

AUTOSTRADA (A1): MILANO-NAPOLI

AMPLIAMENTO ALLA TERZA CORSIA NEL TRATTO INCISA - VALDARNO LOTTO 1

PROGETTO ESECUTIVO

DG - DOCUMENTAZIONE GENERALE

IDROLOGIA E IDRAULICA Parte generale

Relazione idrologica Allegato A

IL PROGETTISTA SPECIALISTICO

Ing. Paolo De Paoli
Ord. Ingg. Pavia N. 1739

Responsabile Idrologia e Idraulica

IL RESPONSABILE INTEGRAZIONE
PRESTAZIONI SPECIALISTICHE

Ing. Paola Castiglioni
Ord. Ingg. Varese N. 2725


IL DIRETTORE TECNICO

Ing. Orlando Mazza
Ord. Ingg. Pavia N. 1496

Progettazione Infrastrutture

CODICE IDENTIFICATIVO

RIFERIMENTO PROGETTO			RIFERIMENTO DIRETTORIO				RIFERIMENTO ELABORATO				ORDINATORE
Codice Commessa	Lotto, Sub-Prog. Cod. Appalto	Fase	Capitolo	Paragrafo	W B S	Parte d'opera	Tip.	Disciplina	Progressivo	Rev.	-
119941	LL01	PE	DG	IDR	GE000	00000	R	IDR	0331	-3	SCALA -

 Gruppo Autostrade per l'italia	PROJECT MANAGER:		SUPPORTO SPECIALISTICO:				REVISIONE	
	Ing. Paola Castiglioni Ord. Ingg. Varese N. 2725						n.	data
							0	LUGLIO 2020
							1	OTTOBRE 2020
							2	GENNAIO 2021
REDATTO:		VERIFICATO:				3	GENNAIO 2021	

VISTO DEL COMMITTENTE



IL RESPONSABILE UNICO DEL PROCEDIMENTO
Ing. Furio Cruciani

VISTO DEL CONCEDENTE



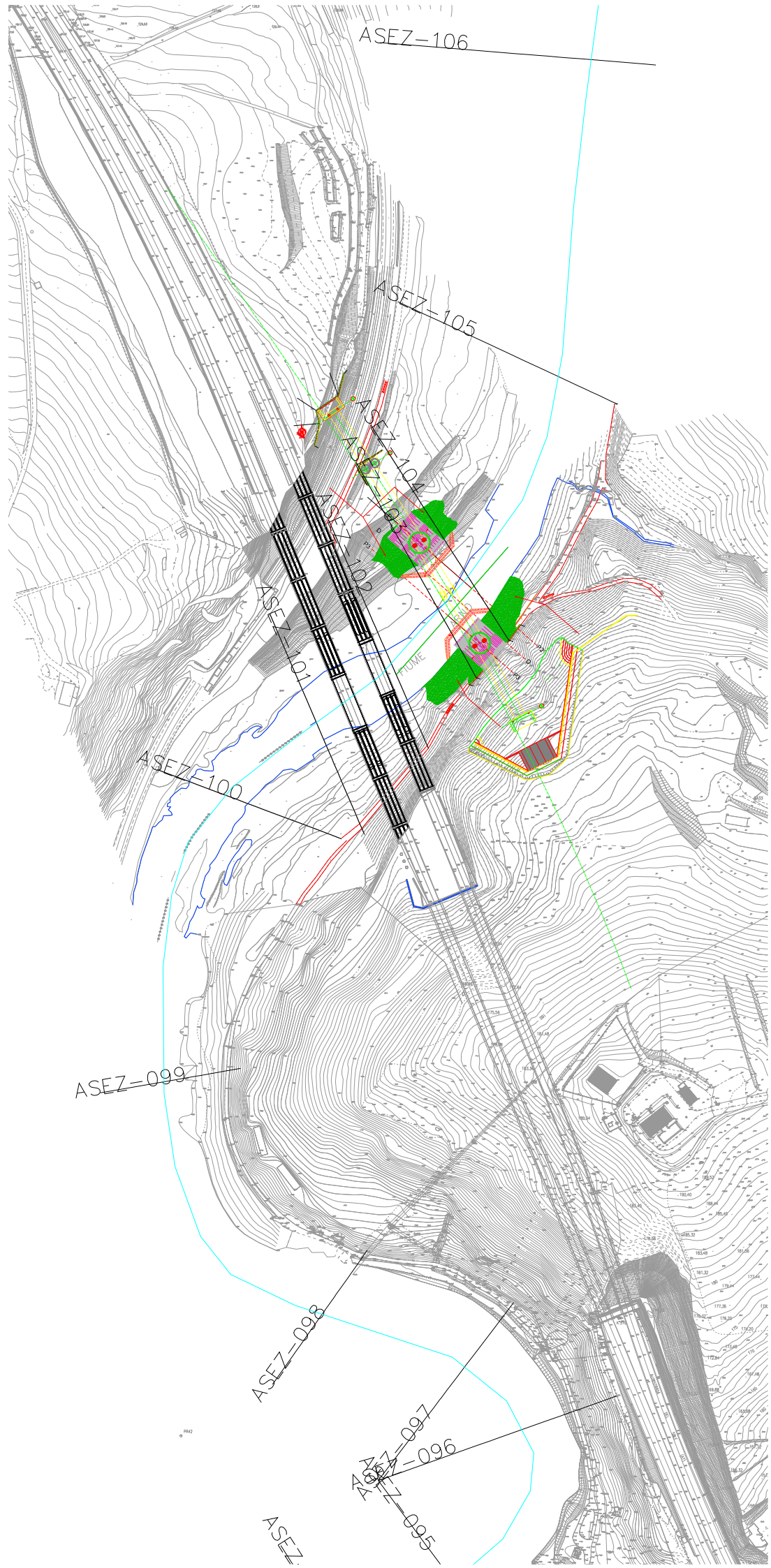
Ministero delle Infrastrutture e dei Trasporti
DIPARTIMENTO PER LE INFRASTRUTTURE, GLI AFFARI GENERALI ED IL PERSONALE
STRUTTURA DI VIGILANZA SULLE CONCESSIONARIE AUTOSTRADALI

OPERE MAGGIORI

OPERA N. 2061

NUOVO VIADOTTO FIUME ARNO

ANTE OPERAM



ASEZ-106

ASEZ-105

ASEZ-104

ASEZ-100

ASEZ-099

ASEZ-098

ASEZ-097

ASEZ-096

ASEZ-095

HOME

HEC-RAS Plan: New ante River: Arno Reach: Arno

Reach	River Sta		Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
				(m3/s)	(m)	(m)	(m)	(m)	(m/m)	(m/s)	(m2)	(m)	
Arno	16	Sez. 94	Tr 30	1684.00	108.06	115.44	113.80	116.29	0.003974	4.08	412.78	86.25	0.60
Arno	16	Sez. 94	Tr 200	2503.00	108.06	117.09	115.01	118.10	0.003620	4.44	563.66	96.43	0.59
Arno	15	Sez. 95	Tr 30	1684.00	107.66	115.24	113.39	115.92	0.003288	3.66	459.85	98.81	0.54
Arno	15	Sez. 95	Tr 200	2503.00	107.66	116.98	114.51	117.76	0.002710	3.92	637.83	105.61	0.51
Arno	14	Sez. 96	Tr 30	1684.00	107.56	114.82	113.17	115.49	0.003421	3.62	465.62	103.89	0.55
Arno	14	Sez. 96	Tr 200	2503.00	107.56	116.69	114.15	117.42	0.002418	3.78	663.63	108.15	0.48
Arno	13	Sez. 97	Tr 30	1684.00	106.55	114.92	111.69	115.28	0.001188	2.70	644.47	112.62	0.34
Arno	13	Sez. 97	Tr 200	2503.00	106.55	116.79	112.65	117.24	0.001072	3.04	864.09	120.24	0.34
Arno	12	Sez. 98	Tr 30	1684.00	105.91	114.56	111.93	115.11	0.001912	3.29	522.89	93.14	0.43
Arno	12	Sez. 98	Tr 200	2503.00	105.91	116.39	113.02	117.08	0.001712	3.70	701.50	103.71	0.42
Arno	11	Sez. 99	Tr 30	1684.00	106.39	113.41	111.92	114.47	0.004242	4.59	372.68	71.49	0.63
Arno	11	Sez. 99	Tr 200	2503.00	106.39	115.22	113.19	116.50	0.003704	5.05	506.59	76.39	0.61
Arno	10	Sez. 100	Tr 30	1684.00	104.34	113.44	110.00	113.82	0.001291	2.70	623.75	106.88	0.35
Arno	10	Sez. 100	Tr 200	2503.00	104.34	115.41	111.10	115.87	0.001095	3.01	842.73	115.88	0.34
Arno	9	Sez. 101	Tr 30	1684.00	106.18	113.35	110.12	113.71	0.001173	2.69	644.80	118.58	0.34
Arno	9	Sez. 101	Tr 200	2503.00	106.18	115.35	111.10	115.78	0.000979	2.95	895.28	130.40	0.33
Arno	8.9		Tr 30	1684.00	105.96	113.35	109.91	113.68	0.001168	2.57	676.01	119.41	0.32
Arno	8.9		Tr 200	2503.00	105.96	115.35	110.88	115.75	0.001005	2.85	924.90	129.02	0.31
Arno	8.85			Bridge									
Arno	8.8		Tr 30	1684.00	105.73	113.34	109.78	113.66	0.001086	2.52	691.84	118.93	0.31
Arno	8.8		Tr 200	2503.00	105.73	115.34	110.75	115.72	0.000953	2.81	938.22	127.84	0.30
Arno	8.4		Tr 30	1684.00	105.48	113.34	109.61	113.64	0.001005	2.46	708.27	117.87	0.30
Arno	8.4		Tr 200	2503.00	105.48	115.33	110.59	115.71	0.000902	2.76	951.87	126.35	0.30

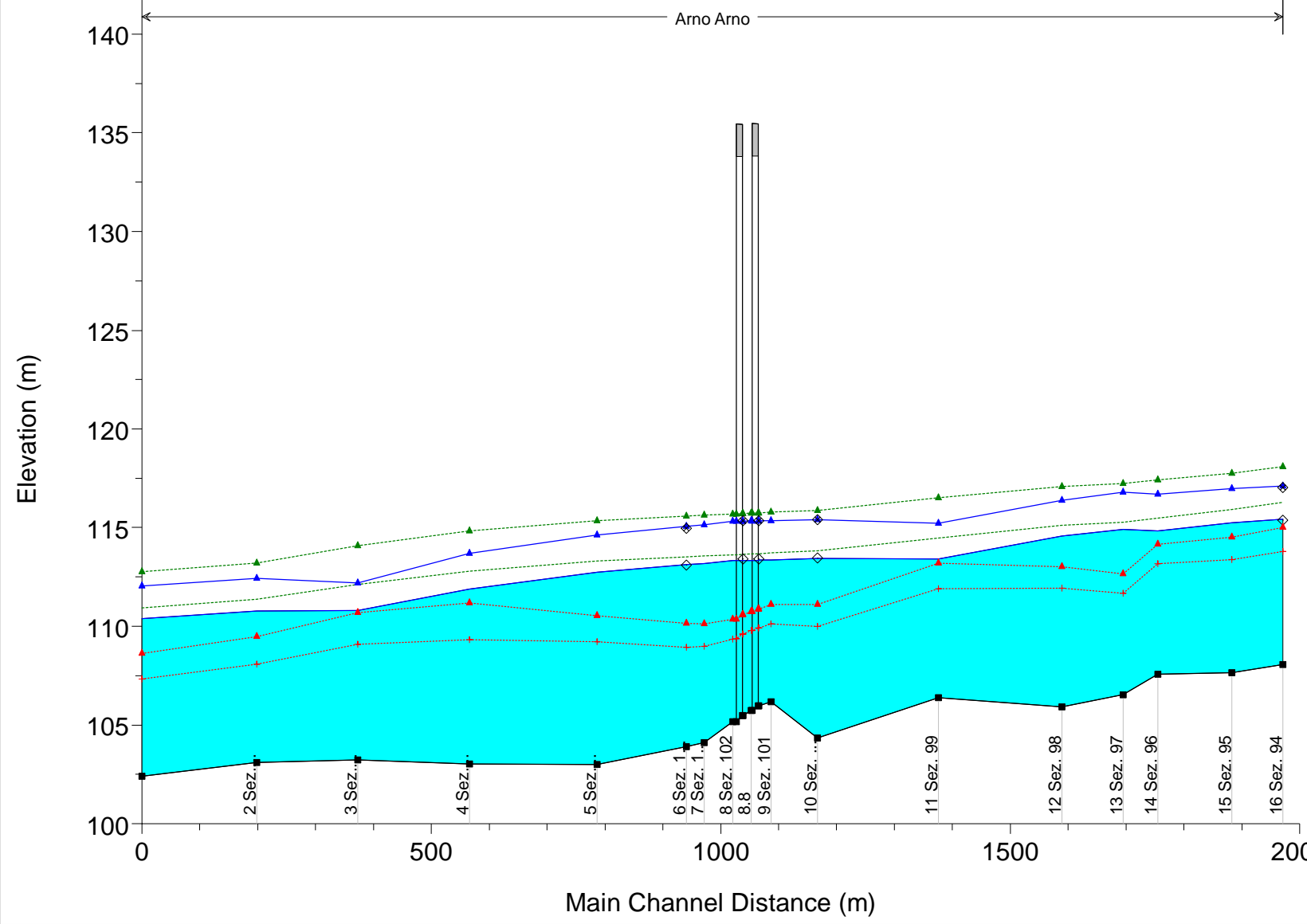
HEC-RAS Plan: New ante River: Arno Reach: Arno (Continued)

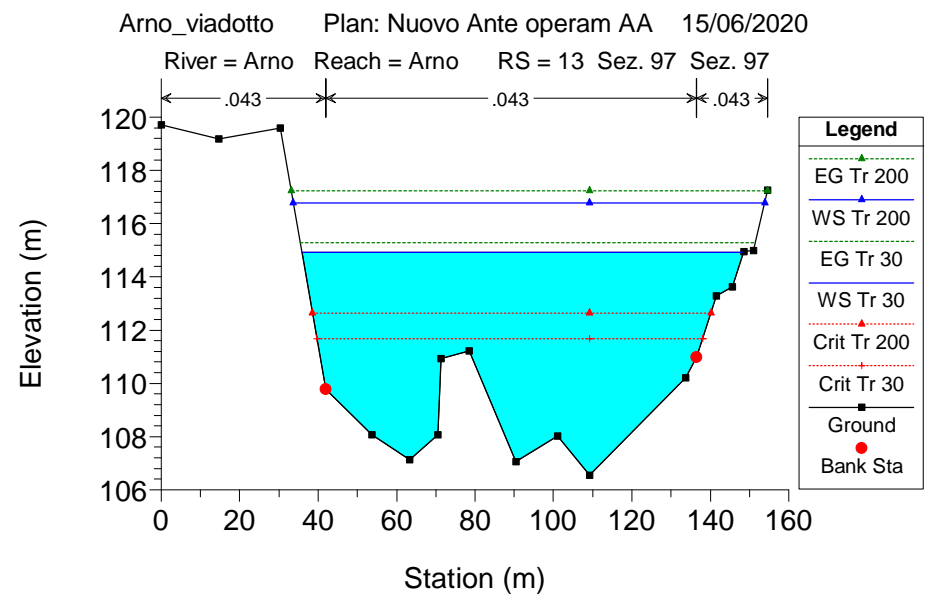
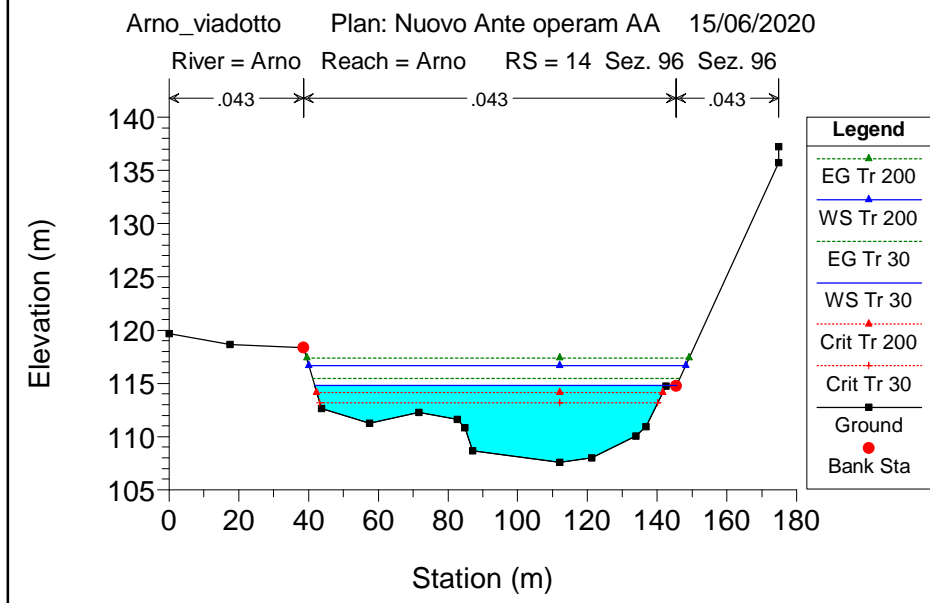
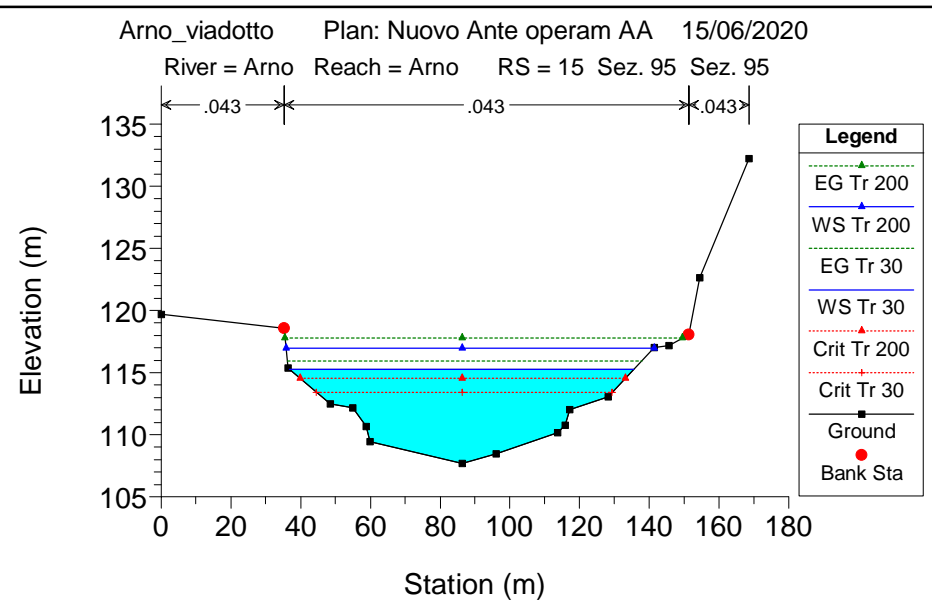
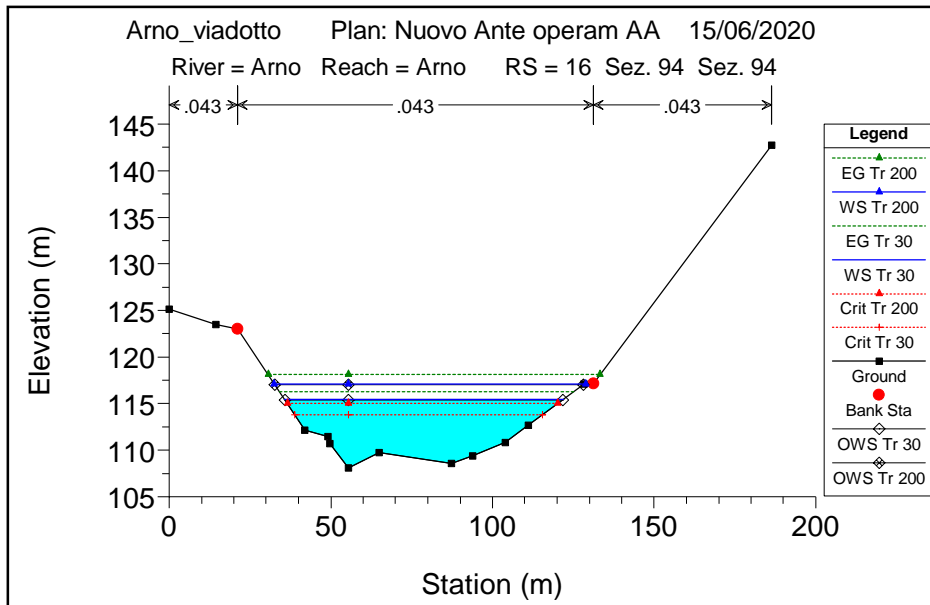
Reach	River Sta		Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
				(m3/s)	(m)	(m)	(m)	(m)	(m/m)	(m/s)	(m2)	(m)	
Arno	8.2			Bridge									
Arno	8	Sez. 102	Tr 30	1684.00	105.16	113.33	109.37	113.62	0.000921	2.39	726.65	115.95	0.29
Arno	8	Sez. 102	Tr 200	2503.00	105.16	115.32	110.36	115.68	0.000850	2.71	965.55	124.10	0.29
Arno	7	Sez. 103	Tr 30	1684.00	104.12	113.19	108.99	113.56	0.001019	2.76	650.20	98.86	0.31
Arno	7	Sez. 103	Tr 200	2503.00	104.12	115.14	110.14	115.63	0.001022	3.19	858.38	112.59	0.32
Arno	6	Sez. 104	Tr 30	1684.00	103.91	113.13	108.94	113.52	0.001085	2.85	625.55	92.05	0.32
Arno	6	Sez. 104	Tr 200	2503.00	103.91	115.05	110.14	115.59	0.001122	3.33	819.67	109.88	0.34
Arno	5	Sez. 105	Tr 30	1684.00	103.01	112.73	109.22	113.30	0.001781	3.34	514.41	79.94	0.40
Arno	5	Sez. 105	Tr 200	2503.00	103.01	114.62	110.54	115.35	0.001743	3.86	682.14	93.90	0.41
Arno	4	Sez. 106	Tr 30	1684.00	103.03	111.89	109.34	112.79	0.002650	4.51	437.46	79.15	0.50
Arno	4	Sez. 106	Tr 200	2503.00	103.03	113.69	111.20	114.84	0.002695	5.20	589.29	96.28	0.53
Arno	3	Sez. 107	Tr 30	1684.00	103.22	110.80	109.09	112.11	0.004241	5.25	349.89	60.34	0.62
Arno	3	Sez. 107	Tr 200	2503.00	103.22	112.20	110.71	114.08	0.004895	6.35	437.93	65.17	0.69
Arno	2	Sez. 108	Tr 30	1684.00	103.11	110.78	108.09	111.37	0.002258	3.47	514.28	100.58	0.44
Arno	2	Sez. 108	Tr 200	2503.00	103.11	112.43	109.48	113.20	0.002209	4.00	692.64	129.70	0.45
Arno	1	Sez. 109	Tr 30	1684.00	102.41	110.38	107.34	110.93	0.002001	3.30	521.43	91.05	0.41
Arno	1	Sez. 109	Tr 200	2503.00	102.41	112.04	108.64	112.77	0.002004	3.84	684.54	115.19	0.43

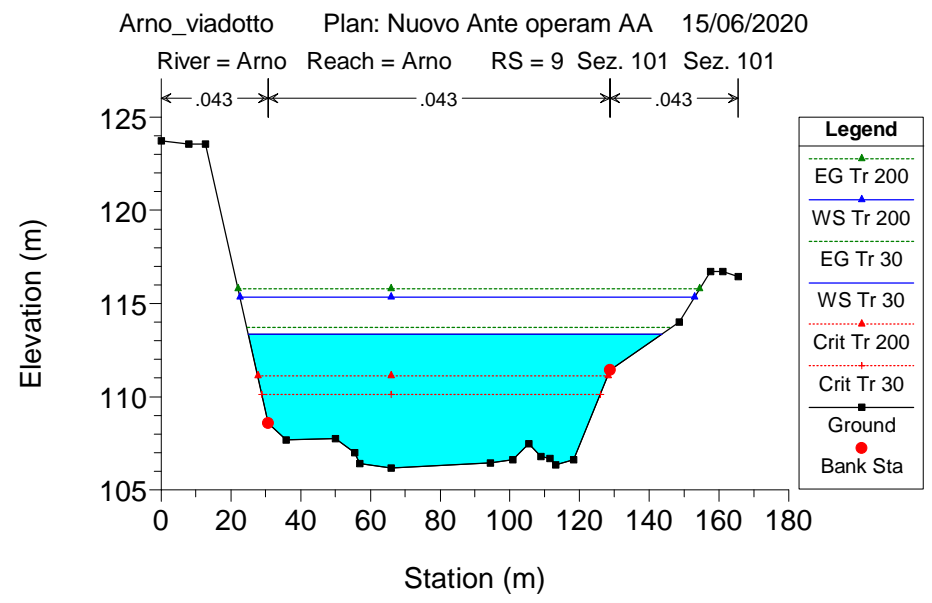
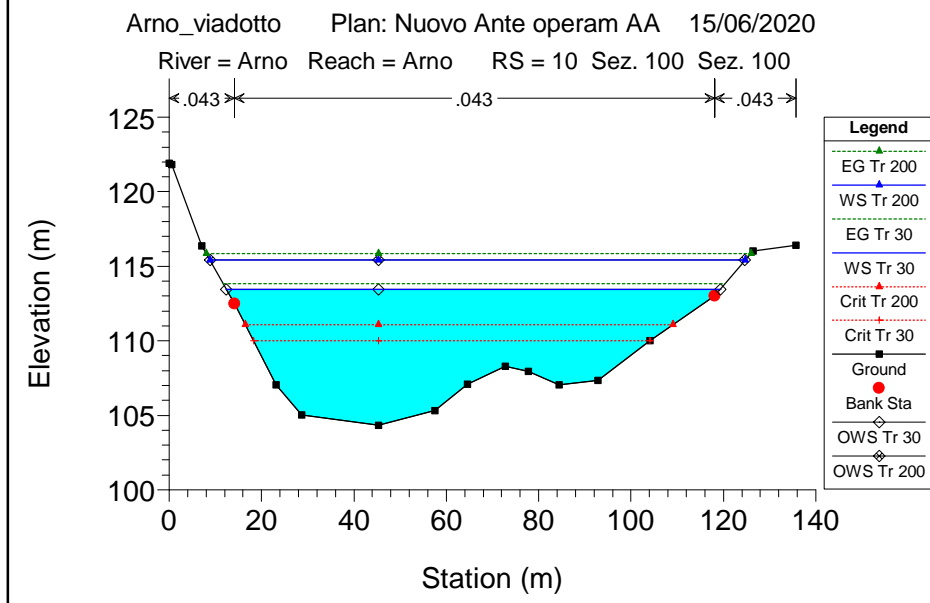
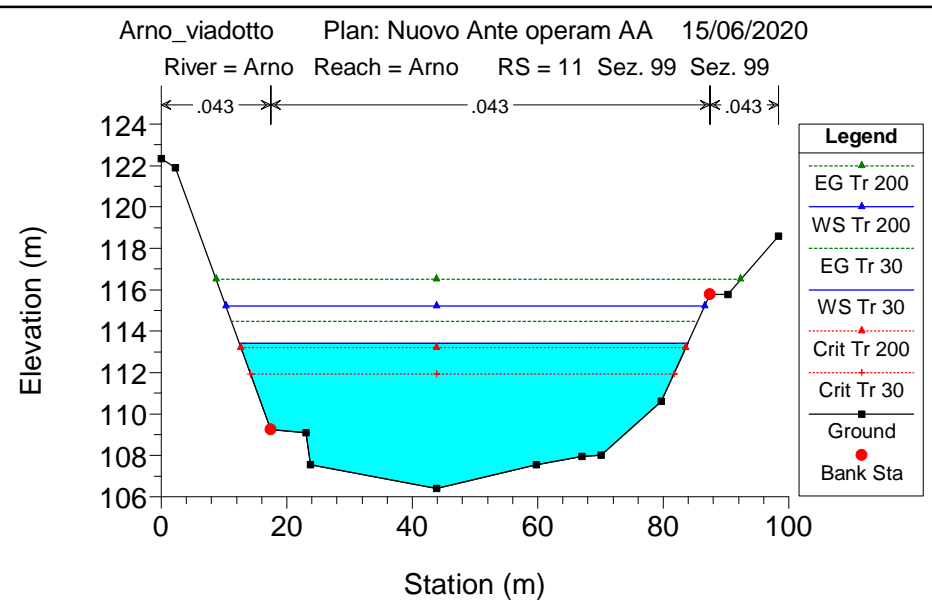
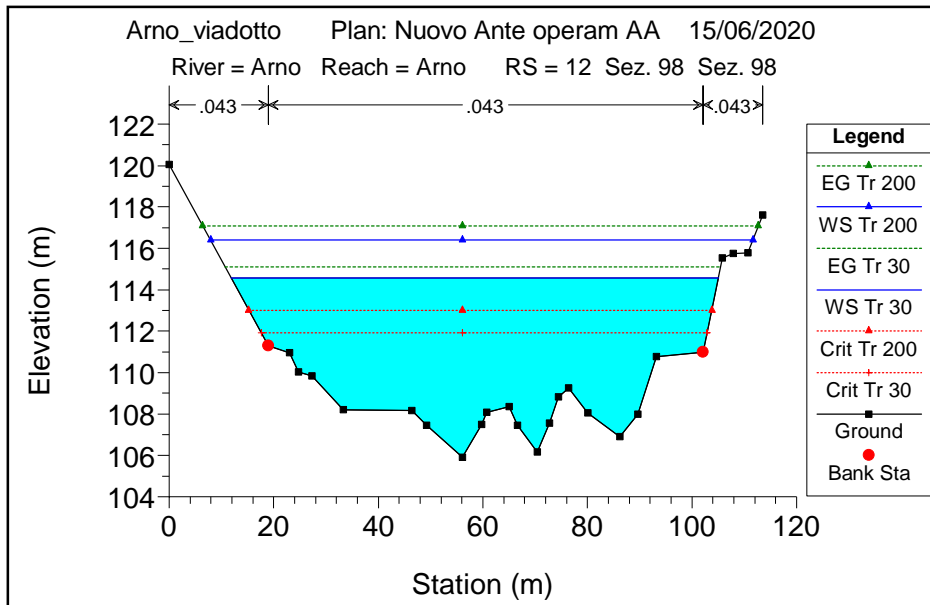
Arno Arno

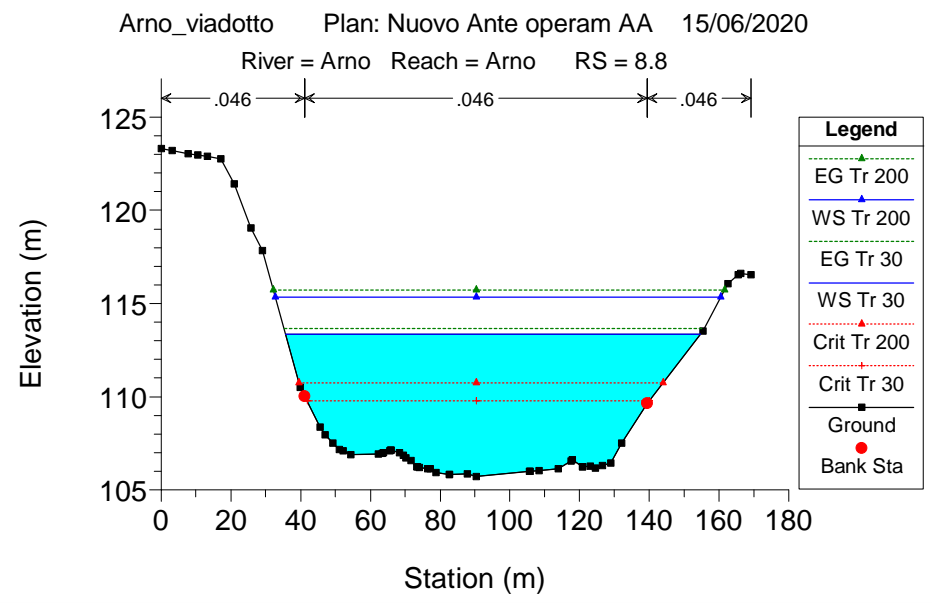
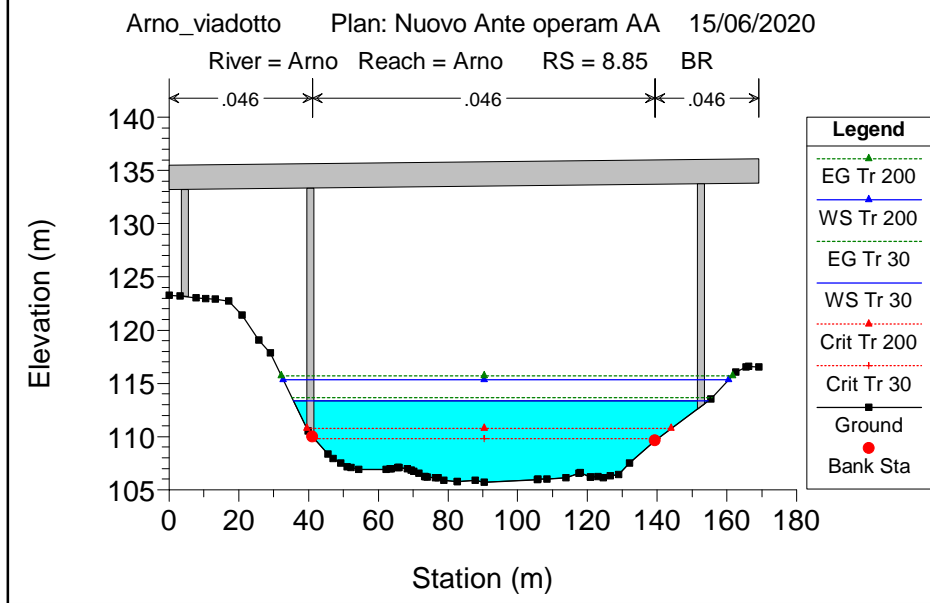
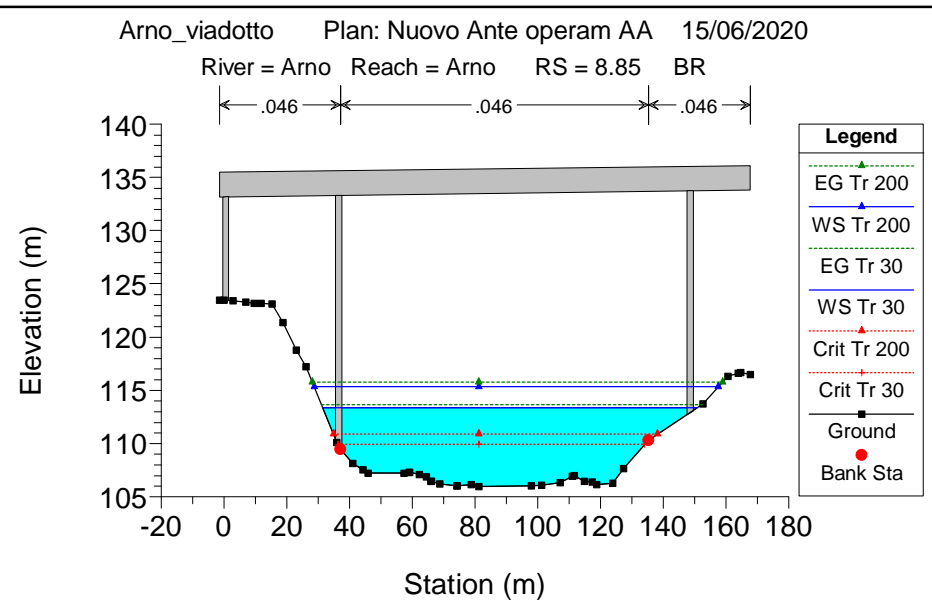
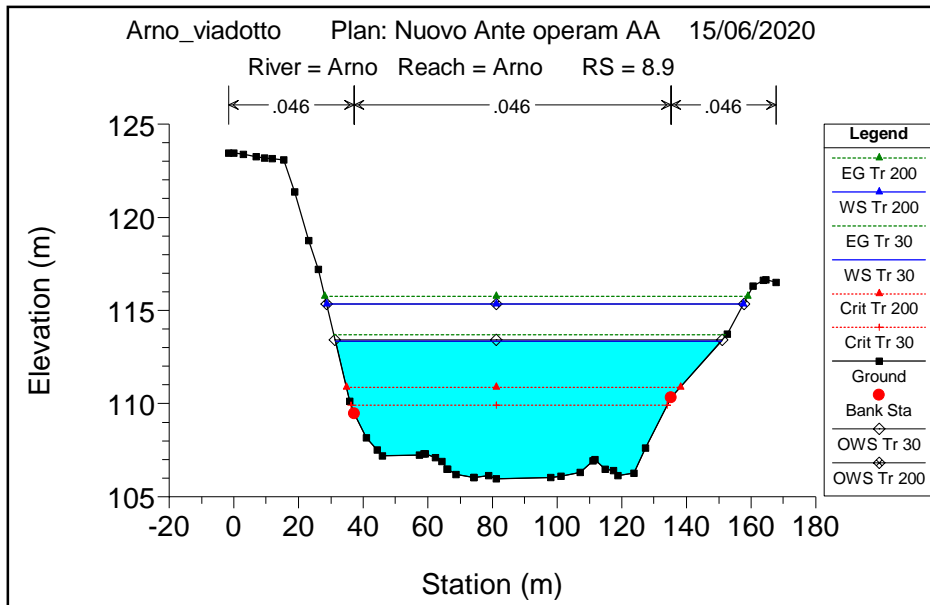
Legend

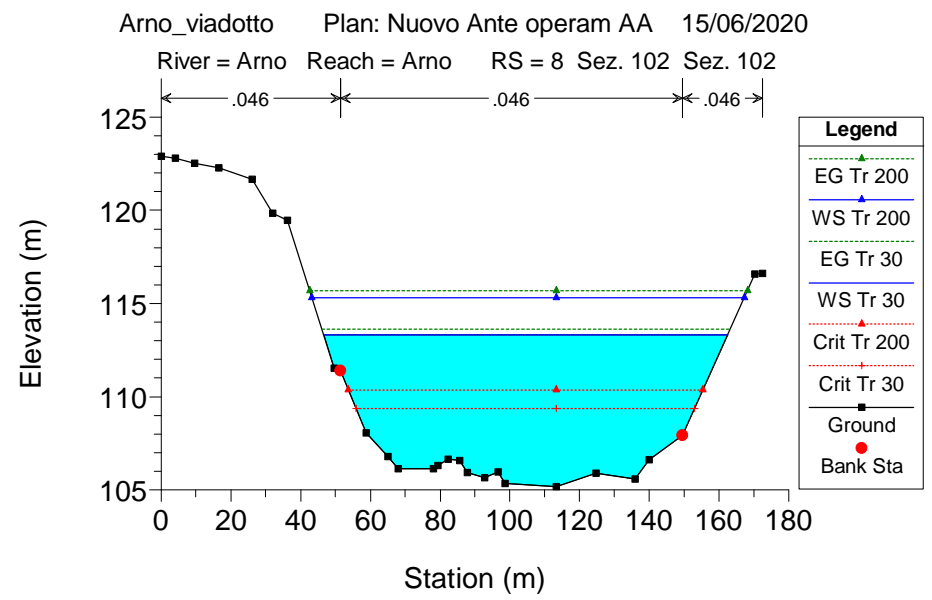
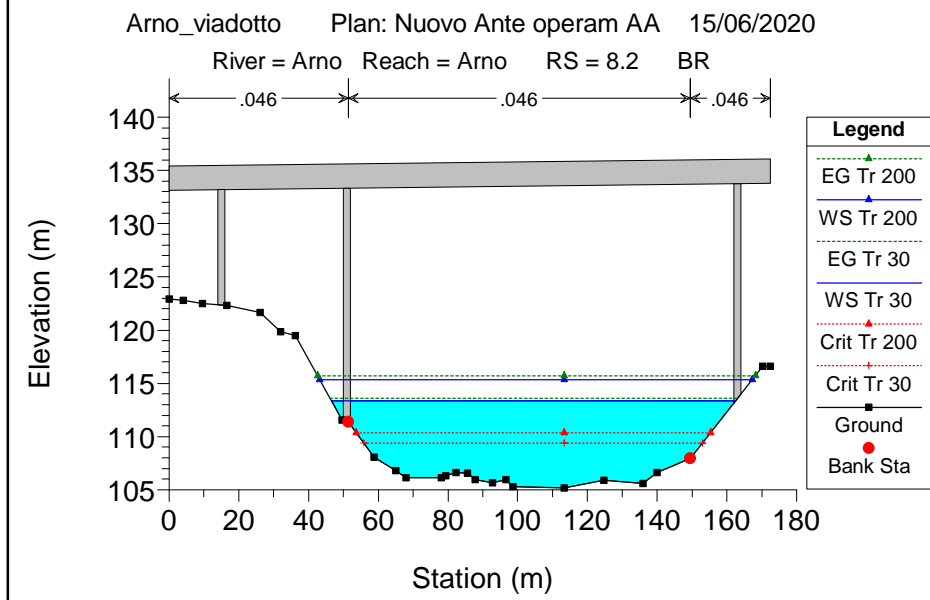
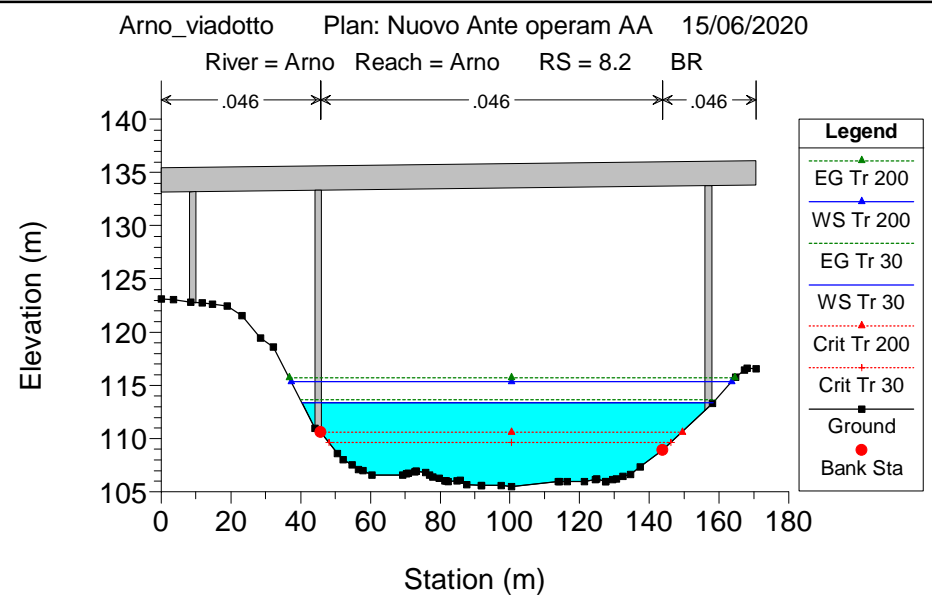
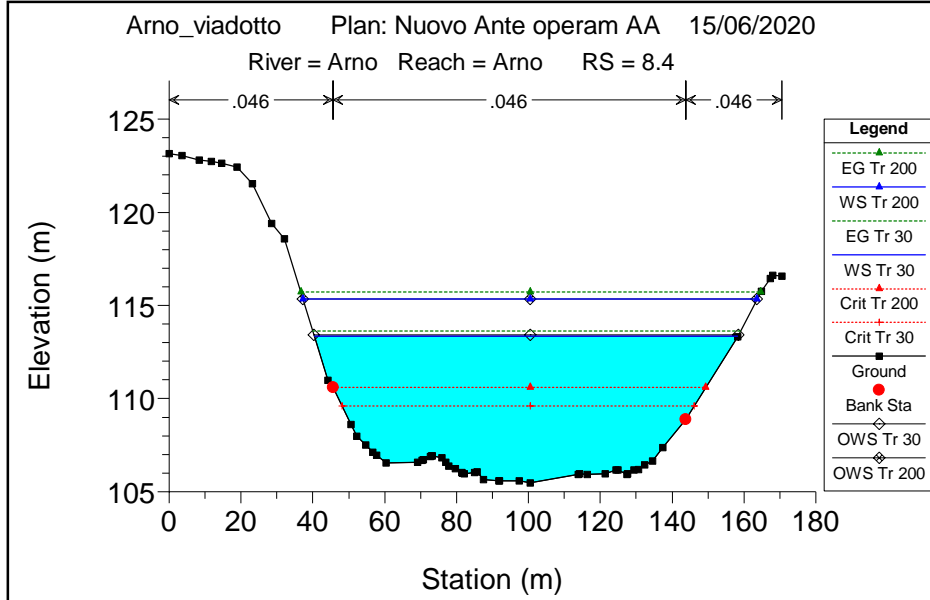
- EG Tr 200 (green dashed line with triangles)
- WS Tr 200 (blue solid line with triangles)
- EG Tr 30 (green dotted line with triangles)
- WS Tr 30 (blue solid line)
- Crit Tr 200 (red dotted line with triangles)
- Crit Tr 30 (red dotted line with triangles)
- Ground (black solid line with squares)
- OWS Tr 30 (black solid line with diamonds)
- OWS Tr 200 (black solid line with diamonds)

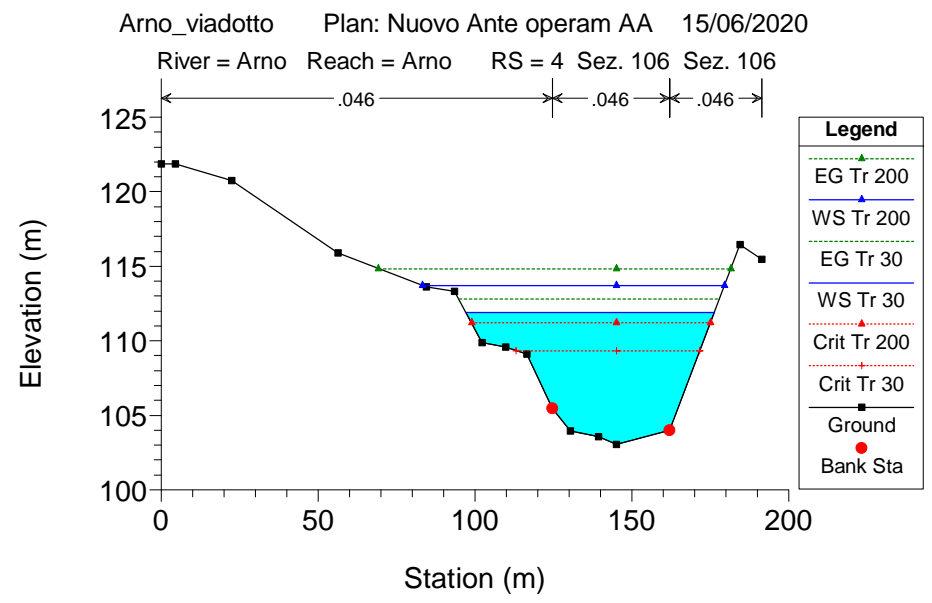
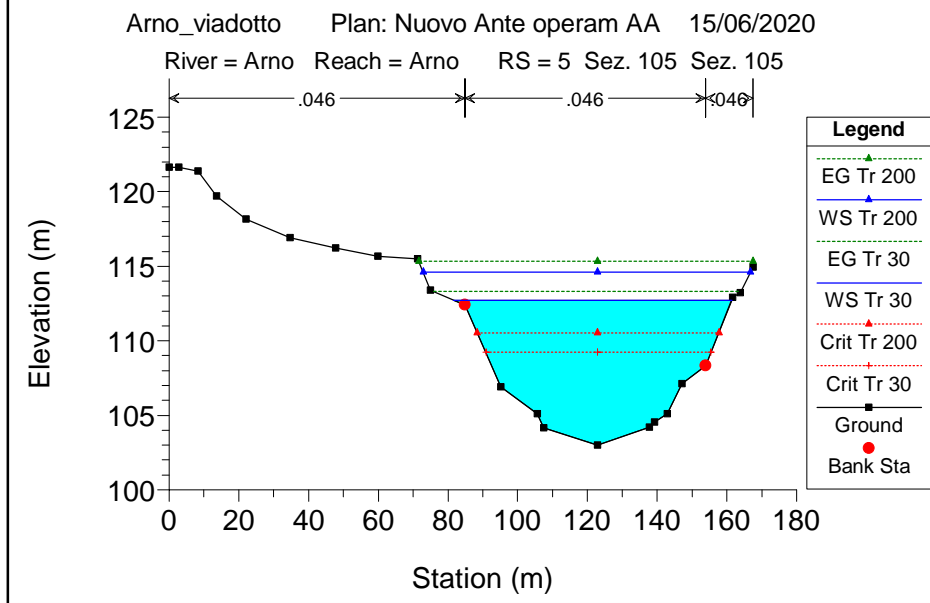
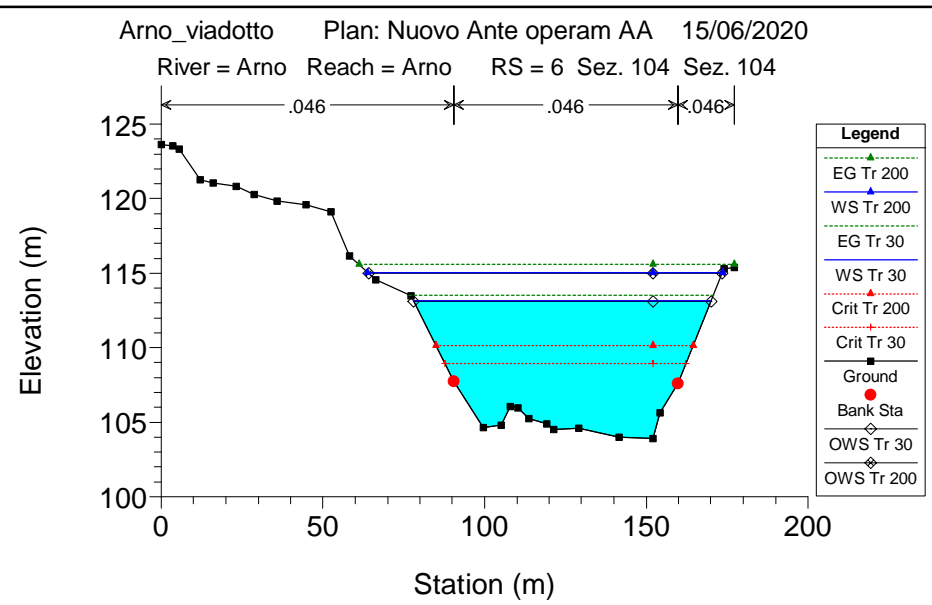
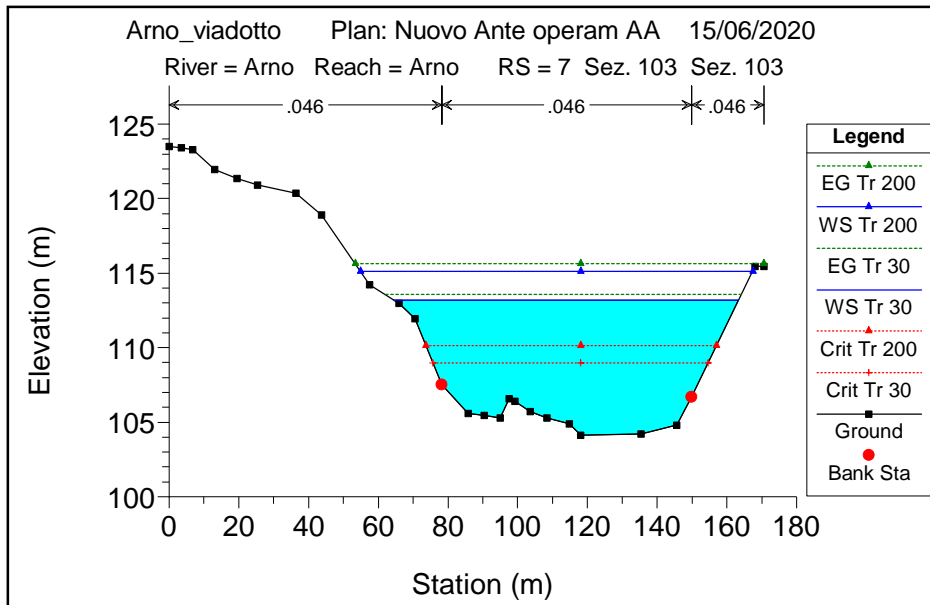


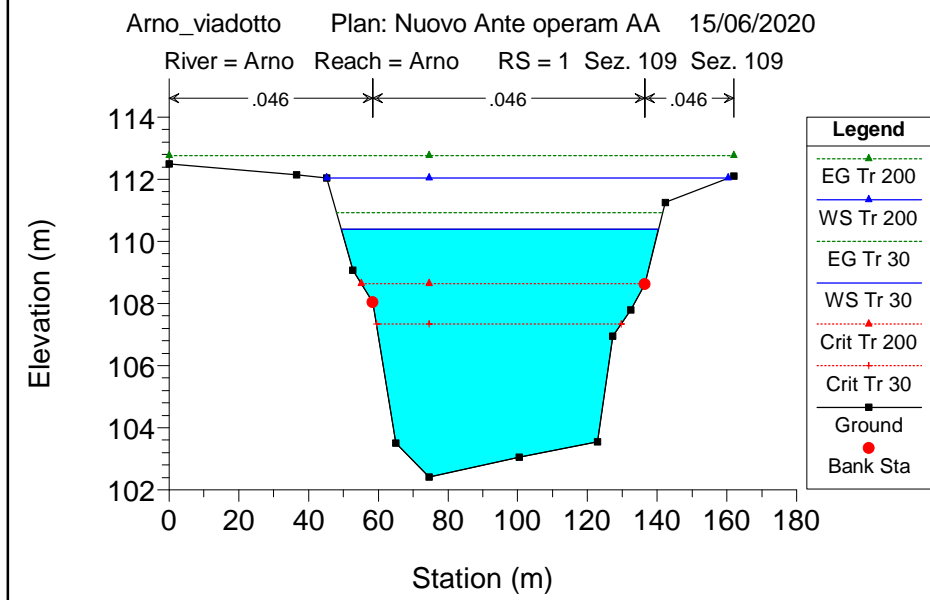
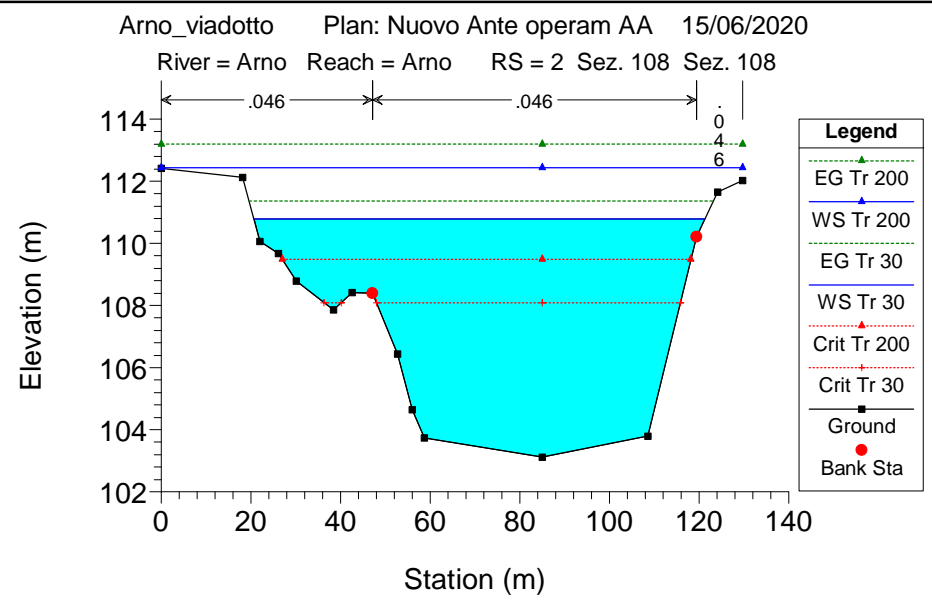
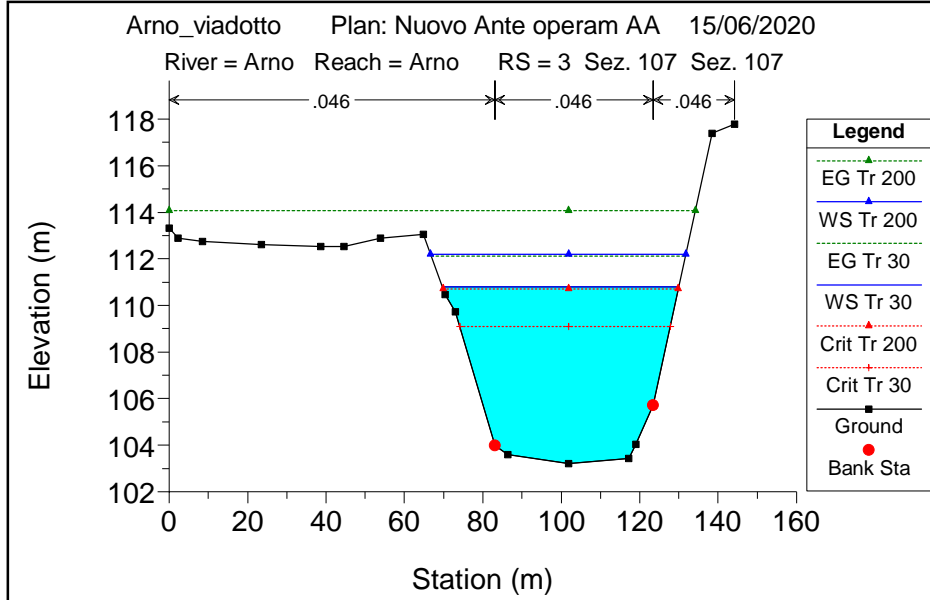












OPERA N. 2061

NUOVO VIADOTTO FIUME ARNO

POST OPERAM

HEC-RAS Plan: Post-pila spost River: Arno Reach: Arno

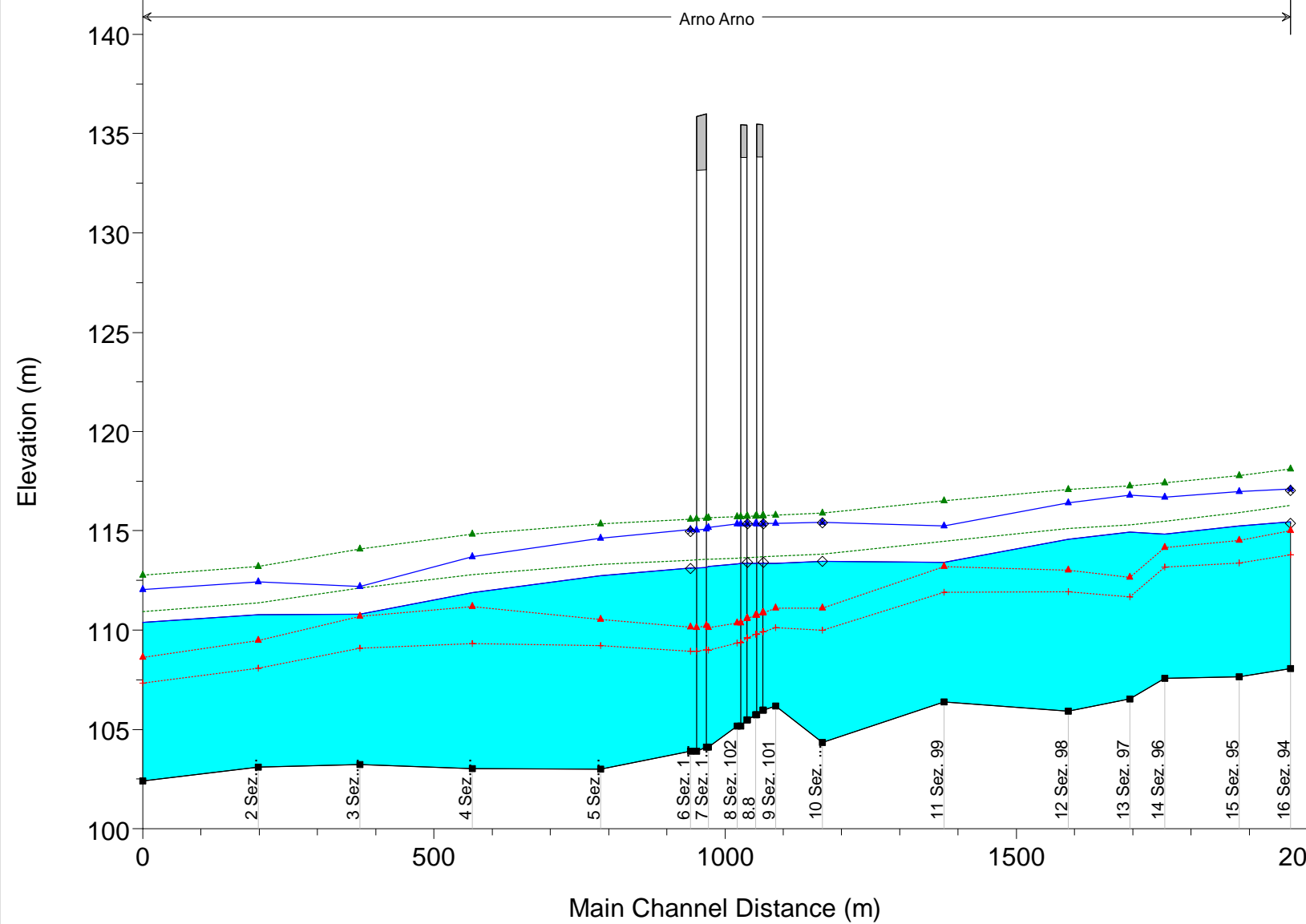
Reach	River Sta		Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
				(m3/s)	(m)	(m)	(m)	(m)	(m/m)	(m/s)	(m2)	(m)	
Arno	16	Sez. 94	Tr 30	1684.00	108.06	115.44	113.80	116.29	0.003968	4.08	412.98	86.27	0.60
Arno	16	Sez. 94	Tr 200	2503.00	108.06	117.10	115.01	118.11	0.003613	4.43	564.61	96.69	0.59
Arno	15	Sez. 95	Tr 30	1684.00	107.66	115.24	113.39	115.92	0.003282	3.66	460.13	98.83	0.54
Arno	15	Sez. 95	Tr 200	2503.00	107.66	116.99	114.51	117.77	0.002697	3.92	638.91	105.65	0.51
Arno	14	Sez. 96	Tr 30	1684.00	107.56	114.82	113.17	115.49	0.003411	3.61	466.05	103.90	0.54
Arno	14	Sez. 96	Tr 200	2503.00	107.56	116.70	114.15	117.43	0.002403	3.78	664.96	108.17	0.48
Arno	13	Sez. 97	Tr 30	1684.00	106.55	114.92	111.69	115.29	0.001185	2.70	644.92	112.63	0.34
Arno	13	Sez. 97	Tr 200	2503.00	106.55	116.80	112.65	117.25	0.001067	3.04	865.52	120.27	0.34
Arno	12	Sez. 98	Tr 30	1684.00	105.91	114.57	111.93	115.11	0.001907	3.28	523.33	93.15	0.42
Arno	12	Sez. 98	Tr 200	2503.00	105.91	116.41	113.02	117.09	0.001701	3.70	702.95	103.76	0.42
Arno	11	Sez. 99	Tr 30	1684.00	106.39	113.42	111.92	114.48	0.004214	4.58	373.48	71.52	0.63
Arno	11	Sez. 99	Tr 200	2503.00	106.39	115.25	113.19	116.52	0.003660	5.03	508.61	76.46	0.61
Arno	10	Sez. 100	Tr 30	1684.00	104.34	113.46	110.00	113.83	0.001282	2.70	625.05	106.94	0.35
Arno	10	Sez. 100	Tr 200	2503.00	104.34	115.44	111.10	115.89	0.001083	3.00	845.74	116.00	0.34
Arno	9	Sez. 101	Tr 30	1684.00	106.18	113.36	110.12	113.73	0.001165	2.68	646.33	118.70	0.34
Arno	9	Sez. 101	Tr 200	2503.00	106.18	115.38	111.10	115.80	0.000967	2.94	898.81	130.52	0.33
Arno	8.9		Tr 30	1684.00	105.96	113.36	109.91	113.69	0.001160	2.57	677.56	119.49	0.32
Arno	8.9		Tr 200	2503.00	105.96	115.38	110.88	115.77	0.000993	2.84	928.39	129.14	0.31
Arno	8.85			Bridge									
Arno	8.8		Tr 30	1684.00	105.73	113.35	109.78	113.67	0.001078	2.51	693.39	119.00	0.31
Arno	8.8		Tr 200	2503.00	105.73	115.36	110.75	115.75	0.000942	2.80	941.68	127.96	0.30
Arno	8.4		Tr 30	1684.00	105.48	113.35	109.61	113.65	0.000999	2.45	709.80	117.92	0.30
Arno	8.4		Tr 200	2503.00	105.48	115.36	110.59	115.73	0.000892	2.75	955.29	126.47	0.30

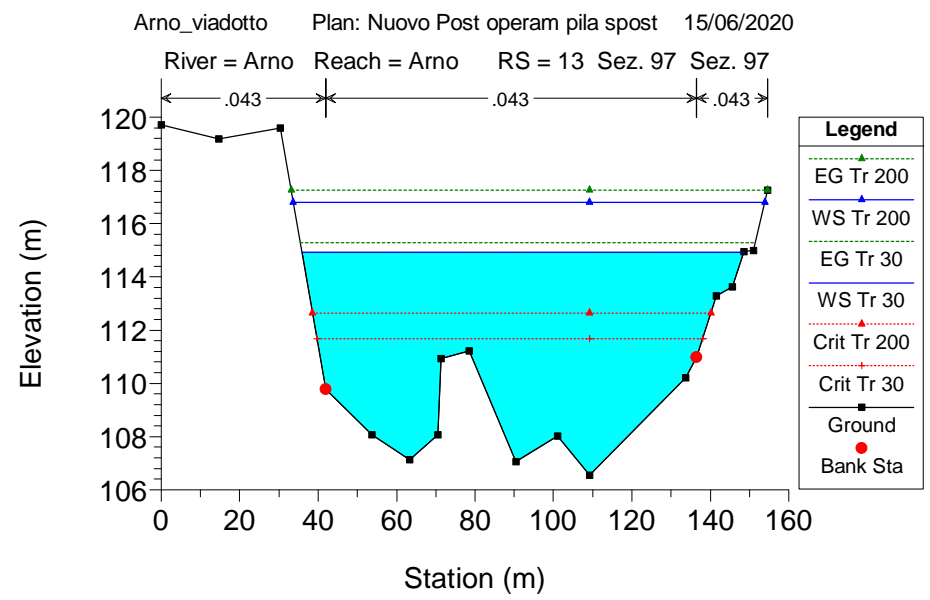
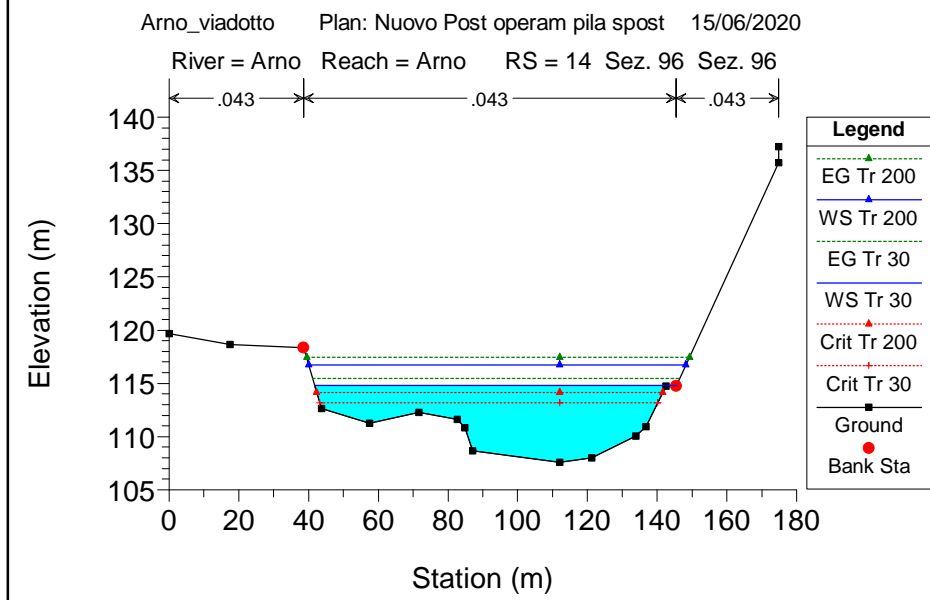
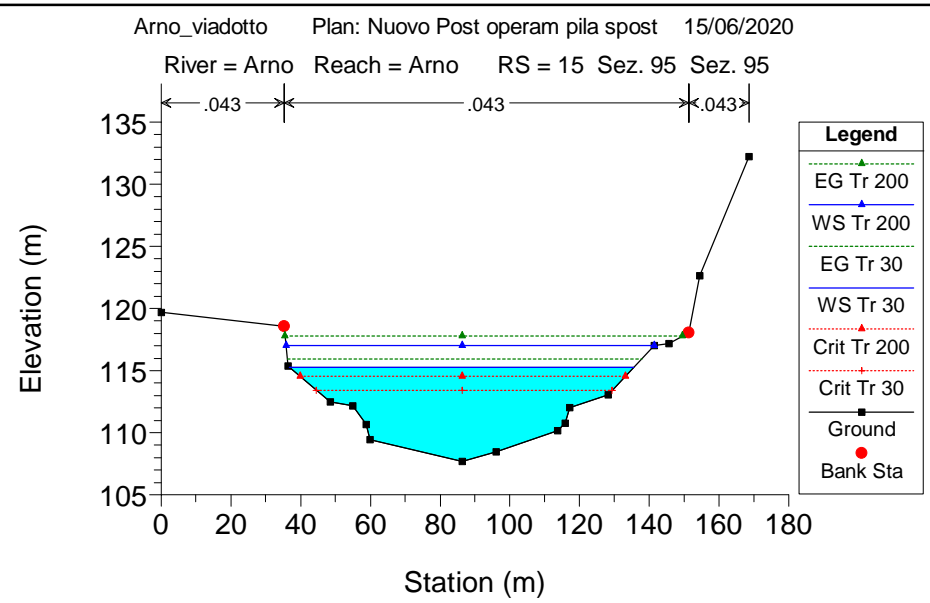
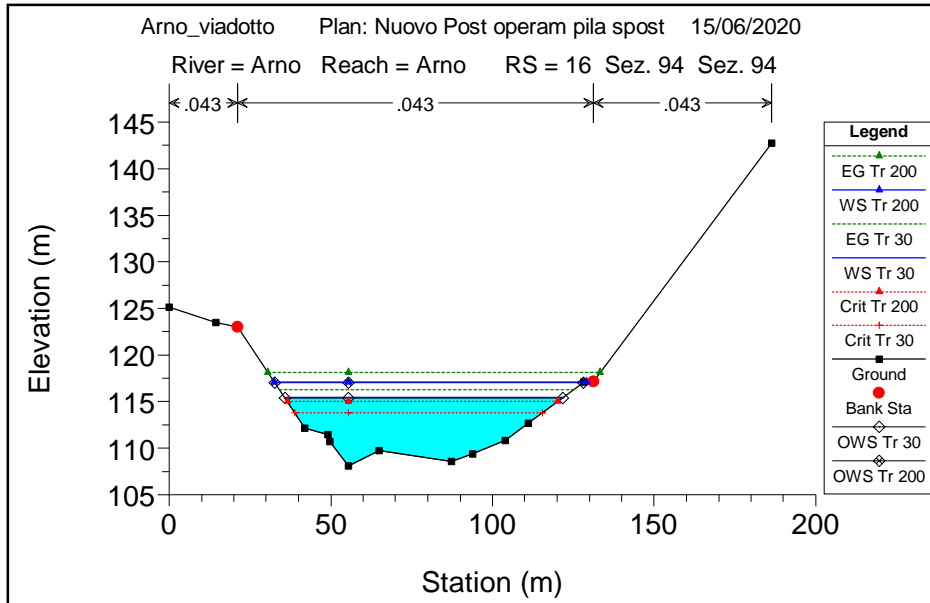
HEC-RAS Plan: Post-pila spost River: Arno Reach: Arno (Continued)

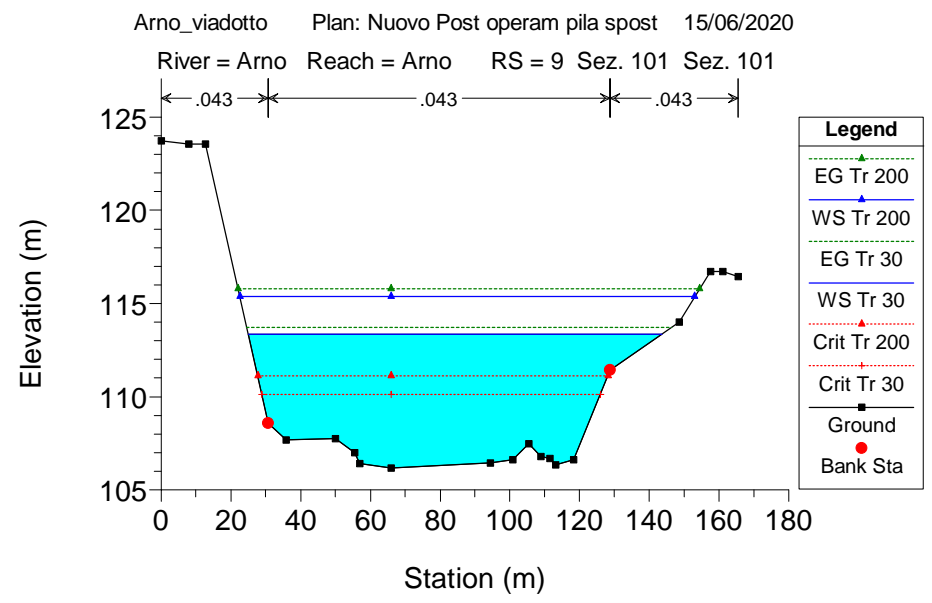
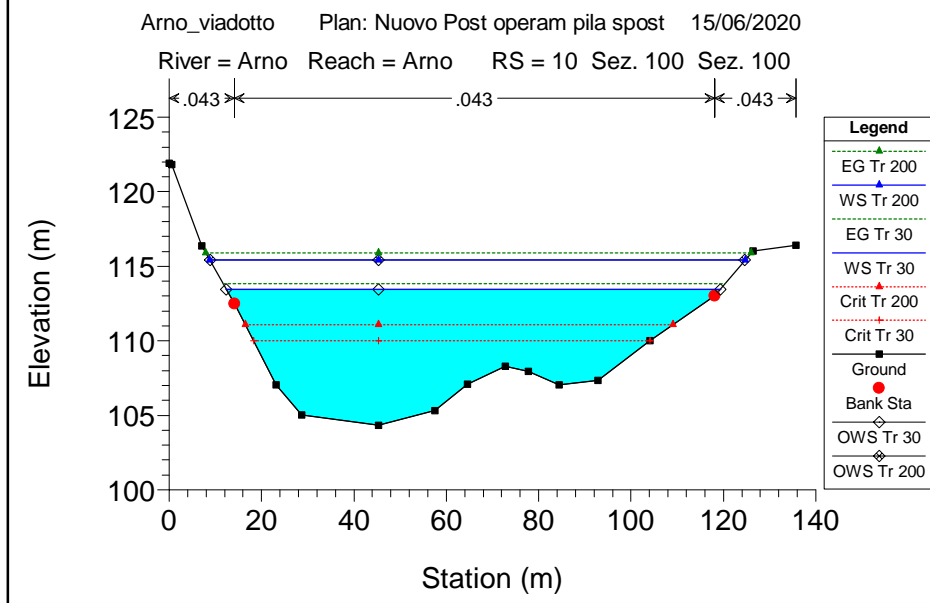
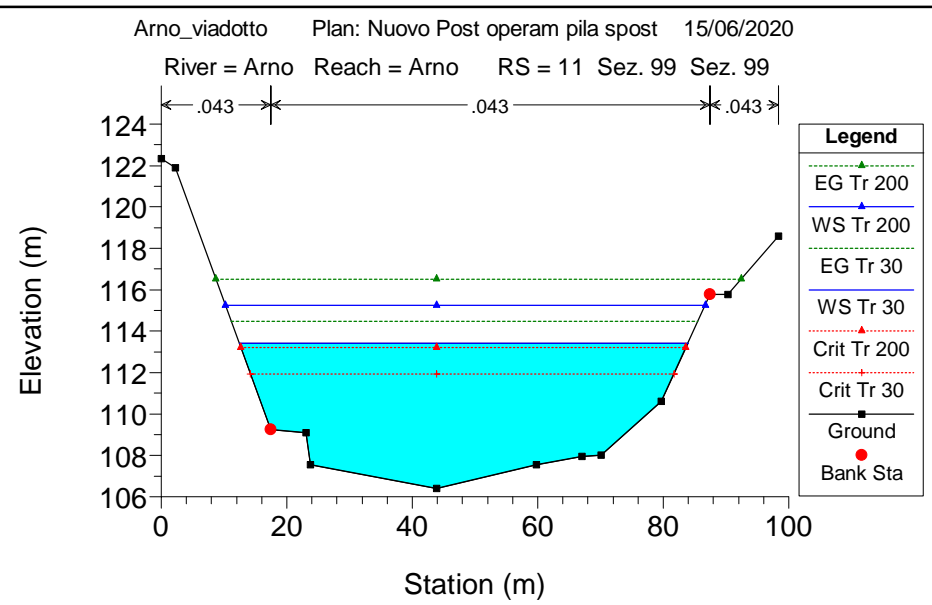
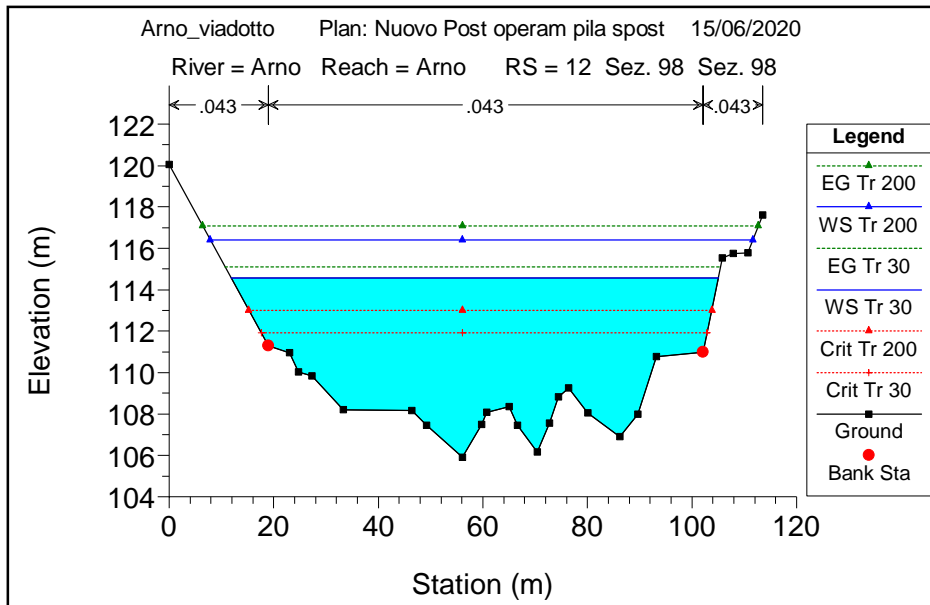
Reach	River Sta		Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
				(m3/s)	(m)	(m)	(m)	(m)	(m/m)	(m/s)	(m2)	(m)	
Arno	8.2			Bridge									
Arno	8	Sez. 102	Tr 30	1684.00	105.16	113.34	109.37	113.63	0.000915	2.38	728.17	116.00	0.29
Arno	8	Sez. 102	Tr 200	2503.00	105.16	115.35	110.36	115.71	0.000841	2.70	968.92	124.21	0.29
Arno	7	Sez. 103	Tr 30	1684.00	104.12	113.20	108.99	113.57	0.001013	2.75	651.55	98.98	0.31
Arno	7	Sez. 103	Tr 200	2503.00	104.12	115.17	110.14	115.65	0.001011	3.18	861.63	112.74	0.32
Arno	6.5			Bridge									
Arno	6	Sez. 104	Tr 30	1684.00	103.91	113.13	108.94	113.52	0.001085	2.85	625.56	92.05	0.32
Arno	6	Sez. 104	Tr 200	2503.00	103.91	115.05	110.14	115.59	0.001122	3.33	819.63	109.88	0.34
Arno	5	Sez. 105	Tr 30	1684.00	103.01	112.73	109.22	113.30	0.001781	3.34	514.41	79.94	0.40
Arno	5	Sez. 105	Tr 200	2503.00	103.01	114.62	110.54	115.35	0.001743	3.86	682.14	93.90	0.41
Arno	4	Sez. 106	Tr 30	1684.00	103.03	111.89	109.34	112.79	0.002650	4.51	437.46	79.15	0.50
Arno	4	Sez. 106	Tr 200	2503.00	103.03	113.69	111.20	114.84	0.002695	5.20	589.29	96.28	0.53
Arno	3	Sez. 107	Tr 30	1684.00	103.22	110.80	109.09	112.11	0.004241	5.25	349.89	60.34	0.62
Arno	3	Sez. 107	Tr 200	2503.00	103.22	112.20	110.71	114.08	0.004895	6.35	437.93	65.17	0.69
Arno	2	Sez. 108	Tr 30	1684.00	103.11	110.78	108.09	111.37	0.002258	3.47	514.28	100.58	0.44
Arno	2	Sez. 108	Tr 200	2503.00	103.11	112.43	109.48	113.20	0.002209	4.00	692.64	129.70	0.45
Arno	1	Sez. 109	Tr 30	1684.00	102.41	110.38	107.34	110.93	0.002001	3.30	521.43	91.05	0.41
Arno	1	Sez. 109	Tr 200	2503.00	102.41	112.04	108.64	112.77	0.002004	3.84	684.54	115.19	0.43

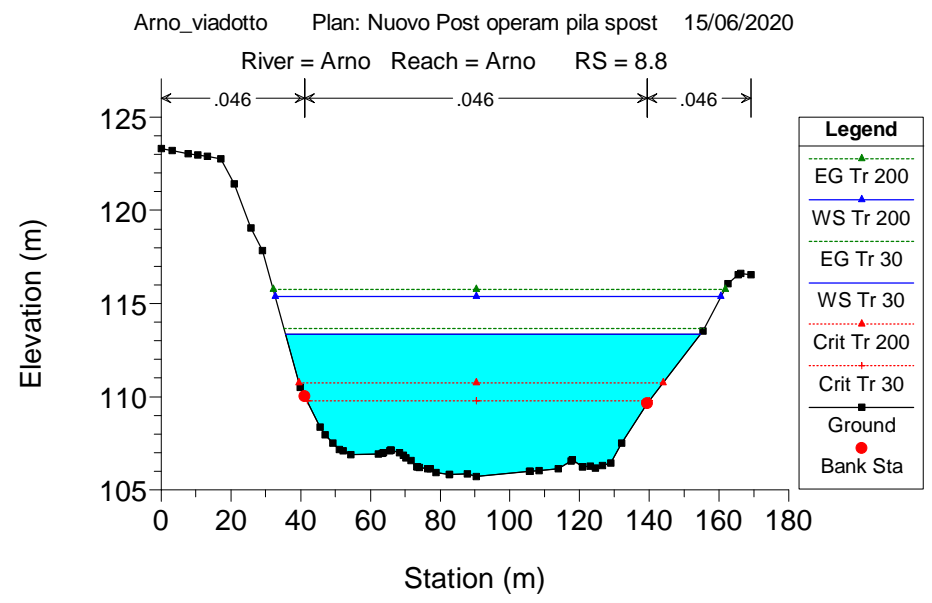
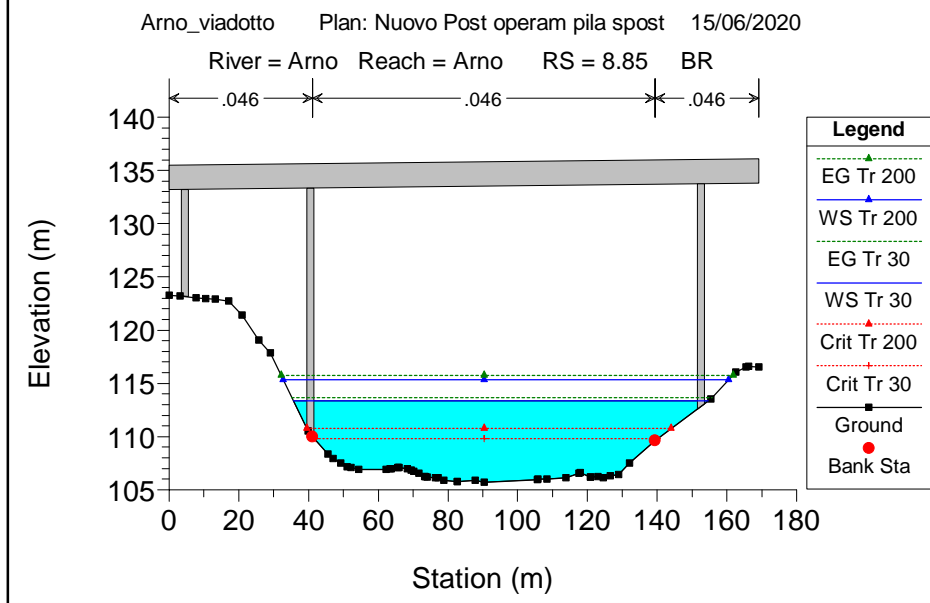
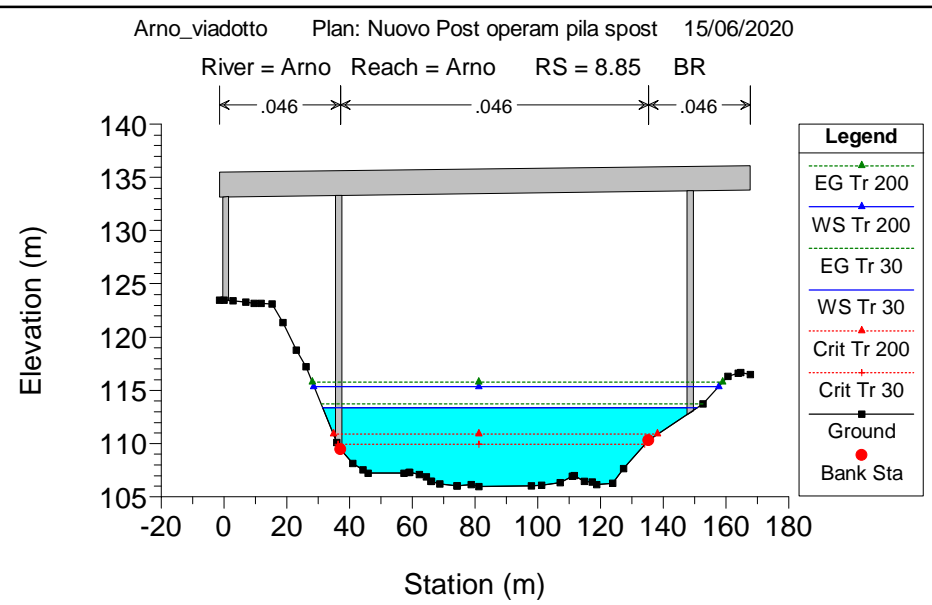
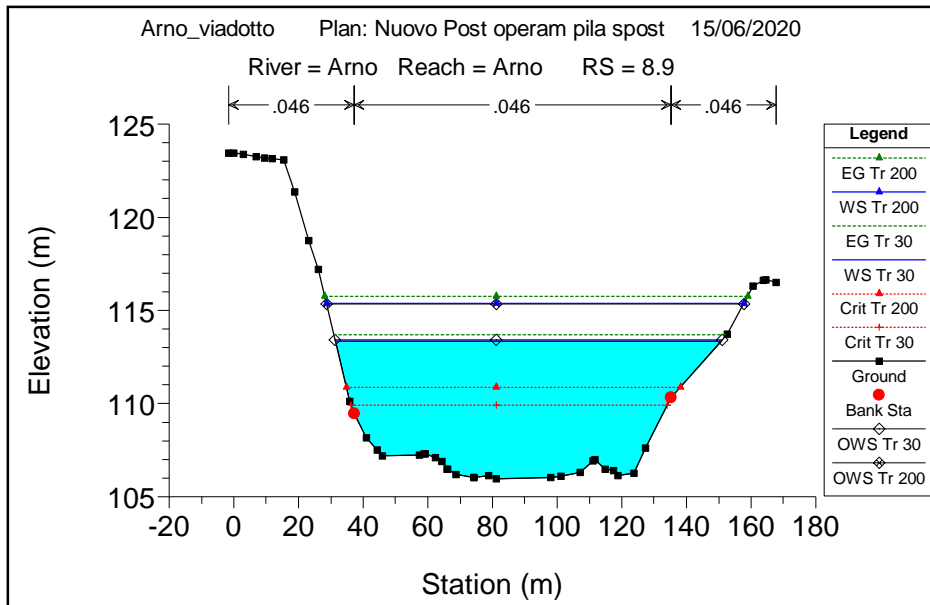
Legend

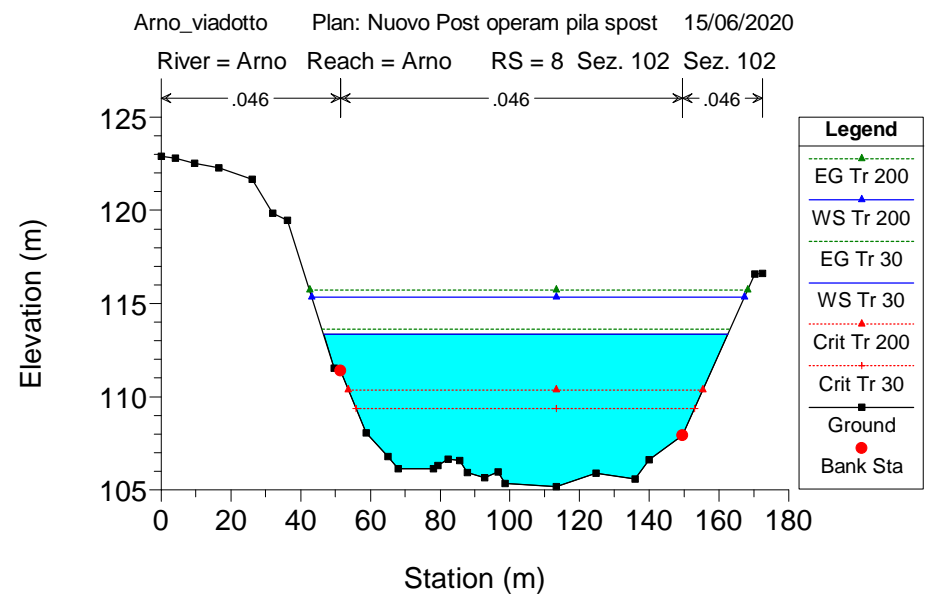
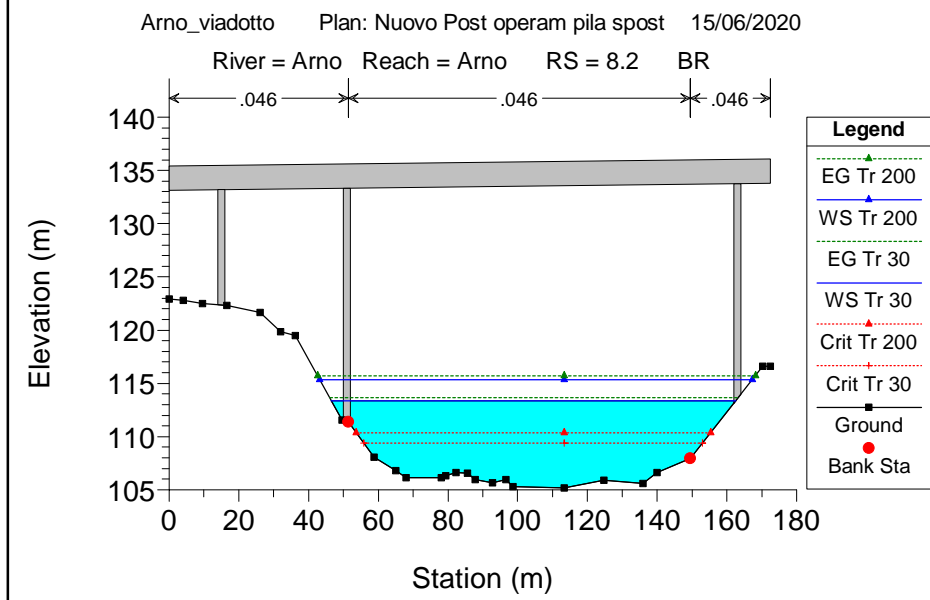
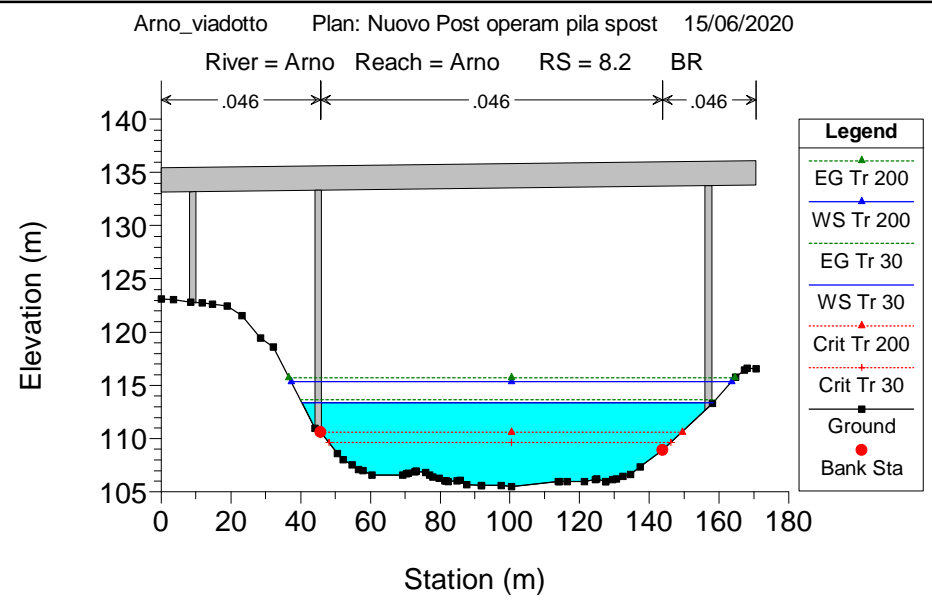
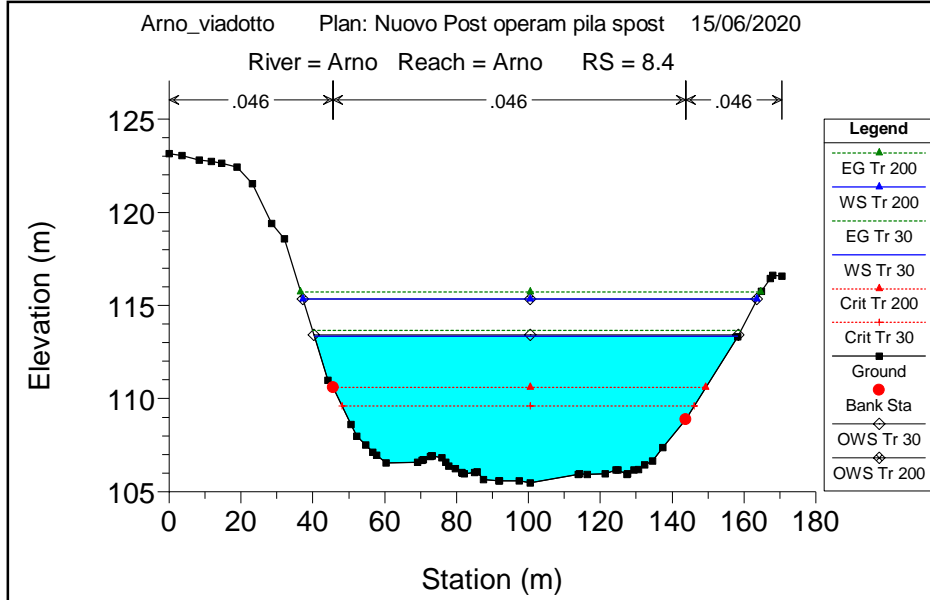
- EG Tr 200
- WS Tr 200
- EG Tr 30
- WS Tr 30
- Crit Tr 200
- Crit Tr 30
- Ground
- OWS Tr 30
- OWS Tr 200

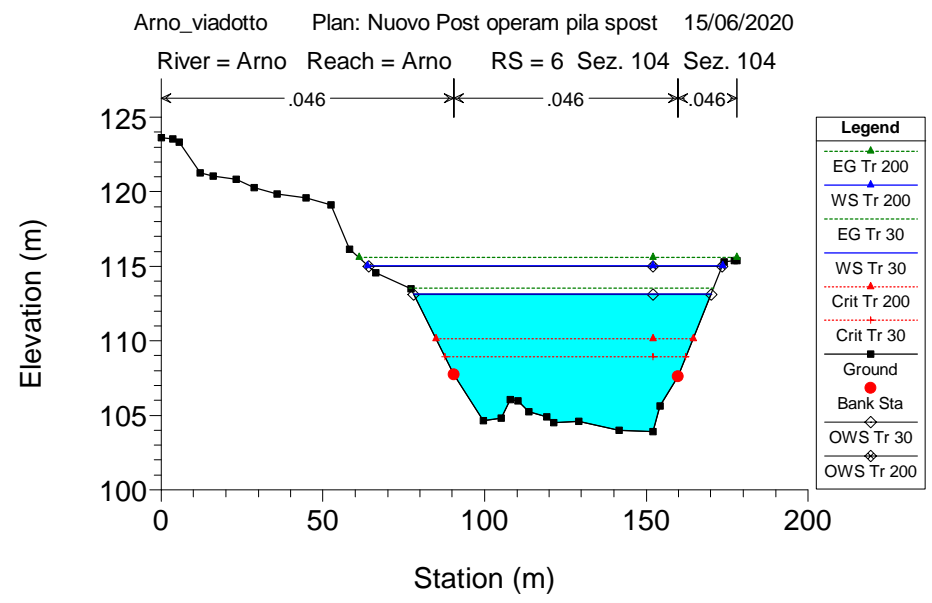
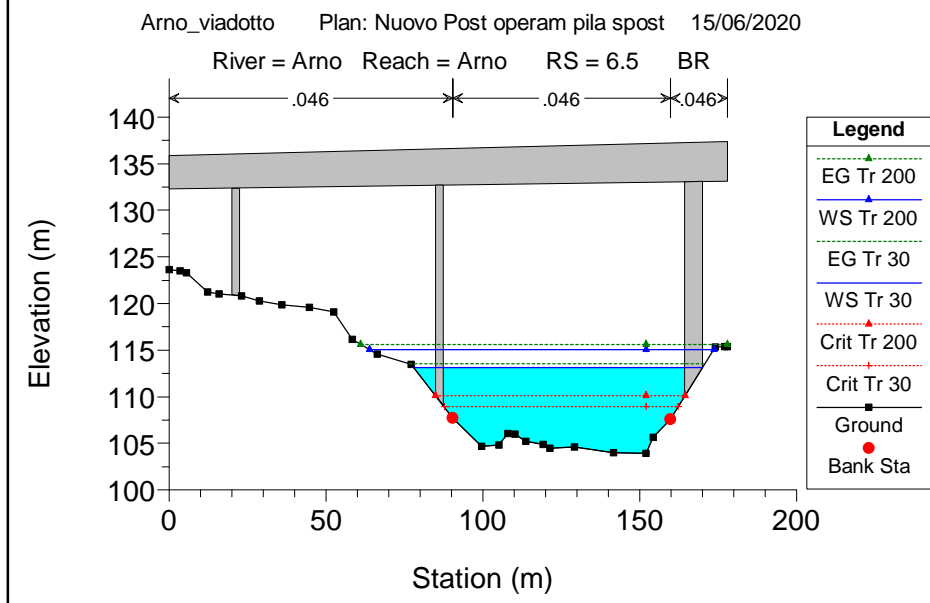
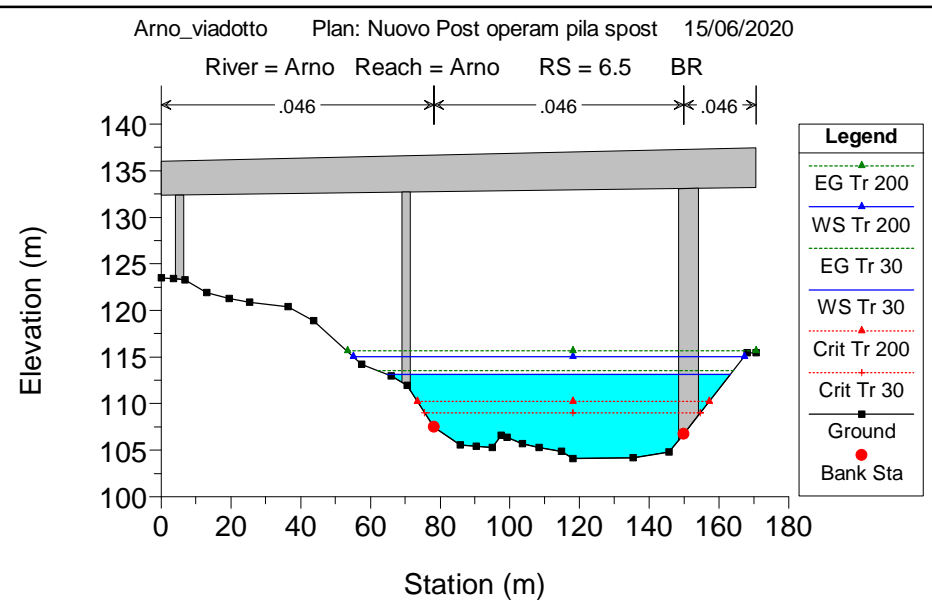
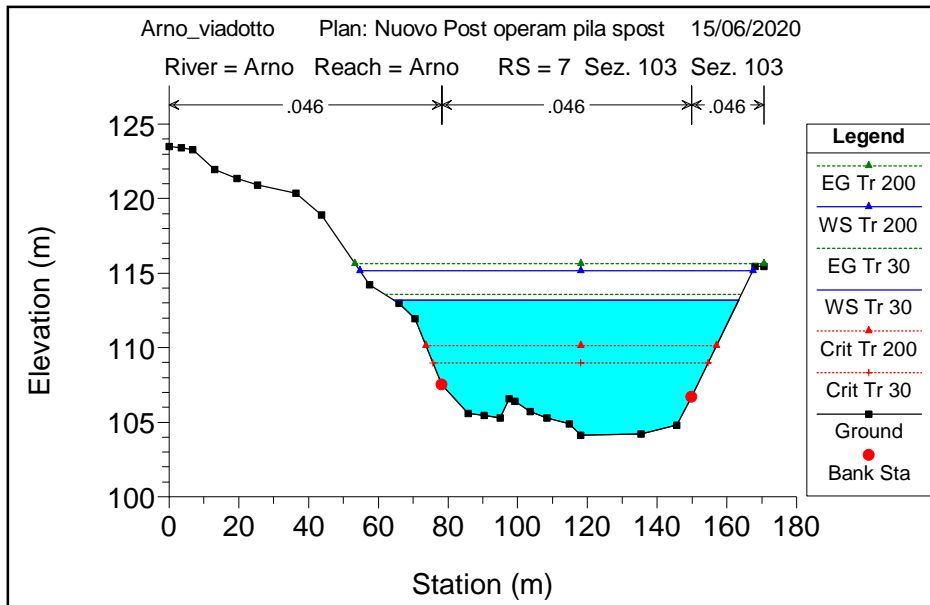


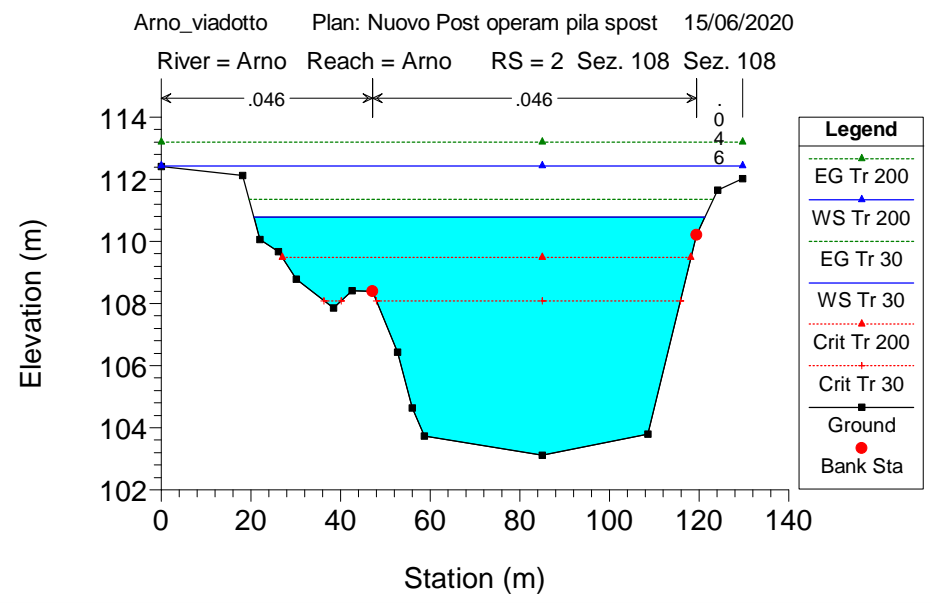
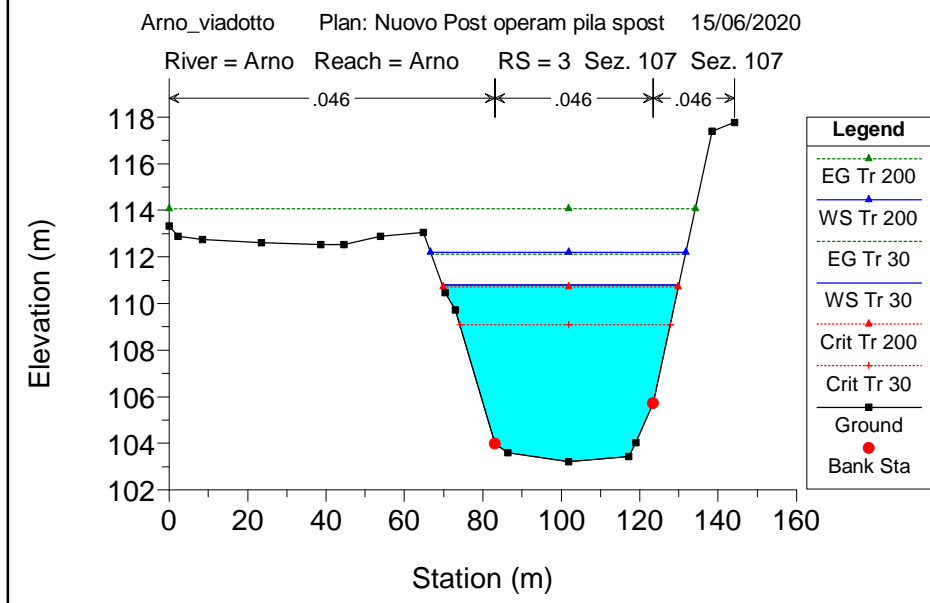
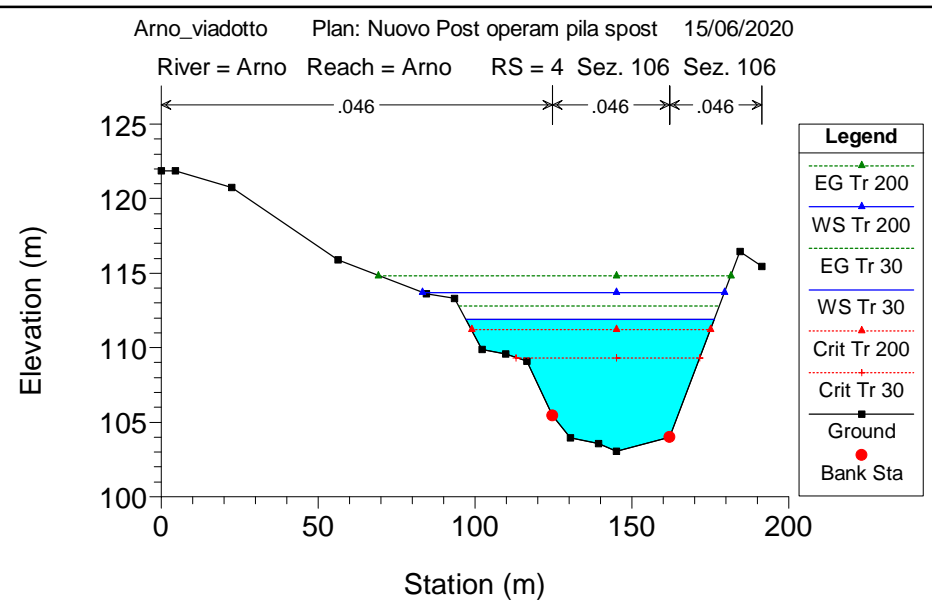
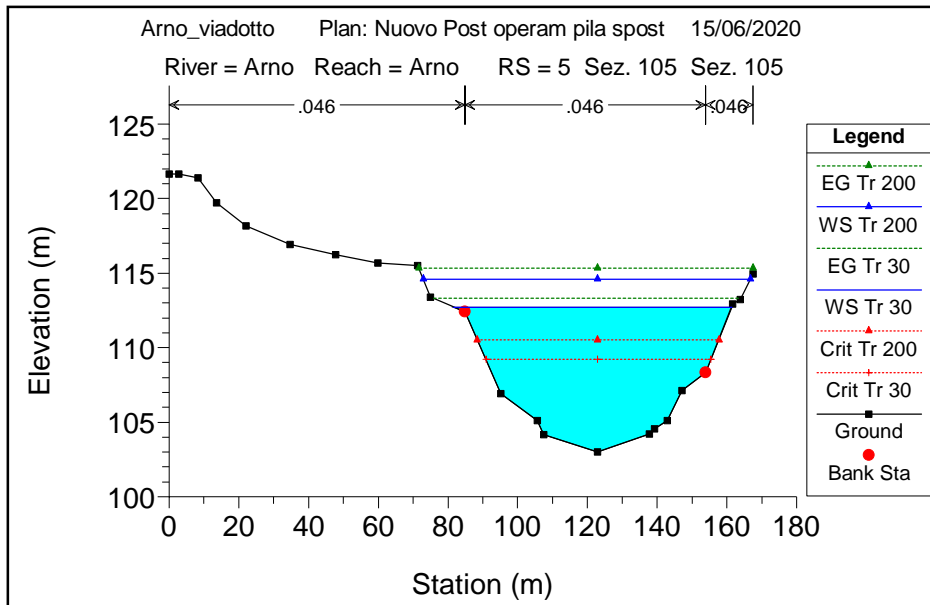






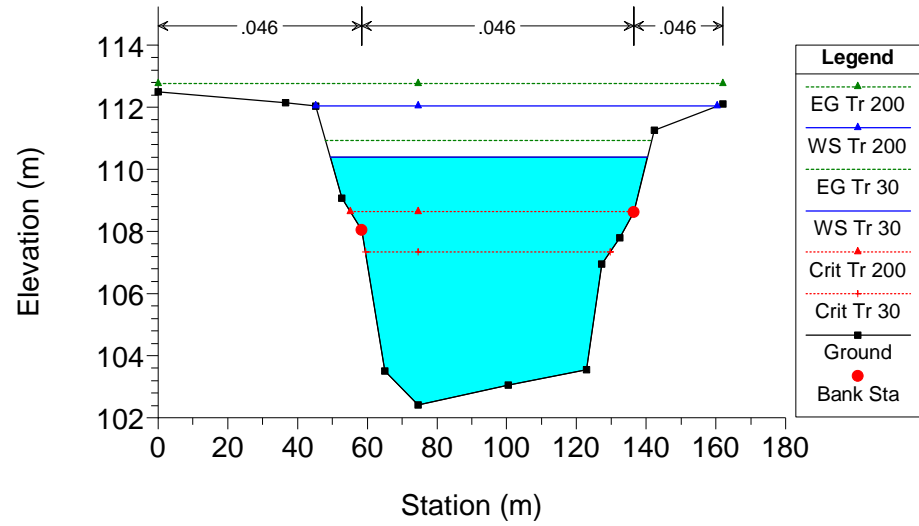






Arno_viadotto Plan: Nuovo Post operam pila spost 15/06/2020

River = Arno Reach = Arno RS = 1 Sez. 109 Sez. 109



OPERA N. 2061

NUOVO VIADOTTO FIUME ARNO

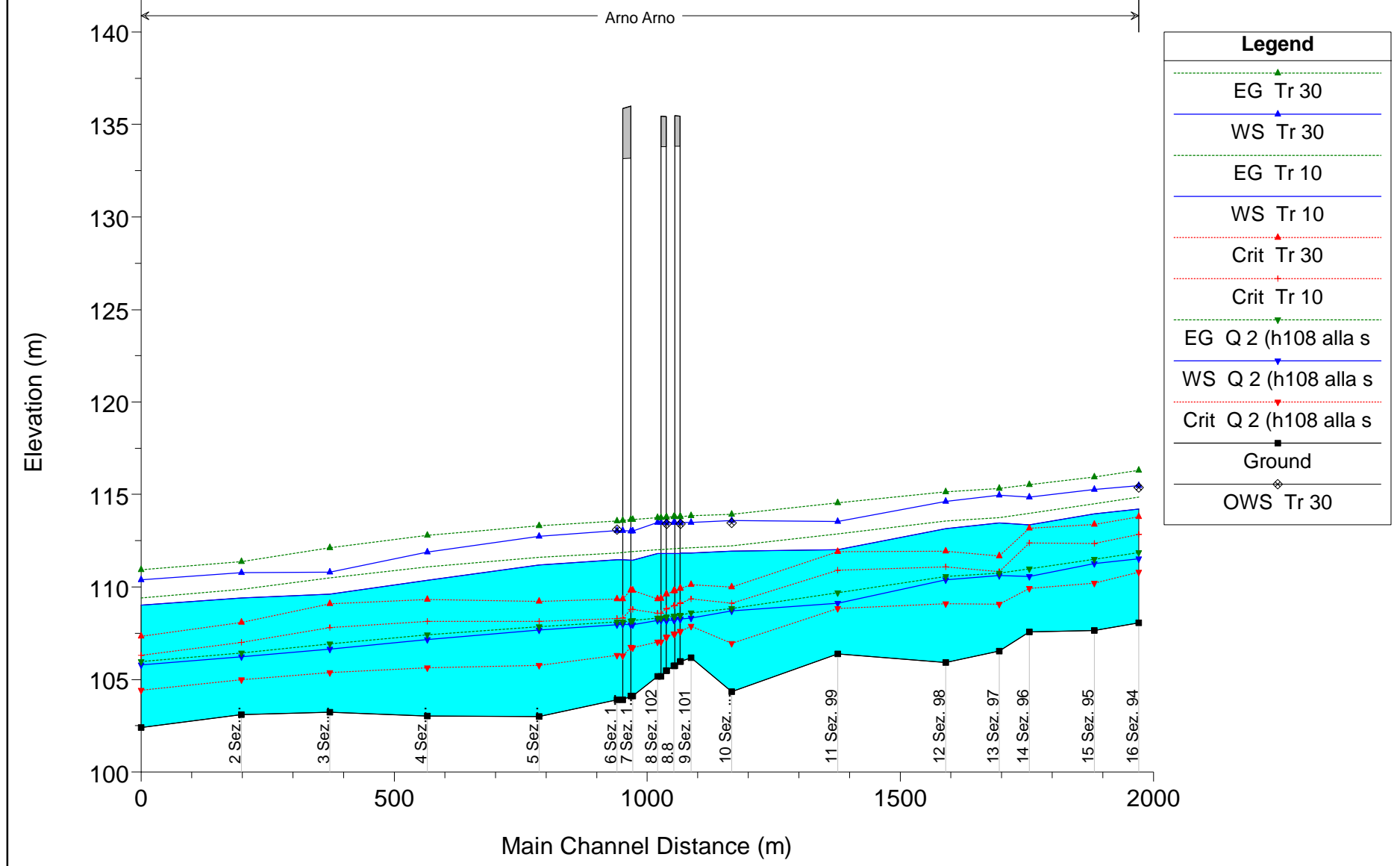
PROVVISIONALE PILA DX

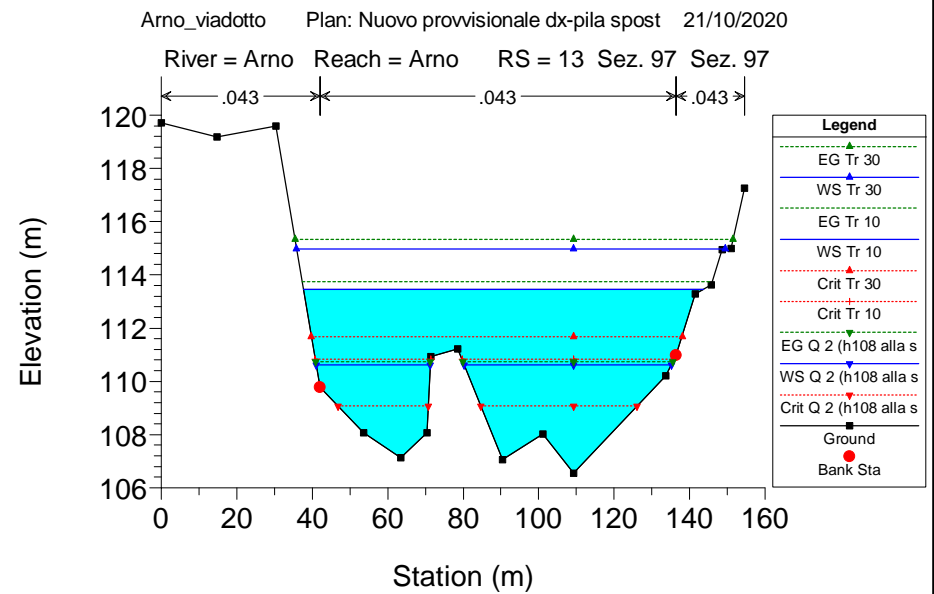
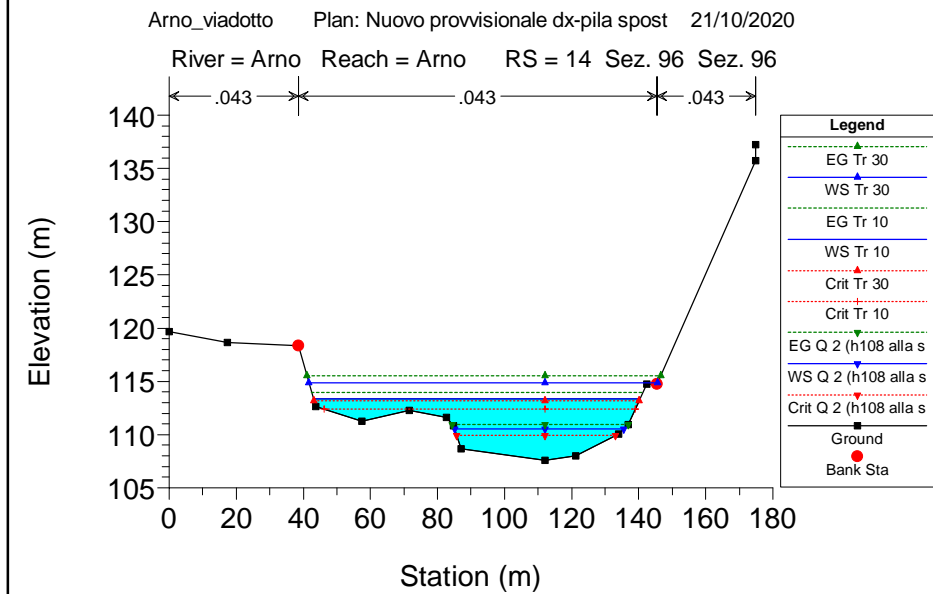
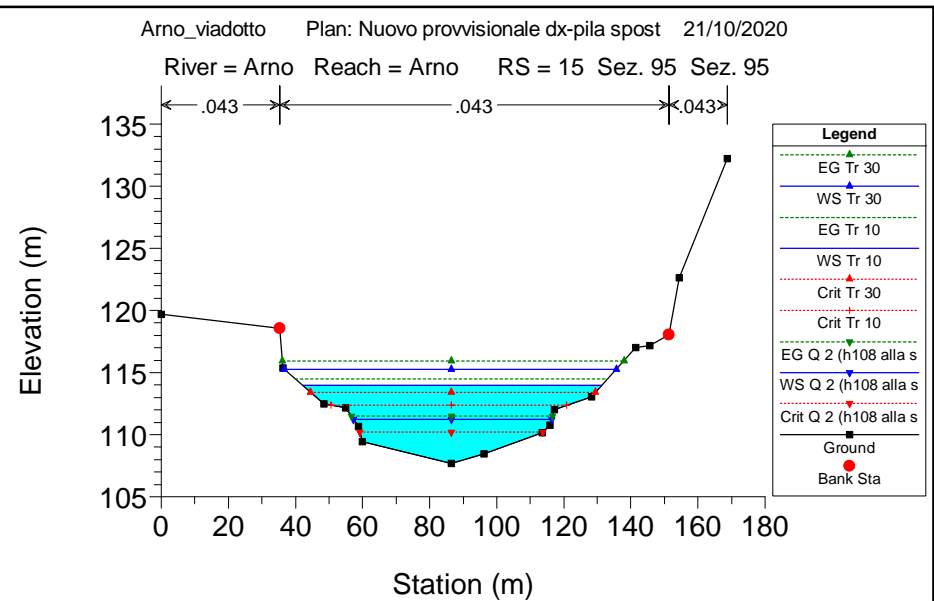
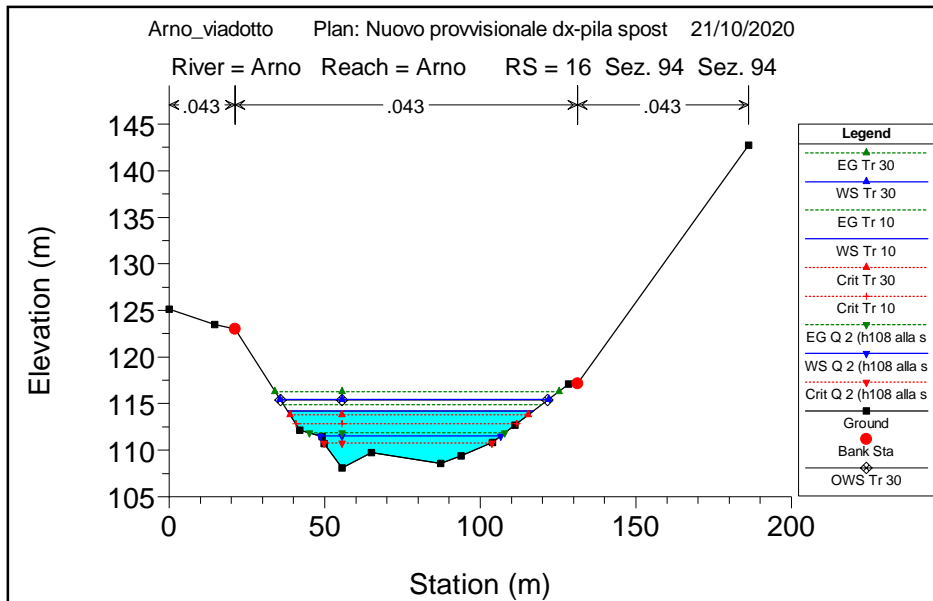
HEC-RAS Plan: Prov dx-pila spost River: Arno Reach: Arno (Continued)

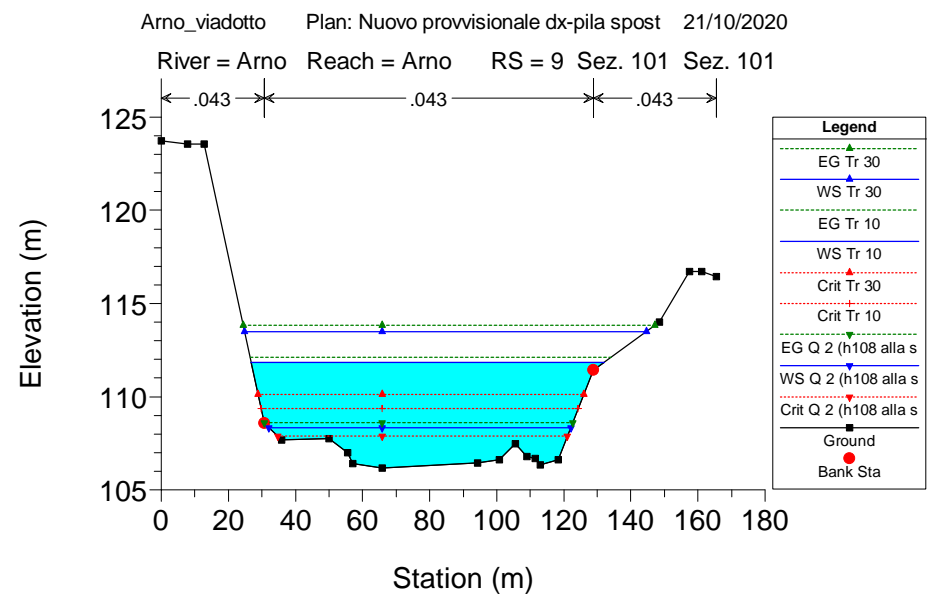
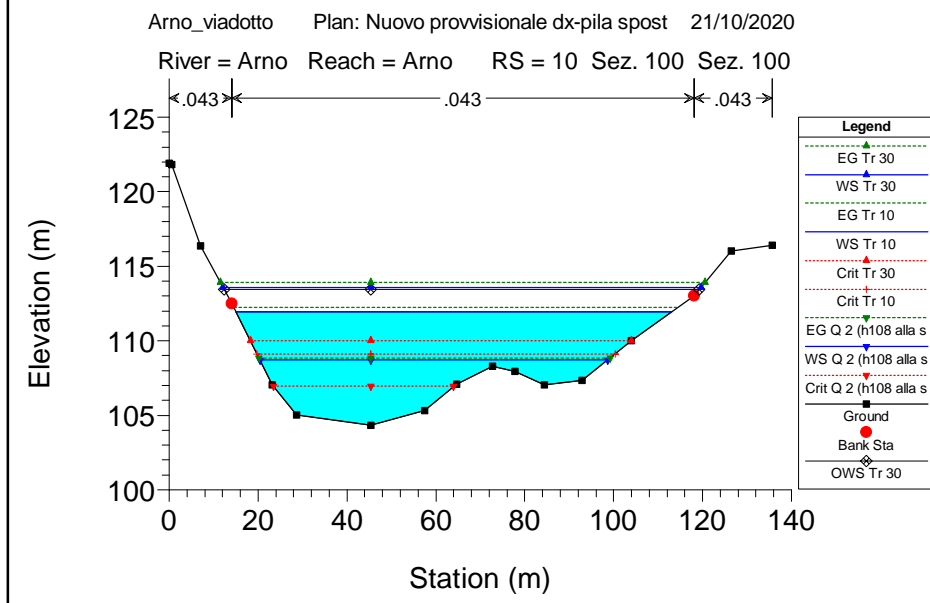
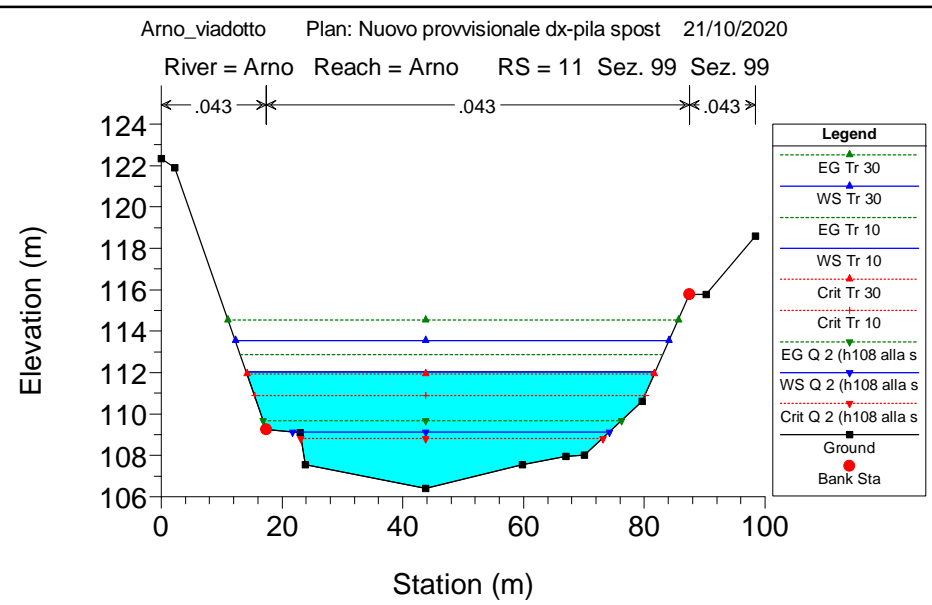
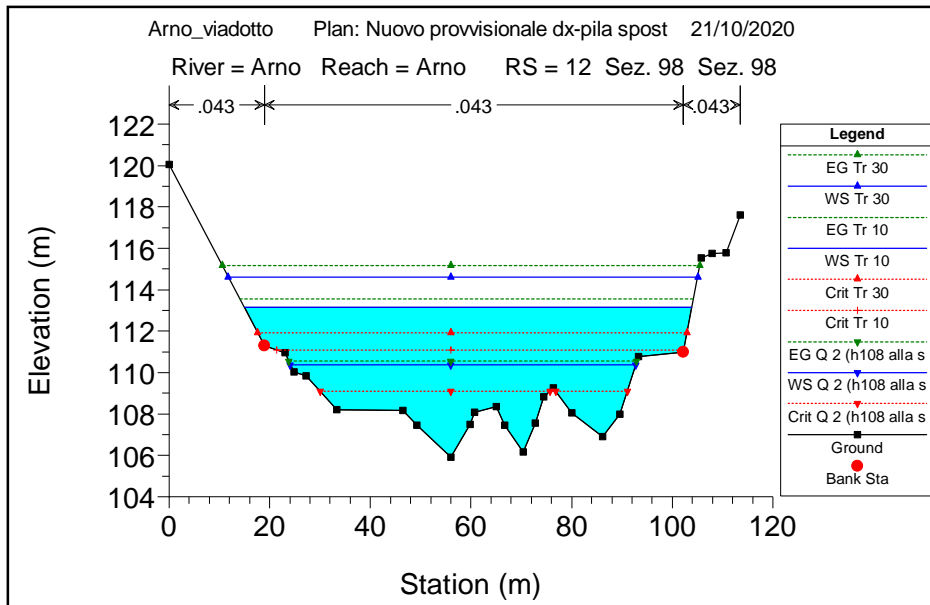
Reach	River Sta		Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
				(m3/s)	(m)	(m)	(m)	(m)	(m/m)	(m/s)	(m2)	(m)	
Arno	8.8		Tr 10	1120.70	105.73	111.81	108.99	112.06	0.001181	2.21	516.70	110.42	0.31
Arno	8.8		Tr 30	1684.00	105.73	113.49	109.78	113.79	0.001007	2.46	709.15	119.73	0.30
Arno	8.8		Q 2 (h108 alla s	310.00	105.73	108.23	107.46	108.42	0.003726	1.95	158.89	88.57	0.47
Arno	8.4		Tr 10	1120.70	105.48	111.81	108.82	112.04	0.001070	2.14	533.71	110.53	0.30
Arno	8.4		Tr 30	1684.00	105.48	113.48	109.61	113.77	0.000934	2.40	725.45	118.49	0.29
Arno	8.4		Q 2 (h108 alla s	310.00	105.48	108.20	107.28	108.37	0.002935	1.81	171.27	89.34	0.42
Arno	8.2		Bridge										
Arno	8	Sez. 102	Tr 10	1120.70	105.16	111.80	108.57	112.02	0.000952	2.06	554.29	109.69	0.28
Arno	8	Sez. 102	Tr 30	1684.00	105.16	113.48	109.37	113.75	0.000858	2.34	743.59	116.55	0.28
Arno	8	Sez. 102	Q 2 (h108 alla s	310.00	105.16	108.18	107.02	108.31	0.002094	1.62	191.18	91.69	0.36
Arno	7	Sez. 103	Tr 10	1120.70	104.12	111.45	108.78	111.92	0.002062	3.06	373.70	69.94	0.41
Arno	7	Sez. 103	Tr 30	1684.00	104.12	113.03	109.83	113.65	0.002065	3.54	499.43	97.43	0.42
Arno	7	Sez. 103	Q 2 (h108 alla s	310.00	104.12	107.97	106.73	108.19	0.002690	2.08	149.52	58.71	0.41
Arno	6.5		Bridge										
Arno	6	Sez. 104	Tr 10	1120.70	103.91	111.47	108.30	111.84	0.001523	2.73	419.64	75.38	0.35
Arno	6	Sez. 104	Tr 30	1684.00	103.91	113.05	109.34	113.56	0.001572	3.19	549.72	91.75	0.37
Arno	6	Sez. 104	Q 2 (h108 alla s	310.00	103.91	107.95	106.29	108.11	0.001625	1.74	178.17	62.00	0.33
Arno	5	Sez. 105	Tr 10	1120.70	103.01	111.18	108.14	111.59	0.001696	2.85	398.17	71.68	0.38
Arno	5	Sez. 105	Tr 30	1684.00	103.01	112.73	109.22	113.30	0.001781	3.34	514.41	79.94	0.40
Arno	5	Sez. 105	Q 2 (h108 alla s	310.00	103.01	107.68	105.75	107.85	0.001656	1.82	170.42	56.54	0.33
Arno	4	Sez. 106	Tr 10	1120.70	103.03	110.37	108.15	111.09	0.002689	3.96	322.14	72.55	0.49
Arno	4	Sez. 106	Tr 30	1684.00	103.03	111.89	109.34	112.79	0.002650	4.51	437.46	79.15	0.50
Arno	4	Sez. 106	Q 2 (h108 alla s	310.00	103.03	107.16	105.64	107.42	0.002198	2.31	140.51	46.96	0.40
Arno	3	Sez. 107	Tr 10	1120.70	103.22	109.60	107.81	110.48	0.003577	4.27	280.57	55.28	0.56
Arno	3	Sez. 107	Tr 30	1684.00	103.22	110.80	109.09	112.11	0.004241	5.25	349.89	60.34	0.62
Arno	3	Sez. 107	Q 2 (h108 alla s	310.00	103.22	106.64	105.38	106.94	0.002898	2.45	130.07	46.24	0.45
Arno	2	Sez. 108	Tr 10	1120.70	103.11	109.39	107.01	109.86	0.002338	3.04	381.22	90.77	0.43
Arno	2	Sez. 108	Tr 30	1684.00	103.11	110.78	108.09	111.37	0.002258	3.47	514.28	100.58	0.44

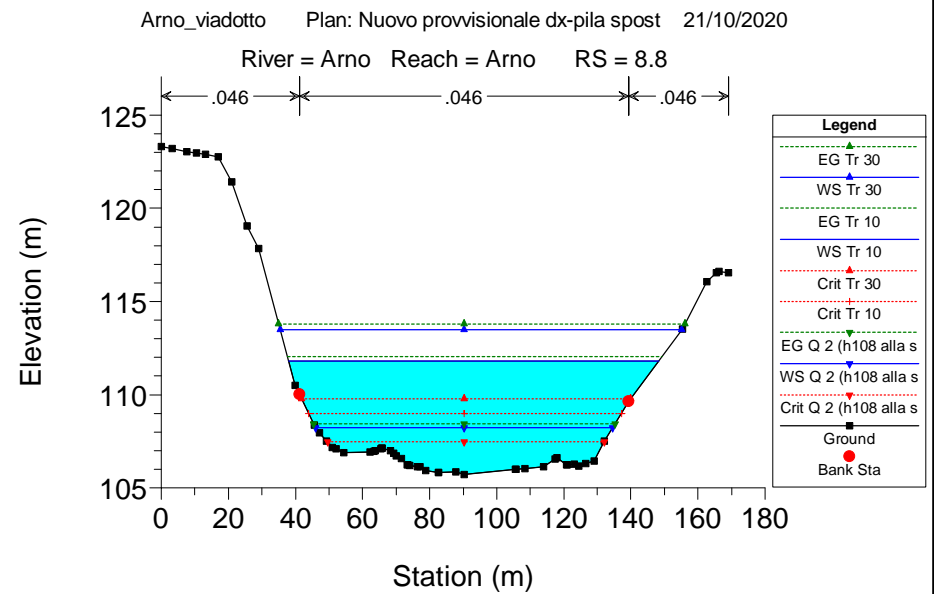
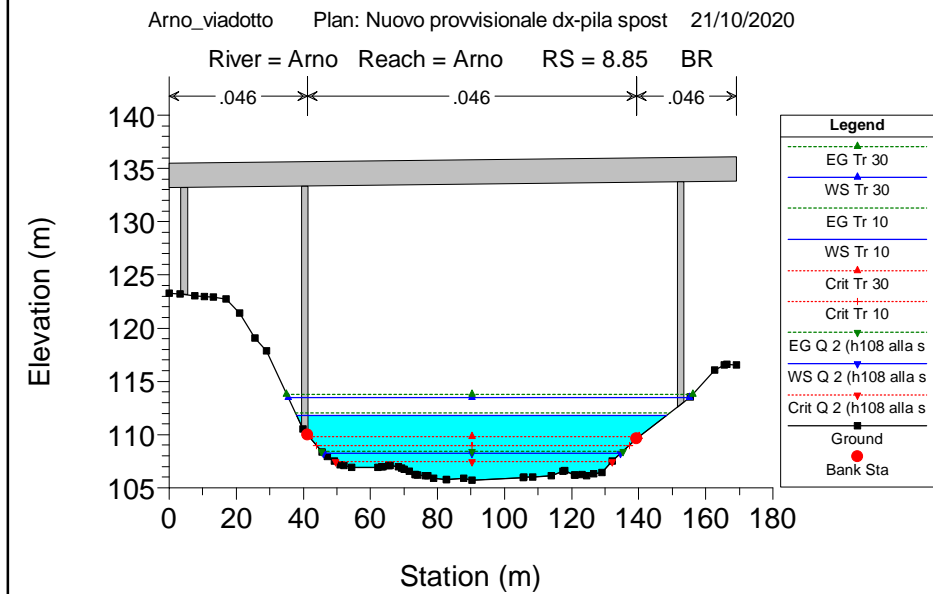
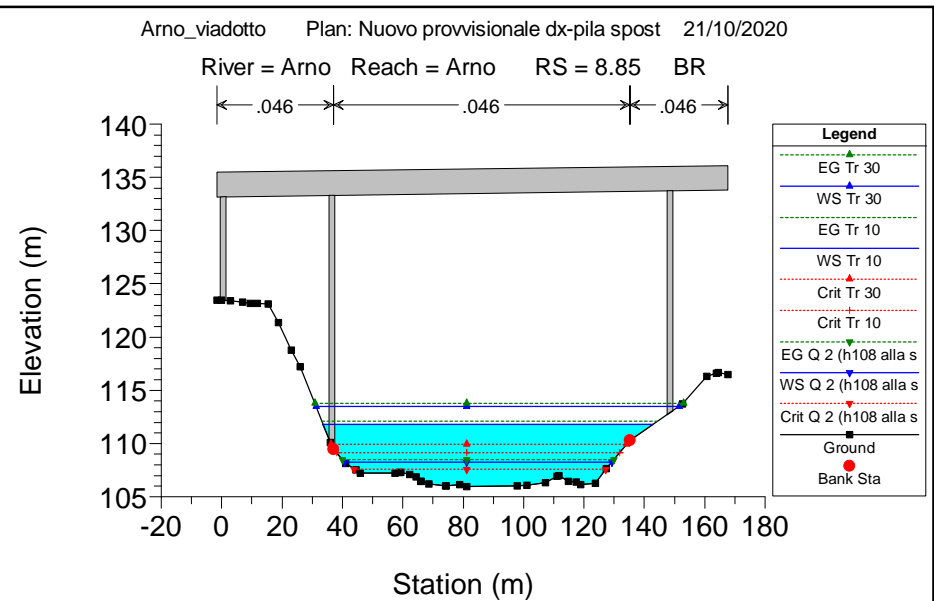
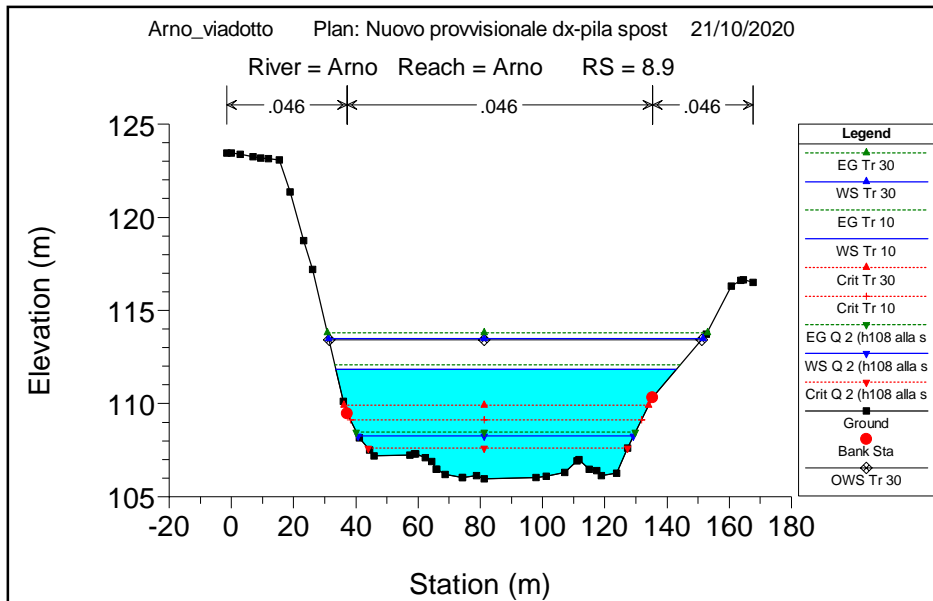
HEC-RAS Plan: Prov dx-pila spost River: Arno Reach: Arno (Continued)

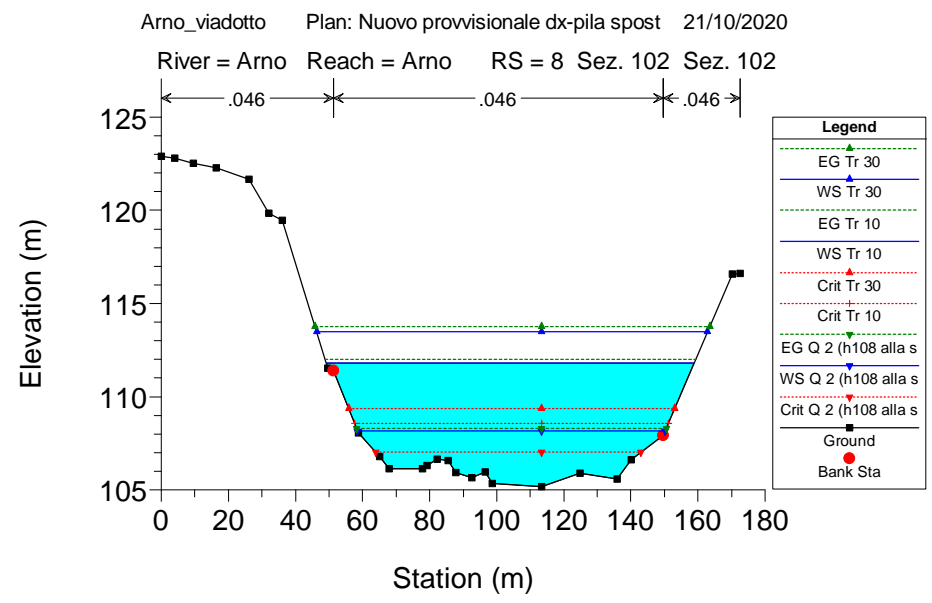
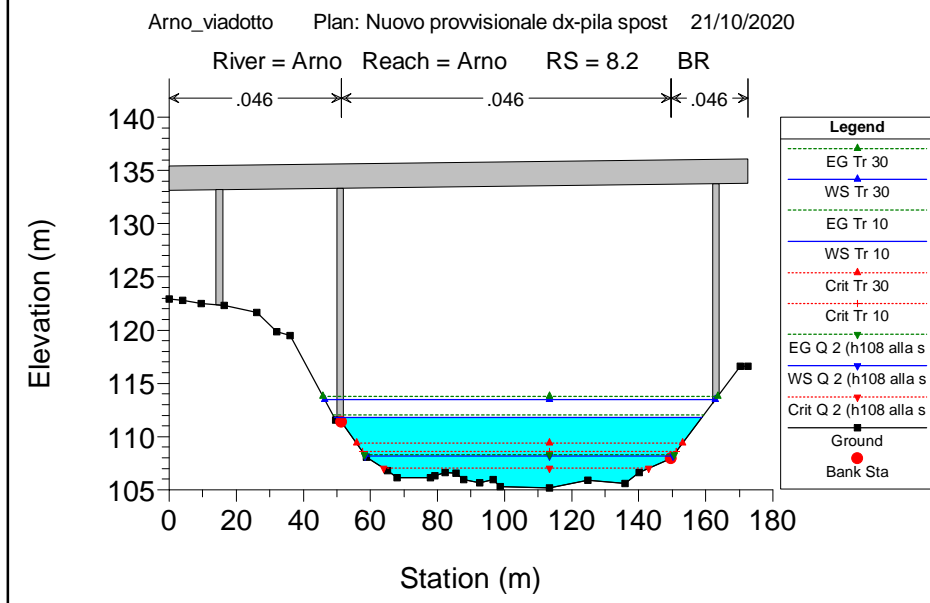
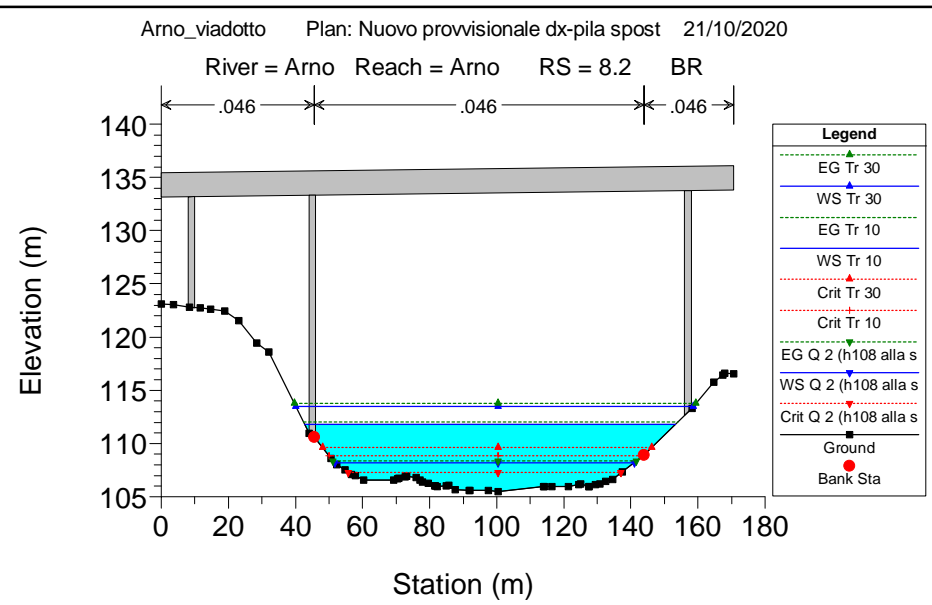
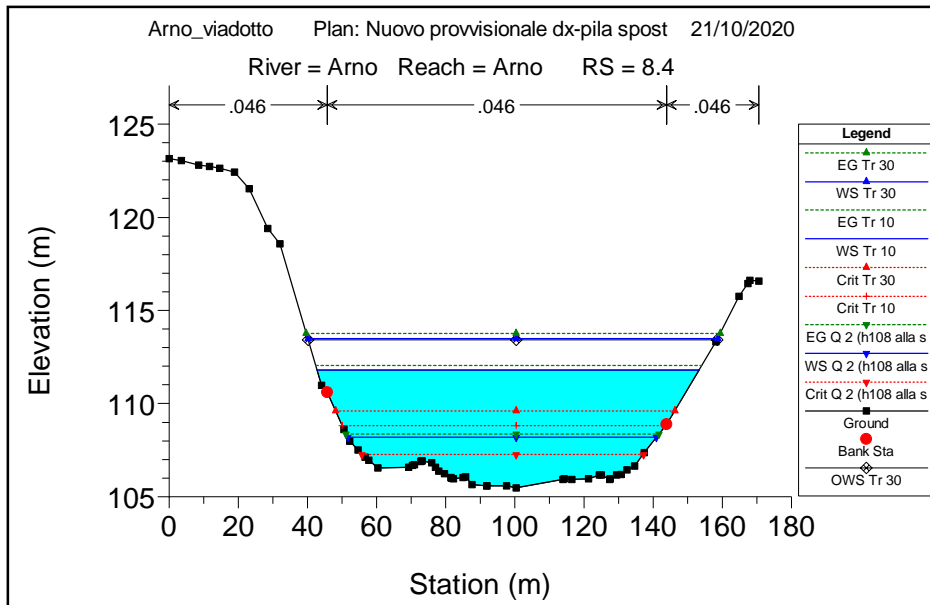
Reach	River Sta		Profile	Q Total (m3/s)	Min Ch El (m)	W.S. Elev (m)	Crit W.S. (m)	E.G. Elev (m)	E.G. Slope (m/m)	Vel Chnl (m/s)	Flow Area (m2)	Top Width (m)	Froude # Chl
Arno	2	Sez. 108	Q 2 (h108 alla s	310.00	103.11	106.22	105.00	106.43	0.002629	2.05	151.41	59.59	0.41
Arno	1	Sez. 109	Tr 10	1120.70	102.41	109.01	106.30	109.41	0.002000	2.81	400.77	84.40	0.40
Arno	1	Sez. 109	Tr 30	1684.00	102.41	110.38	107.34	110.93	0.002001	3.30	521.43	91.05	0.41
Arno	1	Sez. 109	Q 2 (h108 alla s	310.00	102.41	105.79	104.42	105.96	0.002002	1.83	169.42	64.08	0.36

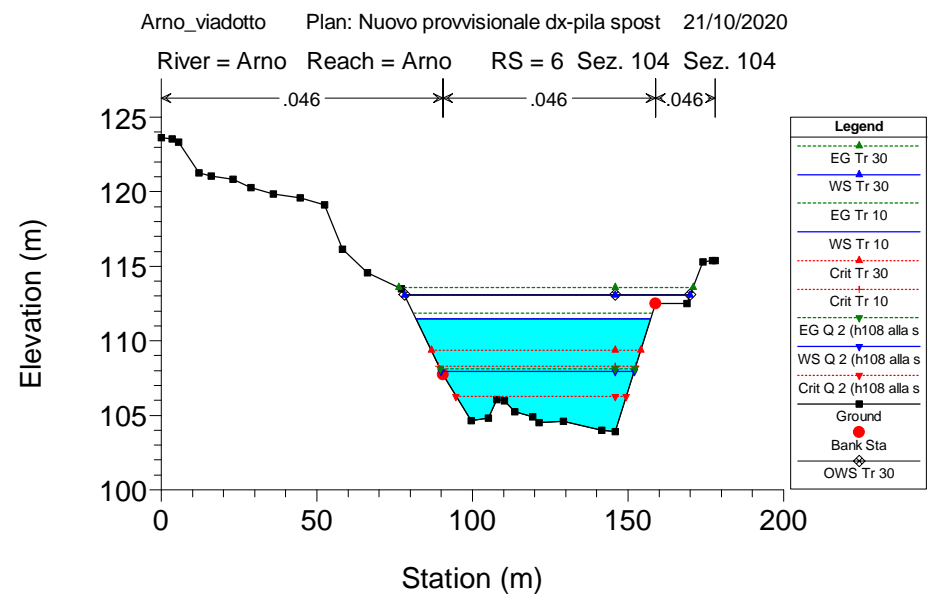
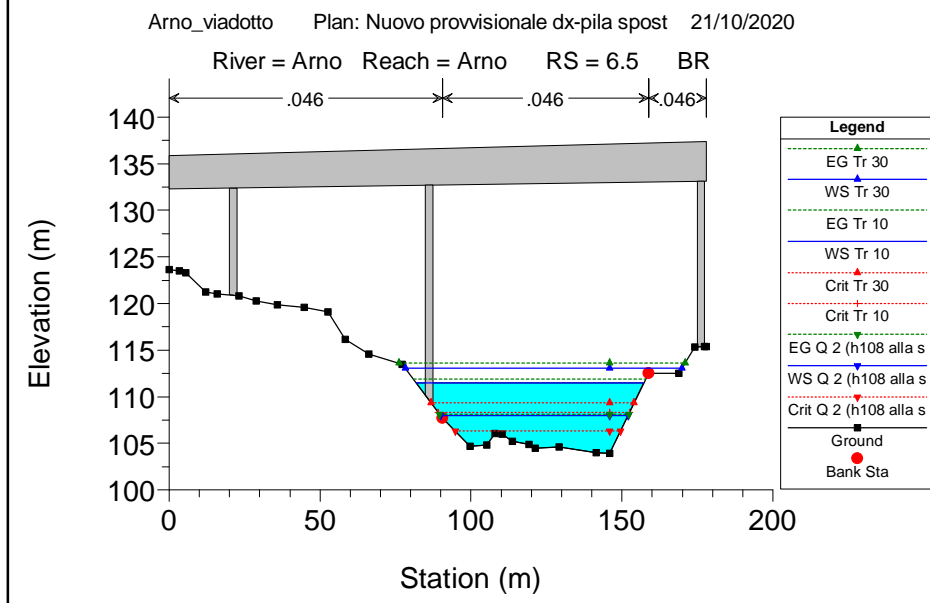
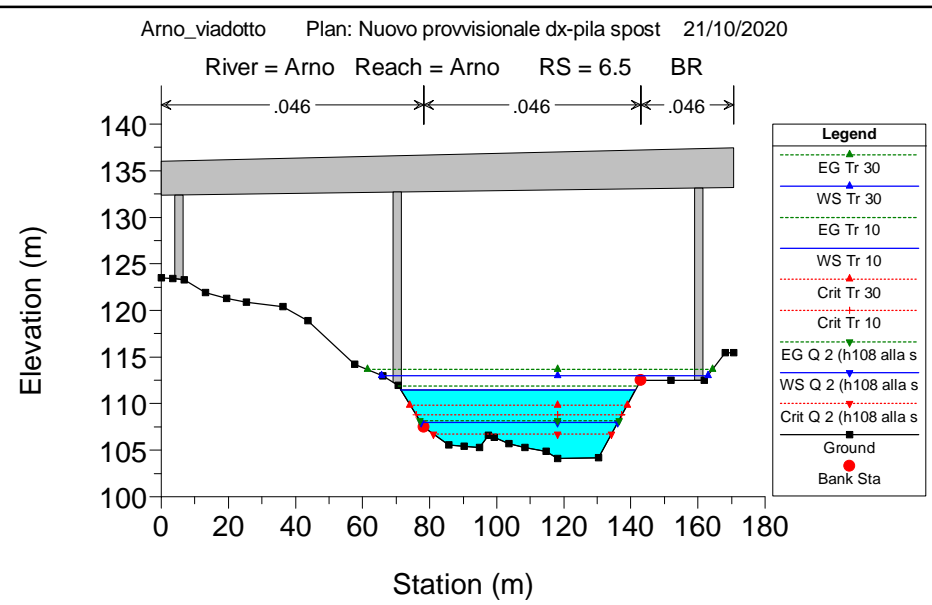
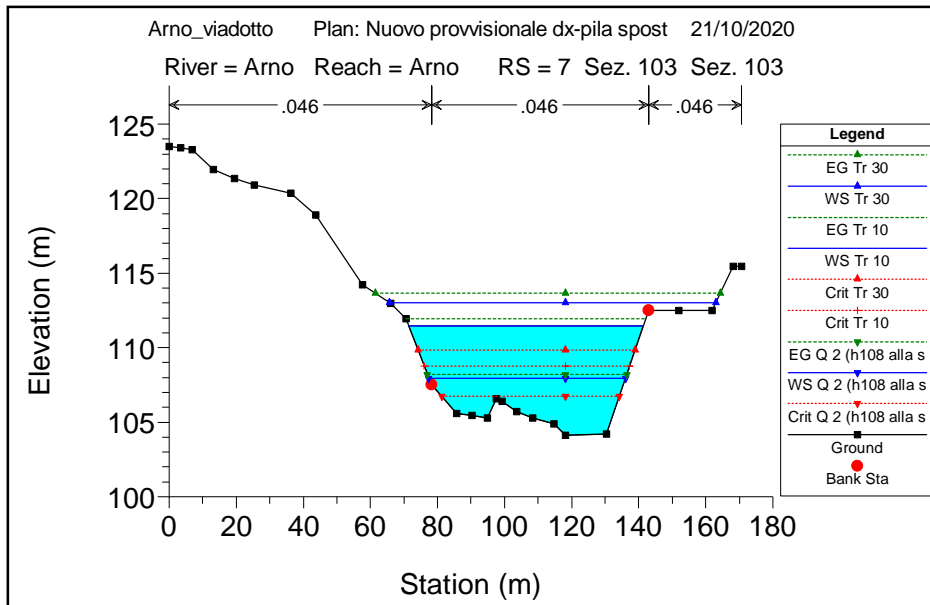


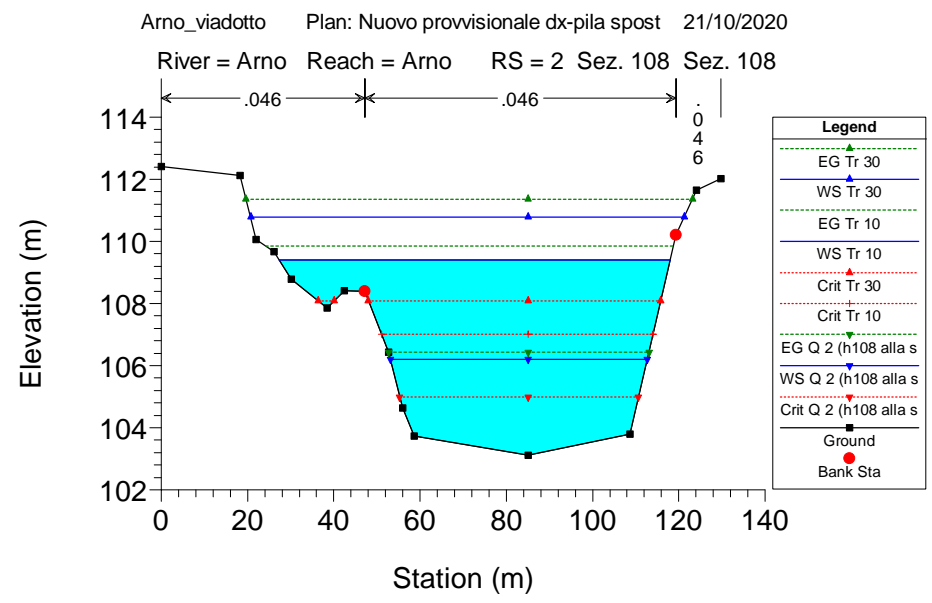
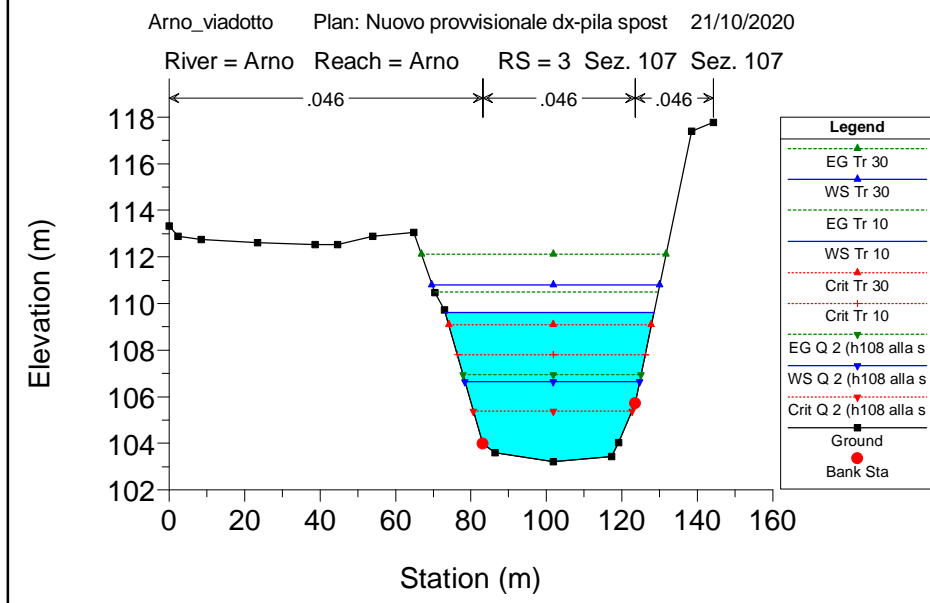
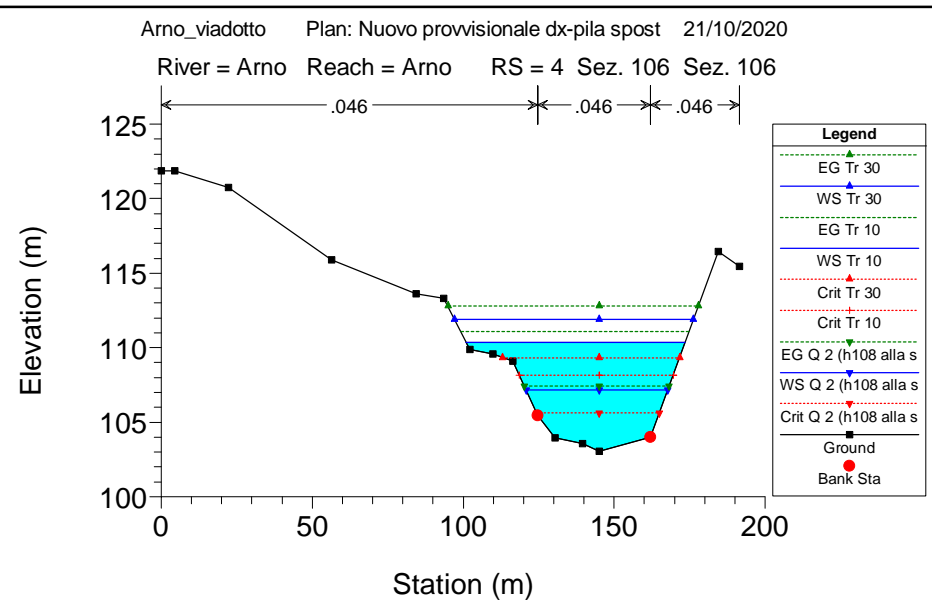
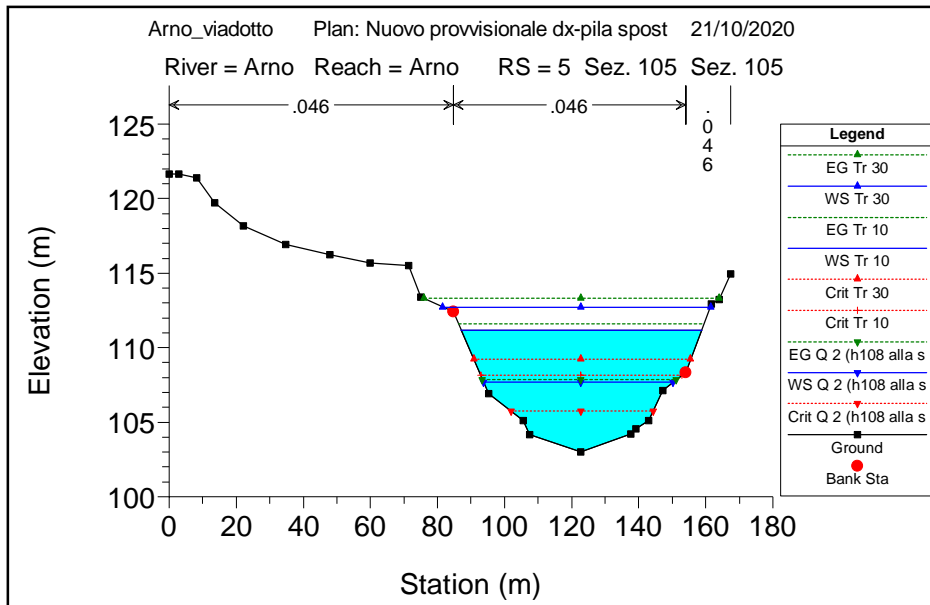






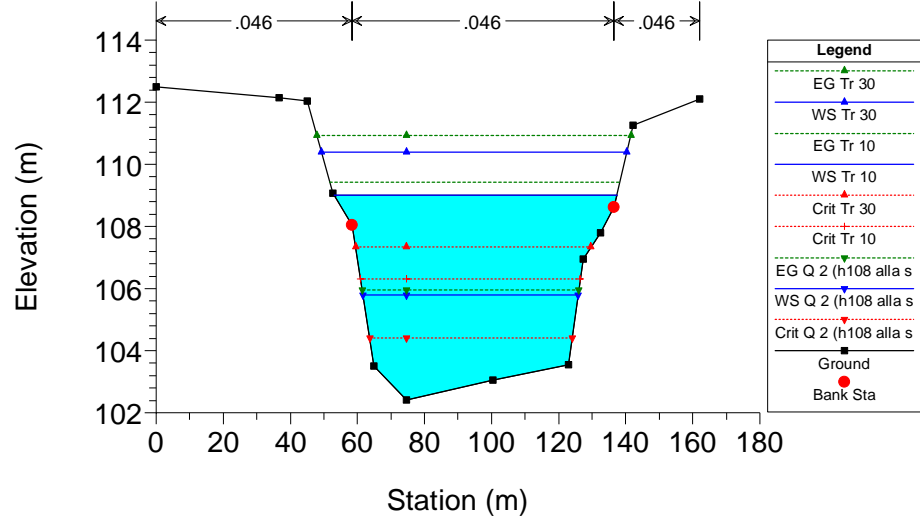






Arno_viadotto Plan: Nuovo provvisionale dx-pila spost 21/10/2020

River = Arno Reach = Arno RS = 1 Sez. 109 Sez. 109



OPERA N. 2061

NUOVO VIADOTTO FIUME ARNO

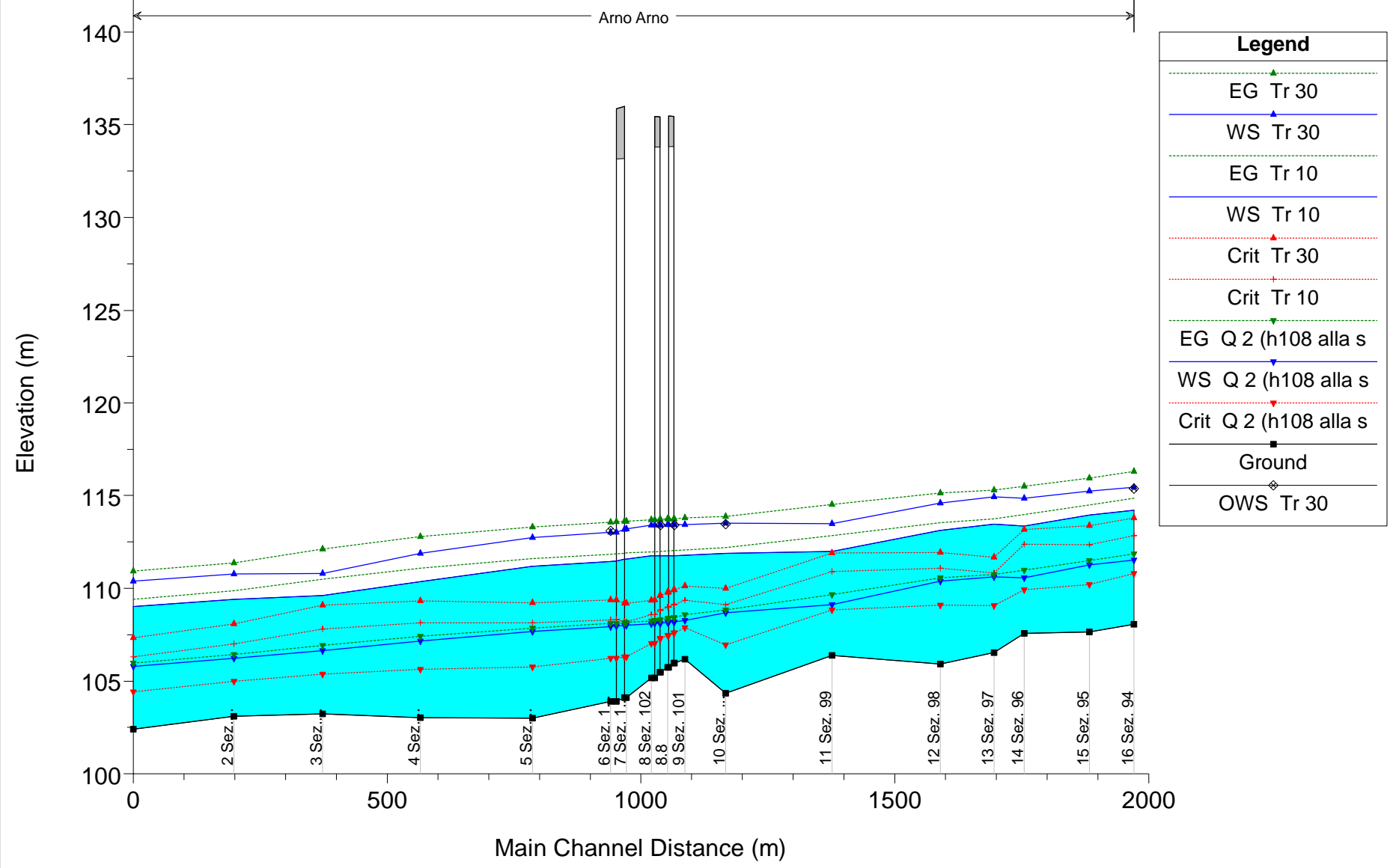
PROVVISIONALE PILA SX

HEC-RAS Plan: Prov sx River: Arno Reach: Arno (Continued)

Reach	River Sta		Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
				(m3/s)	(m)	(m)	(m)	(m)	(m/m)	(m/s)	(m2)	(m)	
Arno	8.8		Tr 10	1120.70	105.73	111.76	108.99	112.01	0.001225	2.23	510.70	110.12	0.32
Arno	8.8		Tr 30	1684.00	105.73	113.43	109.78	113.74	0.001038	2.48	702.02	119.40	0.31
Arno	8.8		Q 2 (h108 alla s	310.00	105.73	108.15	107.46	108.37	0.004241	2.03	152.48	88.06	0.49
Arno	8.4		Tr 10	1120.70	105.48	111.75	108.82	111.99	0.001109	2.16	527.67	110.26	0.30
Arno	8.4		Tr 30	1684.00	105.48	113.42	109.61	113.72	0.000962	2.42	718.38	118.23	0.29
Arno	8.4		Q 2 (h108 alla s	310.00	105.48	108.12	107.28	108.30	0.003337	1.89	164.39	88.80	0.44
Arno	8.2		Bridge										
Arno	8	Sez. 102	Tr 10	1120.70	105.16	111.75	108.57	111.97	0.000985	2.08	548.29	109.47	0.29
Arno	8	Sez. 102	Tr 30	1684.00	105.16	113.42	109.37	113.69	0.000883	2.36	736.62	116.30	0.28
Arno	8	Sez. 102	Q 2 (h108 alla s	310.00	105.16	108.10	107.02	108.24	0.002379	1.69	183.80	91.32	0.38
Arno	7	Sez. 103	Tr 10	1120.70	104.12	111.58	108.20	111.90	0.001261	2.53	455.26	80.01	0.33
Arno	7	Sez. 103	Tr 30	1684.00	104.12	113.20	109.19	113.63	0.001295	2.95	597.47	99.55	0.34
Arno	7	Sez. 103	Q 2 (h108 alla s	310.00	104.12	108.02	106.29	108.15	0.001343	1.62	193.01	67.25	0.30
Arno	6.5		Bridge										
Arno	6	Sez. 104	Tr 10	1120.70	103.91	111.44	108.29	111.85	0.001634	2.84	402.28	70.82	0.37
Arno	6	Sez. 104	Tr 30	1684.00	103.91	113.01	109.38	113.57	0.001718	3.34	525.47	91.57	0.39
Arno	6	Sez. 104	Q 2 (h108 alla s	310.00	103.91	107.94	106.23	108.10	0.001608	1.77	175.26	59.05	0.33
Arno	5	Sez. 105	Tr 10	1120.70	103.01	111.18	108.14	111.59	0.001696	2.85	398.17	71.68	0.38
Arno	5	Sez. 105	Tr 30	1684.00	103.01	112.73	109.22	113.30	0.001781	3.34	514.41	79.94	0.40
Arno	5	Sez. 105	Q 2 (h108 alla s	310.00	103.01	107.68	105.75	107.85	0.001656	1.82	170.42	56.54	0.33
Arno	4	Sez. 106	Tr 10	1120.70	103.03	110.37	108.15	111.09	0.002689	3.96	322.14	72.55	0.49
Arno	4	Sez. 106	Tr 30	1684.00	103.03	111.89	109.34	112.79	0.002650	4.51	437.46	79.15	0.50
Arno	4	Sez. 106	Q 2 (h108 alla s	310.00	103.03	107.16	105.64	107.42	0.002198	2.31	140.51	46.96	0.40
Arno	3	Sez. 107	Tr 10	1120.70	103.22	109.60	107.81	110.48	0.003577	4.27	280.57	55.28	0.56
Arno	3	Sez. 107	Tr 30	1684.00	103.22	110.80	109.09	112.11	0.004241	5.25	349.89	60.34	0.62
Arno	3	Sez. 107	Q 2 (h108 alla s	310.00	103.22	106.64	105.38	106.94	0.002898	2.45	130.07	46.24	0.45
Arno	2	Sez. 108	Tr 10	1120.70	103.11	109.39	107.01	109.86	0.002338	3.04	381.22	90.77	0.43
Arno	2	Sez. 108	Tr 30	1684.00	103.11	110.78	108.09	111.37	0.002258	3.47	514.28	100.58	0.44

HEC-RAS Plan: Prov sx River: Arno Reach: Arno (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
Arno	2	Sez. 108	Q 2 (h108 alla s	310.00	103.11	106.22	105.00	106.43	0.002629	2.05	151.41	59.59	0.41
Arno	1	Sez. 109	Tr 10	1120.70	102.41	109.01	106.30	109.41	0.002000	2.81	400.77	84.40	0.40
Arno	1	Sez. 109	Tr 30	1684.00	102.41	110.38	107.34	110.93	0.002001	3.30	521.43	91.05	0.41
Arno	1	Sez. 109	Q 2 (h108 alla s	310.00	102.41	105.79	104.42	105.96	0.002002	1.83	169.42	64.08	0.36



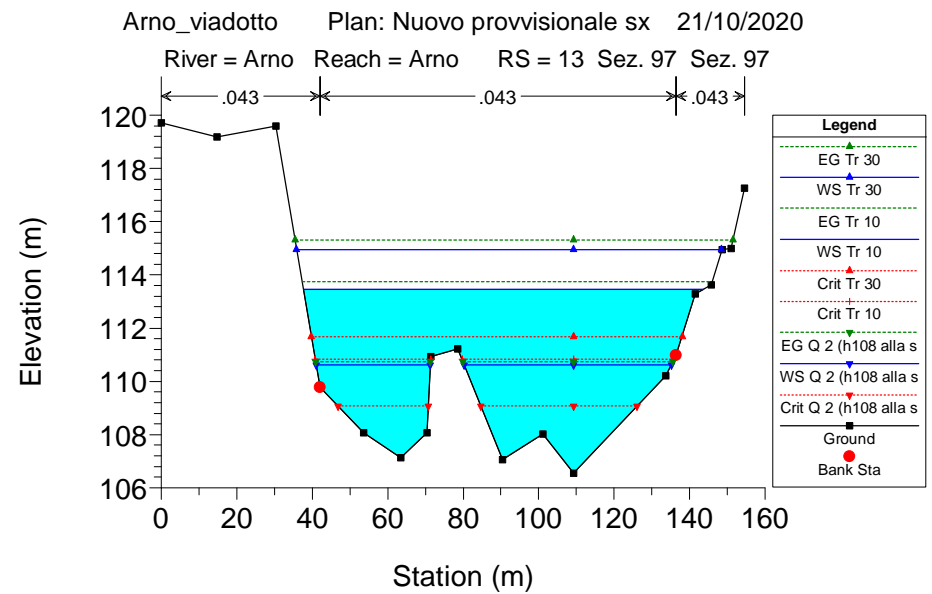
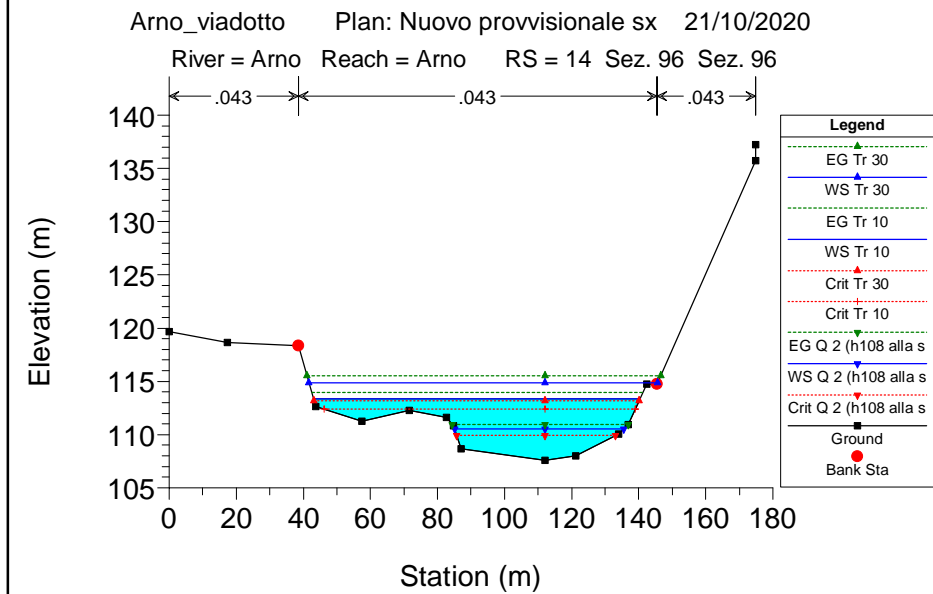
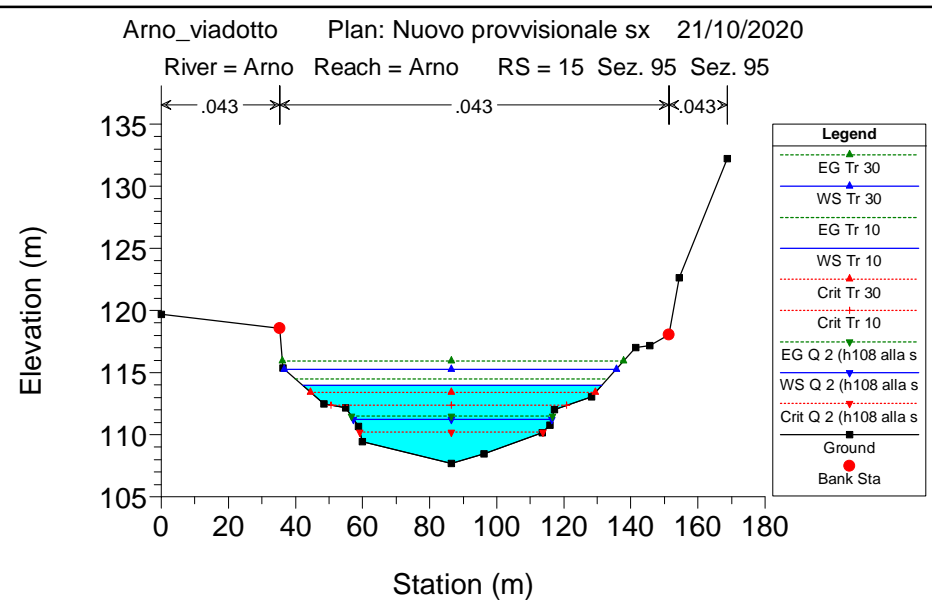
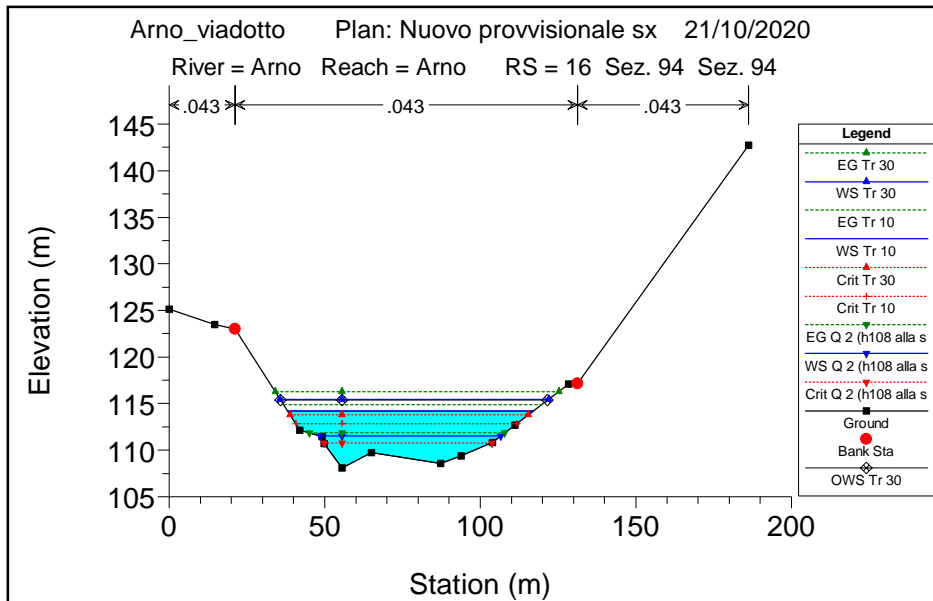
140
135
130
125
120
115
110
105
100

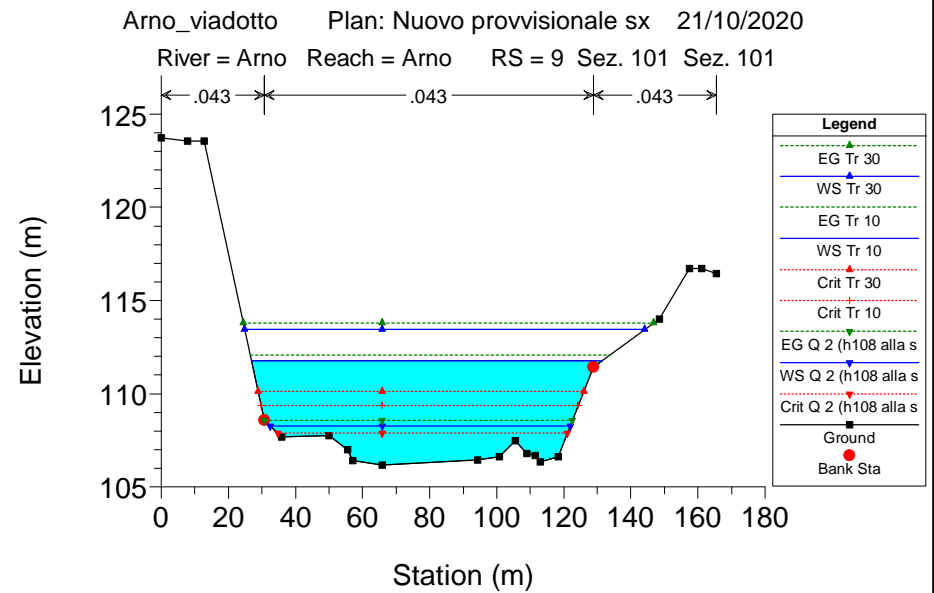
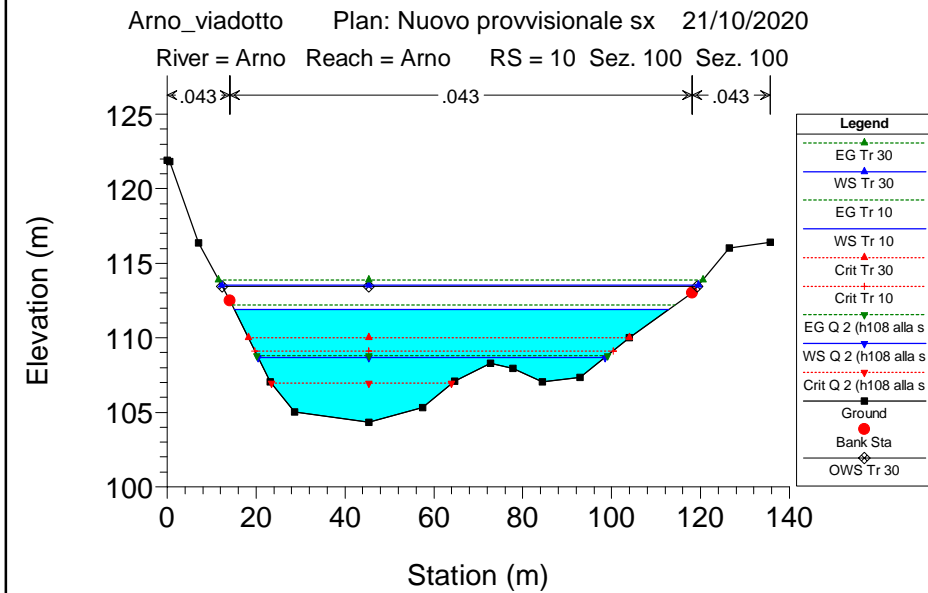
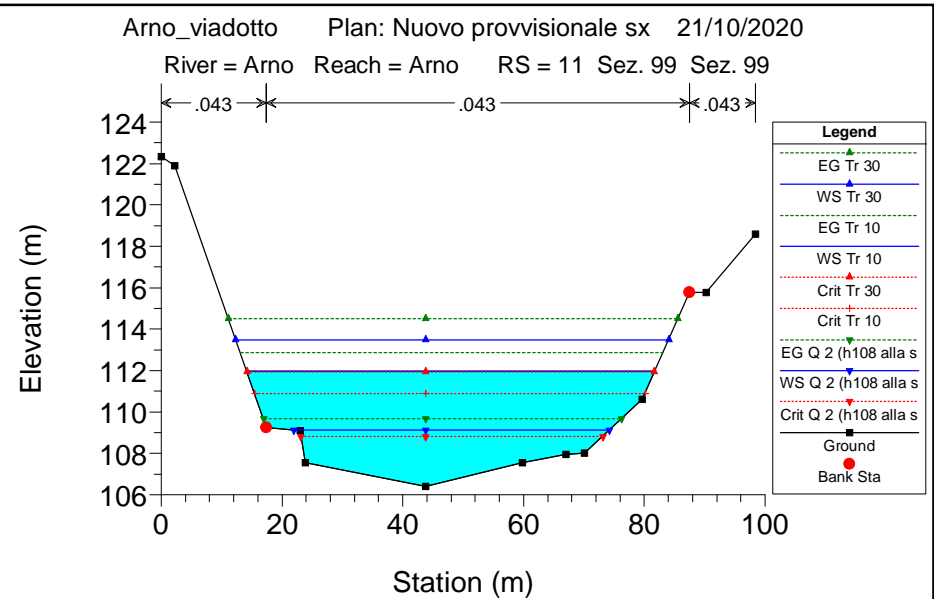
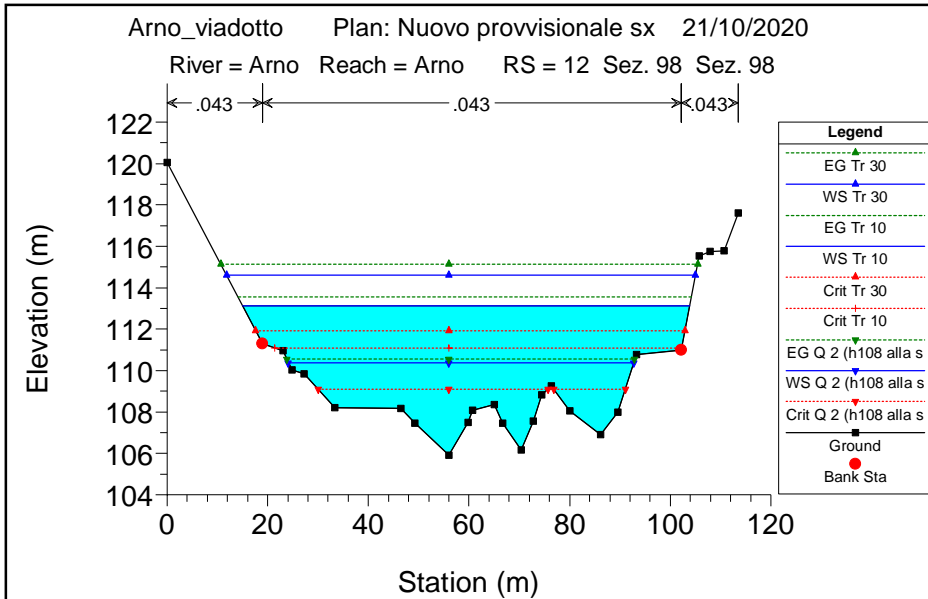
0 500 1000 1500 2000

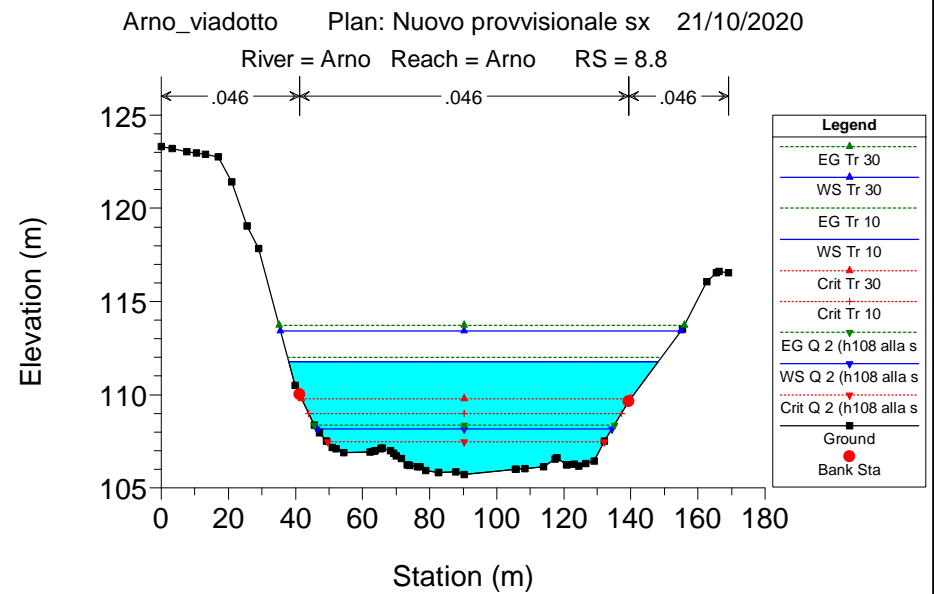
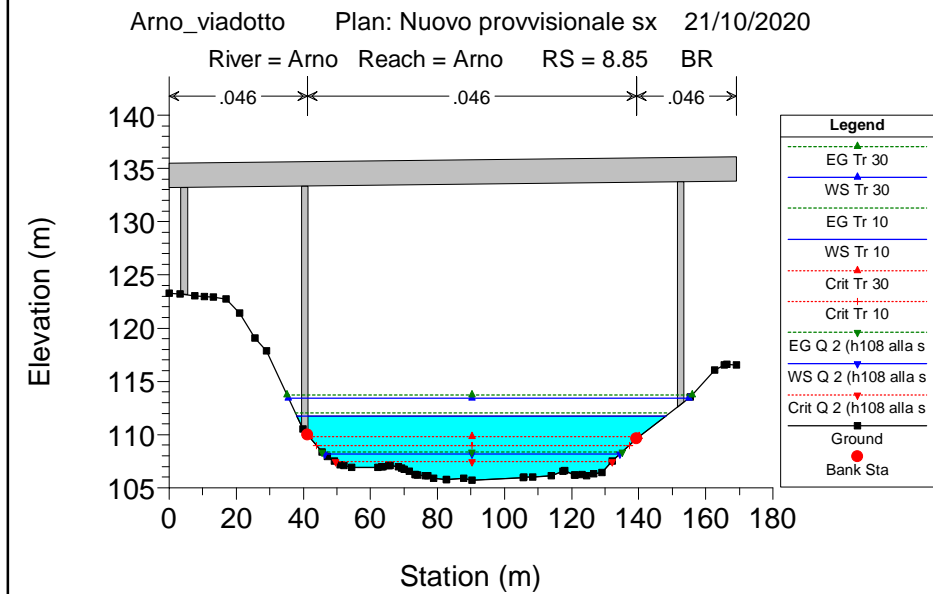
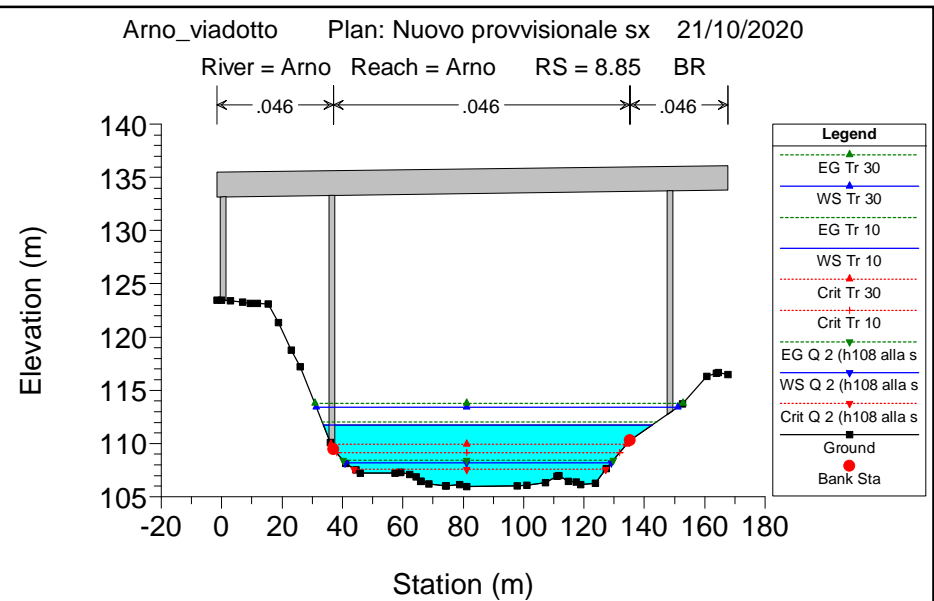
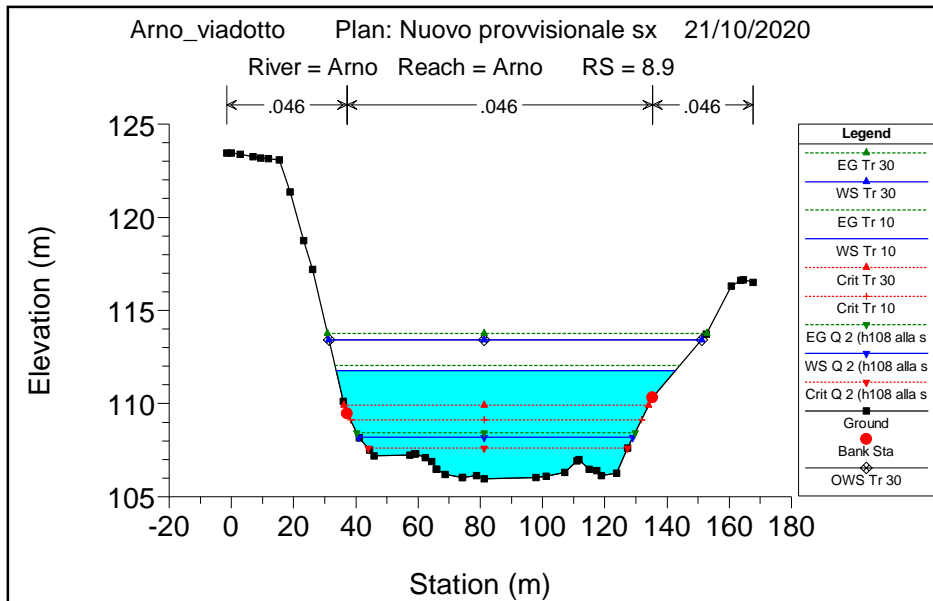
2 Sez. 3 Sez. 4 Sez. 5 Sez. 6 Sez. 1 7 Sez. 1 8 Sez. 102 8.8 9 Sez. 101 10 Sez. 11 Sez. 99 12 Sez. 98 13 Sez. 97 14 Sez. 96 15 Sez. 95 16 Sez. 94

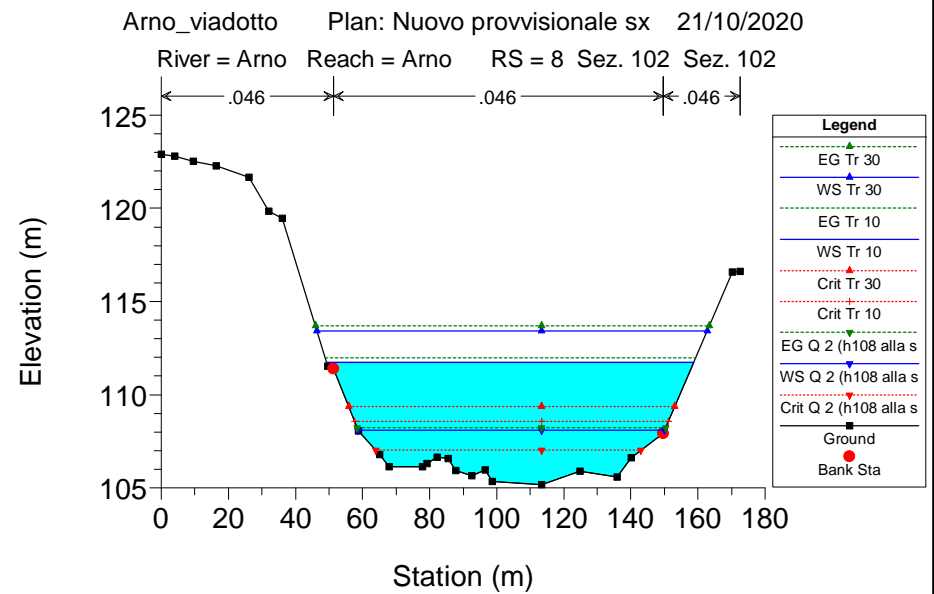
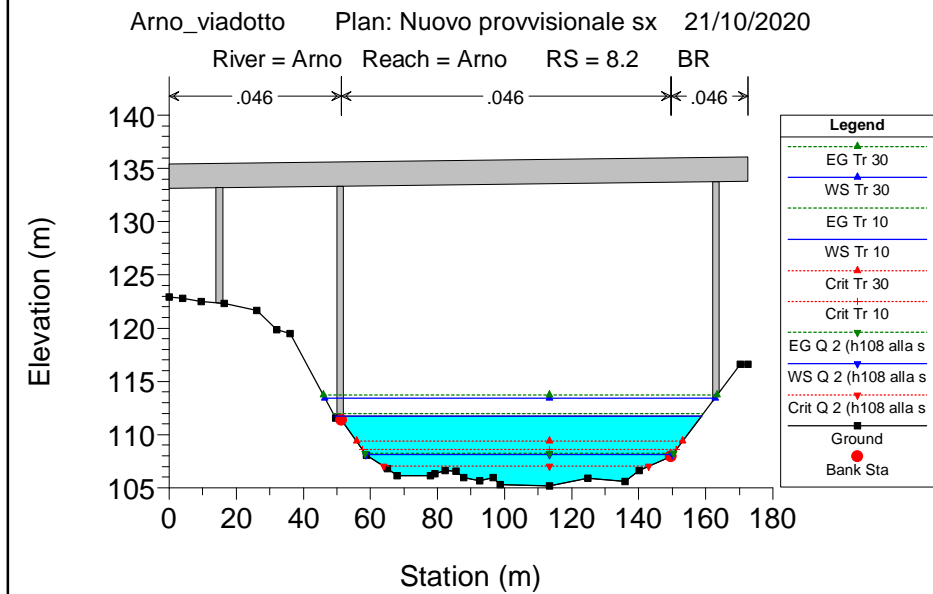
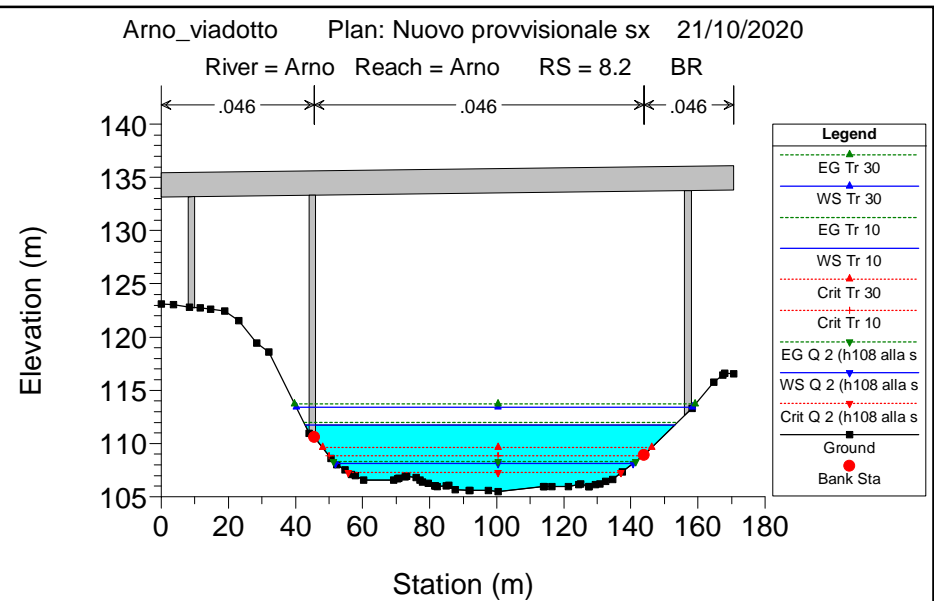
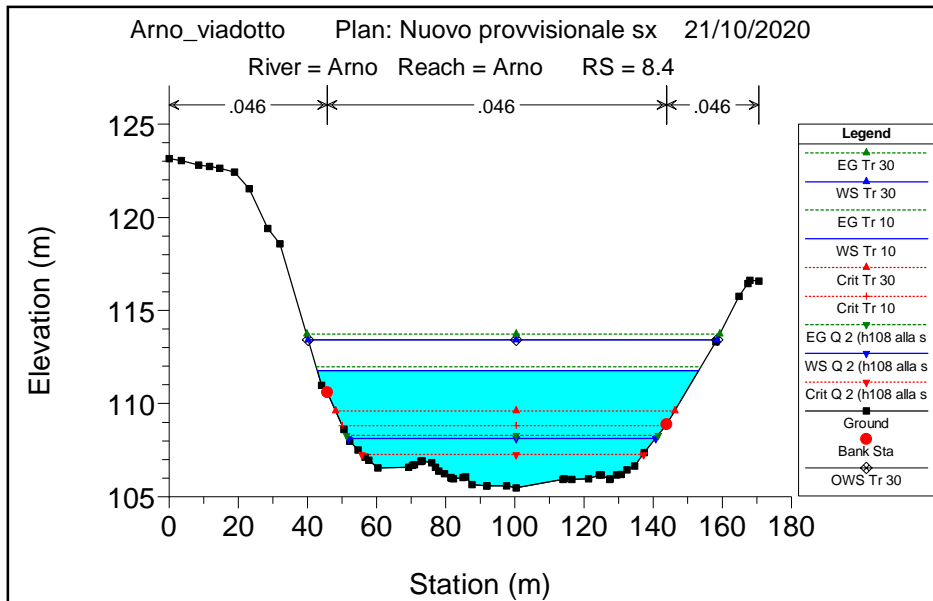
Arno Arno

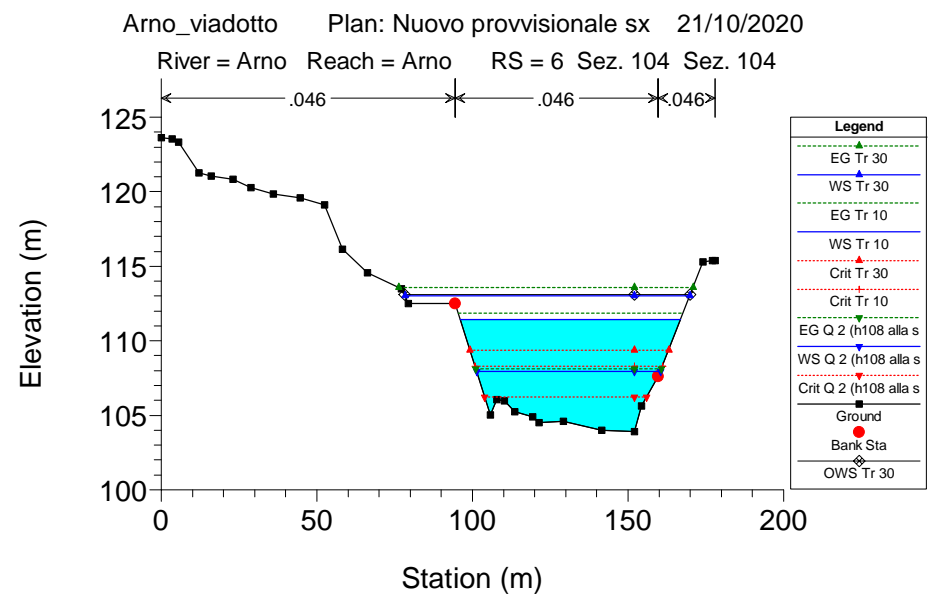
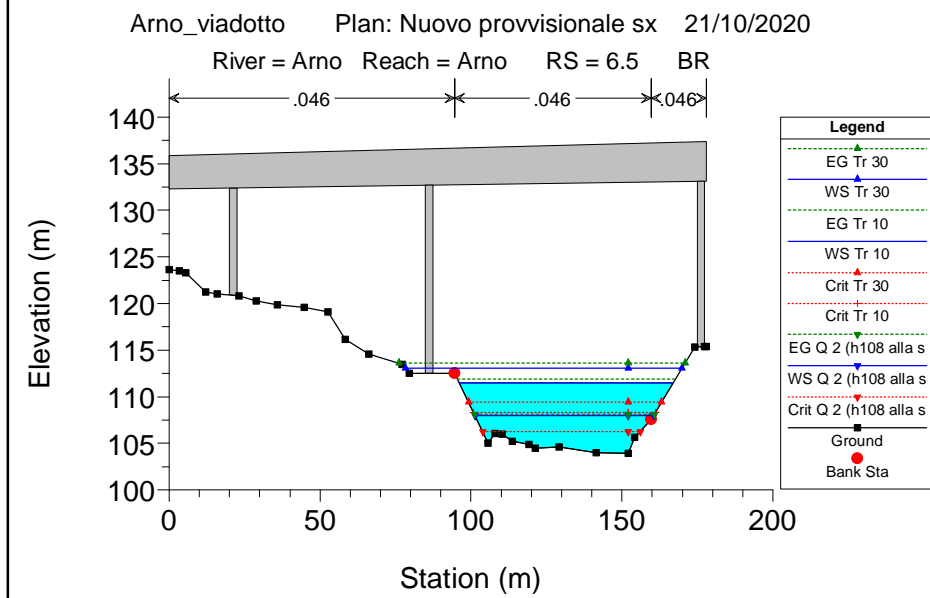
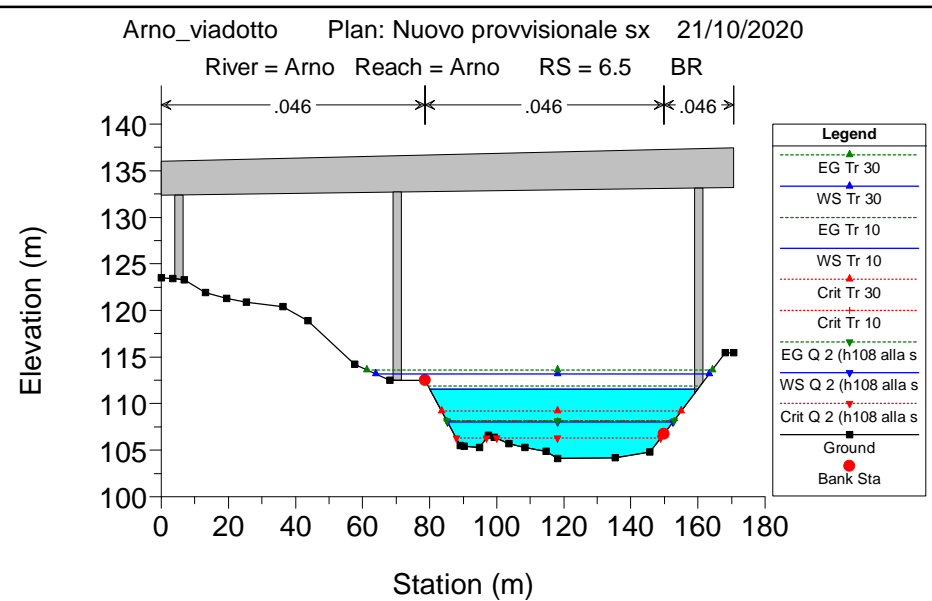
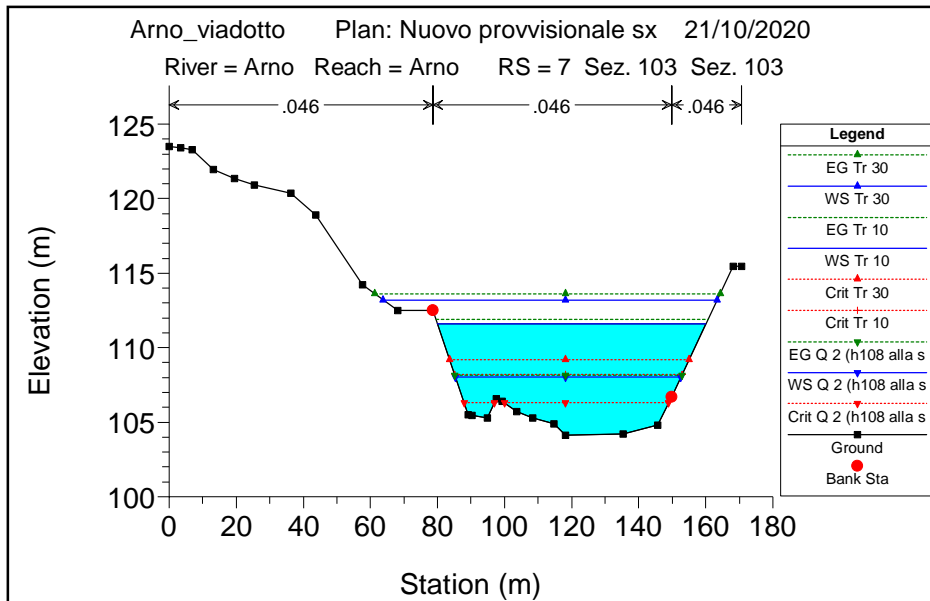
Legend	
EG Tr 30	(Green dashed line with triangles)
WS Tr 30	(Blue solid line with triangles)
EG Tr 10	(Green dashed line with triangles)
WS Tr 10	(Blue solid line with triangles)
Crit Tr 30	(Red dotted line with triangles)
Crit Tr 10	(Red dotted line with triangles)
EG Q 2 (h108 alla s)	(Green dashed line with triangles)
WS Q 2 (h108 alla s)	(Blue solid line with triangles)
Crit Q 2 (h108 alla s)	(Red dotted line with triangles)
Ground	(Black solid line with squares)
OWS Tr 30	(Black solid line with diamonds)

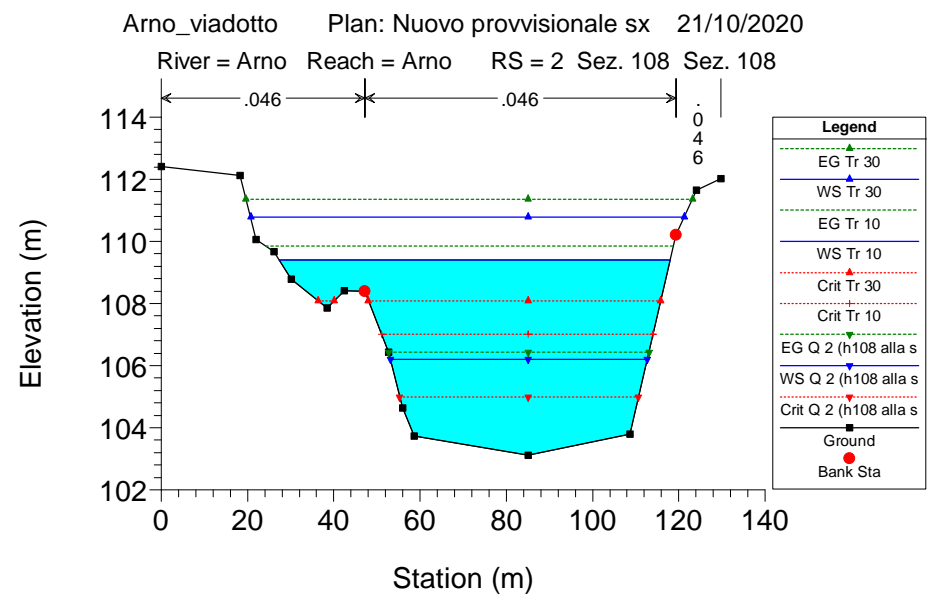
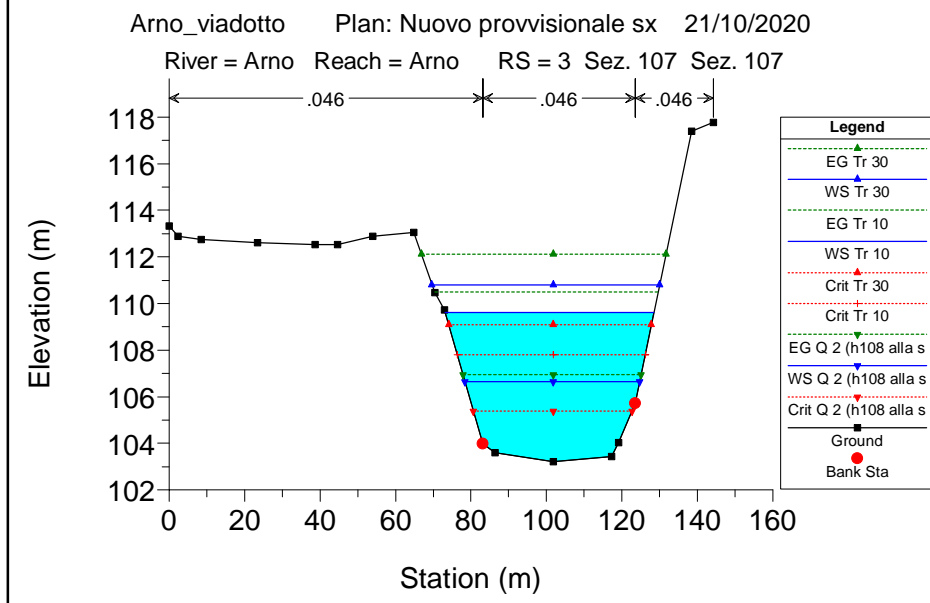
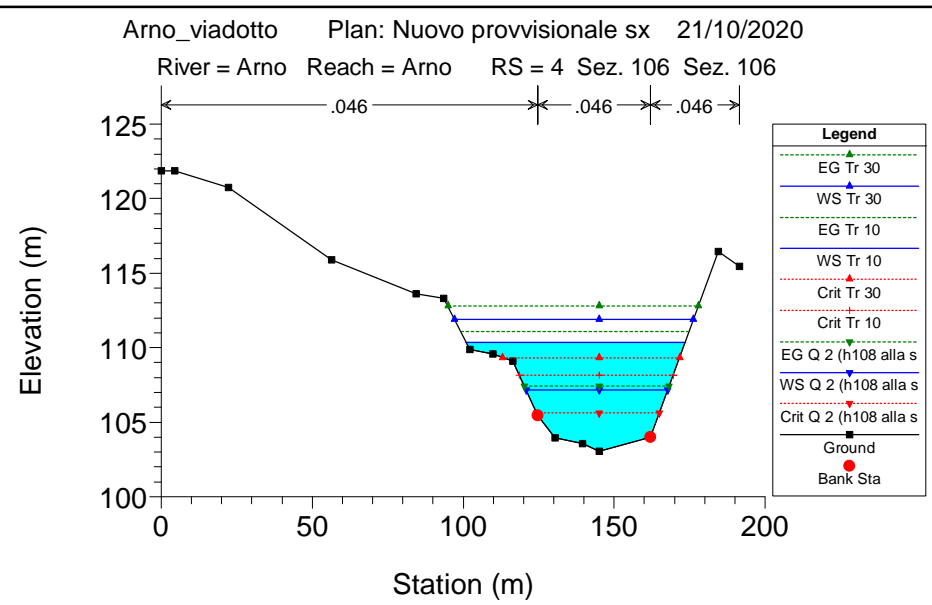
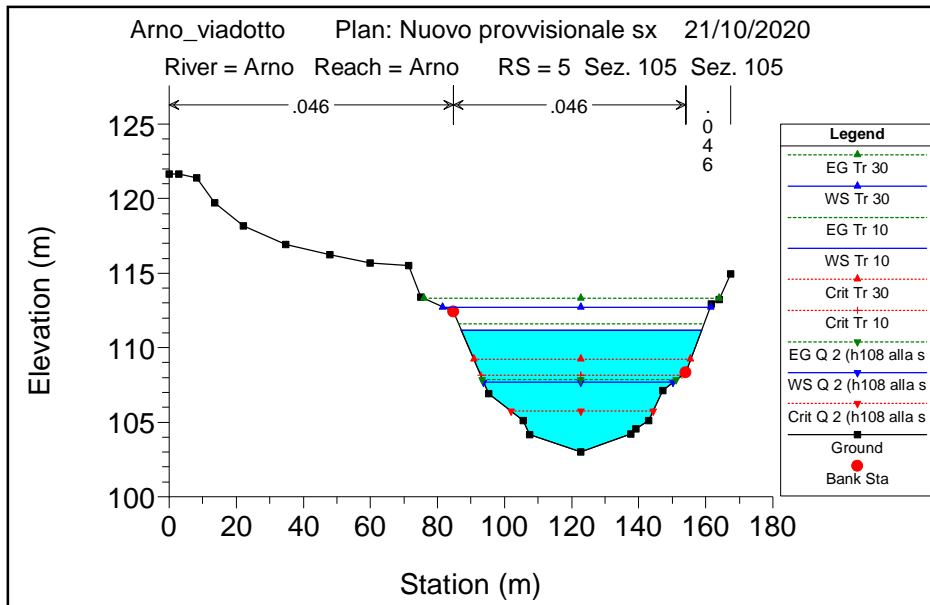






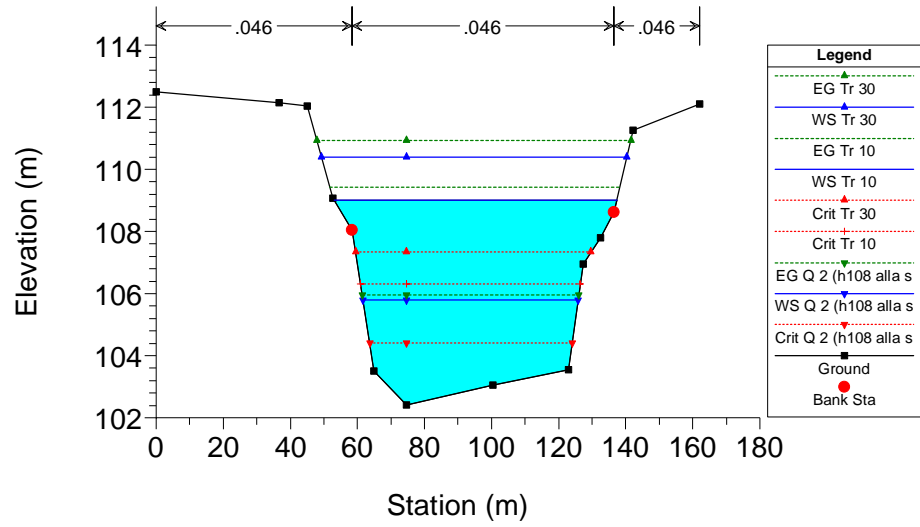






Arno_viadotto Plan: Nuovo provvisionale sx 21/10/2020

River = Arno Reach = Arno RS = 1 Sez. 109 Sez. 109



OPERA N. 2062

FOSSO DI CETINA

ANTE OPERAM



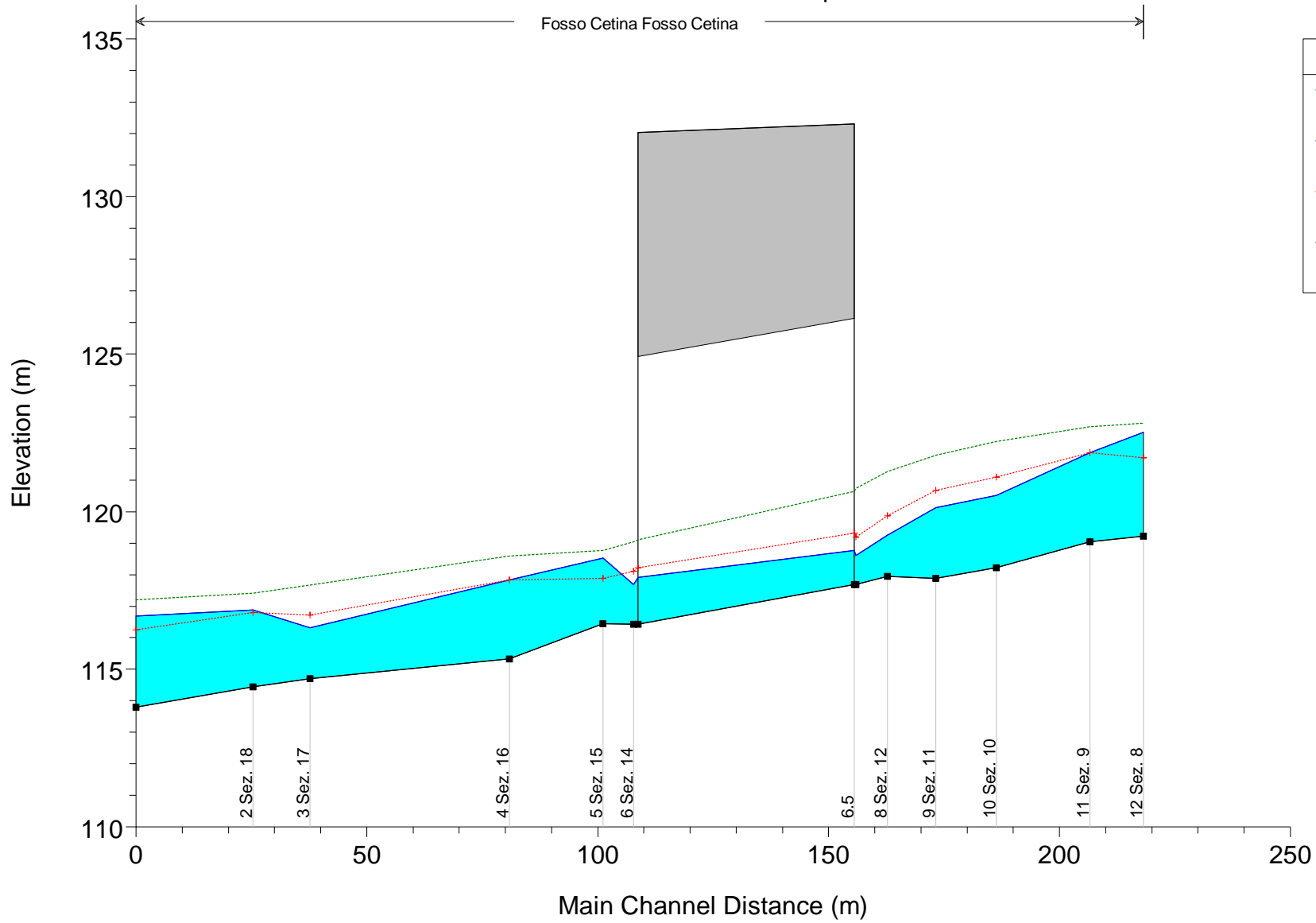
HEC-RAS Plan: Ante River: Fosso Cetina Reach: Fosso Cetina Profile: Tr200

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
Fosso Cetina	12	Sez. 8	Tr200	56.70	119.22	122.51	121.71	122.81	0.003389	2.43	24.50	17.27	0.54
Fosso Cetina	11	Sez. 9	Tr200	56.70	119.05	121.88	121.88	122.69	0.012164	4.00	14.53	10.15	0.96
Fosso Cetina	10	Sez. 10	Tr200	56.70	118.22	120.52	121.09	122.22	0.031349	5.80	9.99	7.60	1.48
Fosso Cetina	9	Sez. 11	Tr200	56.70	117.88	120.13	120.68	121.79	0.033286	5.71	9.95	7.86	1.52
Fosso Cetina	8	Sez. 12	Tr200	56.70	117.95	119.26	119.87	121.28	0.067043	6.29	9.01	10.09	2.13
Fosso Cetina	7	Sez. 13	Tr200	56.70	117.68	118.60	119.19	120.74	0.087402	6.48	8.75	12.15	2.44
Fosso Cetina	6.5			Bridge									
Fosso Cetina	6	Sez. 14	Tr200	56.70	116.43	117.69	118.10	119.05	0.042311	5.16	10.99	12.51	1.76
Fosso Cetina	5	Sez. 15	Tr200	56.70	116.45	118.53	117.88	118.77	0.003310	2.16	26.29	15.39	0.53
Fosso Cetina	4	Sez. 16	Tr200	56.70	115.33	117.84	117.84	118.60	0.013023	3.86	14.68	9.66	1.00
Fosso Cetina	3	Sez. 17	Tr200	56.70	114.70	116.31	116.72	117.67	0.033772	5.16	10.99	10.43	1.61
Fosso Cetina	2	Sez. 18	Tr200	56.70	114.44	116.88	116.80	117.41	0.010873	3.22	17.59	14.08	0.92
Fosso Cetina	1	Sez. 19	Tr200	56.70	113.79	116.69	116.24	117.20	0.006440	3.18	18.60	11.48	0.70

2062 Fosso Cetina Plan: Ante Operam 25/09/2017

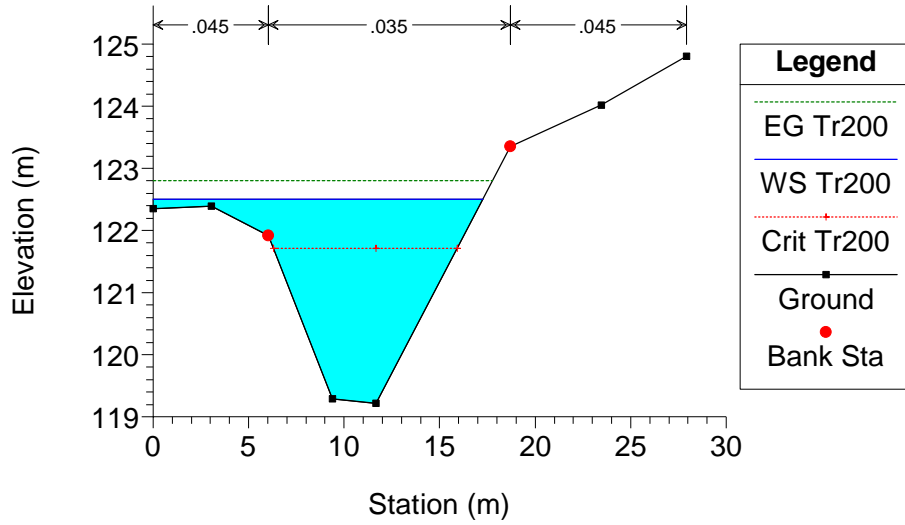
Fosso Cetina Fosso Cetina

Legend	
	EG Tr200
	WS Tr200
	Crit Tr200
	Ground



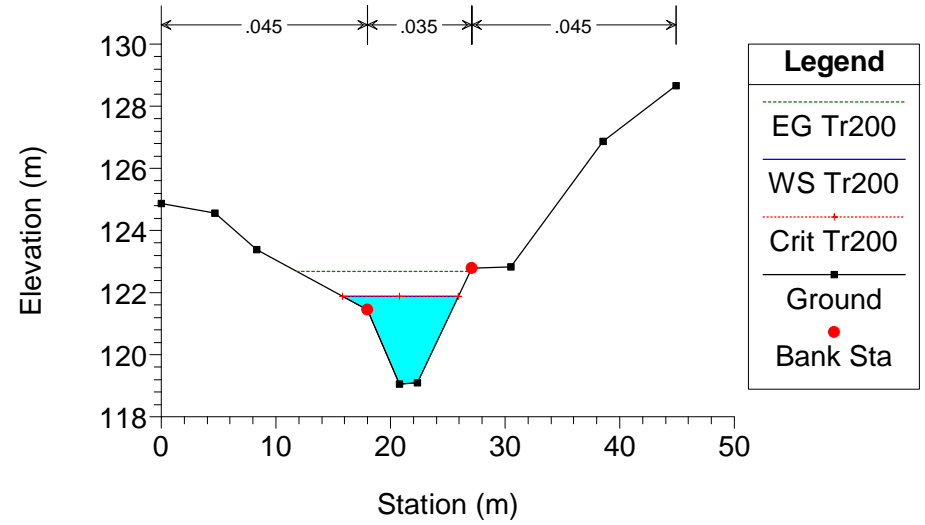
2062 Fosso Cetina Plan: Ante Operam 25/09/2017

River = Fosso Cetina Reach = Fosso Cetina RS = 12 Sez. 8



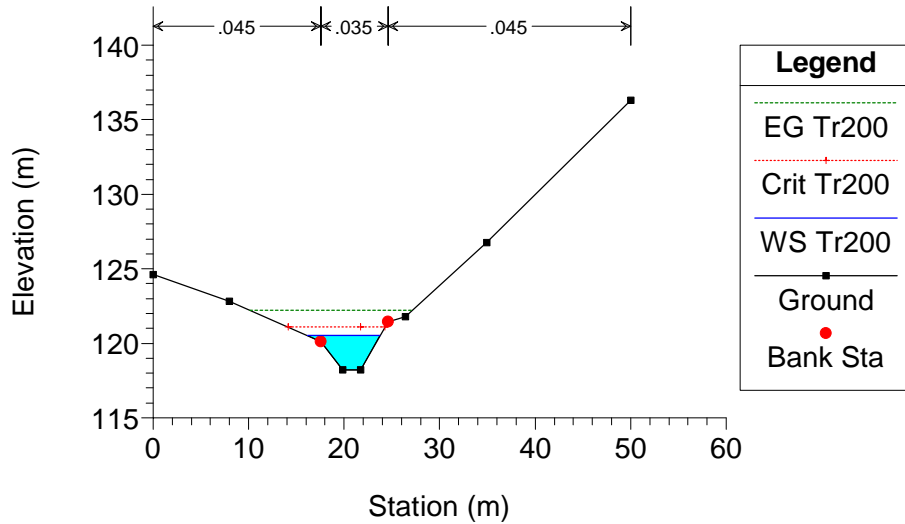
2062 Fosso Cetina Plan: Ante Operam 25/09/2017

River = Fosso Cetina Reach = Fosso Cetina RS = 11 Sez. 9



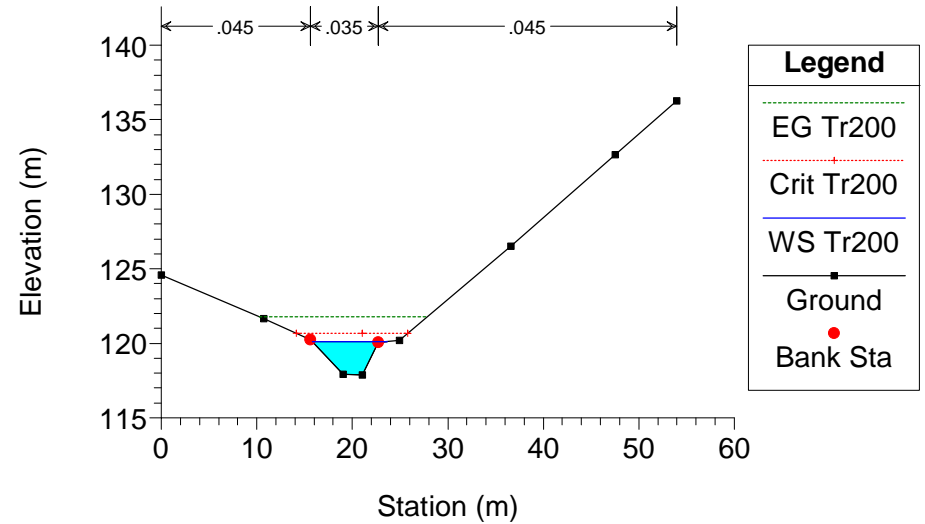
2062 Fosso Cetina Plan: Ante Operam 25/09/2017

River = Fosso Cetina Reach = Fosso Cetina RS = 10 Sez. 10



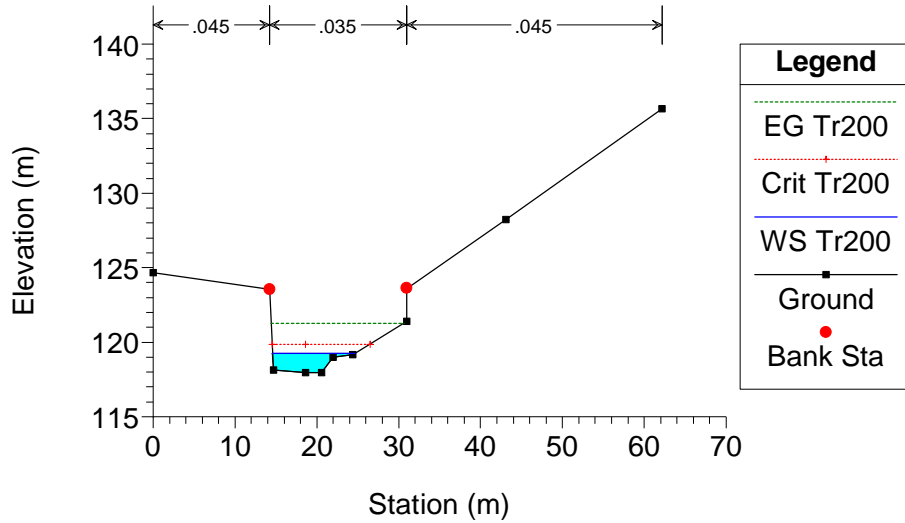
2062 Fosso Cetina Plan: Ante Operam 25/09/2017

River = Fosso Cetina Reach = Fosso Cetina RS = 9 Sez. 11



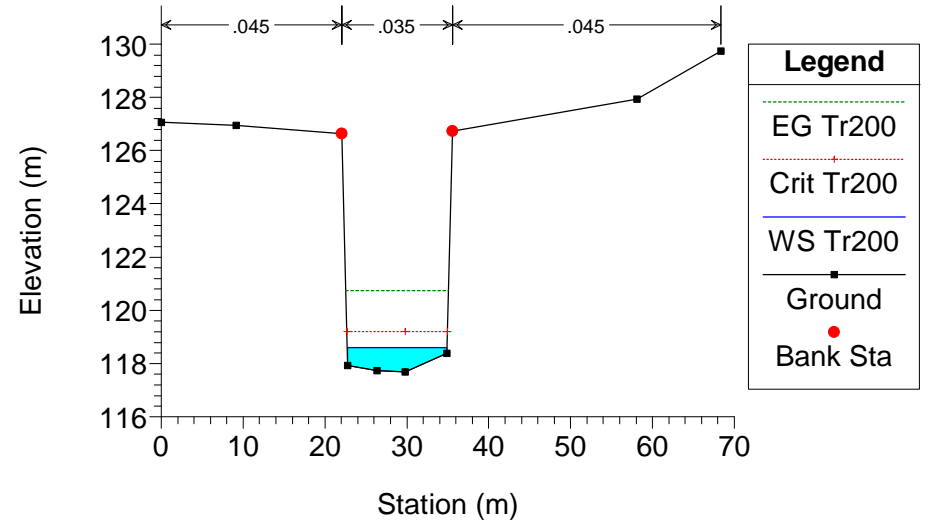
2062 Fosso Cetina Plan: Ante Operam 25/09/2017

River = Fosso Cetina Reach = Fosso Cetina RS = 8 Sez. 12



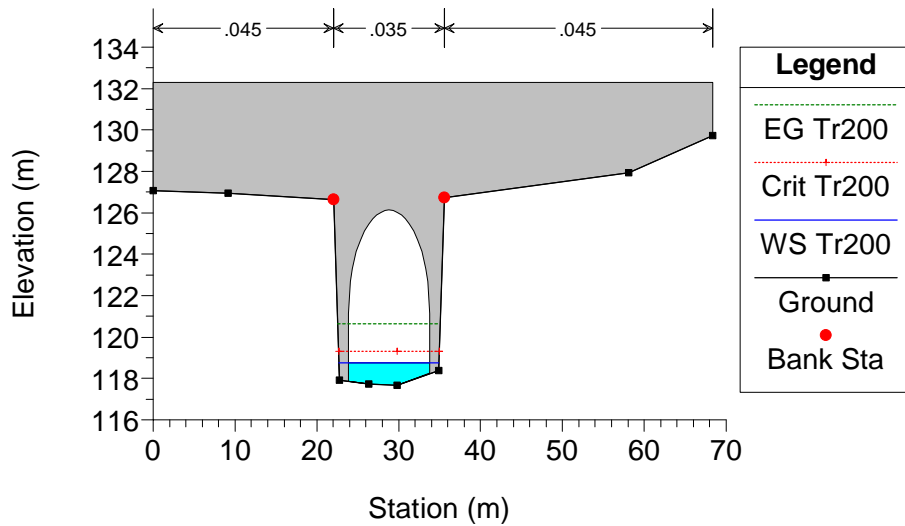
2062 Fosso Cetina Plan: Ante Operam 25/09/2017

River = Fosso Cetina Reach = Fosso Cetina RS = 7 Sez. 13



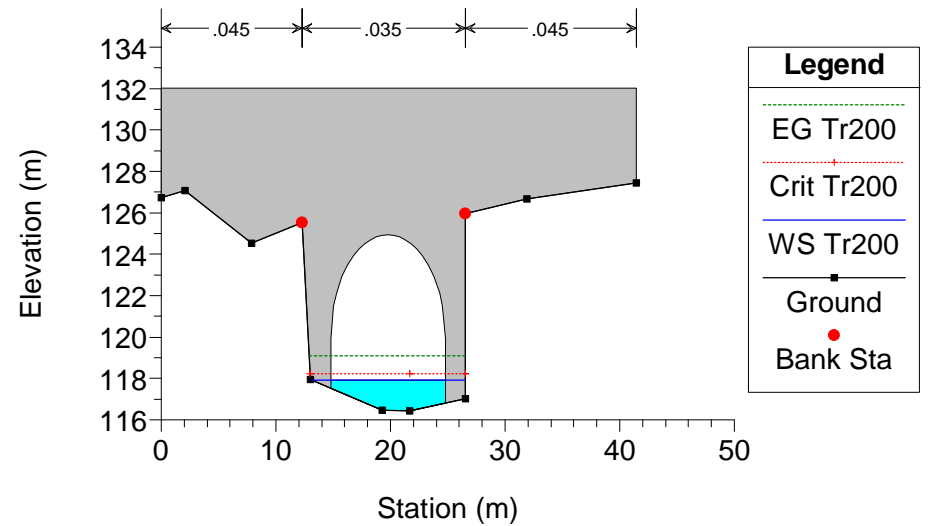
2062 Fosso Cetina Plan: Ante Operam 25/09/2017

River = Fosso Cetina Reach = Fosso Cetina RS = 6.5 BR Ponte Autostradale



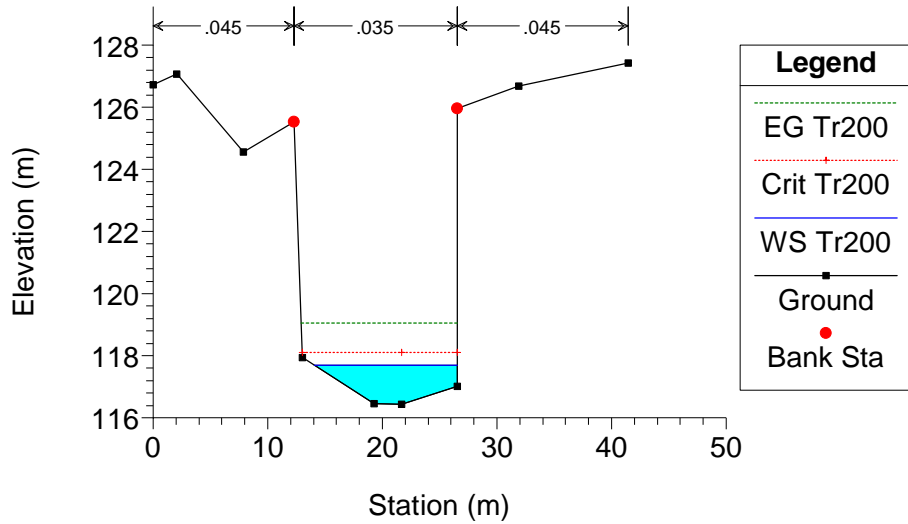
2062 Fosso Cetina Plan: Ante Operam 25/09/2017

River = Fosso Cetina Reach = Fosso Cetina RS = 6.5 BR Ponte Autostradale



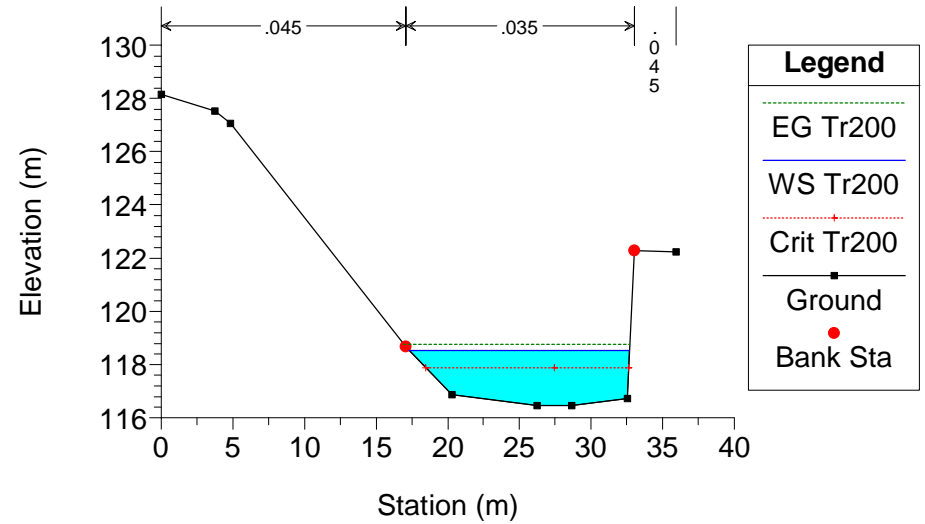
2062 Fosso Cetina Plan: Ante Operam 25/09/2017

River = Fosso Cetina Reach = Fosso Cetina RS = 6 Sez. 14



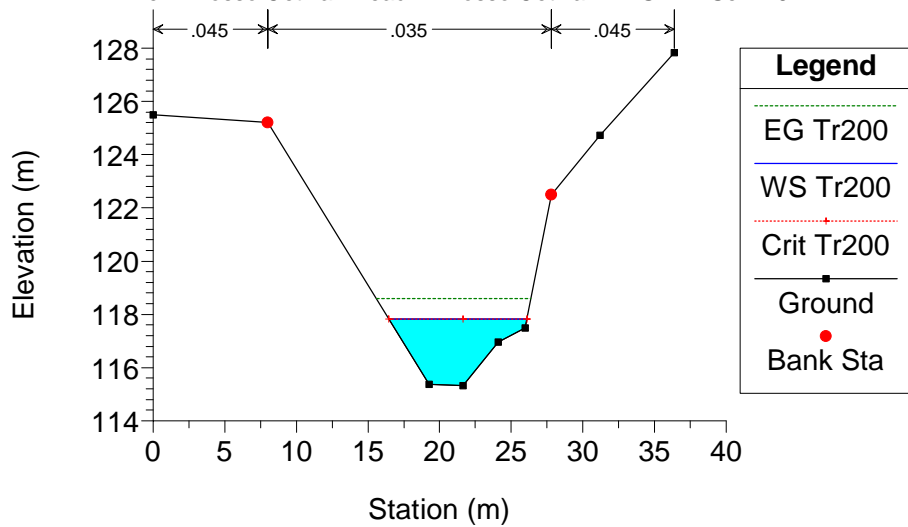
2062 Fosso Cetina Plan: Ante Operam 25/09/2017

River = Fosso Cetina Reach = Fosso Cetina RS = 5 Sez. 15



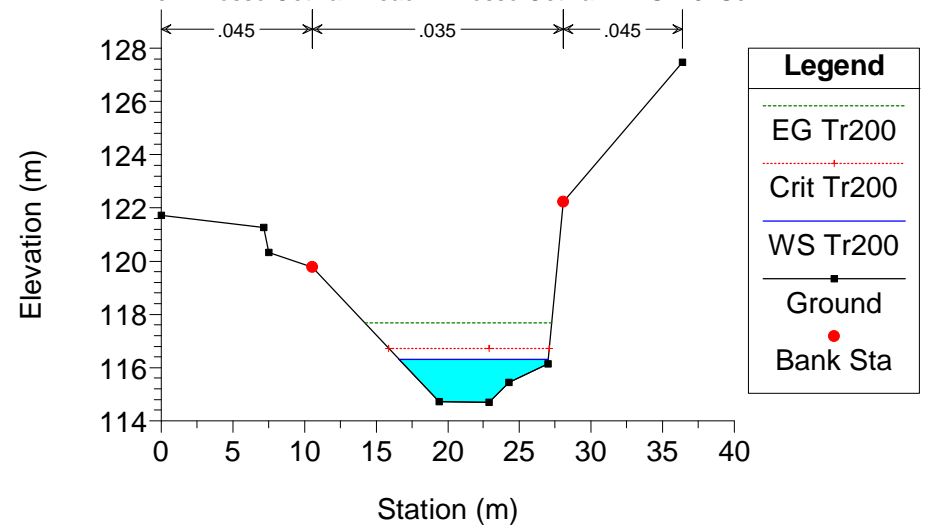
2062 Fosso Cetina Plan: Ante Operam 25/09/2017

River = Fosso Cetina Reach = Fosso Cetina RS = 4 Sez. 16



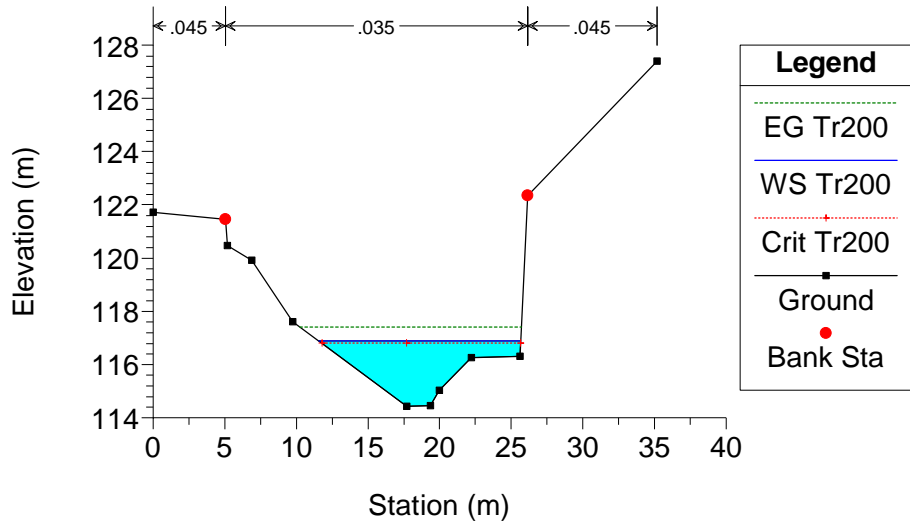
2062 Fosso Cetina Plan: Ante Operam 25/09/2017

River = Fosso Cetina Reach = Fosso Cetina RS = 3 Sez. 17



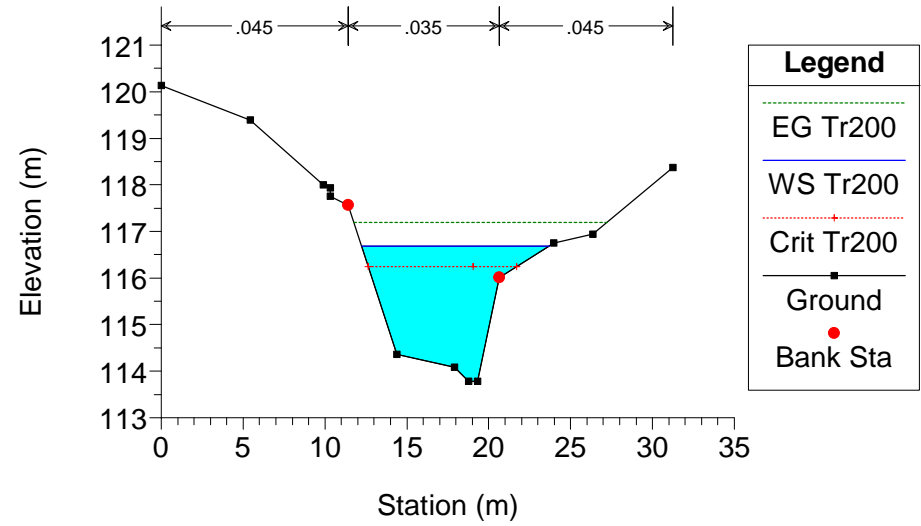
2062 Fosso Cetina Plan: Ante Operam 25/09/2017

River = Fosso Cetina Reach = Fosso Cetina RS = 2 Sez. 18



2062 Fosso Cetina Plan: Ante Operam 25/09/2017

River = Fosso Cetina Reach = Fosso Cetina RS = 1 Sez. 19



OPERA N. 2062

FOSSO DI CETINA

POST OPERAM

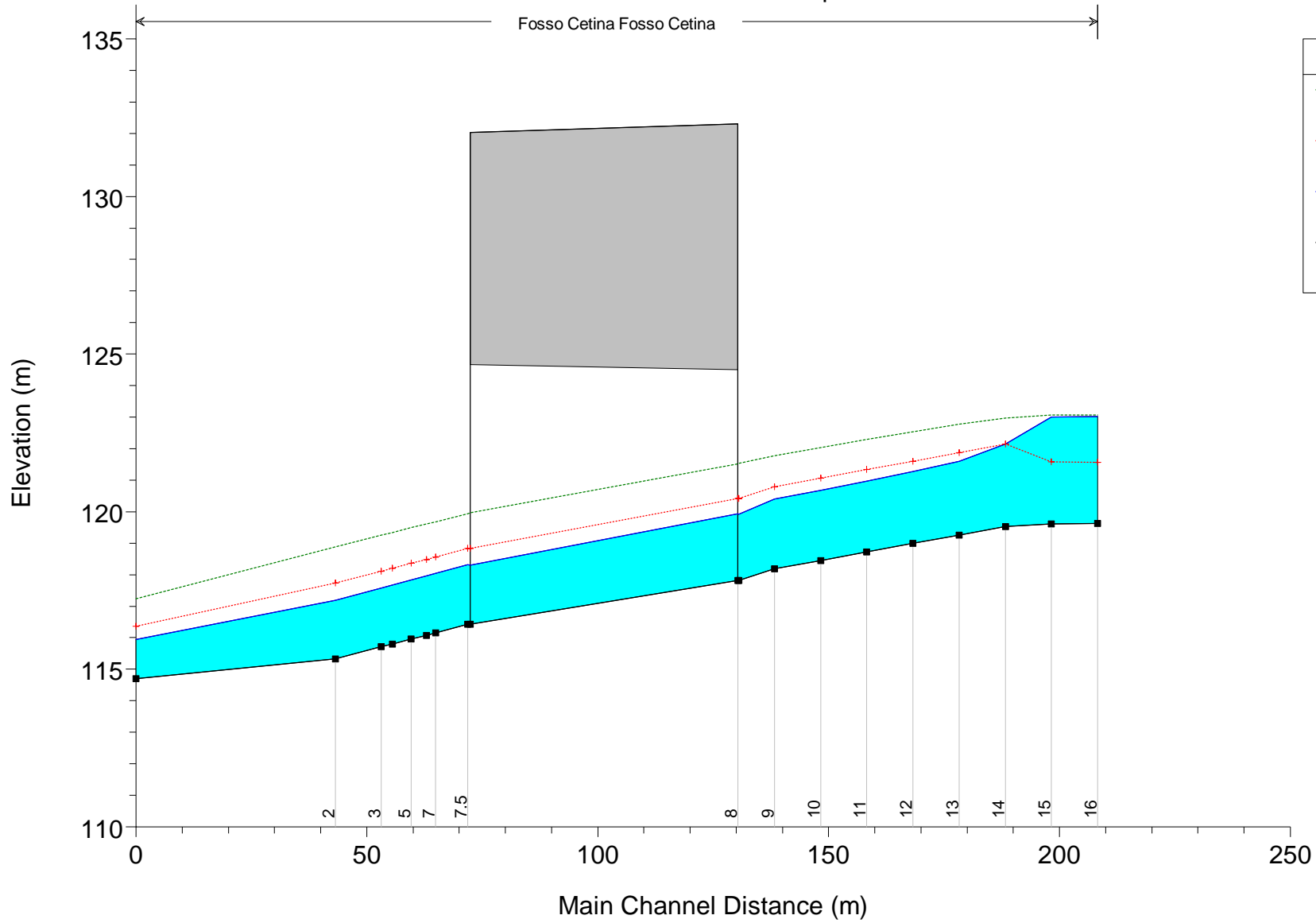
HEC-RAS Plan: PO River: Fosso Cetina Reach: Fosso Cetina Profile: Tr200

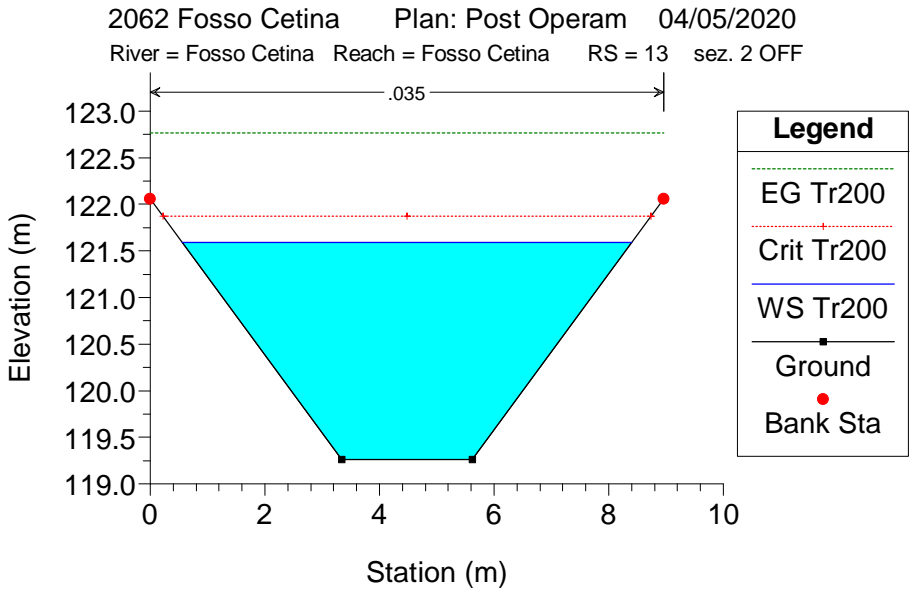
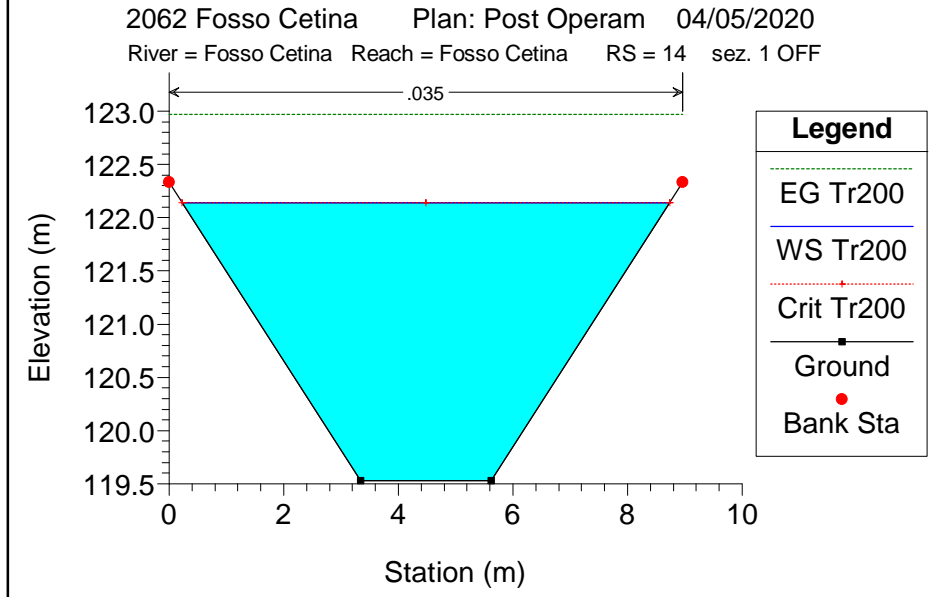
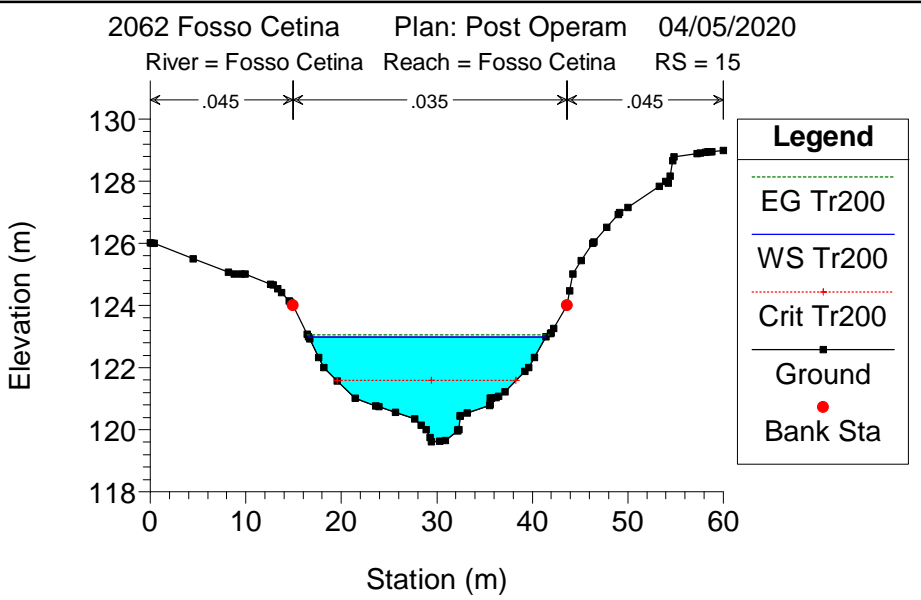
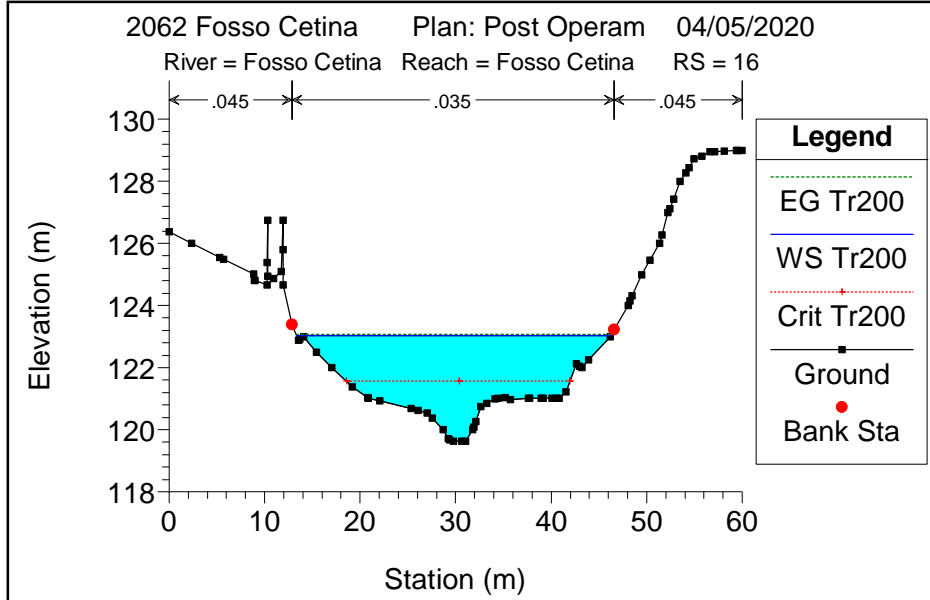
Reach	River Sta	Profile	Q Total (m3/s)	Min Ch El (m)	W.S. Elev (m)	Crit W.S. (m)	E.G. Elev (m)	E.G. Slope (m/m)	Vel Chnl (m/s)	Flow Area (m2)	Top Width (m)	Froude # Chl
Fosso Cetina	16	Tr200	56.70	119.63	123.02	121.56	123.07	0.000509	0.94	60.38	32.90	0.22
Fosso Cetina	15	Tr200	56.70	119.60	123.00	121.58	123.06	0.000684	1.14	49.85	24.91	0.26
Fosso Cetina	14	Tr200	56.70	119.53	122.14	122.14	122.97	0.013296	4.03	14.07	8.51	1.00
Fosso Cetina	13	Tr200	56.70	119.26	121.59	121.87	122.77	0.021201	4.80	11.82	7.85	1.25
Fosso Cetina	12	Tr200	56.70	118.99	121.27	121.60	122.53	0.023508	4.99	11.37	7.71	1.31
Fosso Cetina	11	Tr200	56.70	118.72	120.97	121.33	122.29	0.024828	5.09	11.14	7.64	1.35
Fosso Cetina	10	Tr200	56.70	118.45	120.68	121.06	122.03	0.025658	5.15	11.01	7.60	1.37
Fosso Cetina	9	Tr200	56.70	118.18	120.40	120.79	121.77	0.026131	5.19	10.93	7.57	1.38
Fosso Cetina	8.5	Tr200	56.70	117.81	119.92	120.42	121.52	0.032304	5.61	10.10	7.31	1.52
Fosso Cetina	8		Bridge									
Fosso Cetina	7.5	Tr200	56.70	116.43	118.32	118.84	119.93	0.034882	5.62	10.08	8.18	1.62
Fosso Cetina	7	Tr200	56.70	116.16	118.04	118.56	119.68	0.035776	5.68	9.99	8.14	1.64
Fosso Cetina	6	Tr200	56.70	116.08	117.96	118.49	119.61	0.035987	5.69	9.96	8.12	1.64
Fosso Cetina	5	Tr200	56.70	115.96	117.83	118.37	119.49	0.036200	5.70	9.94	8.12	1.65
Fosso Cetina	4	Tr200	56.70	115.80	117.67	118.21	119.34	0.036597	5.73	9.90	8.10	1.65
Fosso Cetina	3	Tr200	56.70	115.71	117.58	118.12	119.25	0.036777	5.74	9.88	8.10	1.66
Fosso Cetina	2	Tr200	56.70	115.33	117.19	117.73	118.88	0.037220	5.76	9.84	8.08	1.67
Fosso Cetina	1	Tr200	56.70	114.70	115.95	116.36	117.23	0.033532	5.02	11.29	11.36	1.61

2062 Fosso Cetina Plan: Post Operam 04/05/2020

Fosso Cetina Fosso Cetina

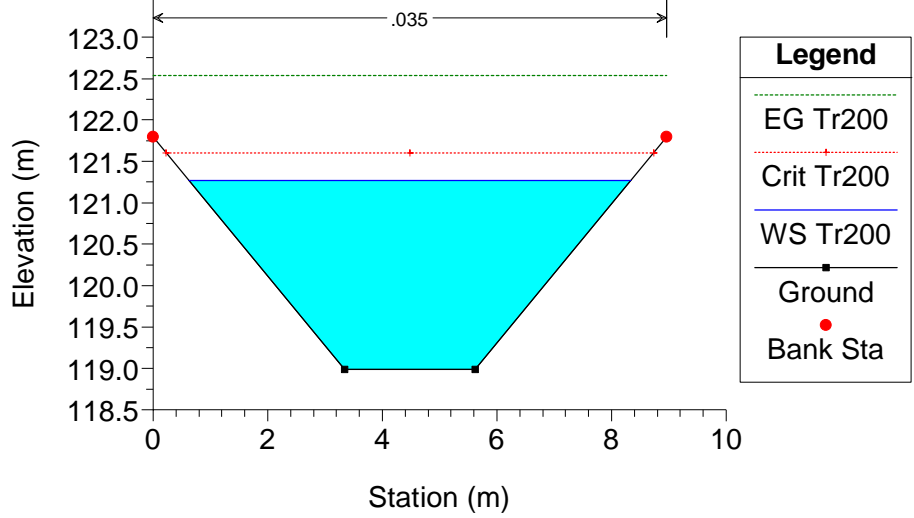
Legend	
EG Tr200	
Crit Tr200	
WS Tr200	
Ground	





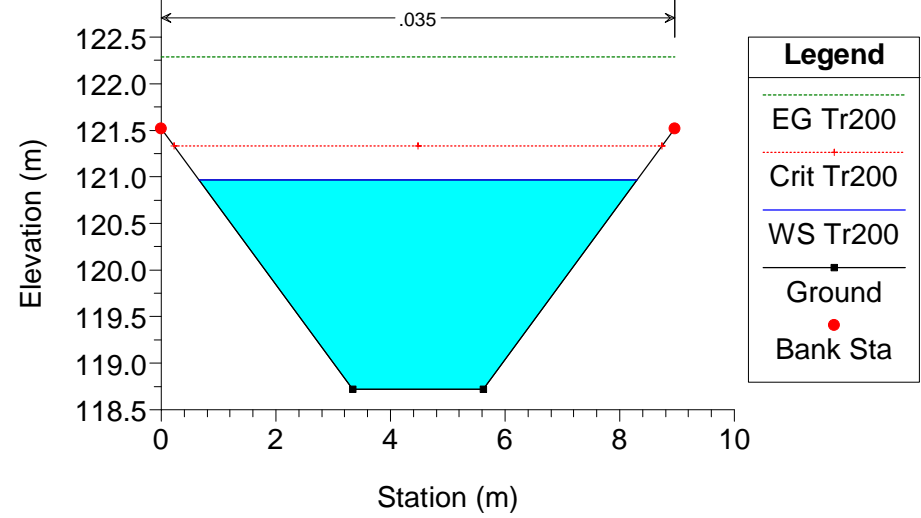
2062 Fosso Cetina Plan: Post Operam 04/05/2020

River = Fosso Cetina Reach = Fosso Cetina RS = 12 sez. 3 OFF



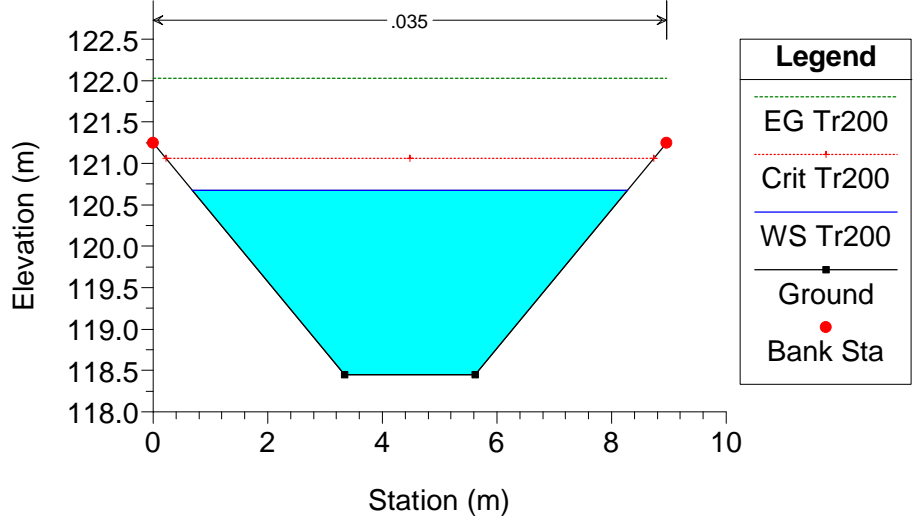
2062 Fosso Cetina Plan: Post Operam 04/05/2020

River = Fosso Cetina Reach = Fosso Cetina RS = 11 sez. 4 OFF



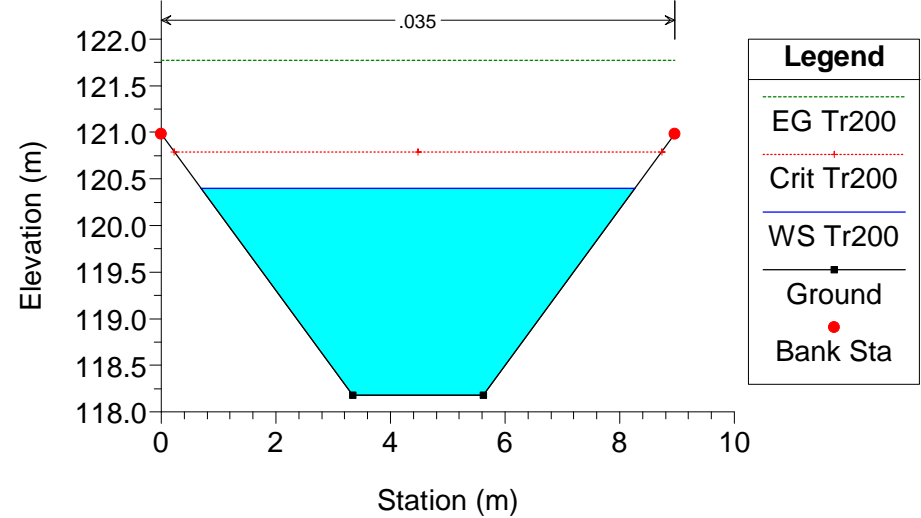
2062 Fosso Cetina Plan: Post Operam 04/05/2020

River = Fosso Cetina Reach = Fosso Cetina RS = 10 sez. 5 OFF



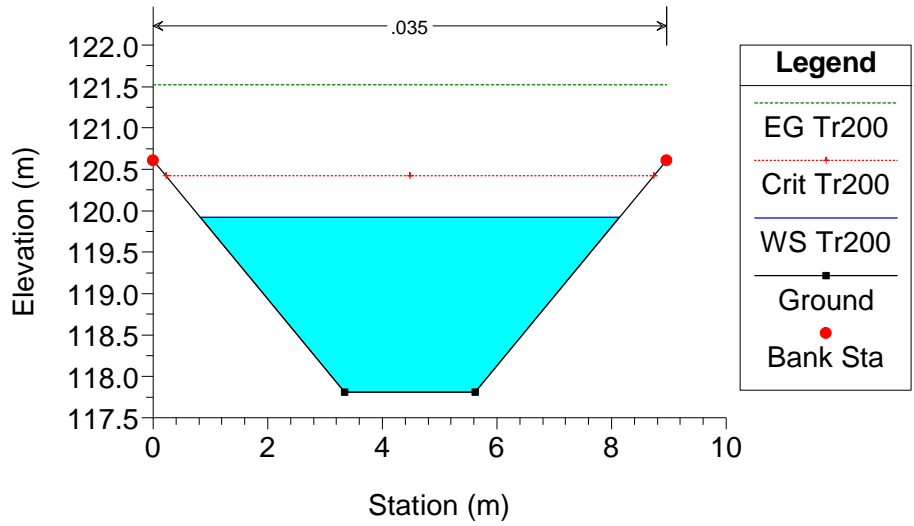
2062 Fosso Cetina Plan: Post Operam 04/05/2020

River = Fosso Cetina Reach = Fosso Cetina RS = 9 sez. 6 OFF



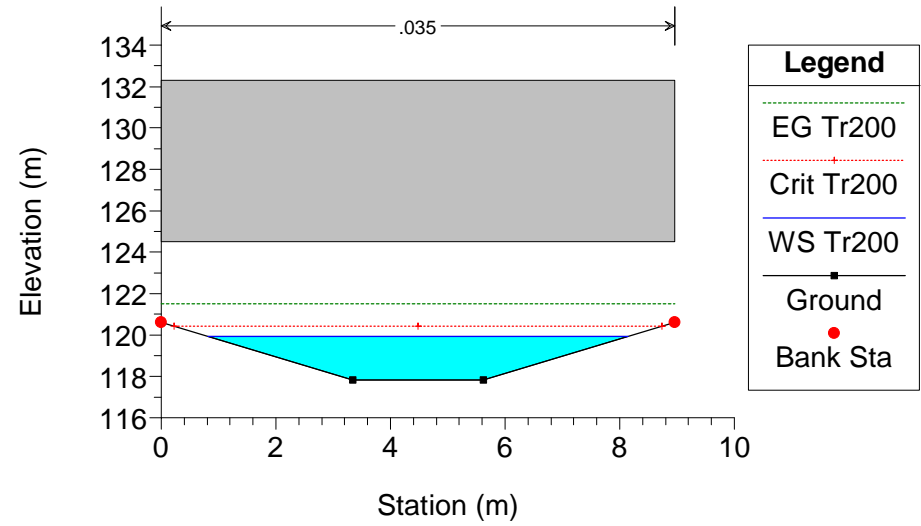
2062 Fosso Cetina Plan: Post Operam 04/05/2020

River = Fosso Cetina Reach = Fosso Cetina RS = 8.5 Prospetto OFF



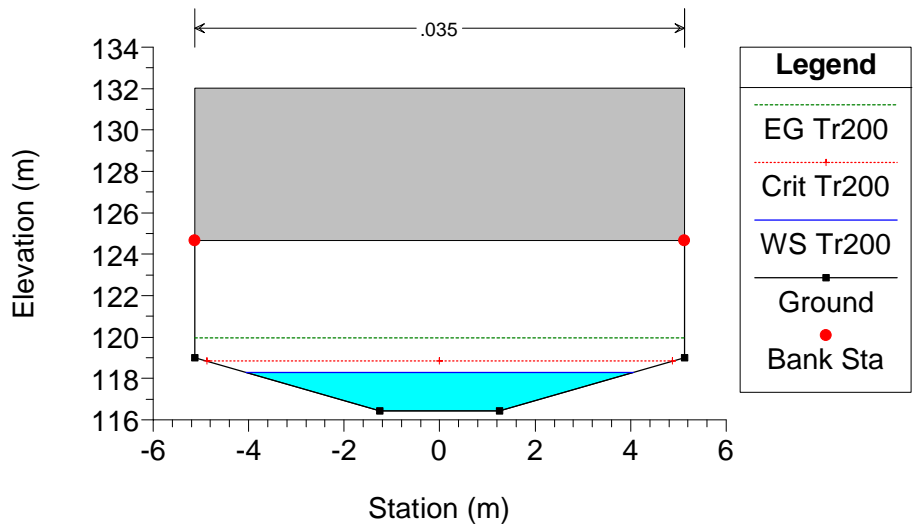
2062 Fosso Cetina Plan: Post Operam 04/05/2020

River = Fosso Cetina Reach = Fosso Cetina RS = 8 BR Ponte Autostradale



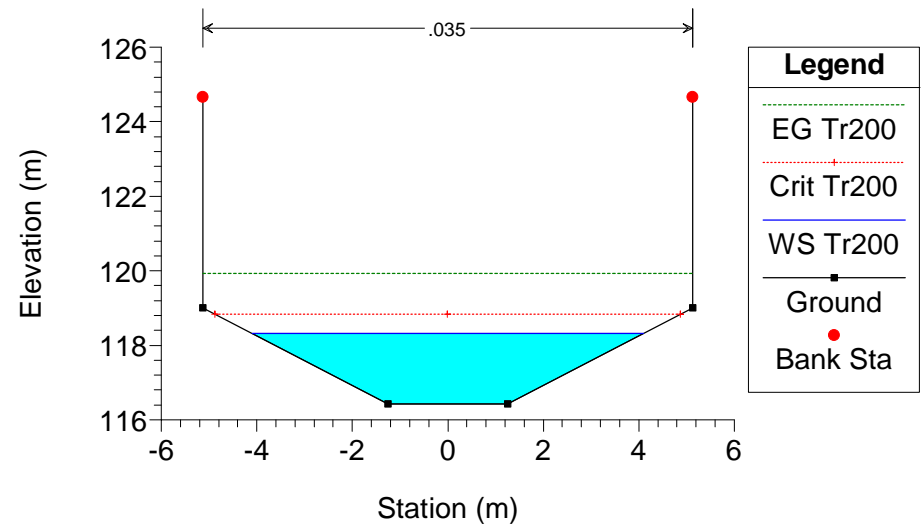
2062 Fosso Cetina Plan: Post Operam 04/05/2020

River = Fosso Cetina Reach = Fosso Cetina RS = 8 BR Ponte Autostradale



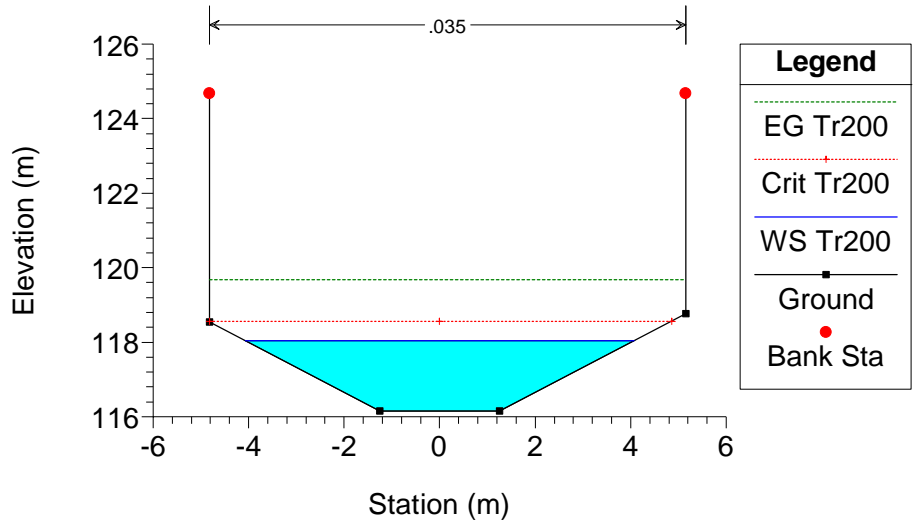
2062 Fosso Cetina Plan: Post Operam 04/05/2020

River = Fosso Cetina Reach = Fosso Cetina RS = 7.5



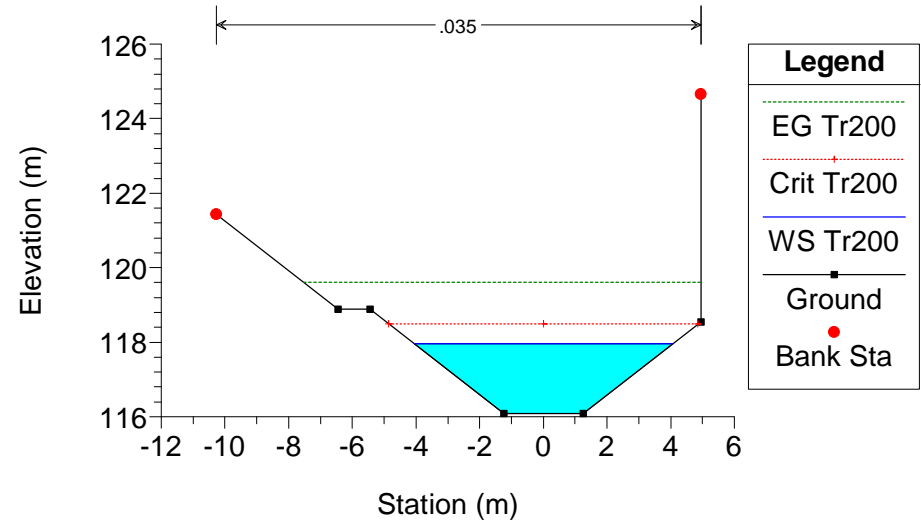
2062 Fosso Cetina Plan: Post Operam 04/05/2020

River = Fosso Cetina Reach = Fosso Cetina RS = 7 Sez.10



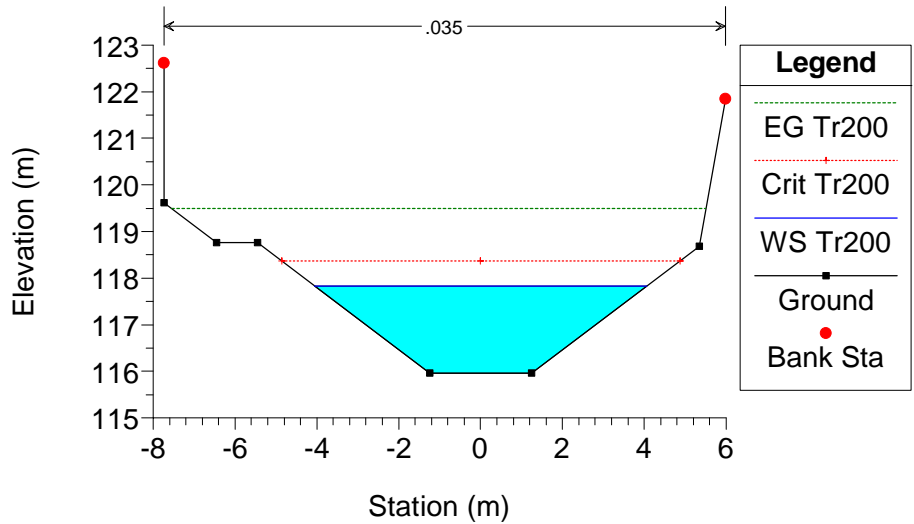
2062 Fosso Cetina Plan: Post Operam 04/05/2020

River = Fosso Cetina Reach = Fosso Cetina RS = 6 Sez. 11



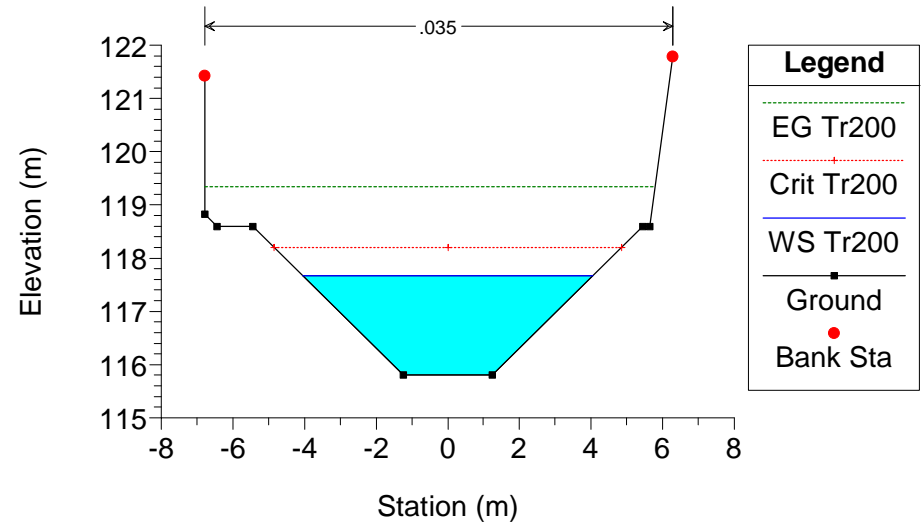
2062 Fosso Cetina Plan: Post Operam 04/05/2020

River = Fosso Cetina Reach = Fosso Cetina RS = 5 Sez. 12

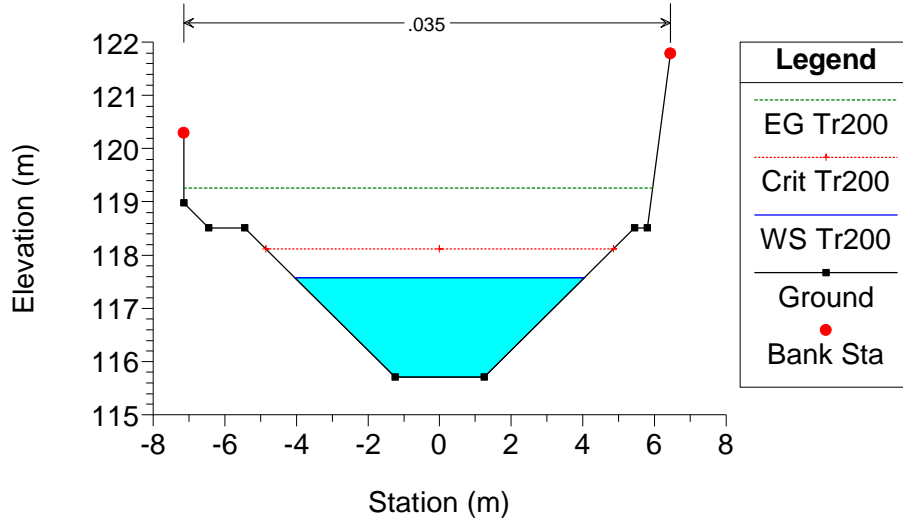


2062 Fosso Cetina Plan: Post Operam 04/05/2020

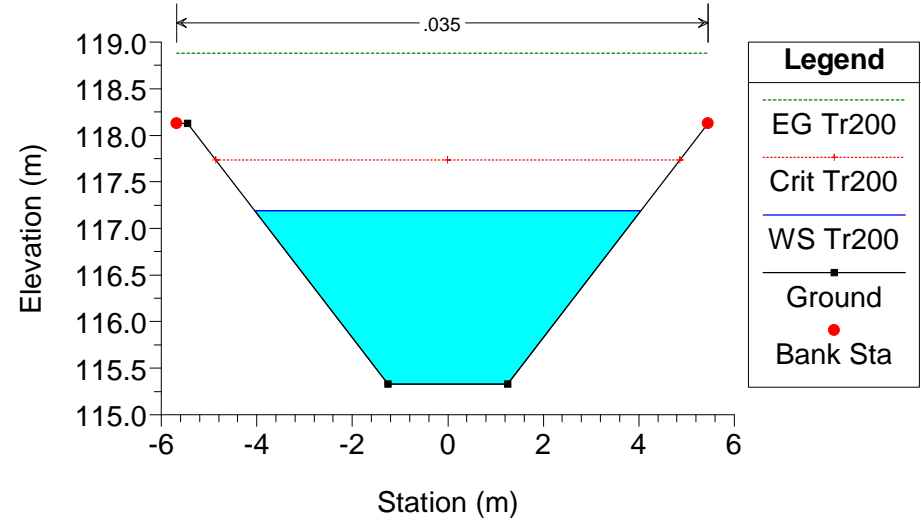
River = Fosso Cetina Reach = Fosso Cetina RS = 4 Sez. 13



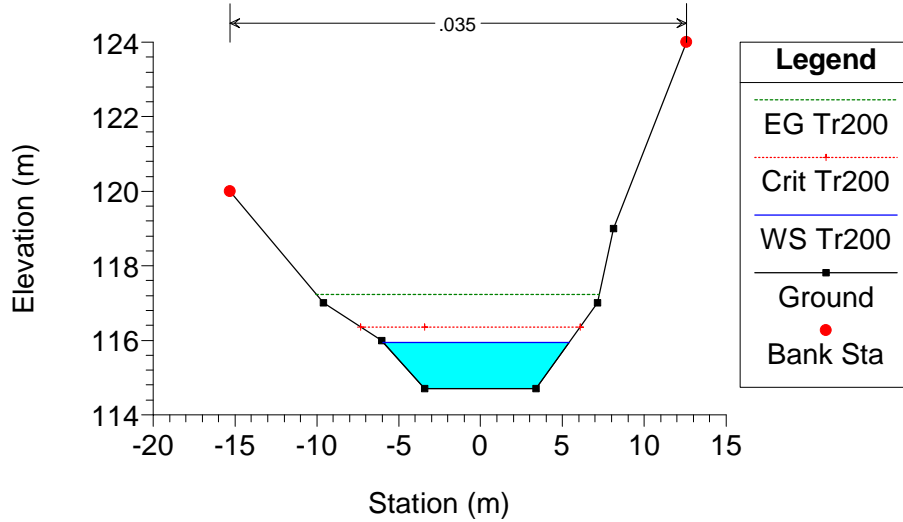
2062 Fosso Cetina Plan: Post Operam 04/05/2020
 River = Fosso Cetina Reach = Fosso Cetina RS = 3 Sez. 14



2062 Fosso Cetina Plan: Post Operam 04/05/2020
 River = Fosso Cetina Reach = Fosso Cetina RS = 2 Sez. 15



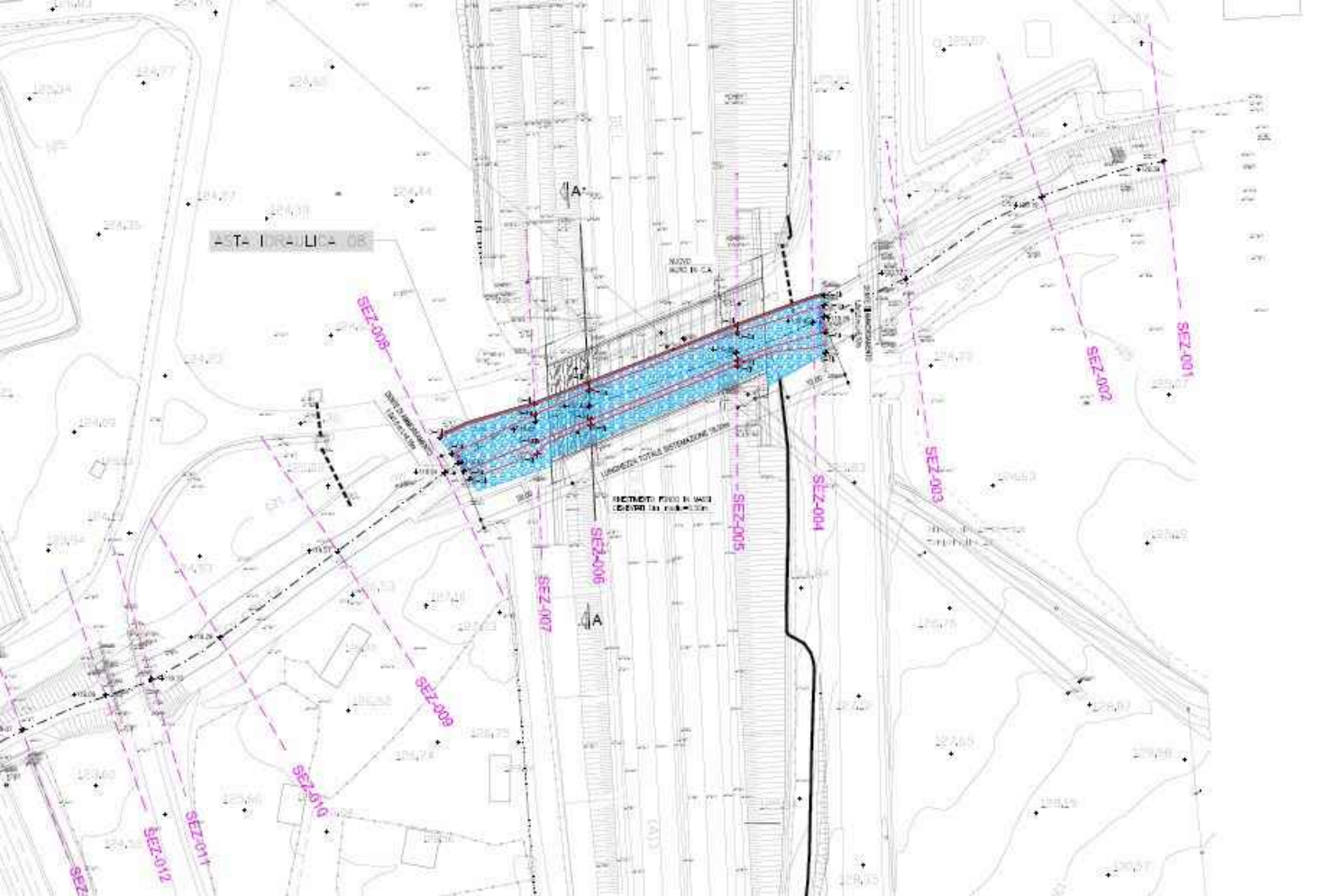
2062 Fosso Cetina Plan: Post Operam 04/05/2020
 River = Fosso Cetina Reach = Fosso Cetina RS = 1 Sez. 16



OPERA N. 2075

TORRENTE CHIESIMONE

ANTE OPERAM



HEC-RAS Plan: Ante River: Torrente Chiesim Reach: Torrente Chiesim

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
Torrente Chiesim	21	Sez. 1	Tr 30	110.90	120.39	126.31	123.95	126.39	0.000514	1.43	106.86	55.21	0.23
Torrente Chiesim	21	Sez. 1	Tr 200	174.70	120.39	127.54	124.72	127.62	0.000336	1.40	175.26	55.21	0.20
Torrente Chiesim	20	Sez. 2	Tr 30	110.90	120.19	126.30	123.55	126.38	0.000426	1.34	115.70	57.28	0.21
Torrente Chiesim	20	Sez. 2	Tr 200	174.70	120.19	127.54	124.37	127.61	0.000293	1.32	186.77	57.28	0.18
Torrente Chiesim	19	Sez. 3	Tr 30	110.90	120.12	126.30	123.45	126.36	0.000386	1.29	121.29	57.48	0.20
Torrente Chiesim	19	Sez. 3	Tr 200	174.70	120.12	127.54	124.27	127.60	0.000271	1.27	192.71	57.48	0.17
Torrente Chiesim	18.9		Tr 30	110.90	120.08	126.18	123.50	126.35	0.000765	1.88	65.54	17.29	0.28
Torrente Chiesim	18.9		Tr 200	174.70	120.08	127.32	124.40	127.57	0.000882	2.33	85.21	17.29	0.31
Torrente Chiesim	18.5		Bridge										
Torrente Chiesim	18	Sez. 4	Tr 30	110.90	119.95	125.53	122.87	125.73	0.001233	1.99	64.90	45.93	0.29
Torrente Chiesim	18	Sez. 4	Tr 200	174.70	119.95	126.52	123.64	126.69	0.001026	2.06	117.85	55.09	0.27
Torrente Chiesim	17	Sez. 5	Tr 30	110.90	119.86	125.50	123.09	125.70	0.001365	2.04	59.38	18.21	0.31
Torrente Chiesim	17	Sez. 5	Tr 200	174.70	119.86	126.32	123.86	126.63	0.001881	2.60	74.30	18.24	0.36
Torrente Chiesim	16.5		Bridge										
Torrente Chiesim	16	Sez. 6	Tr 30	110.90	119.83	125.44	123.14	125.65	0.001552	2.10	57.73	17.22	0.32
Torrente Chiesim	16	Sez. 6	Tr 200	174.70	119.83	126.22	124.01	126.56	0.002195	2.71	71.16	17.28	0.38
Torrente Chiesim	15	Sez. 7	Tr 30	110.90	119.82	125.54	122.91	125.59	0.000310	1.13	139.51	63.55	0.17
Torrente Chiesim	15	Sez. 7	Tr 200	174.70	119.82	126.40	123.82	126.46	0.000310	1.27	194.28	63.55	0.17
Torrente Chiesim	14	Sez. 8	Tr 30	110.90	119.64	125.37	123.23	125.56	0.001044	2.07	70.53	35.71	0.32
Torrente Chiesim	14	Sez. 8	Tr 200	174.70	119.64	126.20	124.09	126.43	0.001088	2.37	100.63	36.60	0.33
Torrente Chiesim	13	Sez. 9	Tr 30	110.90	119.51	125.34	123.02	125.53	0.001242	2.00	62.90	32.66	0.34
Torrente Chiesim	13	Sez. 9	Tr 200	174.70	119.51	126.15	123.91	126.40	0.001358	2.32	89.87	34.07	0.36
Torrente Chiesim	12	Sez. 10	Tr 30	110.90	119.29	125.33	122.85	125.49	0.000947	1.81	70.53	33.22	0.30
Torrente Chiesim	12	Sez. 10	Tr 200	174.70	119.29	126.15	123.71	126.35	0.001047	2.13	98.84	40.44	0.32
Torrente Chiesim	11	Sez. 11	Tr 30	110.90	119.10	125.37	122.61	125.46	0.000502	1.42	96.62	49.57	0.23

HEC-RAS Plan: Ante River: Torrente Chiesim Reach: Torrente Chiesim (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
Torrente Chiesim	11	Sez. 11	Tr 200	174.70	119.10	126.20	123.36	126.31	0.000522	1.64	137.83	49.57	0.24
Torrente Chiesim	10.5		Bridge										
Torrente Chiesim	10	Sez. 12	Tr 30	110.90	119.09	124.35	122.55	124.57	0.001451	2.15	63.29	48.70	0.37
Torrente Chiesim	10	Sez. 12	Tr 200	174.70	119.09	125.73	123.36	125.86	0.000676	1.84	130.28	48.70	0.27
Torrente Chiesim	9	Sez. 13	Tr 30	110.90	119.07	124.35	123.38	124.55	0.000508	2.29	86.28	44.88	0.37
Torrente Chiesim	9	Sez. 13	Tr 200	174.70	119.07	125.69	123.91	125.85	0.000319	2.21	146.54	45.24	0.31
Torrente Chiesim	8.9		Tr 30	110.90	119.07	123.73	123.09	124.49	0.001884	3.94	31.84	16.42	0.67
Torrente Chiesim	8.9		Tr 200	174.70	119.07	124.73	124.01	125.76	0.001873	4.64	44.12	16.42	0.70
Torrente Chiesim	8.5		Bridge										
Torrente Chiesim	8	Sez. 14	Tr 30	110.90	119.06	123.77	122.77	124.38	0.001317	3.49	35.15	47.25	0.59
Torrente Chiesim	8	Sez. 14	Tr 200	174.70	119.06	124.62	123.76	125.53	0.001526	4.32	46.22	47.47	0.66
Torrente Chiesim	7	Sez. 15	Tr 30	110.90	119.03	123.65	122.84	124.35	0.001761	3.75	31.78	12.88	0.65
Torrente Chiesim	7	Sez. 15	Tr 200	174.70	119.03	124.35	123.82	125.48	0.002245	4.80	40.24	13.33	0.75
Torrente Chiesim	6.5		Bridge										
Torrente Chiesim	6	Sez. 16	Tr 30	110.90	118.85	123.79	122.41	124.21	0.000758	2.93	42.96	31.59	0.48
Torrente Chiesim	6	Sez. 16	Tr 200	174.70	118.85	123.76	123.27	124.82	0.001945	4.66	42.46	31.58	0.76
Torrente Chiesim	5	Sez. 17	Tr 30	110.90	118.78	123.80	122.56	124.16	0.002756	2.76	46.26	47.85	0.48
Torrente Chiesim	5	Sez. 17	Tr 200	174.70	118.78	123.73	123.67	124.68	0.007454	4.47	44.75	47.85	0.79
Torrente Chiesim	4	Sez. 18	Tr 30	110.90	118.67	123.80	121.92	124.05	0.001780	2.22	50.03	16.65	0.40
Torrente Chiesim	4	Sez. 18	Tr 200	174.70	118.67	123.72	122.76	124.37	0.004719	3.58	48.83	15.83	0.65
Torrente Chiesim	3	Sez. 19	Tr 30	110.90	118.62	123.31	122.14	123.83	0.004601	3.19	34.79	12.04	0.60
Torrente Chiesim	3	Sez. 19	Tr 200	174.70	118.62	124.01	123.17	124.15	0.001570	2.05	122.37	68.46	0.36
Torrente Chiesim	2	Sez. 20	Tr 30	110.90	118.21	123.34	121.56	123.57	0.001309	2.23	59.49	23.87	0.36
Torrente Chiesim	2	Sez. 20	Tr 200	174.70	118.21	123.54	122.61	124.02	0.002659	3.29	64.21	24.18	0.52

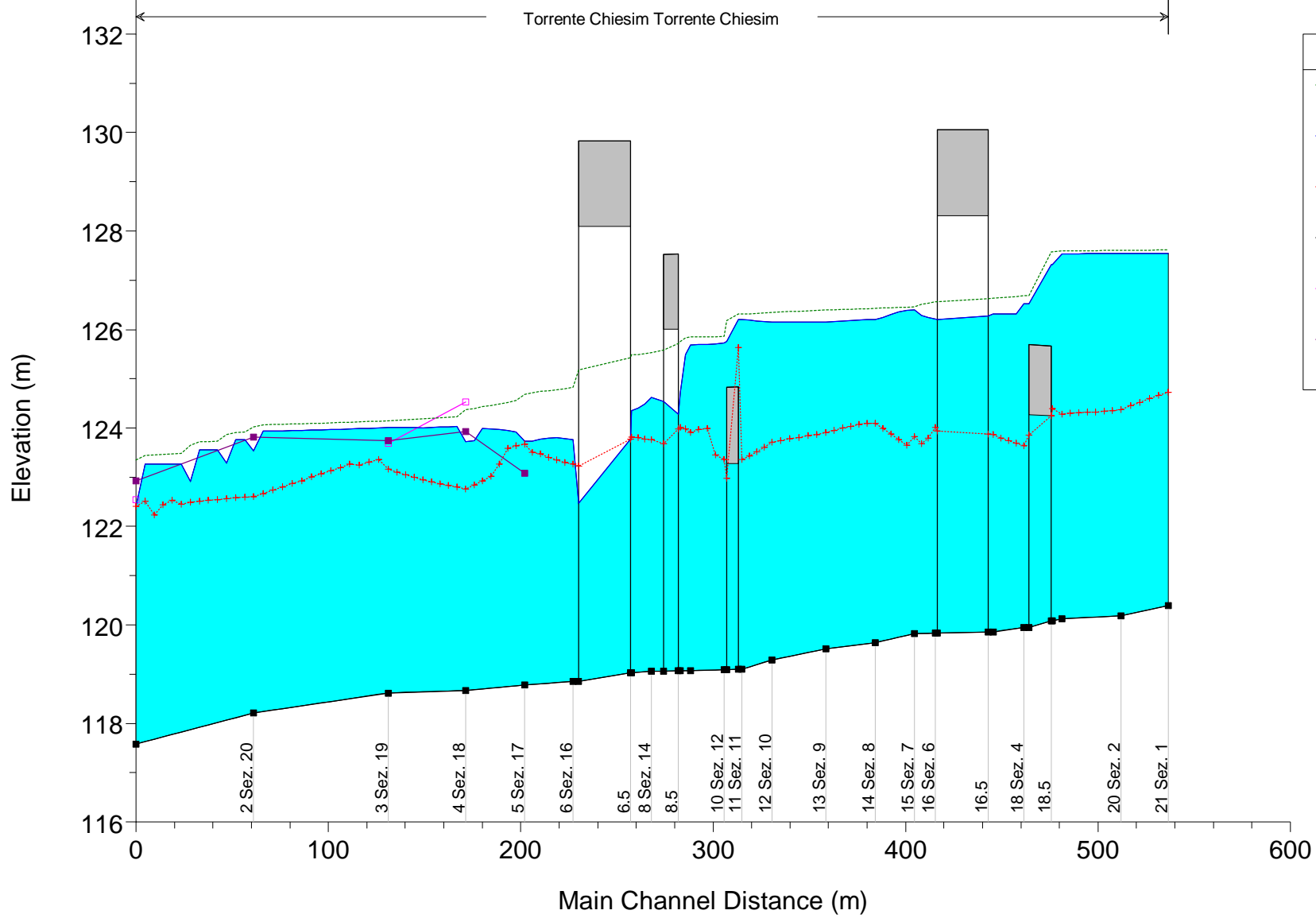
HEC-RAS Plan: Ante River: Torrente Chiesim Reach: Torrente Chiesim (Continued)

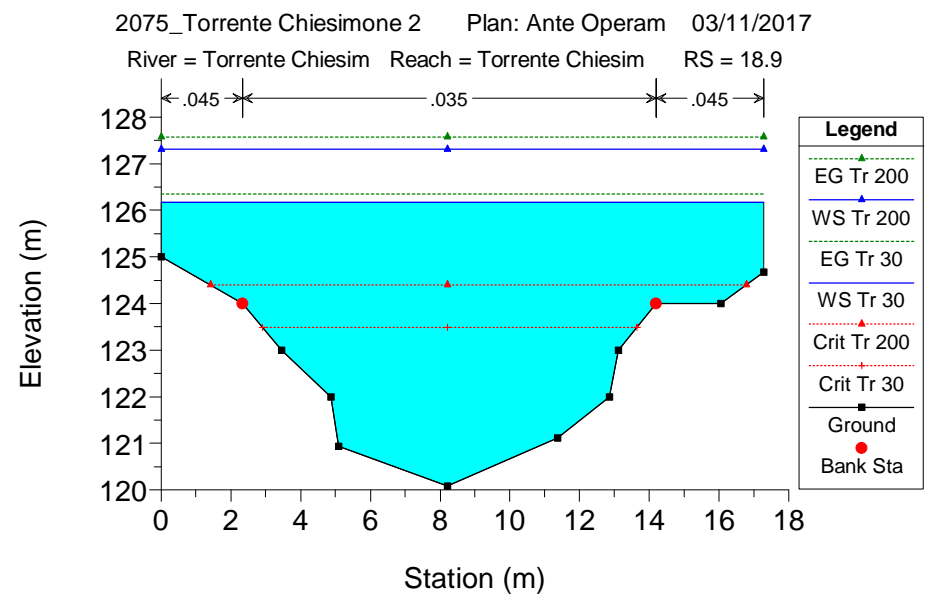
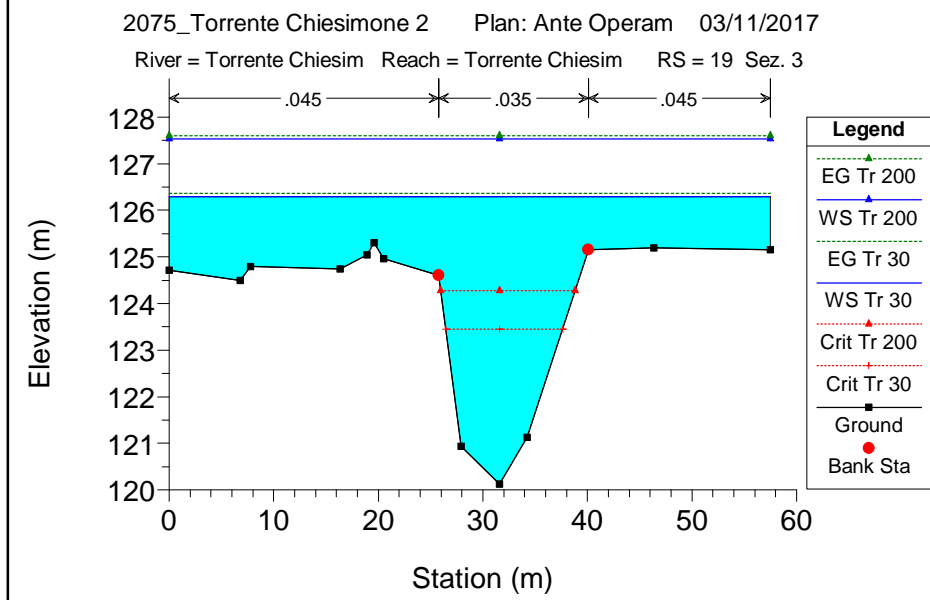
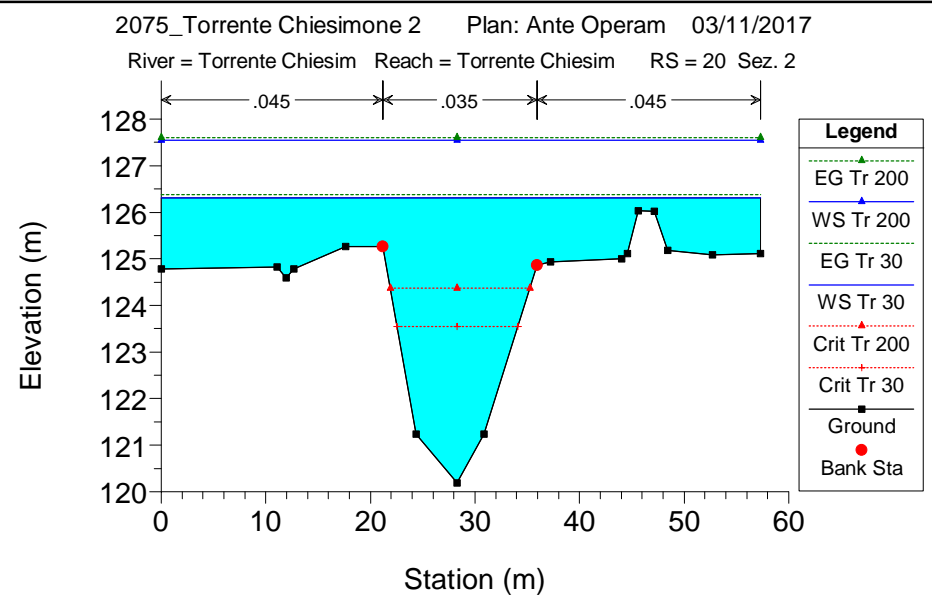
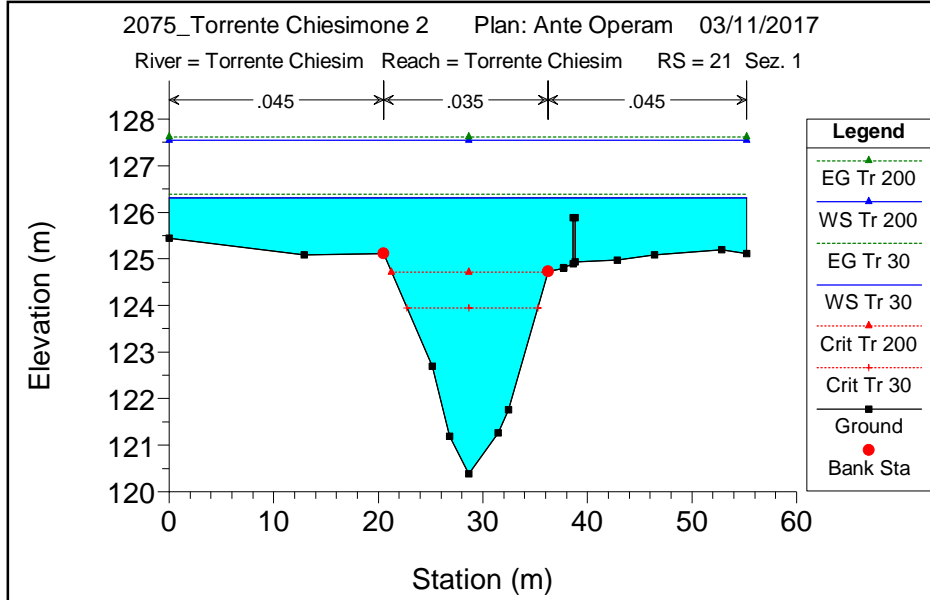
Reach	River Sta		Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
				(m ³ /s)	(m)	(m)	(m)	(m)	(m/m)	(m/s)	(m ²)	(m)	
Torrente Chiesim	1	Sez. 21	Tr 30	110.90	117.58	123.41	121.26	123.47	0.000427	1.31	130.17	63.11	0.20
Torrente Chiesim	1	Sez. 21	Tr 200	174.70	117.58	122.41	122.41	123.35	0.007160	4.50	46.27	26.20	0.79

2075_Torrente Chiesimone 2 Plan: Ante Operam 03/11/2017

Torrente Chiesim Torrente Chiesim

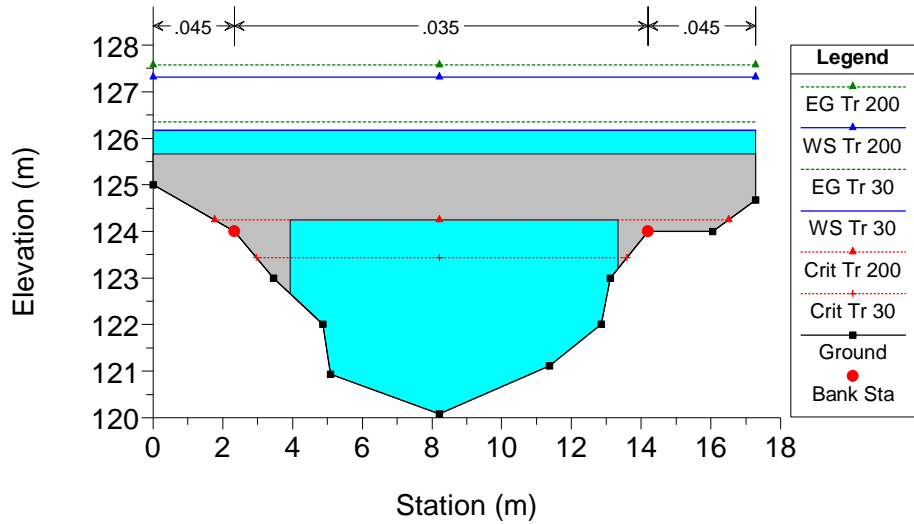
Legend	
	EG Tr 200
	WS Tr 200
	Crit Tr 200
	Ground
	Left Levee
	Right Levee





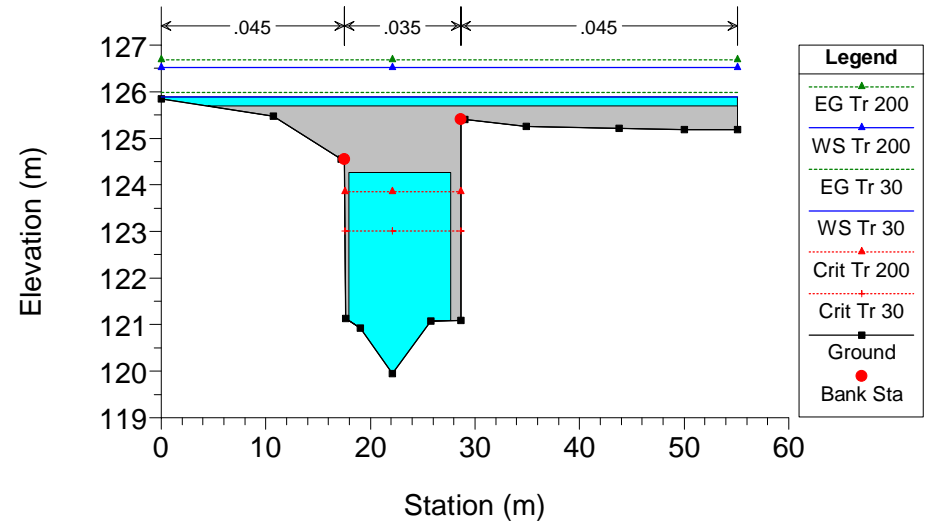
2075_Torrente Chiesimone 2 Plan: Ante Operam 03/11/2017

River = Torrente Chiesim Reach = Torrente Chiesim RS = 18.5 BR Ponte S.S.



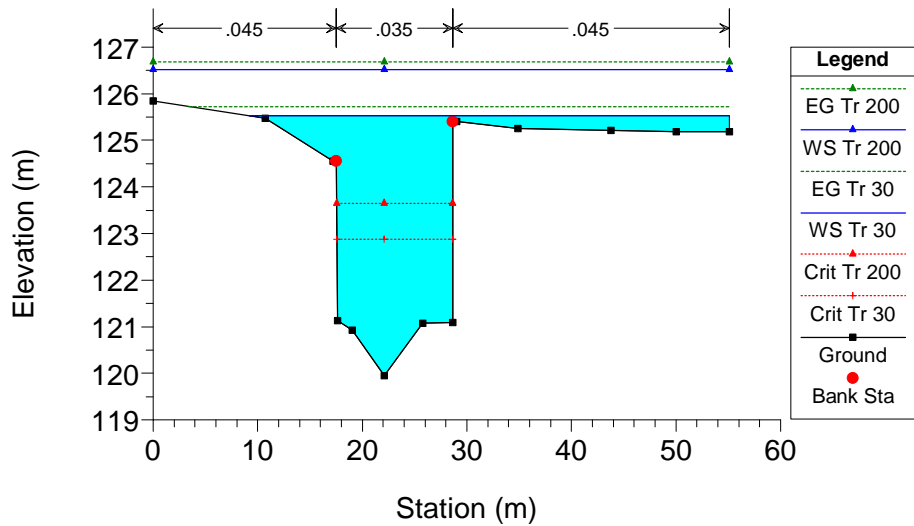
2075_Torrente Chiesimone 2 Plan: Ante Operam 03/11/2017

River = Torrente Chiesim Reach = Torrente Chiesim RS = 18.5 BR Ponte S.S.



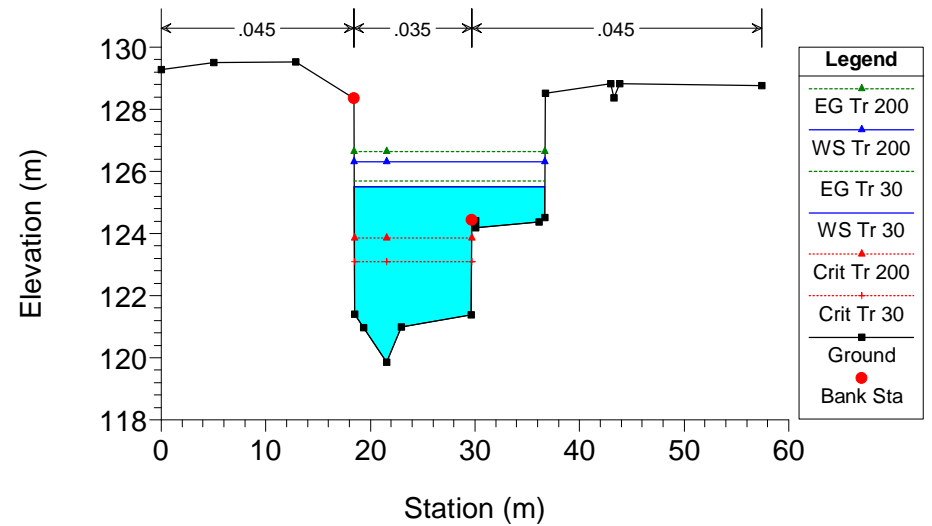
2075_Torrente Chiesimone 2 Plan: Ante Operam 03/11/2017

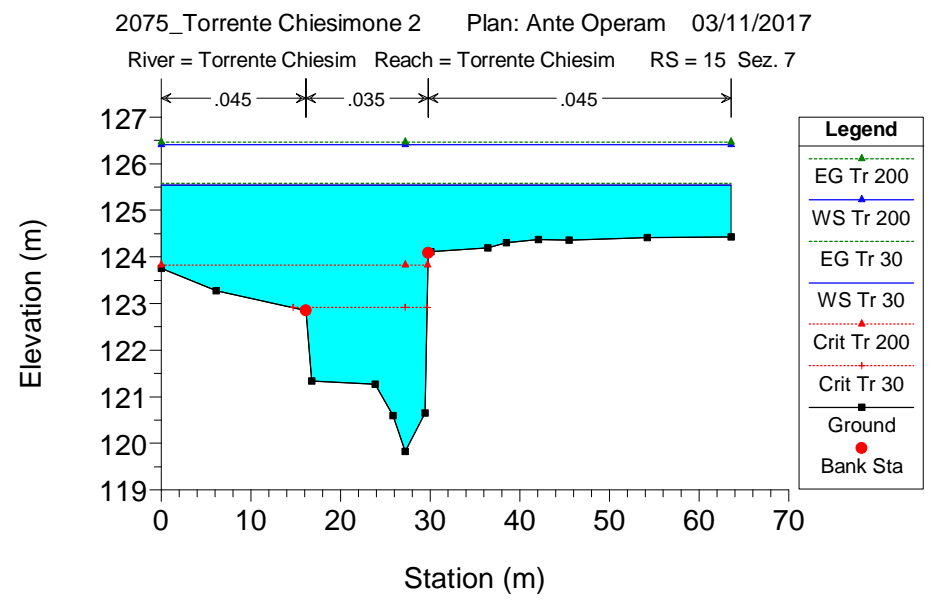
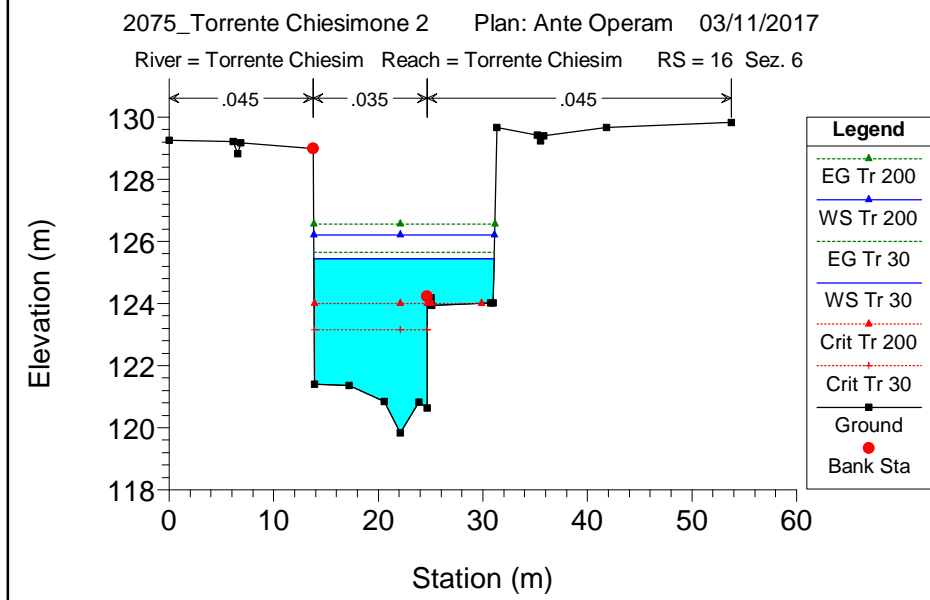
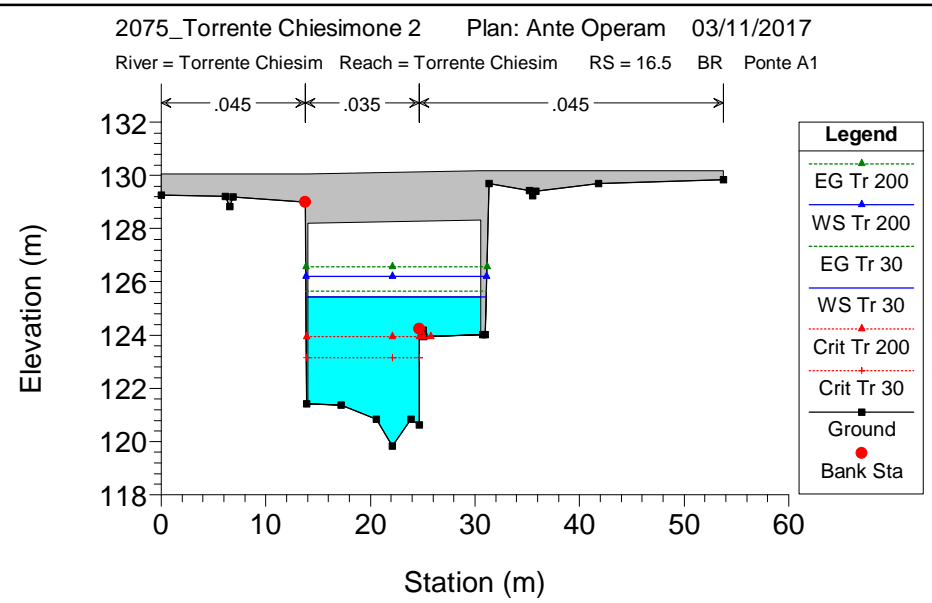
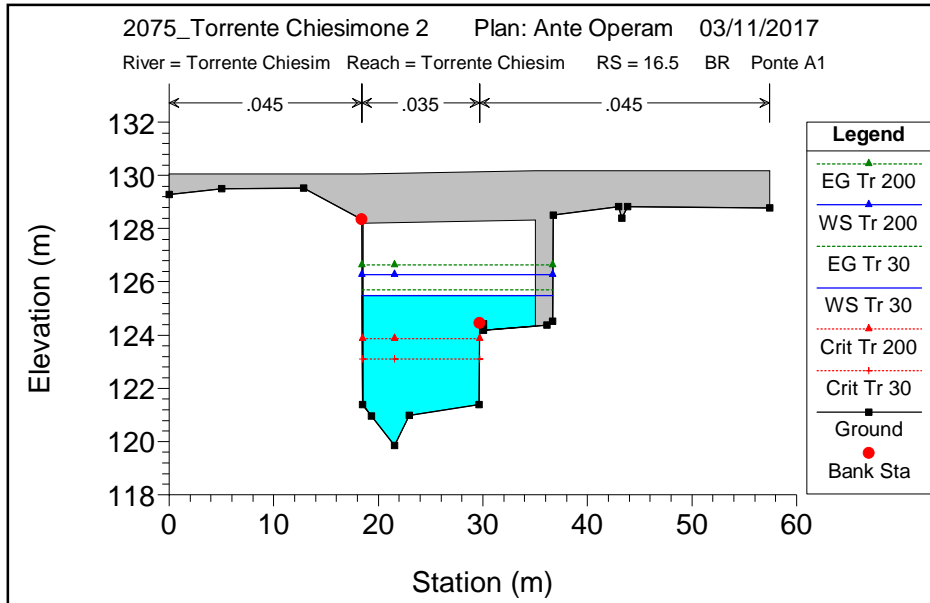
River = Torrente Chiesim Reach = Torrente Chiesim RS = 18 Sez. 4

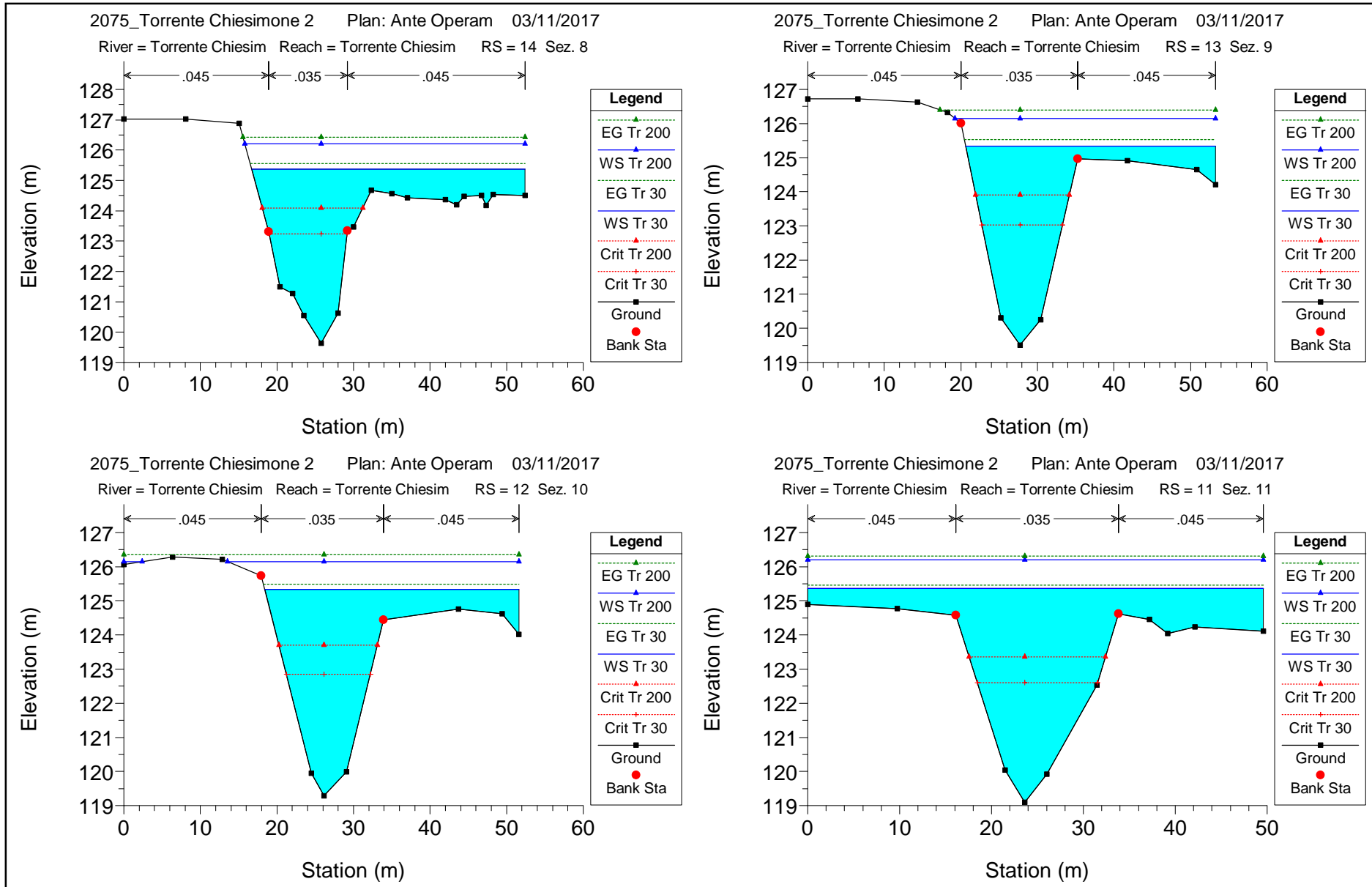


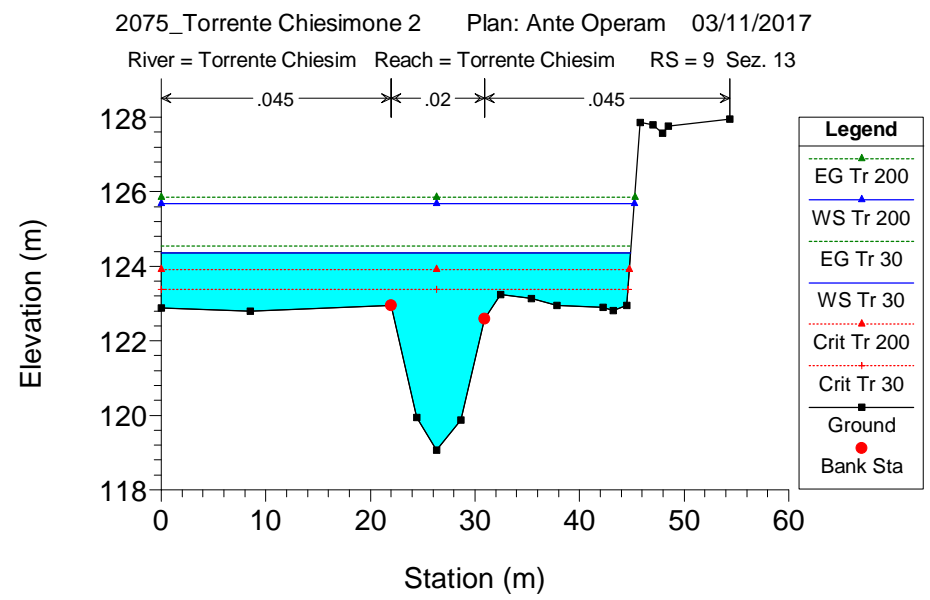
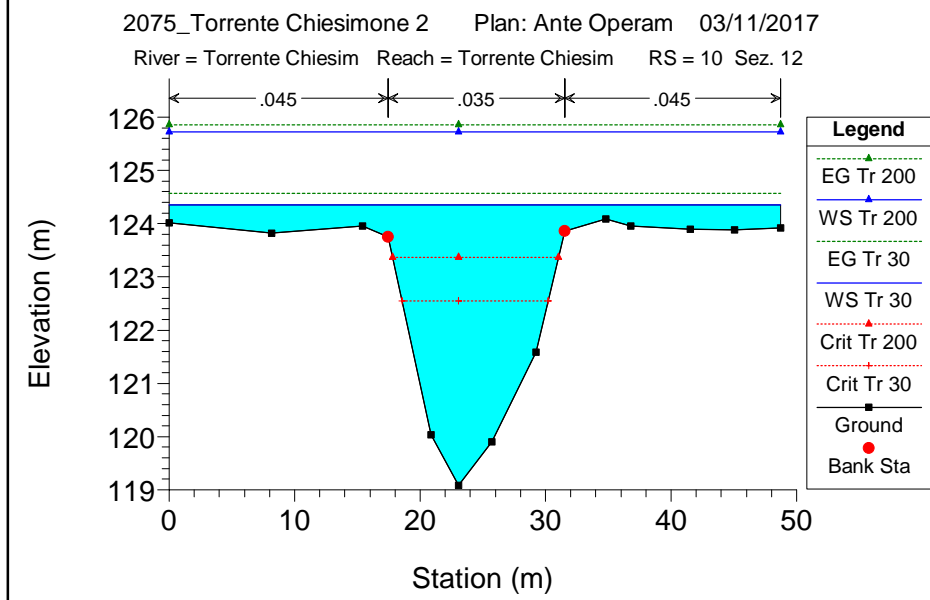
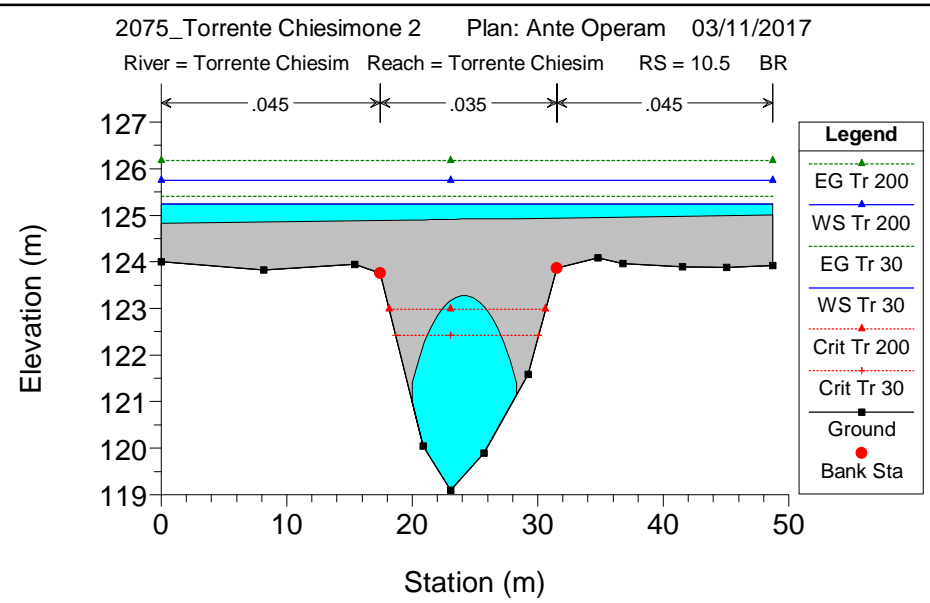
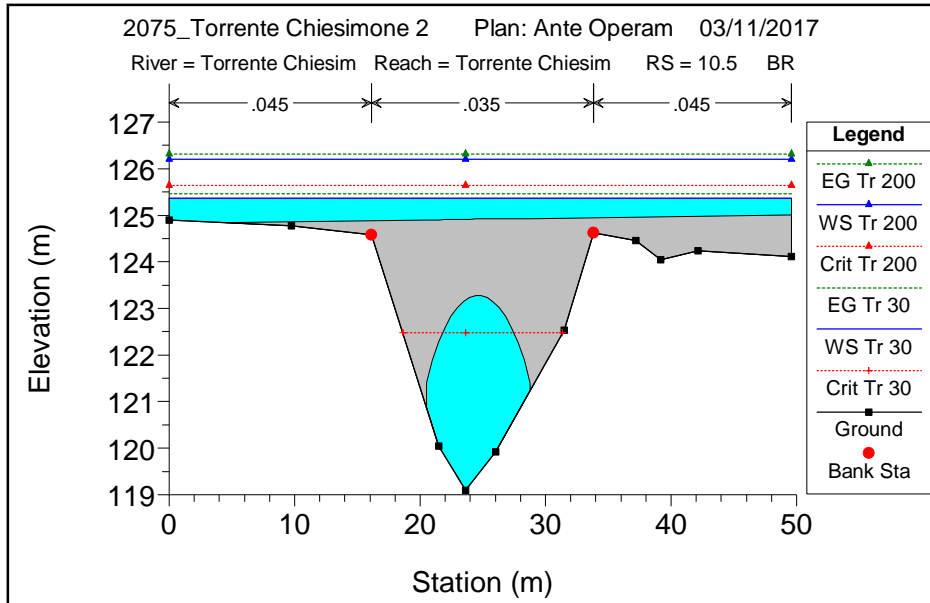
2075_Torrente Chiesimone 2 Plan: Ante Operam 03/11/2017

River = Torrente Chiesim Reach = Torrente Chiesim RS = 17 Sez. 5



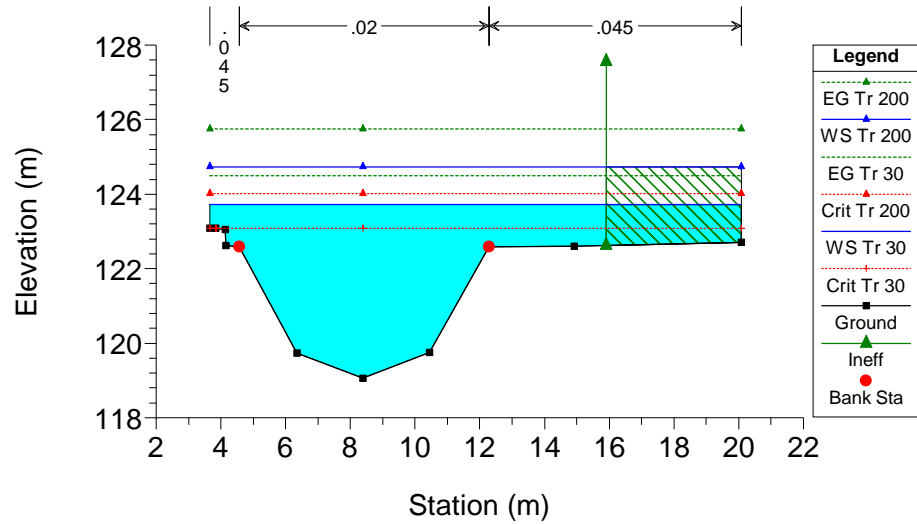






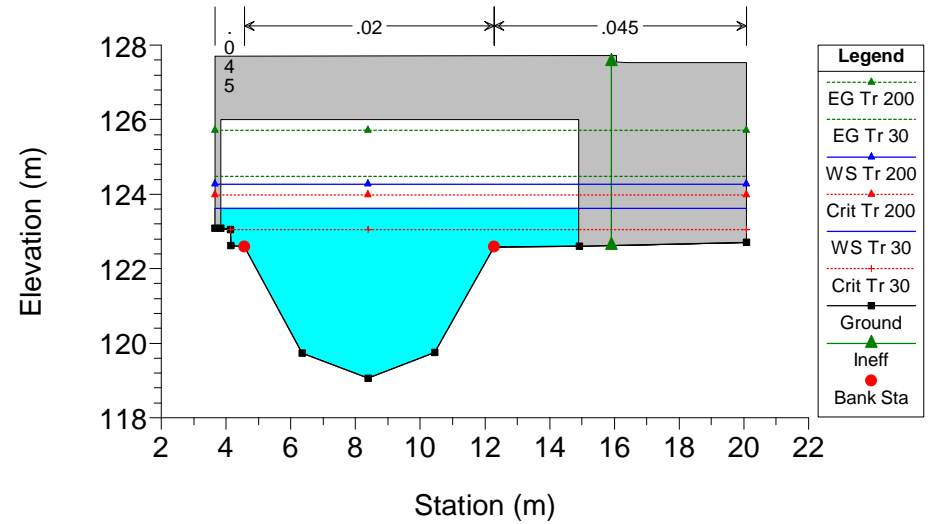
2075_Torrente Chiesimone 2 Plan: Ante Operam 03/11/2017

River = Torrente Chiesim Reach = Torrente Chiesim RS = 8.9



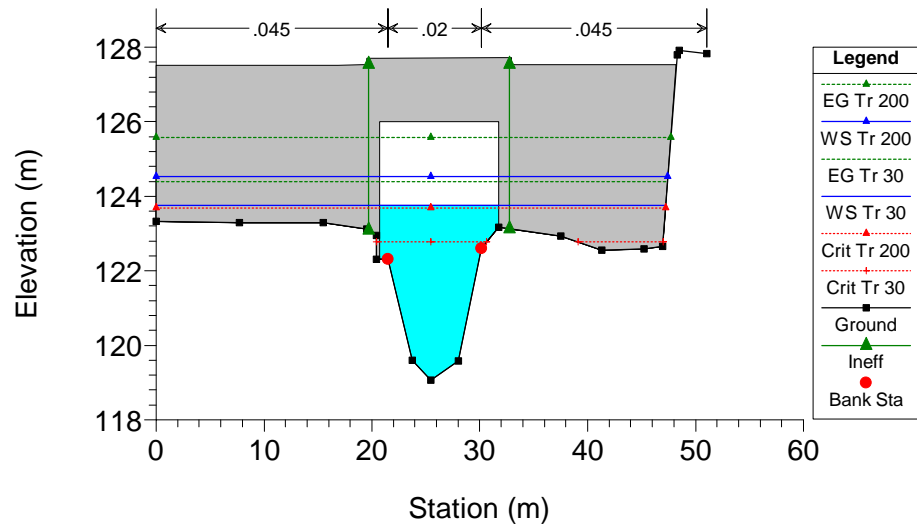
2075_Torrente Chiesimone 2 Plan: Ante Operam 03/11/2017

River = Torrente Chiesim Reach = Torrente Chiesim RS = 8.5 BR Ponte Ferrovia



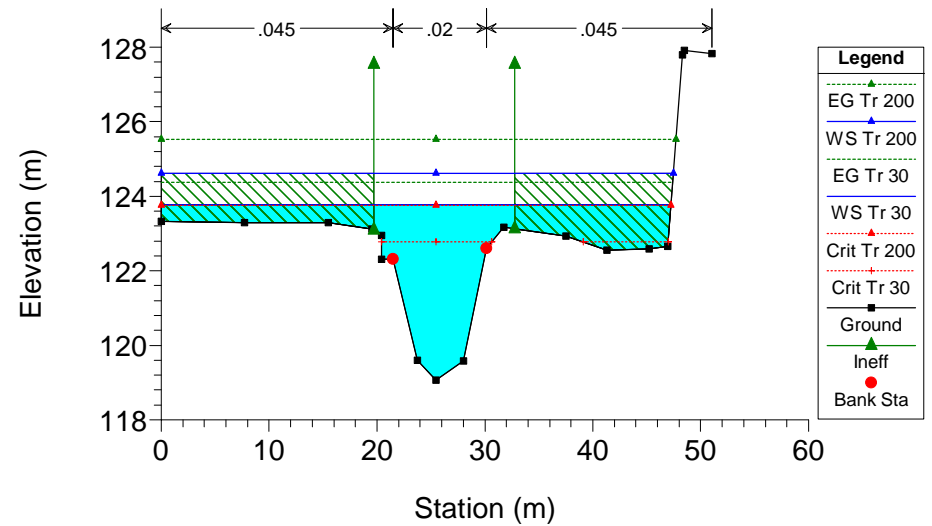
2075_Torrente Chiesimone 2 Plan: Ante Operam 03/11/2017

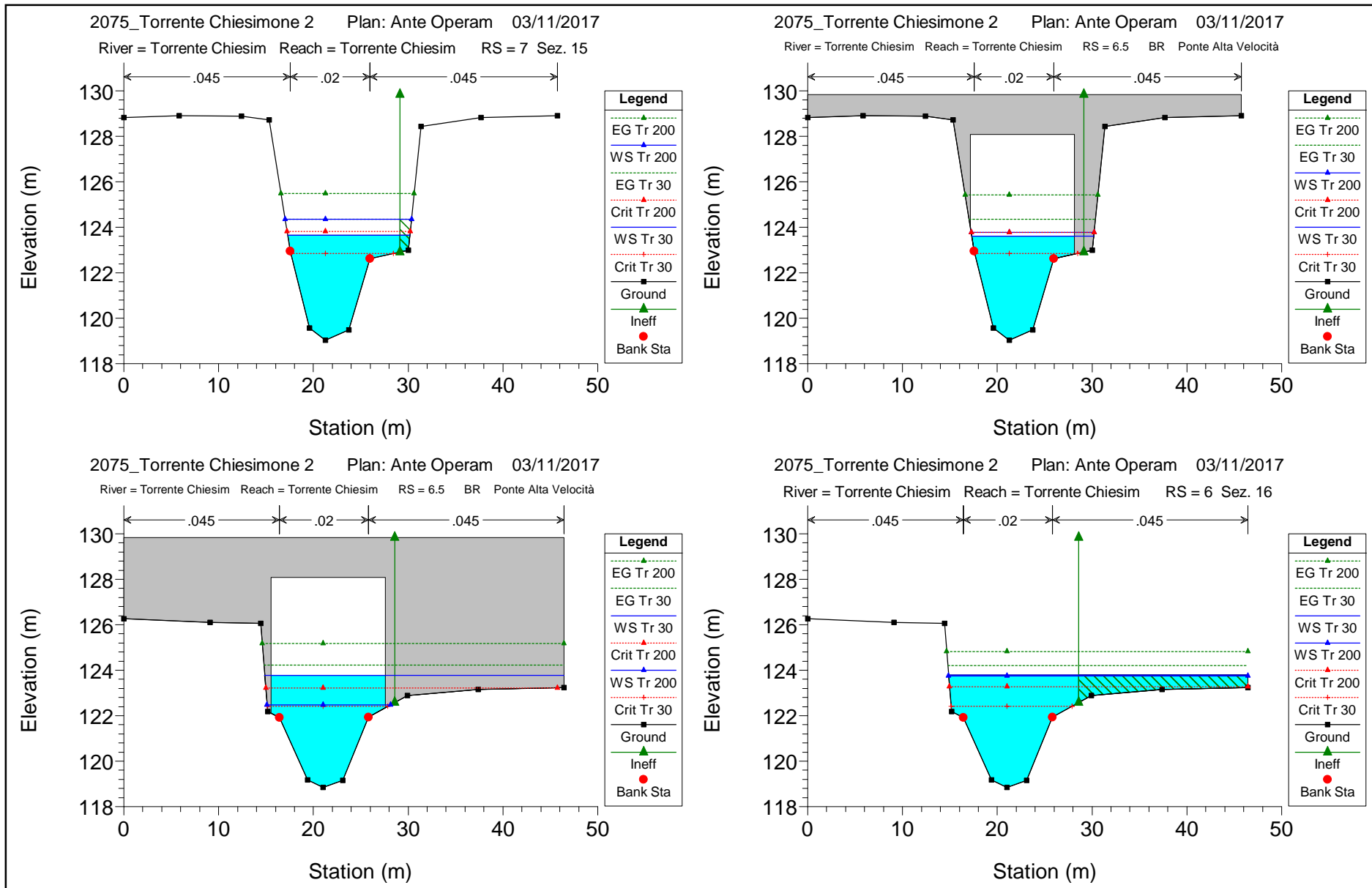
River = Torrente Chiesim Reach = Torrente Chiesim RS = 8.5 BR Ponte Ferrovia

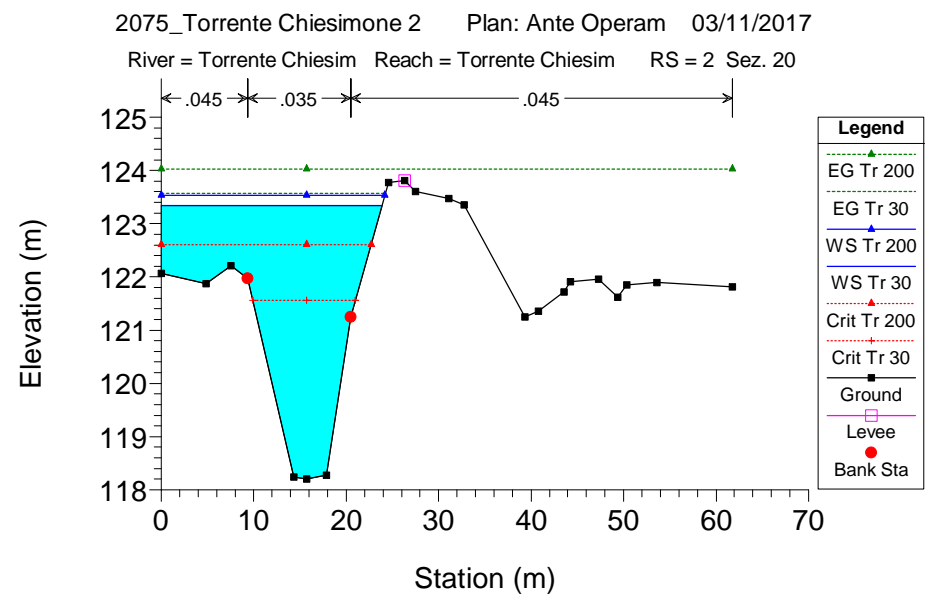
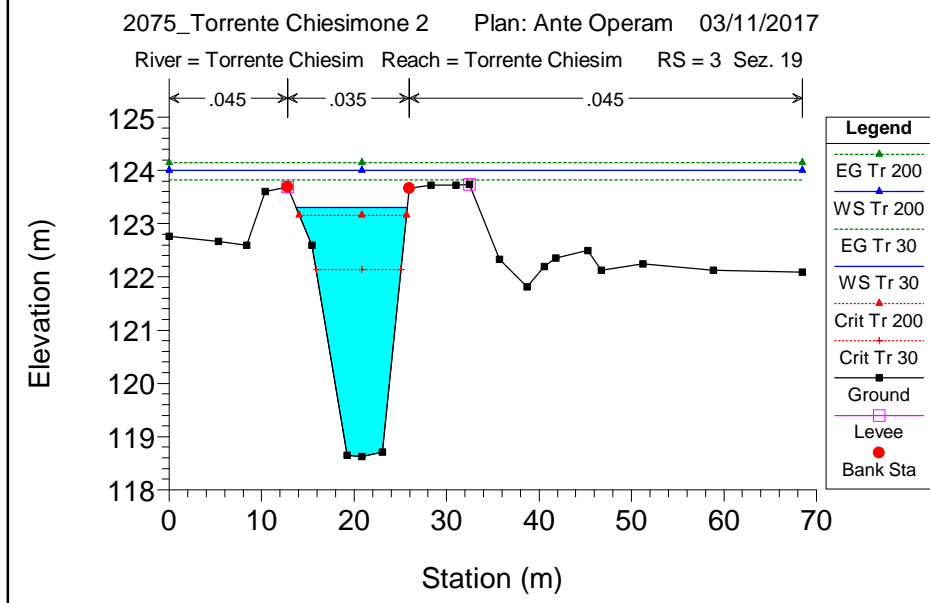
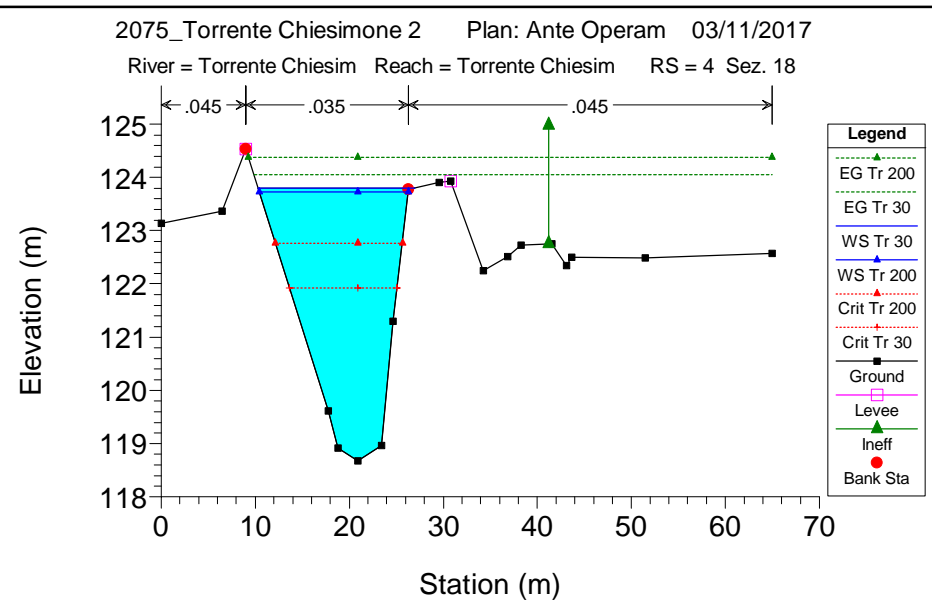
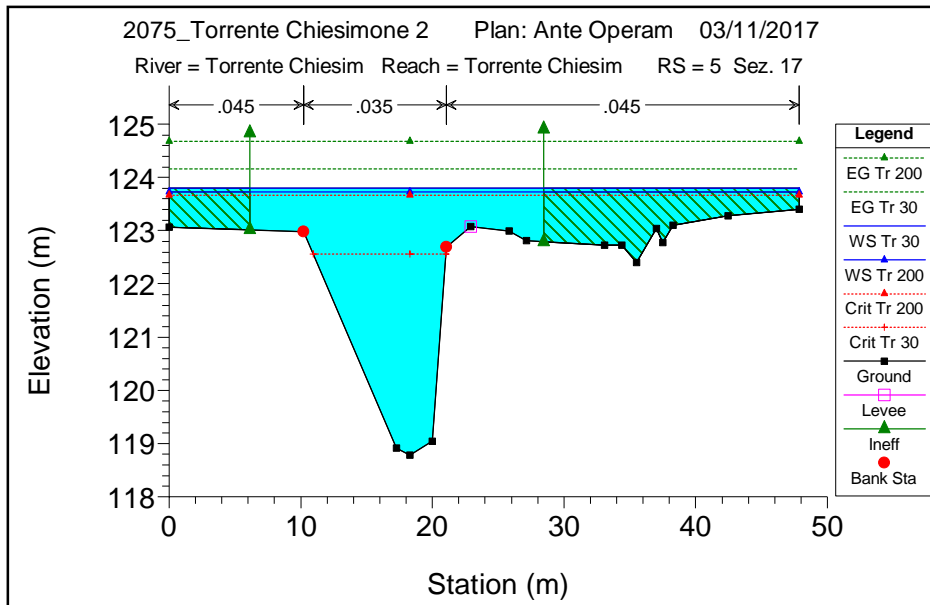


2075_Torrente Chiesimone 2 Plan: Ante Operam 03/11/2017

River = Torrente Chiesim Reach = Torrente Chiesim RS = 8 Sez. 14

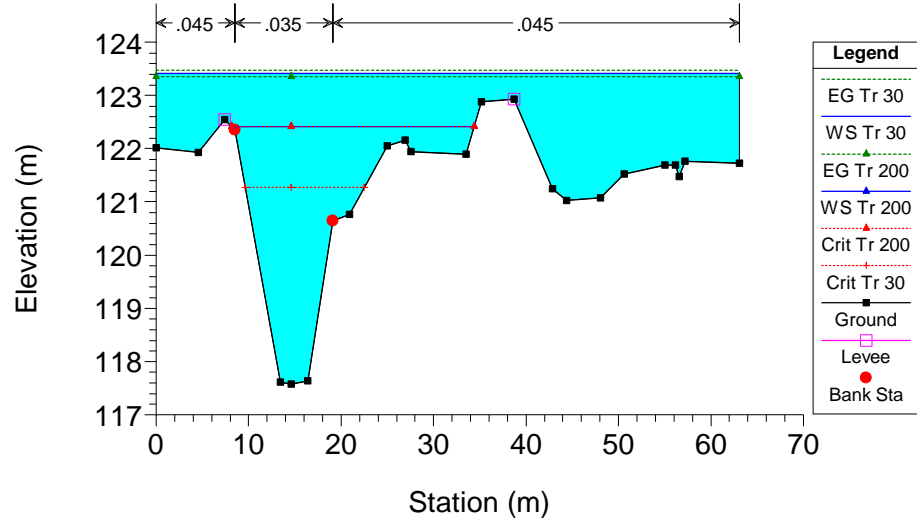






2075_Torrente Chiesimone 2 Plan: Ante Operam 03/11/2017

River = Torrente Chiesim Reach = Torrente Chiesim RS = 1 Sez. 21



OPERA N. 2075 TORRENTE

CHIESIMONE

POST OPERAM

HEC-RAS Plan: PO-tomb-muro21 River: Torrente Chiesim Reach: Torrente Chiesim

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
Torrente Chiesim	21	Sez. 1	Tr 30	110.90	120.39	125.72	123.95	125.89	0.001176	1.94	74.28	55.02	0.34
Torrente Chiesim	21	Sez. 1	Tr 200	174.70	120.39	127.32	124.72	127.41	0.000412	1.50	163.06	55.21	0.22
Torrente Chiesim	20	Sez. 2	Tr 30	110.90	120.19	125.71	123.56	125.85	0.000918	1.78	82.43	54.86	0.30
Torrente Chiesim	20	Sez. 2	Tr 200	174.70	120.19	127.32	124.37	127.39	0.000357	1.42	174.07	57.28	0.20
Torrente Chiesim	19	Sez. 3	Tr 30	110.90	120.12	125.69	123.45	125.82	0.000853	1.73	86.56	57.48	0.29
Torrente Chiesim	19	Sez. 3	Tr 200	174.70	120.12	127.32	124.27	127.38	0.000330	1.37	179.91	57.48	0.19
Torrente Chiesim	18.9		Tr 30	110.90	120.08	125.57	123.49	125.81	0.001260	2.19	55.05	17.29	0.35
Torrente Chiesim	18.9		Tr 200	174.70	120.08	127.08	124.40	127.36	0.001021	2.44	81.05	17.29	0.33
Torrente Chiesim	18.5		Bridge										
Torrente Chiesim	18	Sez. 4	Tr 30	110.90	119.95	124.77	122.88	125.08	0.002263	2.46	45.26	12.96	0.39
Torrente Chiesim	18	Sez. 4	Tr 200	174.70	119.95	126.09	123.65	126.46	0.002149	2.77	71.79	28.66	0.38
Torrente Chiesim	17.5		Tr 30	110.90	119.90	124.79	122.48	125.05	0.001612	2.22	49.97	11.24	0.34
Torrente Chiesim	17.5		Tr 200	174.70	119.90	126.06	123.25	126.44	0.002053	2.72	64.25	11.25	0.36
Torrente Chiesim	17.3		Bridge										
Torrente Chiesim	15.5		Tr 30	110.90	119.82	124.72	122.37	124.98	0.001711	2.26	49.17	10.78	0.34
Torrente Chiesim	15.5		Tr 200	174.70	119.82	125.98	123.15	126.37	0.002238	2.79	62.67	10.80	0.37
Torrente Chiesim	15	Sez. 7	Tr 30	110.90	119.82	124.82	122.92	124.94	0.000944	1.71	77.15	29.77	0.28
Torrente Chiesim	15	Sez. 7	Tr 200	174.70	119.82	126.16	123.84	126.29	0.000720	1.75	117.22	29.77	0.25
Torrente Chiesim	14	Sez. 8	Tr 30	110.90	119.64	124.40	123.24	124.87	0.003260	3.09	37.51	14.04	0.53
Torrente Chiesim	14	Sez. 8	Tr 200	174.70	119.64	125.66	124.13	126.22	0.002599	3.40	56.71	15.91	0.50
Torrente Chiesim	13	Sez. 9	Tr 30	110.90	119.51	124.37	123.03	124.77	0.003098	2.81	39.48	13.13	0.52
Torrente Chiesim	13	Sez. 9	Tr 200	174.70	119.51	125.66	123.91	126.12	0.002740	3.02	57.80	14.93	0.49
Torrente Chiesim	12	Sez. 10	Tr 30	110.90	119.29	124.33	122.86	124.67	0.002612	2.61	42.50	14.23	0.48
Torrente Chiesim	12	Sez. 10	Tr 200	174.70	119.29	125.63	123.72	126.03	0.002287	2.81	62.23	15.85	0.45
Torrente Chiesim	11	Sez. 11	Tr 30	110.90	119.10	124.38	122.62	124.61	0.001587	2.13	52.11	17.16	0.39

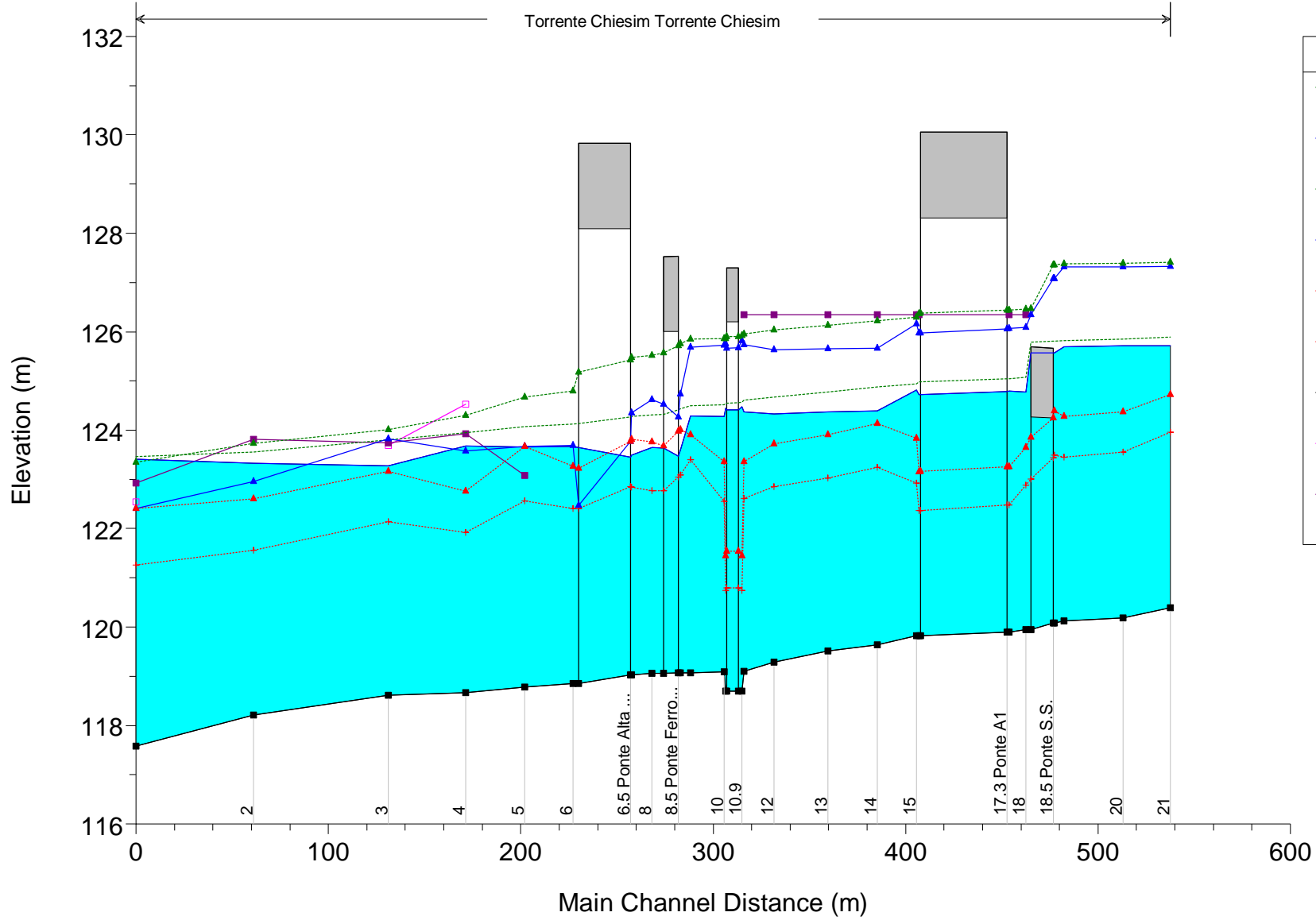
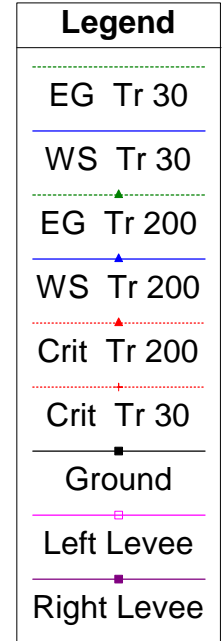
HEC-RAS Plan: PO-tomb-muro21 River: Torrente Chiesim Reach: Torrente Chiesim (Continued)

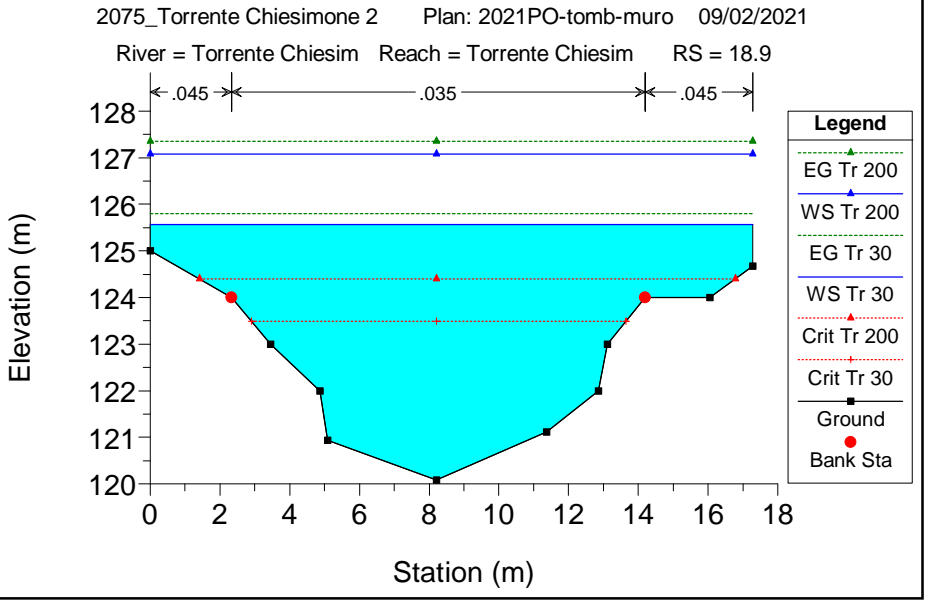
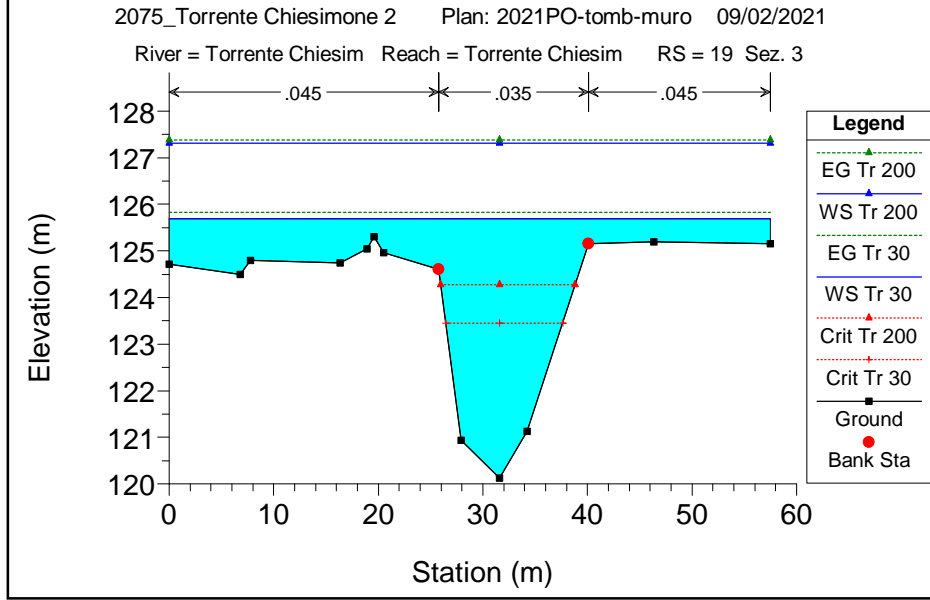
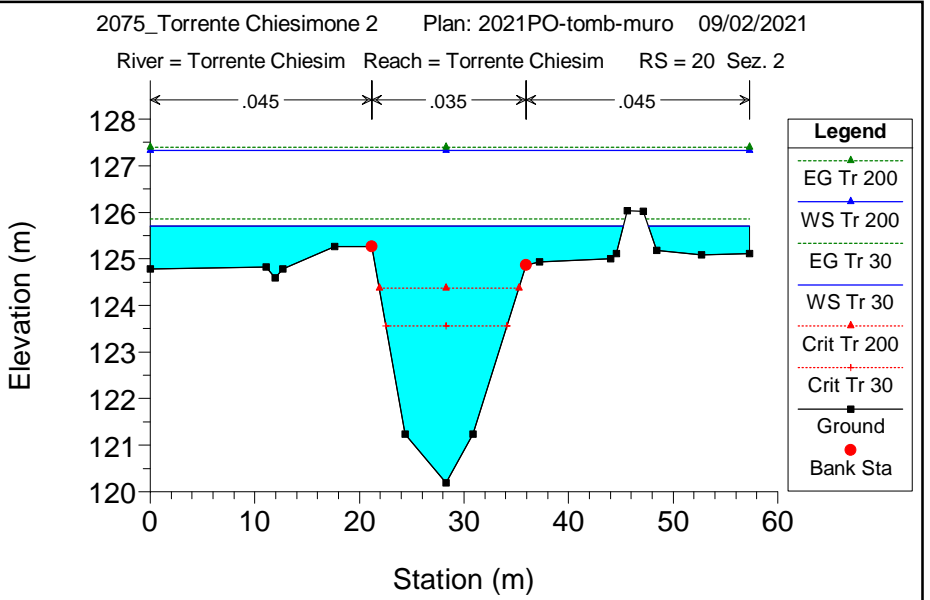
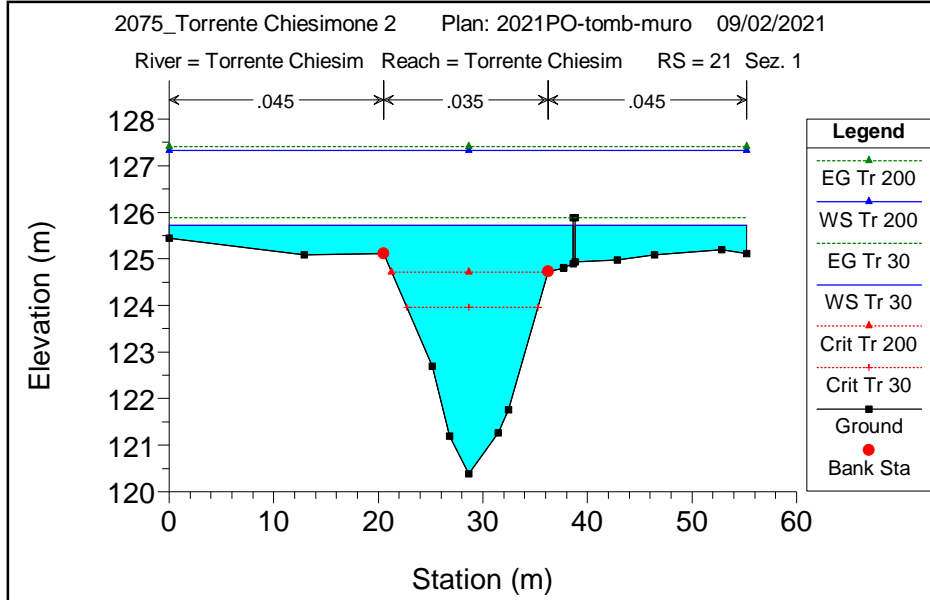
Reach	River Sta		Profile	Q Total (m3/s)	Min Ch El (m)	W.S. Elev (m)	Crit W.S. (m)	E.G. Elev (m)	E.G. Slope (m/m)	Vel Chnl (m/s)	Flow Area (m2)	Top Width (m)	Froude # Chl
Torrente Chiesim	11	Sez. 11	Tr 200	174.70	119.10	125.73	123.36	125.96	0.001101	2.16	91.55	33.81	0.33
Torrente Chiesim	10.9		Tr 30	110.90	118.70	124.48	120.75	124.56	0.000412	1.34	92.96	34.70	0.19
Torrente Chiesim	10.9		Tr 200	174.70	118.70	125.82	121.45	125.92	0.000386	1.51	139.54	34.70	0.19
Torrente Chiesim	10.5		Bridge										
Torrente Chiesim	10.1		Tr 30	110.90	118.70	124.45	120.75	124.54	0.000422	1.35	91.98	34.70	0.19
Torrente Chiesim	10.1		Tr 200	174.70	118.70	125.75	121.45	125.86	0.000402	1.53	137.32	34.70	0.19
Torrente Chiesim	10	Sez. 12	Tr 30	110.90	119.09	124.28	122.55	124.52	0.001604	2.23	59.81	48.70	0.39
Torrente Chiesim	10	Sez. 12	Tr 200	174.70	119.09	125.72	123.36	125.86	0.000678	1.84	130.13	48.70	0.27
Torrente Chiesim	9	Sez. 13	Tr 30	110.90	119.07	124.28	123.40	124.50	0.000552	2.36	83.29	44.86	0.39
Torrente Chiesim	9	Sez. 13	Tr 200	174.70	119.07	125.69	123.91	125.85	0.000320	2.22	146.47	45.24	0.31
Torrente Chiesim	8.9		Tr 30	110.90	119.07	123.60	123.09	124.43	0.002163	4.11	30.24	16.42	0.72
Torrente Chiesim	8.9		Tr 200	174.70	119.07	124.73	124.01	125.76	0.001876	4.65	44.09	16.42	0.70
Torrente Chiesim	8.5		Bridge										
Torrente Chiesim	8	Sez. 14	Tr 30	110.90	119.06	123.65	122.77	124.31	0.001488	3.62	33.58	47.22	0.62
Torrente Chiesim	8	Sez. 14	Tr 200	174.70	119.06	124.62	123.76	125.52	0.001530	4.33	46.17	47.47	0.66
Torrente Chiesim	7	Sez. 15	Tr 30	110.90	119.03	123.49	122.84	124.27	0.002072	3.95	29.96	12.79	0.70
Torrente Chiesim	7	Sez. 15	Tr 200	174.70	119.03	124.35	123.82	125.48	0.002247	4.80	40.23	13.33	0.75
Torrente Chiesim	6.5		Bridge										
Torrente Chiesim	6	Sez. 16	Tr 30	110.90	118.85	123.67	122.41	124.12	0.000854	3.04	41.21	31.56	0.50
Torrente Chiesim	6	Sez. 16	Tr 200	174.70	118.85	123.69	123.27	124.80	0.002073	4.75	41.53	31.57	0.78
Torrente Chiesim	5	Sez. 17	Tr 30	110.90	118.78	123.66	122.56	124.07	0.003290	2.93	43.18	47.85	0.52
Torrente Chiesim	5	Sez. 17	Tr 200	174.70	118.78	123.67	123.67	124.67	0.008070	4.59	43.37	47.85	0.81
Torrente Chiesim	4	Sez. 18	Tr 30	110.90	118.67	123.68	121.92	123.95	0.001970	2.30	48.19	15.73	0.42
Torrente Chiesim	4	Sez. 18	Tr 200	174.70	118.67	123.58	122.76	124.30	0.005339	3.75	46.62	15.49	0.69

HEC-RAS Plan: PO-tomb-muro21 River: Torrente Chiesim Reach: Torrente Chiesim (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
Torrente Chiesim	3	Sez. 19	Tr 30	110.90	118.62	123.28	122.14	123.81	0.004709	3.22	34.46	11.96	0.61
Torrente Chiesim	3	Sez. 19	Tr 200	174.70	118.62	123.83	123.17	124.01	0.002117	2.30	110.22	68.46	0.41
Torrente Chiesim	2	Sez. 20	Tr 30	110.90	118.21	123.33	121.56	123.56	0.001322	2.24	59.26	23.85	0.36
Torrente Chiesim	2	Sez. 20	Tr 200	174.70	118.21	122.96	122.61	123.73	0.004936	4.05	50.53	23.26	0.69
Torrente Chiesim	1	Sez. 21	Tr 30	110.90	117.58	123.41	121.26	123.47	0.000427	1.31	130.17	63.11	0.20
Torrente Chiesim	1	Sez. 21	Tr 200	174.70	117.58	122.41	122.41	123.35	0.007160	4.50	46.27	26.20	0.79

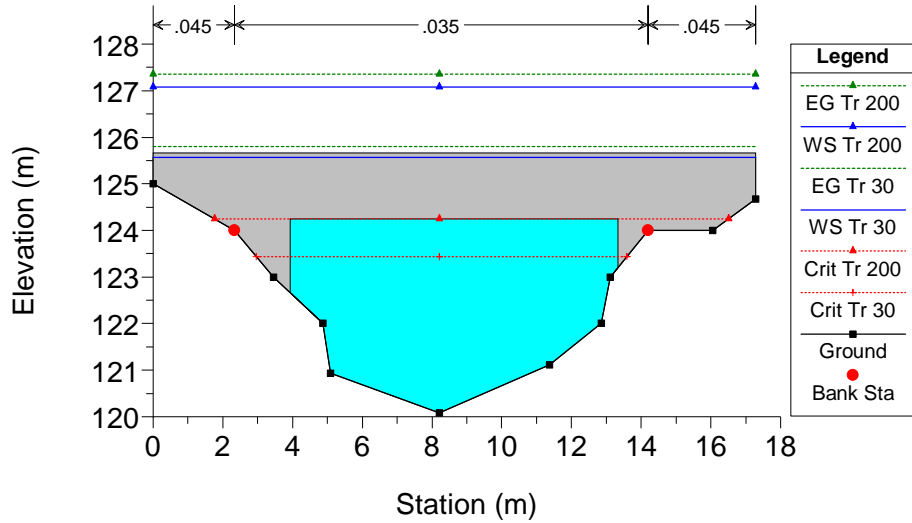
Torrente Chiesim Torrente Chiesim





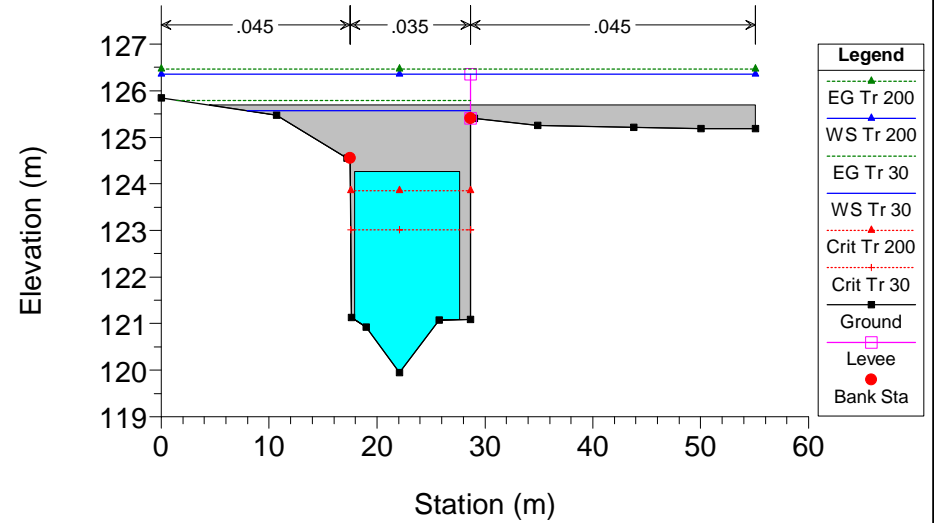
2075_Torrente Chiesimone 2 Plan: 2021PO-tomb-muro 09/02/2021

River = Torrente Chiesim Reach = Torrente Chiesim RS = 18.5 BR Ponte S.S.



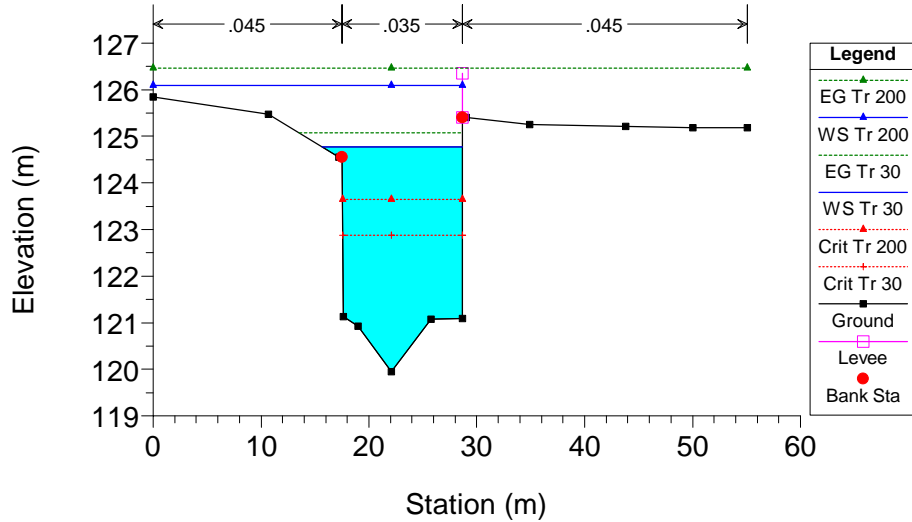
2075_Torrente Chiesimone 2 Plan: 2021PO-tomb-muro 09/02/2021

River = Torrente Chiesim Reach = Torrente Chiesim RS = 18.5 BR Ponte S.S.



2075_Torrente Chiesimone 2 Plan: 2021PO-tomb-muro 09/02/2021

River = Torrente Chiesim Reach = Torrente Chiesim RS = 18 Sez. 4



2075_Torrente Chiesimone 2 Plan: 2021PO-tomb-muro 09/02/2021

River = Torrente Chiesim Reach = Torrente Chiesim RS = 17.5 Sez. 5 copiata 7 m a monte

