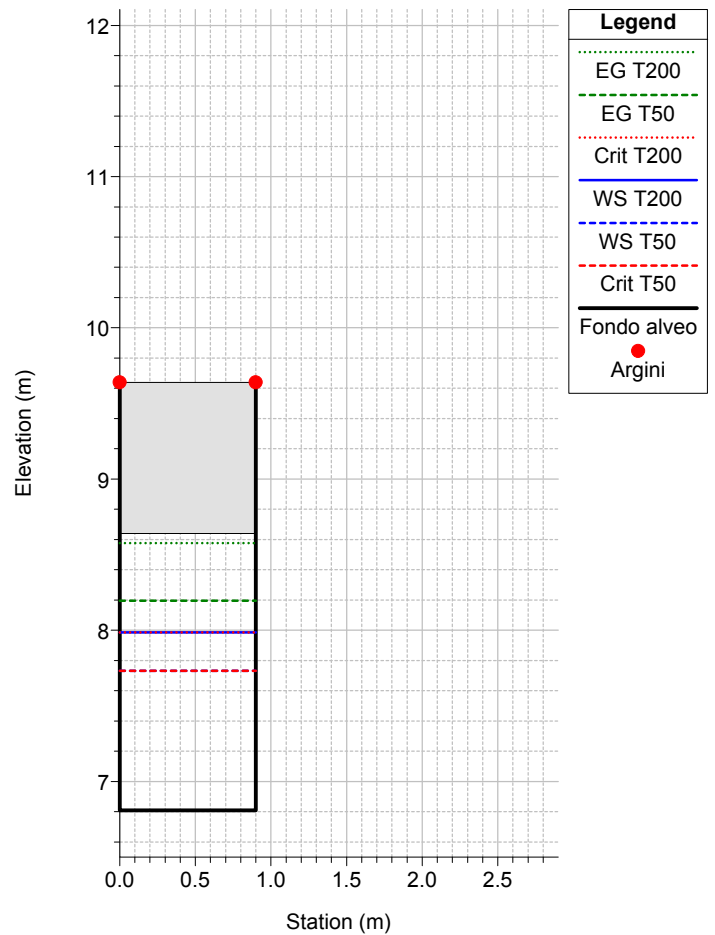
Valletto Serra  
RS = 8



Valletto Serra  
RS = 7



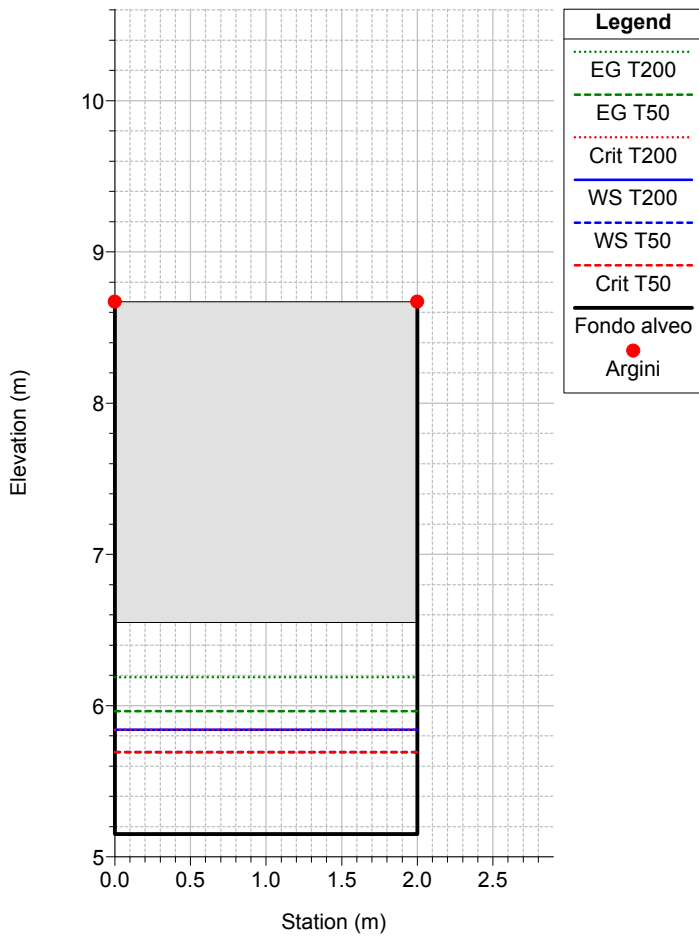
Valletto Serra  
RS = 6



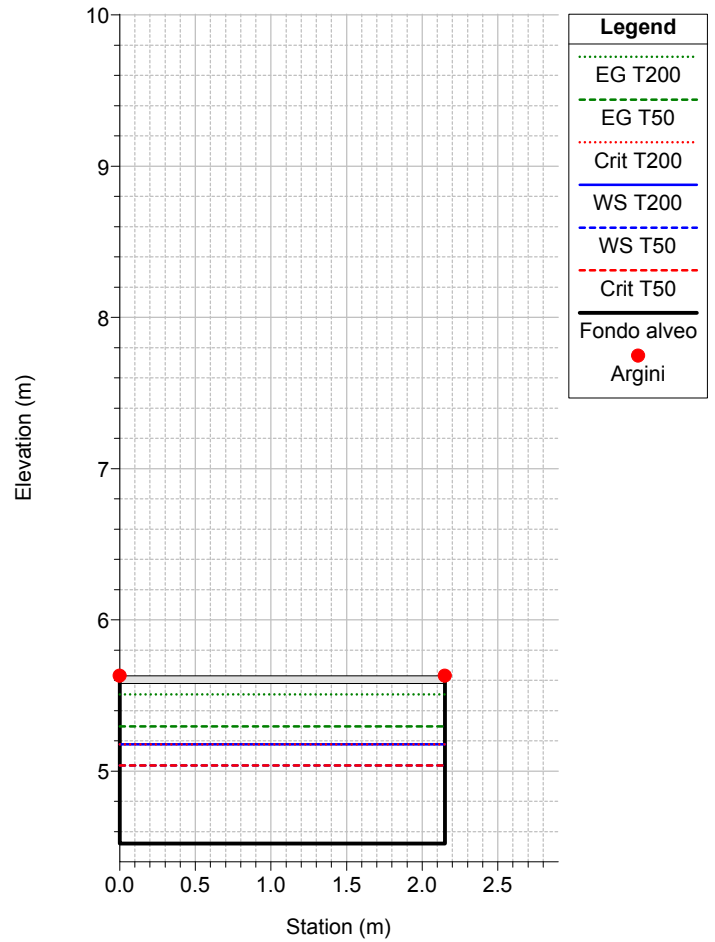
1 cm Horiz. = 0.5 m 1 cm Vert. = 0.5 m



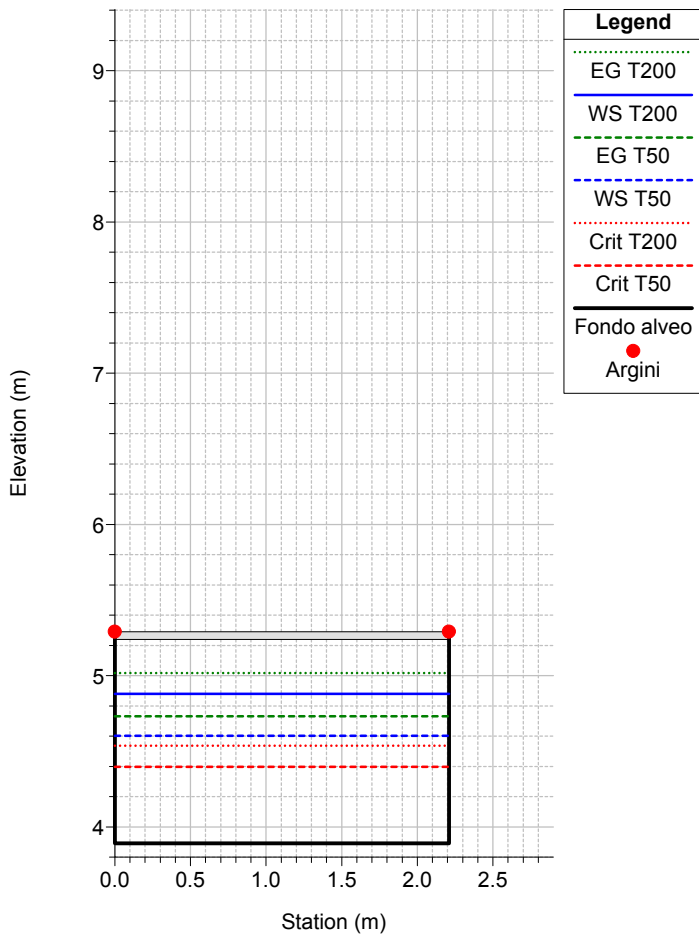
**Valletto Serra**  
RS = 5



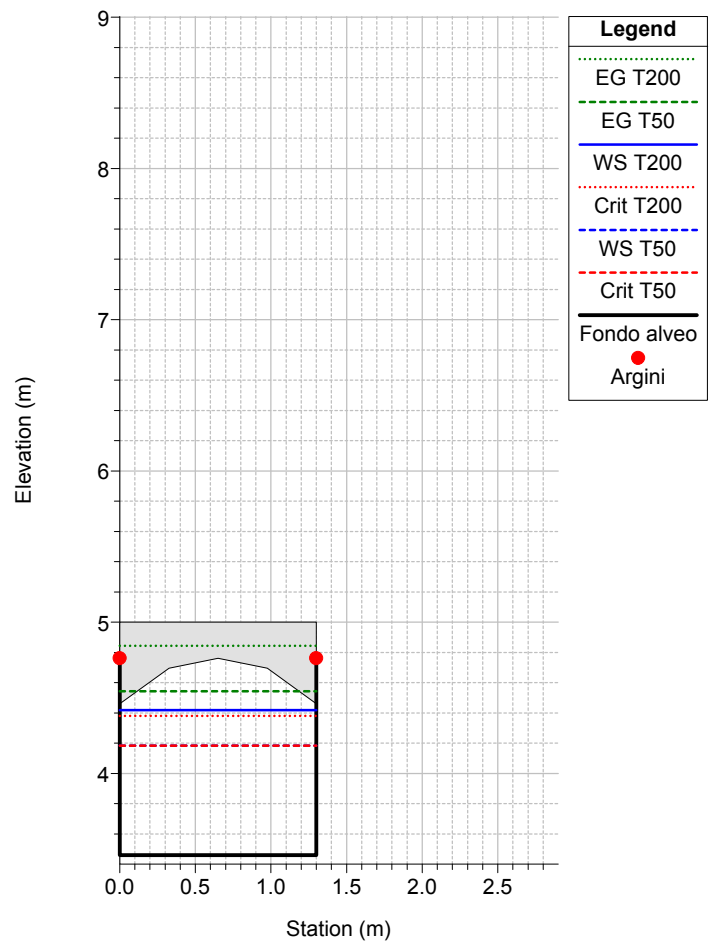
**Valletto Serra**  
RS = 4



**Valletto Serra**  
RS = 3



**Valletto Serra**  
RS = 2



1 cm Horiz. = 0.5 m 1 cm Vert. = 0.5 m

Approvato con DDG n. 2118 del 31/03/2020

### Valletto Serra RS = 1

