



COMUNE DI SIENA

**STUDIO IDROLOGICO IDRAULICO DEI TORRENTI TRESSA,
RILUOGO, BOZZONE, SORRA E SERPENNA NEL TERRITORIO
COMUNALE DI SIENA**

***ET. 02.3 VERIFICHE IDRAULICHE E ALLEGATI
DI CALCOLO: T. BOZZONE***

Agosto 2008 Rev.0

Progettista

Dott. Ing. CLAUDIO LOMBARDI

Collaboratori

Dott. Ing. ALESSIO GIUNTI

Dott. Ing. ALESSIO MAGAZZINI

Dott. Ing. ALBERTO NASTASI

Studio Tecnico Ing. CLAUDIO LOMBARDI

Risultati delle verifiche idrauliche

Torrente Bozzone – tratto Boz.01

Il tratto oggetto di verifiche si estende per circa 2200 metri dal nuovo ponte del raccordo autostradale Siena - Bettolle (zona Ropole) fino alla confluenza con T. Arbia

I risultati delle verifiche idrauliche, riportati nella planimetria delle aree allagate, sintetizzano i valori dei livelli idraulici massimi relativi a due condizioni:

- portata massima del T. Bozzone;
- rigurgito indotto dalla piena del T. Arbia

Questa ultima condizione produce i valori massimi a partire dalla confluenza fino alla sezione 300, a monte della quale prevalgono i livelli idraulici legati alle portate del T. Bozzone.

Lungo il tracciato sono presenti n.2 attraversamenti di recente realizzazione sul raccordo autostradale Siena-Bettolle (sezioni BL1050 e BL1030) e n. 1 attraversamento ferroviario nei pressi di Taverne d'Arbia.



Foto 1 –attraversamenti del raccordo Siena-Bettolle (sezioni BL1050 e BL1030)



Foto 2 –particolare della strada di Mociano che passa al di sotto del raccordo, con il muro di protezione in c.a.

Nel tratto studiato si verificano ovunque condizioni di corrente lenta ($Fr < 1$), con velocità medie comprese tra 1,4 m/s e 4,1 m/s.

Non si segnalano criticità per i manufatti (attraversamenti stradali/ferroviari) presenti sul corso d'acqua, neppure per l'evento con $Tr = 200$ anni. In particolare si nota che anche le rampe di inserimento al raccordo autostradale sono in sicurezza, in quanto protette da un muro in c.a. posto in sinistra idraulica del T. Bozzone (vedere foto 1 e 2).

Per quanto riguarda le zone a rischio di allagamento si segnalano:

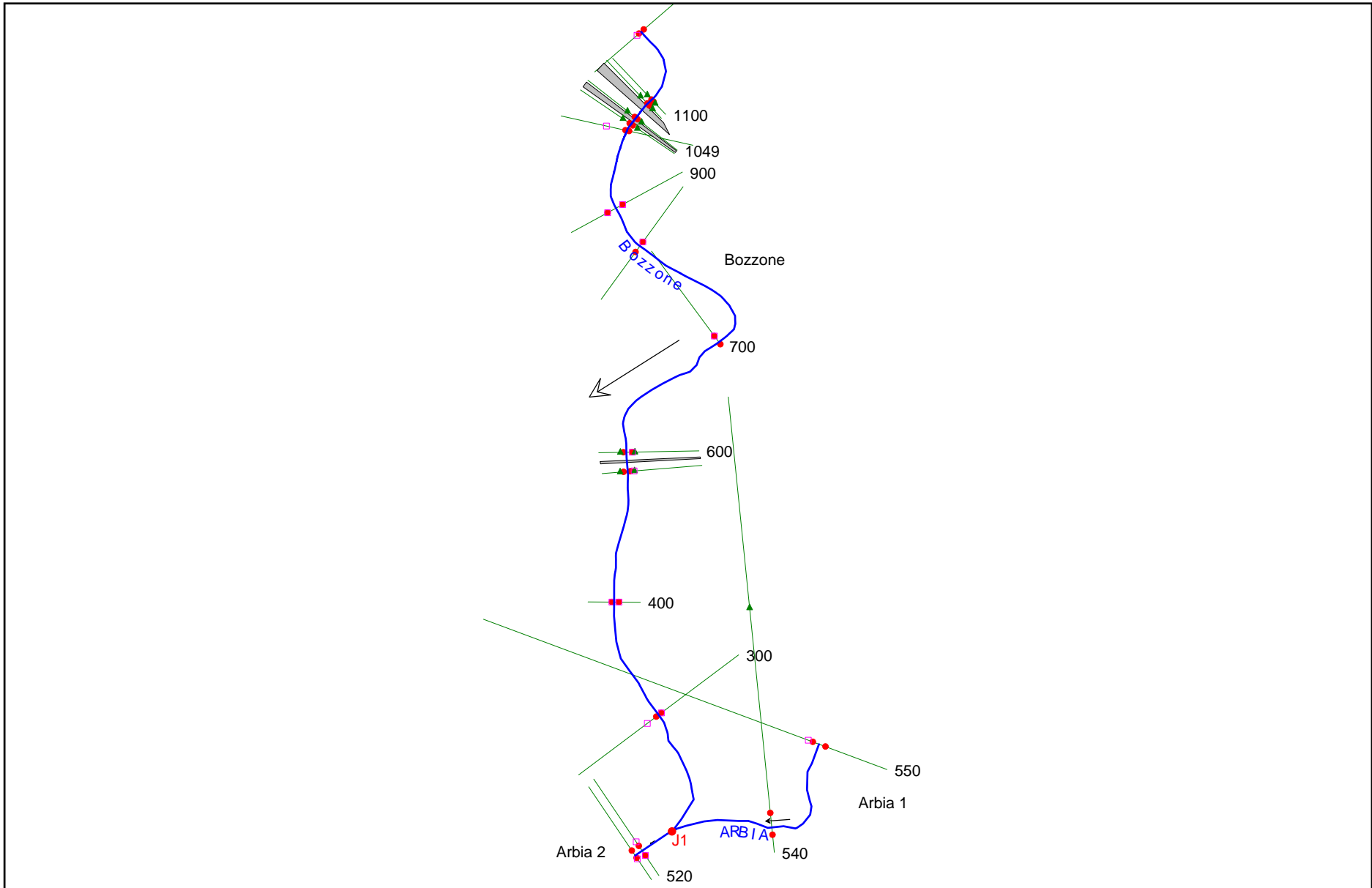
- via Conte D'Arras, per il tratto che corre parallelamente in sinistra idraulica al T. Bozzone, allagata per eventi con $Tr \geq 30$ anni.
- allagamenti vari in sinistra e destra idrografica delle aree golenali per eventi con $Tr \geq 30$ anni;

Per non sovrastimare la portata effettivamente transitabile in tali aree golenali sono stati utilizzati valori di scabrezza $n = 0.12$ superiori a quelli standard (a vantaggio di sicurezza), in modo da ridurre la velocità di moto simulata.

ALLEGATI DI CALCOLO HEC-RAS 3.1.3

TRATTO BOZ01 – TORRENTE BOZZONE

EVENTO CON PORTATA MASSIMA T. BOZZONE (Dcr = 3.77)

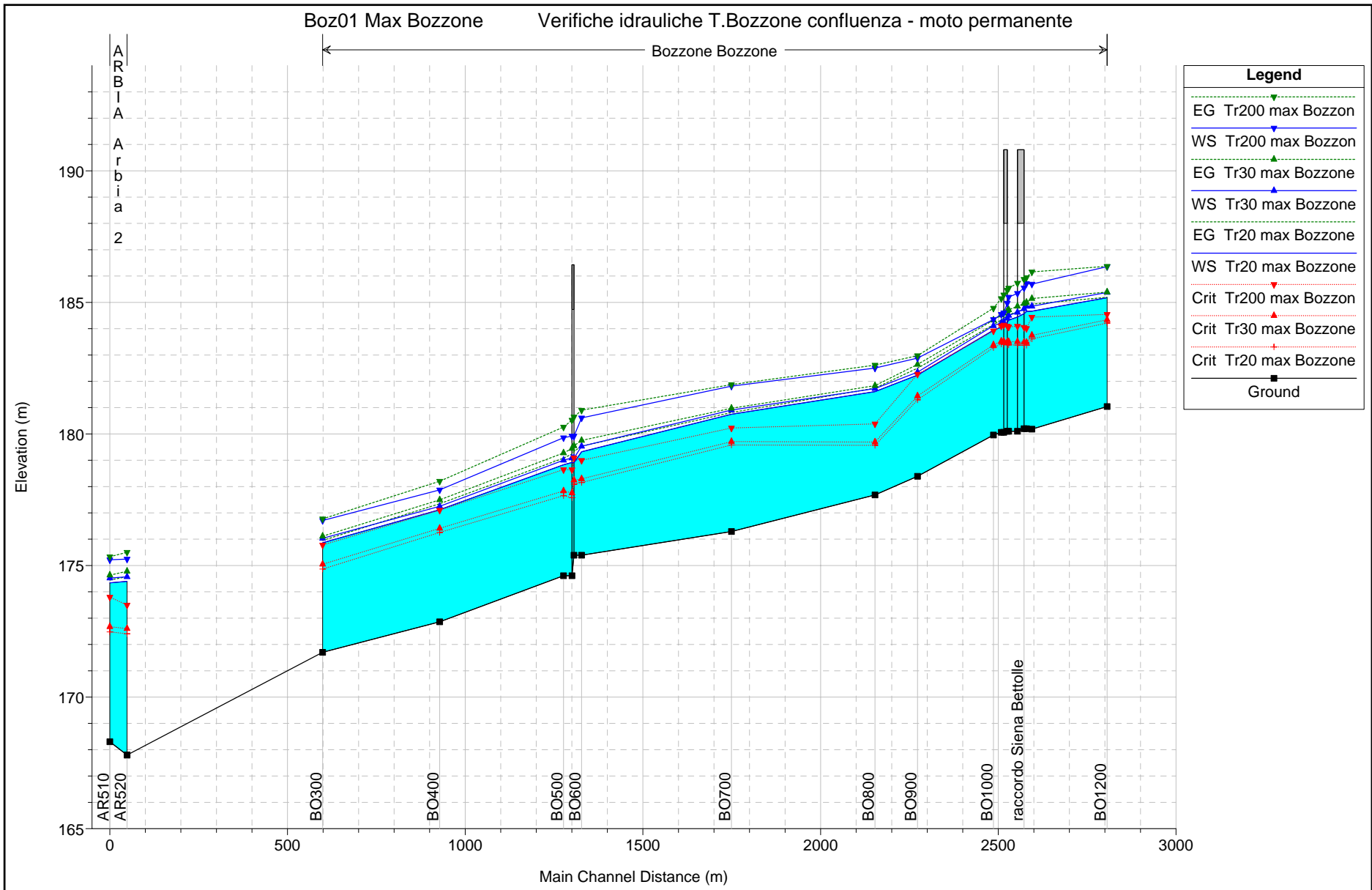


HEC-RAS Plan: BOZ01 MB

River	Reach	River Sta	Profile	Q Total	Q Left	Q Channel	Q Right	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Total	Vel Chnl	Flow Area	Top Width	Froude # Chl	Froude # XS
				(m3/s)	(m3/s)	(m3/s)	(m3/s)	(m)	(m)	(m)	(m/m)	(m/s)	(m/s)	(m2)	(m)			
Bozzone	Bozzone	1200	Tr20 max Bozzone	147.10	25.34	48.08	73.68	181.04	185.18	184.22	185.19	0.000631	0.37	0.88	401.99	240.58	0.15	0.09
Bozzone	Bozzone	1200	Tr30 max Bozzone	165.10	31.00	50.63	83.47	181.04	185.38	184.34	185.39	0.000576	0.37	0.87	449.78	242.75	0.15	0.09
Bozzone	Bozzone	1200	Tr200 max Bozzon	273.60	65.33	66.88	141.39	181.04	186.36	184.54	186.37	0.000439	0.39	0.90	693.46	252.21	0.14	0.08
Bozzone	Bozzone	1100	Tr20 max Bozzone	147.10	14.06	86.31	46.73	180.18	184.66	183.61	184.93	0.006094	1.77	2.85	83.22	139.21	0.46	0.34
Bozzone	Bozzone	1100	Tr30 max Bozzone	165.10	16.48	94.78	53.83	180.18	184.85	183.74	185.15	0.006294	1.86	2.99	88.95	139.86	0.47	0.35
Bozzone	Bozzone	1100	Tr200 max Bozzon	273.60	31.25	145.53	96.82	180.18	185.69	184.44	186.16	0.008036	2.39	3.82	114.37	145.65	0.54	0.39
Bozzone	Bozzone	1099	Tr20 max Bozzone	147.10	18.25	67.69	61.16	180.20	184.66	183.37	184.79	0.003742	1.20	2.24	122.22	46.00	0.36	0.24
Bozzone	Bozzone	1099	Tr30 max Bozzone	165.10	21.32	74.19	69.60	180.20	184.85	183.47	185.00	0.003835	1.26	2.34	131.14	46.00	0.37	0.24
Bozzone	Bozzone	1099	Tr200 max Bozzon	273.60	39.64	113.67	120.28	180.20	185.71	184.01	185.94	0.004800	1.60	2.97	170.93	46.00	0.42	0.27
Bozzone	Bozzone	1050	Tr20 max Bozzone	147.10					184.66		184.79							
Bozzone	Bozzone	1050	Tr30 max Bozzone	165.10					184.85		185.00							
Bozzone	Bozzone	1050	Tr200 max Bozzon	273.60					185.71		185.94							
Bozzone	Bozzone	1049	Tr20 max Bozzone	147.10	15.19	85.20	46.71	180.10	184.33	183.39	184.53	0.004924	1.39	2.50	105.54	47.00	0.43	0.30
Bozzone	Bozzone	1049	Tr30 max Bozzone	165.10	18.19	93.26	53.65	180.10	184.50	183.50	184.72	0.005001	1.45	2.61	113.92	47.00	0.43	0.30
Bozzone	Bozzone	1049	Tr200 max Bozzon	273.60	35.60	143.43	94.57	180.10	185.20	184.06	185.54	0.006660	1.87	3.37	146.52	47.00	0.51	0.34
Bozzone	Bozzone	1030	Tr20 max Bozzone	147.10					184.33		184.53							
Bozzone	Bozzone	1030	Tr30 max Bozzone	165.10					184.50		184.72							
Bozzone	Bozzone	1030	Tr200 max Bozzon	273.60					185.20		185.54							
Bozzone	Bozzone	1001	Tr20 max Bozzone	147.10	14.71	91.43	40.96	180.06	184.05	183.41	184.34	0.007307	1.63	2.89	90.15	46.00	0.51	0.37
Bozzone	Bozzone	1001	Tr30 max Bozzone	165.10	18.00	99.81	47.29	180.06	184.22	183.52	184.52	0.007392	1.69	3.00	97.71	46.00	0.52	0.37
Bozzone	Bozzone	1001	Tr200 max Bozzon	273.60	33.92	157.84	81.83	180.06	184.54	184.10	185.15	0.013678	2.43	4.34	112.62	46.00	0.72	0.50
Bozzone	Bozzone	1000	Tr20 max Bozzone	147.10	8.32	80.71	58.08	179.96	183.94	183.28	184.15	0.006273	1.28	2.62	114.89	83.52	0.47	0.35
Bozzone	Bozzone	1000	Tr30 max Bozzone	165.10	10.39	87.17	67.54	179.96	184.11	183.38	184.33	0.006141	1.27	2.69	130.30	99.82	0.47	0.35
Bozzone	Bozzone	1000	Tr200 max Bozzon	273.60	22.56	136.00	115.04	179.96	184.35	183.92	184.78	0.011913	1.74	3.92	157.45	130.63	0.66	0.51
Bozzone	Bozzone	900	Tr20 max Bozzone	147.10		147.10		178.39	182.23	181.29	182.50	0.009572	2.28	2.28	64.43	37.51	0.56	0.56
Bozzone	Bozzone	900	Tr30 max Bozzone	165.10		165.10		178.39	182.35	181.44	182.64	0.010432	2.40	2.40	68.83	39.76	0.58	0.58
Bozzone	Bozzone	900	Tr200 max Bozzon	273.60	111.21	157.25	5.14	178.39	182.88	182.27	182.98	0.004193	0.94	1.71	289.74	223.64	0.38	0.26
Bozzone	Bozzone	800	Tr20 max Bozzone	147.10		147.10		177.68	181.61	179.57	181.74	0.002372	1.61	1.61	91.28	29.47	0.29	0.29
Bozzone	Bozzone	800	Tr30 max Bozzone	165.10	17.45	147.65		177.68	181.72	179.69	181.83	0.002163	1.03	1.56	159.90	143.65	0.28	0.31
Bozzone	Bozzone	800	Tr200 max Bozzon	273.60	69.30	204.30		177.68	182.50	180.38	182.62	0.002131	0.92	1.72	296.24	205.42	0.29	0.25
Bozzone	Bozzone	700	Tr20 max Bozzone	147.10	0.00	93.81	53.29	176.29	180.75	179.58	180.81	0.002184	0.72	1.37	203.06	158.42	0.27	0.20
Bozzone	Bozzone	700	Tr30 max Bozzone	165.10	0.01	101.23	63.86	176.29	180.91	179.71	180.97	0.002077	0.72	1.40	229.10	167.32	0.27	0.20
Bozzone	Bozzone	700	Tr200 max Bozzon	273.60	0.06	138.67	134.87	176.29	181.82	180.22	181.87	0.001493	0.68	1.43	404.76	220.70	0.24	0.16
Bozzone	Bozzone	600	Tr20 max Bozzone	147.10	6.17	136.90	4.04	175.39	179.32	178.15	179.54	0.004468	1.80	2.11	81.50	144.62	0.40	0.39
Bozzone	Bozzone	600	Tr30 max Bozzone	165.10	7.70	151.82	5.58	175.39	179.53	178.29	179.76	0.004318	1.84	2.18	89.50	189.47	0.40	0.39
Bozzone	Bozzone	600	Tr200 max Bozzon	273.60	17.50	239.93	16.17	175.39	180.61	179.00	180.90	0.003866	2.09	2.53	130.82	253.11	0.40	0.36
Bozzone	Bozzone	550	Tr20 max Bozzone	147.10					179.32		179.54							
Bozzone	Bozzone	550	Tr30 max Bozzone	165.10					179.53		179.76							
Bozzone	Bozzone	550	Tr200 max Bozzon	273.60					180.61		180.90							
Bozzone	Bozzone	500	Tr20 max Bozzone	147.10	7.30	132.19	7.61	174.61	178.83	177.66	179.08	0.004649	1.84	2.35	80.00	215.36	0.42	0.41

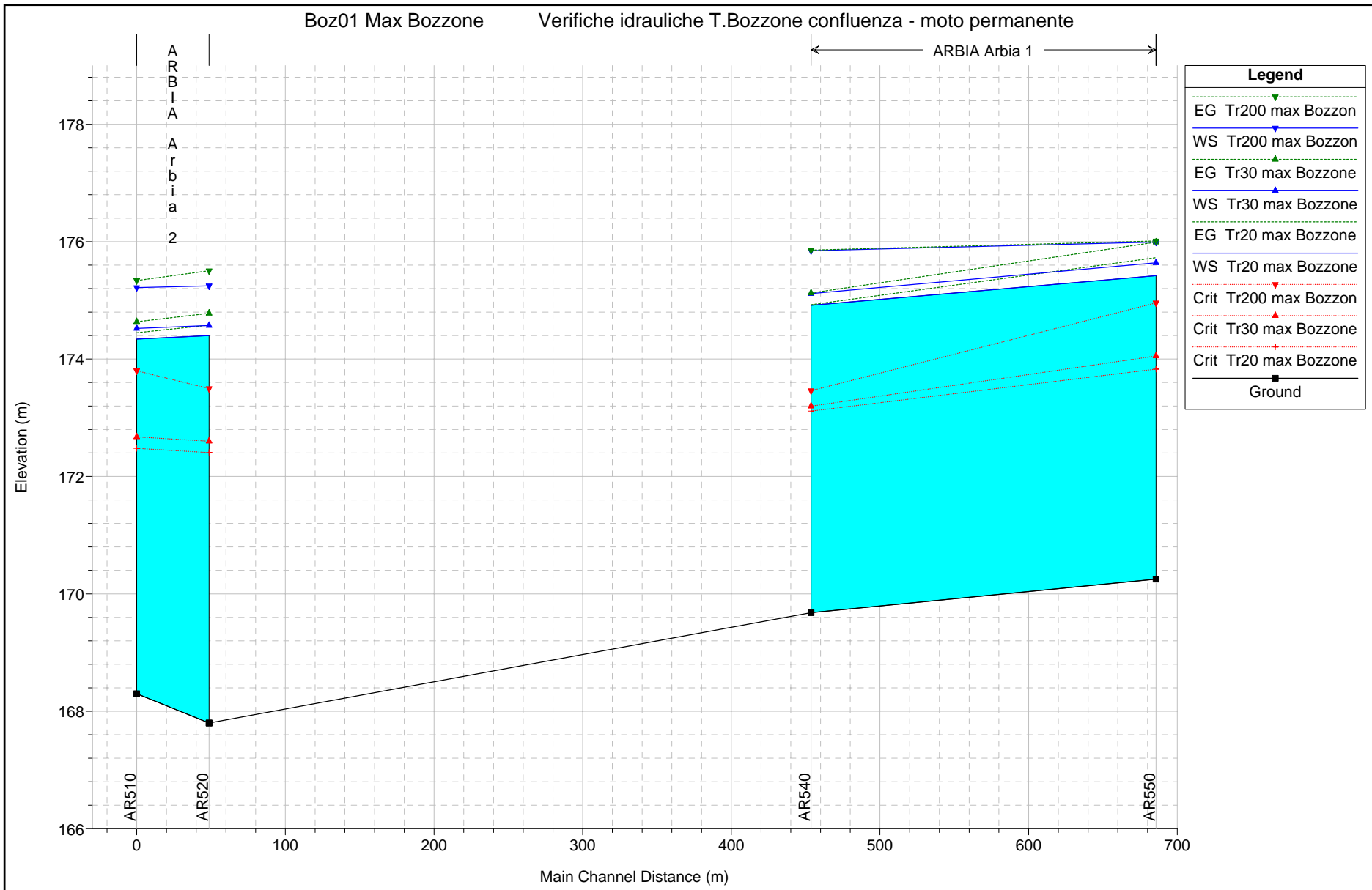
HEC-RAS Plan: BOZ01 MB (Continued)

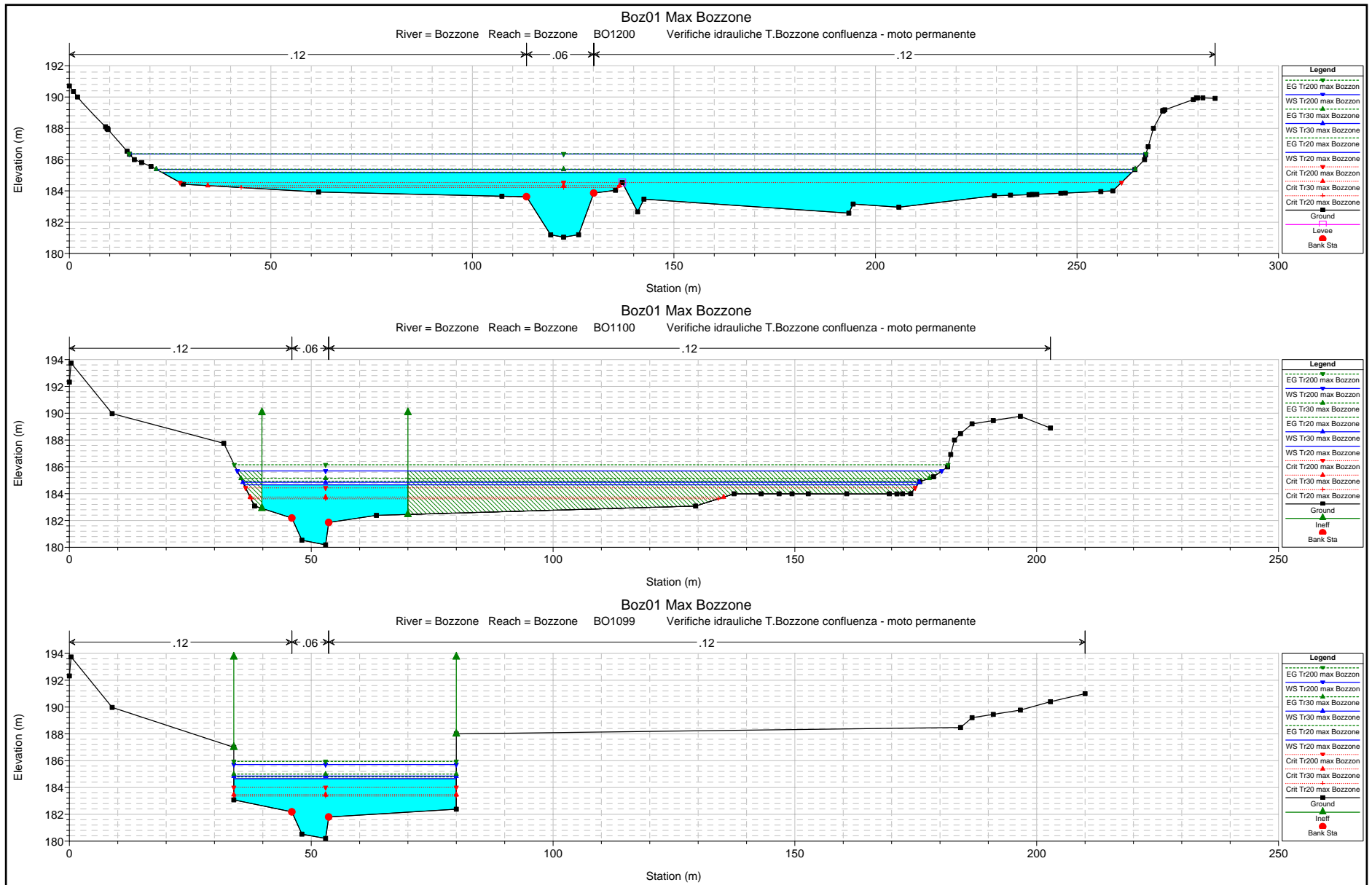
River	Reach	River Sta	Profile	Q Total	Q Left	Q Channel	Q Right	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Total	Vel Chnl	Flow Area	Top Width	Froude # Chl	Froude # XS
				(m3/s)	(m3/s)	(m3/s)	(m3/s)	(m)	(m)	(m)	(m/m)	(m/s)	(m/s)	(m2)	(m)			
Bozzone	Bozzone	500	Tr30 max Bozzone	165.10	9.40	146.13	9.57	174.61	179.00	177.84	179.28	0.004743	1.90	2.46	86.67	223.09	0.43	0.40
Bozzone	Bozzone	500	Tr200 max Bozzon	273.60	23.45	227.84	22.31	174.61	179.86	178.64	180.26	0.005357	2.29	3.05	119.40	248.88	0.48	0.41
Bozzone	Bozzone	400	Tr20 max Bozzone	147.10	11.93	121.58	13.59	172.86	177.12	176.26	177.35	0.005272	1.46	2.31	100.62	76.53	0.44	0.41
Bozzone	Bozzone	400	Tr30 max Bozzone	165.10	14.88	133.61	16.61	172.86	177.25	176.41	177.49	0.005491	1.49	2.43	110.84	82.29	0.45	0.41
Bozzone	Bozzone	400	Tr200 max Bozzon	273.60	34.97	197.41	41.22	172.86	177.87	177.10	178.20	0.006322	1.60	2.96	170.59	107.99	0.50	0.41
Bozzone	Bozzone	300	Tr20 max Bozzone	147.10	32.95	83.88	30.26	171.70	175.86	174.87	175.95	0.003015	0.69	1.73	212.05	227.82	0.32	0.23
Bozzone	Bozzone	300	Tr30 max Bozzone	165.10	41.21	86.26	37.64	171.70	176.03	175.05	176.11	0.002643	0.66	1.68	251.80	245.61	0.31	0.21
Bozzone	Bozzone	300	Tr200 max Bozzon	273.60	86.00	103.36	84.24	171.70	176.71	175.78	176.77	0.001964	0.61	1.66	449.56	320.82	0.27	0.16
ARBIA	Arbia 1	550	Tr20 max Bozzone	210.20		209.96	0.24	170.25	175.42	173.83	175.73	0.005527	2.44	2.46	86.20	32.90	0.43	0.48
ARBIA	Arbia 1	550	Tr30 max Bozzone	241.30	0.45	239.68	1.18	170.25	175.64	174.05	175.99	0.005966	2.48	2.63	97.34	79.68	0.45	0.72
ARBIA	Arbia 1	550	Tr200 max Bozzon	392.70	2.64	101.29	288.76	170.25	175.99	174.96	176.01	0.000782	0.41	1.01	969.48	567.17	0.17	0.10
ARBIA	Arbia 1	540	Tr20 max Bozzone	210.20		74.87	135.33	169.68	174.91	173.11	174.93	0.000519	0.32	0.68	653.84	484.60	0.13	0.08
ARBIA	Arbia 1	540	Tr30 max Bozzone	241.30		80.07	161.23	169.68	175.11	173.20	175.12	0.000495	0.33	0.67	733.91	567.95	0.12	0.08
ARBIA	Arbia 1	540	Tr200 max Bozzon	392.70	0.20	108.80	283.70	169.68	175.85	173.46	175.86	0.000476	0.38	0.73	1046.17	634.05	0.12	0.08
ARBIA	Arbia 2	520	Tr20 max Bozzone	357.30		357.30		167.80	174.40	172.41	174.58	0.001935	1.88	1.88	190.44	65.26	0.35	0.35
ARBIA	Arbia 2	520	Tr30 max Bozzone	406.40		406.40		167.80	174.57	172.60	174.78	0.002164	2.01	2.01	201.80	65.63	0.37	0.37
ARBIA	Arbia 2	520	Tr200 max Bozzon	666.30	67.69	588.30	10.31	167.80	175.25	173.50	175.51	0.002677	1.58	2.39	422.74	359.77	0.39	0.46
ARBIA	Arbia 2	510	Tr20 max Bozzone	357.30	65.13	279.82	12.35	168.30	174.34	172.48	174.45	0.002701	1.01	1.64	353.59	282.51	0.28	0.29
ARBIA	Arbia 2	510	Tr30 max Bozzone	406.40	81.22	305.03	20.15	168.30	174.52	172.67	174.64	0.002700	0.99	1.69	410.41	337.76	0.28	0.29
ARBIA	Arbia 2	510	Tr200 max Bozzon	666.30	155.24	408.30	102.77	168.30	175.22	173.80	175.34	0.002701	0.96	1.90	693.75	439.85	0.29	0.24

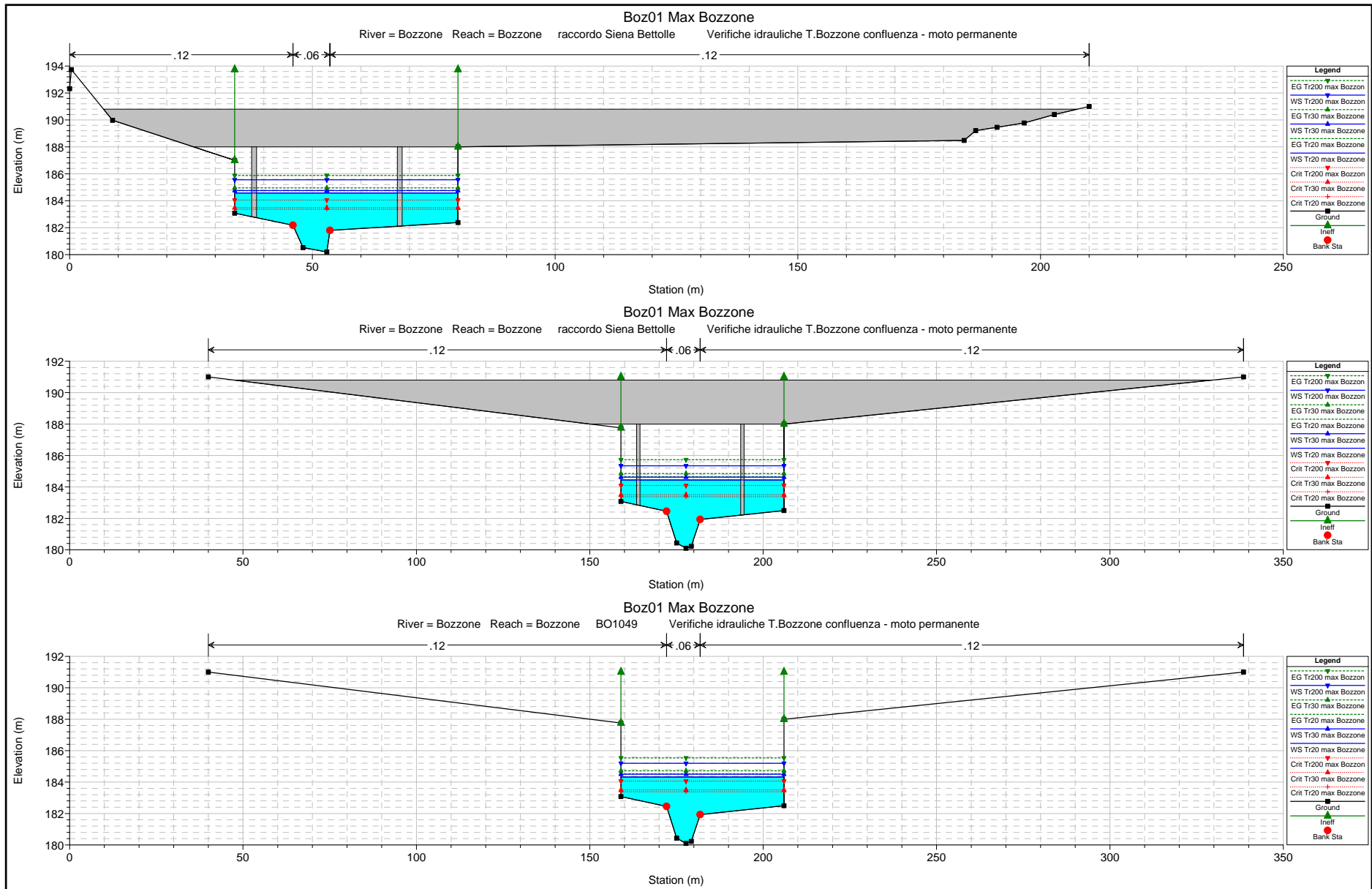


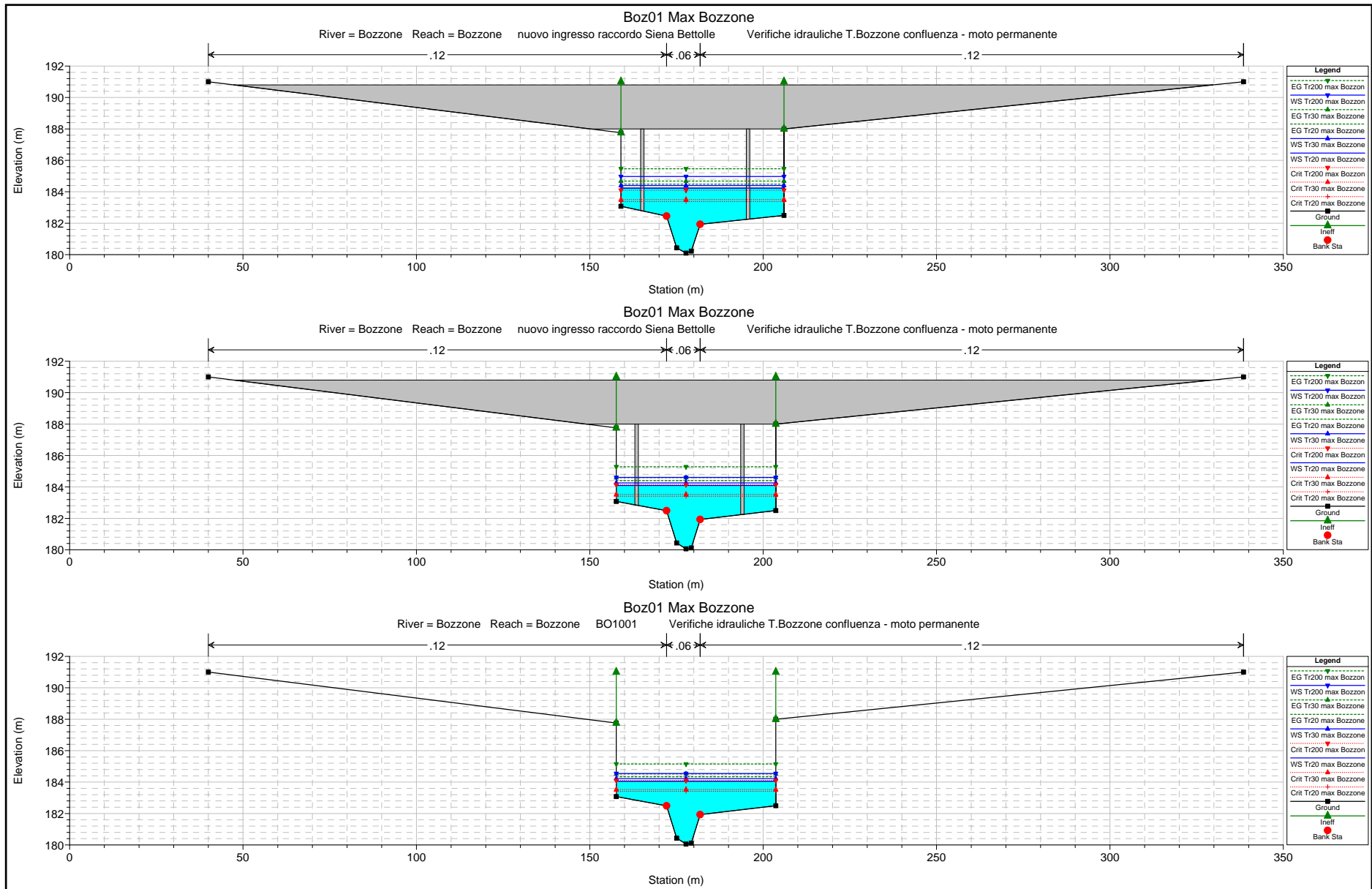
Boz01 Max Bozzone

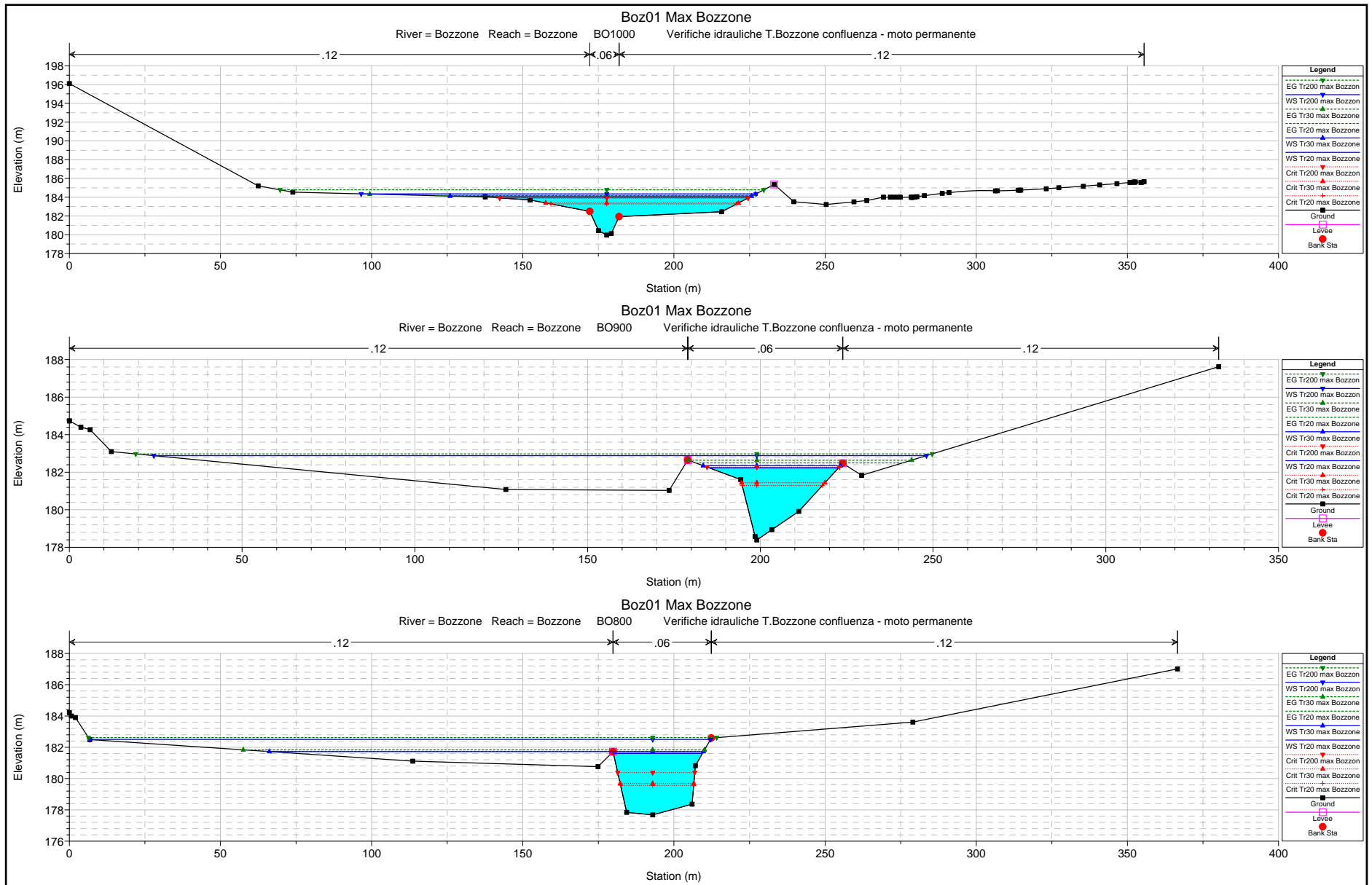
Verifiche idrauliche T.Bozzone confluenza - moto permanente

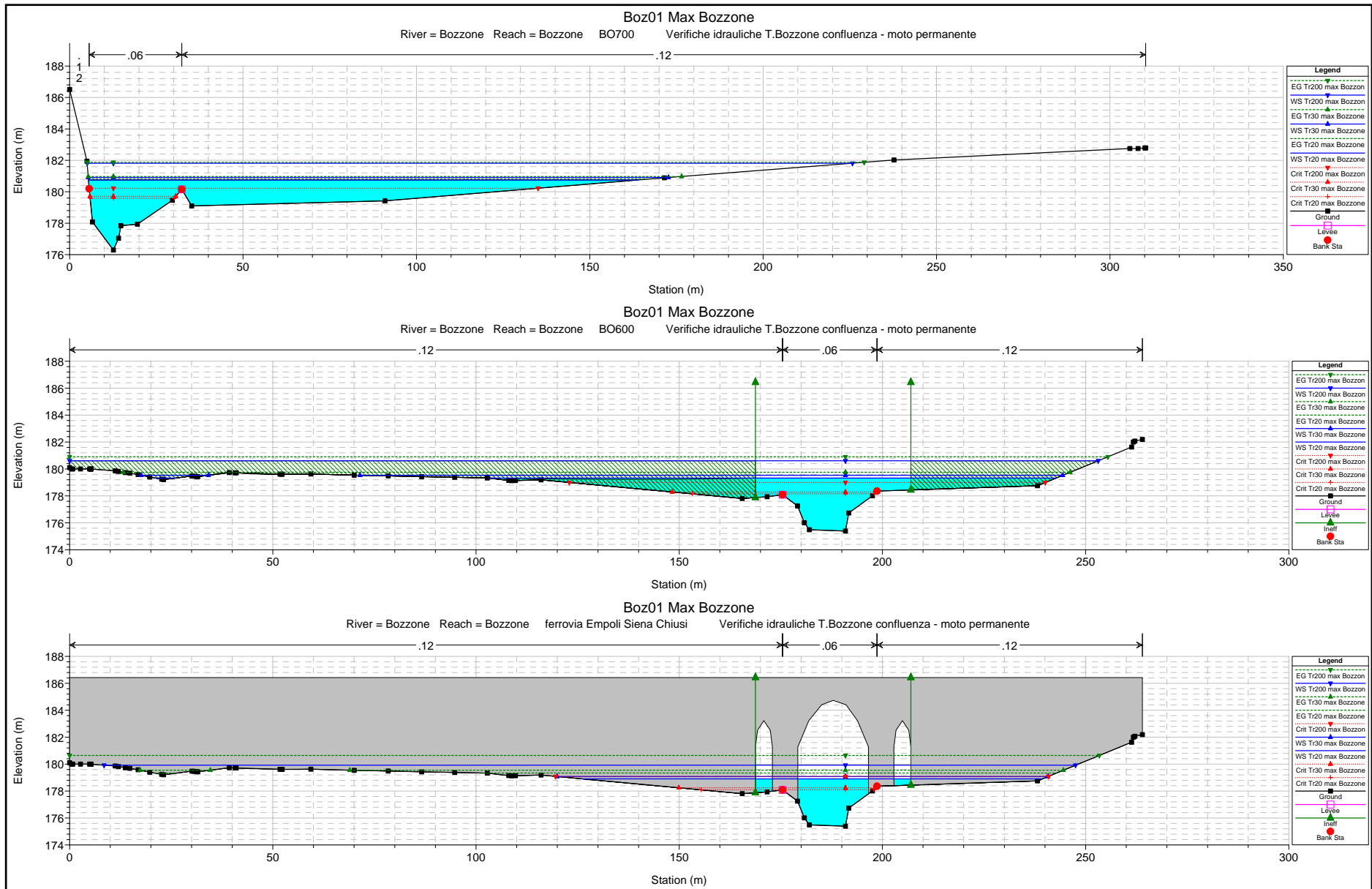


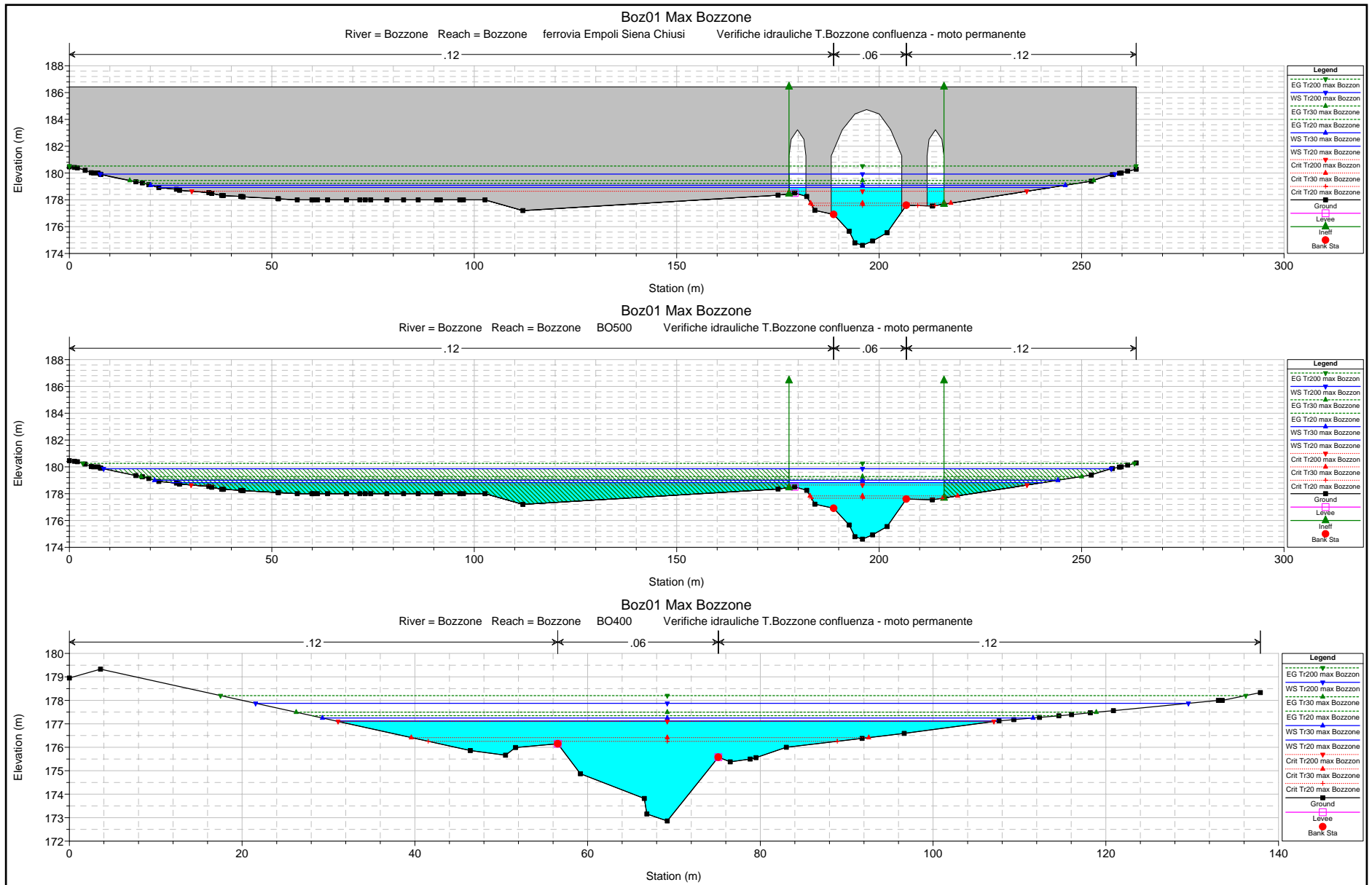


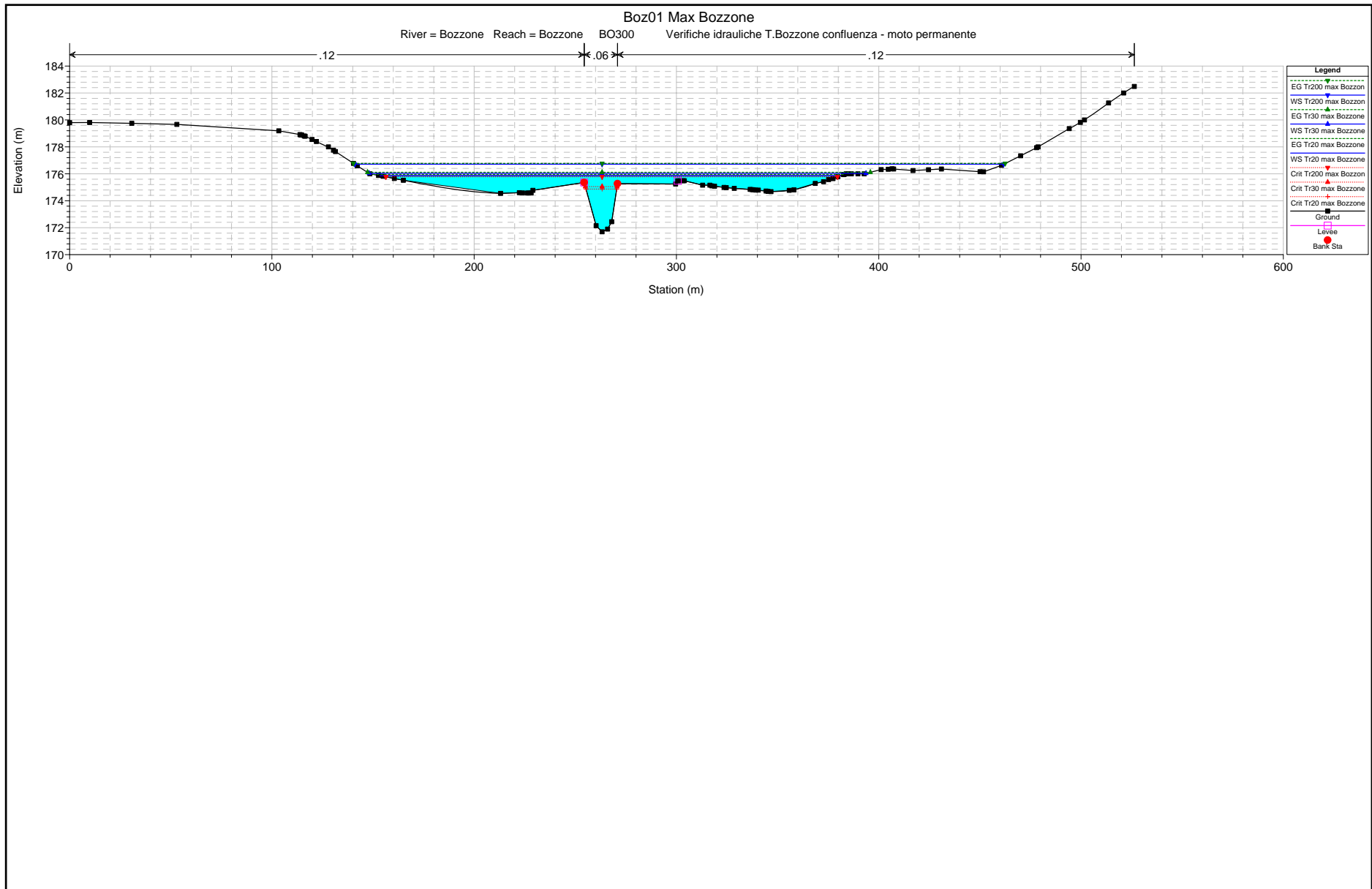


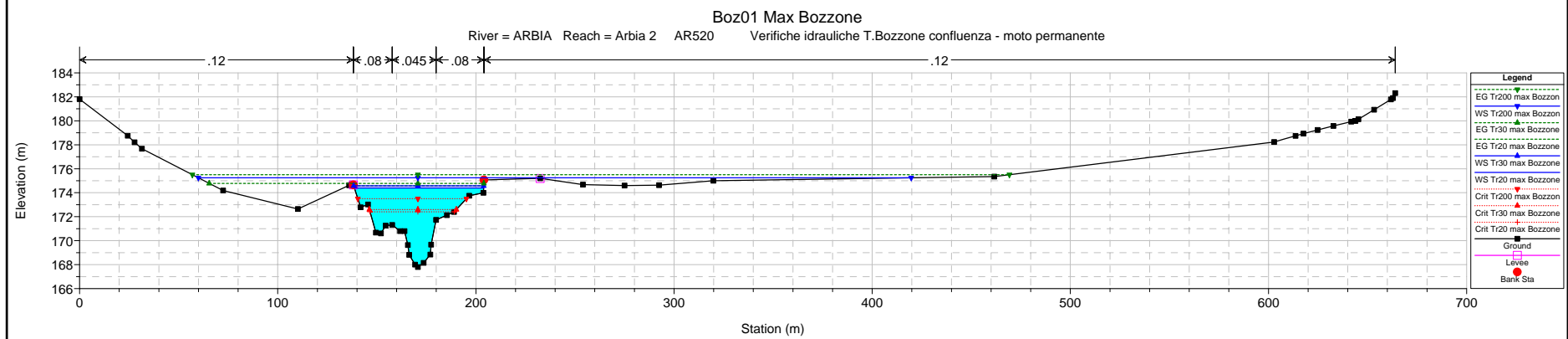
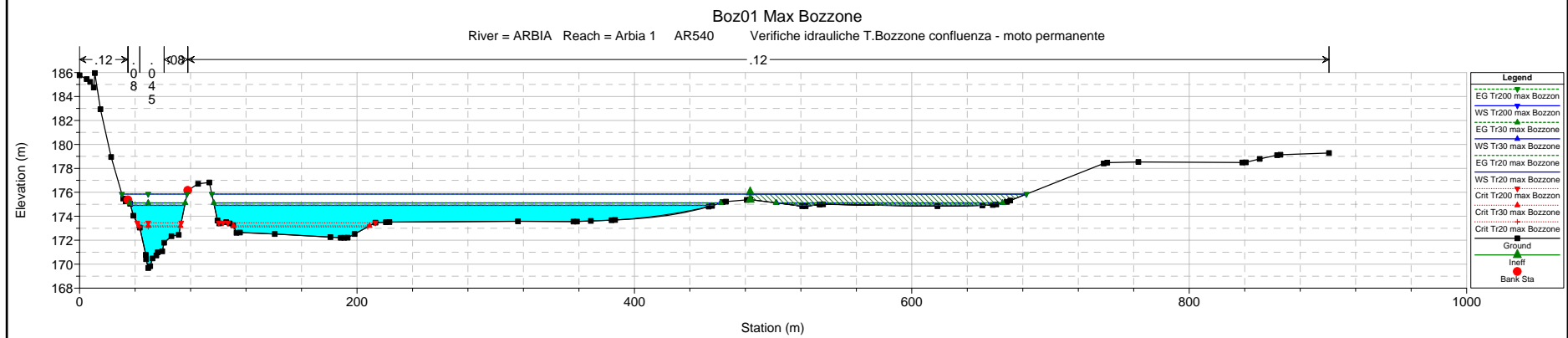
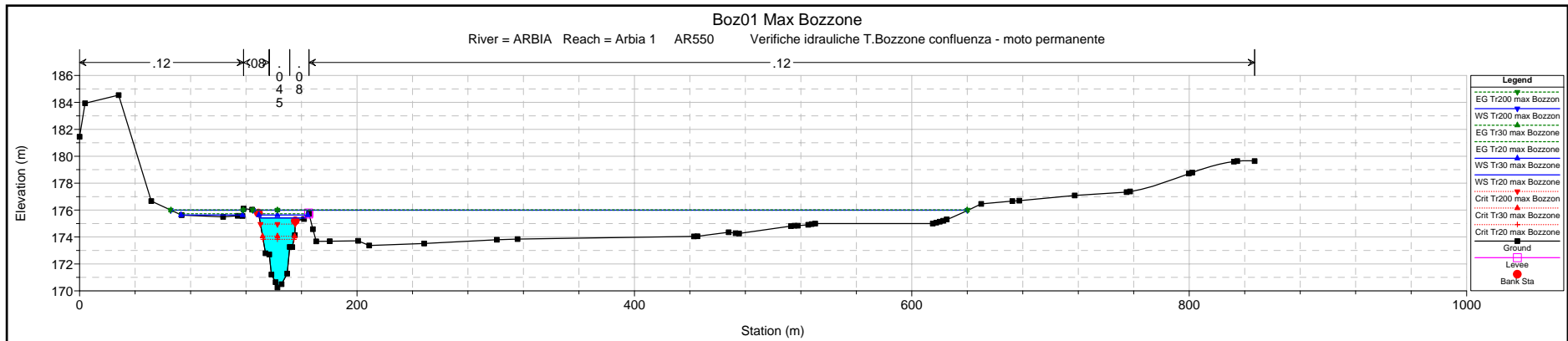






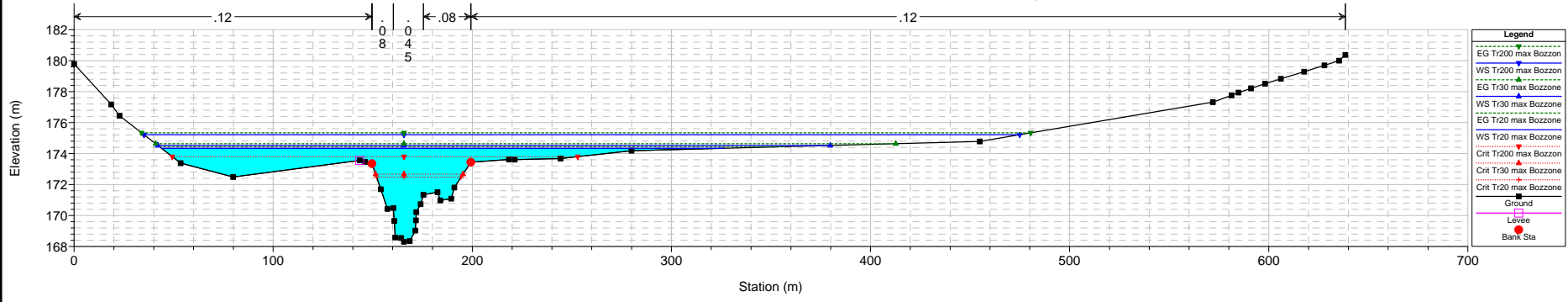






Boz01 Max Bozzone

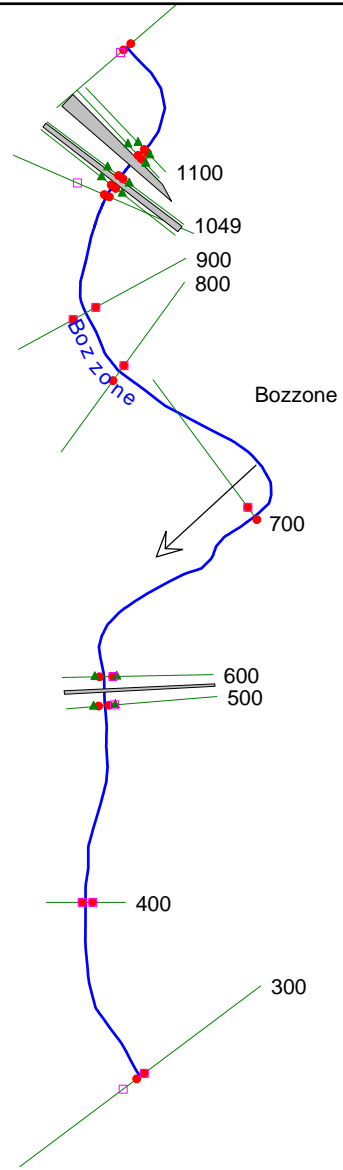
River = ARBIA Reach = Arbia 2 AR510 Verifiche idrauliche T.Bozzone confluenza - moto permanente



ALLEGATI DI CALCOLO HEC-RAS 3.1.3

TRATTO BOZ01 – TORRENTE BOZZONE

EVENTO CON PORTATA MASSIMA T. ARBIA (Dcr = 6.12)



HEC-RAS Plan: BOZ01 MA River: Bozzone Reach: Bozzone

Reach	River Sta	Profile	Q Total (m3/s)	Q Left (m3/s)	Q Channel (m3/s)	Q Right (m3/s)	Min Ch El (m)	W.S. Elev (m)	Crit W.S. (m)	E.G. Elev (m)	E.G. Slope (m/m)	Vel Total (m/s)	Vel Chnl (m/s)	Flow Area (m2)	Top Width (m)	Froude # Chl	Froude # XS
Bozzone	1200	Tr20 max Arbia	130.90	20.31	45.81	64.78	181.04	184.99	184.06	185.01	0.000696	0.37	0.89	357.57	238.54	0.16	0.10
Bozzone	1200	Tr30 max Arbia	146.50	25.15	47.99	73.36	181.04	185.17	184.21	185.19	0.000633	0.37	0.88	400.40	240.51	0.15	0.09
Bozzone	1200	Tr200 max Arbia	240.90	54.44	62.37	124.09	181.04	186.07	184.54	186.08	0.000478	0.39	0.90	620.11	250.93	0.14	0.08
Bozzone	1100	Tr20 max Arbia	130.90	11.92	78.58	40.40	180.18	184.48	183.49	184.73	0.005905	1.68	2.72	77.73	138.58	0.45	0.33
Bozzone	1100	Tr30 max Arbia	146.50	13.98	86.02	46.50	180.18	184.66	183.60	184.93	0.006086	1.76	2.84	83.03	139.19	0.46	0.34
Bozzone	1100	Tr200 max Arbia	240.90	26.61	130.78	83.51	180.18	185.44	184.24	185.86	0.007740	2.26	3.61	106.58	144.29	0.53	0.38
Bozzone	1099	Tr20 max Arbia	130.90	15.52	61.79	53.59	180.20	184.47	183.27	184.60	0.003658	1.15	2.14	113.68	46.00	0.35	0.23
Bozzone	1099	Tr30 max Arbia	146.50	18.15	67.47	60.88	180.20	184.65	183.36	184.79	0.003738	1.20	2.24	121.92	46.00	0.36	0.24
Bozzone	1099	Tr200 max Arbia	240.90	33.96	102.12	104.82	180.20	185.45	183.86	185.66	0.004642	1.52	2.82	158.71	46.00	0.41	0.26
Bozzone	1050	Tr20 max Arbia	130.90					184.47		184.60							
Bozzone	1050	Tr30 max Arbia	146.50					184.65		184.79							
Bozzone	1050	Tr200 max Arbia	240.90					185.45		185.66							
Bozzone	1049	Tr20 max Arbia	130.90	12.54	77.87	40.49	180.10	184.16	183.28	184.34	0.004856	1.34	2.40	97.53	47.00	0.42	0.30
Bozzone	1049	Tr30 max Arbia	146.50	15.09	84.92	46.48	180.10	184.32	183.38	184.52	0.004920	1.39	2.50	105.26	47.00	0.43	0.30
Bozzone	1049	Tr200 max Arbia	240.90	29.99	129.03	81.89	180.10	184.97	183.91	185.28	0.006453	1.78	3.20	135.69	47.00	0.50	0.33
Bozzone	1030	Tr20 max Arbia	130.90					184.16		184.34							
Bozzone	1030	Tr30 max Arbia	146.50					184.32		184.52							
Bozzone	1030	Tr200 max Arbia	240.90					184.97		185.28							
Bozzone	1001	Tr20 max Arbia	130.90	11.82	83.80	35.27	180.06	183.90	183.30	184.16	0.007242	1.58	2.78	82.90	46.00	0.50	0.38
Bozzone	1001	Tr30 max Arbia	146.50	14.61	91.14	40.75	180.06	184.05	183.41	184.33	0.007301	1.63	2.89	89.91	46.00	0.51	0.37
Bozzone	1001	Tr200 max Arbia	240.90	28.37	141.72	70.81	180.06	184.40	183.94	184.93	0.012558	2.27	4.05	106.02	46.00	0.68	0.48
Bozzone	1000	Tr20 max Arbia	130.90	6.34	74.89	49.67	179.96	183.78	183.18	183.98	0.006457	1.29	2.57	101.80	74.85	0.47	0.35
Bozzone	1000	Tr30 max Arbia	146.50	8.23	80.49	57.77	179.96	183.94	183.27	184.15	0.006276	1.28	2.62	114.43	83.23	0.47	0.35
Bozzone	1000	Tr200 max Arbia	240.90	16.36	124.68	99.87	179.96	184.20	183.73	184.61	0.011556	1.73	3.75	139.23	110.91	0.65	0.49
Bozzone	900	Tr20 max Arbia	130.90		130.90		178.39	182.05	181.15	182.31	0.009515	2.26	2.26	57.85	33.88	0.55	0.55
Bozzone	900	Tr30 max Arbia	146.50		146.50		178.39	182.23	181.28	182.49	0.009573	2.28	2.28	64.18	37.38	0.56	0.56
Bozzone	900	Tr200 max Arbia	240.90	94.61	142.97	3.33	178.39	182.70	182.08	182.79	0.004729	0.96	1.70	250.11	210.04	0.40	0.28
Bozzone	800	Tr20 max Arbia	130.90		130.90		177.68	181.45	179.44	181.57	0.002167	1.51	1.51	86.64	28.81	0.28	0.28
Bozzone	800	Tr30 max Arbia	146.50		146.50		177.68	181.60	179.56	181.74	0.002365	1.61	1.61	91.11	29.45	0.29	0.29
Bozzone	800	Tr200 max Arbia	240.90	51.23	189.67		177.68	182.28	180.19	182.40	0.002190	0.95	1.69	253.07	188.74	0.29	0.26
Bozzone	700	Tr20 max Arbia	130.90	0.00	86.78	44.12	176.29	180.60	179.45	180.66	0.002287	0.73	1.35	179.92	150.14	0.28	0.21
Bozzone	700	Tr30 max Arbia	146.50	0.00	93.58	52.92	176.29	180.74	179.57	180.81	0.002192	0.73	1.37	202.01	158.05	0.27	0.20
Bozzone	700	Tr200 max Arbia	240.90	0.04	128.38	112.48	176.29	181.56	180.15	181.62	0.001635	0.69	1.43	350.09	205.58	0.25	0.17
Bozzone	600	Tr20 max Arbia	130.90	4.78	123.43	2.69	175.39	179.11	177.95	179.32	0.004717	1.78	2.06	73.45	122.21	0.41	0.41
Bozzone	600	Tr30 max Arbia	146.50	6.07	136.50	3.93	175.39	179.30	178.15	179.52	0.004546	1.81	2.12	80.76	143.04	0.41	0.40
Bozzone	600	Tr200 max Arbia	240.90	14.48	213.60	12.82	175.39	180.31	178.82	180.58	0.003953	2.02	2.43	119.34	250.69	0.40	0.36
Bozzone	550	Tr20 max Arbia	130.90					179.11		179.32							
Bozzone	550	Tr30 max Arbia	146.50					179.30		179.52							
Bozzone	550	Tr200 max Arbia	240.90					180.31		180.58							

HEC-RAS Plan: BOZ01 MA River: Bozzone Reach: Bozzone (Continued)

Reach	River Sta	Profile	Q Total (m3/s)	Q Left (m3/s)	Q Channel (m3/s)	Q Right (m3/s)	Min Ch El (m)	W.S. Elev (m)	Crit W.S. (m)	E.G. Elev (m)	E.G. Slope (m/m)	Vel Total (m/s)	Vel Chnl (m/s)	Flow Area (m2)	Top Width (m)	Froude # Chl	Froude # XS
Bozzone	500	Tr20 max Arbia	130.90	5.36	119.73	5.81	174.61	178.64	177.47	178.88	0.004695	1.80	2.27	72.75	206.11	0.42	0.42
Bozzone	500	Tr30 max Arbia	146.50	7.07	132.02	7.41	174.61	178.80	177.65	179.06	0.004794	1.86	2.37	78.81	213.57	0.43	0.41
Bozzone	500	Tr200 max Arbia	240.90	19.05	203.50	18.35	174.61	179.63	178.33	179.99	0.005159	2.18	2.88	110.65	242.86	0.46	0.41
Bozzone	400	Tr20 max Arbia	130.90	12.86	103.73	14.32	172.86	177.37	176.00	177.50	0.002894	1.08	1.81	121.16	87.62	0.33	0.29
Bozzone	400	Tr30 max Arbia	146.50	13.59	117.78	15.13	172.86	177.29	176.25	177.47	0.004084	1.28	2.11	114.08	84.04	0.39	0.35
Bozzone	400	Tr200 max Arbia	240.90	28.61	179.29	33.00	172.86	177.71	176.92	178.02	0.006104	1.57	2.82	153.26	101.38	0.49	0.41
Bozzone	300	Tr20 max Arbia	130.90		130.73	0.17	171.70	175.30	174.68	175.87	0.014748	3.24	3.34	40.42	45.33	0.69	1.09
Bozzone	300	Tr30 max Arbia	146.50	23.14	106.44	16.92	171.70	175.50	174.85	175.74	0.007536	1.10	2.51	132.81	208.05	0.50	0.44
Bozzone	300	Tr200 max Arbia	240.90	73.98	101.72	65.21	171.70	176.50	175.70	176.57	0.002304	0.63	1.73	382.23	315.10	0.29	0.18

Boz01 Max Arbia Verifiche idrauliche T.Bozzone confluenza - moto permanente

Bozzone Bozzone

Legend	
EG Tr200 max Arbia	
WS Tr200 max Arbia	
EG Tr20 max Arbia	
EG Tr30 max Arbia	
Crit Tr200 max Arbia	
WS Tr30 max Arbia	
WS Tr20 max Arbia	
Crit Tr30 max Arbia	
Crit Tr20 max Arbia	
Ground	

