



**PROVINCIA DI SAVONA**  
**DIFESA DEL SUOLO E TUTELA AMBIENTALE**

**VERIFICHE IDRAULICHE**

**Bacino: QUILIANO**

**RIO MADONNA DEL MONTE**

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# **PROFILI DI RIGURGITO**

PER LE PORTATE

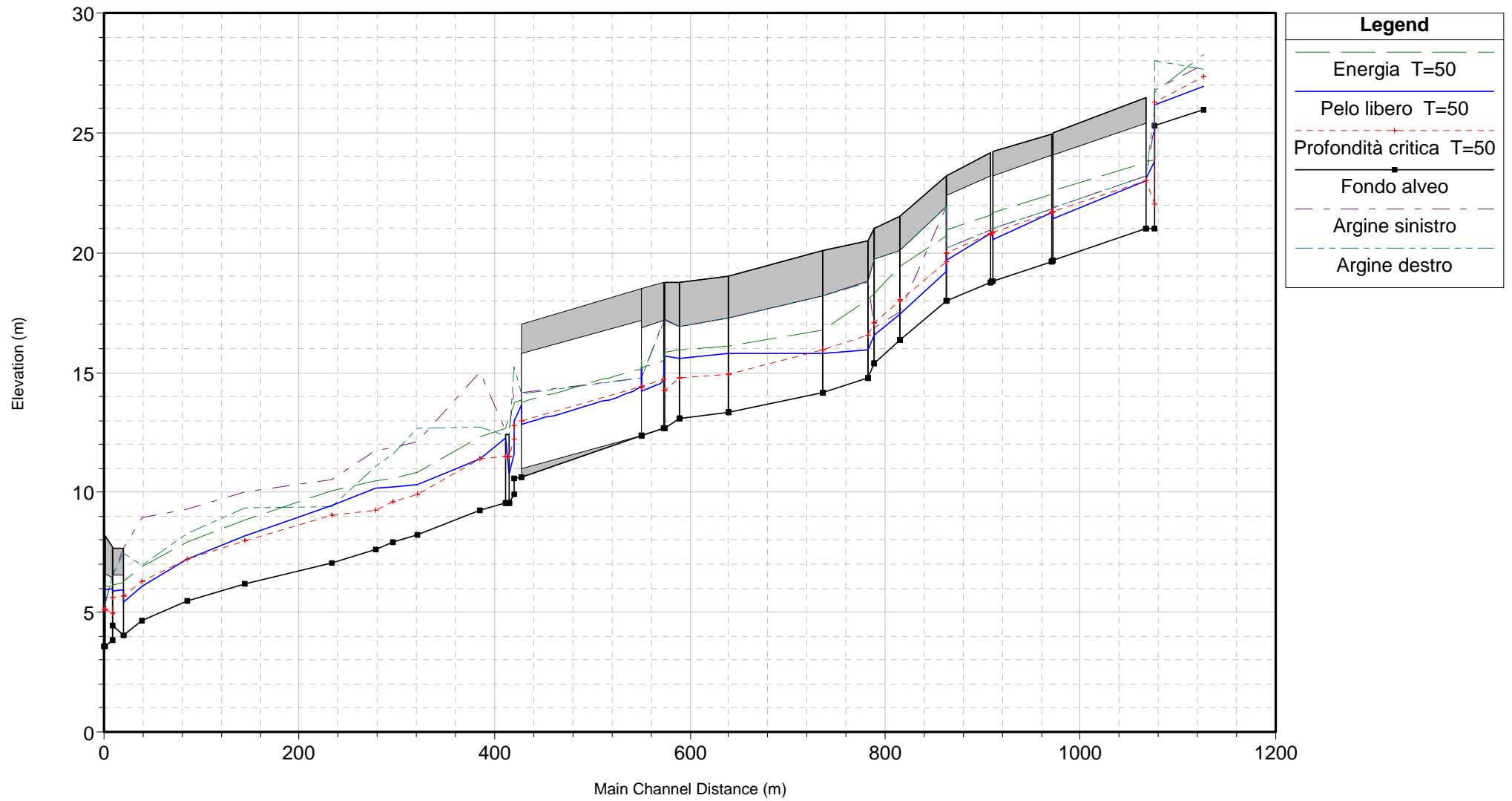
**T=50, 200, 500 ANNI**

## **RIO MADONNA DEL MONTE**

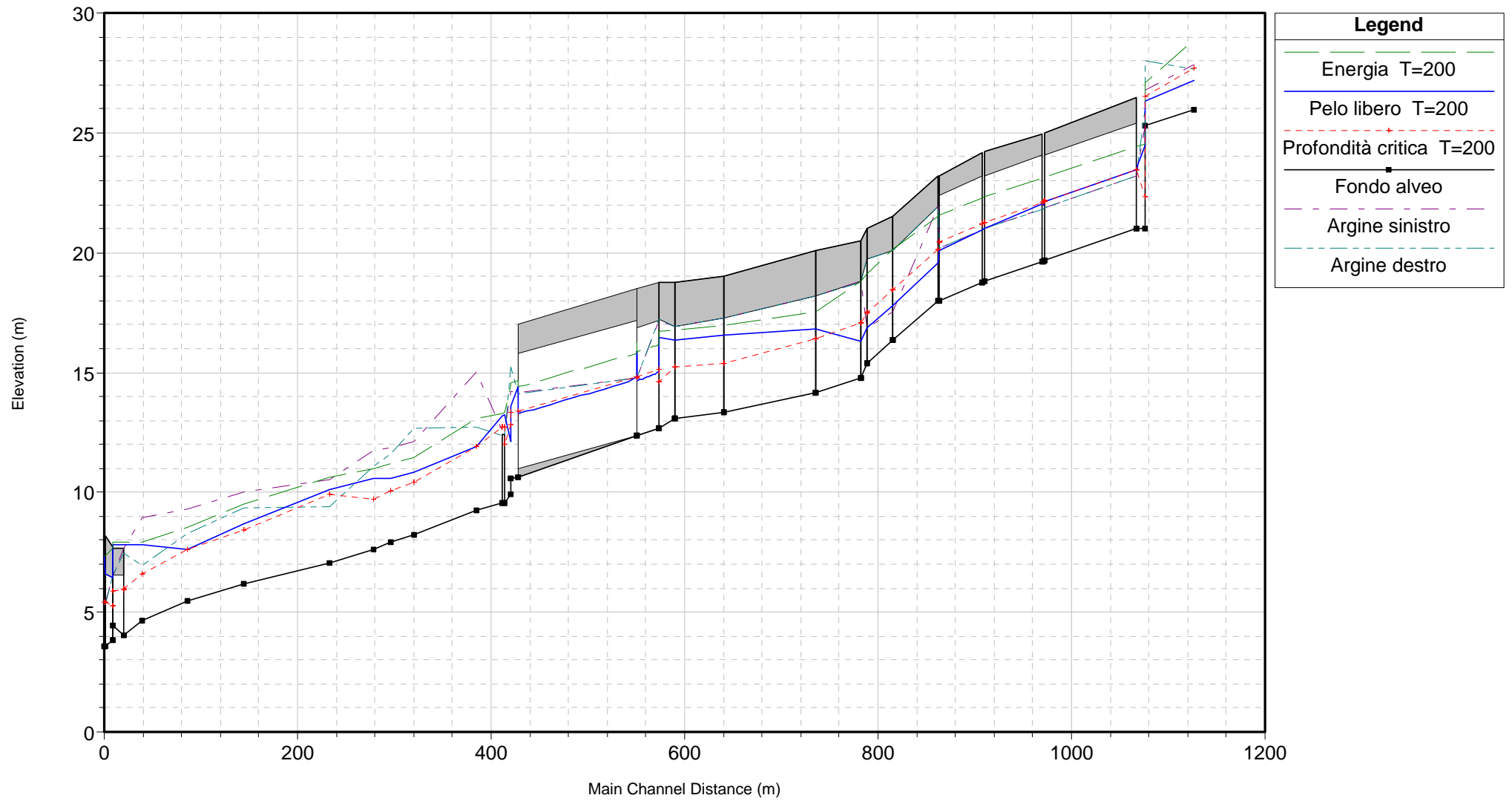
**Dalla sez. 1 alla sez. 28**



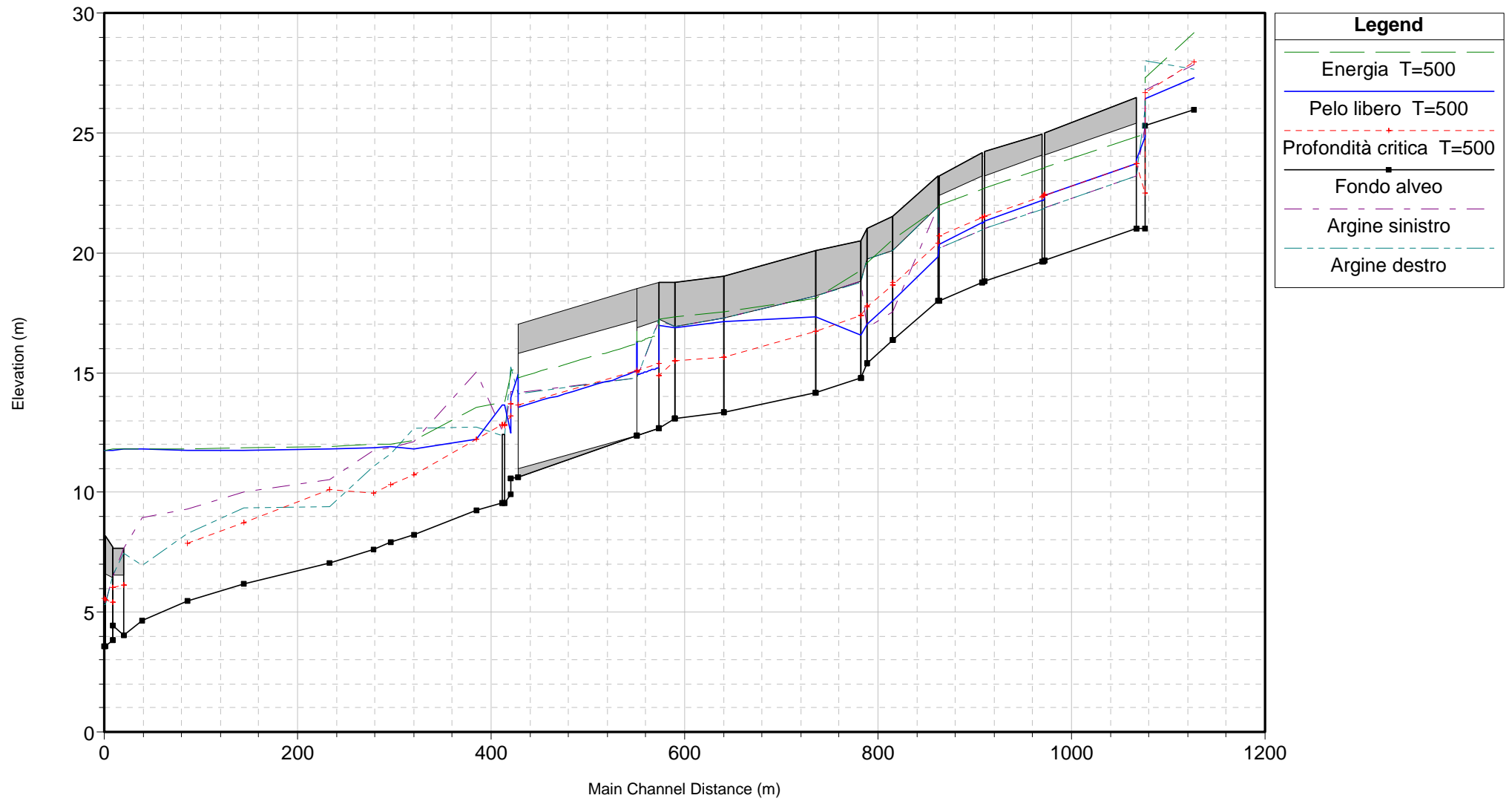
Rio Madonna del Monte – Profilo longitudinale di moto permanente per T=50 anni



Rio Madonna del Monte – Profilo longitudinale di moto permanente per T=200 anni



Rio Madonna del Monte – Profilo longitudinale di moto permanente per T=500 anni



**GEOMETRIA DELLE SEZIONI**

**E LIVELLI IDRICI**

PER LE PORTATE

**T=50, 200, 500 ANNI**

**RIO MADONNA DEL MONTE**

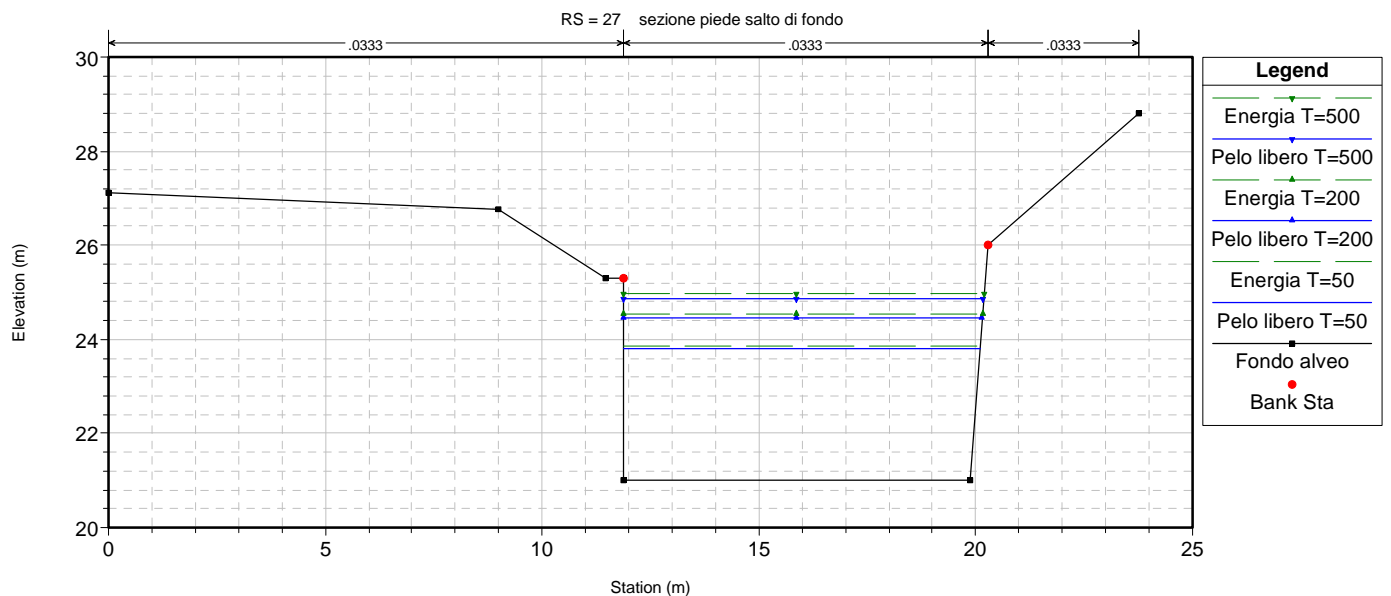
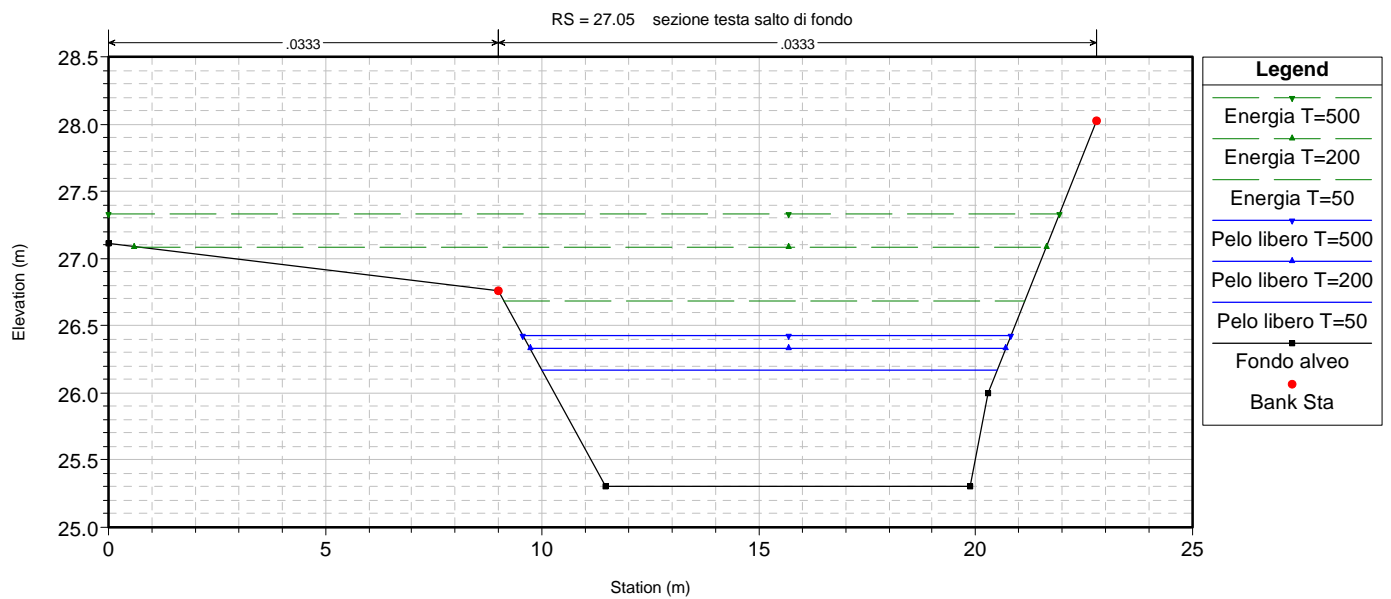
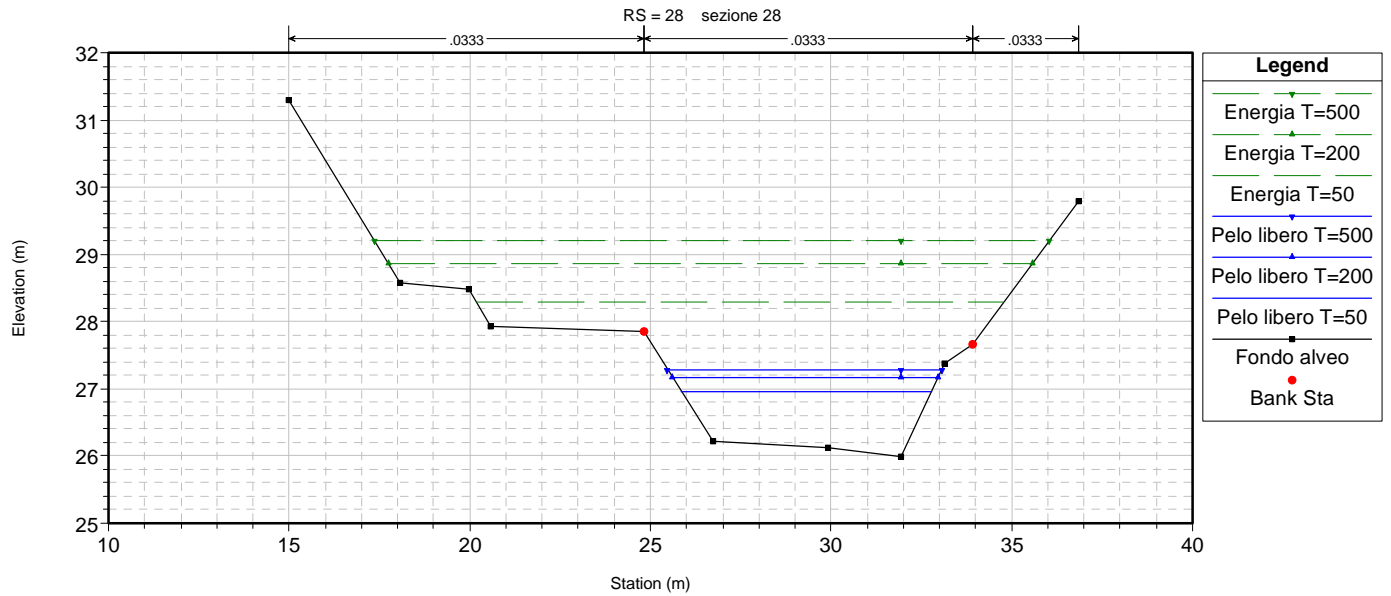
**Dalla sez. 1 alla sez. 28**

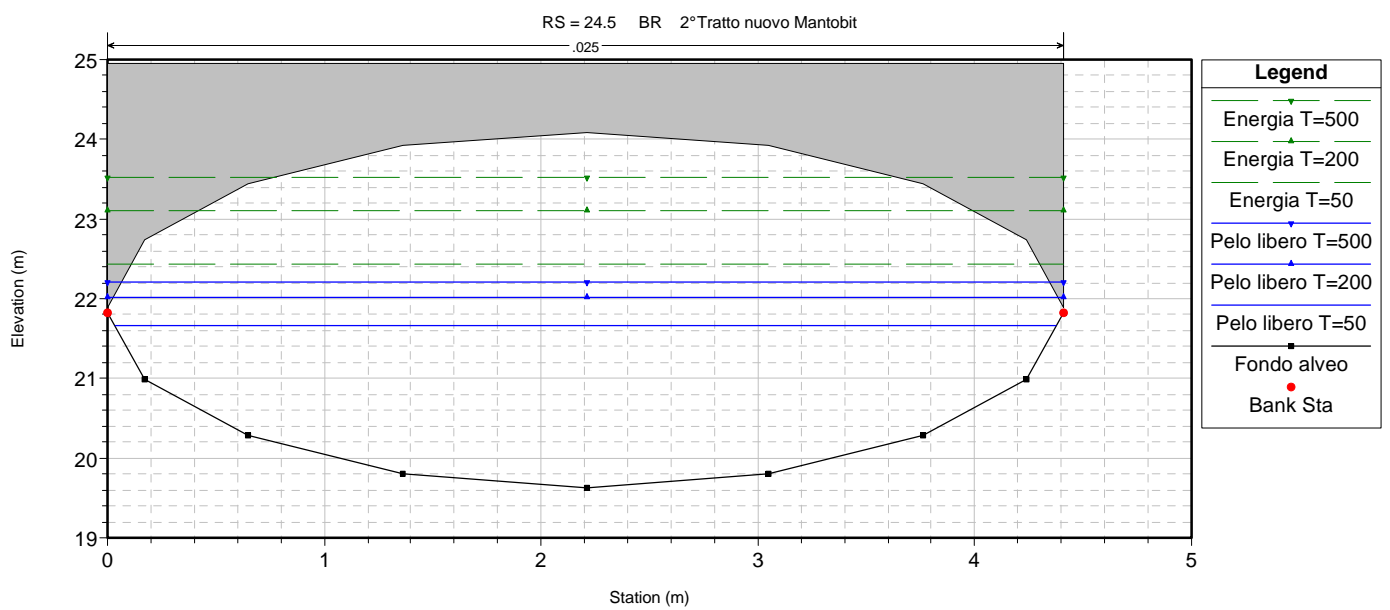
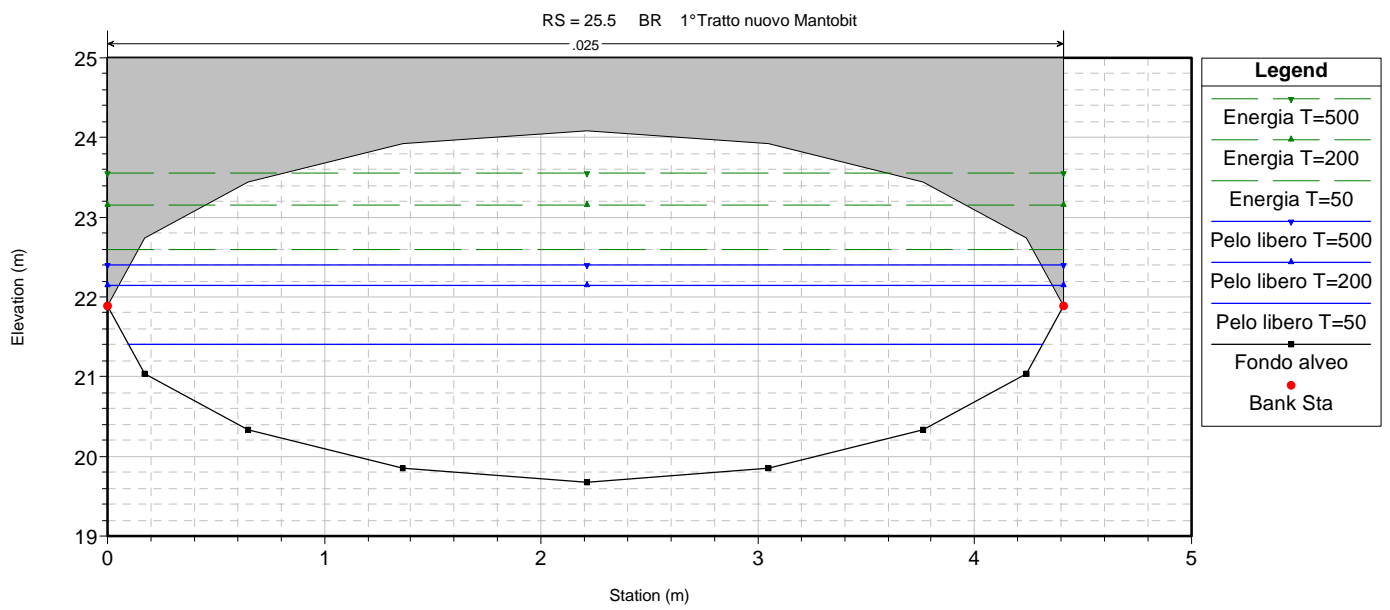
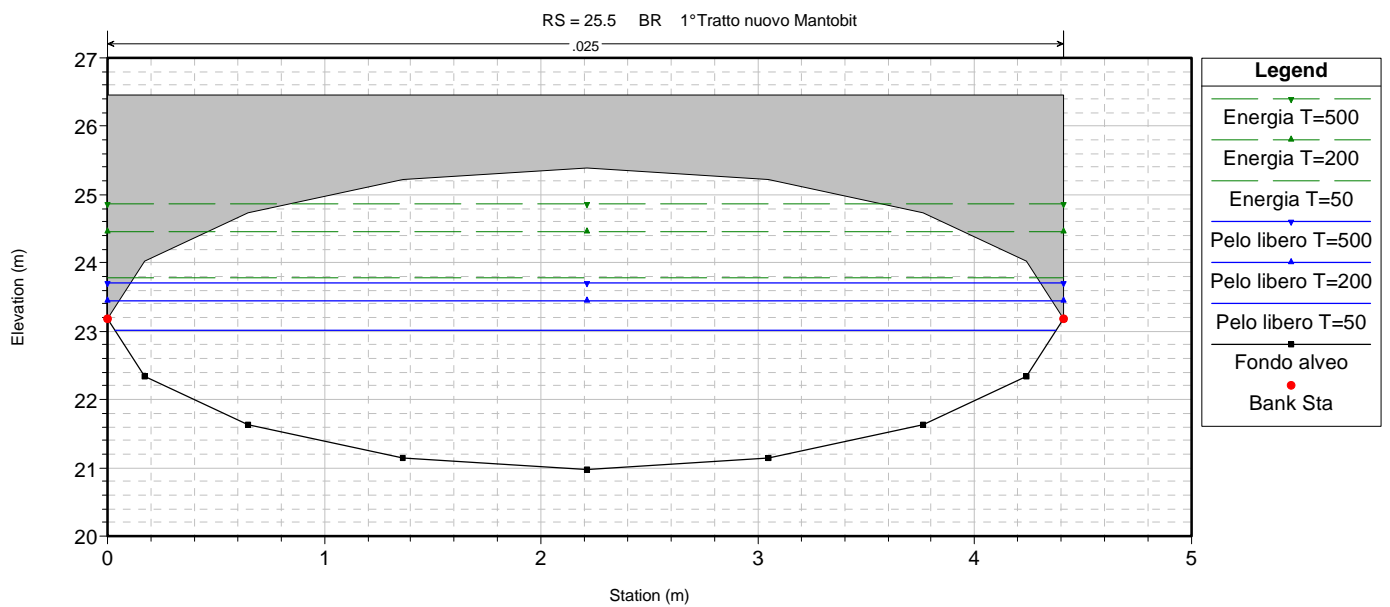


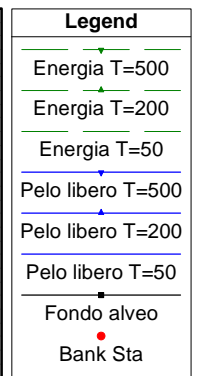
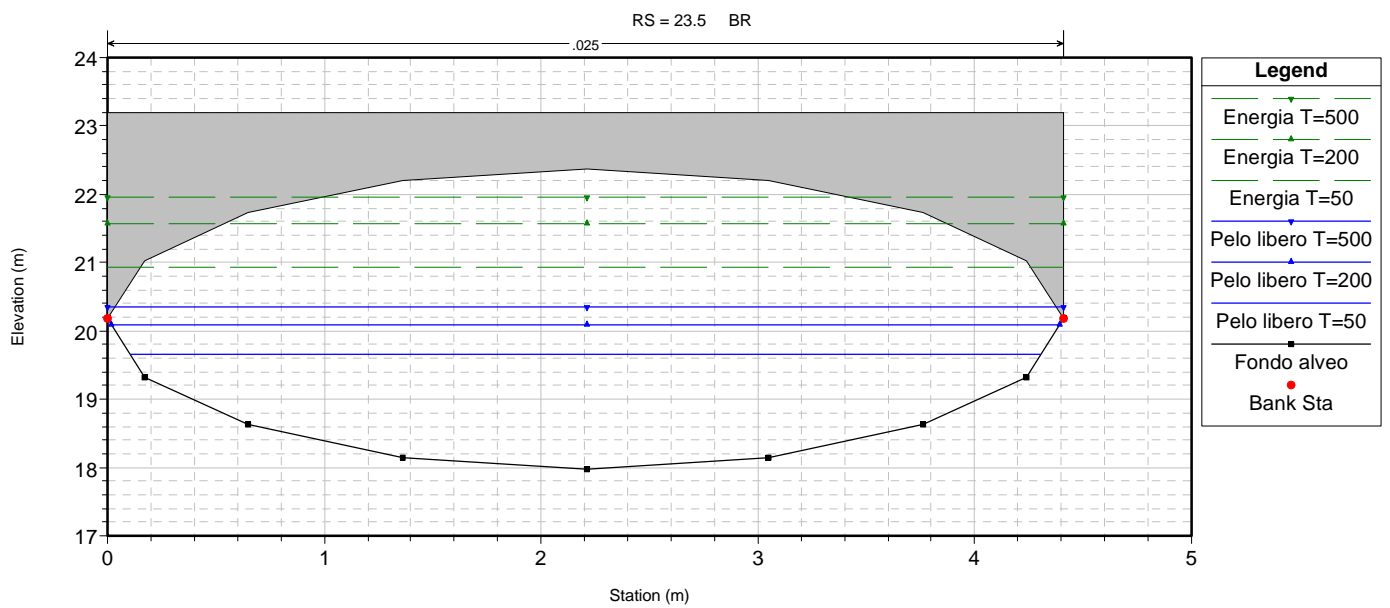
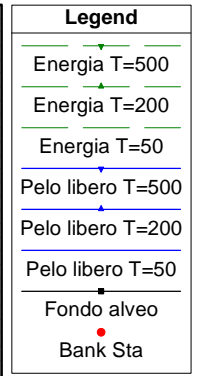
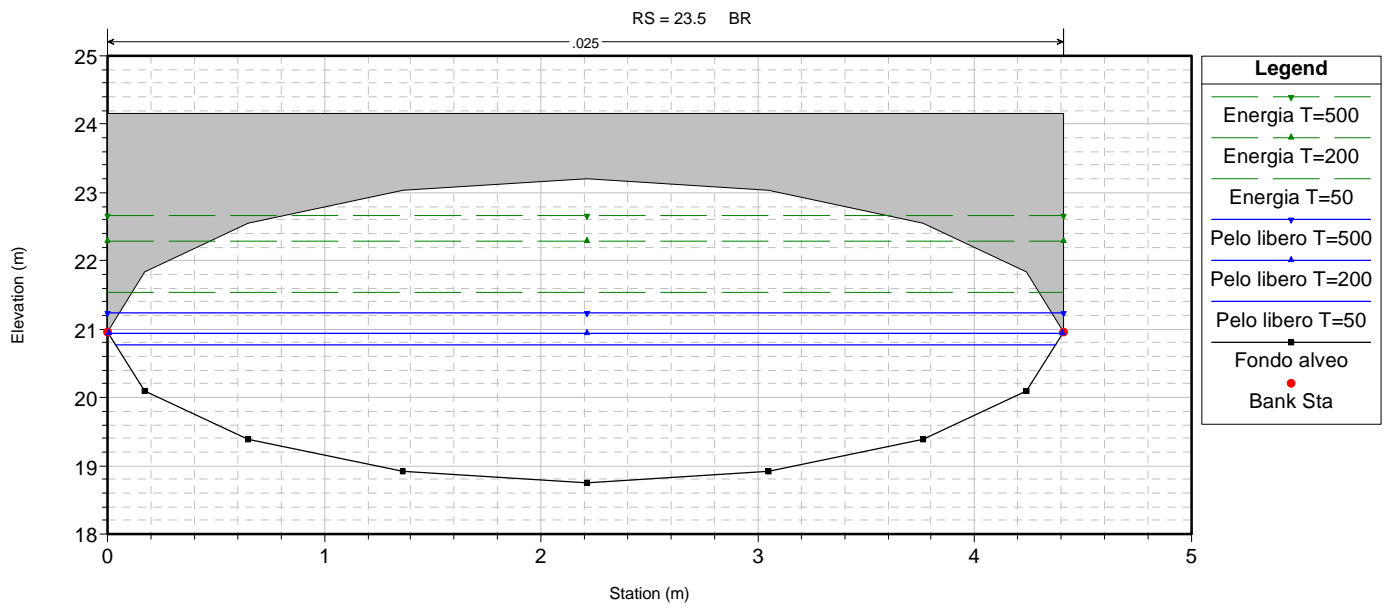
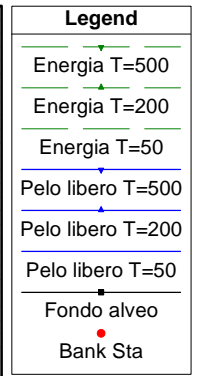
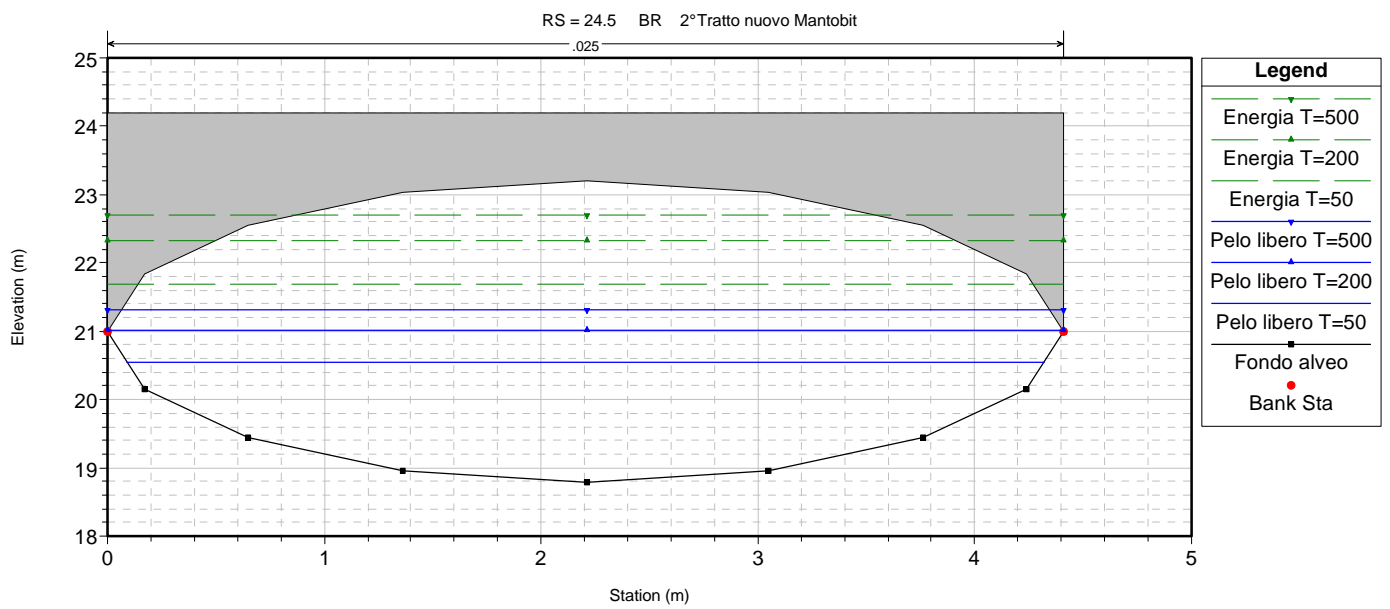


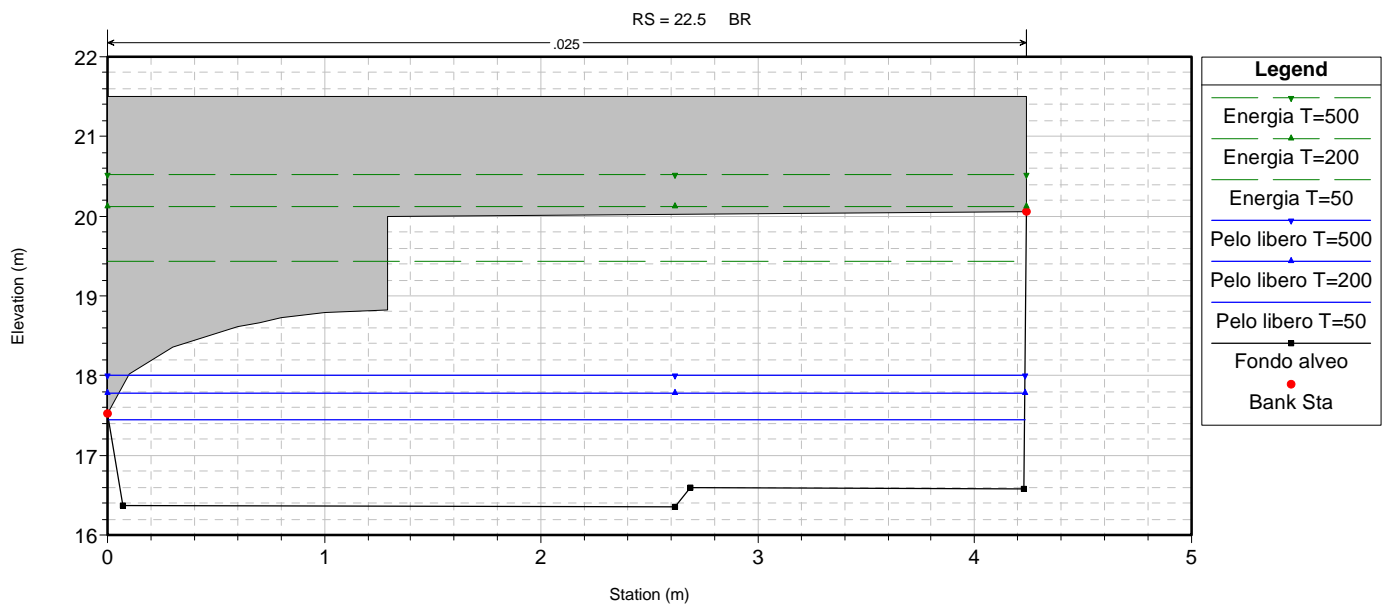
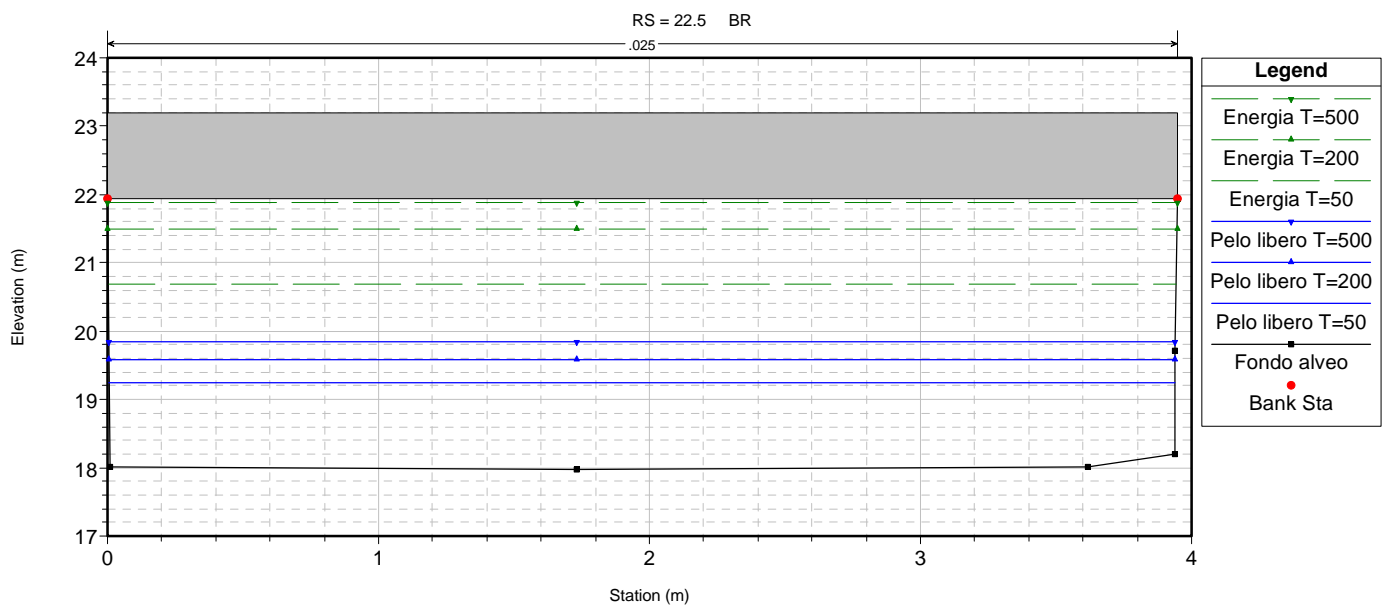
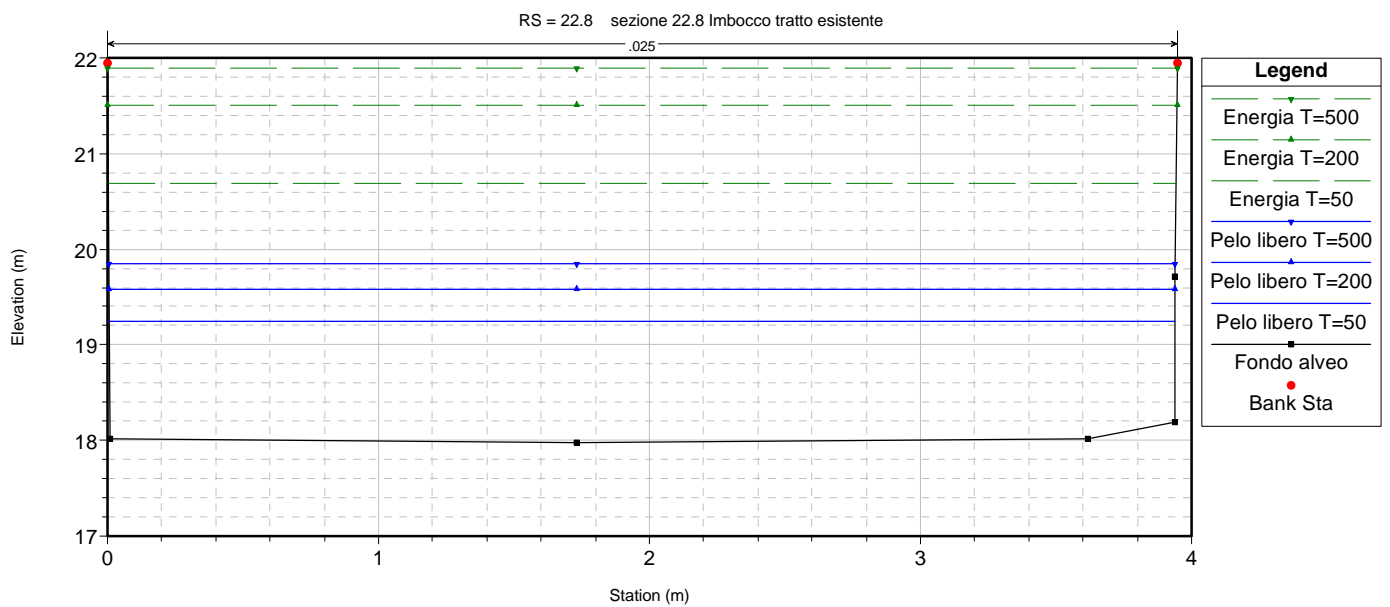
# RIO MADONNA DEL MONTE

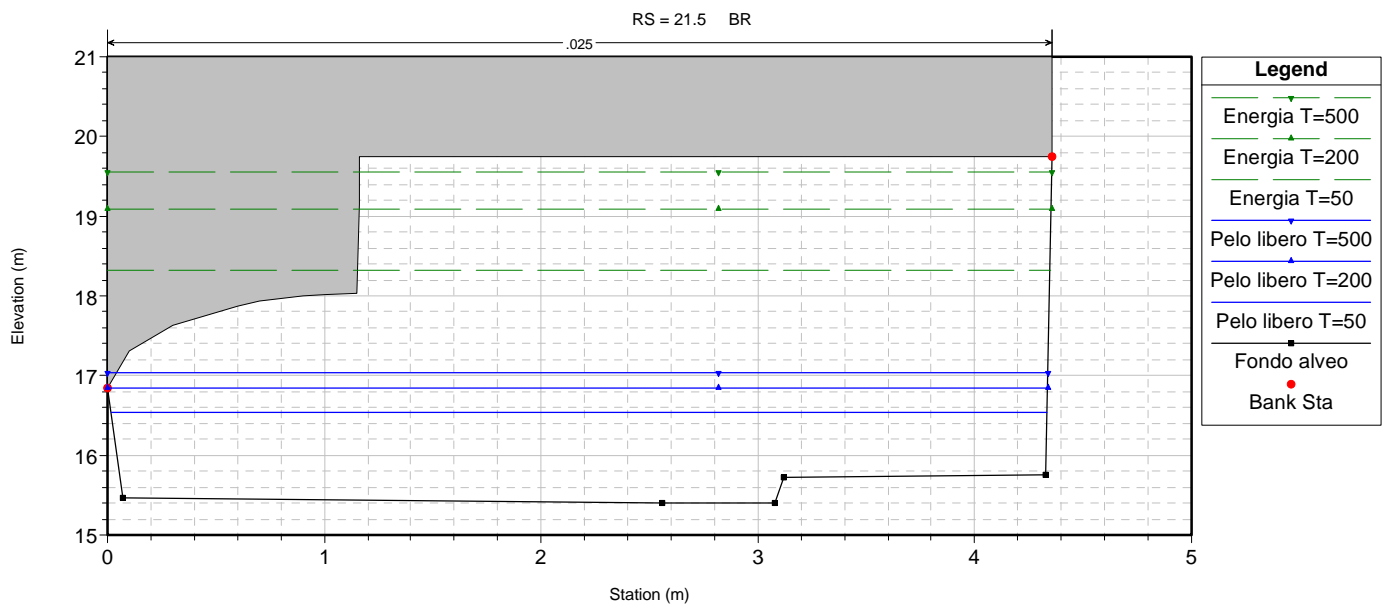
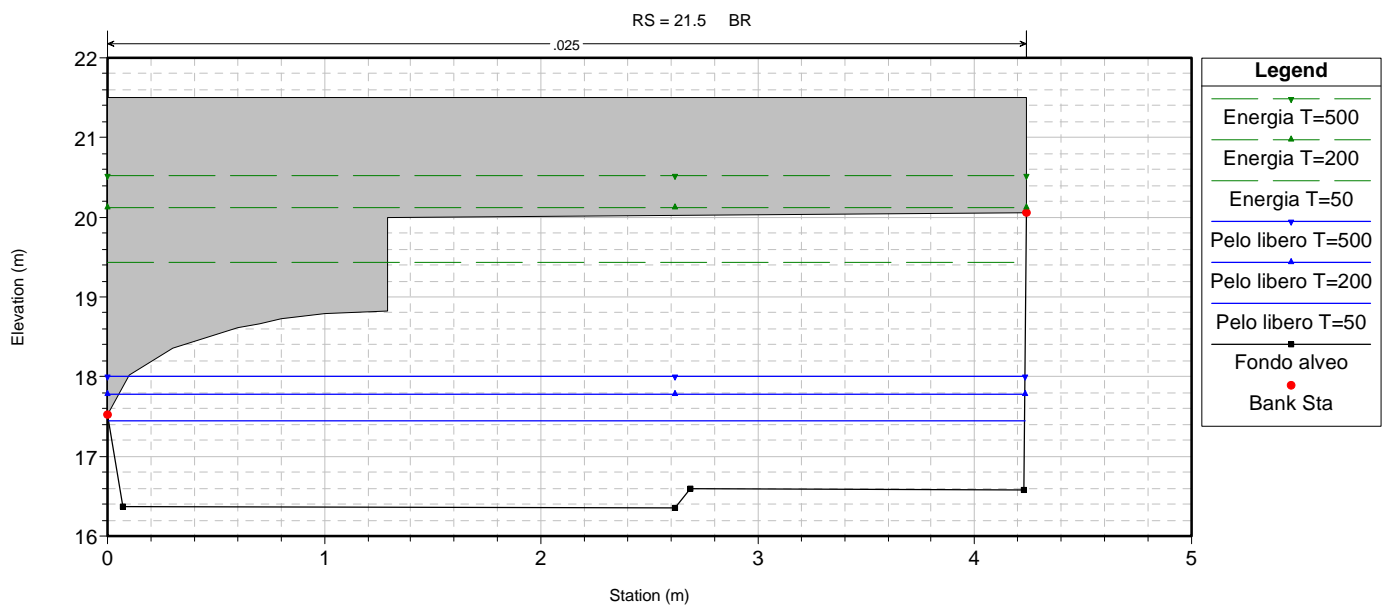
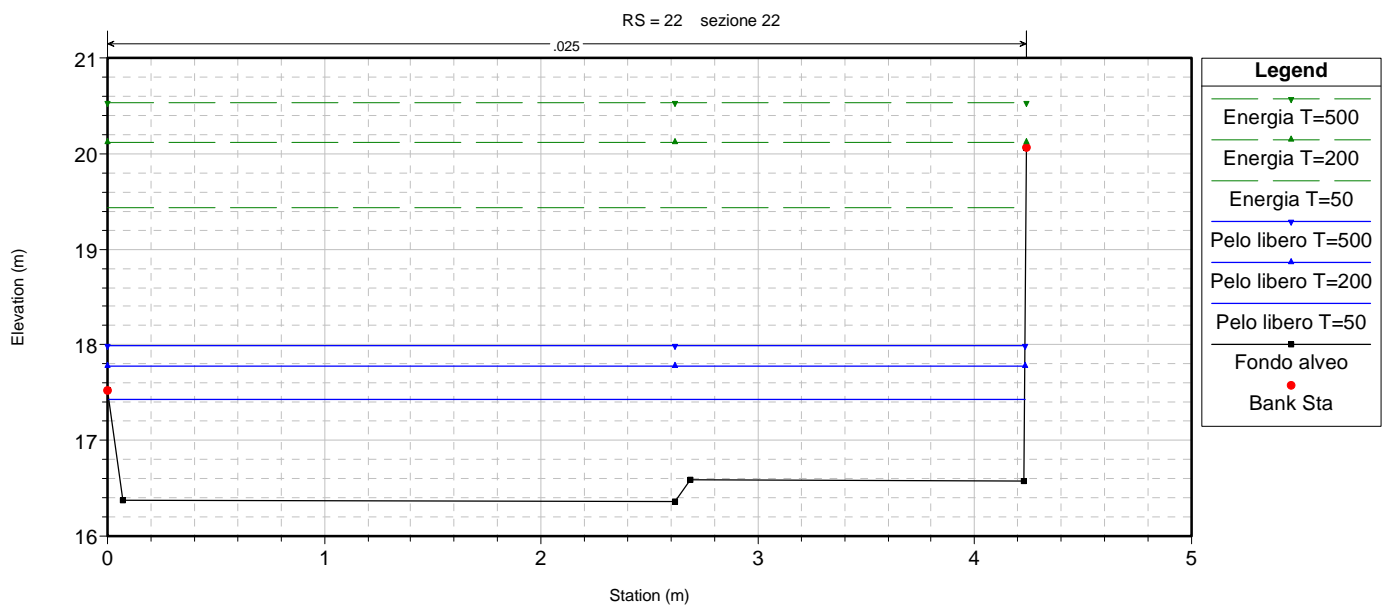
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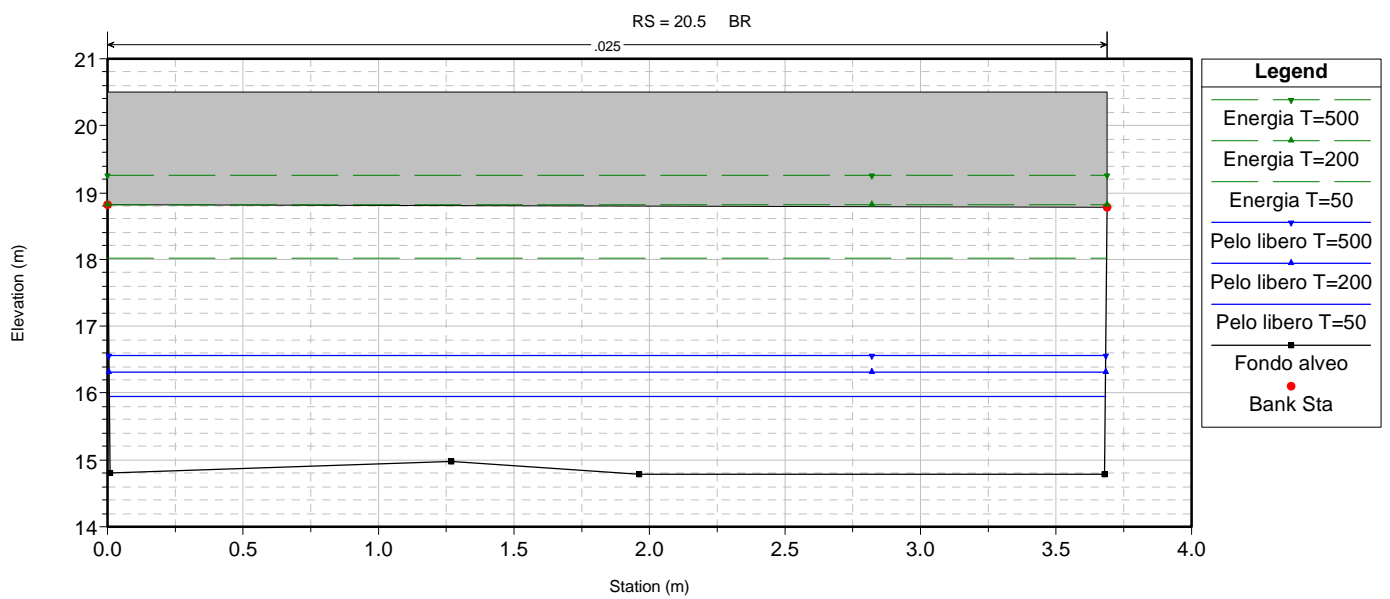
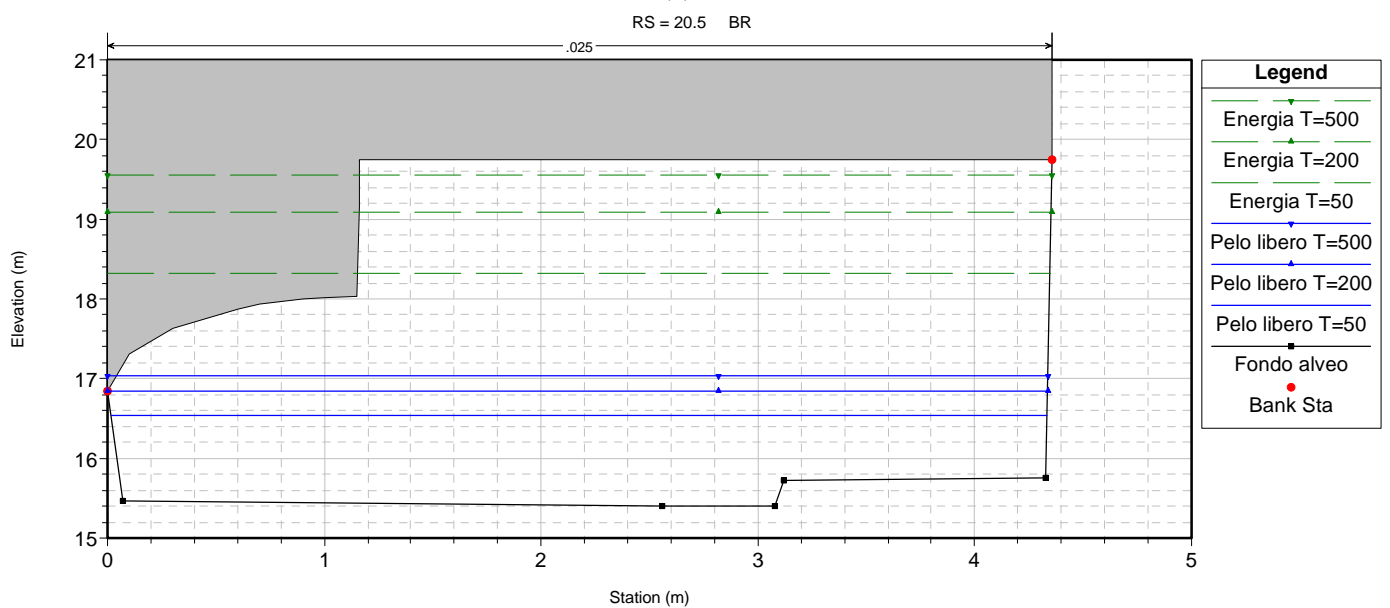
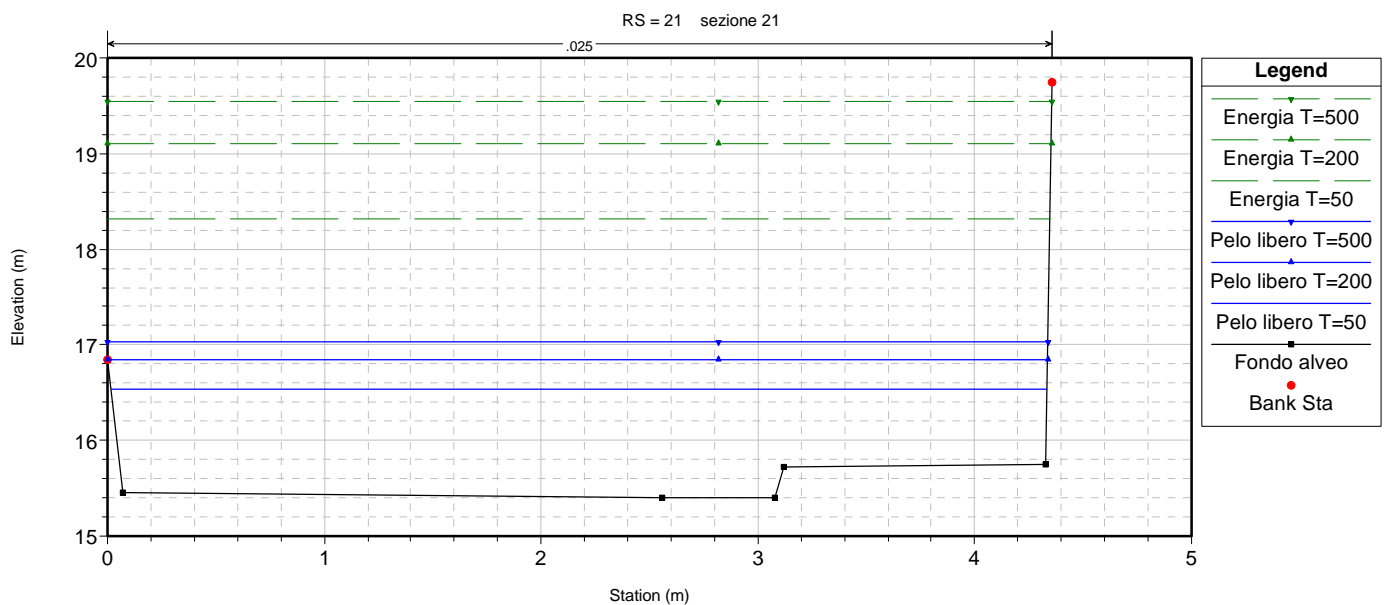


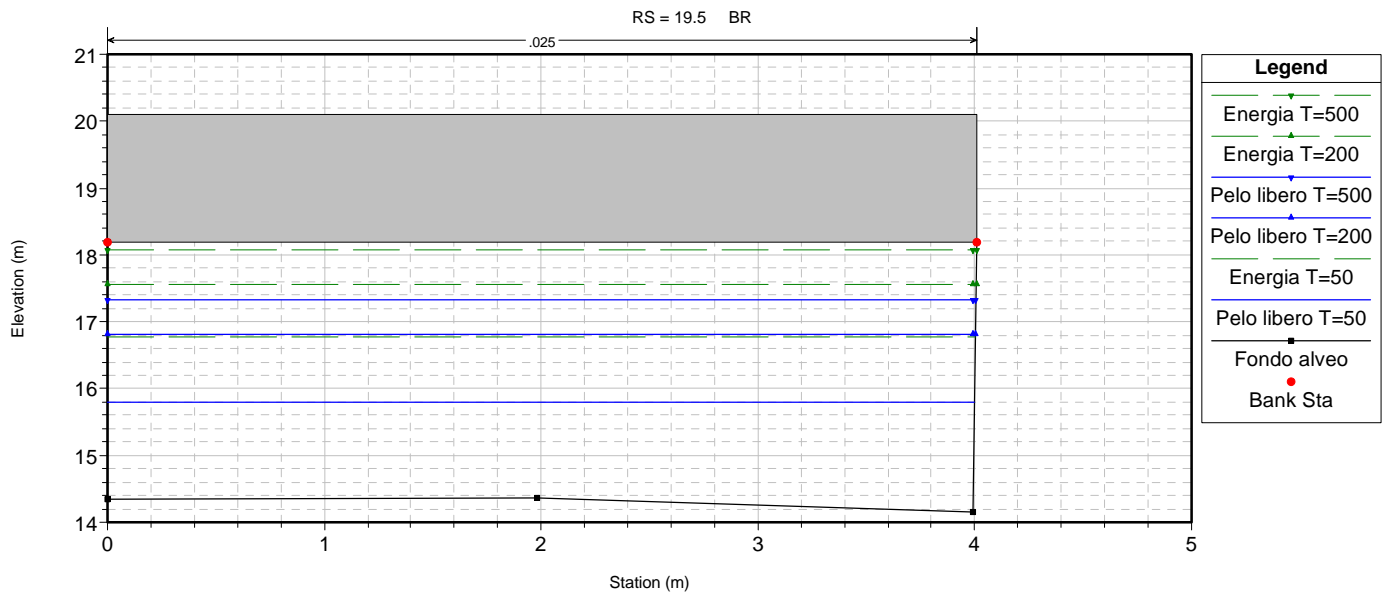
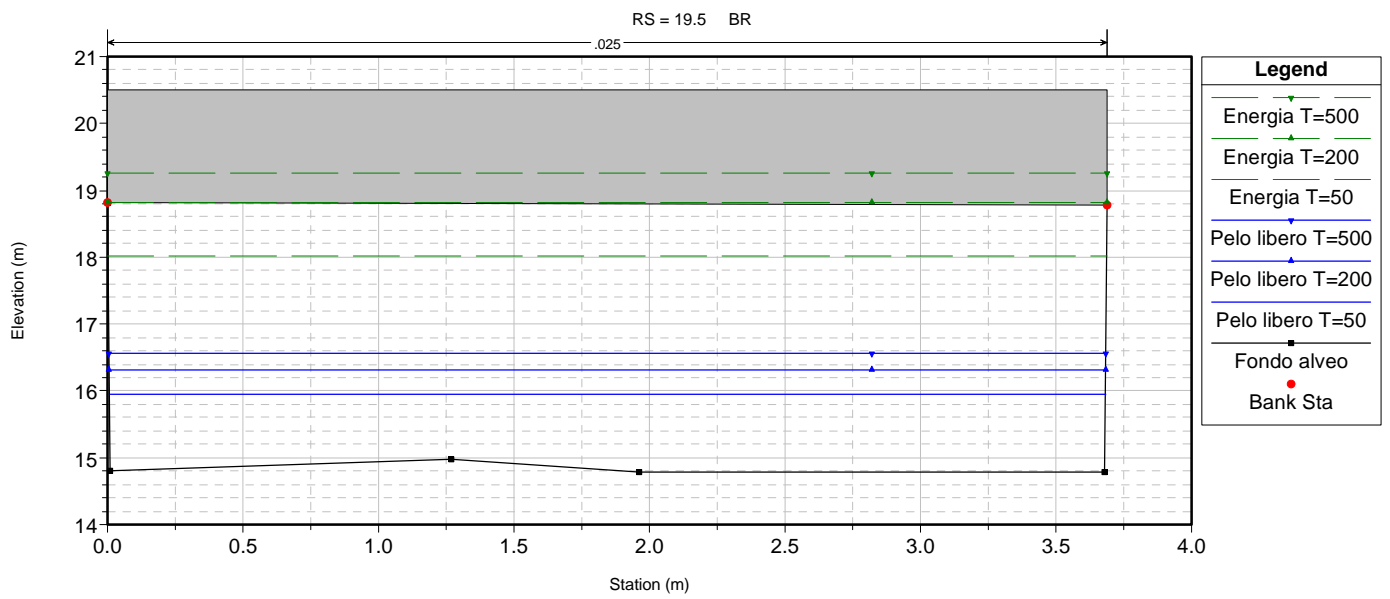
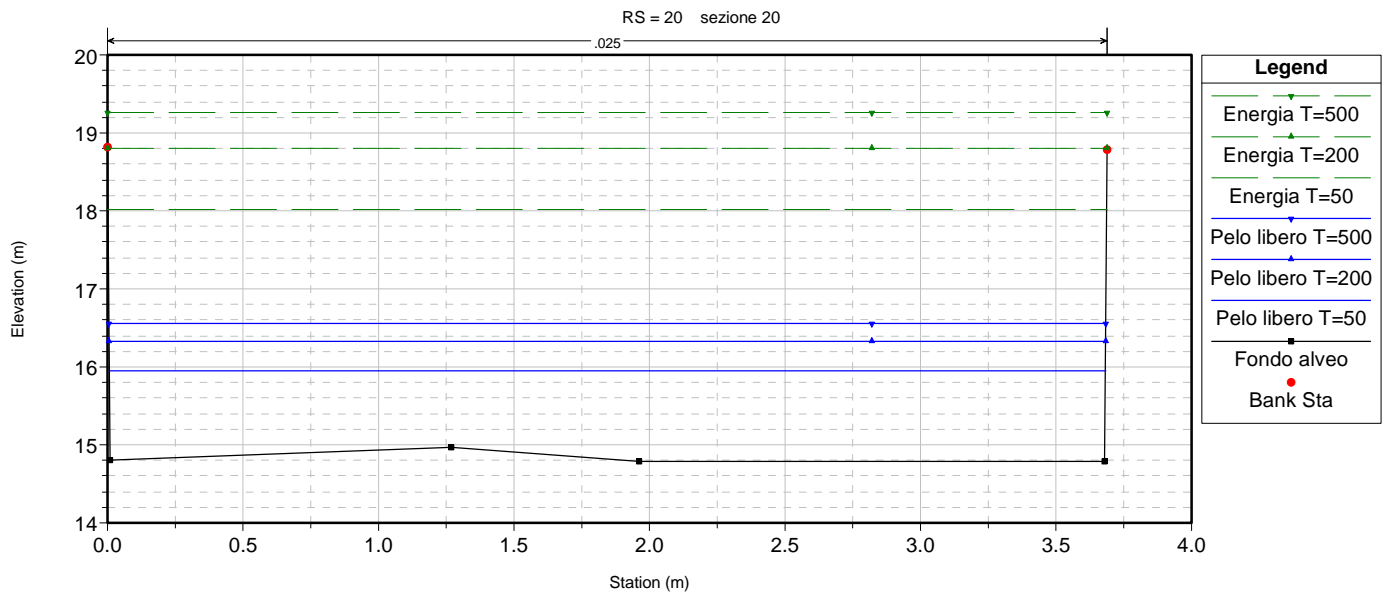




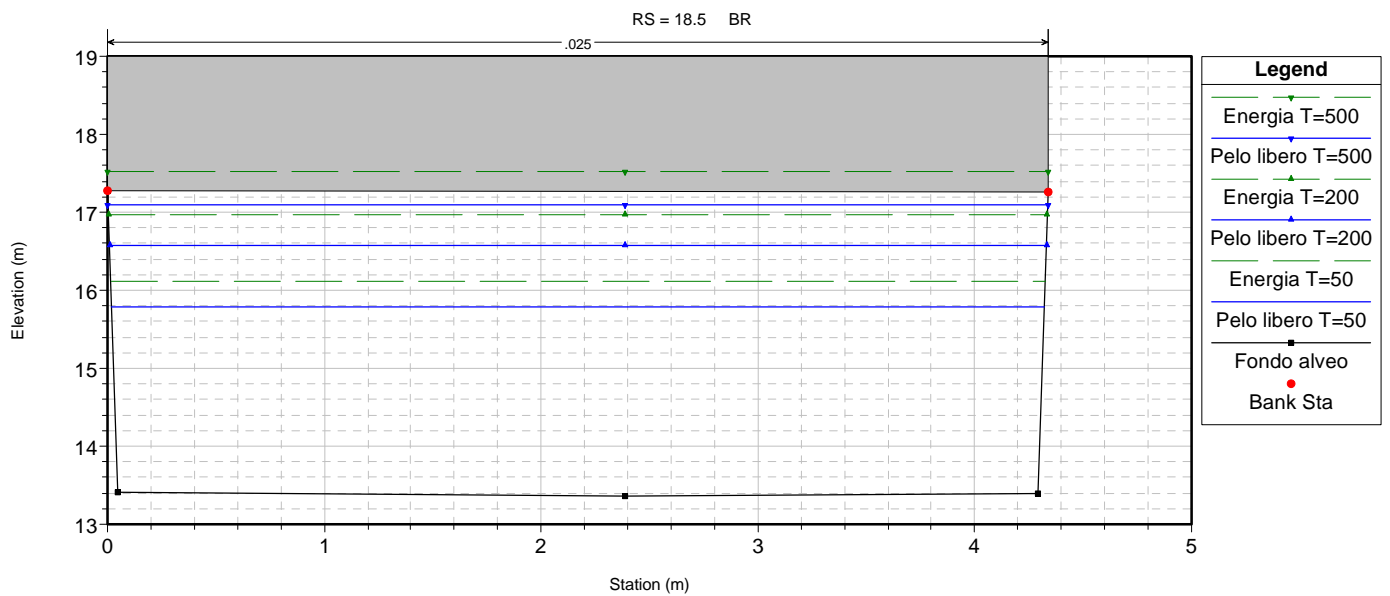
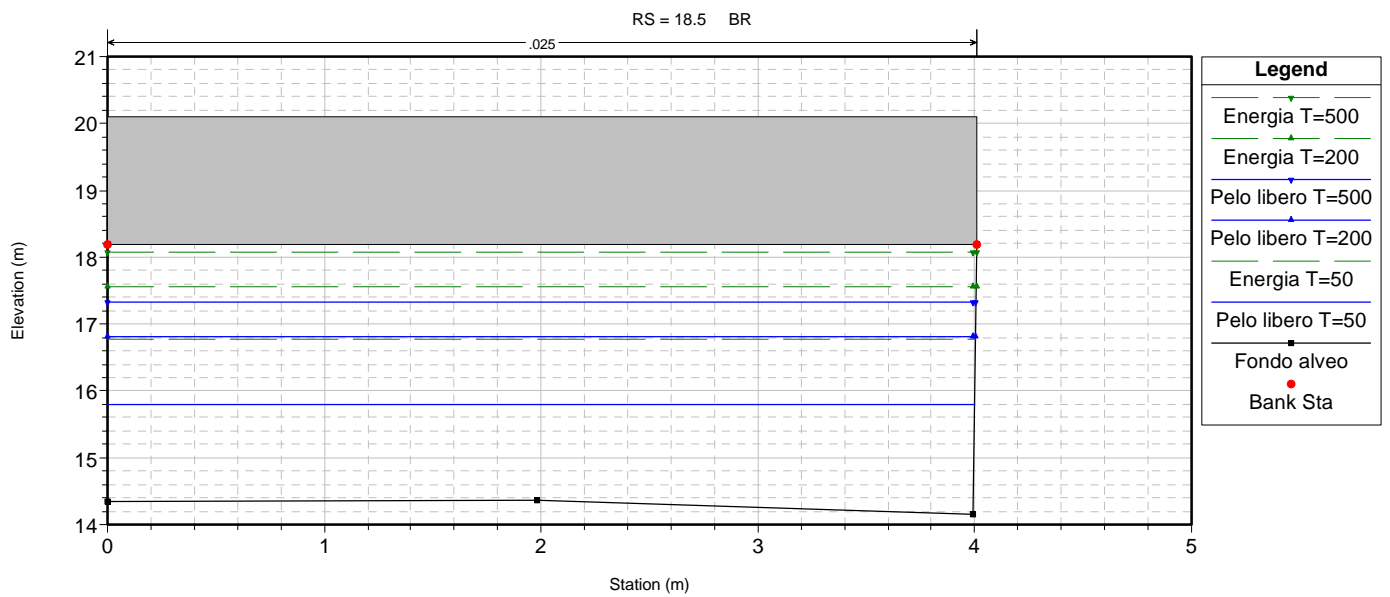
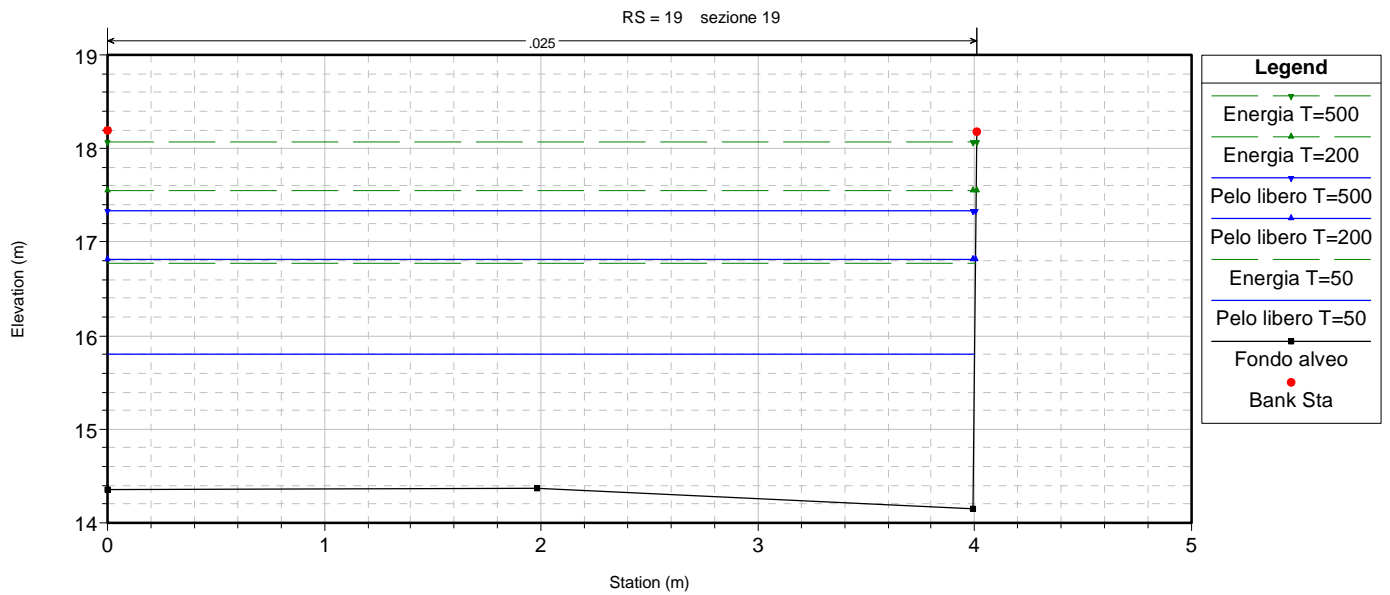


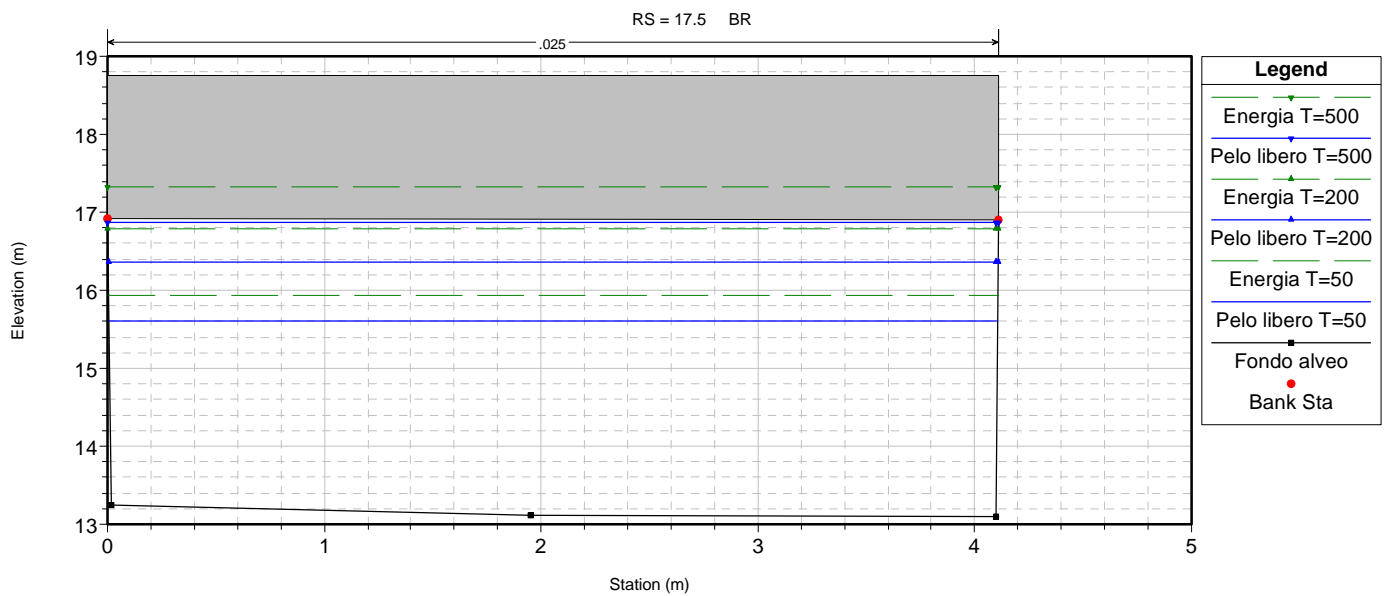
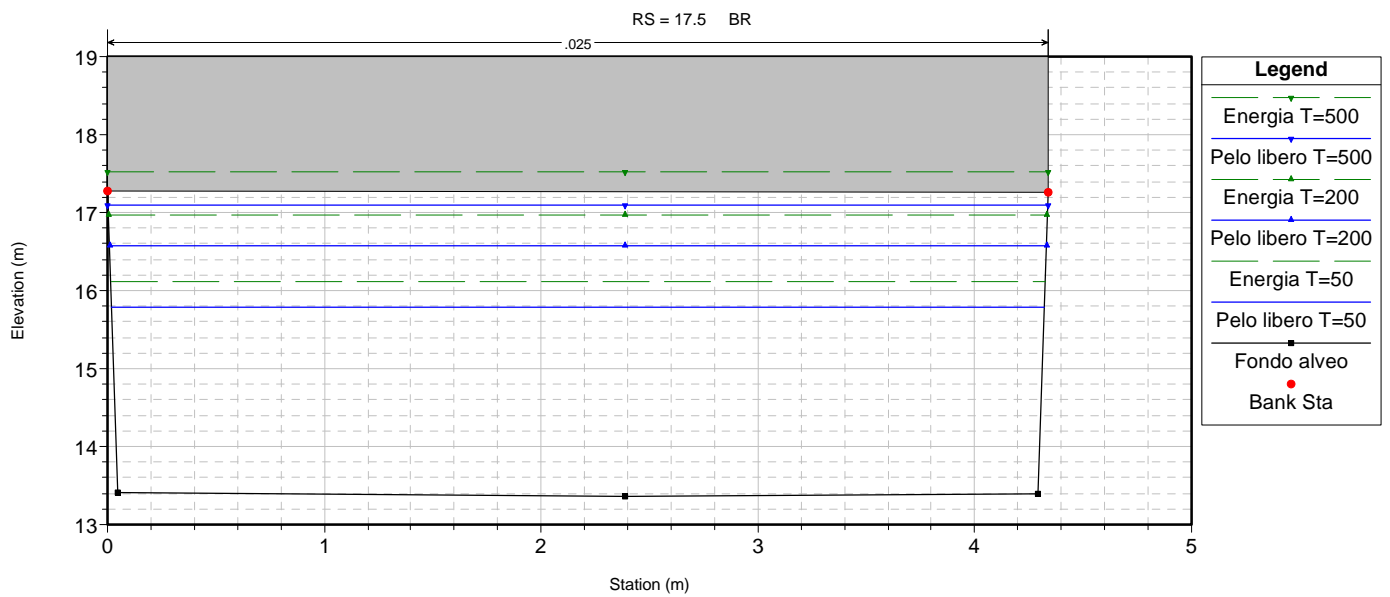
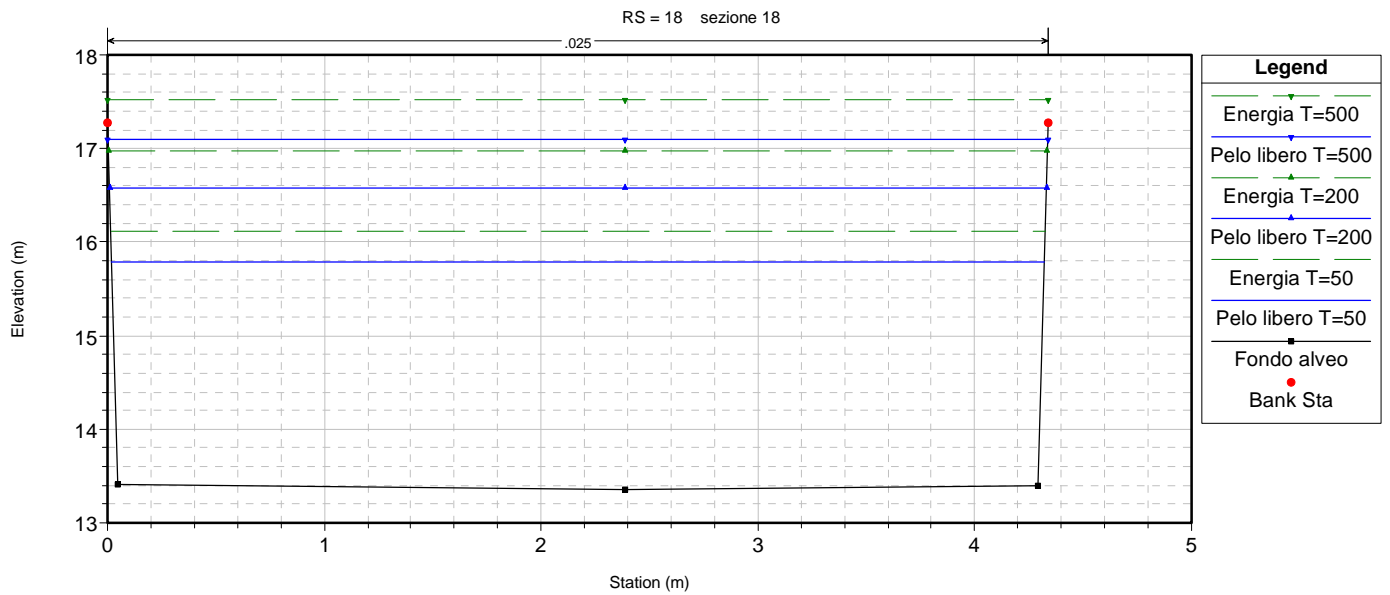


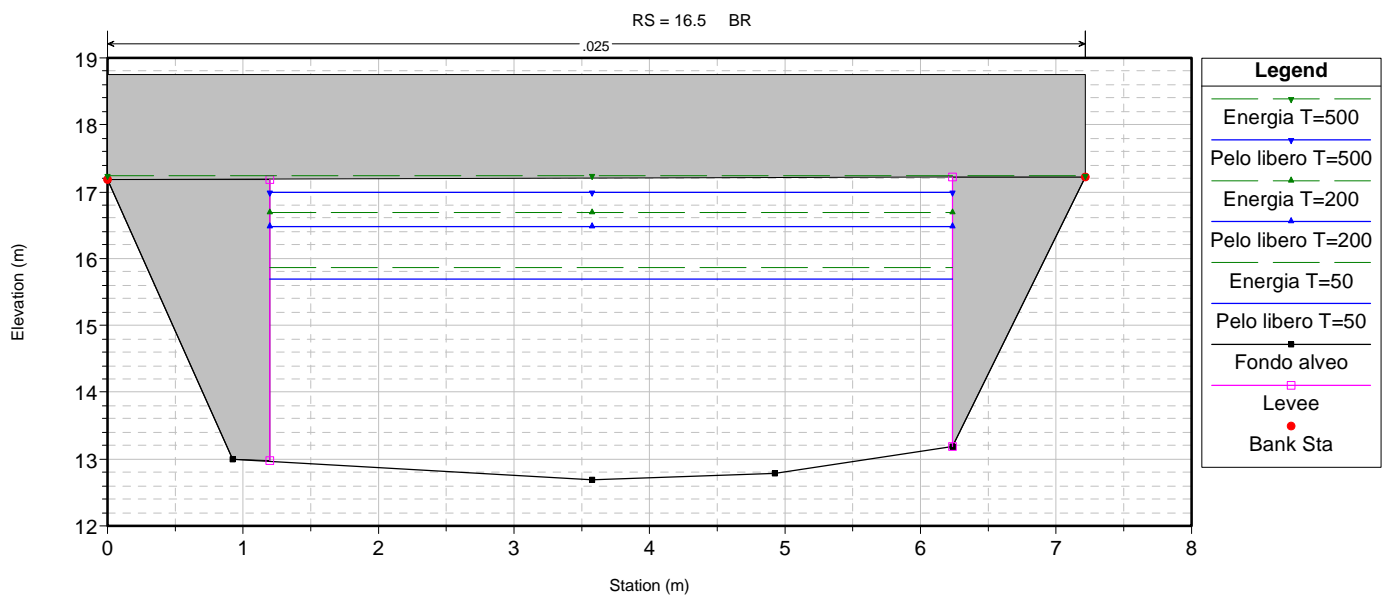
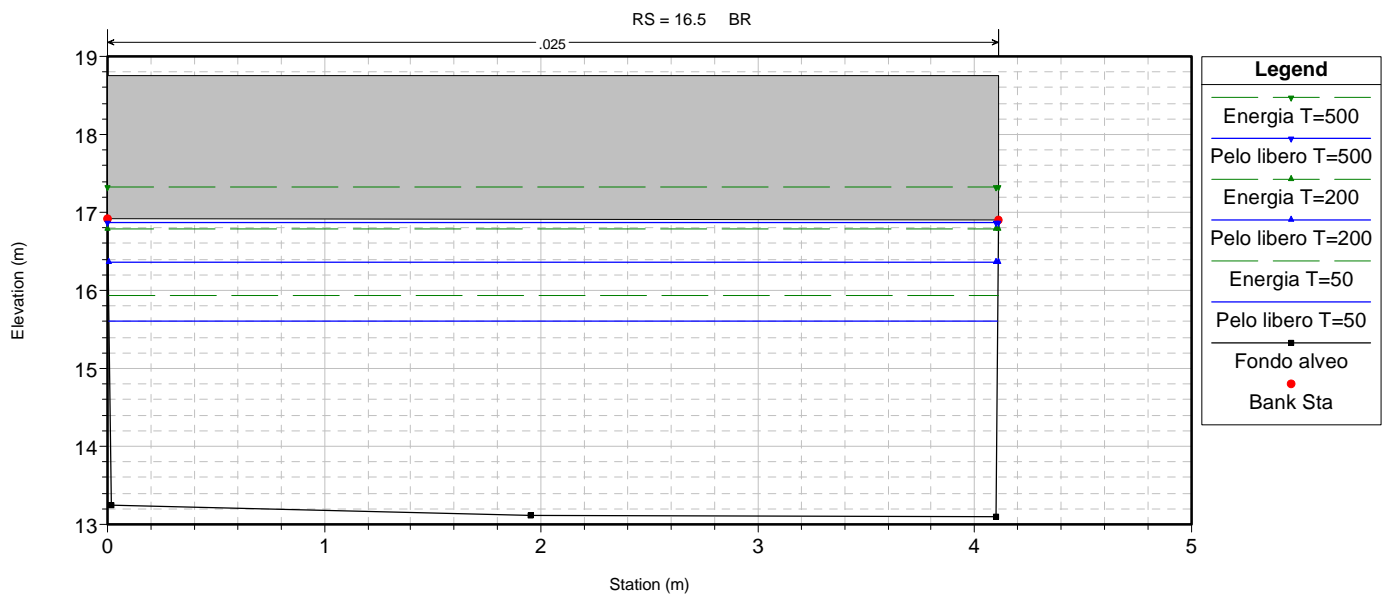
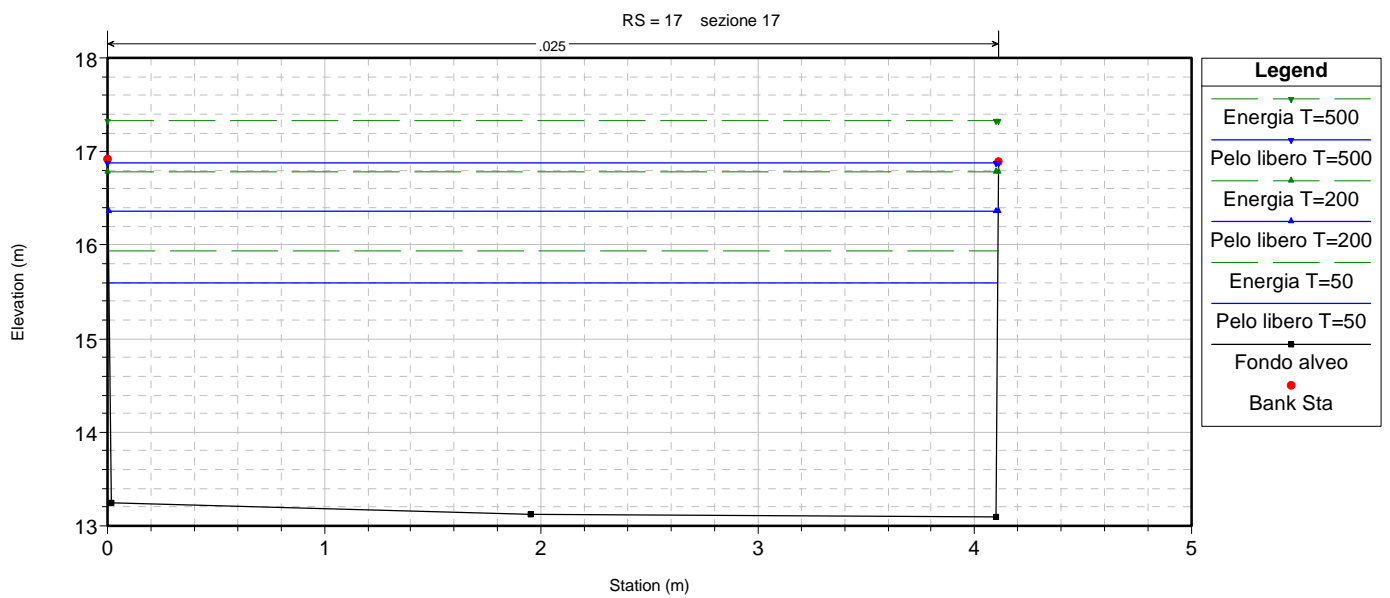


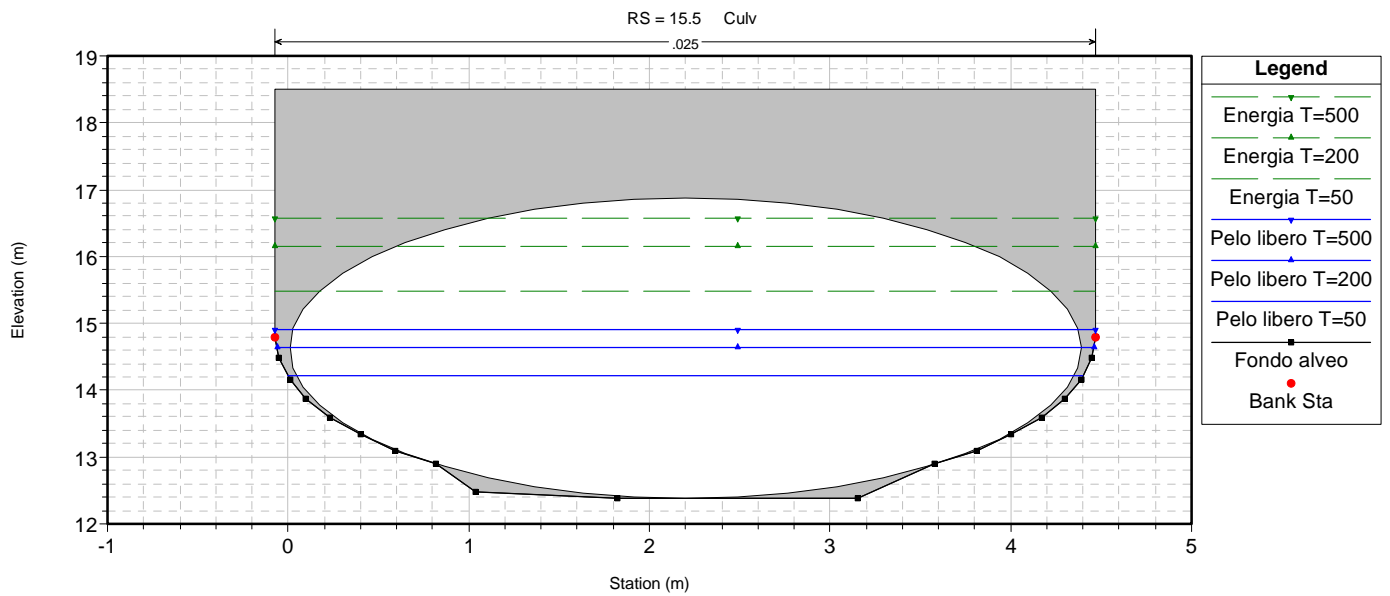
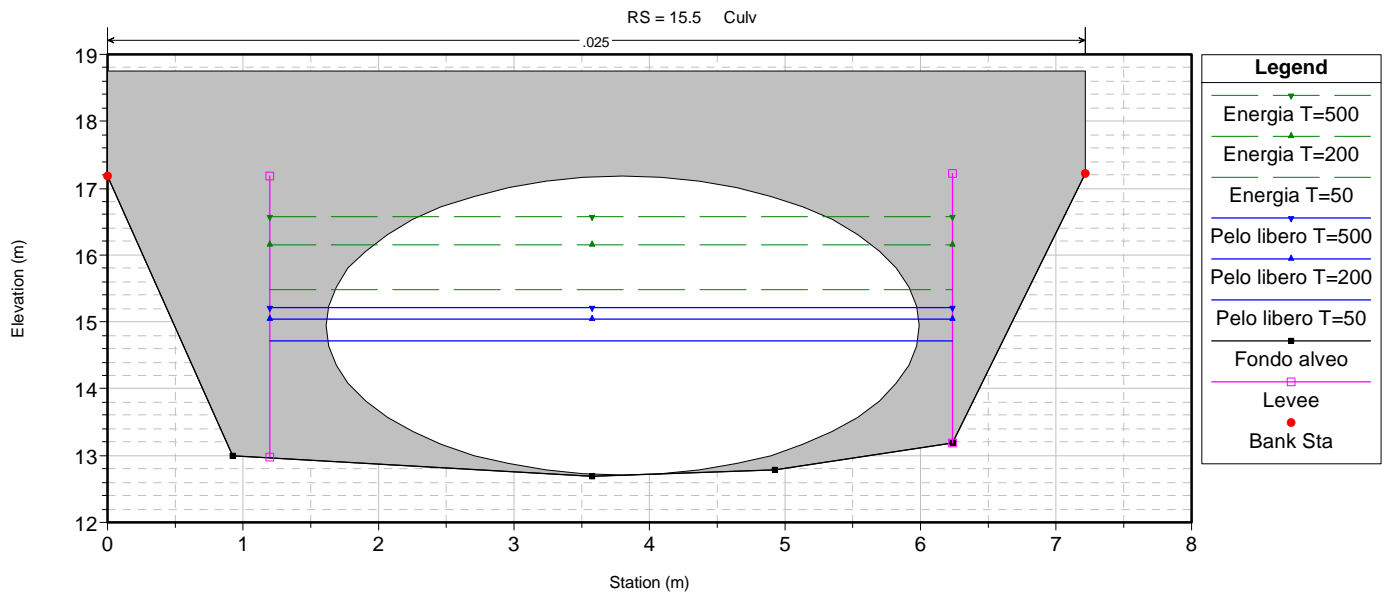
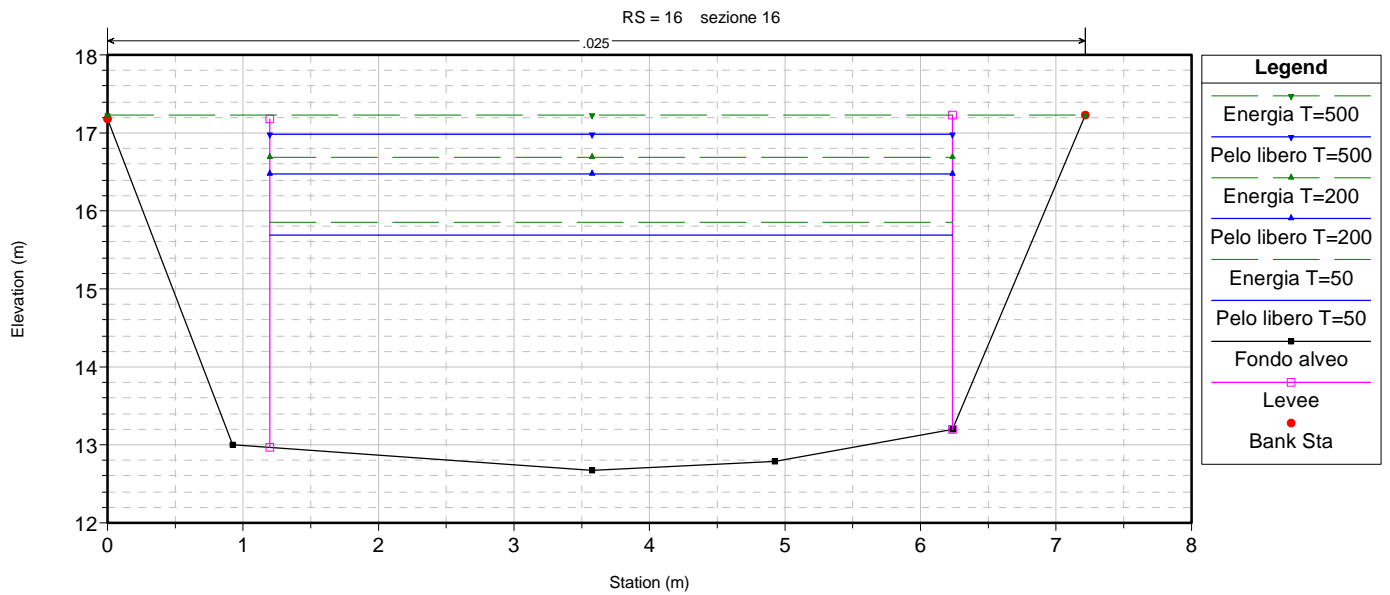


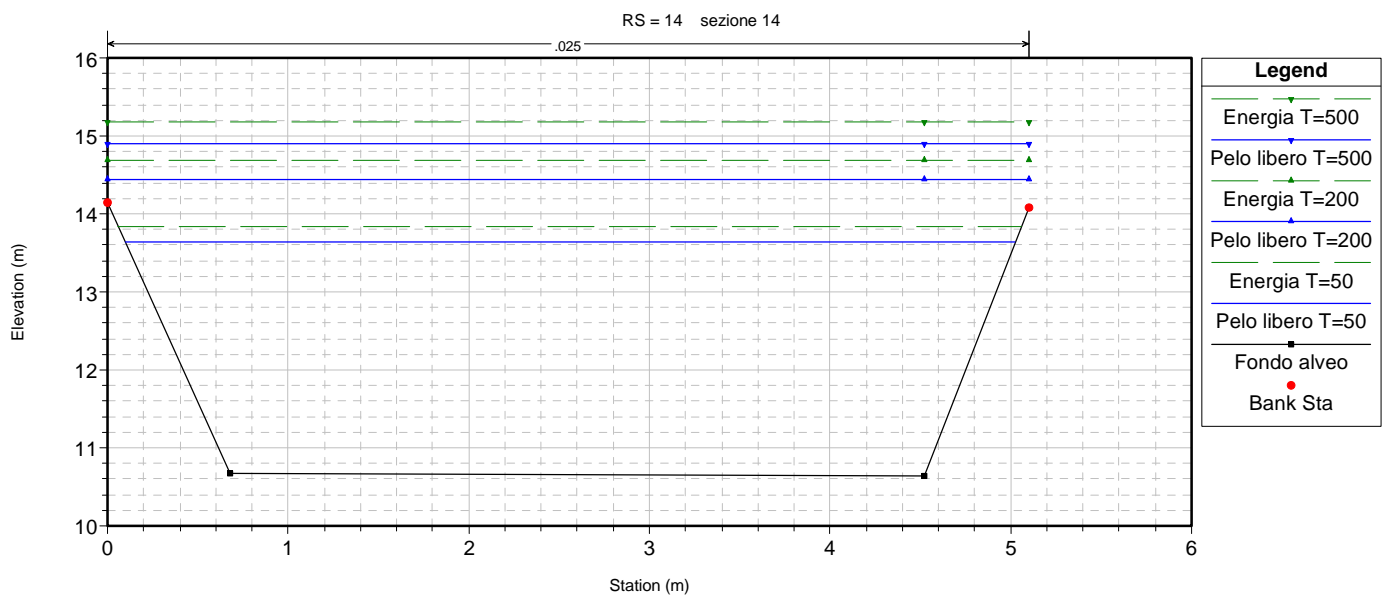
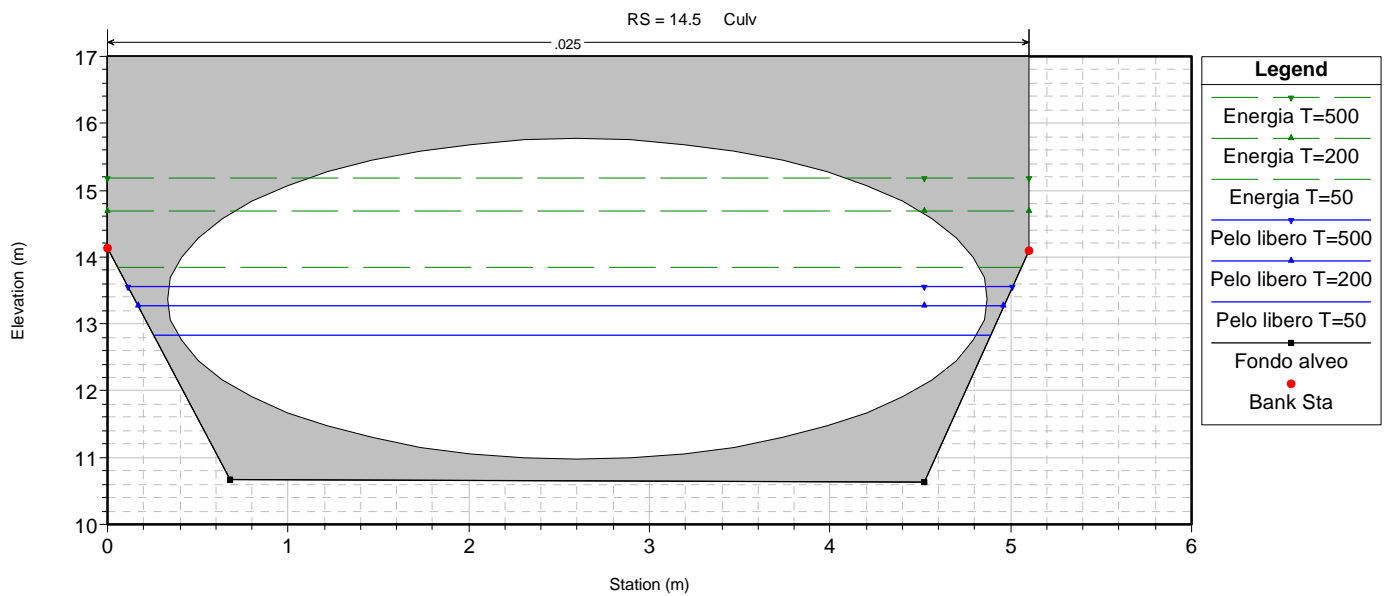
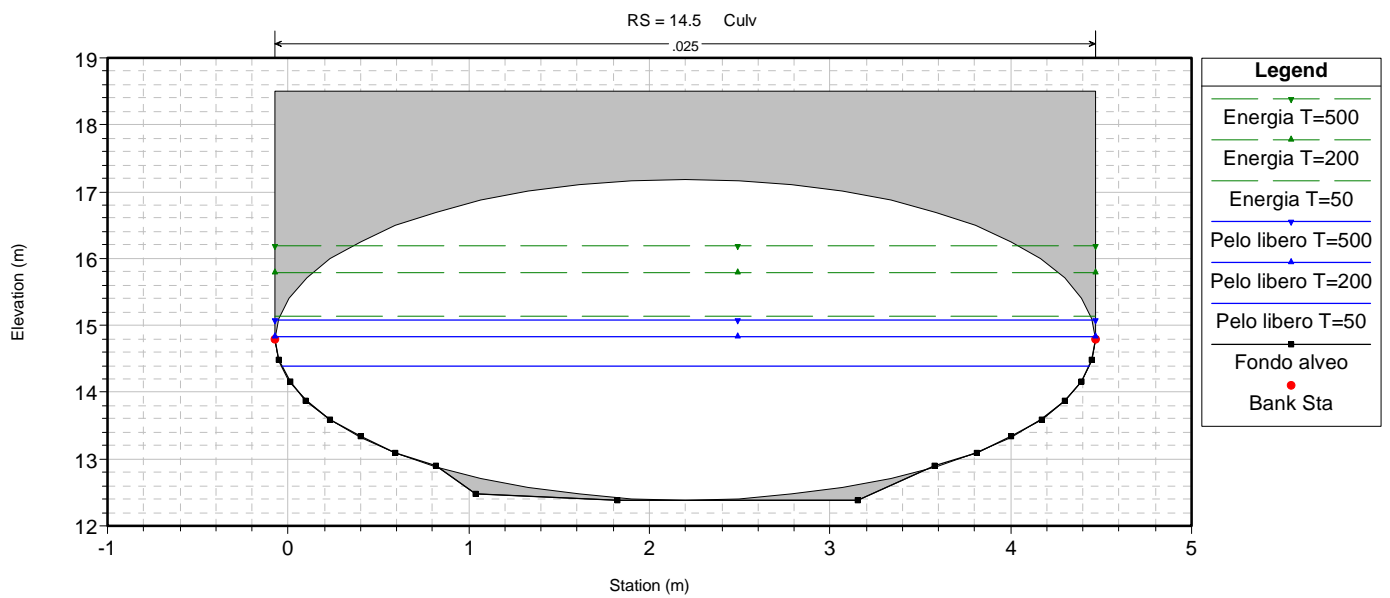


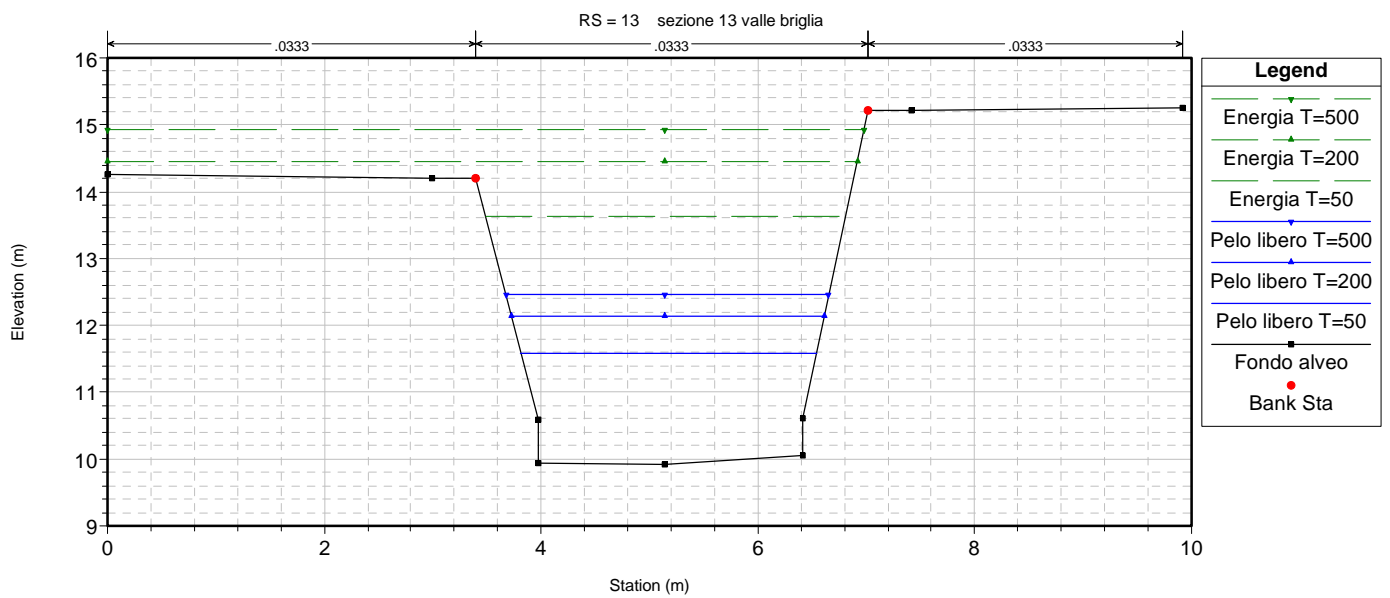
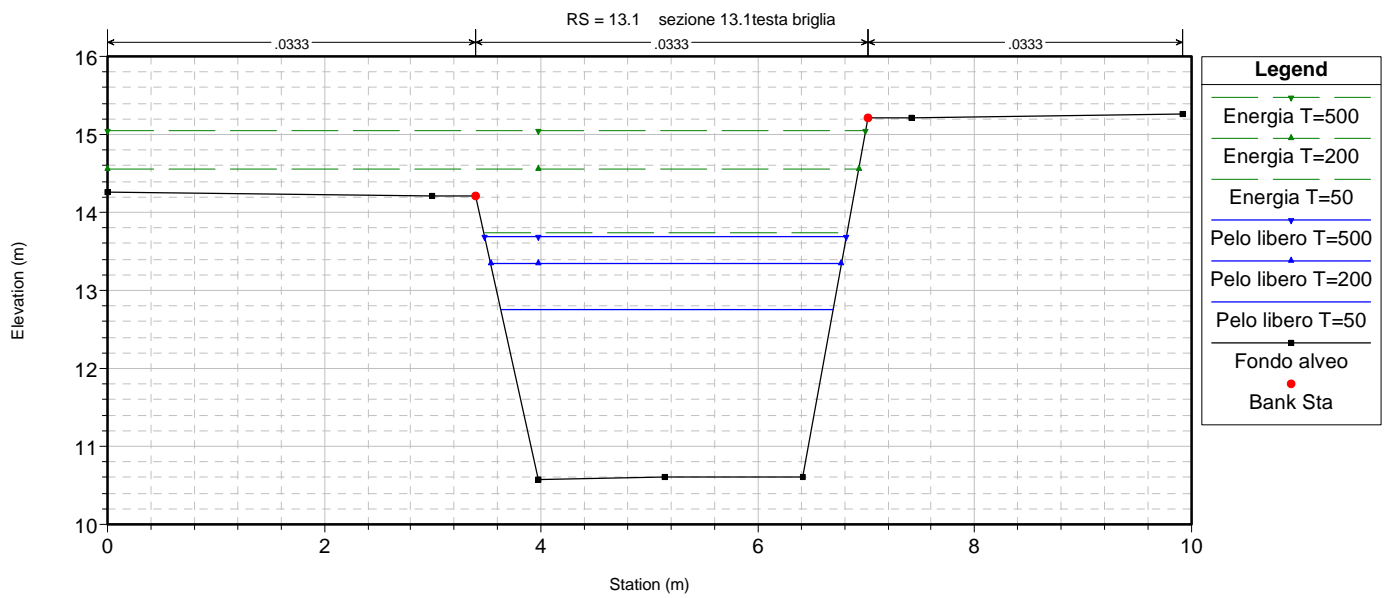
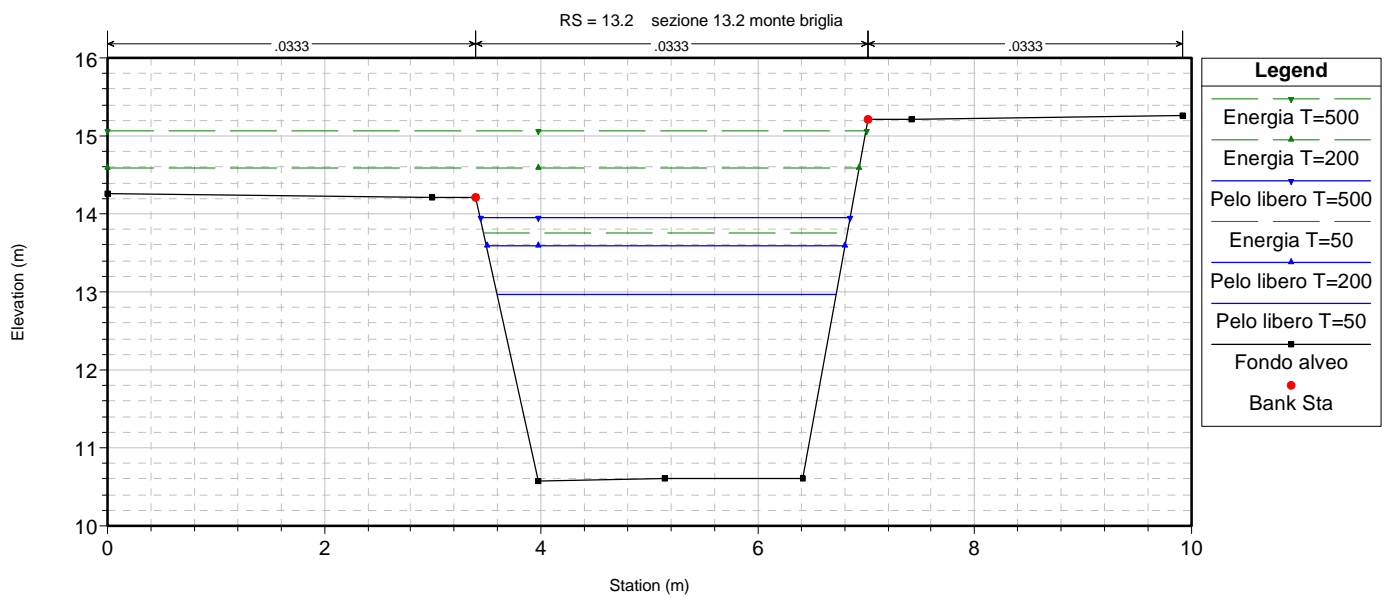


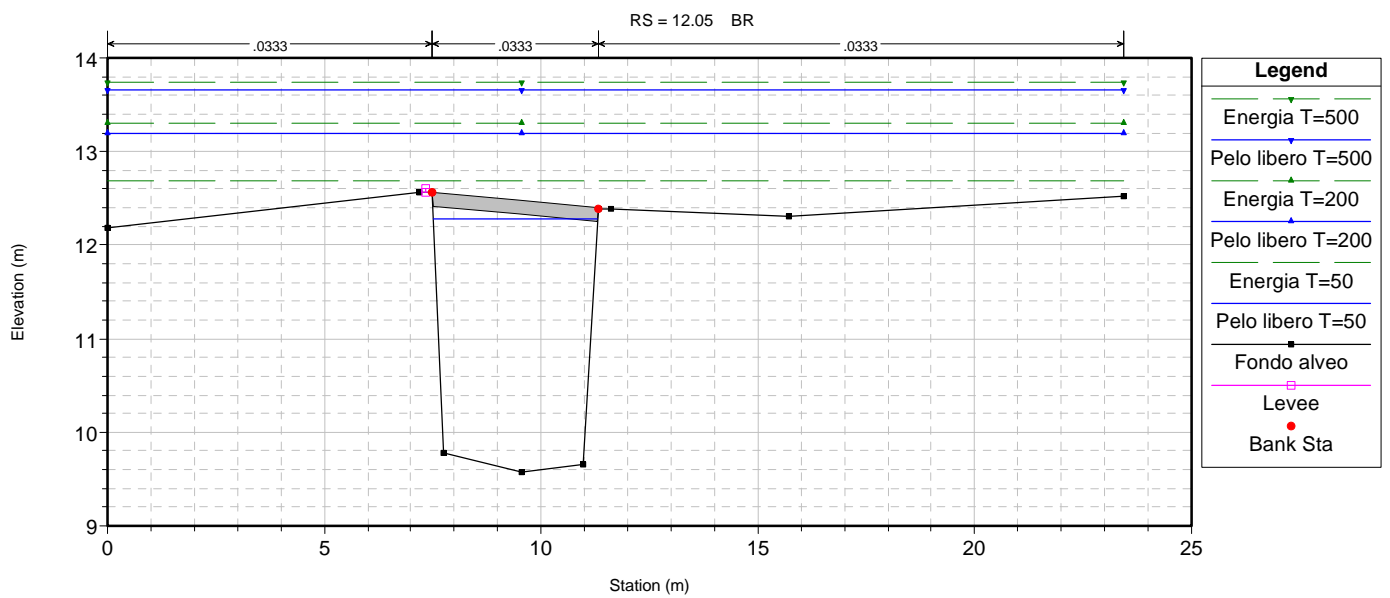
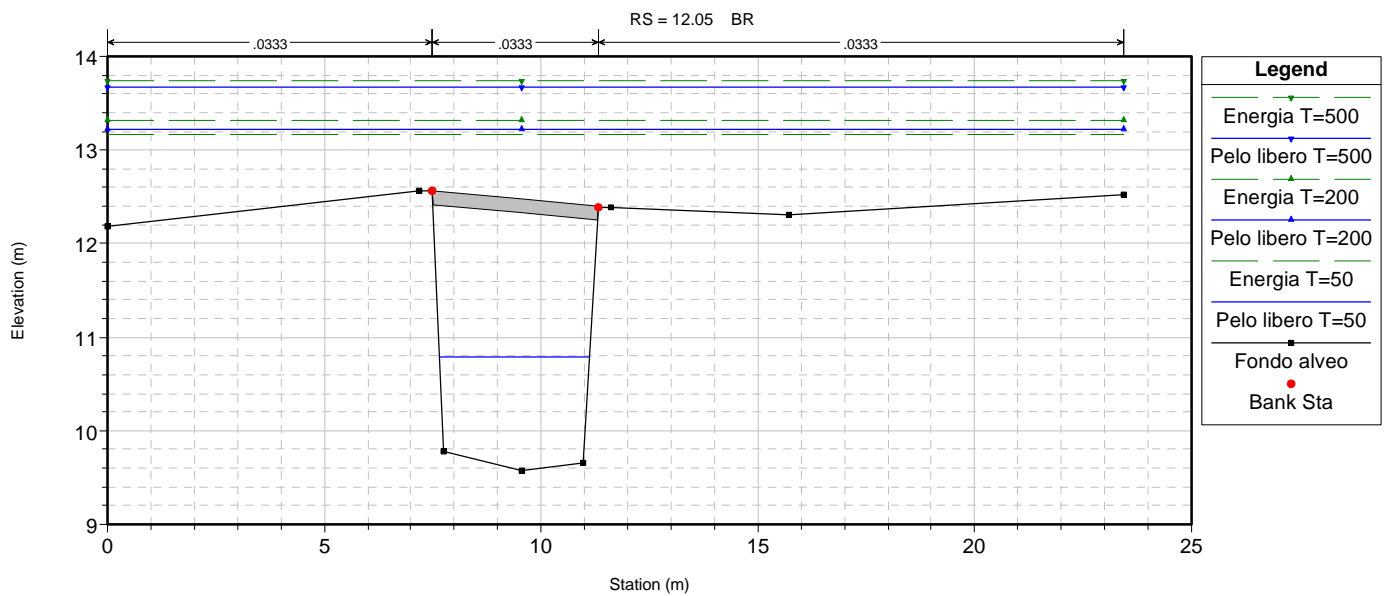
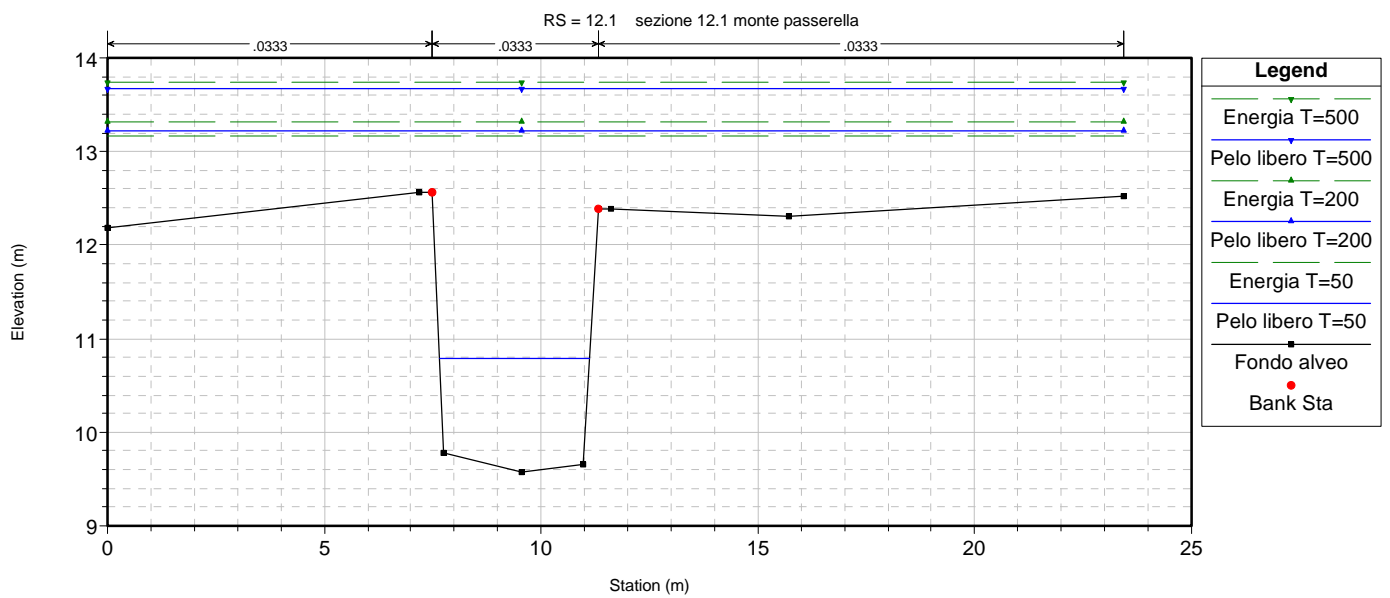


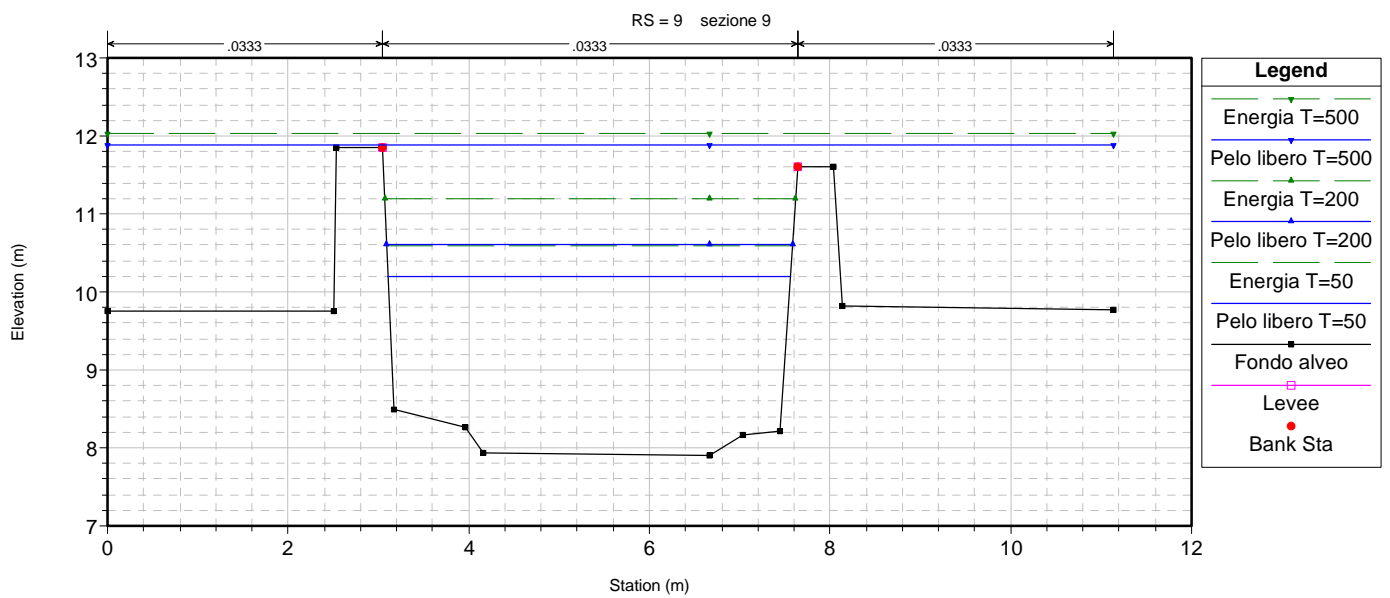
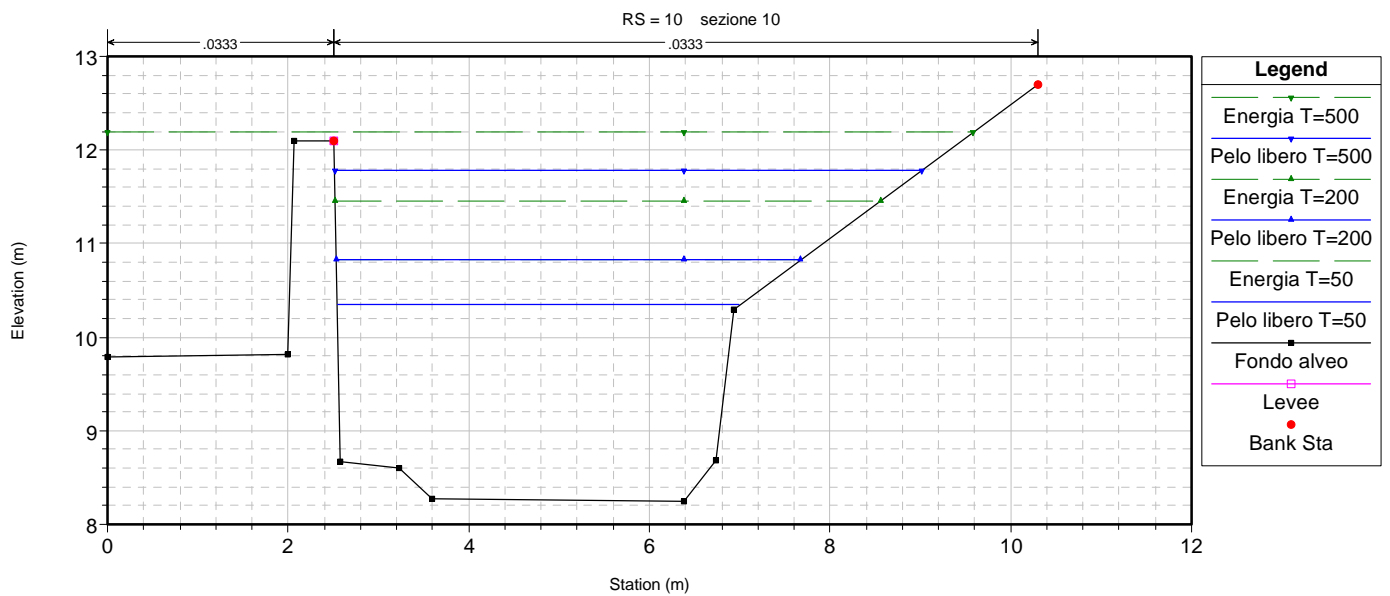
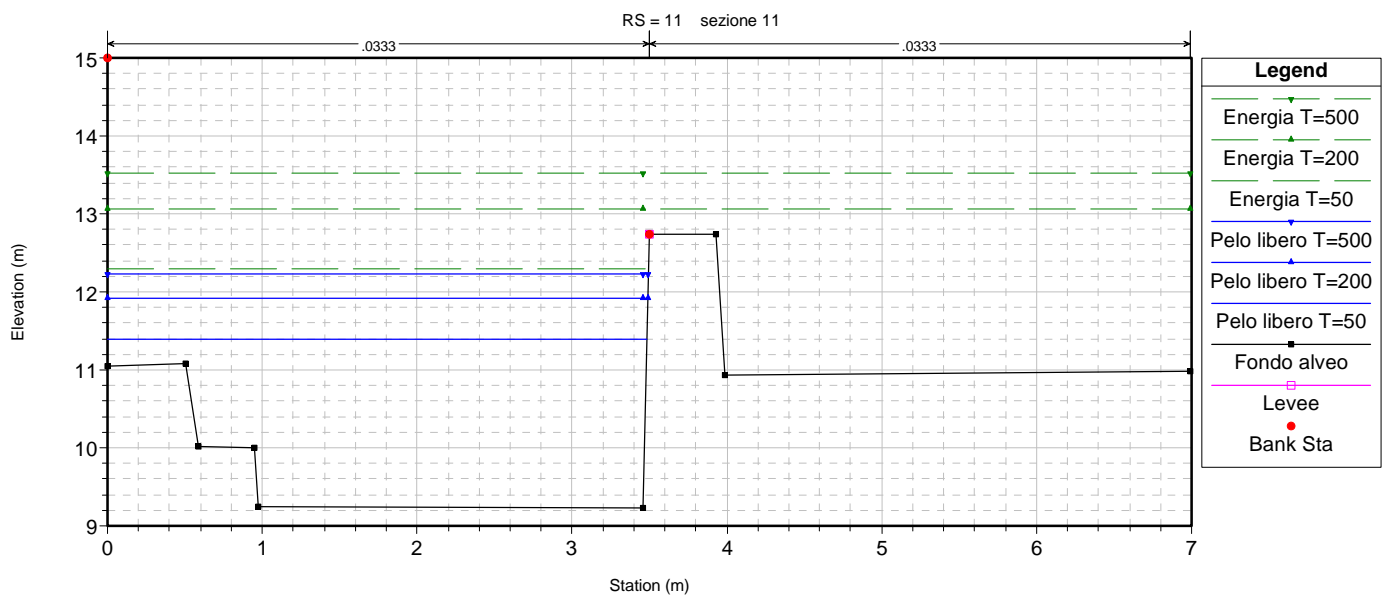




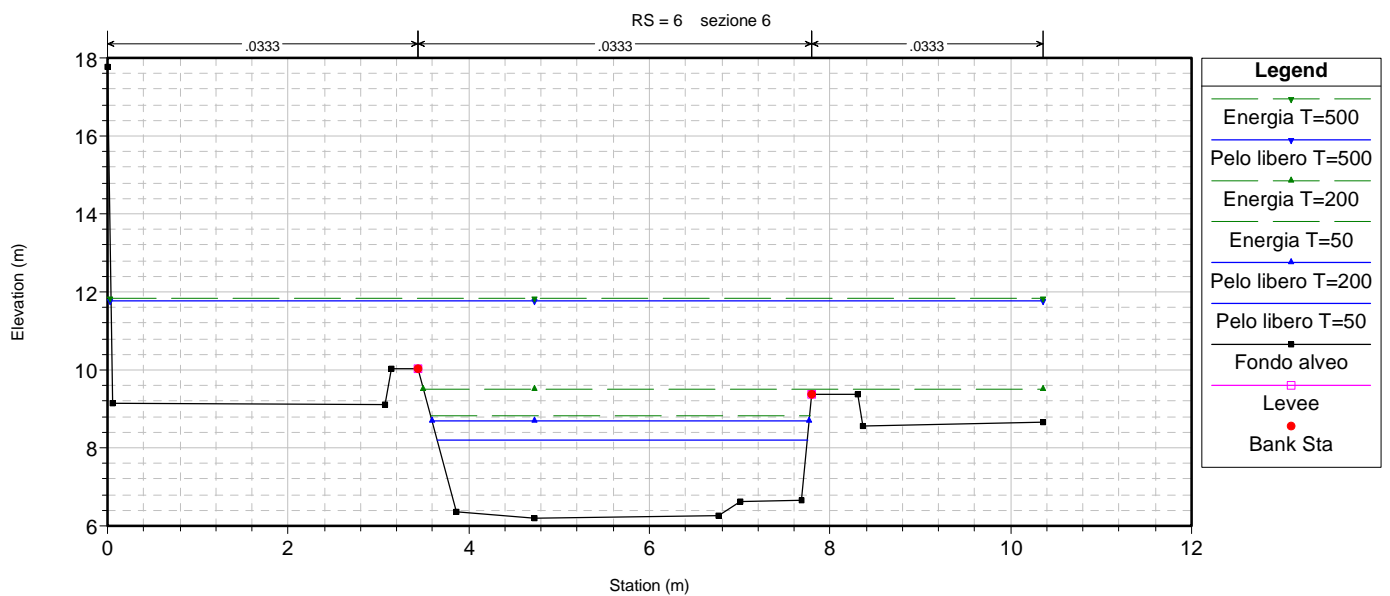
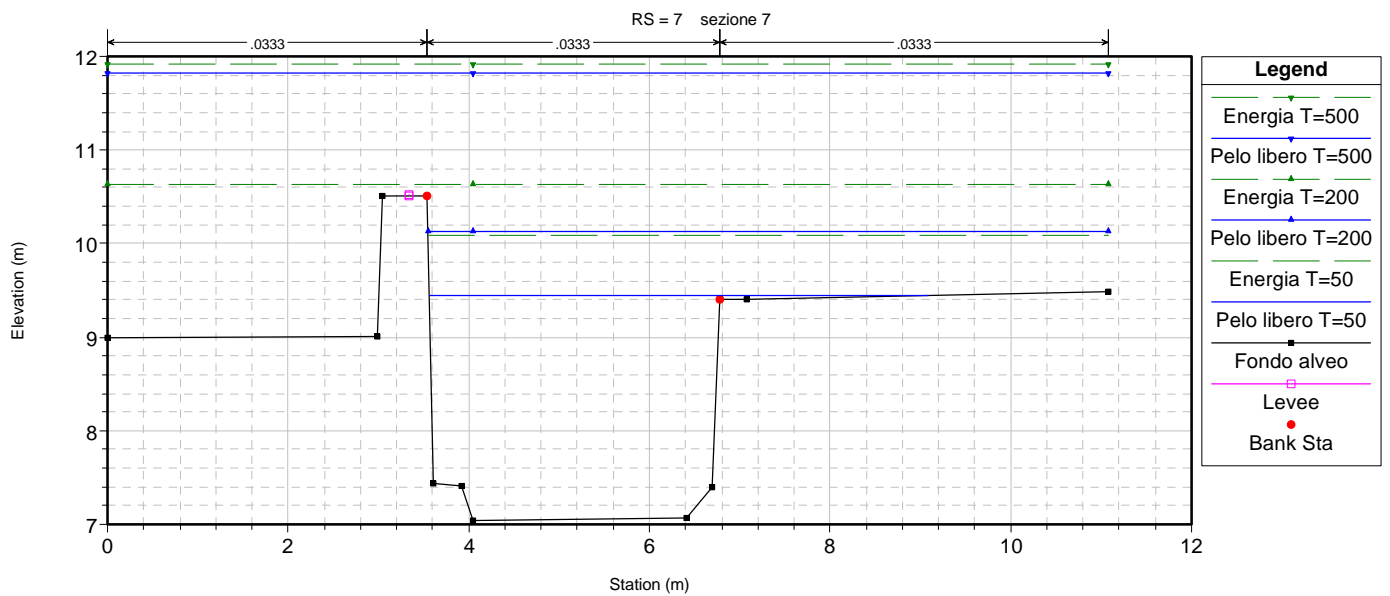
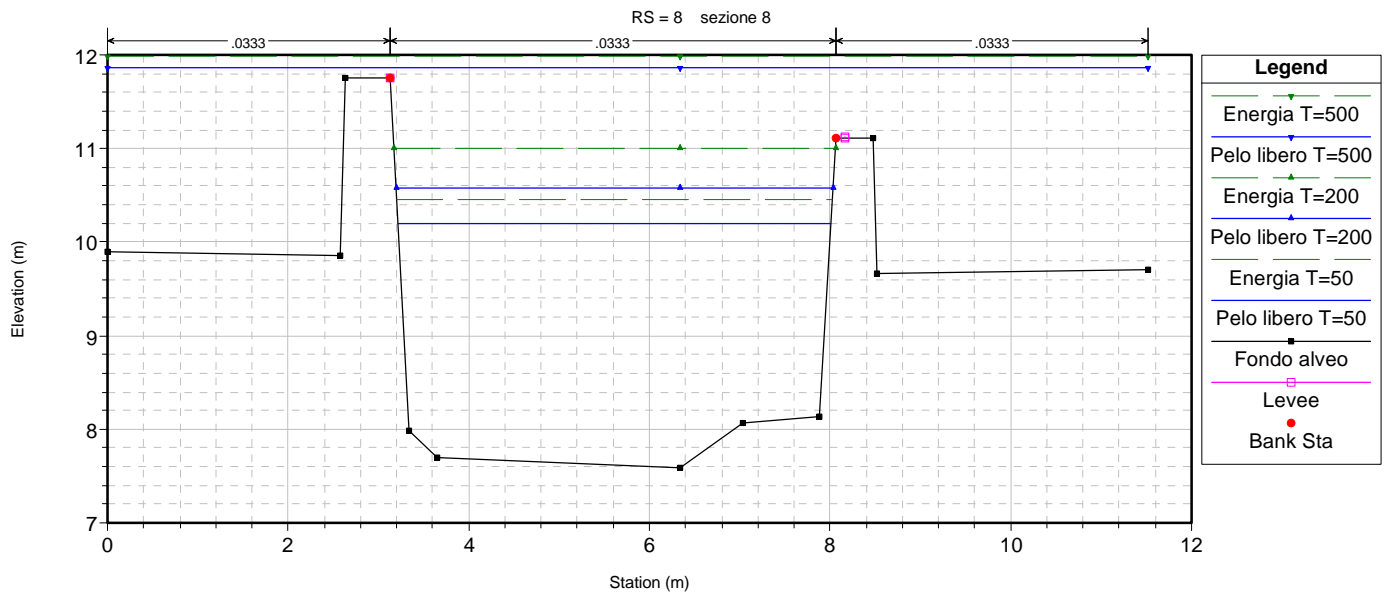


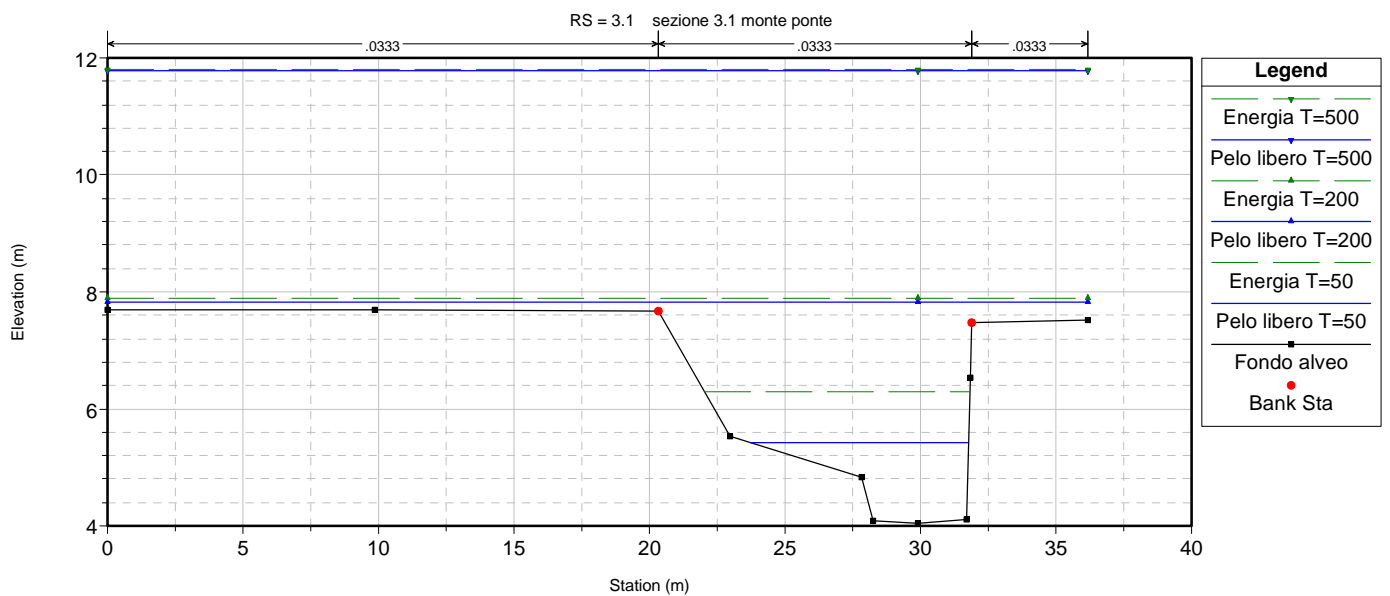
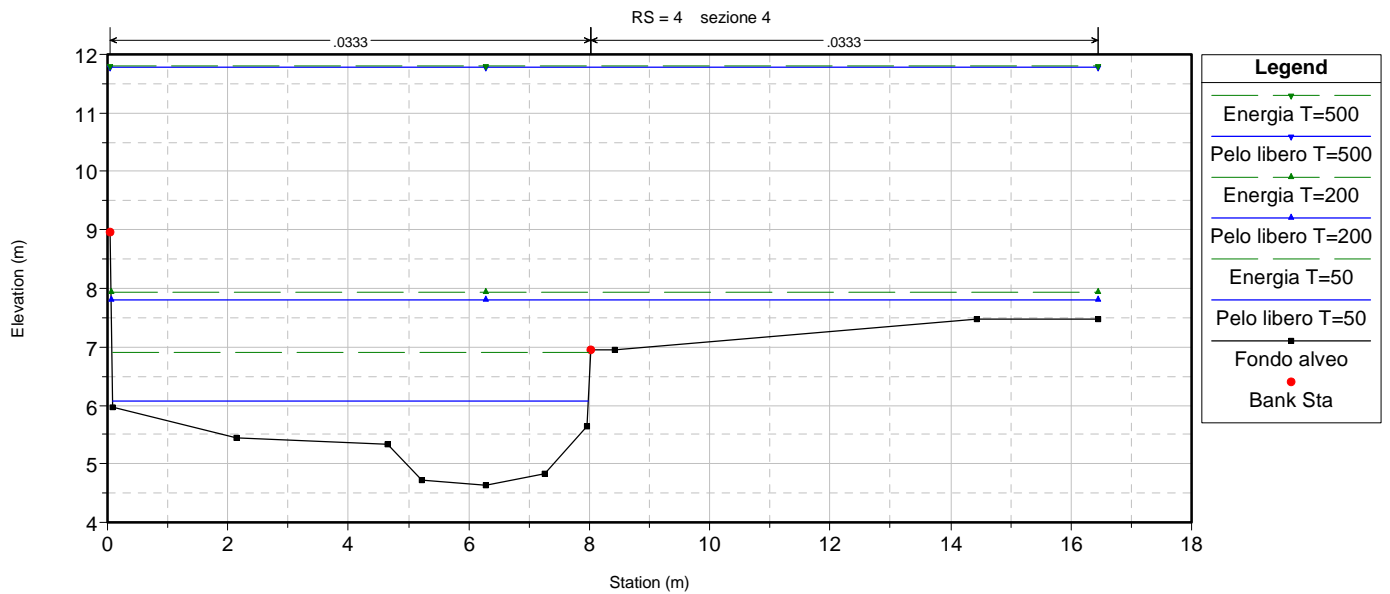
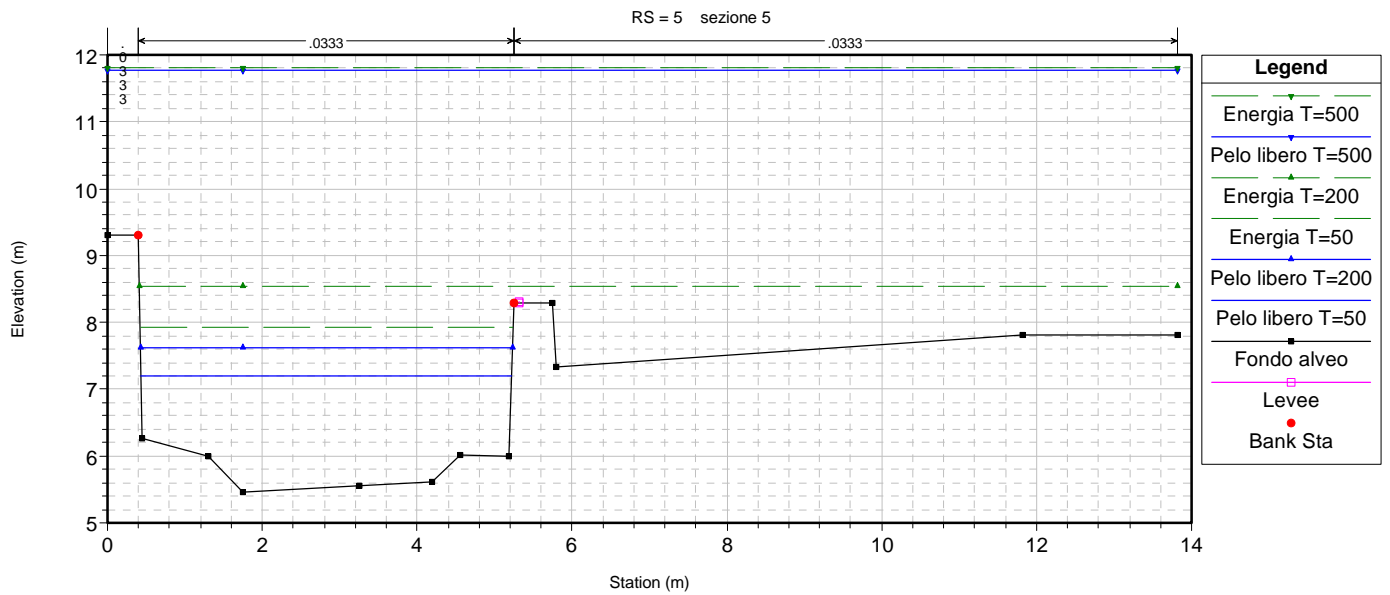


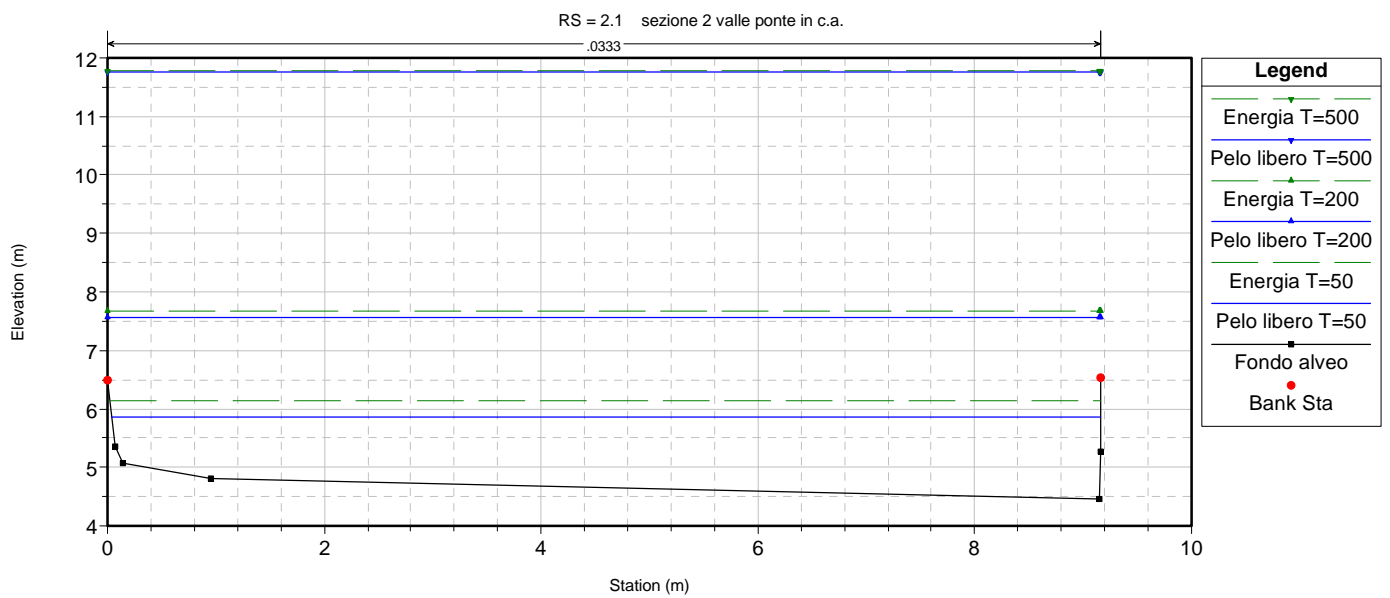
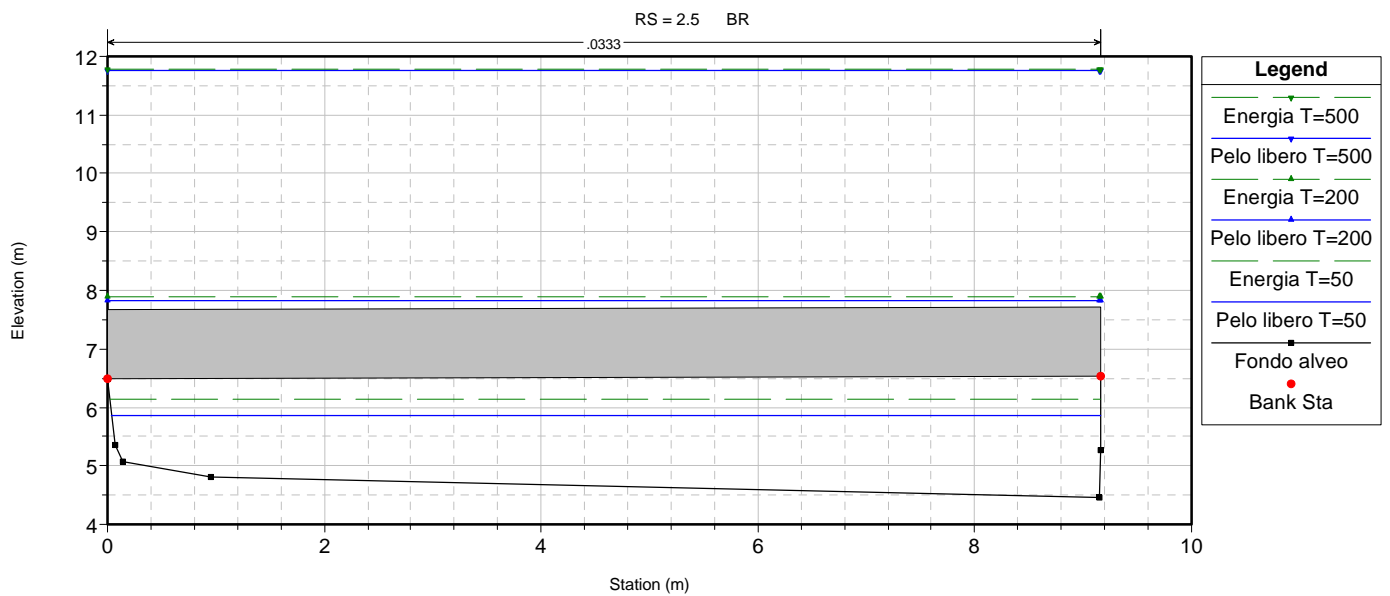
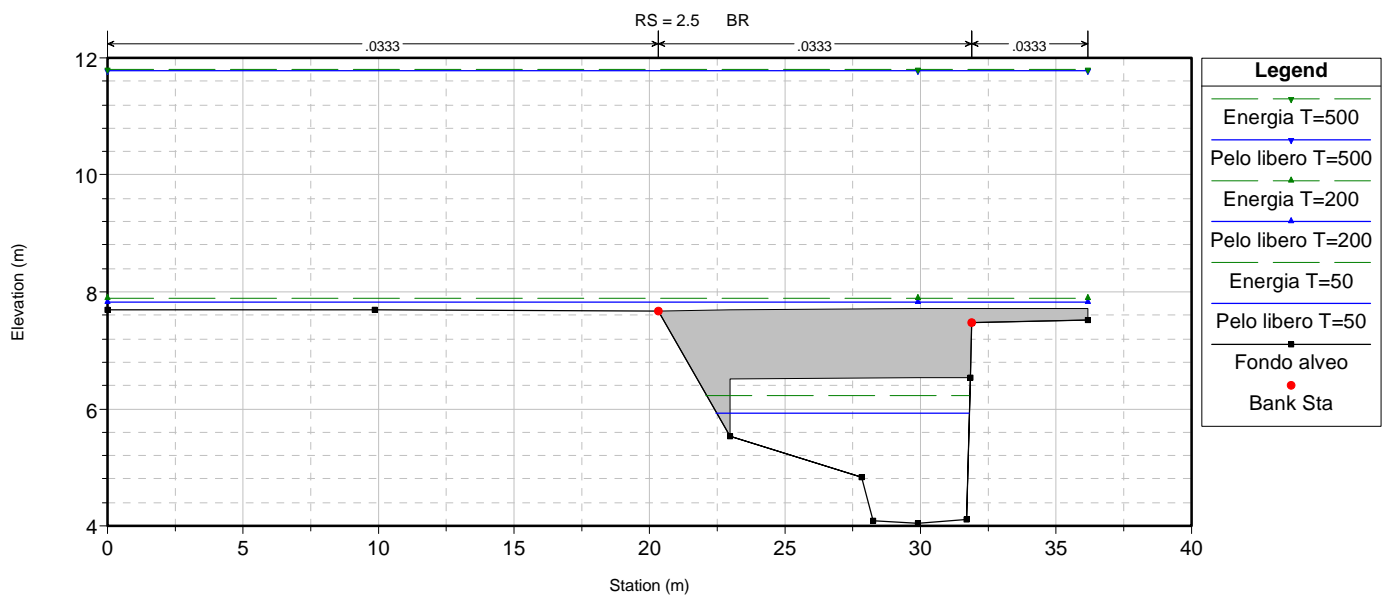


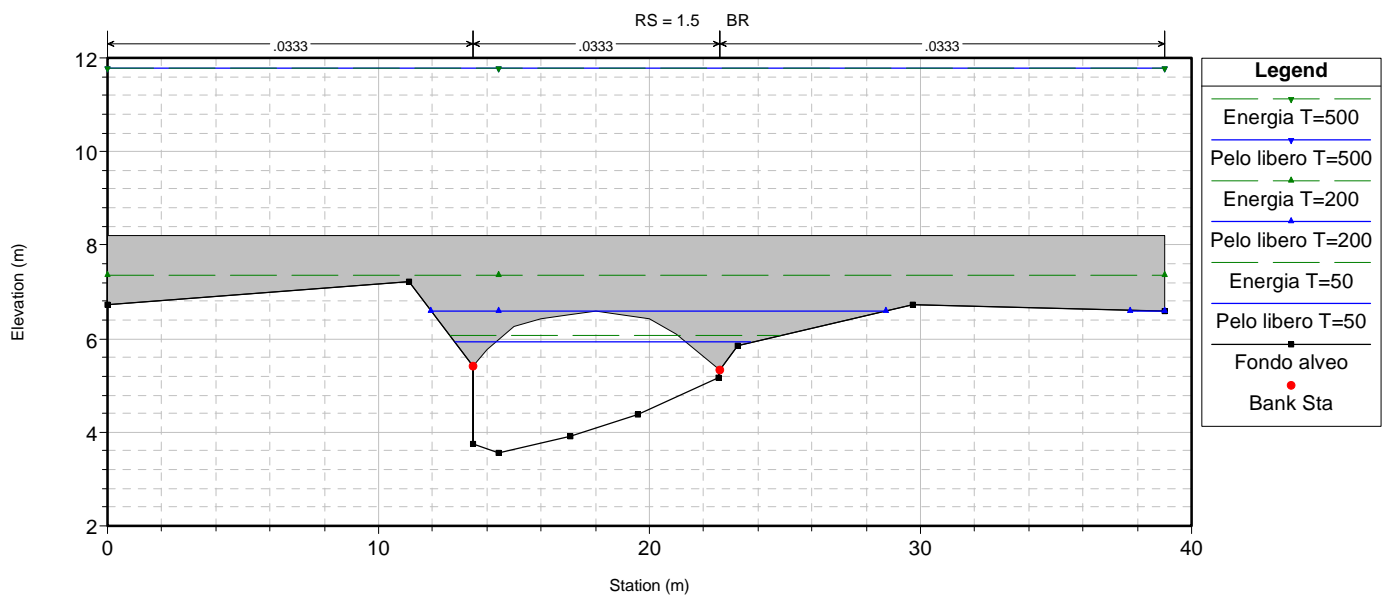
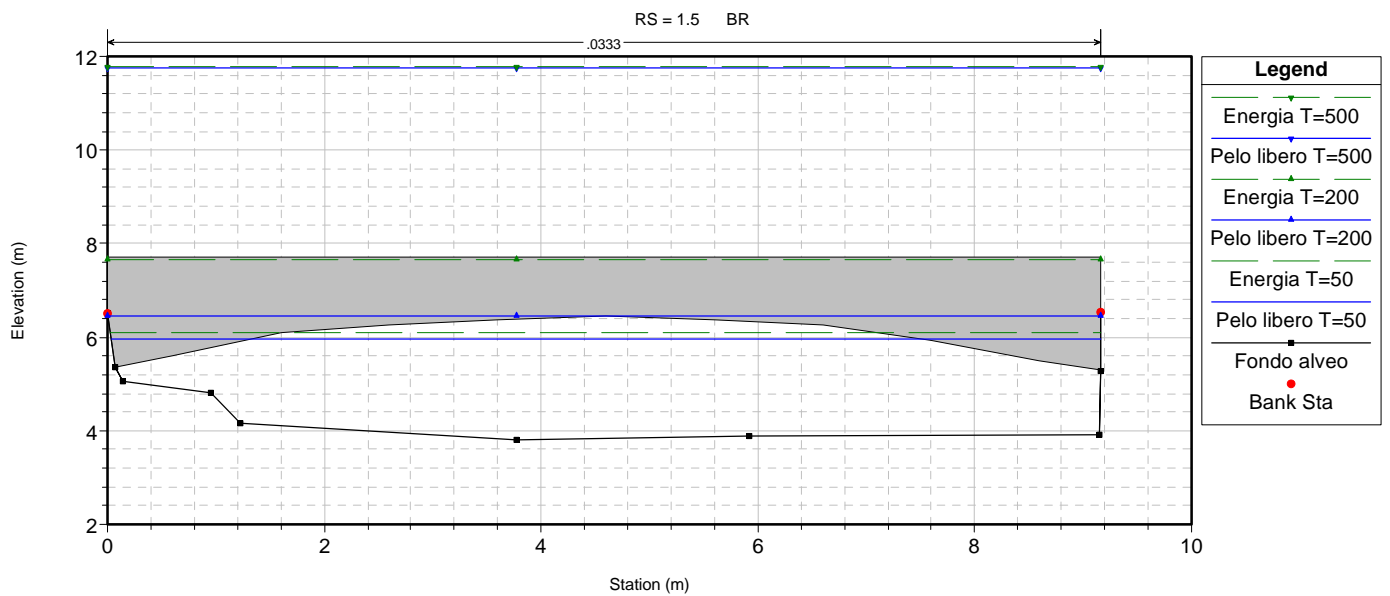
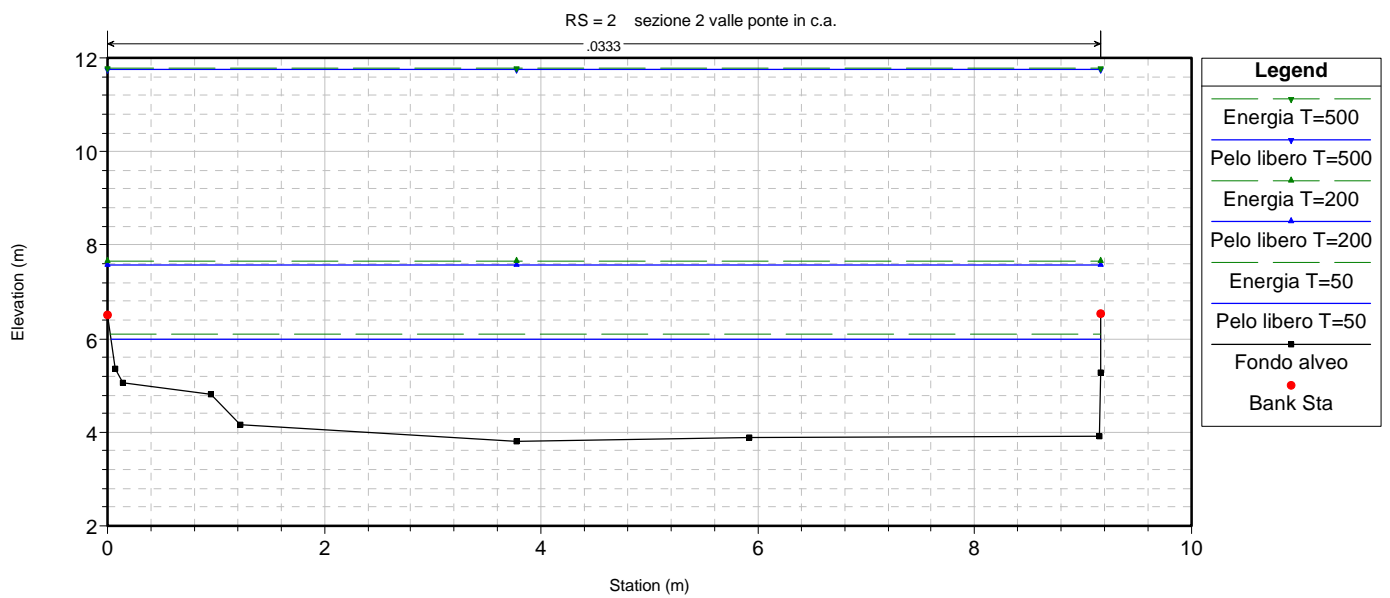


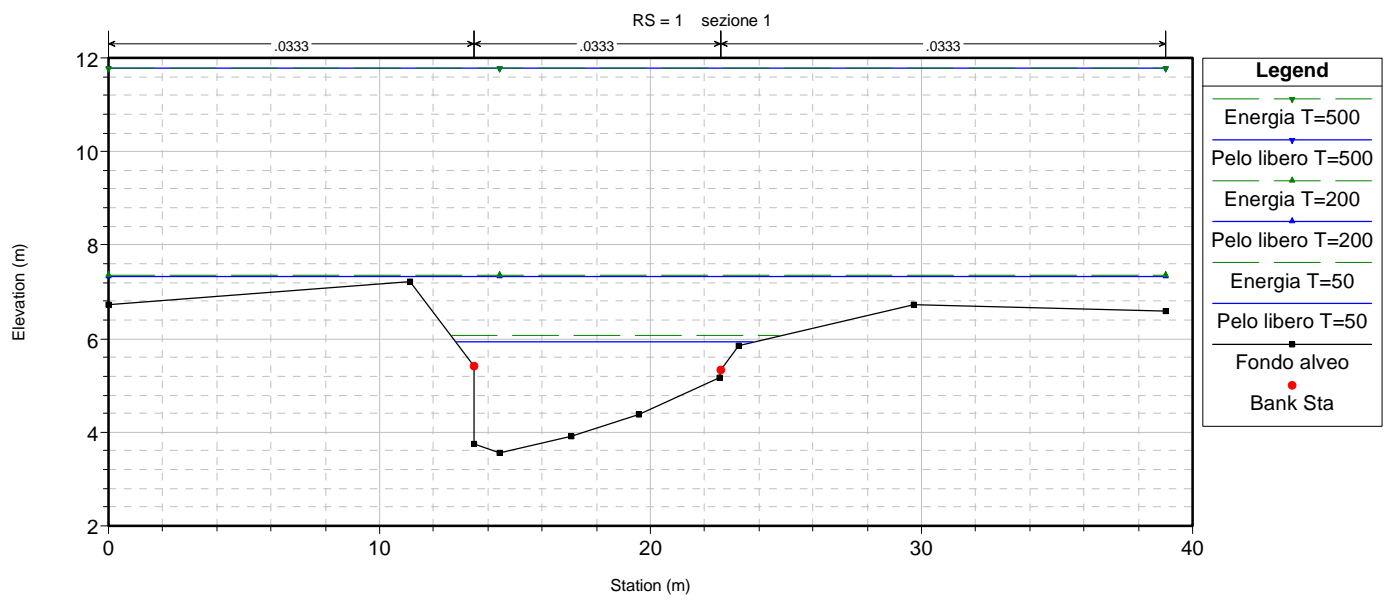












**TABELLE DELLE GRANDEZZE**

**IDRAULICHE SIGNIFICATIVE**

PER LE PORTATE

**T=50, 200, 500 ANNI**

**RIO MADONNA DEL MONTE**

**Dalla sez. 1 alla sez. 28**



**Rio Madonna del Monte T=50 anni**

Sezioni	Portata totale (m <sup>3</sup> /s)	Fondo alveo (m)	Argine sinistro (m)	Argine destro (m)	Pelo libero (m)	Profondità critica (m)	Energia (m <sup>2</sup> )	Velocità (m/s)	Area bagnata (m <sup>2</sup> )	N° Froude
28	26	25.98	27.85	27.66	26.95	27.37	28.29	5.11	5.08	1.9
27.05	26	25.3	26.76	28.02	26.17	26.25	26.68	3.17	8.2	1.14
27	26	21	25.3	26	23.8	22.02	23.87	1.14	22.74	0.22
26	26	20.98	23.19	23.19	23.12	23.01	23.79	3.65	7.12	0.91
25.5	Bridge									
25	26	19.68	21.88	21.88	21.73	21.71	22.49	3.85	6.75	0.99
24.8	26	19.63	21.83	21.83	21.77	21.66	22.44	3.65	7.13	0.91
24.5	Bridge									
24	26	18.79	21	21	20.83	20.82	21.6	3.88	6.7	1
23.8	26	18.74	20.95	20.95	20.88	20.77	21.55	3.65	7.12	0.91
23.5	Bridge									
23	26	17.97	20.18	20.18	20.01	20.01	20.78	3.89	6.69	1
22.8	26	17.97	21.94	21.94	19.24	19.65	20.7	5.34	4.87	1.53
22.5	Bridge									
22	26	16.36	17.52	20.06	17.44	18.02	19.43	6.26	4.15	2.02
21.5	Bridge									
21	26	15.4	16.84	19.75	16.54	17.07	18.32	5.92	4.39	1.87
20.5	Bridge									
20	26	14.79	18.82	18.78	15.95	16.56	18.02	6.38	4.08	1.93
19.5	Bridge									
19	26	14.15	18.19	18.18	15.8	15.93	16.77	4.37	5.95	1.14
18.5	Bridge									
18	26	13.36	17.28	17.27	15.79	14.94	16.12	2.52	10.3	0.52
17.5	Bridge									
17	26	13.1	16.92	16.9	15.6	14.75	15.94	2.59	10.05	0.53
16.5	Bridge									
16	26	12.68	17.18	17.23	15.69	14.23	15.86	1.81	14.36	0.34
15.5	Culvert									
15	26	12.39	14.79	14.79	15.23	14.34	15.52	2.42	10.75	0.5
14.5	Culvert									
14	26	10.64	14.14	14.09	13.64		13.84	1.98	13.1	0.39
13.2	26	10.58	14.21	15.22	12.96	12.76	13.76	3.95	6.58	0.87
13.1	26	10.58	14.21	15.22	12.76	12.76	13.73	4.37	5.95	1
13	26	9.92	14.21	15.22	11.59	12.2	13.62	6.32	4.11	1.64
12.1	26	9.58	12.57	12.39	10.8	11.49	13.17	6.83	3.81	2.08
12.05	Bridge									
12	26	9.58	12.57	12.39	12.28	11.5	12.69	2.83	9.19	0.58
11	26	9.23	15	12.73	11.4	11.4	12.3	4.19	6.21	1
10	26	8.25	12.1	12.7	10.34	9.93	10.82	3.07	8.47	0.71
9	26	7.9	11.85	11.6	10.2	9.6	10.59	2.77	9.38	0.61
8	26	7.59	11.76	11.11	10.19	9.26	10.46	2.31	11.26	0.48
7	26	7.04	10.51	9.4	9.44	9.05	10.09	3.56	7.35	0.75
6	26	6.19	10.02	9.37	8.19	7.98	8.82	3.52	7.38	0.84
5	26	5.46	9.3	8.29	7.2	7.2	7.92	3.76	6.91	1
4	26	4.63	8.96	6.94	6.07	6.29	6.9	4.03	6.45	1.43
3.1	26	4.05	7.67	7.47	5.41	5.67	6.3	4.17	6.24	1.51
2.5	Bridge									
2.1	26	4.46	6.5	6.53	5.86	5.61	6.15	2.41	10.81	0.71
2	26	3.81	6.5	6.53	5.99	4.95	6.09	1.47	17.75	0.34
1.5	Bridge									
1	26	3.57	5.41	5.34	5.93	5.12	6.06	1.63	16.24	0.4



**Rio Madonna del Monte T=200 anni**

Sezioni	Portata totale (m3/s)	Fondo alveo (m)	Argine sinistro (m)	Argine destro (m)	Pelo libero (m)	Profondità critica (m)	Energia (m2)	Velocità (m/s)	Area bagnata (m2)	N° Froude
28	38	25.98	27.85	27.66	27.16	27.7	28.86	5.78	6.58	1.95
27.05	38	25.3	26.76	28.02	26.34	26.51	27.07	3.79	10.03	1.27
27	38	21	25.3	26	24.46	22.32	24.55	1.35	28.12	0.23
26	38	20.98	23.19	23.19	23.53	23.46	24.45	4.24	8.96	0.95
25.5	Bridge									
25	38	19.68	21.88	21.88	22.1	22.16	23.15	4.53	8.4	1.05
24.8	38	19.63	21.83	21.83	21.95	22.11	23.12	4.78	7.95	1.14
24.5	Bridge									
24	38	18.79	21	21	21.02	21.27	22.32	5.06	7.52	1.24
23.8	38	18.74	20.95	20.95	20.93	21.22	22.29	5.15	7.37	1.27
23.5	Bridge									
23	38	17.97	20.18	20.18	20.1	20.45	21.56	5.36	7.08	1.35
22.8	38	17.97	21.94	21.94	19.58	20.12	21.5	6.14	6.18	1.56
22.5	Bridge									
22	38	16.36	17.52	20.06	17.78	18.47	20.12	6.78	5.61	1.88
21.5	Bridge									
21	38	15.4	16.84	19.75	16.84	17.51	19.1	6.66	5.71	1.85
20.5	Bridge									
20	38	14.79	18.82	18.78	16.32	17.06	18.81	6.99	5.44	1.84
19.5	Bridge									
19	38	14.15	18.19	18.18	16.82	16.41	17.55	3.79	10.02	0.77
18.5	Bridge									
18	38	13.36	17.28	17.27	16.58	15.39	16.97	2.77	13.69	0.5
17.5	Bridge									
17	38	13.1	16.92	16.9	16.36	15.21	16.79	2.88	13.18	0.51
16.5	Bridge									
16	38	12.68	17.18	17.23	16.47	14.64	16.69	2.08	18.29	0.35
15.5	Culvert									
15	38	12.39	14.79	14.79	15.89	14.78	16.27	2.76	13.75	0.51
14.5	Culvert									
14	38	10.64	14.14	14.09	14.44		14.69	2.22	17.1	0.39
13.2	38	10.58	14.21	15.22	13.59	13.35	14.58	4.42	8.59	0.88
13.1	38	10.58	14.21	15.22	13.35	13.35	14.55	4.87	7.8	1
13	38	9.92	14.21	15.22	12.13	12.82	14.45	6.74	5.64	1.54
12.1	38	9.58	12.57	12.39	13.22	12	13.32	1.62	29.14	0.28
12.05	Bridge									
12	38	9.58	12.57	12.39	13.19	12.72	13.3	1.67	28.43	0.29
11	38	9.23	15	12.73	11.92	11.92	13.07	4.75	8.01	1
10	38	8.25	12.1	12.7	10.83	10.4	11.46	3.52	10.79	0.78
9	38	7.9	11.85	11.6	10.6	10.04	11.19	3.41	11.15	0.69
8	38	7.59	11.76	11.11	10.58	9.69	11.01	2.89	13.14	0.56
7	38	7.04	10.51	9.4	10.12	9.93	10.63	3.34	12.45	0.62
6	38	6.19	10.02	9.37	8.7	8.45	9.51	4	9.5	0.85
5	38	5.46	9.3	8.29	7.62	7.62	8.54	4.27	8.91	1
4	38	4.63	8.96	6.94	7.8	6.58	7.94	1.71	24.7	0.34
3.1	38	4.05	7.67	7.47	7.83	5.95	7.9	1.2	35.18	0.23
2.5	Bridge									
2.1	38	4.46	6.5	6.53	7.56		7.67	1.44	26.42	0.27
2	38	3.81	6.5	6.53	7.59	5.24	7.66	1.17	32.4	0.2
1.5	Bridge									
1	38	3.57	5.41	5.34	7.32	5.4	7.36	1.03	48.69	0.19

**Rio Madonna del Monte T=500 anni**

Sezioni	Portata totale (m3/s)	Fondo alveo (m)	Argine sinistro (m)	Argine destro (m)	Pelo libero (m)	Profondità critica (m)	Energia (m2)	Velocità (m/s)	Area bagnata (m2)	N° Froude
28	46	25.98	27.85	27.66	27.29	27.95	29.2	6.13	7.5	1.97
27.05	46	25.3	26.76	28.02	26.44	26.66	27.31	4.14	11.1	1.33
27	46	21	25.3	26	24.85	22.49	24.96	1.46	31.43	0.24
26	46	20.98	23.19	23.19	23.87	23.73	24.86	4.4	10.46	0.91
25.5	Bridge									
25	46	19.68	21.88	21.88	22.3	22.43	23.56	4.97	9.26	1.09
24.8	46	19.63	21.83	21.83	22.18	22.38	23.52	5.13	8.97	1.15
24.5	Bridge									
24	46	18.79	21	21	21.32	21.54	22.69	5.19	8.87	1.17
23.8	46	18.74	20.95	20.95	21.23	21.48	22.66	5.31	8.67	1.21
23.5	Bridge									
23	46	17.97	20.18	20.18	20.35	20.72	21.95	5.61	8.2	1.31
22.8	46	17.97	21.94	21.94	19.85	20.41	21.89	6.33	7.27	1.49
22.5	Bridge									
22	46	16.36	17.52	20.06	18	18.75	20.53	7.05	6.52	1.81
21.5	Bridge									
21	46	15.4	16.84	19.75	17.03	17.77	19.55	7.03	6.55	1.83
20.5	Bridge									
20	46	14.79	18.82	18.78	16.56	17.35	19.27	7.3	6.31	1.78
19.5	Bridge									
19	46	14.15	18.19	18.18	17.34	16.69	18.07	3.8	12.1	0.7
18.5	Bridge									
18	46	13.36	17.28	17.27	17.1	15.66	17.52	2.89	15.94	0.48
17.5	Bridge									
17	46	13.1	16.92	16.9	16.87	15.49	17.34	3.01	15.27	0.5
16.5	Bridge									
16	46	12.68	17.18	17.23	16.99	14.88	17.23	2.2	20.89	0.35
15.5	Culvert									
15	46	12.39	14.79	14.79	16.29	15.04	16.74	2.95	15.59	0.51
14.5	Culvert									
14	46	10.64	14.14	14.09	14.9		15.19	2.36	19.48	0.39
13.2	46	10.58	14.21	15.22	13.96	13.7	15.07	4.68	9.84	0.88
13.1	46	10.58	14.21	15.22	13.7	13.7	15.04	5.14	8.95	1
13	46	9.92	14.21	15.22	12.46	13.18	14.93	6.95	6.61	1.49
12.1	46	9.58	12.57	12.39	13.67	12.83	13.74	1.35	39.56	0.22
12.05	Bridge									
12	46	9.58	12.57	12.39	13.66	12.83	13.73	1.36	39.45	0.22
11	46	9.23	15	12.73	12.23	12.23	13.53	5.05	9.1	1
10	46	8.25	12.1	12.7	11.78	10.72	12.19	2.81	16.35	0.57
9	46	7.9	11.85	11.6	11.88	10.31	12.03	1.84	28.91	0.31
8	46	7.59	11.76	11.11	11.87	9.95	11.99	1.68	31.64	0.27
7	46	7.04	10.51	9.4	11.83	10.13	11.92	1.46	34.49	0.22
6	46	6.19	10.02	9.37	11.76	8.74	11.84	1.36	38.99	0.19
5	46	5.46	9.3	8.29	11.78	7.87	11.8	0.73	65.22	0.09
4	46	4.63	8.96	6.94	11.78		11.8	0.53	90.03	0.07
3.1	46	4.05	7.67	7.47	11.79	6.12	11.79	0.3	178.55	0.04
2.5	Bridge									
2.1	46	4.46	6.5	6.53	11.76		11.79	0.71	64.88	0.09
2	46	3.81	6.5	6.53	11.76	5.41	11.78	0.65	70.65	0.07
1.5	Bridge									
1	46	3.57	5.41	5.34	11.77	5.57	11.77	0.26	222.19	0.03