



avvio del procedimento Del.C.C. n.55 del 15.05.2008  
*valutazione iniziale Del.G.C. n.171 del 17.07.2008*  
*valutazione intermedia e rapporto ambientale preliminare Del.C.C. n.47 del 29.05.2009*  
*relazione di sintesi finale - rapporto ambientale Del.G.C. n.251 del 29.10.2009*  
*rapporto ambientale - relazione di sintesi non tecnica Del.C.C. n..... del .....*  
adozione Del.C.C. n..... del .....

**variante di adeguamento**  
**alla disciplina urbanistica regionale e ai contenuti dell'art.55 co.6 della L.R.1/2005**

**RELAZIONE IDRAULICA - ALLEGATI**

# **REGOLAMENTO URBANISTICO**

dicembre 2009





comune di montevarchi - provincia di arezzo

*Sindaco*

*Giorgio Valentini*

*Assessore*

*Moreno Grassi*

*Responsabile del procedimento*

*Domenico Scrascia*

*Garante della comunicazione*

*Francesca Barucci*

*Progetto*

*Stefania Fanfani*  
*Domenico Scrascia*

*Sistema informativo*

*Ugo Fabbri*

*Ufficio di piano*

*Gabriele Banchetti*  
*Stefano Borchi*

*Indagini geologiche ed idrauliche*

*Claudia Lombardi*  
*Roberto Nevini*  
*Michele Sani*

**RELAZIONE IDRAULICA - ALLEGATI**

# **REGOLAMENTO URBANISTICO**

dicembre 2009



**verifiche idrauliche di progetto**

borro dello Spedaluzzo

borro del Giglio

borro della Sabina

borro del Caspri

borro della Dogana

borro del Valdilago

torrente Caposelvi



**borro dello Spedaluzzo - stato di progetto**

verifiche con Tpioggia critico per il Borro dello Spedaluzzo

- moto vario

Tr=200, 100, 30 e 20 anni

*profilo*

*livelli idrici nelle sezioni di verifica*

*tabella di output del software Hec-ras 4.0*

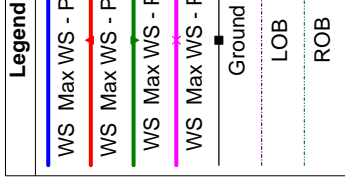
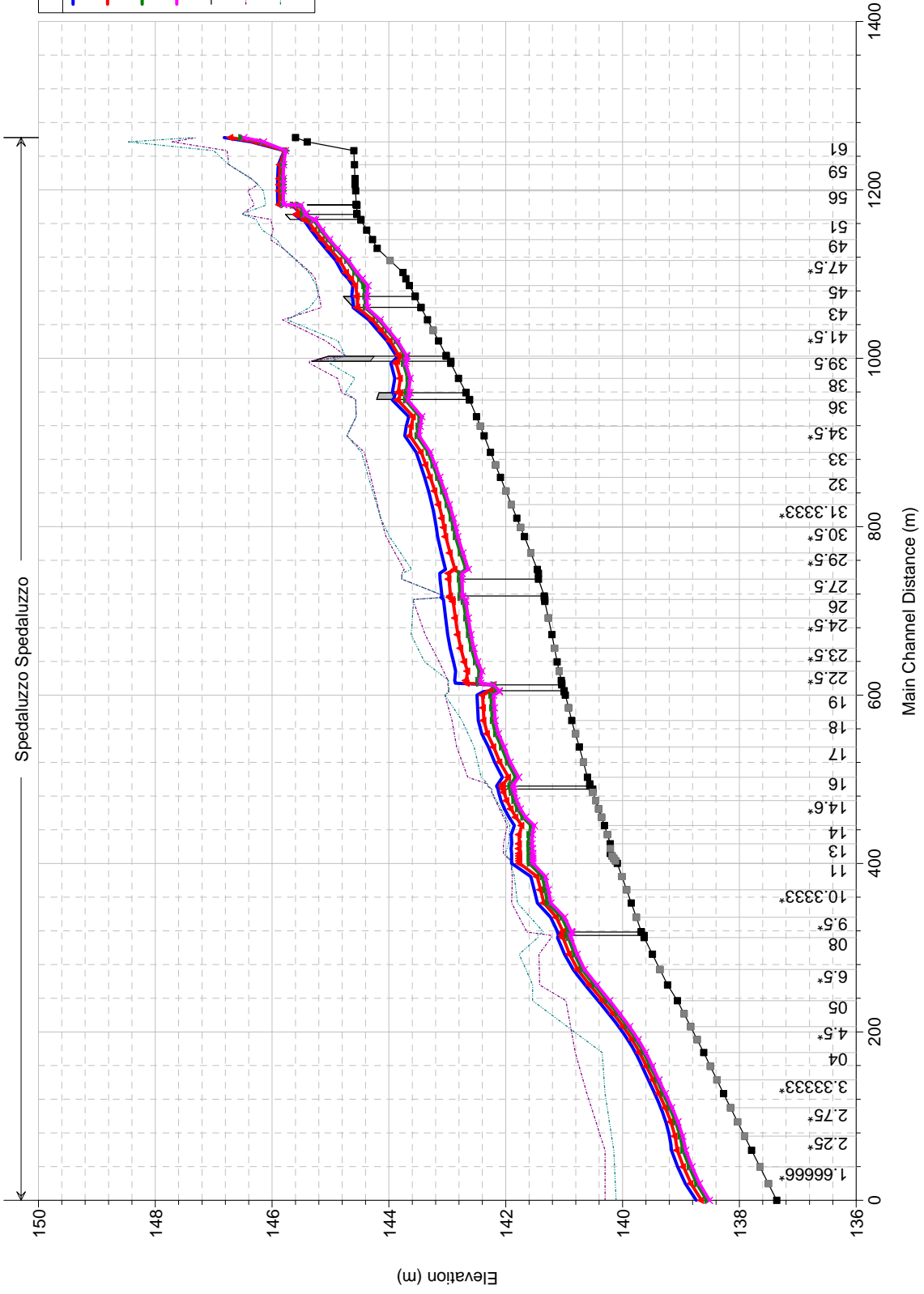
*livelli e portate in ingresso alle aree di accumulo*

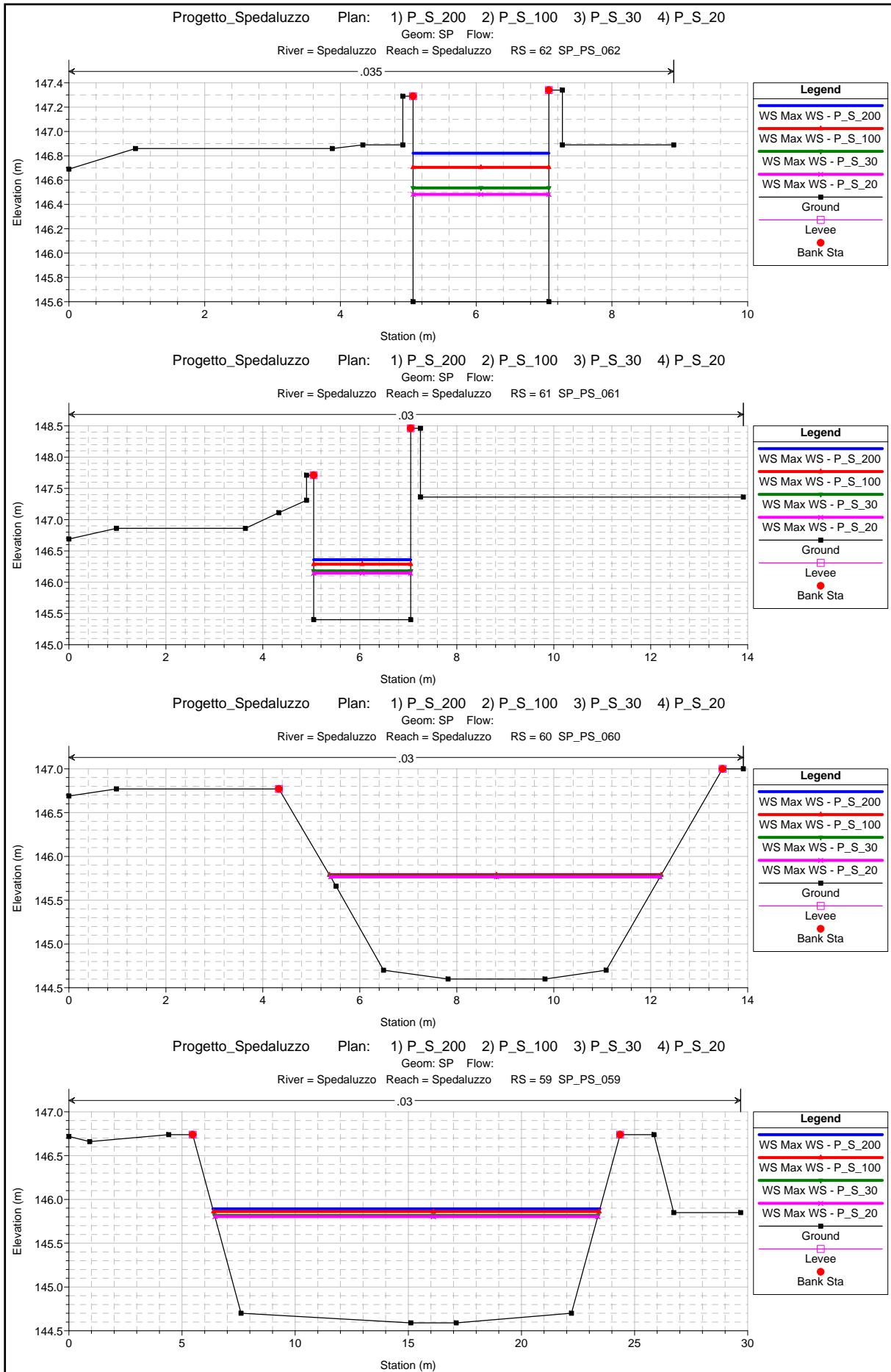


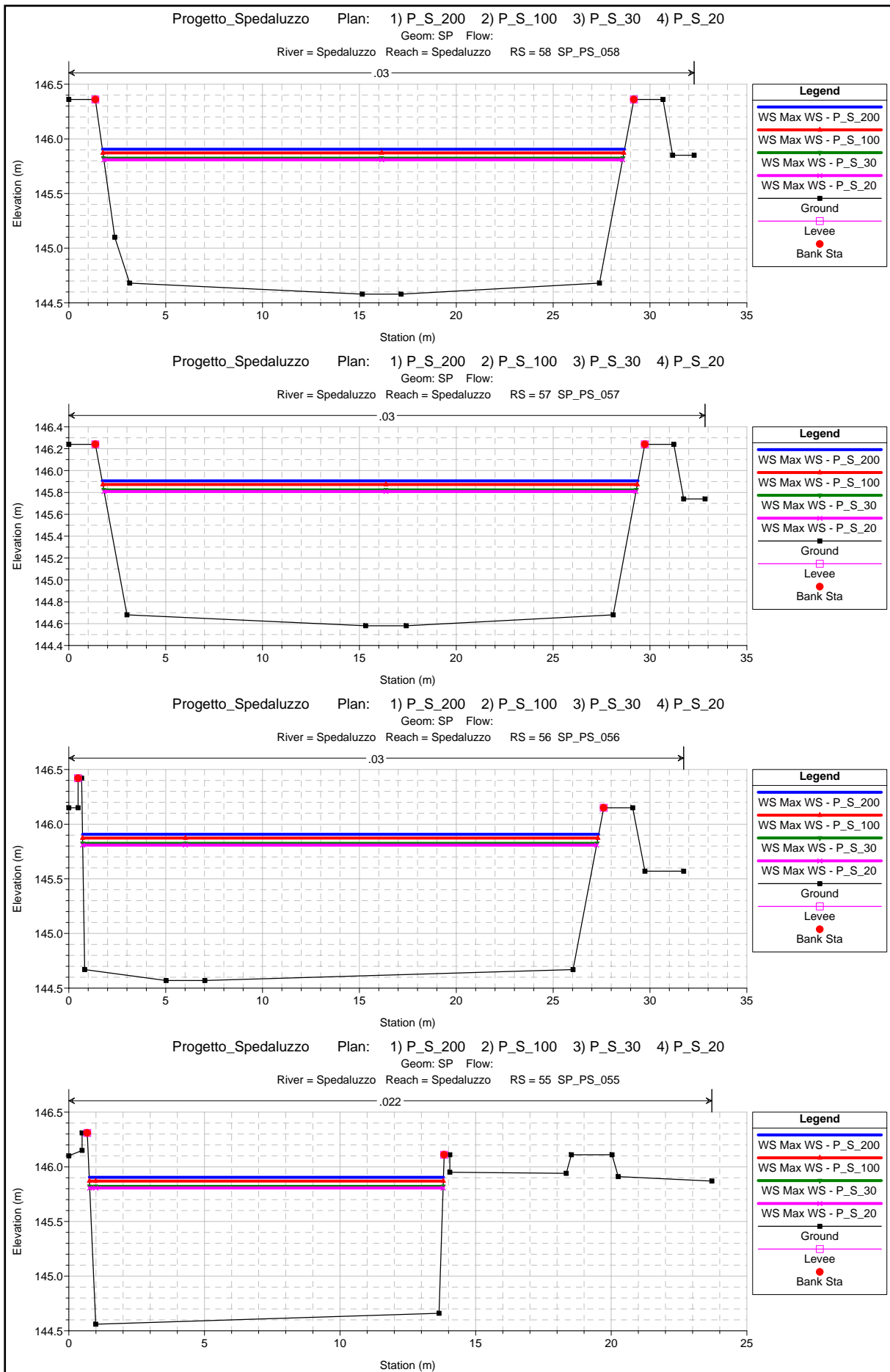


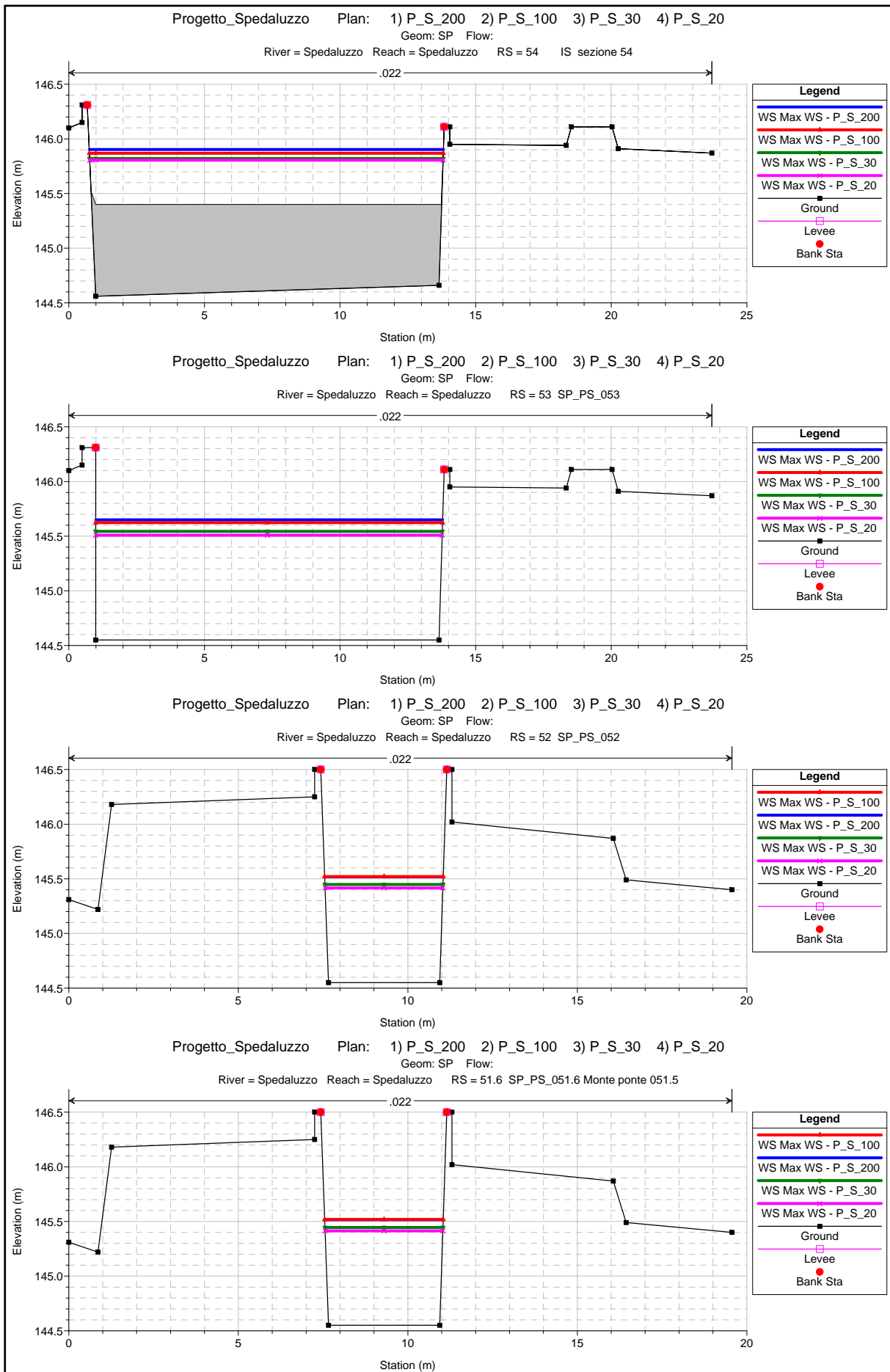
Progetto\_Spedaluzzo Plan: 1) P\_S\_200 2) P\_S\_100 3) P\_S\_30 4) P\_S\_20

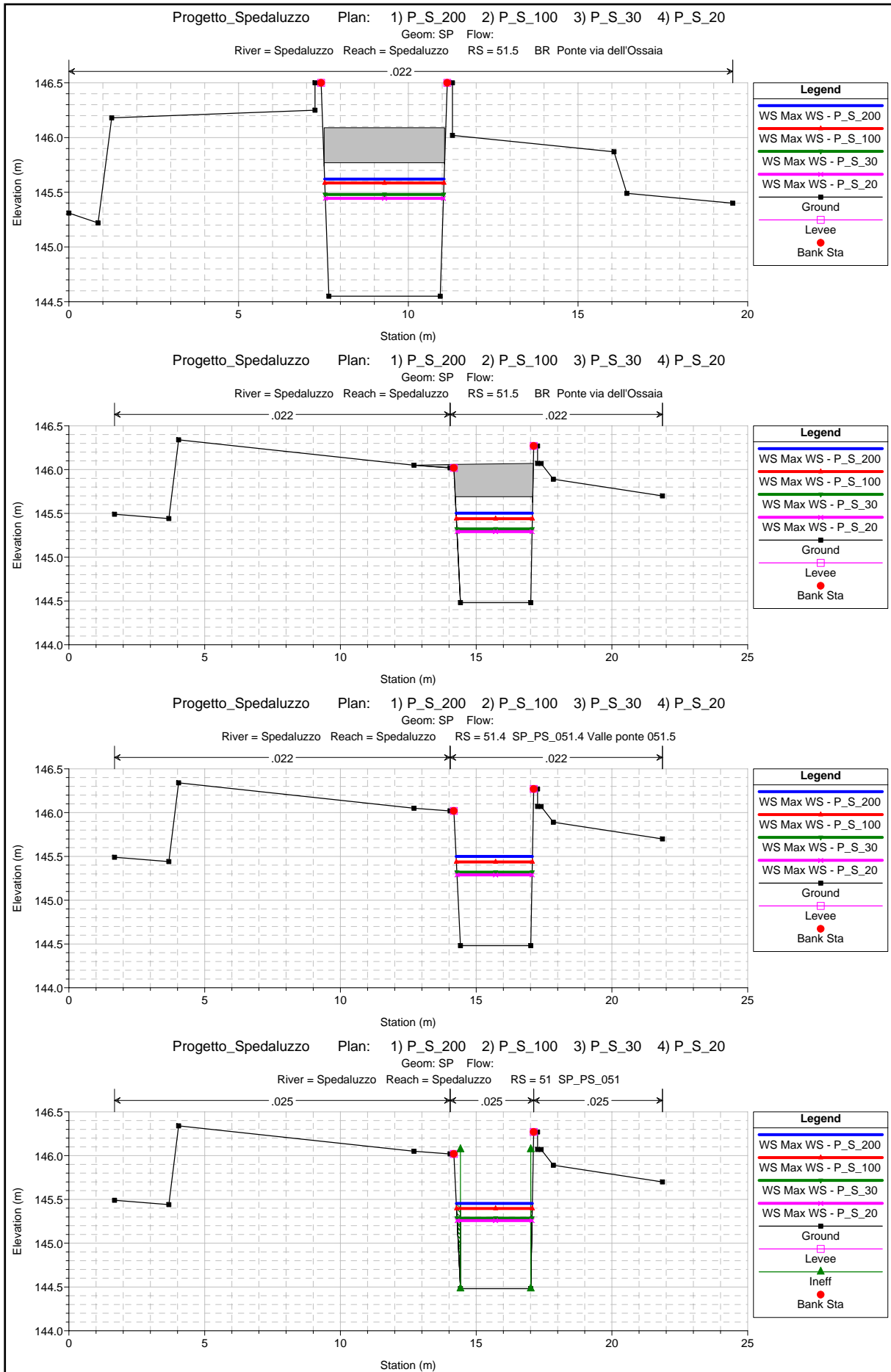
Geom: SP Flow:

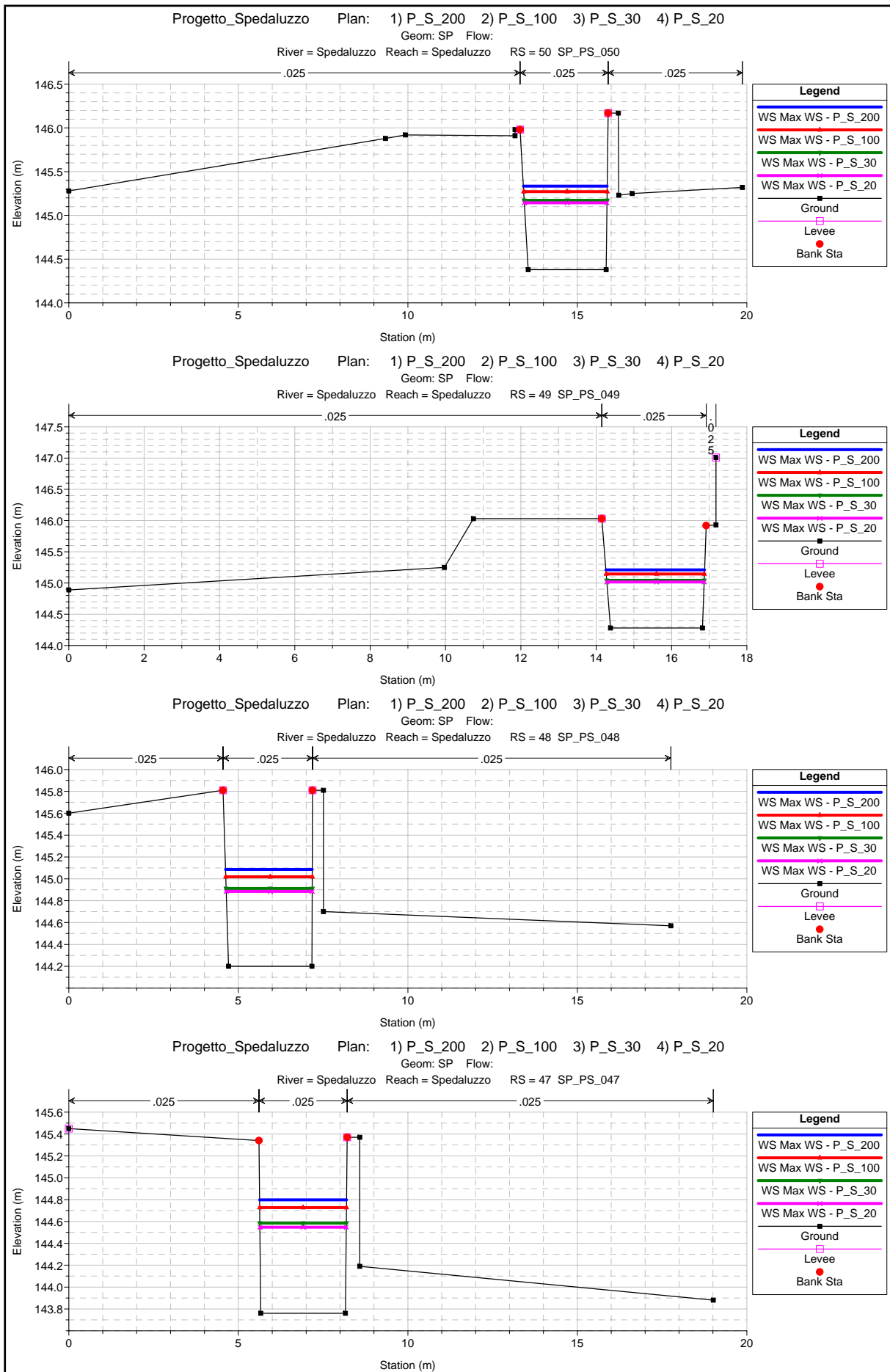


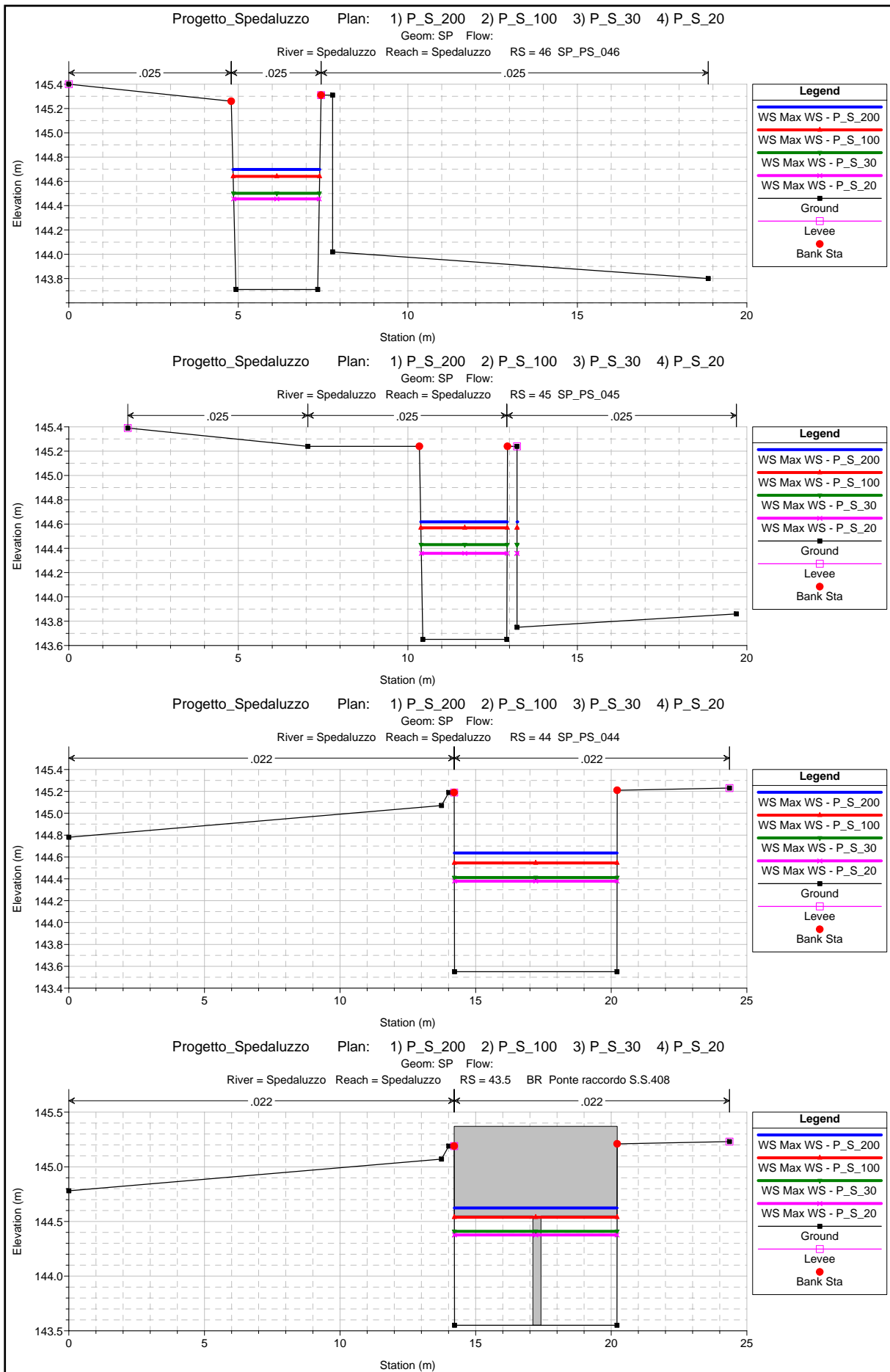


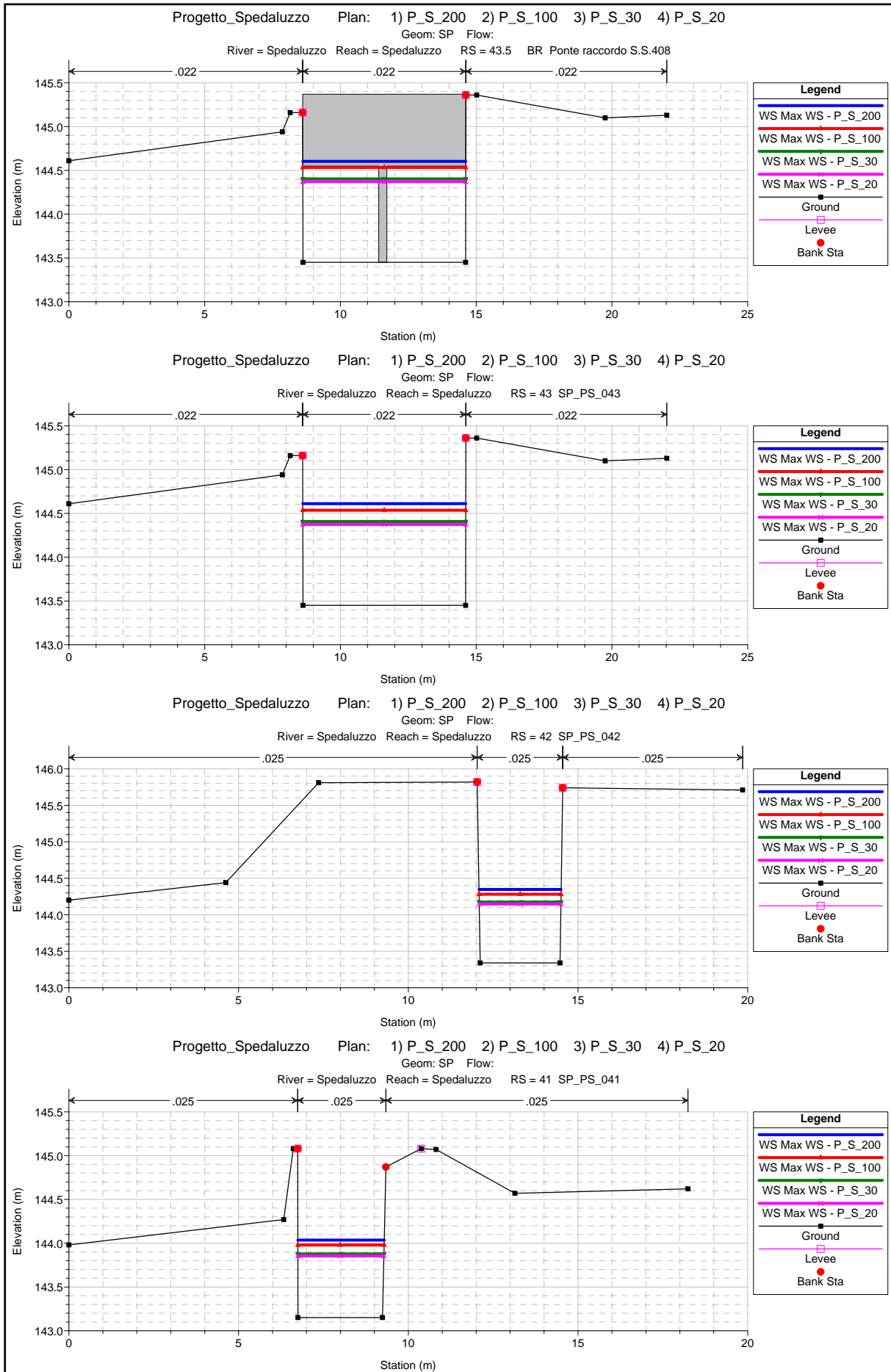




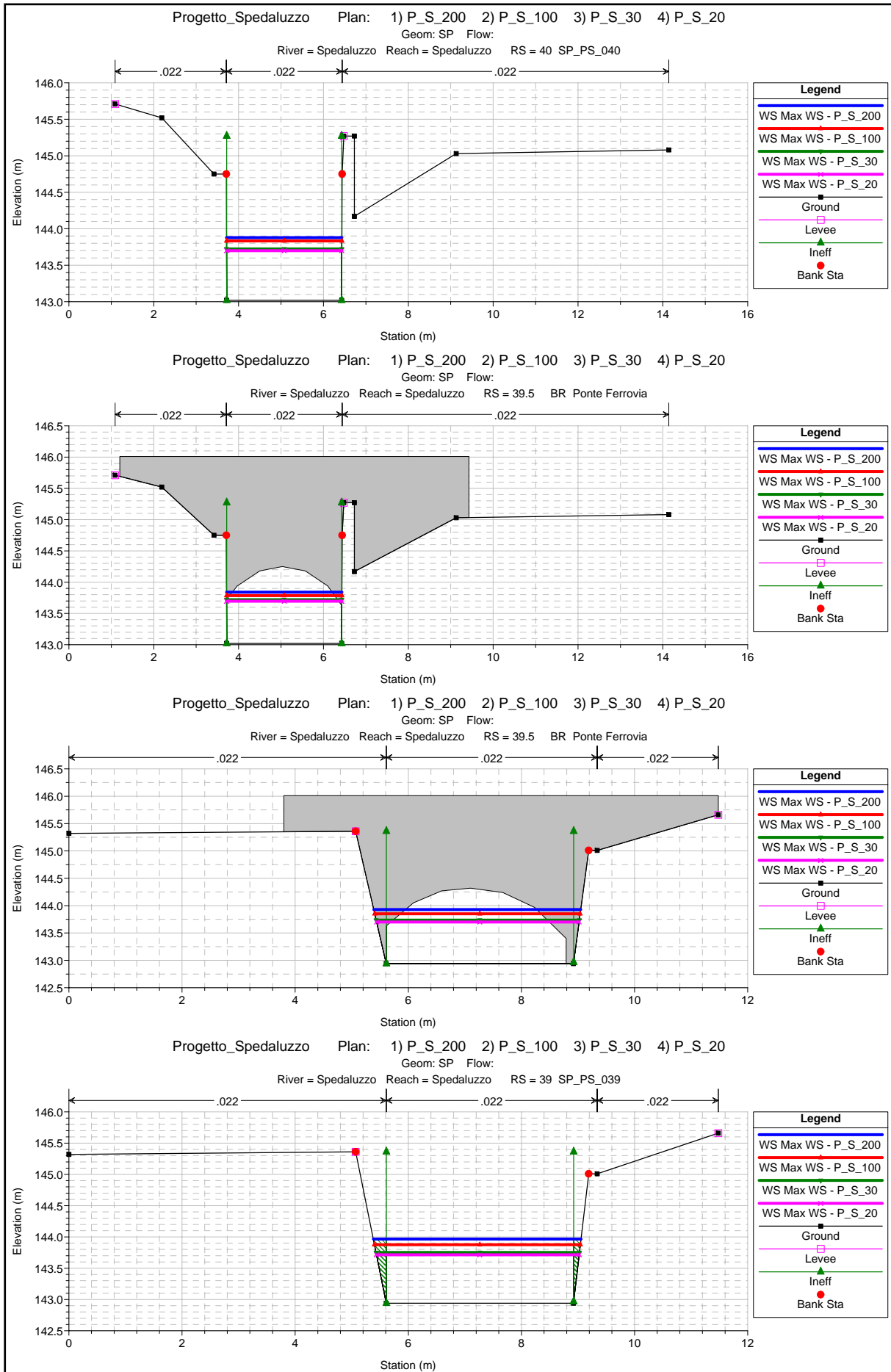


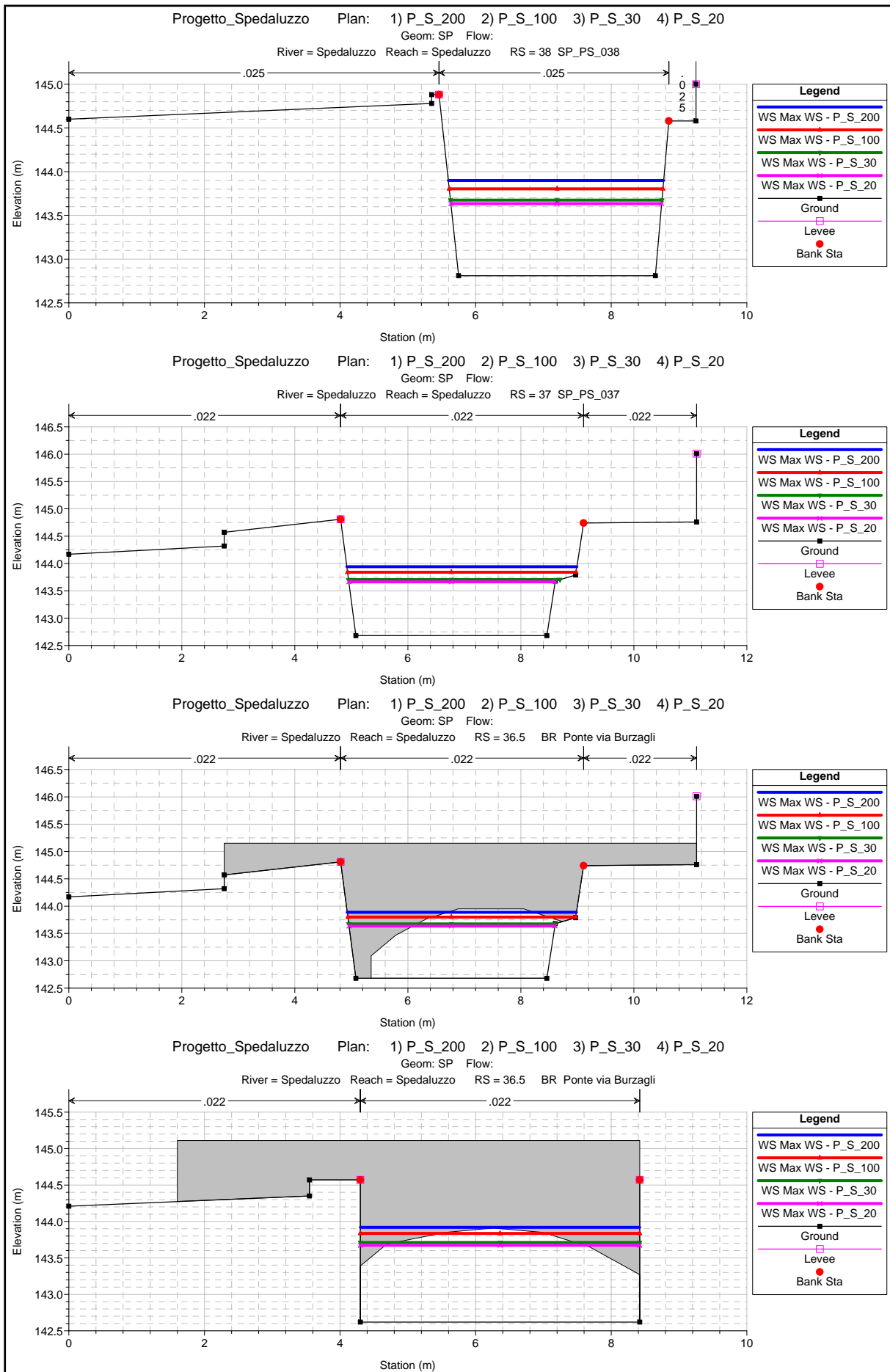


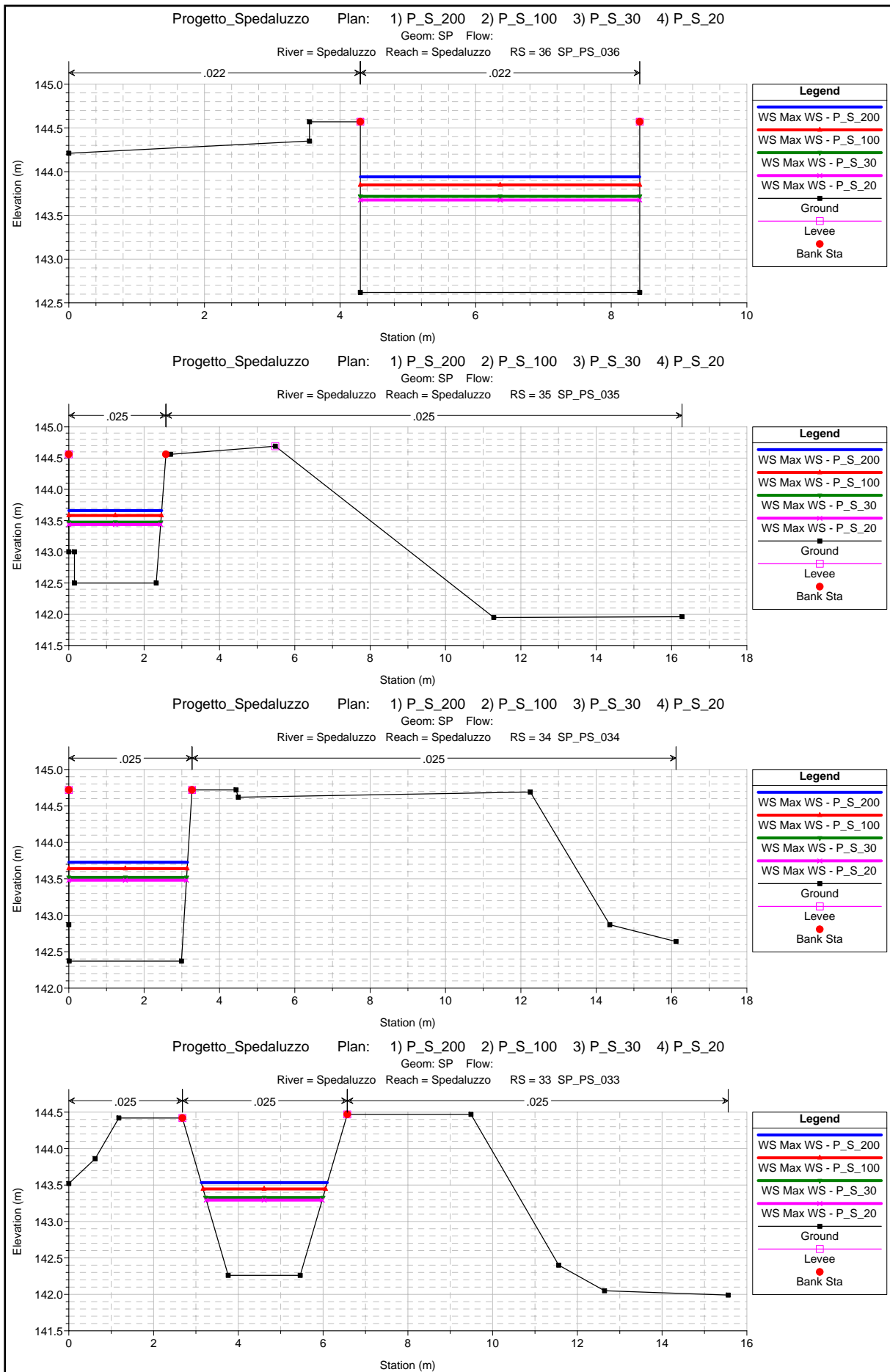


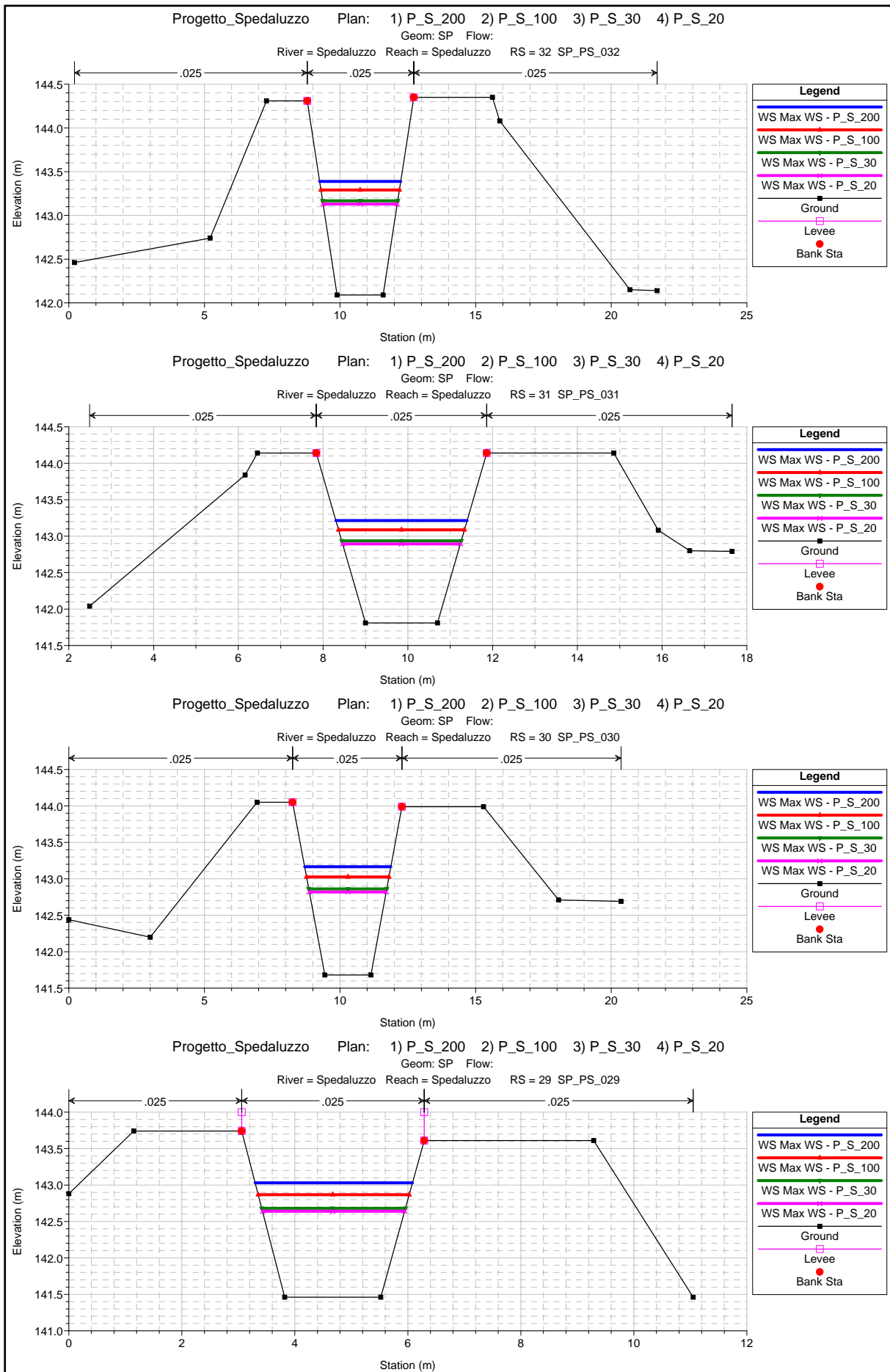


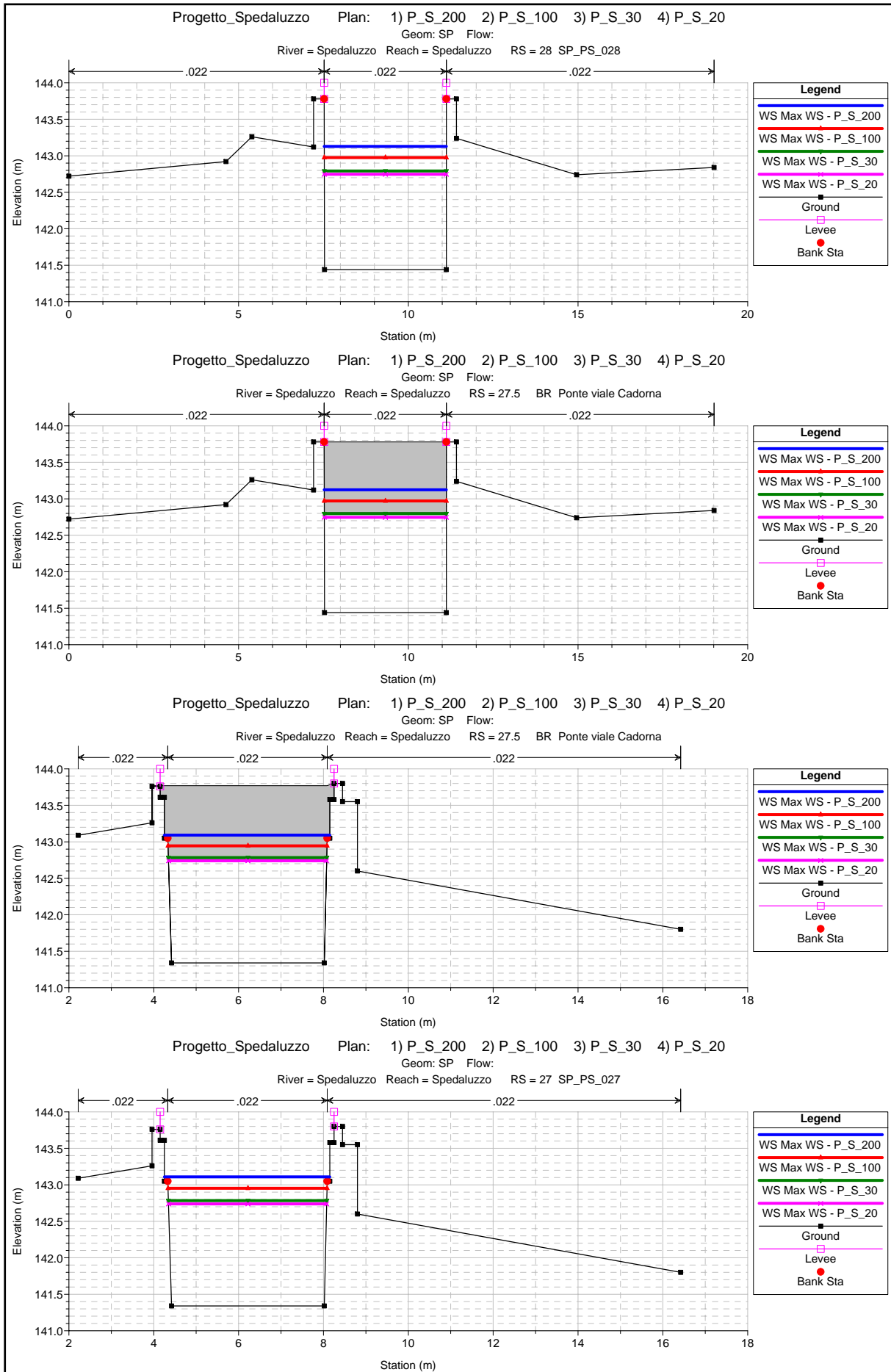


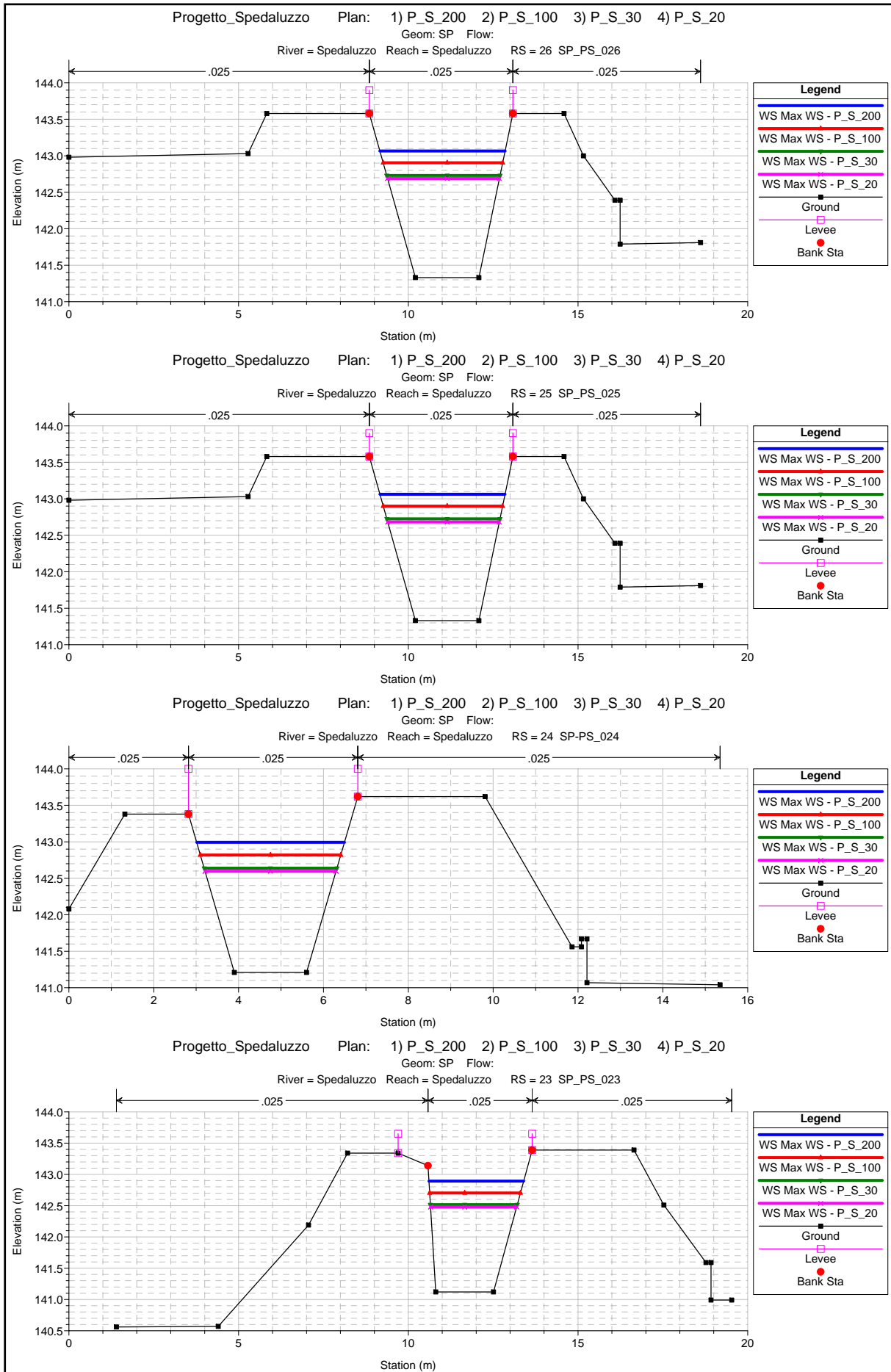


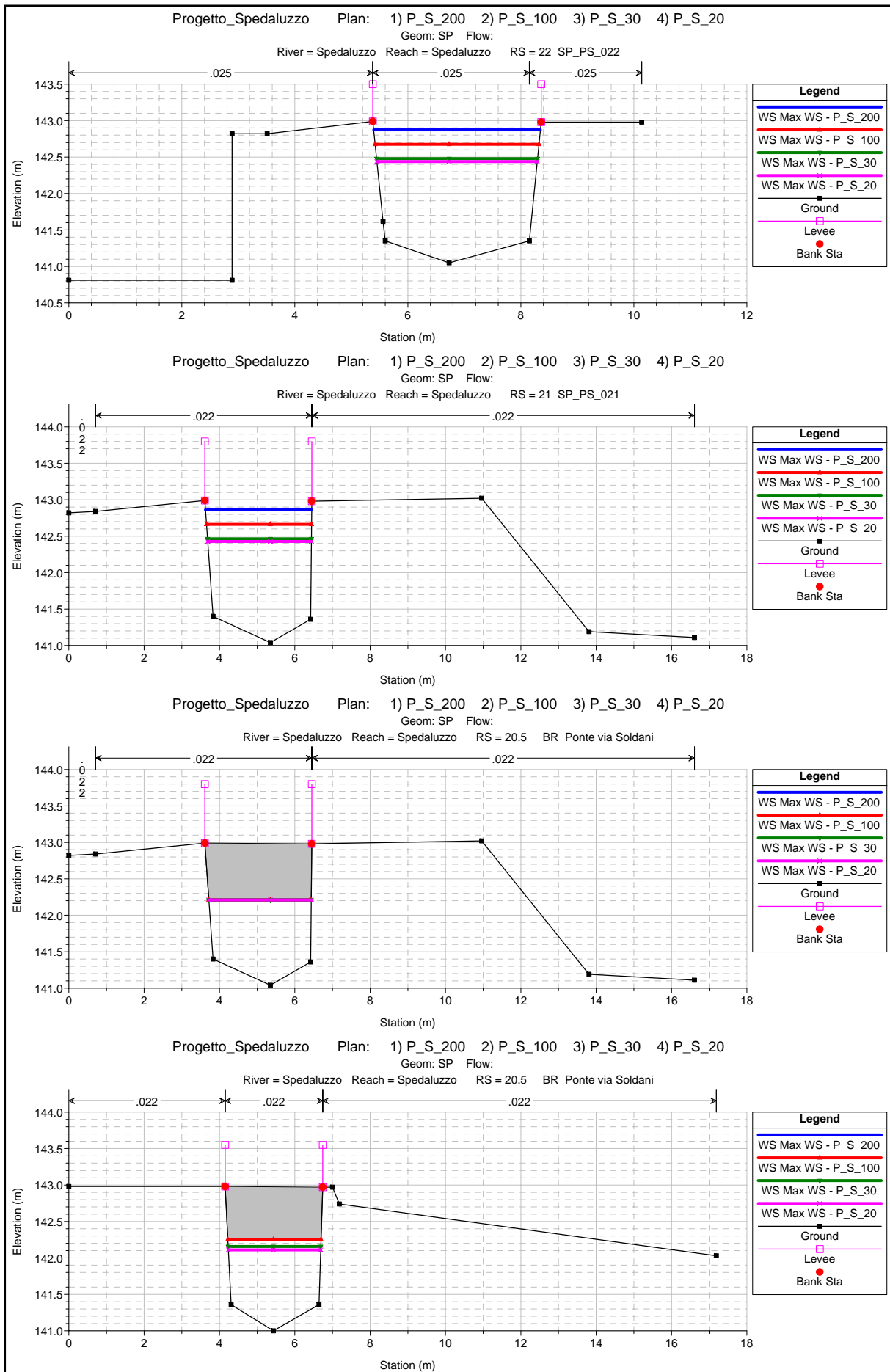


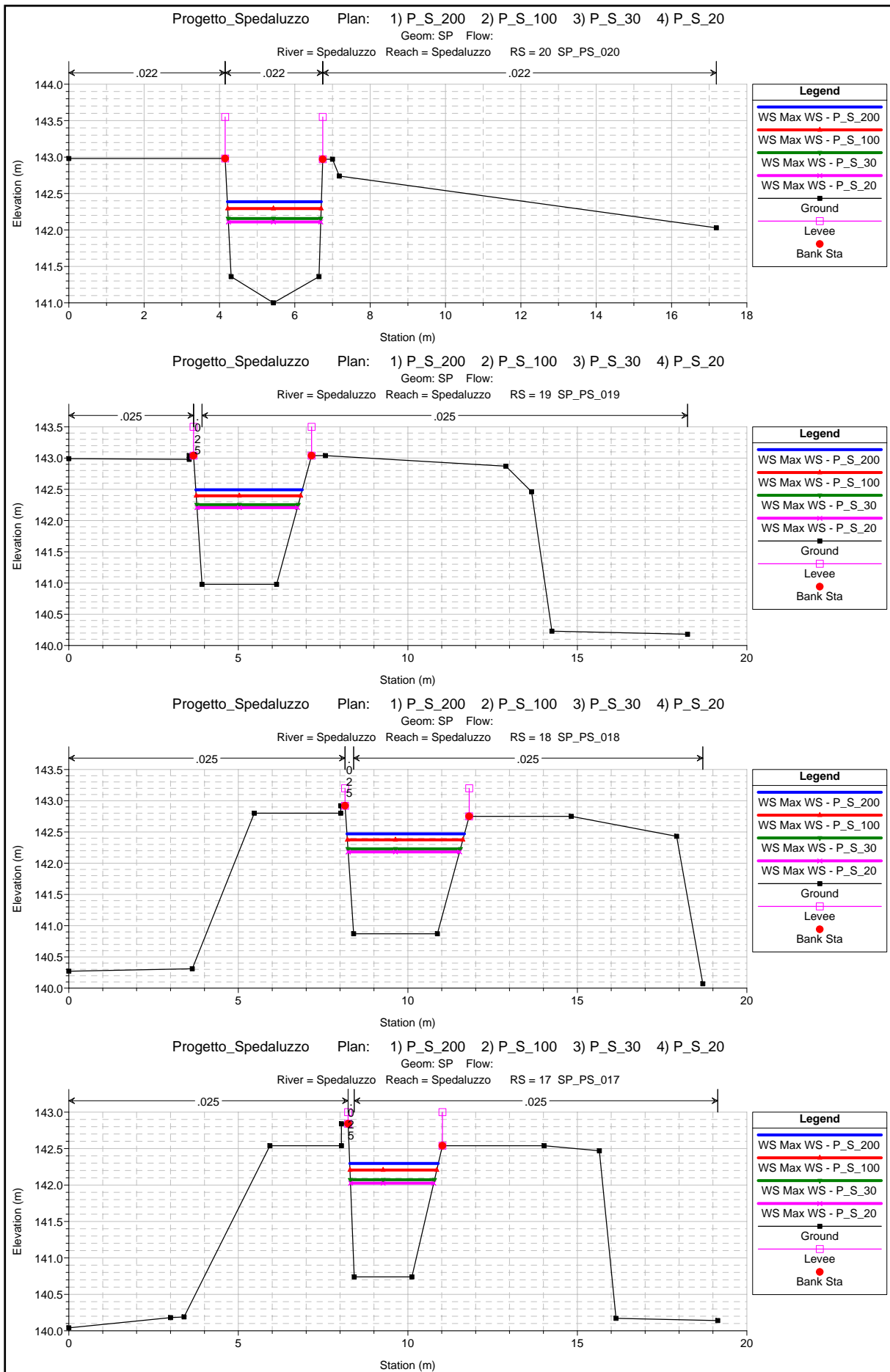




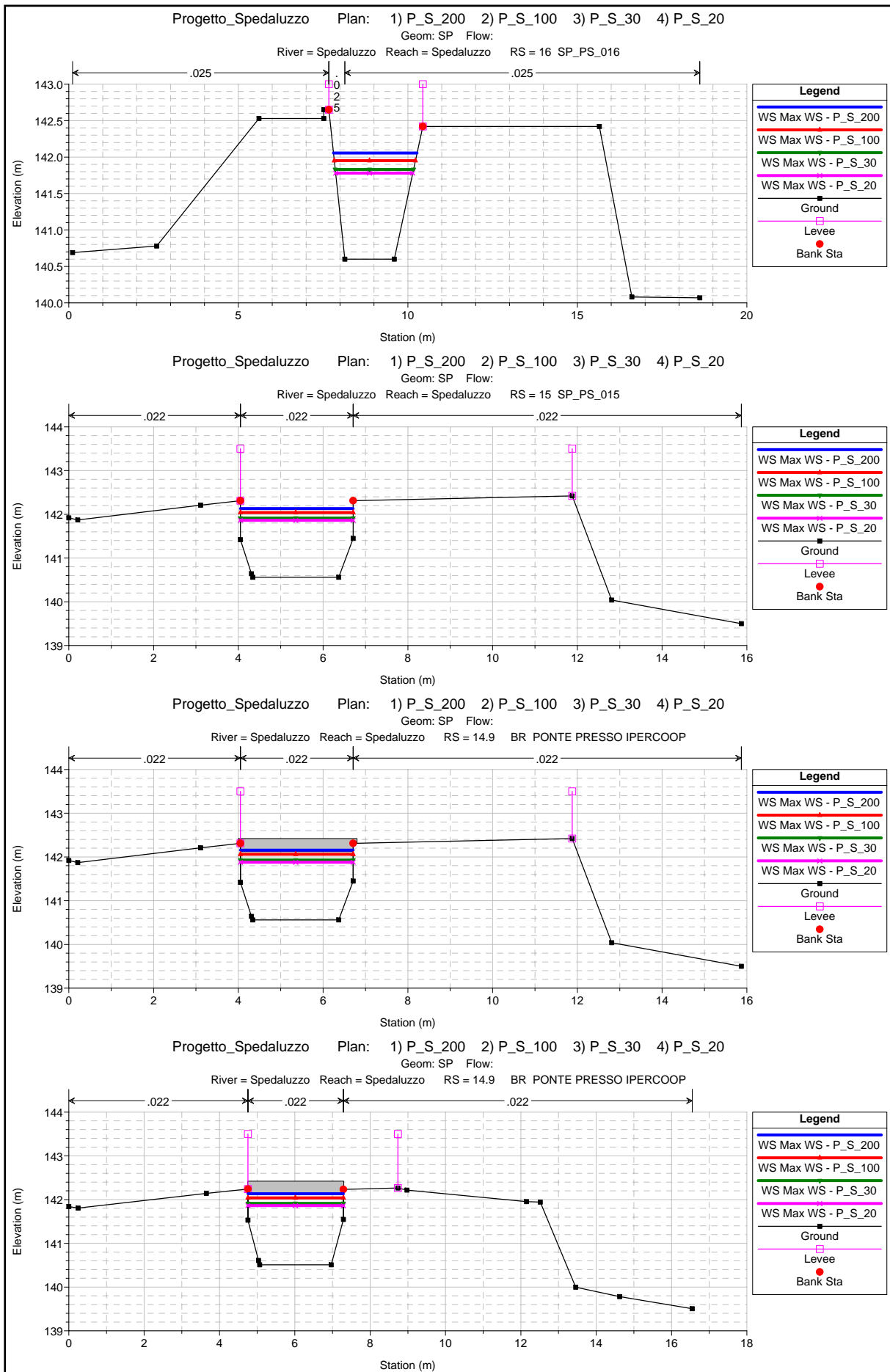


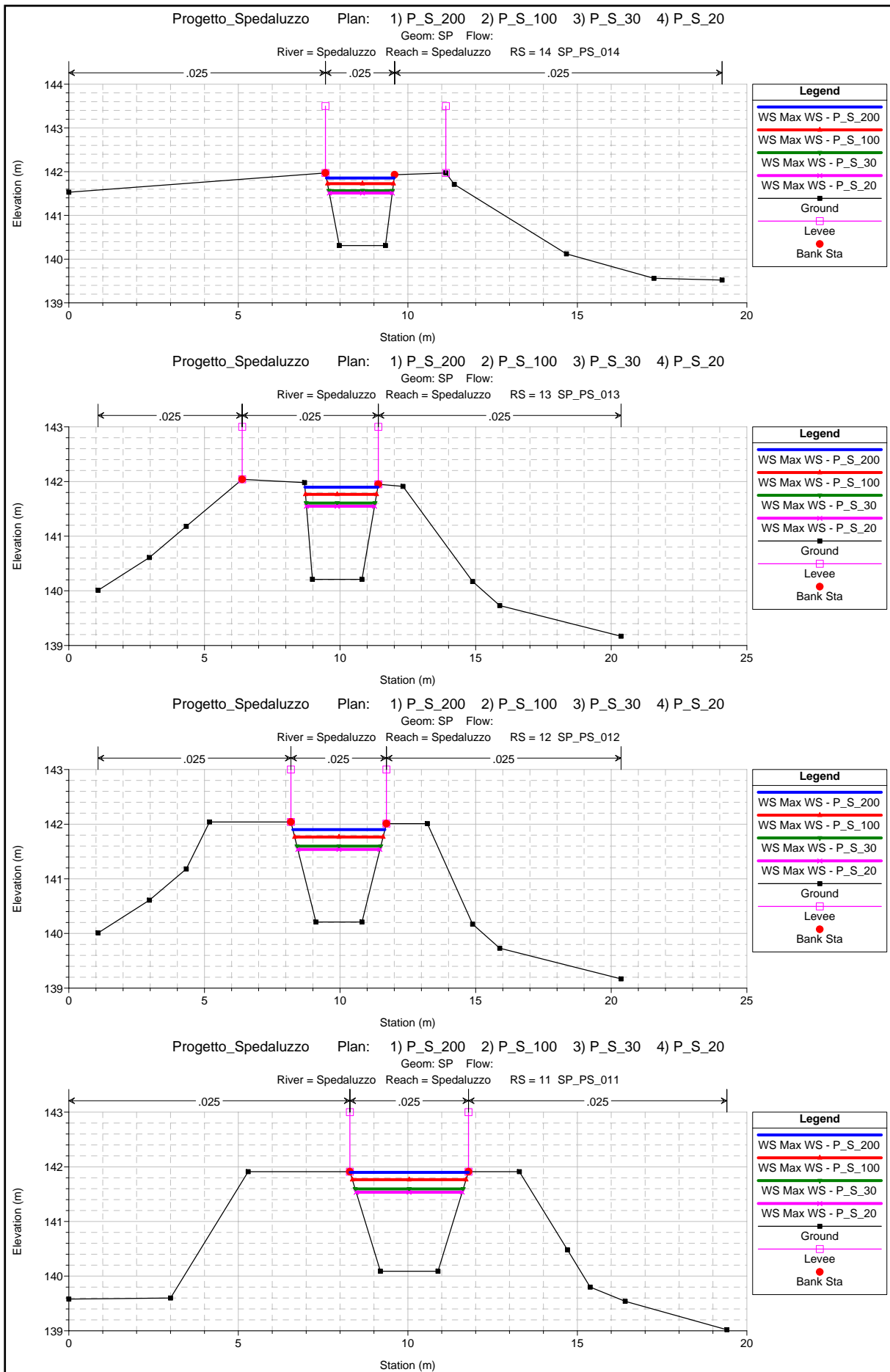


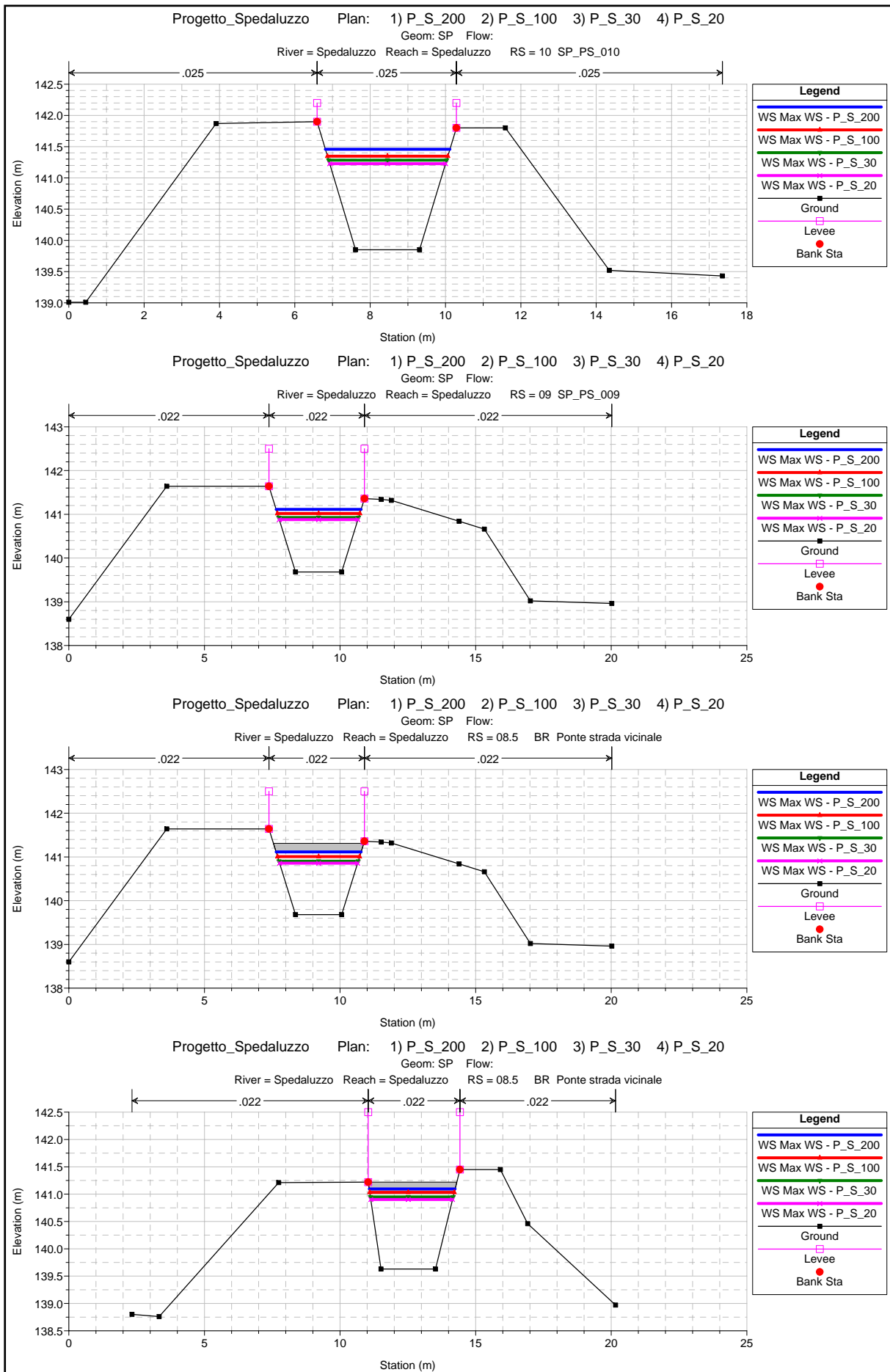


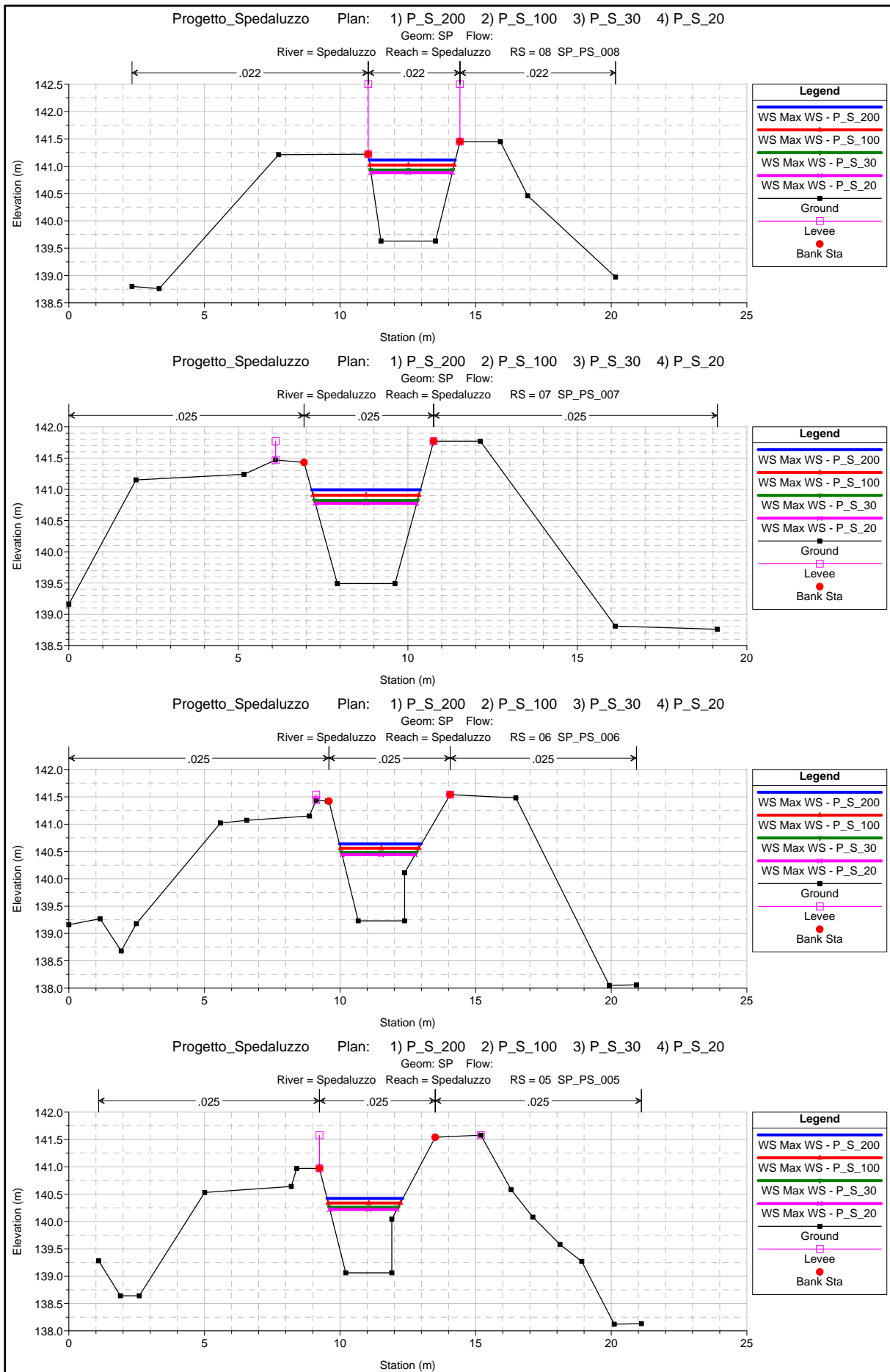


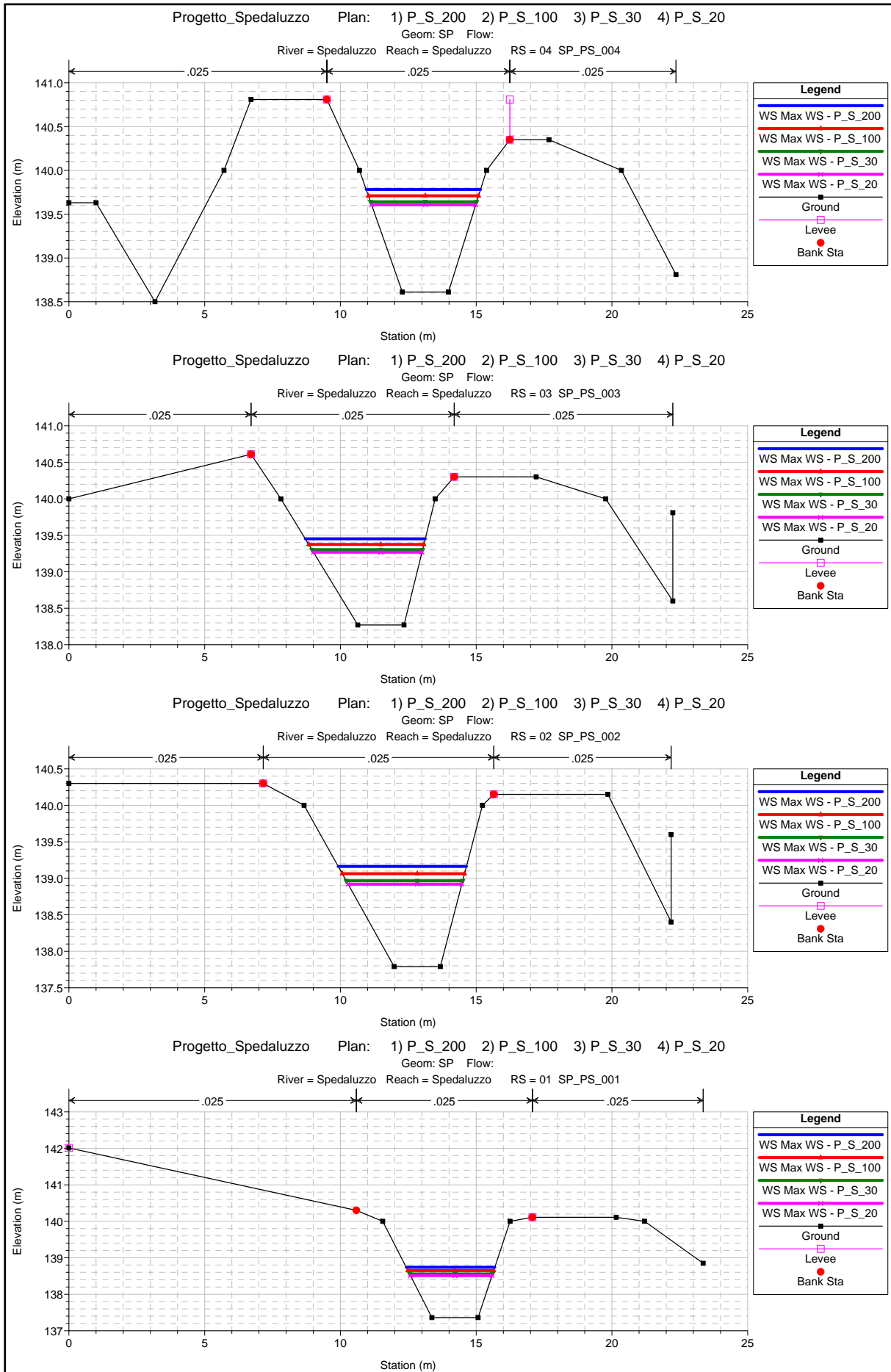












HEC-RAS Profile: Max WS

Storage Area	Profile	Plan	W.S. Elev (m)	SA Min El (m)	Net Flux (m3/s)	SA Area (1000 m2)	SA Volume (1000 m3)
Cassa Spedaluzzo	Max WS	P_S_200	145.71	144.00	6.07	12.00	19.50
Cassa Spedaluzzo	Max WS	P_S_100	145.51	144.00	4.93	12.00	17.14
Cassa Spedaluzzo	Max WS	P_S_30	145.28	144.00	3.24	12.00	14.41
Cassa Spedaluzzo	Max WS	P_S_20	145.20	144.00	2.74	12.00	13.42
SA_Sped_Dx1	Max WS	P_S_200	139.50	139.50	0.00	56.00	0.00
SA_Sped_Dx1	Max WS	P_S_100	139.50	139.50	0.00	56.00	0.00
SA_Sped_Dx1	Max WS	P_S_30	139.50	139.50	0.00	56.00	0.00
SA_Sped_Dx1	Max WS	P_S_20	139.50	139.50	0.00	56.00	0.02
SA_Sped_Sx1	Max WS	P_S_200	140.60	140.60	0.00	3.00	0.00
SA_Sped_Sx1	Max WS	P_S_100	140.60	140.60	0.00	3.00	0.00
SA_Sped_Sx1	Max WS	P_S_30	140.60	140.60	0.00	3.00	0.00
SA_Sped_Sx1	Max WS	P_S_20	140.61	140.60	0.00	3.00	0.02
Spedaluzzo_StSn	Max WS	P_S_200	138.20	138.20	0.00	9.00	0.00
Spedaluzzo_StSn	Max WS	P_S_100	138.20	138.20	0.00	9.00	0.00
Spedaluzzo_StSn	Max WS	P_S_30	138.20	138.20	0.00	9.00	0.00
Spedaluzzo_StSn	Max WS	P_S_20	138.20	138.20	0.00	9.00	0.00

HEC-RAS River: Spedaluzzo Reach: Spedaluzzo Profile: Max WS

Reach	River Sta	Profile	Plan	Q Total (m3/s)	Min Ch El (m)	W.S. Elev (m)	Crit W.S. (m)	E.G. Elev (m)	E.G. Slope (m/m)	Vel Chnl (m/s)	Flow Area (m2)	Top Width (m)	Froude # Chl
Spedaluzzo	62	Max WS	P_S_200	12.89	145.60	146.82	147.22	148.24	0.075856	5.28	2.44	2.00	1.53
Spedaluzzo	62	Max WS	P_S_100	10.93	145.60	146.71	147.05	147.95	0.070599	4.94	2.21	2.00	1.50
Spedaluzzo	62	Max WS	P_S_30	8.29	145.60	146.54	146.81	147.53	0.063295	4.43	1.87	2.00	1.46
Spedaluzzo	62	Max WS	P_S_20	7.52	145.60	146.48	146.73	147.41	0.061034	4.26	1.77	2.00	1.45
Spedaluzzo	61	Max WS	P_S_200	12.89	145.40	146.36	147.02	148.66	0.105142	6.72	1.92	2.00	2.19
Spedaluzzo	61	Max WS	P_S_100	10.92	145.40	146.29	146.85	148.22	0.093118	6.15	1.78	2.00	2.08
Spedaluzzo	61	Max WS	P_S_30	8.29	145.40	146.18	146.60	147.62	0.076420	5.32	1.56	2.00	1.92
Spedaluzzo	61	Max WS	P_S_20	7.52	145.40	146.15	146.53	147.44	0.071241	5.05	1.49	2.00	1.87
Spedaluzzo	60	Max WS	P_S_200	12.49	144.60	145.79		145.98	0.004040	1.90	6.57	6.85	0.62
Spedaluzzo	60	Max WS	P_S_100	10.81	144.60	145.79		145.93	0.003064	1.65	6.55	6.84	0.54
Spedaluzzo	60	Max WS	P_S_30	8.27	144.60	145.77		145.86	0.001871	1.28	6.45	6.81	0.42
Spedaluzzo	60	Max WS	P_S_20	7.50	144.60	145.77		145.84	0.001573	1.17	6.40	6.80	0.39
Spedaluzzo	59.5			Lat Struct									
Spedaluzzo	59	Max WS	P_S_200	11.80	144.59	145.89		145.91	0.000283	0.60	19.81	17.11	0.18
Spedaluzzo	59	Max WS	P_S_100	10.00	144.59	145.86		145.88	0.000220	0.52	19.29	17.04	0.16
Spedaluzzo	59	Max WS	P_S_30	7.65	144.59	145.82		145.83	0.000146	0.41	18.54	16.95	0.13
Spedaluzzo	59	Max WS	P_S_20	6.97	144.59	145.80		145.81	0.000126	0.38	18.30	16.92	0.12
Spedaluzzo	58	Max WS	P_S_200	9.96	144.58	145.90		145.91	0.000067	0.30	32.84	26.96	0.09
Spedaluzzo	58	Max WS	P_S_100	8.55	144.58	145.87		145.87	0.000054	0.27	31.94	26.89	0.08
Spedaluzzo	58	Max WS	P_S_30	6.70	144.58	145.82		145.83	0.000038	0.22	30.65	26.80	0.07
Spedaluzzo	58	Max WS	P_S_20	6.17	144.58	145.81		145.81	0.000033	0.20	30.24	26.78	0.06
Spedaluzzo	57	Max WS	P_S_200	9.10	144.58	145.91		145.91	0.000053	0.27	33.70	27.66	0.08
Spedaluzzo	57	Max WS	P_S_100	7.88	144.58	145.87		145.88	0.000043	0.24	32.77	27.59	0.07
Spedaluzzo	57	Max WS	P_S_30	6.27	144.58	145.82		145.83	0.000031	0.20	31.43	27.49	0.06
Spedaluzzo	57	Max WS	P_S_20	5.80	144.58	145.81		145.81	0.000028	0.19	31.01	27.46	0.06
Spedaluzzo	56	Max WS	P_S_200	8.23	144.57	145.91		145.91	0.000044	0.25	33.43	26.64	0.07
Spedaluzzo	56	Max WS	P_S_100	7.20	144.57	145.87		145.88	0.000036	0.22	32.52	26.60	0.06
Spedaluzzo	56	Max WS	P_S_30	5.83	144.57	145.82		145.83	0.000027	0.19	31.22	26.55	0.05
Spedaluzzo	56	Max WS	P_S_20	5.43	144.57	145.81		145.81	0.000025	0.18	30.81	26.53	0.05

HEC-RAS River: Spedaluzzo Reach: Spedaluzzo Profile: Max WS (Continued)

Reach	River Sta	Profile	Plan	Q Total (m3/s)	Min Ch El (m)	W.S. Elev (m)	Crit W.S. (m)	E.G. Elev (m)	E.G. Slope (m/m)	Vel Chnl (m/s)	Flow Area (m2)	Top Width (m)	Froude # Chl
Spedaluzzo	55	Max WS	P_S_200	6.63	144.56	145.90	144.91	145.91	0.000069	0.40	16.64	13.06	0.11
Spedaluzzo	55	Max WS	P_S_100	5.96	144.56	145.87	144.89	145.88	0.000060	0.37	16.19	13.05	0.11
Spedaluzzo	55	Max WS	P_S_30	5.04	144.56	145.82	144.87	145.83	0.000049	0.32	15.56	13.04	0.09
Spedaluzzo	55	Max WS	P_S_20	4.76	144.56	145.81	144.85	145.81	0.000045	0.31	15.36	13.03	0.09
Spedaluzzo	54			Inl Struct									
Spedaluzzo	53	Max WS	P_S_200	6.63	144.55	145.65		145.66	0.000118	0.47	13.99	12.79	0.14
Spedaluzzo	53	Max WS	P_S_100	5.72	144.55	145.62		145.63	0.000095	0.42	13.67	12.79	0.13
Spedaluzzo	53	Max WS	P_S_30	5.04	144.55	145.54		145.55	0.000094	0.40	12.64	12.78	0.13
Spedaluzzo	53	Max WS	P_S_20	4.76	144.55	145.51		145.52	0.000094	0.39	12.20	12.78	0.13
Spedaluzzo	52.5			Lat Struct									
Spedaluzzo	52	Max WS	P_S_200	5.69	144.55	145.52		145.67	0.002703	1.73	3.28	3.50	0.57
Spedaluzzo	52	Max WS	P_S_100	5.71	144.55	145.52		145.67	0.002705	1.73	3.29	3.50	0.57
Spedaluzzo	52	Max WS	P_S_30	5.04	144.55	145.45		145.59	0.002649	1.66	3.04	3.48	0.57
Spedaluzzo	52	Max WS	P_S_20	4.76	144.55	145.42		145.55	0.002635	1.63	2.93	3.48	0.57
Spedaluzzo	51.6	Max WS	P_S_200	5.69	144.55	145.52	145.22	145.67	0.002723	1.74	3.27	3.50	0.57
Spedaluzzo	51.6	Max WS	P_S_100	5.71	144.55	145.52	145.22	145.67	0.002725	1.74	3.28	3.50	0.57
Spedaluzzo	51.6	Max WS	P_S_30	5.04	144.55	145.45	145.17	145.59	0.002670	1.66	3.03	3.48	0.57
Spedaluzzo	51.6	Max WS	P_S_20	4.76	144.55	145.41	145.14	145.55	0.002657	1.63	2.92	3.47	0.57
Spedaluzzo	51.5			Bridge									
Spedaluzzo	51.4	Max WS	P_S_200	6.65	144.48	145.50		145.80	0.005660	2.41	2.75	2.81	0.78
Spedaluzzo	51.4	Max WS	P_S_100	6.08	144.48	145.44		145.72	0.005702	2.36	2.58	2.80	0.79
Spedaluzzo	51.4	Max WS	P_S_30	5.04	144.48	145.32		145.57	0.005713	2.24	2.25	2.77	0.79
Spedaluzzo	51.4	Max WS	P_S_20	4.76	144.48	145.29		145.54	0.005686	2.20	2.17	2.77	0.79
Spedaluzzo	51	Max WS	P_S_200	6.65	144.48	145.45		145.81	0.004502	2.64	2.52	2.80	0.85
Spedaluzzo	51	Max WS	P_S_100	6.08	144.48	145.40		145.73	0.004601	2.56	2.37	2.79	0.85
Spedaluzzo	51	Max WS	P_S_30	5.04	144.48	145.29		145.58	0.004834	2.41	2.09	2.77	0.86
Spedaluzzo	51	Max WS	P_S_20	4.76	144.48	145.26		145.54	0.004873	2.36	2.02	2.76	0.85
Spedaluzzo	50	Max WS	P_S_200	6.64	144.38	145.34	145.31	145.77	0.012059	2.91	2.28	2.48	0.97



HEC-RAS River: Spedaluzzo Reach: Spedaluzzo Profile: Max WS (Continued)

Reach	River Sta	Profile	Plan	Q Total (m3/s)	Min Ch El (m)	W.S. Elev (m)	Crit W.S. (m)	E.G. Elev (m)	E.G. Slope (m/m)	Vel Chnl (m/s)	Flow Area (m2)	Top Width (m)	Froude # Chl
Spedaluzzo	50	Max WS	P_S_100	6.00	144.38	145.27	145.26	145.68	0.011971	2.83	2.12	2.46	0.97
Spedaluzzo	50	Max WS	P_S_30	5.04	144.38	145.17	145.16	145.54	0.011879	2.68	1.88	2.45	0.98
Spedaluzzo	50	Max WS	P_S_20	4.76	144.38	145.14	145.13	145.50	0.011795	2.63	1.81	2.44	0.98
Spedaluzzo	49	Max WS	P_S_200	6.61	144.28	145.21	145.18	145.61	0.011065	2.81	2.35	2.62	0.95
Spedaluzzo	49	Max WS	P_S_100	5.95	144.28	145.14	145.12	145.52	0.011097	2.73	2.18	2.61	0.95
Spedaluzzo	49	Max WS	P_S_30	5.04	144.28	145.04	145.03	145.39	0.011352	2.62	1.92	2.59	0.97
Spedaluzzo	49	Max WS	P_S_20	4.76	144.28	145.02	145.00	145.35	0.011300	2.58	1.85	2.58	0.97
Spedaluzzo	48	Max WS	P_S_200	6.61	144.20	145.09	145.10	145.54	0.013070	2.97	2.22	2.56	1.02
Spedaluzzo	48	Max WS	P_S_100	5.95	144.20	145.02	145.04	145.45	0.013266	2.90	2.05	2.55	1.03
Spedaluzzo	48	Max WS	P_S_30	5.04	144.20	144.91	144.95	145.32	0.014169	2.83	1.78	2.54	1.08
Spedaluzzo	48	Max WS	P_S_20	4.76	144.20	144.88	144.92	145.28	0.014185	2.78	1.71	2.54	1.08
Spedaluzzo	47	Max WS	P_S_200	6.59	143.76	144.80	145.12	145.12	0.008245	2.51	2.63	2.57	0.79
Spedaluzzo	47	Max WS	P_S_100	5.90	143.76	144.73	145.02	145.02	0.008027	2.41	2.45	2.56	0.79
Spedaluzzo	47	Max WS	P_S_30	4.68	143.76	144.59	144.84	144.84	0.007908	2.25	2.08	2.55	0.79
Spedaluzzo	47	Max WS	P_S_20	4.76	143.76	144.55	144.84	144.84	0.009331	2.39	1.99	2.55	0.87
Spedaluzzo	46	Max WS	P_S_200	6.59	143.71	144.70	145.07	145.07	0.009785	2.68	2.45	2.56	0.88
Spedaluzzo	46	Max WS	P_S_100	5.87	143.71	144.64	144.97	144.97	0.009176	2.54	2.31	2.55	0.85
Spedaluzzo	46	Max WS	P_S_30	4.66	143.71	144.50	144.79	144.79	0.009204	2.38	1.96	2.53	0.87
Spedaluzzo	46	Max WS	P_S_20	4.76	143.71	144.46	144.44	144.80	0.011433	2.59	1.84	2.52	0.97
Spedaluzzo	45	Max WS	P_S_200	6.23	143.65	144.62	144.95	144.95	0.009046	2.56	2.43	2.55	0.84
Spedaluzzo	45	Max WS	P_S_100	5.80	143.65	144.57	144.89	144.89	0.009062	2.51	2.31	2.55	0.84
Spedaluzzo	45	Max WS	P_S_30	4.61	143.65	144.43	144.71	144.71	0.009102	2.35	1.96	2.54	0.86
Spedaluzzo	45	Max WS	P_S_20	4.76	143.65	144.36	144.37	144.72	0.012807	2.68	1.78	2.53	1.02
Spedaluzzo	44	Max WS	P_S_200	6.78	143.55	144.64	144.06	144.69	0.000708	1.04	6.52	6.00	0.32
Spedaluzzo	44	Max WS	P_S_100	6.13	143.55	144.55	144.02	144.60	0.000752	1.03	5.97	6.00	0.33
Spedaluzzo	44	Max WS	P_S_30	5.04	143.55	144.41	143.97	144.46	0.000785	0.97	5.17	6.00	0.34
Spedaluzzo	44	Max WS	P_S_20	4.76	143.55	144.38	143.95	144.43	0.000792	0.96	4.96	6.00	0.34
Spedaluzzo	43.5			Bridge									
Spedaluzzo	43	Max WS	P_S_200	6.77	143.45	144.61	144.66	144.66	0.000579	0.97	6.97	6.00	0.29





HEC-RAS River: Spedaluzzo Reach: Spedaluzzo Profile: Max WS (Continued)

Reach	River Sta	Profile	Plan	Q Total (m3/s)	Min Ch El (m)	W.S. Elev (m)	Crit W.S. (m)	E.G. Elev (m)	E.G. Slope (m/m)	Vel Chnl (m/s)	Flow Area (m2)	Top Width (m)	Froude # Chl
Spedaluzzo	29.3			Lat Struct									
Spedaluzzo	29	Max WS	P_S_200	6.52	141.46	143.03	142.14	143.21	0.003443	1.85	3.52	2.79	0.53
Spedaluzzo	29	Max WS	P_S_100	5.89	141.46	142.87	142.09	143.05	0.003993	1.91	3.08	2.67	0.57
Spedaluzzo	29	Max WS	P_S_30	5.02	141.46	142.68	142.03	142.87	0.004585	1.94	2.59	2.54	0.61
Spedaluzzo	29	Max WS	P_S_20	4.74	141.46	142.64	142.00	142.83	0.004573	1.91	2.49	2.52	0.61
Spedaluzzo	28	Max WS	P_S_200	6.52	141.44	143.13	142.14	143.19	0.000673	1.08	6.07	3.60	0.26
Spedaluzzo	28	Max WS	P_S_100	5.89	141.44	142.97	142.09	143.03	0.000711	1.07	5.51	3.60	0.28
Spedaluzzo	28	Max WS	P_S_30	5.02	141.44	142.79	142.03	142.85	0.000730	1.03	4.86	3.60	0.28
Spedaluzzo	28	Max WS	P_S_20	4.75	141.44	142.75	142.00	142.80	0.000716	1.01	4.70	3.60	0.28
Spedaluzzo	27.5			Bridge									
Spedaluzzo	27	Max WS	P_S_200	6.52	141.34	143.11	142.14	143.16	0.000536	1.00	6.52	3.90	0.24
Spedaluzzo	27	Max WS	P_S_100	5.89	141.34	142.95	142.09	143.00	0.000577	0.99	5.93	3.75	0.25
Spedaluzzo	27	Max WS	P_S_30	5.02	141.34	142.78	142.03	142.83	0.000571	0.95	5.29	3.74	0.25
Spedaluzzo	27	Max WS	P_S_20	4.75	141.34	142.74	142.00	142.78	0.000557	0.93	5.13	3.73	0.25
Spedaluzzo	26.9			Lat Struct									
Spedaluzzo	26.8			Lat Struct									
Spedaluzzo	26	Max WS	P_S_200	6.52	141.33	143.07	142.14	143.16	0.001458	1.35	4.83	3.69	0.38
Spedaluzzo	26	Max WS	P_S_100	5.89	141.33	142.90	142.09	143.00	0.001677	1.39	4.24	3.52	0.40
Spedaluzzo	26	Max WS	P_S_30	5.02	141.33	142.73	142.03	142.83	0.001817	1.37	3.65	3.34	0.42
Spedaluzzo	26	Max WS	P_S_20	4.75	141.33	142.69	142.00	142.78	0.001808	1.35	3.51	3.29	0.42
Spedaluzzo	25	Max WS	P_S_200	6.52	141.33	143.06	142.14	143.16	0.001470	1.36	4.81	3.69	0.38
Spedaluzzo	25	Max WS	P_S_100	5.89	141.33	142.90	142.09	143.00	0.001695	1.39	4.22	3.52	0.41
Spedaluzzo	25	Max WS	P_S_30	5.02	141.33	142.73	142.03	142.82	0.001840	1.38	3.63	3.33	0.42
Spedaluzzo	25	Max WS	P_S_20	4.75	141.33	142.68	142.00	142.78	0.001833	1.36	3.49	3.29	0.42
Spedaluzzo	24	Max WS	P_S_200	6.52	141.21	142.99	142.14	143.09	0.001640	1.41	4.62	3.48	0.39
Spedaluzzo	24	Max WS	P_S_100	5.89	141.21	142.82	142.09	142.93	0.001926	1.46	4.03	3.31	0.42
Spedaluzzo	24	Max WS	P_S_30	5.02	141.21	142.64	142.03	142.75	0.002111	1.46	3.45	3.13	0.44

HEC-RAS River: Spedaluzzo Reach: Spedaluzzo Profile: Max WS (Continued)

Reach	River Sta	Profile	Plan	Q Total (m3/s)	Min Ch El (m)	W.S. Elev (m)	Crit W.S. (m)	E.G. Elev (m)	E.G. Slope (m/m)	Vel Chnl (m/s)	Flow Area (m2)	Top Width (m)	Froude # Chl
Spedaluzzo	24	Max WS	P_S_20	4.74	141.21	142.60		142.70	0.002092	1.43	3.32	3.09	0.44
Spedaluzzo	23	Max WS	P_S_200	6.52	141.12	142.89		143.03	0.002555	1.64	3.98	2.79	0.44
Spedaluzzo	23	Max WS	P_S_100	5.89	141.12	142.70		142.85	0.003003	1.70	3.46	2.68	0.48
Spedaluzzo	23	Max WS	P_S_30	5.02	141.12	142.52		142.66	0.003236	1.69	2.98	2.56	0.50
Spedaluzzo	23	Max WS	P_S_20	4.74	141.12	142.48		142.62	0.003155	1.65	2.88	2.54	0.49
Spedaluzzo	22	Max WS	P_S_200	6.51	141.05	142.87		142.98	0.001695	1.42	4.58	2.95	0.36
Spedaluzzo	22	Max WS	P_S_100	5.89	141.05	142.68		142.79	0.001975	1.47	4.00	2.90	0.40
Spedaluzzo	22	Max WS	P_S_30	5.02	141.05	142.48		142.59	0.002152	1.46	3.43	2.85	0.43
Spedaluzzo	22	Max WS	P_S_20	4.74	141.05	142.44		142.54	0.002101	1.43	3.32	2.84	0.42
Spedaluzzo	21	Max WS	P_S_200	6.51	141.04	142.86	142.07	142.97	0.001435	1.47	4.44	2.82	0.37
Spedaluzzo	21	Max WS	P_S_100	5.89	141.04	142.66	142.02	142.78	0.001665	1.52	3.88	2.79	0.41
Spedaluzzo	21	Max WS	P_S_30	5.02	141.04	142.47	141.94	142.58	0.001808	1.50	3.34	2.76	0.44
Spedaluzzo	21	Max WS	P_S_20	4.74	141.04	142.43	141.91	142.54	0.001762	1.47	3.23	2.75	0.43
Spedaluzzo	20.5			Bridge									
Spedaluzzo	20	Max WS	P_S_200	6.51	141.00	142.39		142.64	0.004393	2.25	2.90	2.50	0.67
Spedaluzzo	20	Max WS	P_S_100	5.88	141.00	142.29		142.54	0.004466	2.20	2.67	2.48	0.68
Spedaluzzo	20	Max WS	P_S_30	5.00	141.00	142.16		142.39	0.004673	2.15	2.33	2.46	0.71
Spedaluzzo	20	Max WS	P_S_20	4.73	141.00	142.11		142.34	0.004797	2.14	2.21	2.45	0.72
Spedaluzzo	19	Max WS	P_S_200	6.51	140.98	142.49		142.63	0.002399	1.61	4.04	3.14	0.45
Spedaluzzo	19	Max WS	P_S_100	5.89	140.98	142.40		142.52	0.002408	1.57	3.74	3.08	0.46
Spedaluzzo	19	Max WS	P_S_30	5.01	140.98	142.25		142.37	0.002423	1.51	3.31	2.99	0.46
Spedaluzzo	19	Max WS	P_S_20	4.74	140.98	142.21		142.32	0.002443	1.50	3.17	2.96	0.46
Spedaluzzo	18	Max WS	P_S_200	6.51	140.87	142.47		142.57	0.001557	1.37	4.75	3.47	0.37
Spedaluzzo	18	Max WS	P_S_100	5.88	140.87	142.37		142.46	0.001547	1.33	4.42	3.41	0.37
Spedaluzzo	18	Max WS	P_S_30	5.01	140.87	142.23		142.31	0.001530	1.27	3.93	3.32	0.37
Spedaluzzo	18	Max WS	P_S_20	4.74	140.87	142.18		142.26	0.001533	1.26	3.77	3.29	0.37
Spedaluzzo	17.9			Lat Struct									
Spedaluzzo	17	Max WS	P_S_200	6.51	140.74	142.30		142.49	0.004006	1.94	3.35	2.61	0.55

HEC-RAS River: Spedaluzzo Reach: Spedaluzzo Profile: Max WS (Continued)

Reach	River Sta	Profile	Plan	Q Total (m3/s)	Min Ch El (m)	W.S. Elev (m)	Crit W.S. (m)	E.G. Elev (m)	E.G. Slope (m/m)	Vel Chnl (m/s)	Flow Area (m2)	Top Width (m)	Froude # Chl
Spedaluzzo	17	Max WS	P_S_100	5.88	140.74	142.21		142.39	0.003958	1.89	3.12	2.56	0.55
Spedaluzzo	17	Max WS	P_S_30	5.00	140.74	142.07		142.24	0.003862	1.80	2.78	2.48	0.54
Spedaluzzo	17	Max WS	P_S_20	4.73	140.74	142.03		142.19	0.003855	1.77	2.67	2.45	0.54
Spedaluzzo	16	Max WS	P_S_200	5.99	140.60	142.06		142.28	0.005108	2.09	2.86	2.47	0.62
Spedaluzzo	16	Max WS	P_S_100	5.88	140.60	141.95		142.21	0.006298	2.26	2.60	2.39	0.69
Spedaluzzo	16	Max WS	P_S_30	4.94	140.60	141.83		142.06	0.006002	2.13	2.32	2.31	0.68
Spedaluzzo	16	Max WS	P_S_20	4.66	140.60	141.78		142.01	0.006146	2.12	2.20	2.27	0.69
Spedaluzzo	15	Max WS	P_S_200	6.51	140.56	142.13	141.51	142.27	0.002009	1.67	3.91	2.66	0.44
Spedaluzzo	15	Max WS	P_S_100	5.88	140.56	142.04	141.46	142.17	0.001939	1.61	3.66	2.66	0.44
Spedaluzzo	15	Max WS	P_S_30	4.95	140.56	141.91	141.37	142.03	0.001778	1.49	3.32	2.66	0.43
Spedaluzzo	15	Max WS	P_S_20	4.69	140.56	141.86	141.34	141.97	0.001784	1.47	3.19	2.66	0.43
Spedaluzzo	14.9			Bridge									
Spedaluzzo	14	Max WS	P_S_200	5.22	140.31	141.85		142.06	0.005319	2.01	2.59	2.00	0.56
Spedaluzzo	14	Max WS	P_S_100	4.63	140.31	141.72		141.92	0.005452	1.98	2.34	1.95	0.58
Spedaluzzo	14	Max WS	P_S_30	4.61	140.31	141.56		141.83	0.007767	2.27	2.03	1.88	0.70
Spedaluzzo	14	Max WS	P_S_20	4.47	140.31	141.51		141.78	0.008300	2.31	1.93	1.86	0.72
Spedaluzzo	13.9			Lat Struct									
Spedaluzzo	13.8			Lat Struct									
Spedaluzzo	13	Max WS	P_S_200	5.22	140.21	141.90		141.99	0.001834	1.37	3.81	2.69	0.37
Spedaluzzo	13	Max WS	P_S_100	4.84	140.21	141.76		141.86	0.002024	1.40	3.46	2.62	0.39
Spedaluzzo	13	Max WS	P_S_30	4.67	140.21	141.61		141.73	0.002623	1.53	3.05	2.54	0.45
Spedaluzzo	13	Max WS	P_S_20	4.50	140.21	141.55		141.67	0.002765	1.55	2.90	2.51	0.46
Spedaluzzo	12	Max WS	P_S_200	5.22	140.21	141.90		141.97	0.001269	1.21	4.30	3.39	0.34
Spedaluzzo	12	Max WS	P_S_100	4.84	140.21	141.76		141.84	0.001461	1.26	3.85	3.26	0.37
Spedaluzzo	12	Max WS	P_S_30	4.67	140.21	141.60		141.70	0.002017	1.41	3.32	3.09	0.43
Spedaluzzo	12	Max WS	P_S_20	4.48	140.21	141.54		141.64	0.002171	1.43	3.14	3.03	0.45
Spedaluzzo	11	Max WS	P_S_200	5.22	140.09	141.90		141.96	0.001009	1.11	4.69	3.49	0.31
Spedaluzzo	11	Max WS	P_S_100	4.84	140.09	141.76		141.83	0.001141	1.14	4.23	3.36	0.33

HEC-RAS River: Spedaluzzo Reach: Spedaluzzo Profile: Max WS (Continued)

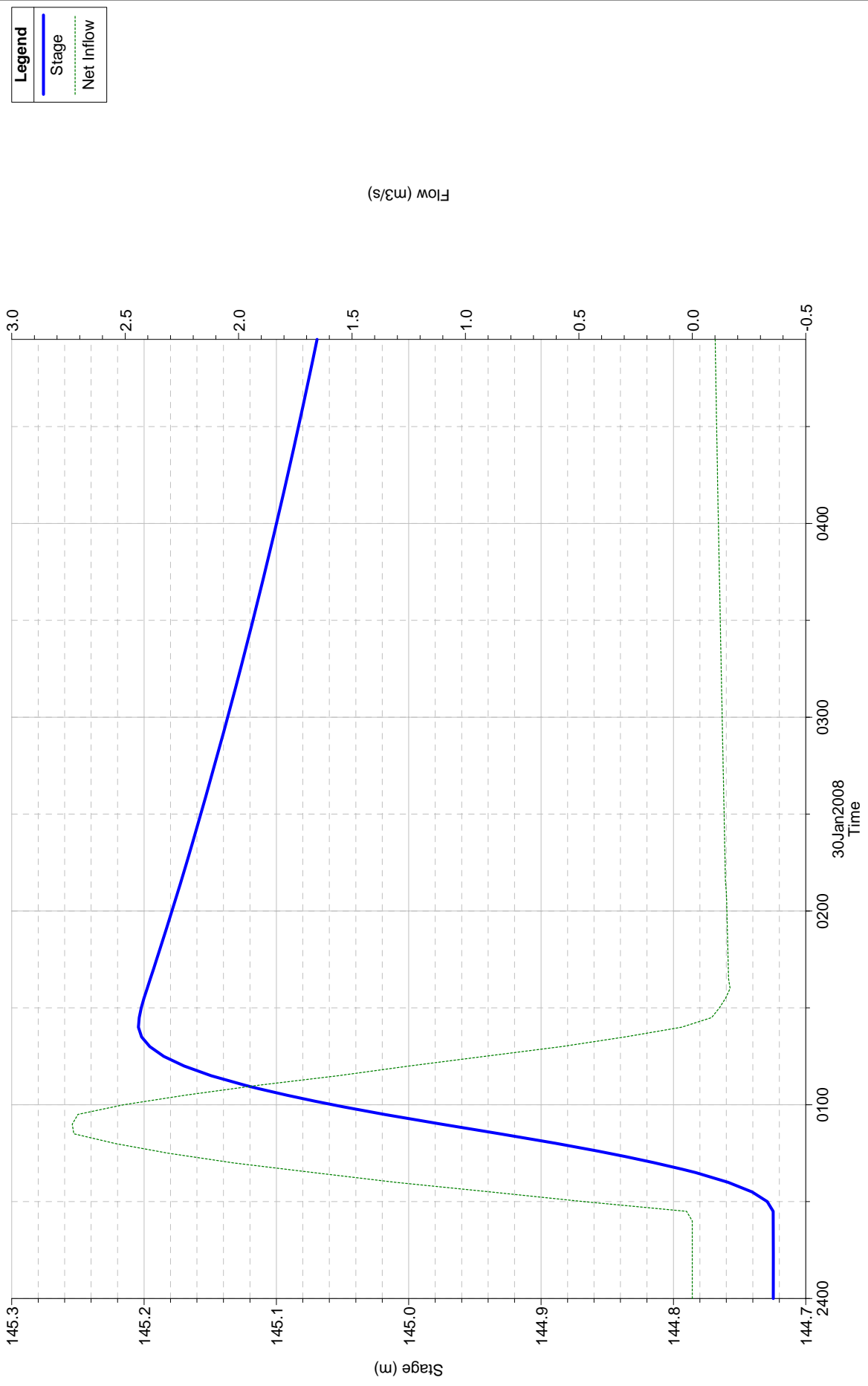
Reach	River Sta	Profile	Plan	Q Total (m3/s)	Min Ch El (m)	W.S. Elev (m)	Crit W.S. (m)	E.G. Elev (m)	E.G. Slope (m/m)	Vel Chnl (m/s)	Flow Area (m2)	Top Width (m)	Froude # Chl
Spedaluzzo	11	Max WS	P_S_30	4.67	140.09	141.60		141.68	0.001537	1.27	3.68	3.19	0.38
Spedaluzzo	11	Max WS	P_S_20	4.48	140.09	141.53		141.62	0.001636	1.29	3.49	3.13	0.39
Spedaluzzo	10	Max WS	P_S_200	8.40	139.85	141.46		141.68	0.003913	2.08	4.03	3.31	0.60
Spedaluzzo	10	Max WS	P_S_100	7.45	139.85	141.35		141.56	0.003951	2.03	3.67	3.20	0.61
Spedaluzzo	10	Max WS	P_S_30	6.26	139.85	141.28		141.45	0.003246	1.81	3.47	3.13	0.55
Spedaluzzo	10	Max WS	P_S_20	5.90	139.85	141.23		141.39	0.003298	1.79	3.29	3.08	0.55
Spedaluzzo	09	Max WS	P_S_200	9.11	139.68	141.11	140.94	141.47	0.005325	2.63	3.46	3.13	0.80
Spedaluzzo	09	Max WS	P_S_100	8.03	139.68	141.02	140.85	141.35	0.005228	2.53	3.17	3.04	0.79
Spedaluzzo	09	Max WS	P_S_30	7.10	139.68	140.93	140.76	141.23	0.005215	2.45	2.90	2.95	0.79
Spedaluzzo	09	Max WS	P_S_20	6.66	139.68	140.88	140.72	141.18	0.005244	2.42	2.76	2.90	0.79
Spedaluzzo	08.5			Bridge									
Spedaluzzo	08	Max WS	P_S_200	9.11	139.63	141.11		141.40	0.004056	2.37	3.85	3.18	0.69
Spedaluzzo	08	Max WS	P_S_100	8.03	139.63	141.02		141.28	0.003900	2.26	3.56	3.11	0.67
Spedaluzzo	08	Max WS	P_S_30	7.10	139.63	140.93		141.17	0.003787	2.16	3.28	3.04	0.67
Spedaluzzo	08	Max WS	P_S_20	6.66	139.63	140.88		141.11	0.003752	2.12	3.14	3.00	0.66
Spedaluzzo	7.9			Lat Struct									
Spedaluzzo	7.8			Lat Struct									
Spedaluzzo	07	Max WS	P_S_200	9.11	139.49	140.99		141.30	0.005806	2.47	3.69	3.21	0.73
Spedaluzzo	07	Max WS	P_S_100	8.03	139.49	140.91		141.19	0.005545	2.35	3.42	3.12	0.72
Spedaluzzo	07	Max WS	P_S_30	7.10	139.49	140.82		141.08	0.005362	2.25	3.15	3.04	0.71
Spedaluzzo	07	Max WS	P_S_20	6.66	139.49	140.78		141.02	0.005302	2.21	3.02	2.99	0.70
Spedaluzzo	06	Max WS	P_S_200	9.10	139.23	140.64	140.59	141.09	0.010577	2.98	3.06	3.02	0.94
Spedaluzzo	06	Max WS	P_S_100	8.03	139.23	140.56		140.97	0.010135	2.84	2.83	2.89	0.92
Spedaluzzo	06	Max WS	P_S_30	7.10	139.23	140.48		140.86	0.009766	2.72	2.61	2.76	0.90
Spedaluzzo	06	Max WS	P_S_20	6.66	139.23	140.44		140.80	0.009639	2.67	2.49	2.69	0.89
Spedaluzzo	05	Max WS	P_S_200	9.10	139.06	140.42	140.42	140.94	0.012472	3.18	2.86	2.80	1.00
Spedaluzzo	05	Max WS	P_S_100	8.03	139.06	140.34	140.32	140.81	0.012039	3.05	2.63	2.67	0.98
Spedaluzzo	05	Max WS	P_S_30	7.10	139.06	140.26	140.23	140.69	0.011587	2.92	2.43	2.54	0.95

HEC-RAS River: Spedaluzzo Reach: Spedaluzzo Profile: Max WS (Continued)

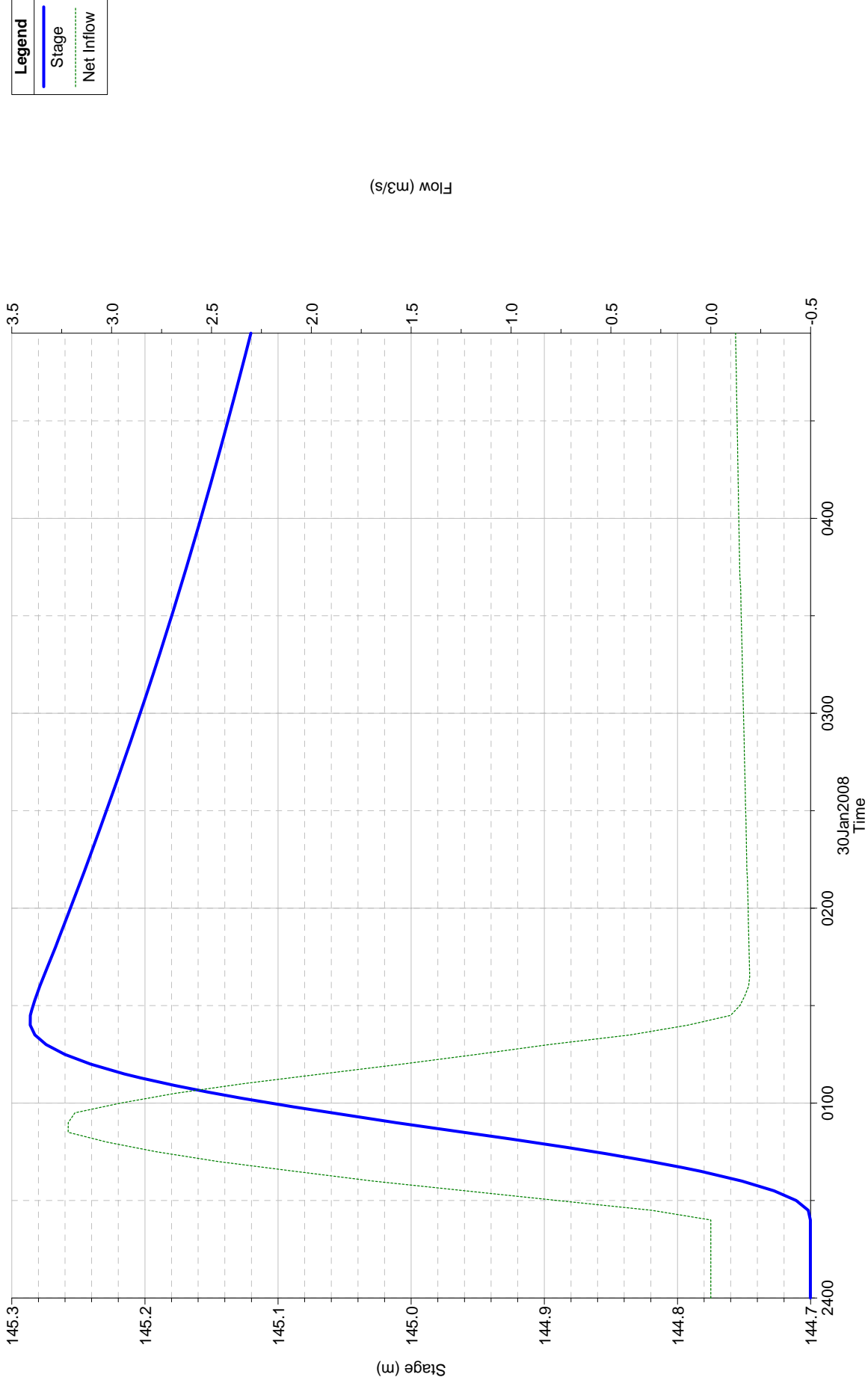
Reach	River Sta	Profile	Plan	Q Total (m3/s)	Min Ch El (m)	W.S. Elev (m)	Crit W.S. (m)	E.G. Elev (m)	E.G. Slope (m/m)	Vel Chnl (m/s)	Flow Area (m2)	Top Width (m)	Froude # Chl
Spedaluzzo	05	Max WS	P_S_20	6.66	139.06	140.22	140.17	140.64	0.011397	2.86	2.33	2.48	0.94
Spedaluzzo	04	Max WS	P_S_200	9.10	138.61	139.78		140.13	0.007270	2.62	3.47	4.21	0.92
Spedaluzzo	04	Max WS	P_S_100	8.03	138.61	139.71		140.04	0.007253	2.54	3.17	4.06	0.92
Spedaluzzo	04	Max WS	P_S_30	7.09	138.61	139.64		139.95	0.007242	2.45	2.89	3.91	0.91
Spedaluzzo	04	Max WS	P_S_20	6.66	138.61	139.61		139.90	0.007225	2.41	2.76	3.84	0.91
Spedaluzzo	03	Max WS	P_S_200	9.10	138.27	139.45		139.77	0.006723	2.52	3.62	4.42	0.89
Spedaluzzo	03	Max WS	P_S_100	8.03	138.27	139.38		139.68	0.006807	2.45	3.28	4.24	0.89
Spedaluzzo	03	Max WS	P_S_30	7.09	138.27	139.30		139.59	0.006870	2.38	2.99	4.08	0.89
Spedaluzzo	03	Max WS	P_S_20	6.66	138.27	139.27		139.55	0.006924	2.34	2.84	4.00	0.89
Spedaluzzo	02	Max WS	P_S_200	9.08	137.79	139.16		139.38	0.003865	2.06	4.41	4.73	0.68
Spedaluzzo	02	Max WS	P_S_100	8.02	137.79	139.06		139.27	0.004073	2.03	3.95	4.50	0.69
Spedaluzzo	02	Max WS	P_S_30	7.09	137.79	138.97		139.17	0.004308	2.01	3.53	4.29	0.71
Spedaluzzo	02	Max WS	P_S_20	6.65	137.79	138.92		139.12	0.004445	2.00	3.32	4.19	0.72
Spedaluzzo	01	Max WS	P_S_200	9.08	137.36	138.74	138.60	139.10	0.007071	2.65	3.42	3.26	0.83
Spedaluzzo	01	Max WS	P_S_100	8.02	137.36	138.65	138.51	138.98	0.007009	2.56	3.13	3.16	0.82
Spedaluzzo	01	Max WS	P_S_30	7.09	137.36	138.56	138.43	138.87	0.007086	2.49	2.84	3.05	0.83
Spedaluzzo	01	Max WS	P_S_20	6.65	137.36	138.51	138.39	138.82	0.007094	2.45	2.71	3.00	0.82



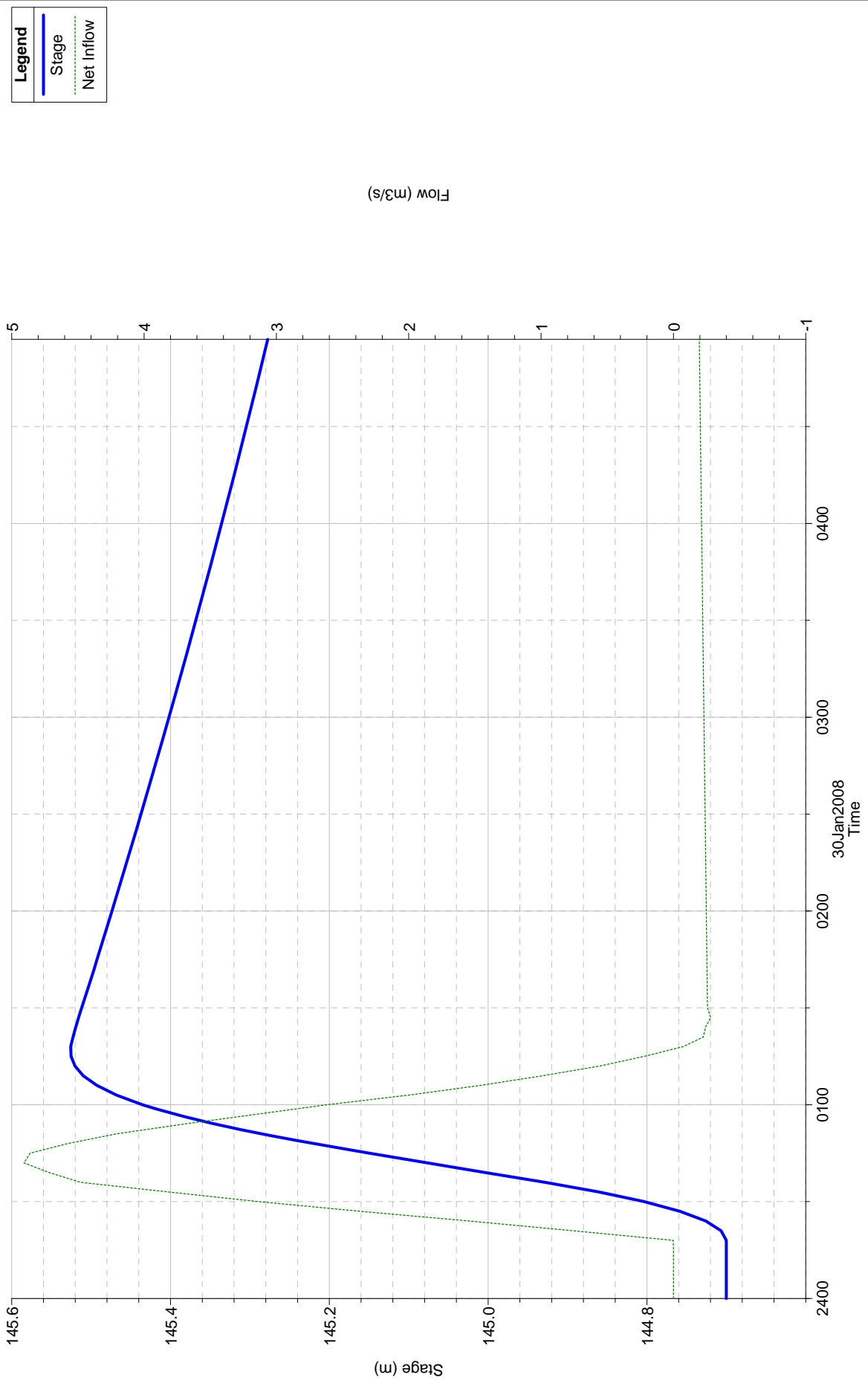
Plan: P\_S\_20 Storage Area: Cassa Spedaluzzo



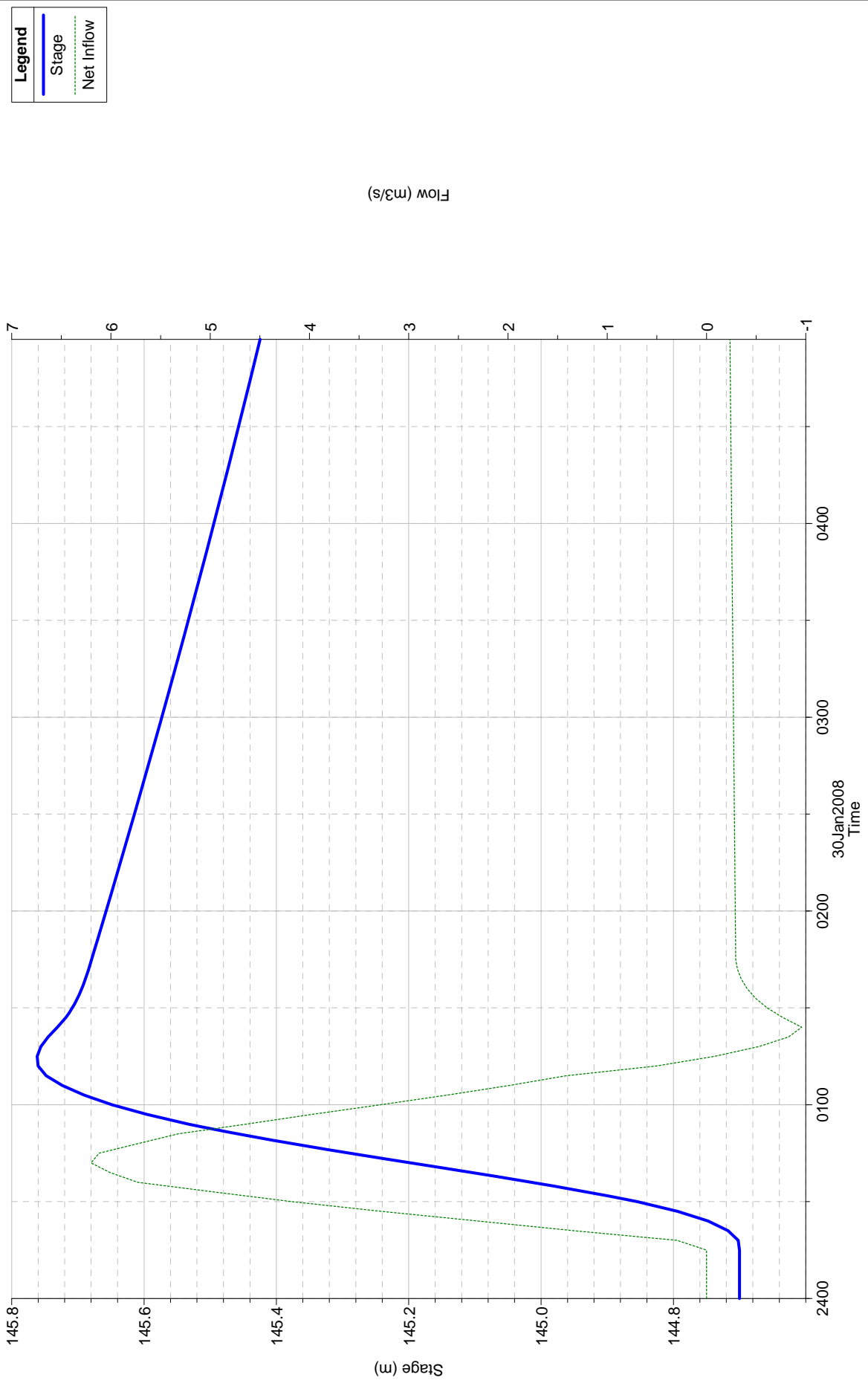
Plan: P\_S\_30 Storage Area: Cassa Spedaluzzo



Plan: P\_S\_100 Storage Area: Cassa Spedaluzzo



Plan: P\_S\_200 Storage Area: Cassa Spedaluzzo



**borro del Giglio - stato di progetto**

verifiche con Tpioggia critico per il Borro del Giglio

- moto vario

Tr=200, 100, 30 e 20 anni

*profilo*

*livelli idrici nelle sezioni di verifica*

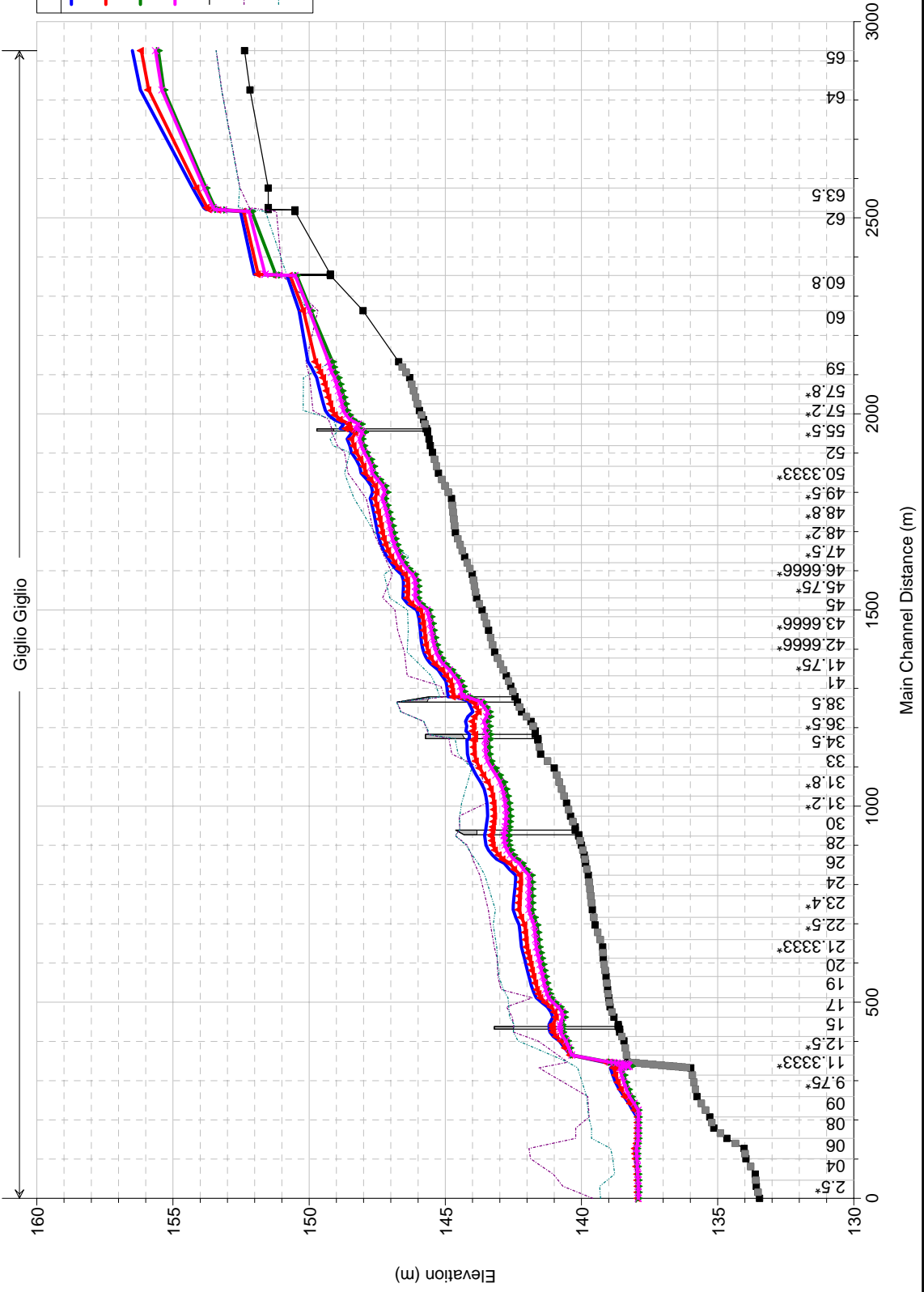
*tabella di output del software Hec-ras 4.0*

*livelli e portate in ingresso alle aree di accumulo*

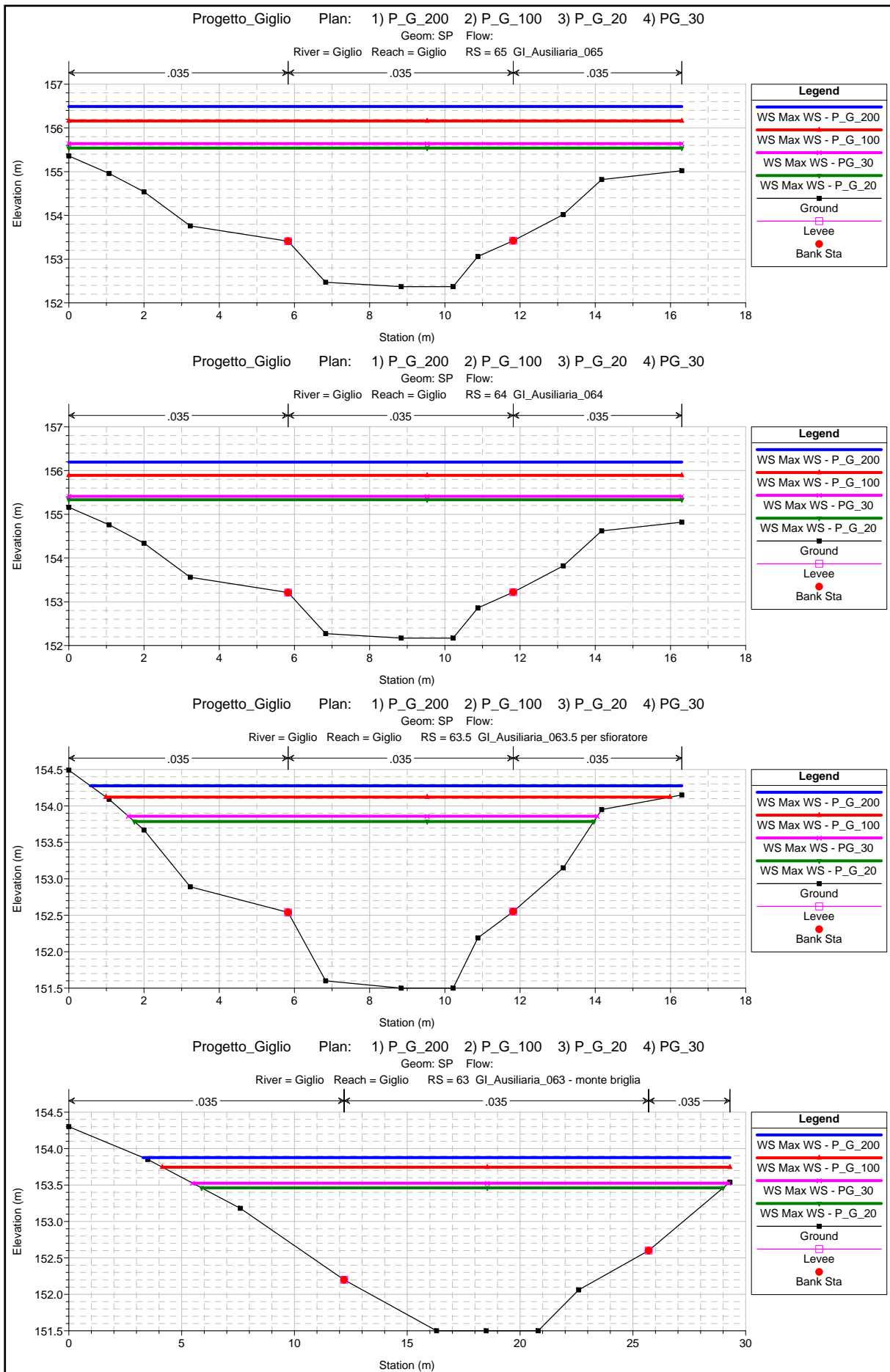


Progetto\_Giglio Plan: 1) P\_G\_200 2) P\_G\_100 3) P\_G\_20 4) PG\_30

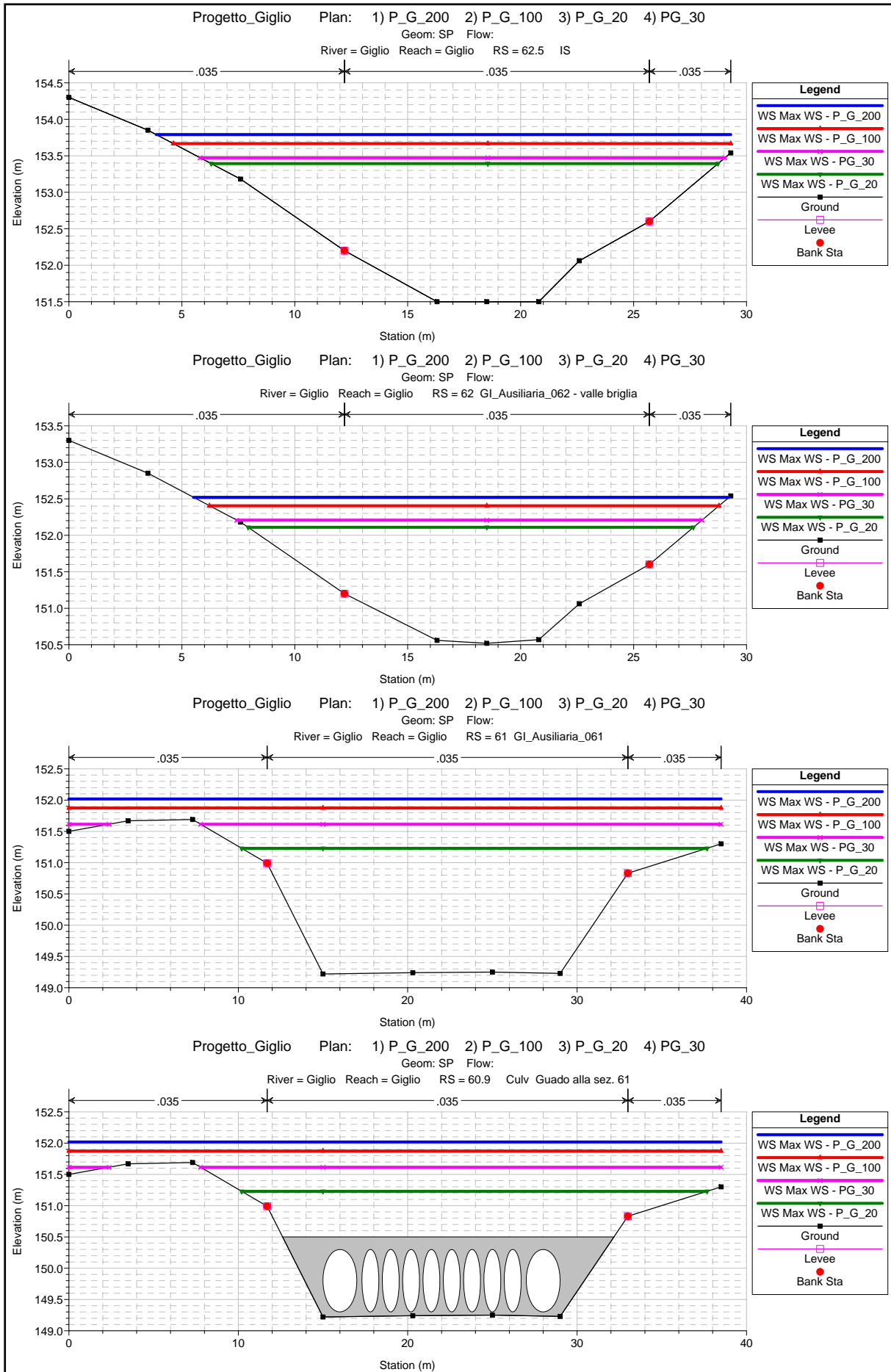
Geom: SP Flow:

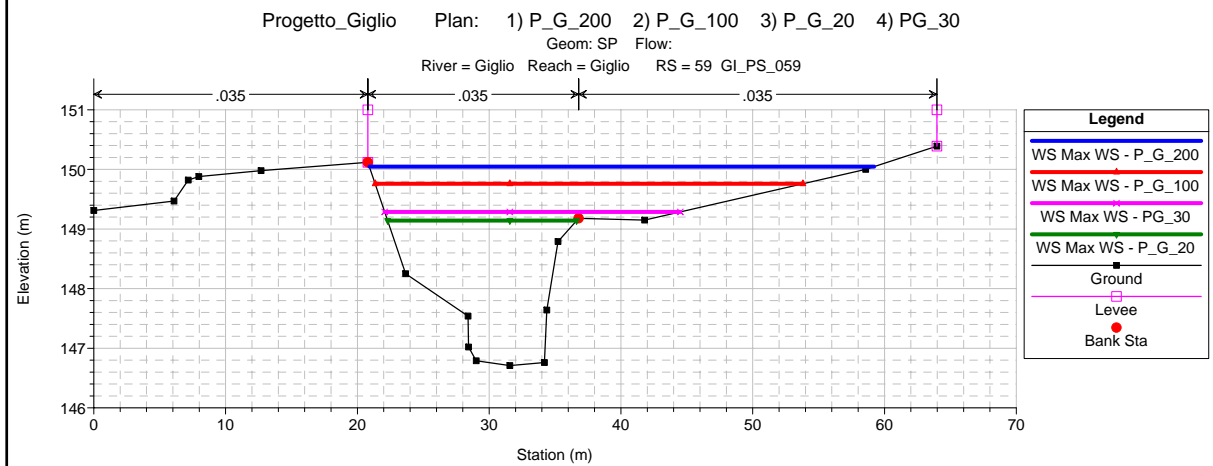
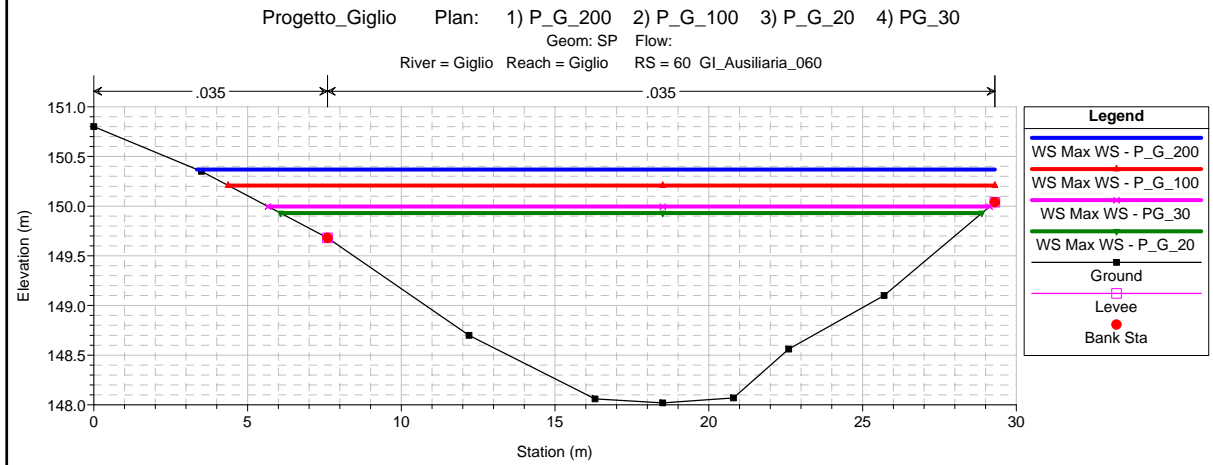
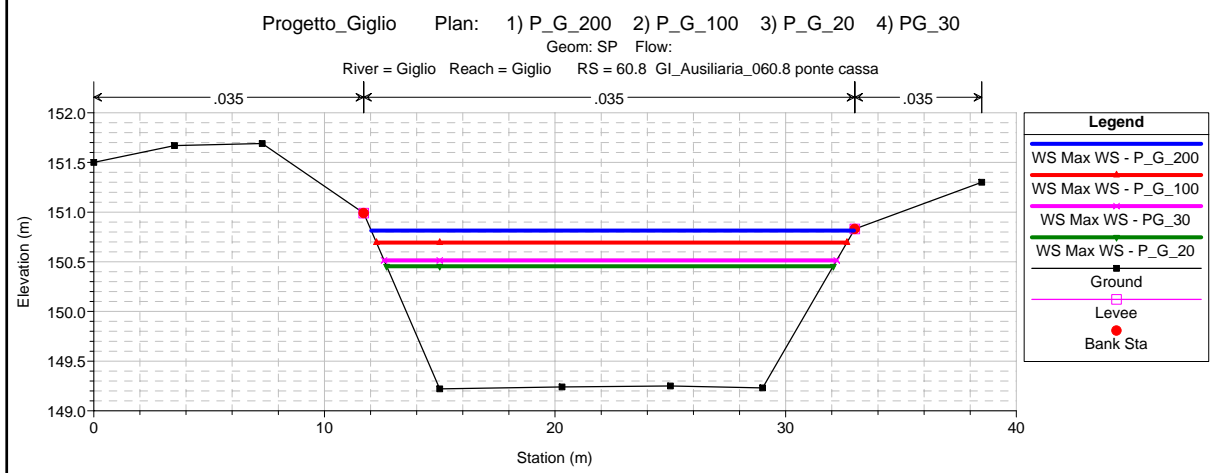
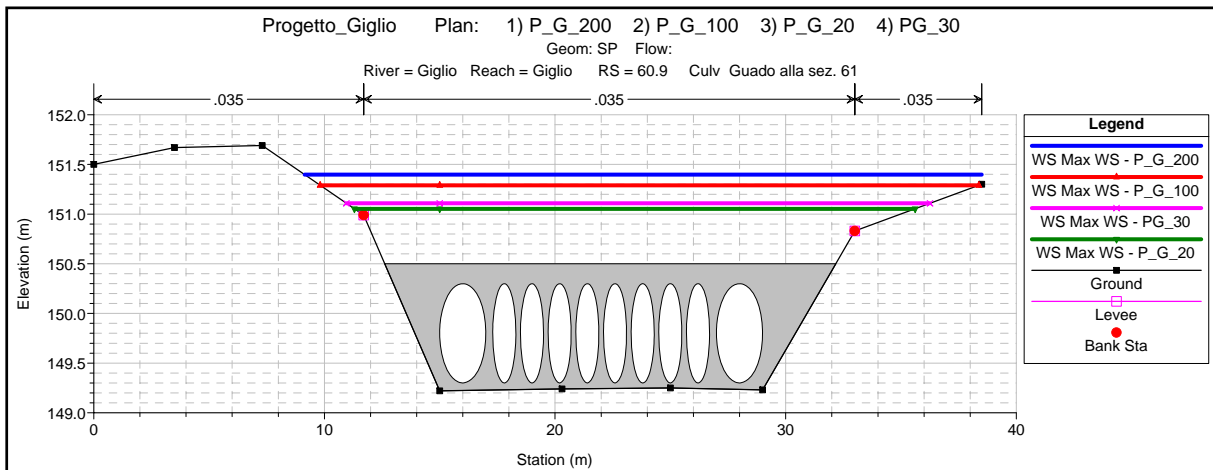


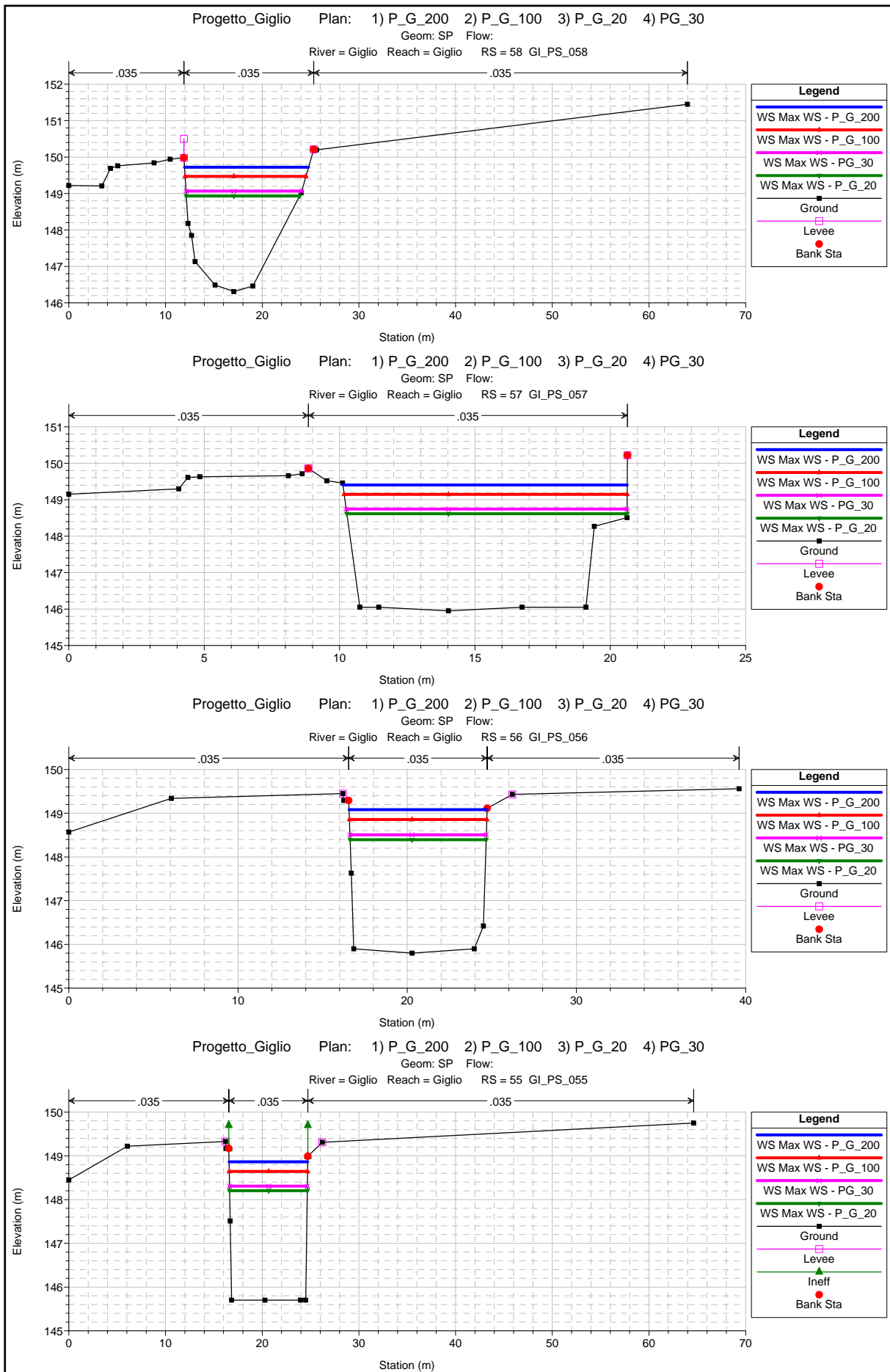
Legend	
WS Max WS - P_G_200	(Blue line)
WS Max WS - P_G_100	(Red line)
WS Max WS - P_G_20	(Green line)
WS Max WS - PG_30	(Purple line)
Ground	(Thick black line)
LOB	(Dotted line)
ROB	(Dashed line)

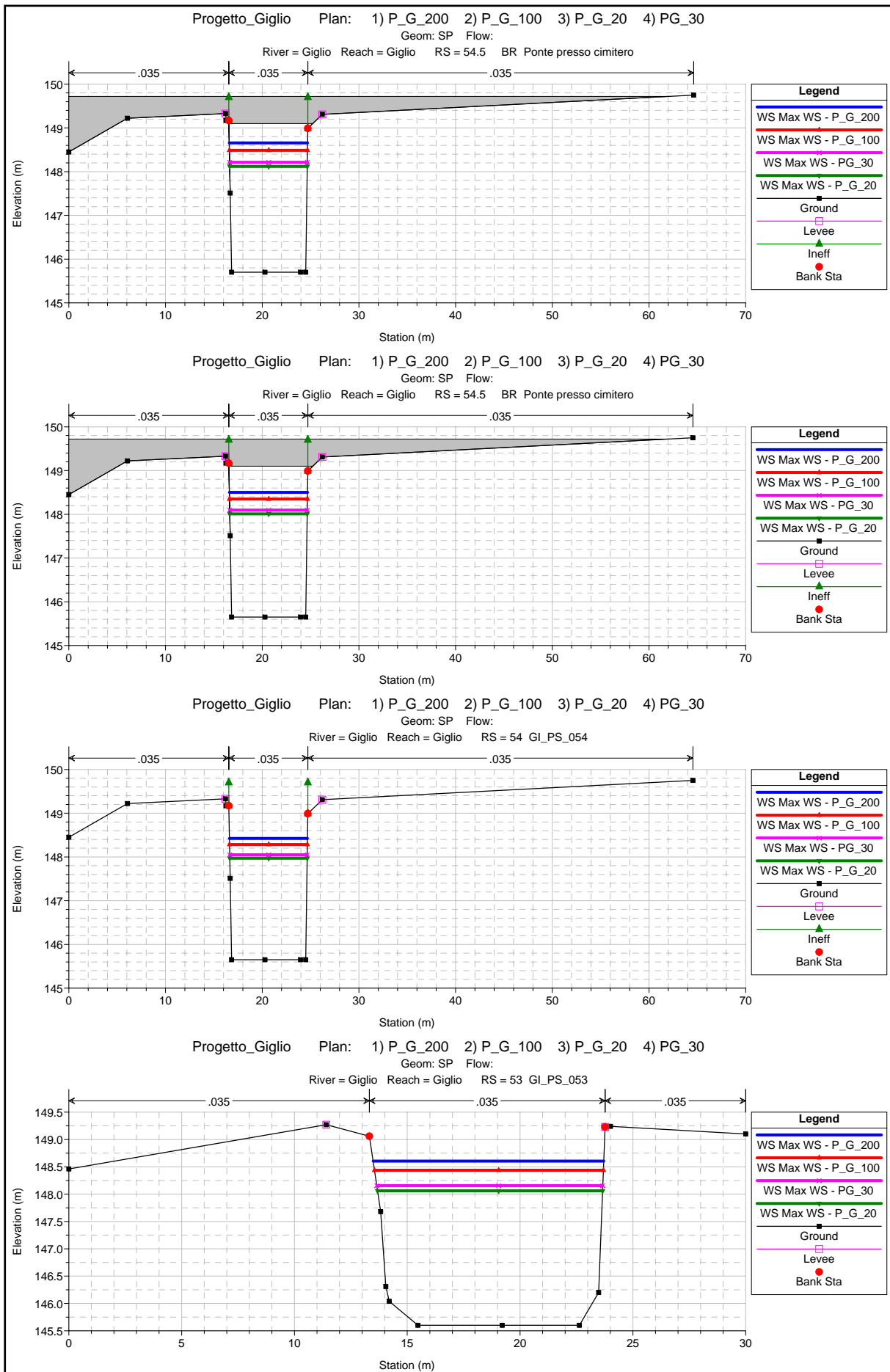


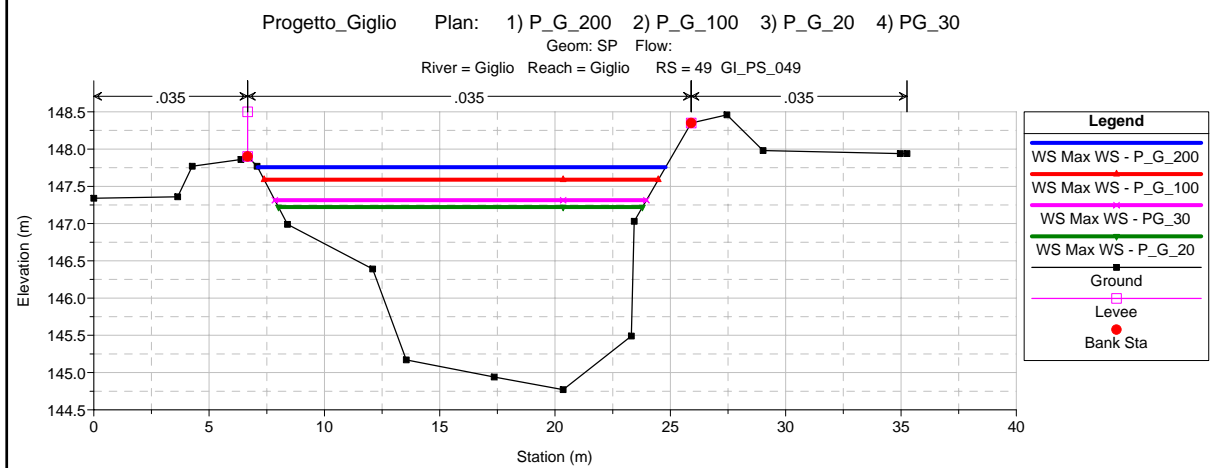
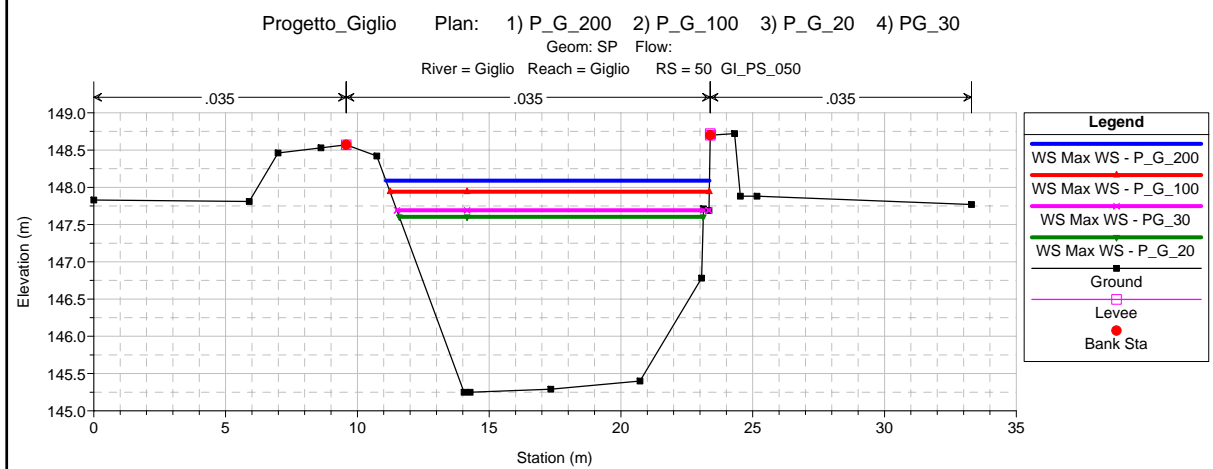
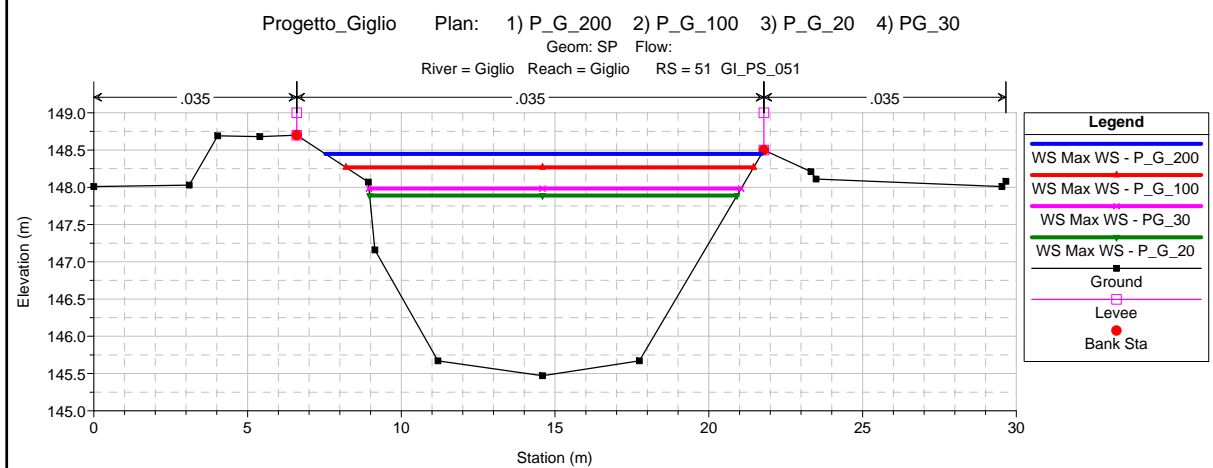
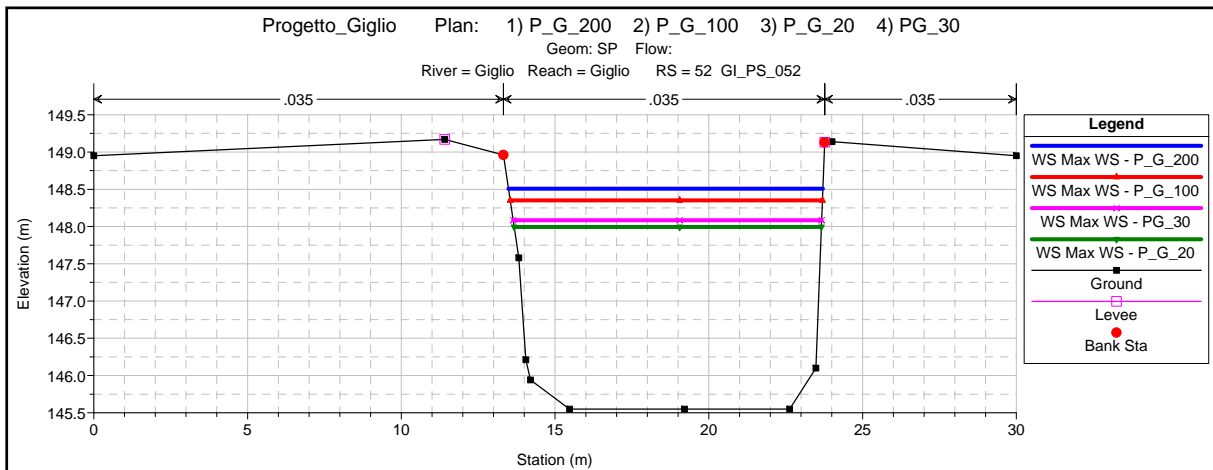


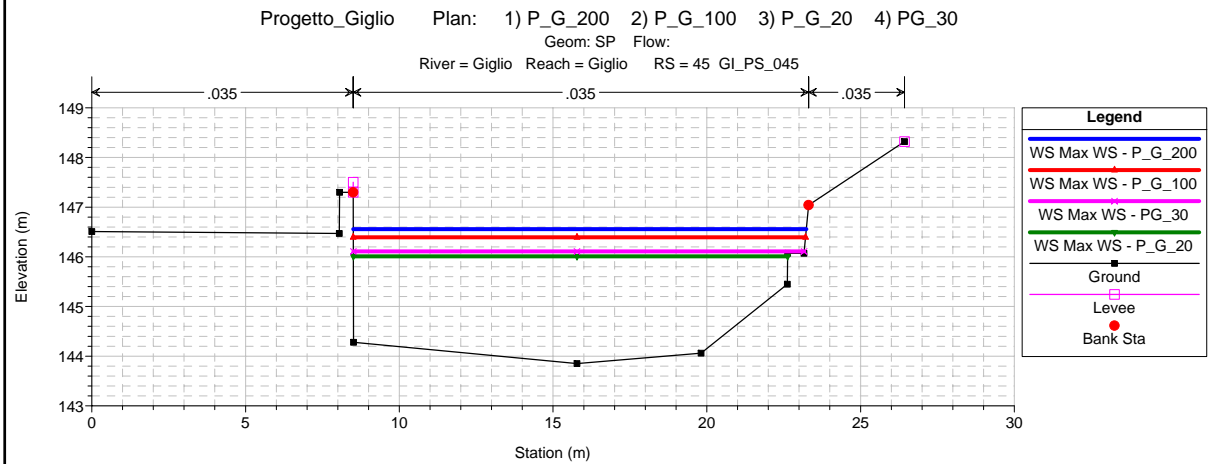
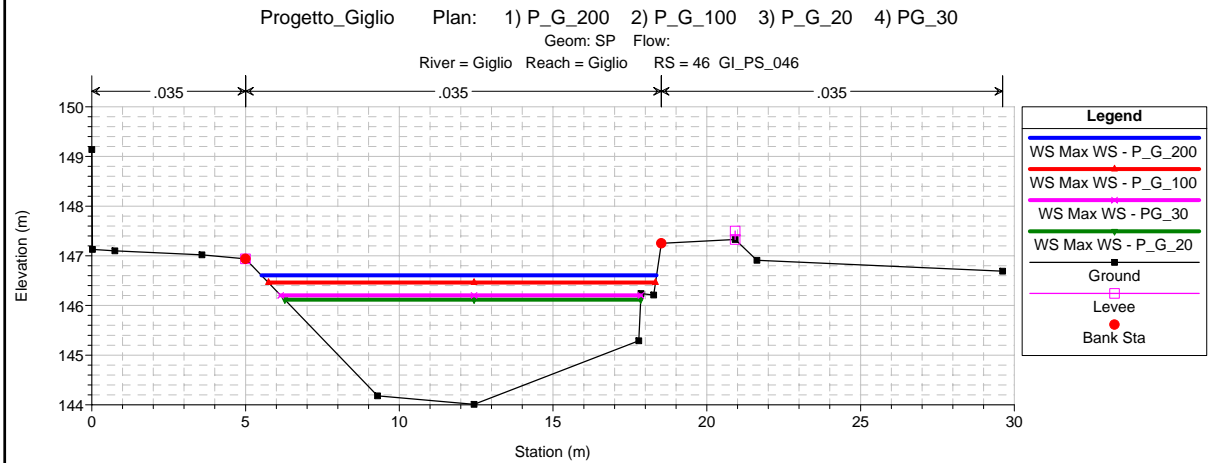
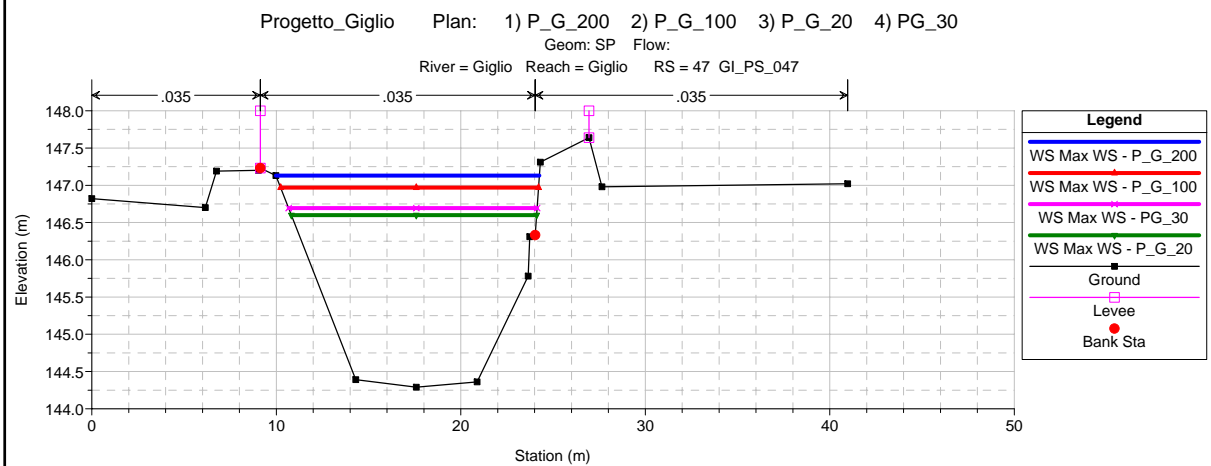
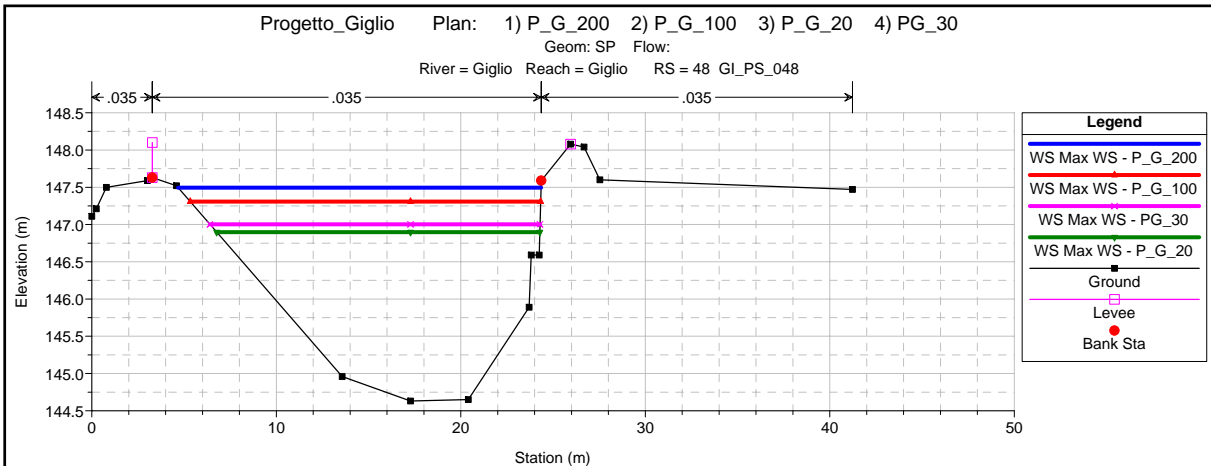


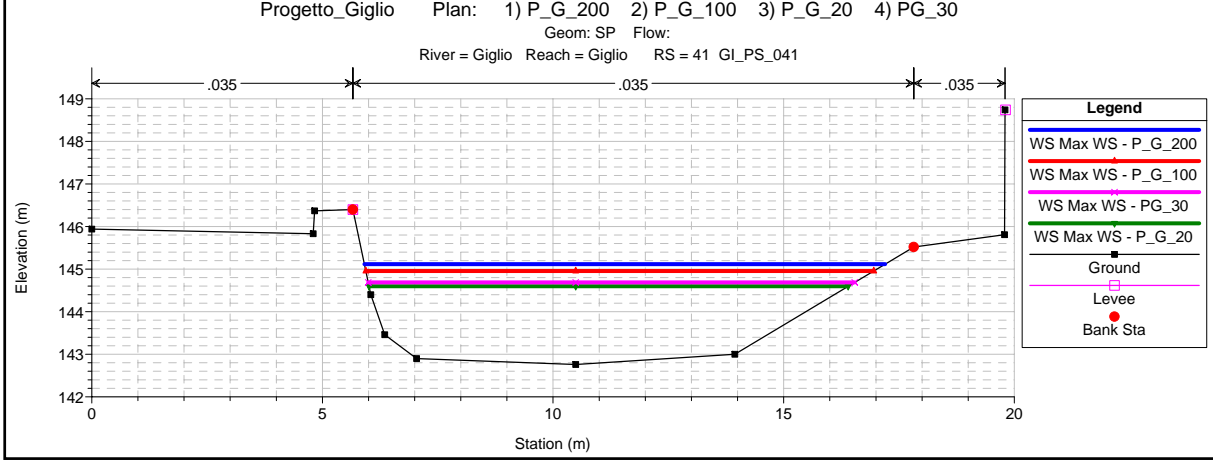
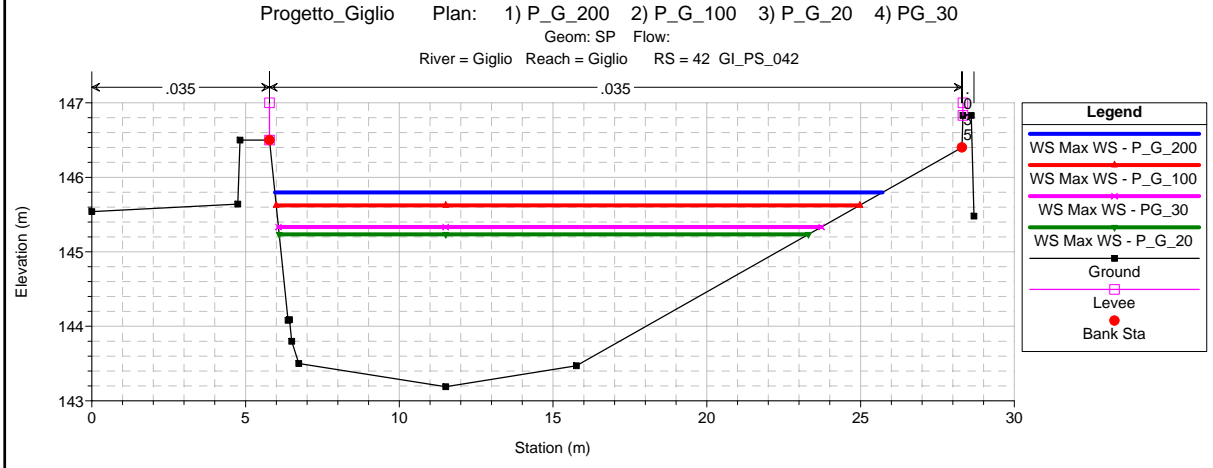
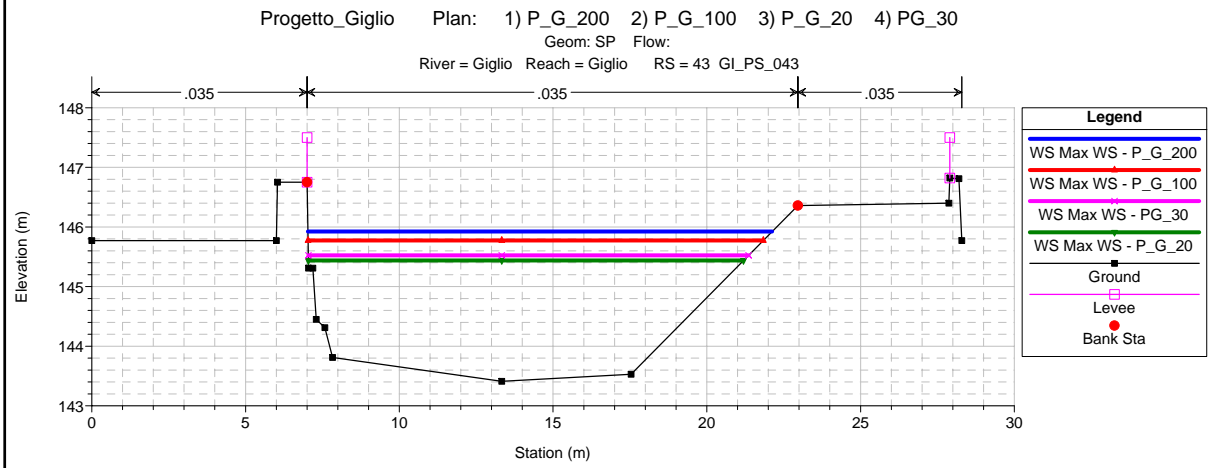
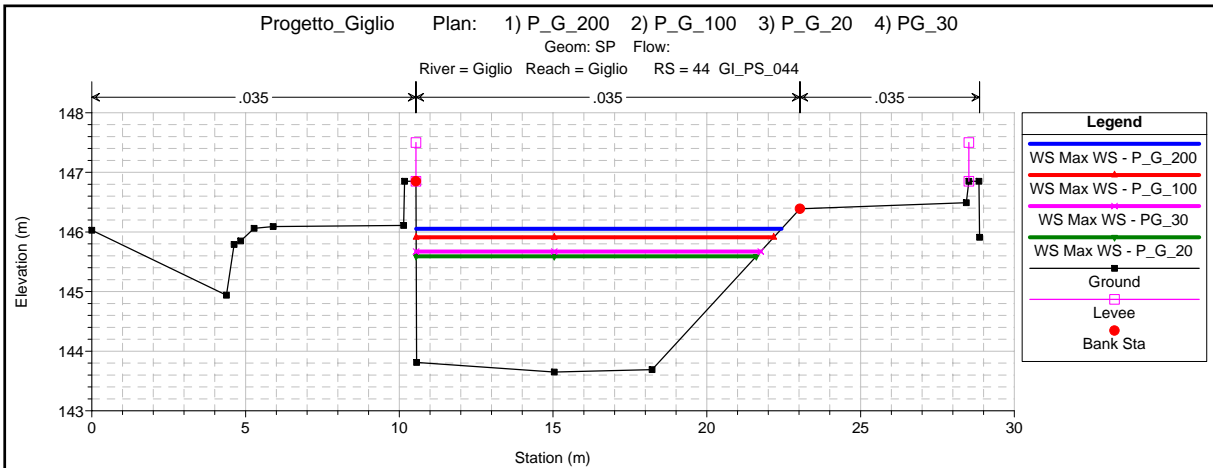


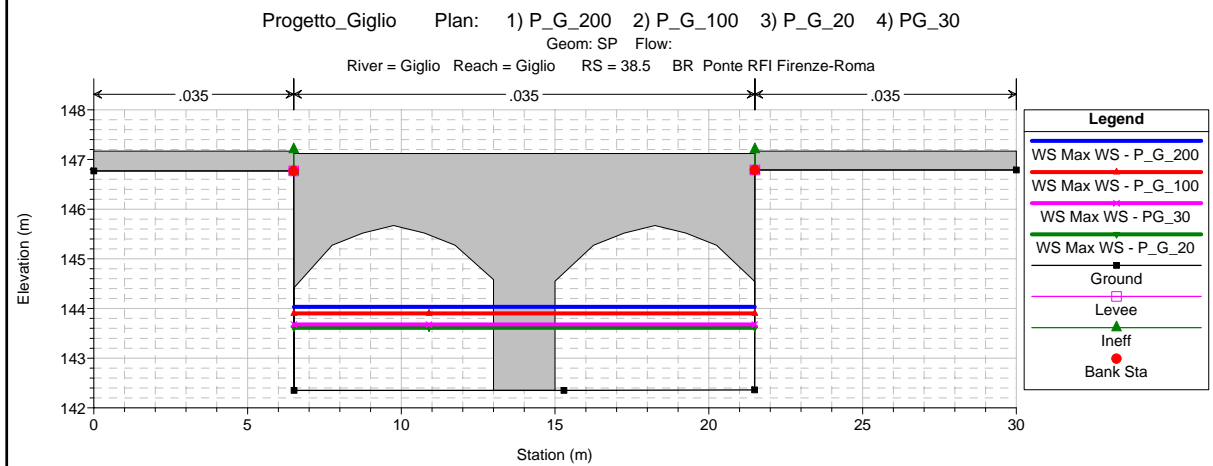
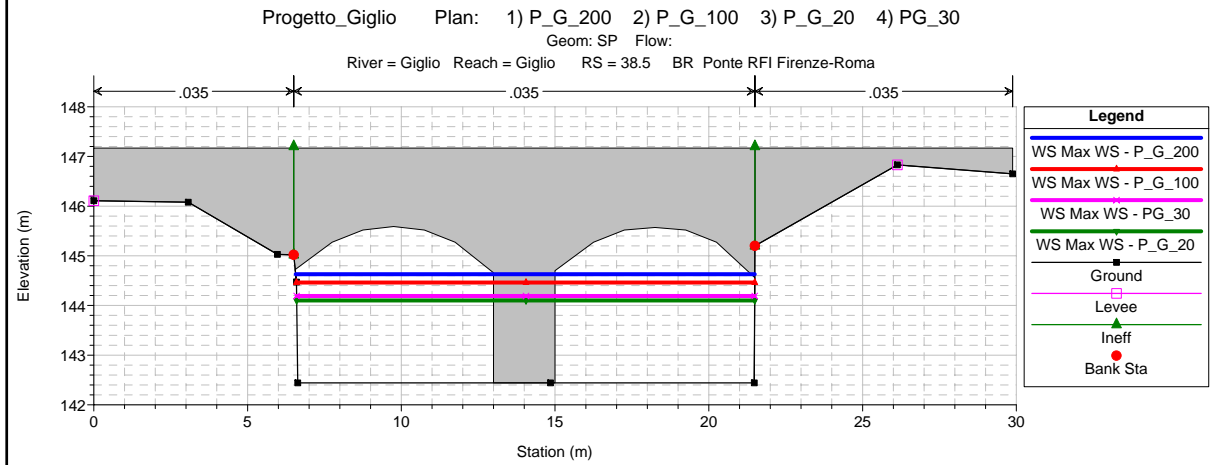
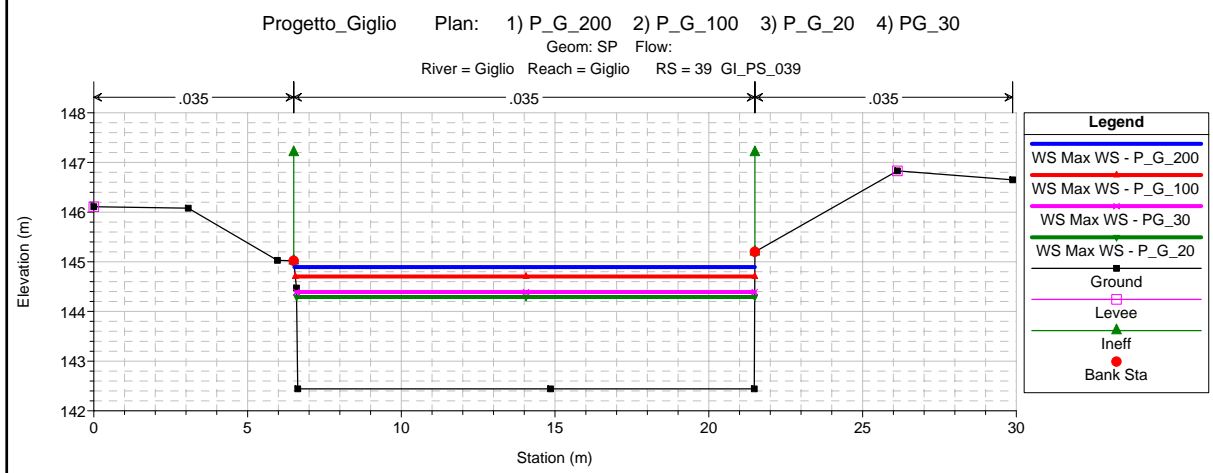
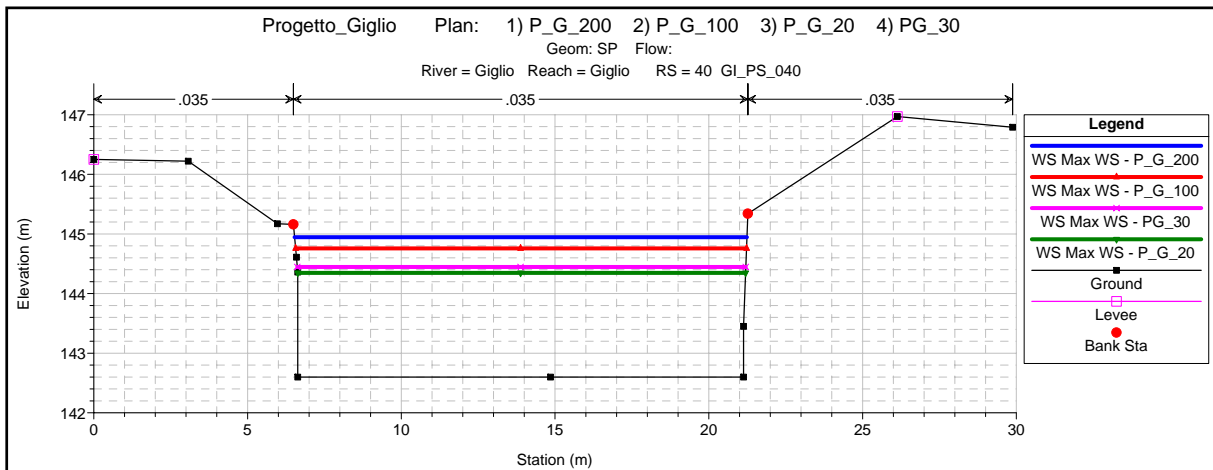




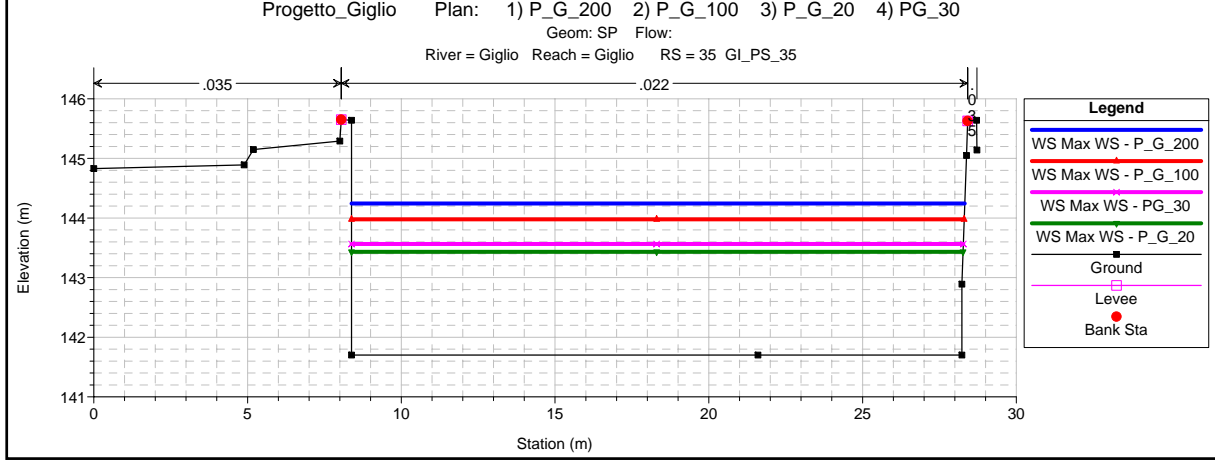
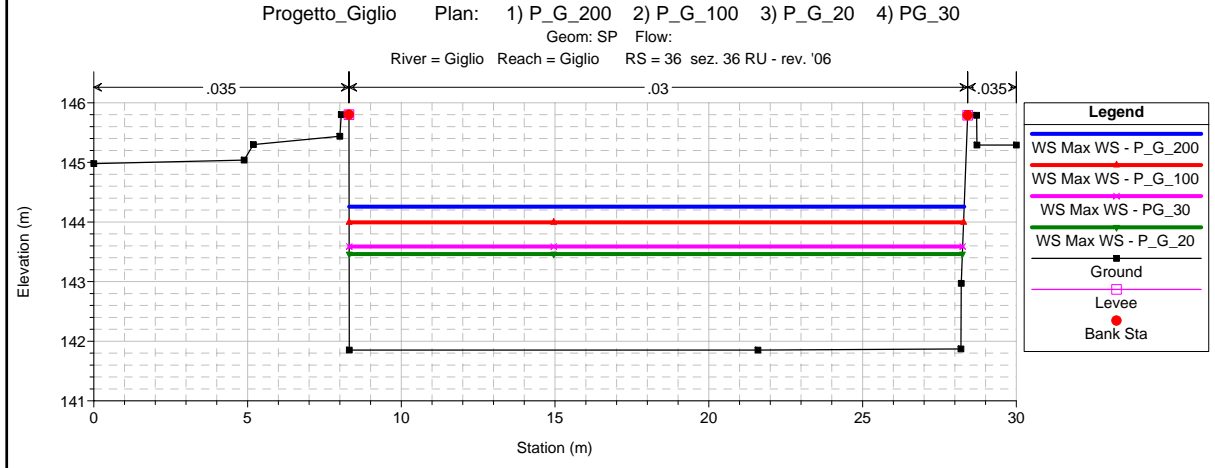
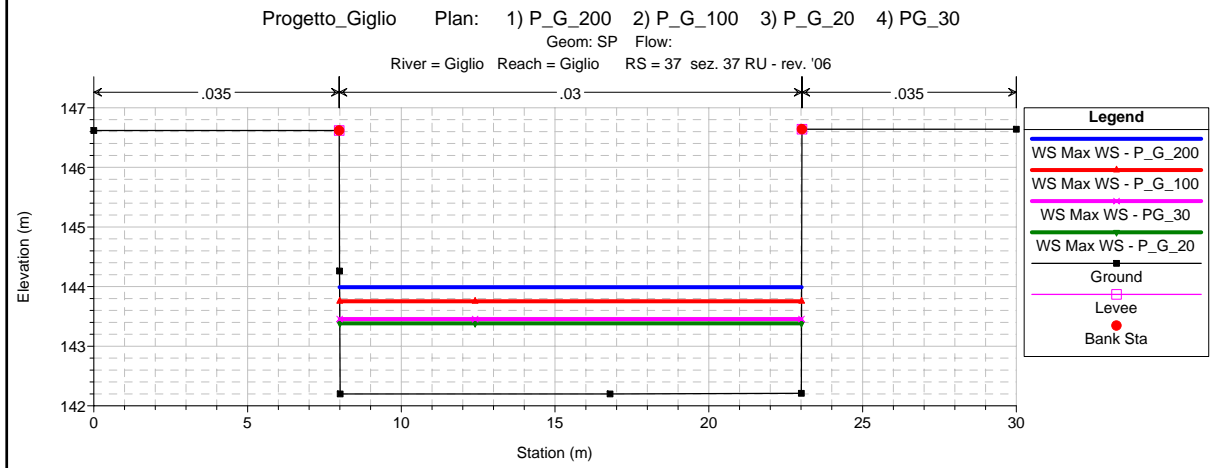
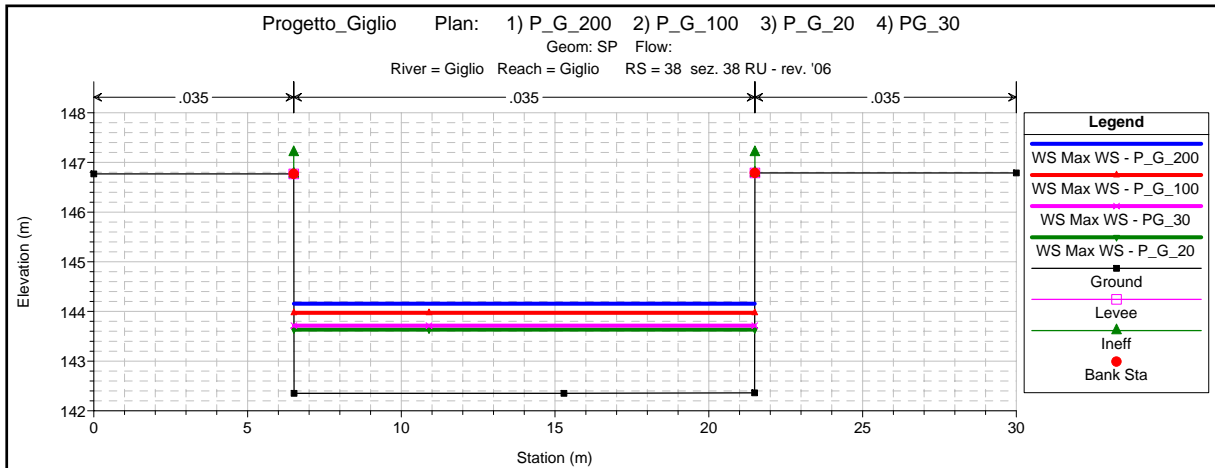


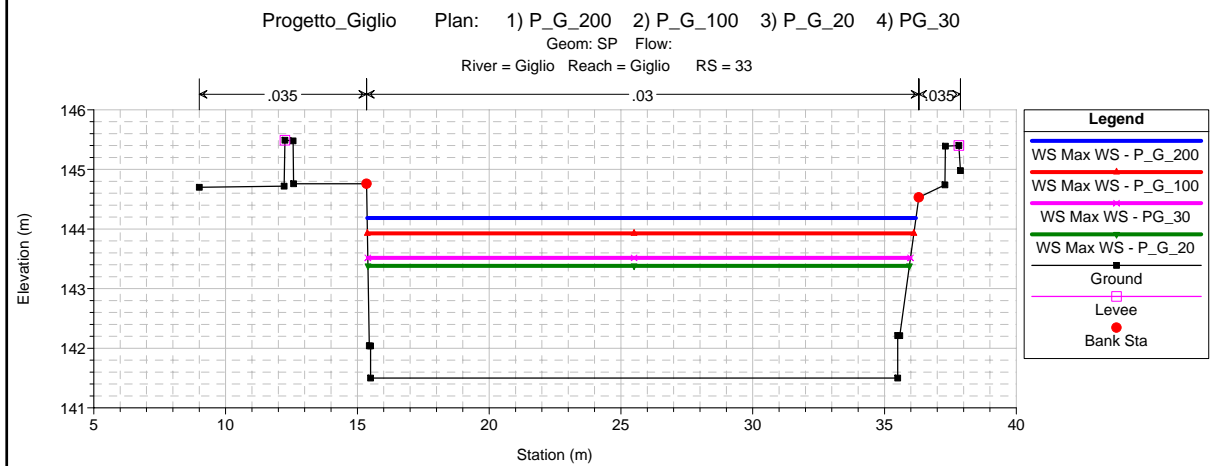
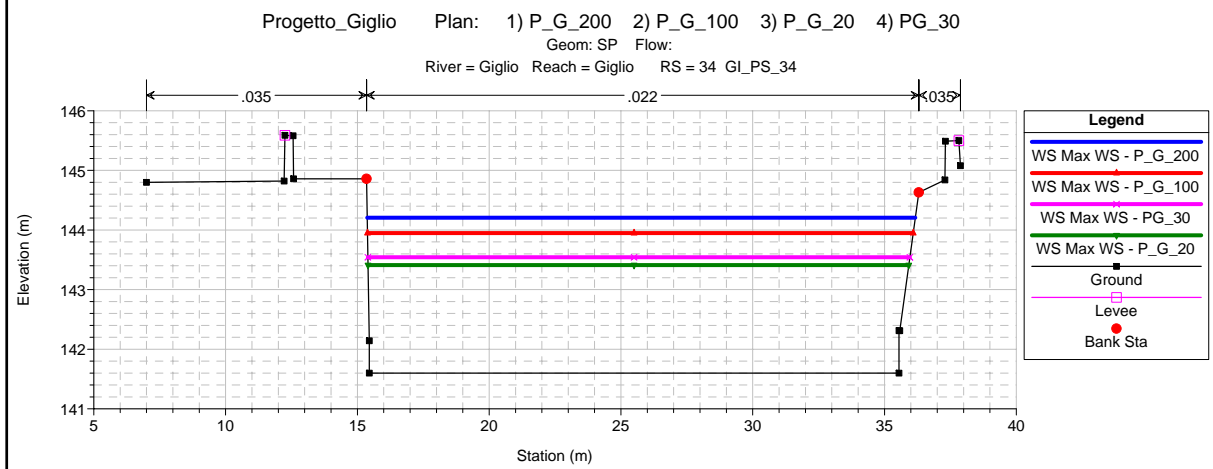
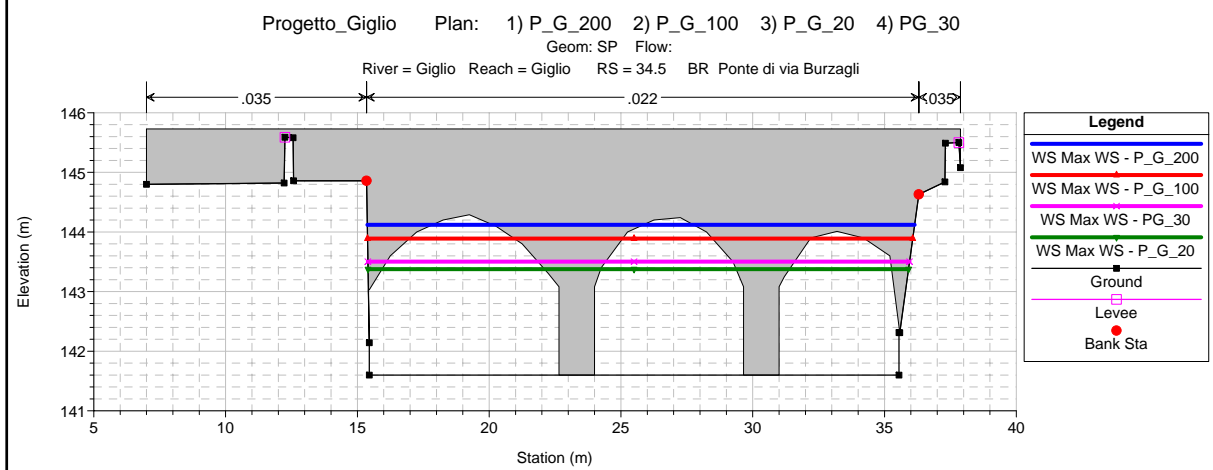
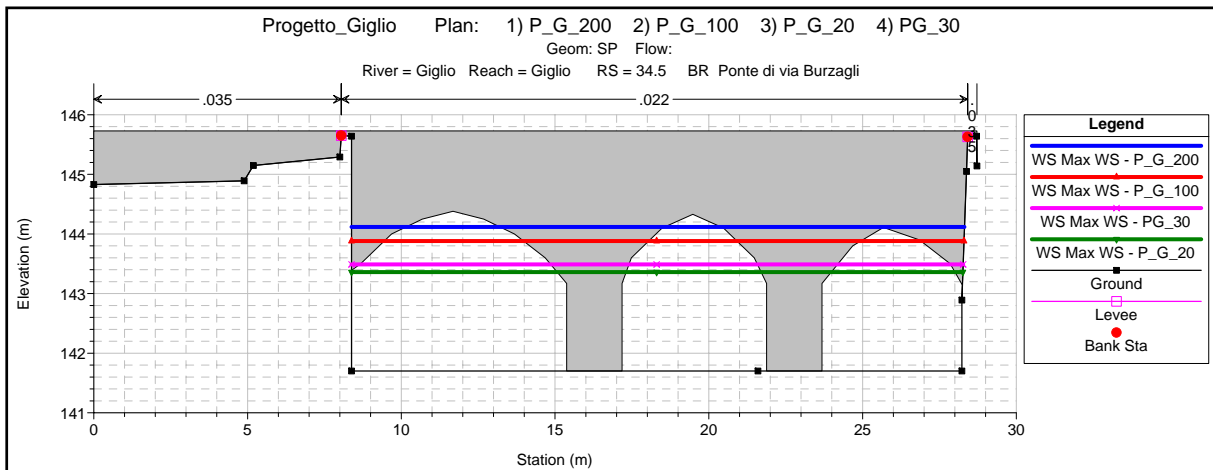


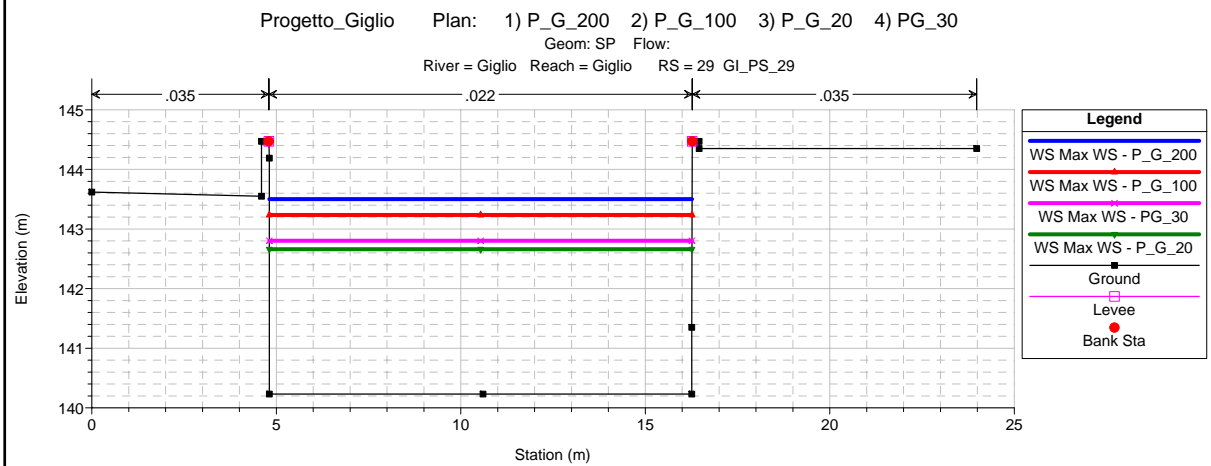
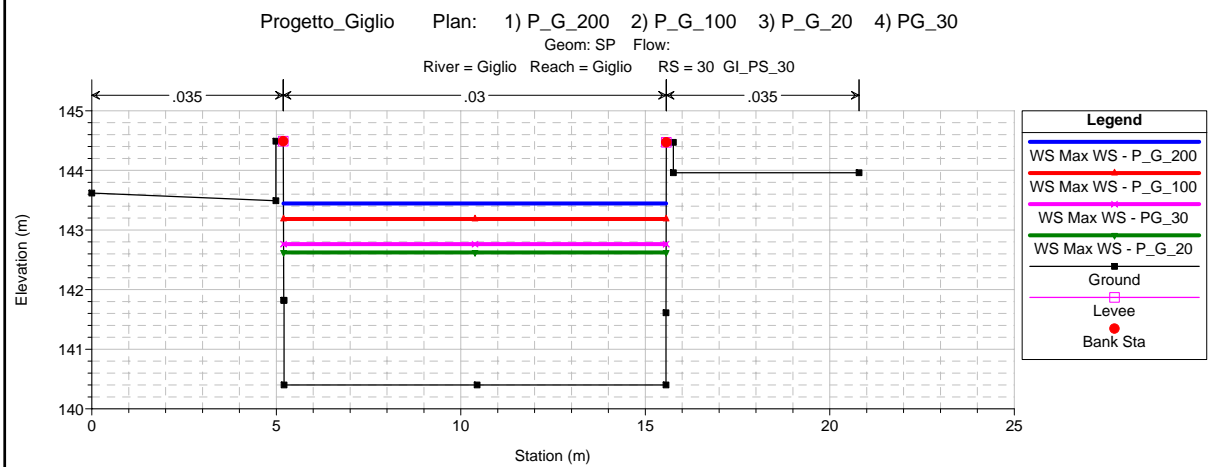
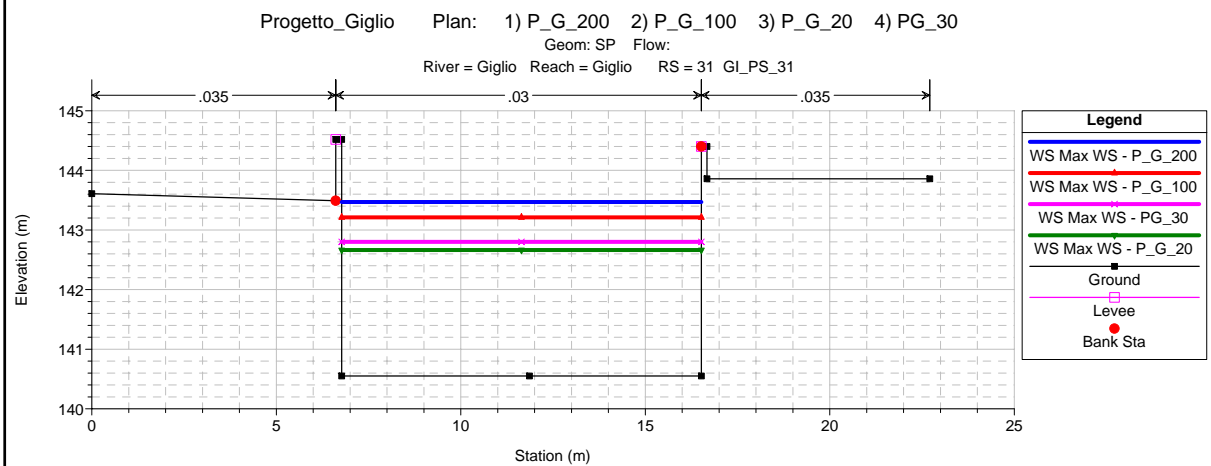
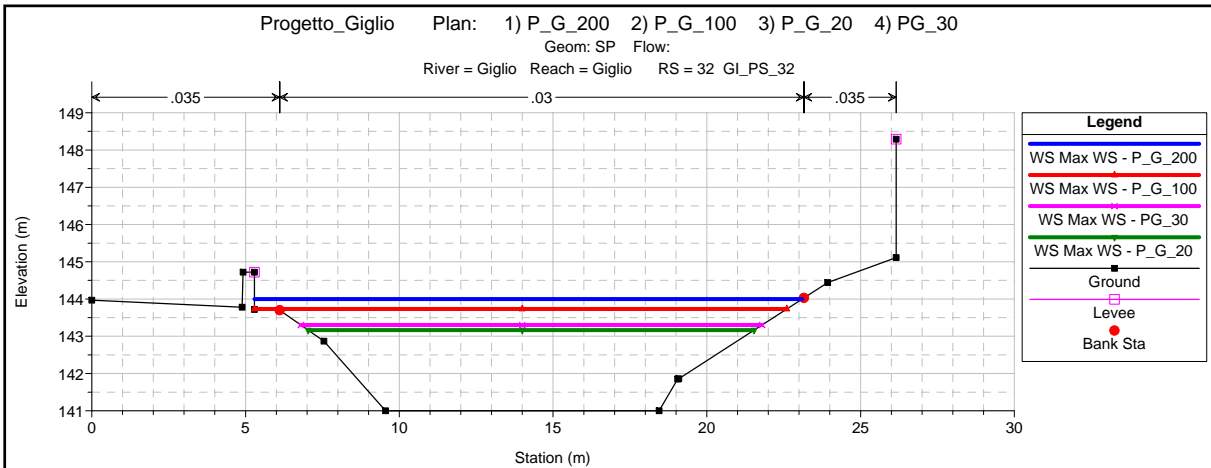


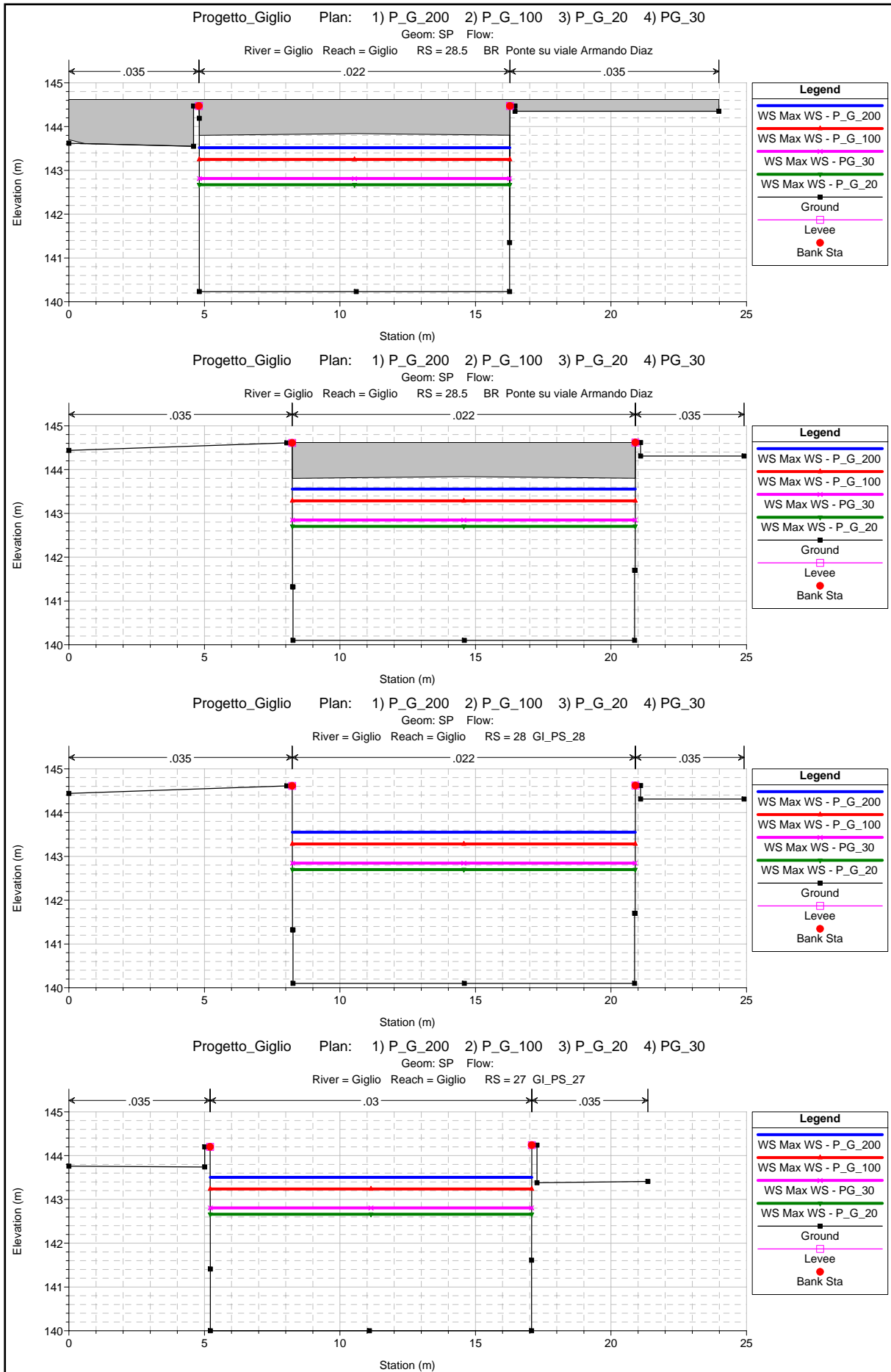


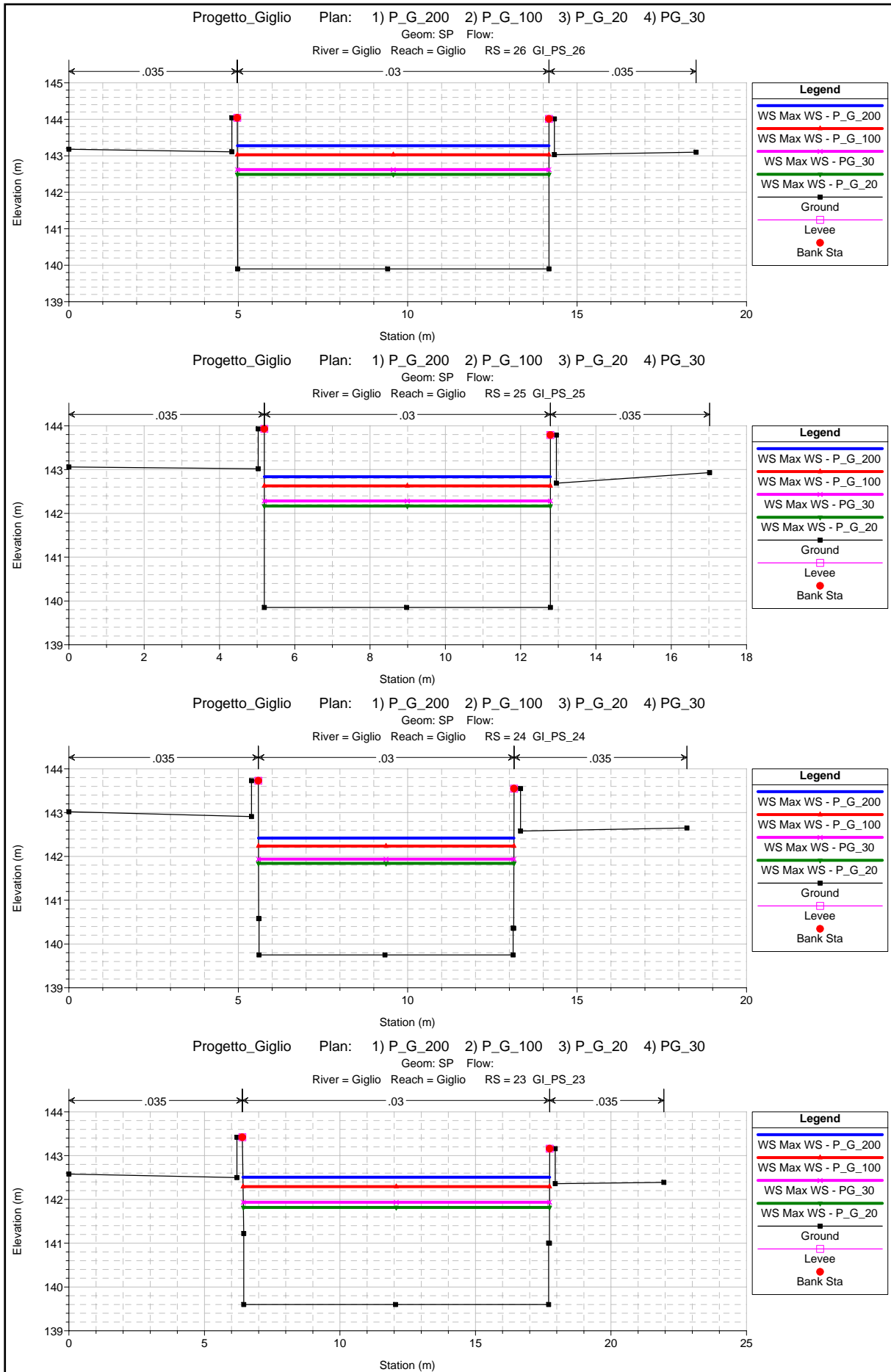


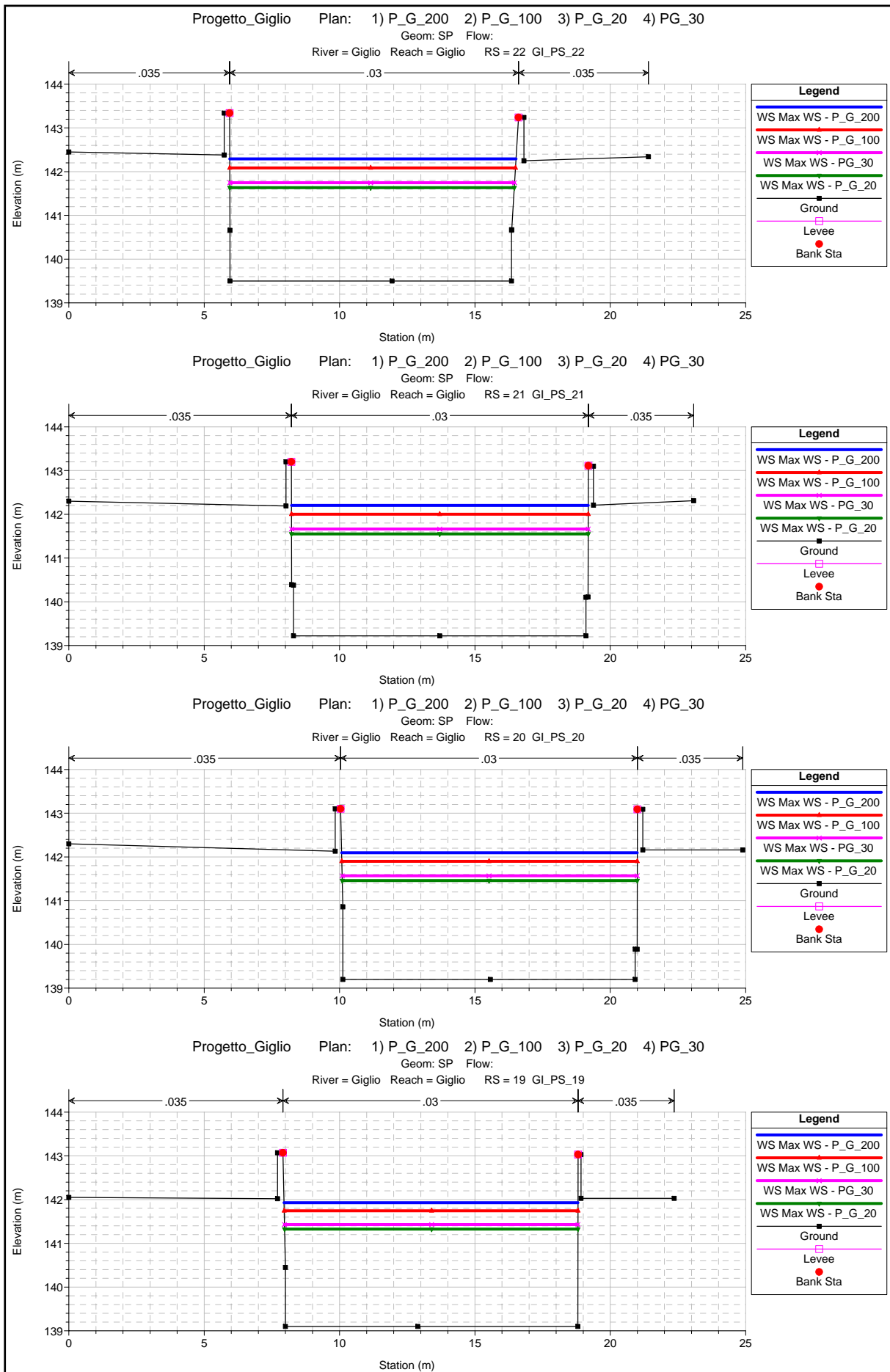


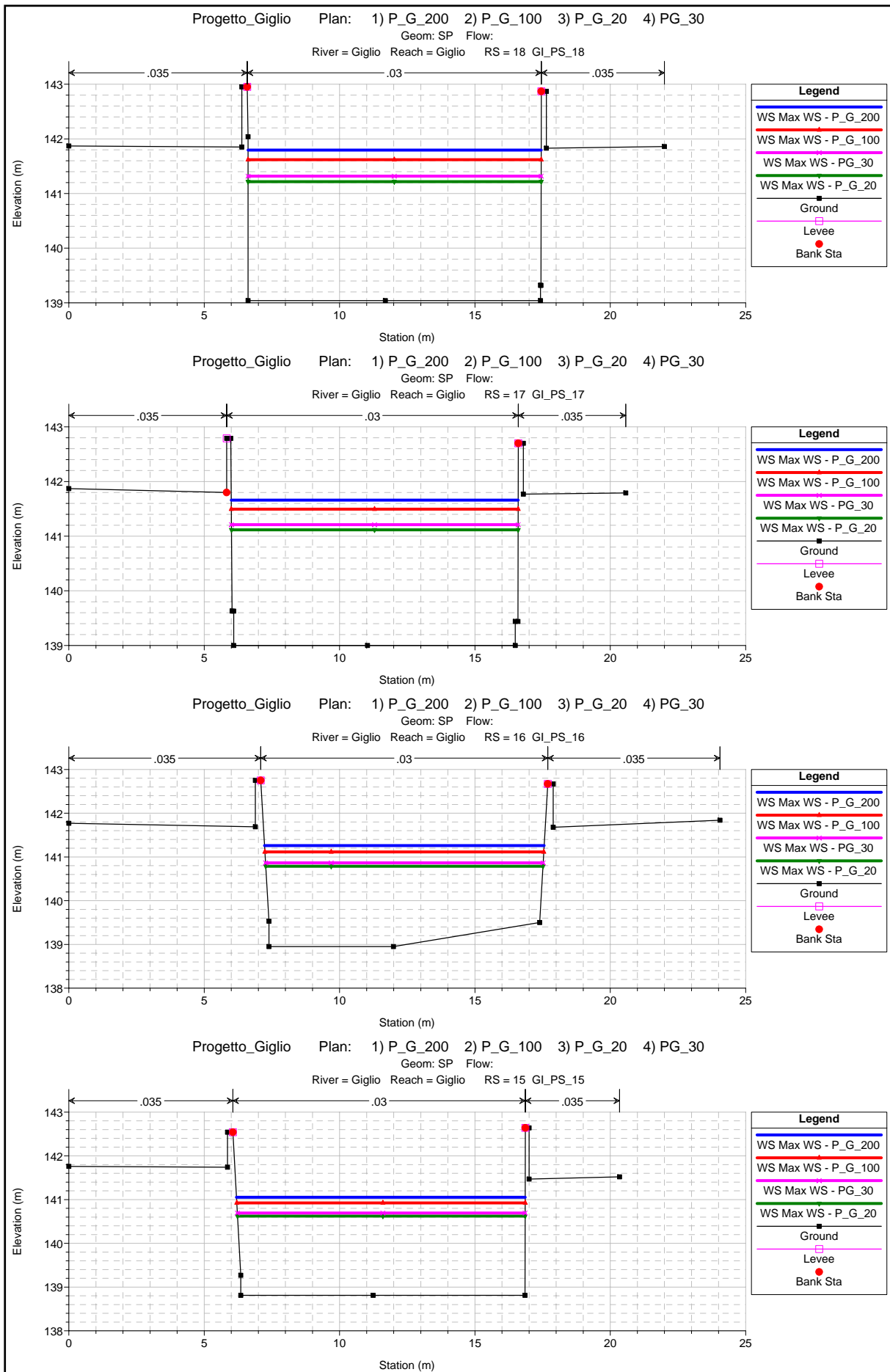


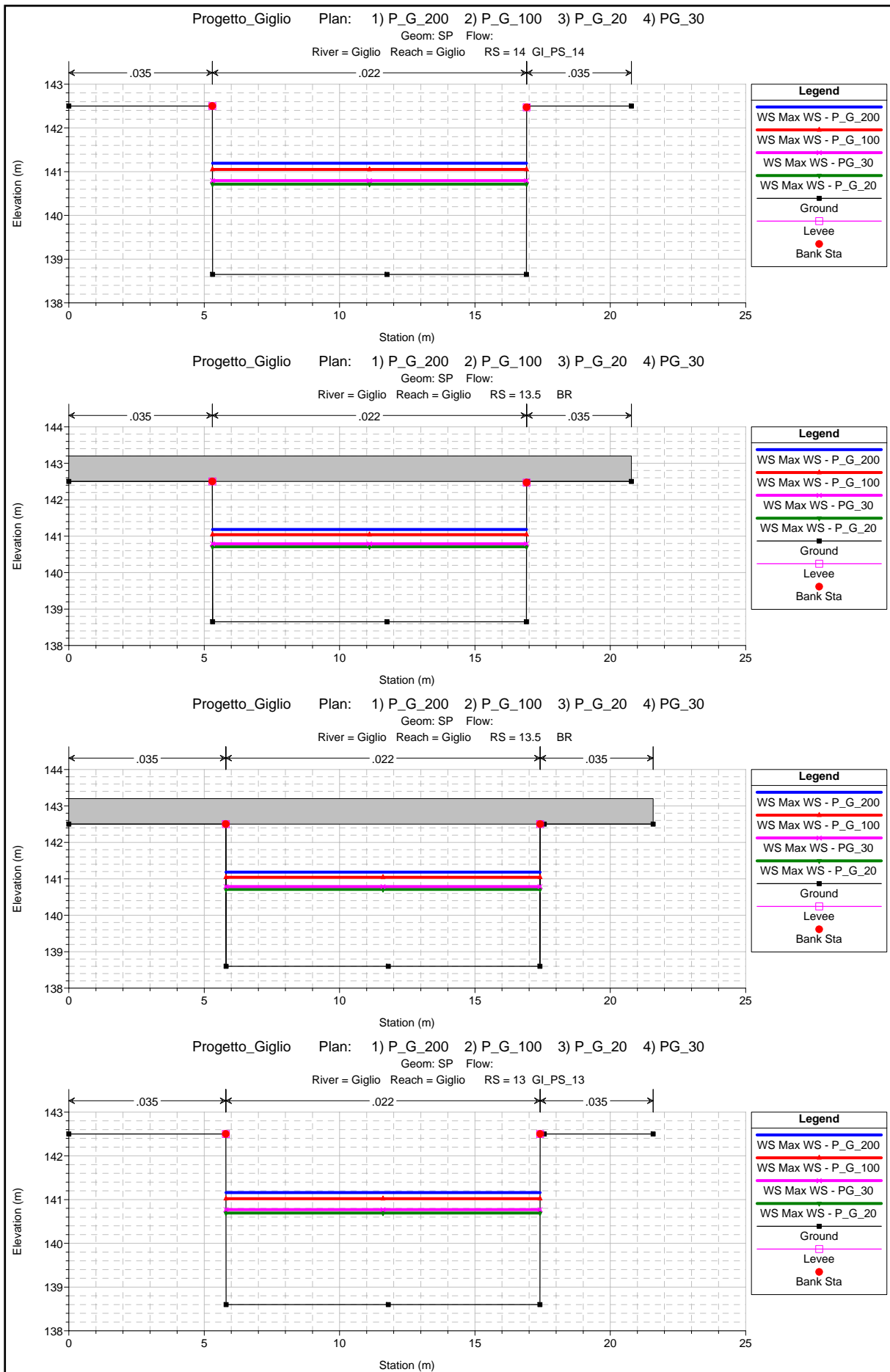




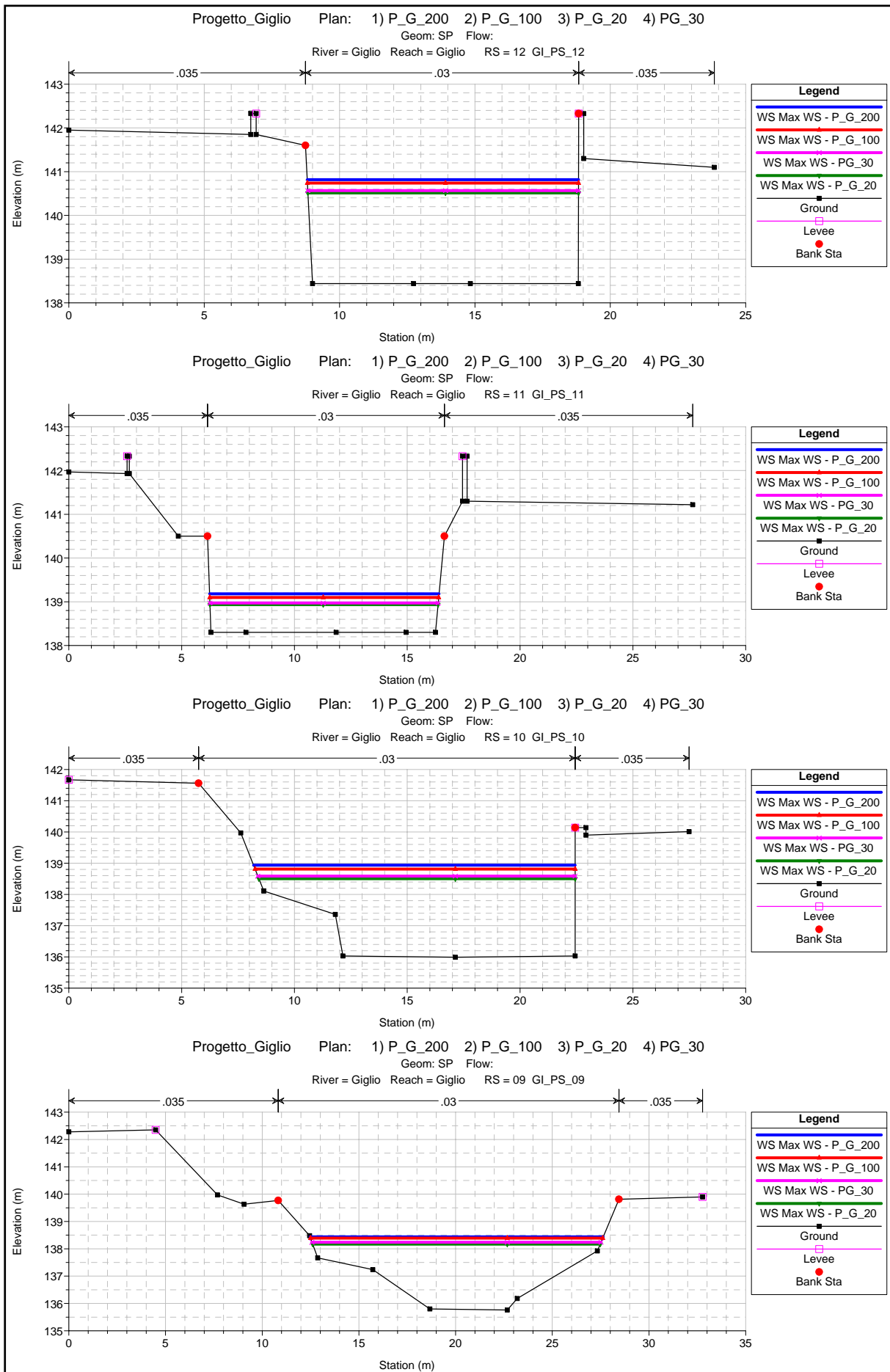


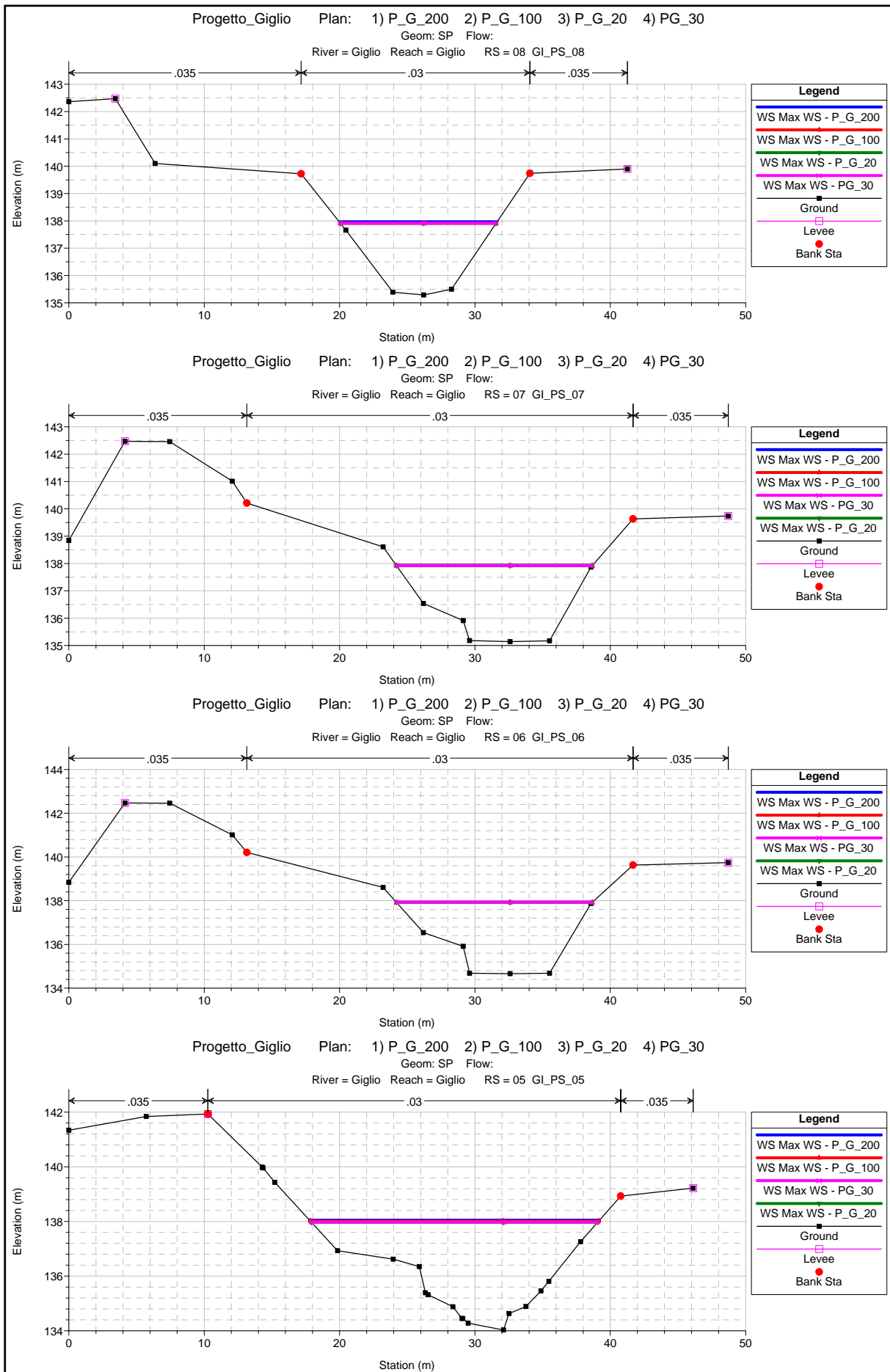


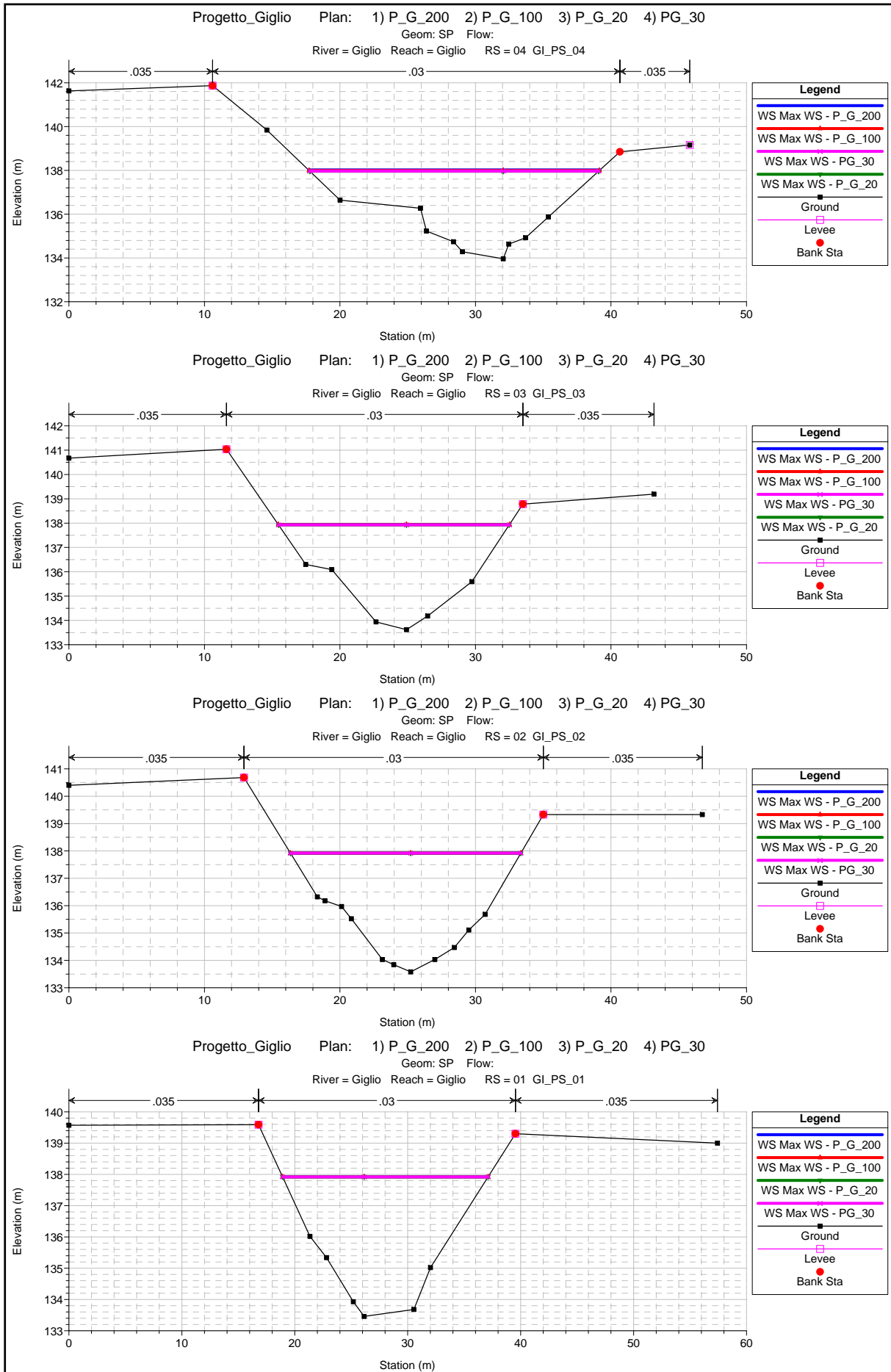












HEC-RAS Profile: Max WS

Storage Area	Profile	Plan	W.S. Elev (m)	SA Min EI (m)	Net Flux (m3/s)	SA Area (1000 m2)	SA Volume (1000 m3)
Cassa_Par_Monte	Max WS	P_G_200	152.72	150.20	14.72	40.00	108.62
Cassa_Par_Monte	Max WS	P_G_100	151.44	150.20	9.04	44.01	56.42
Cassa_Par_Monte	Max WS	P_G_20	150.25	150.20	1.62	47.98	2.43
Cassa_Par_Monte	Max WS	PG_30	150.40	150.20	3.03	47.98	9.49
Cassa_Par_Valle	Max WS	P_G_200	150.62	148.00	2.06	20.00	50.49
Cassa_Par_Valle	Max WS	P_G_100	149.93	148.00	1.88	20.00	36.52
Cassa_Par_Valle	Max WS	P_G_20	148.06	148.00	0.01	10.00	0.55
Cassa_Par_Valle	Max WS	PG_30	148.35	148.00	0.18	20.00	5.04
Giglio_dx	Max WS	P_G_200	144.00	144.00	0.00	50.00	0.00
Giglio_dx	Max WS	P_G_100	144.00	144.00	0.00	50.00	0.00
Giglio_dx	Max WS	P_G_20	144.00	144.00	0.00	50.00	0.00
Giglio_dx	Max WS	PG_30	144.00	144.00	0.00	50.00	0.00
Giglio_dx_valle	Max WS	P_G_200	145.00	145.00	0.00	9.00	0.00
Giglio_dx_valle	Max WS	P_G_100	145.00	145.00	0.00	9.00	0.00
Giglio_dx_valle	Max WS	P_G_20	145.00	145.00	0.00	9.00	0.00
Giglio_dx_valle	Max WS	PG_30	145.00	145.00	0.00	9.00	0.00
Giglio_sx	Max WS	P_G_200	144.00	144.00	0.00	24.01	0.00
Giglio_sx	Max WS	P_G_100	144.00	144.00	0.00	24.01	0.00
Giglio_sx	Max WS	P_G_20	144.00	144.00	0.00	24.01	0.00
Giglio_sx	Max WS	PG_30	144.00	144.00	0.00	24.01	0.00

HEC-RAS River: Giglio Reach: Giglio Profile: Max WS

Reach	River Sta	Profile	Plan	Q Total (m3/s)	Min Ch El (m)	W.S. Elev (m)	Crit W.S. (m)	E.G. Elev (m)	E.G. Slope (m/m)	Vel Chnl (m/s)	Flow Area (m2)	Top Width (m)	Froude # Chl
Giglio	65	Max WS	P_G_200	106.78	152.37	156.49		156.82	0.001988	2.89	45.57	16.30	0.47
Giglio	65	Max WS	P_G_100	89.49	152.37	156.16		156.46	0.002012	2.74	40.19	16.30	0.47
Giglio	65	Max WS	P_G_20	57.73	152.37	155.54		155.76	0.001927	2.35	30.07	16.30	0.44
Giglio	65	Max WS	PG_30	64.87	152.37	155.64		155.90	0.002083	2.50	31.75	16.30	0.46
Giglio	64	Max WS	P_G_200	106.77	152.17	156.20		156.55	0.002197	2.99	44.03	16.30	0.49
Giglio	64	Max WS	P_G_100	89.50	152.17	155.89		156.20	0.002187	2.81	39.05	16.30	0.48
Giglio	64	Max WS	P_G_20	56.24	152.17	155.33		155.55	0.001843	2.30	29.99	16.30	0.43
Giglio	64	Max WS	PG_30	61.40	152.17	155.41		155.65	0.001958	2.41	31.22	16.30	0.45
Giglio	63.5	Max WS	P_G_200	106.76	151.50	154.28	154.60	155.53	0.012532	5.44	23.74	15.73	1.10
Giglio	63.5	Max WS	P_G_100	89.49	151.50	154.12	154.37	155.21	0.011585	5.01	21.32	15.00	1.05
Giglio	63.5	Max WS	P_G_20	57.53	151.50	153.79		154.47	0.008713	3.92	16.90	12.22	0.88
Giglio	63.5	Max WS	PG_30	65.20	151.50	153.86	153.91	154.65	0.009708	4.23	17.79	12.47	0.94
Giglio	63.3			Lat Struct									
Giglio	63	Max WS	P_G_200	87.83	151.50	153.88	153.44	154.20	0.003480	2.69	37.42	26.01	0.60
Giglio	63	Max WS	P_G_100	77.58	151.50	153.74	153.32	154.05	0.003525	2.59	34.04	25.15	0.60
Giglio	63	Max WS	P_G_20	57.19	151.50	153.46	153.07	153.72	0.003568	2.34	27.15	23.11	0.59
Giglio	63	Max WS	PG_30	62.84	151.50	153.53	153.14	153.81	0.003705	2.45	28.69	23.76	0.60
Giglio	62.5			Inl Struct									
Giglio	62	Max WS	P_G_200	87.84	150.52	152.52		153.09	0.007674	3.48	28.20	23.72	0.86
Giglio	62	Max WS	P_G_100	77.58	150.52	152.41		152.94	0.007868	3.36	25.52	22.56	0.86
Giglio	62	Max WS	P_G_20	57.19	150.52	152.11	152.09	152.60	0.009381	3.18	19.27	19.72	0.91
Giglio	62	Max WS	PG_30	62.84	150.52	152.21		152.70	0.008572	3.20	21.26	20.60	0.88
Giglio	61	Max WS	P_G_200	87.83	149.22	152.02		152.13	0.000876	1.52	64.22	38.50	0.31
Giglio	61	Max WS	P_G_100	77.57	149.22	151.87		151.98	0.000867	1.45	58.65	38.50	0.30
Giglio	61	Max WS	P_G_20	57.47	149.22	151.23		151.35	0.001544	1.57	37.51	27.48	0.38
Giglio	61	Max WS	PG_30	62.13	149.22	151.62		151.70	0.000867	1.35	49.00	33.10	0.30
Giglio	60.9			Culvert									
Giglio	60.8	Max WS	P_G_200	87.83	149.22	150.81		151.33	0.009010	3.19	27.56	20.93	0.89



HEC-RAS River: Giglio Reach: Giglio Profile: Max WS (Continued)

Reach	River Sta	Profile	Plan	Q Total (m3/s)	Min Ch El (m)	W.S. Elev (m)	Crit.W.S. (m)	E.G. Elev (m)	E.G. Slope (m/m)	Vel Chnl (m/s)	Flow Area (m2)	Top Width (m)	Froude # Chl
Giglio	54	Max WS	P_G_200	87.77	145.65	148.42		149.25	0.010165	4.02	21.82	8.08	0.78
Giglio	54	Max WS	P_G_100	77.54	145.65	148.28		149.00	0.009207	3.75	20.69	8.05	0.75
Giglio	54	Max WS	P_G_20	57.11	145.65	147.97		148.47	0.007218	3.15	18.16	8.00	0.67
Giglio	54	Max WS	PG_30	61.98	145.65	148.05		148.60	0.007696	3.30	18.81	8.02	0.69
Giglio	53	Max WS	P_G_200	87.77	145.60	148.60		149.09	0.004778	3.08	28.50	10.22	0.59
Giglio	53	Max WS	P_G_100	77.54	145.60	148.44		148.86	0.004434	2.89	26.80	10.15	0.57
Giglio	53	Max WS	P_G_20	57.11	145.60	148.06		148.37	0.003712	2.48	23.01	9.98	0.52
Giglio	53	Max WS	PG_30	61.98	145.60	148.16		148.50	0.003892	2.59	23.96	10.02	0.53
Giglio	52	Max WS	P_G_200	87.77	145.55	148.51		149.00	0.004976	3.12	28.13	10.23	0.60
Giglio	52	Max WS	P_G_100	77.54	145.55	148.35		148.79	0.004578	2.92	26.54	10.15	0.58
Giglio	52	Max WS	P_G_20	57.11	145.55	147.99		148.31	0.003760	2.49	22.94	9.99	0.52
Giglio	52	Max WS	PG_30	61.98	145.55	148.08		148.43	0.003961	2.60	23.85	10.03	0.54
Giglio	51.9			Lat Struct									
Giglio	51.8			Lat Struct									
Giglio	51	Max WS	P_G_200	87.77	145.47	148.45		148.92	0.005224	3.03	28.99	14.19	0.68
Giglio	51	Max WS	P_G_100	77.54	145.47	148.27		148.70	0.005046	2.92	26.51	13.26	0.66
Giglio	51	Max WS	P_G_20	57.11	145.47	147.89		148.24	0.004536	2.62	21.80	11.94	0.62
Giglio	51	Max WS	PG_30	61.97	145.47	147.98		148.36	0.004626	2.70	22.93	12.10	0.63
Giglio	50	Max WS	P_G_200	87.77	145.25	148.09		148.61	0.005519	3.18	27.59	12.27	0.68
Giglio	50	Max WS	P_G_100	77.53	145.25	147.94		148.40	0.005229	3.01	25.78	12.11	0.66
Giglio	50	Max WS	P_G_20	57.11	145.25	147.60		147.95	0.004501	2.62	21.78	11.53	0.61
Giglio	50	Max WS	PG_30	61.97	145.25	147.69		148.07	0.004661	2.72	22.79	11.64	0.62
Giglio	49	Max WS	P_G_200	87.76	144.77	147.76		148.08	0.003770	2.53	34.73	17.69	0.58
Giglio	49	Max WS	P_G_100	77.53	144.77	147.59		147.89	0.003762	2.44	31.82	17.09	0.57
Giglio	49	Max WS	P_G_20	57.10	144.77	147.22		147.47	0.003694	2.21	25.79	15.78	0.55
Giglio	49	Max WS	PG_30	61.97	144.77	147.31		147.58	0.003714	2.27	27.27	16.11	0.56
Giglio	48	Max WS	P_G_200	87.76	144.63	147.49		147.76	0.003058	2.30	38.11	19.67	0.53
Giglio	48	Max WS	P_G_100	77.53	144.63	147.31		147.57	0.003143	2.25	34.53	19.00	0.53

HEC-RAS River: Giglio Reach: Giglio Profile: Max WS (Continued)

Reach	River Sta	Profile	Plan	Q Total (m3/s)	Min Ch El (m)	W.S. Elev (m)	Crit W.S. (m)	E.G. Elev (m)	E.G. Slope (m/m)	Vel Chnl (m/s)	Flow Area (m2)	Top Width (m)	Froude # Chl
Giglio	48	Max WS	P_G_20	57.09	144.63	146.90		147.13	0.003387	2.11	27.04	17.51	0.54
Giglio	48	Max WS	PG_30	61.97	144.63	147.00		147.24	0.003313	2.15	28.88	17.89	0.54
Giglio	47	Max WS	P_G_200	87.69	144.29	147.13		147.55	0.004220	2.89	30.44	14.28	0.63
Giglio	47	Max WS	P_G_100	77.53	144.29	146.97		147.36	0.004153	2.76	28.16	13.98	0.62
Giglio	47	Max WS	P_G_20	57.09	144.29	146.60		146.91	0.004064	2.47	23.13	13.29	0.60
Giglio	47	Max WS	PG_30	61.96	144.29	146.69		147.02	0.004079	2.54	24.39	13.46	0.60
Giglio	46	Max WS	P_G_200	87.65	144.01	146.61		147.33	0.009719	3.78	23.19	12.85	0.90
Giglio	46	Max WS	P_G_100	77.53	144.01	146.46		147.13	0.009672	3.64	21.33	12.58	0.89
Giglio	46	Max WS	P_G_20	57.09	144.01	146.12		146.68	0.009411	3.32	17.17	11.57	0.87
Giglio	46	Max WS	PG_30	61.96	144.01	146.20		146.80	0.009416	3.41	18.17	11.71	0.87
Giglio	45	Max WS	P_G_200	87.60	143.85	146.56		146.90	0.003593	2.58	33.96	14.73	0.54
Giglio	45	Max WS	P_G_100	77.52	143.85	146.39		146.70	0.003514	2.46	31.54	14.71	0.54
Giglio	45	Max WS	P_G_20	57.08	143.85	146.01		146.26	0.003302	2.20	25.96	14.12	0.52
Giglio	45	Max WS	PG_30	61.96	143.85	146.11		146.37	0.003451	2.26	27.37	14.66	0.53
Giglio	44.9			Lat Struct									
Giglio	44	Max WS	P_G_200	87.59	143.65	146.05		146.79	0.009833	3.81	22.99	11.89	0.87
Giglio	44	Max WS	P_G_100	77.52	143.65	145.91		146.59	0.009540	3.64	21.30	11.63	0.86
Giglio	44	Max WS	P_G_20	57.08	143.65	145.59		146.12	0.008748	3.23	17.69	11.06	0.81
Giglio	44	Max WS	PG_30	61.96	143.65	145.67		146.24	0.008954	3.33	18.59	11.21	0.83
Giglio	43	Max WS	P_G_200	87.52	143.41	145.92		146.37	0.005242	2.95	29.65	15.10	0.67
Giglio	43	Max WS	P_G_100	77.51	143.41	145.78		146.18	0.005138	2.83	27.43	14.81	0.66
Giglio	43	Max WS	P_G_20	57.08	143.41	145.44		145.76	0.004909	2.53	22.55	14.15	0.64
Giglio	43	Max WS	PG_30	61.96	143.41	145.52		145.87	0.004962	2.61	23.77	14.32	0.65
Giglio	42	Max WS	P_G_200	87.38	143.19	145.80		146.12	0.004111	2.51	34.85	19.76	0.60
Giglio	42	Max WS	P_G_100	77.45	143.19	145.62		145.93	0.004267	2.46	31.50	18.98	0.61
Giglio	42	Max WS	P_G_20	57.05	143.19	145.23		145.51	0.004673	2.33	24.44	17.21	0.63
Giglio	42	Max WS	PG_30	61.95	143.19	145.33		145.62	0.004557	2.37	26.17	17.66	0.62
Giglio	41	Max WS	P_G_200	85.82	142.76	145.12	145.08	145.98	0.011605	4.13	20.80	11.29	0.97
Giglio	41	Max WS	P_G_100	76.72	142.76	144.96	144.93	145.79	0.011951	4.04	19.01	11.01	0.98





HEC-RAS River: Giglio Reach: Giglio Profile: Max WS (Continued)

Reach	River Sta	Profile	Plan	Q Total (m3/s)	Min Ch El (m)	W.S. Elev (m)	Crit W.S. (m)	E.G. Elev (m)	E.G. Slope (m/m)	Vel Chnl (m/s)	Flow Area (m2)	Top Width (m)	Froude # Chl
Giglio	34	Max WS	P_G_200	87.74	141.60	144.21		144.34	0.000496	1.65	53.06	20.79	0.33
Giglio	34	Max WS	P_G_100	77.57	141.60	143.95		144.08	0.000536	1.62	47.75	20.71	0.34
Giglio	34	Max WS	P_G_20	57.35	141.60	143.41		143.54	0.000667	1.57	36.64	20.52	0.37
Giglio	34	Max WS	PG_30	62.01	141.60	143.54		143.67	0.000625	1.58	39.34	20.56	0.36
Giglio	33	Max WS	P_G_200	87.73	141.50	144.19		144.32	0.000843	1.60	54.66	20.82	0.32
Giglio	33	Max WS	P_G_100	77.52	141.50	143.93		144.05	0.000902	1.57	49.32	20.73	0.33
Giglio	33	Max WS	P_G_20	57.17	141.50	143.38		143.50	0.001095	1.50	38.06	20.54	0.35
Giglio	33	Max WS	PG_30	61.97	141.50	143.52		143.63	0.001036	1.52	40.81	20.59	0.34
Giglio	32	Max WS	P_G_200	87.72	141.00	144.00		144.27	0.001923	2.32	38.04	17.82	0.50
Giglio	32	Max WS	P_G_100	77.50	141.00	143.73		144.01	0.002204	2.33	33.32	17.31	0.52
Giglio	32	Max WS	P_G_20	57.15	141.00	143.16		143.44	0.002795	2.33	24.50	14.50	0.57
Giglio	32	Max WS	PG_30	61.95	141.00	143.30		143.58	0.002642	2.34	26.51	14.99	0.56
Giglio	31	Max WS	P_G_200	87.70	140.55	143.47		143.95	0.003832	3.08	28.45	9.75	0.58
Giglio	31	Max WS	P_G_100	77.49	140.55	143.21		143.67	0.003885	2.98	25.96	9.75	0.58
Giglio	31	Max WS	P_G_20	57.12	140.55	142.67		143.06	0.004113	2.77	20.62	9.75	0.61
Giglio	31	Max WS	PG_30	61.94	140.55	142.80		143.21	0.004033	2.82	21.94	9.75	0.60
Giglio	30	Max WS	P_G_200	87.70	140.40	143.45		143.84	0.002916	2.78	31.56	10.37	0.51
Giglio	30	Max WS	P_G_100	77.49	140.40	143.19		143.55	0.002940	2.69	28.86	10.37	0.51
Giglio	30	Max WS	P_G_20	57.12	140.40	142.62		142.94	0.003078	2.48	23.02	10.37	0.53
Giglio	30	Max WS	PG_30	61.94	140.40	142.76		143.09	0.003026	2.53	24.47	10.37	0.53
Giglio	29	Max WS	P_G_200	87.70	140.23	143.50	142.04	143.78	0.000997	2.34	37.46	11.46	0.41
Giglio	29	Max WS	P_G_100	77.49	140.23	143.24	141.90	143.49	0.000993	2.25	34.42	11.46	0.41
Giglio	29	Max WS	P_G_20	57.09	140.23	142.66	141.60	142.87	0.000999	2.05	27.83	11.45	0.42
Giglio	29	Max WS	PG_30	61.94	140.23	142.80	141.67	143.03	0.000994	2.10	29.47	11.45	0.42
Giglio	28.5			Bridge									
Giglio	28	Max WS	P_G_200	87.69	140.10	143.55		143.76	0.000671	2.01	43.61	12.65	0.35
Giglio	28	Max WS	P_G_100	77.49	140.10	143.28		143.47	0.000663	1.93	40.19	12.65	0.35
Giglio	28	Max WS	P_G_20	57.09	140.10	142.70		142.85	0.000650	1.74	32.81	12.65	0.34
Giglio	28	Max WS	PG_30	61.94	140.10	142.85		143.01	0.000652	1.79	34.65	12.65	0.34

HEC-RAS River: Giglio Reach: Giglio Profile: Max WS (Continued)

Reach	River Sta	Profile	Plan	Q Total (m3/s)	Min Ch El (m)	W.S. Elev (m)	Crit W.S. (m)	E.G. Elev (m)	E.G. Slope (m/m)	Vel Chnl (m/s)	Flow Area (m2)	Top Width (m)	Froude # Chl
Giglio	27	Max WS	P_G_200	87.69	140.00	143.51		143.73	0.001398	2.11	41.56	11.86	0.36
Giglio	27	Max WS	P_G_100	77.49	140.00	143.24		143.45	0.001368	2.02	38.39	11.86	0.36
Giglio	27	Max WS	P_G_20	57.09	140.00	142.66		142.83	0.001310	1.81	31.54	11.86	0.35
Giglio	27	Max WS	PG_30	61.94	140.00	142.81		142.98	0.001323	1.86	33.25	11.86	0.36
Giglio	26	Max WS	P_G_200	87.68	139.90	143.27		143.68	0.002956	2.83	31.03	9.20	0.49
Giglio	26	Max WS	P_G_100	77.49	139.90	143.03		143.40	0.002855	2.70	28.75	9.20	0.49
Giglio	26	Max WS	P_G_20	57.08	139.90	142.49		142.78	0.002640	2.40	23.80	9.20	0.48
Giglio	26	Max WS	PG_30	61.94	139.90	142.62		142.94	0.002692	2.47	25.04	9.20	0.48
Giglio	25	Max WS	P_G_200	87.68	139.85	142.84		143.60	0.006764	3.86	22.70	7.60	0.71
Giglio	25	Max WS	P_G_100	77.49	139.85	142.63		143.31	0.006453	3.67	21.11	7.60	0.70
Giglio	25	Max WS	P_G_20	57.08	139.85	142.17		142.70	0.005798	3.24	17.63	7.60	0.68
Giglio	25	Max WS	PG_30	61.93	139.85	142.28		142.86	0.005959	3.35	18.50	7.60	0.68
Giglio	24	Max WS	P_G_200	87.68	139.75	142.42		143.39	0.009477	4.37	20.08	7.54	0.85
Giglio	24	Max WS	P_G_100	77.49	139.75	142.24		143.11	0.009021	4.14	18.71	7.54	0.84
Giglio	24	Max WS	P_G_20	57.07	139.75	141.84		142.51	0.007995	3.63	15.73	7.54	0.80
Giglio	24	Max WS	PG_30	61.93	139.75	141.94		142.66	0.008259	3.76	16.47	7.54	0.81
Giglio	23	Max WS	P_G_200	87.67	139.60	142.51		142.87	0.002701	2.67	32.79	11.32	0.50
Giglio	23	Max WS	P_G_100	77.49	139.60	142.29		142.62	0.002641	2.55	30.34	11.31	0.50
Giglio	23	Max WS	P_G_20	57.06	139.60	141.82		142.08	0.002537	2.29	24.96	11.30	0.49
Giglio	23	Max WS	PG_30	61.93	139.60	141.93		142.22	0.002562	2.35	26.30	11.30	0.49
Giglio	22	Max WS	P_G_200	87.66	139.50	142.29		142.75	0.003646	3.00	29.18	10.57	0.58
Giglio	22	Max WS	P_G_100	77.48	139.50	142.09		142.51	0.003557	2.87	27.02	10.55	0.57
Giglio	22	Max WS	P_G_20	57.05	139.50	141.63		141.97	0.003403	2.57	22.24	10.51	0.56
Giglio	22	Max WS	PG_30	61.93	139.50	141.75		142.10	0.003440	2.64	23.43	10.52	0.57
Giglio	21	Max WS	P_G_200	87.65	139.22	142.20		142.57	0.002727	2.69	32.54	10.96	0.50
Giglio	21	Max WS	P_G_100	77.48	139.22	142.00		142.33	0.002612	2.56	30.31	10.96	0.49
Giglio	21	Max WS	P_G_20	57.05	139.22	141.55		141.81	0.002378	2.25	25.37	10.96	0.47
Giglio	21	Max WS	PG_30	61.93	139.22	141.66		141.94	0.002438	2.33	26.61	10.96	0.48
Giglio	20	Max WS	P_G_200	87.65	139.20	142.10		142.49	0.002991	2.79	31.47	10.92	0.52
Giglio	20	Max WS	P_G_100	77.48	139.20	141.90		142.26	0.002866	2.64	29.32	10.91	0.51

HEC-RAS River: Giglio Reach: Giglio Profile: Max WS (Continued)

Reach	River Sta	Profile	Plan	Q Total (m3/s)	Min Ch El (m)	W.S. Elev (m)	Crit W.S. (m)	E.G. Elev (m)	E.G. Slope (m/m)	Vel Chnl (m/s)	Flow Area (m2)	Top Width (m)	Froude # Chl
Giglio	20	Max WS	P_G_20	57.05	139.20	141.46		141.74	0.002614	2.33	24.53	10.90	0.49
Giglio	20	Max WS	PG_30	61.93	139.20	141.57		141.87	0.002680	2.41	25.73	10.90	0.50
Giglio	19	Max WS	P_G_200	87.64	139.10	141.93		142.35	0.003225	2.86	30.62	10.86	0.54
Giglio	19	Max WS	P_G_100	77.48	139.10	141.74		142.12	0.003070	2.71	28.59	10.85	0.53
Giglio	19	Max WS	P_G_20	57.04	139.10	141.33		141.61	0.002758	2.37	24.05	10.84	0.51
Giglio	19	Max WS	PG_30	61.93	139.10	141.43		141.74	0.002840	2.46	25.18	10.84	0.52
Giglio	18	Max WS	P_G_200	87.64	139.04	141.79		142.24	0.003487	2.94	29.81	10.83	0.57
Giglio	18	Max WS	P_G_100	77.48	139.04	141.62		142.01	0.003301	2.78	27.90	10.83	0.55
Giglio	18	Max WS	P_G_20	57.04	139.04	141.22		141.52	0.002934	2.42	23.56	10.83	0.52
Giglio	18	Max WS	PG_30	61.93	139.04	141.32		141.64	0.003032	2.51	24.64	10.83	0.53
Giglio	17	Max WS	P_G_200	87.64	139.00	141.66		142.16	0.004121	3.13	28.04	10.60	0.61
Giglio	17	Max WS	P_G_100	77.48	139.00	141.49		141.94	0.003879	2.95	26.29	10.60	0.60
Giglio	17	Max WS	P_G_20	57.04	139.00	141.12		141.45	0.003409	2.56	22.29	10.59	0.56
Giglio	17	Max WS	PG_30	61.93	139.00	141.21		141.57	0.003535	2.66	23.29	10.59	0.57
Giglio	16	Max WS	P_G_200	87.63	138.95	141.26		142.08	0.008036	4.00	21.89	10.33	0.88
Giglio	16	Max WS	P_G_100	77.48	138.95	141.12		141.85	0.007715	3.80	20.41	10.30	0.86
Giglio	16	Max WS	P_G_20	57.03	138.95	140.79		141.36	0.007161	3.35	17.03	10.24	0.83
Giglio	16	Max WS	PG_30	61.93	138.95	140.87		141.48	0.007334	3.47	17.85	10.25	0.84
Giglio	15	Max WS	P_G_200	87.63	138.81	141.05		141.75	0.006669	3.70	23.72	10.66	0.79
Giglio	15	Max WS	P_G_100	77.48	138.81	140.92		141.54	0.006222	3.47	22.33	10.65	0.76
Giglio	15	Max WS	P_G_20	57.03	138.81	140.62		141.08	0.005353	2.98	19.12	10.62	0.71
Giglio	15	Max WS	PG_30	61.93	138.81	140.69		141.19	0.005619	3.12	19.88	10.63	0.73
Giglio	14	Max WS	P_G_200	87.63	138.65	141.19	140.45	141.64	0.002001	2.97	29.48	11.60	0.60
Giglio	14	Max WS	P_G_100	77.48	138.65	141.05	140.31	141.44	0.001853	2.78	27.82	11.60	0.57
Giglio	14	Max WS	P_G_20	57.03	138.65	140.71	140.00	141.00	0.001569	2.38	23.93	11.60	0.53
Giglio	14	Max WS	PG_30	61.93	138.65	140.79	140.08	141.11	0.001651	2.49	24.86	11.60	0.54
Giglio	13.5			Bridge									
Giglio	13	Max WS	P_G_200	87.63	138.60	141.16		141.60	0.001960	2.95	29.68	11.60	0.59
Giglio	13	Max WS	P_G_100	77.48	138.60	141.02		141.41	0.001804	2.76	28.08	11.60	0.57

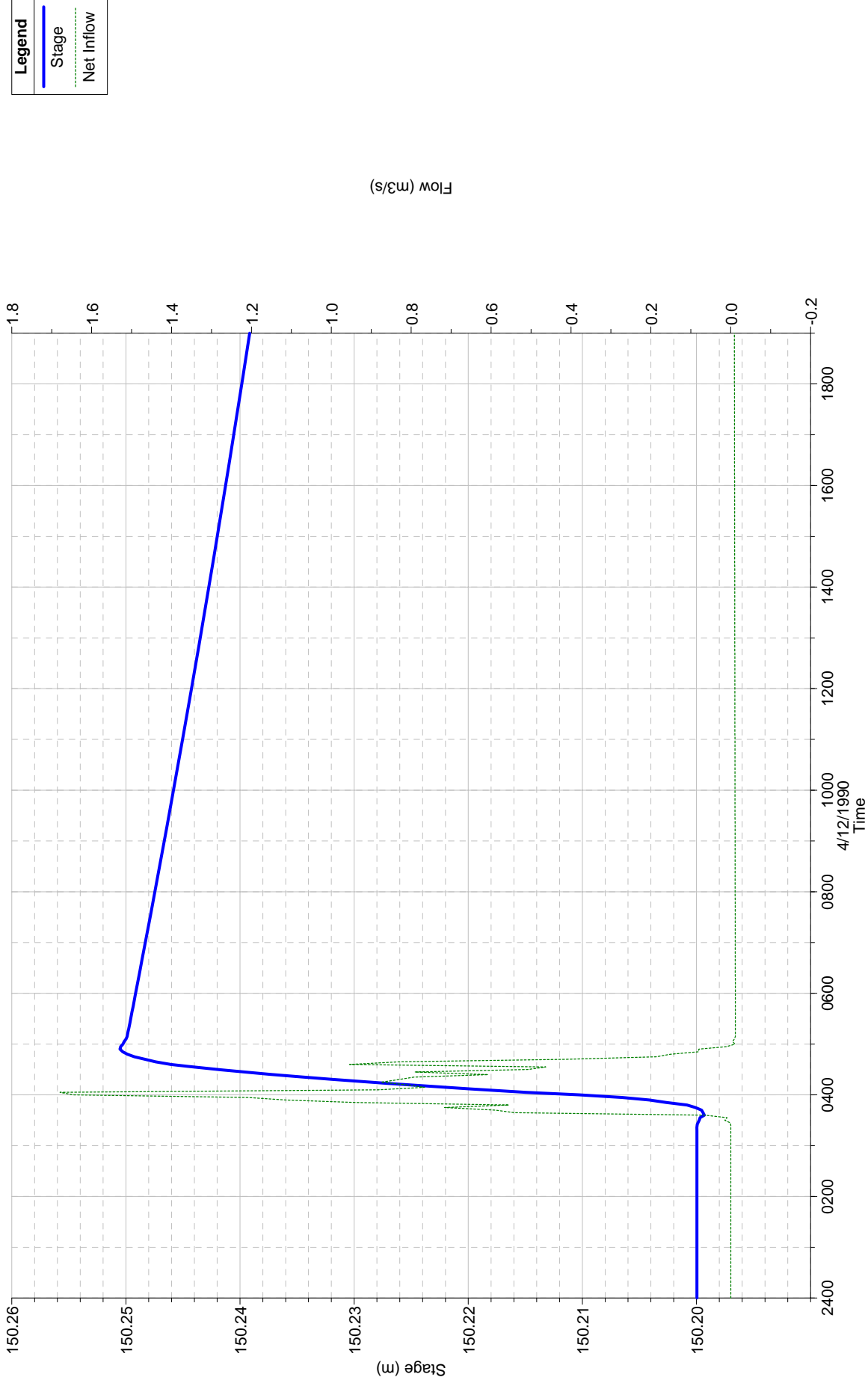
HEC-RAS River: Giglio Reach: Giglio Profile: Max WS (Continued)

Reach	River Sta	Profile	Plan	Q Total (m3/s)	Min Ch El (m)	W.S. Elev (m)	Crit.W.S. (m)	E.G. Elev (m)	E.G. Slope (m/m)	Vel Chnl (m/s)	Flow Area (m2)	Top Width (m)	Froude # Chl
Giglio	13	Max WS	P_G_20	57.03	138.60	140.69		140.97	0.001507	2.35	24.26	11.60	0.52
Giglio	13	Max WS	PG_30	61.93	138.60	140.77		141.08	0.001592	2.46	25.17	11.60	0.53
Giglio	12	Max WS	P_G_200	87.63	138.44	140.82		141.52	0.006546	3.72	23.58	10.02	0.77
Giglio	12	Max WS	P_G_100	77.47	138.44	140.74		141.33	0.005635	3.40	22.81	10.01	0.72
Giglio	12	Max WS	P_G_20	57.03	138.44	140.51		140.91	0.004143	2.77	20.55	10.00	0.62
Giglio	12	Max WS	PG_30	61.93	138.44	140.57		141.01	0.004527	2.94	21.09	10.00	0.65
Giglio	11	Max WS	P_G_200	87.64	138.30	139.18	140.28	144.15	0.127336	9.88	8.87	10.17	3.37
Giglio	11	Max WS	P_G_100	77.48	138.30	139.10	140.12	143.86	0.137156	9.67	8.01	10.15	3.47
Giglio	11	Max WS	P_G_20	57.03	138.30	138.93	139.79	143.03	0.154094	8.96	6.36	10.11	3.60
Giglio	11	Max WS	PG_30	61.93	138.30	138.97	139.87	143.26	0.150744	9.17	6.75	10.12	3.59
Giglio	10	Max WS	P_G_200	89.09	135.99	138.93		139.27	0.002577	2.56	34.85	14.25	0.52
Giglio	10	Max WS	P_G_100	78.77	135.99	138.81		139.10	0.002343	2.38	33.12	14.19	0.50
Giglio	10	Max WS	P_G_20	57.95	135.99	138.50		138.71	0.001935	2.02	28.75	14.02	0.45
Giglio	10	Max WS	PG_30	62.93	135.99	138.59		138.81	0.002024	2.10	29.92	14.06	0.46
Giglio	09	Max WS	P_G_200	89.08	135.76	138.44		139.02	0.005652	3.38	26.33	15.16	0.82
Giglio	09	Max WS	P_G_100	78.75	135.76	138.39		138.87	0.004806	3.08	25.61	15.11	0.75
Giglio	09	Max WS	P_G_20	57.95	135.76	138.17		138.51	0.003931	2.59	22.35	14.87	0.67
Giglio	09	Max WS	PG_30	62.93	135.76	138.24		138.61	0.004048	2.69	23.37	14.95	0.69
Giglio	08	Max WS	P_G_200	89.08	135.29	137.97	138.03	138.93	0.009511	4.35	20.49	11.66	1.05
Giglio	08	Max WS	P_G_100	15.98	135.29	137.91		137.95	0.000333	0.80	19.86	11.50	0.20
Giglio	08	Max WS	P_G_20	15.97	135.29	137.91		137.95	0.000332	0.80	19.86	11.50	0.20
Giglio	08	Max WS	PG_30	15.99	135.29	137.91		137.95	0.000333	0.80	19.86	11.50	0.20
Giglio	07	Max WS	P_G_200	22.68	135.14	137.93		137.96	0.000283	0.80	28.20	14.47	0.18
Giglio	07	Max WS	P_G_100	22.83	135.14	137.93		137.96	0.000287	0.81	28.17	14.47	0.19
Giglio	07	Max WS	P_G_20	22.71	135.14	137.92		137.96	0.000285	0.81	28.15	14.46	0.18
Giglio	07	Max WS	PG_30	22.66	135.14	137.93		137.96	0.000284	0.81	28.15	14.46	0.18
Giglio	06	Max WS	P_G_200	45.93	134.66	137.93		138.03	0.000815	1.44	31.94	14.47	0.31
Giglio	06	Max WS	P_G_100	38.32	134.66	137.93		138.00	0.000568	1.20	31.92	14.47	0.26
Giglio	06	Max WS	P_G_20	45.45	134.66	137.92		138.03	0.000801	1.42	31.90	14.46	0.31
Giglio	06	Max WS	PG_30	45.49	134.66	137.93		138.03	0.000802	1.43	31.90	14.47	0.31

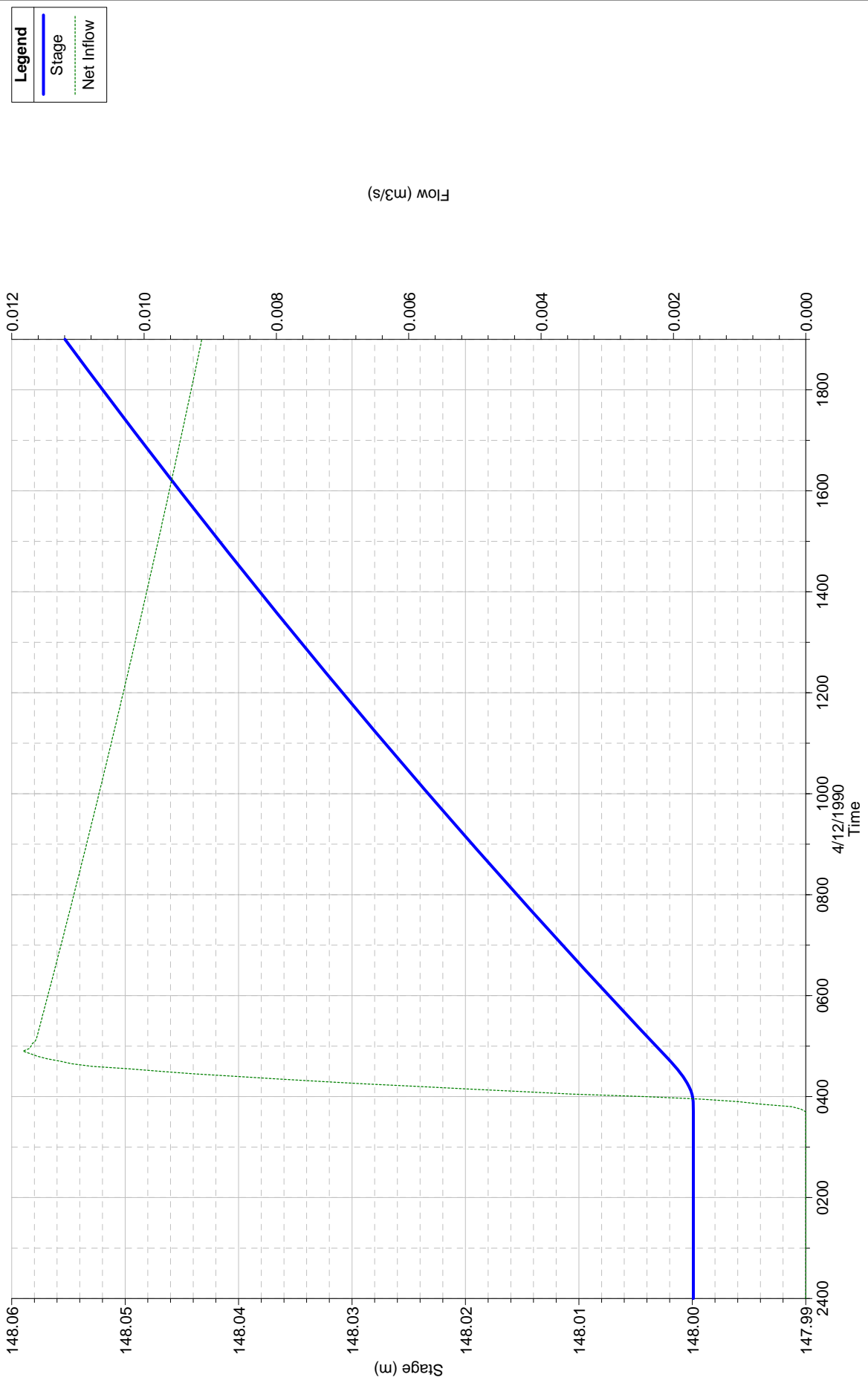
HEC-RAS River: Giglio Reach: Giglio Profile: Max WS (Continued)

Reach	River Sta	Profile	Plan	Q Total (m3/s)	Min Ch El (m)	W.S. Elev (m)	Crit W.S. (m)	E.G. Elev (m)	E.G. Slope (m/m)	Vel Chnl (m/s)	Flow Area (m2)	Top Width (m)	Froude # Chl
Giglio	05	Max WS	P_G_200	89.08	134.03	138.05		138.25	0.001536	1.99	44.74	21.42	0.44
Giglio	05	Max WS	P_G_100	78.75	134.03	138.02		138.18	0.001252	1.79	44.09	21.31	0.40
Giglio	05	Max WS	P_G_20	57.86	134.03	137.97		138.06	0.000721	1.34	43.10	21.14	0.30
Giglio	05	Max WS	PG_30	62.89	134.03	137.98		138.09	0.000841	1.45	43.30	21.17	0.32
Giglio	04	Max WS	P_G_200	89.08	133.96	138.02		138.21	0.001412	1.93	46.08	21.51	0.42
Giglio	04	Max WS	P_G_100	78.75	133.96	138.00		138.15	0.001140	1.73	45.55	21.43	0.38
Giglio	04	Max WS	P_G_20	57.85	133.96	137.96		138.04	0.000647	1.29	44.77	21.30	0.28
Giglio	04	Max WS	PG_30	62.88	133.96	137.97		138.07	0.000757	1.40	44.92	21.32	0.31
Giglio	03	Max WS	P_G_200	89.08	133.62	137.95		138.16	0.001297	2.05	43.55	17.07	0.41
Giglio	03	Max WS	P_G_100	78.60	133.62	137.94		138.11	0.001018	1.81	43.44	17.06	0.36
Giglio	03	Max WS	P_G_20	57.16	133.62	137.93		138.02	0.000544	1.32	43.28	17.03	0.26
Giglio	03	Max WS	PG_30	62.58	133.62	137.93		138.04	0.000650	1.44	43.31	17.04	0.29
Giglio	02	Max WS	P_G_200	23.12	133.58	137.92		137.93	0.000083	0.52	44.13	17.01	0.10
Giglio	02	Max WS	P_G_100	23.00	133.58	137.92		137.93	0.000082	0.52	44.12	17.01	0.10
Giglio	02	Max WS	P_G_20	22.82	133.58	137.92		137.93	0.000081	0.52	44.12	17.00	0.10
Giglio	02	Max WS	PG_30	22.79	133.58	137.92		137.93	0.000081	0.52	44.12	17.00	0.10
Giglio	01	Max WS	P_G_200	15.50	133.46	137.92	134.52	137.92	0.000028	0.31	49.22	18.19	0.06
Giglio	01	Max WS	P_G_100	15.50	133.46	137.92	134.52	137.92	0.000028	0.31	49.22	18.19	0.06
Giglio	01	Max WS	P_G_20	15.50	133.46	137.92	134.52	137.92	0.000028	0.31	49.22	18.19	0.06
Giglio	01	Max WS	PG_30	15.50	133.46	137.92	134.52	137.92	0.000028	0.31	49.22	18.19	0.06

Plan: P\_G\_20 Storage Area: Cassa\_Par\_Monte

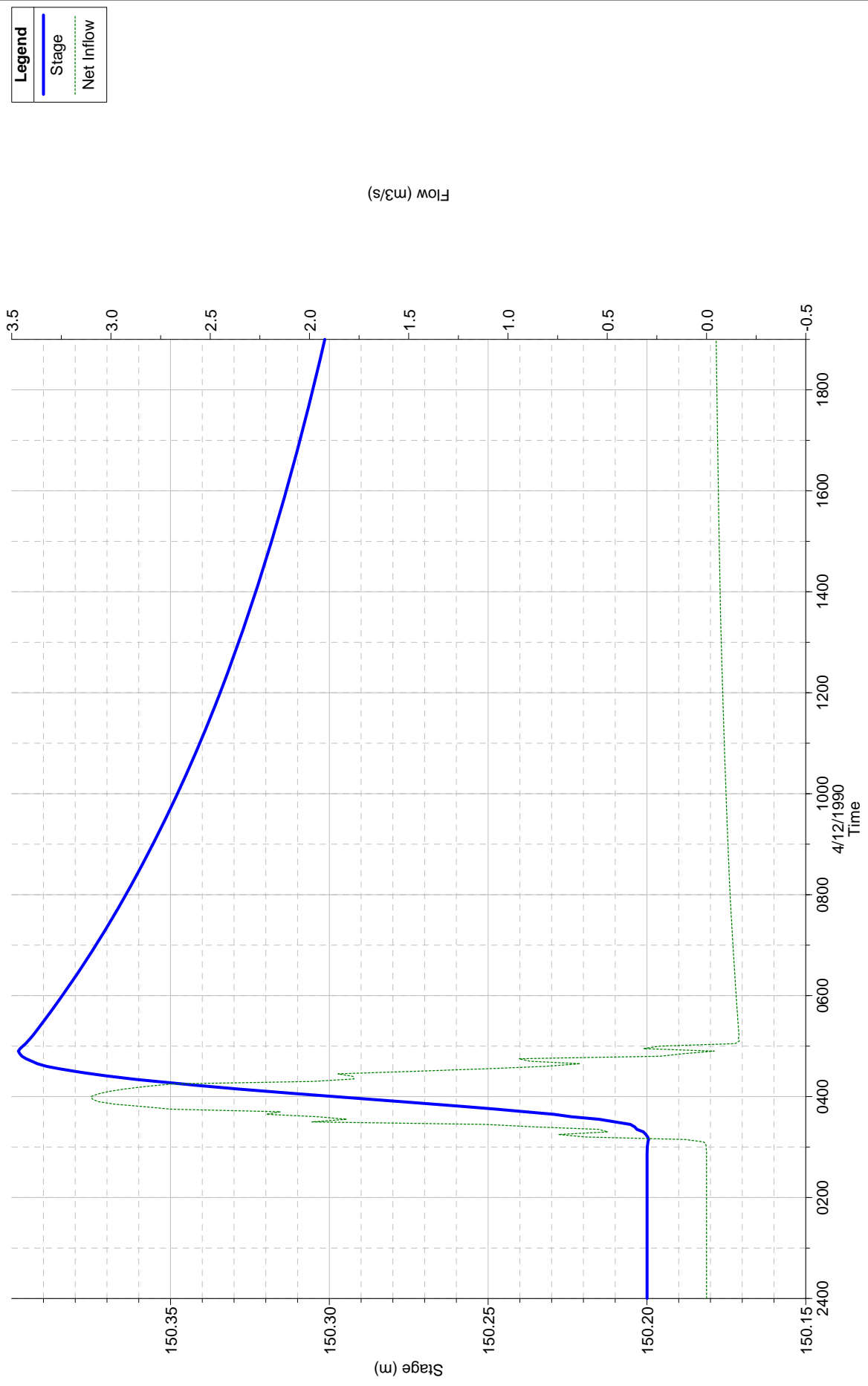


Plan: P\_G\_20 Storage Area: Cassa\_Par\_Valle

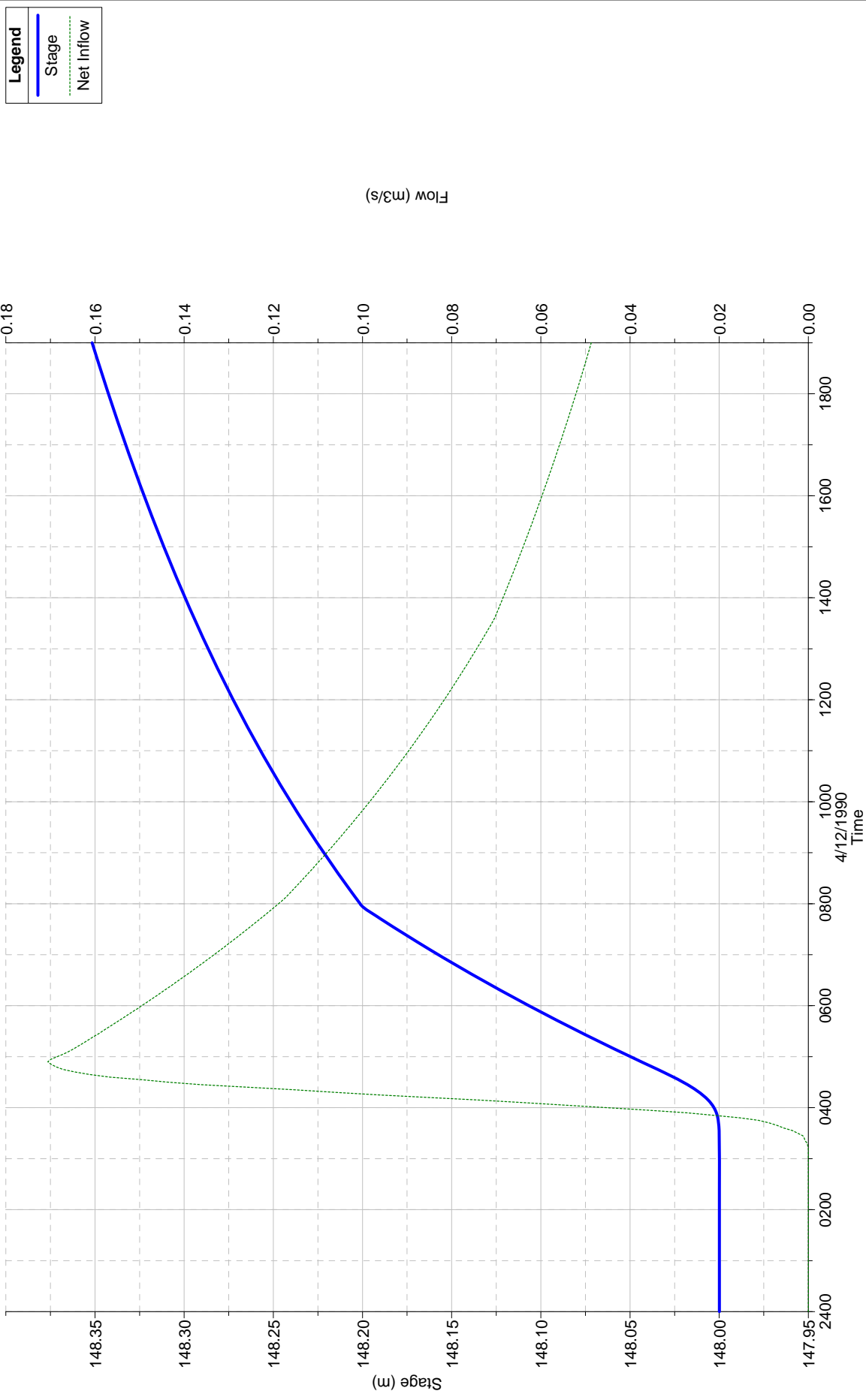




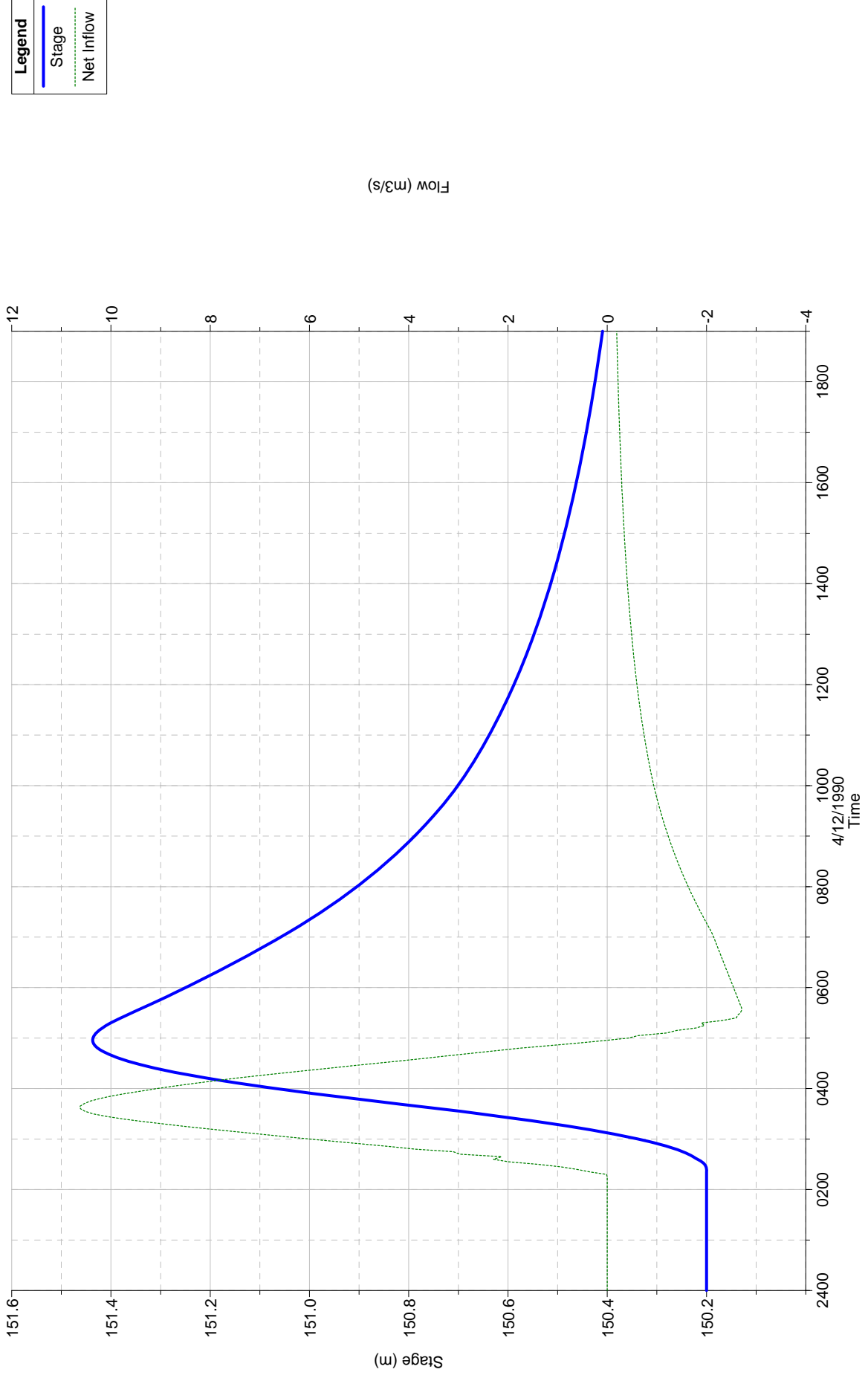
Plan: PG\_30 Storage Area: Cassa\_Par\_Monte



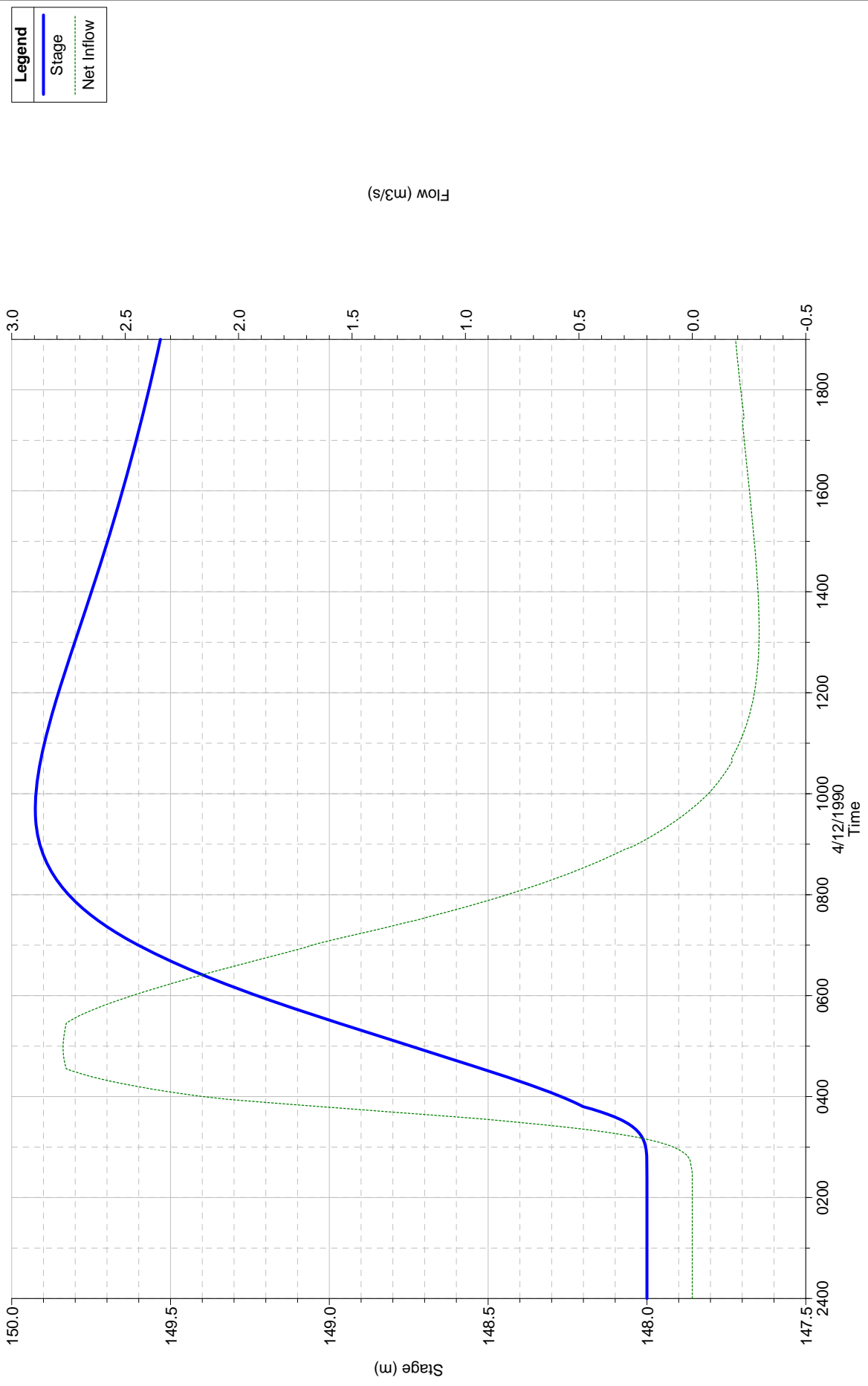
Plan: PG\_30 Storage Area: Cassa\_Par\_Valle



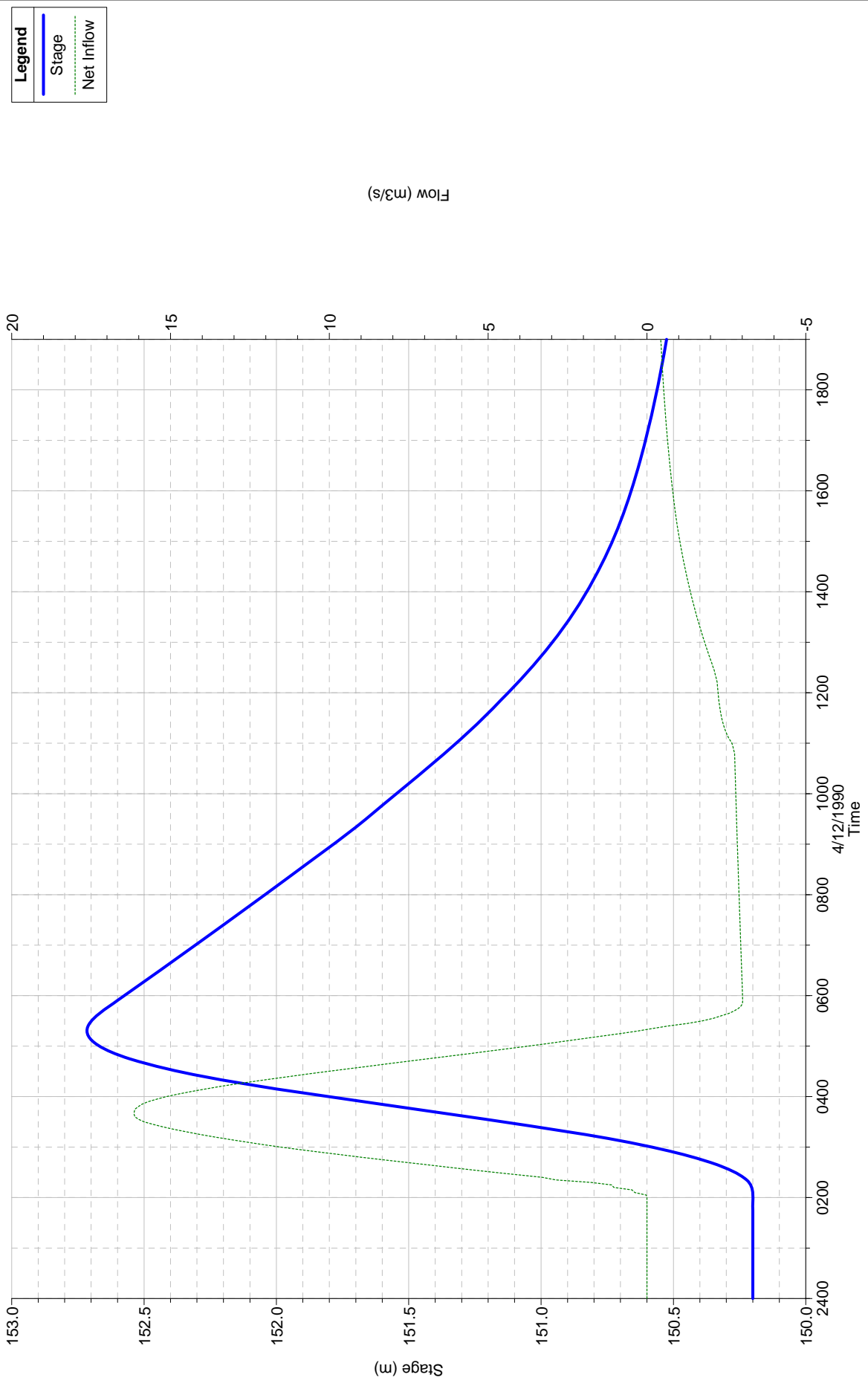
Plan: P\_G\_100 Storage Area: Cassa\_Par\_Monte



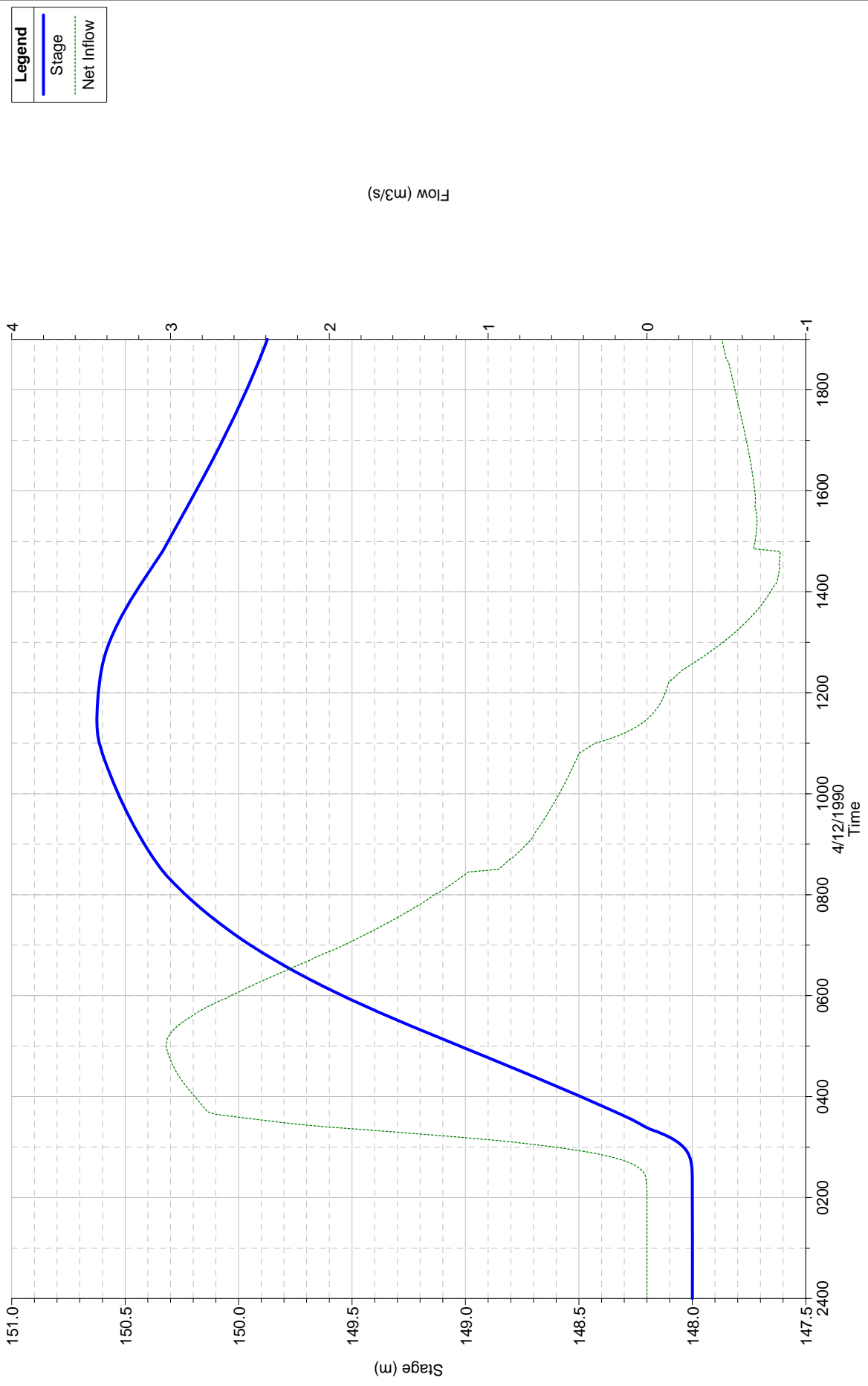
Plan: P\_G\_100 Storage Area: Cassa\_Par\_Valle



Plan: P\_G\_200 Storage Area: Cassa\_Par\_Monte



Plan: P\_G\_200 Storage Area: Cassa\_Par\_Valle



Legend  
Stage  
Net Inflow

Flow (m³/s)

4  
3  
2  
1  
0  
-1

151.0  
150.5  
150.0  
149.5  
149.0  
148.5  
148.0  
147.5

Time  
4/12/1990

2400  
0200  
0400  
0600  
0800  
1000  
1200  
1400  
1600  
1800

**borro della Sabina - stato di progetto**

verifiche con Tpioggia critico per il Borro della Sabina

- moto vario

Tr=200, 100, 30 e 20 anni

*profilo*

*livelli idrici nelle sezioni di verifica*

*tabella di output del software Hec-ras 4.0*

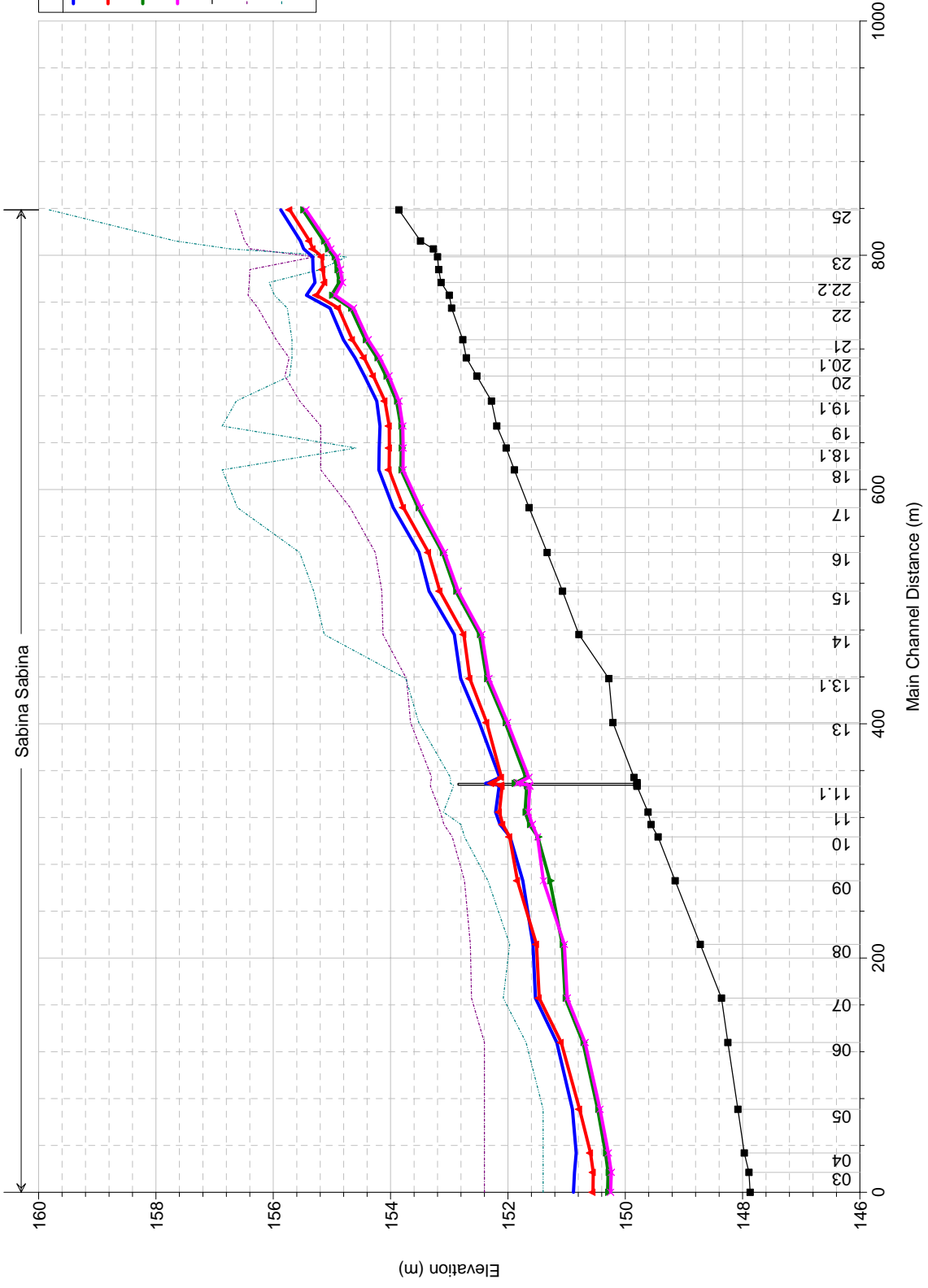
*livelli e portate in ingresso alle aree di accumulo*





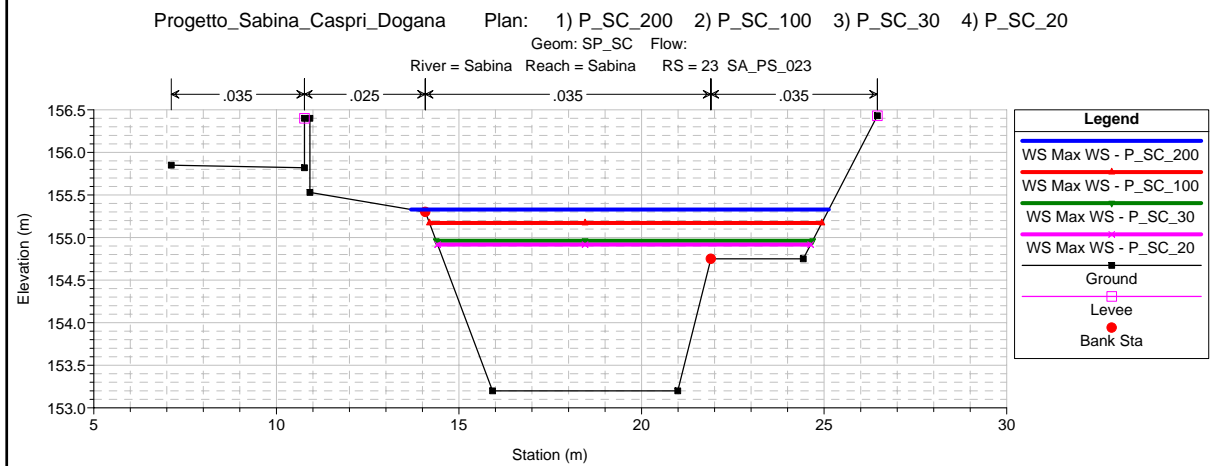
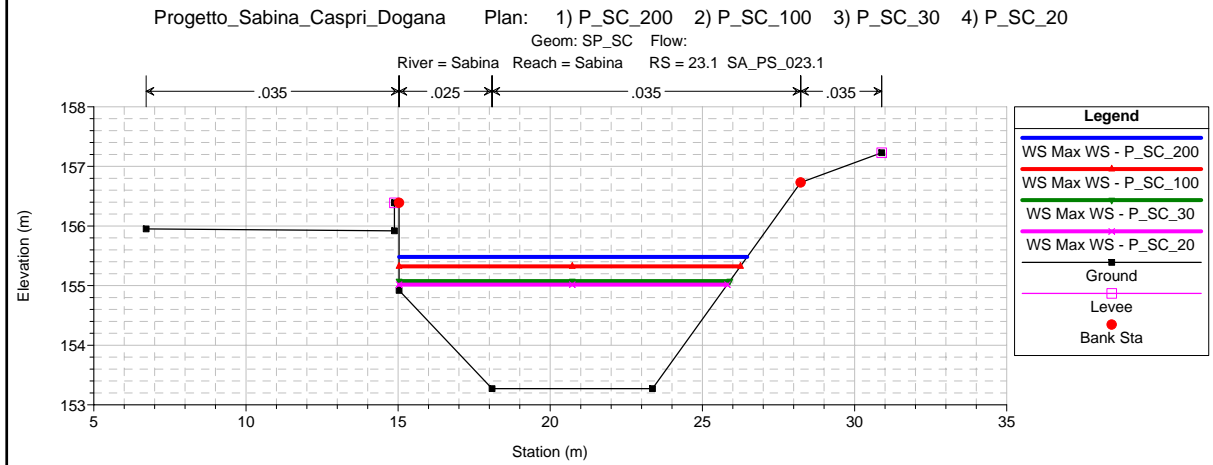
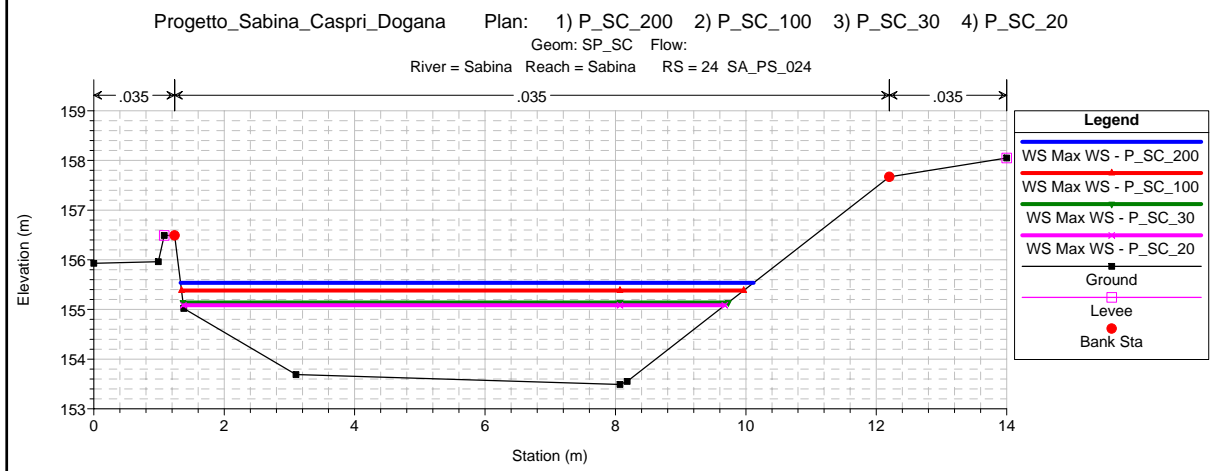
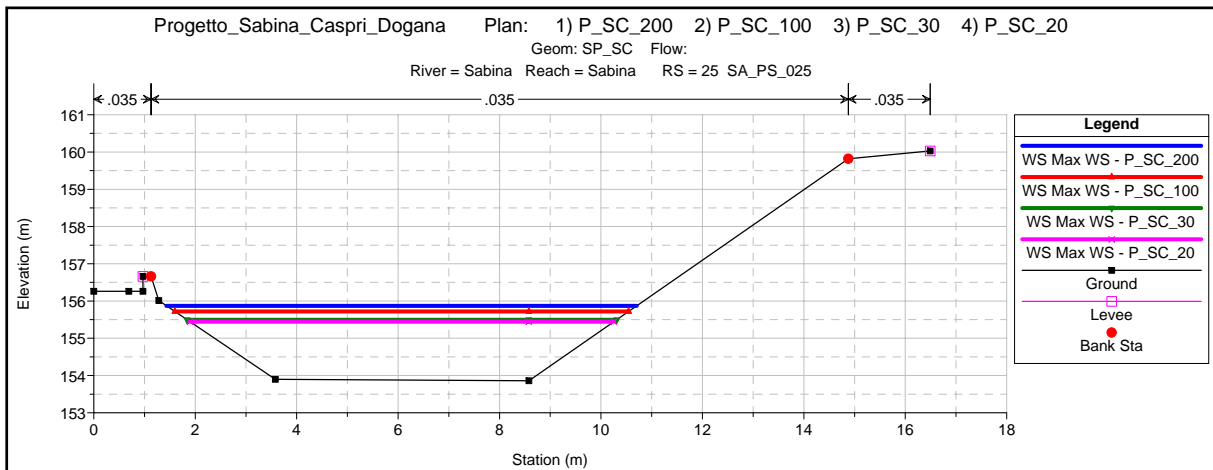
Progetto\_Sabina\_Caspri\_Dogana Plan: 1) P\_SC\_200 2) P\_SC\_100 3) P\_SC\_30 4) P\_SC\_20

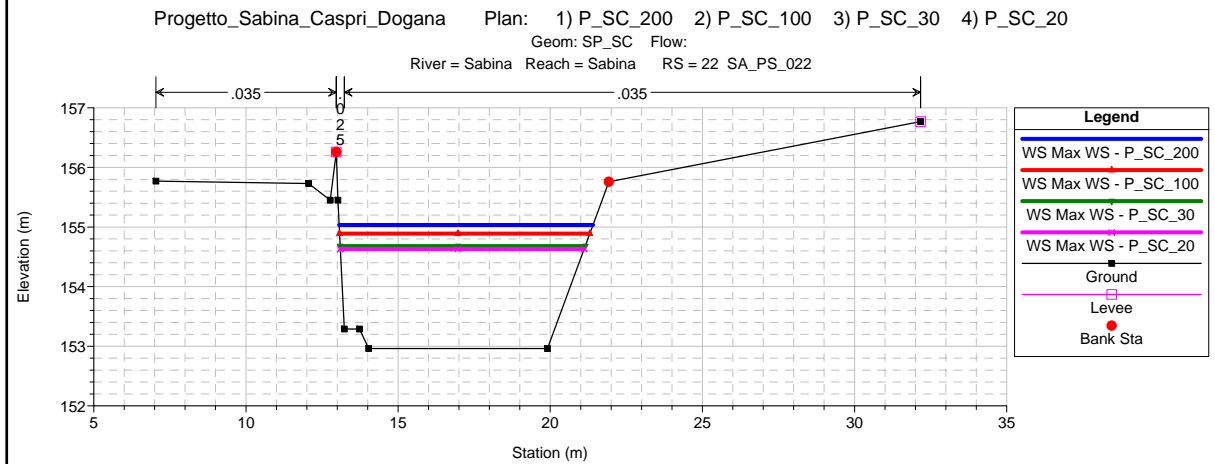
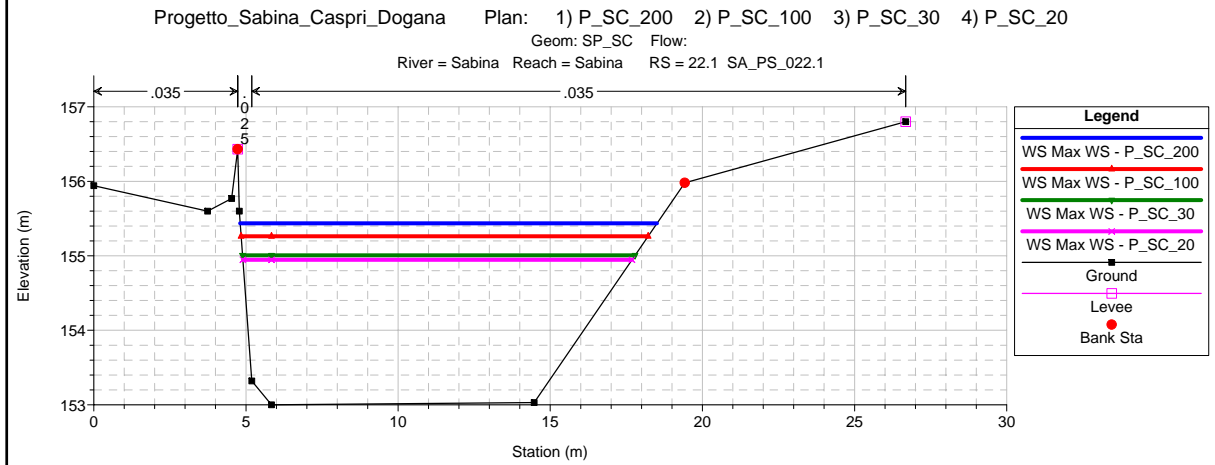
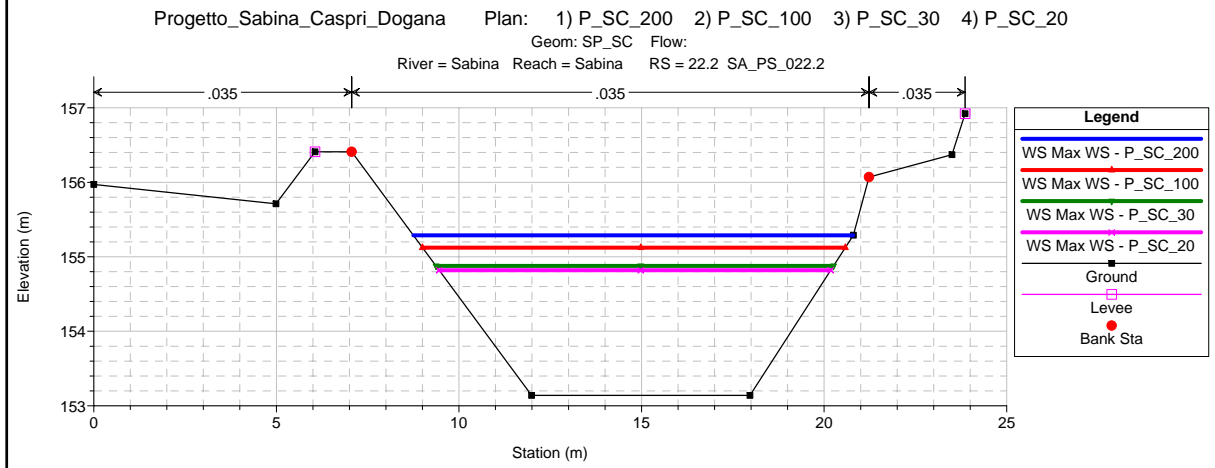
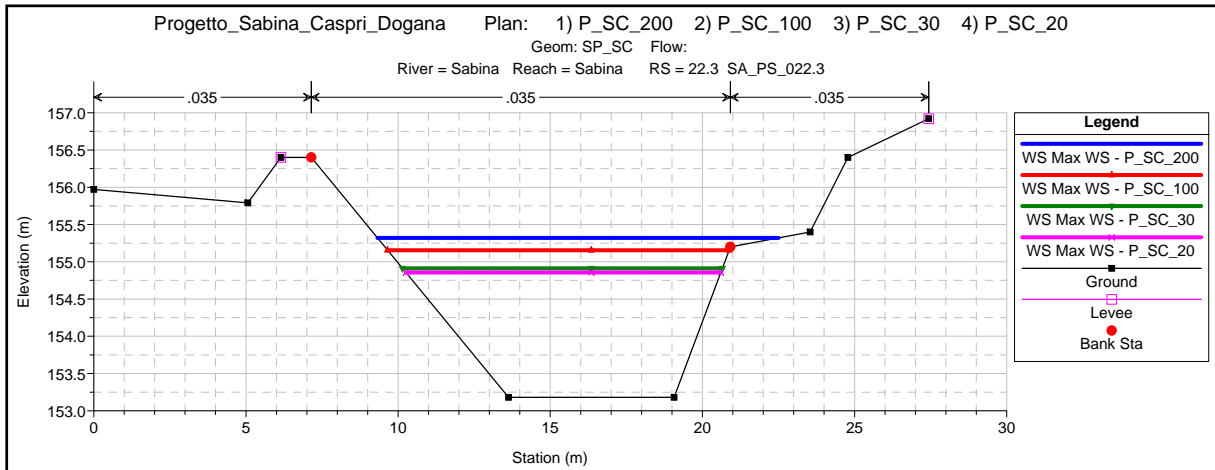
Geom: SP\_SC Flow:

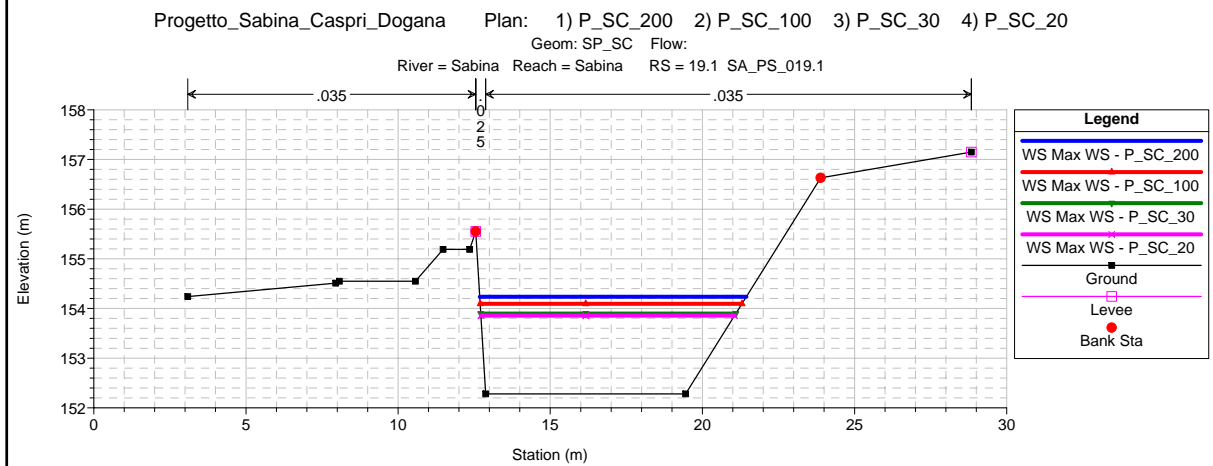
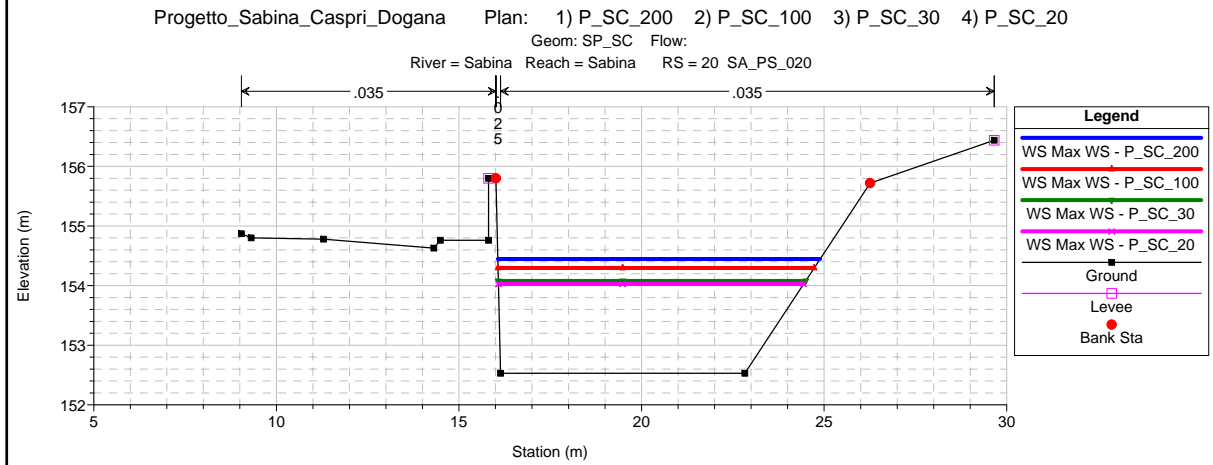
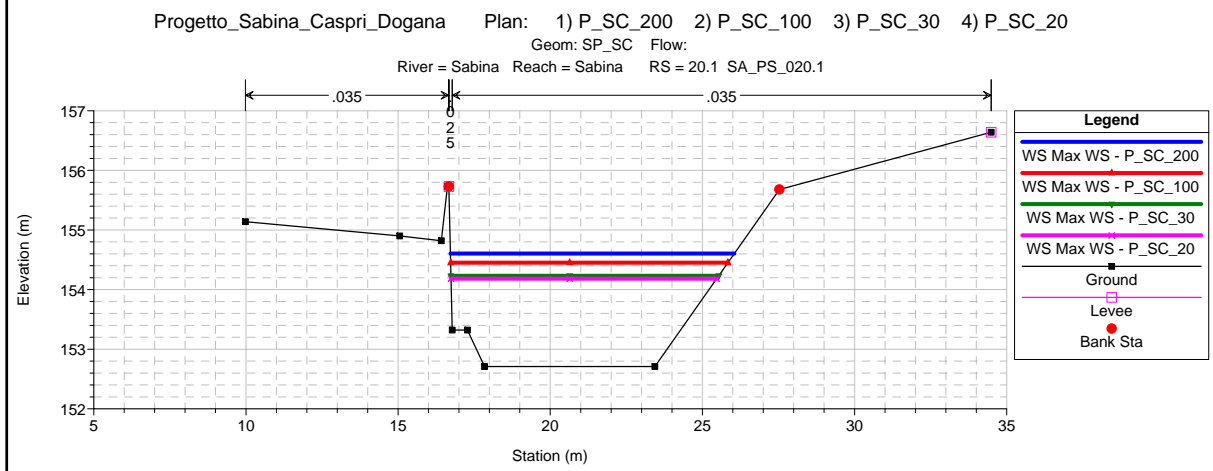
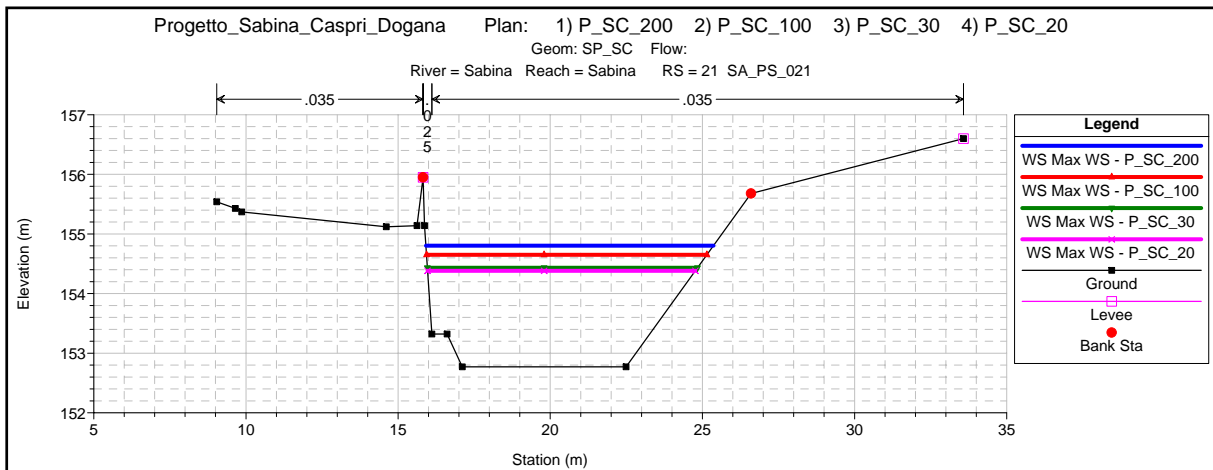


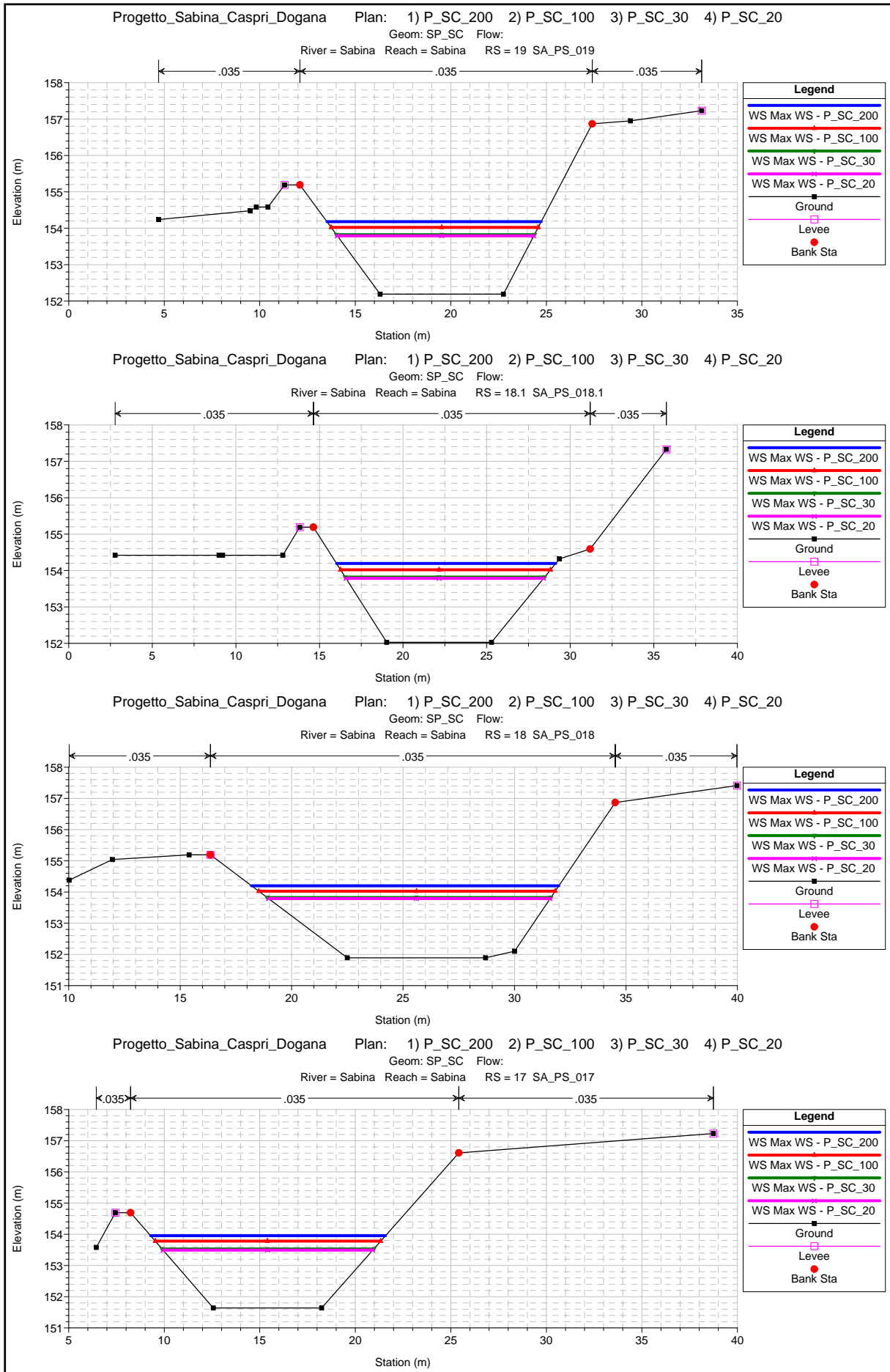
**Legend**

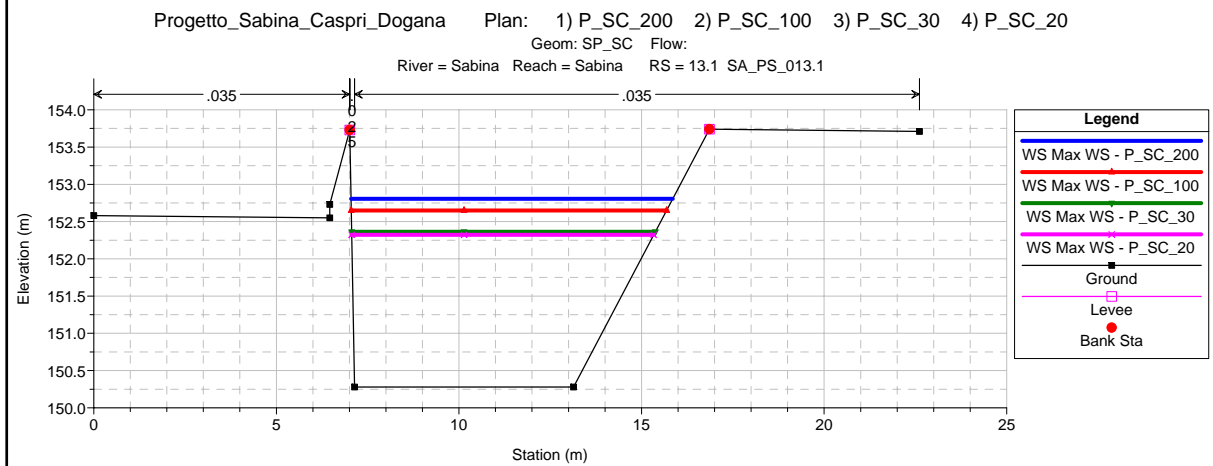
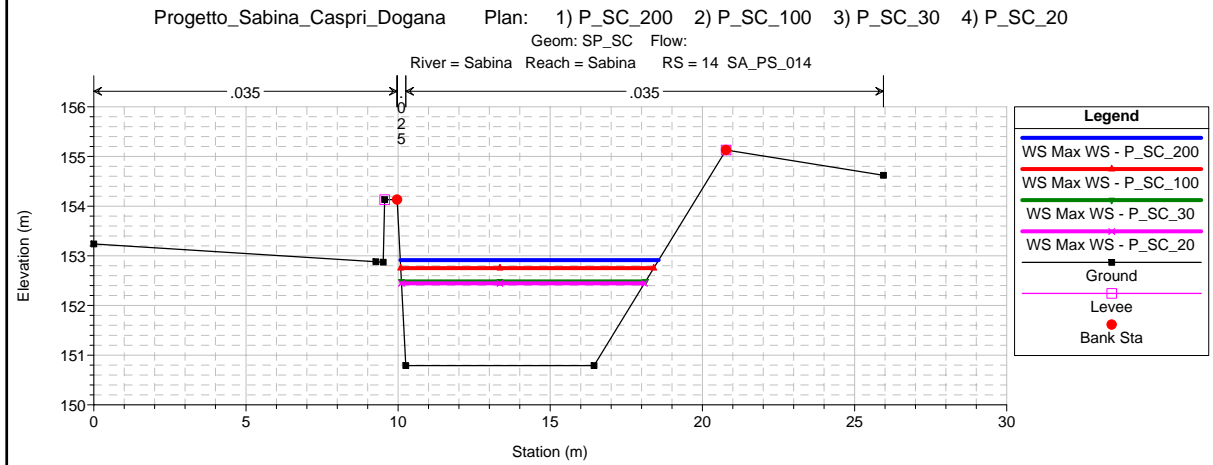
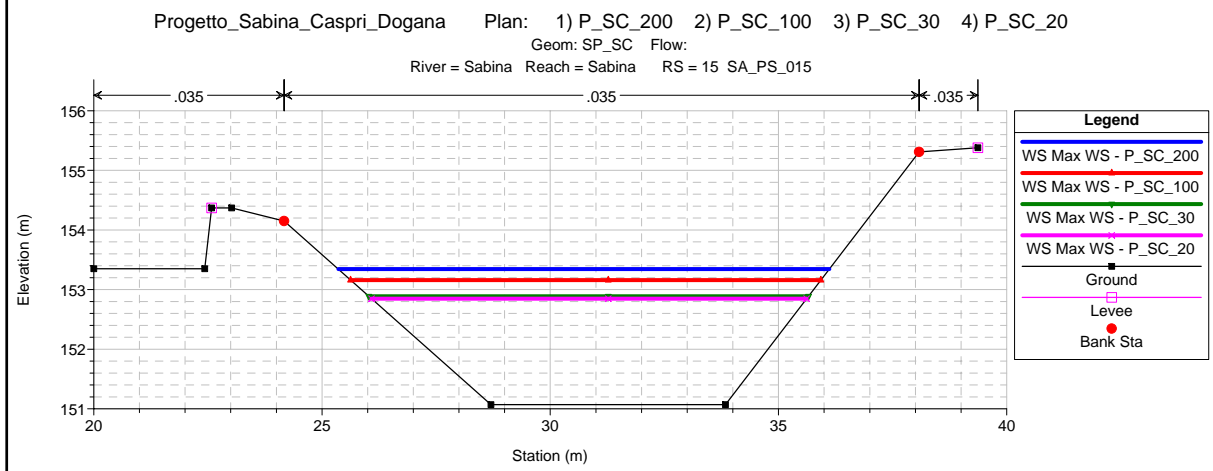
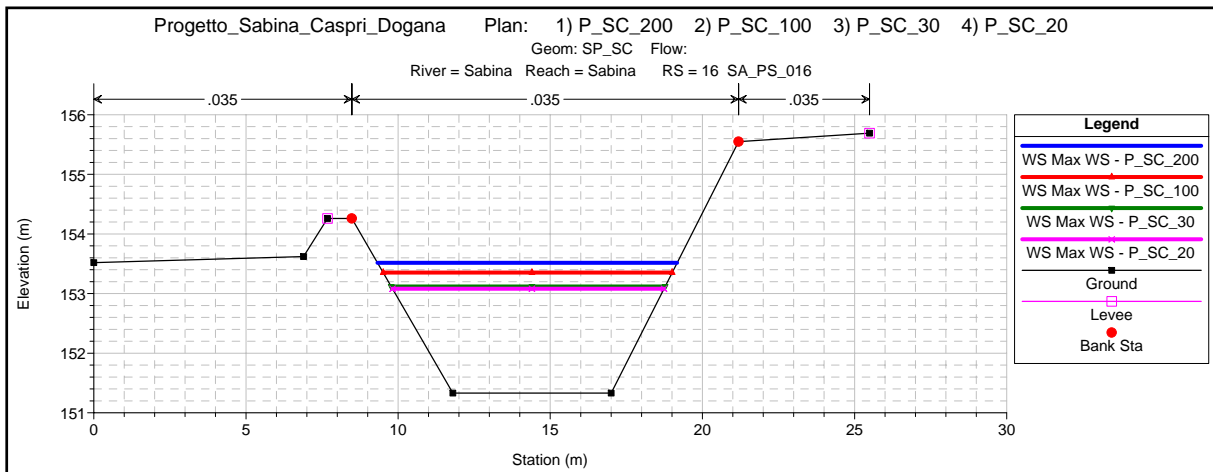
- WS Max WS - P\_SC\_200
- WS Max WS - P\_SC\_100
- WS Max WS - P\_SC\_30
- WS Max WS - P\_SC\_20
- Ground
- LOB
- ROB

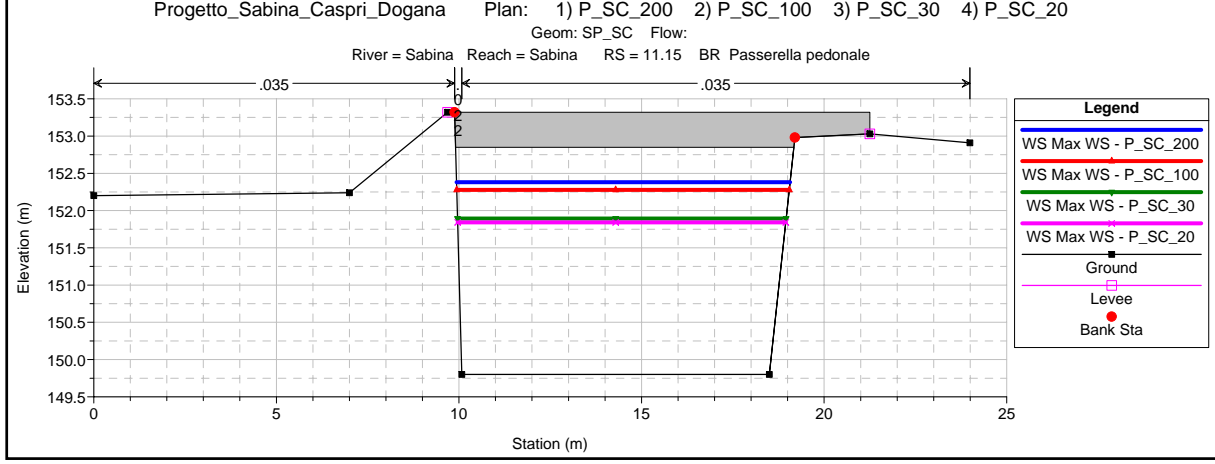
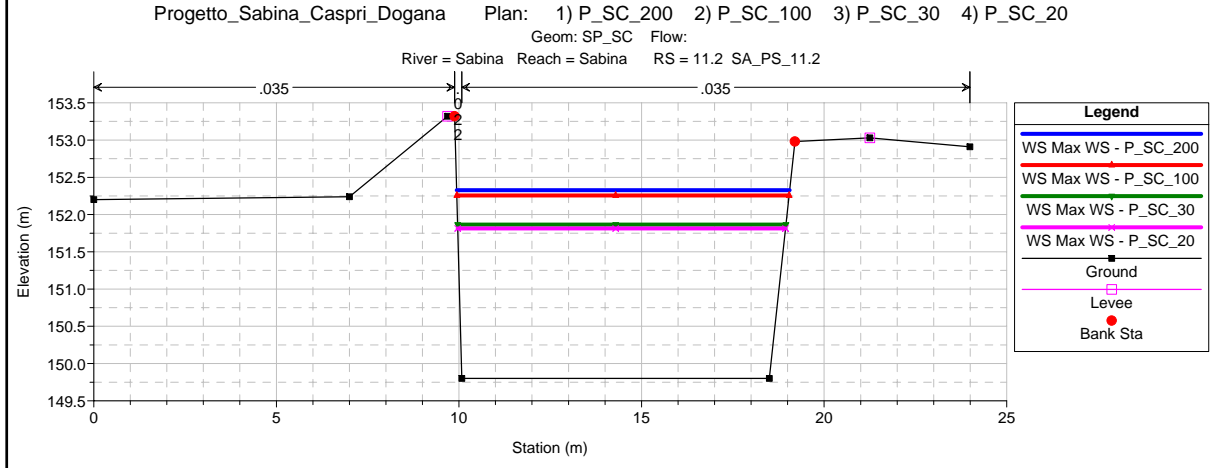
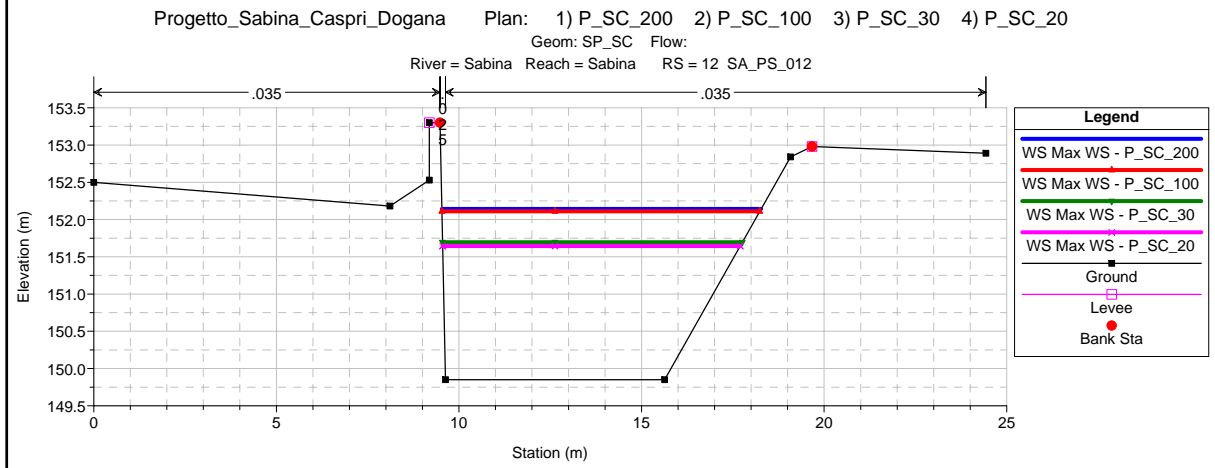
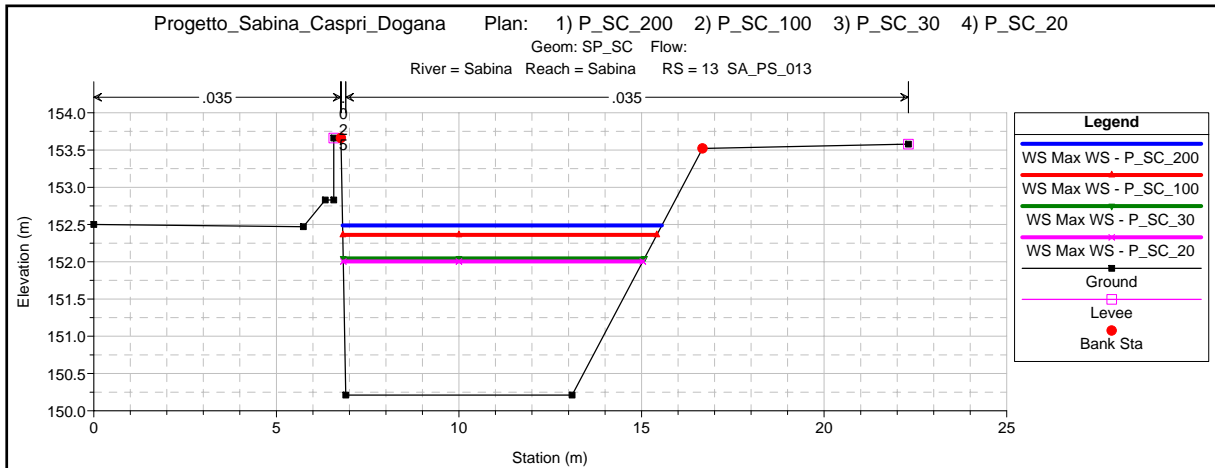


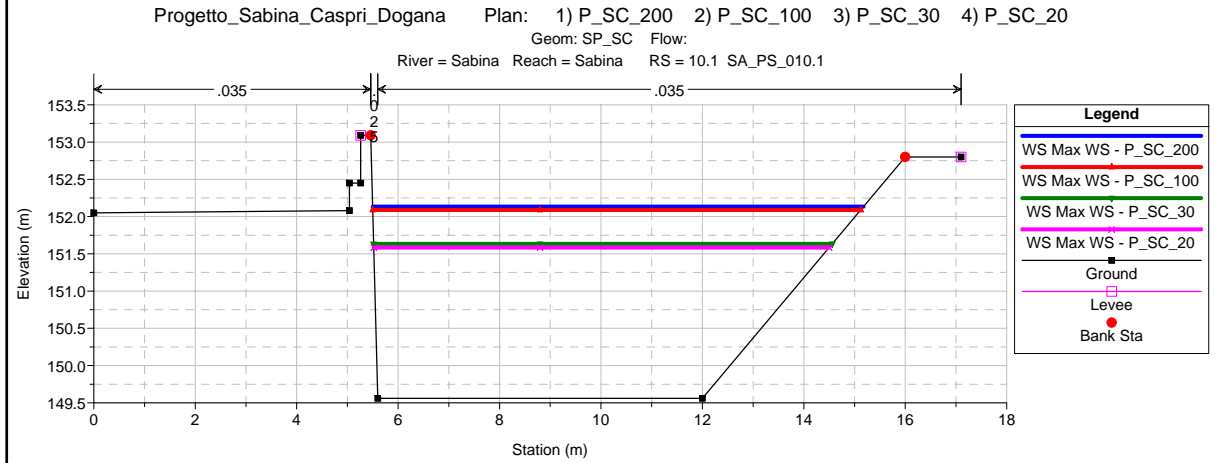
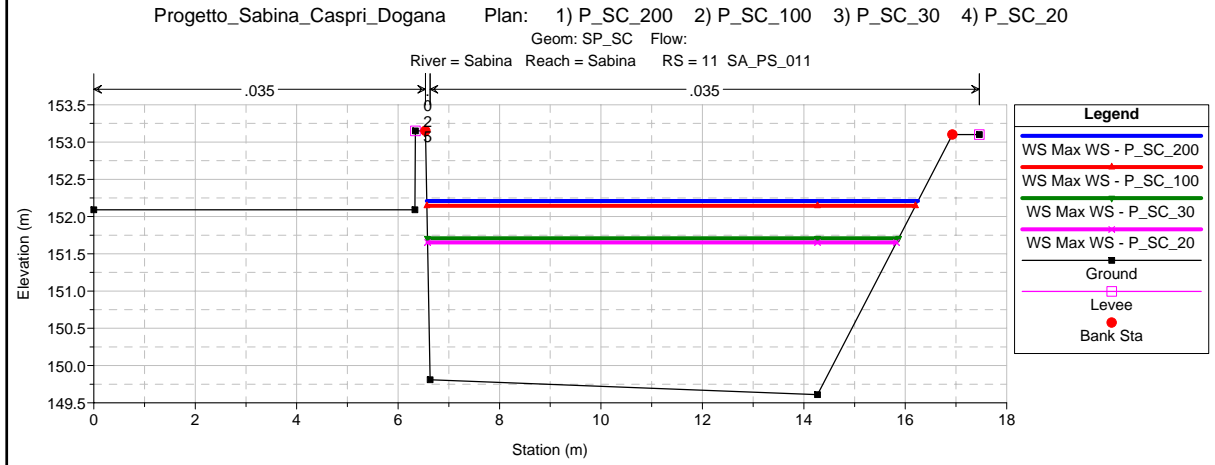
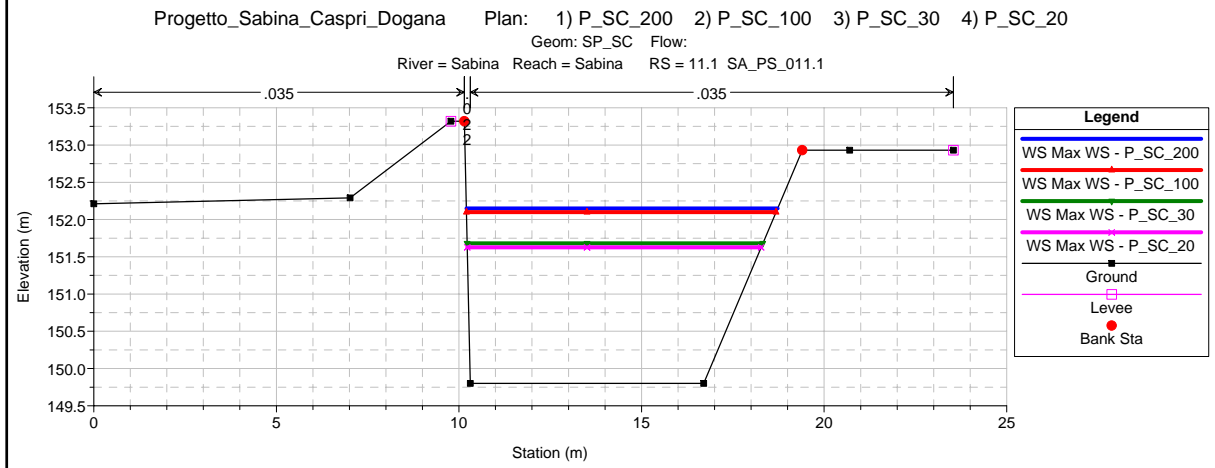
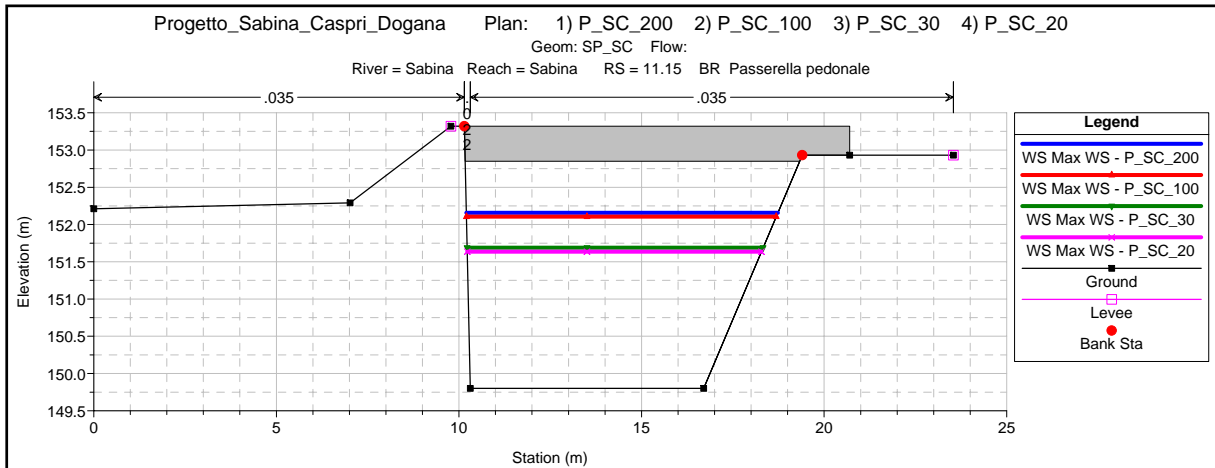




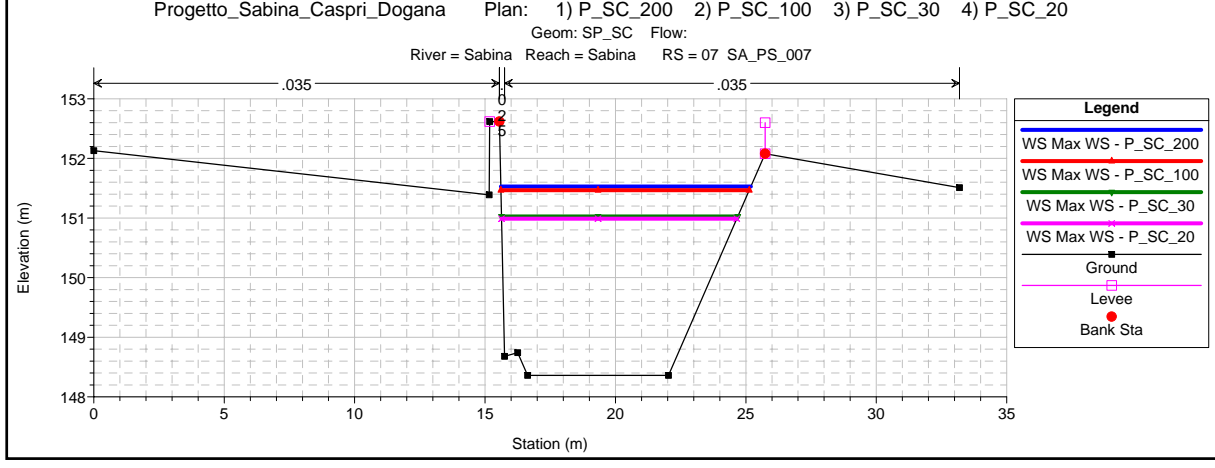
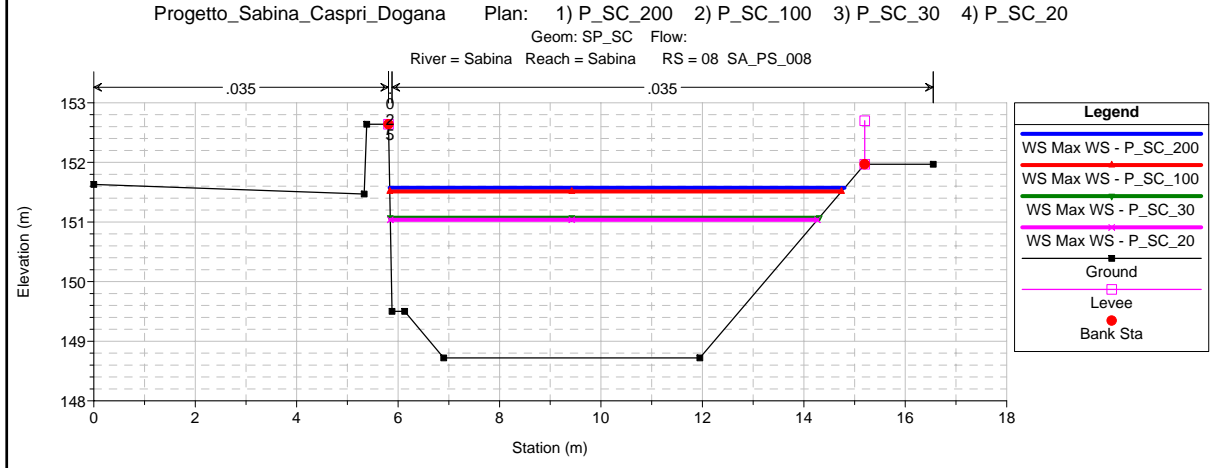
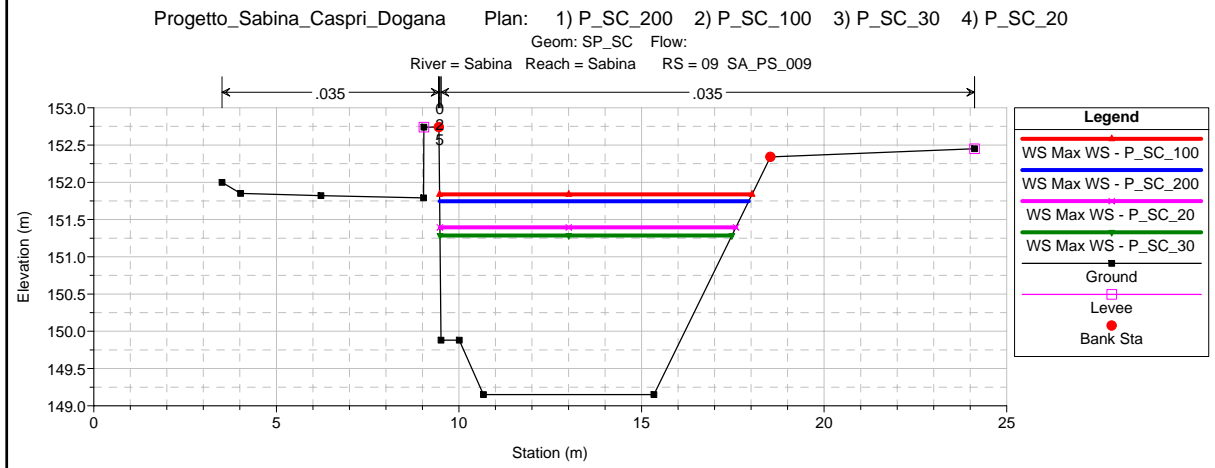
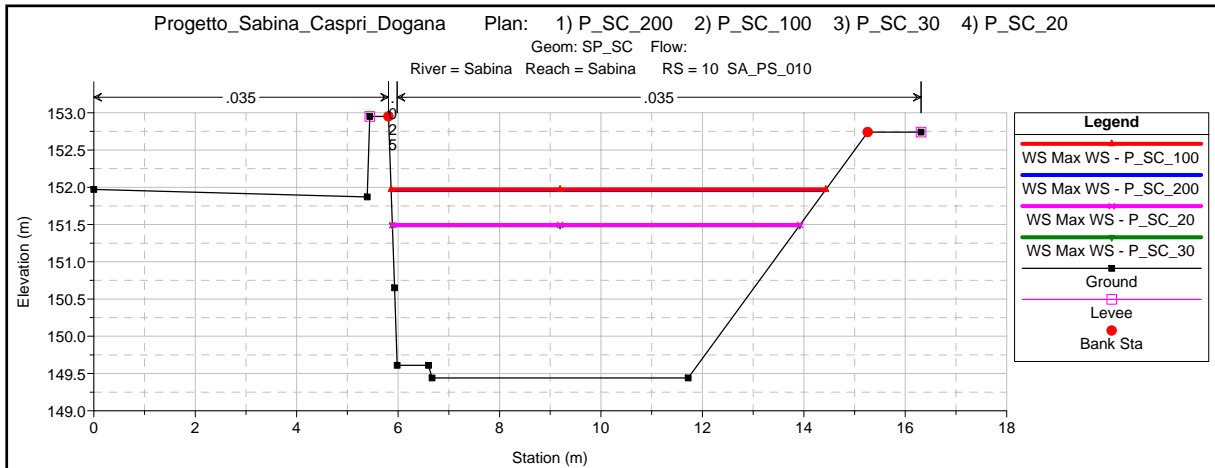


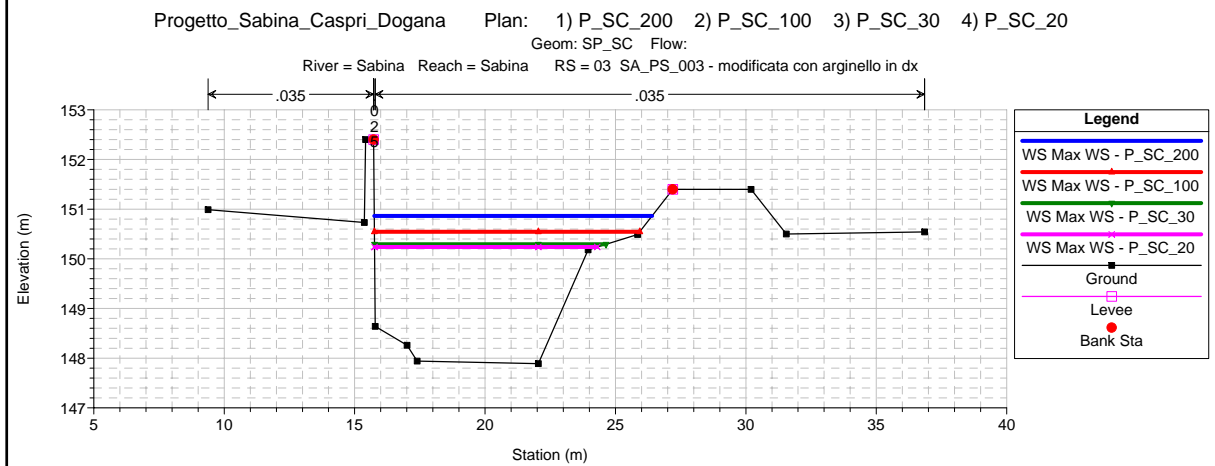
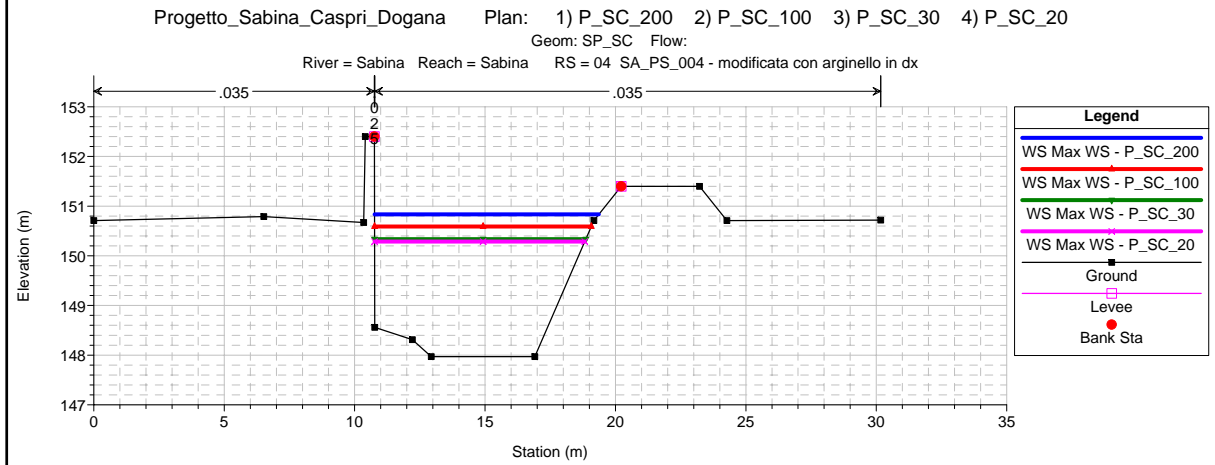
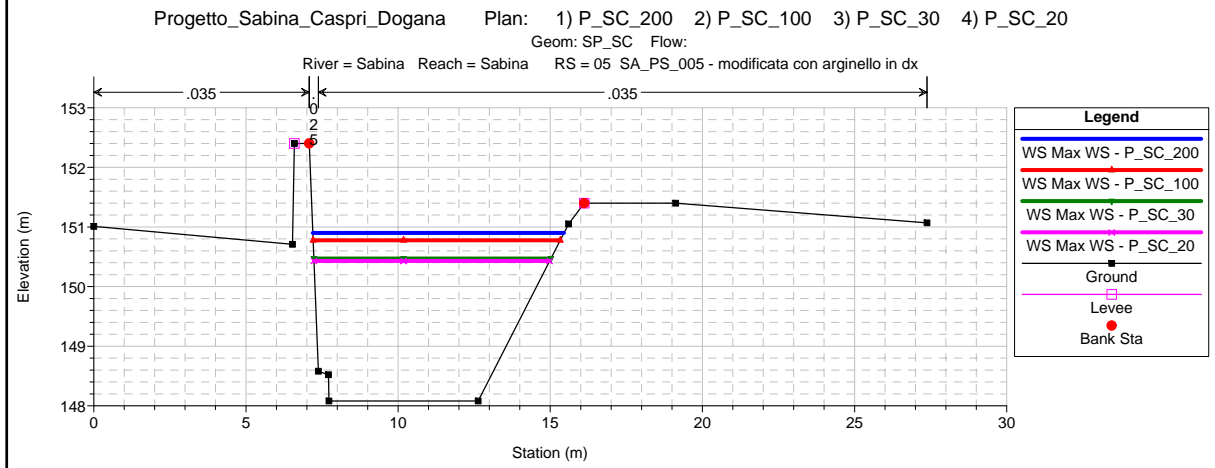
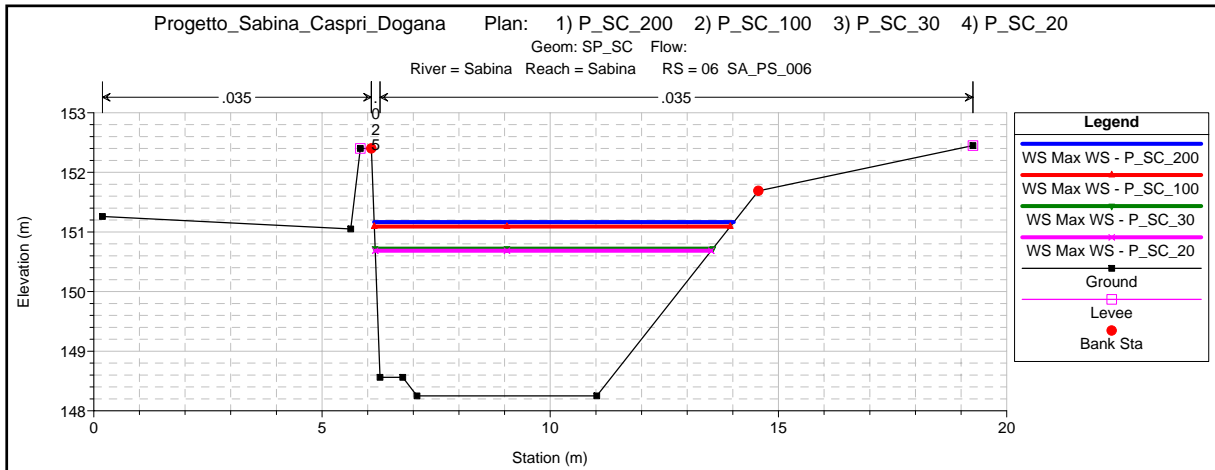








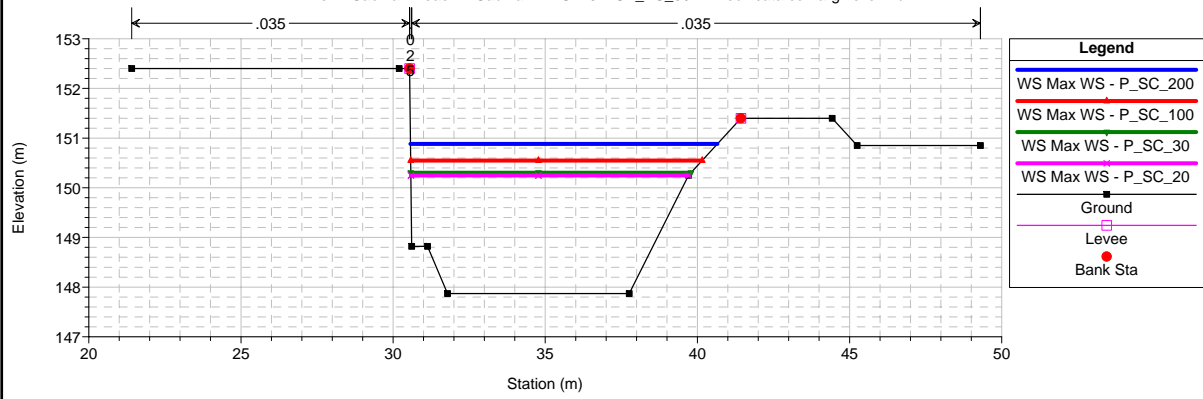




Progetto\_Sabina\_Caspri\_Dogana Plan: 1) P\_SC\_200 2) P\_SC\_100 3) P\_SC\_30 4) P\_SC\_20

Geom: SP\_SC Flow:

River = Sabina Reach = Sabina RS = 02 SA\_PS\_002 - modificata con arginello in dx



HEC-RAS Profile: Max WS

Storage Area	Profile	Plan	W.S. Elev (m)	SA Min El (m)	Net Flux (m3/s)	SA Area (1000 m2)	SA Volume (1000 m3)
Cassa_Pestello	Max WS	P_SC_200	151.78	148.80	0.29	5.80	92.18
Cassa_Pestello	Max WS	P_SC_100	149.41	148.80	32.83	39.54	11.14
Cassa_Pestello	Max WS	P_SC_30	149.21	148.80	10.40	39.54	3.55
Cassa_Pestello	Max WS	P_SC_20	148.84	148.80	7.46	7.50	0.28

HEC-RAS River: Sabina Reach: Sabina Profile: Max WS

Reach	River Sta	Profile	Plan	Q Total (m3/s)	Min Ch El (m)	W.S. Elev (m)	Crit W.S. (m)	E.G. Elev (m)	E.G. Slope (m/m)	Vel Chnl (m/s)	Flow Area (m2)	Top Width (m)	Froude # Chl
Sabina	25	Max WS	P_SC_200	54.14	153.86	155.87	155.85	156.61	0.012386	3.81	14.21	9.28	0.98
Sabina	25	Max WS	P_SC_100	47.16	153.86	155.72	155.70	156.41	0.012505	3.68	12.83	8.95	0.98
Sabina	25	Max WS	P_SC_30	37.85	153.86	155.50	155.48	156.11	0.012732	3.47	10.90	8.47	0.98
Sabina	25	Max WS	P_SC_20	35.80	153.86	155.44	155.42	156.04	0.012819	3.43	10.45	8.36	0.98
Sabina	24	Max WS	P_SC_200	54.04	153.49	155.54	155.53	156.31	0.012942	3.90	13.87	8.79	0.99
Sabina	24	Max WS	P_SC_100	47.06	153.49	155.38	155.38	156.10	0.013205	3.76	12.51	8.62	1.00
Sabina	24	Max WS	P_SC_30	37.85	153.49	155.14	155.17	155.81	0.014281	3.61	10.47	8.36	1.03
Sabina	24	Max WS	P_SC_20	35.80	153.49	155.08	155.12	155.74	0.014624	3.58	10.00	8.30	1.04
Sabina	23.1	Max WS	P_SC_200	54.27	153.27	155.48		155.88	0.004848	2.81	19.33	11.44	0.69
Sabina	23.1	Max WS	P_SC_100	47.26	153.27	155.32		155.69	0.004861	2.69	17.54	11.22	0.69
Sabina	23.1	Max WS	P_SC_30	37.85	153.27	155.08		155.41	0.005112	2.56	14.81	10.87	0.70
Sabina	23.1	Max WS	P_SC_20	35.80	153.27	155.02		155.34	0.005194	2.52	14.18	10.79	0.70
Sabina	23	Max WS	P_SC_200	54.26	153.20	155.33	155.29	155.98	0.010019	3.66	15.68	11.44	0.87
Sabina	23	Max WS	P_SC_100	47.23	153.20	155.17	155.14	155.80	0.010428	3.56	13.95	10.75	0.88
Sabina	23	Max WS	P_SC_30	37.85	153.20	154.96	154.91	155.52	0.010478	3.33	11.76	10.31	0.87
Sabina	23	Max WS	P_SC_20	35.80	153.20	154.92	154.84	155.45	0.010408	3.27	11.29	10.22	0.87
Sabina	22.3	Max WS	P_SC_200	54.24	153.18	155.32		155.77	0.006744	2.95	18.45	13.18	0.75
Sabina	22.3	Max WS	P_SC_100	47.20	153.18	155.16		155.57	0.007020	2.87	16.46	11.23	0.76
Sabina	22.3	Max WS	P_SC_30	37.85	153.18	154.91		155.29	0.007348	2.74	13.82	10.51	0.76
Sabina	22.3	Max WS	P_SC_20	35.80	153.18	154.86		155.23	0.007405	2.70	13.24	10.35	0.76
Sabina	22.2	Max WS	P_SC_200	54.22	153.14	155.29		155.69	0.005891	2.80	19.36	12.05	0.71
Sabina	22.2	Max WS	P_SC_100	47.18	153.14	155.12		155.50	0.006003	2.71	17.40	11.58	0.71
Sabina	22.2	Max WS	P_SC_30	37.85	153.14	154.88		155.22	0.006256	2.58	14.65	10.89	0.71
Sabina	22.2	Max WS	P_SC_20	35.79	153.14	154.82		155.15	0.006320	2.55	14.04	10.73	0.71
Sabina	22.1	Max WS	P_SC_200	54.20	153.00	155.44		155.63	0.002156	1.96	27.62	13.70	0.44
Sabina	22.1	Max WS	P_SC_100	47.17	153.00	155.26		155.44	0.002108	1.87	25.29	13.38	0.43
Sabina	22.1	Max WS	P_SC_30	37.84	153.00	155.01		155.16	0.002056	1.73	21.92	12.90	0.42
Sabina	22.1	Max WS	P_SC_20	35.79	153.00	154.95		155.09	0.002042	1.69	21.15	12.79	0.42
Sabina	22	Max WS	P_SC_200	54.19	152.96	155.03		155.67	0.009161	3.53	15.34	8.35	0.83
Sabina	22	Max WS	P_SC_100	47.16	152.96	154.89		155.46	0.008787	3.34	14.14	8.23	0.81

HEC-RAS River: Sabina Reach: Sabina Profile: Max WS (Continued)

Reach	River Sta	Profile	Plan	Q Total (m3/s)	Min Ch El (m)	W.S. Elev (m)	Crit W.S. (m)	E.G. Elev (m)	E.G. Slope (m/m)	Vel Chnl (m/s)	Flow Area (m2)	Top Width (m)	Froude # Chl
Sabina	22	Max WS	P_SC_30	37.84	152.96	154.68		155.15	0.008237	3.04	12.44	8.06	0.78
Sabina	22	Max WS	P_SC_20	35.79	152.96	154.63		155.08	0.008092	2.97	12.05	8.02	0.77
Sabina	21	Max WS	P_SC_200	54.18	152.77	154.80		155.42	0.009270	3.47	15.63	9.45	0.86
Sabina	21	Max WS	P_SC_100	47.16	152.77	154.65		155.21	0.009255	3.32	14.20	9.21	0.85
Sabina	21	Max WS	P_SC_30	37.84	152.77	154.43		154.92	0.009195	3.10	12.22	8.87	0.84
Sabina	21	Max WS	P_SC_20	35.79	152.77	154.38		154.85	0.009143	3.04	11.79	8.80	0.84
Sabina	20.1	Max WS	P_SC_200	54.17	152.71	154.61	154.54	155.30	0.011302	3.69	14.66	9.33	0.94
Sabina	20.1	Max WS	P_SC_100	47.16	152.71	154.45	154.39	155.10	0.011507	3.56	13.24	9.11	0.94
Sabina	20.1	Max WS	P_SC_30	37.84	152.71	154.23	154.18	154.81	0.011856	3.36	11.28	8.80	0.95
Sabina	20.1	Max WS	P_SC_20	35.79	152.71	154.18	154.14	154.74	0.011916	3.30	10.84	8.73	0.95
Sabina	20	Max WS	P_SC_200	54.17	152.53	154.45		155.12	0.010461	3.65	14.86	8.83	0.90
Sabina	20	Max WS	P_SC_100	47.16	152.53	154.29		154.91	0.010380	3.48	13.54	8.66	0.89
Sabina	20	Max WS	P_SC_30	37.84	152.53	154.08		154.61	0.010275	3.24	11.69	8.42	0.88
Sabina	20	Max WS	P_SC_20	35.79	152.53	154.03		154.54	0.010226	3.17	11.28	8.36	0.87
Sabina	19.1	Max WS	P_SC_200	54.17	152.28	154.24		154.90	0.009984	3.61	15.01	8.76	0.88
Sabina	19.1	Max WS	P_SC_100	47.16	152.28	154.10		154.69	0.009688	3.42	13.78	8.61	0.86
Sabina	19.1	Max WS	P_SC_30	37.84	152.28	153.90		154.40	0.009125	3.13	12.10	8.38	0.83
Sabina	19.1	Max WS	P_SC_20	34.99	152.28	153.86		154.31	0.008485	2.98	11.76	8.34	0.80
Sabina	19	Max WS	P_SC_200	54.17	152.19	154.18		154.66	0.007521	3.08	17.58	11.21	0.79
Sabina	19	Max WS	P_SC_100	47.15	152.19	154.02		154.47	0.007641	2.98	15.85	10.84	0.79
Sabina	19	Max WS	P_SC_30	34.89	152.19	153.82		154.15	0.006277	2.54	13.74	10.36	0.70
Sabina	19	Max WS	P_SC_20	33.36	152.19	153.79		154.11	0.006154	2.49	13.41	10.29	0.70
Sabina	18.1	Max WS	P_SC_200	54.16	152.03	154.19		154.53	0.004943	2.58	20.97	13.11	0.65
Sabina	18.1	Max WS	P_SC_100	47.15	152.03	154.02		154.34	0.005115	2.52	18.74	12.56	0.66
Sabina	18.1	Max WS	P_SC_30	34.48	152.03	153.82		154.05	0.004055	2.12	16.28	11.92	0.58
Sabina	18.1	Max WS	P_SC_20	32.68	152.03	153.79		154.00	0.003908	2.06	15.88	11.82	0.57
Sabina	18	Max WS	P_SC_200	54.16	151.89	154.20		154.46	0.003302	2.23	24.26	13.79	0.54
Sabina	18	Max WS	P_SC_100	47.15	151.89	154.03		154.26	0.003337	2.15	21.89	13.30	0.54
Sabina	18	Max WS	P_SC_30	34.48	151.89	153.82		153.99	0.002566	1.79	19.24	12.73	0.47
Sabina	18	Max WS	P_SC_20	32.68	151.89	153.79		153.94	0.002461	1.74	18.81	12.63	0.45

HEC-RAS River: Sabina Reach: Sabina Profile: Max WS (Continued)

Reach	River Sta	Profile	Plan	Q Total (m3/s)	Min Ch El (m)	W.S. Elev (m)	Crit W.S. (m)	E.G. Elev (m)	E.G. Slope (m/m)	Vel Chnl (m/s)	Flow Area (m2)	Top Width (m)	Froude # Chl
Sabina	17	Max WS	P_SC_200	55.16	151.64	153.95		154.31	0.004965	2.65	20.80	12.30	0.65
Sabina	17	Max WS	P_SC_100	48.15	151.64	153.78		154.12	0.005071	2.57	18.71	11.80	0.65
Sabina	17	Max WS	P_SC_30	38.83	151.64	153.53		153.84	0.005240	2.45	15.84	11.09	0.65
Sabina	17	Max WS	P_SC_20	37.47	151.64	153.49		153.79	0.005277	2.43	15.40	10.97	0.66
Sabina	16	Max WS	P_SC_200	55.15	151.33	153.52		154.09	0.008644	3.35	16.44	9.85	0.83
Sabina	16	Max WS	P_SC_100	48.14	151.33	153.35		153.89	0.008718	3.24	14.86	9.50	0.83
Sabina	16	Max WS	P_SC_30	38.83	151.33	153.12		153.59	0.008809	3.06	12.70	9.00	0.82
Sabina	16	Max WS	P_SC_20	37.47	151.33	153.08		153.55	0.008827	3.03	12.37	8.92	0.82
Sabina	15	Max WS	P_SC_200	55.15	151.07	153.34		153.82	0.006910	3.05	18.07	10.76	0.75
Sabina	15	Max WS	P_SC_100	48.14	151.07	153.16		153.61	0.007188	2.98	16.14	10.30	0.76
Sabina	15	Max WS	P_SC_30	38.83	151.07	152.89		153.31	0.007801	2.89	13.43	9.63	0.78
Sabina	15	Max WS	P_SC_20	37.46	151.07	152.85		153.27	0.007875	2.87	13.04	9.53	0.78
Sabina	14	Max WS	P_SC_200	54.98	150.79	152.91		153.55	0.008987	3.53	15.58	8.49	0.83
Sabina	14	Max WS	P_SC_100	48.13	150.79	152.75		153.33	0.008936	3.38	14.23	8.32	0.83
Sabina	14	Max WS	P_SC_30	38.83	150.79	152.48		153.01	0.009420	3.22	12.05	8.03	0.84
Sabina	14	Max WS	P_SC_20	37.45	150.79	152.45		152.96	0.009463	3.19	11.73	7.98	0.84
Sabina	13.1	Max WS	P_SC_200	54.73	150.28	152.81		153.24	0.005316	2.93	18.70	8.81	0.64
Sabina	13.1	Max WS	P_SC_100	48.10	150.28	152.65		153.04	0.005082	2.77	17.34	8.64	0.62
Sabina	13.1	Max WS	P_SC_30	38.82	150.28	152.36		152.71	0.005083	2.60	14.91	8.32	0.62
Sabina	13.1	Max WS	P_SC_20	37.45	150.28	152.32		152.66	0.005049	2.57	14.57	8.27	0.62
Sabina	13	Max WS	P_SC_200	54.54	150.21	152.49		153.01	0.006965	3.20	17.02	8.74	0.73
Sabina	13	Max WS	P_SC_100	48.04	150.21	152.36		152.82	0.006546	3.02	15.91	8.60	0.71
Sabina	13	Max WS	P_SC_30	38.80	150.21	152.05		152.48	0.007206	2.93	13.26	8.25	0.74
Sabina	13	Max WS	P_SC_20	37.45	150.21	152.01		152.43	0.007228	2.90	12.93	8.20	0.74
Sabina	12	Max WS	P_SC_200	54.58	149.85	152.14		152.67	0.007109	3.23	16.90	8.74	0.74
Sabina	12	Max WS	P_SC_100	48.03	149.85	152.11		152.54	0.005770	2.89	16.62	8.71	0.67
Sabina	12	Max WS	P_SC_30	38.74	149.85	151.70		152.14	0.007391	2.96	13.11	8.21	0.75
Sabina	12	Max WS	P_SC_20	37.44	149.85	151.64		152.09	0.007591	2.95	12.68	8.15	0.76
Sabina	11.2	Max WS	P_SC_200	54.57	149.80	152.33	151.41	152.64	0.003377	2.46	22.16	9.12	0.50

HEC-RAS River: Sabina Reach: Sabina Profile: Max WS (Continued)

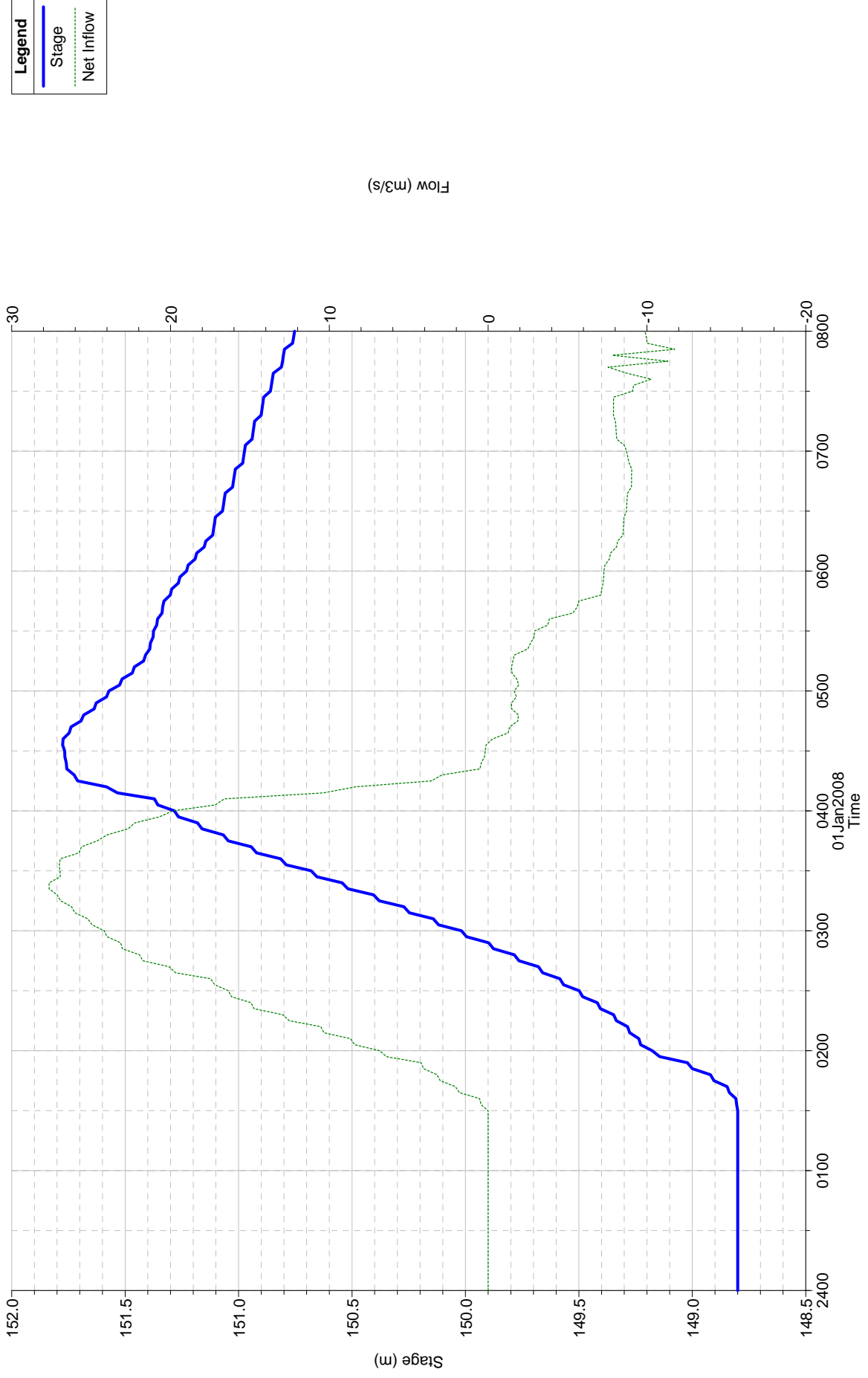
Reach	River Sta	Profile	Plan	Q Total (m3/s)	Min Ch El (m)	W.S. Elev (m)	Crit W.S. (m)	E.G. Elev (m)	E.G. Slope (m/m)	Vel Chnl (m/s)	Flow Area (m2)	Top Width (m)	Froude # Chl
Sabina	11.2	Max WS	P_SC_100	48.03	149.80	152.26	151.28	152.51	0.002850	2.23	21.52	9.10	0.46
Sabina	11.2	Max WS	P_SC_30	38.78	149.80	151.86	151.08	152.10	0.003170	2.16	17.97	8.99	0.49
Sabina	11.2	Max WS	P_SC_20	37.45	149.80	151.81	151.05	152.05	0.003195	2.14	17.51	8.98	0.49
Sabina	11.15		Bridge										
Sabina	11.1	Max WS	P_SC_200	55.12	149.80	152.15		152.65	0.006253	3.15	17.52	8.52	0.70
Sabina	11.1	Max WS	P_SC_100	48.03	149.80	152.10		152.50	0.005096	2.81	17.09	8.48	0.63
Sabina	11.1	Max WS	P_SC_30	38.73	149.80	151.68		152.09	0.006406	2.85	13.61	8.10	0.70
Sabina	11.1	Max WS	P_SC_20	37.44	149.80	151.63		152.04	0.006573	2.84	13.19	8.05	0.71
Sabina	11.09		Lat Struct										
Sabina	11.08		Lat Struct										
Sabina	11	Max WS	P_SC_200	55.12	149.61	152.21		152.54	0.003705	2.53	21.75	9.69	0.54
Sabina	11	Max WS	P_SC_100	48.03	149.61	152.14		152.41	0.003059	2.27	21.13	9.63	0.49
Sabina	11	Max WS	P_SC_30	38.73	149.61	151.71		151.97	0.003742	2.28	17.00	9.29	0.54
Sabina	11	Max WS	P_SC_20	37.44	149.61	151.65		151.92	0.003838	2.27	16.48	9.25	0.54
Sabina	10.1	Max WS	P_SC_200	55.11	149.56	152.13		152.50	0.004224	2.66	20.69	9.68	0.58
Sabina	10.1	Max WS	P_SC_100	48.02	149.56	152.09		152.37	0.003407	2.37	20.25	9.62	0.52
Sabina	10.1	Max WS	P_SC_30	38.71	149.56	151.63		151.93	0.004315	2.42	16.01	9.04	0.58
Sabina	10.1	Max WS	P_SC_20	32.45	149.56	151.58		151.81	0.003291	2.09	15.56	8.98	0.51
Sabina	10	Max WS	P_SC_200	54.96	149.44	151.96		152.44	0.005995	3.07	17.92	8.56	0.68
Sabina	10	Max WS	P_SC_100	48.02	149.44	151.97		152.33	0.004532	2.67	17.98	8.57	0.59
Sabina	10	Max WS	P_SC_30	38.41	149.44	151.49		151.87	0.005883	2.74	14.00	8.03	0.66
Sabina	10	Max WS	P_SC_20	32.01	149.44	151.49		151.76	0.004060	2.28	14.03	8.04	0.55
Sabina	09	Max WS	P_SC_200	50.22	149.15	151.75		152.15	0.004974	2.80	17.94	8.47	0.61
Sabina	09	Max WS	P_SC_100	48.00	149.15	151.84		152.17	0.004034	2.57	18.71	8.56	0.55
Sabina	09	Max WS	P_SC_30	37.65	149.15	151.29		151.65	0.005485	2.66	14.14	7.99	0.64
Sabina	09	Max WS	P_SC_20	30.64	149.15	151.40		151.61	0.003050	2.04	15.04	8.11	0.48
Sabina	08	Max WS	P_SC_200	55.47	148.72	151.57		151.93	0.003947	2.65	20.94	8.97	0.55
Sabina	08	Max WS	P_SC_100	54.09	148.72	151.51		151.87	0.004038	2.65	20.40	8.91	0.56



HEC-RAS River: Sabina Reach: Sabina Profile: Max WS (Continued)

Reach	River Sta	Profile	Plan	Q Total (m3/s)	Min Ch El (m)	W.S. Elev (m)	Crit W.S. (m)	E.G. Elev (m)	E.G. Slope (m/m)	Vel Chnl (m/s)	Flow Area (m2)	Top Width (m)	Froude # Chl
Sabina	08	Max WS	P_SC_30	39.85	148.72	151.07		151.37	0.003931	2.40	16.58	8.46	0.55
Sabina	08	Max WS	P_SC_20	38.90	148.72	151.04		151.33	0.003947	2.39	16.28	8.42	0.55
Sabina	07	Max WS	P_SC_200	55.45	148.36	151.53		151.78	0.002468	2.23	24.88	9.59	0.44
Sabina	07	Max WS	P_SC_100	54.08	148.36	151.47		151.72	0.002512	2.23	24.28	9.52	0.45
Sabina	07	Max WS	P_SC_30	39.85	148.36	151.03		151.22	0.002292	1.98	20.17	9.06	0.42
Sabina	07	Max WS	P_SC_20	38.90	148.36	150.99		151.18	0.002288	1.96	19.84	9.02	0.42
Sabina	06	Max WS	P_SC_200	55.32	148.25	151.17		151.64	0.005537	3.04	18.20	7.88	0.64
Sabina	06	Max WS	P_SC_100	54.05	148.25	151.09		151.57	0.005783	3.07	17.61	7.80	0.65
Sabina	06	Max WS	P_SC_30	39.81	148.25	150.72		151.09	0.005082	2.69	14.78	7.40	0.61
Sabina	06	Max WS	P_SC_20	38.89	148.25	150.68		151.05	0.005097	2.68	14.52	7.36	0.61
Sabina	05	Max WS	P_SC_200	53.29	148.08	150.90		151.31	0.004822	2.83	18.84	8.25	0.60
Sabina	05	Max WS	P_SC_100	53.41	148.08	150.78		151.23	0.005646	3.00	17.83	8.12	0.65
Sabina	05	Max WS	P_SC_30	39.46	148.08	150.47		150.81	0.004660	2.57	15.38	7.79	0.58
Sabina	05	Max WS	P_SC_20	38.73	148.08	150.43		150.77	0.004750	2.57	15.08	7.75	0.59
Sabina	04	Max WS	P_SC_200	32.41	147.97	150.84		150.97	0.001469	1.60	20.20	8.60	0.33
Sabina	04	Max WS	P_SC_100	52.52	147.97	150.59		151.02	0.005184	2.90	18.14	8.31	0.63
Sabina	04	Max WS	P_SC_30	38.52	147.97	150.34		150.63	0.003947	2.40	16.05	8.10	0.54
Sabina	04	Max WS	P_SC_20	38.49	147.97	150.29		150.60	0.004227	2.46	15.66	8.06	0.56
Sabina	03	Max WS	P_SC_200	30.62	147.89	150.87		150.96	0.001154	1.37	22.36	10.65	0.30
Sabina	03	Max WS	P_SC_100	51.80	147.89	150.55		150.92	0.005228	2.72	19.03	10.17	0.64
Sabina	03	Max WS	P_SC_30	38.29	147.89	150.29		150.56	0.003813	2.31	16.60	8.88	0.54
Sabina	03	Max WS	P_SC_20	38.34	147.89	150.24		150.53	0.004026	2.38	16.12	8.54	0.55
Sabina	02	Max WS	P_SC_200	29.06	147.87	150.88		150.95	0.000735	1.18	24.63	10.09	0.24
Sabina	02	Max WS	P_SC_100	51.80	147.87	150.55		150.85	0.003461	2.43	21.35	9.58	0.52
Sabina	02	Max WS	P_SC_30	38.33	147.87	150.30		150.51	0.002603	2.01	19.03	9.21	0.45
Sabina	02	Max WS	P_SC_20	38.34	147.87	150.25		150.47	0.002798	2.07	18.54	9.13	0.46

Storage Area: Cassa\_Pestello



**Legend**  
— Stage  
- - - Net Inflow

Flow (m3/s)

30  
20  
10  
0  
-10  
-20

152.0  
151.5  
151.0  
150.5  
150.0  
149.5  
149.0  
148.5

01Jan2008  
Time

2400  
0100  
0200  
0300  
0400  
0500  
0600  
0700  
0800

**borro del Caspri - stato di progetto**

verifiche con Tpioggia critico per il Borro del Caspri

- moto vario

Tr=200, 100, 30 e 20 anni

*profilo*

*livelli idrici nelle sezioni di verifica*

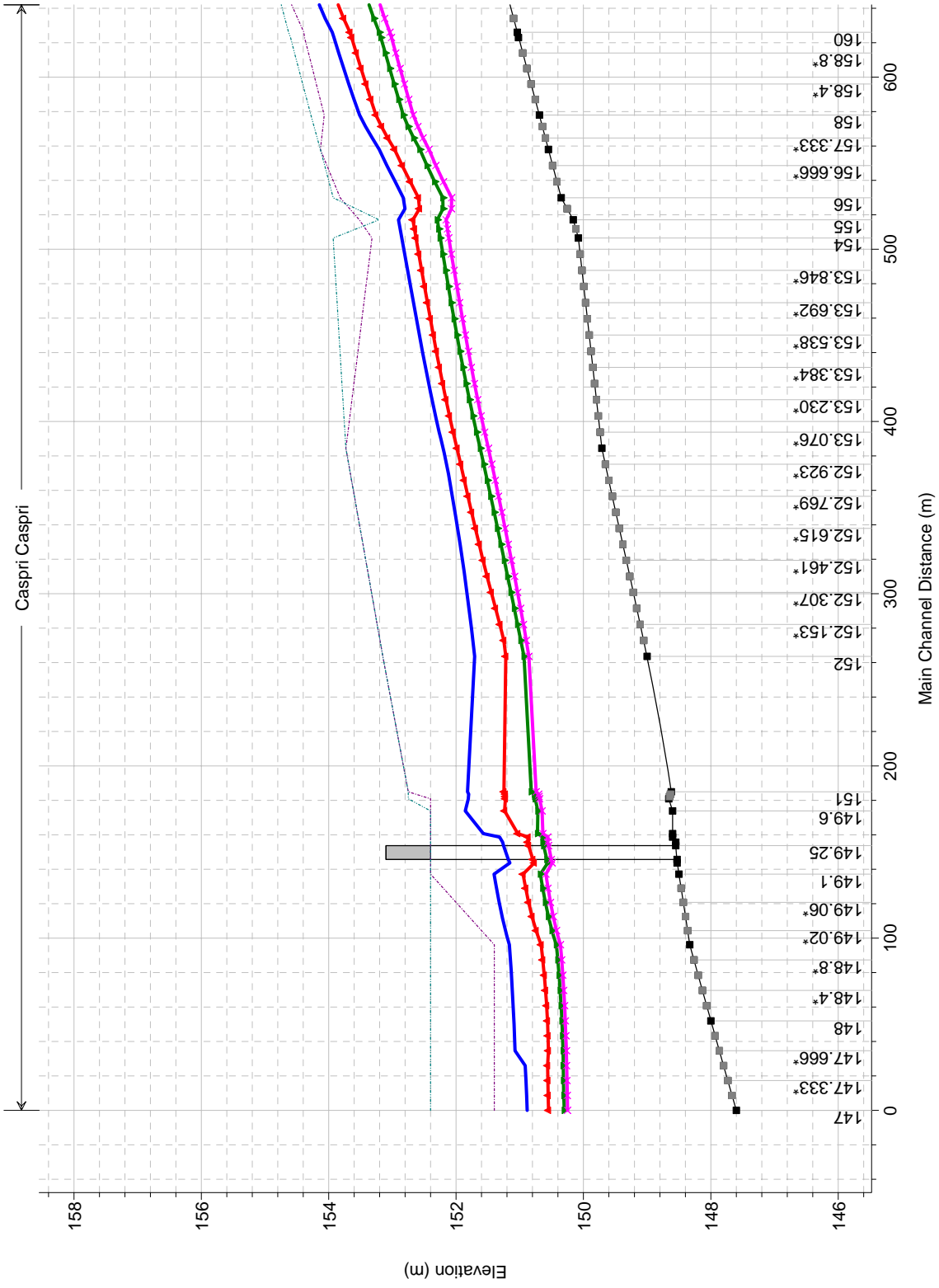
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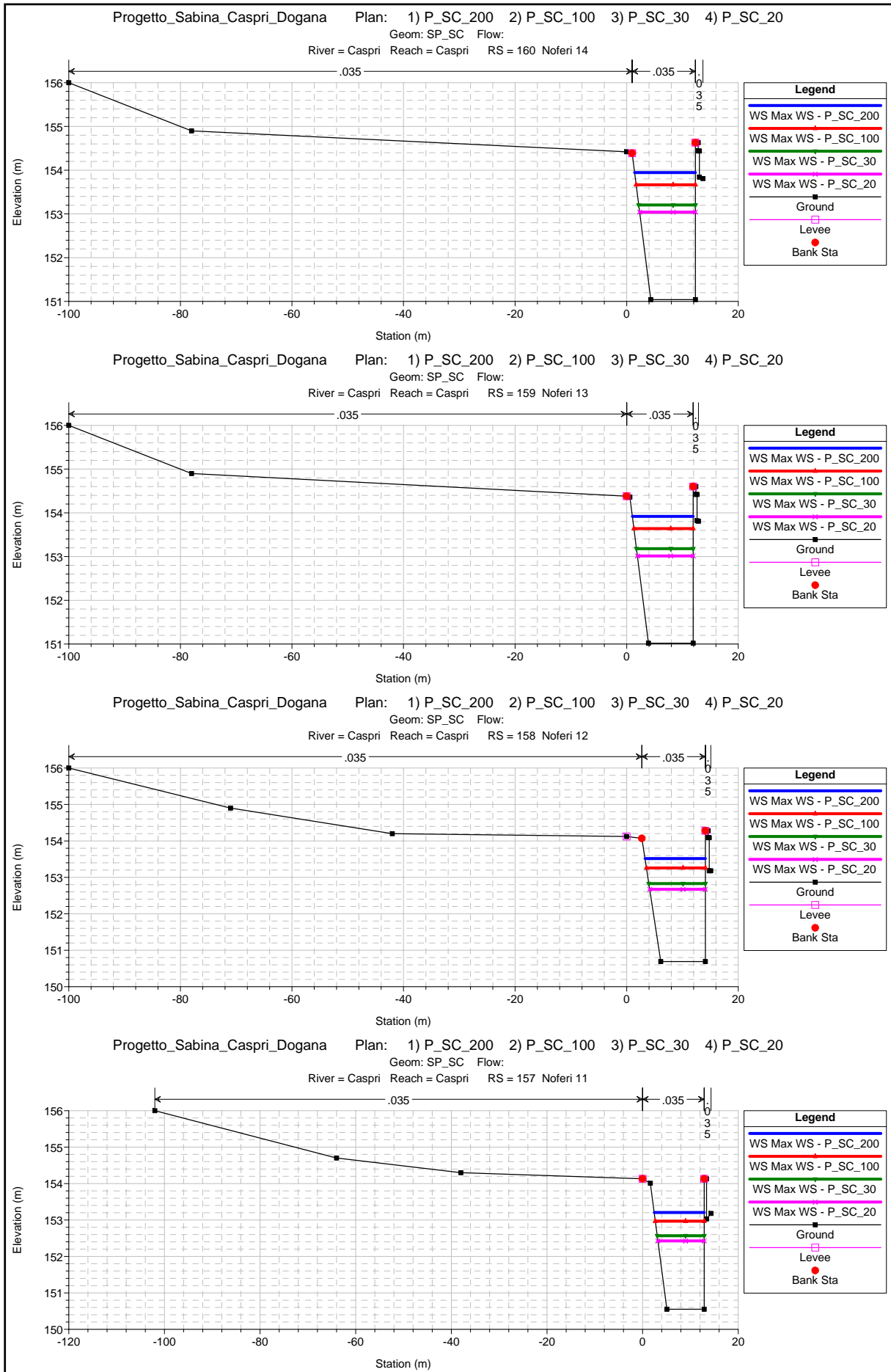
*livelli e portate in ingresso alle aree di accumulo*

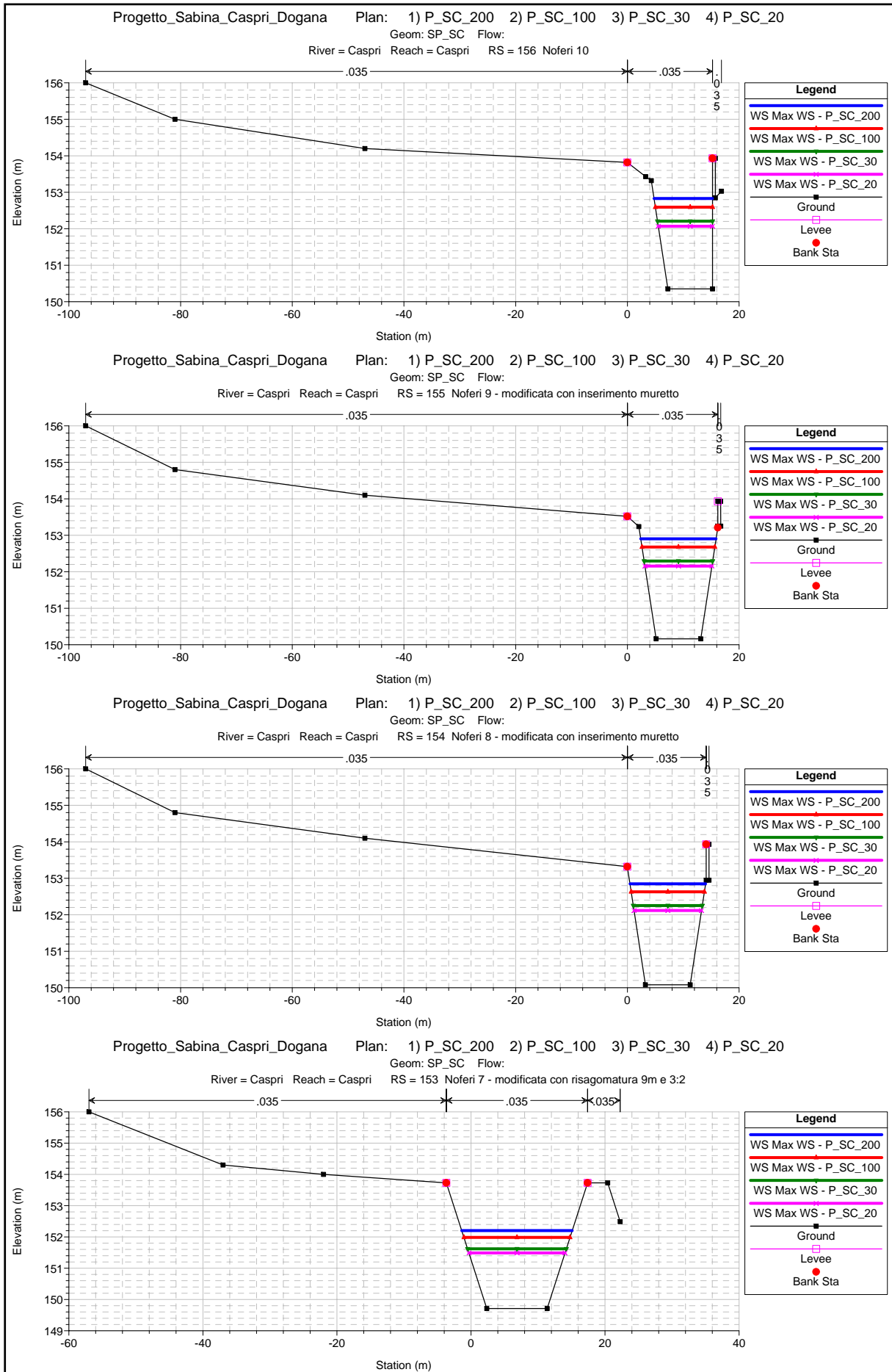


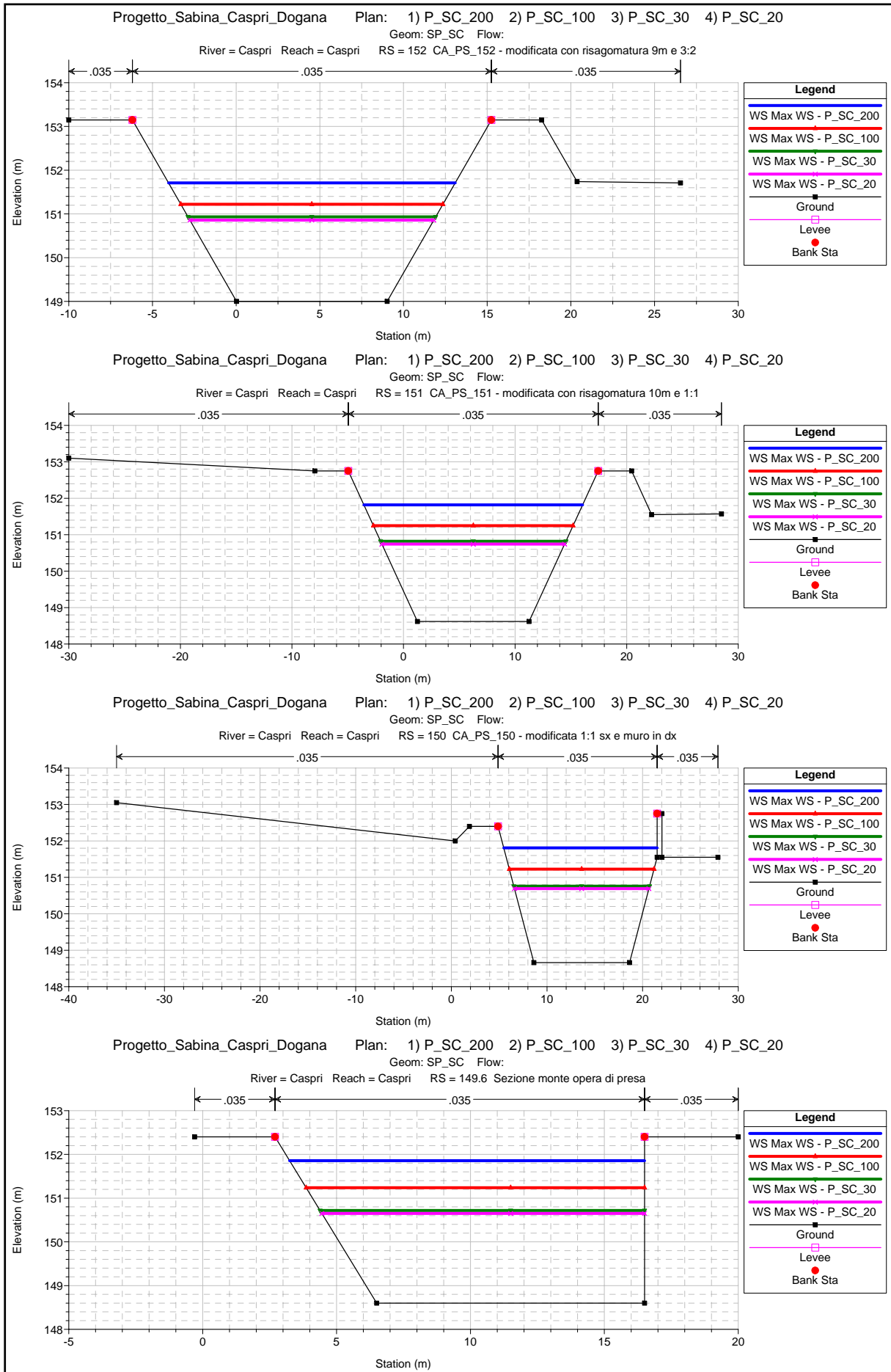
Progetto\_Sabina\_Caspri\_Dogana Plan: 1) P\_SC\_200 2) P\_SC\_100 3) P\_SC\_30 4) P\_SC\_20

Geom: SP\_SC Flow:

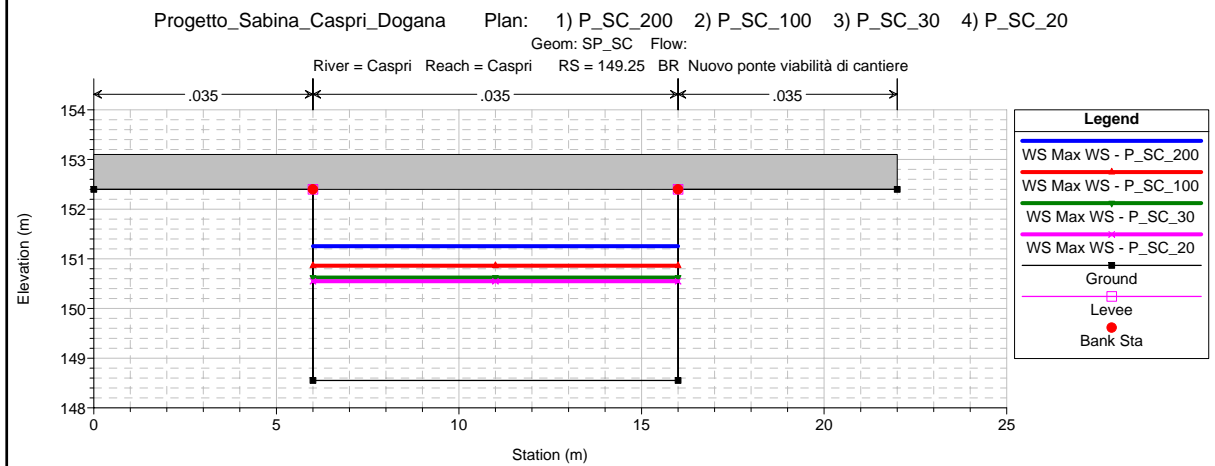
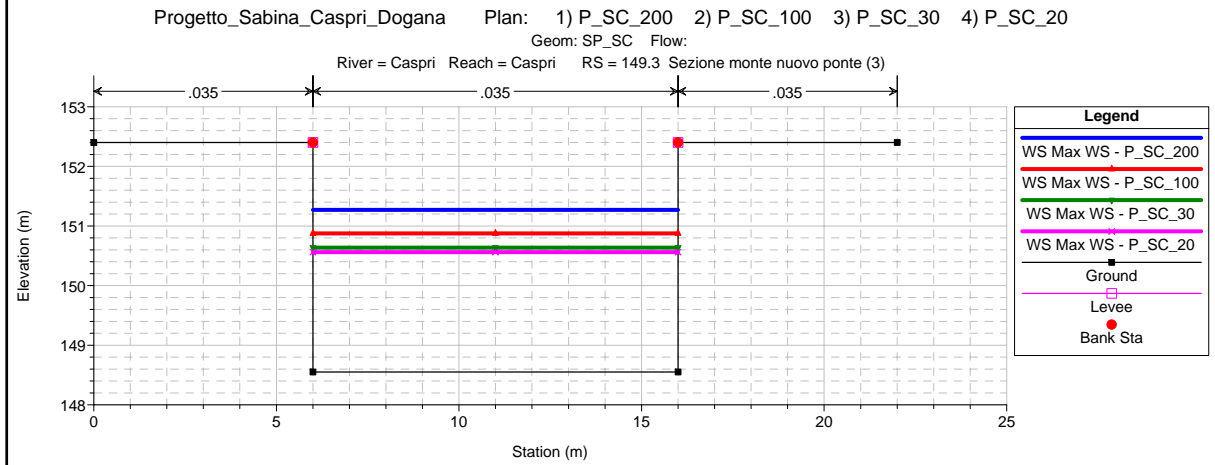
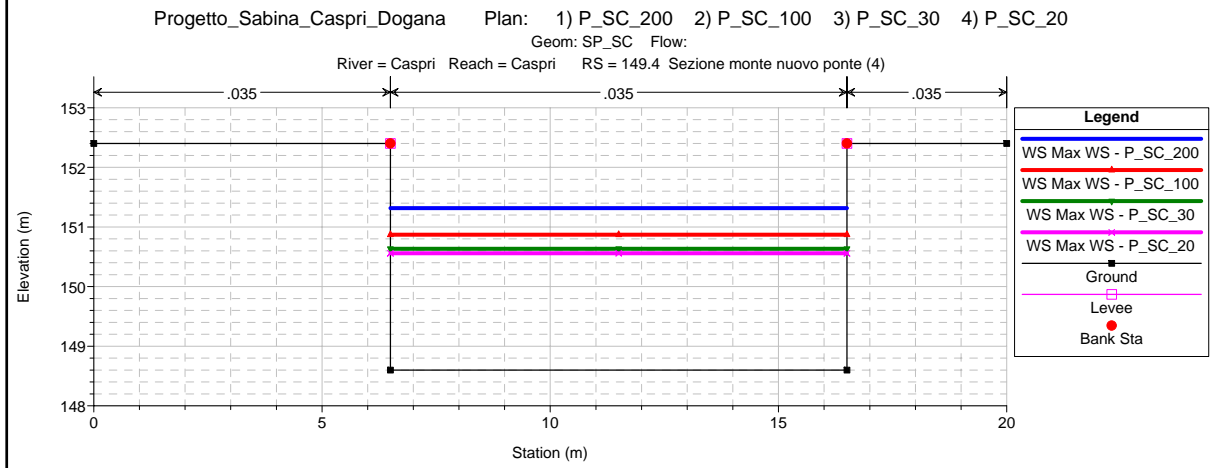
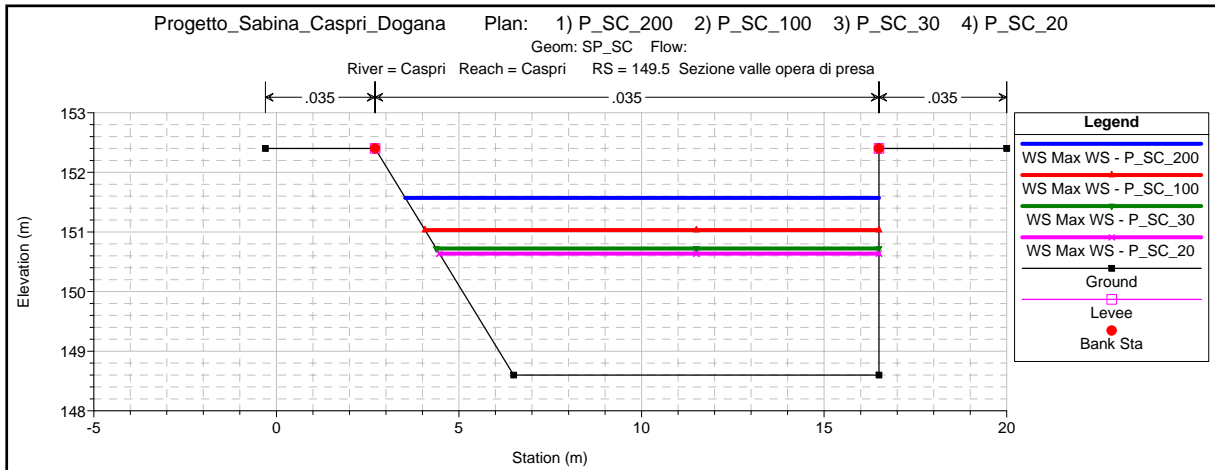


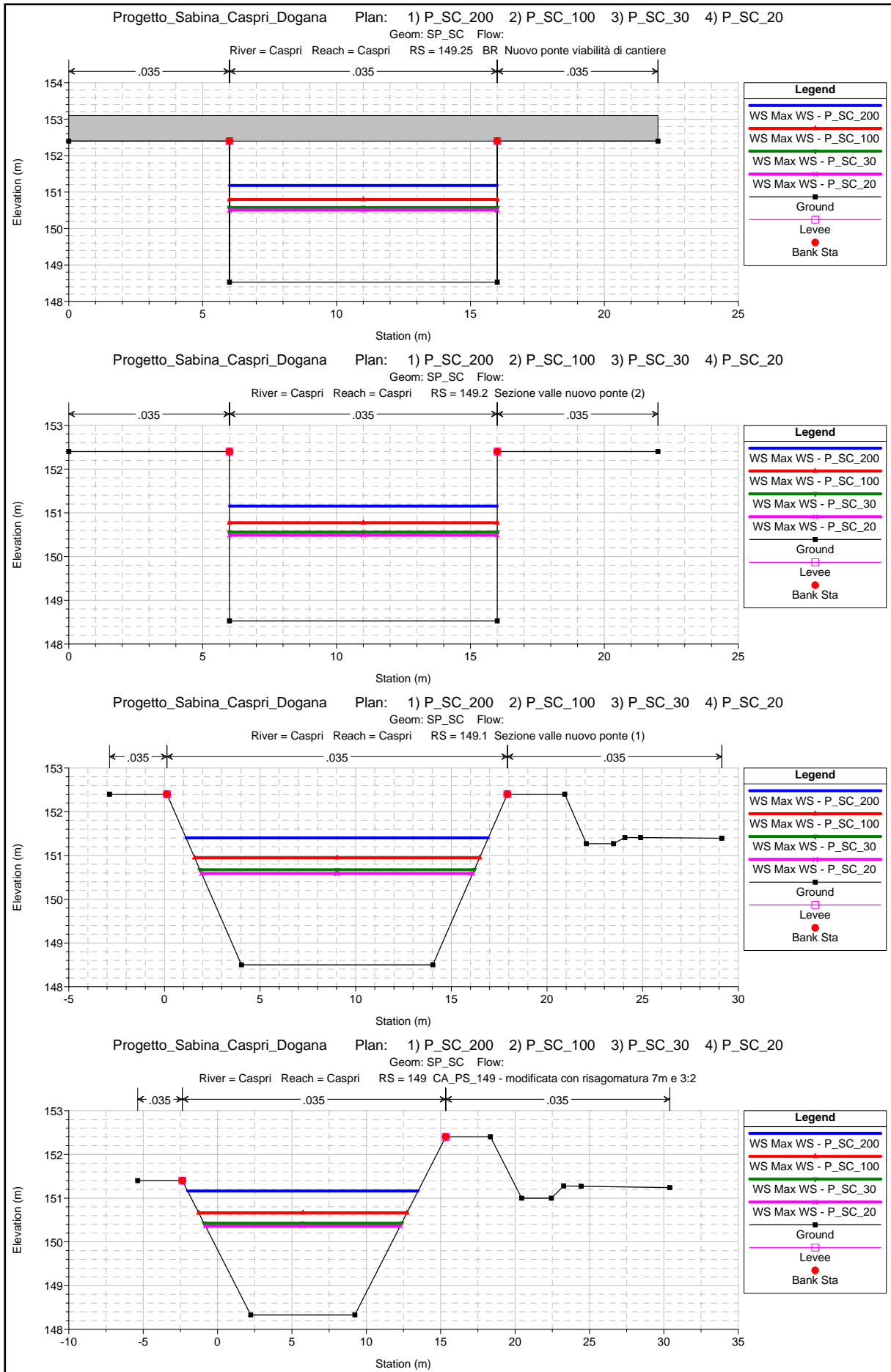


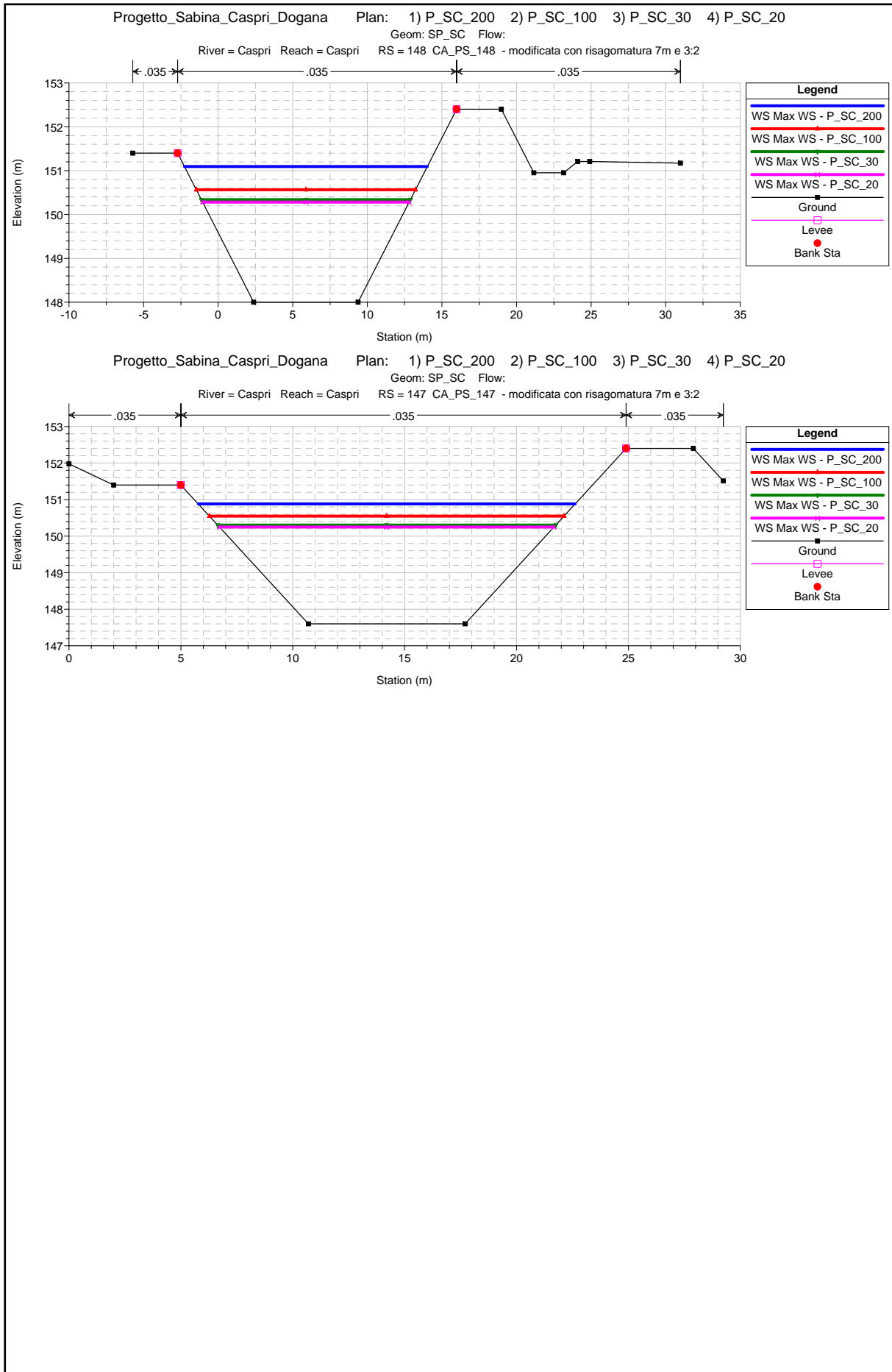












HEC-RAS Profile: Max WS

Storage Area	Profile	Plan	W.S. Elev (m)	SA Min El (m)	Net Flux (m3/s)	SA Area (1000 m2)	SA Volume (1000 m3)
Cassa_Pestello	Max WS	P_SC_200	151.78	148.80	0.29	5.80	92.18
Cassa_Pestello	Max WS	P_SC_100	149.41	148.80	32.83	39.54	11.14
Cassa_Pestello	Max WS	P_SC_30	149.21	148.80	10.40	39.54	3.55
Cassa_Pestello	Max WS	P_SC_20	148.84	148.80	7.46	7.50	0.28

HEC-RAS River: Caspri Reach: Caspri Profile: Max WS

Reach	River Sta	Profile	Plan	Q Total (m3/s)	Min Ch El (m)	W.S. Elev (m)	Crit W.S. (m)	E.G. Elev (m)	E.G. Slope (m/m)	Vel Chnl (m/s)	Flow Area (m2)	Top Width (m)	Froude # Chl
Caspri	182	Max WS	P_SC_200	104.27	153.73	156.64		157.08	0.004590	3.02	41.44	53.66	0.60
Caspri	182	Max WS	P_SC_100	86.52	153.73	156.35		156.81	0.005241	3.01	28.77	15.39	0.64
Caspri	182	Max WS	P_SC_30	62.33	153.73	156.21		156.48	0.003239	2.31	27.00	12.32	0.50
Caspri	182	Max WS	P_SC_20	55.38	153.73	156.02		156.27	0.003260	2.24	24.68	11.87	0.50
Caspri	181.99	Max WS	P_SC_200	104.27	153.73	156.64		157.08	0.004590	3.02	41.44	53.66	0.60
Caspri	181.99	Max WS	P_SC_100	86.52	153.73	156.35		156.81	0.005244	3.01	28.77	15.36	0.64
Caspri	181.99	Max WS	P_SC_30	62.33	153.73	156.21		156.48	0.003239	2.31	27.00	12.32	0.50
Caspri	181.99	Max WS	P_SC_20	55.38	153.73	156.02		156.27	0.003260	2.24	24.68	11.87	0.50
Caspri	181.9			Lat Struct									
Caspri	181	Max WS	P_SC_200	103.31	153.62	156.69		156.97	0.002979	2.50	52.55	59.77	0.48
Caspri	181	Max WS	P_SC_100	86.55	153.62	156.47		156.77	0.003254	2.49	40.20	51.97	0.50
Caspri	181	Max WS	P_SC_30	62.33	153.62	156.25		156.46	0.002452	2.05	30.43	15.71	0.43
Caspri	181	Max WS	P_SC_20	55.38	153.62	156.06		156.26	0.002443	1.98	27.91	12.86	0.43
Caspri	180	Max WS	P_SC_200	103.14	153.63	156.70		156.95	0.002599	2.39	59.79	79.41	0.45
Caspri	180	Max WS	P_SC_100	86.54	153.63	156.46		156.75	0.003112	2.48	42.62	60.22	0.49
Caspri	180	Max WS	P_SC_30	62.32	153.63	156.23		156.45	0.002438	2.08	30.97	38.04	0.43
Caspri	180	Max WS	P_SC_20	55.38	153.63	156.03		156.24	0.002501	2.02	27.39	12.39	0.43
Caspri	179	Max WS	P_SC_200	103.15	153.50	156.75		156.89	0.001555	1.86	80.78	91.75	0.35
Caspri	179	Max WS	P_SC_100	86.56	153.50	156.51		156.68	0.001923	1.97	60.54	76.74	0.39
Caspri	179	Max WS	P_SC_30	62.31	153.50	156.25		156.40	0.001852	1.82	42.21	59.97	0.38
Caspri	179	Max WS	P_SC_20	55.38	153.50	156.00		156.20	0.002376	1.95	28.36	13.12	0.42
Caspri	178	Max WS	P_SC_200	103.15	153.42	156.73		156.86	0.001489	1.83	77.26	76.53	0.35
Caspri	178	Max WS	P_SC_100	86.56	153.42	156.50		156.65	0.001759	1.89	60.45	67.31	0.37
Caspri	178	Max WS	P_SC_30	62.30	153.42	156.20		156.38	0.001979	1.87	33.23	14.27	0.39
Caspri	178	Max WS	P_SC_20	55.38	153.42	156.00		156.17	0.001956	1.81	30.52	13.68	0.39
Caspri	177	Max WS	P_SC_200	103.15	153.26	156.61		156.84	0.003518	2.44	58.61	72.95	0.52
Caspri	177	Max WS	P_SC_100	86.51	153.26	156.29		156.68	0.004762	2.92	38.11	58.29	0.60
Caspri	177	Max WS	P_SC_30	66.42	153.26	155.94		156.37	0.005403	2.90	22.89	10.62	0.63
Caspri	177	Max WS	P_SC_20	55.37	153.26	155.74		156.11	0.004884	2.66	20.81	10.31	0.60

HEC-RAS River: Caspri Reach: Caspri Profile: Max WS (Continued)

Reach	River Sta	Profile	Plan	Q Total (m3/s)	Min Ch El (m)	W.S. Elev (m)	Crit W.S. (m)	E.G. Elev (m)	E.G. Slope (m/m)	Vel Chnl (m/s)	Flow Area (m2)	Top Width (m)	Froude # Chl
Caspri	176	Max WS	P_SC_200	103.13	153.04	156.48		156.75	0.003200	2.64	56.19	65.14	0.50
Caspri	176	Max WS	P_SC_100	84.59	153.04	156.12	155.59	156.59	0.005467	3.16	34.58	55.54	0.64
Caspri	176	Max WS	P_SC_30	65.97	153.04	155.73		156.26	0.007129	3.24	20.40	11.96	0.71
Caspri	176	Max WS	P_SC_20	55.37	153.04	155.42		155.93	0.007676	3.17	17.45	9.14	0.73
Caspri	175	Max WS	P_SC_200	103.12	152.96	156.32	156.34	156.77	0.004907	3.15	43.03	55.93	0.60
Caspri	175	Max WS	P_SC_100	83.44	152.96	156.06	155.39	156.57	0.005598	3.19	29.05	51.48	0.64
Caspri	175	Max WS	P_SC_30	65.34	152.96	155.70	155.05	156.14	0.005679	2.96	22.06	10.11	0.64
Caspri	175	Max WS	P_SC_20	55.37	152.96	155.44	154.85	155.85	0.005678	2.83	19.56	9.73	0.64
Caspri	174.5		Bridge										
Caspri	174	Max WS	P_SC_200	103.12	152.93	156.24	156.33	156.76	0.005805	3.35	38.89	54.21	0.65
Caspri	174	Max WS	P_SC_100	90.03	152.93	155.95		156.61	0.007619	3.60	25.05	12.59	0.74
Caspri	174	Max WS	P_SC_30	65.52	152.93	155.67		156.12	0.005722	2.97	22.04	10.10	0.64
Caspri	174	Max WS	P_SC_20	55.37	152.93	155.43		155.83	0.005590	2.82	19.67	9.74	0.63
Caspri	173.9		Lat Struct										
Caspri	173	Max WS	P_SC_200	102.86	152.47	156.01		156.43	0.003707	2.86	36.01	13.52	0.56
Caspri	173	Max WS	P_SC_100	86.76	152.47	155.85		156.18	0.003116	2.56	33.84	13.04	0.51
Caspri	173	Max WS	P_SC_30	64.96	152.47	155.64		155.86	0.002257	2.09	31.10	12.90	0.43
Caspri	173	Max WS	P_SC_20	55.36	152.47	155.39		155.59	0.002236	1.98	27.92	12.60	0.43
Caspri	172	Max WS	P_SC_200	102.99	152.38	155.92	155.41	156.58	0.003397	3.65	30.92	25.33	0.72
Caspri	172	Max WS	P_SC_100	86.51	152.38	155.68	155.14	156.28	0.003326	3.43	25.73	18.79	0.71
Caspri	172	Max WS	P_SC_30	64.88	152.38	155.39	154.72	155.83	0.002690	2.93	22.14	10.25	0.64
Caspri	172	Max WS	P_SC_20	55.36	152.38	155.16	154.52	155.56	0.002659	2.80	19.80	9.90	0.63
Caspri	171.5		Bridge										
Caspri	171	Max WS	P_SC_200	102.97	152.36	155.88	155.55	156.64	0.004019	3.87	27.90	22.57	0.80
Caspri	171	Max WS	P_SC_100	86.36	152.36	155.65		156.32	0.003929	3.61	23.89	11.07	0.78
Caspri	171	Max WS	P_SC_30	64.74	152.36	155.29		155.82	0.003527	3.23	20.05	10.16	0.73
Caspri	171	Max WS	P_SC_20	55.36	152.36	155.06		155.55	0.003524	3.11	17.79	9.50	0.73
Caspri	170	Max WS	P_SC_200	103.37	152.26	155.82		156.26	0.004319	3.09	39.98	33.49	0.61

HEC-RAS River: Caspri Reach: Caspri Profile: Max WS (Continued)

Reach	River Sta	Profile	Plan	Q Total (m3/s)	Min Ch El (m)	W.S. Elev (m)	Crit W.S. (m)	E.G. Elev (m)	E.G. Slope (m/m)	Vel Chnl (m/s)	Flow Area (m2)	Top Width (m)	Froude # Chl
Caspri	170	Max WS	P_SC_100	87.74	152.26	155.69		156.07	0.003907	2.86	35.74	30.63	0.58
Caspri	170	Max WS	P_SC_30	64.71	152.26	155.40		155.71	0.003526	2.54	27.74	24.32	0.55
Caspri	170	Max WS	P_SC_20	55.36	152.26	155.18		155.49	0.003716	2.47	23.04	19.54	0.56
Caspri	169	Max WS	P_SC_200	103.33	152.18	155.69	155.19	156.26	0.005535	3.42	34.67	35.34	0.68
Caspri	169	Max WS	P_SC_100	87.35	152.18	155.58		156.06	0.004755	3.09	31.02	30.23	0.63
Caspri	169	Max WS	P_SC_30	64.53	152.18	155.32		155.67	0.003905	2.62	24.65	18.17	0.57
Caspri	169	Max WS	P_SC_20	55.36	152.18	155.13		155.44	0.003724	2.46	22.48	11.21	0.56
Caspri	168	Max WS	P_SC_200	103.28	152.08	155.68		156.08	0.004547	2.98	44.33	57.51	0.62
Caspri	168	Max WS	P_SC_100	87.13	152.08	155.56		155.93	0.004281	2.81	37.59	52.73	0.60
Caspri	168	Max WS	P_SC_30	64.51	152.08	155.29		155.62	0.003963	2.54	25.44	12.76	0.57
Caspri	168	Max WS	P_SC_20	55.36	152.08	155.11		155.40	0.003362	2.37	23.34	11.40	0.53
Caspri	167	Max WS	P_SC_200	103.15	151.72	155.65		155.87	0.002146	2.30	62.35	63.40	0.43
Caspri	167	Max WS	P_SC_100	86.92	151.72	155.52		155.72	0.002026	2.18	54.10	59.64	0.42
Caspri	167	Max WS	P_SC_30	63.17	151.72	155.20		155.41	0.002132	2.10	36.31	50.59	0.42
Caspri	167	Max WS	P_SC_20	55.33	151.72	155.05		155.26	0.002156	2.04	29.43	46.62	0.43
Caspri	166	Max WS	P_SC_200	103.14	151.63	155.66		155.83	0.001613	2.05	70.08	69.60	0.37
Caspri	166	Max WS	P_SC_100	86.92	151.63	155.53		155.69	0.001493	1.93	61.17	64.63	0.36
Caspri	166	Max WS	P_SC_30	63.12	151.63	155.23		155.38	0.001427	1.78	43.48	53.43	0.35
Caspri	166	Max WS	P_SC_20	55.34	151.63	155.08		155.23	0.001446	1.74	35.99	47.90	0.35
Caspri	165	Max WS	P_SC_200	103.13	151.53	155.68		155.80	0.001081	1.73	83.72	75.60	0.31
Caspri	165	Max WS	P_SC_100	86.92	151.53	155.55		155.66	0.000992	1.62	73.98	70.90	0.30
Caspri	165	Max WS	P_SC_30	63.38	151.53	155.26		155.36	0.000943	1.49	54.65	60.52	0.29
Caspri	165	Max WS	P_SC_20	55.34	151.53	155.11		155.21	0.000968	1.47	45.89	55.18	0.29
Caspri	164	Max WS	P_SC_200	103.12	151.45	155.67		155.79	0.001281	1.85	81.22	76.53	0.31
Caspri	164	Max WS	P_SC_100	86.92	151.45	155.53		155.65	0.001189	1.75	71.34	71.54	0.30
Caspri	164	Max WS	P_SC_30	63.34	151.45	155.23		155.35	0.001157	1.64	51.71	60.41	0.30
Caspri	164	Max WS	P_SC_20	55.34	151.45	155.08		155.20	0.001209	1.63	42.66	54.52	0.30
Caspri	163	Max WS	P_SC_200	103.12	151.36	155.54	153.91	155.79	0.001973	2.28	55.12	54.57	0.39
Caspri	163	Max WS	P_SC_100	86.92	151.36	155.44	153.65	155.64	0.001619	2.03	49.96	47.72	0.35
Caspri	163	Max WS	P_SC_30	63.37	151.36	155.20	153.25	155.34	0.001183	1.67	40.24	30.93	0.30

HEC-RAS River: Caspri Reach: Caspri Profile: Max WS (Continued)

Reach	River Sta	Profile	Plan	Q Total (m3/s)	Min Ch El (m)	W.S. Elev (m)	Crit W.S. (m)	E.G. Elev (m)	E.G. Slope (m/m)	Vel Chnl (m/s)	Flow Area (m2)	Top Width (m)	Froude # Chl
Caspri	163	Max WS	P_SC_20	55.34	151.36	155.06	153.09	155.18	0.001052	1.53	36.72	21.82	0.28
Caspri	162.5		Bridge										
Caspri	162	Max WS	P_SC_200	103.12	151.36	154.15		154.99	0.009965	4.08	25.26	11.11	0.86
Caspri	162	Max WS	P_SC_100	86.92	151.36	153.86		154.64	0.010215	3.93	22.14	10.69	0.87
Caspri	162	Max WS	P_SC_30	63.35	151.36	153.40		154.08	0.010733	3.65	17.36	10.02	0.88
Caspri	162	Max WS	P_SC_20	55.34	151.36	153.23		153.86	0.010879	3.52	15.71	9.77	0.89
Caspri	161	Max WS	P_SC_200	103.12	151.27	154.31		154.87	0.005778	3.32	31.06	12.46	0.67
Caspri	161	Max WS	P_SC_100	86.92	151.27	154.00		154.52	0.005876	3.18	27.30	12.00	0.67
Caspri	161	Max WS	P_SC_30	63.34	151.27	153.50		153.94	0.006116	2.95	21.49	11.27	0.68
Caspri	161	Max WS	P_SC_20	55.34	151.27	153.32		153.73	0.006157	2.84	19.50	11.01	0.68
Caspri	160	Max WS	P_SC_200	103.12	151.04	153.95		154.66	0.007722	3.76	27.46	10.91	0.76
Caspri	160	Max WS	P_SC_100	86.92	151.04	153.67		154.31	0.007595	3.55	24.45	10.63	0.75
Caspri	160	Max WS	P_SC_30	63.28	151.04	153.21		153.73	0.007466	3.22	19.67	10.17	0.74
Caspri	160	Max WS	P_SC_20	55.34	151.04	153.04		153.52	0.007376	3.08	18.00	10.00	0.73
Caspri	159	Max WS	P_SC_200	103.12	151.02	153.92		154.64	0.007783	3.77	27.38	10.90	0.76
Caspri	159	Max WS	P_SC_100	86.92	151.02	153.64		154.29	0.007655	3.56	24.39	10.62	0.75
Caspri	159	Max WS	P_SC_30	63.27	151.02	153.18		153.71	0.007519	3.22	19.62	10.16	0.74
Caspri	159	Max WS	P_SC_20	55.34	151.02	153.01		153.50	0.007430	3.08	17.95	10.00	0.73
Caspri	158	Max WS	P_SC_200	103.11	150.69	153.52		154.28	0.008439	3.88	26.60	10.83	0.79
Caspri	158	Max WS	P_SC_100	86.92	150.69	153.26		153.94	0.008153	3.64	23.85	10.57	0.77
Caspri	158	Max WS	P_SC_30	63.21	150.69	152.83		153.37	0.007761	3.26	19.39	10.14	0.75
Caspri	158	Max WS	P_SC_20	55.33	150.69	152.67		153.16	0.007592	3.11	17.82	9.98	0.74
Caspri	157	Max WS	P_SC_200	103.11	150.55	153.21		154.13	0.010826	4.25	24.28	10.47	0.89
Caspri	157	Max WS	P_SC_100	86.92	150.55	152.97		153.78	0.010434	3.99	21.80	10.23	0.87
Caspri	157	Max WS	P_SC_30	63.20	150.55	152.57		153.21	0.009817	3.55	17.81	9.83	0.84
Caspri	157	Max WS	P_SC_20	55.33	150.55	152.43		153.00	0.009525	3.37	16.41	9.69	0.83
Caspri	156	Max WS	P_SC_200	103.11	150.35	152.83	152.78	153.86	0.012844	4.50	22.91	10.48	0.97
Caspri	156	Max WS	P_SC_100	86.92	150.35	152.59	152.54	153.51	0.012615	4.25	20.45	10.24	0.96
Caspri	156	Max WS	P_SC_30	63.16	150.35	152.21		152.95	0.012173	3.81	16.58	9.86	0.94



HEC-RAS River: Caspri Reach: Caspri Profile: Max WS (Continued)

Reach	River Sta	Profile	Plan	Q Total (m3/s)	Min Ch El (m)	W.S. Elev (m)	Crit W.S. (m)	E.G. Elev (m)	E.G. Slope (m/m)	Vel Chnl (m/s)	Flow Area (m2)	Top Width (m)	Froude # Chl
Caspri	156	Max WS	P_SC_20	55.33	150.35	152.07		152.74	0.011950	3.63	15.24	9.72	0.93
Caspri	155	Max WS	P_SC_200	103.11	150.16	152.90		153.53	0.006504	3.50	29.48	13.49	0.76
Caspri	155	Max WS	P_SC_100	86.92	150.16	152.68		153.23	0.006245	3.28	26.49	13.04	0.73
Caspri	155	Max WS	P_SC_30	63.15	150.16	152.29		152.73	0.005871	2.92	21.62	12.27	0.70
Caspri	155	Max WS	P_SC_20	55.33	150.16	152.16		152.55	0.005685	2.77	19.94	11.99	0.69
Caspri	154	Max WS	P_SC_200	103.11	150.08	152.85		153.46	0.006296	3.46	29.82	13.54	0.74
Caspri	154	Max WS	P_SC_100	86.92	150.08	152.63		153.16	0.005977	3.23	26.91	13.10	0.72
Caspri	154	Max WS	P_SC_30	63.13	150.08	152.25		152.67	0.005517	2.86	22.09	12.34	0.68
Caspri	154	Max WS	P_SC_20	55.33	150.08	152.12		152.49	0.005300	2.71	20.43	12.07	0.66
Caspri	153	Max WS	P_SC_200	103.09	149.71	152.20		152.74	0.006036	3.24	31.78	16.48	0.75
Caspri	153	Max WS	P_SC_100	86.91	149.71	151.98		152.47	0.006004	3.08	28.22	15.82	0.74
Caspri	153	Max WS	P_SC_30	62.98	149.71	151.62		152.01	0.005904	2.78	22.65	14.73	0.72
Caspri	153	Max WS	P_SC_20	55.32	149.71	151.49		151.85	0.005836	2.66	20.78	14.34	0.71
Caspri	152	Max WS	P_SC_200	97.13	149.00	151.71		152.09	0.003960	2.74	35.39	17.13	0.61
Caspri	152	Max WS	P_SC_100	70.26	149.00	151.22		151.56	0.004282	2.57	27.37	15.66	0.62
Caspri	152	Max WS	P_SC_30	62.87	149.00	150.93		151.31	0.005630	2.73	23.00	14.80	0.70
Caspri	152	Max WS	P_SC_20	55.32	149.00	150.86		151.18	0.005017	2.53	21.90	14.57	0.66
Caspri	151.9			Lat Struct									
Caspri	151	Max WS	P_SC_200	80.68	148.62	151.82		151.97	0.001243	1.70	47.37	19.61	0.35
Caspri	151	Max WS	P_SC_100	60.73	148.62	151.25		151.39	0.001449	1.66	36.64	17.89	0.37
Caspri	151	Max WS	P_SC_30	58.54	148.62	150.82		151.02	0.002554	2.00	29.26	16.60	0.48
Caspri	151	Max WS	P_SC_20	52.09	148.62	150.74		150.92	0.002291	1.86	28.01	16.38	0.45
Caspri	150	Max WS	P_SC_200	76.26	148.66	151.81		151.98	0.001456	1.84	41.35	16.04	0.37
Caspri	150	Max WS	P_SC_100	58.42	148.66	151.23		151.39	0.001749	1.81	32.24	15.13	0.40
Caspri	150	Max WS	P_SC_30	57.50	148.66	150.76		151.02	0.003383	2.27	25.37	14.19	0.54
Caspri	150	Max WS	P_SC_20	51.32	148.66	150.69		150.91	0.003016	2.10	24.41	14.06	0.51
Caspri	149.6	Max WS	P_SC_200	66.87	148.60	151.86		152.01	0.001403	1.77	37.86	13.26	0.33
Caspri	149.6	Max WS	P_SC_100	55.54	148.60	151.24		151.41	0.001904	1.86	29.85	12.64	0.39
Caspri	149.6	Max WS	P_SC_30	55.99	148.60	150.72		151.01	0.003912	2.39	23.41	12.12	0.55

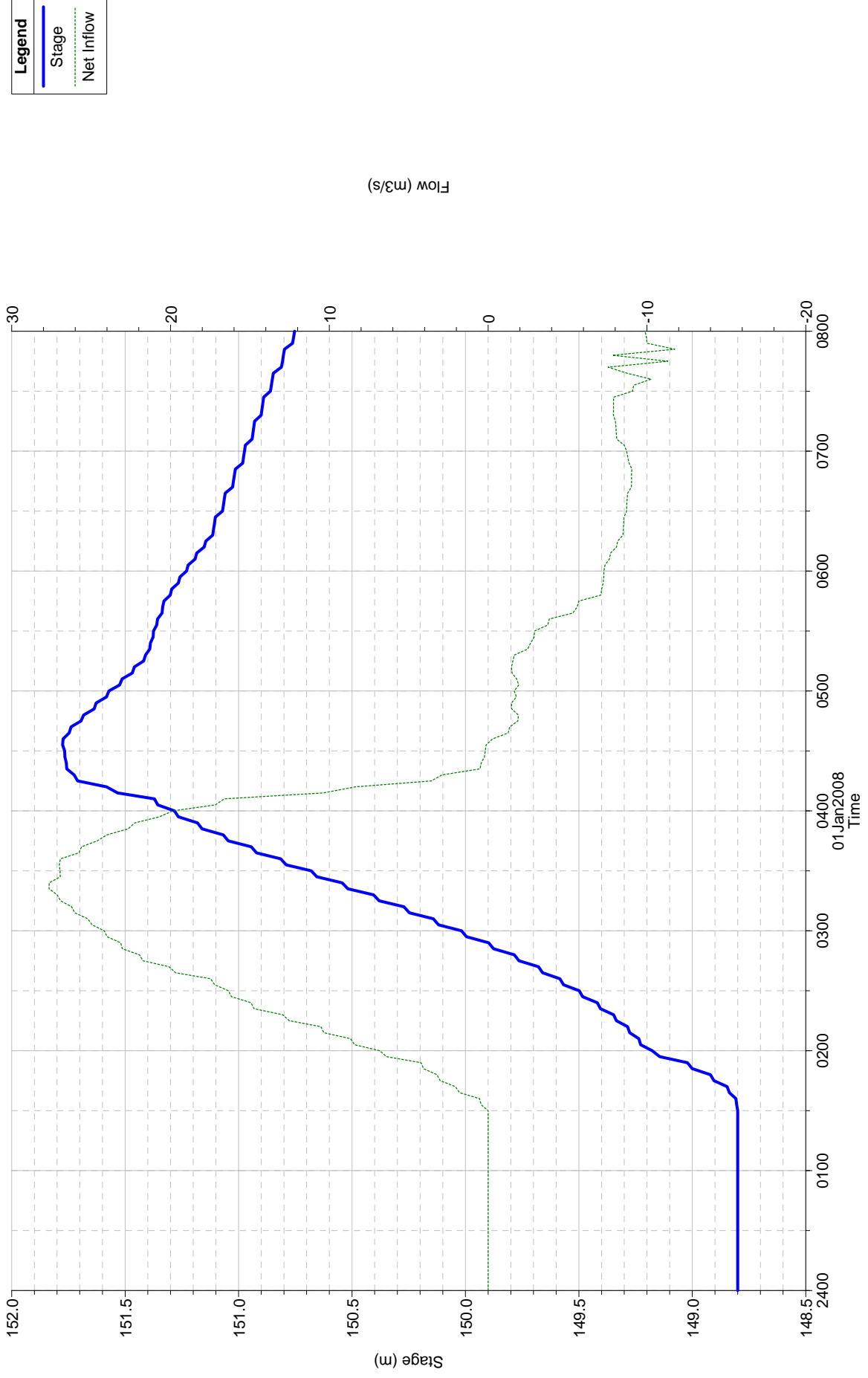
HEC-RAS River: Caspri Reach: Caspri Profile: Max WS (Continued)

Reach	River Sta	Profile	Plan	Q Total (m3/s)	Min Ch El (m)	W.S. Elev (m)	Crit W.S. (m)	E.G. Elev (m)	E.G. Slope (m/m)	Vel Chnl (m/s)	Flow Area (m2)	Top Width (m)	Froude # Chl
Caspri	149.6	Max WS	P_SC_20	50.24	148.60	150.65		150.90	0.003486	2.22	22.61	12.05	0.52
Caspri	149.5	Max WS	P_SC_200	84.37	148.60	151.57		151.88	0.002993	2.47	34.14	12.97	0.49
Caspri	149.5	Max WS	P_SC_100	65.31	148.60	151.03		151.32	0.003413	2.39	27.27	12.43	0.52
Caspri	149.5	Max WS	P_SC_30	53.37	148.60	150.72		150.99	0.003522	2.27	23.48	12.12	0.52
Caspri	149.5	Max WS	P_SC_20	48.49	148.60	150.64		150.87	0.003320	2.16	22.44	12.04	0.51
Caspri	149.4	Max WS	P_SC_200	86.85	148.60	151.32		151.84	0.005894	3.20	27.16	10.00	0.62
Caspri	149.4	Max WS	P_SC_100	67.59	148.60	150.87		151.32	0.005999	2.98	22.70	10.00	0.63
Caspri	149.4	Max WS	P_SC_30	53.04	148.60	150.64		150.98	0.005087	2.61	20.35	10.00	0.58
Caspri	149.4	Max WS	P_SC_20	48.28	148.60	150.56		150.87	0.004714	2.46	19.59	10.00	0.56
Caspri	149.3	Max WS	P_SC_200	88.11	148.55	151.27	150.54	151.80	0.006046	3.24	27.19	10.00	0.63
Caspri	149.3	Max WS	P_SC_100	67.52	148.55	150.87	150.22	151.30	0.005583	2.90	23.25	10.00	0.61
Caspri	149.3	Max WS	P_SC_30	53.04	148.55	150.64	149.97	150.97	0.004717	2.54	20.88	10.00	0.56
Caspri	149.3	Max WS	P_SC_20	48.28	148.55	150.56	149.88	150.86	0.004363	2.40	20.11	10.00	0.54
Caspri	149.25		Bridge										
Caspri	149.2	Max WS	P_SC_200	88.10	148.53	151.15		151.73	0.006694	3.36	26.24	10.00	0.66
Caspri	149.2	Max WS	P_SC_100	67.52	148.53	150.77		151.23	0.006199	3.01	22.43	10.00	0.64
Caspri	149.2	Max WS	P_SC_30	53.04	148.53	150.56		150.91	0.005125	2.61	20.30	10.00	0.59
Caspri	149.2	Max WS	P_SC_20	48.23	148.53	150.49		150.80	0.004682	2.46	19.63	10.00	0.56
Caspri	149.1	Max WS	P_SC_200	88.10	148.50	151.40		151.68	0.002591	2.35	37.46	15.81	0.49
Caspri	149.1	Max WS	P_SC_100	67.52	148.50	150.95		151.20	0.002745	2.22	30.47	14.90	0.49
Caspri	149.1	Max WS	P_SC_30	53.04	148.50	150.68		150.88	0.002540	2.00	26.49	14.35	0.47
Caspri	149.1	Max WS	P_SC_20	48.28	148.50	150.59		150.78	0.002416	1.91	25.26	14.18	0.46
Caspri	149	Max WS	P_SC_200	88.09	148.33	151.16		151.55	0.004111	2.76	31.88	15.50	0.61
Caspri	149	Max WS	P_SC_100	67.52	148.33	150.66		151.05	0.005009	2.75	24.51	14.00	0.66
Caspri	149	Max WS	P_SC_30	53.02	148.33	150.43		150.74	0.004593	2.49	21.27	13.29	0.63
Caspri	149	Max WS	P_SC_20	48.13	148.33	150.36		150.65	0.004242	2.36	20.42	13.10	0.60
Caspri	148	Max WS	P_SC_200	88.00	148.00	151.09		151.40	0.002938	2.44	36.00	16.28	0.52
Caspri	148	Max WS	P_SC_100	55.31	148.00	150.56		150.77	0.002365	1.99	27.81	14.69	0.46
Caspri	148	Max WS	P_SC_30	51.99	148.00	150.34		150.57	0.002951	2.12	24.57	14.01	0.51

HEC-RAS River: Caspri Reach: Caspri Profile: Max WS (Continued)

Reach	River Sta	Profile	Plan	Q Total (m3/s)	Min Ch El (m)	W.S. Elev (m)	Crit W.S. (m)	E.G. Elev (m)	E.G. Slope (m/m)	Vel Chnl (m/s)	Flow Area (m2)	Top Width (m)	Froude # Chl
Caspri	148	Max WS	P_SC_20	47.96	148.00	150.28		150.49	0.002741	2.01	23.81	13.85	0.49
Caspri	147.55			Lat Struct									
Caspri	147	Max WS	P_SC_200	95.88	147.60	150.88		151.19	0.002770	2.45	39.15	16.85	0.51
Caspri	147	Max WS	P_SC_100	53.65	147.60	150.55		150.68	0.001311	1.59	33.69	15.85	0.35
Caspri	147	Max WS	P_SC_30	51.23	147.60	150.30		150.45	0.001666	1.72	29.87	15.11	0.39
Caspri	147	Max WS	P_SC_20	47.48	147.60	150.25		150.39	0.001542	1.63	29.07	14.95	0.37

Storage Area: Cassa\_Pestello



Legend  
Stage  
Net Inflow

Flow (m3/s)

30  
20  
10  
0  
-10  
-20

152.0  
151.5  
151.0  
150.5  
150.0  
149.5  
149.0  
148.5

01Jan2008  
Time

2400  
0100  
0200  
0300  
0400  
0500  
0600  
0700  
0800

**borro della Dogana - stato di progetto**

verifiche con Tpioggia critico per il Borro della Dogana

- moto vario

Tr=200, 100, 30 e 20 anni

*profilo*

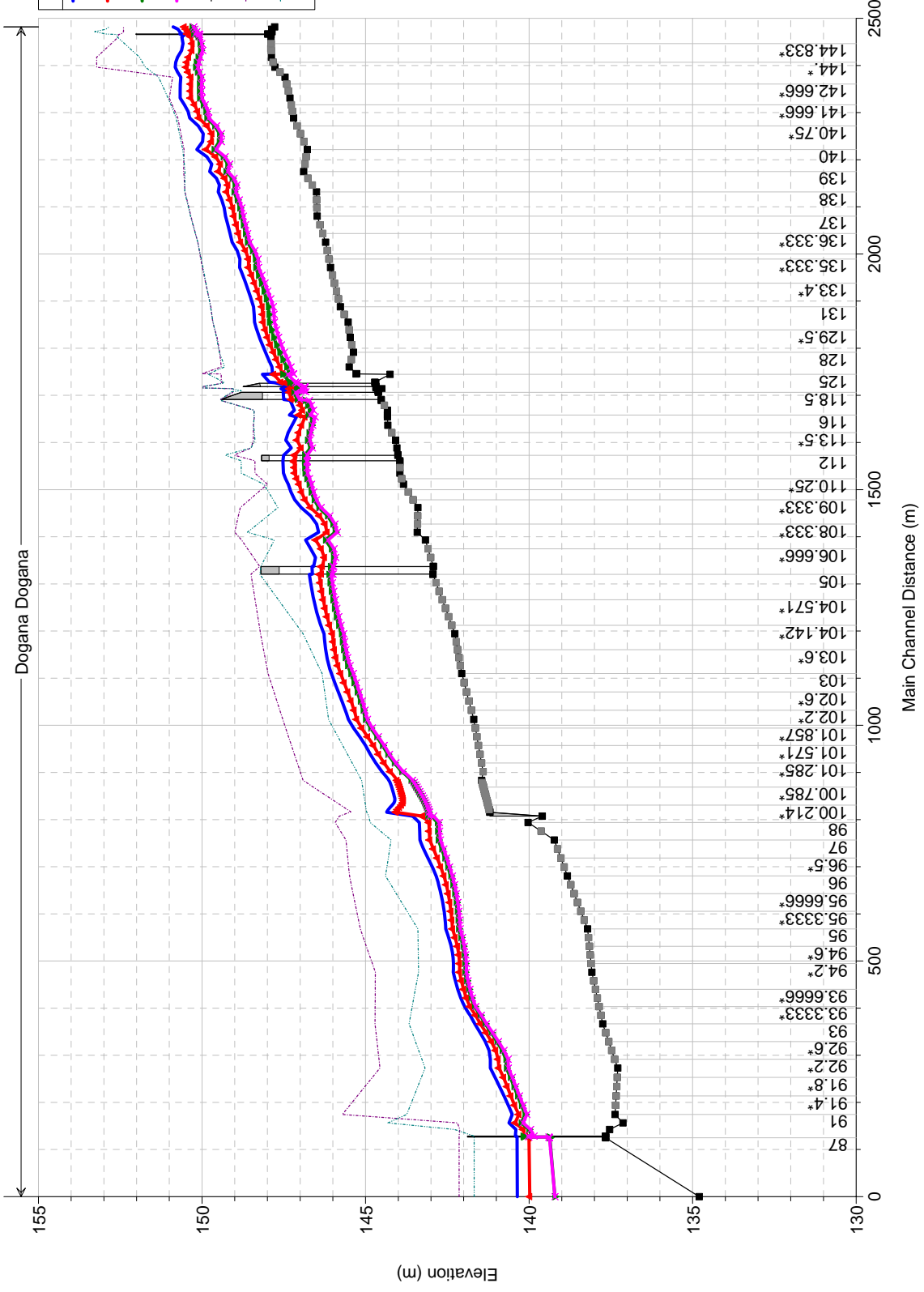
*livelli idrici nelle sezioni di verifica*

*tabella di output del software Hec-ras 4.0*



Progetto\_Sabina\_Caspri\_Dogana Plan: 1) P\_D\_200 2) P\_D\_100 3) P\_D\_30 4) P\_D\_20

Geom: SP\_D Flow:



Legend	
WS Max WS - P_D_200	(Blue solid line)
WS Max WS - P_D_100	(Red solid line)
WS Max WS - P_D_30	(Green solid line)
WS Max WS - P_D_20	(Magenta solid line)
Ground	(Black dashed line)
LOB	(Red dotted line)
ROB	(Blue dotted line)

155  
150  
145  
140  
135  
130

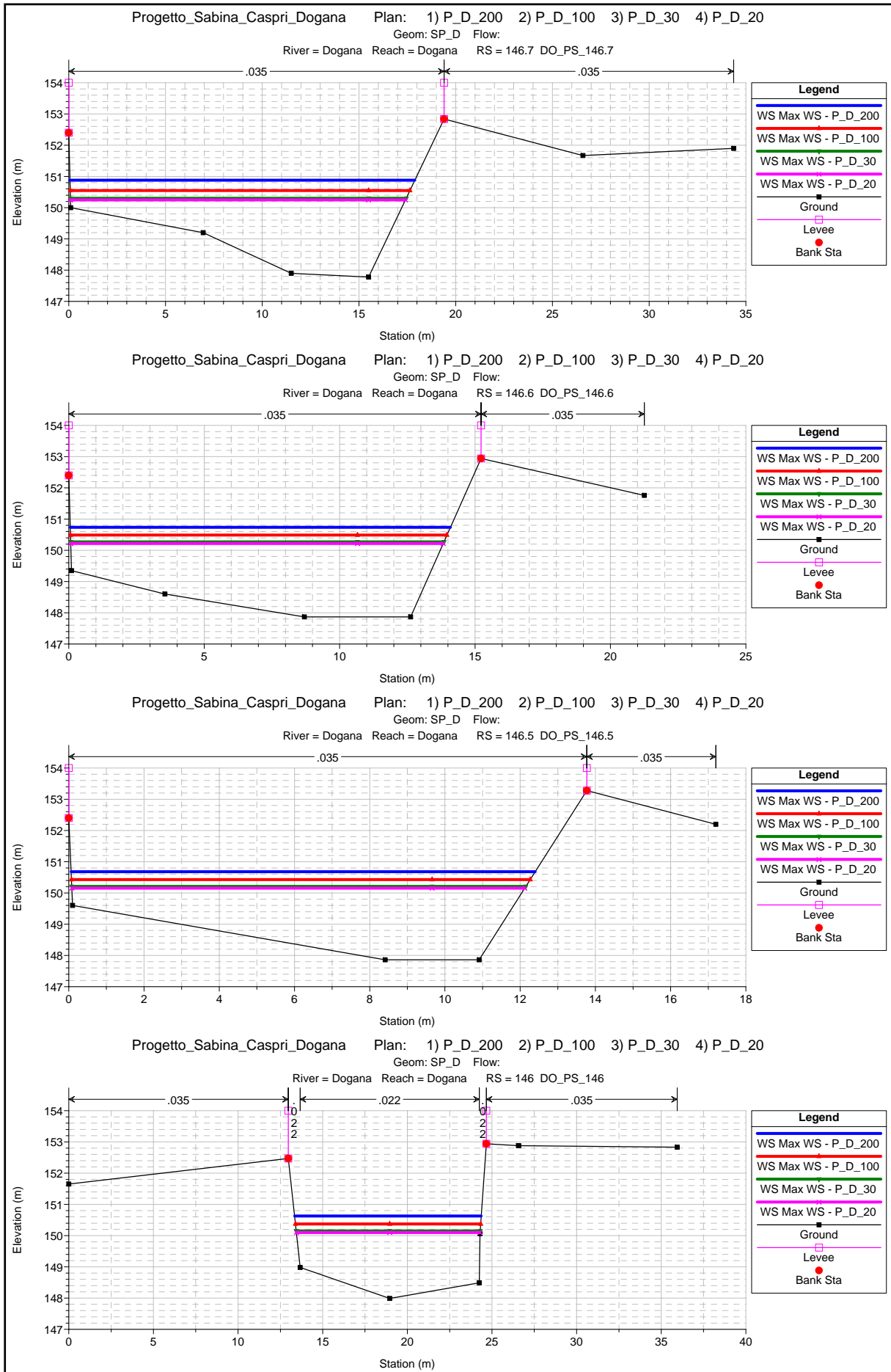
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138  
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135.333\*  
133.4\*  
131  
129.5\*  
128  
125  
118.5  
116  
113.5\*  
112  
110.25\*  
109.333\*  
108.333\*  
106.666\*  
105  
104.571\*  
104.142\*  
103.6\*  
103  
102.6\*  
102.2\*  
101.857\*  
101.571\*  
101.285\*  
100.785\*  
100.214\*  
98  
97  
96.5\*  
96  
95.666\*  
95.3333\*  
95  
94.6\*  
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92.2\*  
91.8\*  
91.4\*  
91  
87

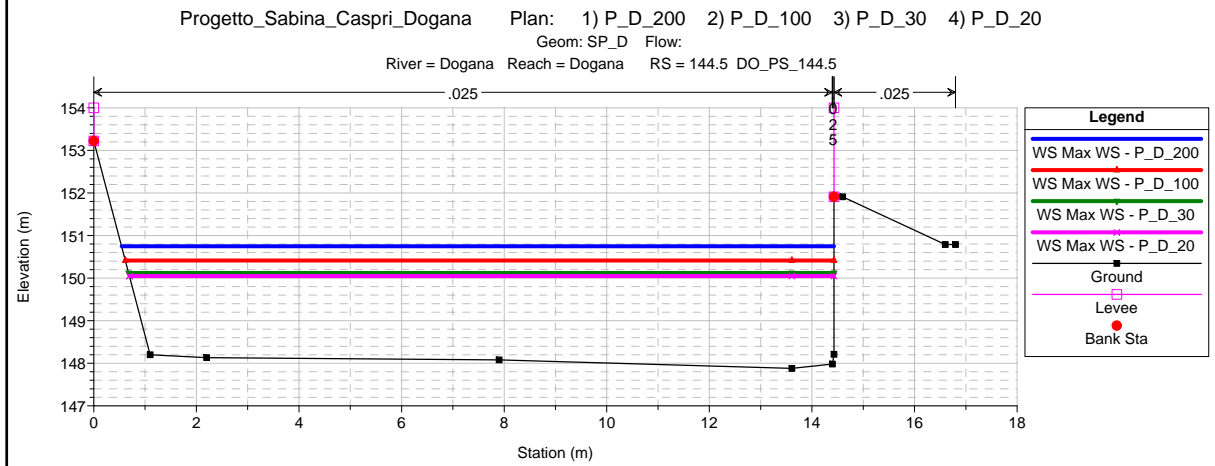
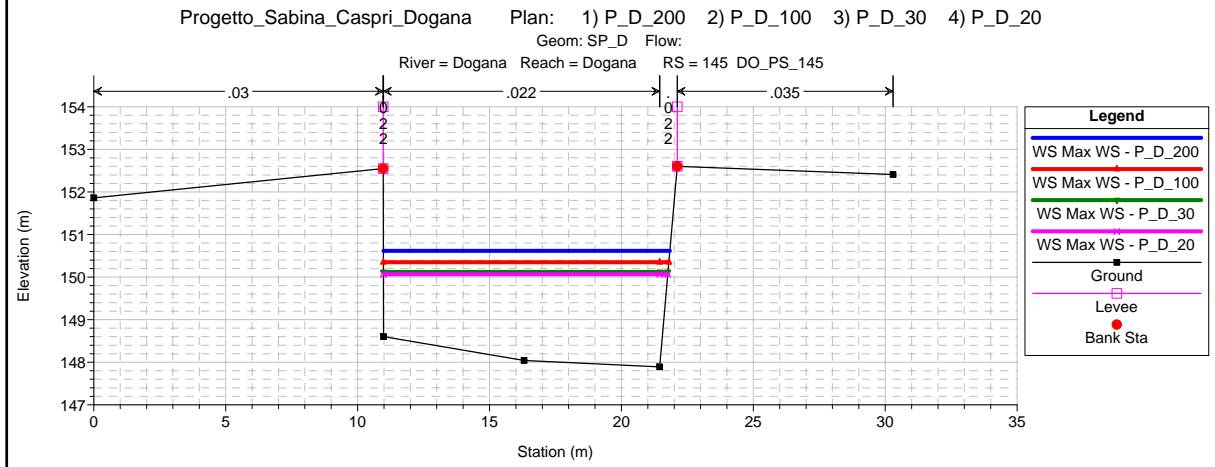
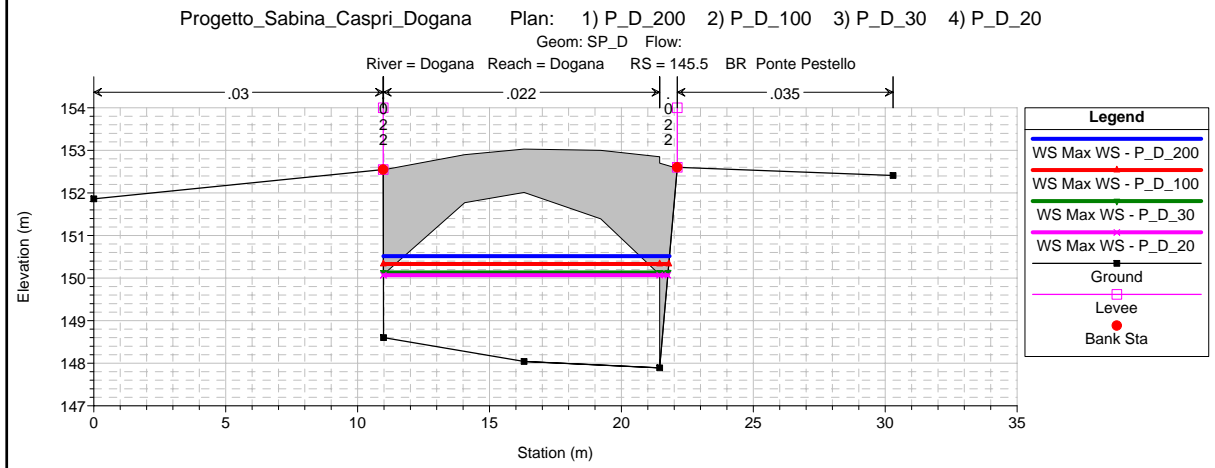
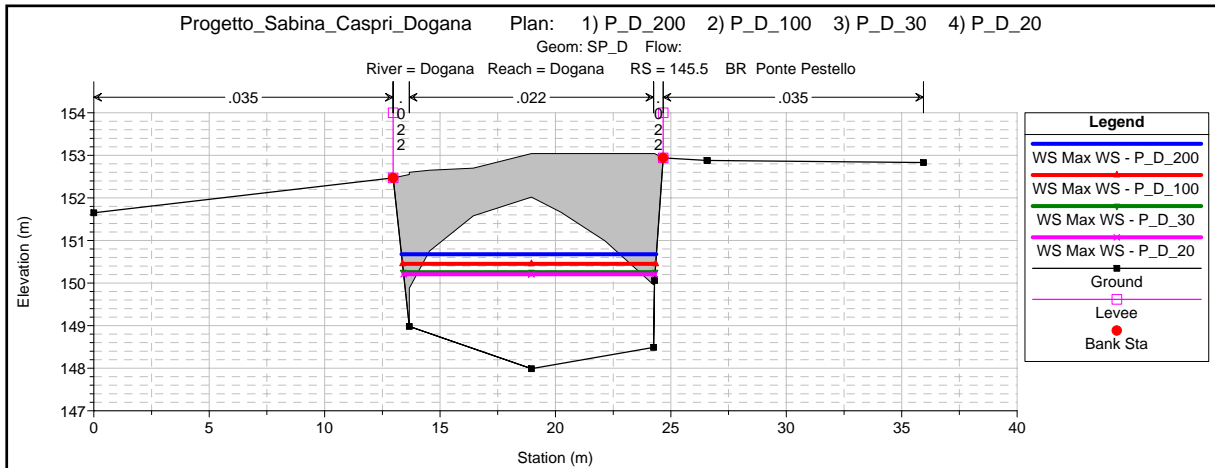
Elevation (m)

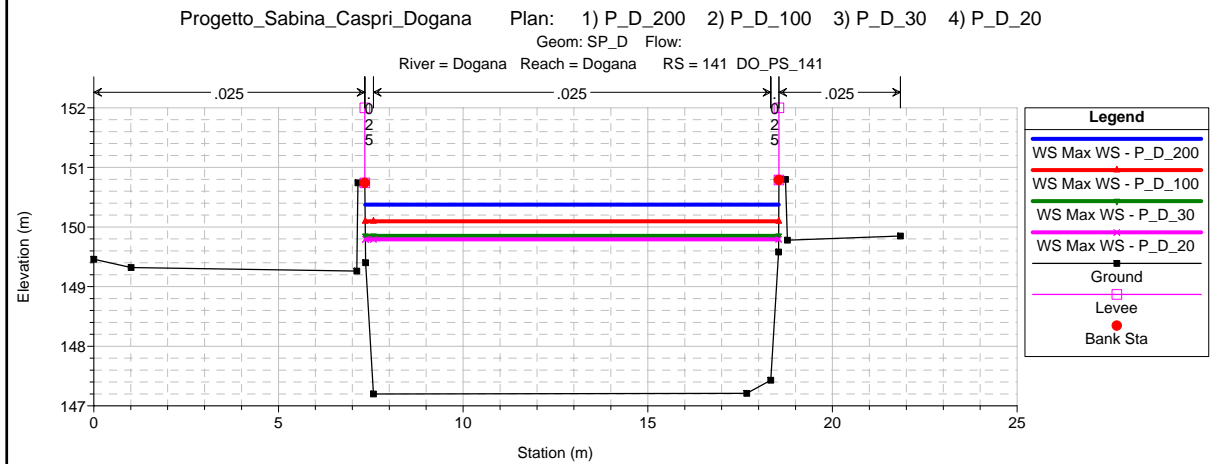
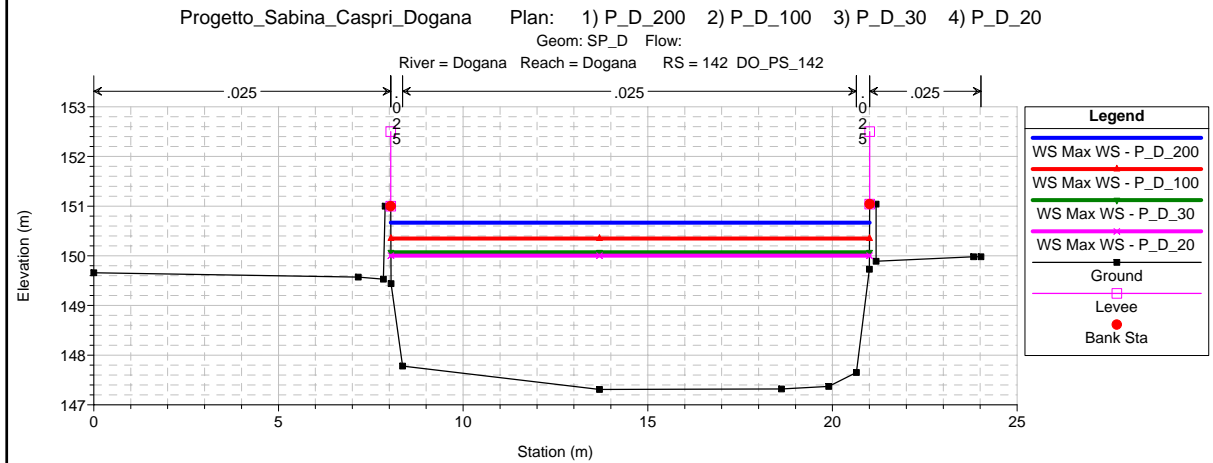
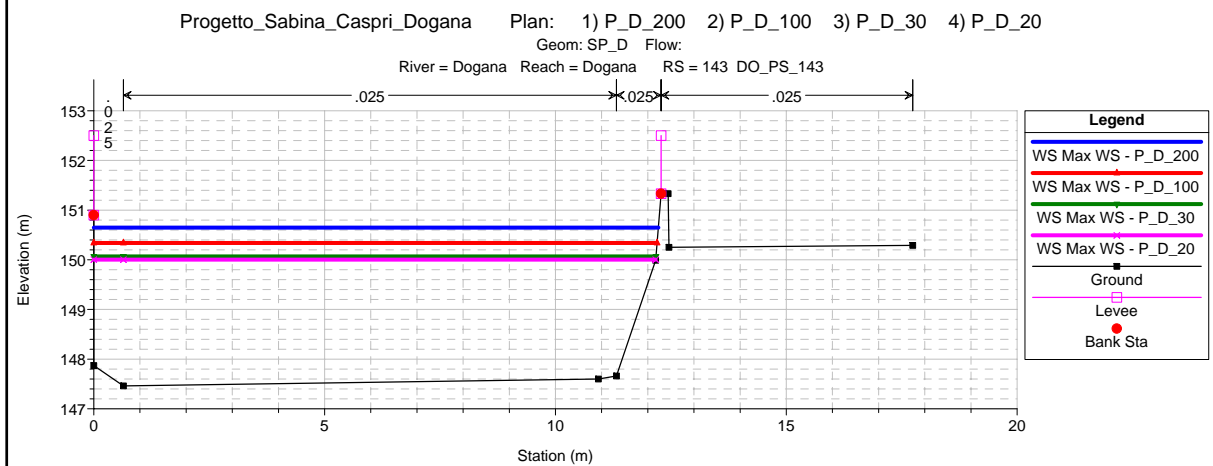
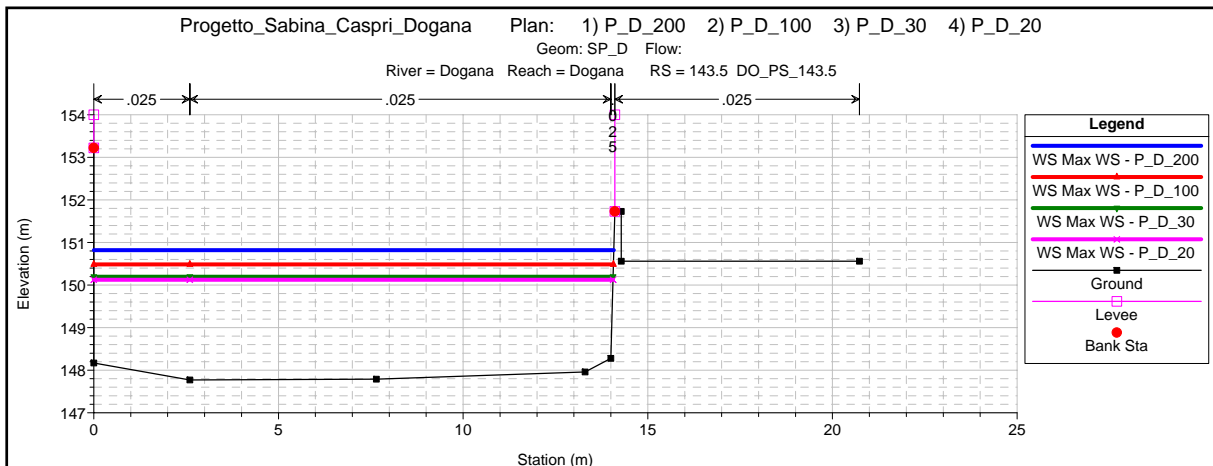
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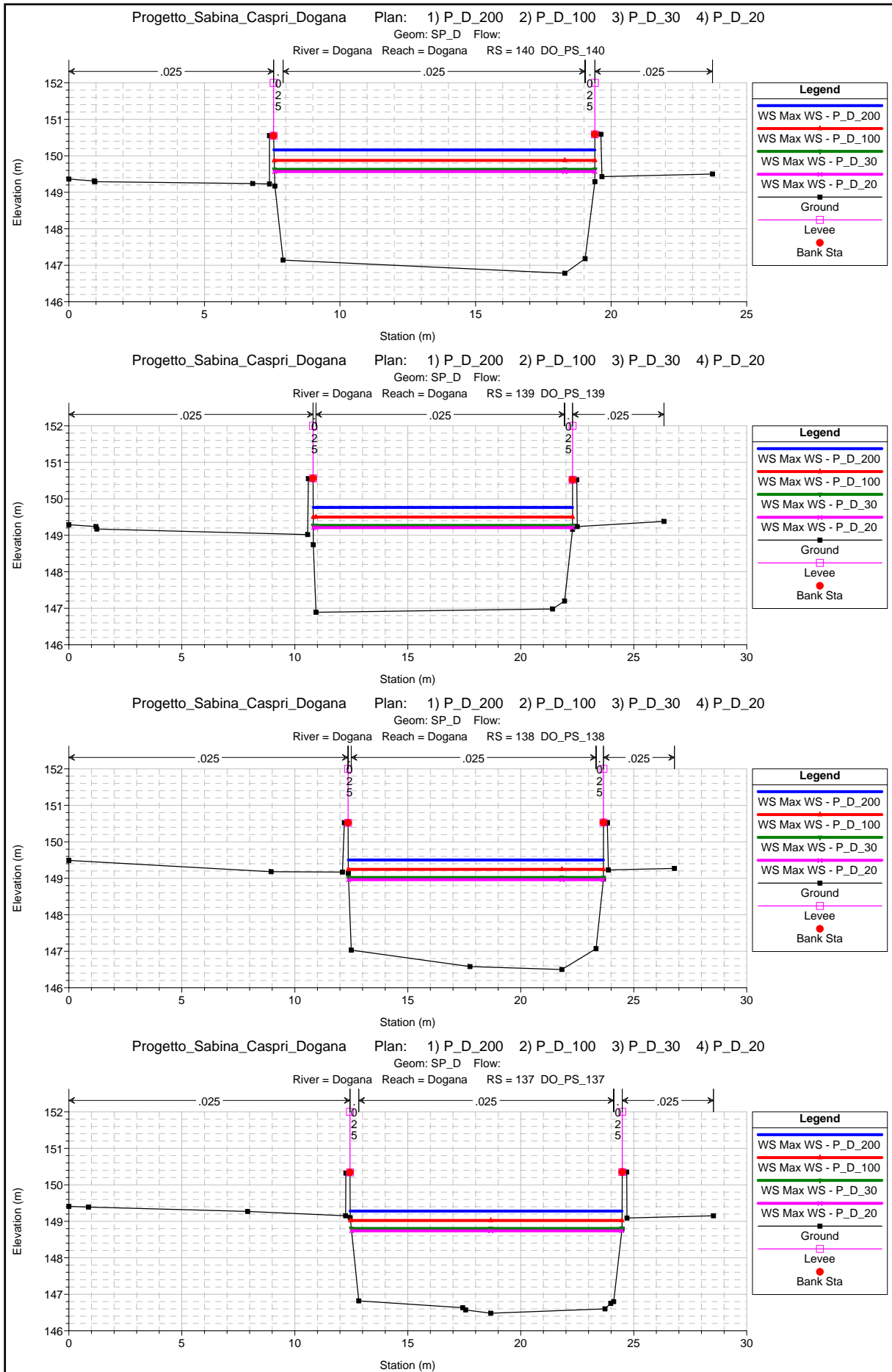
Dogana Dogana

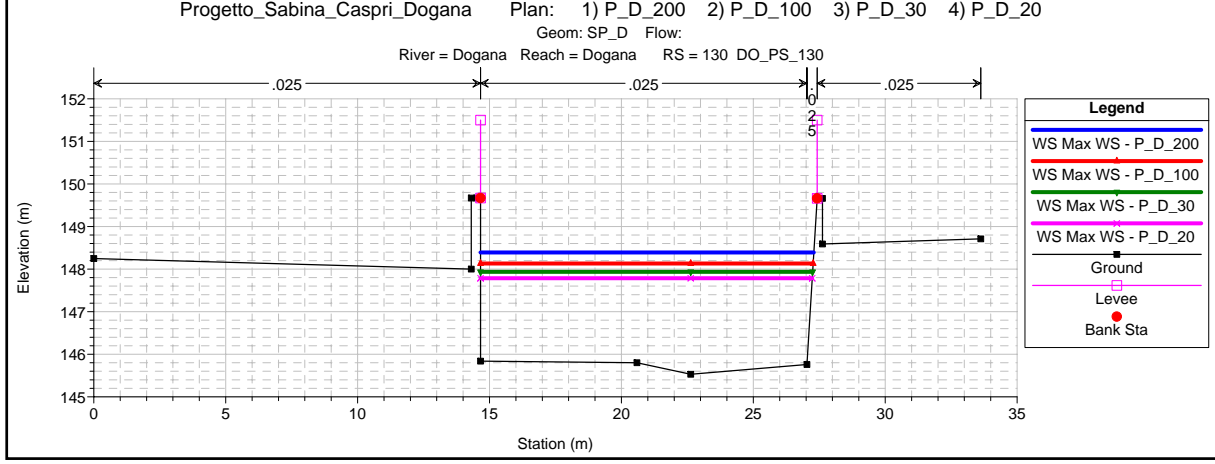
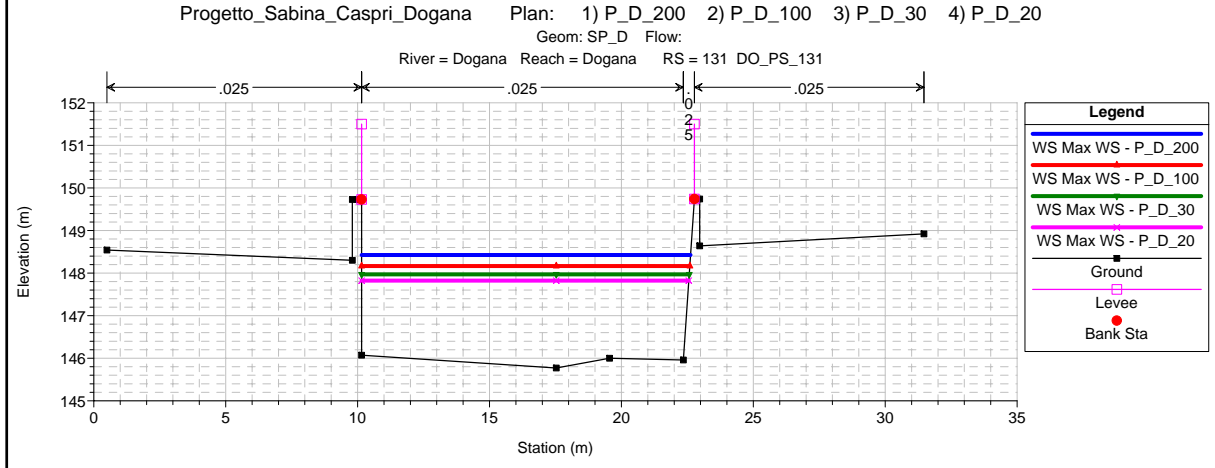
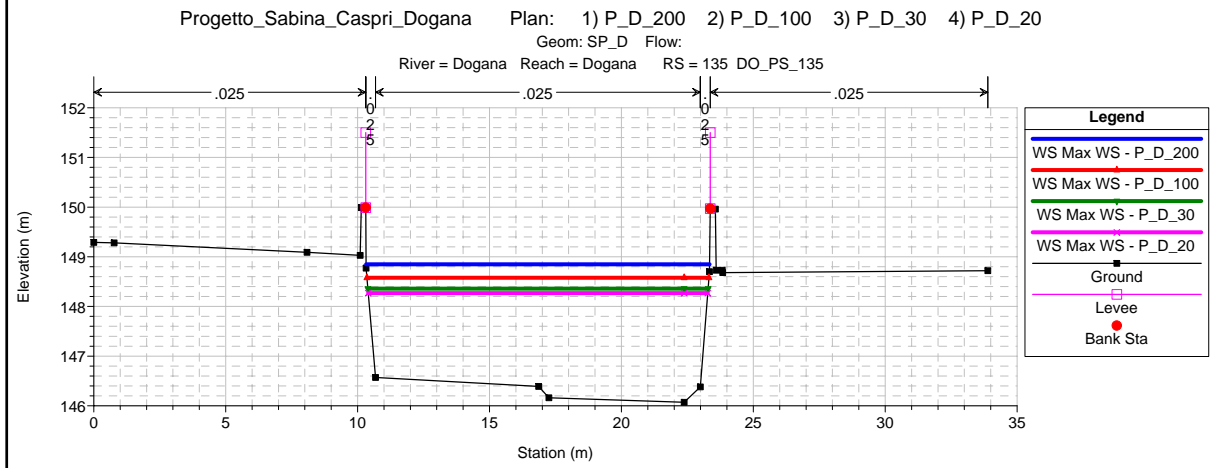
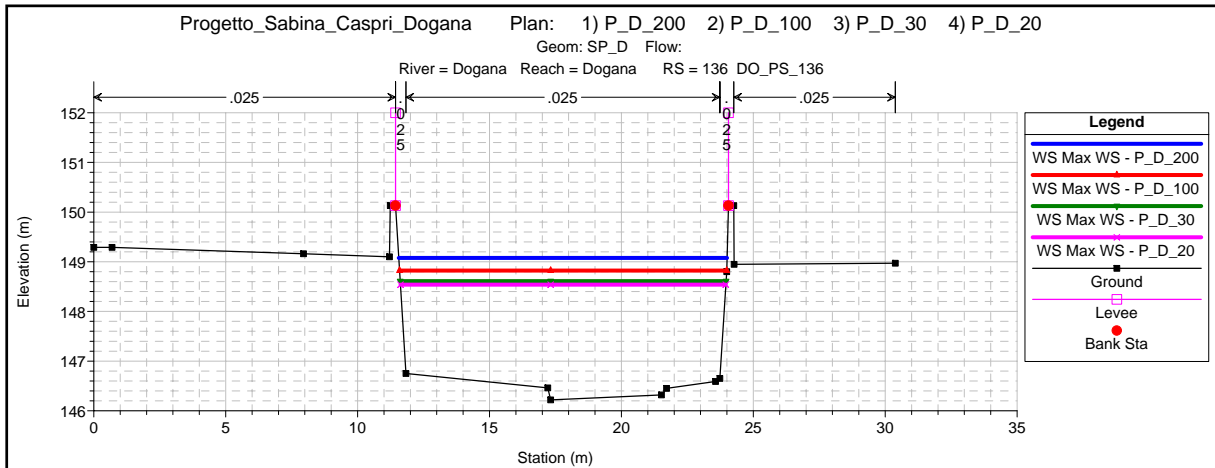


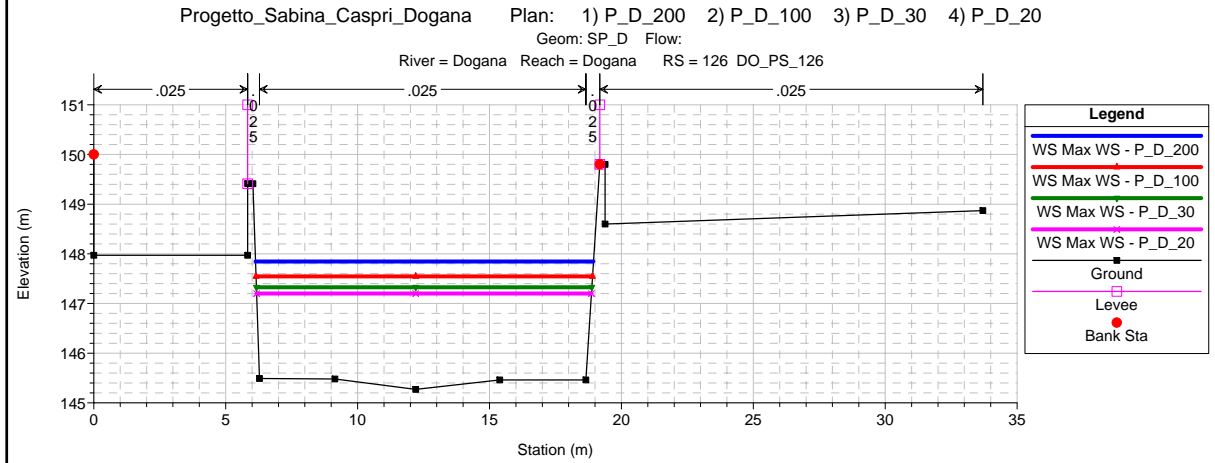
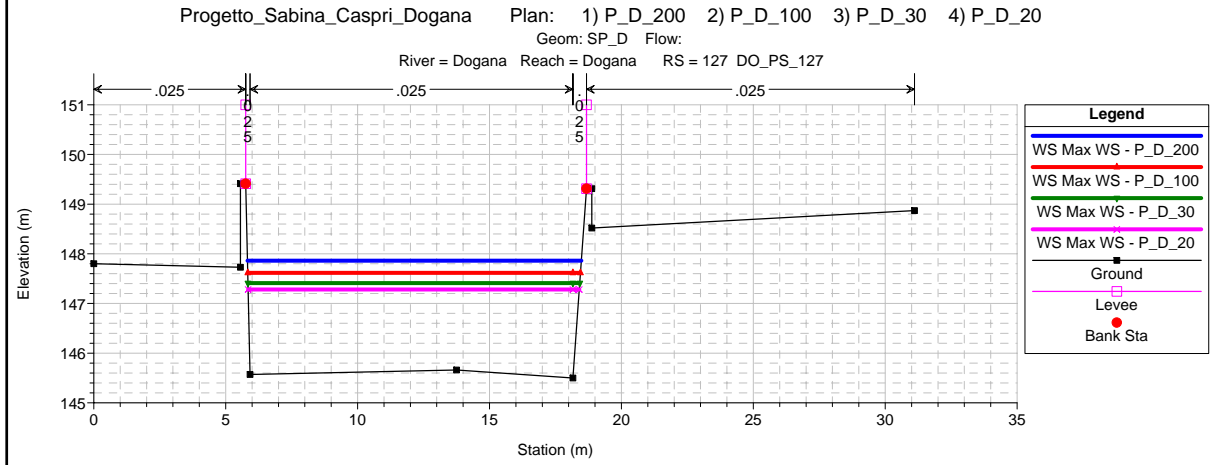
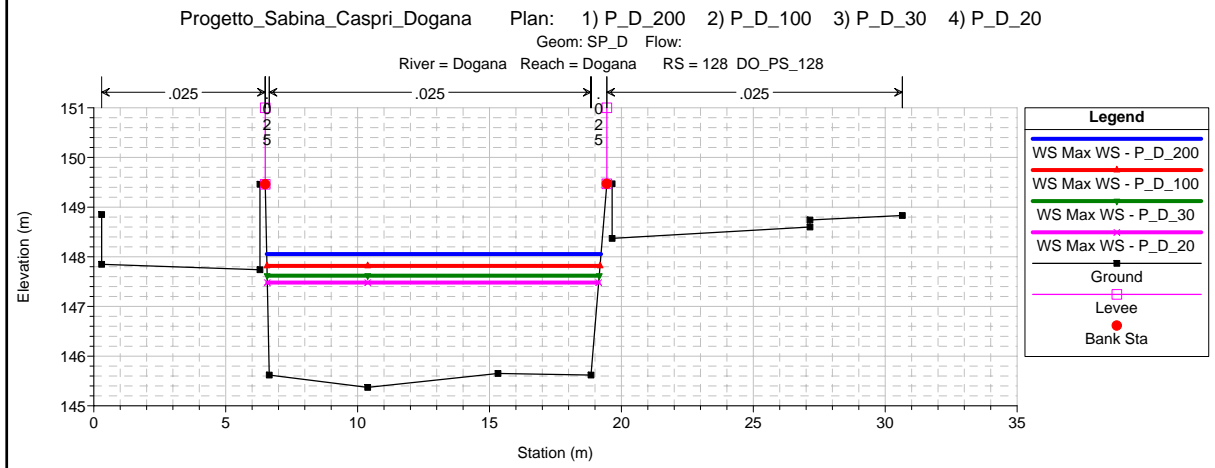
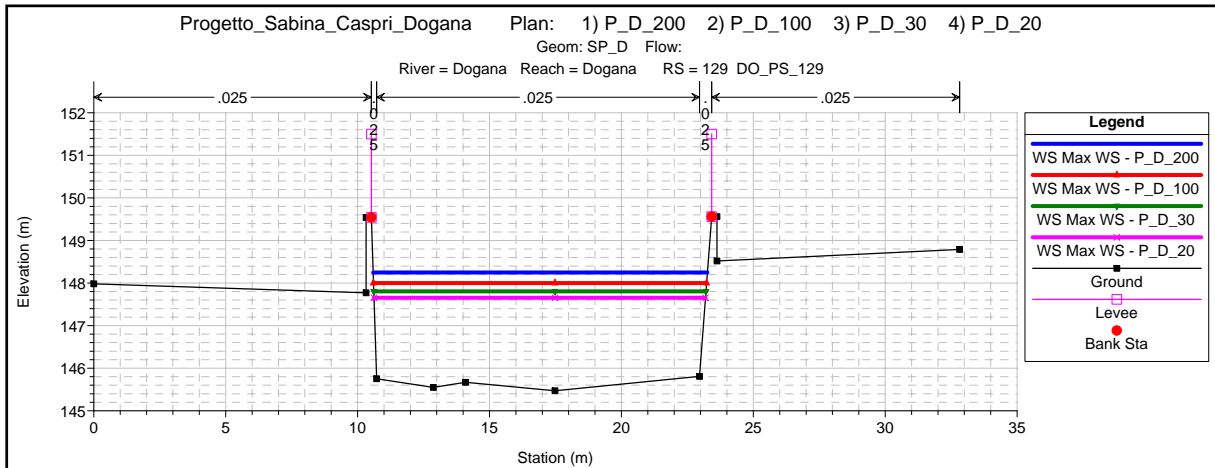


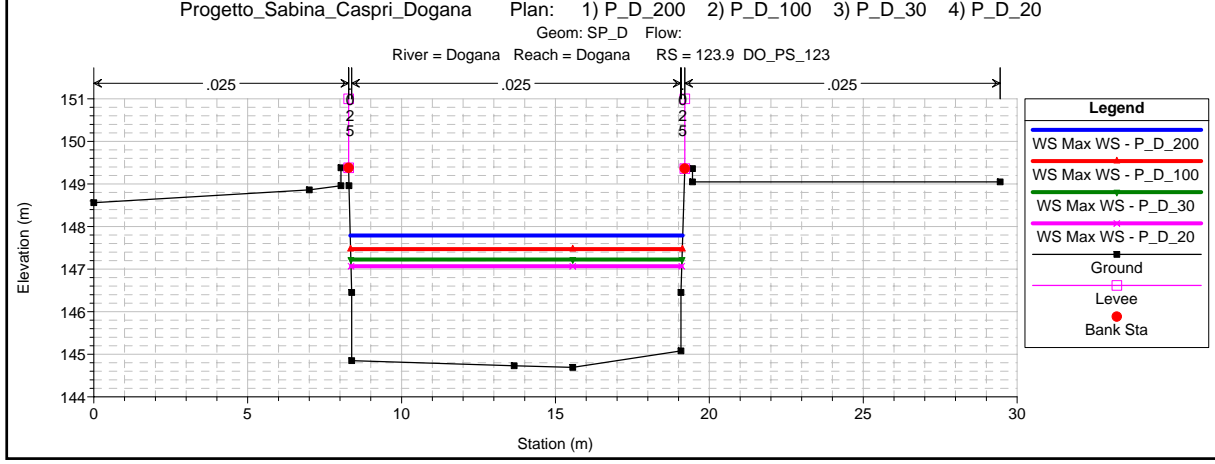
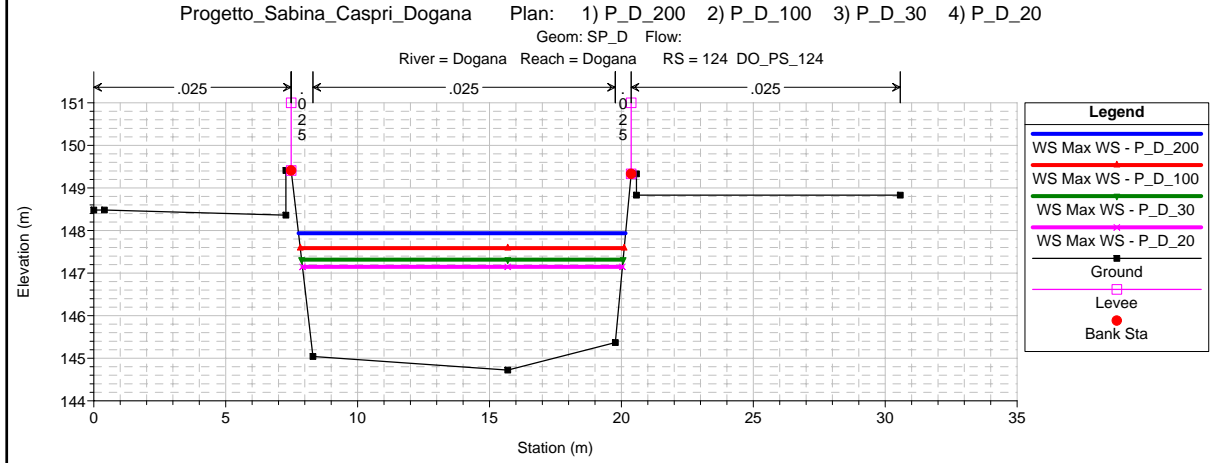
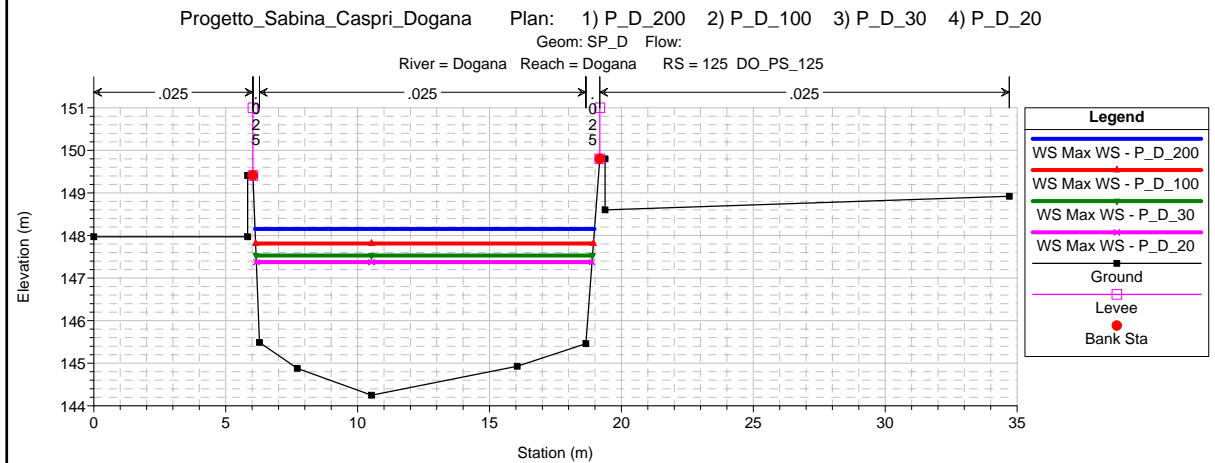
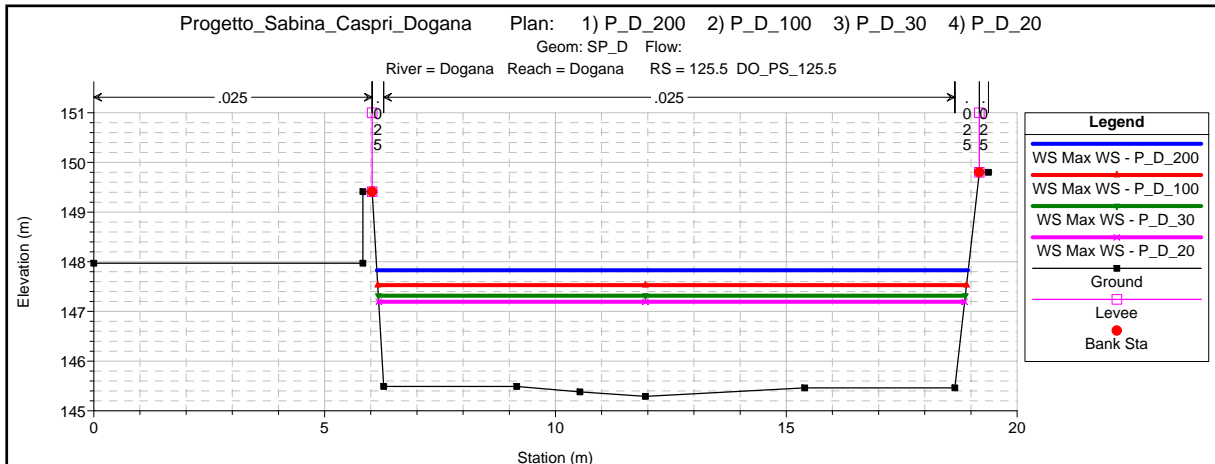


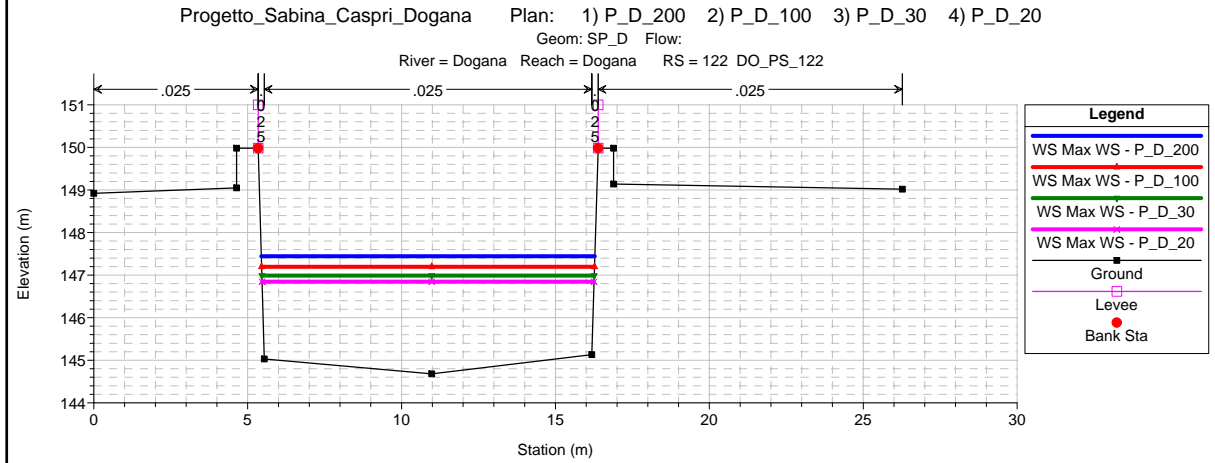
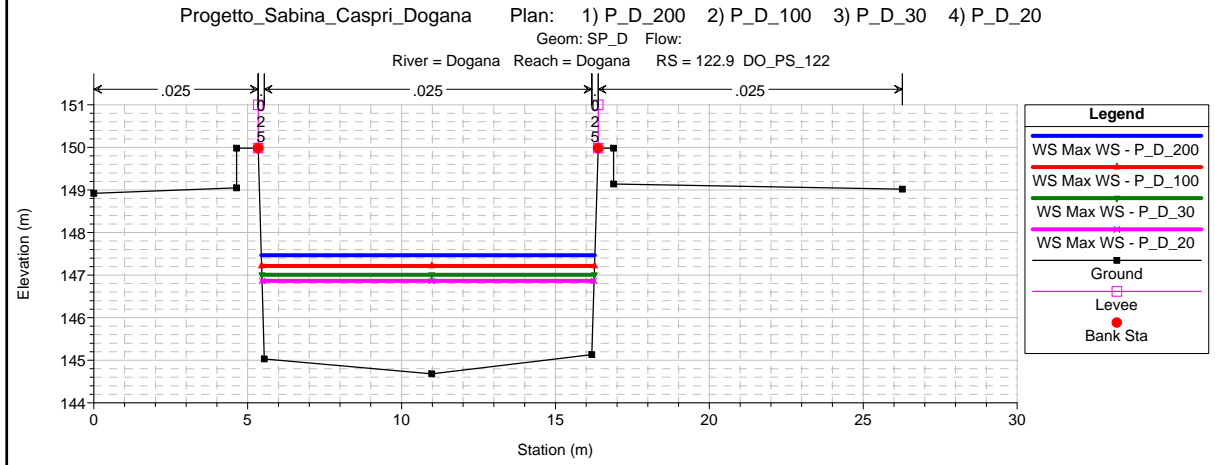
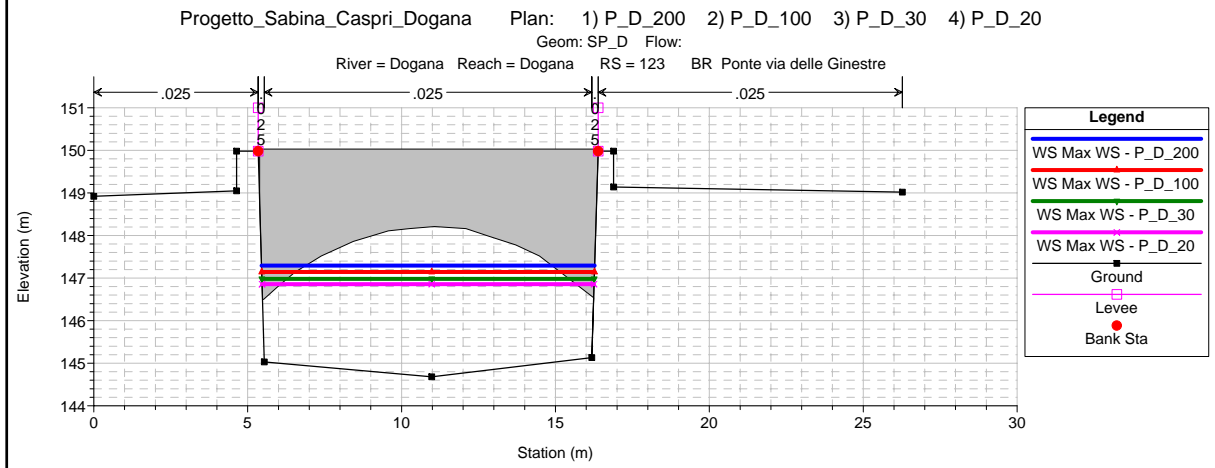
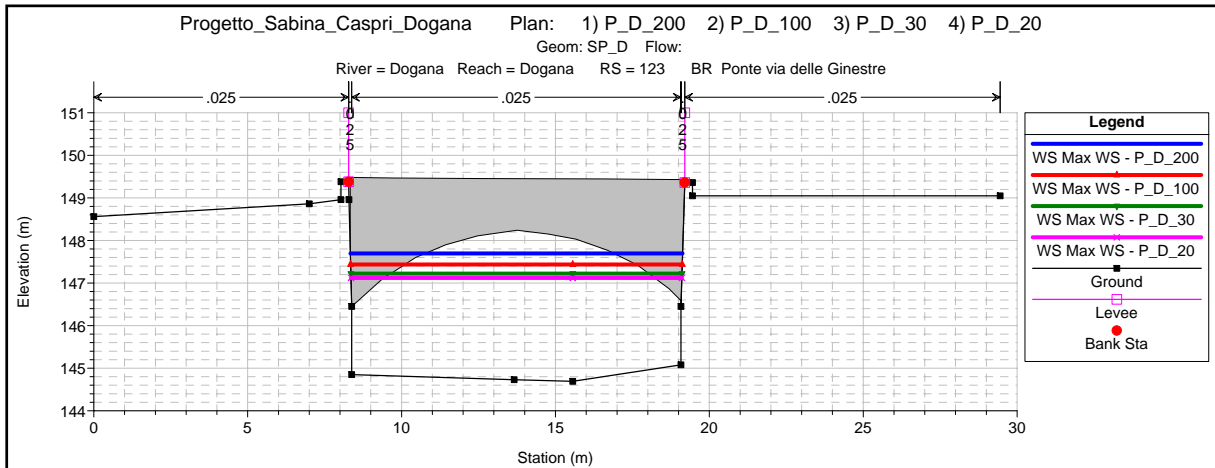


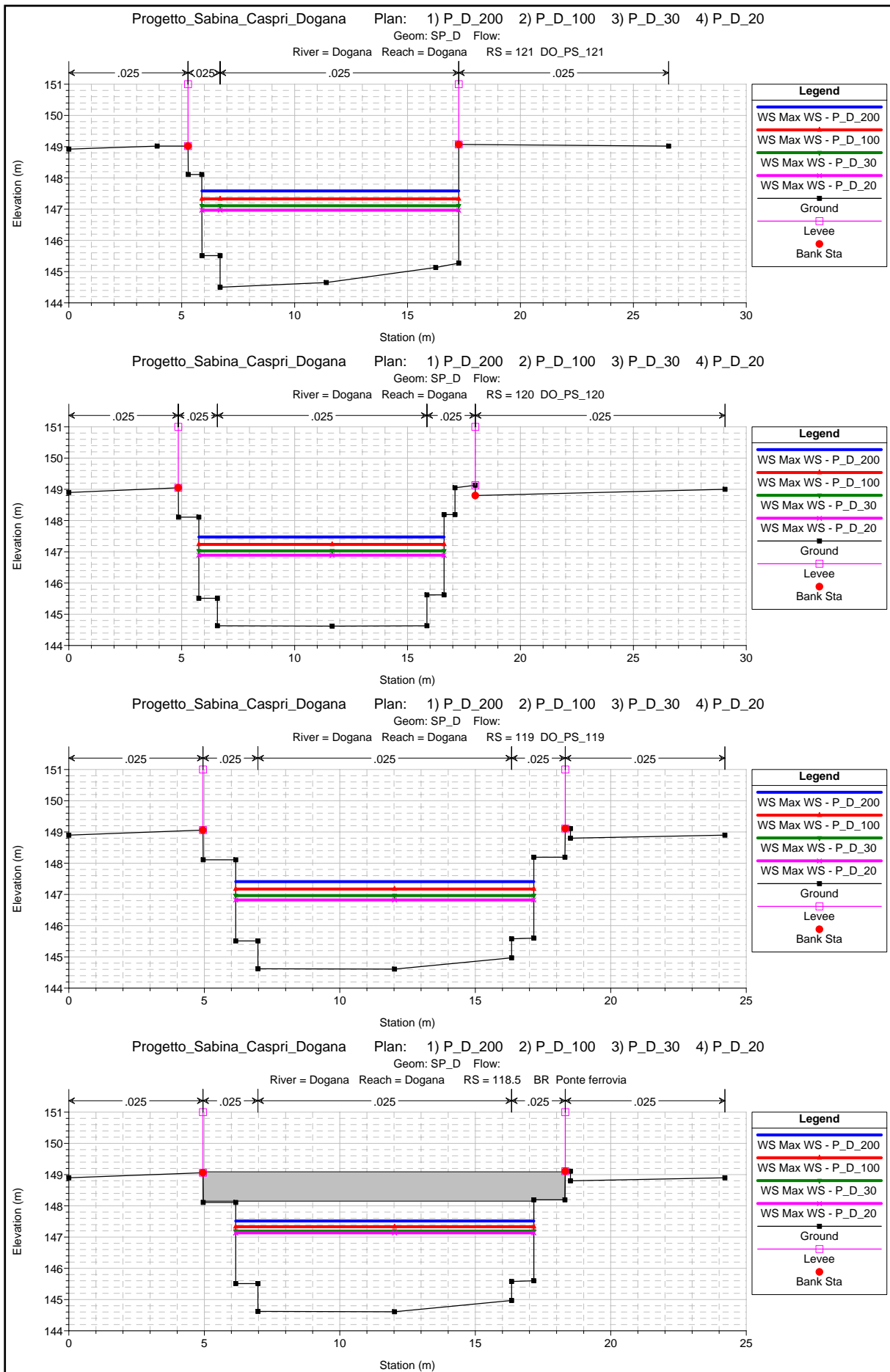




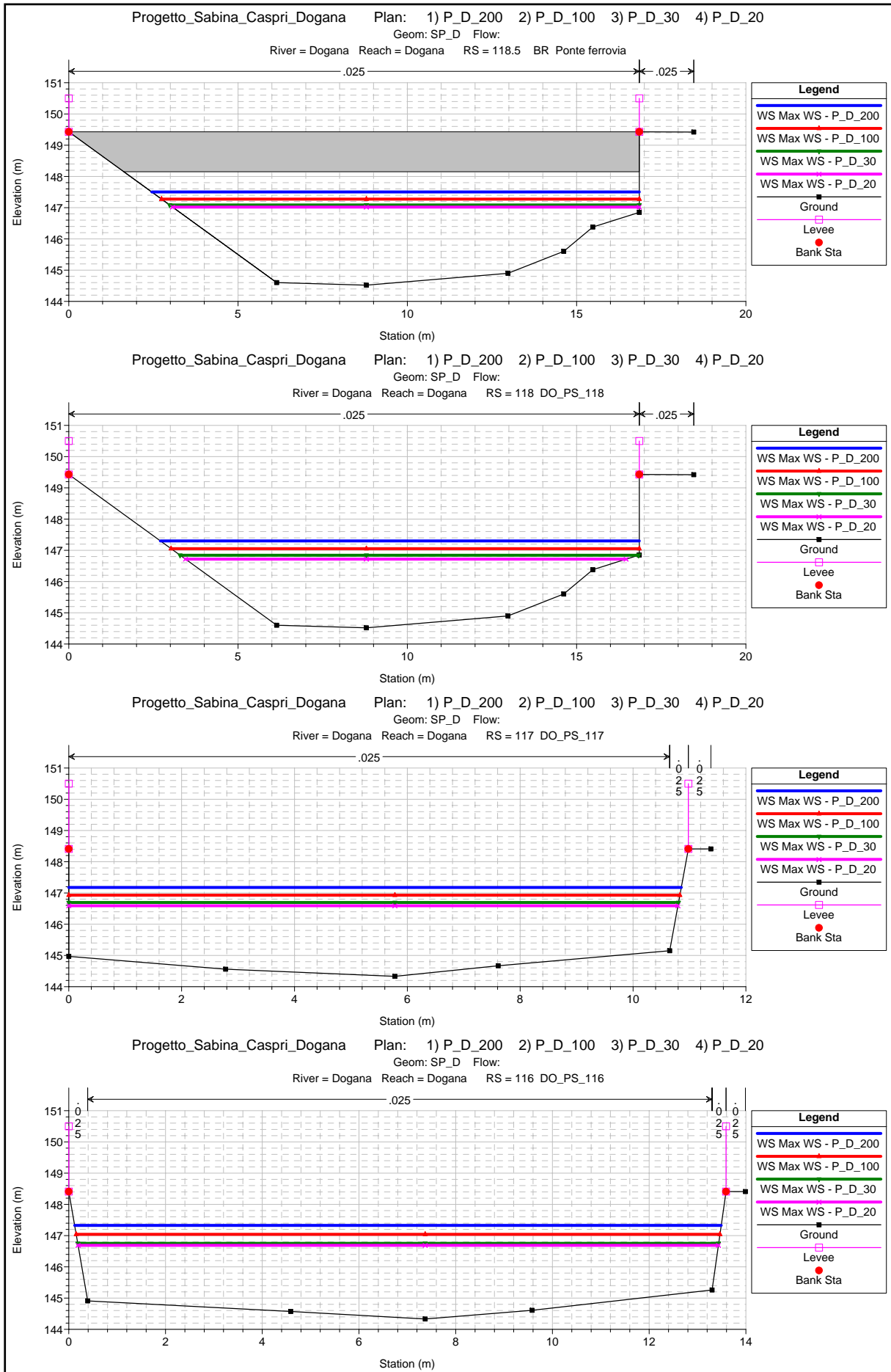


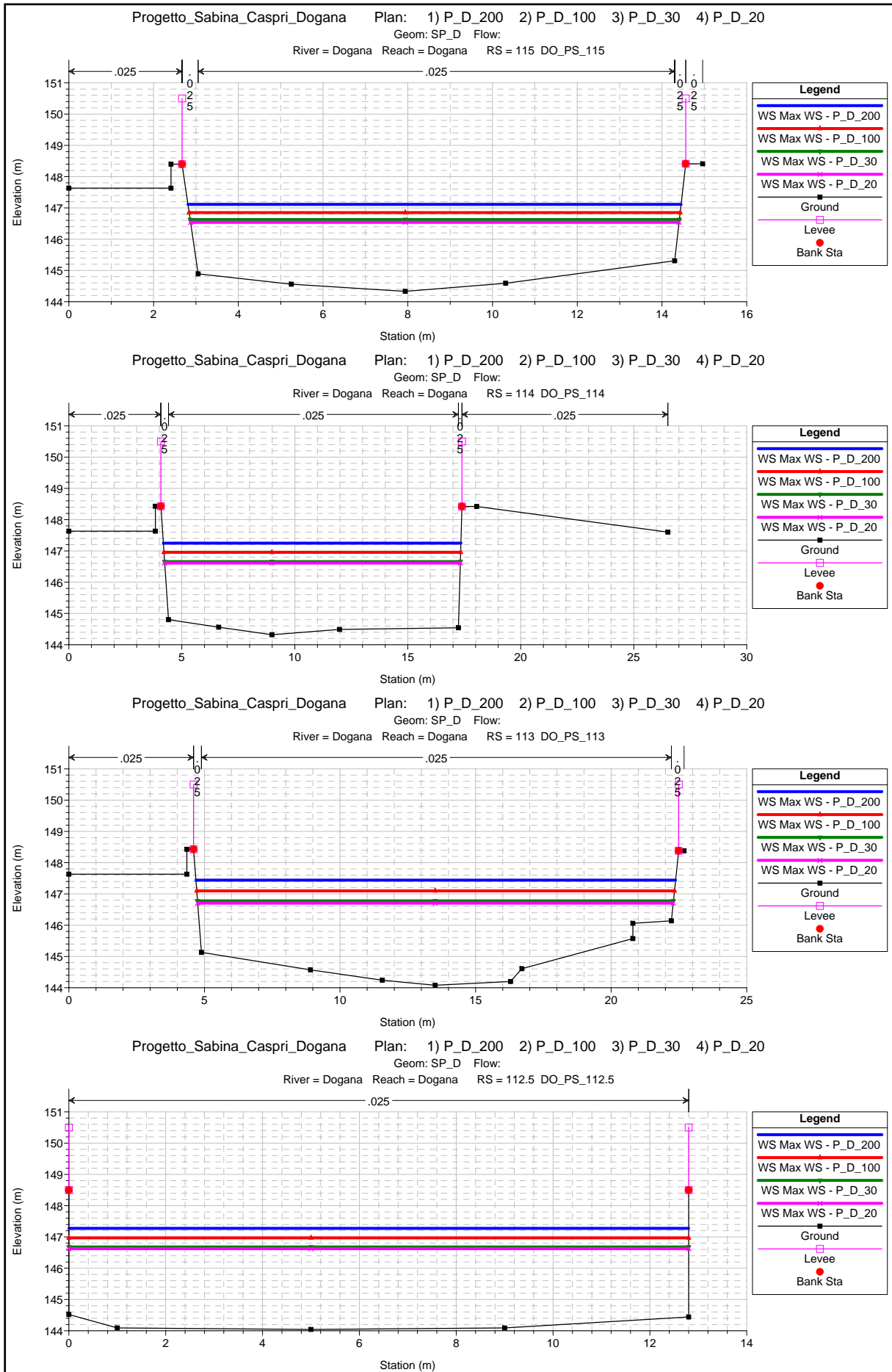


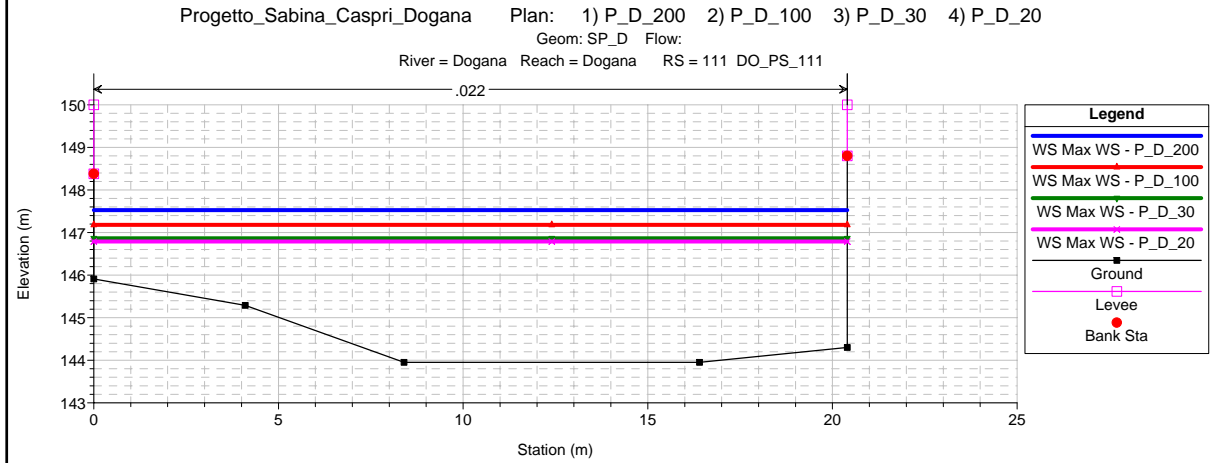
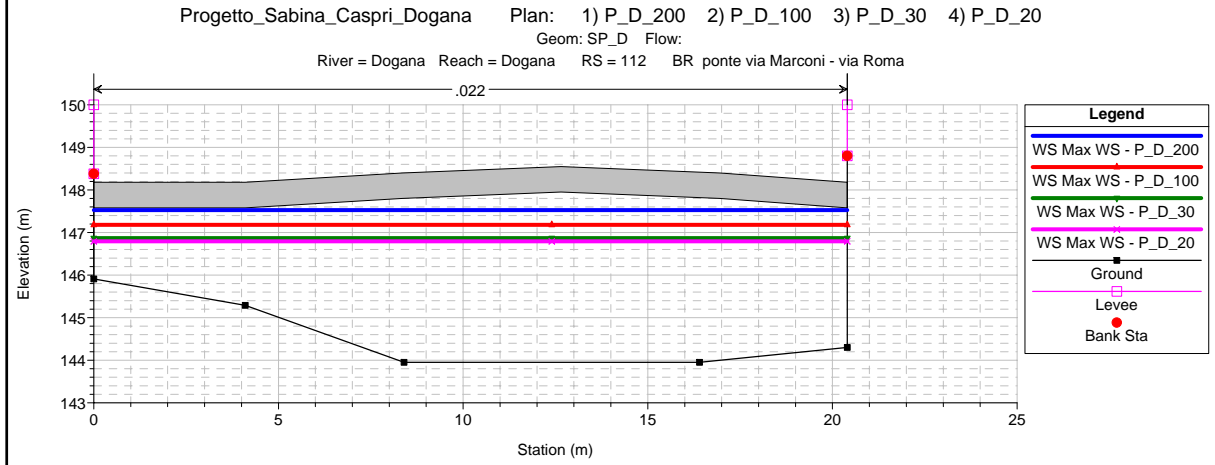
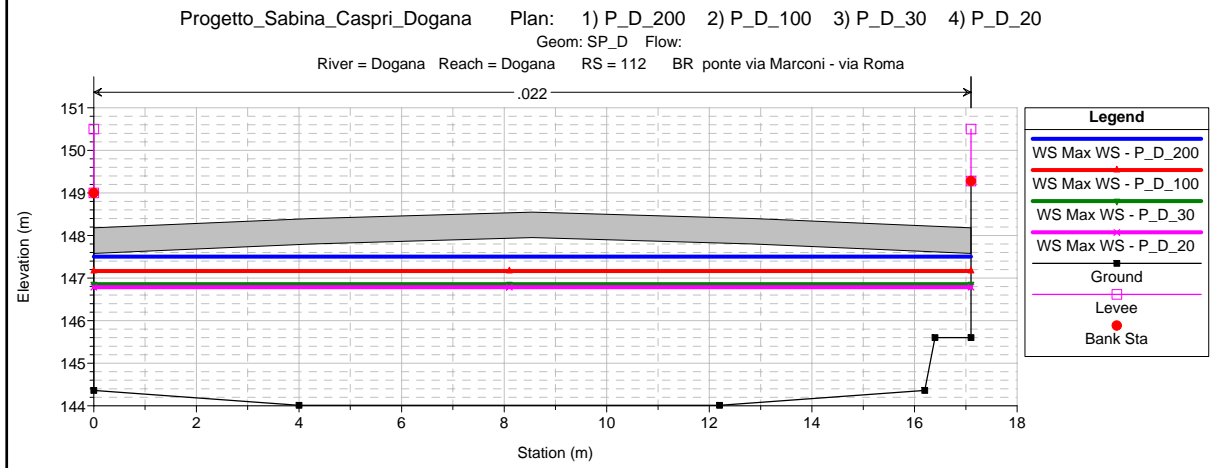
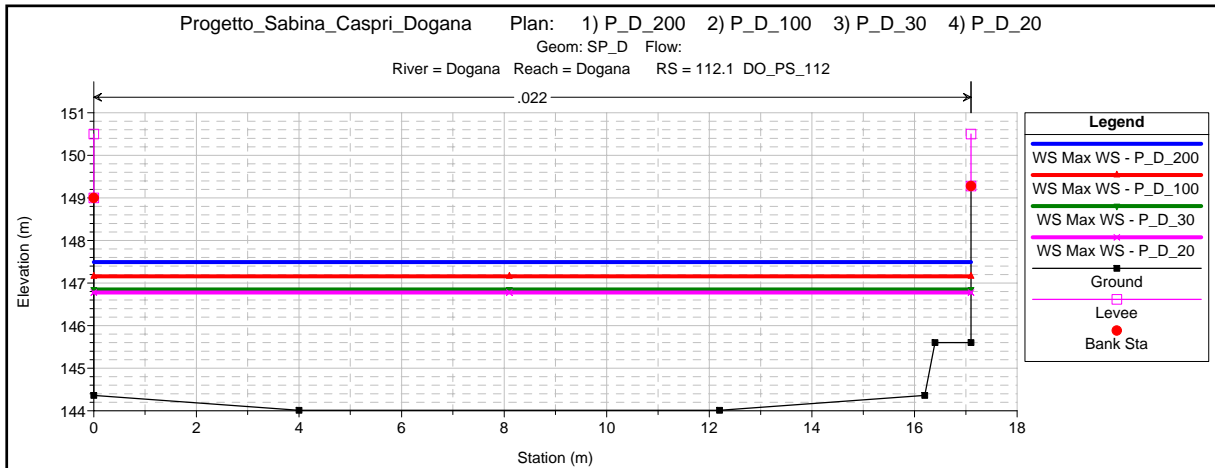


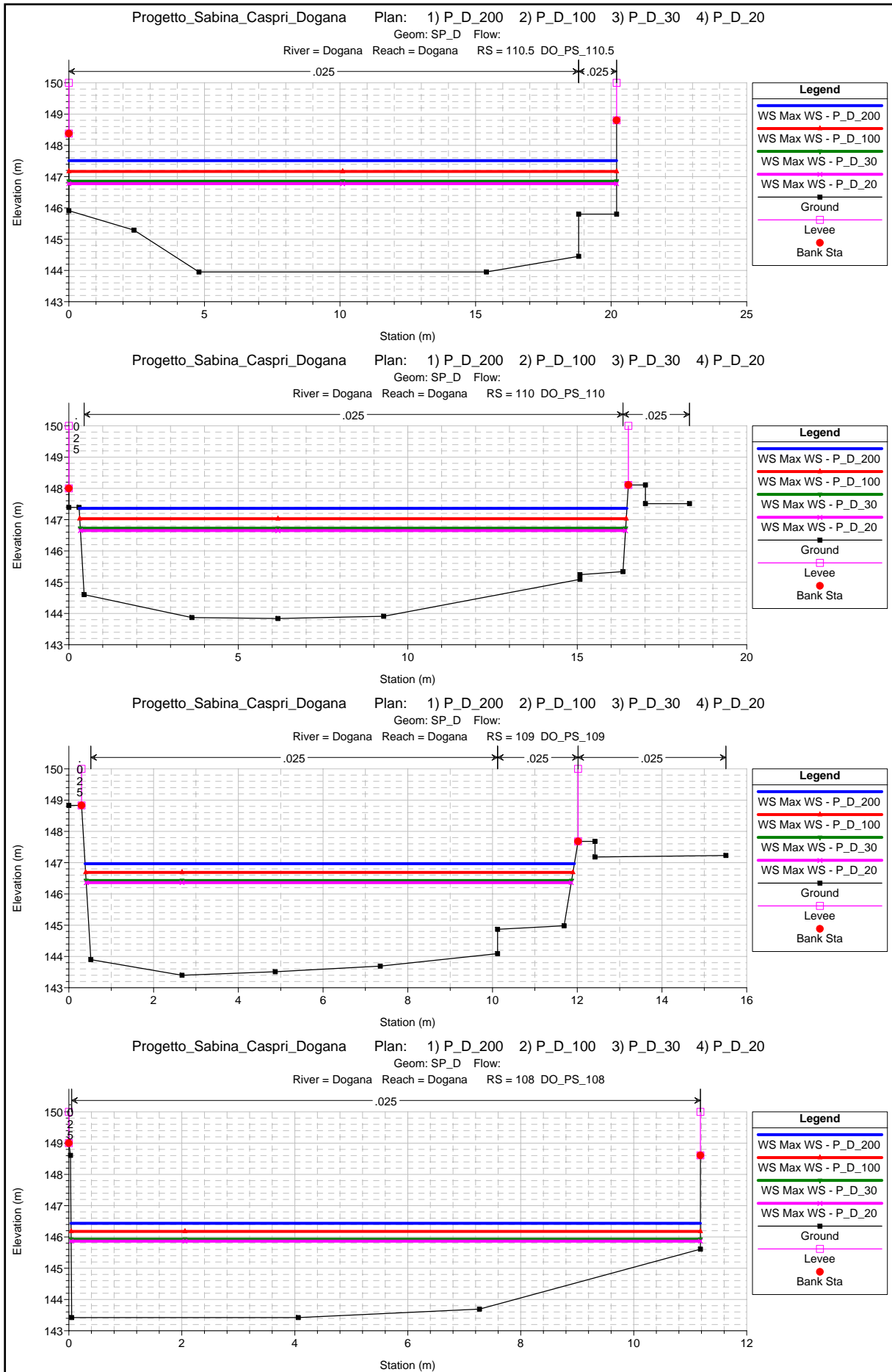


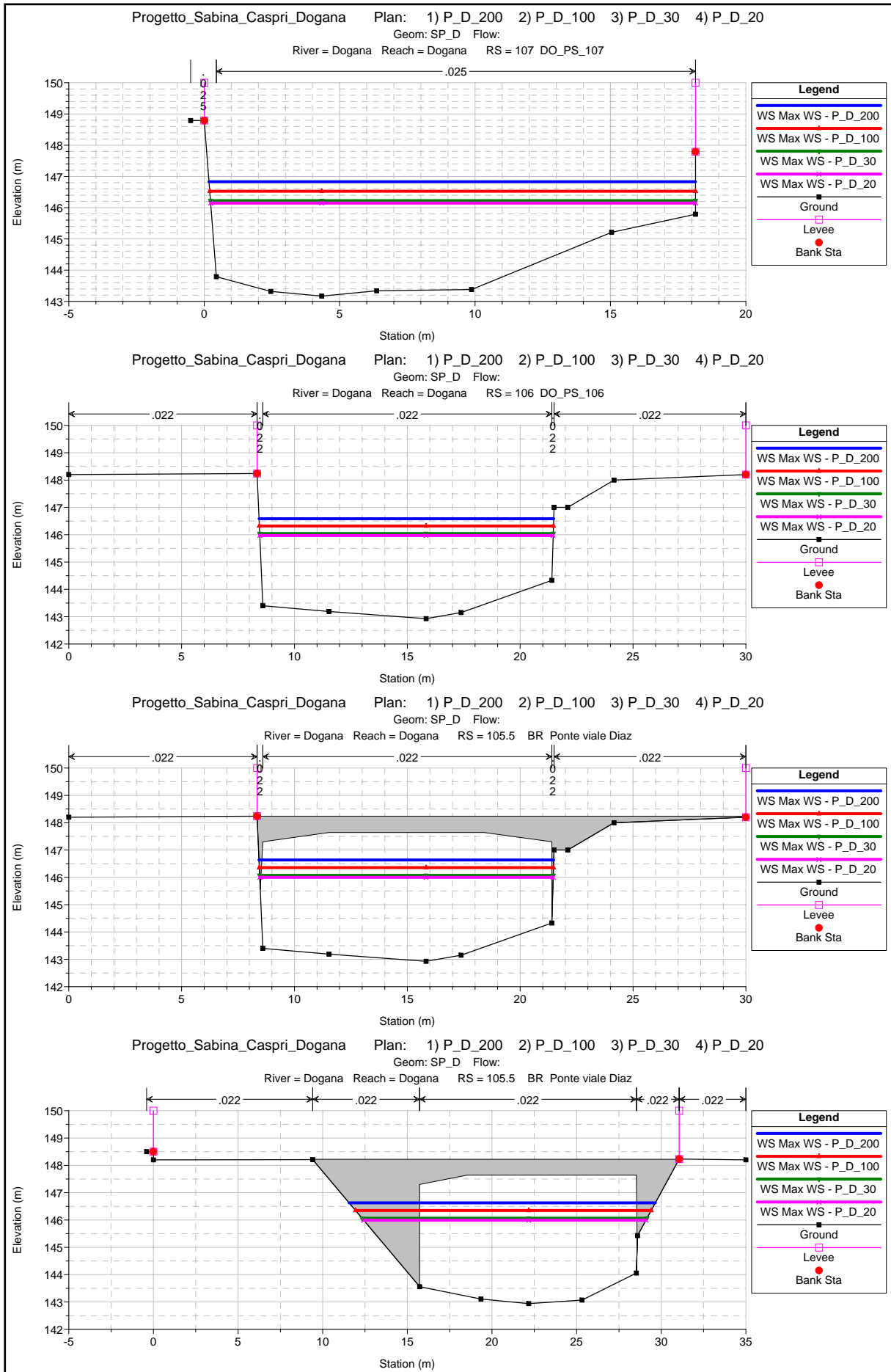


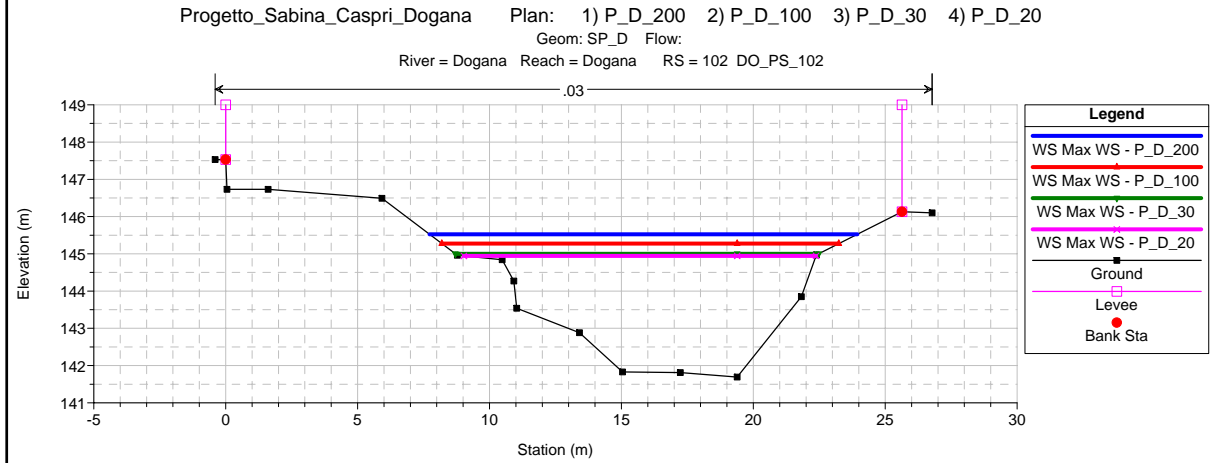
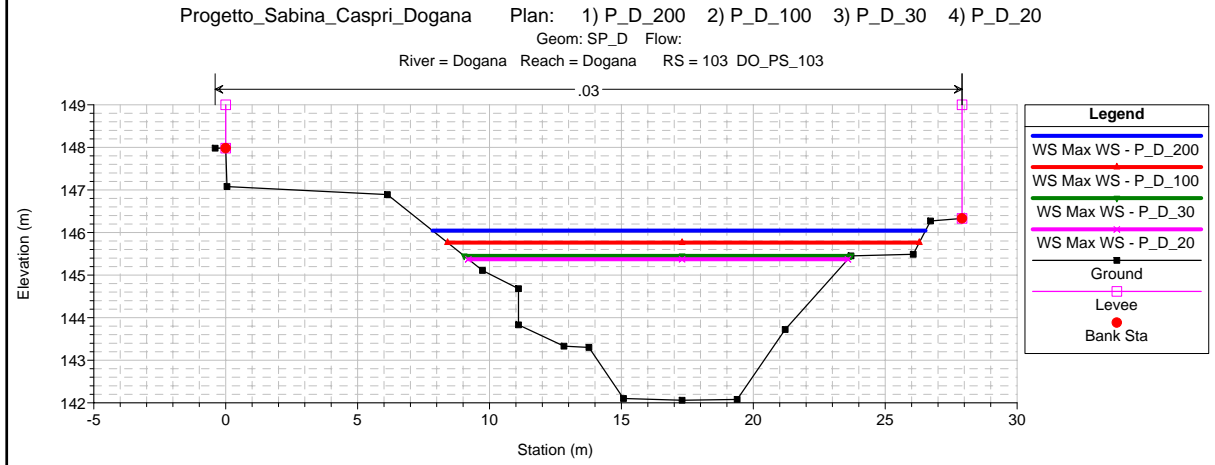
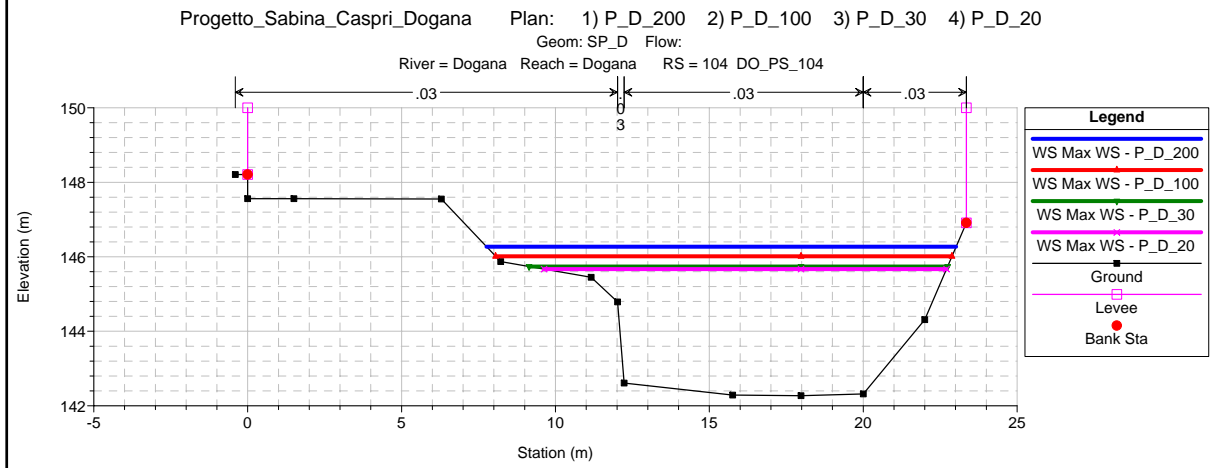
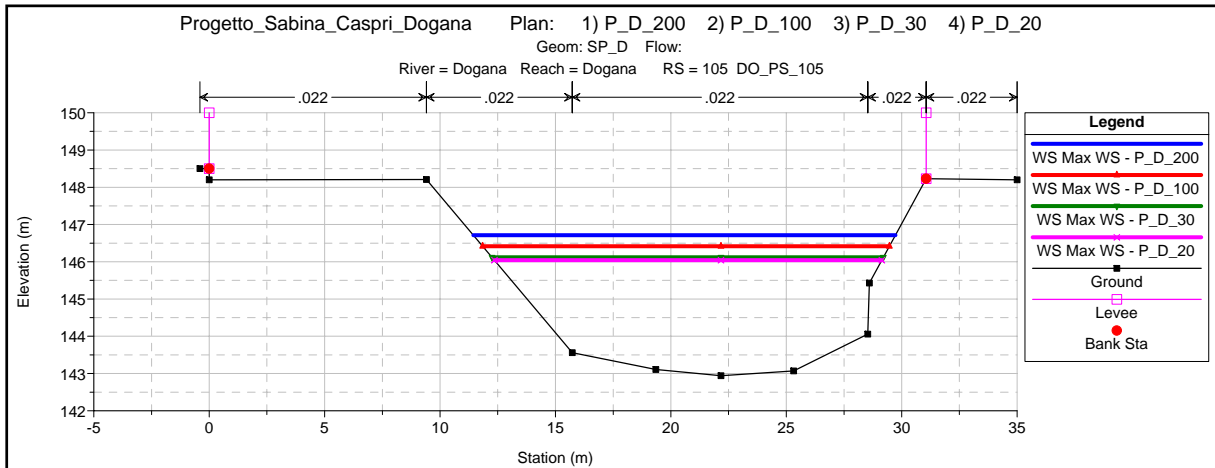


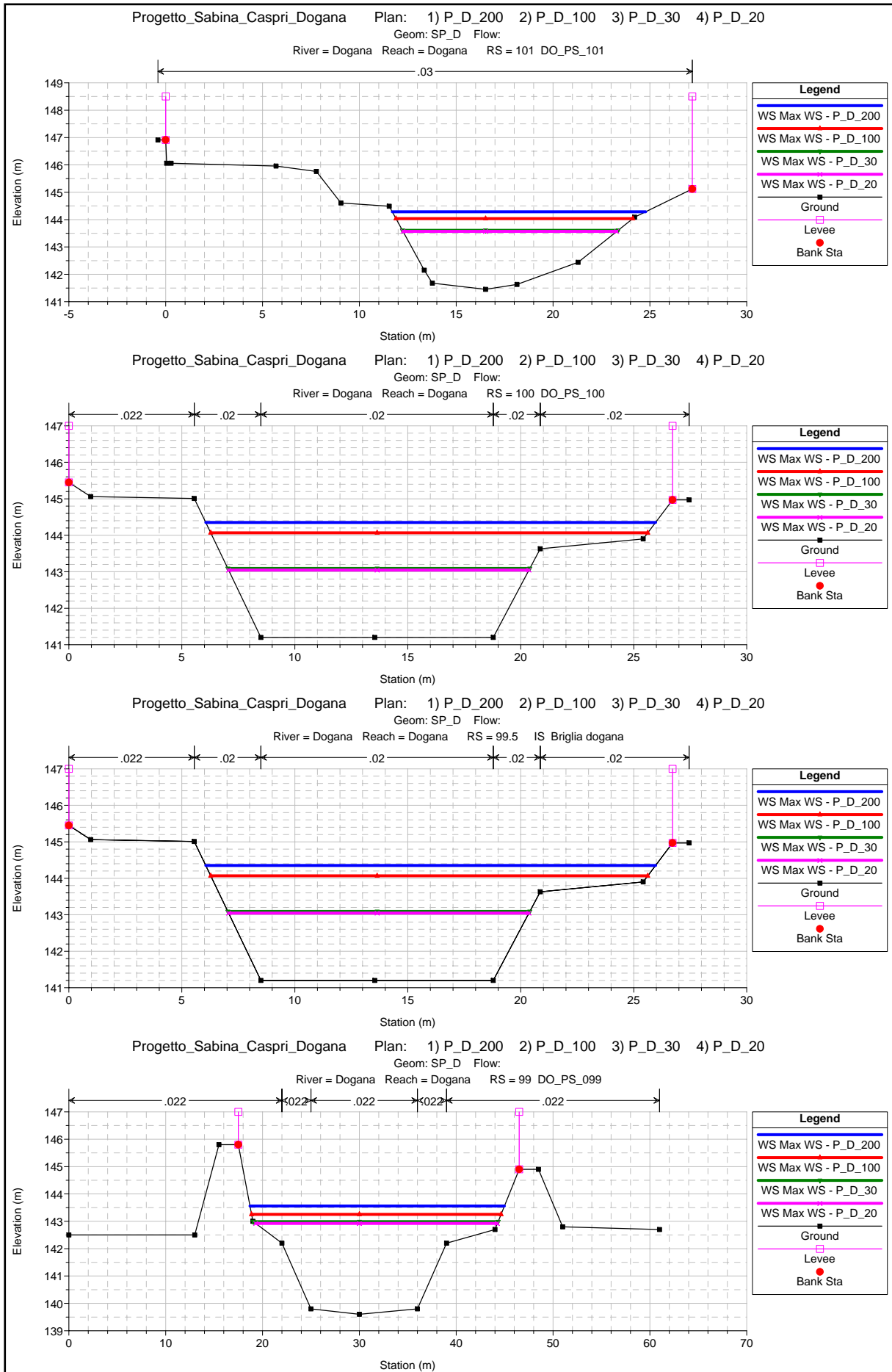


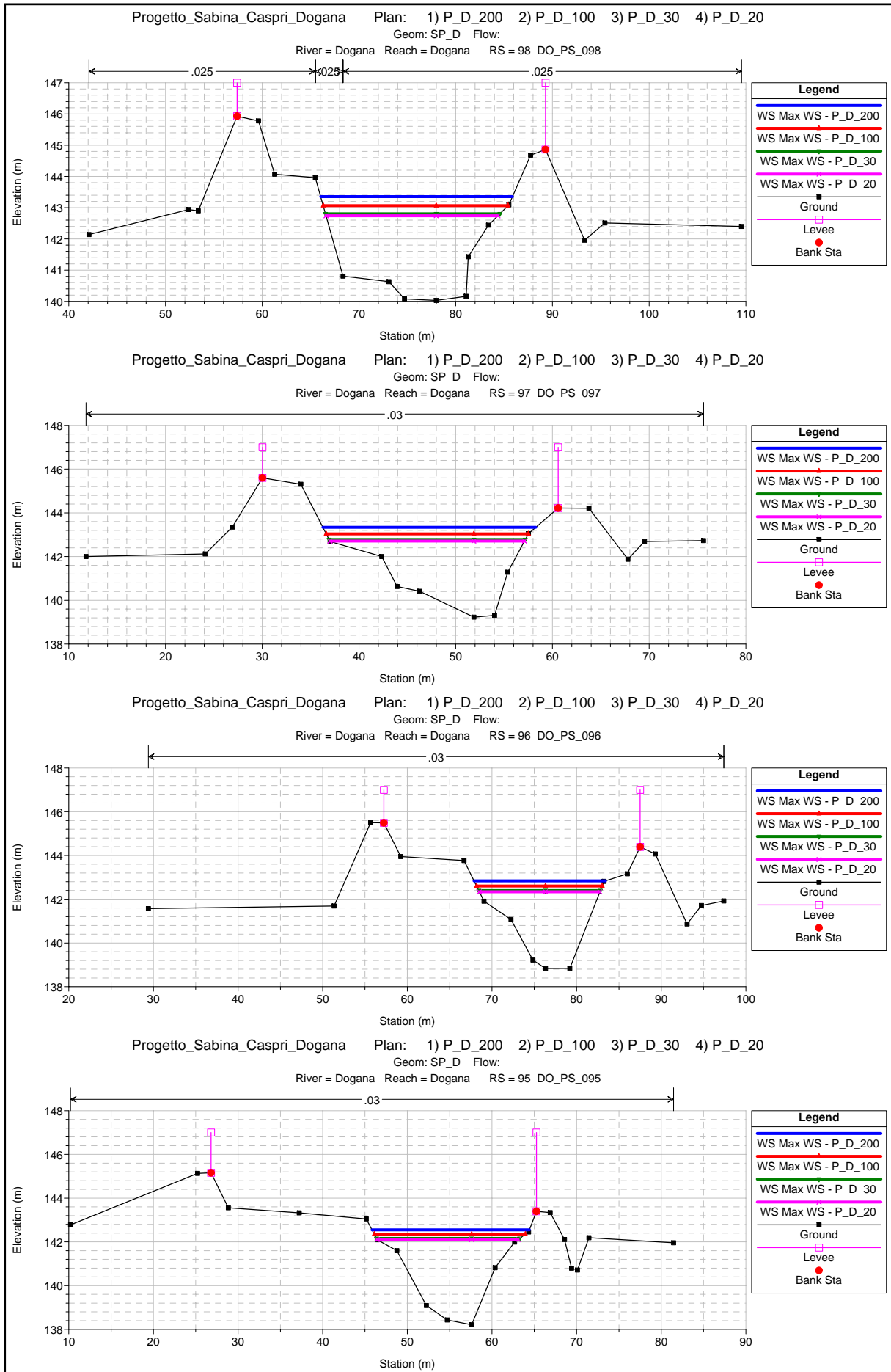




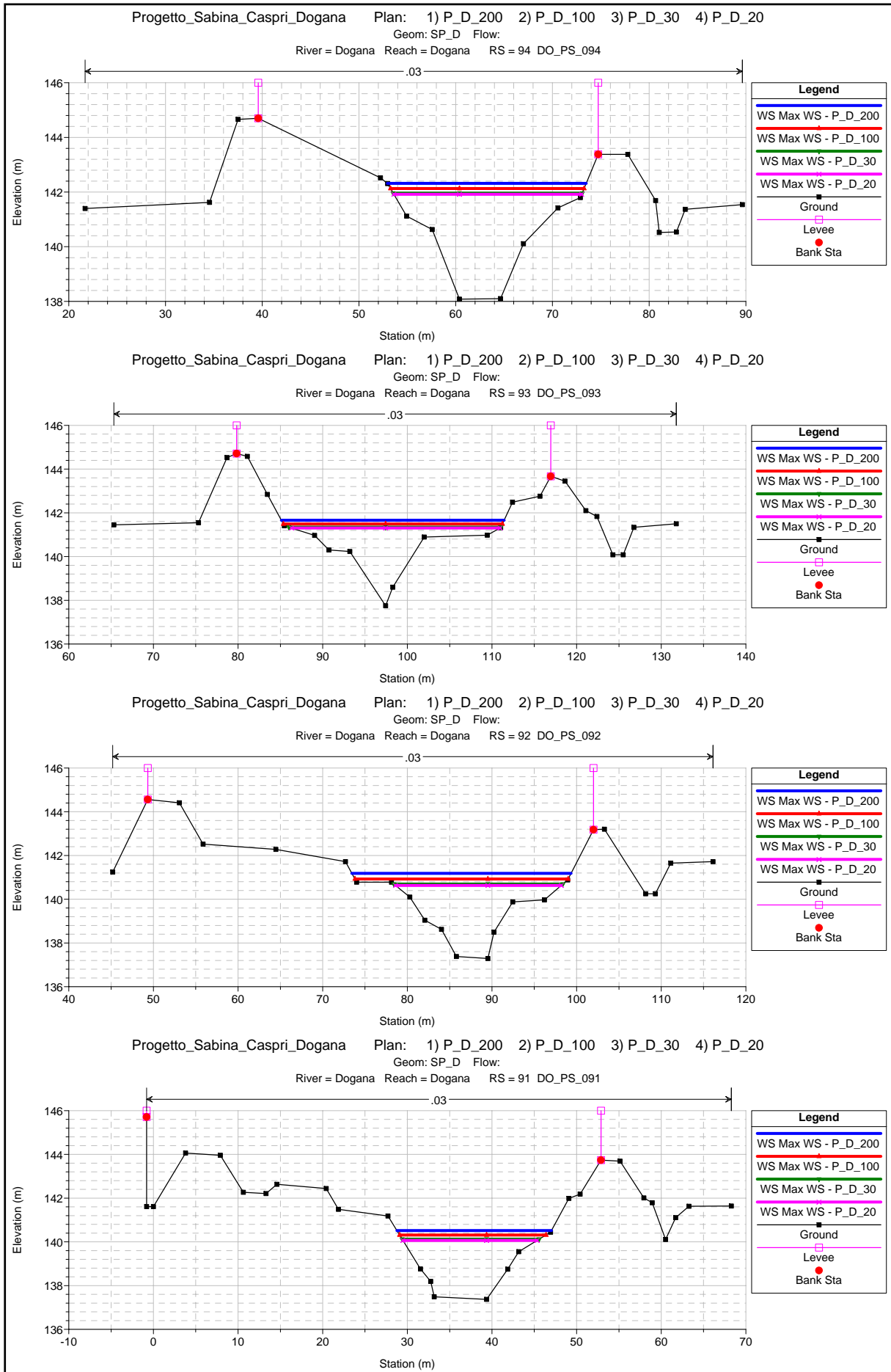


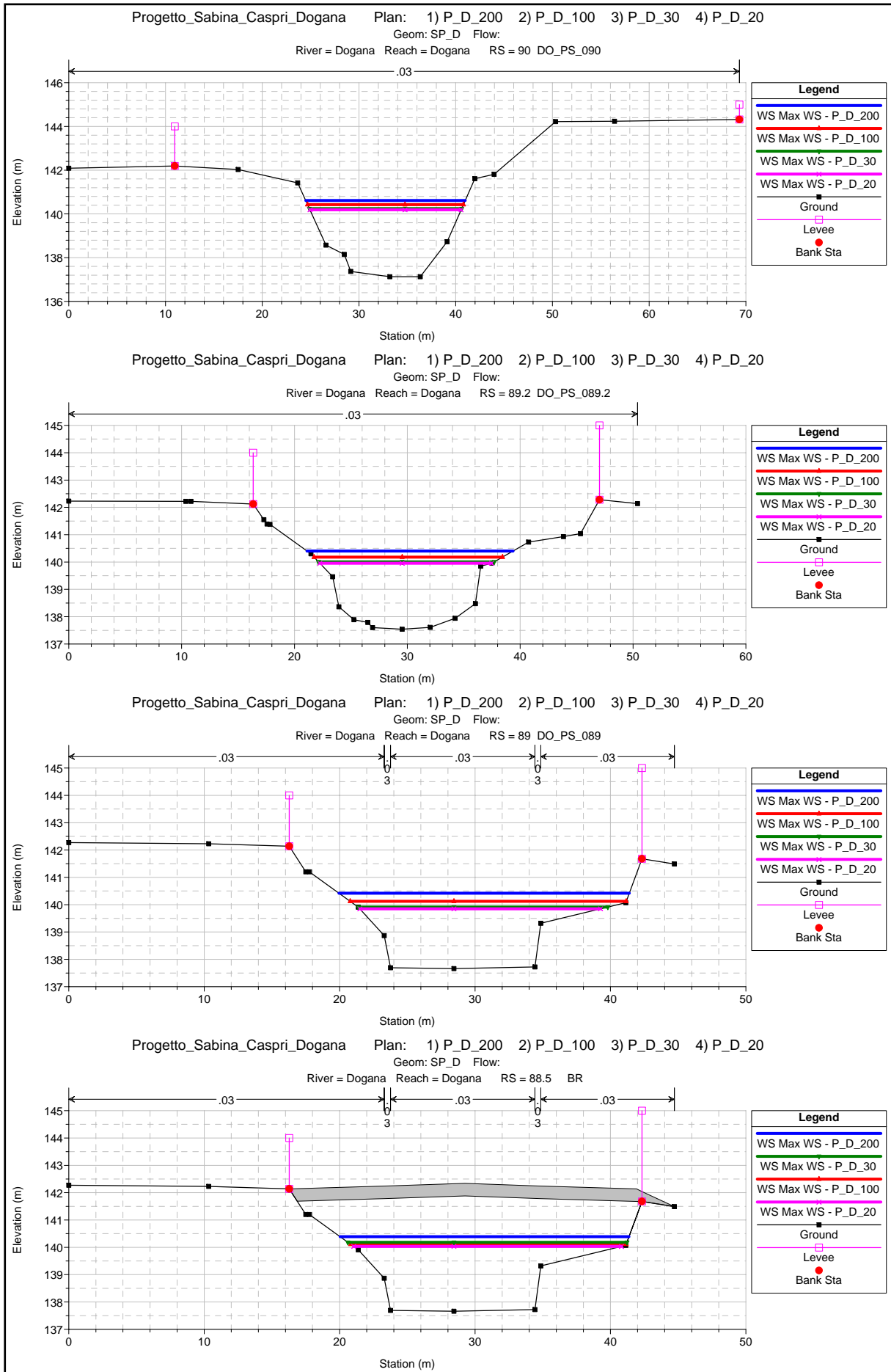


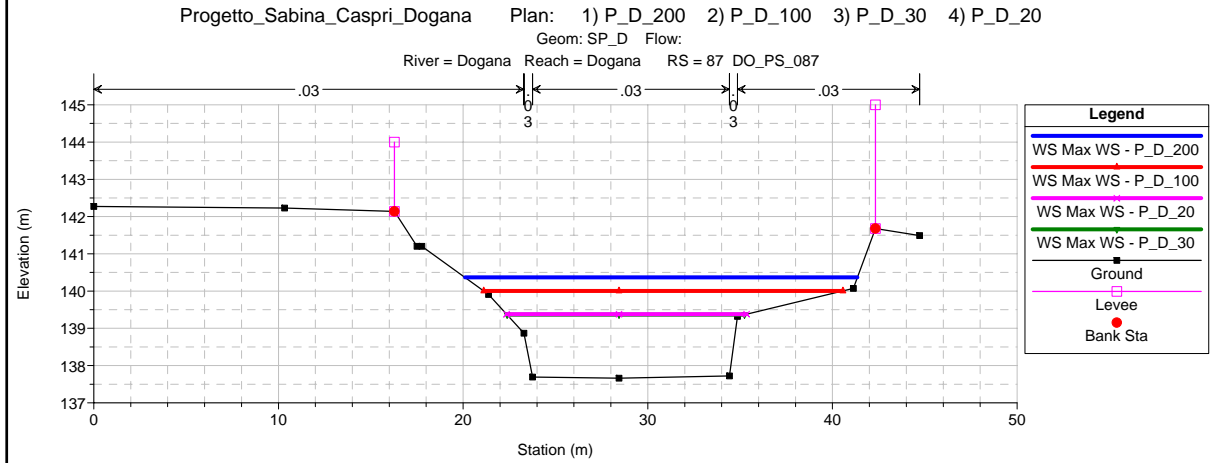
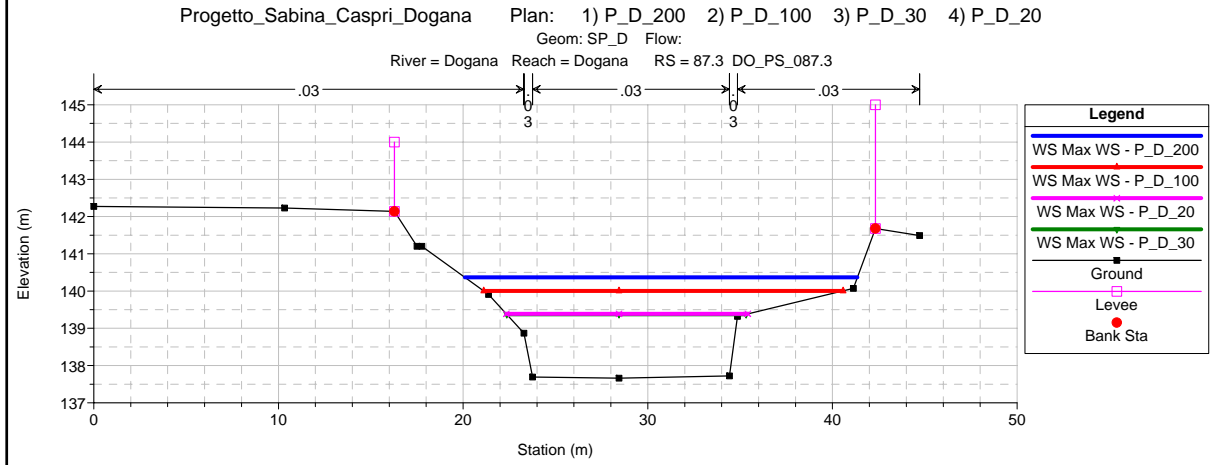
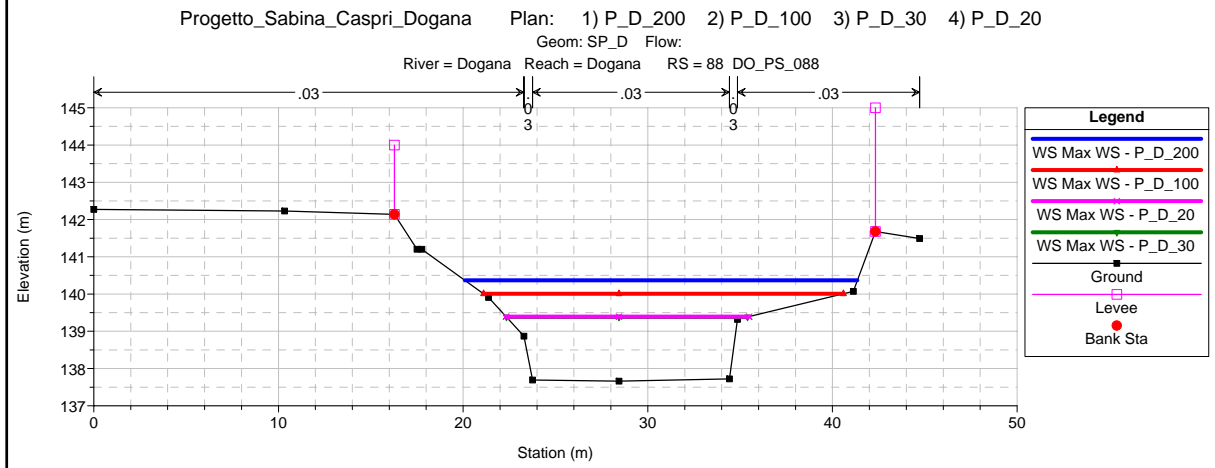
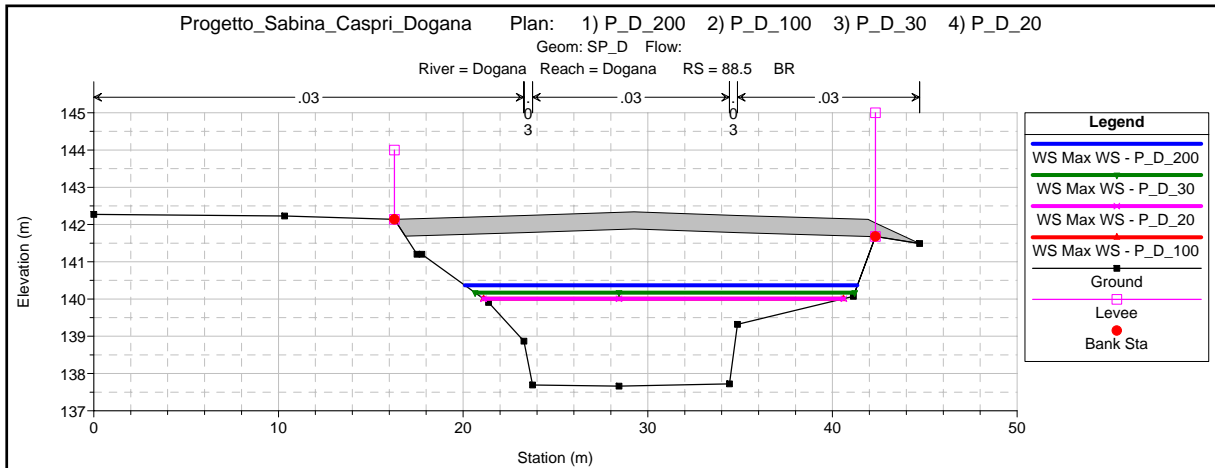








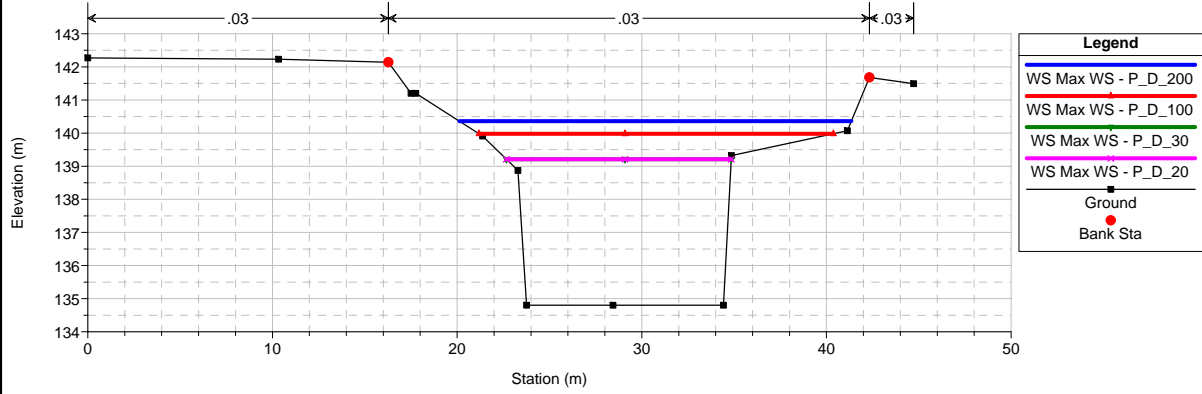




Progetto\_Sabina\_Caspri\_Dogana Plan: 1) P\_D\_200 2) P\_D\_100 3) P\_D\_30 4) P\_D\_20

Geom: SP\_D Flow:

River = Dogana Reach = Dogana RS = 80 Quota arno sez. 878



HEC-RAS River: Dogana Reach: Dogana Profile: Max WS

Reach	River Sta	Profile	Plan	Q Total (m3/s)	Min Ch El (m)	W.S. Elev (m)	Crit W.S. (m)	E.G. Elev (m)	E.G. Slope (m/m)	Vel Chnl (m/s)	Flow Area (m2)	Top Width (m)	Froude # Chl
Dogana	146.7	Max WS	P_D_200	124.84	147.78	150.88		151.52	0.007416	3.54	35.26	17.83	0.80
Dogana	146.7	Max WS	P_D_100	105.36	147.78	150.55		151.20	0.009249	3.59	29.36	17.56	0.89
Dogana	146.7	Max WS	P_D_30	89.55	147.78	150.30	150.25	150.95	0.010878	3.57	25.08	17.36	0.95
Dogana	146.7	Max WS	P_D_20	85.82	147.78	150.25	150.21	150.89	0.011213	3.55	24.16	17.31	0.96
Dogana	146.6	Max WS	P_D_200	124.84	147.87	150.74		151.50	0.007899	3.86	32.35	14.04	0.81
Dogana	146.6	Max WS	P_D_100	105.36	147.87	150.49		151.17	0.007887	3.65	28.87	13.90	0.81
Dogana	146.6	Max WS	P_D_30	89.55	147.87	150.27		150.88	0.007921	3.46	25.86	13.78	0.81
Dogana	146.6	Max WS	P_D_20	85.82	147.87	150.22		150.81	0.007930	3.42	25.13	13.75	0.81
Dogana	146.5	Max WS	P_D_200	124.84	147.86	150.68	150.81	151.91	0.015053	4.92	25.37	12.34	1.10
Dogana	146.5	Max WS	P_D_100	105.36	147.86	150.43	150.57	151.57	0.015724	4.72	22.30	12.20	1.12
Dogana	146.5	Max WS	P_D_30	89.55	147.86	150.21	150.36	151.27	0.016633	4.56	19.63	12.07	1.14
Dogana	146.5	Max WS	P_D_20	85.82	147.86	150.16	150.31	151.20	0.016908	4.52	18.98	12.04	1.15
Dogana	146	Max WS	P_D_200	124.83	147.99	150.63	150.78	151.97	0.006428	5.14	24.30	11.03	1.10
Dogana	146	Max WS	P_D_100	105.36	147.99	150.37	150.53	151.59	0.006539	4.90	21.52	10.94	1.11
Dogana	146	Max WS	P_D_30	89.55	147.99	150.15	150.30	151.27	0.006734	4.69	19.10	10.87	1.13
Dogana	146	Max WS	P_D_20	85.82	147.99	150.10	150.25	151.19	0.006795	4.64	18.51	10.85	1.13
Dogana	145.5		Bridge										
Dogana	145	Max WS	P_D_200	124.83	147.89	150.62	150.57	151.76	0.005223	4.73	26.39	10.86	0.97
Dogana	145	Max WS	P_D_100	105.36	147.89	150.35	150.31	151.37	0.005222	4.48	23.50	10.82	0.97
Dogana	145	Max WS	P_D_30	89.55	147.89	150.12	150.09	151.04	0.005224	4.26	21.04	10.79	0.97
Dogana	145	Max WS	P_D_20	85.82	147.89	150.07	150.03	150.96	0.005228	4.20	20.45	10.78	0.97
Dogana	144.5	Max WS	P_D_200	124.81	147.88	150.75		151.34	0.002934	3.40	36.72	13.89	0.67
Dogana	144.5	Max WS	P_D_100	105.35	147.88	150.41		150.96	0.003125	3.28	32.07	13.81	0.69
Dogana	144.5	Max WS	P_D_30	89.52	147.88	150.12		150.64	0.003363	3.19	28.08	13.75	0.71
Dogana	144.5	Max WS	P_D_20	85.79	147.88	150.05		150.56	0.003439	3.17	27.10	13.74	0.72
Dogana	143.5	Max WS	P_D_200	124.79	147.77	150.82		151.28	0.002052	3.01	41.40	14.08	0.56
Dogana	143.5	Max WS	P_D_100	105.35	147.77	150.49		150.91	0.002086	2.87	36.70	14.07	0.57
Dogana	143.5	Max WS	P_D_30	89.52	147.77	150.20		150.58	0.002137	2.74	32.63	14.06	0.57
Dogana	143.5	Max WS	P_D_20	85.80	147.77	150.13		150.50	0.002155	2.71	31.62	14.06	0.58

HEC-RAS River: Dogana Reach: Dogana Profile: Max WS (Continued)

Reach	River Sta	Profile	Plan	Q Total (m3/s)	Min Ch El (m)	W.S. Elev (m)	Crit W.S. (m)	E.G. Elev (m)	E.G. Slope (m/m)	Vel Chnl (m/s)	Flow Area (m2)	Top Width (m)	Froude # Chl
Dogana	143	Max WS	P_D_200	124.75	147.46	150.65		151.24	0.002652	3.40	36.74	12.23	0.63
Dogana	143	Max WS	P_D_100	105.35	147.46	150.34		150.86	0.002592	3.20	32.94	12.20	0.62
Dogana	143	Max WS	P_D_30	89.52	147.46	150.07		150.53	0.002539	3.02	29.68	12.18	0.62
Dogana	143	Max WS	P_D_20	85.79	147.46	150.00		150.45	0.002528	2.97	28.87	12.17	0.62
Dogana	142	Max WS	P_D_200	124.75	147.31	150.67		151.14	0.001958	3.03	41.12	12.96	0.54
Dogana	142	Max WS	P_D_100	105.34	147.31	150.35		150.76	0.001896	2.85	36.98	12.96	0.54
Dogana	142	Max WS	P_D_30	89.52	147.31	150.07		150.44	0.001841	2.68	33.41	12.96	0.53
Dogana	142	Max WS	P_D_20	85.80	147.31	150.00		150.36	0.001829	2.64	32.53	12.96	0.53
Dogana	141	Max WS	P_D_200	124.73	147.20	150.38		151.03	0.003048	3.58	34.89	11.20	0.65
Dogana	141	Max WS	P_D_100	105.33	147.20	150.10		150.66	0.002847	3.32	31.75	11.19	0.63
Dogana	141	Max WS	P_D_30	89.52	147.20	149.85		150.34	0.002664	3.08	29.02	11.19	0.61
Dogana	141	Max WS	P_D_20	85.79	147.20	149.79		150.26	0.002621	3.03	28.34	11.19	0.61
Dogana	140	Max WS	P_D_200	124.70	146.78	150.16		150.74	0.002592	3.38	36.93	11.84	0.61
Dogana	140	Max WS	P_D_100	105.33	146.78	149.87		150.38	0.002432	3.14	33.57	11.83	0.59
Dogana	140	Max WS	P_D_30	89.52	146.78	149.63		150.06	0.002282	2.92	30.67	11.82	0.58
Dogana	140	Max WS	P_D_20	85.79	146.78	149.57		149.99	0.002249	2.87	29.93	11.81	0.57
Dogana	139	Max WS	P_D_200	124.69	146.89	149.76		150.55	0.004002	3.92	31.82	11.48	0.75
Dogana	139	Max WS	P_D_100	105.32	146.89	149.50		150.18	0.003822	3.66	28.78	11.47	0.74
Dogana	139	Max WS	P_D_30	89.52	146.89	149.27		149.87	0.003656	3.42	26.15	11.47	0.72
Dogana	139	Max WS	P_D_20	85.79	146.89	149.21		149.79	0.003631	3.37	25.46	11.47	0.72
Dogana	138	Max WS	P_D_200	124.69	146.50	149.50		150.33	0.004152	4.02	30.99	11.29	0.78
Dogana	138	Max WS	P_D_100	105.32	146.50	149.25		149.96	0.003934	3.75	28.09	11.29	0.76
Dogana	138	Max WS	P_D_30	89.52	146.50	149.02		149.65	0.003736	3.50	25.58	11.28	0.74
Dogana	138	Max WS	P_D_20	85.79	146.50	148.96		149.57	0.003713	3.45	24.89	11.28	0.74
Dogana	137	Max WS	P_D_200	124.66	146.48	149.28		150.10	0.004278	4.01	31.07	12.03	0.80
Dogana	137	Max WS	P_D_100	105.31	146.48	149.02		149.75	0.004155	3.77	27.97	12.02	0.79
Dogana	137	Max WS	P_D_30	89.51	146.48	148.80		149.44	0.004026	3.54	25.32	11.98	0.78
Dogana	137	Max WS	P_D_20	85.78	146.48	148.74		149.36	0.004054	3.49	24.54	11.96	0.78
Dogana	136	Max WS	P_D_200	124.65	146.22	149.08		149.86	0.004164	3.93	31.74	12.44	0.79
Dogana	136	Max WS	P_D_100	105.31	146.22	148.82		149.52	0.004054	3.69	28.56	12.40	0.78

HEC-RAS River: Dogana Reach: Dogana Profile: Max WS (Continued)

Reach	River Sta	Profile	Plan	Q Total (m3/s)	Min Ch El (m)	W.S. Elev (m)	Crit W.S. (m)	E.G. Elev (m)	E.G. Slope (m/m)	Vel Chnl (m/s)	Flow Area (m2)	Top Width (m)	Froude # Chl
Dogana	136	Max WS	P_D_30	89.51	146.22	148.61		149.22	0.003903	3.45	25.93	12.35	0.76
Dogana	136	Max WS	P_D_20	85.78	146.22	148.54		149.14	0.003970	3.42	25.05	12.33	0.77
Dogana	135	Max WS	P_D_200	124.62	146.07	148.85		149.61	0.004100	3.88	32.14	13.02	0.79
Dogana	135	Max WS	P_D_100	105.30	146.07	148.58		149.27	0.004127	3.68	28.62	12.97	0.79
Dogana	135	Max WS	P_D_30	89.51	146.07	148.36		148.97	0.004065	3.47	25.80	12.90	0.78
Dogana	135	Max WS	P_D_20	85.78	146.07	148.27		148.89	0.004290	3.48	24.64	12.87	0.80
Dogana	131	Max WS	P_D_200	124.58	145.77	148.42		149.26	0.004653	4.05	30.79	12.47	0.82
Dogana	131	Max WS	P_D_100	105.17	145.77	148.16		148.91	0.004609	3.82	27.55	12.44	0.82
Dogana	131	Max WS	P_D_30	89.51	145.77	147.97		148.62	0.004394	3.56	25.13	12.42	0.80
Dogana	131	Max WS	P_D_20	85.76	145.77	147.82		148.51	0.005050	3.68	23.32	12.41	0.86
Dogana	130	Max WS	P_D_200	124.57	145.53	148.39		149.11	0.003752	3.75	33.25	12.63	0.74
Dogana	130	Max WS	P_D_100	105.09	145.53	148.13		148.76	0.003624	3.51	29.98	12.61	0.73
Dogana	130	Max WS	P_D_30	89.51	145.53	147.94		148.48	0.003394	3.25	27.51	12.59	0.70
Dogana	130	Max WS	P_D_20	82.73	145.53	147.78		148.32	0.003599	3.23	25.59	12.57	0.72
Dogana	129	Max WS	P_D_200	124.55	145.47	148.25		148.99	0.003855	3.81	32.71	12.67	0.76
Dogana	129	Max WS	P_D_100	104.93	145.47	148.00		148.64	0.003691	3.55	29.55	12.63	0.74
Dogana	129	Max WS	P_D_30	89.51	145.47	147.81		148.36	0.003465	3.30	27.12	12.59	0.72
Dogana	129	Max WS	P_D_20	82.50	145.47	147.66		148.20	0.003656	3.27	25.22	12.57	0.74
Dogana	128	Max WS	P_D_200	124.52	145.37	148.05		148.86	0.004453	3.99	31.24	12.67	0.81
Dogana	128	Max WS	P_D_100	104.73	145.37	147.82		148.52	0.004261	3.71	28.21	12.63	0.79
Dogana	128	Max WS	P_D_30	89.50	145.37	147.62		148.24	0.004093	3.48	25.73	12.59	0.78
Dogana	128	Max WS	P_D_20	82.16	145.37	147.48		148.08	0.004259	3.43	23.99	12.56	0.79
Dogana	127	Max WS	P_D_200	124.41	145.50	147.86	147.78	148.86	0.006188	4.42	28.16	12.66	0.95
Dogana	127	Max WS	P_D_100	103.84	145.50	147.62		148.49	0.006128	4.15	25.04	12.61	0.94
Dogana	127	Max WS	P_D_30	89.51	145.50	147.41	147.35	148.22	0.006339	3.99	22.44	12.58	0.95
Dogana	127	Max WS	P_D_20	79.16	145.50	147.28	147.21	148.02	0.006238	3.80	20.81	12.55	0.94
Dogana	126	Max WS	P_D_200	124.38	145.27	147.84		148.69	0.004820	4.08	30.50	12.81	0.84
Dogana	126	Max WS	P_D_100	104.70	145.27	147.54		148.33	0.005090	3.92	26.68	12.76	0.87
Dogana	126	Max WS	P_D_30	89.51	145.27	147.33		148.04	0.005175	3.74	23.91	12.72	0.87
Dogana	126	Max WS	P_D_20	78.24	145.27	147.20		147.83	0.004872	3.51	22.31	12.69	0.84

HEC-RAS River: Dogana Reach: Dogana Profile: Max WS (Continued)

Reach	River Sta	Profile	Plan	Q Total (m3/s)	Min Ch El (m)	W.S. Elev (m)	Crit W.S. (m)	E.G. Elev (m)	E.G. Slope (m/m)	Vel Chnl (m/s)	Flow Area (m2)	Top Width (m)	Froude # Chl
Dogana	125.5	Max WS	P_D_200	124.38	145.29	147.83		148.69	0.004945	4.11	30.25	12.81	0.85
Dogana	125.5	Max WS	P_D_100	104.70	145.29	147.53		148.33	0.005236	3.96	26.43	12.75	0.88
Dogana	125.5	Max WS	P_D_30	89.50	145.29	147.32		148.04	0.005324	3.78	23.69	12.71	0.88
Dogana	125.5	Max WS	P_D_20	78.21	145.29	147.20		147.83	0.004969	3.53	22.17	12.69	0.85
Dogana	125	Max WS	P_D_200	124.68	144.25	148.15		148.59	0.001731	2.94	42.39	12.87	0.52
Dogana	125	Max WS	P_D_100	107.00	144.25	147.81		148.22	0.001742	2.82	38.01	12.81	0.52
Dogana	125	Max WS	P_D_30	89.52	144.25	147.53		147.87	0.001628	2.60	34.39	12.75	0.51
Dogana	125	Max WS	P_D_20	85.75	144.25	147.38		147.73	0.001771	2.64	32.44	12.72	0.53
Dogana	124	Max WS	P_D_200	124.37	144.72	147.94		148.56	0.002848	3.49	35.65	12.40	0.66
Dogana	124	Max WS	P_D_100	106.93	144.72	147.59		148.18	0.003056	3.41	31.34	12.28	0.68
Dogana	124	Max WS	P_D_30	89.52	144.72	147.31		147.84	0.002977	3.20	28.01	12.19	0.67
Dogana	124	Max WS	P_D_20	85.74	144.72	147.15		147.70	0.003411	3.30	25.97	12.13	0.72
Dogana	123.9	Max WS	P_D_200	124.37	144.69	147.79	147.21	148.56	0.003878	3.89	31.96	10.80	0.72
Dogana	123.9	Max WS	P_D_100	104.47	144.69	147.47	146.94	148.15	0.003788	3.66	28.54	10.78	0.72
Dogana	123.9	Max WS	P_D_30	89.52	144.69	147.22	146.73	147.83	0.003690	3.46	25.88	10.76	0.71
Dogana	123.9	Max WS	P_D_20	84.29	144.69	147.07	146.66	147.69	0.003973	3.48	24.22	10.75	0.74
Dogana	123		Bridge										
Dogana	122.9	Max WS	P_D_200	124.35	144.68	147.47		148.49	0.005743	4.48	27.75	10.84	0.89
Dogana	122.9	Max WS	P_D_100	104.42	144.68	147.22		148.10	0.005454	4.17	25.05	10.82	0.87
Dogana	122.9	Max WS	P_D_30	89.51	144.68	147.01		147.79	0.005273	3.92	22.81	10.80	0.86
Dogana	122.9	Max WS	P_D_20	85.74	144.68	146.87		147.69	0.005952	4.03	21.27	10.79	0.92
Dogana	122	Max WS	P_D_200	124.35	144.68	147.44		148.48	0.005880	4.52	27.53	10.84	0.90
Dogana	122	Max WS	P_D_100	104.41	144.68	147.19		148.10	0.005603	4.21	24.82	10.82	0.89
Dogana	122	Max WS	P_D_30	89.51	144.68	146.99		147.79	0.005433	3.96	22.58	10.80	0.87
Dogana	122	Max WS	P_D_20	85.74	144.68	146.85		147.69	0.006131	4.07	21.06	10.79	0.93
Dogana	121	Max WS	P_D_200	124.35	144.50	147.58		148.39	0.004301	3.97	31.31	11.38	0.76
Dogana	121	Max WS	P_D_100	104.40	144.50	147.33		148.02	0.004026	3.68	28.40	11.38	0.74
Dogana	121	Max WS	P_D_30	89.52	144.50	147.11		147.72	0.003875	3.45	25.91	11.38	0.73
Dogana	121	Max WS	P_D_20	84.22	144.50	146.97		147.58	0.004155	3.47	24.28	11.38	0.76



HEC-RAS River: Dogana Reach: Dogana Profile: Max WS (Continued)

Reach	River Sta	Profile	Plan	Q Total (m3/s)	Min Ch El (m)	W.S. Elev (m)	Crit W.S. (m)	E.G. Elev (m)	E.G. Slope (m/m)	Vel Chnl (m/s)	Flow Area (m2)	Top Width (m)	Froude # Chl
Dogana	120	Max WS	P_D_200	124.35	144.62	147.47		148.38	0.005173	4.22	29.44	10.86	0.82
Dogana	120	Max WS	P_D_100	104.35	144.62	147.24		148.00	0.004751	3.88	26.87	10.86	0.79
Dogana	120	Max WS	P_D_30	89.52	144.62	147.03		147.70	0.004518	3.64	24.62	10.86	0.77
Dogana	120	Max WS	P_D_20	83.00	144.62	146.89		147.55	0.004669	3.59	23.13	10.86	0.78
Dogana	119	Max WS	P_D_200	124.34	144.61	147.41	147.17	148.38	0.005634	4.37	28.47	11.00	0.87
Dogana	119	Max WS	P_D_100	104.32	144.61	147.17	146.91	148.00	0.005261	4.04	25.85	11.00	0.84
Dogana	119	Max WS	P_D_30	89.52	144.61	146.96	146.71	147.70	0.005101	3.80	23.54	11.00	0.83
Dogana	119	Max WS	P_D_20	82.93	144.61	146.82	146.62	147.55	0.005344	3.77	22.01	11.00	0.85
Dogana	118.5			Bridge									
Dogana	118	Max WS	P_D_200	124.18	144.52	147.30	147.30	148.29	0.005725	4.40	28.20	14.15	1.00
Dogana	118	Max WS	P_D_100	104.22	144.52	147.05	147.06	147.96	0.005921	4.22	24.72	13.83	1.01
Dogana	118	Max WS	P_D_30	89.52	144.52	146.84	146.88	147.70	0.006282	4.10	21.84	13.54	1.03
Dogana	118	Max WS	P_D_20	85.73	144.52	146.72	146.83	147.64	0.007112	4.25	20.17	13.02	1.09
Dogana	117	Max WS	P_D_200	124.10	144.33	147.18		148.26	0.006107	4.61	26.90	10.86	0.94
Dogana	117	Max WS	P_D_100	103.06	144.33	146.93		147.85	0.005728	4.26	24.20	10.83	0.91
Dogana	117	Max WS	P_D_30	89.53	144.33	146.70		147.56	0.005969	4.13	21.68	10.81	0.93
Dogana	117	Max WS	P_D_20	85.73	144.33	146.59	146.54	147.48	0.006427	4.17	20.53	10.80	0.97
Dogana	116	Max WS	P_D_200	124.56	144.33	147.33		147.99	0.003273	3.60	34.58	13.37	0.71
Dogana	116	Max WS	P_D_100	107.07	144.33	147.04		147.66	0.003409	3.48	30.79	13.31	0.73
Dogana	116	Max WS	P_D_30	89.51	144.33	146.75		147.31	0.003548	3.32	26.94	13.25	0.74
Dogana	116	Max WS	P_D_20	85.71	144.33	146.69		147.24	0.003576	3.28	26.10	13.24	0.75
Dogana	115	Max WS	P_D_200	124.77	144.33	147.11		148.14	0.005758	4.49	27.76	11.64	0.93
Dogana	115	Max WS	P_D_100	107.19	144.33	146.85	146.78	147.81	0.005983	4.34	24.71	11.59	0.95
Dogana	115	Max WS	P_D_30	89.53	144.33	146.63		147.46	0.005799	4.05	22.11	11.55	0.93
Dogana	115	Max WS	P_D_20	85.72	144.33	146.54	146.49	147.38	0.006123	4.06	21.09	11.53	0.96
Dogana	114	Max WS	P_D_200	124.45	144.32	147.25		147.87	0.003067	3.49	35.66	13.17	0.68
Dogana	114	Max WS	P_D_100	106.64	144.32	146.96		147.53	0.003155	3.35	31.80	13.13	0.69
Dogana	114	Max WS	P_D_30	89.48	144.32	146.66		147.18	0.003289	3.21	27.88	13.09	0.70
Dogana	114	Max WS	P_D_20	85.70	144.32	146.61		147.12	0.003212	3.14	27.30	13.09	0.69

HEC-RAS River: Dogana Reach: Dogana Profile: Max WS (Continued)

Reach	River Sta	Profile	Plan	Q Total (m3/s)	Min Ch El (m)	W.S. Elev (m)	Crit W.S. (m)	E.G. Elev (m)	E.G. Slope (m/m)	Vel Chnl (m/s)	Flow Area (m2)	Top Width (m)	Froude # Chl
Dogana	113	Max WS	P_D_200	124.52	144.08	147.44		147.79	0.001559	2.64	47.14	17.69	0.52
Dogana	113	Max WS	P_D_100	106.13	144.08	147.10		147.44	0.001712	2.58	41.12	17.62	0.54
Dogana	113	Max WS	P_D_30	89.50	144.08	146.78		147.10	0.001912	2.52	35.46	17.55	0.57
Dogana	113	Max WS	P_D_20	85.70	144.08	146.71		147.03	0.001955	2.50	34.23	17.54	0.57
Dogana	112.5	Max WS	P_D_200	124.38	144.04	147.27		147.76	0.002148	3.10	40.07	12.80	0.56
Dogana	112.5	Max WS	P_D_100	105.82	144.04	146.97		147.40	0.002092	2.93	36.17	12.80	0.56
Dogana	112.5	Max WS	P_D_30	89.49	144.04	146.68		147.07	0.002047	2.75	32.49	12.80	0.55
Dogana	112.5	Max WS	P_D_20	85.70	144.04	146.62		146.99	0.002013	2.70	31.73	12.80	0.55
Dogana	112.1	Max WS	P_D_200	124.45	144.01	147.49	145.92	147.74	0.000703	2.19	56.83	17.10	0.38
Dogana	112.1	Max WS	P_D_100	105.94	144.01	147.16	145.74	147.38	0.000698	2.07	51.11	17.10	0.38
Dogana	112.1	Max WS	P_D_30	89.50	144.01	146.85	145.55	147.04	0.000689	1.95	45.85	17.10	0.38
Dogana	112.1	Max WS	P_D_20	85.71	144.01	146.78	145.51	146.97	0.000686	1.92	44.63	17.10	0.38
Dogana	112		Bridge										
Dogana	111	Max WS	P_D_200	124.43	143.95	147.52		147.73	0.000578	1.99	62.58	20.40	0.36
Dogana	111	Max WS	P_D_100	105.84	143.95	147.18		147.37	0.000600	1.91	55.55	20.40	0.37
Dogana	111	Max WS	P_D_30	89.50	143.95	146.87		147.04	0.000624	1.82	49.14	20.40	0.37
Dogana	111	Max WS	P_D_20	85.71	143.95	146.79		146.96	0.000631	1.80	47.59	20.40	0.38
Dogana	110.5	Max WS	P_D_200	124.40	143.95	147.51		147.71	0.000726	1.98	62.91	20.20	0.36
Dogana	110.5	Max WS	P_D_100	105.70	143.95	147.17		147.35	0.000747	1.89	55.95	20.20	0.36
Dogana	110.5	Max WS	P_D_30	89.50	143.95	146.85		147.02	0.000772	1.80	49.62	20.20	0.37
Dogana	110.5	Max WS	P_D_20	85.71	143.95	146.77		146.94	0.000782	1.78	48.05	20.20	0.37
Dogana	110	Max WS	P_D_200	124.39	143.84	147.36		147.69	0.001283	2.53	49.26	16.17	0.46
Dogana	110	Max WS	P_D_100	105.59	143.84	147.03		147.32	0.001302	2.41	43.88	16.13	0.47
Dogana	110	Max WS	P_D_30	89.50	143.84	146.73		146.99	0.001332	2.30	38.99	16.09	0.47
Dogana	110	Max WS	P_D_20	85.71	143.84	146.65		146.91	0.001344	2.27	37.77	16.09	0.47
Dogana	109	Max WS	P_D_200	124.37	143.40	146.97		147.60	0.002929	3.51	35.40	11.55	0.64
Dogana	109	Max WS	P_D_100	105.43	143.40	146.69		147.23	0.002773	3.28	32.16	11.50	0.63
Dogana	109	Max WS	P_D_30	89.49	143.40	146.43		146.91	0.002648	3.07	29.17	11.46	0.61
Dogana	109	Max WS	P_D_20	85.70	143.40	146.36		146.82	0.002625	3.02	28.40	11.45	0.61

HEC-RAS River: Dogana Reach: Dogana Profile: Max WS (Continued)

Reach	River Sta	Profile	Plan	Q Total (m3/s)	Min Ch El (m)	W.S. Elev (m)	Crit W.S. (m)	E.G. Elev (m)	E.G. Slope (m/m)	Vel Chnl (m/s)	Flow Area (m2)	Top Width (m)	Froude # Chl
Dogana	108	Max WS	P_D_200	124.33	143.42	146.44		147.42	0.005342	4.39	28.35	11.14	0.88
Dogana	108	Max WS	P_D_100	105.35	143.42	146.18		147.05	0.005248	4.14	25.45	11.14	0.87
Dogana	108	Max WS	P_D_30	89.49	143.42	145.93		146.72	0.005314	3.95	22.68	11.14	0.88
Dogana	108	Max WS	P_D_20	85.69	143.42	145.86		146.64	0.005356	3.90	21.97	11.14	0.89
Dogana	107	Max WS	P_D_200	124.31	143.17	146.83		147.14	0.001275	2.47	50.41	17.96	0.47
Dogana	107	Max WS	P_D_100	105.34	143.17	146.53		146.81	0.001294	2.34	44.94	17.94	0.47
Dogana	107	Max WS	P_D_30	89.47	143.17	146.22		146.49	0.001382	2.27	39.50	17.91	0.49
Dogana	107	Max WS	P_D_20	85.67	143.17	146.15		146.40	0.001414	2.25	38.10	17.90	0.49
Dogana	106	Max WS	P_D_200	124.22	142.93	146.59	145.45	147.03	0.001401	2.95	42.11	13.06	0.52
Dogana	106	Max WS	P_D_100	105.00	142.93	146.32	145.22	146.70	0.001284	2.72	38.62	13.03	0.50
Dogana	106	Max WS	P_D_30	89.46	142.93	146.04	145.03	146.38	0.001238	2.55	35.03	13.01	0.50
Dogana	106	Max WS	P_D_20	85.66	142.93	145.97	144.98	146.29	0.001227	2.51	34.11	13.00	0.49
Dogana	105.5		Bridge										
Dogana	105	Max WS	P_D_200	124.25	142.94	146.72		147.01	0.000842	2.39	52.07	18.29	0.45
Dogana	105	Max WS	P_D_100	105.25	142.94	146.42		146.67	0.000819	2.25	46.70	17.62	0.44
Dogana	105	Max WS	P_D_30	89.47	142.94	146.12		146.35	0.000823	2.15	41.55	16.95	0.44
Dogana	105	Max WS	P_D_20	85.67	142.94	146.04		146.27	0.000825	2.13	40.26	16.78	0.44
Dogana	104	Max WS	P_D_200	124.18	142.27	146.27		146.74	0.003178	3.05	40.70	15.26	0.60
Dogana	104	Max WS	P_D_100	105.12	142.27	146.01		146.43	0.003035	2.86	36.81	14.83	0.58
Dogana	104	Max WS	P_D_30	89.45	142.27	145.74		146.12	0.002883	2.72	32.87	13.60	0.56
Dogana	104	Max WS	P_D_20	85.66	142.27	145.67		146.04	0.002784	2.68	31.94	13.08	0.55
Dogana	103	Max WS	P_D_200	124.15	142.06	146.04		146.50	0.003384	2.98	41.60	18.69	0.64
Dogana	103	Max WS	P_D_100	105.05	142.06	145.76		146.19	0.003532	2.88	36.46	17.88	0.64
Dogana	103	Max WS	P_D_30	89.45	142.06	145.45		145.87	0.003437	2.86	31.06	14.66	0.63
Dogana	103	Max WS	P_D_20	85.66	142.06	145.37		145.79	0.003476	2.86	29.94	14.39	0.63
Dogana	102	Max WS	P_D_200	124.14	141.69	145.53		146.11	0.004376	3.38	36.68	16.22	0.72
Dogana	102	Max WS	P_D_100	105.00	141.69	145.27		145.80	0.004165	3.21	32.75	15.05	0.69
Dogana	102	Max WS	P_D_30	89.45	141.69	145.00		145.49	0.004166	3.11	28.80	13.77	0.69
Dogana	102	Max WS	P_D_20	85.65	141.69	144.94		145.42	0.004036	3.06	28.02	13.35	0.67

HEC-RAS River: Dogana Reach: Dogana Profile: Max WS (Continued)

Reach	River Sta	Profile	Plan	Q Total (m3/s)	Min Ch El (m)	W.S. Elev (m)	Crit W.S. (m)	E.G. Elev (m)	E.G. Slope (m/m)	Vel Chnl (m/s)	Flow Area (m2)	Top Width (m)	Froude # Chl
Dogana	101	Max WS	P_D_200	124.12	141.45	144.29	144.63	145.56	0.011403	5.00	24.84	13.08	1.16
Dogana	101	Max WS	P_D_100	104.96	141.45	144.04	144.26	145.23	0.011651	4.84	21.69	12.23	1.16
Dogana	101	Max WS	P_D_30	89.44	141.45	143.61	144.02	145.07	0.017621	5.36	16.67	11.14	1.40
Dogana	101	Max WS	P_D_20	85.65	141.45	143.57	143.97	144.99	0.017467	5.28	16.22	11.03	1.39
Dogana	100	Max WS	P_D_200	124.11	141.20	144.35	143.51	144.77	0.001421	2.88	43.04	19.91	0.63
Dogana	100	Max WS	P_D_100	104.95	141.20	144.07	143.28	144.47	0.001535	2.80	37.48	19.34	0.64
Dogana	100	Max WS	P_D_30	89.36	141.20	143.09		143.91	0.003803	4.00	22.37	13.36	0.99
Dogana	100	Max WS	P_D_20	85.63	141.20	143.05		143.84	0.003782	3.93	21.77	13.29	0.98
Dogana	99.5			Inl Struct									
Dogana	99	Max WS	P_D_200	124.08	139.60	143.56		143.73	0.000546	1.86	66.67	26.27	0.37
Dogana	99	Max WS	P_D_100	104.89	139.60	143.25		143.42	0.000571	1.78	58.81	25.77	0.38
Dogana	99	Max WS	P_D_30	89.45	139.60	142.99		143.14	0.000604	1.72	51.99	25.28	0.38
Dogana	99	Max WS	P_D_20	85.72	139.60	142.92		143.07	0.000607	1.70	50.33	24.96	0.38
Dogana	98	Max WS	P_D_200	124.05	140.03	143.35		143.72	0.001757	2.70	45.99	19.83	0.57
Dogana	98	Max WS	P_D_100	104.87	140.03	143.06		143.41	0.001842	2.60	40.30	19.10	0.57
Dogana	98	Max WS	P_D_30	89.45	140.03	142.80		143.13	0.001888	2.52	35.52	18.04	0.57
Dogana	98	Max WS	P_D_20	85.72	140.03	142.74		143.06	0.001895	2.49	34.38	17.77	0.57
Dogana	97	Max WS	P_D_200	124.05	139.23	143.34		143.65	0.002086	2.46	50.52	22.01	0.52
Dogana	97	Max WS	P_D_100	104.86	139.23	143.04		143.33	0.002179	2.38	44.13	20.89	0.52
Dogana	97	Max WS	P_D_30	89.44	139.23	142.78		143.05	0.002338	2.31	38.72	20.27	0.53
Dogana	97	Max WS	P_D_20	85.71	139.23	142.71		142.98	0.002383	2.29	37.39	20.12	0.54
Dogana	96	Max WS	P_D_200	124.03	138.83	142.84		143.41	0.003884	3.34	37.15	15.53	0.69
Dogana	96	Max WS	P_D_100	104.84	138.83	142.60		143.10	0.003659	3.13	33.53	14.84	0.66
Dogana	96	Max WS	P_D_30	89.44	138.83	142.39		142.83	0.003477	2.93	30.50	14.36	0.64
Dogana	96	Max WS	P_D_20	85.67	138.83	142.34		142.76	0.003428	2.88	29.73	14.24	0.64
Dogana	95	Max WS	P_D_200	124.01	138.21	142.55		142.98	0.002993	2.91	42.60	18.60	0.61
Dogana	95	Max WS	P_D_100	104.82	138.21	142.34		142.71	0.002750	2.70	38.83	17.84	0.58
Dogana	95	Max WS	P_D_30	89.43	138.21	142.16		142.48	0.002501	2.51	35.58	16.91	0.55
Dogana	95	Max WS	P_D_20	85.69	138.21	142.11		142.42	0.002434	2.46	34.78	16.67	0.54



HEC-RAS River: Dogana Reach: Dogana Profile: Max WS (Continued)

Reach	River Sta	Profile	Plan	Q Total (m3/s)	Min Ch El (m)	W.S. Elev (m)	Crit W.S. (m)	E.G. Elev (m)	E.G. Slope (m/m)	Vel Chnl (m/s)	Flow Area (m2)	Top Width (m)	Froude # Chl
Dogana	88	Max WS	P_D_200	49.99	137.66	140.37		140.46	0.000927	1.36	36.83	21.26	0.33
Dogana	88	Max WS	P_D_100	50.00	137.66	140.01		140.15	0.001755	1.70	29.37	19.48	0.44
Dogana	88	Max WS	P_D_30	87.99	137.66	139.38	139.65	140.44	0.013624	4.56	19.30	13.06	1.20
Dogana	88	Max WS	P_D_20	83.15	137.66	139.40	139.57	140.33	0.011999	4.28	19.43	13.16	1.12
Dogana	87.3	Max WS	P_D_200	49.99	137.66	140.37		140.46	0.000928	1.36	36.82	21.26	0.33
Dogana	87.3	Max WS	P_D_100	50.00	137.66	140.00		140.15	0.001758	1.70	29.35	19.47	0.44
Dogana	87.3	Max WS	P_D_30	87.92	137.66	139.38	139.66	140.45	0.013774	4.59	19.17	12.96	1.20
Dogana	87.3	Max WS	P_D_20	82.99	137.66	139.39	139.57	140.33	0.012084	4.29	19.33	13.08	1.13
Dogana	87	Max WS	P_D_200	49.99	137.66	140.37		140.46	0.000930	1.36	36.80	21.25	0.33
Dogana	87	Max WS	P_D_100	50.00	137.66	140.00		140.15	0.001762	1.71	29.32	19.45	0.44
Dogana	87	Max WS	P_D_30	87.00	137.66	139.37	139.64	140.43	0.013663	4.57	19.05	12.86	1.20
Dogana	87	Max WS	P_D_20	82.99	137.66	139.38	139.57	140.33	0.012223	4.32	19.21	12.99	1.13
Dogana	80	Max WS	P_D_200	49.95	134.80	140.36	136.10	140.39	0.000154	0.73	68.72	21.23	0.13
Dogana	80	Max WS	P_D_100	49.96	134.80	139.98	136.10	140.01	0.000207	0.82	60.94	19.19	0.15
Dogana	80	Max WS	P_D_30	50.00	134.80	139.21	136.10	139.26	0.000278	1.02	49.18	12.18	0.16
Dogana	80	Max WS	P_D_20	50.00	134.80	139.21	136.10	139.26	0.000278	1.02	49.18	12.18	0.16

**borro di Valdilago - stato di progetto**

verifiche con Tpioggia critico per il Borro di Valdilago

- moto vario

Tr=200 anni (portata in uscita dalla cassa di espansione del Valdilago - *Sorgente Ingegneria*)

*profilo*

*livelli idrici nelle sezioni di verifica*

*tabella di output del software Hec-ras 4.0*

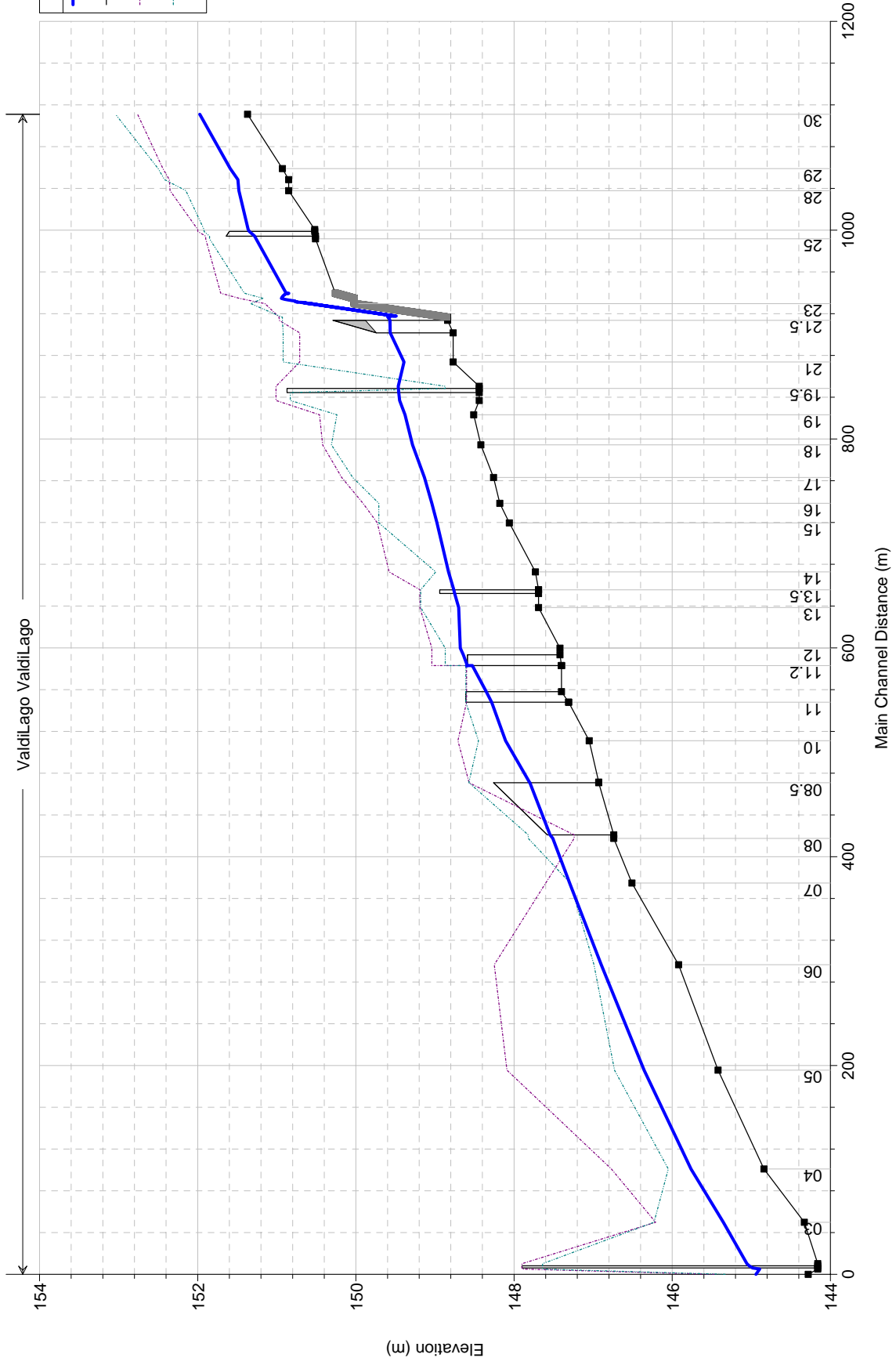
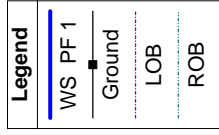


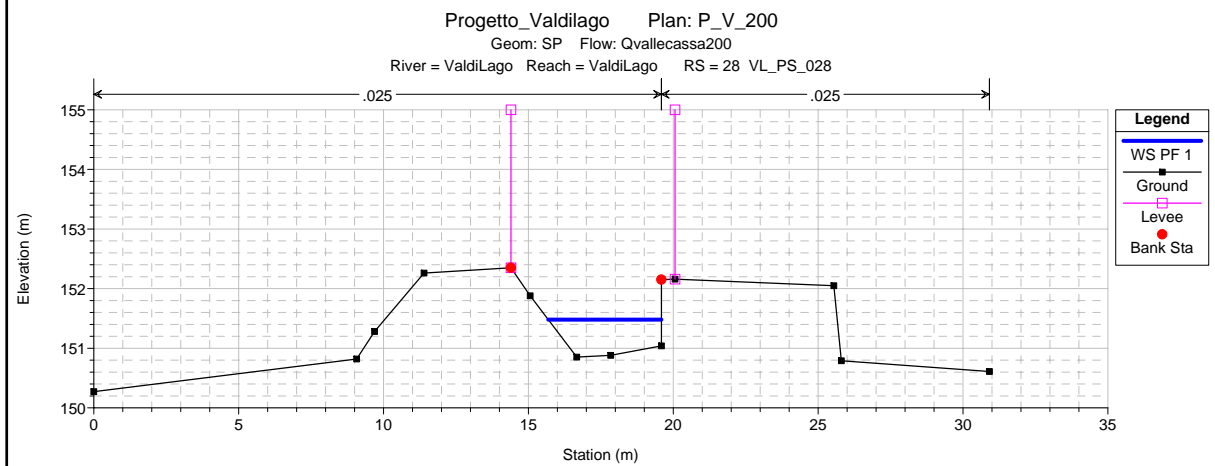
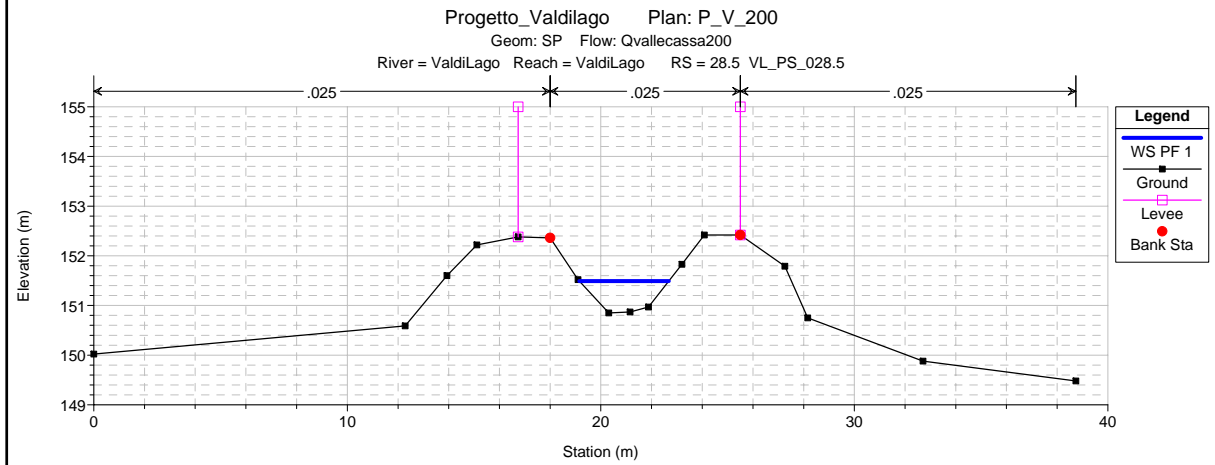
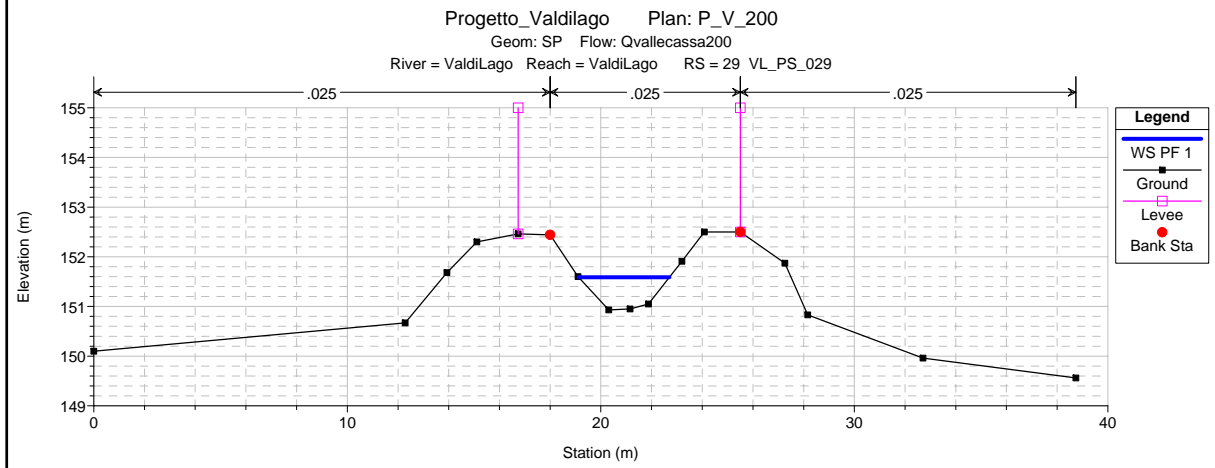
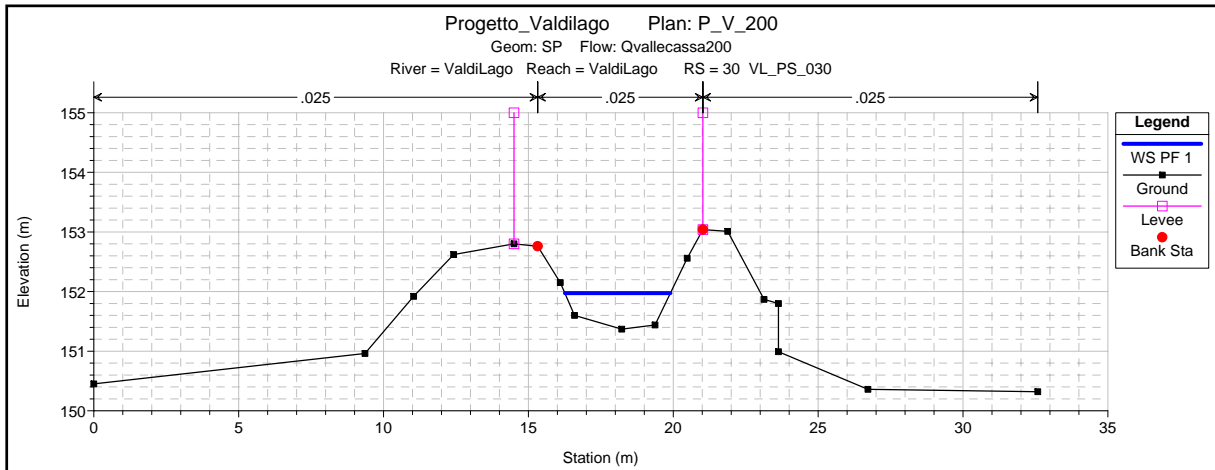


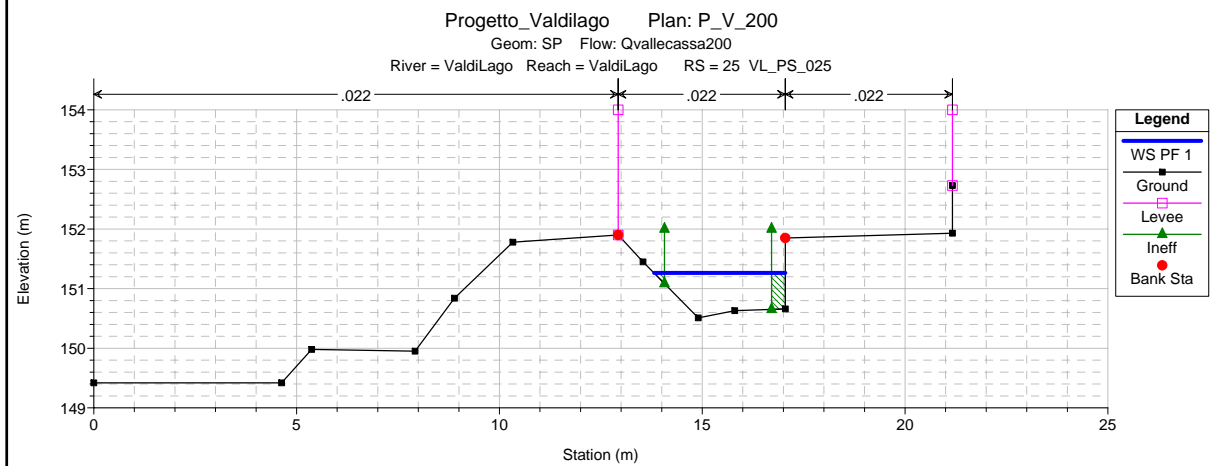
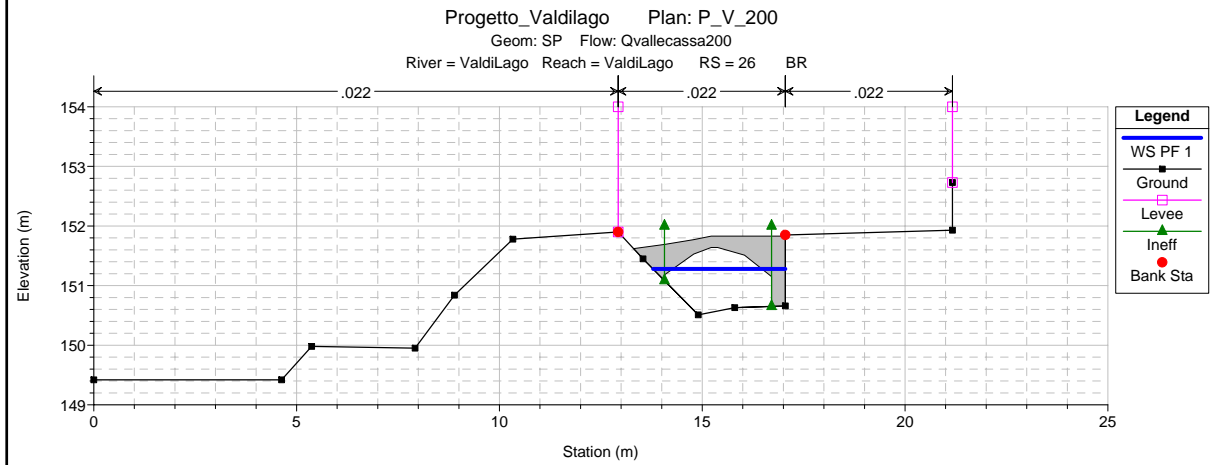
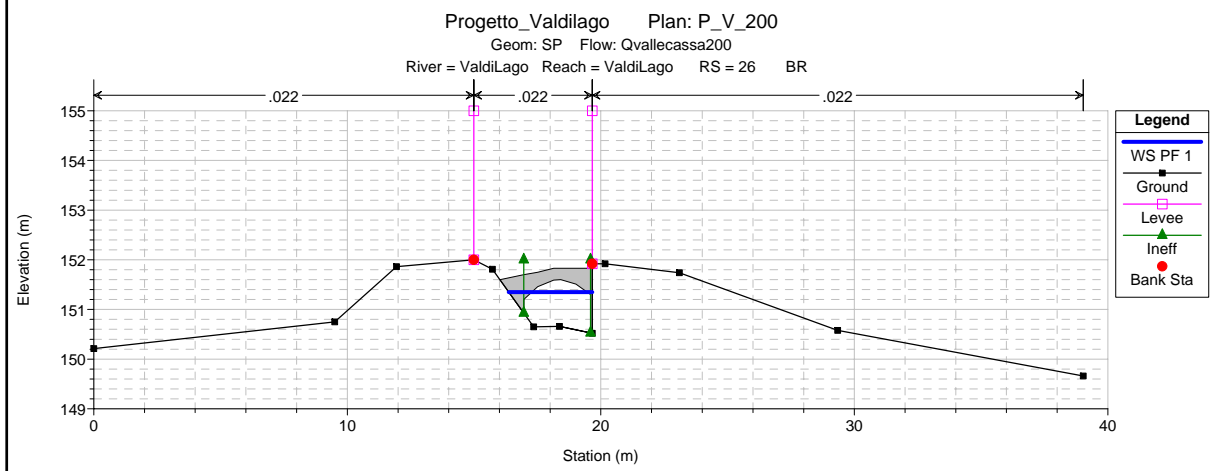
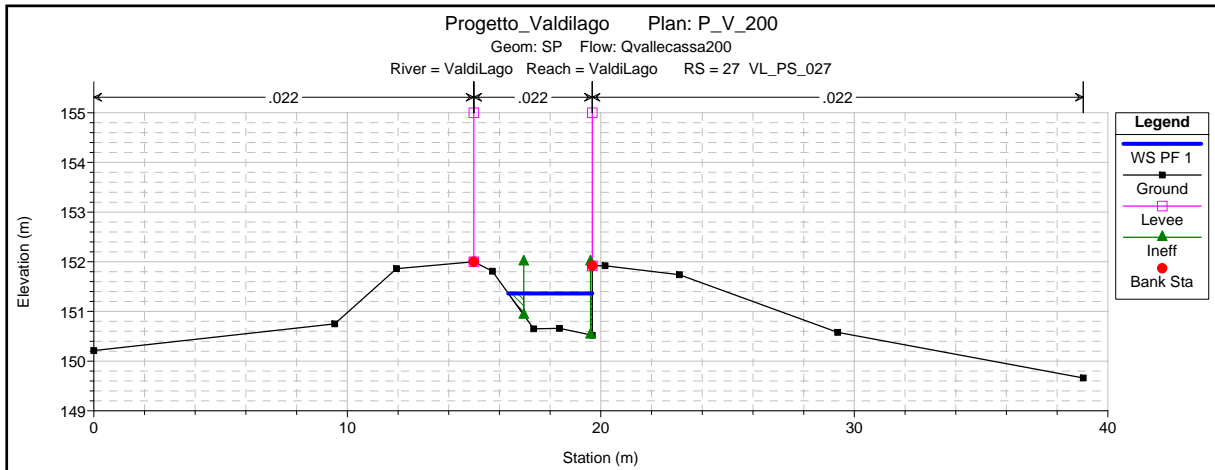
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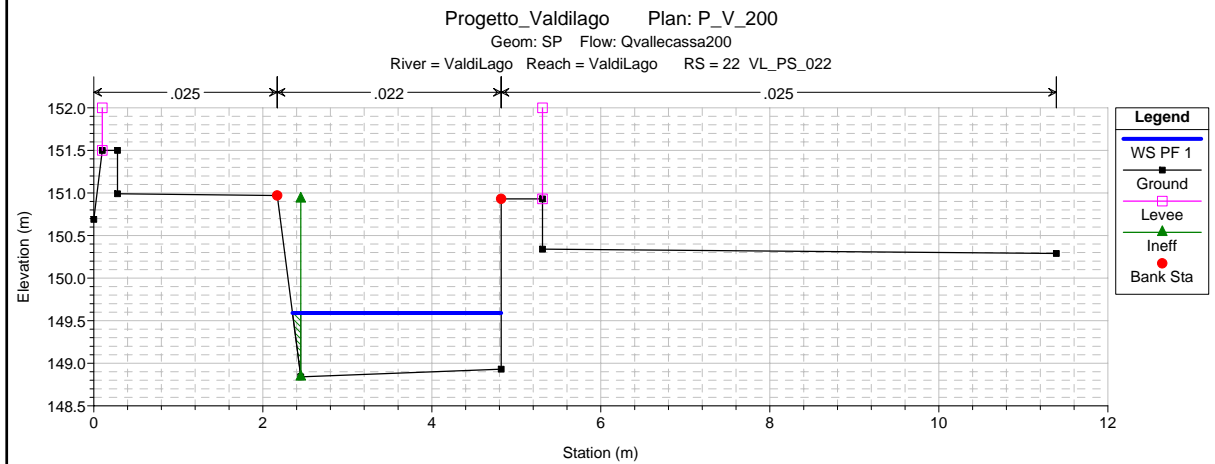
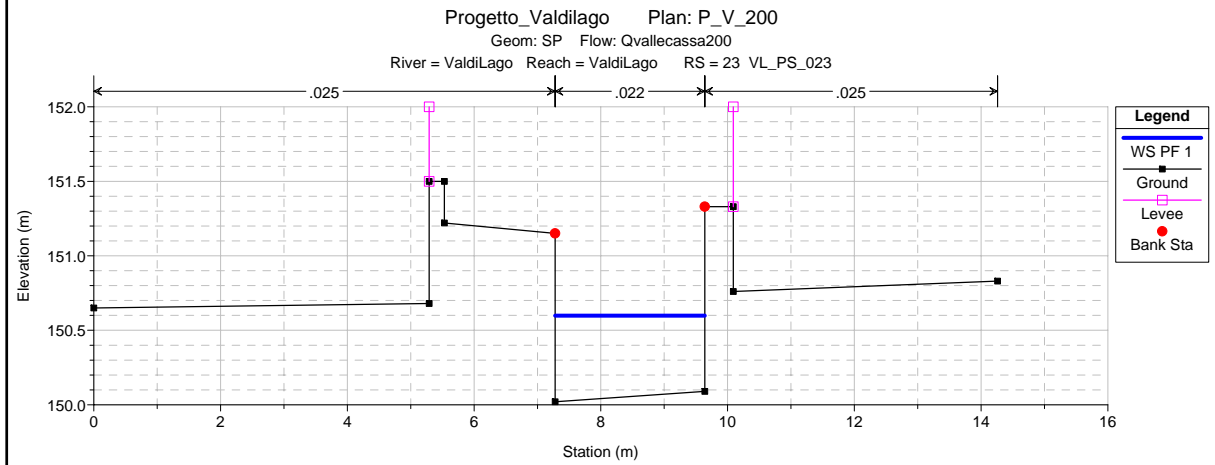
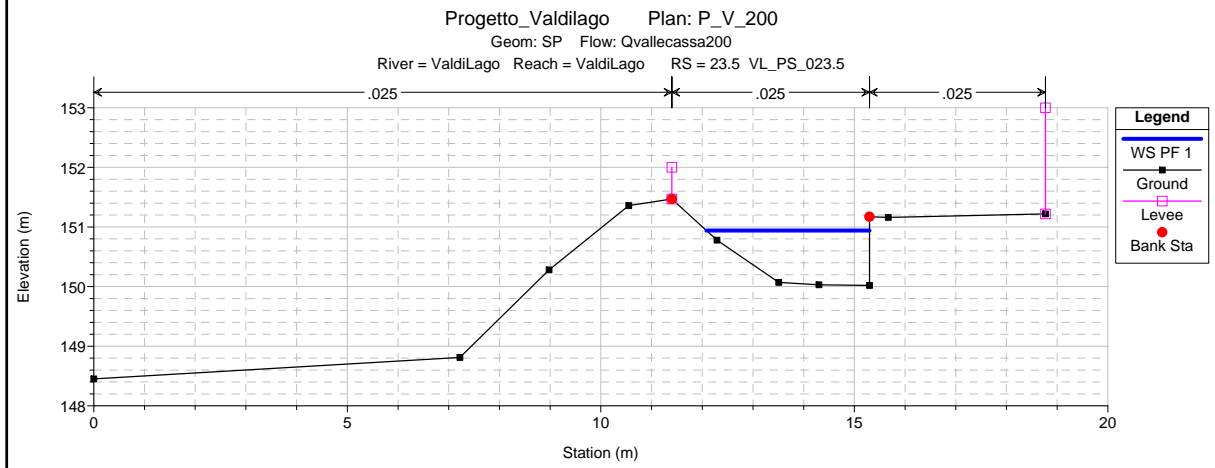
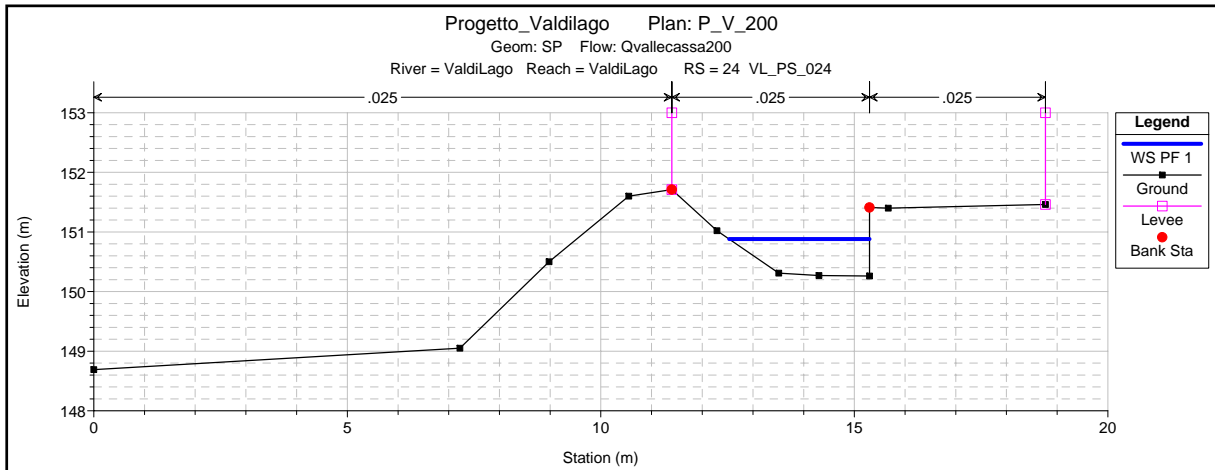
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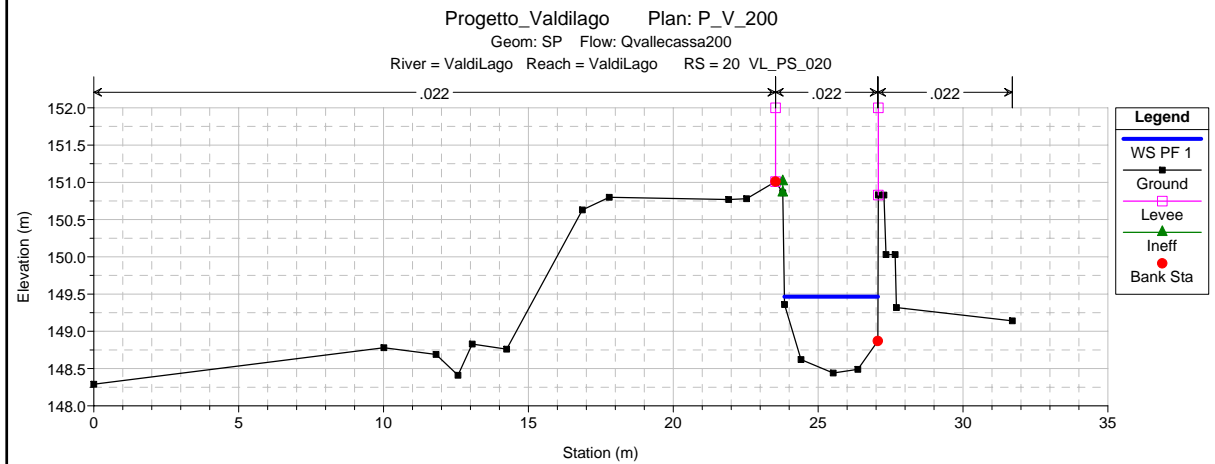
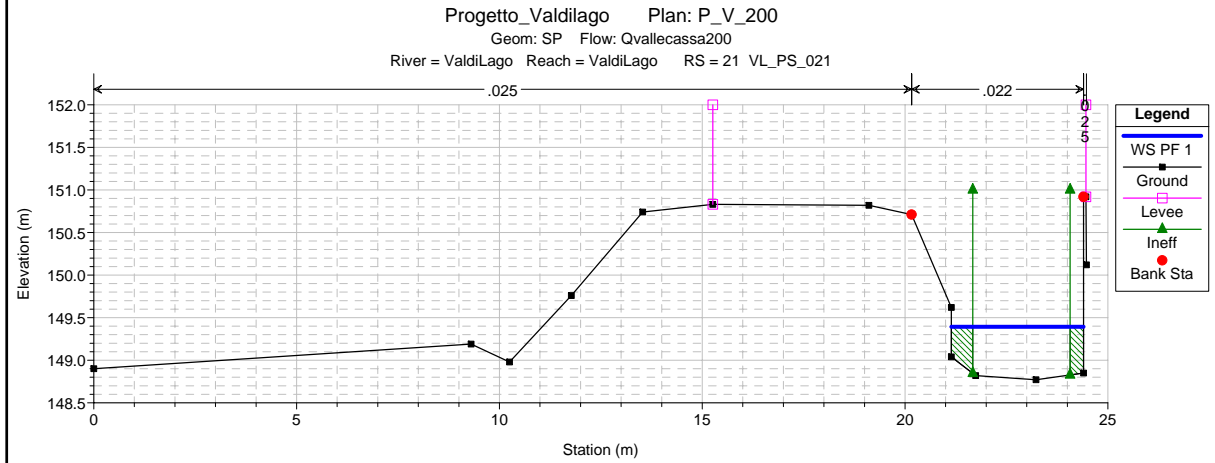
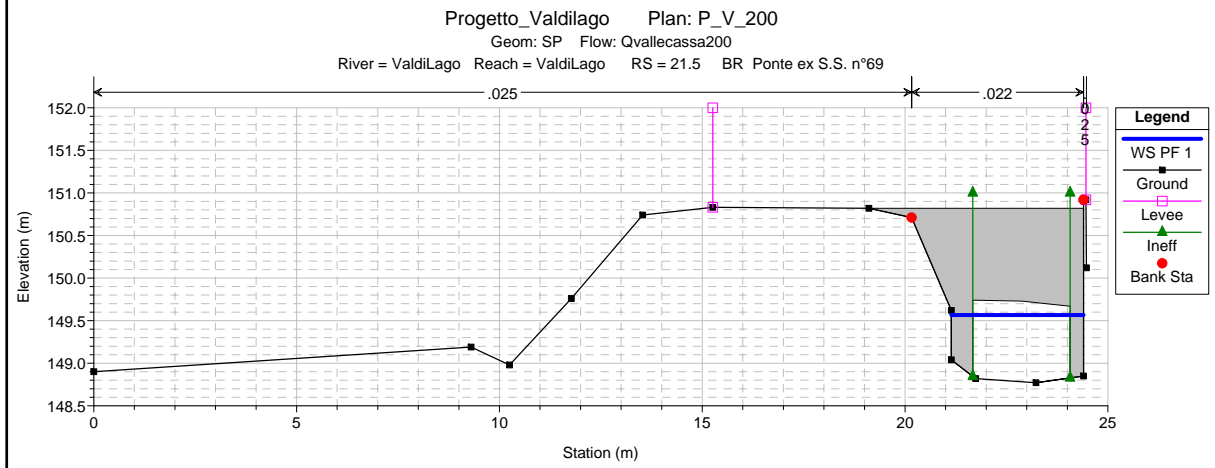
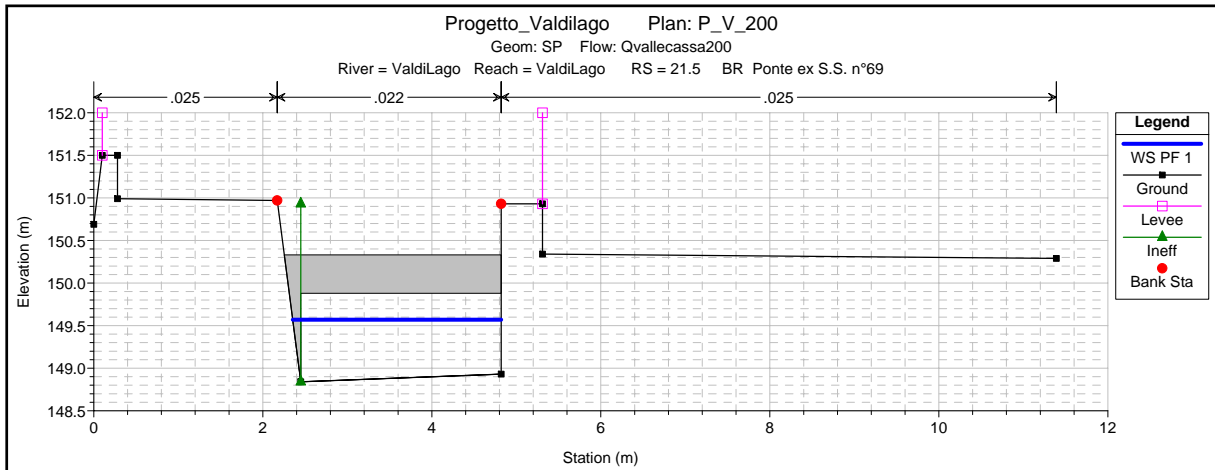
Valdilago Valdilago

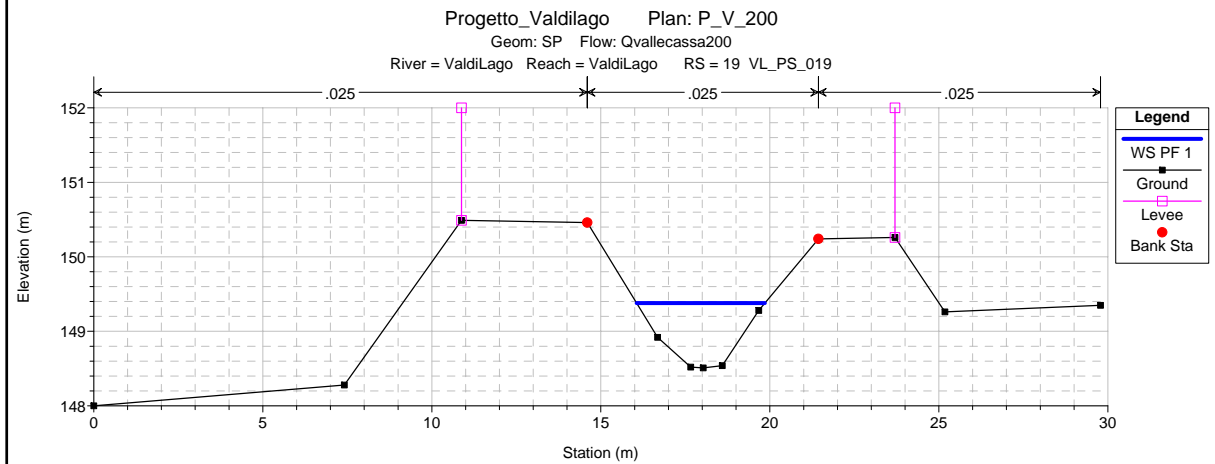
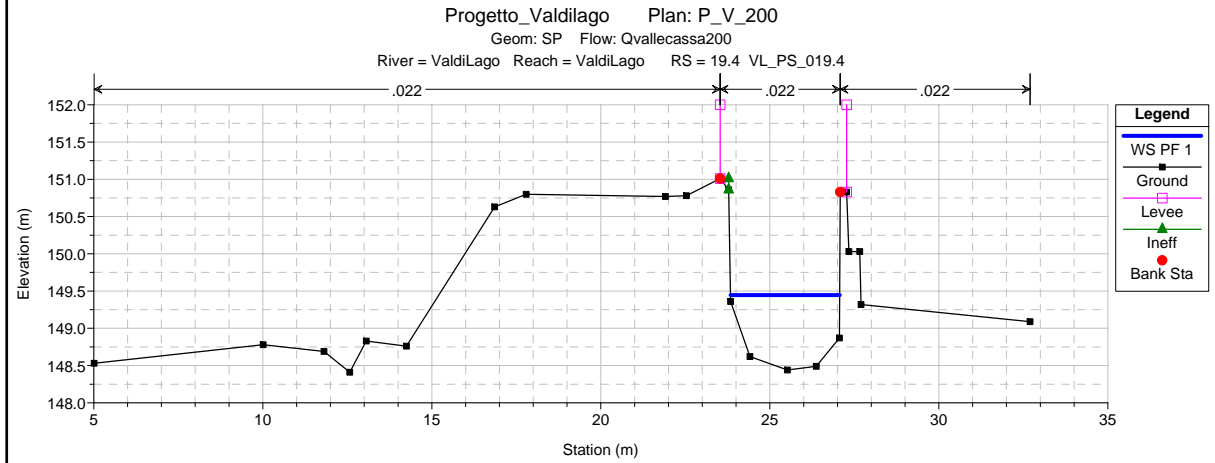
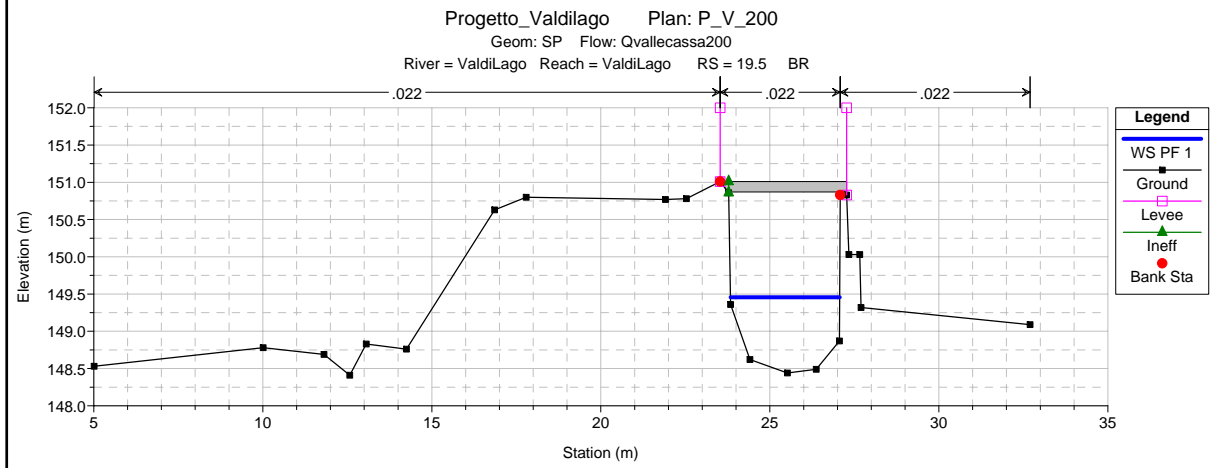
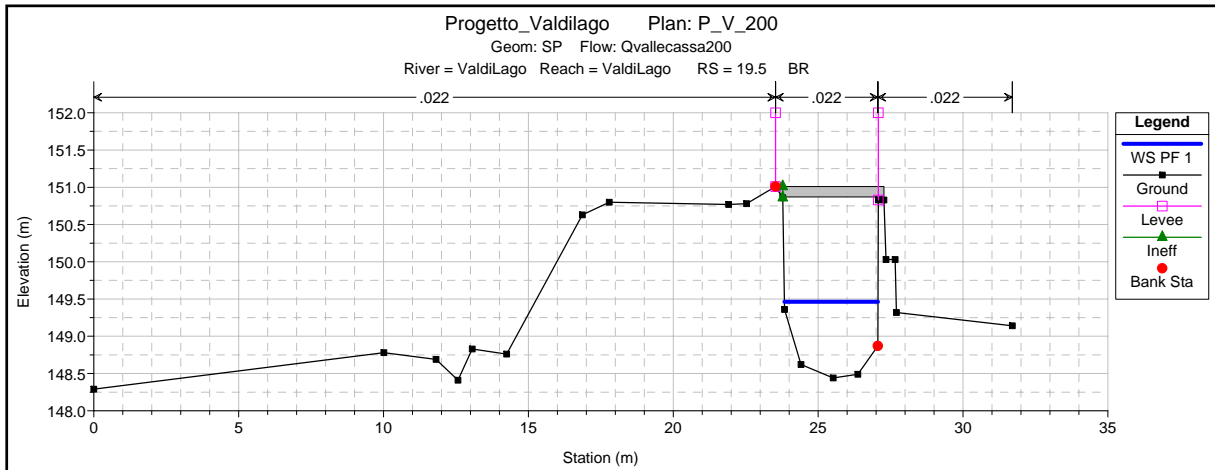


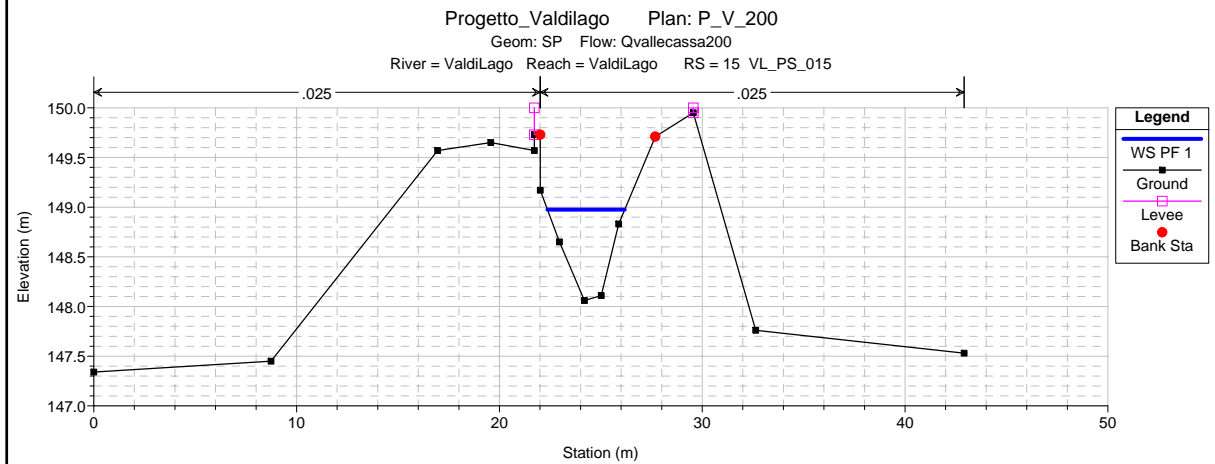
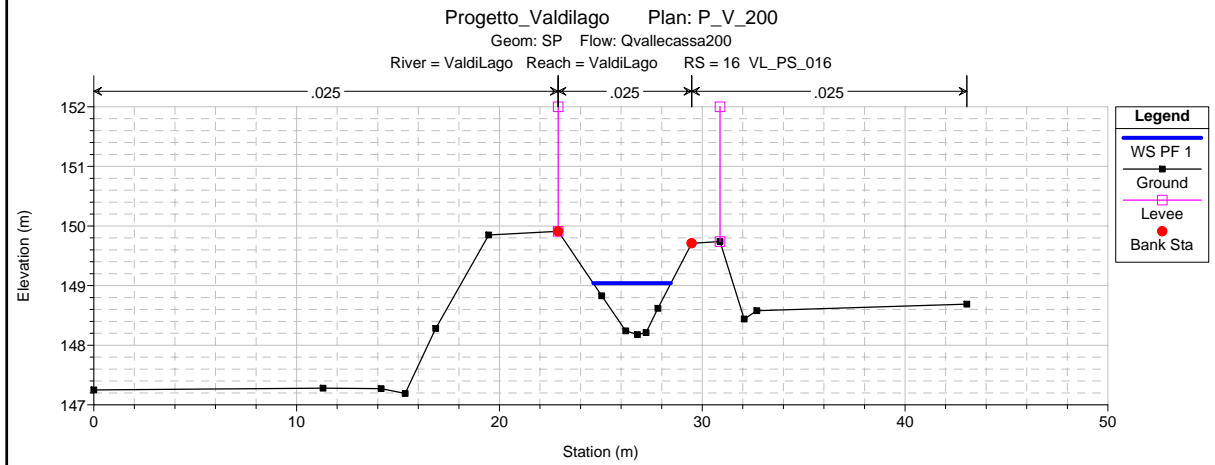
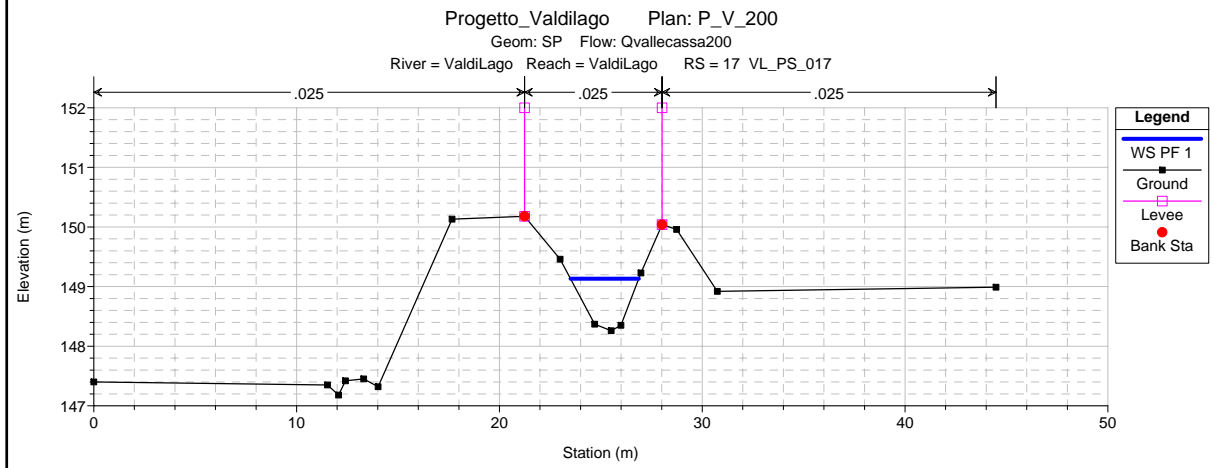
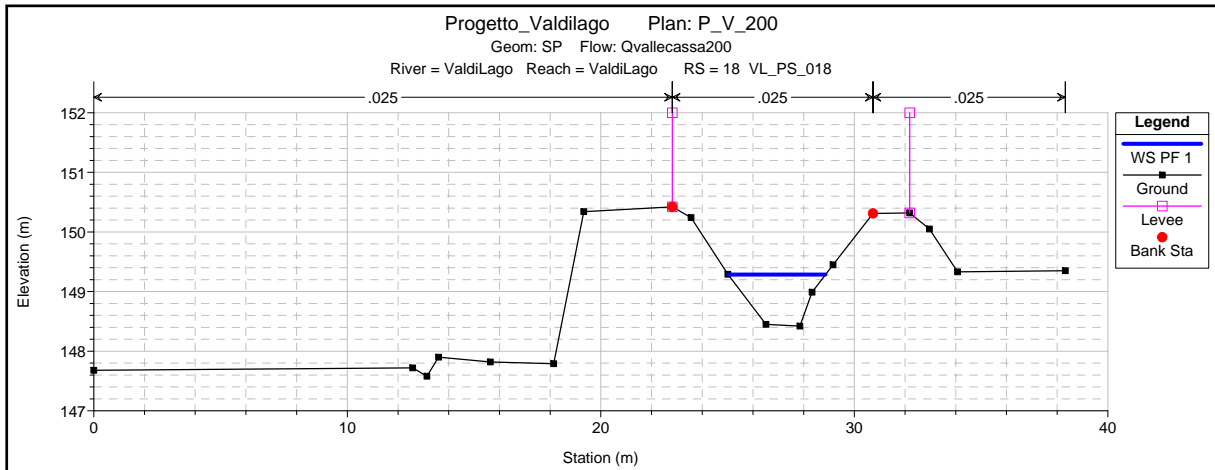


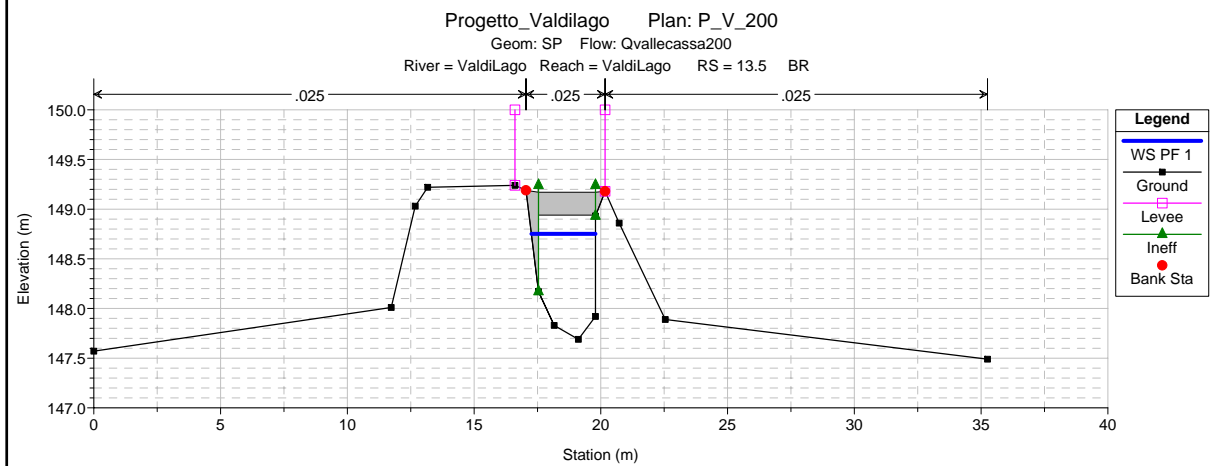
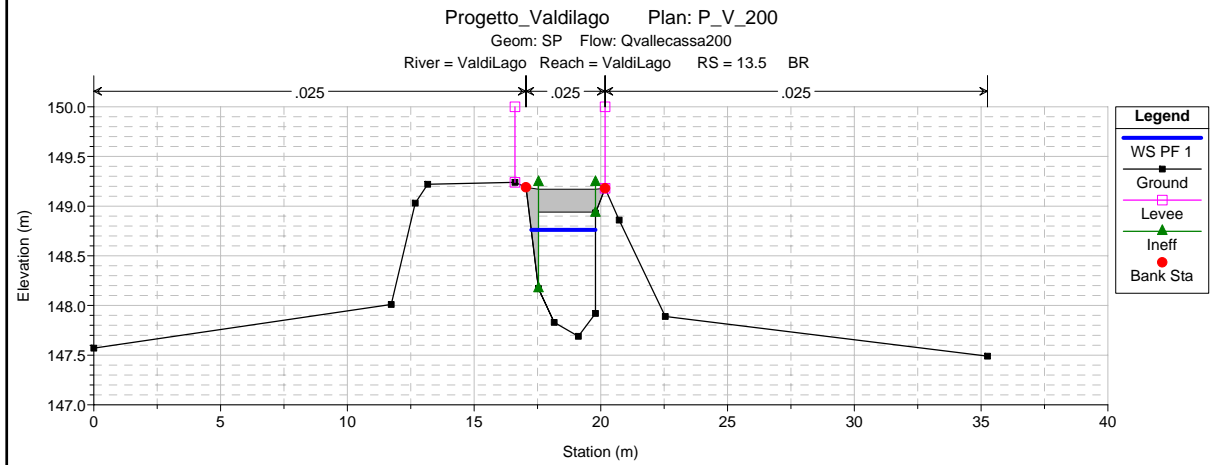
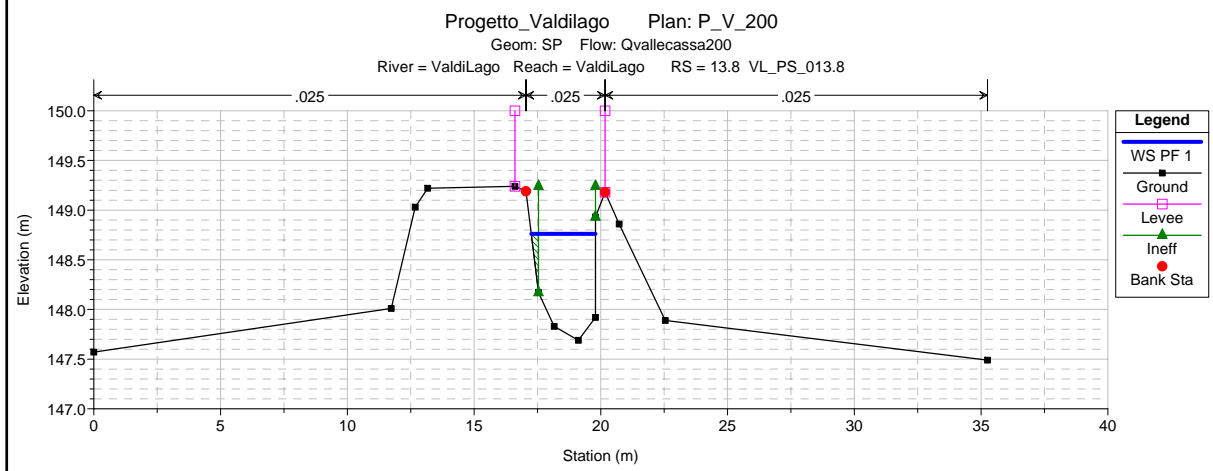
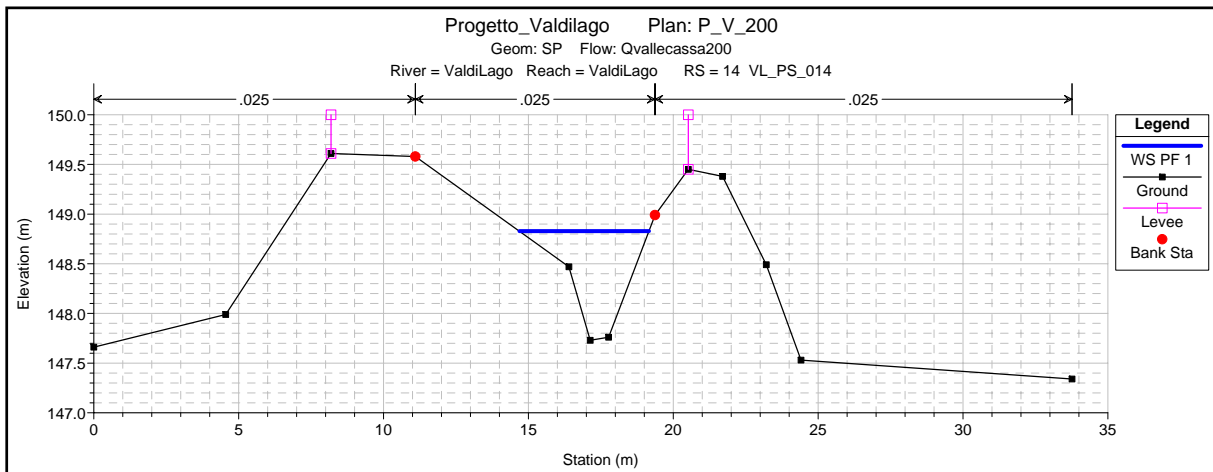




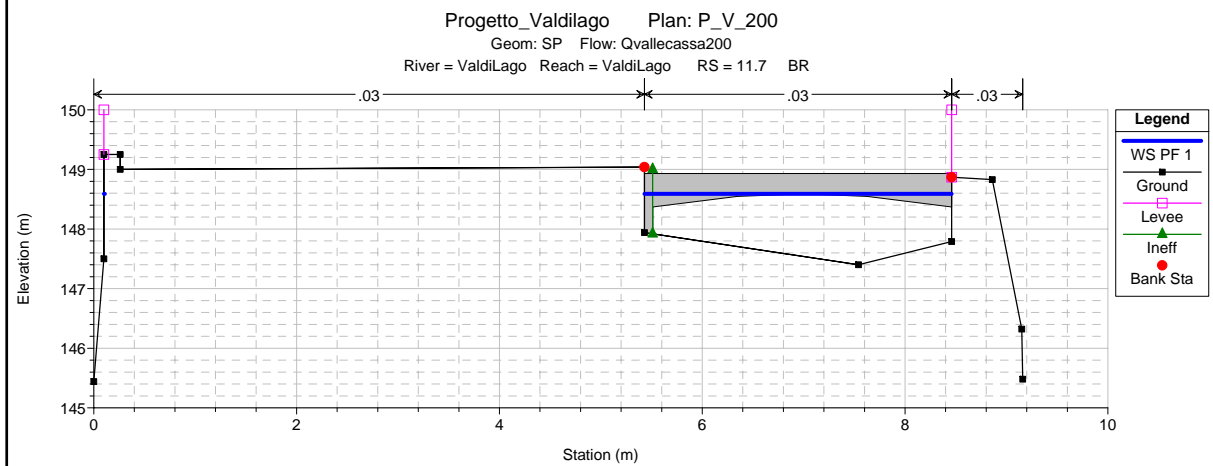
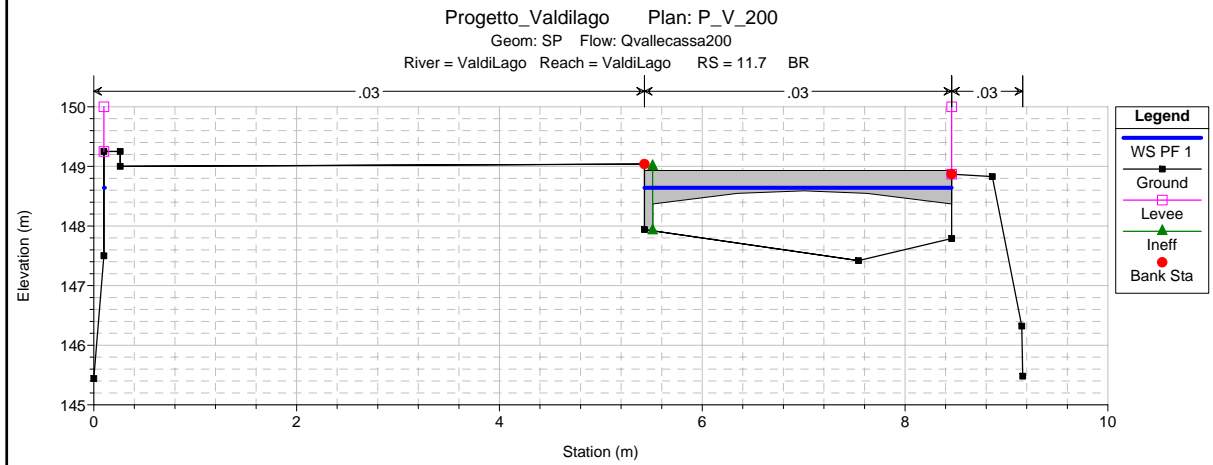
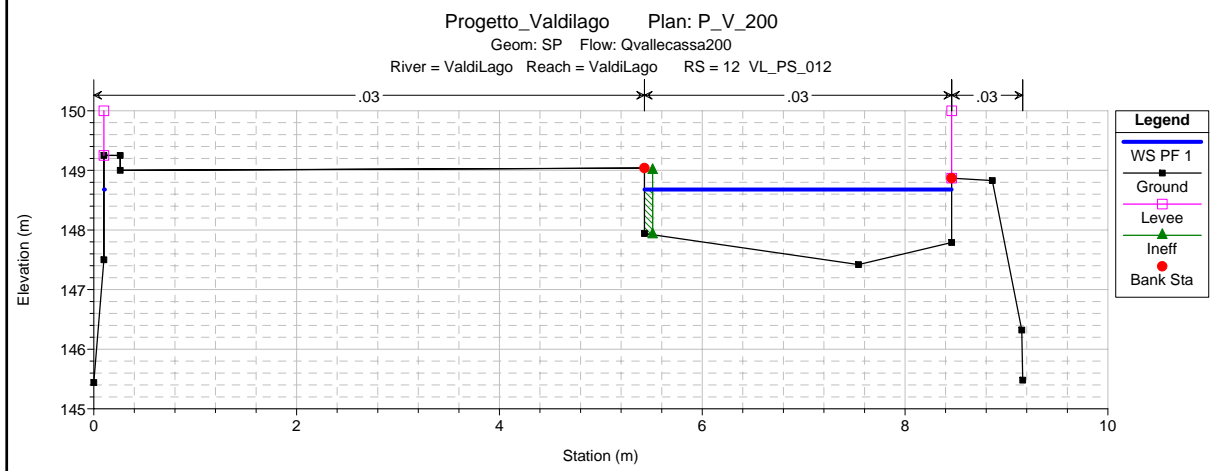
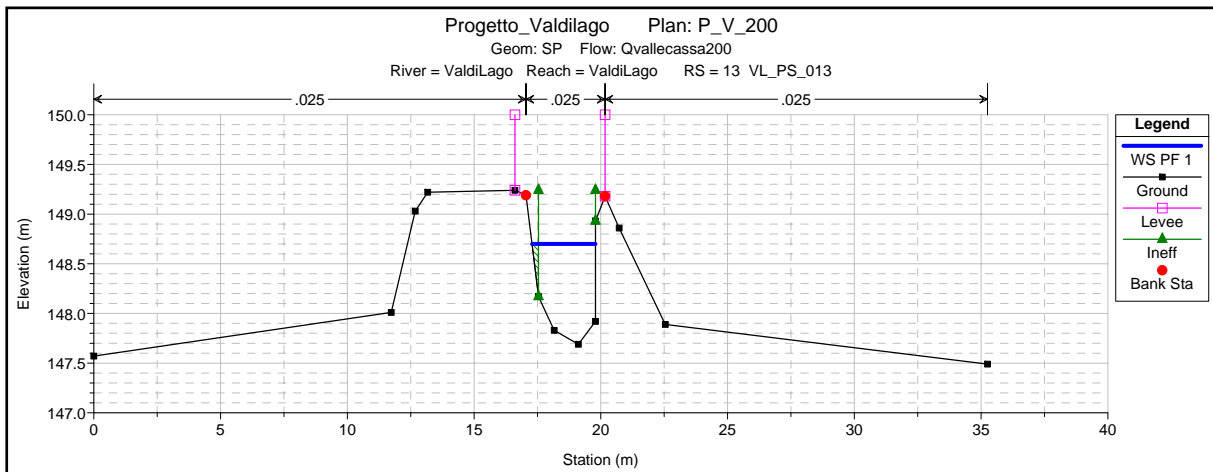


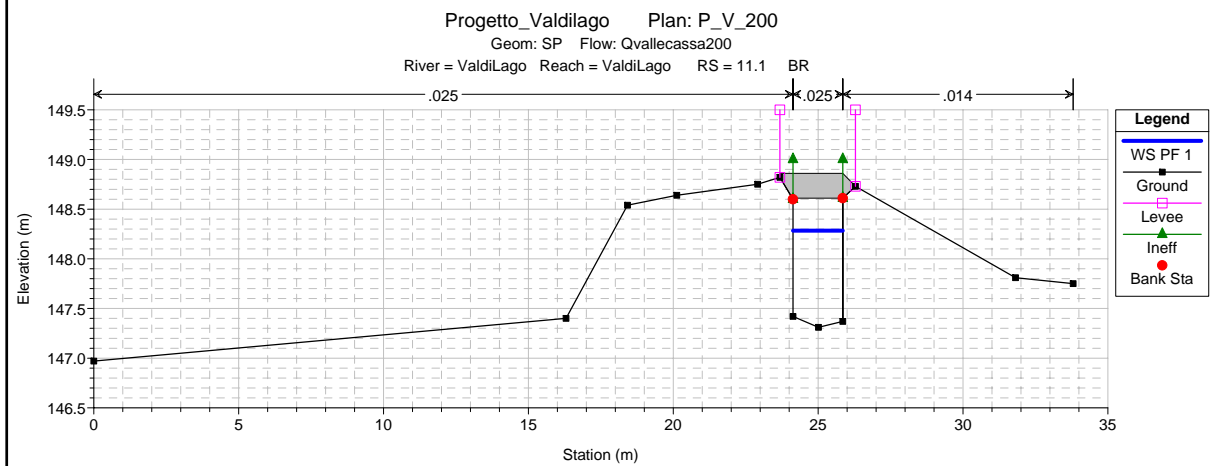
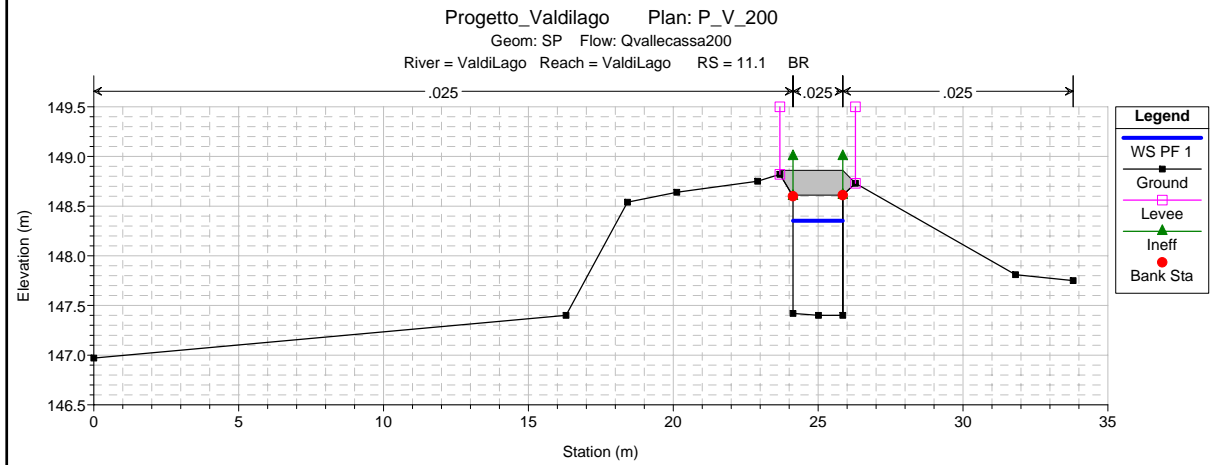
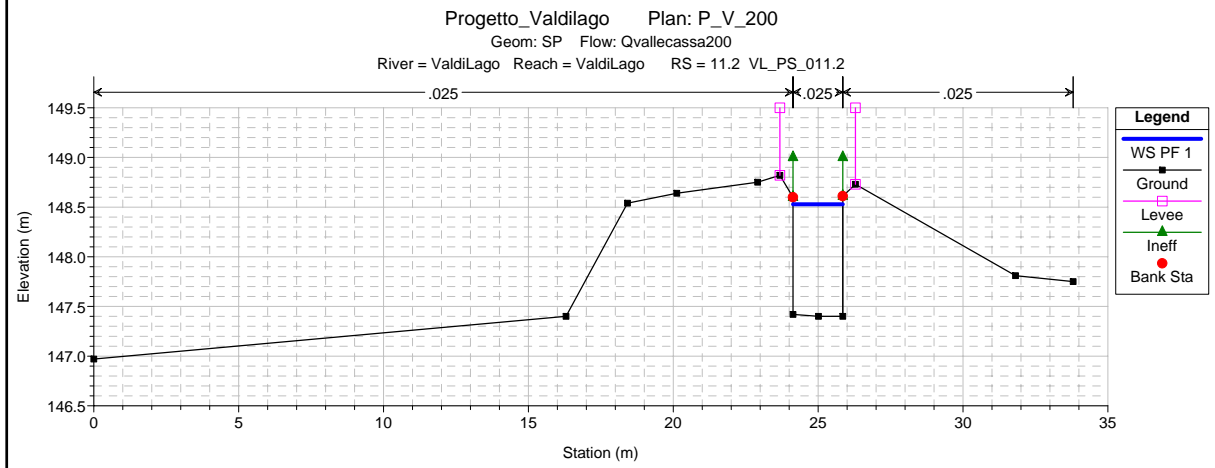
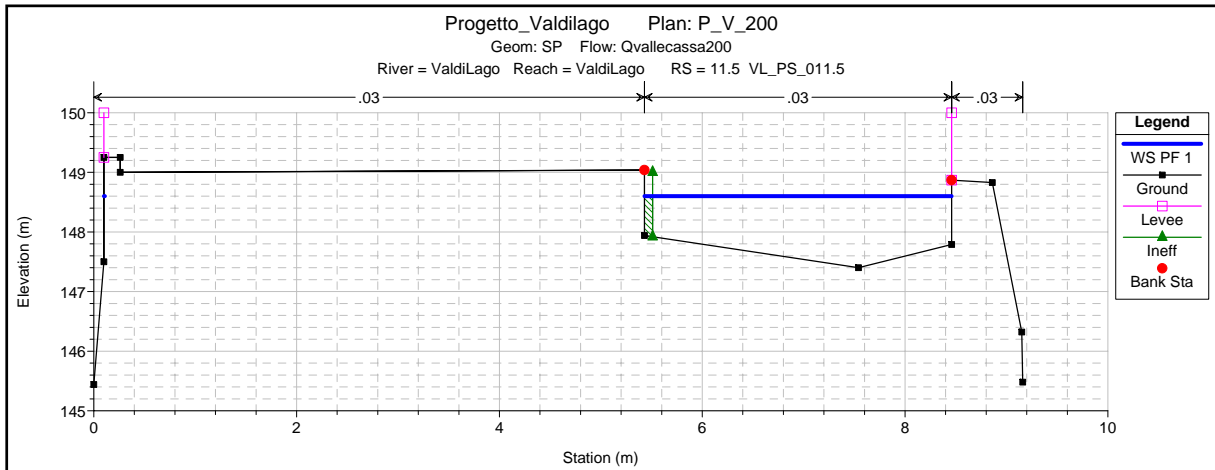


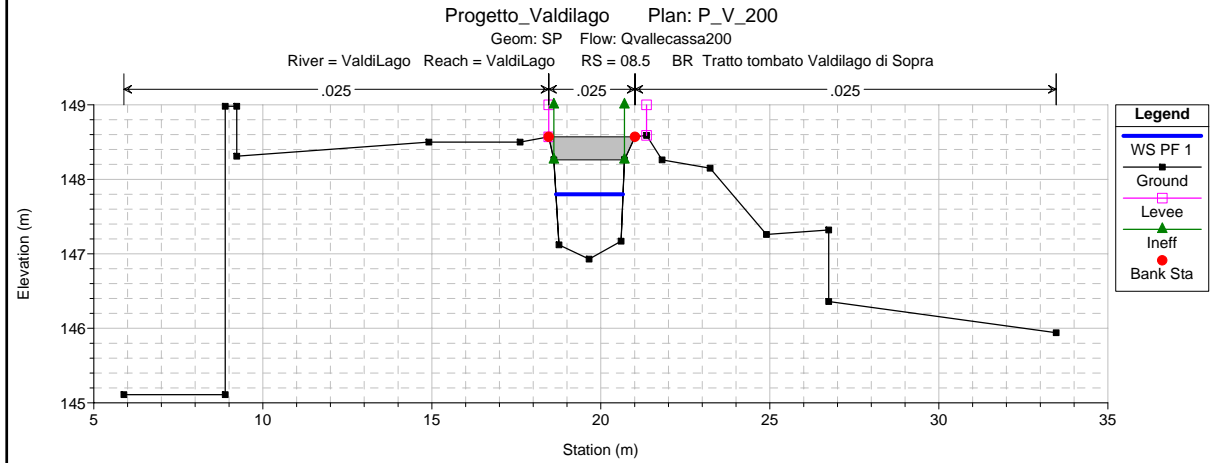
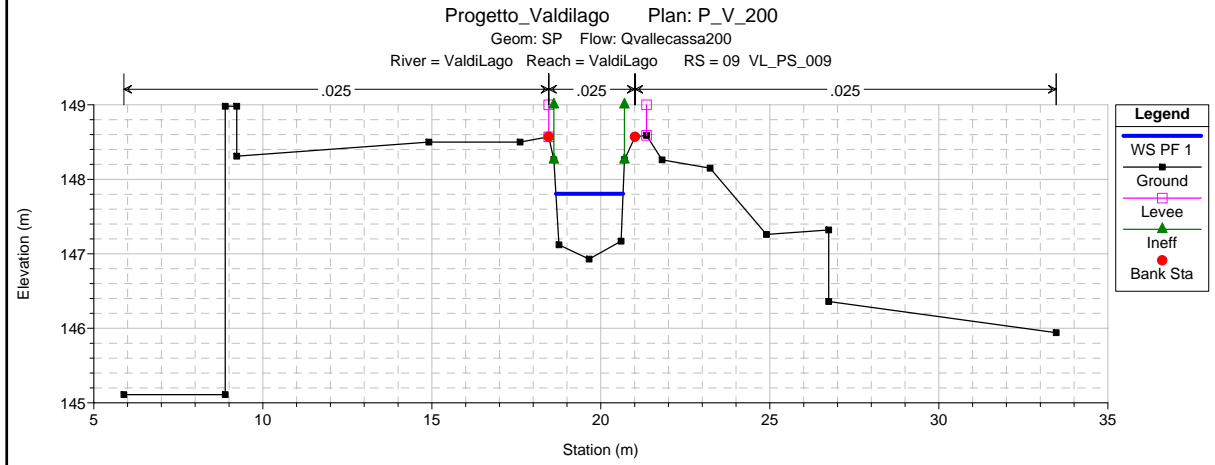
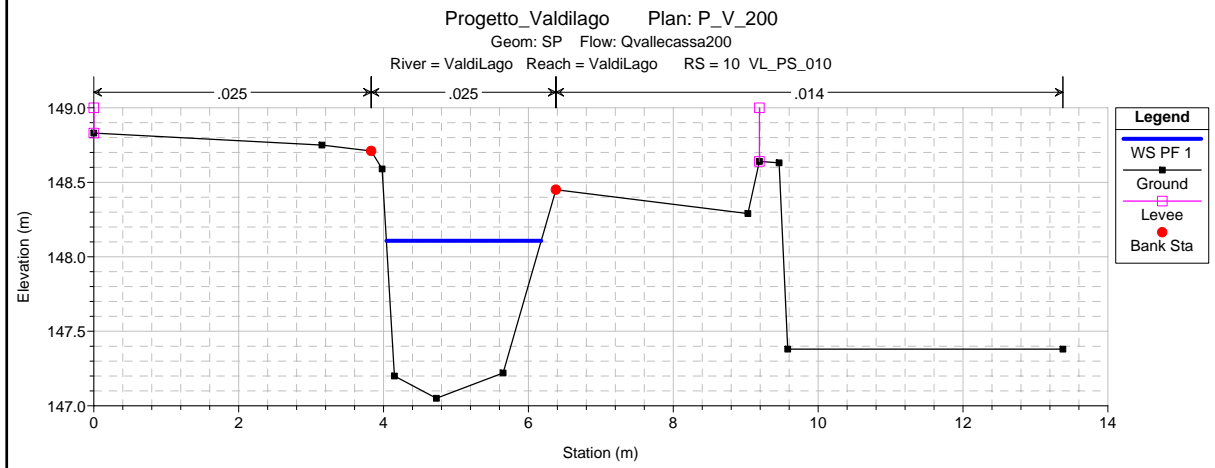
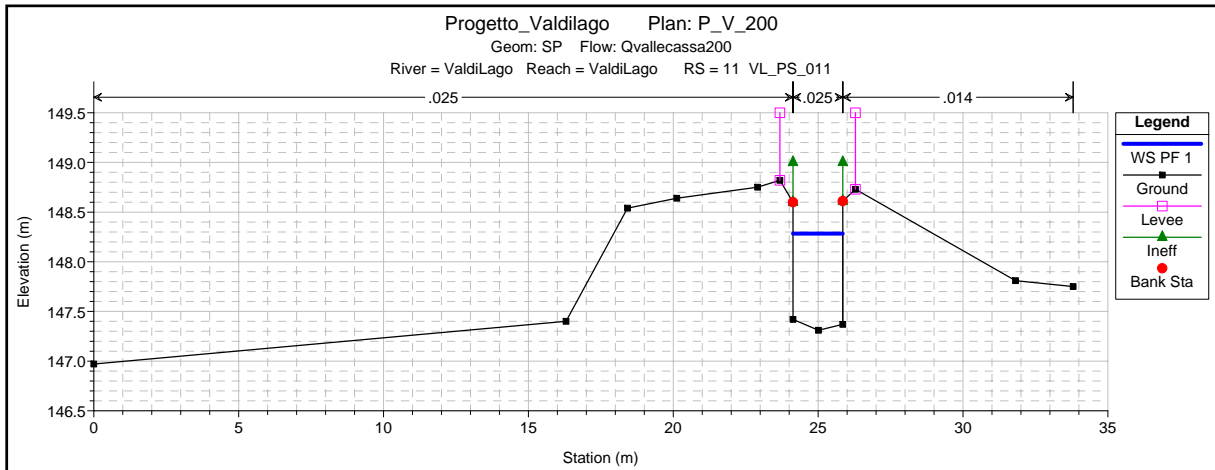


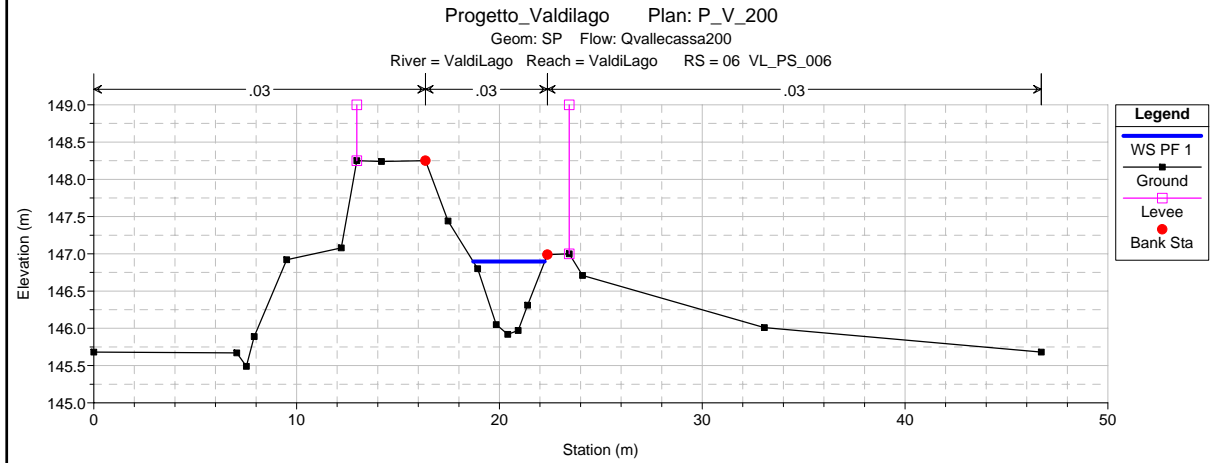
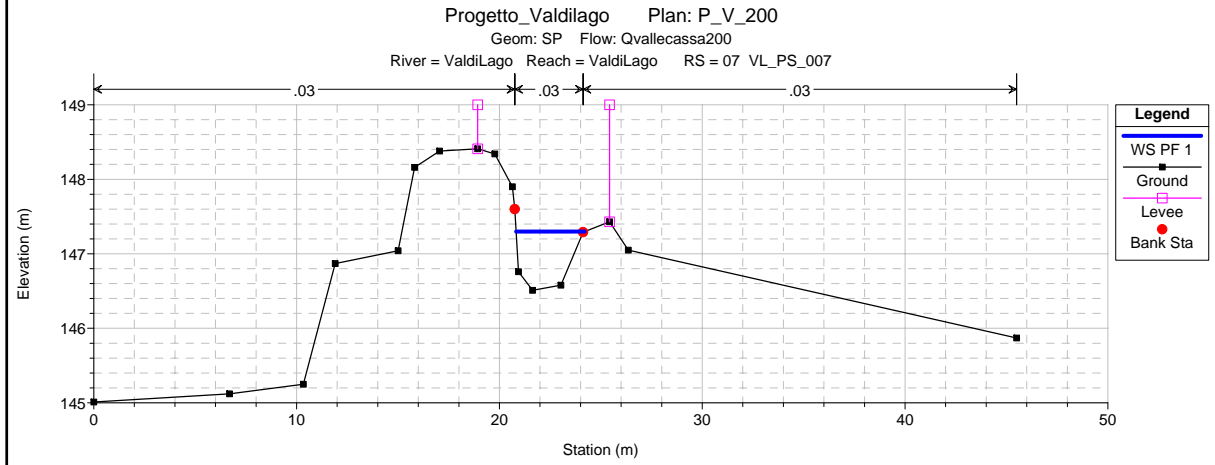
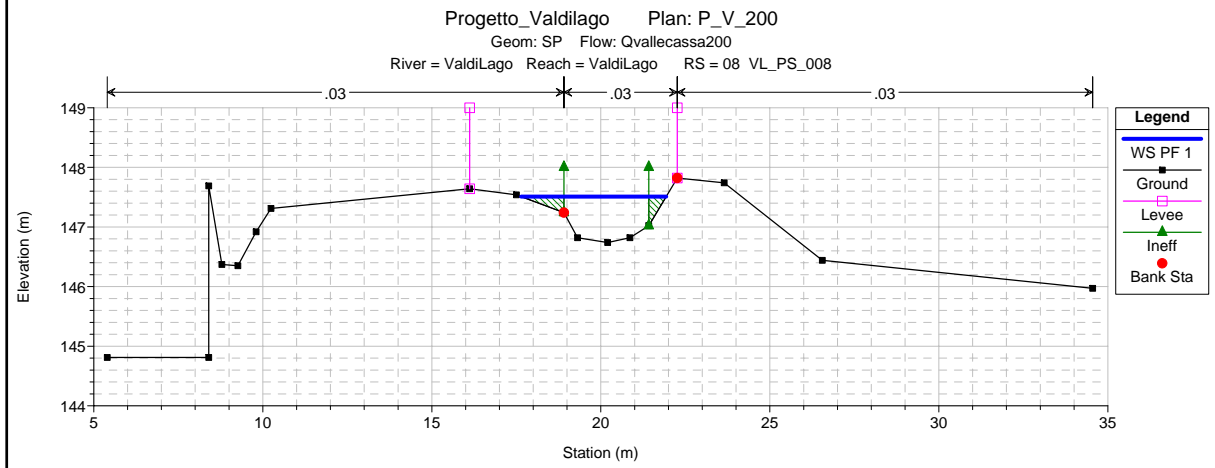
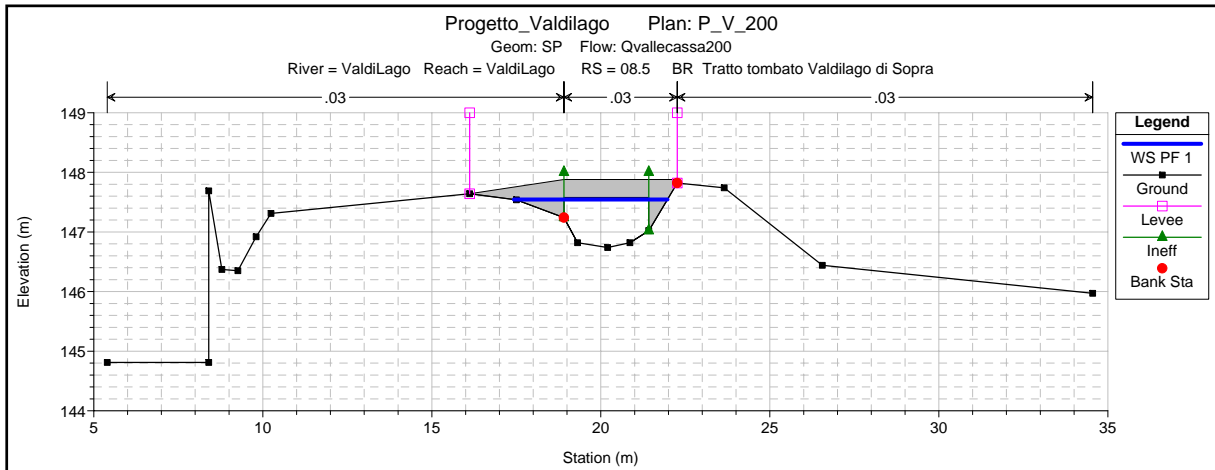


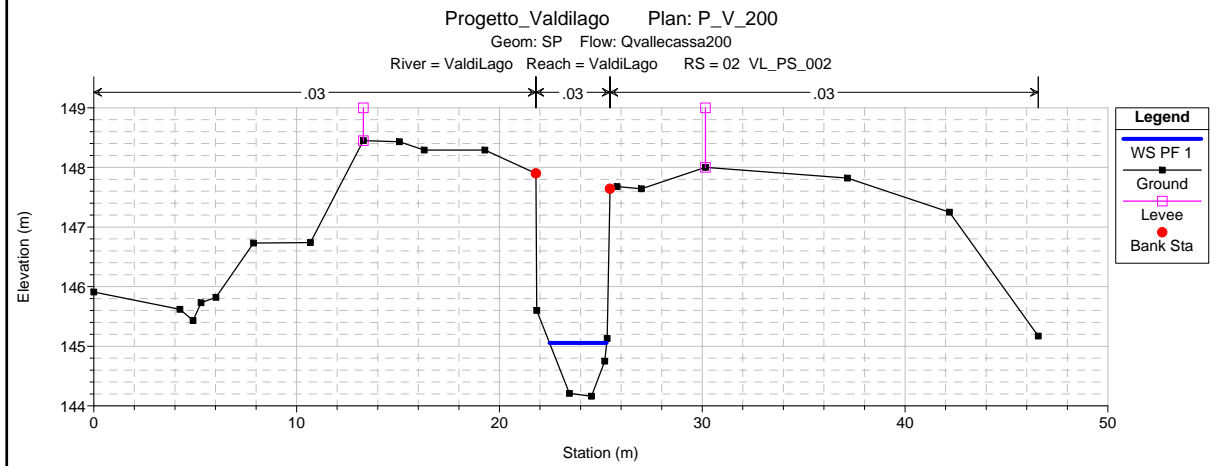
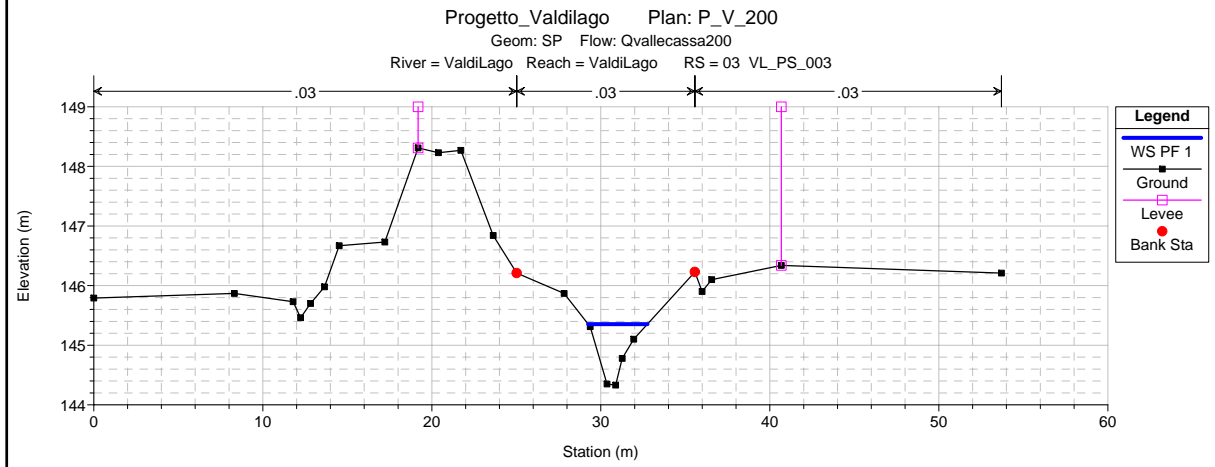
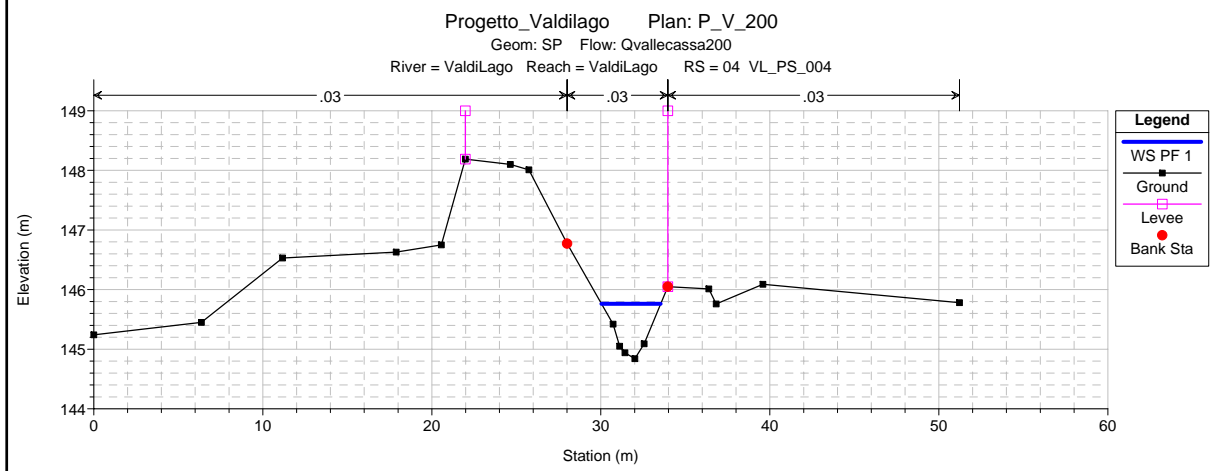
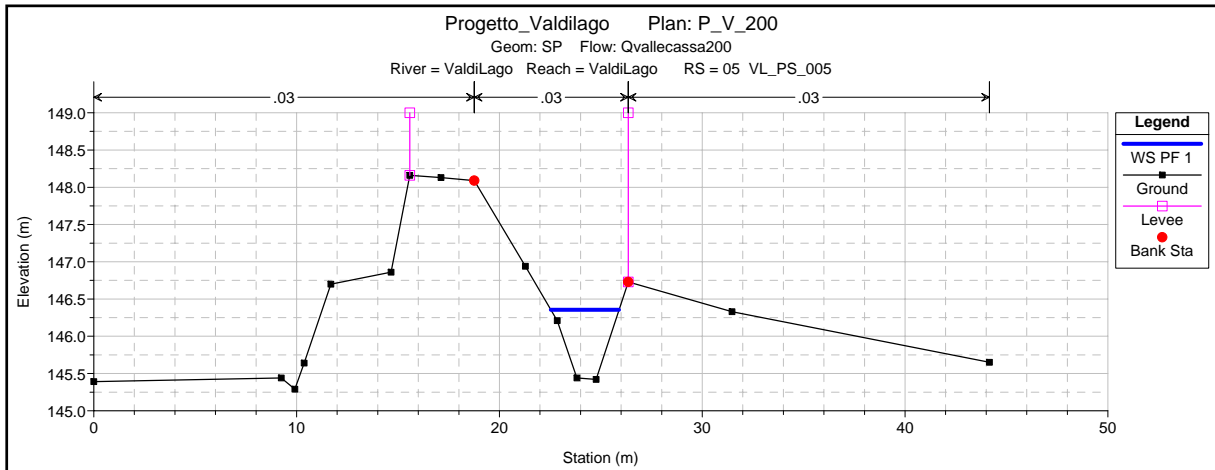


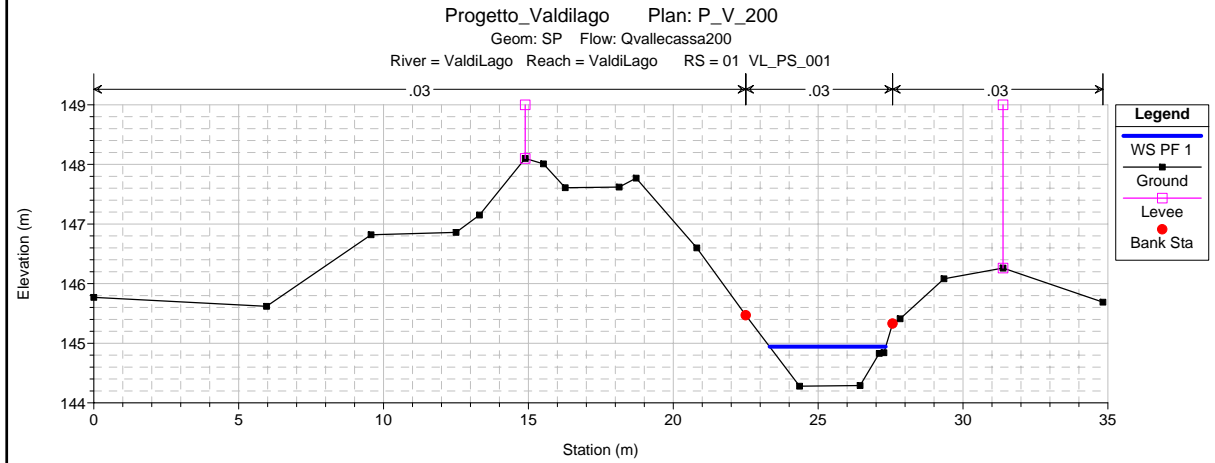
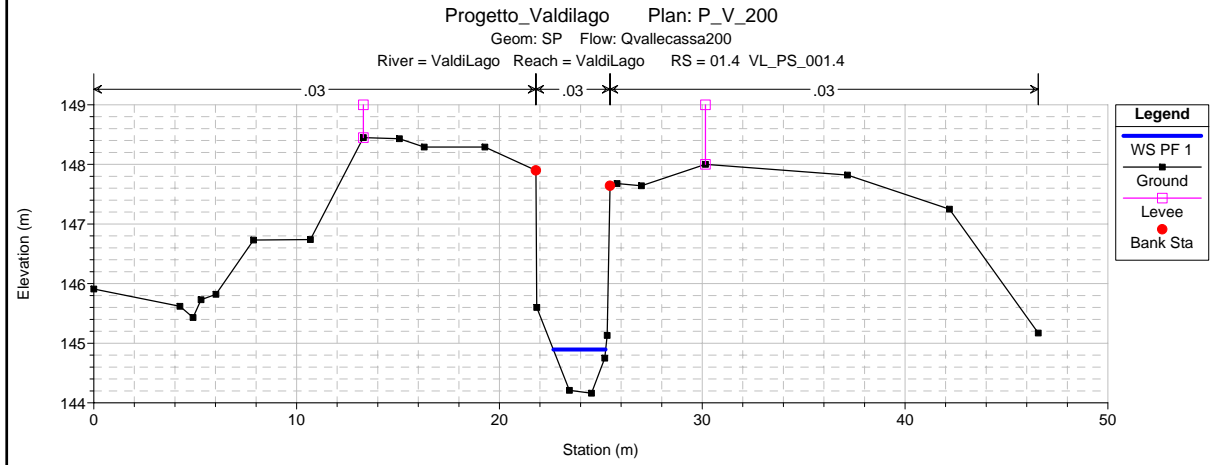
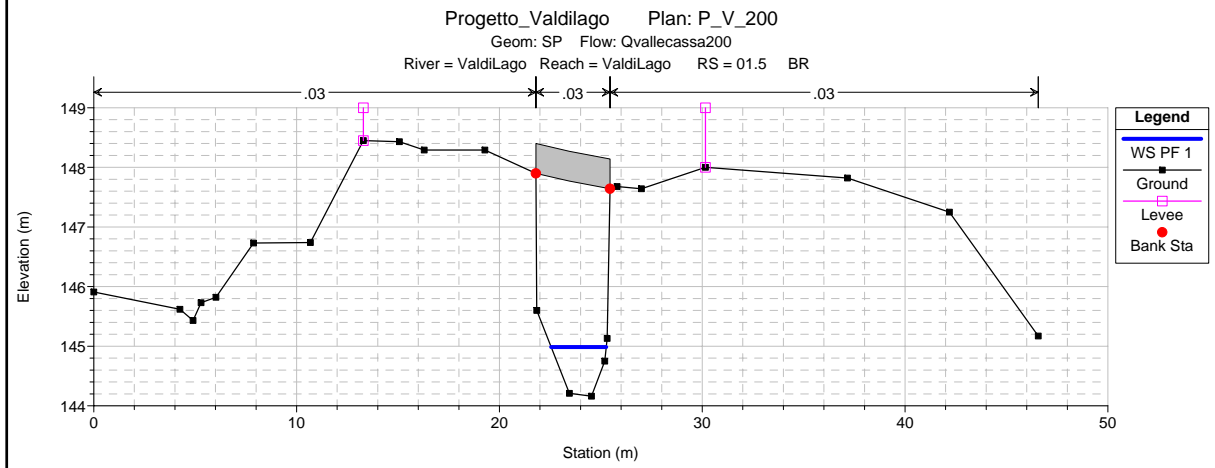
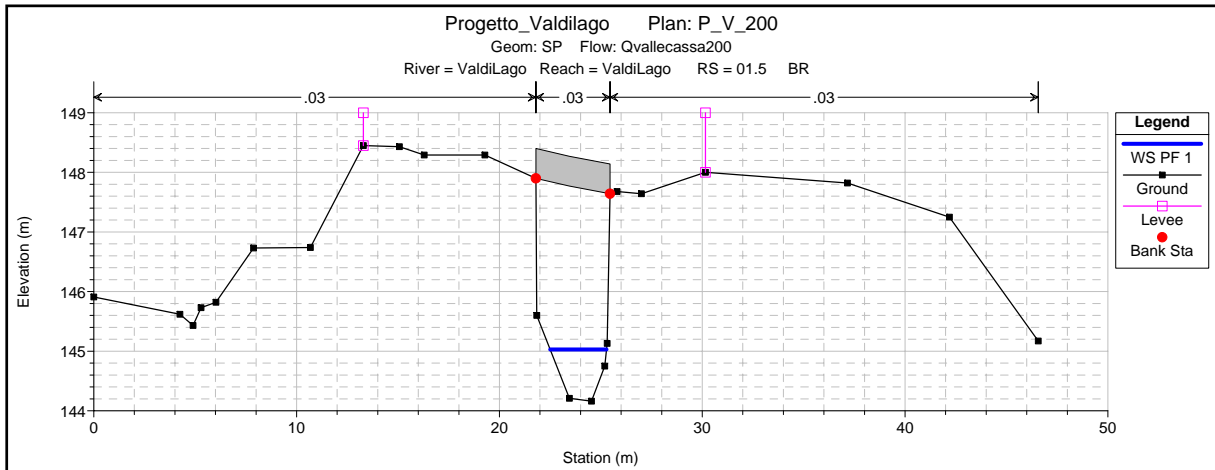












HEC-RAS Plan: P\_V\_200 River: ValdiLago Reach: ValdiLago Profile: PF 1

Reach	River Sta	Profile	Q Total (m3/s)	Min Ch El (m)	W.S. Elev (m)	Crit W.S. (m)	E.G. Elev (m)	E.G. Slope (m/m)	Vel Chnl (m/s)	Flow Area (m2)	Top Width (m)	Froude # Chl
ValdiLago	30	PF 1	3.00	151.37	151.97	151.93	152.14	0.006779	1.81	1.65	3.64	0.86
ValdiLago	29	PF 1	3.00	150.93	151.59	151.56	151.77	0.007447	1.89	1.59	3.59	0.91
ValdiLago	28.5	PF 1	3.00	150.85	151.49	151.47	151.69	0.008273	1.96	1.53	3.53	0.95
ValdiLago	28	PF 1	3.00	150.85	151.48	151.36	151.60	0.004660	1.55	1.94	3.90	0.70
ValdiLago	27	PF 1	3.00	150.52	151.36	151.16	151.49	0.002014	1.59	1.88	3.31	0.60
ValdiLago	26		Bridge									
ValdiLago	25	PF 1	3.00	150.51	151.26	151.17	151.45	0.003824	1.90	1.58	3.24	0.79
ValdiLago	24.8		Lat Struct									
ValdiLago	24	PF 1	3.00	150.26	150.88	150.88	151.13	0.010841	2.20	1.36	2.77	1.00
ValdiLago	23.5	PF 1	3.00	150.02	150.94	150.64	151.03	0.002639	1.32	2.27	3.22	0.50
ValdiLago	23	PF 1	3.00	150.02	150.60	150.60	150.88	0.009924	2.34	1.28	2.36	1.01
ValdiLago	22	PF 1	3.00	148.84	149.59	149.43	149.75	0.003446	1.79	1.67	2.47	0.68
ValdiLago	21.5		Bridge									
ValdiLago	21	PF 1	3.00	148.77	149.39	149.34	149.62	0.004290	2.10	1.43	3.26	0.87
ValdiLago	20	PF 1	3.00	148.44	149.46	149.05	149.53	0.000944	1.11	2.70	3.23	0.39
ValdiLago	19.5		Bridge									
ValdiLago	19.4	PF 1	3.00	148.44	149.45	149.05	149.51	0.001216	1.14	2.64	3.23	0.40
ValdiLago	19	PF 1	3.00	148.51	149.38	149.19	149.48	0.003291	1.43	2.10	3.79	0.61
ValdiLago	18	PF 1	3.00	148.42	149.28	149.09	149.39	0.003333	1.42	2.12	3.84	0.61
ValdiLago	17	PF 1	3.00	148.26	149.13	148.99	149.27	0.004353	1.61	1.86	3.37	0.69
ValdiLago	16	PF 1	3.00	148.18	149.04	148.89	149.16	0.004010	1.52	1.98	3.83	0.67
ValdiLago	15	PF 1	3.00	148.06	148.98	148.79	149.08	0.003593	1.46	2.06	3.81	0.63
ValdiLago	14.9		Lat Struct									
ValdiLago	14	PF 1	3.00	147.73	148.83	148.60	148.92	0.003257	1.32	2.28	4.47	0.59
ValdiLago	13.88		Lat Struct									
ValdiLago	13.8	PF 1	3.00	147.69	148.76	148.41	148.87	0.002355	1.45	2.07	2.53	0.48
ValdiLago	13.5		Bridge									
ValdiLago	13	PF 1	3.00	147.69	148.70	148.41	148.82	0.002892	1.55	1.94	2.50	0.53
ValdiLago	12.9		Lat Struct									
ValdiLago	12	PF 1	3.00	147.42	148.68	148.12	148.73	0.001253	0.99	3.04	3.03	0.31
ValdiLago	11.7		Bridge									
ValdiLago	11.5	PF 1	3.00	147.40	148.60	148.11	148.66	0.001543	1.06	2.84	3.03	0.34
ValdiLago	11.2	PF 1	3.00	147.40	148.53	148.08	148.65	0.003920	1.55	1.93	1.72	0.47
ValdiLago	11.1		Bridge									
ValdiLago	11	PF 1	3.00	147.31	148.28	148.03	148.46	0.006245	1.87	1.60	1.72	0.62

HEC-RAS Plan: P\_V\_200 River: ValdiLago Reach: ValdiLago Profile: PF 1 (Continued)

Reach	River Sta	Profile	Q Total (m3/s)	Min Ch El (m)	W.S. Elev (m)	Crit W.S. (m)	E.G. Elev (m)	E.G. Slope (m/m)	Vel Chnl (m/s)	Flow Area (m2)	Top Width (m)	Froude # Chl
ValdiLago	10.9		Lat Struct									
ValdiLago	10.8		Lat Struct									
ValdiLago	10	PF 1	3.00	147.05	148.11	147.84	148.26	0.004611	1.72	1.75	2.14	0.61
ValdiLago	09	PF 1	3.00	146.93	147.81	147.68	148.02	0.007532	2.05	1.46	1.99	0.76
ValdiLago	08.5		Bridge									
ValdiLago	08	PF 1	3.00	146.74	147.51	147.38	147.68	0.005795	1.81	1.65	4.29	0.71
ValdiLago	7.9		Lat Struct									
ValdiLago	7.8		Lat Struct									
ValdiLago	07	PF 1	3.00	146.51	147.30	147.13	147.42	0.005622	1.55	1.94	3.38	0.64
ValdiLago	06	PF 1	3.00	145.92	146.90	146.69	147.01	0.004899	1.46	2.05	3.53	0.61
ValdiLago	05	PF 1	3.00	145.42	146.36	146.16	146.48	0.005583	1.54	1.95	3.36	0.65
ValdiLago	04	PF 1	3.00	144.84	145.76	145.63	145.90	0.006751	1.63	1.84	3.51	0.72
ValdiLago	03	PF 1	3.00	144.33	145.35	145.25	145.51	0.008752	1.73	1.74	3.51	0.78
ValdiLago	02	PF 1	3.00	144.16	145.06	144.89	145.20	0.006628	1.70	1.77	2.82	0.68
ValdiLago	01.5		Bridge									
ValdiLago	01.4	PF 1	3.00	144.16	144.89	144.89	145.15	0.014438	2.25	1.33	2.58	1.00
ValdiLago	01	PF 1	3.00	144.28	144.94	144.81	145.06	0.006001	1.51	1.99	4.01	0.68



**torrente Caposelvi - stato di progetto**

verifiche con Tpioggia critico per il Torrente Caposelvi

- moto vario

Tr=200, 100, 30 e 20 anni

*profilo*

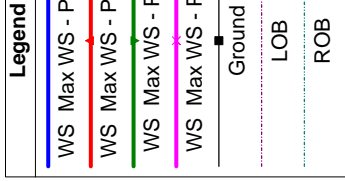
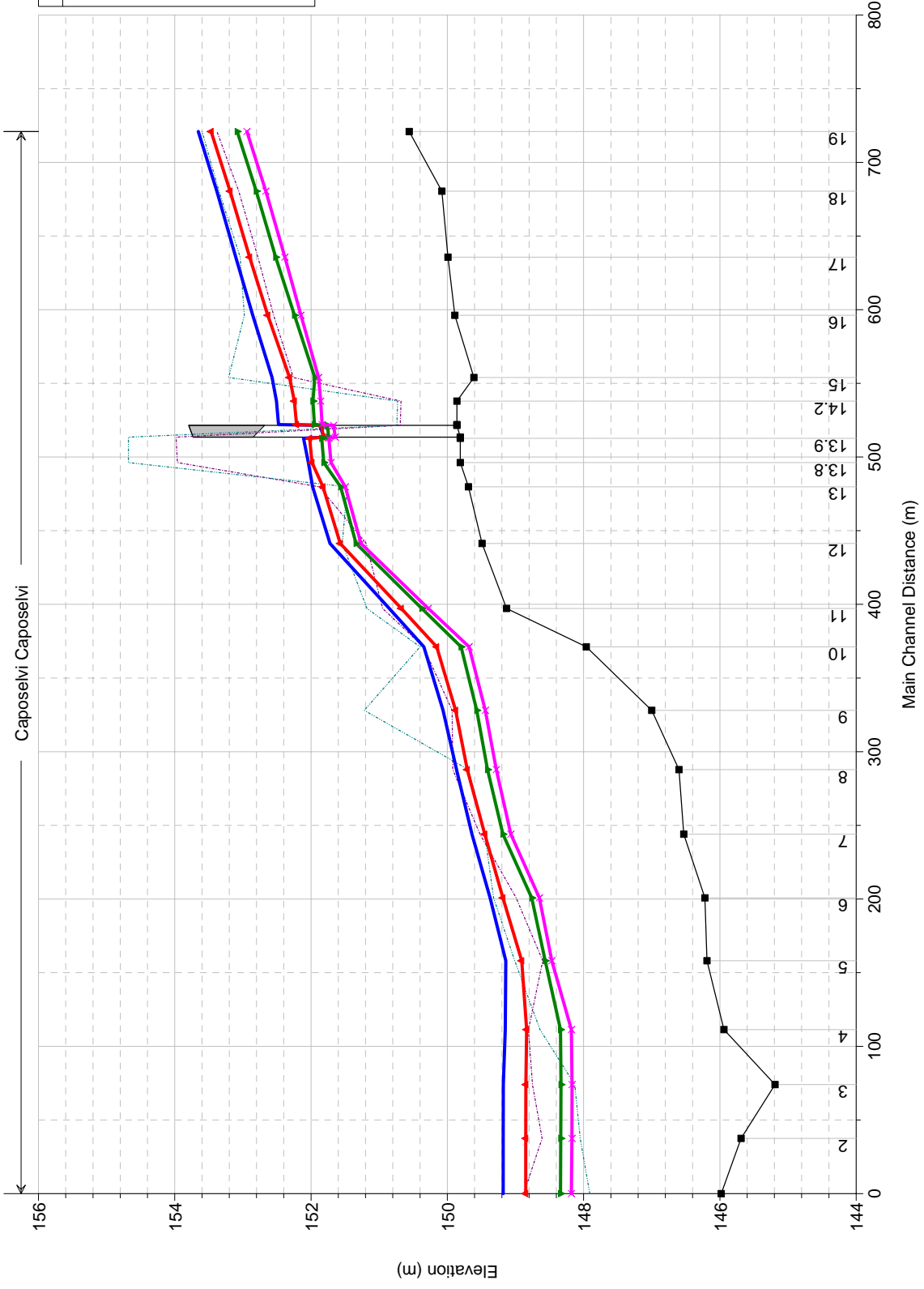
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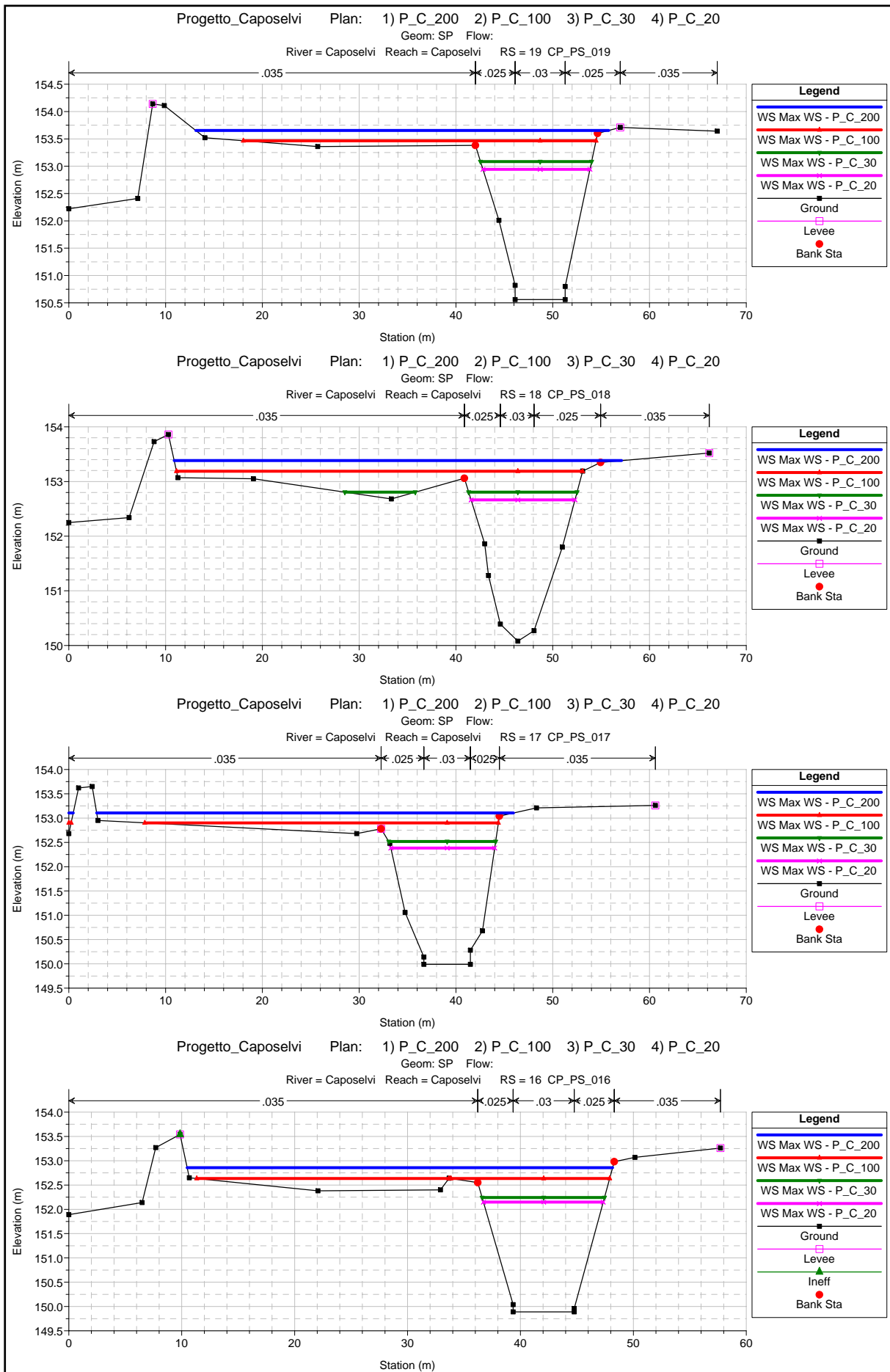
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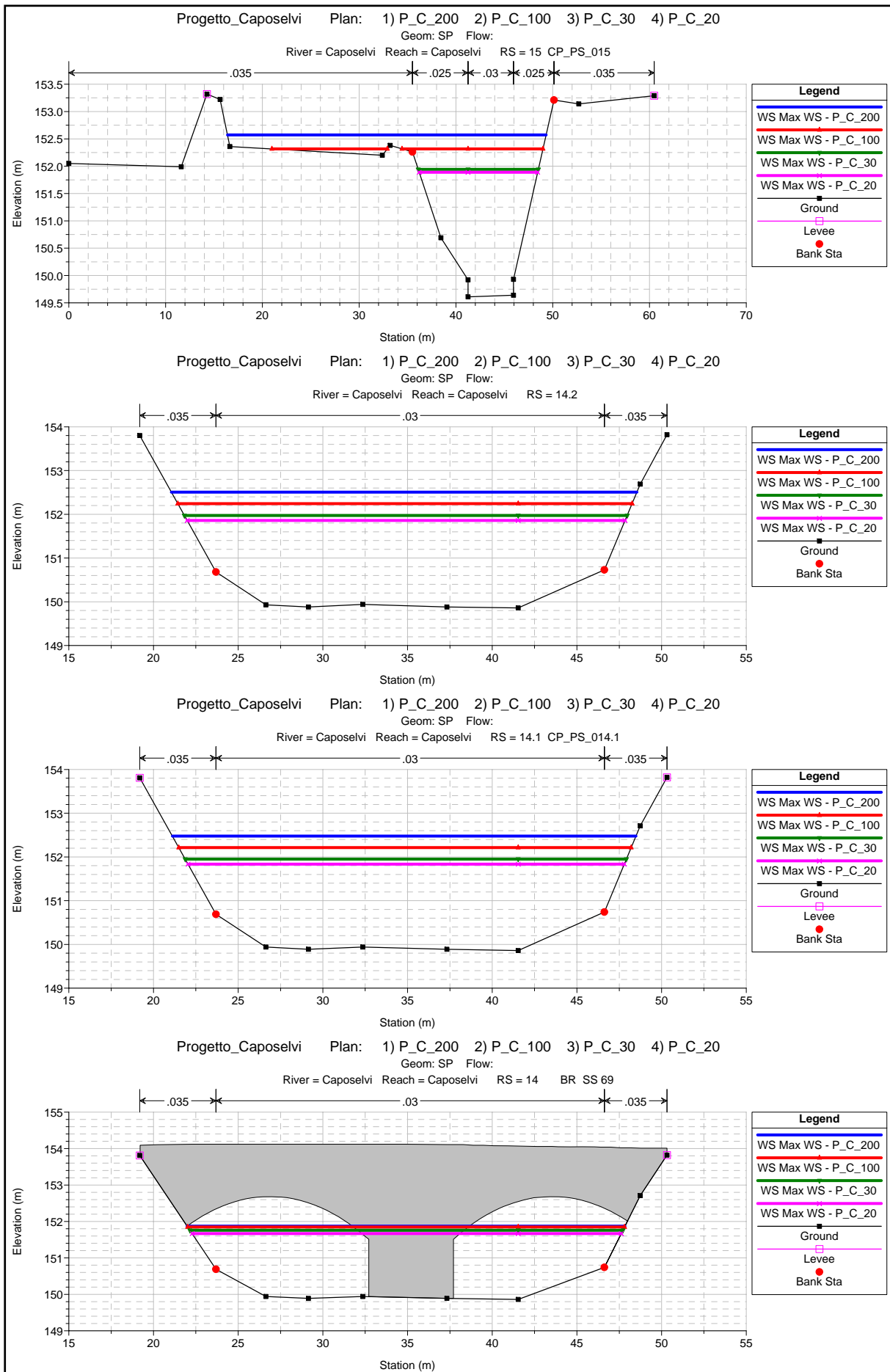


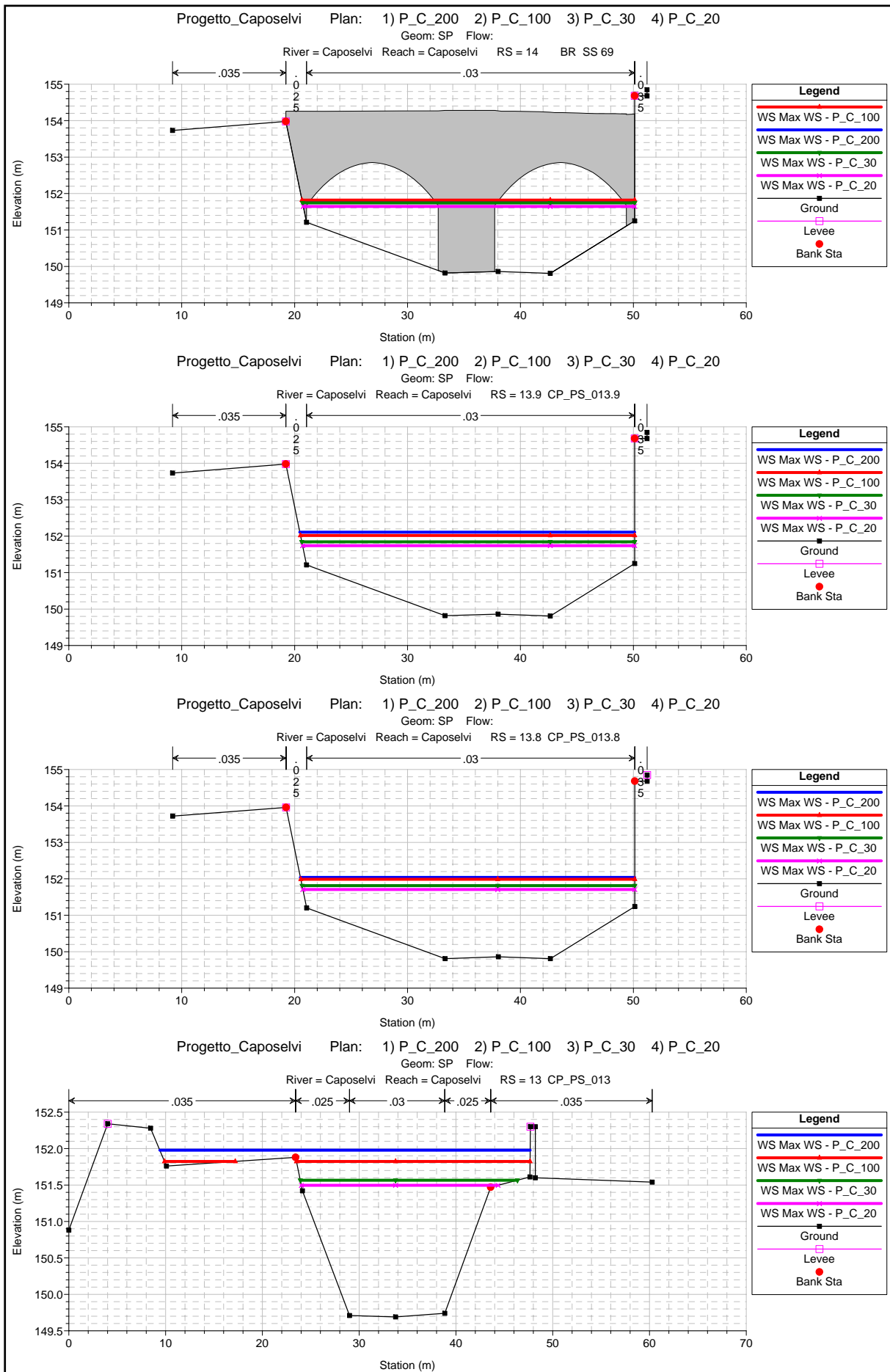
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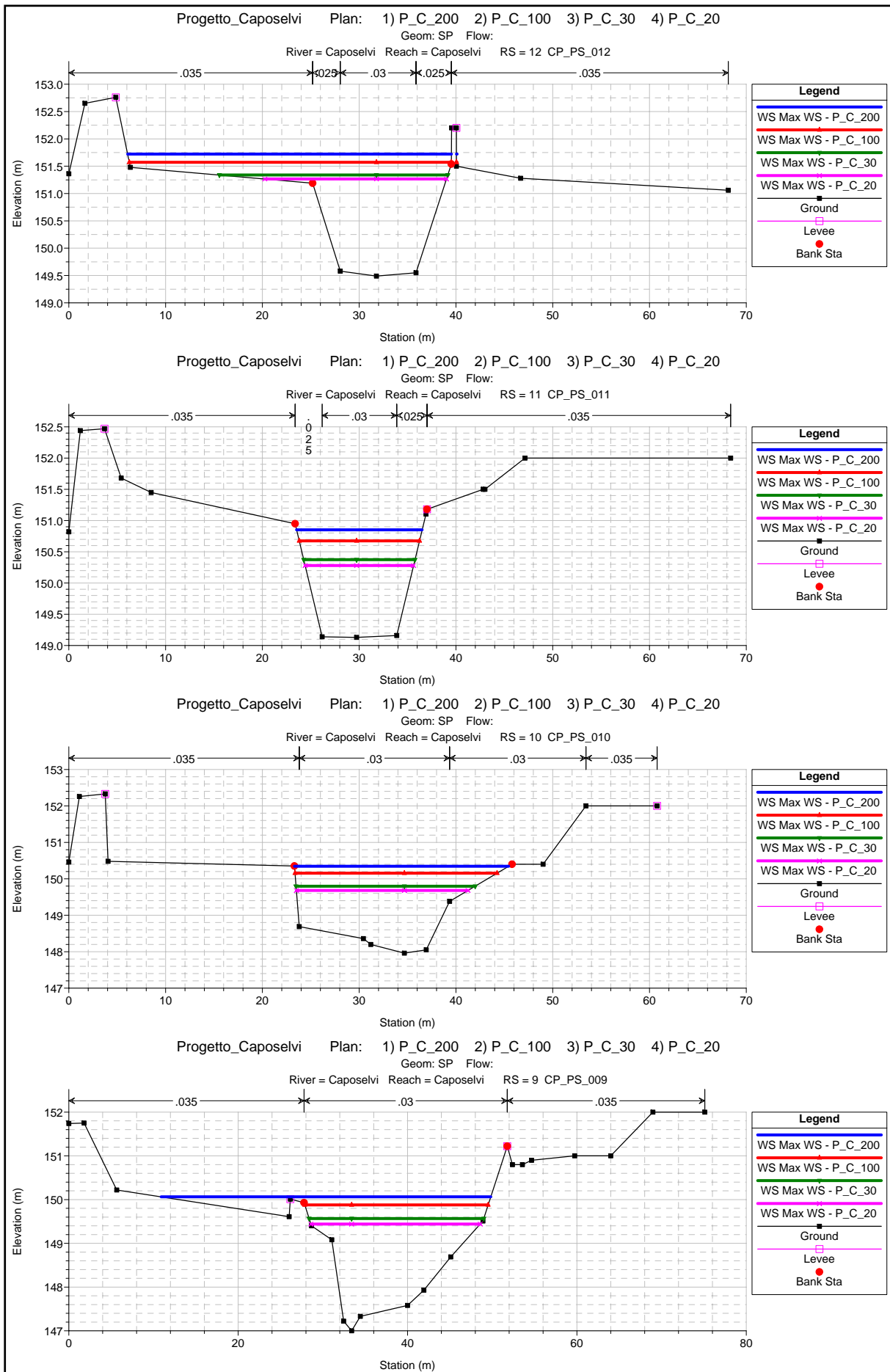
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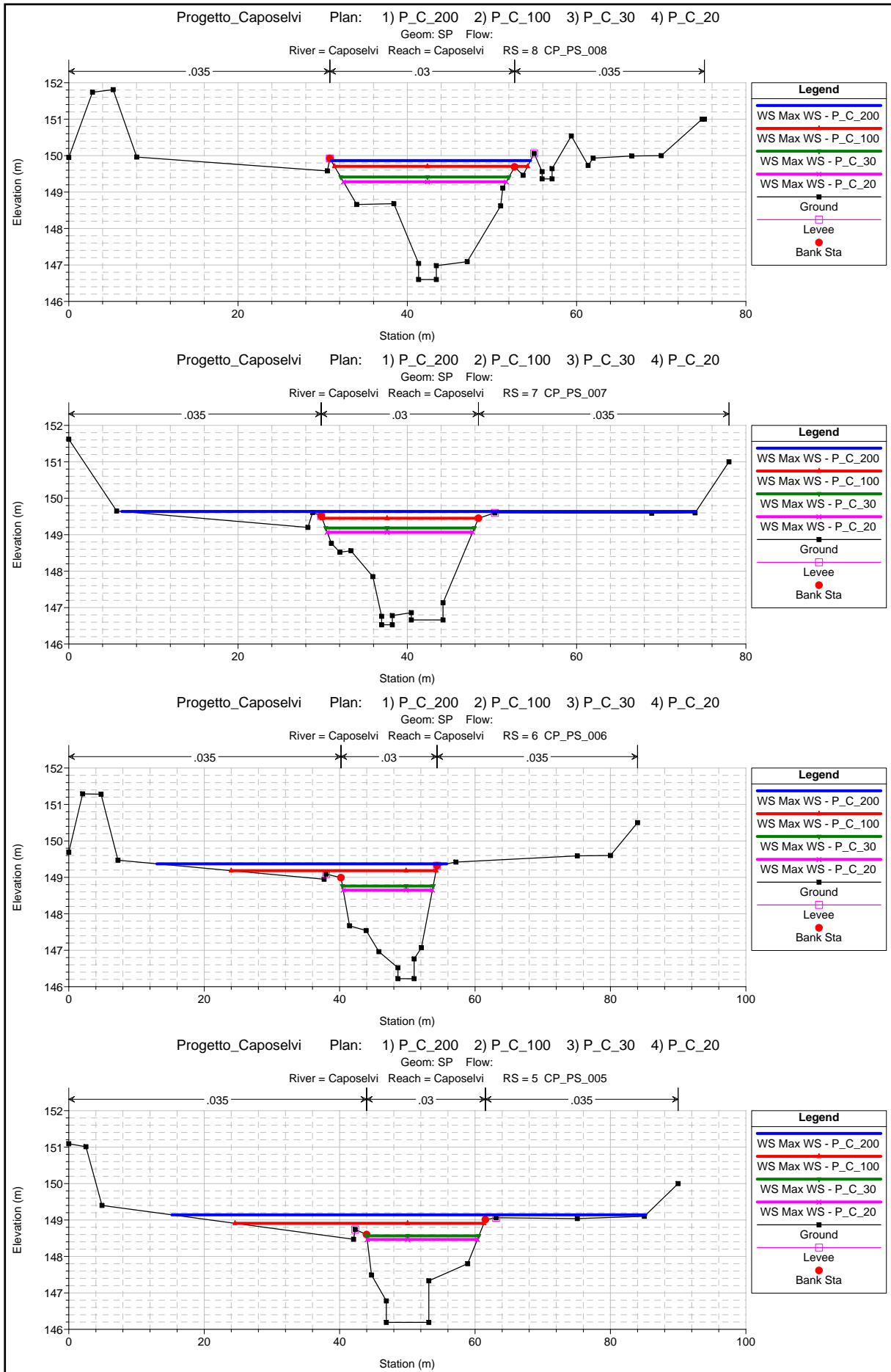




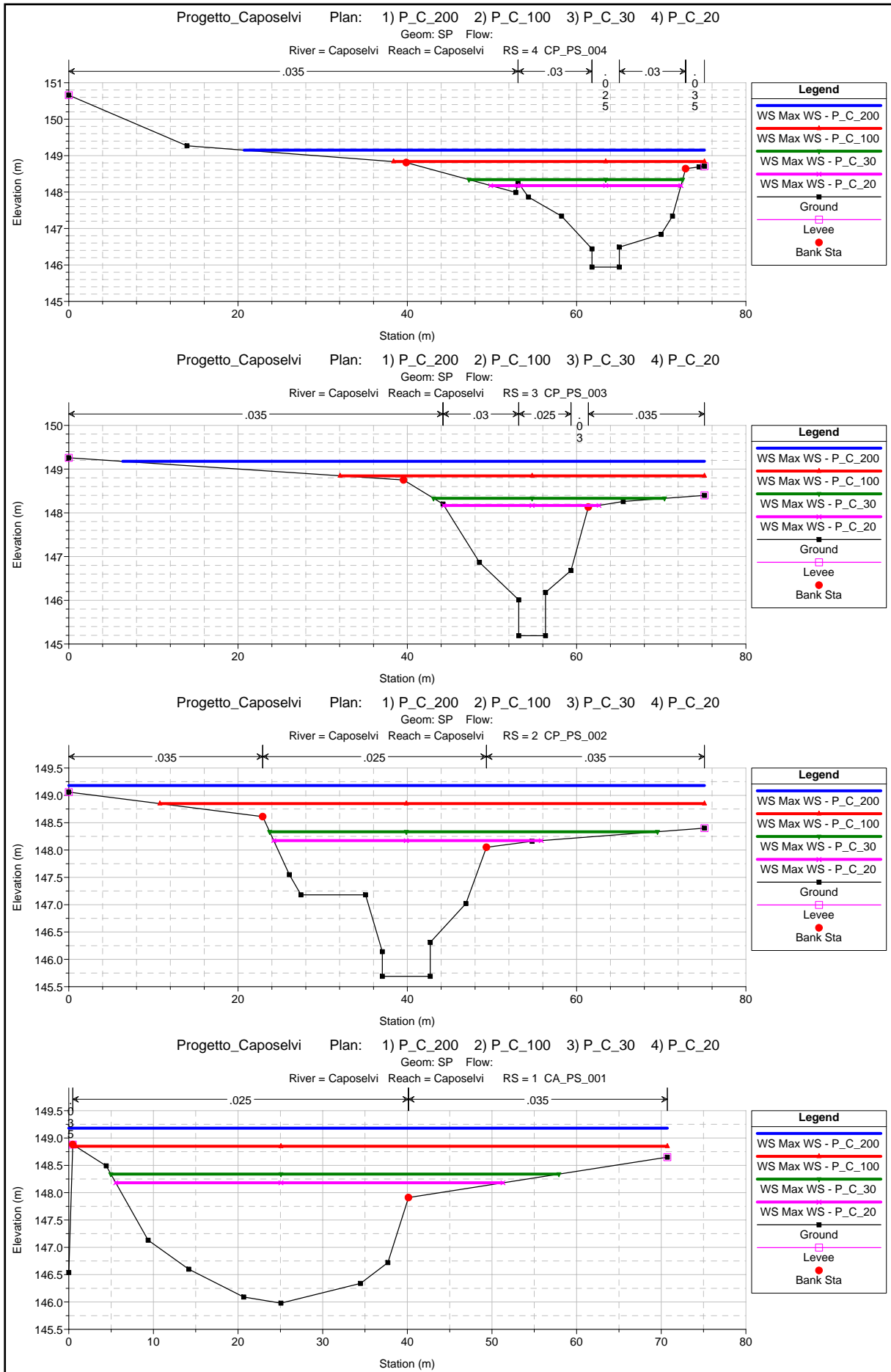














HEC-RAS River: Caposelvi Reach: Caposelvi Profile: Max WS (Continued)

Reach	River Sta	Profile	Plan	Q Total (m3/s)	Min Ch El (m)	W.S. Elev (m)	Crit W.S. (m)	E.G. Elev (m)	E.G. Slope (m/m)	Vel Chnl (m/s)	Flow Area (m2)	Top Width (m)	Froude # Chl
Caposelvi	13.9	Max WS	P_C_200	130.24	149.81	152.11	151.57	152.42	0.002686	2.47	52.81	29.66	0.59
Caposelvi	13.9	Max WS	P_C_100	94.24	149.81	152.02	151.32	152.20	0.001657	1.88	50.17	29.61	0.46
Caposelvi	13.9	Max WS	P_C_30	77.69	149.81	151.84	151.20	152.00	0.001598	1.73	44.97	29.49	0.45
Caposelvi	13.9	Max WS	P_C_20	68.97	149.81	151.74	151.11	151.88	0.001587	1.65	41.85	29.42	0.44
Caposelvi	13.8	Max WS	P_C_200	130.24	149.81	152.04	151.57	152.37	0.003016	2.56	50.93	29.62	0.62
Caposelvi	13.8	Max WS	P_C_100	94.18	149.81	151.99	151.32	152.17	0.001744	1.91	49.35	29.59	0.47
Caposelvi	13.8	Max WS	P_C_30	77.69	149.81	151.81	151.19	151.97	0.001688	1.76	44.21	29.47	0.46
Caposelvi	13.8	Max WS	P_C_20	68.97	149.81	151.71	151.11	151.85	0.001682	1.68	41.10	29.40	0.45
Caposelvi	13	Max WS	P_C_200	130.23	149.69	151.98	151.93	152.60	0.004558	3.54	39.90	38.27	0.85
Caposelvi	13	Max WS	P_C_100	108.59	149.69	151.82	151.65	152.37	0.004380	3.28	34.25	31.45	0.82
Caposelvi	13	Max WS	P_C_30	77.69	149.69	151.57	151.30	151.97	0.003909	2.80	27.87	22.44	0.75
Caposelvi	13	Max WS	P_C_20	59.01	149.69	151.50	151.06	151.75	0.002649	2.24	26.39	20.33	0.62
Caposelvi	12	Max WS	P_C_200	130.23	149.49	151.72	152.03	152.79	0.008755	4.74	32.61	33.46	1.14
Caposelvi	12	Max WS	P_C_100	108.59	149.49	151.57	151.87	152.56	0.008887	4.50	27.56	33.28	1.13
Caposelvi	12	Max WS	P_C_30	77.69	149.49	151.34	151.57	152.11	0.007942	3.90	20.54	23.60	1.05
Caposelvi	12	Max WS	P_C_20	68.97	149.49	151.27	151.32	151.95	0.007405	3.66	19.01	18.77	1.00
Caposelvi	11	Max WS	P_C_200	130.22	149.13	150.85	151.18	153.62	0.030773	7.37	17.66	12.98	2.02
Caposelvi	11	Max WS	P_C_100	108.58	149.13	150.67	151.18	153.20	0.031894	7.04	15.42	12.43	2.02
Caposelvi	11	Max WS	P_C_30	77.69	149.13	150.37	151.07	152.57	0.035829	6.57	11.83	11.50	2.07
Caposelvi	11	Max WS	P_C_20	68.96	149.13	150.28	150.92	152.38	0.037565	6.41	10.75	11.20	2.09
Caposelvi	10	Max WS	P_C_200	130.22	147.96	150.34	150.33	151.09	0.008366	3.82	34.07	22.14	0.98
Caposelvi	10	Max WS	P_C_100	108.58	147.96	150.16	150.11	150.82	0.008184	3.62	30.00	20.88	0.96
Caposelvi	10	Max WS	P_C_30	77.69	147.96	149.80	149.77	150.38	0.008599	3.38	22.96	18.51	0.97
Caposelvi	10	Max WS	P_C_20	68.96	147.96	149.68	149.66	150.24	0.008801	3.31	20.84	17.74	0.97
Caposelvi	9	Max WS	P_C_200	130.21	147.00	150.06	149.79	150.59	0.004836	3.25	42.85	38.93	0.78
Caposelvi	9	Max WS	P_C_100	103.16	147.00	149.88	149.55	150.32	0.004413	2.93	35.21	21.66	0.73
Caposelvi	9	Max WS	P_C_30	77.69	147.00	149.57	149.24	149.94	0.004641	2.71	28.63	20.62	0.74
Caposelvi	9	Max WS	P_C_20	68.96	147.00	149.44	149.10	149.80	0.004794	2.65	26.07	20.01	0.74
Caposelvi	8	Max WS	P_C_200	130.21	146.60	149.86	149.59	150.43	0.005217	3.34	39.39	23.57	0.79
Caposelvi	8	Max WS	P_C_100	103.04	146.60	149.71	149.32	150.13	0.004344	2.90	35.72	22.83	0.72

HEC-RAS River: Caposelvi Reach: Caposelvi Profile: Max WS (Continued)

Reach	River Sta	Profile	Plan	Q Total (m3/s)	Min Ch El (m)	W.S. Elev (m)	Crit W.S. (m)	E.G. Elev (m)	E.G. Slope (m/m)	Vel Chnl (m/s)	Flow Area (m2)	Top Width (m)	Froude # Chl
Caposelvi	8	Max WS	P_C_30	77.69	146.60	149.41	149.04	149.77	0.004226	2.64	29.44	19.87	0.69
Caposelvi	8	Max WS	P_C_20	68.95	146.60	149.28	148.94	149.62	0.004307	2.56	26.90	19.23	0.69
Caposelvi	7	Max WS	P_C_200	130.07	146.53	149.64	149.39	150.24	0.005311	3.48	42.49	67.85	0.80
Caposelvi	7	Max WS	P_C_100	108.51	146.53	149.45	149.16	150.01	0.005474	3.31	32.74	18.47	0.79
Caposelvi	7	Max WS	P_C_30	77.69	146.53	149.18	148.81	149.58	0.004448	2.78	27.93	17.56	0.70
Caposelvi	7	Max WS	P_C_20	68.94	146.53	149.07	148.69	149.43	0.004357	2.66	25.92	17.17	0.69
Caposelvi	6	Max WS	P_C_200	129.84	146.22	149.37	149.32	150.22	0.007135	4.16	36.01	42.82	0.91
Caposelvi	6	Max WS	P_C_100	108.37	146.22	149.18	149.29	149.96	0.007094	3.93	29.26	30.26	0.90
Caposelvi	6	Max WS	P_C_30	77.68	146.22	148.76	148.66	149.43	0.007689	3.62	21.45	13.39	0.91
Caposelvi	6	Max WS	P_C_20	68.92	146.22	148.65	148.53	149.26	0.007467	3.45	19.98	13.17	0.89
Caposelvi	5	Max WS	P_C_200	38.30	146.19	149.14	147.80	149.19	0.000450	1.01	46.62	70.01	0.23
Caposelvi	5	Max WS	P_C_100	107.76	146.19	148.91	148.85	149.48	0.005937	3.41	34.92	36.76	0.82
Caposelvi	5	Max WS	P_C_30	77.68	146.19	148.56	148.36	149.07	0.006281	3.13	24.78	16.56	0.82
Caposelvi	5	Max WS	P_C_20	68.92	146.19	148.47	148.24	148.92	0.006032	2.97	23.17	16.29	0.80
Caposelvi	4.8			Lat Struct									
Caposelvi	4	Max WS	P_C_200	37.08	145.94	149.15	147.55	149.17	0.000271	0.69	57.01	54.38	0.17
Caposelvi	4	Max WS	P_C_100	24.73	145.94	148.84	147.30	148.85	0.000259	0.58	42.74	36.72	0.16
Caposelvi	4	Max WS	P_C_30	20.65	145.94	148.34	147.20	148.37	0.000494	0.74	27.77	25.23	0.23
Caposelvi	4	Max WS	P_C_20	20.86	145.94	148.18	147.21	148.22	0.000676	0.87	23.93	22.17	0.27
Caposelvi	3	Max WS	P_C_200	17.26	145.19	149.18	146.68	149.18	0.000035	0.31	66.88	68.74	0.07
Caposelvi	3	Max WS	P_C_100	18.15	145.19	148.85	146.71	148.86	0.000078	0.42	48.37	43.04	0.10
Caposelvi	3	Max WS	P_C_30	20.64	145.19	148.33	146.78	148.36	0.000239	0.69	30.59	27.29	0.17
Caposelvi	3	Max WS	P_C_20	20.84	145.19	148.17	146.79	148.20	0.000306	0.77	27.03	18.34	0.20
Caposelvi	2	Max WS	P_C_200	17.18	145.69	149.18	146.70	149.18	0.000013	0.24	92.52	75.10	0.05
Caposelvi	2	Max WS	P_C_100	18.14	145.69	148.85	146.74	148.85	0.000028	0.32	68.83	64.33	0.07
Caposelvi	2	Max WS	P_C_30	20.63	145.69	148.33	146.82	148.35	0.000114	0.53	40.85	45.82	0.14
Caposelvi	2	Max WS	P_C_20	20.83	145.69	148.17	146.82	148.19	0.000168	0.61	34.59	31.63	0.17
Caposelvi	1	Max WS	P_C_200	17.09	145.98	149.18	146.61	149.18	0.000005	0.16	121.82	70.72	0.03
Caposelvi	1	Max WS	P_C_100	18.13	145.98	148.85	146.63	148.85	0.000011	0.21	97.94	69.95	0.05

HEC-RAS River: Caposelvi Reach: Caposelvi Profile: Max WS (Continued)

Reach	River Sta	Profile	Plan	Q Total (m3/s)	Min Ch El (m)	W.S. Elev (m)	Crit W.S. (m)	E.G. Elev (m)	E.G. Slope (m/m)	Vel Chnl (m/s)	Flow Area (m2)	Top Width (m)	Froude # Chl
Caposelvi	1	Max WS	P_C_30	20.62	145.98	148.34	146.67	148.35	0.000033	0.33	65.50	52.94	0.08
Caposelvi	1	Max WS	P_C_20	20.80	145.98	148.18	146.67	148.19	0.000046	0.37	57.61	45.75	0.09

