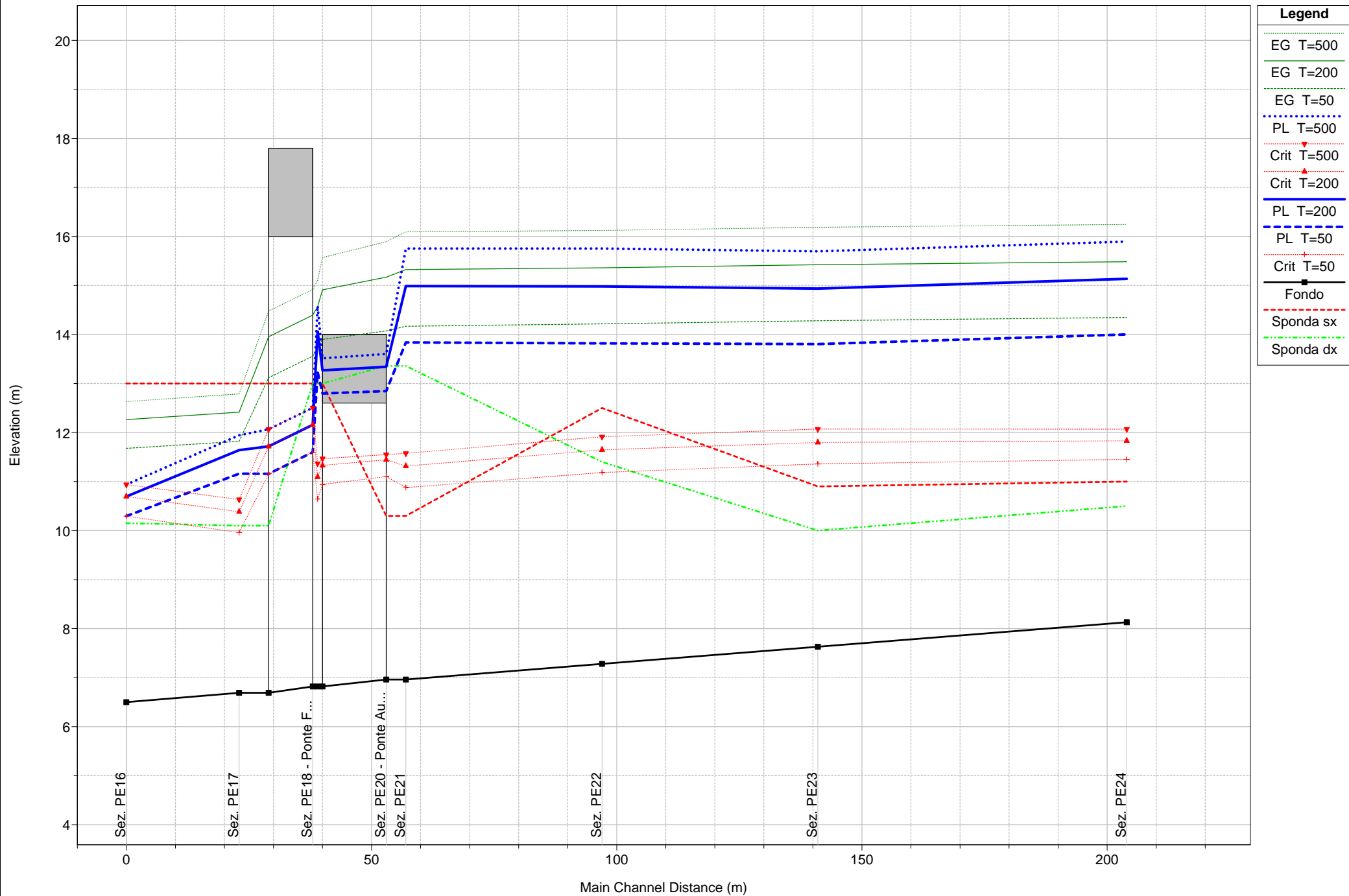
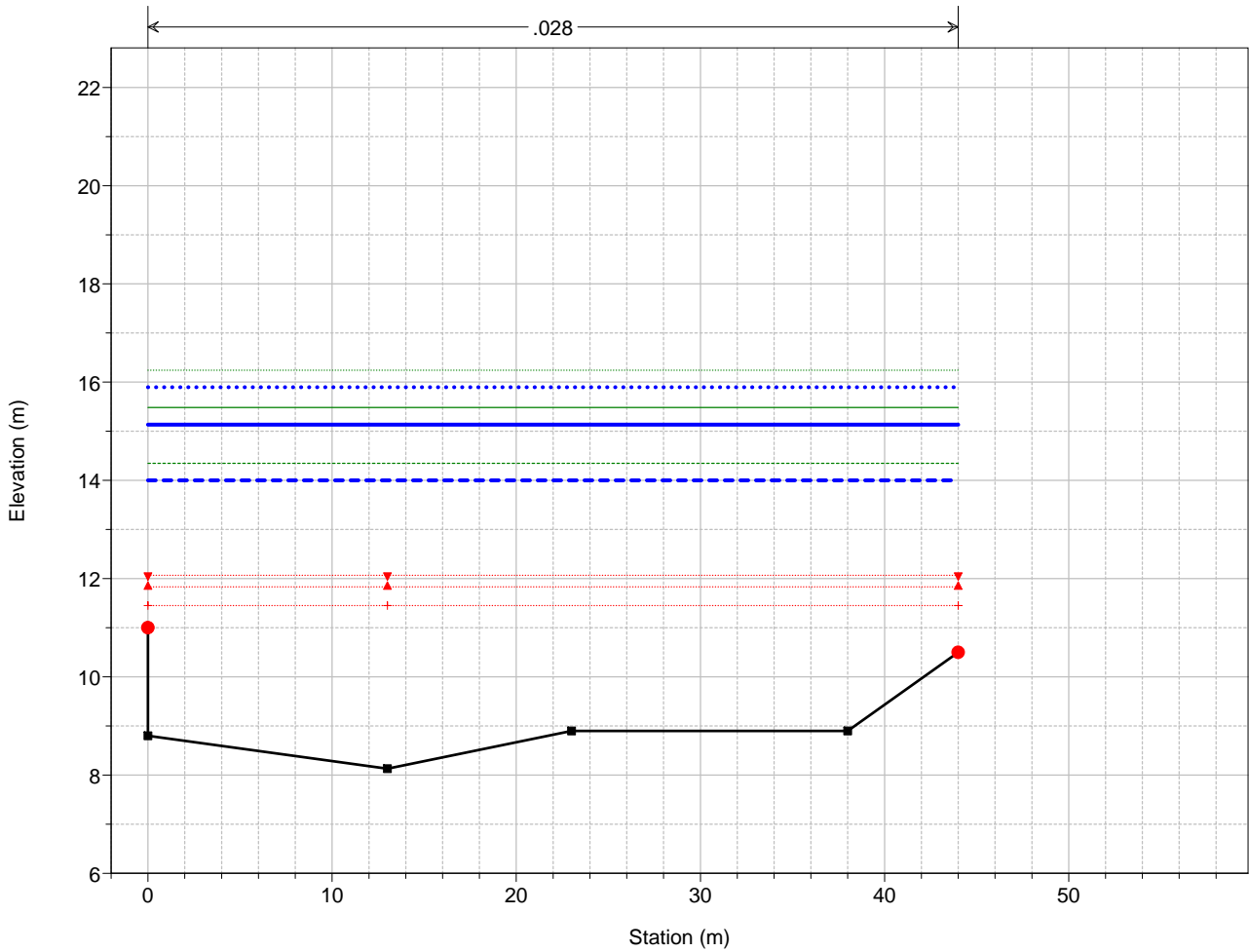


T. Petronio - Ponti Aurelia e FF.SS.



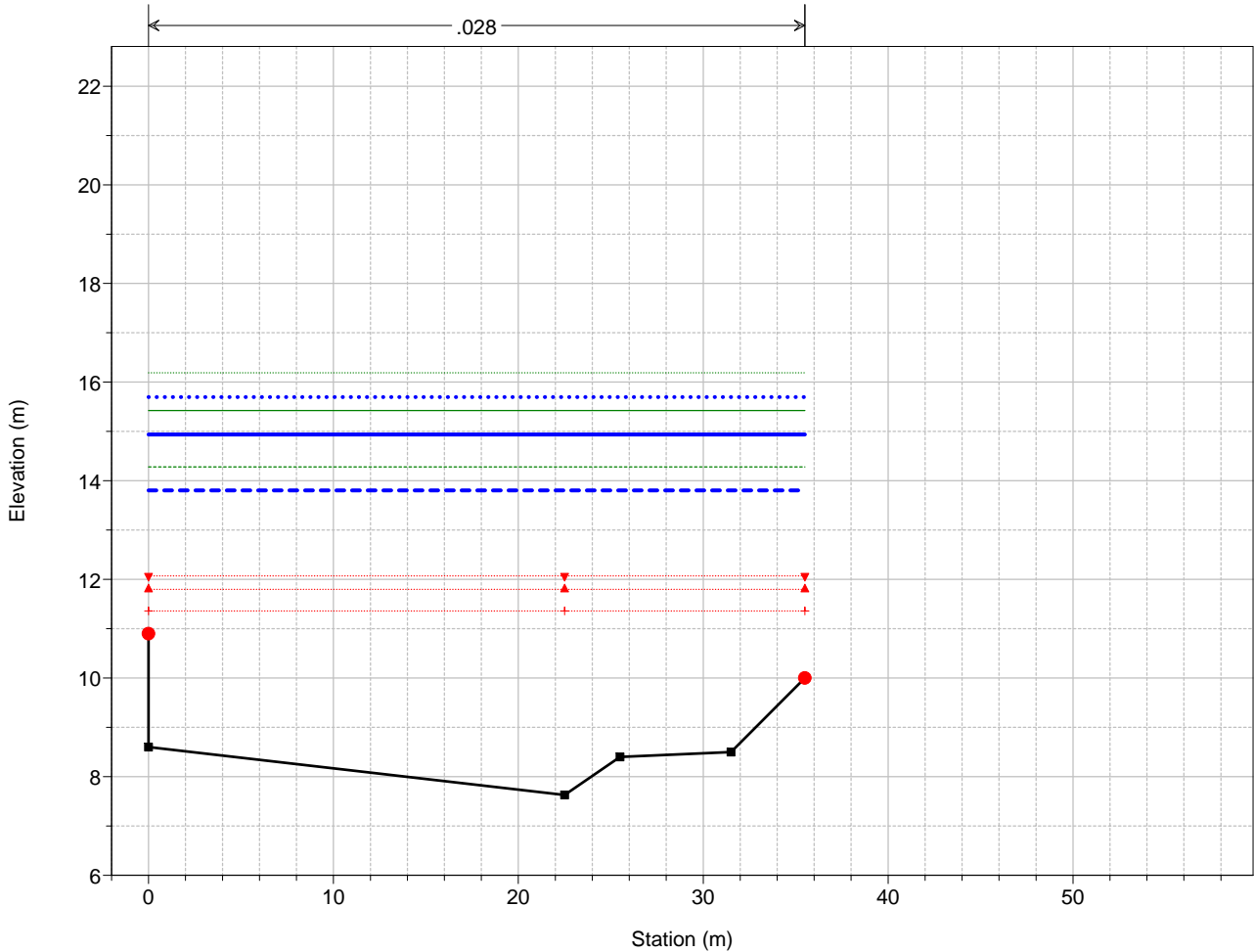
1 cm Horiz. = 10 m 1 cm Vert. = 1 m

T. Petronio - Ponti Aurelia e FF.SS.
Sez. PE24



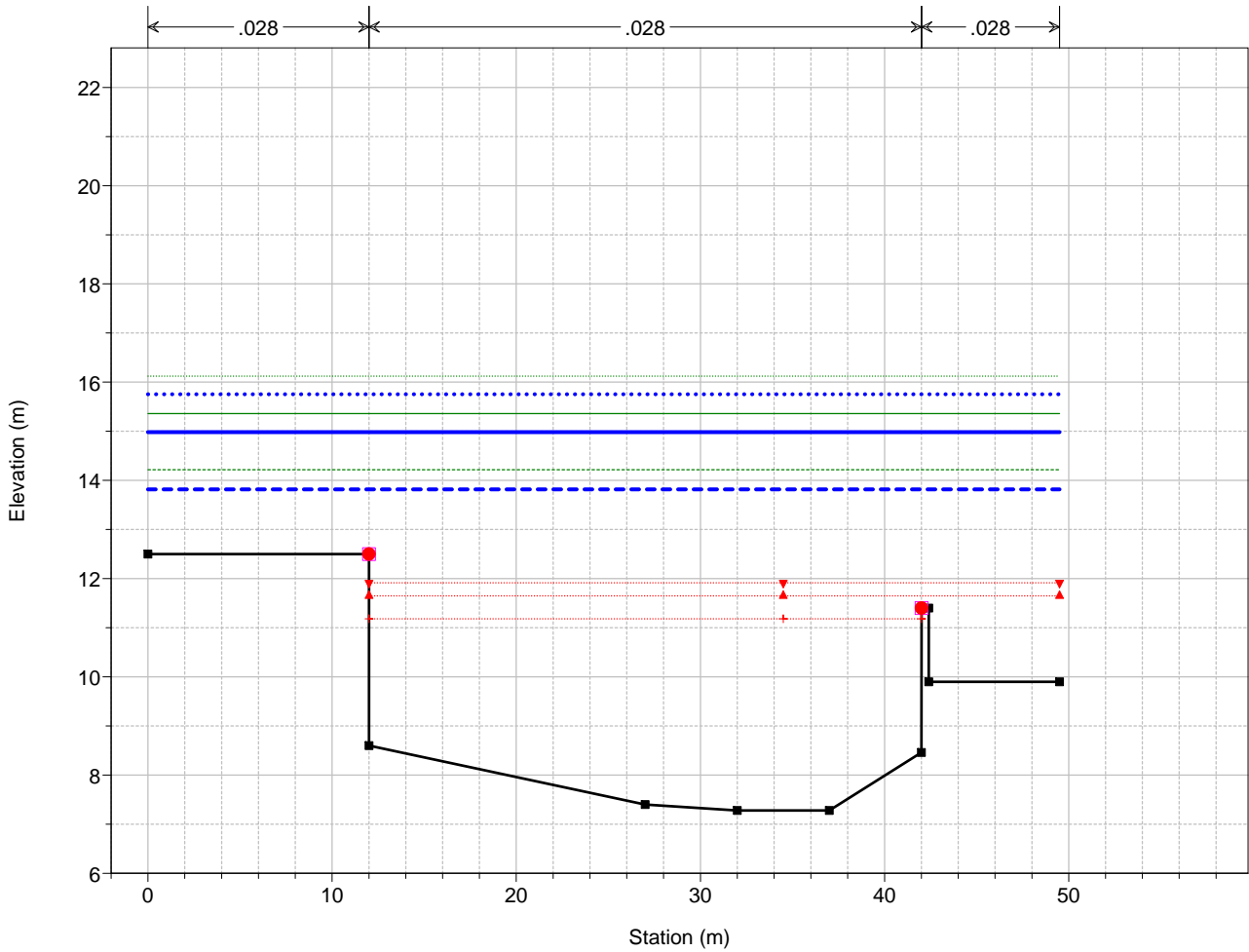
Legend	
EG T=500	(Dotted green line)
PL T=500	(Dotted blue line)
EG T=200	(Solid green line)
PL T=200	(Solid blue line)
EG T=50	(Dashed green line)
PL T=50	(Dashed blue line)
Crit T=500	(Red inverted triangle)
Crit T=200	(Red triangle)
Crit T=50	(Red cross)
Fondo	(Black square)
Sponda	(Red circle)

T. Petronio - Ponti Aurelia e FF.SS.
Sez. PE23

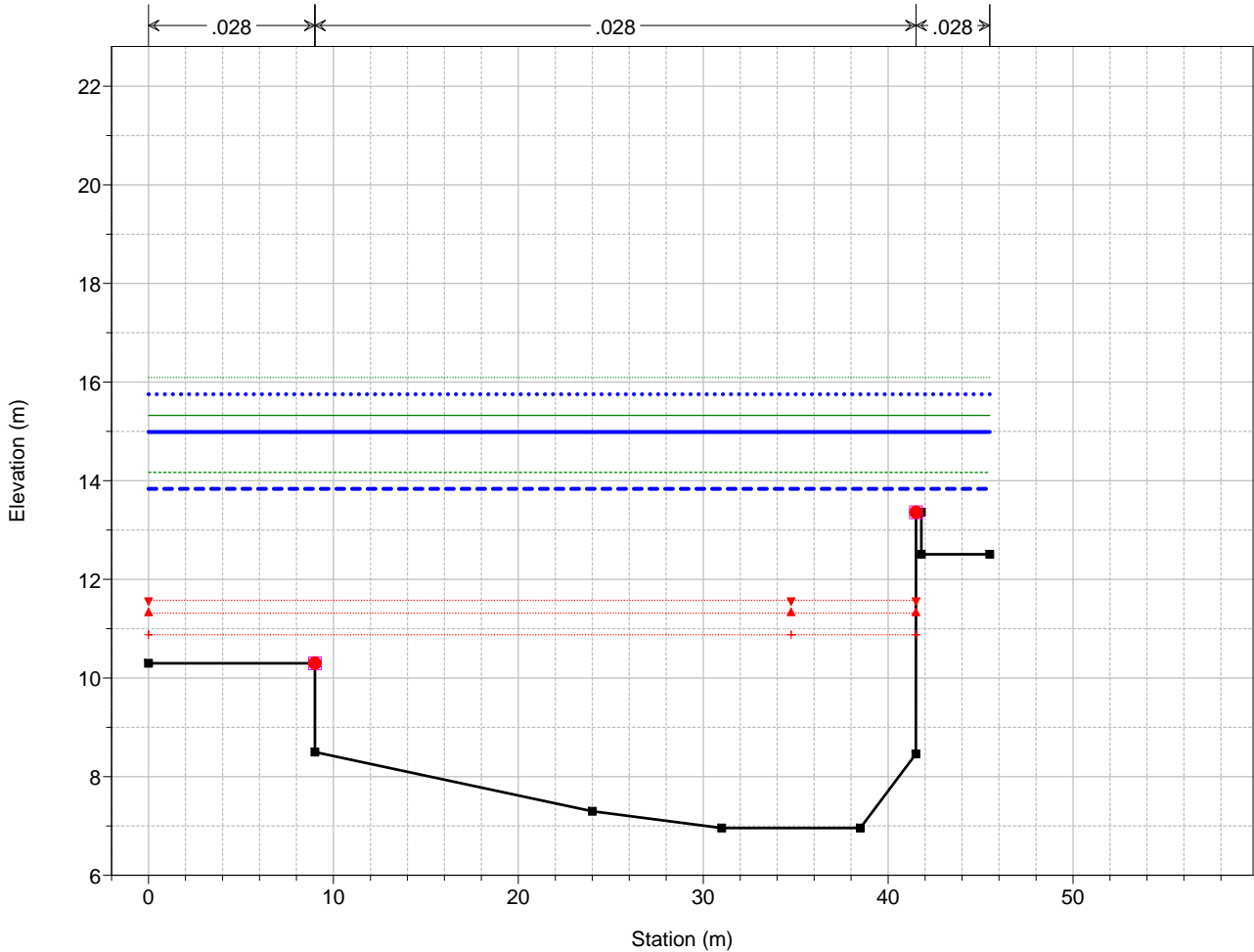


Legend	
EG T=500	(Dotted green line)
PL T=500	(Dotted blue line)
EG T=200	(Solid green line)
PL T=200	(Solid blue line)
EG T=50	(Dashed green line)
PL T=50	(Dashed blue line)
Crit T=500	(Red inverted triangle)
Crit T=200	(Red triangle)
Crit T=50	(Red cross)
Fondo	(Black square)
Sponda	(Red circle)

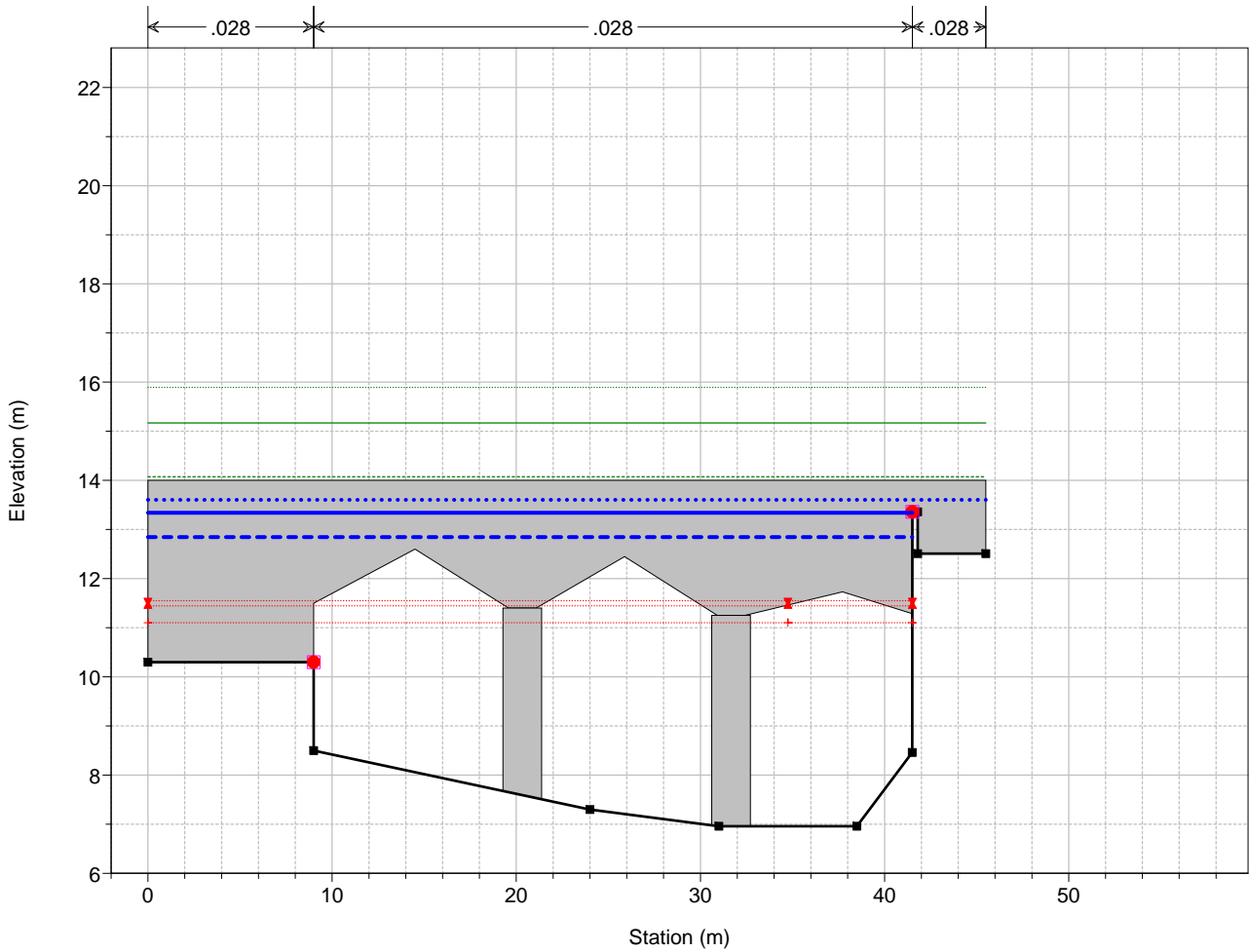
T. Petronio - Ponti Aurelia e FF.SS.
Sez. PE22



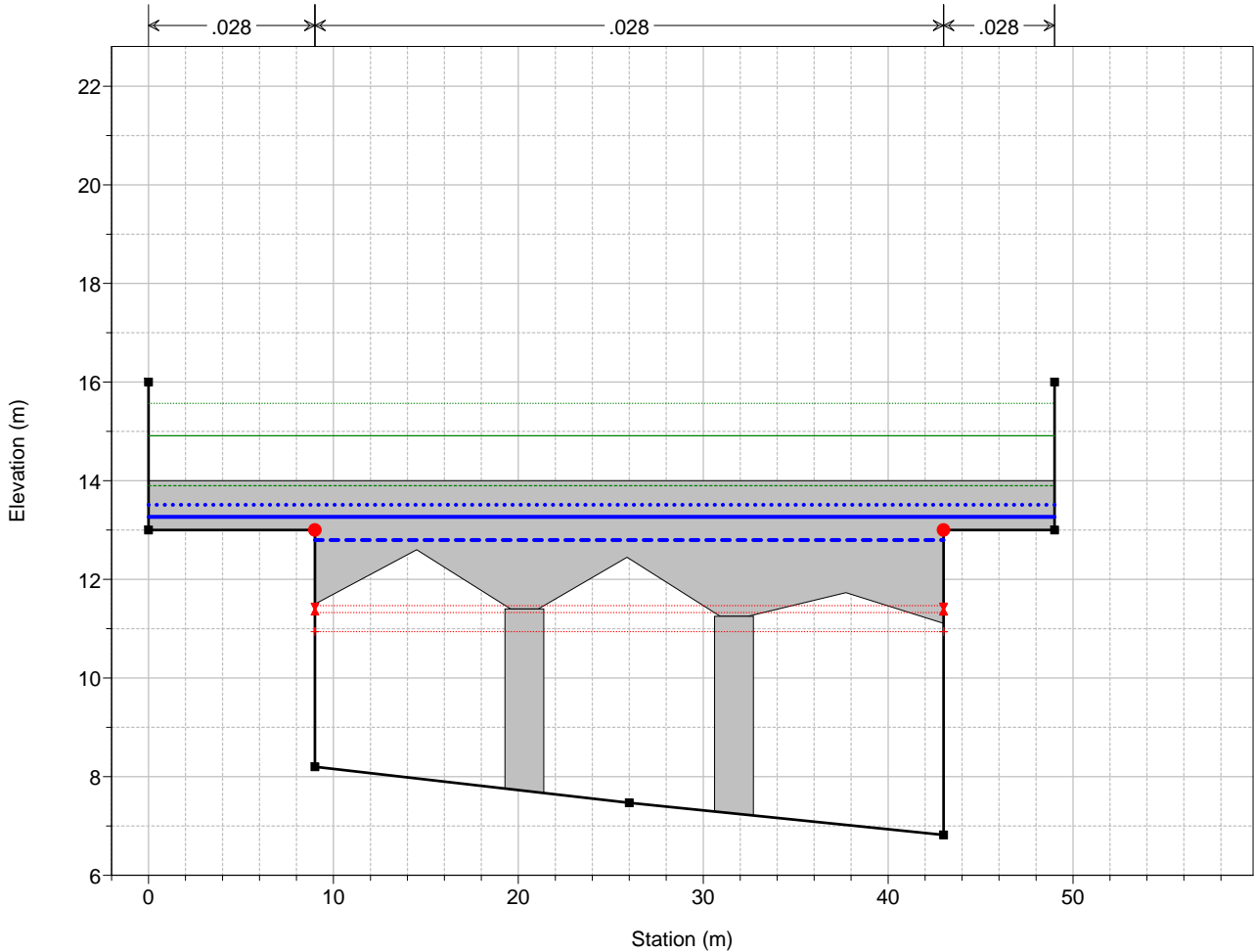
T. Petronio - Ponti Aurelia e FF.SS.
Sez. PE21



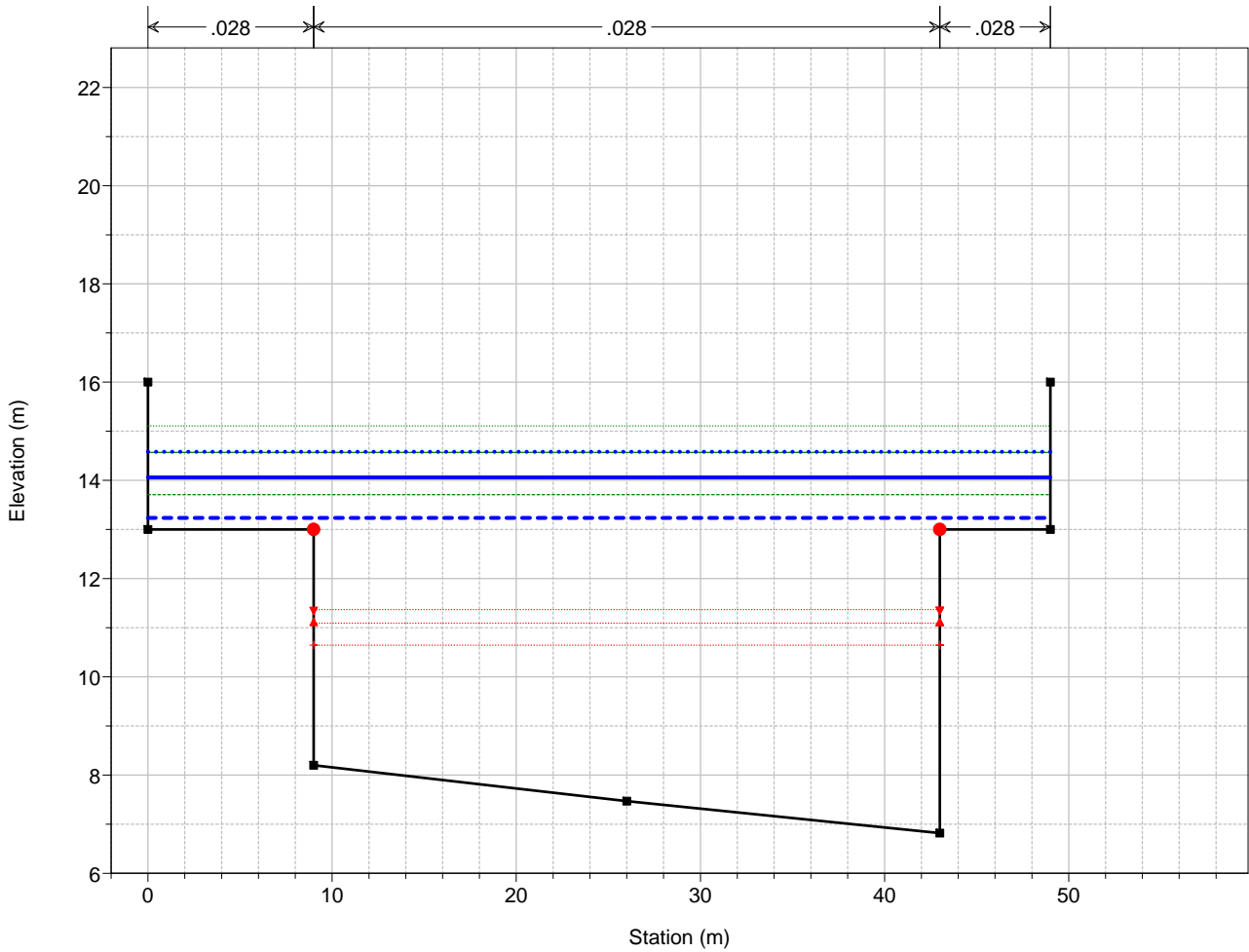
T. Petronio - Ponti Aurelia e FF.SS.
Sez. PE20 - Ponte Aurelia



T. Petronio - Ponti Aurelia e FF.SS.
Sez. PE20 - Ponte Aurelia

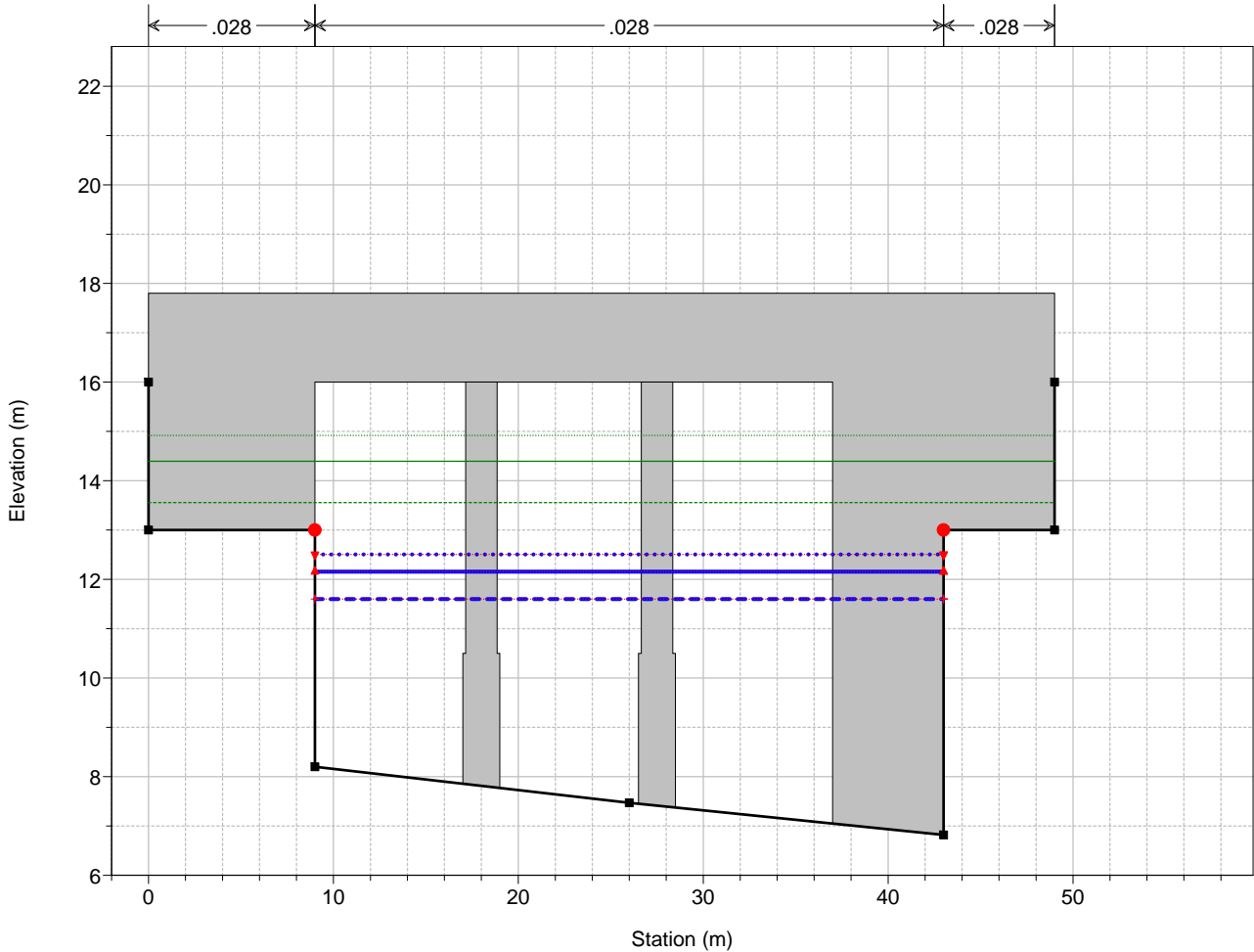


T. Petronio - Ponti Aurelia e FF.SS.
Sez. PE19



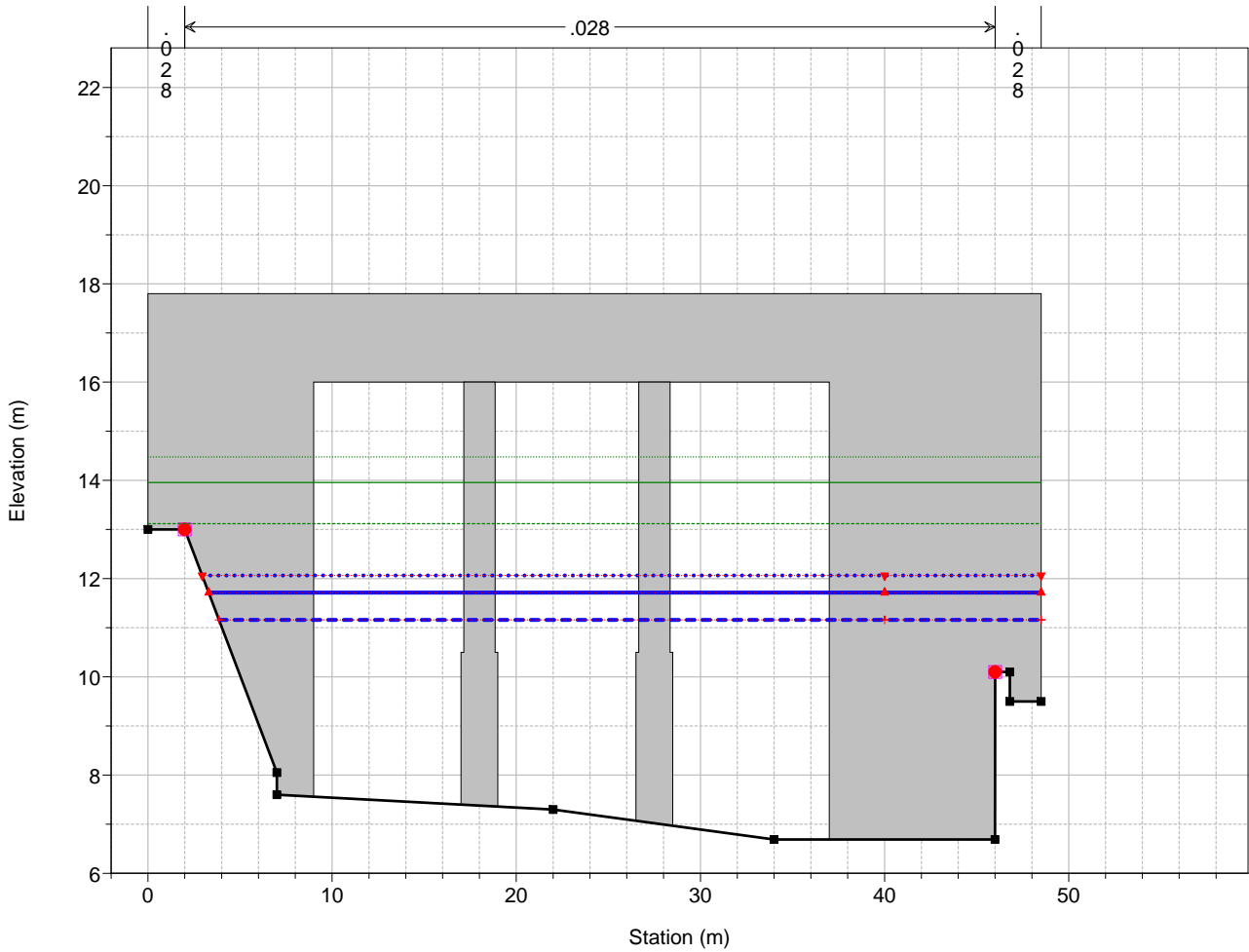
Legend	
EG T=500	(Dotted Green Line)
PL T=500	(Dotted Blue Line)
EG T=200	(Dotted Green Line)
PL T=200	(Solid Blue Line)
EG T=50	(Dotted Green Line)
PL T=50	(Dashed Blue Line)
Crit T=500	(Red Triangle)
Crit T=200	(Red Triangle)
Crit T=50	(Red Triangle)
Fondo	(Black Square)
Sponda	(Red Circle)

T. Petronio - Ponti Aurelia e FF.SS.
Sez. PE18 - Ponte FF.SS.

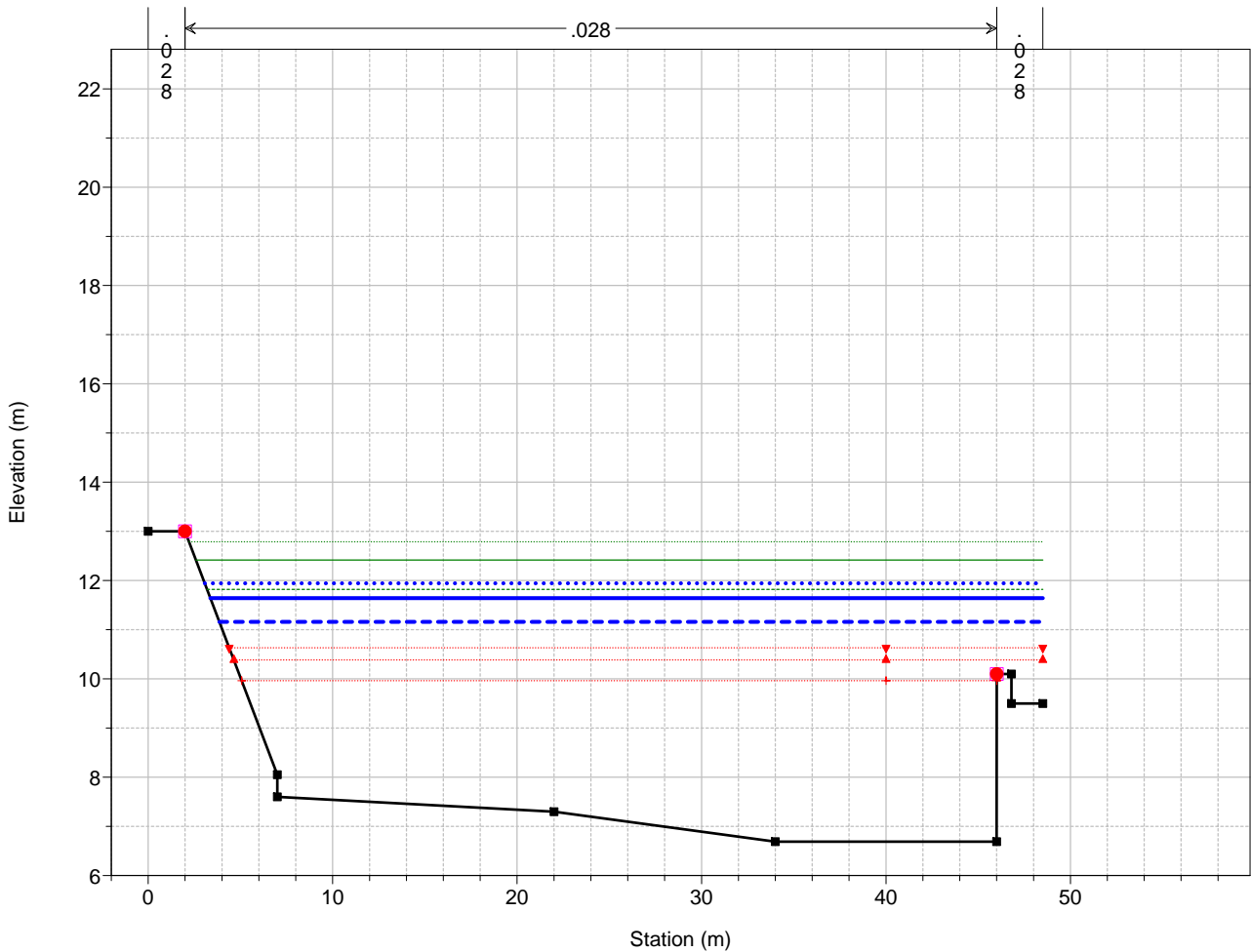


Legend	
EG T=500	(Dotted Green Line)
EG T=200	(Dotted Green Line)
EG T=50	(Dotted Green Line)
PL T=500	(Dotted Blue Line)
Crit T=500	(Red Triangle)
Crit T=200	(Red Triangle)
PL T=200	(Solid Blue Line)
PL T=50	(Dashed Blue Line)
Crit T=50	(Red Triangle)
Fondo	(Black Square)
Sponda	(Red Circle)

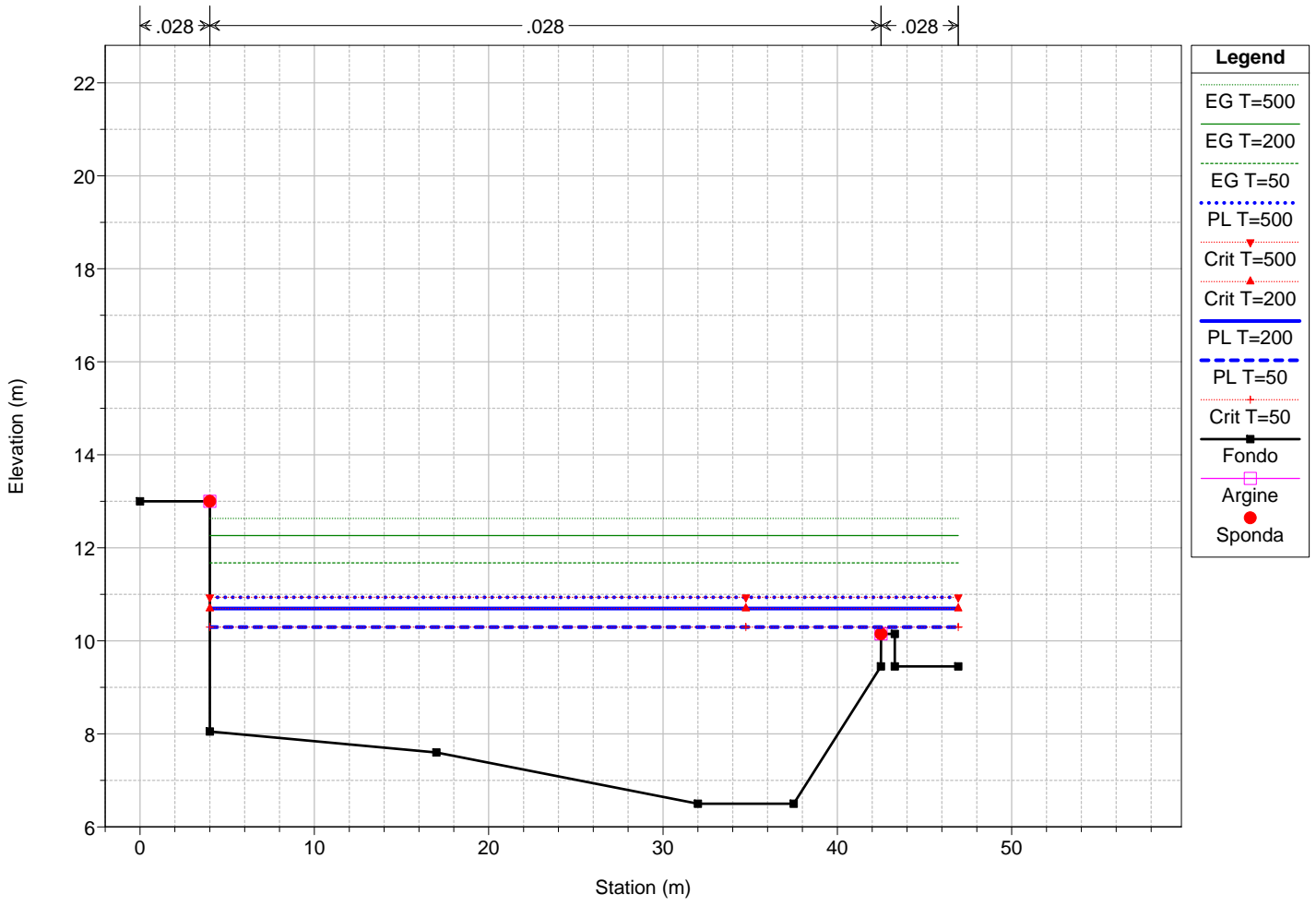
T. Petronio - Ponti Aurelia e FF.SS.
Sez. PE18 - Ponte FF.SS.



T. Petronio - Ponti Aurelia e FF.SS.
Sez. PE17



T. Petronio - Ponti Aurelia e FF.SS.
Sez. PE16



HEC-RAS Plan: Pp3 River: T. Petronio Reach: Tratto 3

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
Tratto 3	24	T=50	598.00	8.13	14.00	11.00	-3.00	10.50	-3.50	11.45	14.35	0.000757	2.61	229.15	44.00	0.37
Tratto 3	24	T=200	730.00	8.13	15.14	11.00	-4.14	10.50	-4.64	11.83	15.48	0.000619	2.62	279.07	44.00	0.33
Tratto 3	24	T=500	817.00	8.13	15.90	11.00	-4.90	10.50	-5.40	12.07	16.24	0.000551	2.61	312.52	44.00	0.31
Tratto 3	23	T=50	598.00	7.63	13.80	10.90	-2.90	10.00	-3.80	11.36	14.28	0.001028	3.06	195.71	35.50	0.42
Tratto 3	23	T=200	730.00	7.63	14.94	10.90	-4.04	10.00	-4.94	11.80	15.42	0.000878	3.09	235.90	35.50	0.38
Tratto 3	23	T=500	817.00	7.63	15.70	10.90	-4.80	10.00	-5.70	12.07	16.19	0.000799	3.11	262.87	35.50	0.36
Tratto 3	22	T=50	598.00	7.28	13.82	12.50	-1.32	11.40	-2.42	11.18	14.22	0.000796	2.91	226.73	49.50	0.38
Tratto 3	22	T=200	730.00	7.28	14.98	12.50	-2.48	11.40	-3.58	11.65	15.36	0.000613	2.87	284.25	49.50	0.34
Tratto 3	22	T=500	817.00	7.28	15.75	12.50	-3.25	11.40	-4.35	11.91	16.12	0.000526	2.85	322.54	49.50	0.32
Tratto 3	21	T=50	598.00	6.96	13.84	10.30	-3.54	13.36	-0.48	10.88	14.17	0.000603	2.63	242.87	45.50	0.33
Tratto 3	21	T=200	730.00	6.96	14.99	10.30	-4.69	13.36	-1.63	11.31	15.32	0.000496	2.67	295.20	45.50	0.31
Tratto 3	21	T=500	817.00	6.96	15.75	10.30	-5.45	13.36	-2.39	11.58	16.09	0.000441	2.69	330.12	45.50	0.30
Tratto 3	20		Bridge													
Tratto 3	19	T=50	598.00	6.82	13.23	13.00	-0.23	13.00	-0.23	10.64	13.71	0.001033	3.05	198.85	49.00	0.41
Tratto 3	19	T=200	730.00	6.82	14.06	13.00	-1.06	13.00	-1.06	11.09	14.57	0.000944	3.19	239.28	49.00	0.40
Tratto 3	19	T=500	817.00	6.82	14.58	13.00	-1.58	13.00	-1.58	11.37	15.11	0.000890	3.26	264.92	49.00	0.39
Tratto 3	18		Bridge													
Tratto 3	17	T=50	598.00	6.69	11.16	13.00	1.84	10.10	-1.06	9.96	11.82	0.001947	3.61	167.83	44.64	0.58
Tratto 3	17	T=200	730.00	6.69	11.64	13.00	1.36	10.10	-1.54	10.38	12.42	0.001993	3.91	189.47	45.13	0.60
Tratto 3	17	T=500	817.00	6.69	11.94	13.00	1.06	10.10	-1.84	10.63	12.79	0.002012	4.09	203.15	45.43	0.61
Tratto 3	16	T=50	598.00	6.50	10.30	13.00	2.71	10.15	-0.14	10.30	11.68	0.005766	5.23	116.46	42.94	0.97
Tratto 3	16	T=200	730.00	6.50	10.69	13.00	2.31	10.15	-0.54	10.69	12.26	0.005623	5.59	133.61	42.94	0.98
Tratto 3	16	T=500	817.00	6.50	10.94	13.00	2.06	10.15	-0.79	10.94	12.63	0.005575	5.81	144.09	42.94	0.98

Plan: Pp3 T. Petronio Tratto 3 RS: 18 Profile: T=50

E.G. US. (m)	13.71	Element	Inside BR US	Inside BR DS
W.S. US. (m)	13.23	E.G. Elev (m)	13.56	13.12
Q Total (m3/s)	598.00	W.S. Elev (m)	11.60	11.16
Q Bridge (m3/s)	598.00	Crit W.S. (m)	11.60	11.16
Q Weir (m3/s)		Max Chl Dpth (m)	4.55	4.47
Weir Sta Lft (m)		Vel Total (m/s)	6.20	6.20
Weir Sta Rgt (m)		Flow Area (m2)	96.45	96.40
Weir Submerg		Froude # Chl	0.93	0.94
Weir Max Depth (m)		Specif Force (m3)	570.78	571.24
Min El Weir Flow (m)	17.80	Hydr Depth (m)	3.92	3.92
Min El Prs (m)	16.00	W.P. Total (m)	43.97	40.45
Delta EG (m)	1.89	Conv. Total (m3/s)	5815.7	6142.5
Delta WS (m)	2.08	Top Width (m)	24.60	24.60
BR Open Area (m2)	204.70	Frctn Loss (m)	0.09	0.02
BR Open Vel (m/s)	6.20	C & E Loss (m)	0.00	0.39
Coef of Q		Shear Total (N/m2)	227.46	221.51
Br Sel Method	Energy only	Power Total (N/m s)	0.00	0.00

Plan: Pp3 T. Petronio Tratto 3 RS: 18 Profile: T=200

E.G. US. (m)	14.57	Element	Inside BR US	Inside BR DS
W.S. US. (m)	14.06	E.G. Elev (m)	14.39	13.96
Q Total (m3/s)	730.00	W.S. Elev (m)	12.16	11.72
Q Bridge (m3/s)	730.00	Crit W.S. (m)	12.16	11.72
Q Weir (m3/s)		Max Chl Dpth (m)	5.11	5.03
Weir Sta Lft (m)		Vel Total (m/s)	6.63	6.63
Weir Sta Rgt (m)		Flow Area (m2)	110.17	110.13
Weir Submerg		Froude # Chl	0.94	0.94
Weir Max Depth (m)		Specif Force (m3)	743.47	743.93
Min El Weir Flow (m)	17.80	Hydr Depth (m)	4.48	4.48
Min El Prs (m)	16.00	W.P. Total (m)	46.76	42.68
Delta EG (m)	2.15	Conv. Total (m3/s)	6967.7	7399.0
Delta WS (m)	2.42	Top Width (m)	24.60	24.60
BR Open Area (m2)	204.70	Frctn Loss (m)	0.05	0.02
BR Open Vel (m/s)	6.63	C & E Loss (m)	0.14	0.44
Coef of Q		Shear Total (N/m2)	253.65	246.31
Br Sel Method	Energy only	Power Total (N/m s)	0.00	0.00

Plan: Pp3 T. Petronio Tratto 3 RS: 18 Profile: T=500

E.G. US. (m)	15.11	Element	Inside BR US	Inside BR DS
W.S. US. (m)	14.58	E.G. Elev (m)	14.92	14.48
Q Total (m3/s)	817.00	W.S. Elev (m)	12.50	12.07
Q Bridge (m3/s)	817.00	Crit W.S. (m)	12.50	12.07
Q Weir (m3/s)		Max Chl Dpth (m)	5.46	5.38
Weir Sta Lft (m)		Vel Total (m/s)	6.88	6.88
Weir Sta Rgt (m)		Flow Area (m2)	118.71	118.72
Weir Submerg		Froude # Chl	0.94	0.95
Weir Max Depth (m)		Specif Force (m3)	863.26	863.73
Min El Weir Flow (m)	17.80	Hydr Depth (m)	4.83	4.83
Min El Prs (m)	16.00	W.P. Total (m)	48.49	44.08
Delta EG (m)	2.32	Conv. Total (m3/s)	7701.4	8207.8
Delta WS (m)	2.64	Top Width (m)	24.60	24.60
BR Open Area (m2)	204.70	Frctn Loss (m)	0.05	0.02
BR Open Vel (m/s)	6.88	C & E Loss (m)	0.15	0.47
Coef of Q		Shear Total (N/m2)	270.18	261.70
Br Sel Method	Energy only	Power Total (N/m s)	0.00	0.00

Plan: Pp3 T. Petronio Tratto 3 RS: 20 Profile: T=50

E.G. US. (m)	14.17	Element	Inside BR US	Inside BR DS
W.S. US. (m)	13.84	E.G. Elev (m)	14.07	13.90
Q Total (m3/s)	598.00	W.S. Elev (m)	12.85	12.80
Q Bridge (m3/s)	598.00	Crit W.S. (m)	11.10	10.94
Q Weir (m3/s)		Max Chl Dpth (m)	5.89	5.98
Weir Sta Lft (m)		Vel Total (m/s)	4.91	4.65
Weir Sta Rgt (m)		Flow Area (m2)	121.84	128.57
Weir Submerg		Froude # Chl	0.65	0.61
Weir Max Depth (m)		Specif Force (m3)	686.11	688.85
Min El Weir Flow (m)	14.00	Hydr Depth (m)		
Min El Prs (m)	12.60	W.P. Total (m)	81.96	85.54
Delta EG (m)	0.46	Conv. Total (m3/s)	5667.9	6025.2
Delta WS (m)	0.60	Top Width (m)		
BR Open Area (m2)	121.84	Frctn Loss (m)	0.14	0.00
BR Open Vel (m/s)	4.91	C & E Loss (m)	0.04	0.19
Coef of Q		Shear Total (N/m2)	162.28	145.19
Br Sel Method	Energy only	Power Total (N/m s)	0.00	0.00

Plan: Pp3 T. Petronio Tratto 3 RS: 20 Profile: T=200

E.G. US. (m)	15.32	Element	Inside BR US	Inside BR DS
W.S. US. (m)	14.99	E.G. Elev (m)	15.17	14.91
Q Total (m3/s)	730.00	W.S. Elev (m)	13.34	13.27
Q Bridge (m3/s)	730.00	Crit W.S. (m)	11.45	11.33
Q Weir (m3/s)		Max Chl Dpth (m)	6.38	6.45
Weir Sta Lft (m)		Vel Total (m/s)	5.99	5.68
Weir Sta Rgt (m)		Flow Area (m2)	121.84	128.57
Weir Submerg		Froude # Chl	0.76	0.71
Weir Max Depth (m)		Specif Force (m3)	893.05	888.39
Min El Weir Flow (m)	14.00	Hydr Depth (m)		
Min El Prs (m)	12.60	W.P. Total (m)	81.96	85.54
Delta EG (m)	0.76	Conv. Total (m3/s)	5667.9	6025.2
Delta WS (m)	0.93	Top Width (m)		
BR Open Area (m2)	121.84	Frctn Loss (m)	0.20	0.00
BR Open Vel (m/s)	5.99	C & E Loss (m)	0.06	0.34
Coef of Q		Shear Total (N/m2)	241.83	216.36
Br Sel Method	Energy only	Power Total (N/m s)	0.00	0.00

Plan: Pp3 T. Petronio Tratto 3 RS: 20 Profile: T=500

E.G. US. (m)	16.09	Element	Inside BR US	Inside BR DS
W.S. US. (m)	15.75	E.G. Elev (m)	15.89	15.57
Q Total (m3/s)	817.00	W.S. Elev (m)	13.60	13.51
Q Bridge (m3/s)	817.00	Crit W.S. (m)	11.55	11.47
Q Weir (m3/s)		Max Chl Dpth (m)	6.64	6.69
Weir Sta Lft (m)		Vel Total (m/s)	6.71	6.35
Weir Sta Rgt (m)		Flow Area (m2)	121.84	128.57
Weir Submerg		Froude # Chl	0.83	0.78
Weir Max Depth (m)		Specif Force (m3)	1037.57	1026.45
Min El Weir Flow (m)	14.00	Hydr Depth (m)		
Min El Prs (m)	12.60	W.P. Total (m)	81.96	85.54
Delta EG (m)	0.99	Conv. Total (m3/s)	5667.9	6025.2
Delta WS (m)	1.17	Top Width (m)		
BR Open Area (m2)	121.84	Frctn Loss (m)	0.25	0.00
BR Open Vel (m/s)	6.71	C & E Loss (m)	0.07	0.46
Coef of Q		Shear Total (N/m2)	302.90	271.01
Br Sel Method	Energy only	Power Total (N/m s)	0.00	0.00