



# COMUNE DI AREZZO

## Assessorato Urbanistica

Servizio Pianificazione Urbanistica e Governo del Territorio

Piano Strutturale  
2019



PS

## B Quadro conoscitivo

### B1 Relazione illustrativa - Indagini geologiche e idrauliche

**Sindaco**  
Alessandro Ghinelli

**Assessore all'Urbanistica**  
Marco Sacchetti

**Responsabile del Procedimento**  
Ing. Paolo Frescucci

RTI Raggruppamento Temporaneo di Professionisti

**Studio D:RH Architetti associati**

*Arch. Sergio Dinale*

**Criteria srl**

*Arch. Paolo Falqui*

**Arch. Luca Di Figlia**

**Dott. Pian.t. Matteo Scamporrino**

**Avv. Agostino Zanelli Quarantini**

# B1.2.1c

## San Giuliano - Fascicolo delle sezioni e profili idraulici

Garante dell'informazione e della partecipazione

**Dott.ssa Daniela Farsetti**

Dirigente Servizio Pianificazione Urbanistica  
**Ing. Paolo Frescucci**

Dirigente Servizio Ambiente  
**Ing. Giovanni Baldini**

Dirigente Servizio Progettazione Opere Pubbliche  
**Ing. Antonella Fabbianelli**

Dirigente Progetto per lo sviluppo delle attività economiche negli ambiti Edilizia e SUAP e promozione del territorio  
**Ing. Paolo Frescucci**

Direttore Ufficio Mobilità  
**Ing. Roberto Bernardini**

Direttore Ufficio Programmazione e Sviluppo Economico del Territorio  
**Dott.ssa Stefania Guidelli**

Direttore Ufficio Edilizia  
**Geom. Gianna Pezuoli**

**Ufficio del Piano**

Arch. Omero Angeli  
Dott.ssa Antonella Benocci  
Sig. Matteo Borri  
Dott.ssa Francesca Calabri  
Arch. Fulvia Comanducci  
Arch. Elisabetta Dreassi  
Geol. Alessandro Forzoni  
Geom. Valentina Mazzoni  
Dott. Vincenzo Oliva  
Arch. Laura Pagliai  
Ing. Deborah Romei  
Arch. Laura Rogialli  
Geol. Annalisa Romizi  
Pianificatore Territoriale Lorenzo Spadaccini  
Sig.ra Fiorenza Verdelli

**Gruppo di progettazione**

**Studio D:RH Architetti associati**

Arch. Sergio Dinale  
Arch. Paola Rigonat Hugues  
Arch. Enrico Robazza  
Arch. Kristiana D'Agnolo  
Dott. Pian.t. Giulio Brocco

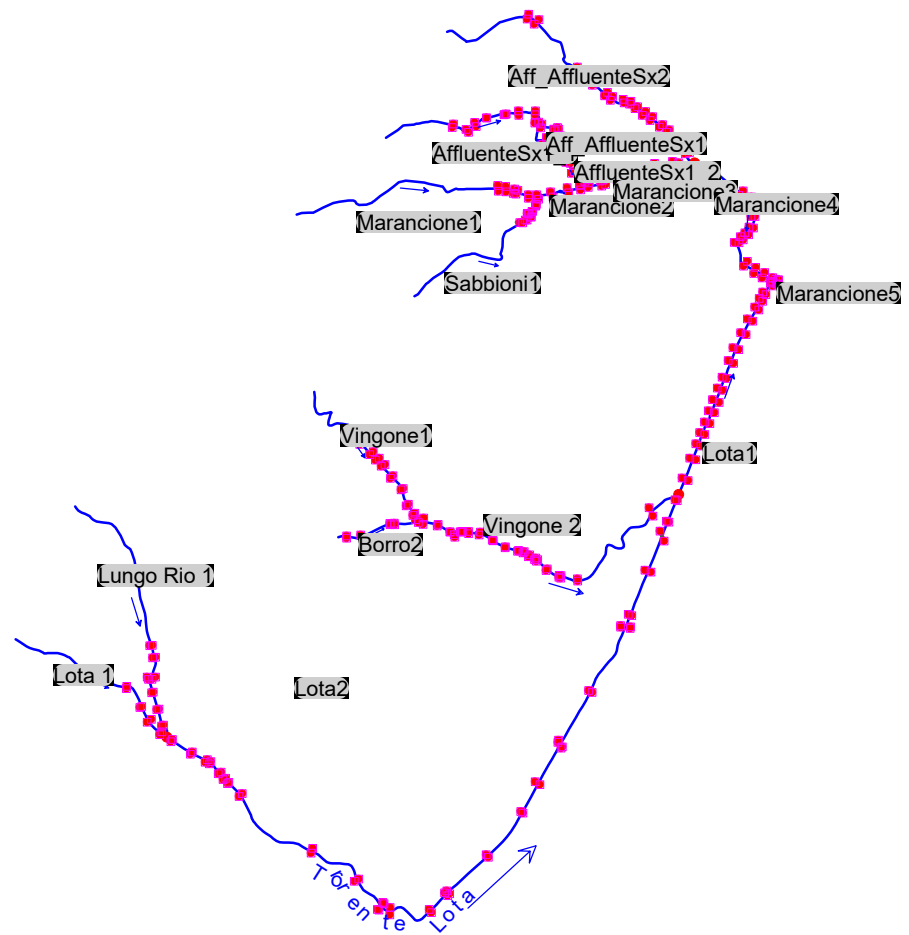
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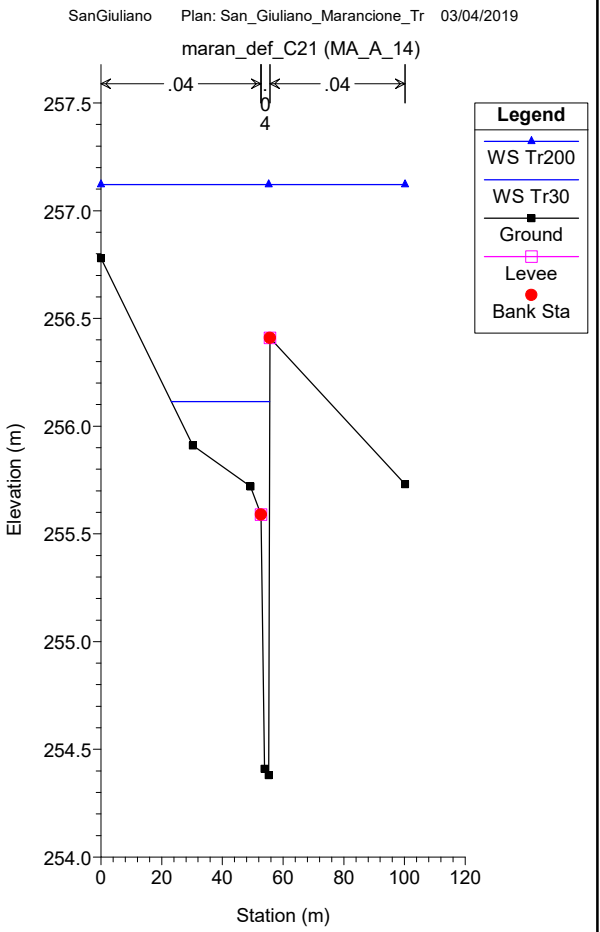
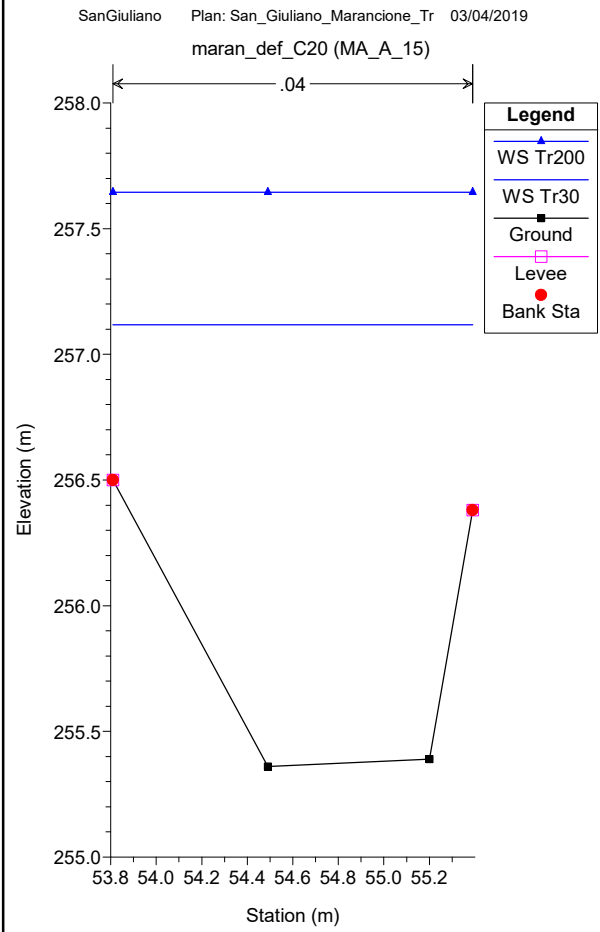
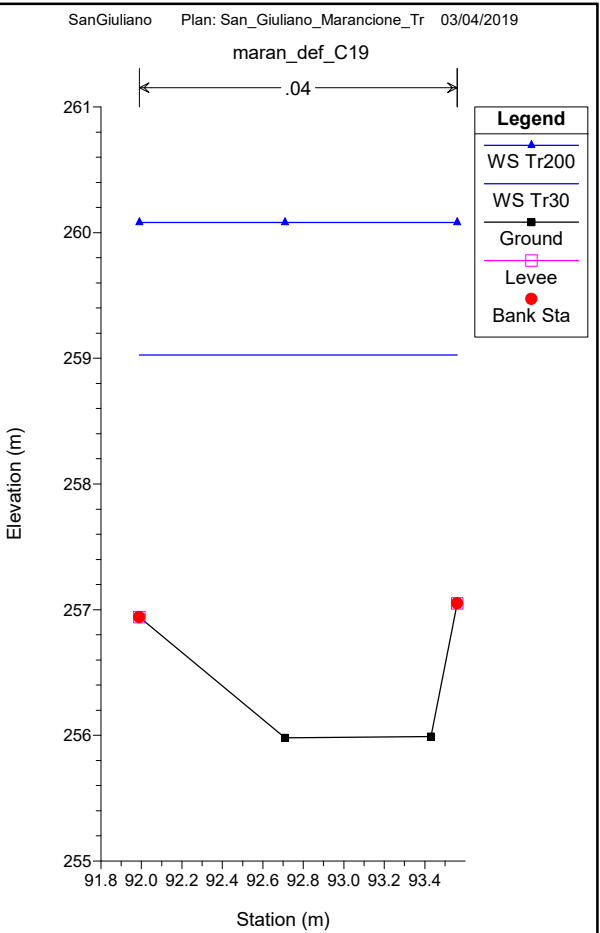
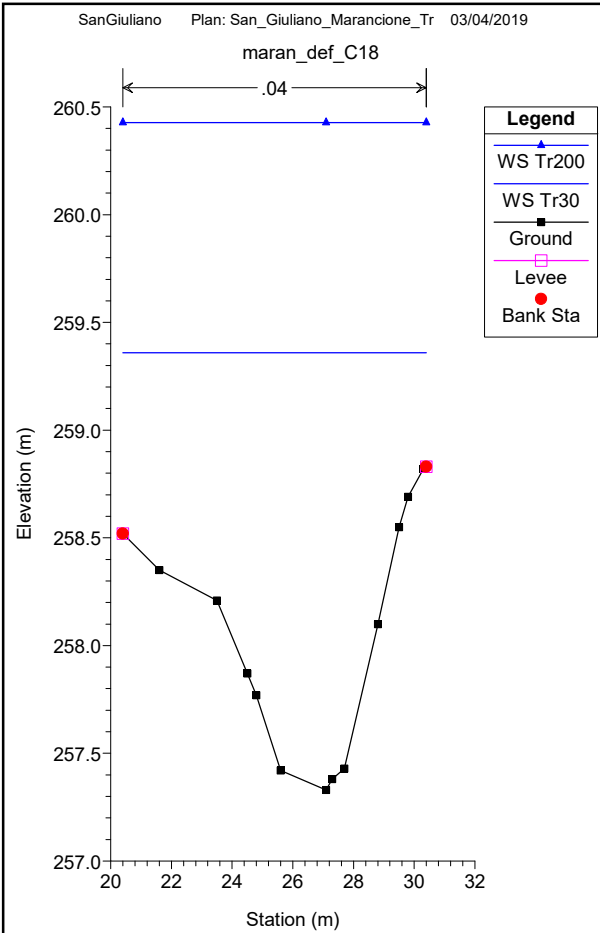
Arch. Paolo Falqui  
Ing. Paolo Bagliani  
Ing. Roberto Ledda  
Biol. Patrizia Carla Sechi  
Geol. Andrea Soriga  
Arch. Laura Zanini  
Dott.ssa Giulia Cubadda  
Dott. Riccardo Frau  
Arch. Veronica Saddi  
Ing. Gianfilippo Serra  
Dott. Vittorio Serra  
Dott.ssa Cinzia Marcella Orrù  
Arch. Salvatore Manca

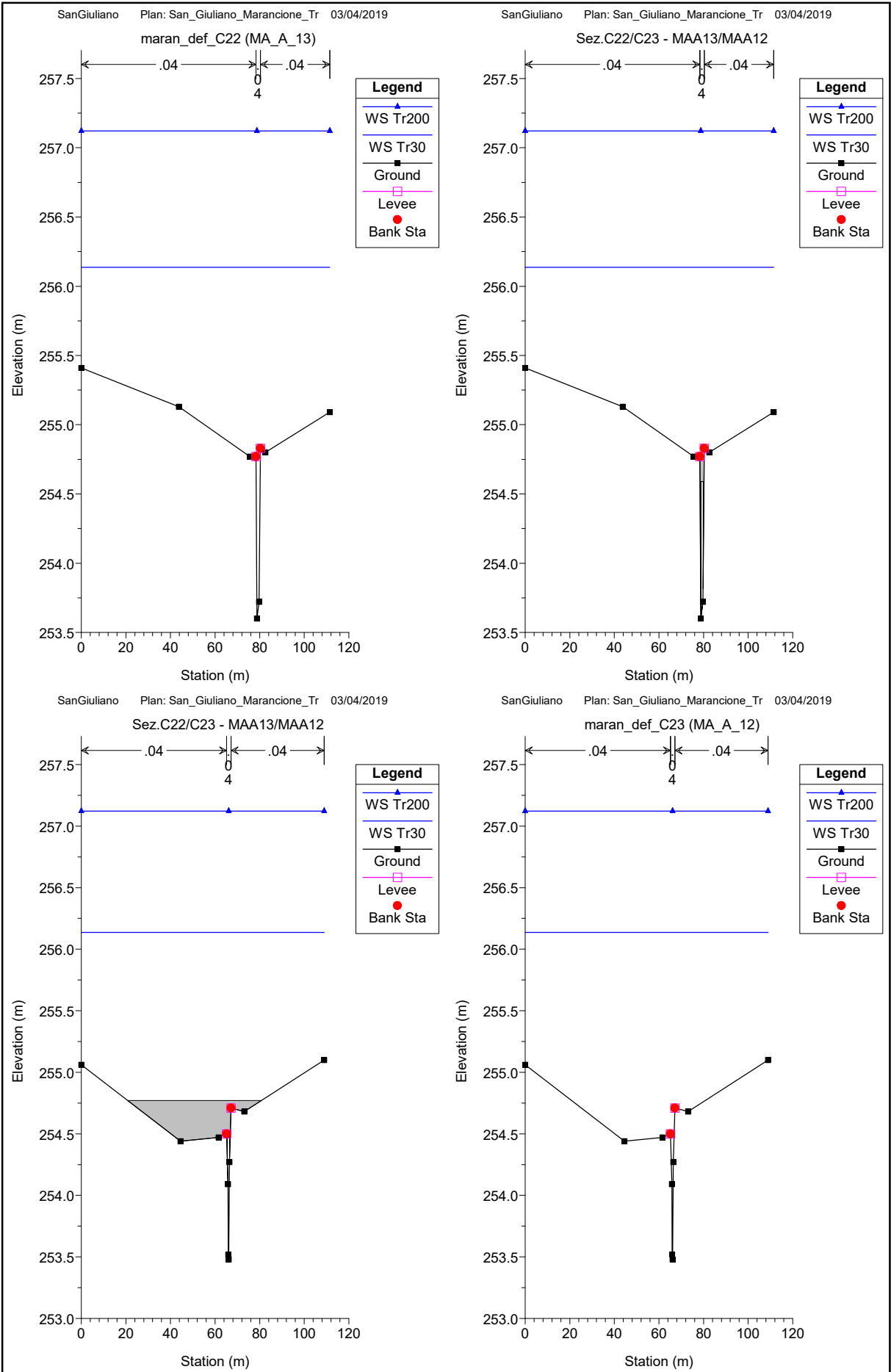
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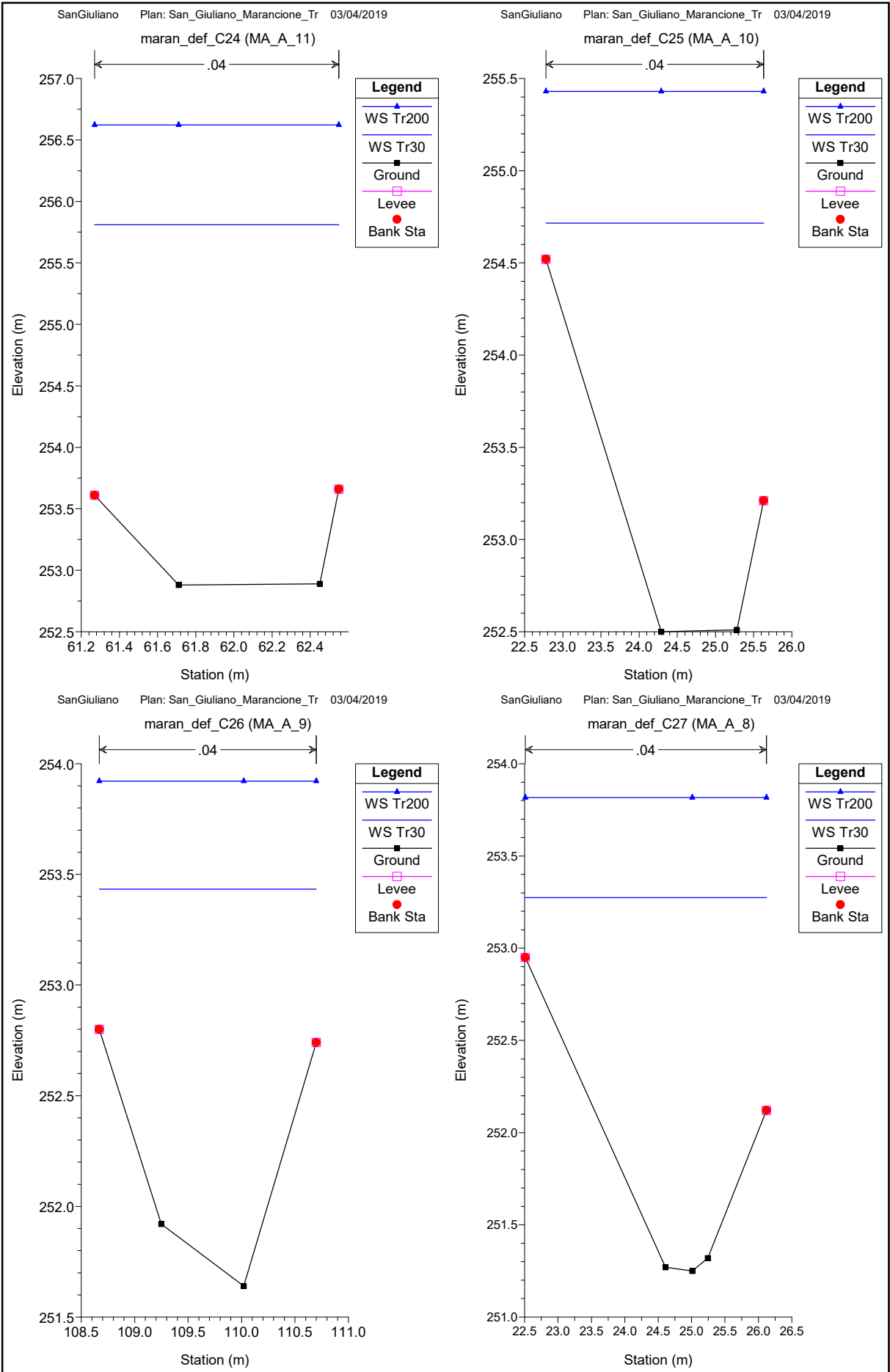
Geol. Maurizio Costa  
Geol. Antonio Pitzalis  
Ing. Nicola Buchignani (Prima STP)  
Ing. Pietro Chiavaccini  
Ing. Elisa Formica

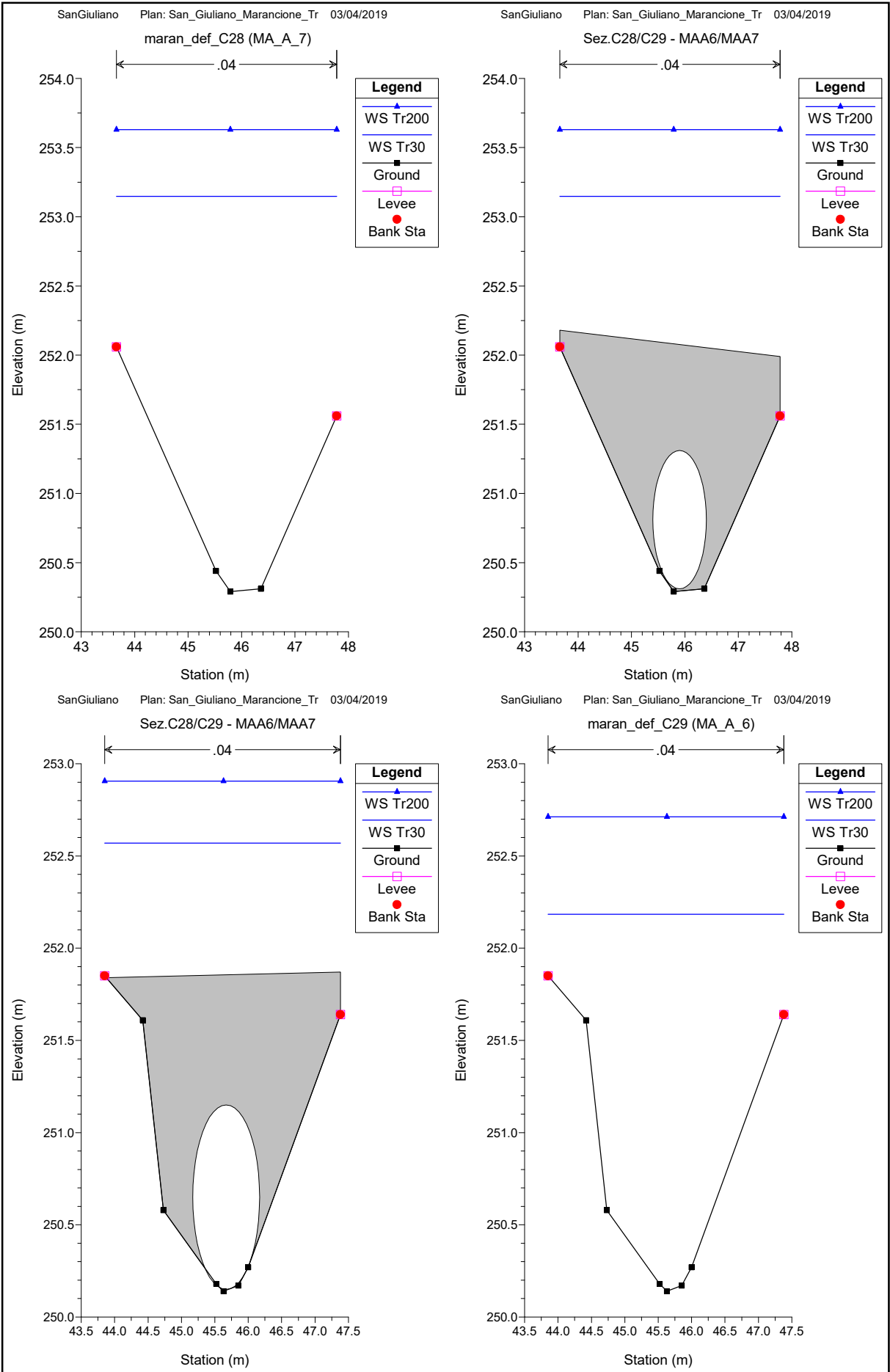
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**Arch Luca Di Figlia**  
**Avv. Agostino Zanelli Quarantini**

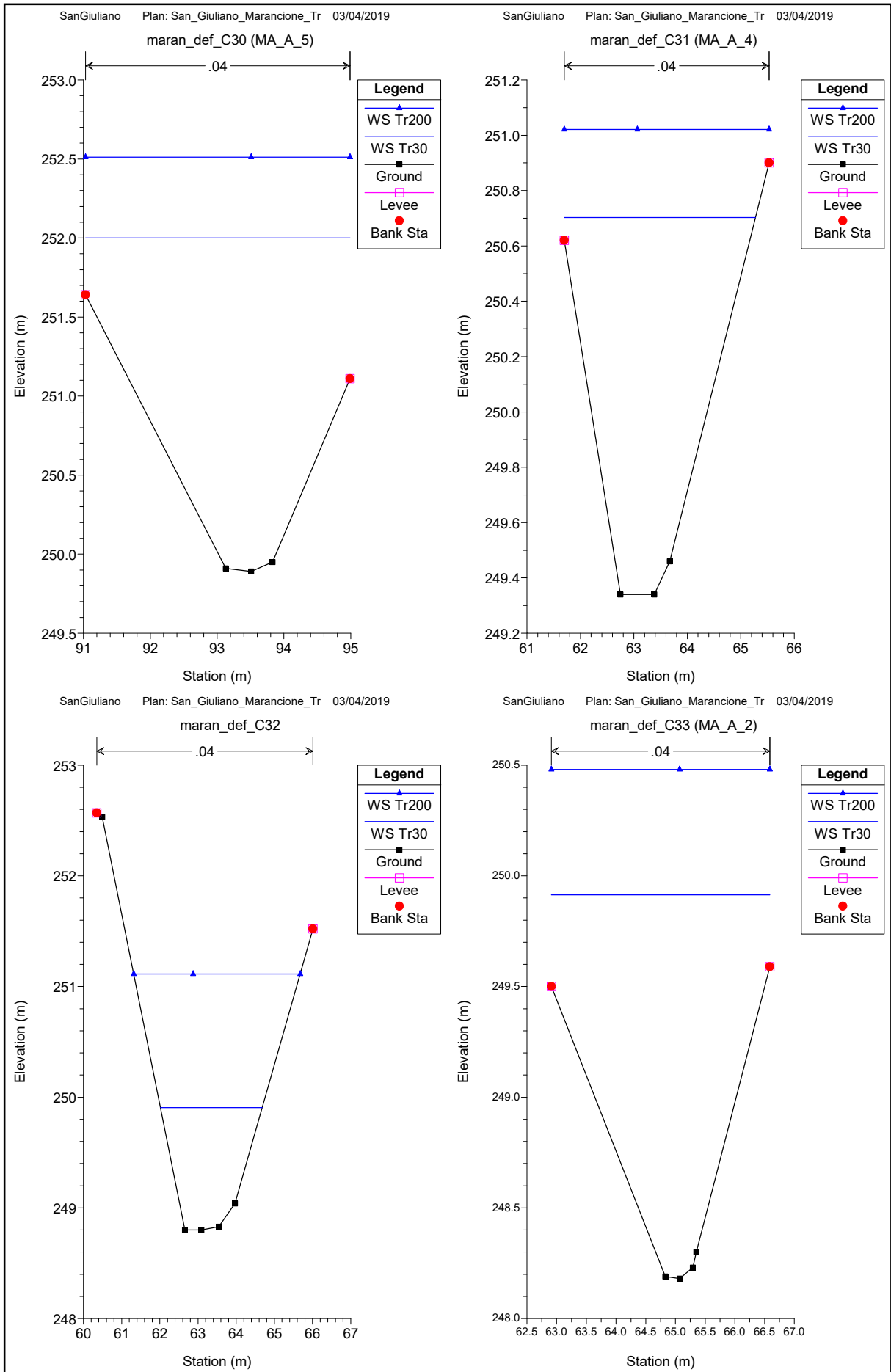




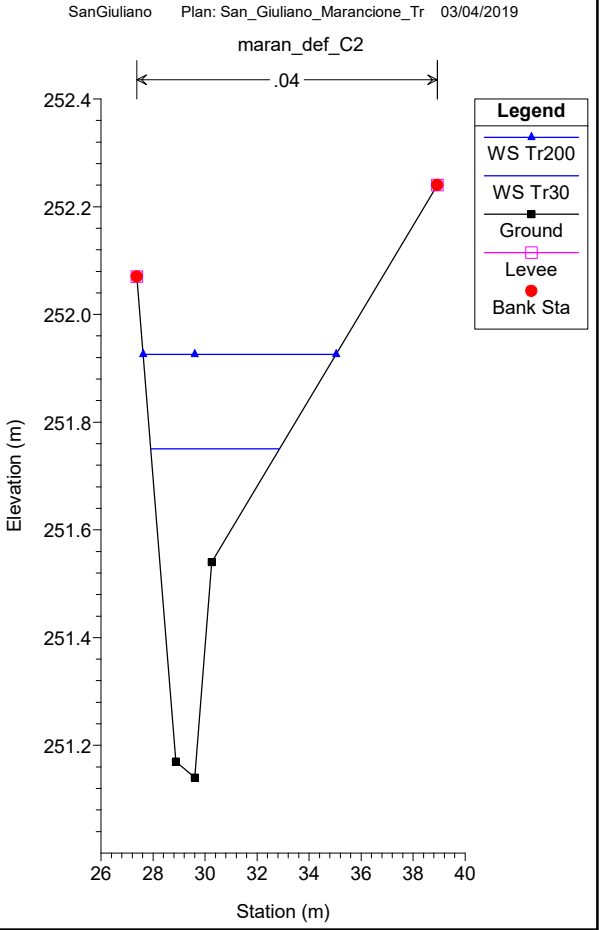
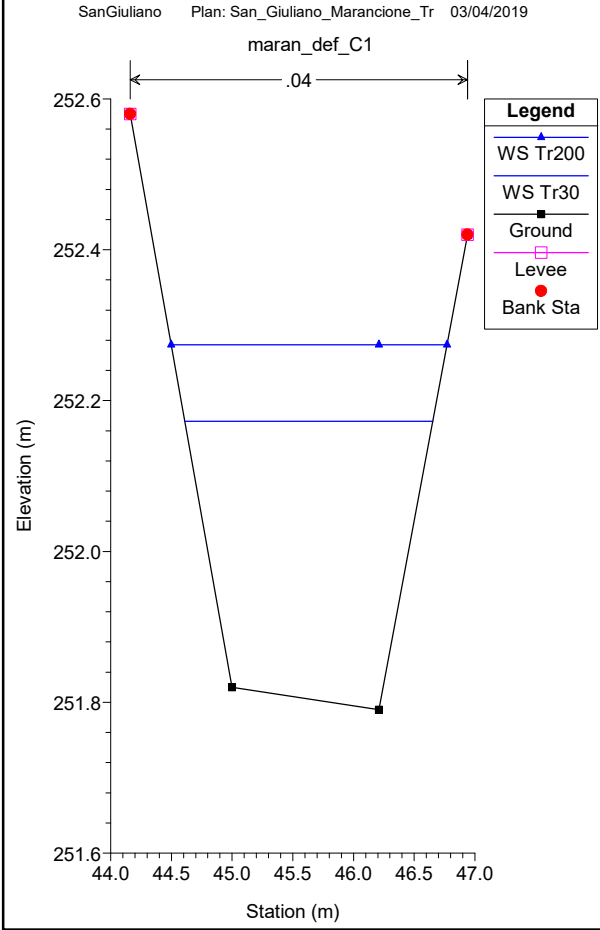
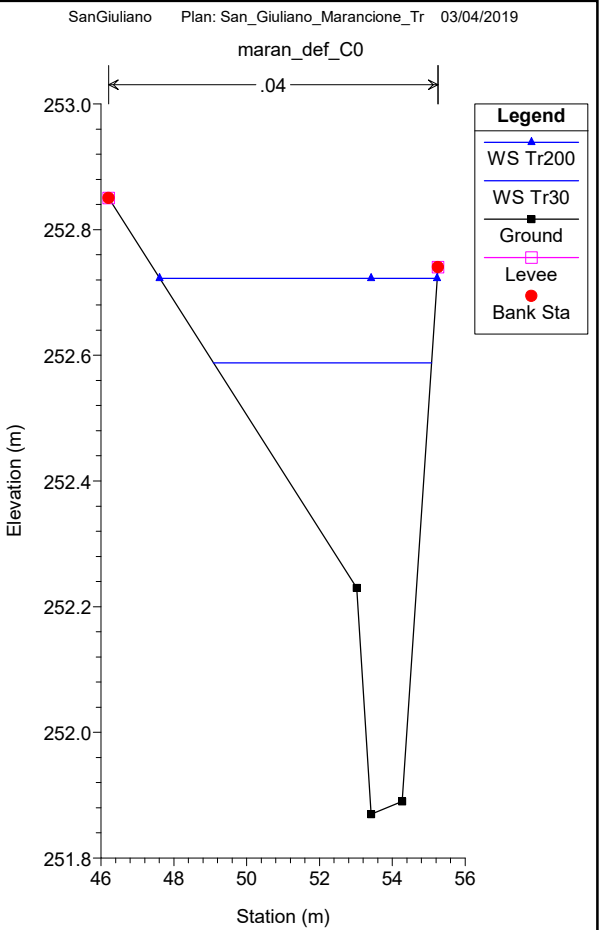
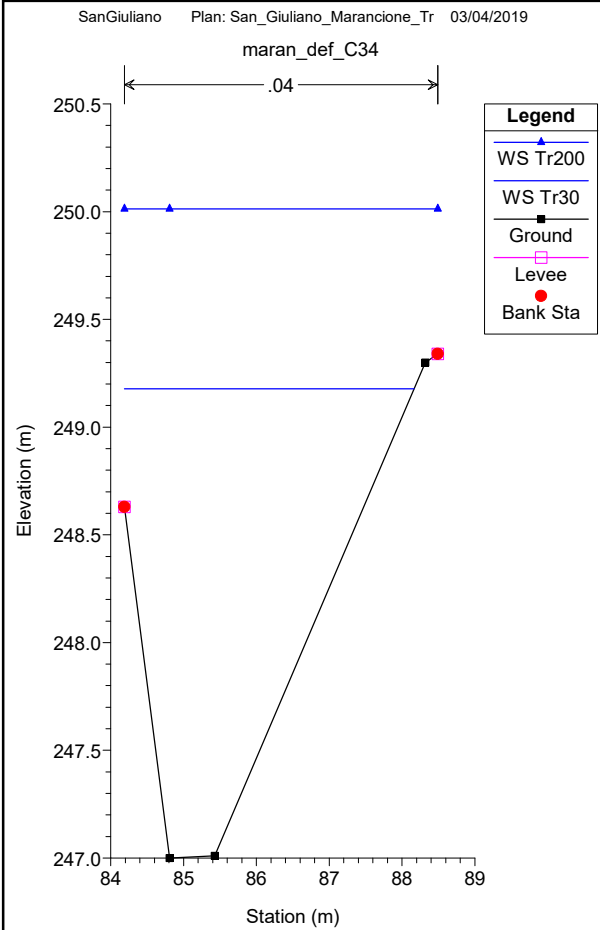


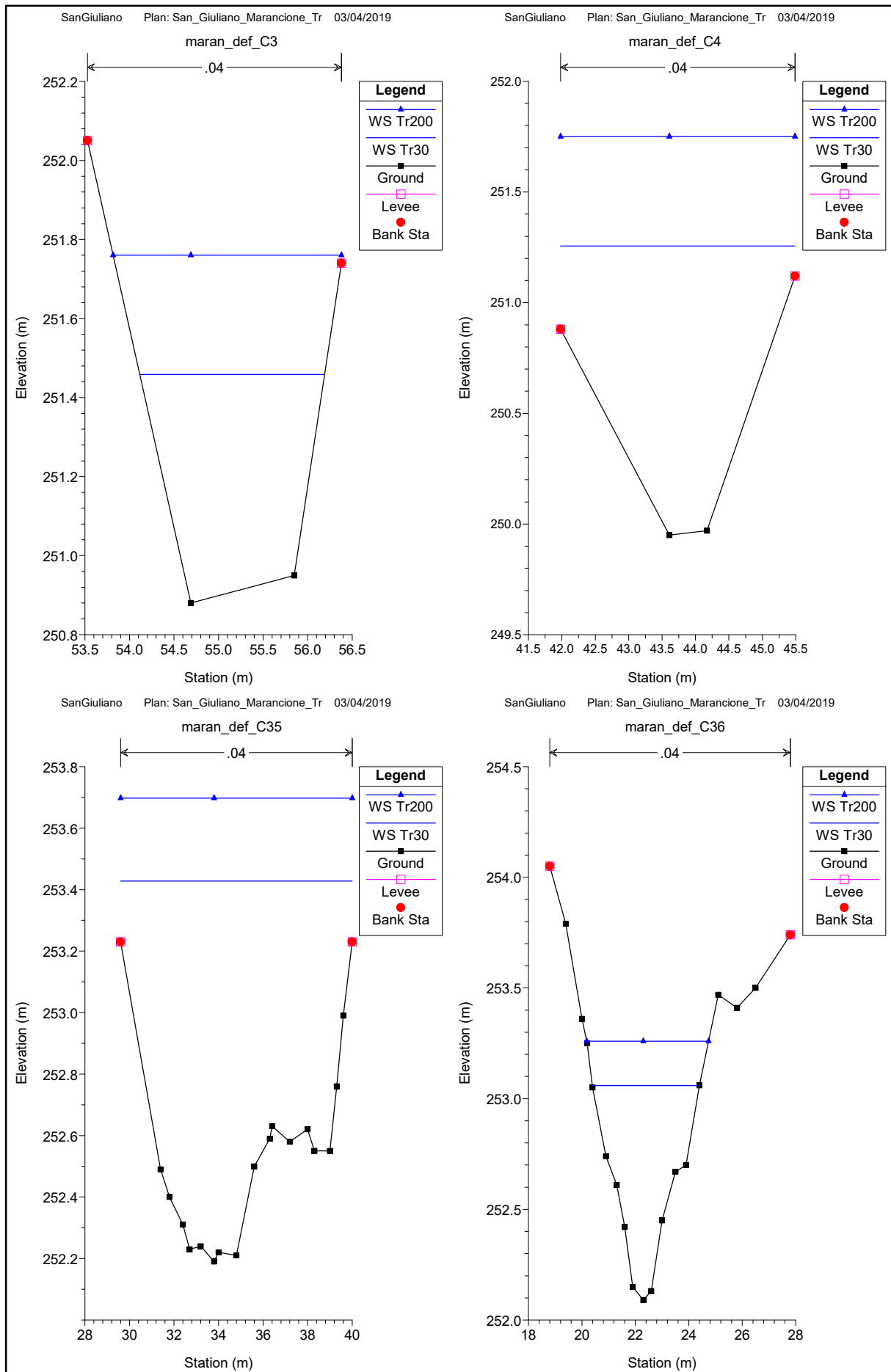


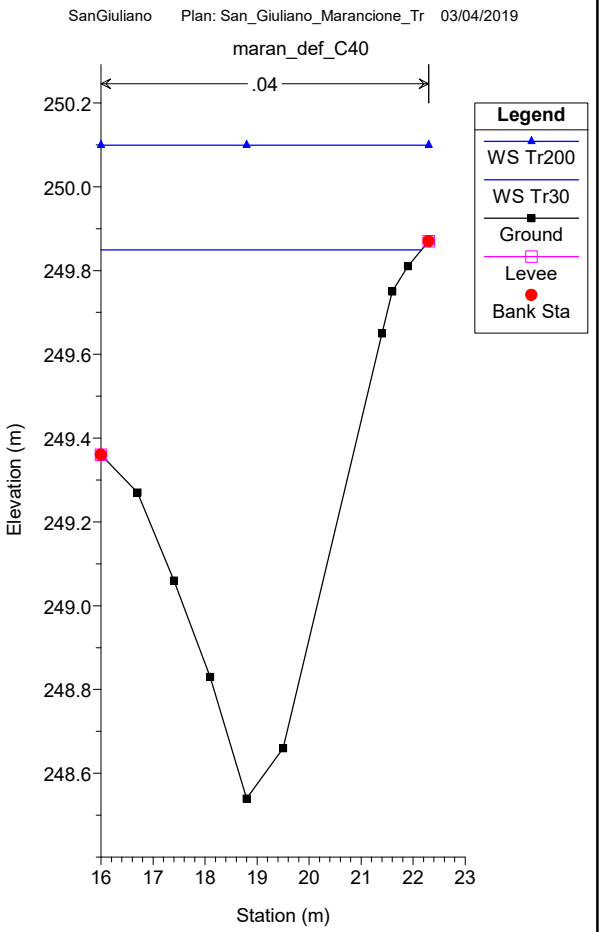
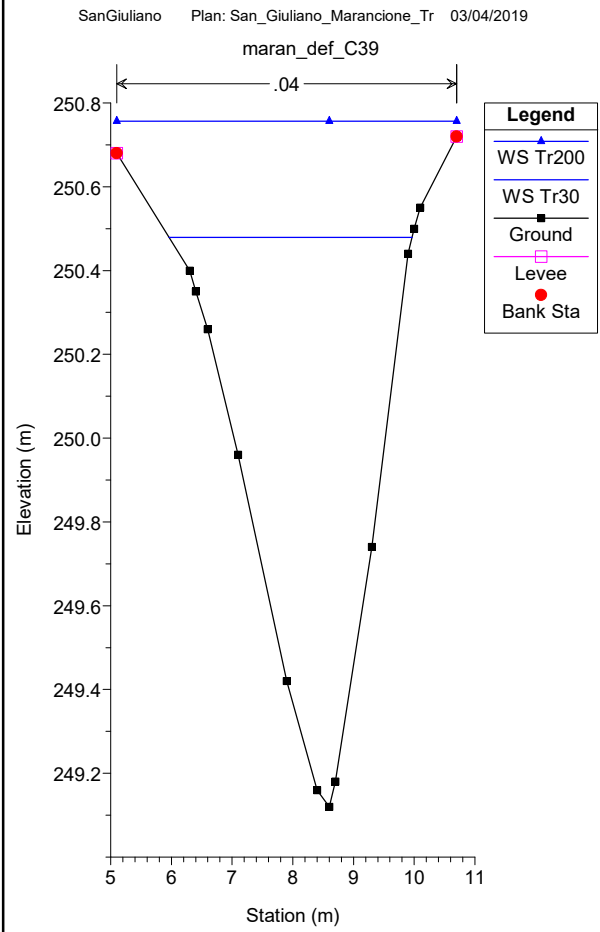
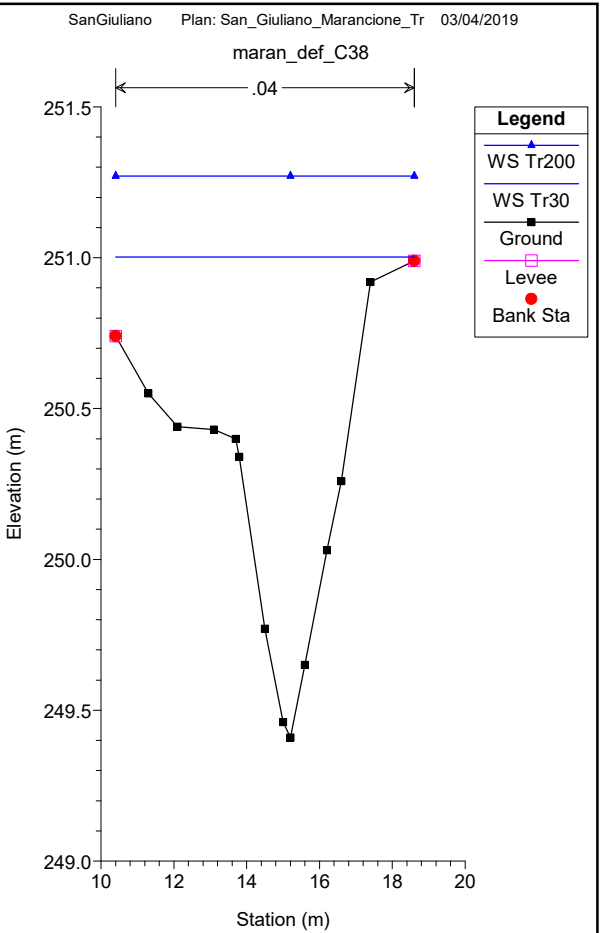
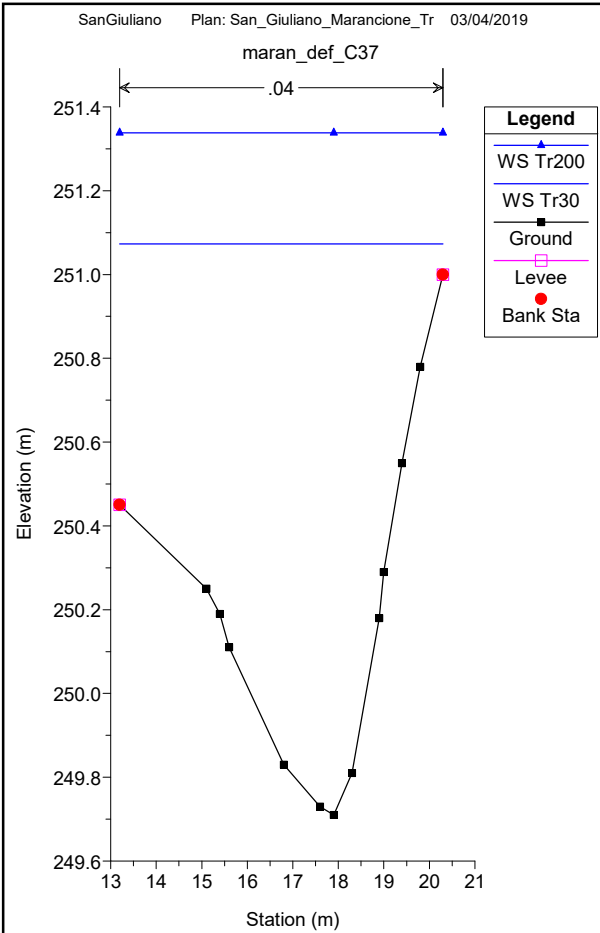


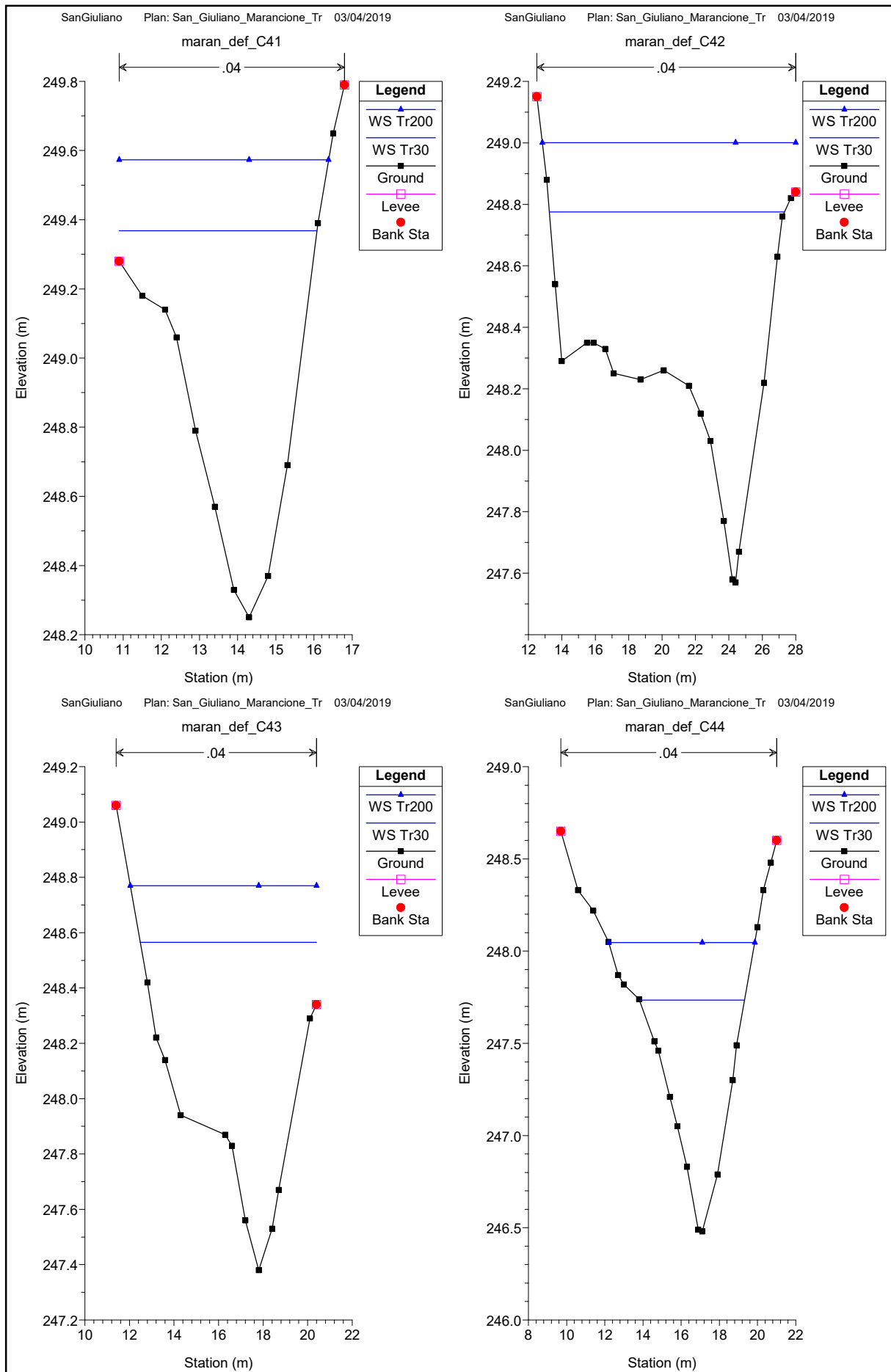


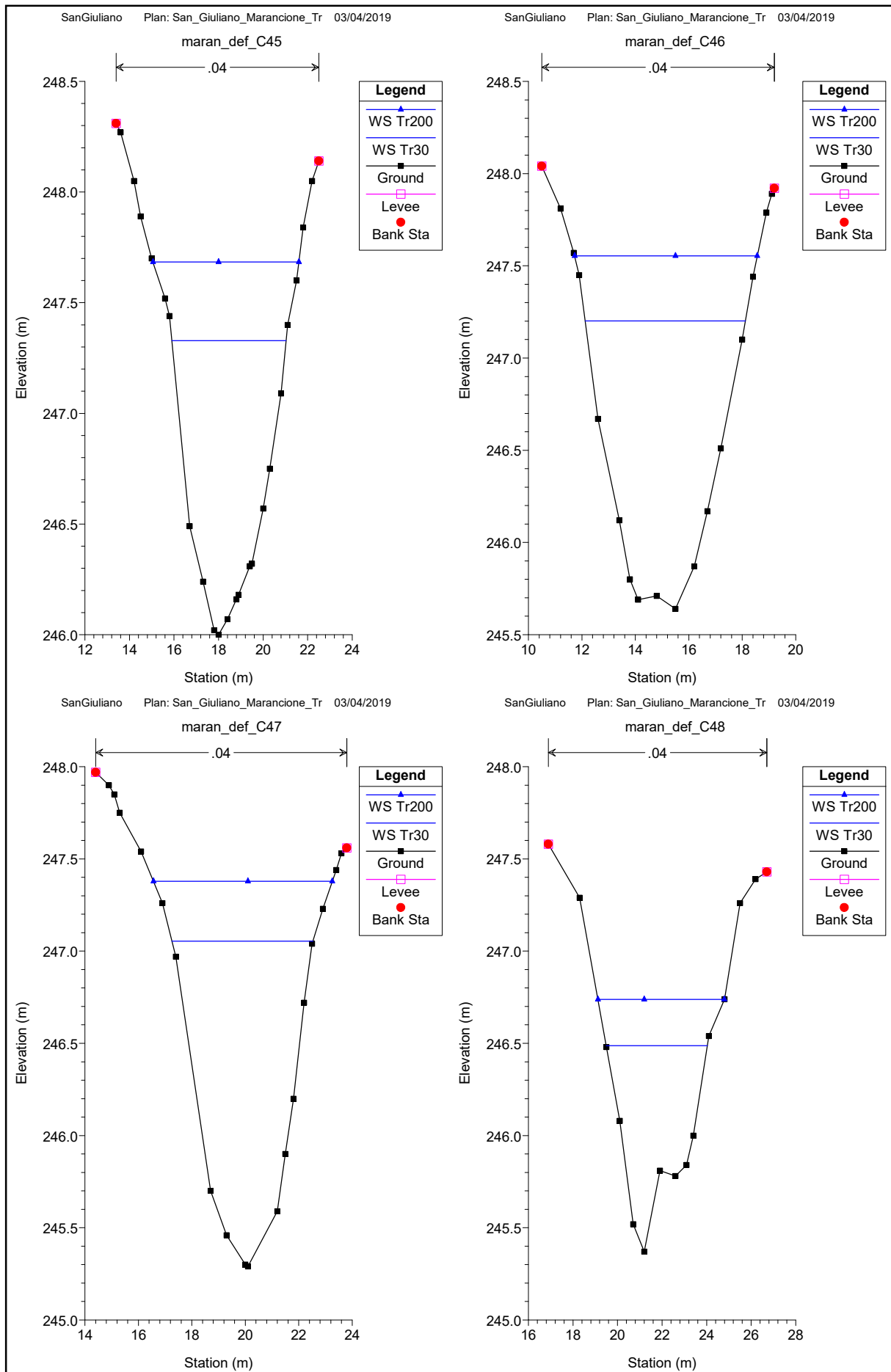


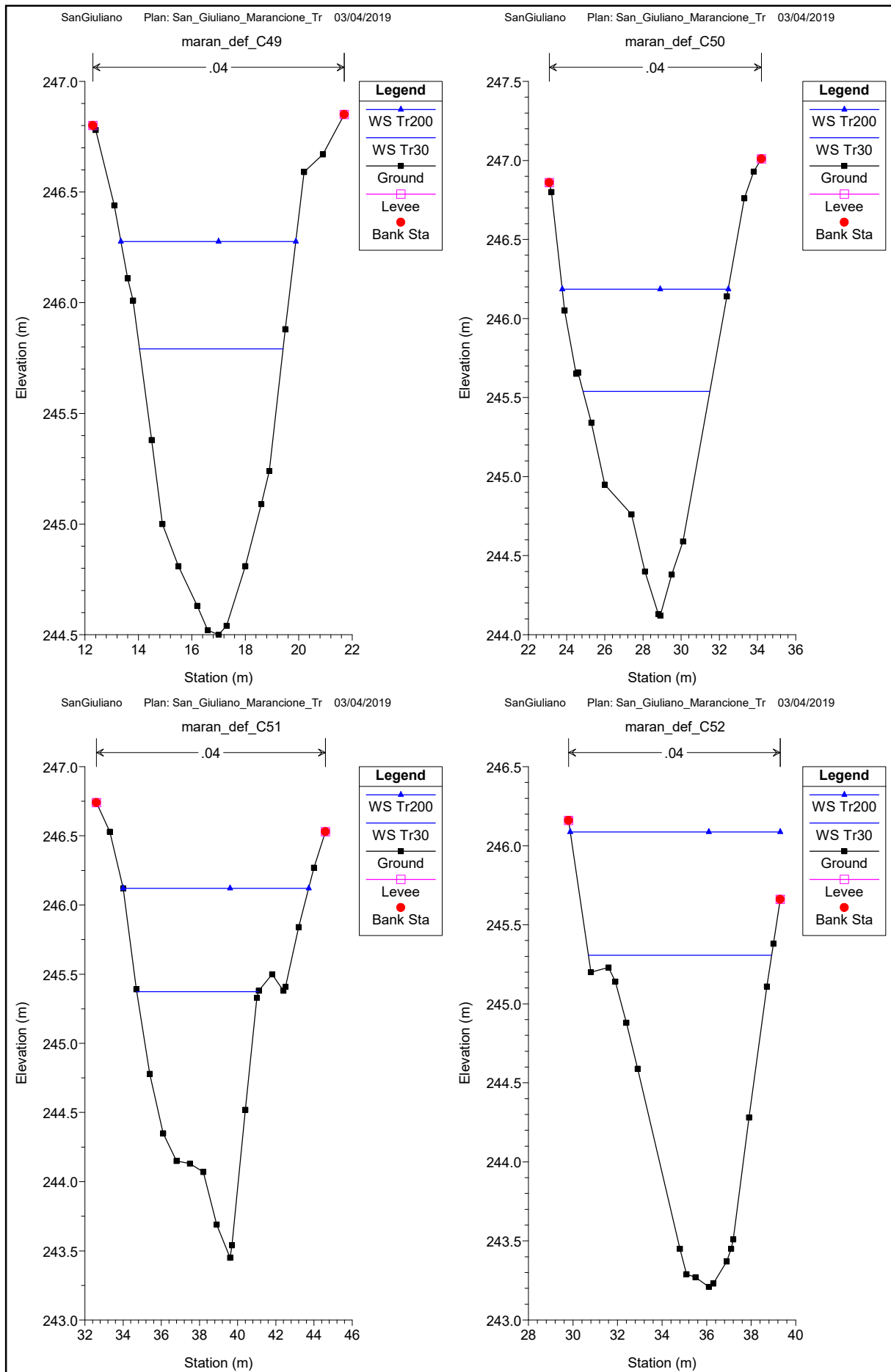


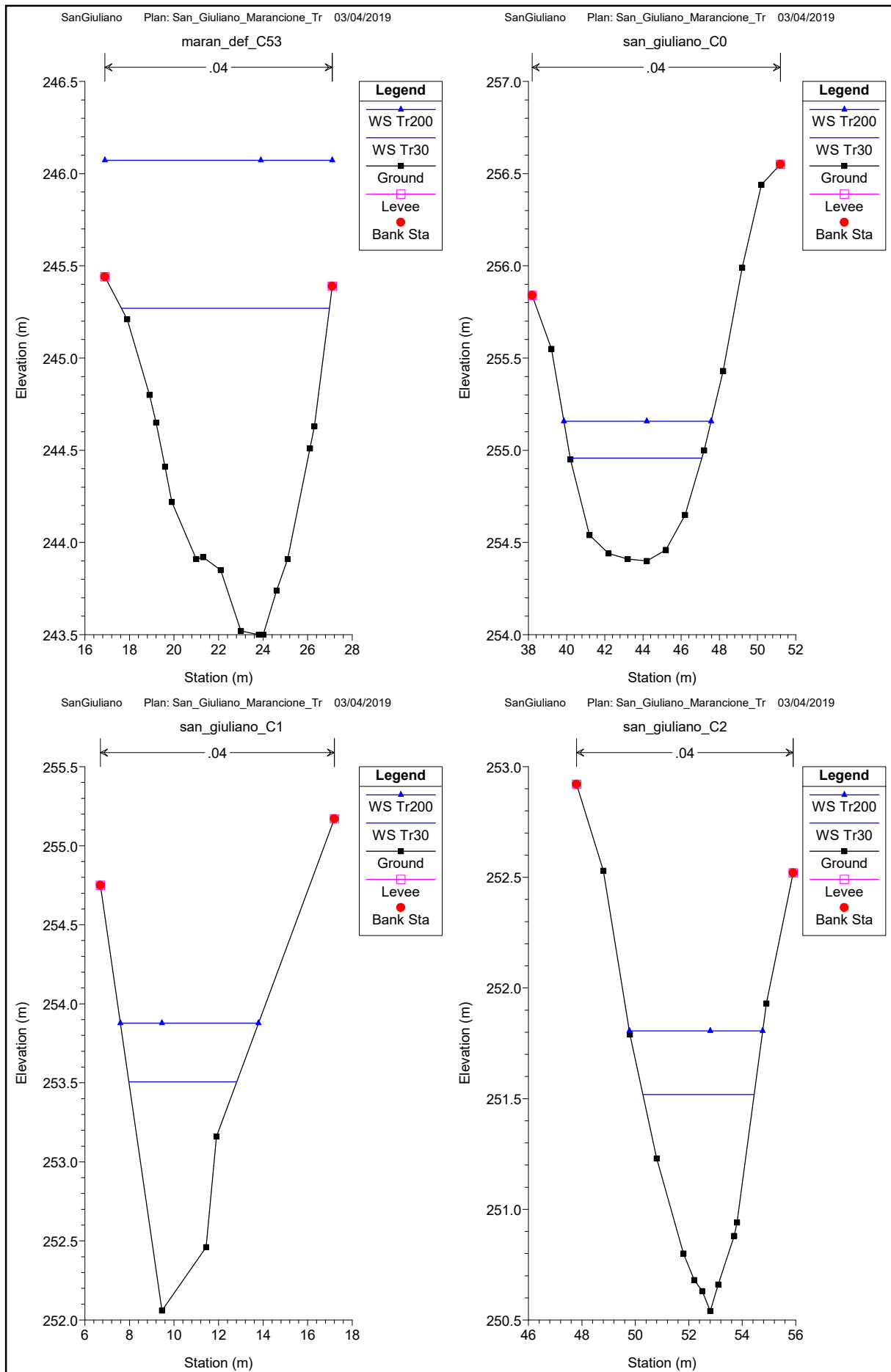


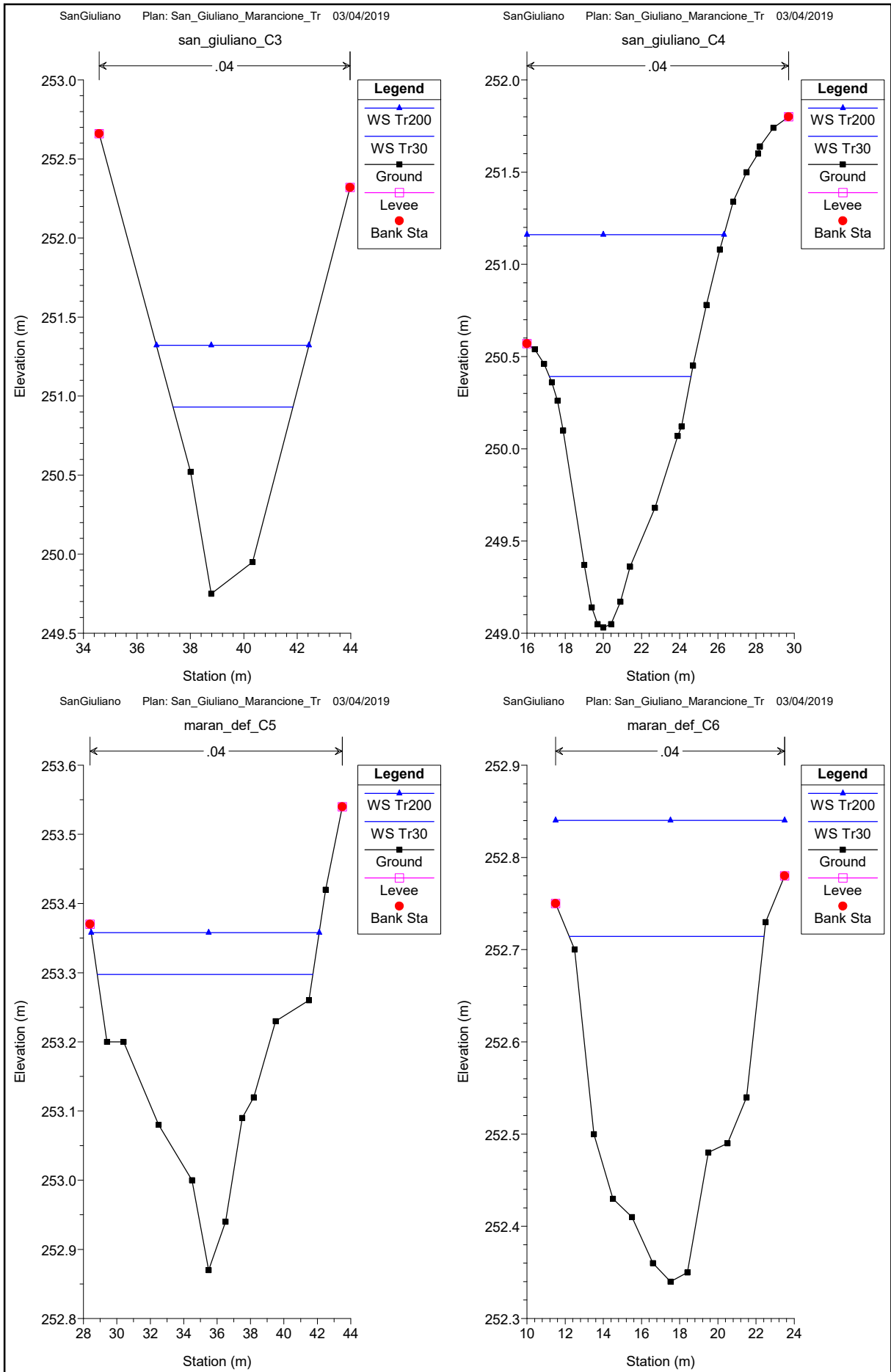




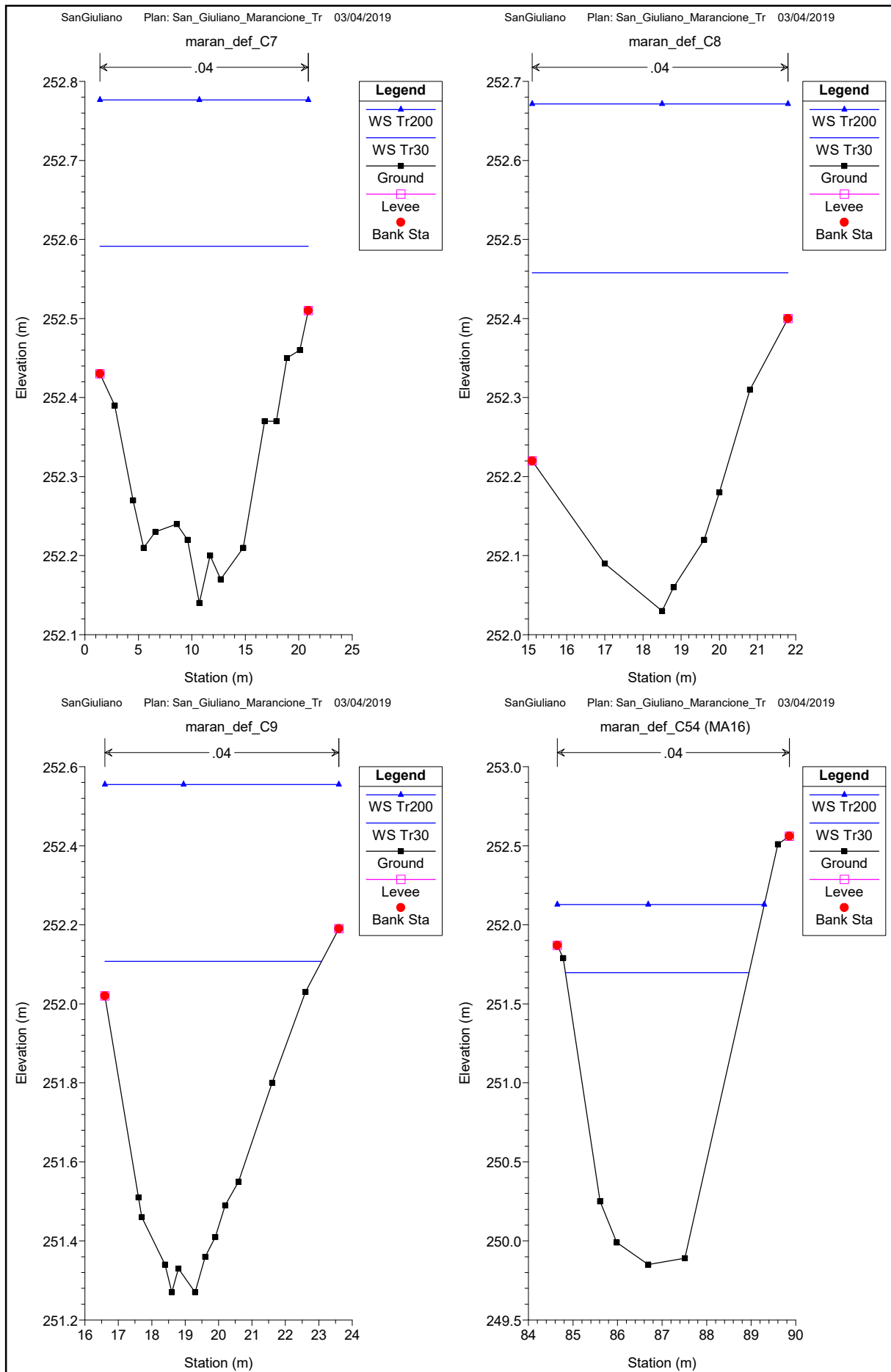


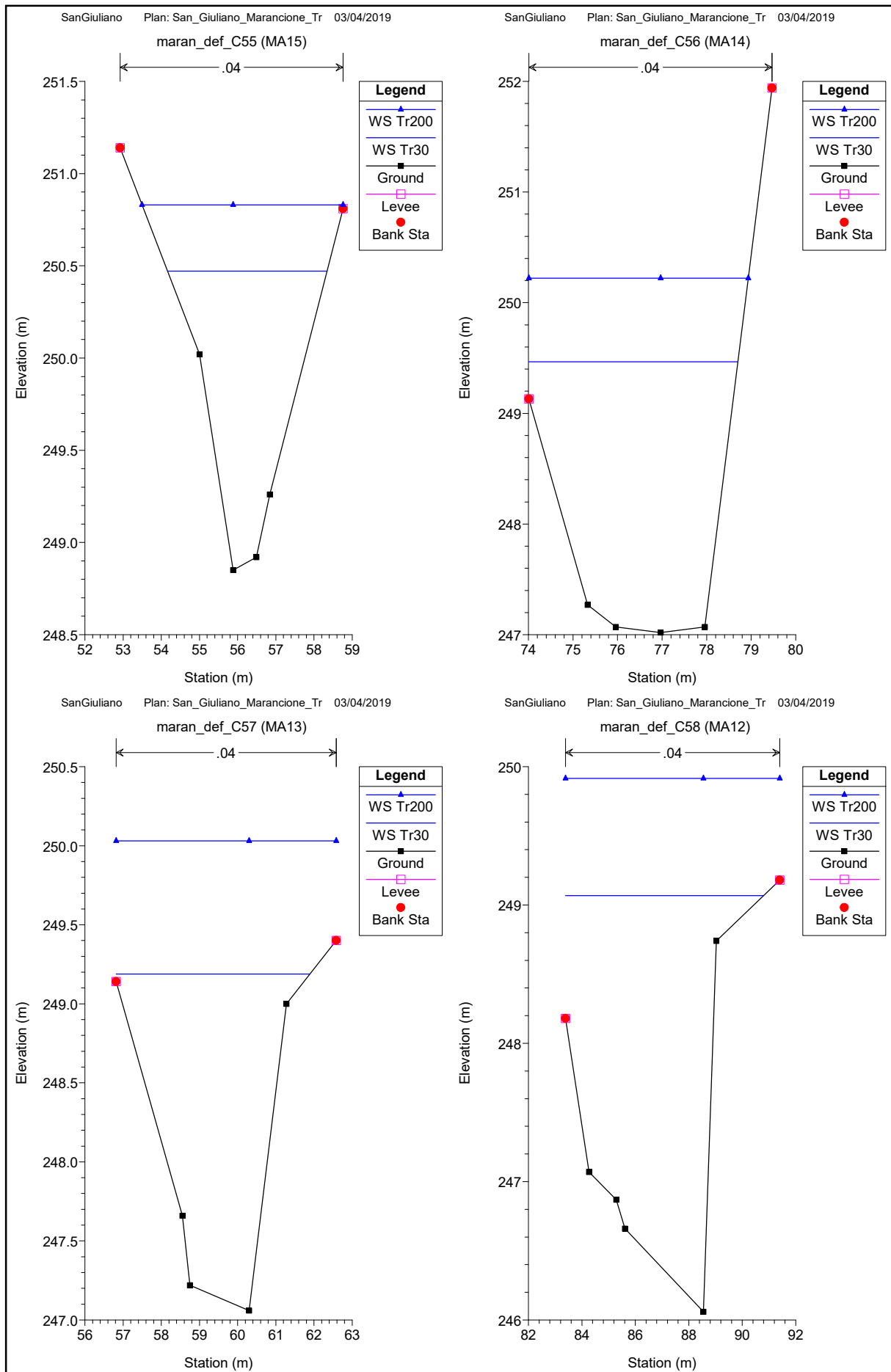


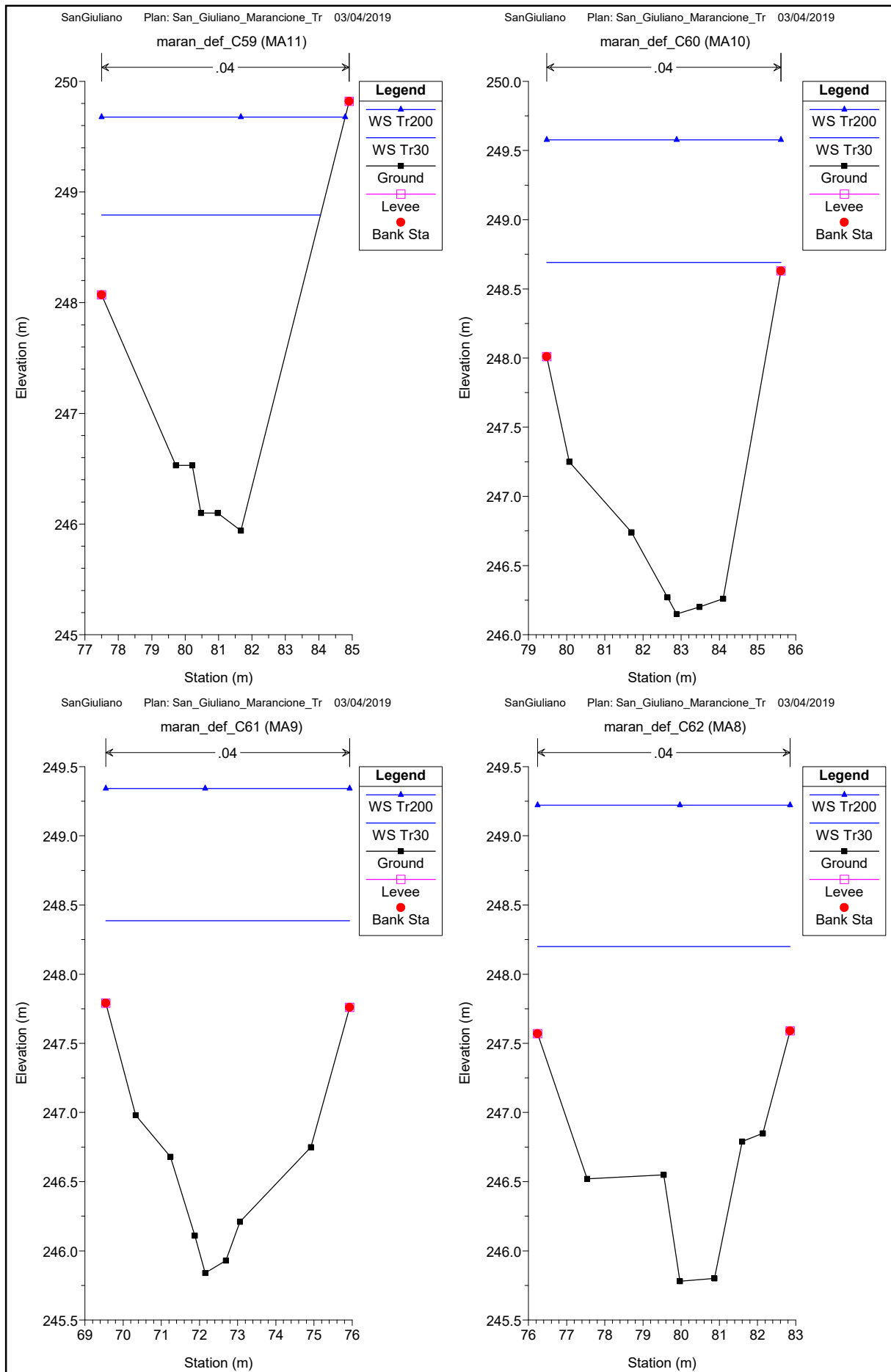


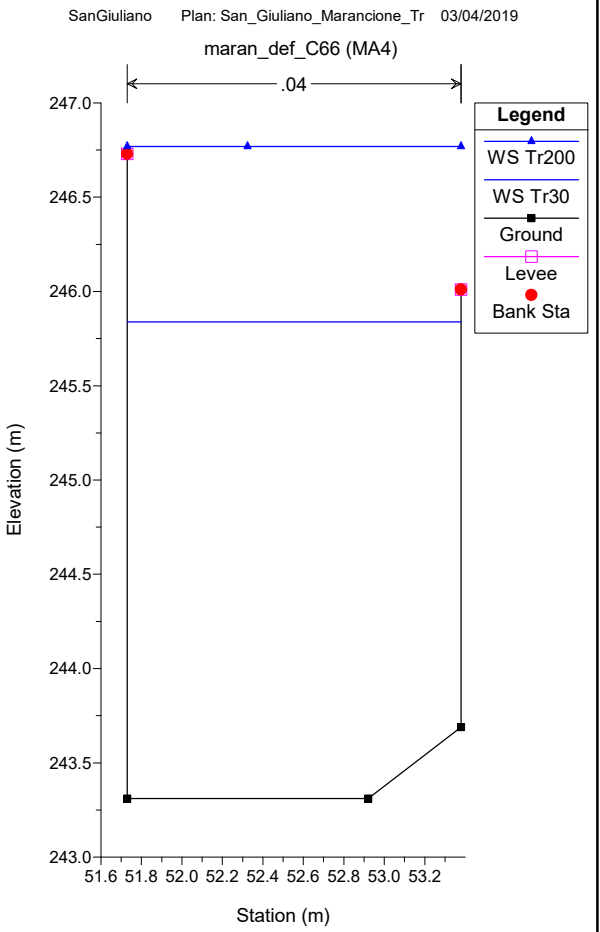
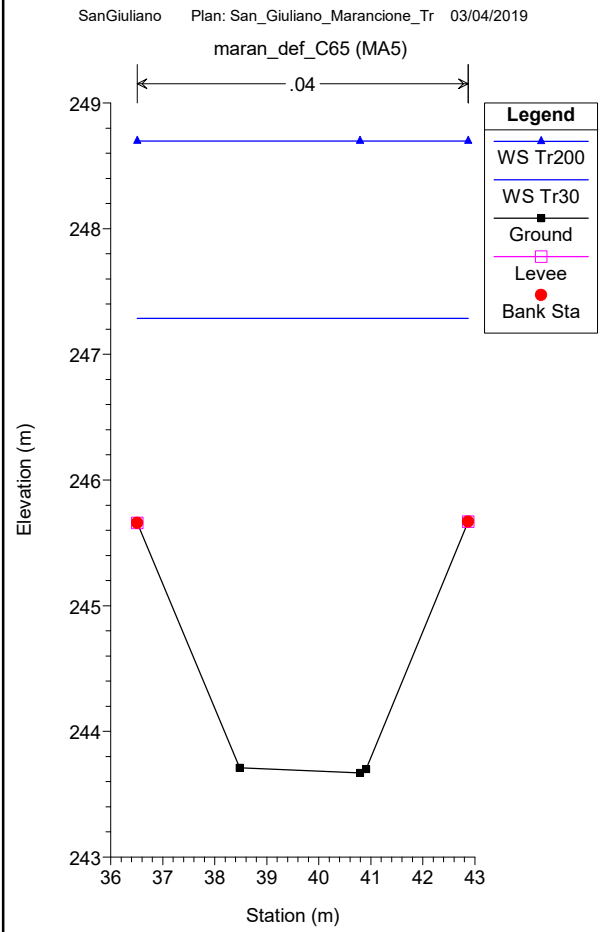
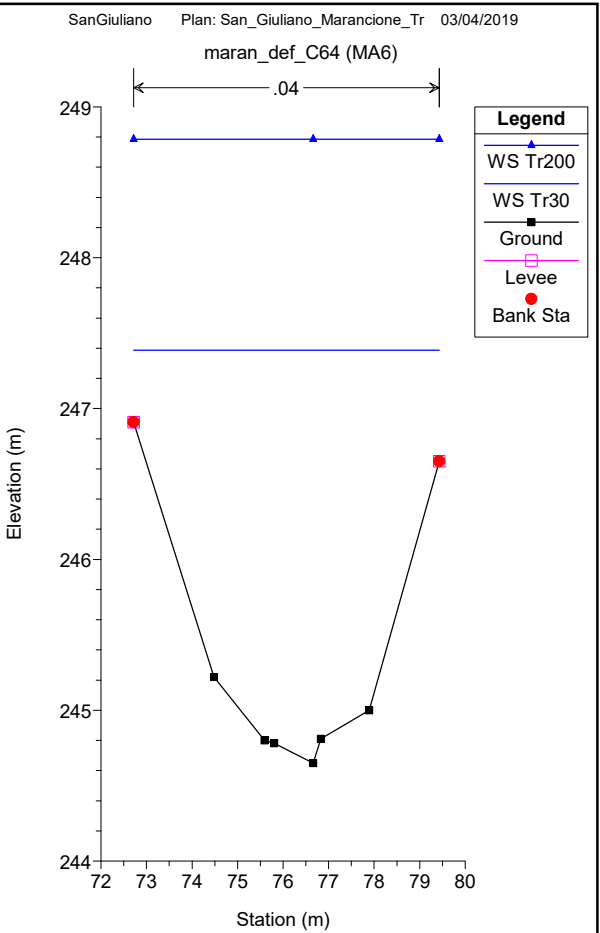
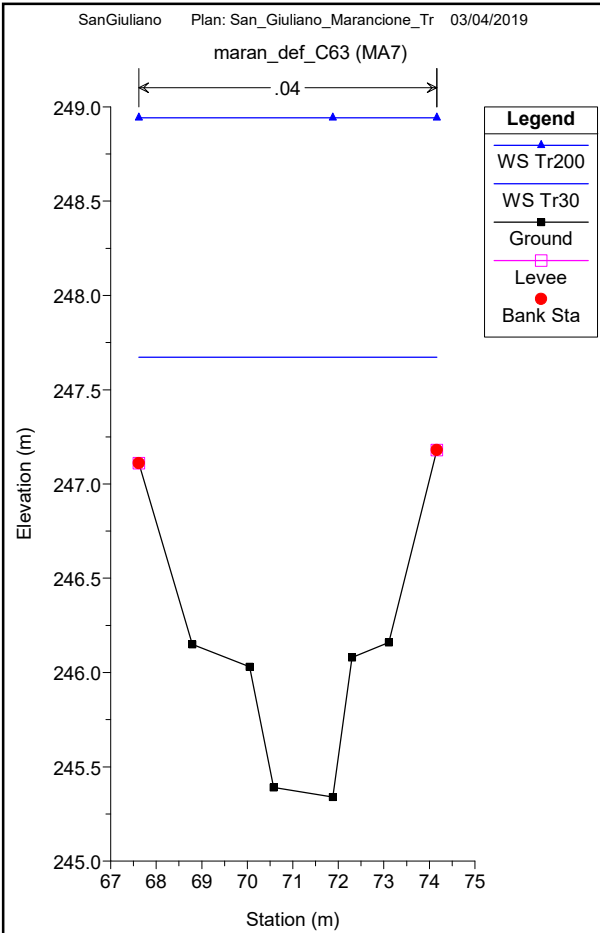


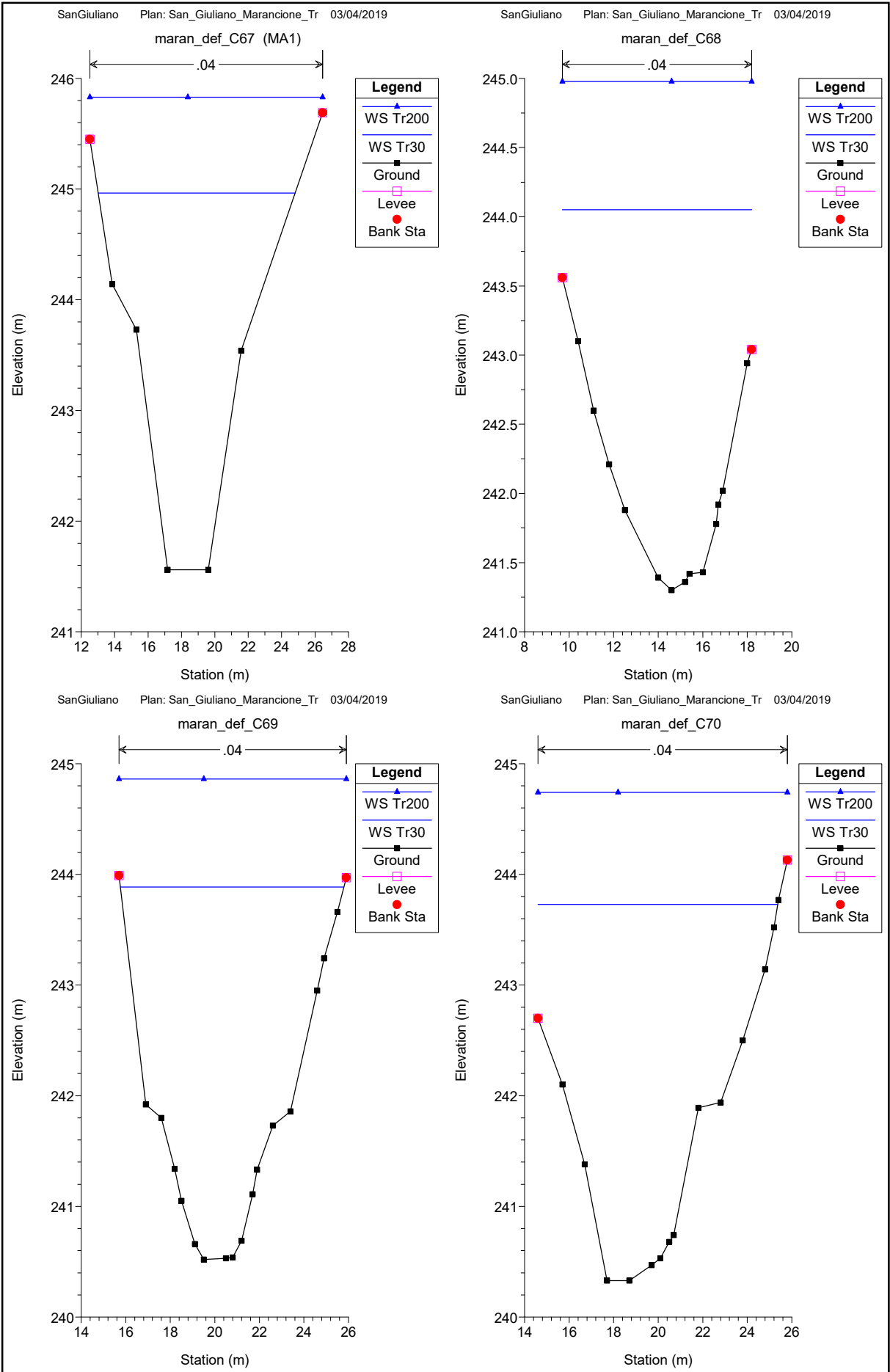


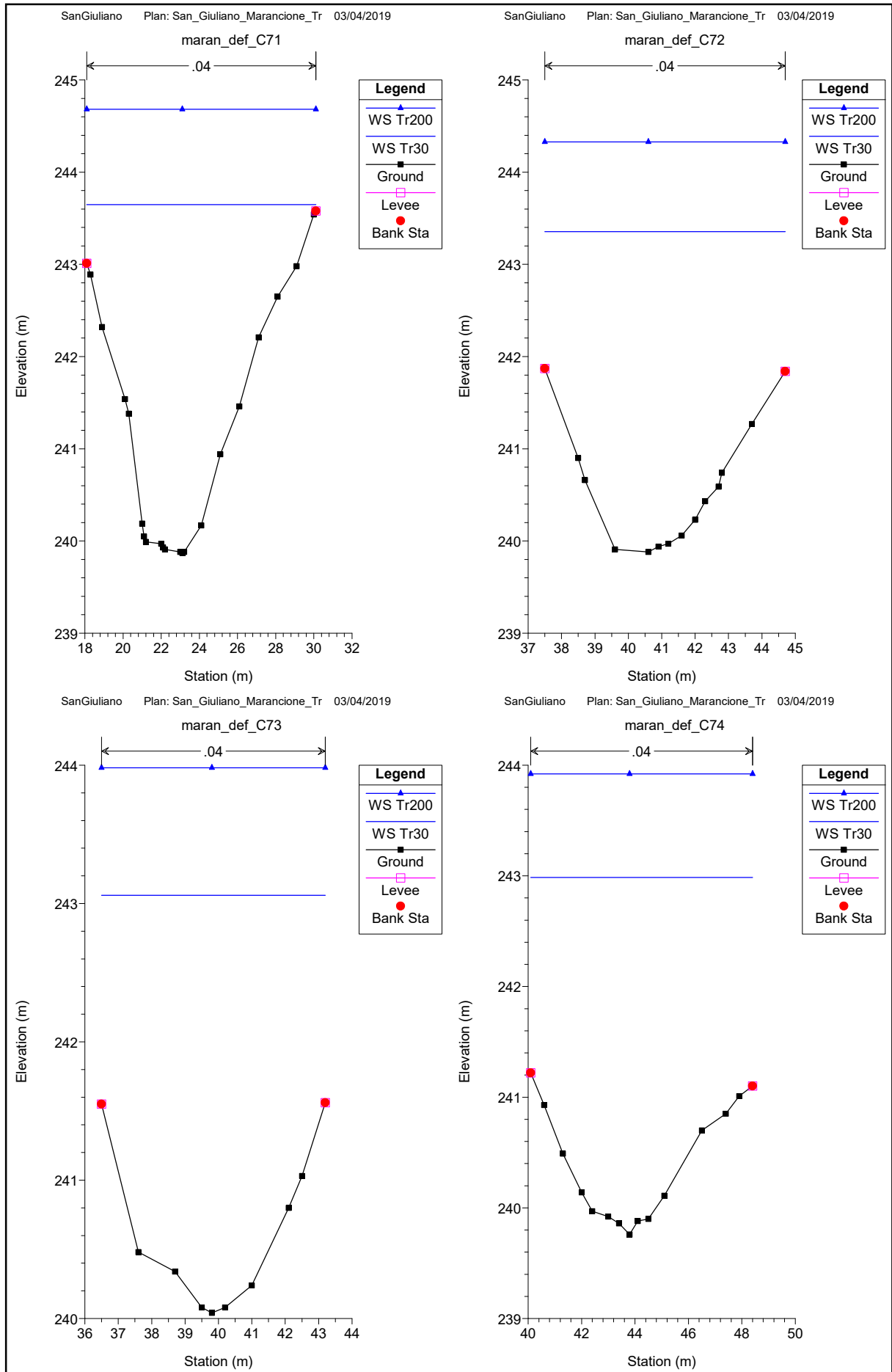


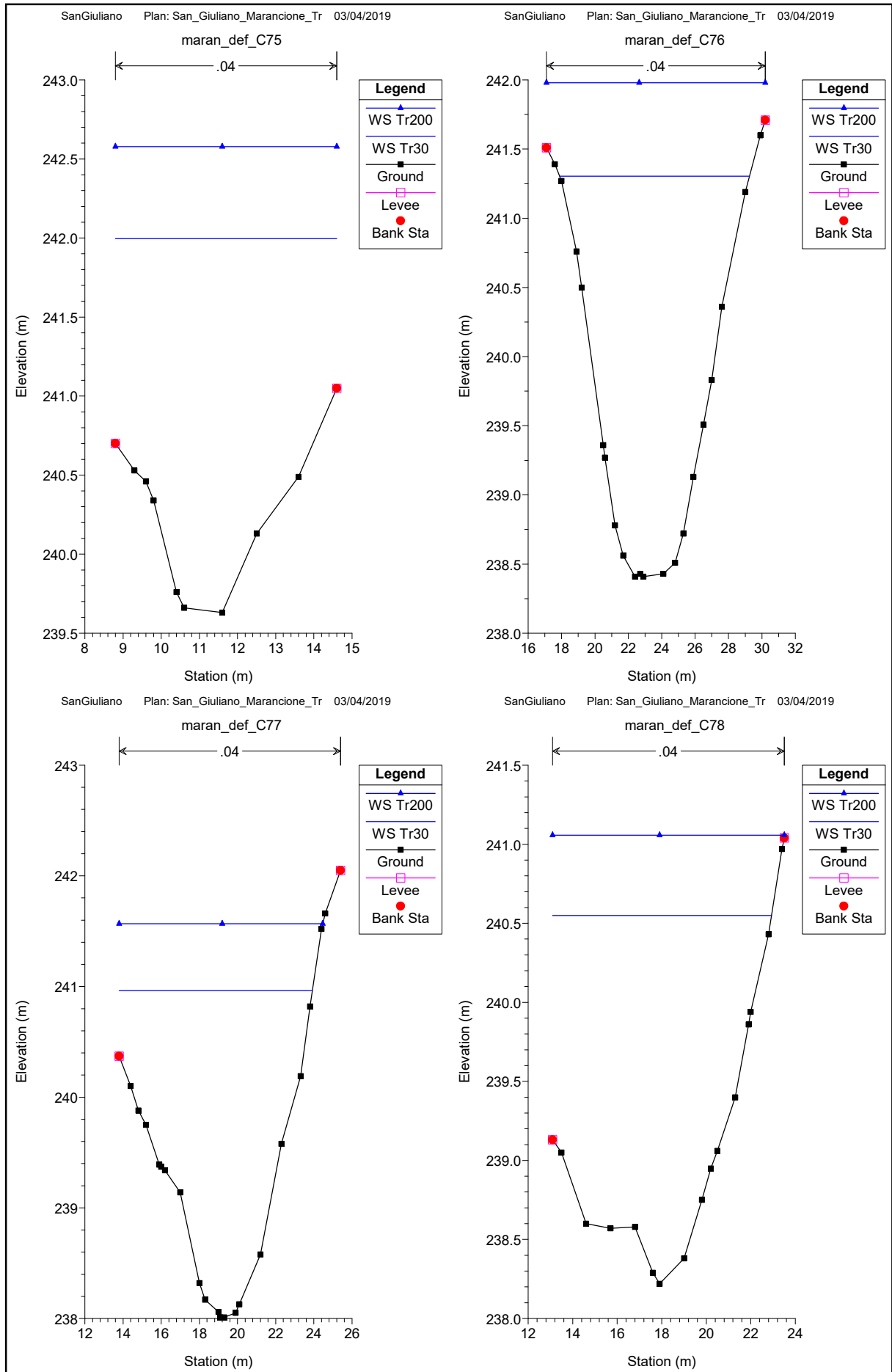


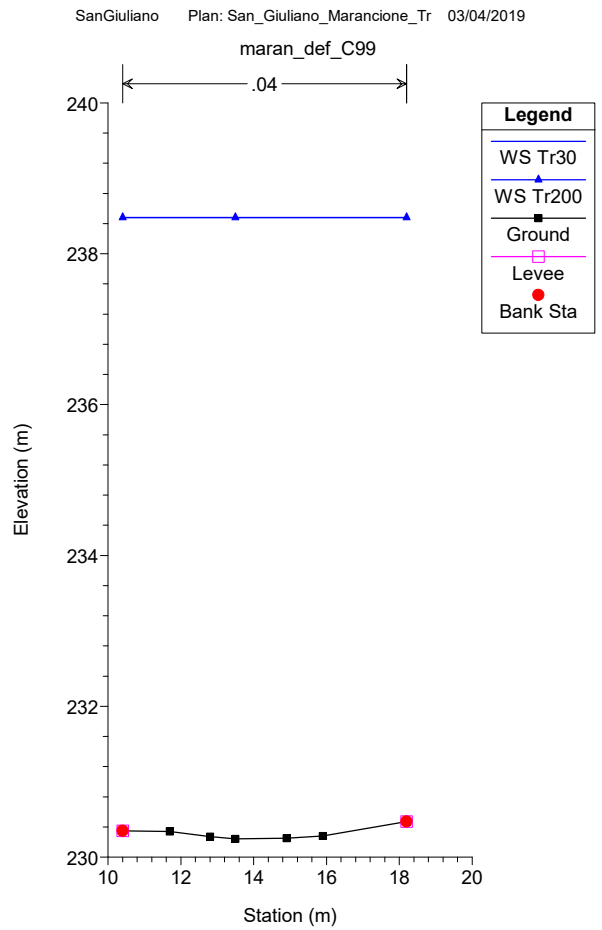
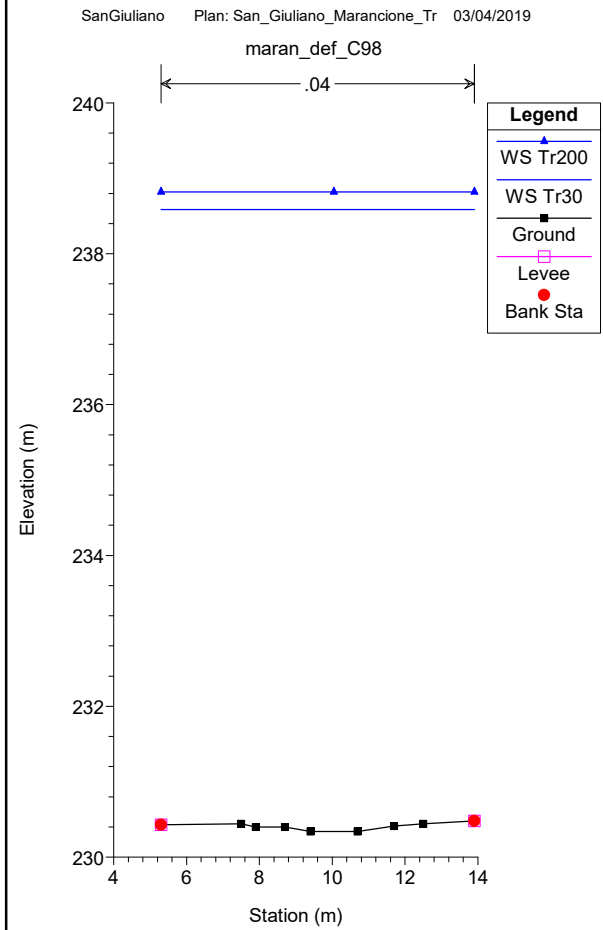
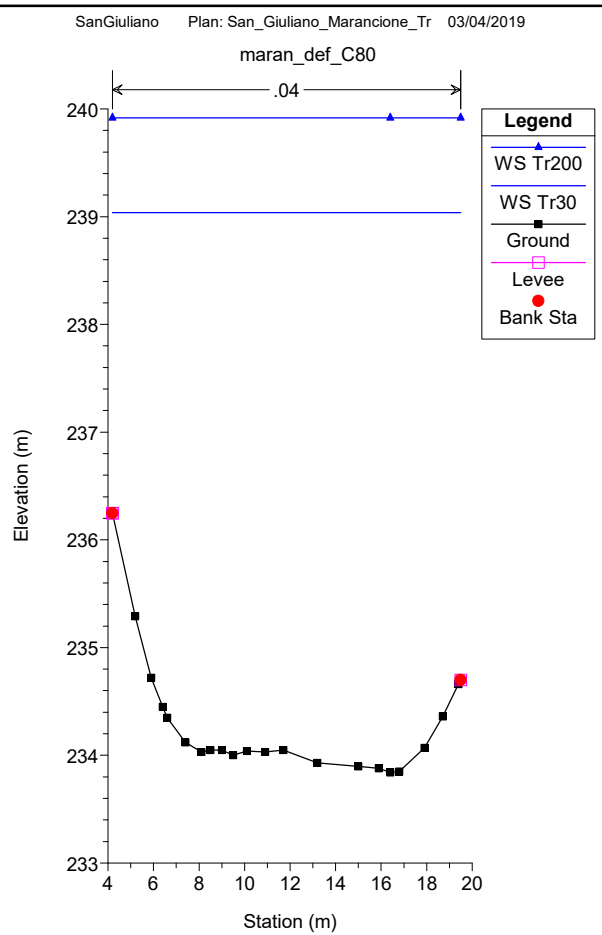
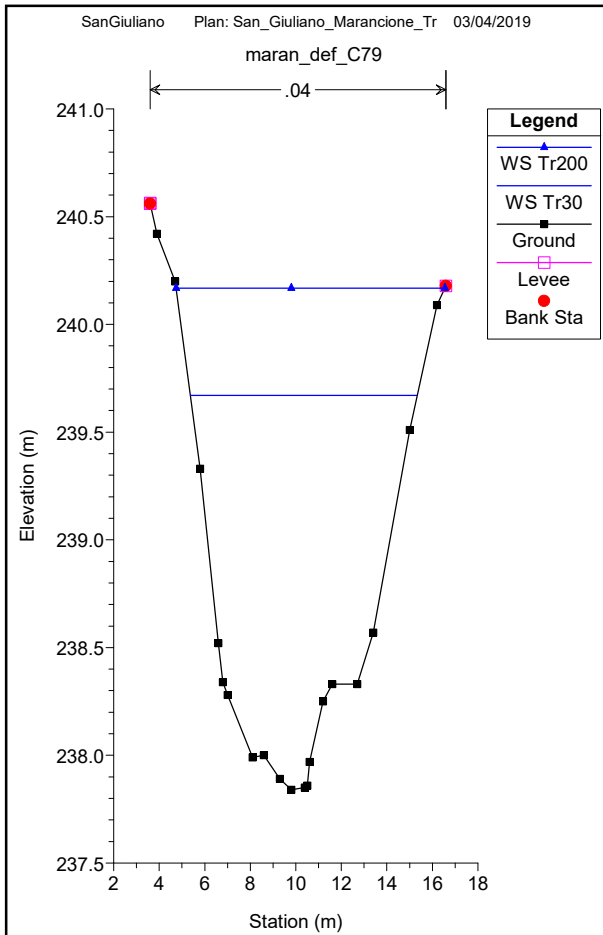




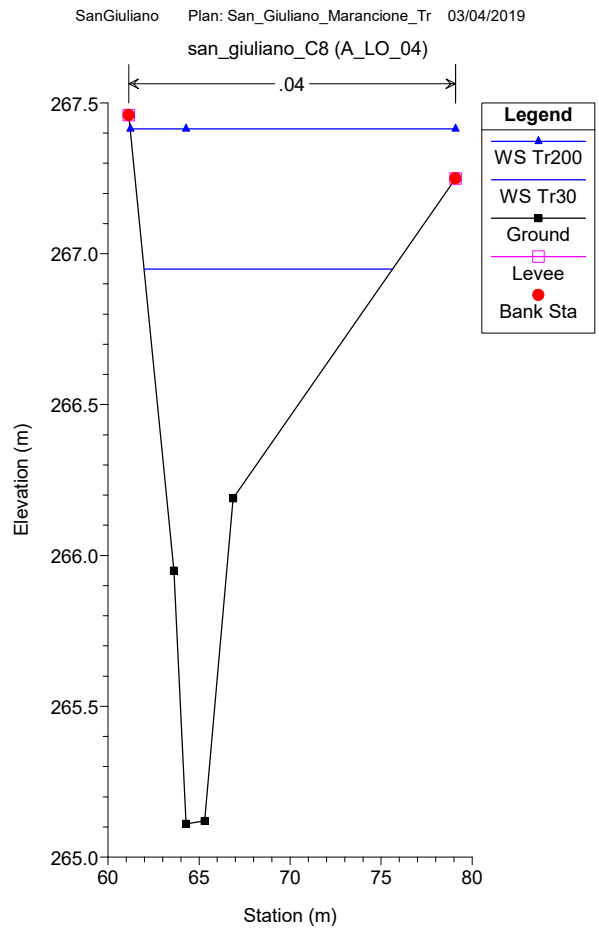
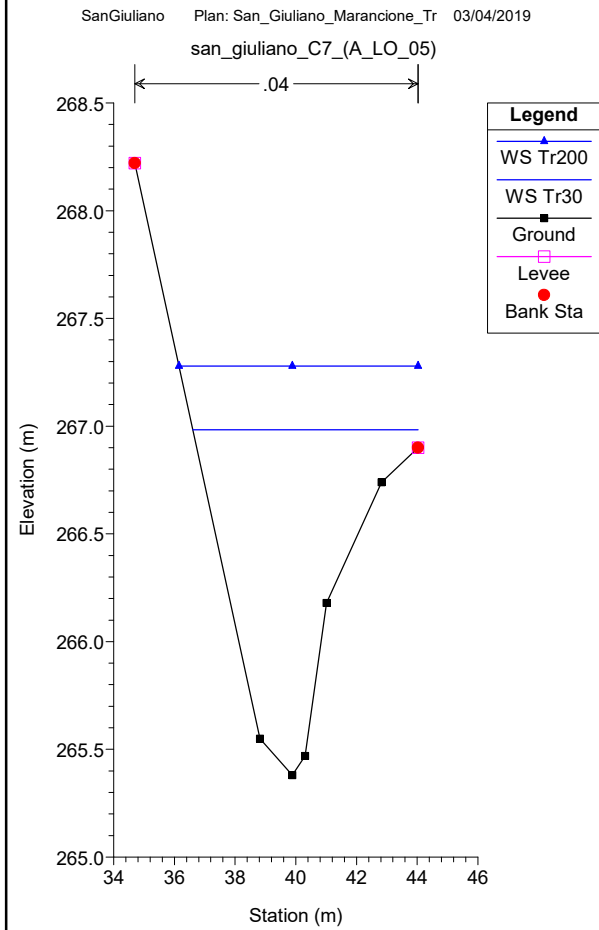
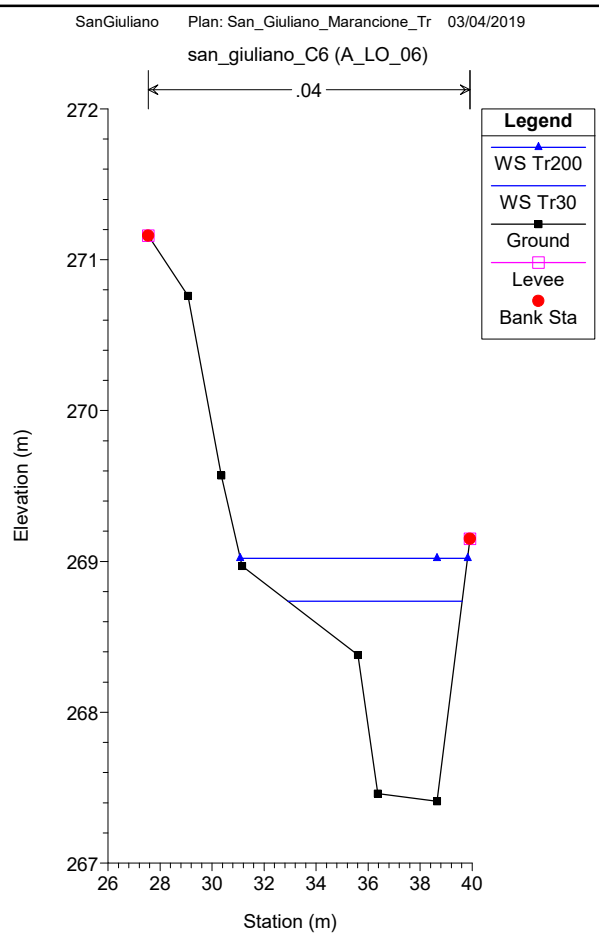
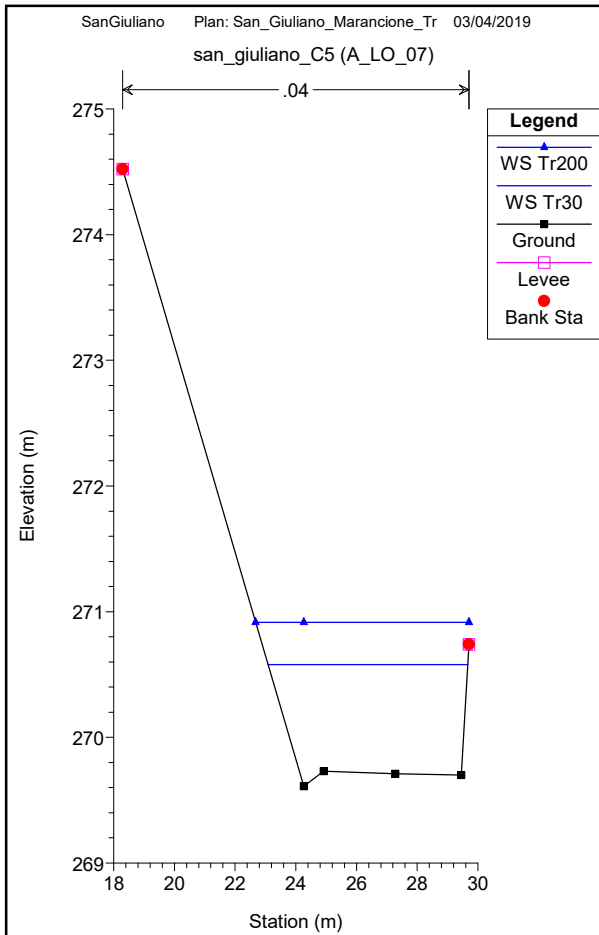


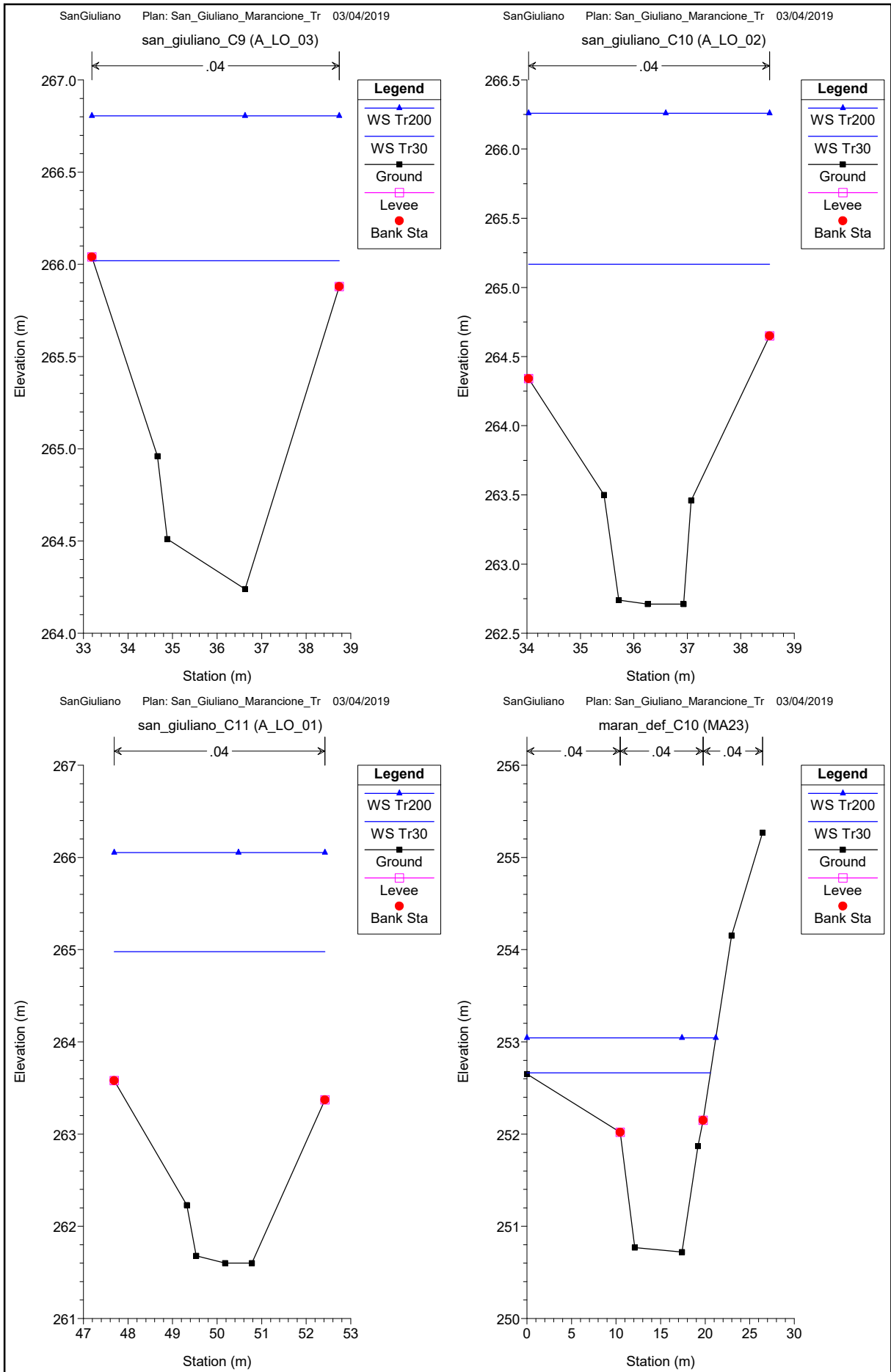


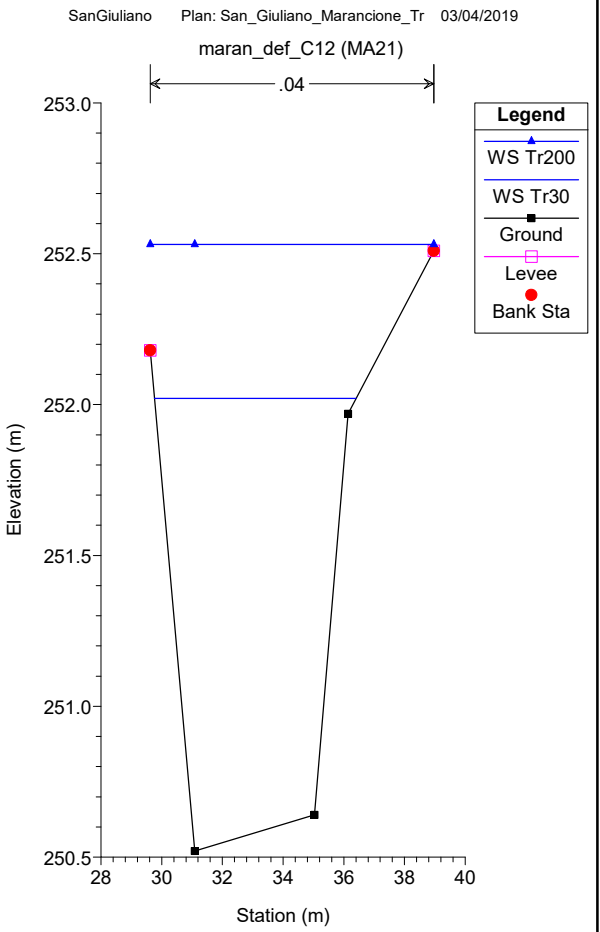
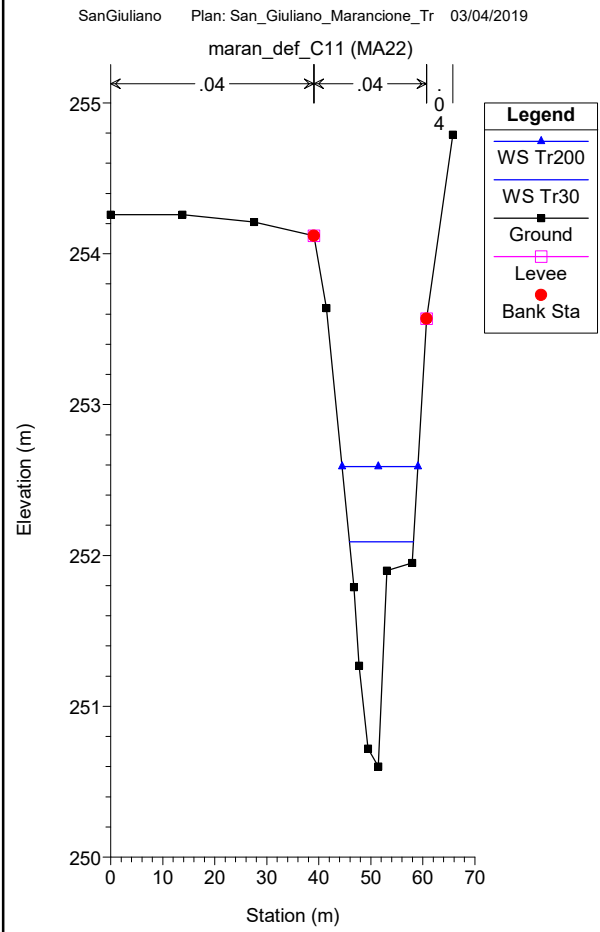
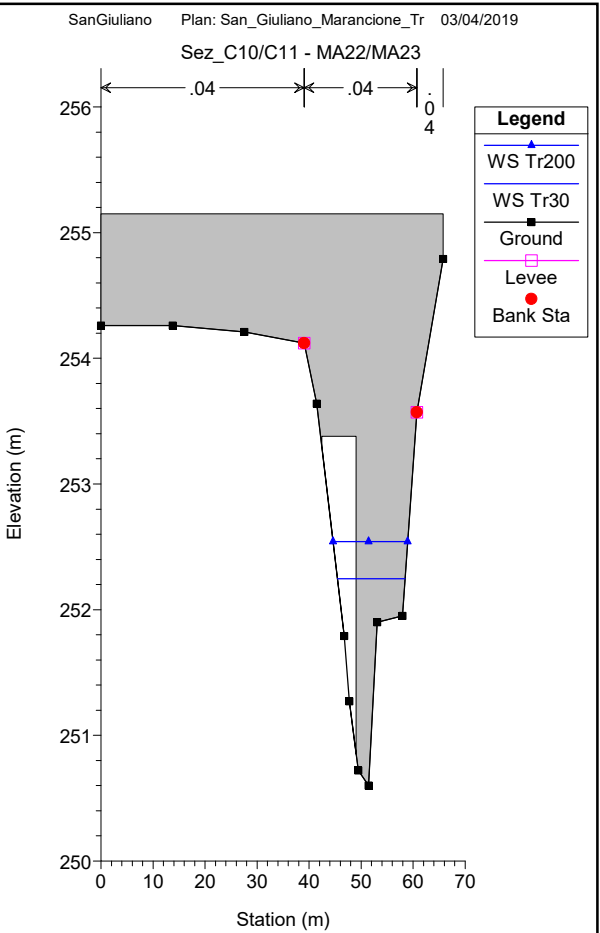
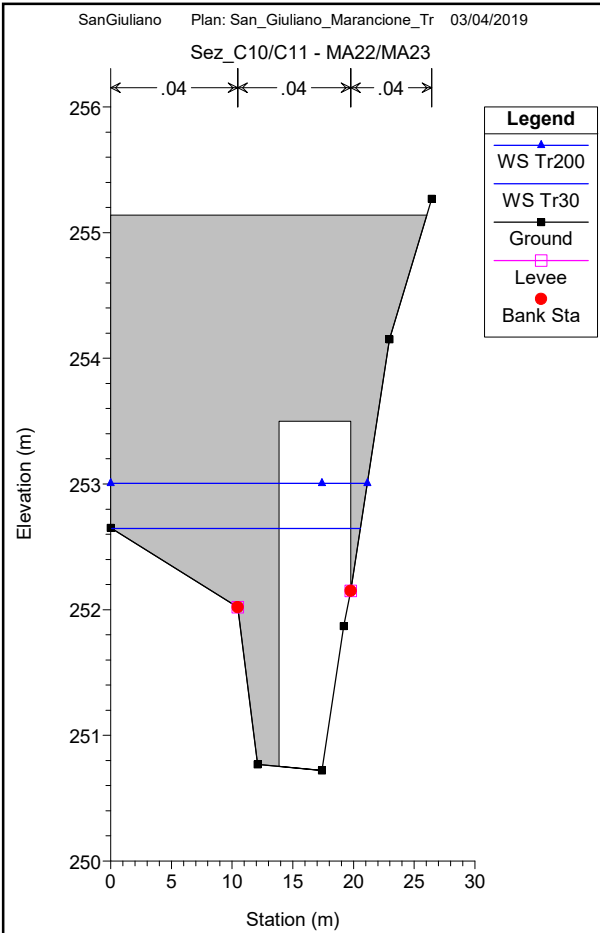


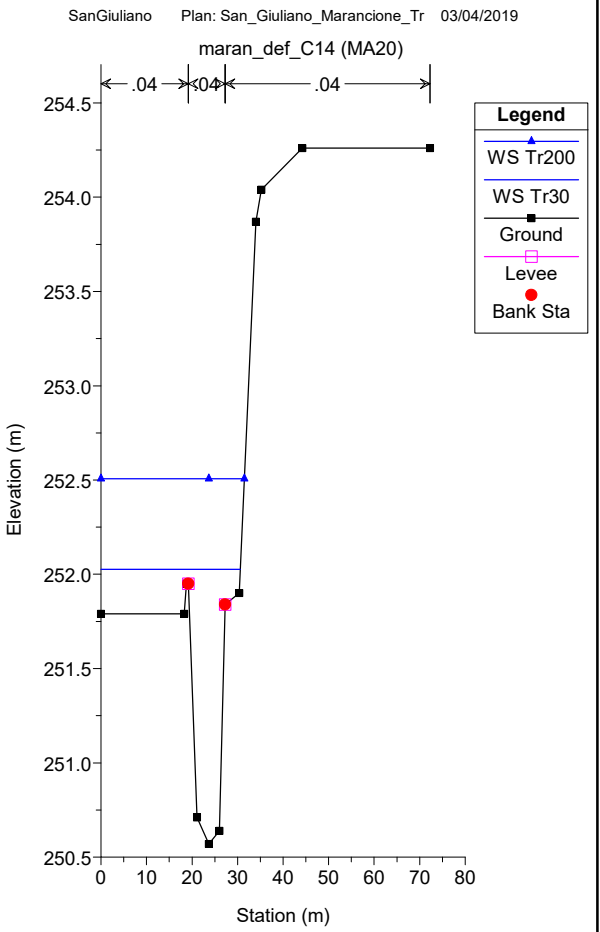
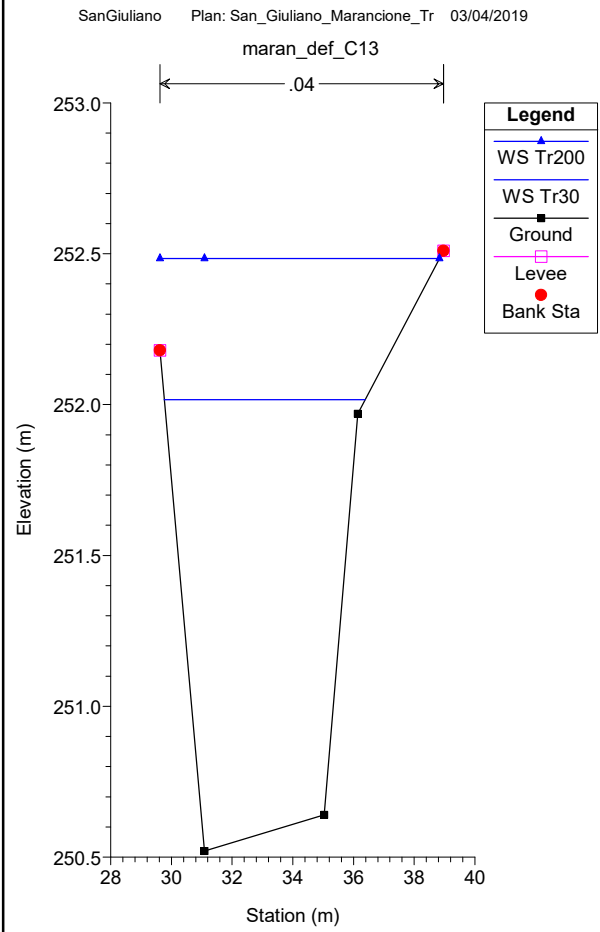
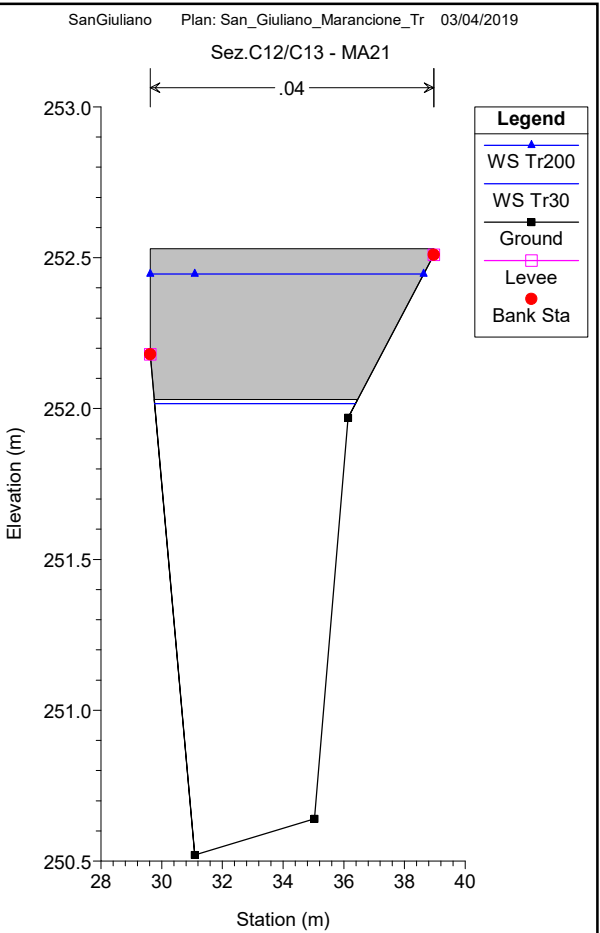
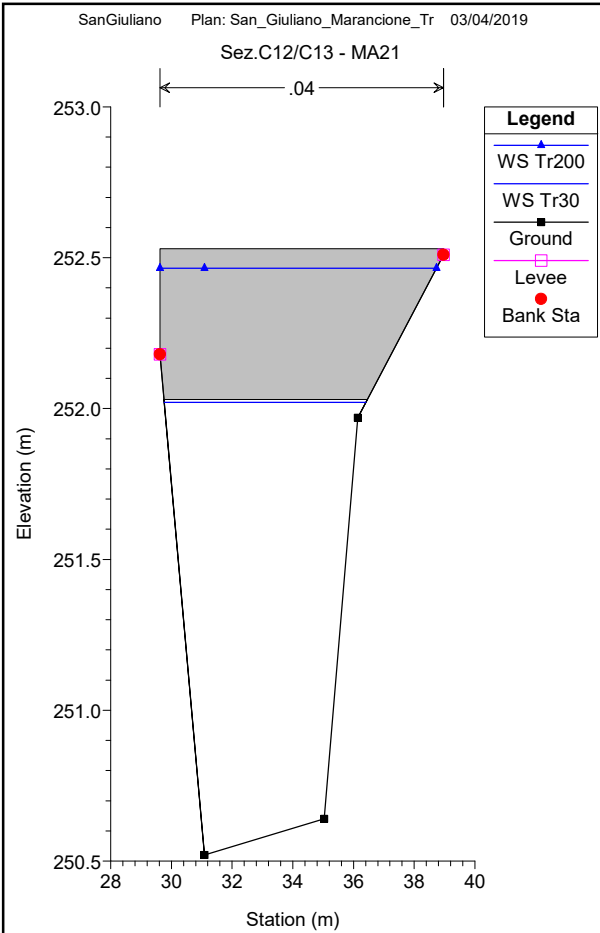


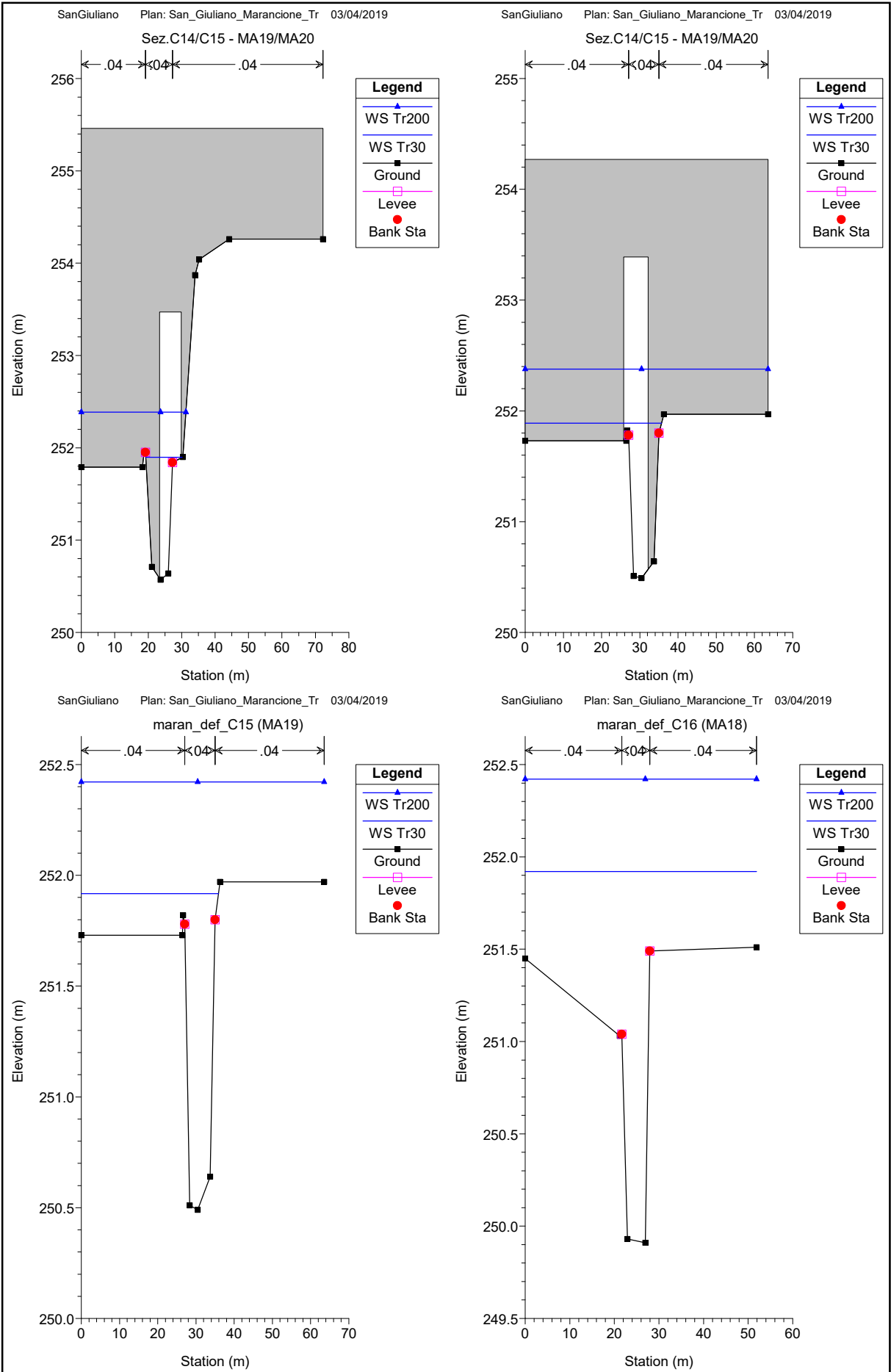




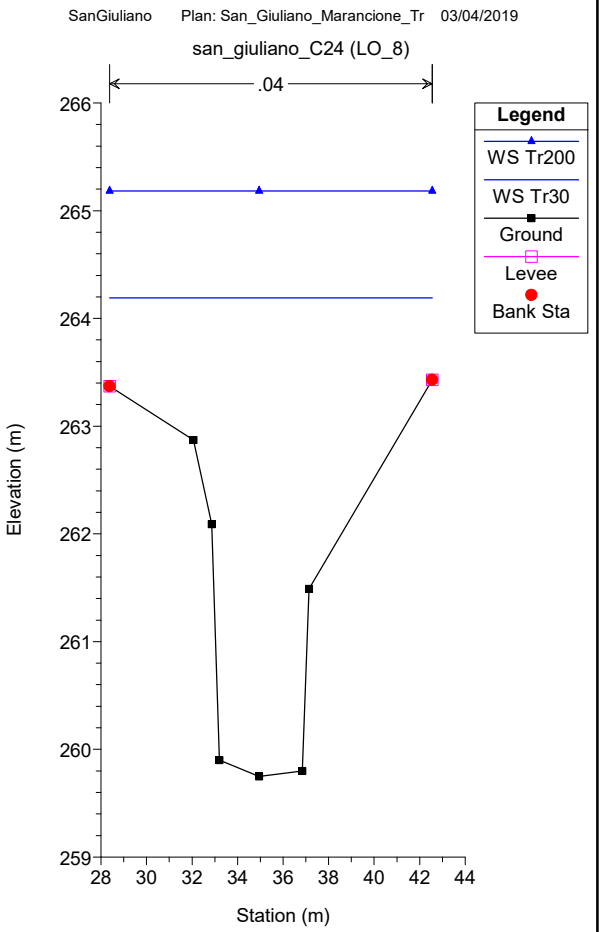
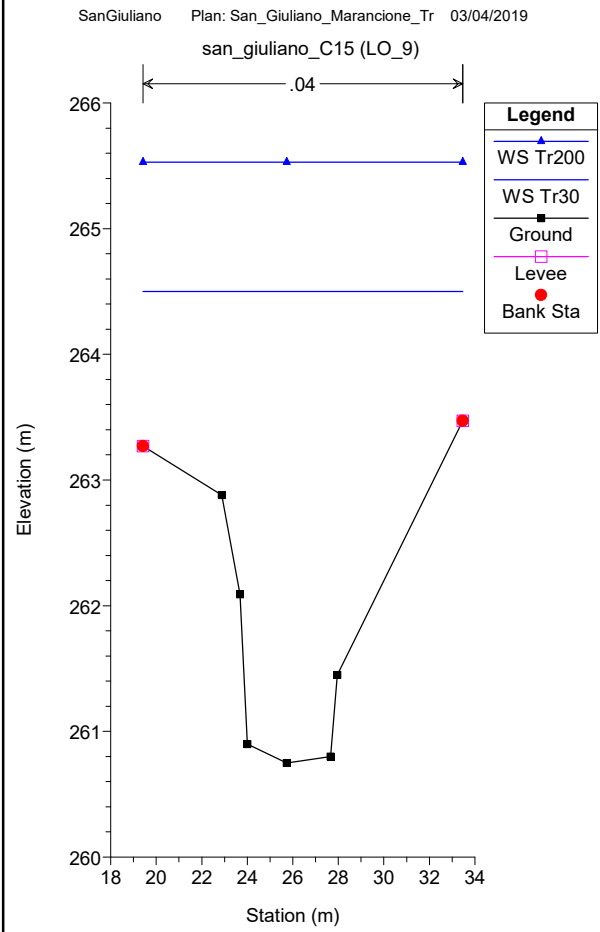
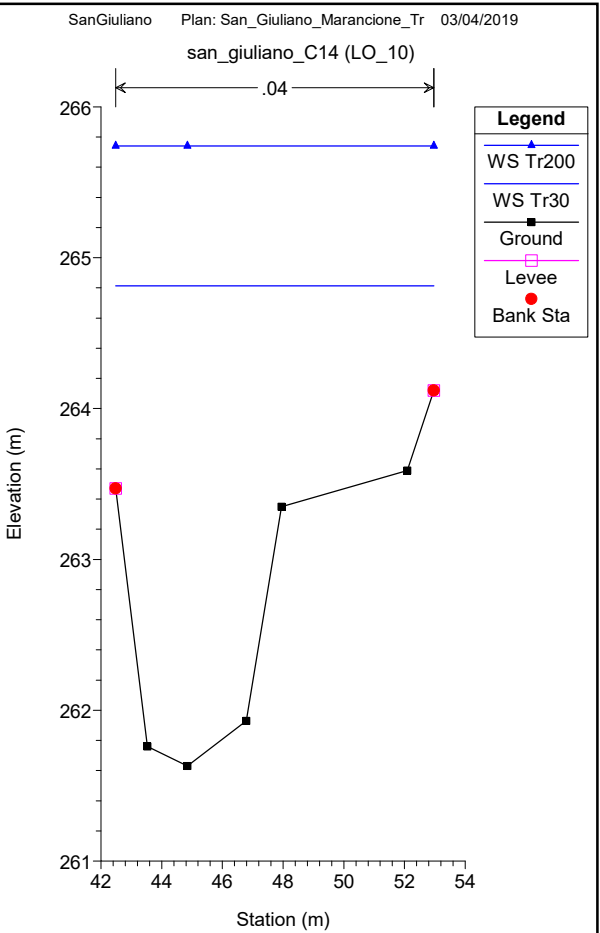
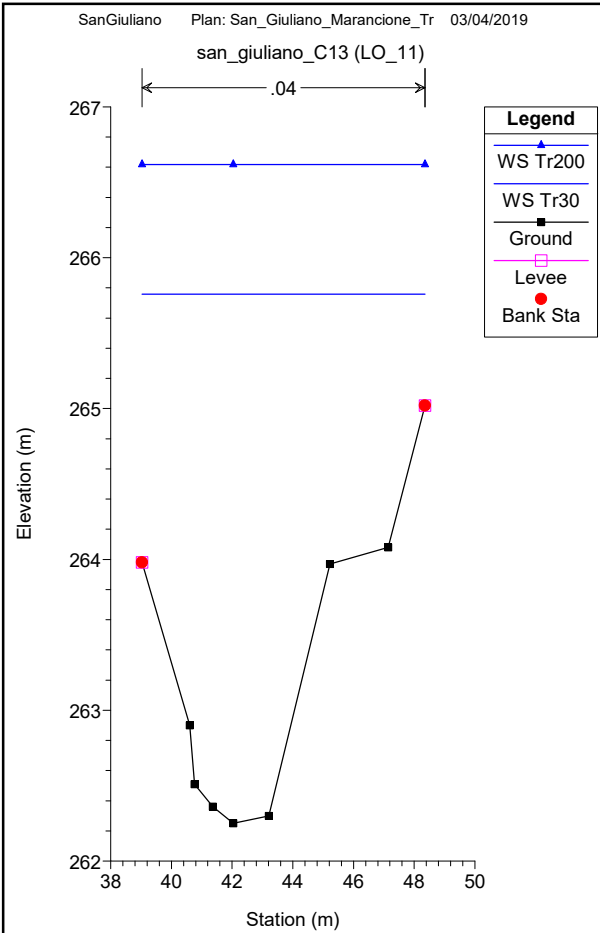


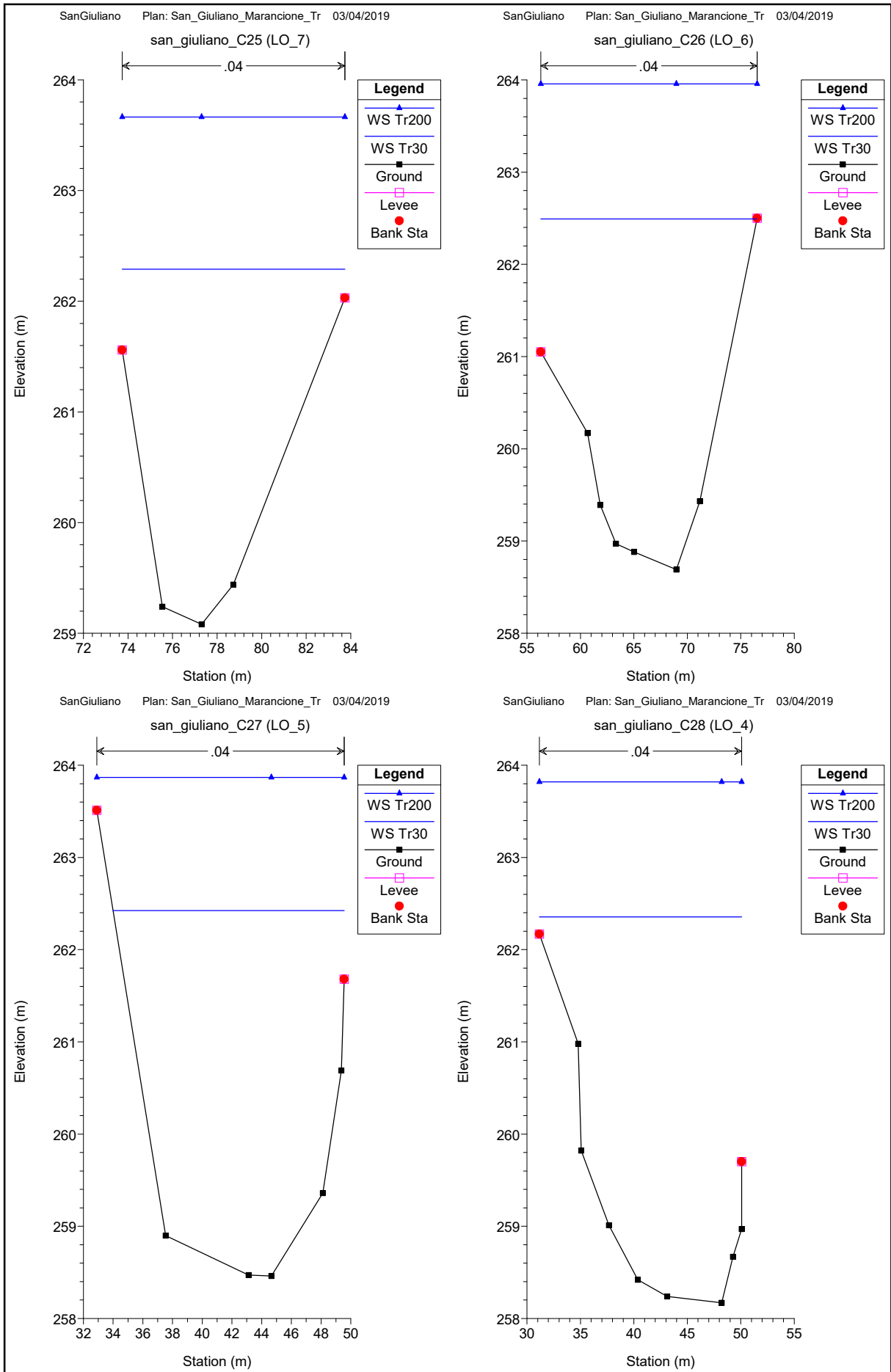




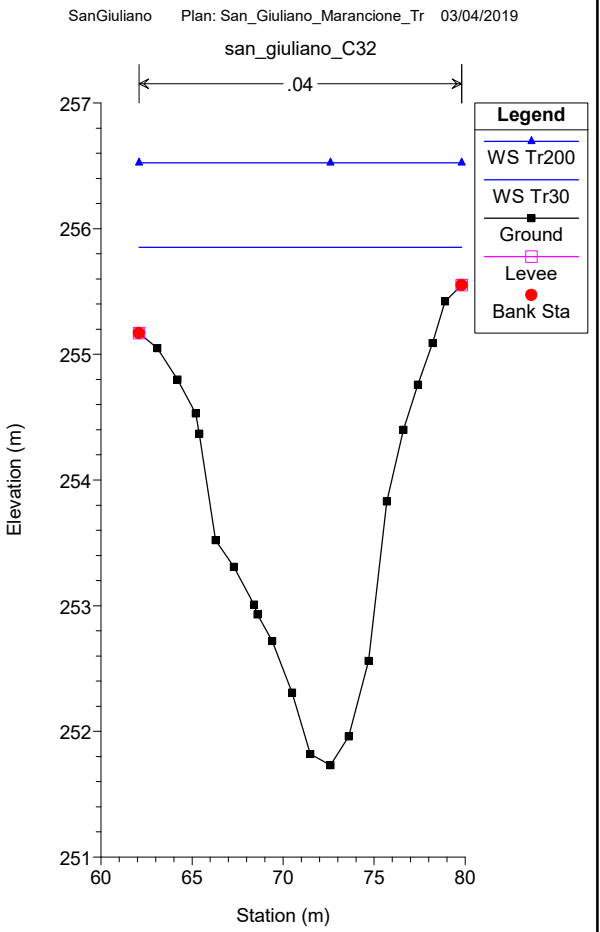
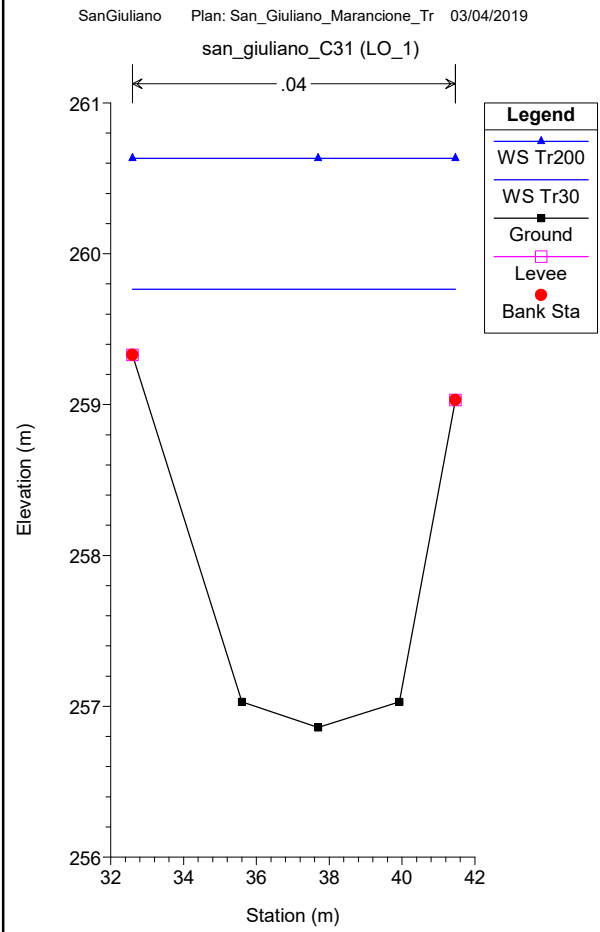
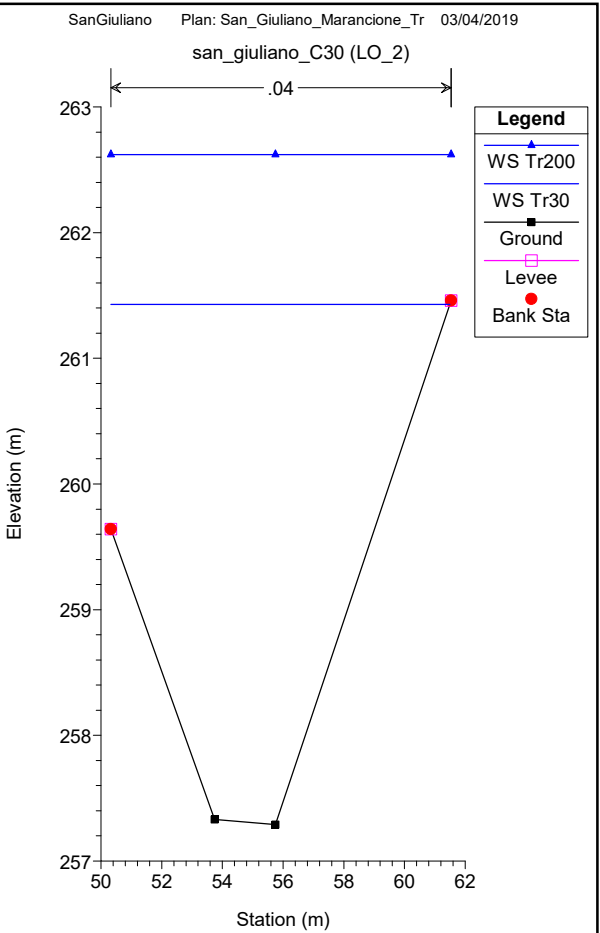
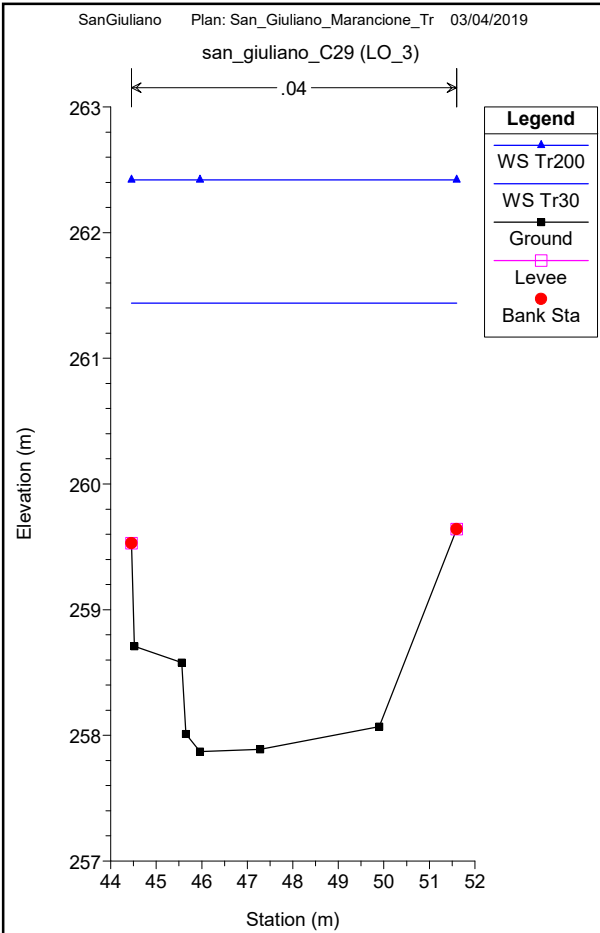


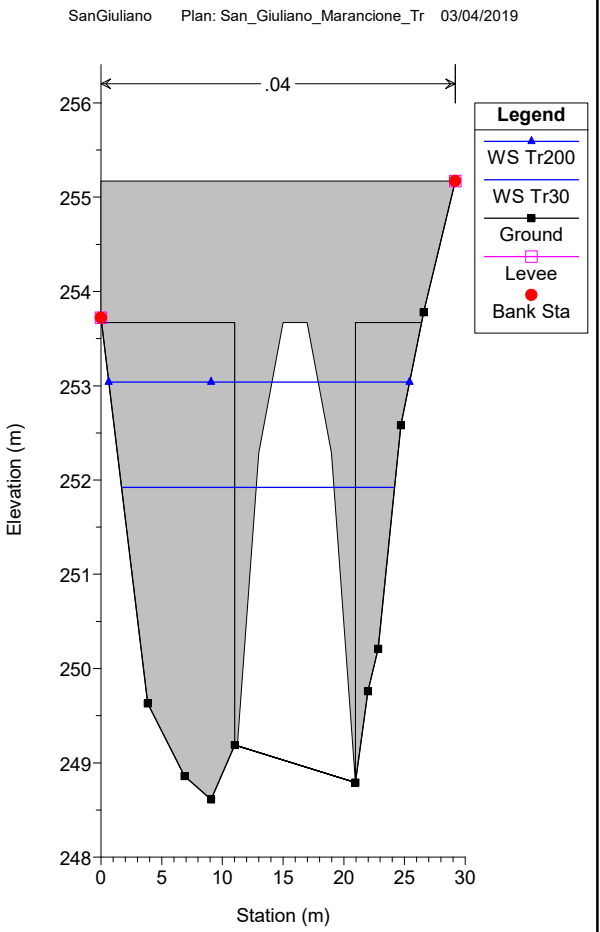
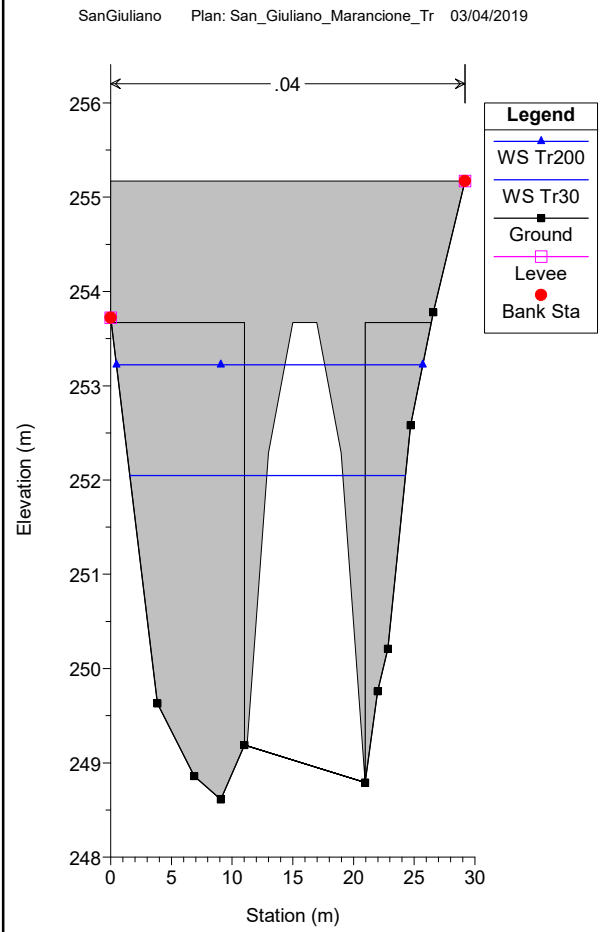
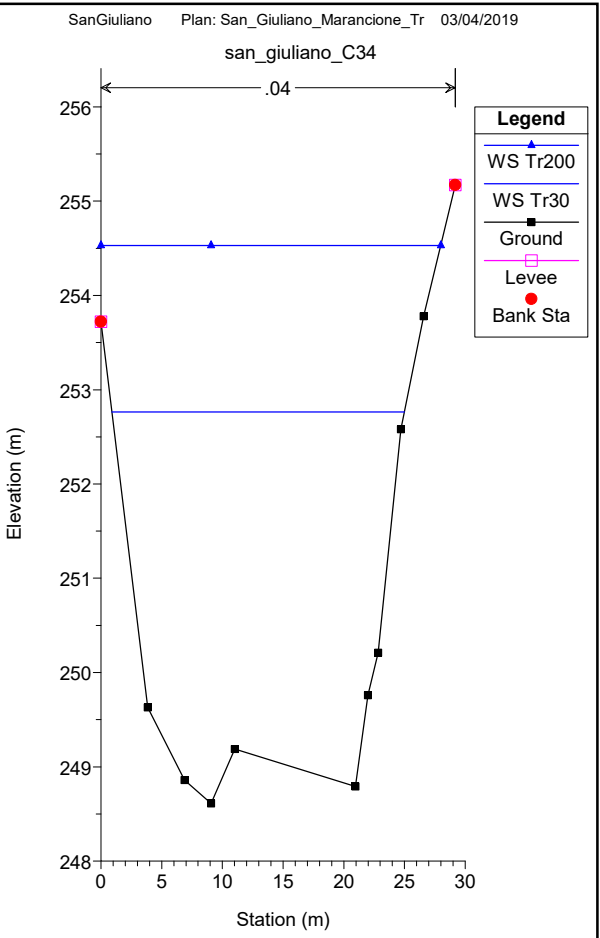
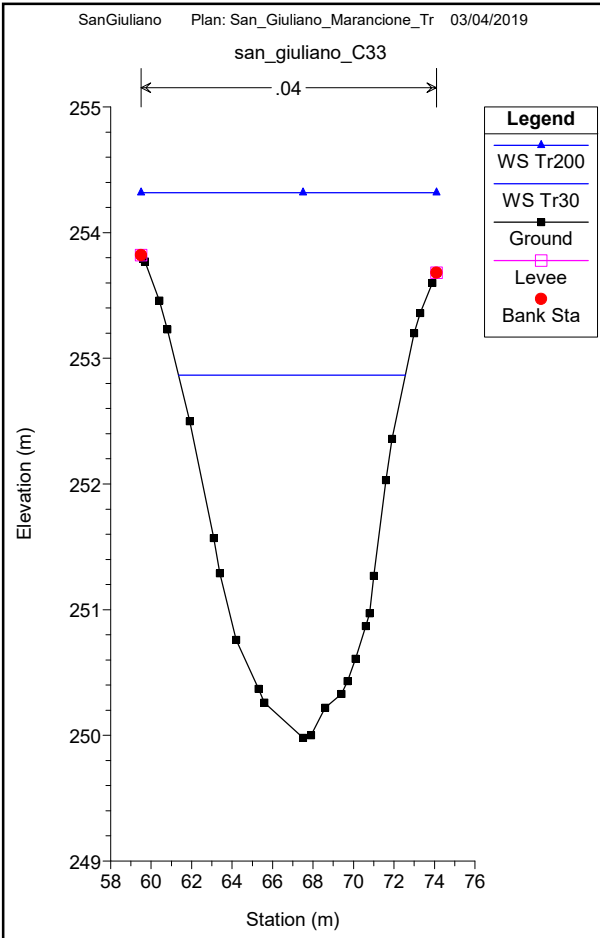


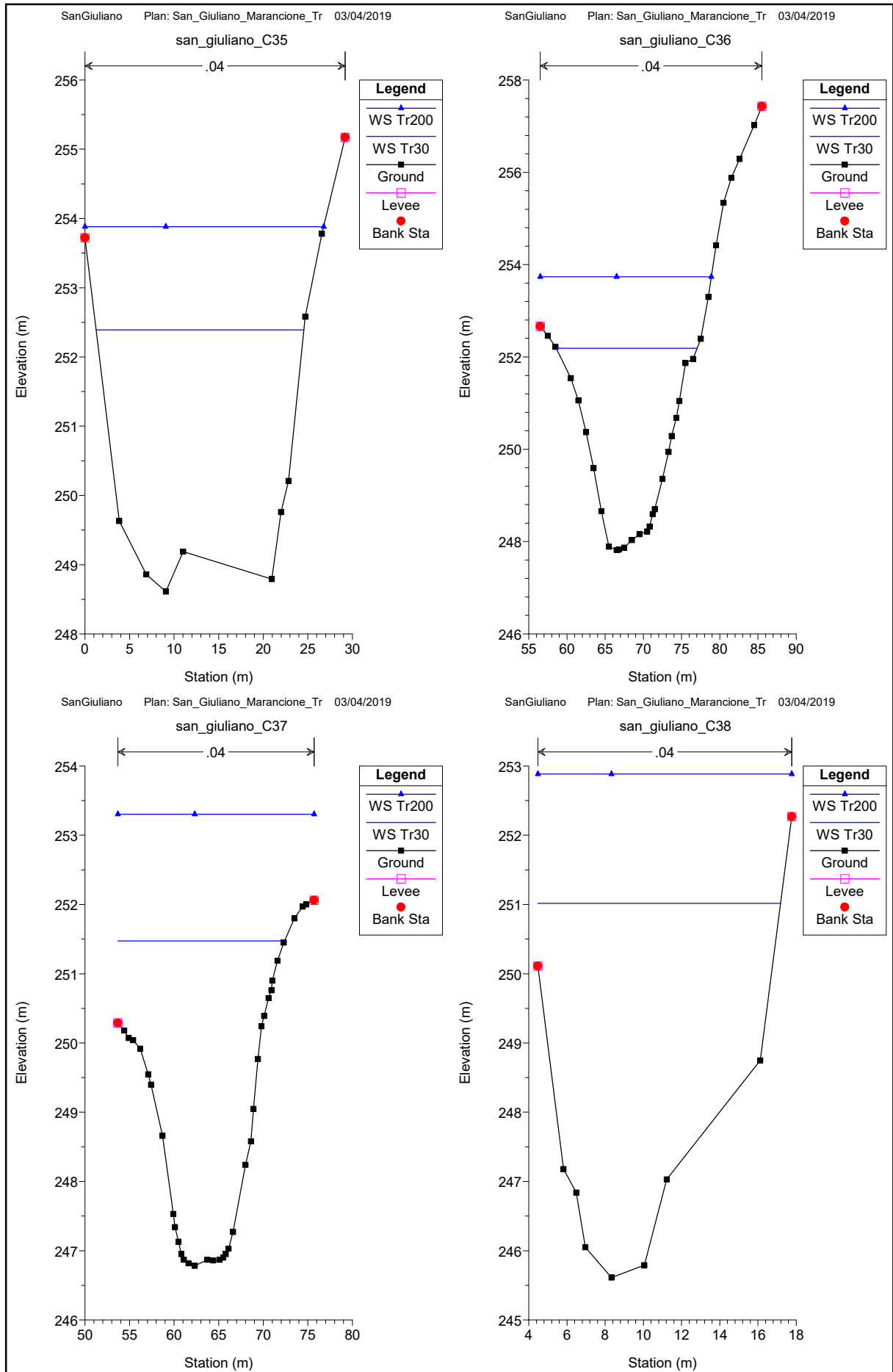


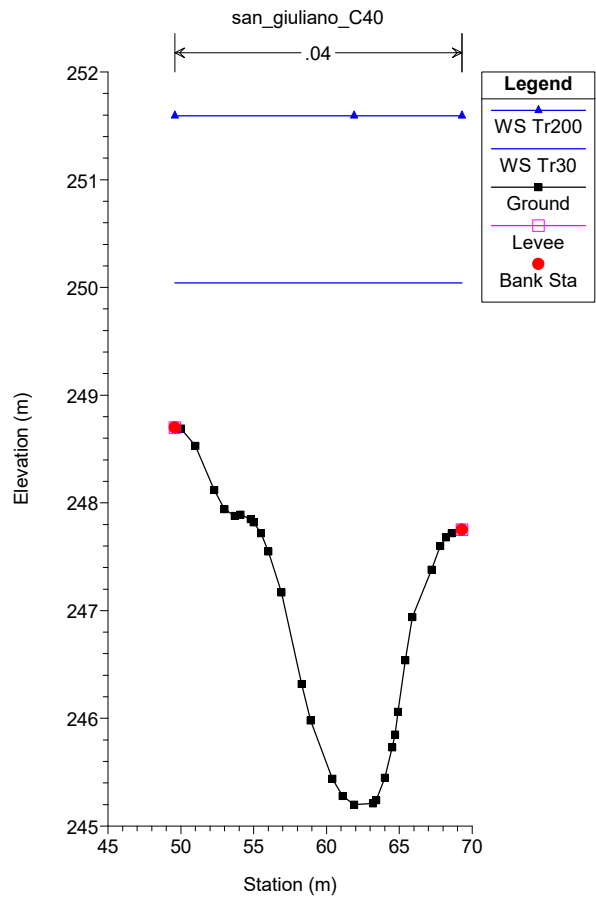
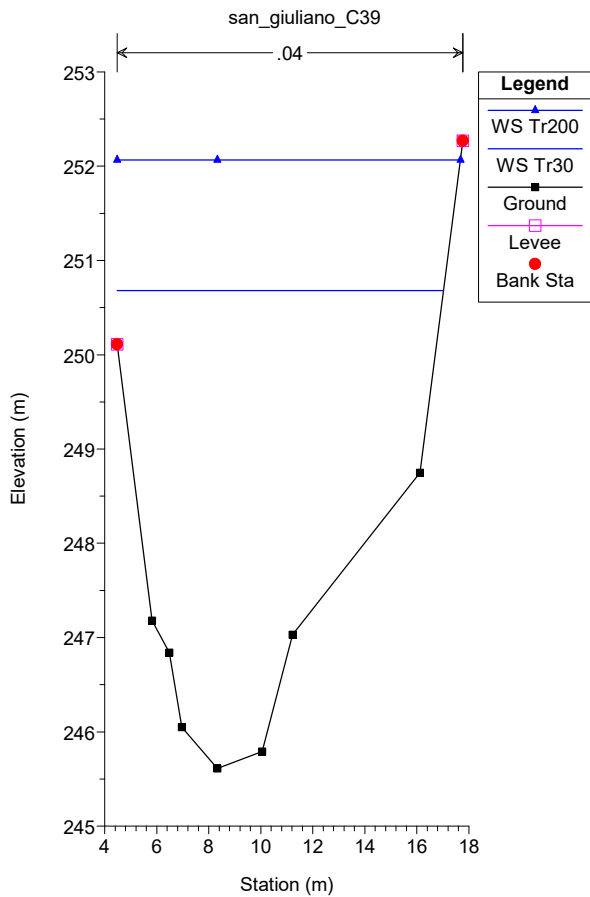
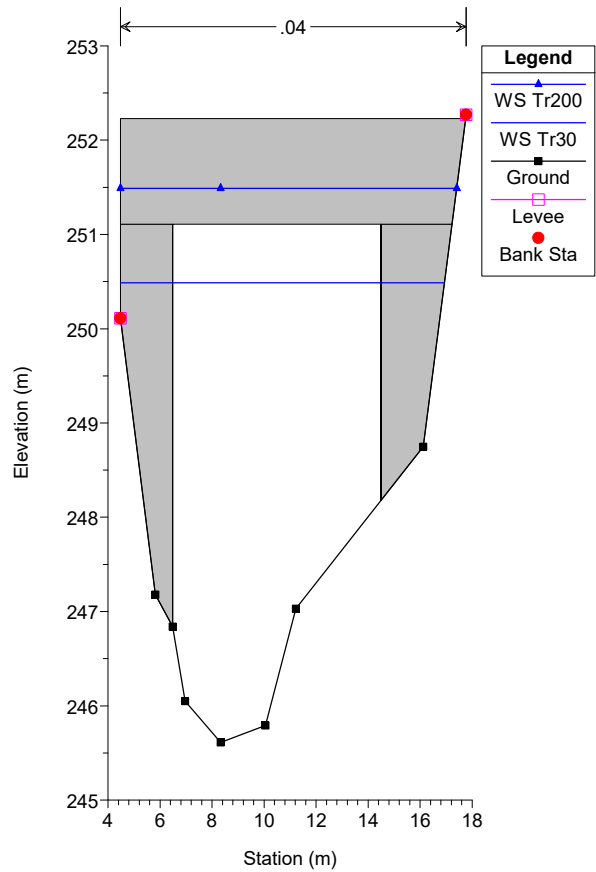
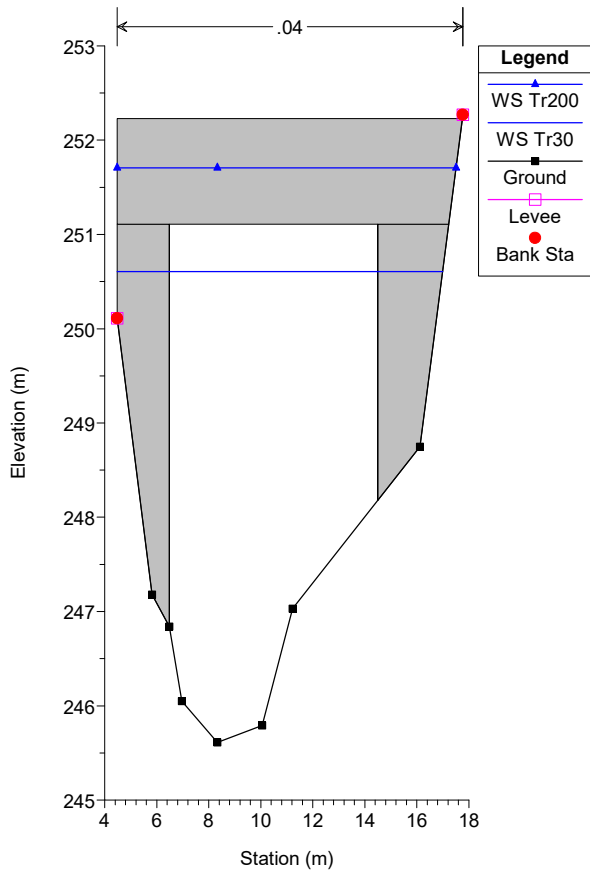


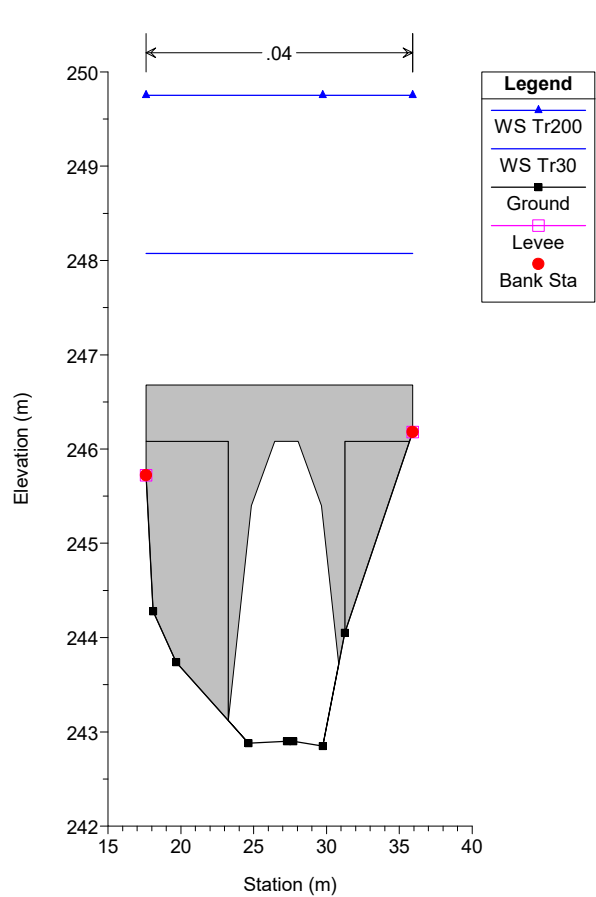
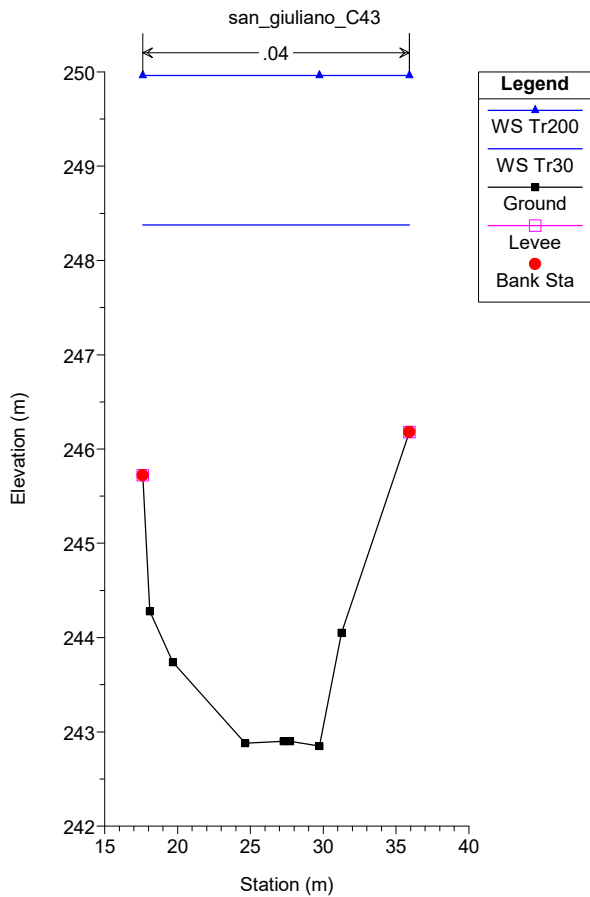
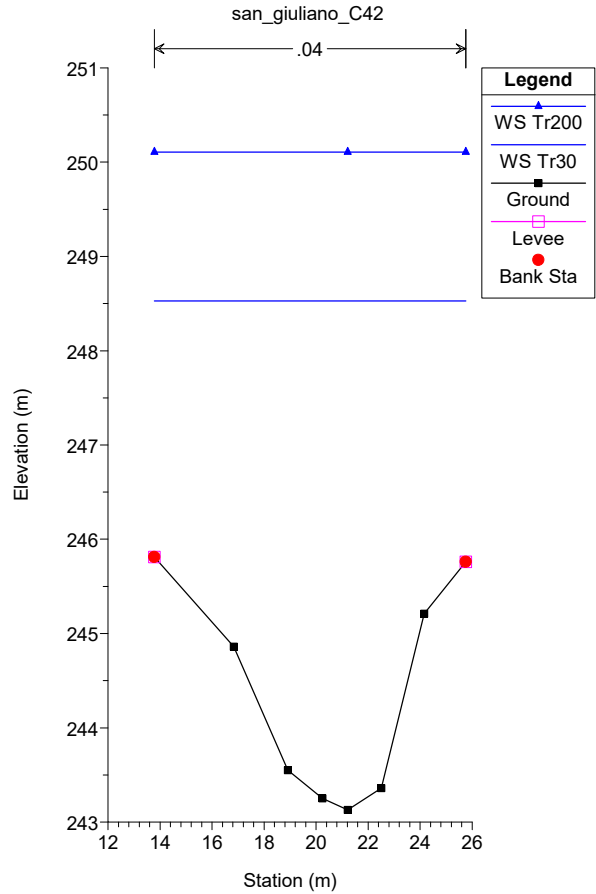
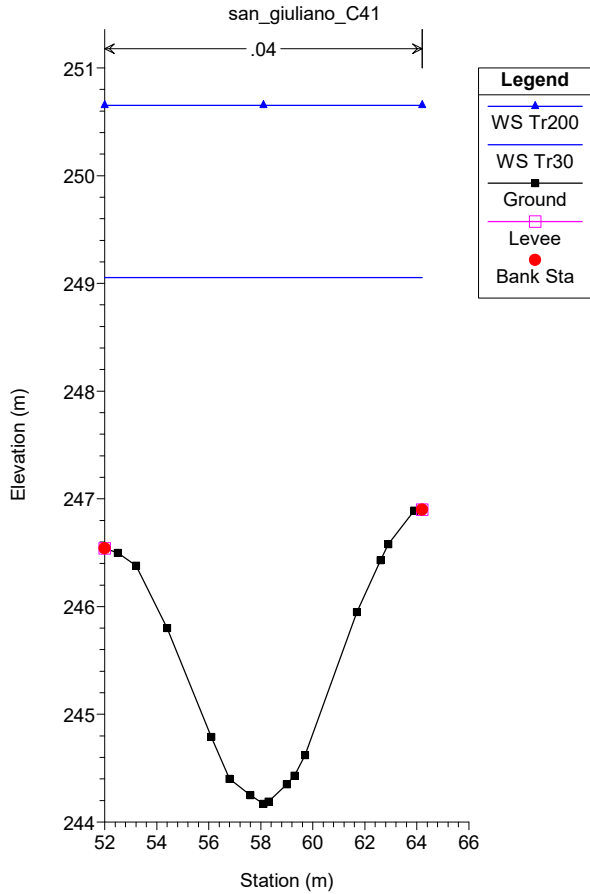


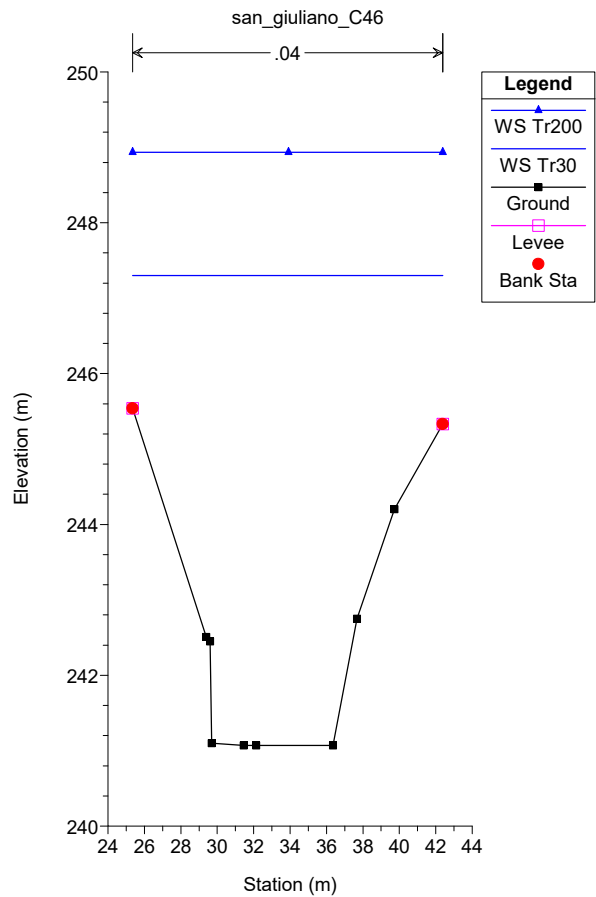
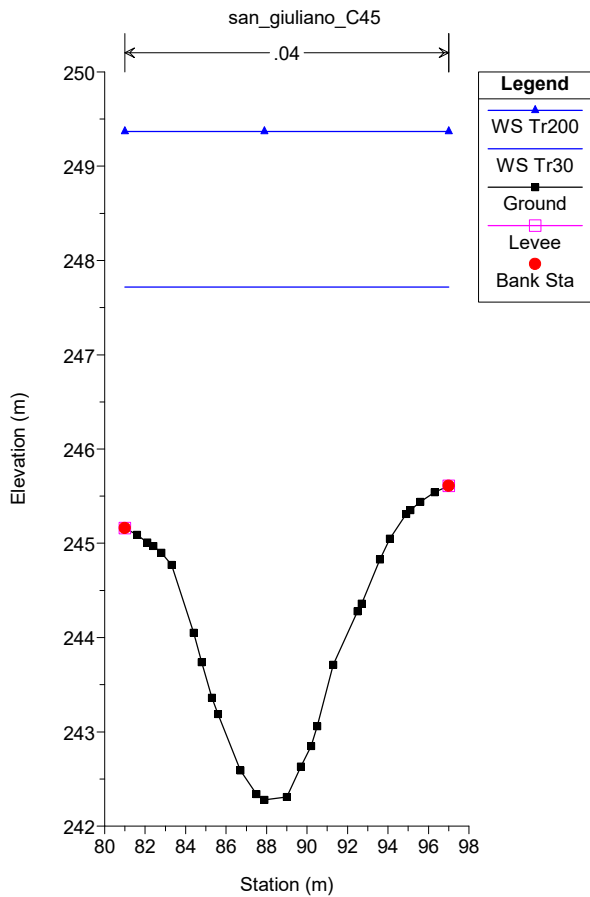
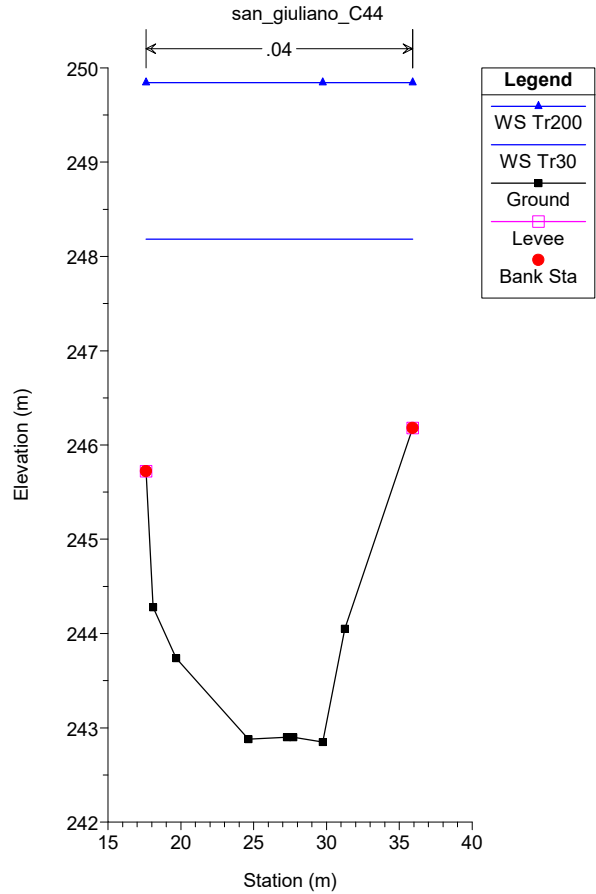
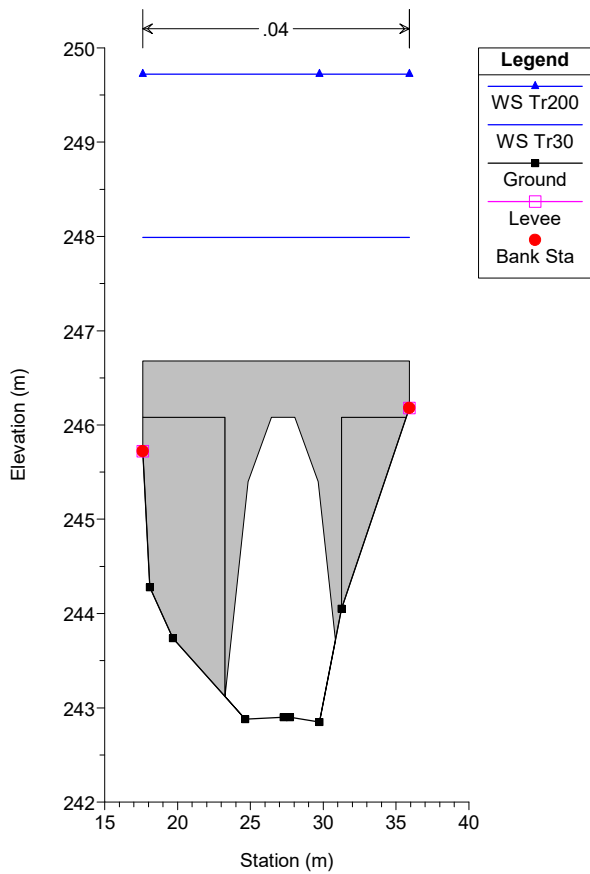


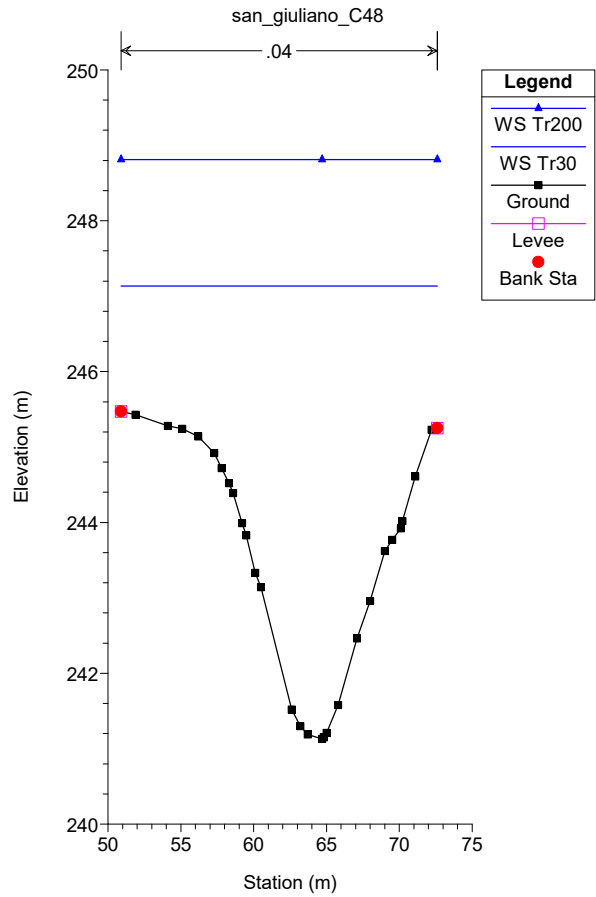
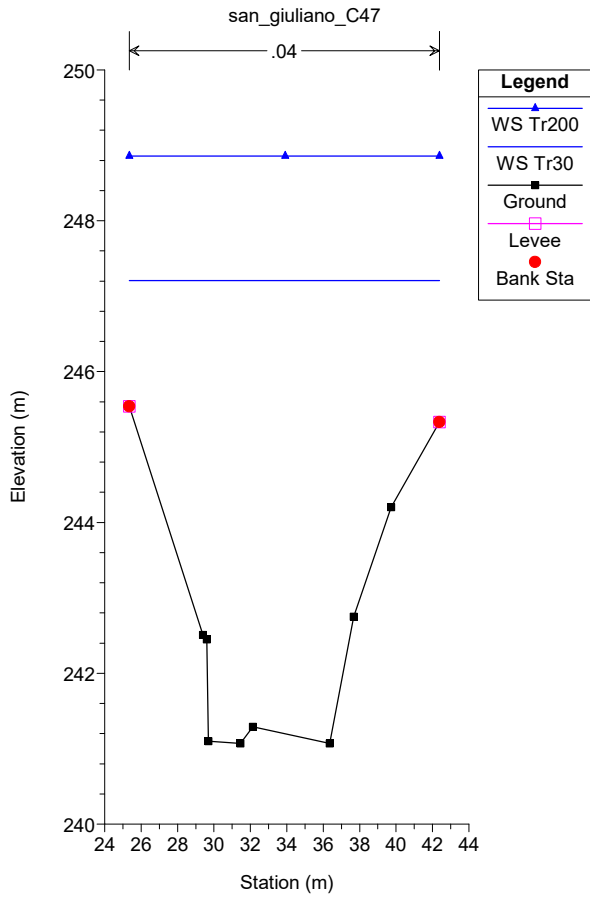
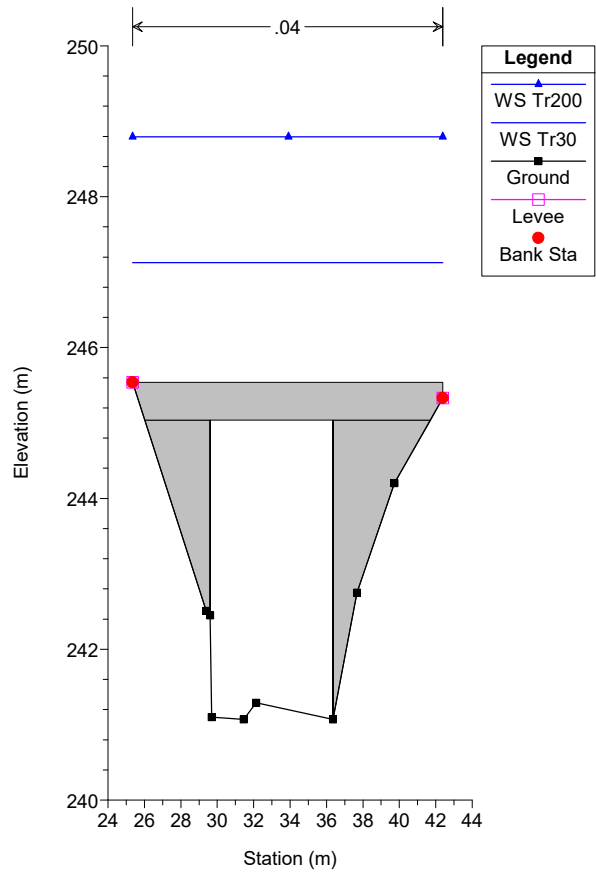
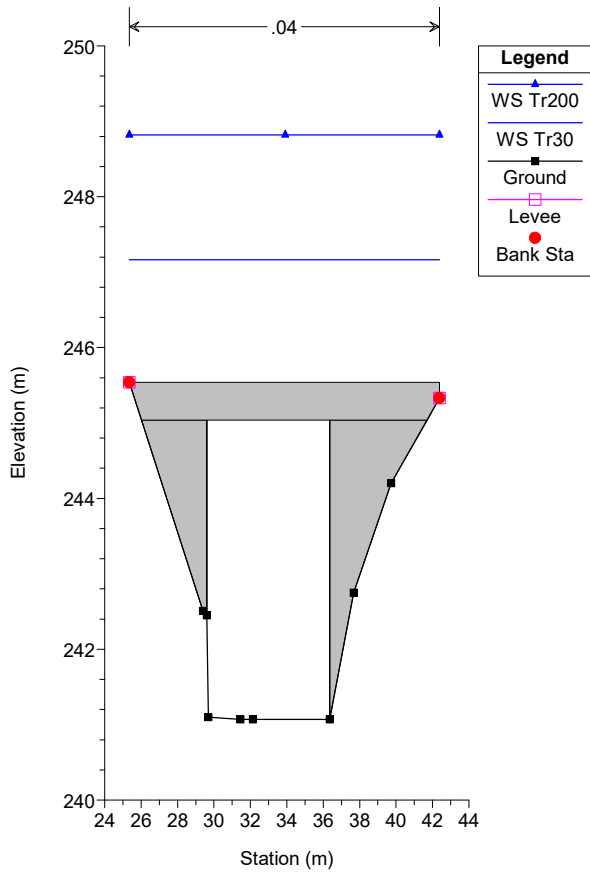


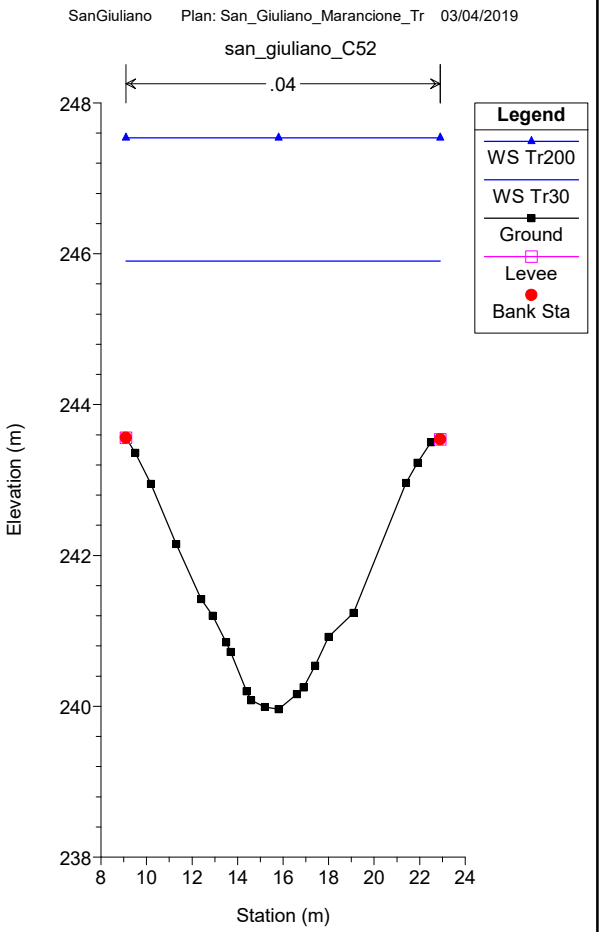
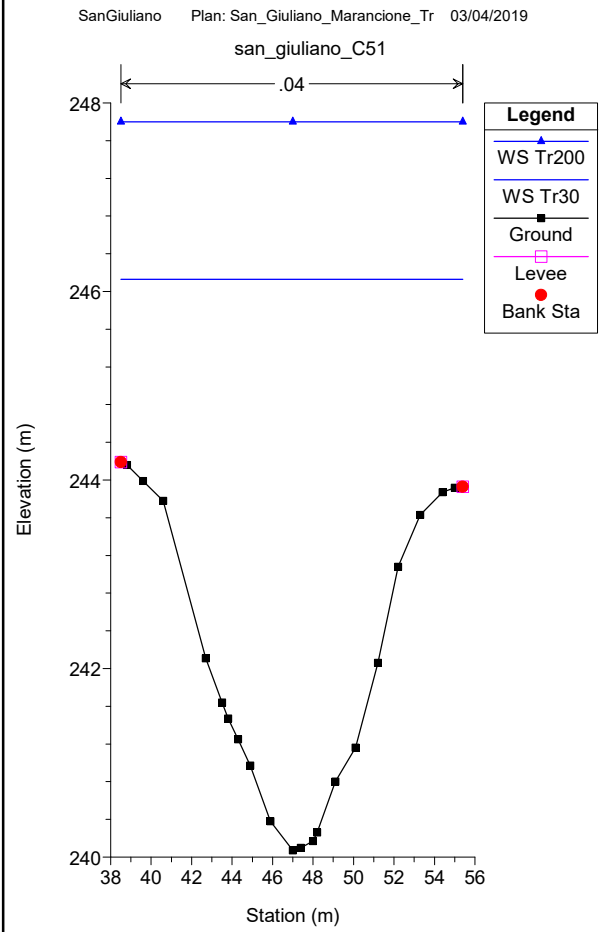
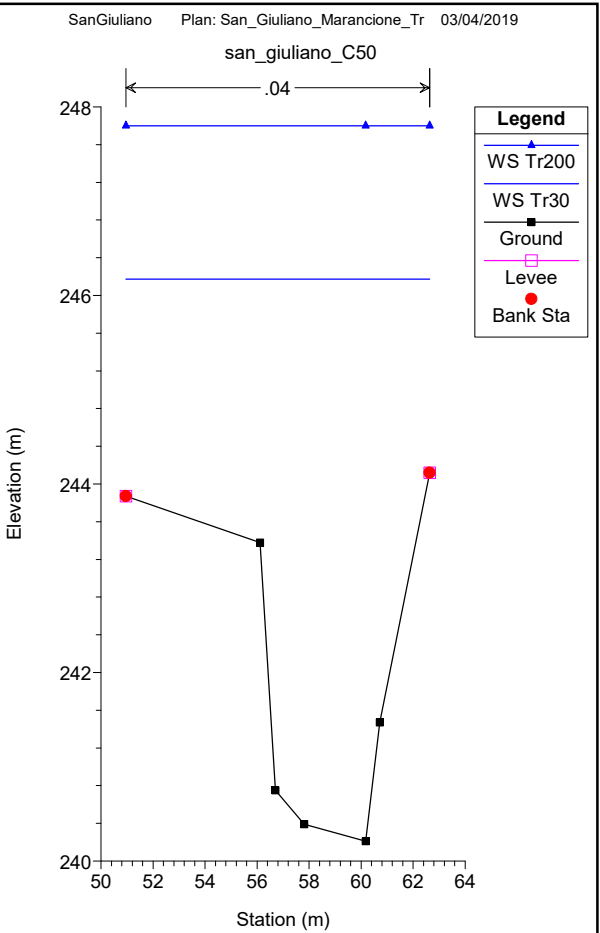
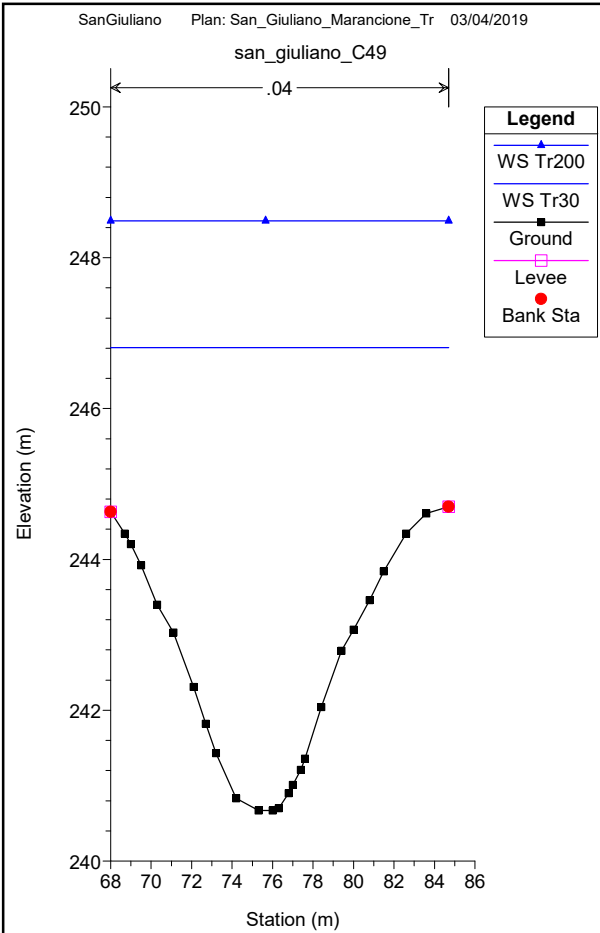




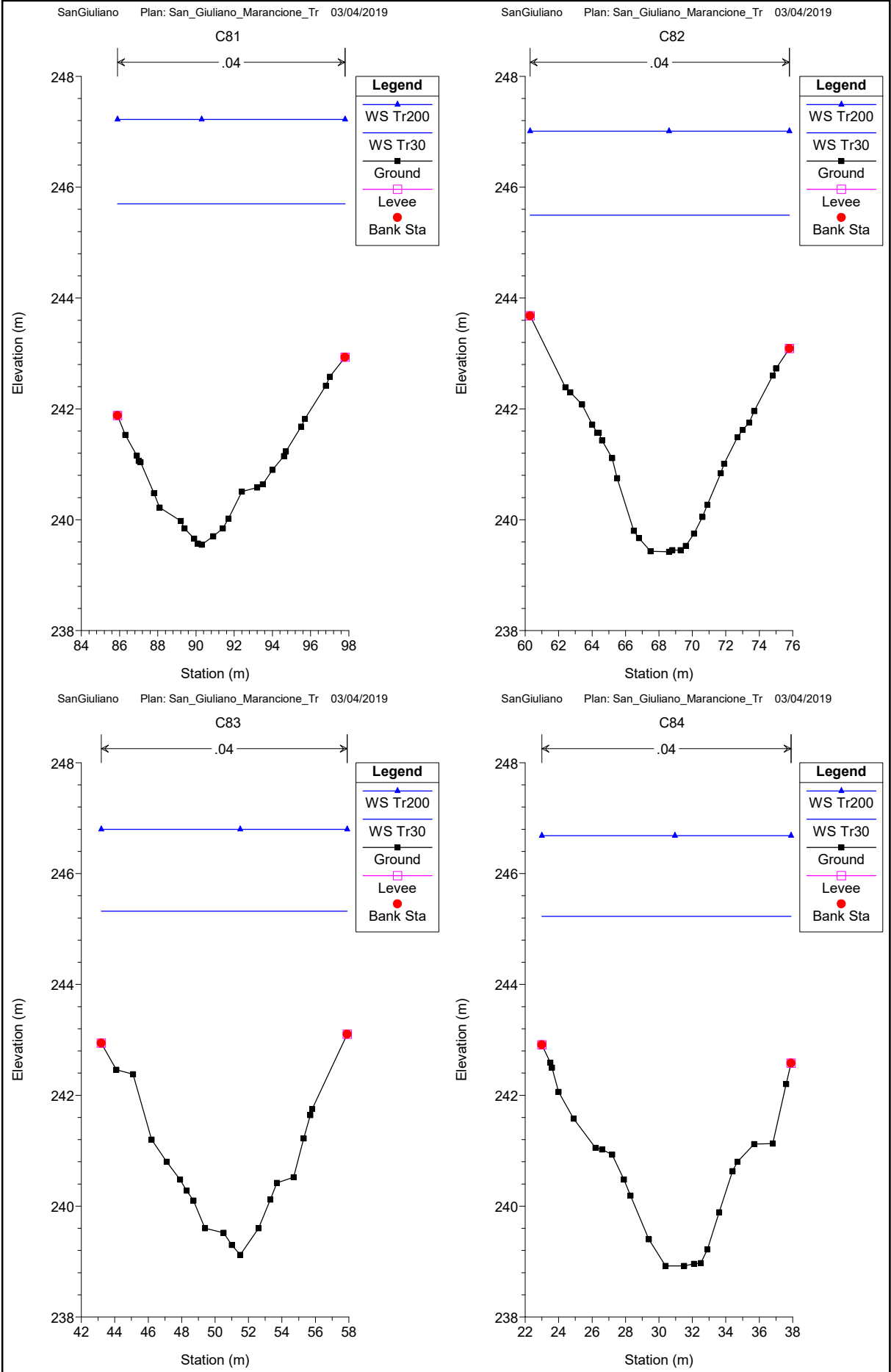


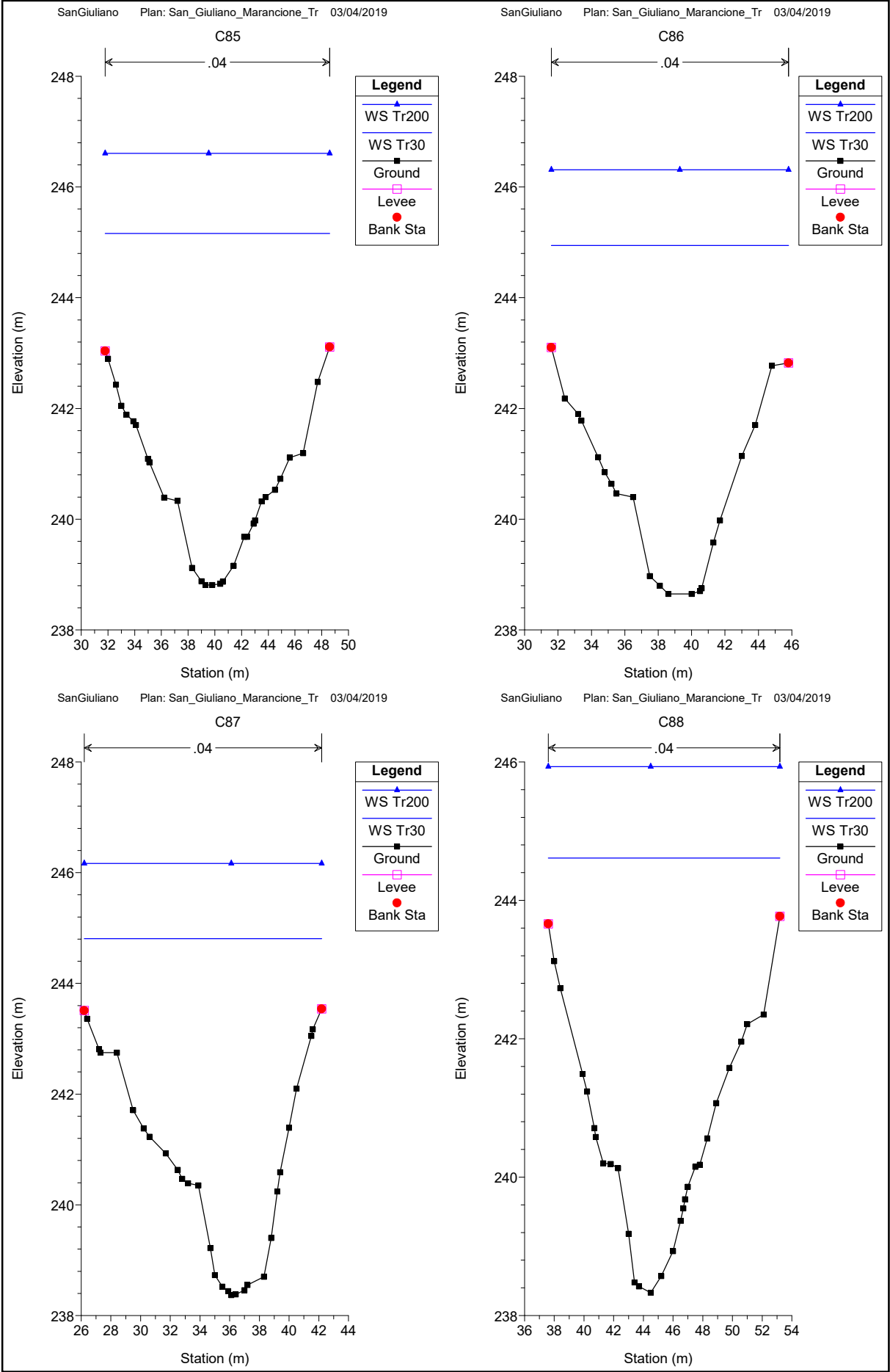


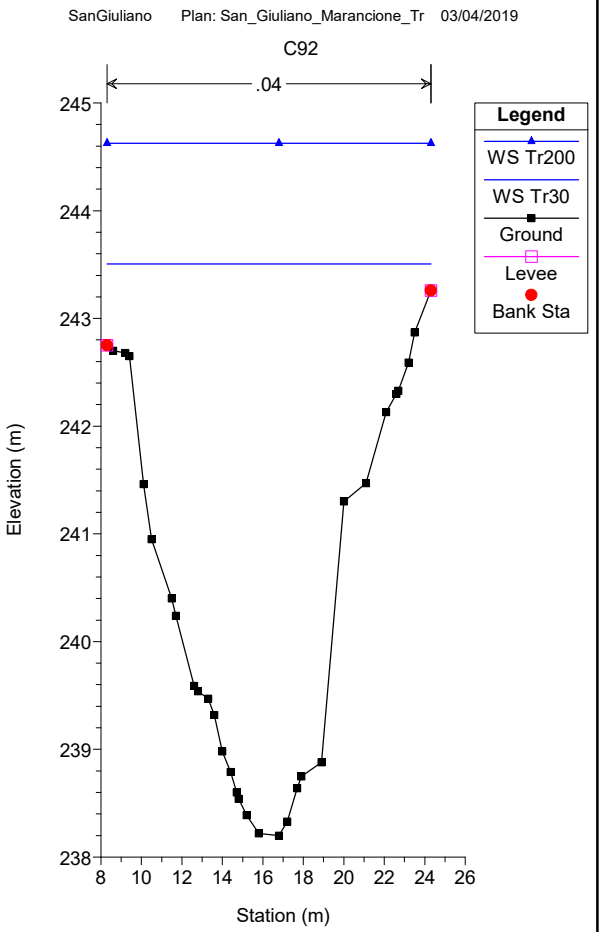
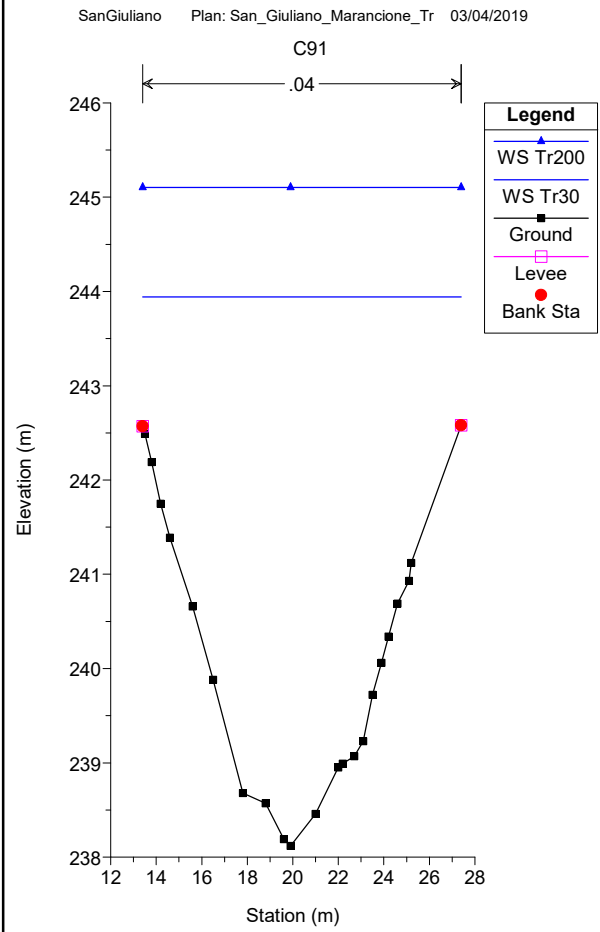
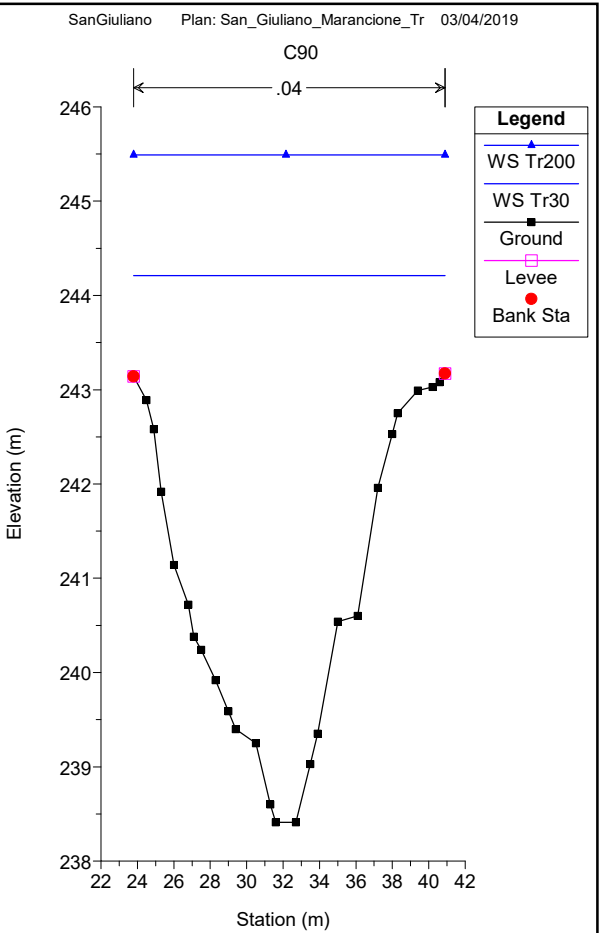
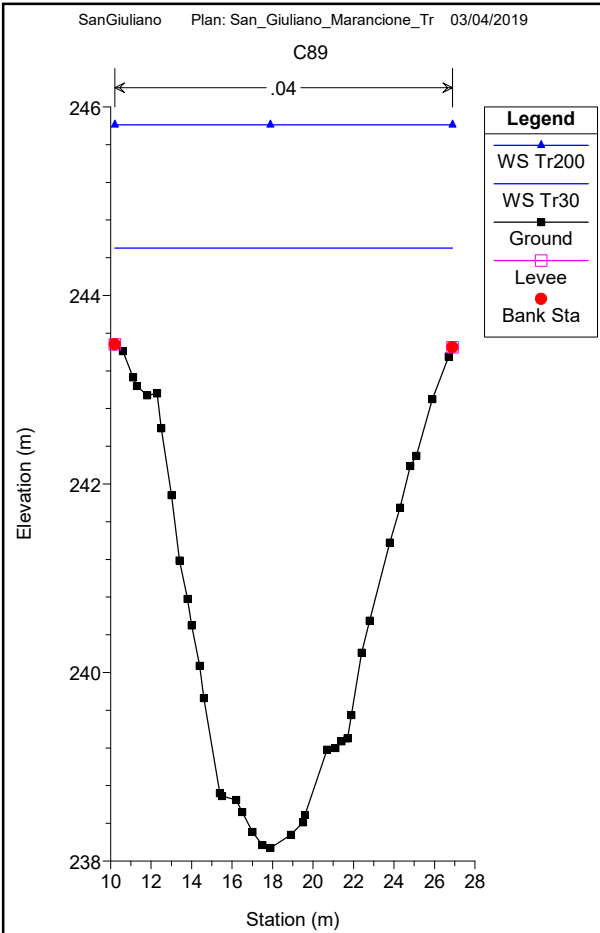


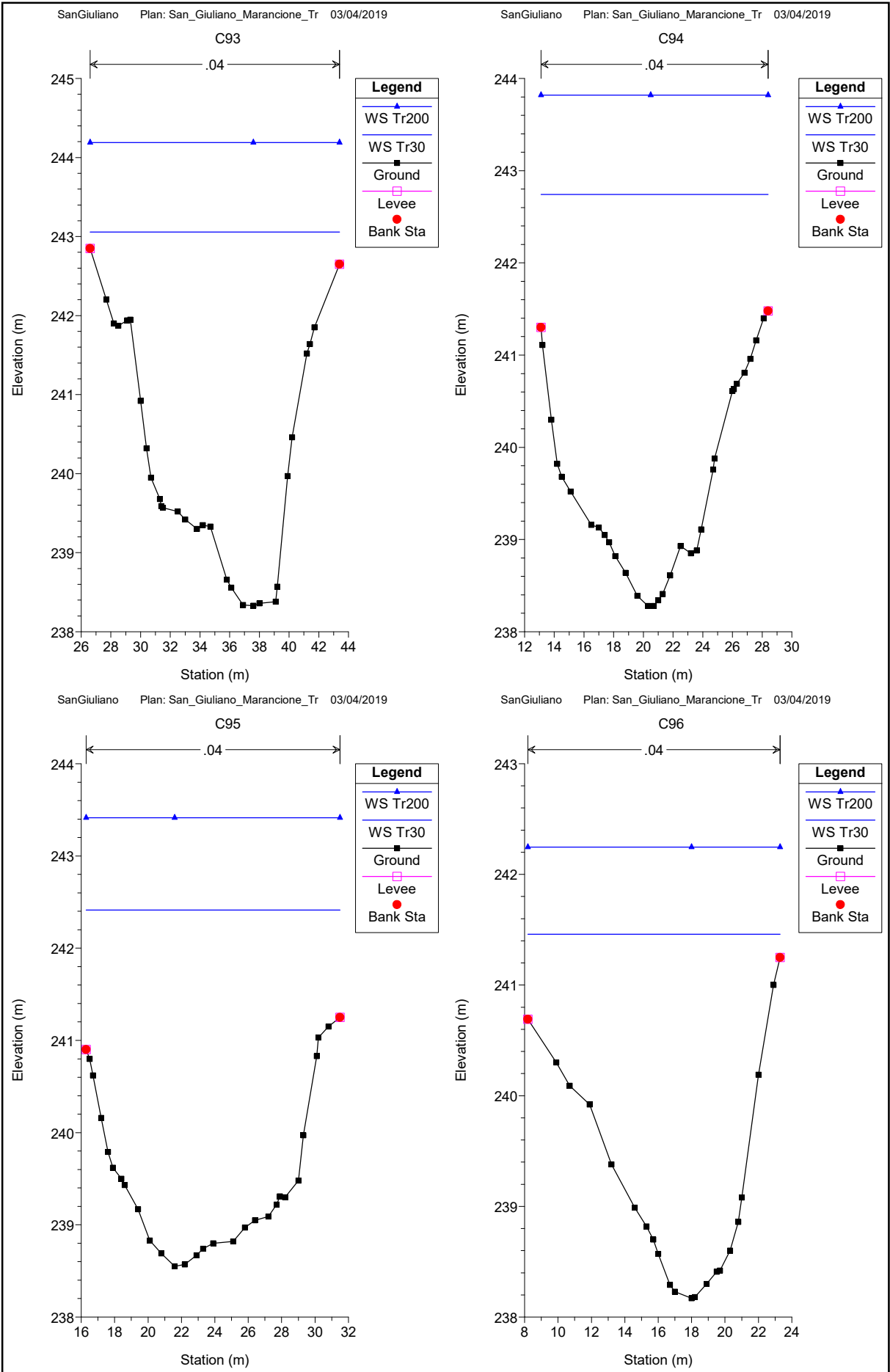


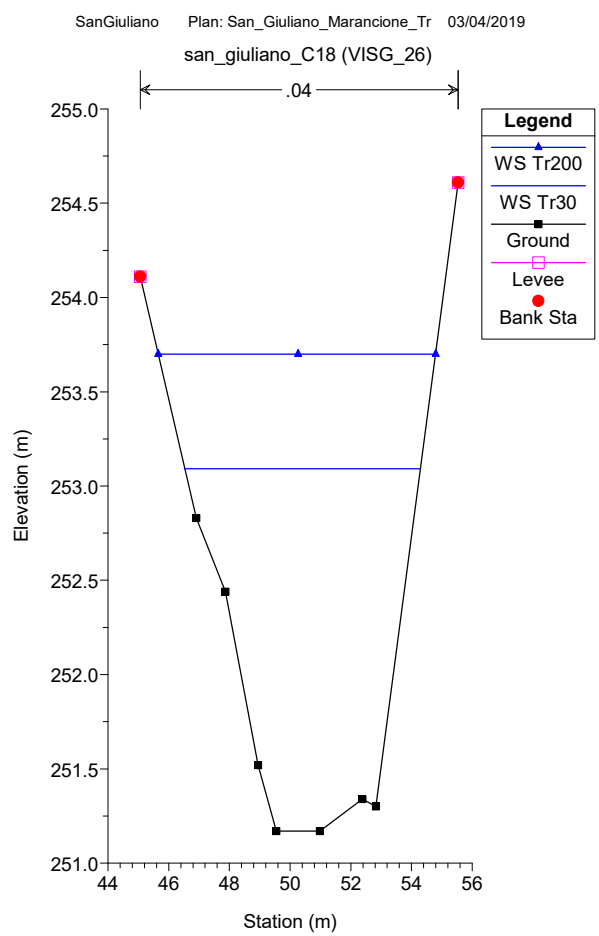
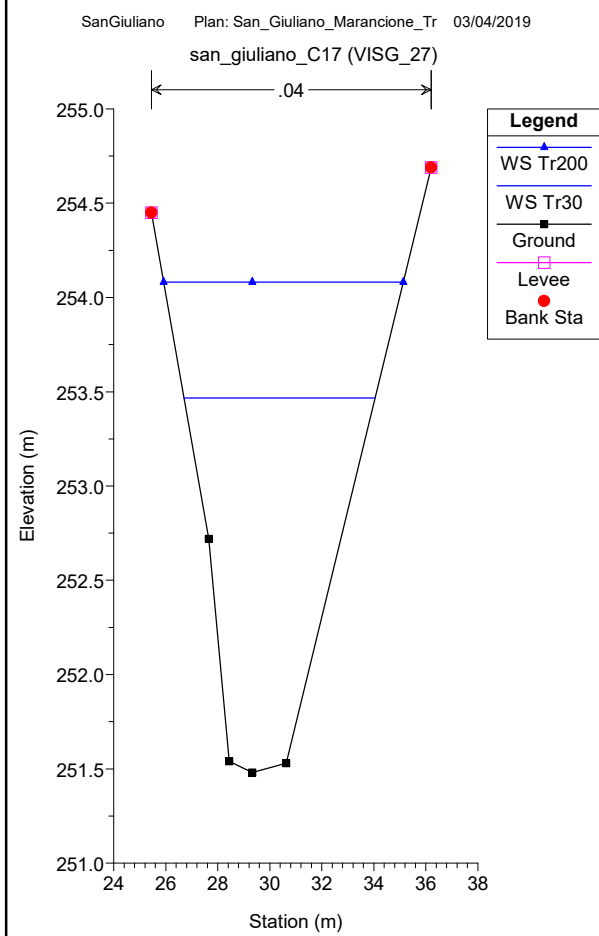
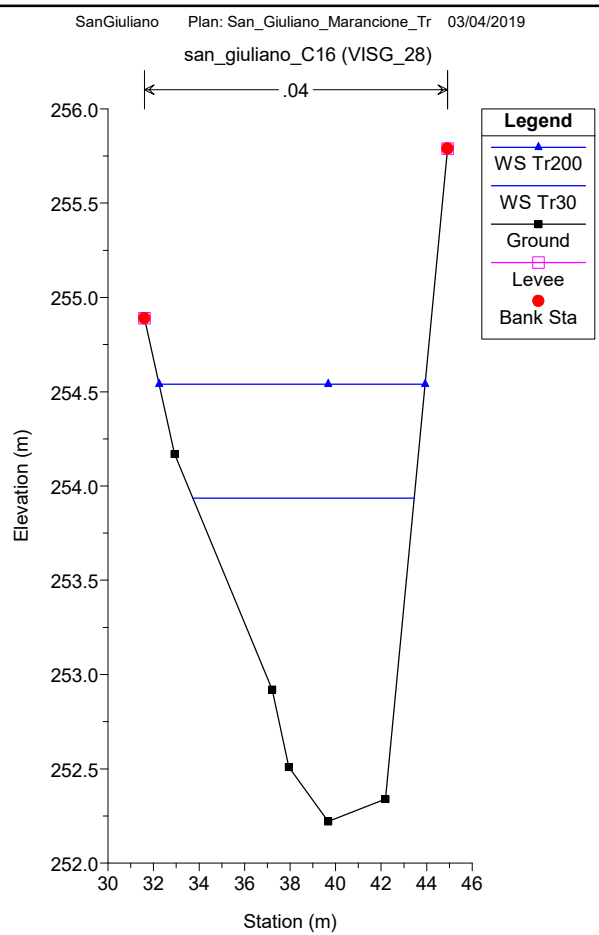
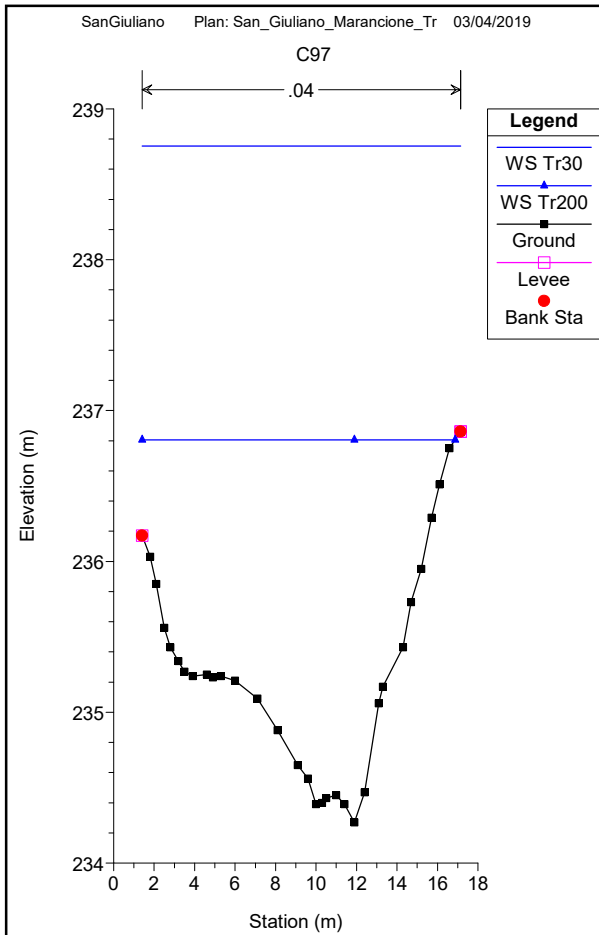




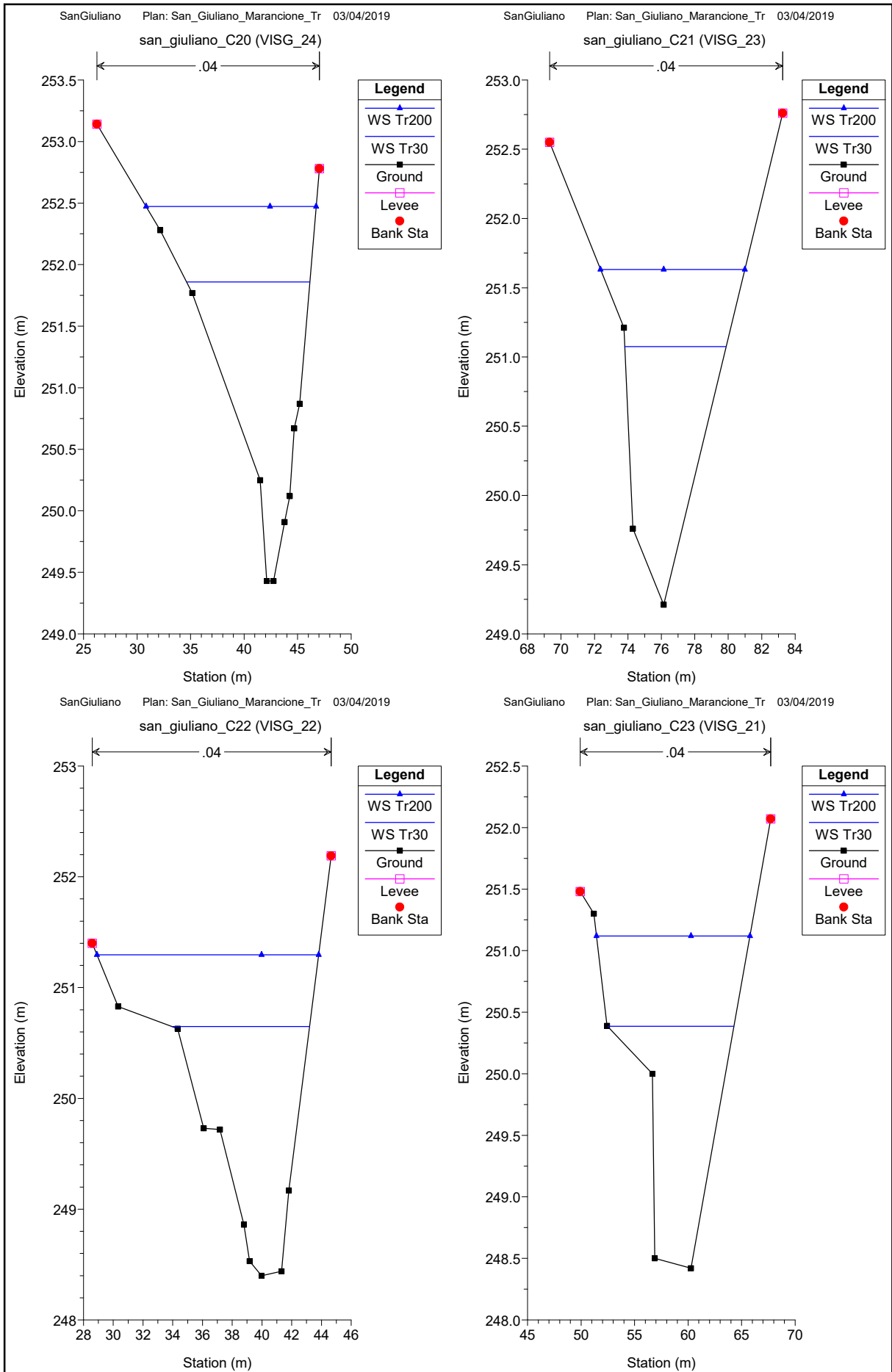


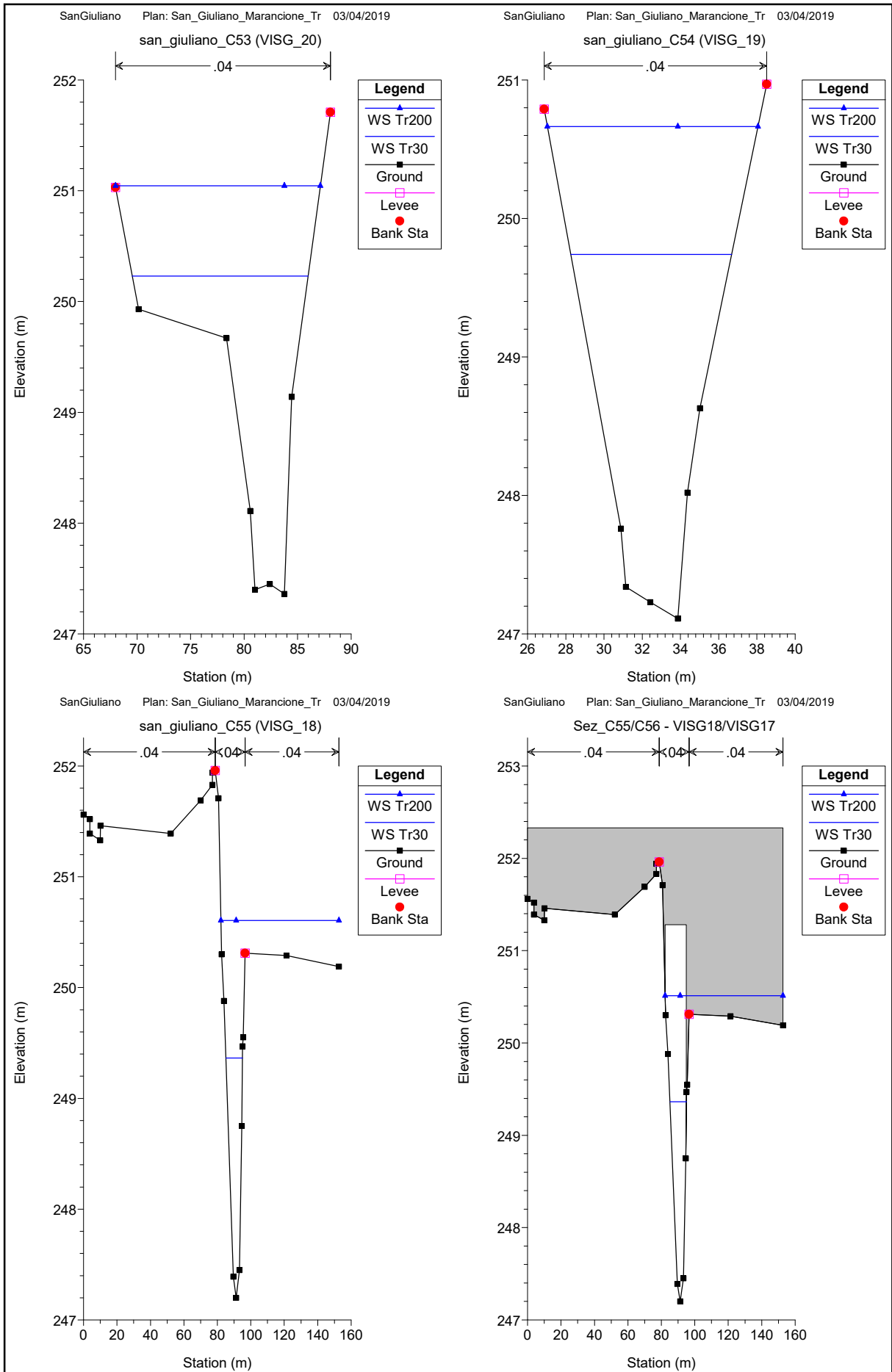




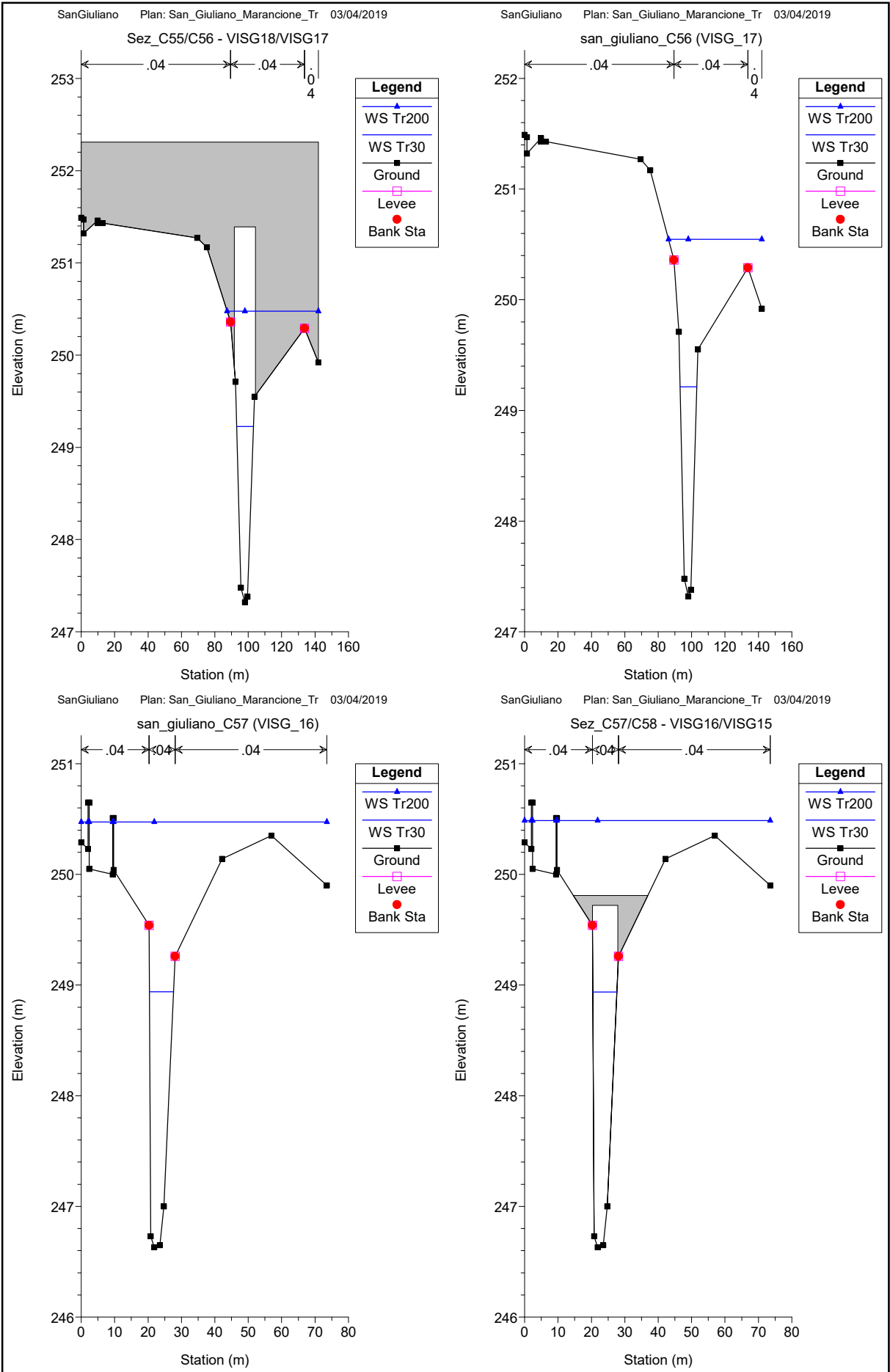


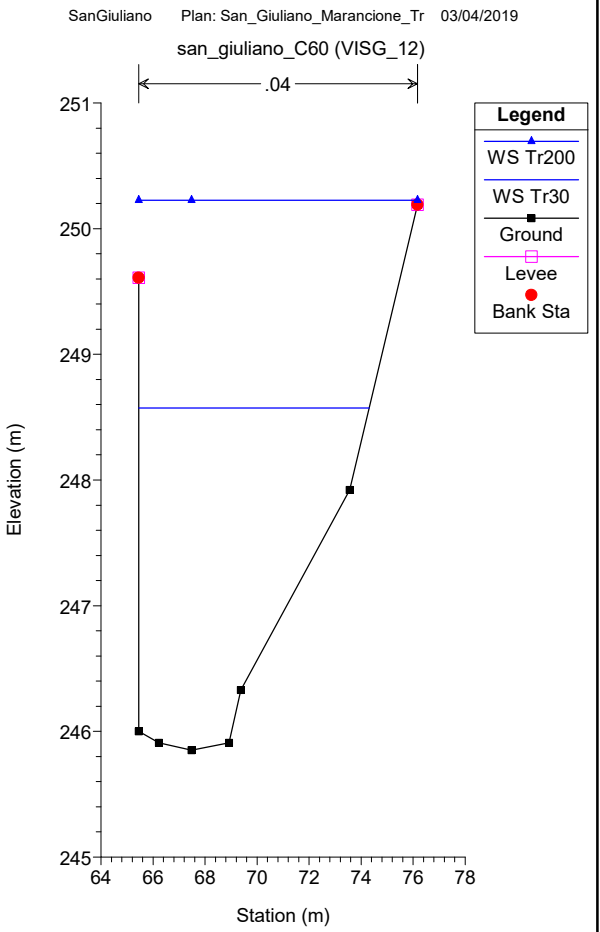
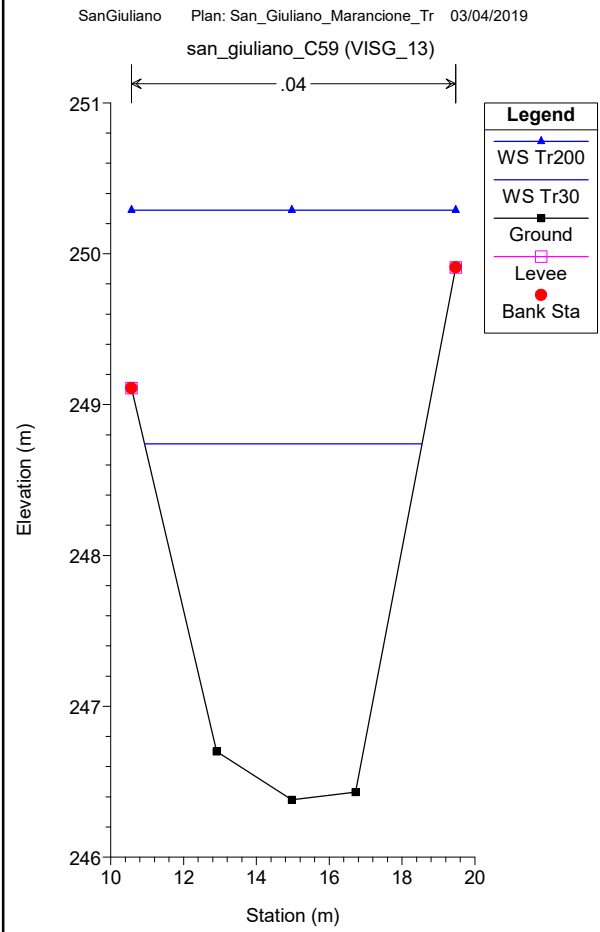
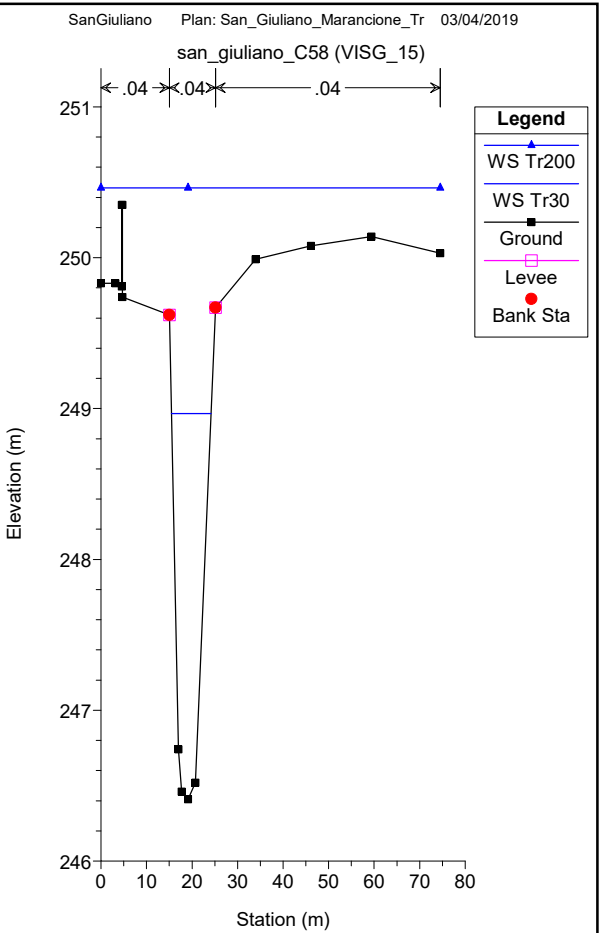
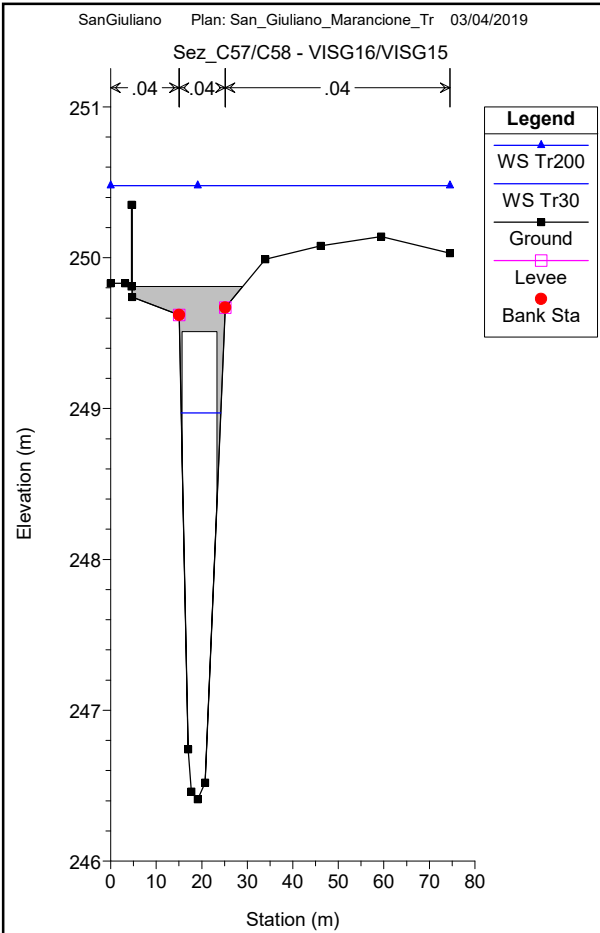


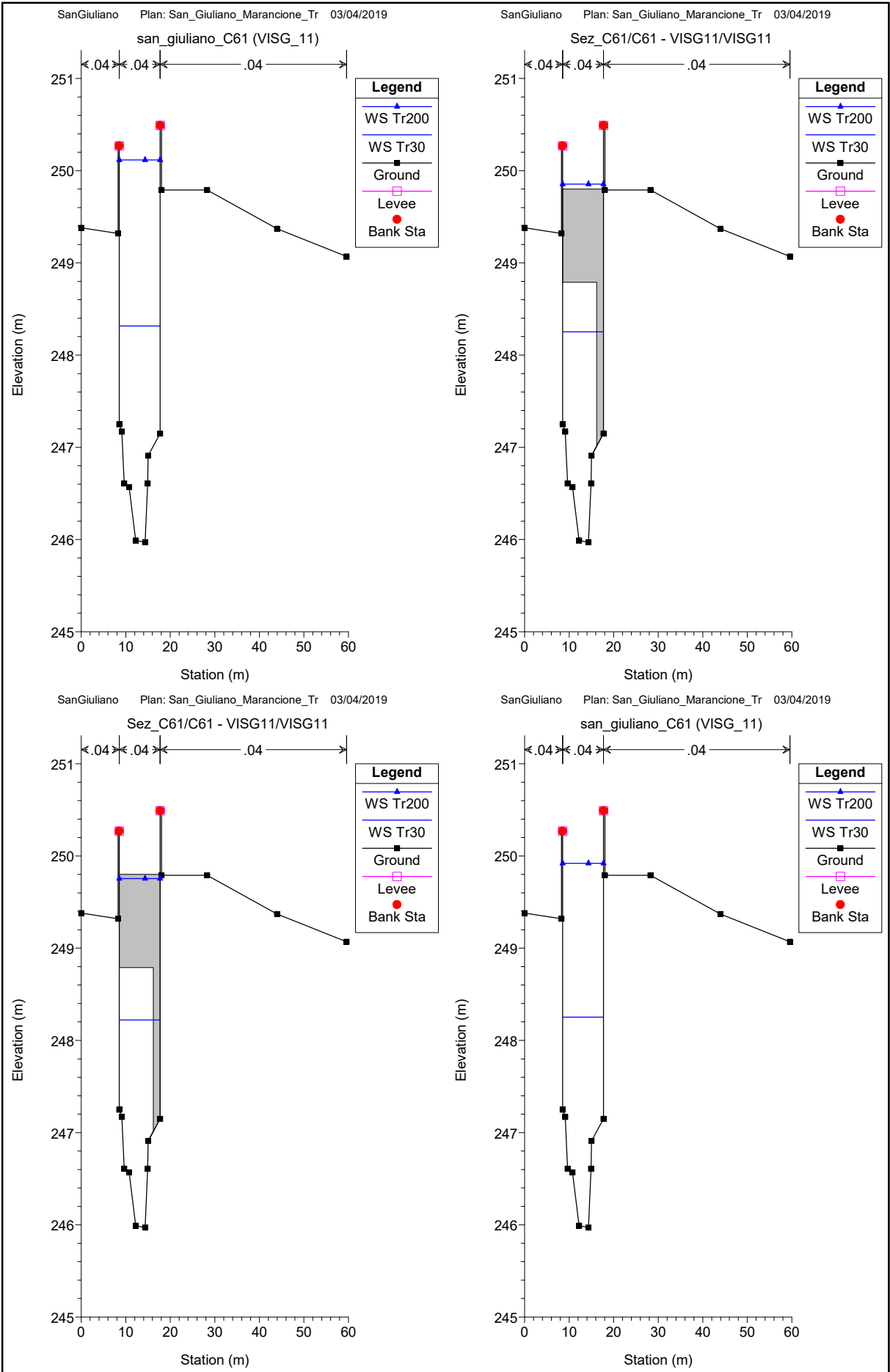


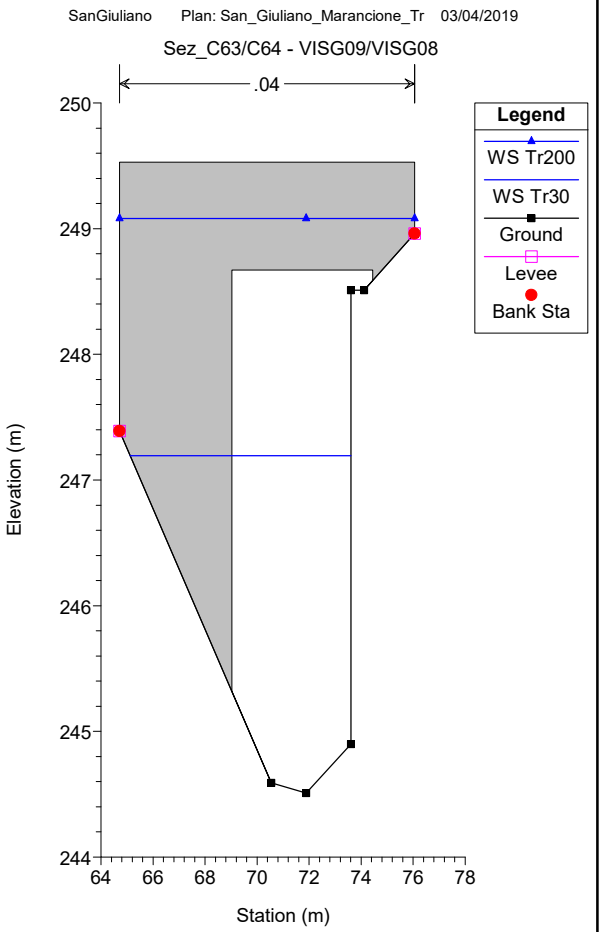
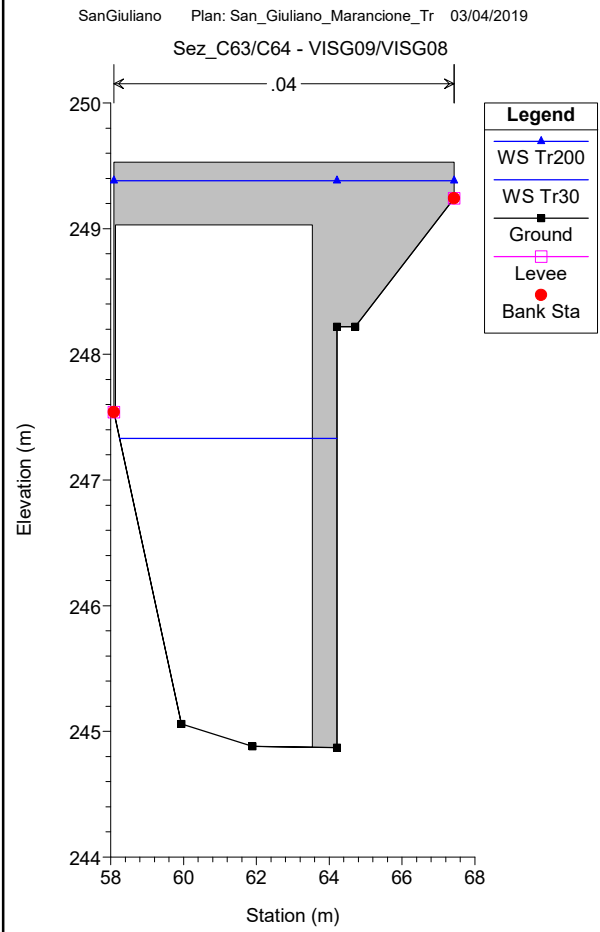
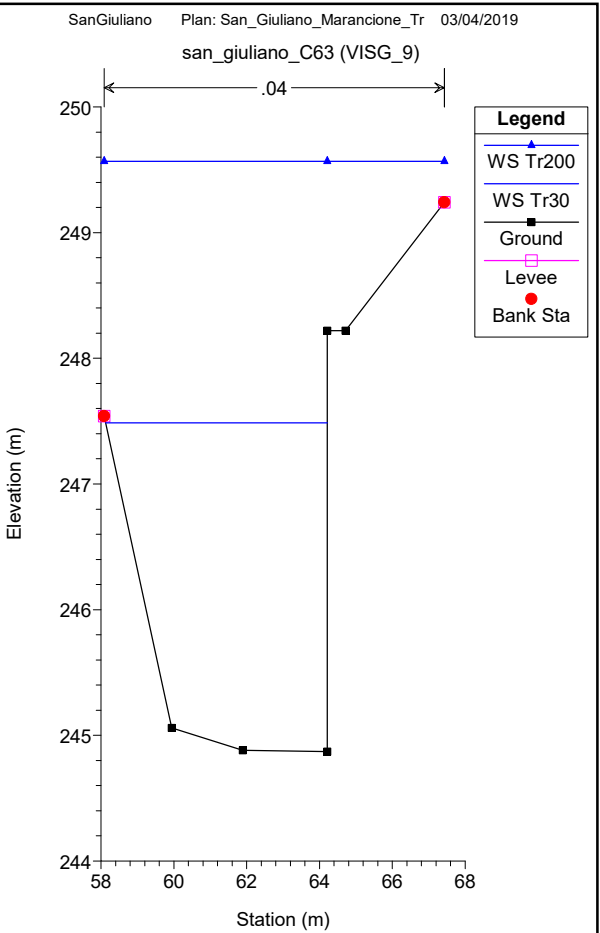
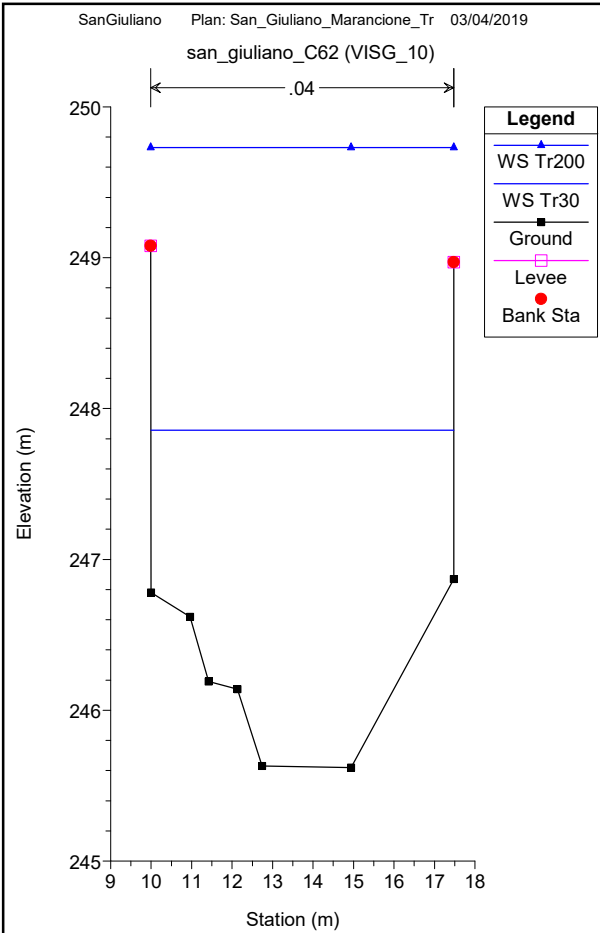


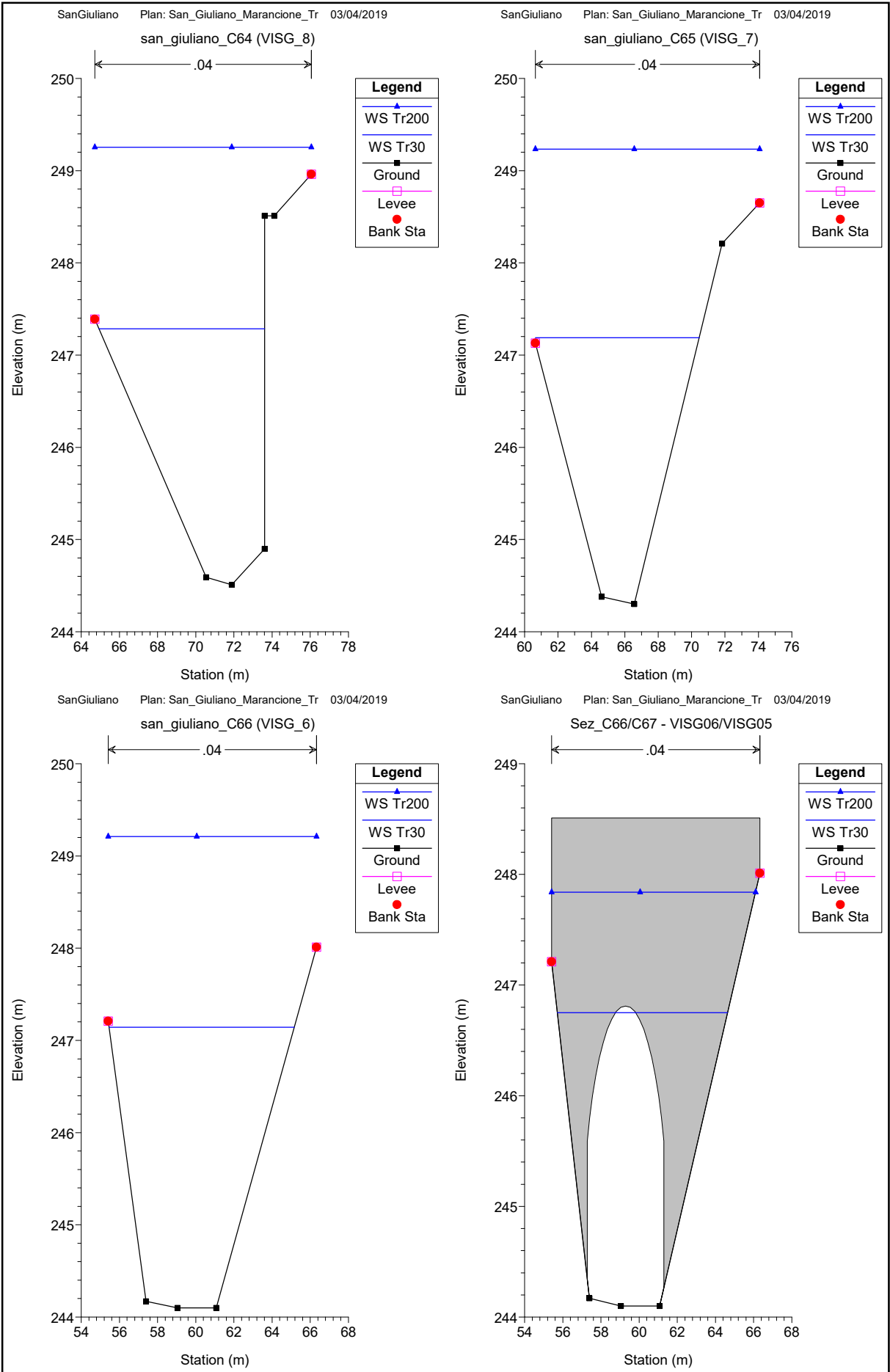


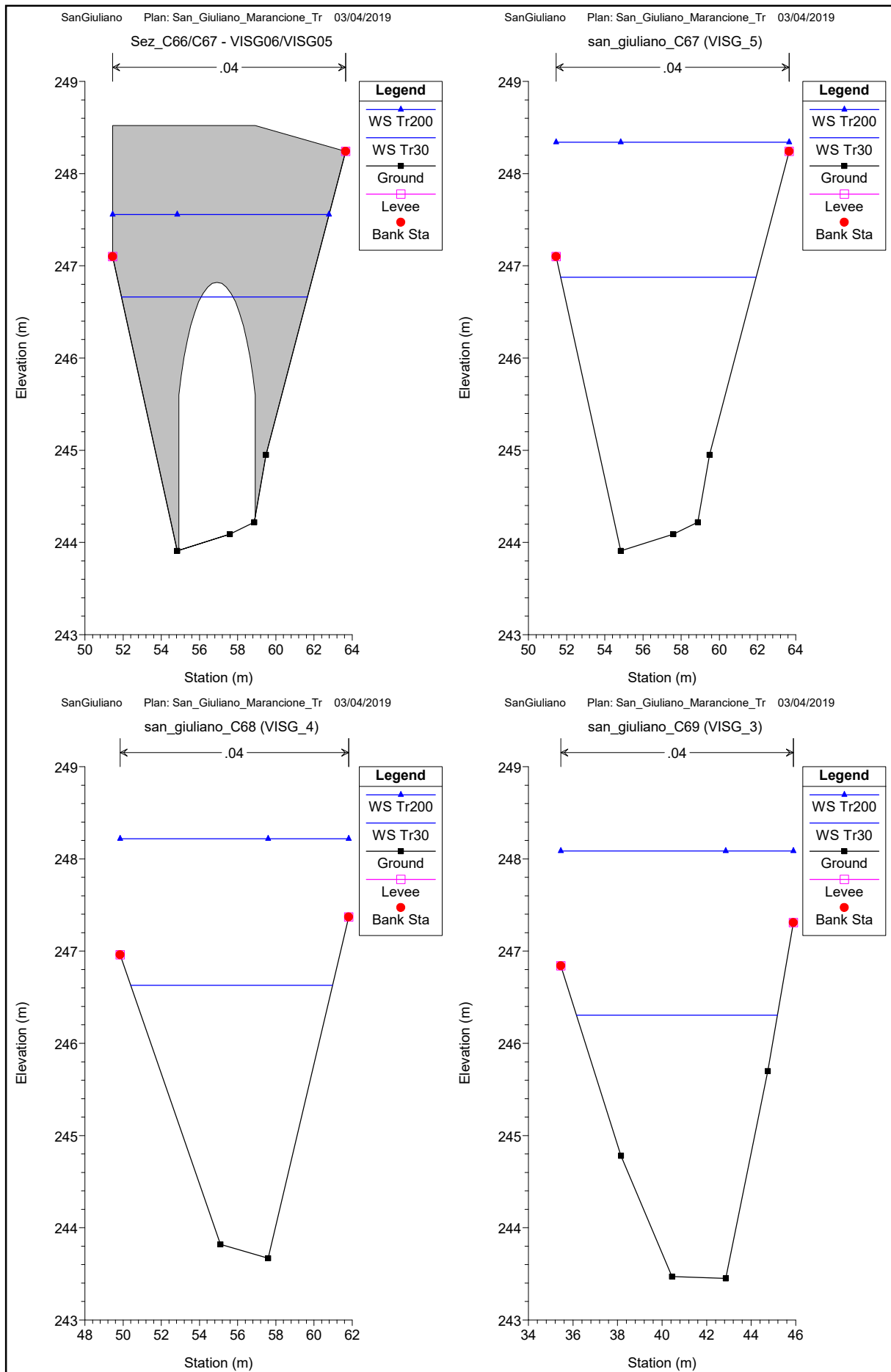


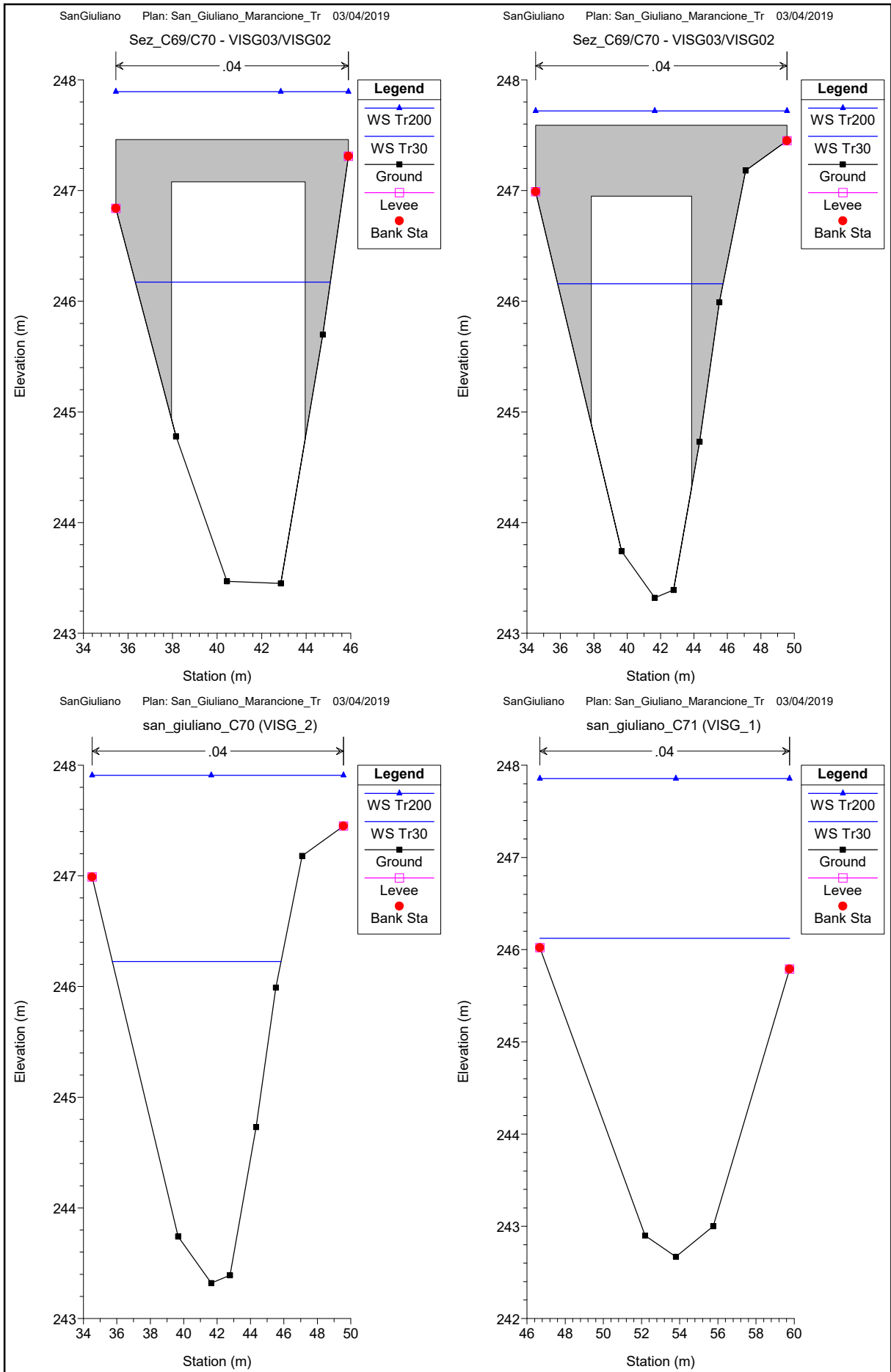


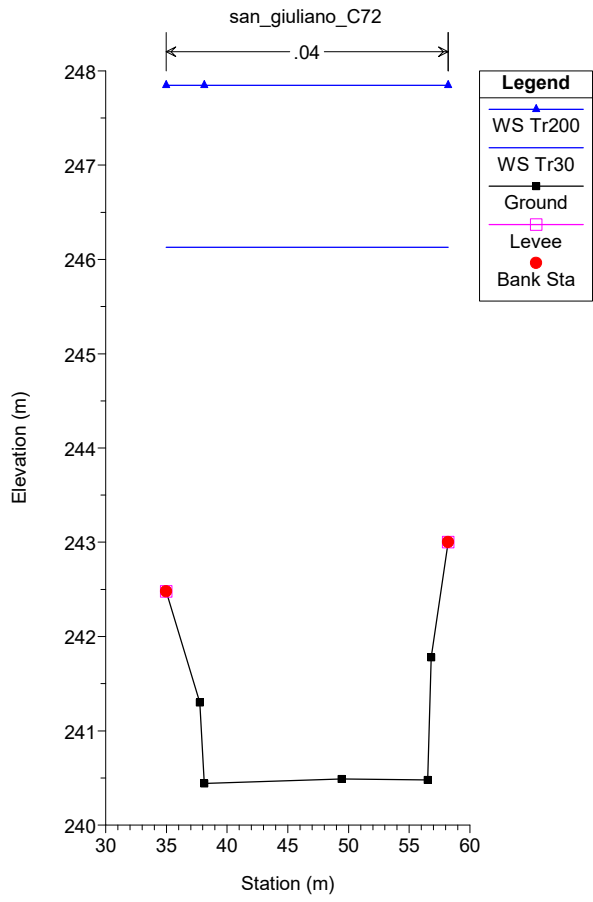






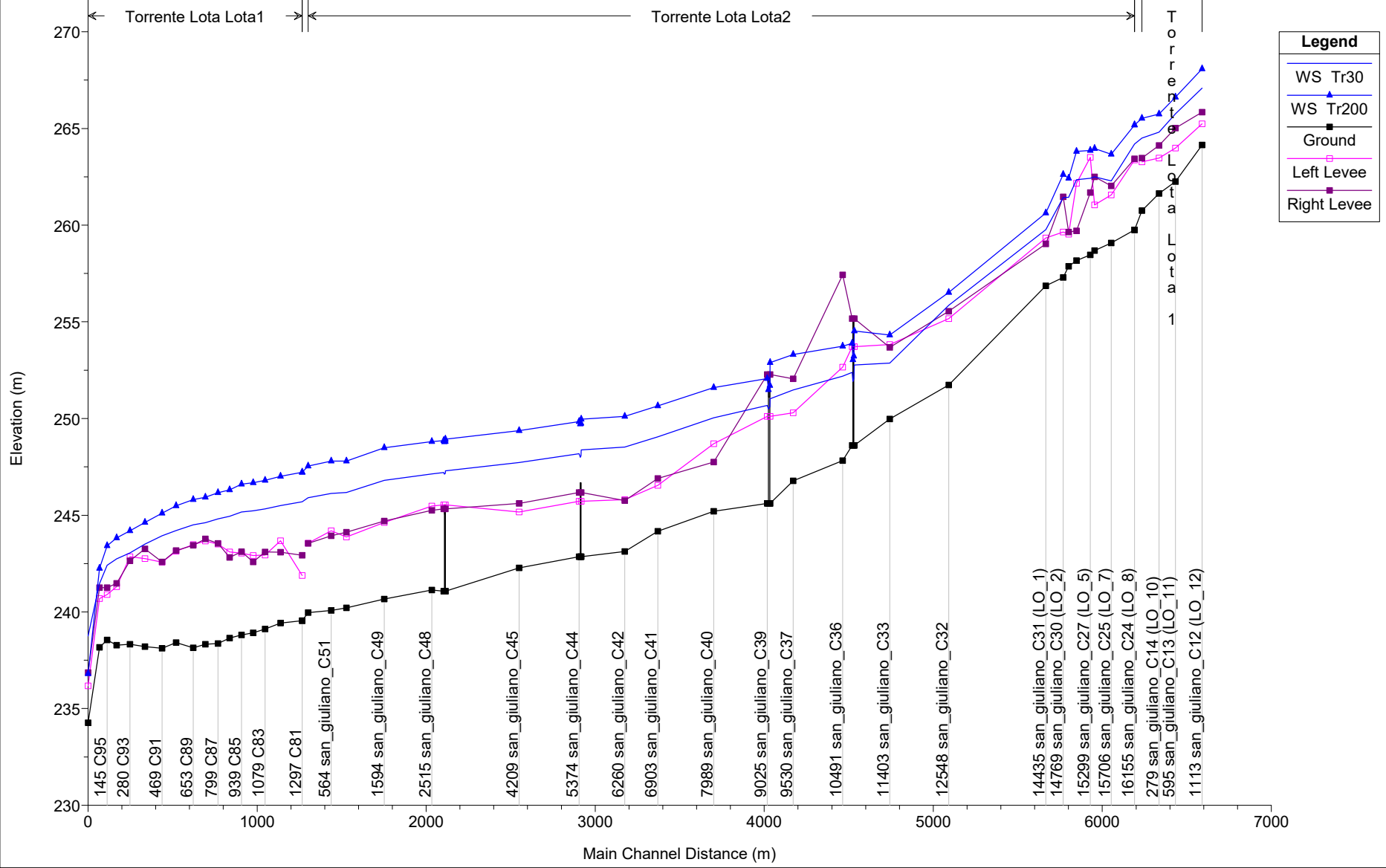




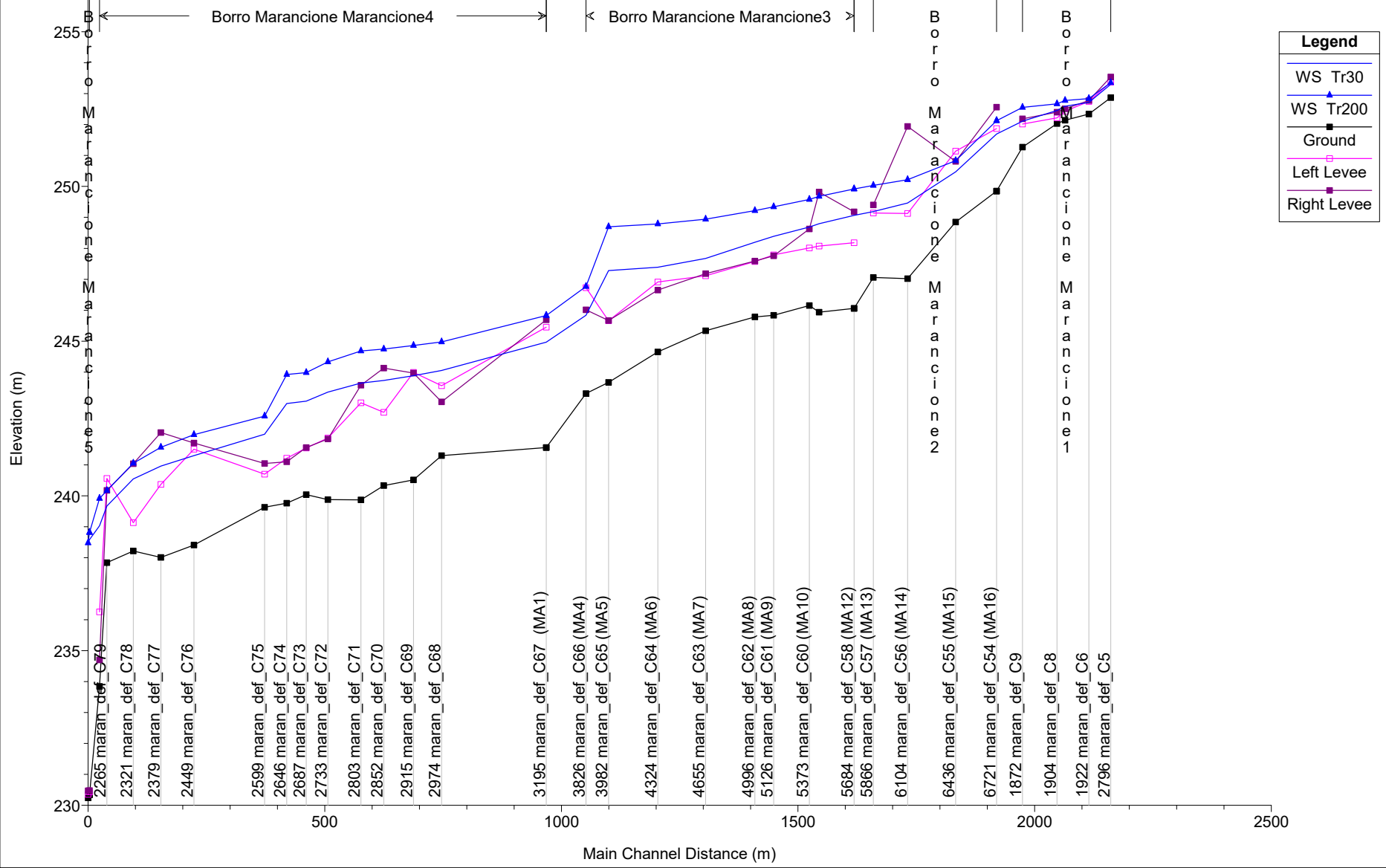


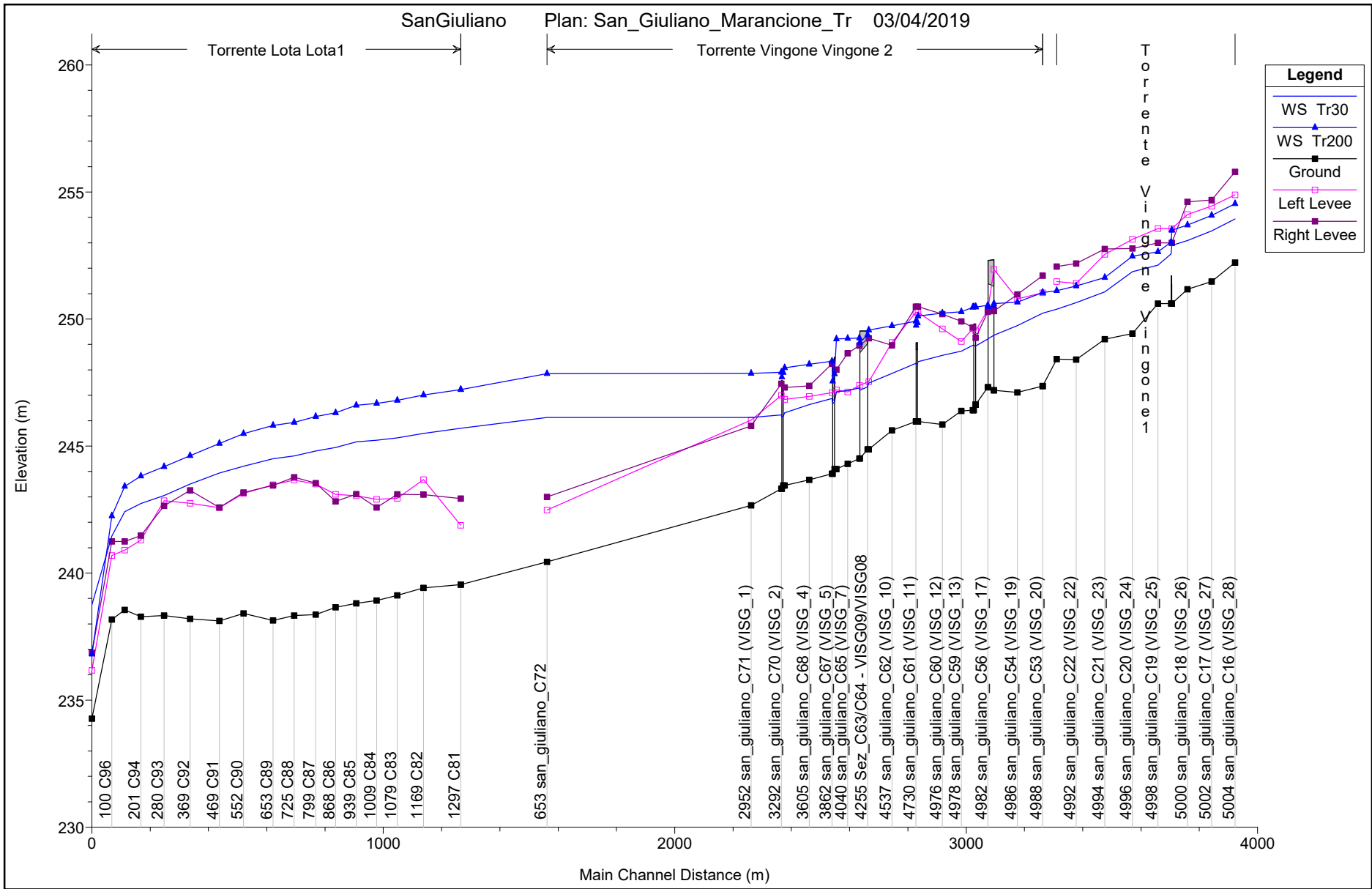


SanGiuliano Plan: San\_Giuliano\_Marancione\_Tr 03/04/2019



SanGiuliano Plan: San\_Giuliano\_Marancione\_Tr 03/04/2019





HEC-RAS Plan: SG M Tr

River	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 Vingone	Vingone1	5004	Tr30	17.50	252.22	253.94	253.43	254.08	0.004522	1.66	10.56	9.73	0.51
Torrente Vingone	Vingone1	5004	Tr200	31.30	252.22	254.54	253.86	254.71	0.003788	1.83	17.09	11.69	0.48
Torrente Vingone	Vingone1	5002	Tr30	17.50	251.48	253.47	252.96	253.66	0.005801	1.94	9.01	7.34	0.56
Torrente Vingone	Vingone1	5002	Tr200	31.30	251.48	254.08	253.47	254.33	0.005653	2.22	14.10	9.21	0.57
Torrente Vingone	Vingone1	5000	Tr30	17.50	251.17	253.09	252.44	253.24	0.004161	1.72	10.16	7.76	0.48
Torrente Vingone	Vingone1	5000	Tr200	31.30	251.17	253.70	252.95	253.91	0.004344	2.04	15.31	9.14	0.50
Torrente Vingone	Vingone1	4999	Tr30	17.50	250.61	252.90	252.11	253.02	0.003679	1.58	11.06	8.40	0.44
Torrente Vingone	Vingone1	4999	Tr200	31.30	250.61	253.50	252.65	253.68	0.003914	1.88	16.62	9.95	0.47
Torrente Vingone	Vingone1	4998.5											
Torrente Vingone	Vingone1	4998	Tr30	17.50	250.61	252.12	252.11	252.61	0.021019	3.10	5.65	5.59	0.98
Torrente Vingone	Vingone1	4998	Tr200	31.30	250.61	252.65	252.65	253.25	0.019674	3.44	9.09	7.50	1.00
Torrente Vingone	Vingone1	4996	Tr30	17.50	249.43	251.86	251.15	251.95	0.002918	1.35	12.96	11.50	0.41
Torrente Vingone	Vingone1	4996	Tr200	31.30	249.43	252.47	251.57	252.58	0.002687	1.47	21.31	15.88	0.40
Torrente Vingone	Vingone1	4994	Tr30	17.50	249.21	251.07	250.88	251.42	0.012523	2.60	6.72	6.06	0.79
Torrente Vingone	Vingone1	4994	Tr200	31.30	249.21	251.63	251.43	252.07	0.012952	2.92	10.73	8.63	0.83
Torrente Vingone	Vingone1	4992	Tr30	17.50	248.40	250.65	249.96	250.77	0.003465	1.53	11.46	9.25	0.44
Torrente Vingone	Vingone1	4992	Tr200	31.30	248.40	251.30	250.40	251.42	0.003122	1.56	20.00	14.92	0.43
Torrente Vingone	Vingone1	4990	Tr30	17.50	248.42	250.39	249.67	250.50	0.004632	1.52	11.49	11.80	0.49
Torrente Vingone	Vingone1	4990	Tr200	31.30	248.42	251.12	250.25	251.23	0.002541	1.48	21.10	14.33	0.39
Torrente Vingone	Vingone 2	4988	Tr30	23.20	247.36	250.23	249.13	250.32	0.003071	1.32	17.60	16.43	0.41
Torrente Vingone	Vingone 2	4988	Tr200	41.30	247.36	251.04	250.00	251.13	0.001617	1.29	32.09	19.14	0.32
Torrente Vingone	Vingone 2	4986	Tr30	26.90	247.11	249.74	249.05	249.96	0.005175	2.08	12.95	8.41	0.53
Torrente Vingone	Vingone 2	4986	Tr200	47.20	247.11	250.66	249.66	250.90	0.003934	2.15	21.92	11.01	0.49
Torrente Vingone	Vingone 2	4984	Tr30	26.90	247.20	249.36	248.78	249.56	0.004631	1.96	13.75	9.85	0.53
Torrente Vingone	Vingone 2	4984	Tr200	47.20	247.20	250.61	249.28	250.68	0.001304	1.33	48.25	70.56	0.30
Torrente Vingone	Vingone 2	4983											
Torrente Vingone	Vingone 2	4982	Tr30	26.90	247.32	249.21	248.77	249.44	0.006000	2.13	12.64	9.98	0.60
Torrente Vingone	Vingone 2	4982	Tr200	47.20	247.32	250.55	249.27	250.59	0.001349	0.95	51.78	55.94	0.29
Torrente Vingone	Vingone 2	4980	Tr30	26.90	246.63	248.94	248.29	249.19	0.005994	2.23	12.04	7.21	0.55
Torrente Vingone	Vingone 2	4980	Tr200	47.20	246.63	250.47	248.90	250.54	0.001017	1.35	54.84	72.94	0.25
Torrente Vingone	Vingone 2	4979.5											
Torrente Vingone	Vingone 2	4979	Tr30	26.90	246.41	248.97	248.03	249.13	0.003178	1.78	15.13	8.68	0.43
Torrente Vingone	Vingone 2	4979	Tr200	47.20	246.41	250.46	248.61	250.51	0.000672	1.14	61.94	74.55	0.21
Torrente Vingone	Vingone 2	4978	Tr30	26.90	246.38	248.74	248.03	248.97	0.004892	2.11	12.75	7.62	0.52
Torrente Vingone	Vingone 2	4978	Tr200	47.20	246.38	250.29	248.63	250.46	0.002153	1.82	25.93	8.90	0.34
Torrente Vingone	Vingone 2	4976	Tr30	26.90	245.85	248.57	247.50	248.71	0.002707	1.61	16.71	8.86	0.37
Torrente Vingone	Vingone 2	4976	Tr200	47.20	245.85	250.23	248.06	250.33	0.001286	1.43	32.94	10.72	0.26
Torrente Vingone	Vingone 2	4830	Tr30	26.90	245.97	248.32	247.53	248.46	0.003146	1.68	16.04	9.18	0.41
Torrente Vingone	Vingone 2	4830	Tr200	47.20	245.97	250.12	247.96	250.22	0.001289	1.45	32.56	9.18	0.25
Torrente Vingone	Vingone 2	4780											
Torrente Vingone	Vingone 2	4730	Tr30	26.90	245.97	248.25	247.53	248.41	0.003513	1.74	15.46	9.18	0.43
Torrente Vingone	Vingone 2	4730	Tr200	47.20	245.97	249.92	247.96	250.04	0.001507	1.53	30.77	9.18	0.27
Torrente Vingone	Vingone 2	4537	Tr30	26.90	245.62	247.86	247.19	248.07	0.004722	2.04	13.19	7.48	0.49
Torrente Vingone	Vingone 2	4537	Tr200	47.20	245.62	249.73	247.69	249.88	0.002379	1.73	27.22	7.49	0.29
Torrente Vingone	Vingone 2	4276	Tr30	26.90	244.87	247.49	246.46	247.70	0.004590	2.04	13.16	6.08	0.44
Torrente Vingone	Vingone 2	4276	Tr200	47.20	244.87	249.57	247.12	249.70	0.002030	1.64	28.85	9.34	0.30
Torrente Vingone	Vingone 2	4255											
Torrente Vingone	Vingone 2	4171	Tr30	26.90	244.51	247.29	246.26	247.44	0.003196	1.72	15.68	8.68	0.41
Torrente Vingone	Vingone 2	4171	Tr200	47.20	244.51	249.25	246.85	249.35	0.001237	1.37	34.56	11.35	0.25
Torrente Vingone	Vingone 2	4040	Tr30	26.90	244.30	247.19	246.14	247.32	0.002496	1.60	16.86	9.80	0.39
Torrente Vingone	Vingone 2	4040	Tr200	47.20	244.30	249.23	246.71	249.30	0.000733	1.16	40.85	13.43	0.21
Torrente Vingone	Vingone 2	3912	Tr30	26.90	244.10	247.14	245.64	247.23	0.001466	1.33	20.20	9.70	0.29
Torrente Vingone	Vingone 2	3912	Tr200	47.20	244.10	249.21	246.23	249.28	0.000594	1.12	42.28	10.91	0.18
Torrente Vingone	Vingone 2	3895											
Torrente Vingone	Vingone 2	3862	Tr30	26.90	243.91	246.88	245.52	246.97	0.001582	1.36	19.82	10.23	0.31
Torrente Vingone	Vingone 2	3862	Tr200	47.20	243.91	248.34	246.08	248.43	0.000915	1.29	36.48	12.20	0.24
Torrente Vingone	Vingone 2	3605	Tr30	33.60	243.67	246.63	245.63	246.79	0.002956	1.79	18.80	10.57	0.43
Torrente Vingone	Vingone 2	3605	Tr200	57.30	243.67	248.22	246.21	248.34	0.001245	1.53	37.40	11.96	0.28
Torrente Vingone	Vingone 2	3330	Tr30	33.60	243.45	246.31	245.39	246.51	0.003759	2.00	16.78	9.01	0.47
Torrente Vingone	Vingone 2	3330	Tr200	57.30	243.45	248.09	246.00	248.22	0.001460	1.65	34.80	10.43	0.29
Torrente Vingone	Vingone 2	3300											
Torrente Vingone	Vingone 2	3292	Tr30	33.60	243.32	246.23	245.29	246.40	0.003301	1.88	17.90	10.10	0.45
Torrente Vingone	Vingone 2	3292	Tr200	57.30	243.32	247.91	245.87	248.02	0.001260	1.45	39.46	15.04	0.29
Torrente Vingone	Vingone 2	2952	Tr30	33.60	242.67	246.12	244.51	246.20	0.001041	1.21	27.87	13.07	0.26
Torrente Vingone	Vingone 2	2952	Tr200	57.30	242.67	247.86	245.06	247.92	0.000548	1.13	50.52	13.07	0.18

HEC-RAS Plan: SG M Tr (Continued)

River	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 Vingone	Vingone 2	653	Tr30	33.60	240.44	246.13	241.17	246.13	0.000019	0.27	124.44	23.23	0.04
Torrente Vingone	Vingone 2	653	Tr200	57.30	240.44	247.85	241.47	247.86	0.000025	0.35	164.38	23.23	0.04
Torrente Lota	Lota 1	1113	Tr30	70.90	264.15	267.09	266.65	267.77	0.010999	3.66	19.39	7.90	0.75
Torrente Lota	Lota 1	1113	Tr200	116.00	264.15	268.09	267.44	269.01	0.011605	4.25	27.30	7.90	0.73
Torrente Lota	Lota 1	595	Tr30	70.90	262.25	265.76	265.14	266.26	0.007807	3.13	22.63	9.33	0.64
Torrente Lota	Lota 1	595	Tr200	116.00	262.25	266.62	265.84	267.35	0.008940	3.79	30.64	9.33	0.67
Torrente Lota	Lota 1	279	Tr30	70.90	261.63	264.81	264.46	265.38	0.010551	3.34	21.25	10.49	0.75
Torrente Lota	Lota 1	279	Tr200	116.00	261.63	265.74	265.11	266.46	0.009453	3.74	30.98	10.49	0.70
Torrente Lota	Lota 1	146	Tr30	70.90	260.75	264.50	263.50	264.73	0.003271	2.13	33.31	14.05	0.44
Torrente Lota	Lota 1	146	Tr200	116.00	260.75	265.53	264.04	265.83	0.003040	2.43	47.74	14.05	0.42
Torrente Lota	Lota2	16155	Tr30	85.30	259.75	264.19	263.42	264.54	0.005513	2.60	32.78	14.17	0.55
Torrente Lota	Lota2	16155	Tr200	140.30	259.75	265.18	264.03	265.64	0.005151	2.99	46.86	14.17	0.53
Torrente Lota	Lota2	15706	Tr30	91.60	259.08	262.29	262.24	263.26	0.015682	4.36	21.02	10.00	0.96
Torrente Lota	Lota2	15706	Tr200	150.10	259.08	263.67	263.03	264.61	0.010184	4.31	34.79	10.00	0.74
Torrente Lota	Lota2	15378	Tr30	91.60	258.69	262.49	261.00	262.65	0.001594	1.74	52.75	20.23	0.34
Torrente Lota	Lota2	15378	Tr200	150.10	258.69	263.96	261.58	264.13	0.001138	1.82	82.37	20.24	0.29
Torrente Lota	Lota2	15299	Tr30	91.60	258.46	262.42	260.65	262.60	0.001657	1.88	48.60	15.57	0.34
Torrente Lota	Lota2	15299	Tr200	150.10	258.46	263.87	261.32	264.09	0.001481	2.08	72.07	16.66	0.32
Torrente Lota	Lota2	15028	Tr30	91.60	258.17	262.35	260.14	262.47	0.001138	1.53	60.03	18.90	0.27
Torrente Lota	Lota2	15028	Tr200	150.10	258.17	263.82	260.74	263.97	0.001004	1.71	87.69	18.90	0.25
Torrente Lota	Lota2	14878	Tr30	91.60	257.87	261.44	260.84	262.28	0.012325	4.06	22.56	7.14	0.73
Torrente Lota	Lota2	14878	Tr200	150.10	257.87	262.42	261.83	263.73	0.016269	5.08	29.57	7.14	0.80
Torrente Lota	Lota2	14769	Tr30	91.60	257.29	261.43	260.49	261.90	0.005790	3.03	30.20	11.17	0.59
Torrente Lota	Lota2	14769	Tr200	150.10	257.29	262.62	261.36	263.23	0.005591	3.45	43.56	11.21	0.56
Torrente Lota	Lota2	14435	Tr30	91.60	256.86	259.77	259.77	260.88	0.017723	4.67	19.62	8.86	1.00
Torrente Lota	Lota2	14435	Tr200	150.10	256.86	260.63	260.63	262.17	0.018987	5.50	27.31	8.86	1.00
Torrente Lota	Lota2	12548	Tr30	91.60	251.73	255.85	254.77	256.12	0.003482	2.29	39.96	17.70	0.49
Torrente Lota	Lota2	12548	Tr200	150.10	251.73	256.52	255.54	256.95	0.004264	2.89	51.87	17.70	0.54
Torrente Lota	Lota2	11403	Tr30	91.60	249.98	252.87	252.87	253.81	0.015522	4.31	21.25	11.21	1.00
Torrente Lota	Lota2	11403	Tr200	150.10	249.98	254.32	253.72	255.01	0.007325	3.68	40.74	14.60	0.70
Torrente Lota	Lota2	10716	Tr30	91.60	248.61	252.76	250.39	252.84	0.000553	1.18	77.65	24.08	0.21
Torrente Lota	Lota2	10716	Tr200	150.10	248.61	254.53	250.91	254.60	0.000402	1.21	123.83	27.99	0.18
Torrente Lota	Lota2	10715		Bridge									
Torrente Lota	Lota2	10677	Tr30	91.60	248.61	252.39	250.39	252.48	0.000786	1.33	68.76	23.28	0.25
Torrente Lota	Lota2	10677	Tr200	150.10	248.61	253.88	250.91	253.98	0.000618	1.41	106.14	26.77	0.23
Torrente Lota	Lota2	10491	Tr30	91.60	247.82	252.19	250.55	252.40	0.002344	2.02	45.39	18.44	0.41
Torrente Lota	Lota2	10491	Tr200	150.10	247.82	253.74	251.34	253.93	0.001402	1.92	78.35	22.39	0.33
Torrente Lota	Lota2	9530	Tr30	117.20	246.78	251.48	249.77	251.71	0.002303	2.16	54.27	18.69	0.40
Torrente Lota	Lota2	9530	Tr200	189.40	246.78	253.30	250.65	253.52	0.001385	2.03	93.27	22.00	0.31
Torrente Lota	Lota2	9080	Tr30	117.20	245.61	251.02	249.31	251.34	0.003018	2.54	46.16	12.70	0.43
Torrente Lota	Lota2	9080	Tr200	189.40	245.61	252.88	250.16	253.25	0.002463	2.68	70.63	13.29	0.37
Torrente Lota	Lota2	9026		Bridge									
Torrente Lota	Lota2	9025	Tr30	117.20	245.61	250.68	249.31	251.08	0.003947	2.80	41.93	12.55	0.49
Torrente Lota	Lota2	9025	Tr200	189.40	245.61	252.07	250.16	252.58	0.003876	3.17	59.77	13.20	0.48
Torrente Lota	Lota2	7989	Tr30	117.20	245.20	250.04	248.38	250.23	0.001718	1.90	61.53	19.70	0.34
Torrente Lota	Lota2	7989	Tr200	189.40	245.20	251.59	249.03	251.81	0.001369	2.06	92.10	19.70	0.30
Torrente Lota	Lota2	6903	Tr30	117.20	244.17	249.05	247.58	249.42	0.003539	2.68	43.74	12.20	0.45
Torrente Lota	Lota2	6903	Tr200	189.40	244.17	250.65	248.38	251.11	0.003356	2.99	63.27	12.20	0.42
Torrente Lota	Lota2	6260	Tr30	117.20	243.13	248.53	246.54	248.82	0.002505	2.37	49.45	11.98	0.37
Torrente Lota	Lota2	6260	Tr200	189.40	243.13	250.11	247.34	250.50	0.002729	2.77	68.36	11.98	0.37
Torrente Lota	Lota2	5415	Tr30	117.20	242.85	248.38	245.26	248.48	0.000618	1.39	84.37	18.31	0.21
Torrente Lota	Lota2	5415	Tr200	189.40	242.85	249.96	245.96	250.11	0.000705	1.67	113.41	18.31	0.21
Torrente Lota	Lota2	5414		Bridge									
Torrente Lota	Lota2	5374	Tr30	117.20	242.85	248.18	245.26	248.29	0.000699	1.45	80.80	18.31	0.22
Torrente Lota	Lota2	5374	Tr200	189.40	242.85	249.84	245.96	249.99	0.000744	1.70	111.23	18.31	0.22
Torrente Lota	Lota2	4209	Tr30	117.20	242.28	247.72	245.75	247.92	0.001652	1.97	59.64	16.00	0.33
Torrente Lota	Lota2	4209	Tr200	189.40	242.28	249.37	246.42	249.62	0.001531	2.20	86.03	16.00	0.30
Torrente Lota	Lota2	2779	Tr30	117.20	241.07	247.30	244.03	247.41	0.000777	1.50	77.90	17.03	0.22
Torrente Lota	Lota2	2779	Tr200	189.40	241.07	248.94	244.95	249.10	0.000865	1.79	105.76	17.03	0.23
Torrente Lota	Lota2	2778		Bridge									
Torrente Lota	Lota2	2749	Tr30	117.20	241.07	247.21	244.08	247.33	0.000845	1.55	75.79	17.03	0.23
Torrente Lota	Lota2	2749	Tr200	189.40	241.07	248.86	245.00	249.03	0.000912	1.82	103.94	17.03	0.24
Torrente Lota	Lota2	2515	Tr30	117.20	241.13	247.14	244.76	247.26	0.001040	1.57	74.67	21.70	0.27
Torrente Lota	Lota2	2515	Tr200	189.40	241.13	248.81	245.68	248.96	0.000844	1.71	111.03	21.70	0.24
Torrente Lota	Lota2	1594	Tr30	117.20	240.67	246.81	244.27	246.96	0.001114	1.72	68.31	16.70	0.27
Torrente Lota	Lota2	1594	Tr200	189.40	240.67	248.49	245.08	248.69	0.001106	1.97	96.38	16.70	0.26

HEC-RAS Plan: SG M Tr (Continued)

River	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 Lota	Lota2	864	Tr30	117.20	240.21	246.17	244.49	246.52	0.003781	2.60	45.00	11.67	0.42
Torrente Lota	Lota2	864	Tr200	189.40	240.21	247.80	245.31	248.25	0.003723	2.96	63.97	11.67	0.40
Torrente Lota	Lota2	564	Tr30	117.20	240.07	246.13	243.62	246.29	0.001191	1.75	67.10	16.90	0.28
Torrente Lota	Lota2	564	Tr200	189.40	240.07	247.80	244.50	248.00	0.001154	1.99	95.31	16.90	0.27
Torrente Lota	Lota2	117	Tr30	117.20	239.96	245.90	243.51	246.10	0.001493	1.97	59.58	13.80	0.30
Torrente Lota	Lota2	117	Tr200	189.40	239.96	247.54	244.27	247.81	0.001630	2.31	82.13	13.80	0.30
Torrente Lota	Lota1	1297	Tr30	143.70	239.55	245.70	243.32	246.02	0.002436	2.50	57.58	11.90	0.36
Torrente Lota	Lota1	1297	Tr200	232.30	239.55	247.23	244.25	247.70	0.003087	3.07	75.72	11.90	0.39
Torrente Lota	Lota1	1169	Tr30	143.70	239.42	245.49	243.24	245.73	0.001736	2.17	66.19	15.50	0.34
Torrente Lota	Lota1	1169	Tr200	232.30	239.42	247.01	244.07	247.35	0.001956	2.59	89.72	15.50	0.34
Torrente Lota	Lota1	1079	Tr30	143.70	239.12	245.32	243.04	245.57	0.001822	2.21	64.94	14.70	0.34
Torrente Lota	Lota1	1079	Tr200	232.30	239.12	246.80	243.85	247.17	0.002158	2.68	86.63	14.70	0.35
Torrente Lota	Lota1	1009	Tr30	143.70	238.92	245.23	242.64	245.45	0.001501	2.06	69.72	14.90	0.30
Torrente Lota	Lota1	1009	Tr200	232.30	238.92	246.68	243.47	247.01	0.001873	2.54	91.38	14.90	0.33
Torrente Lota	Lota1	939	Tr30	143.70	238.81	245.16	242.48	245.34	0.001194	1.88	76.29	16.80	0.28
Torrente Lota	Lota1	939	Tr200	232.30	238.81	246.61	243.32	246.88	0.001447	2.31	100.61	16.80	0.30
Torrente Lota	Lota1	868	Tr30	143.70	238.65	244.94	242.72	245.22	0.002160	2.34	61.41	14.20	0.36
Torrente Lota	Lota1	868	Tr200	232.30	238.65	246.31	243.63	246.73	0.002651	2.87	80.83	14.20	0.38
Torrente Lota	Lota1	799	Tr30	143.70	238.37	244.81	242.63	245.07	0.002100	2.27	63.44	16.00	0.36
Torrente Lota	Lota1	799	Tr200	232.30	238.37	246.17	243.63	246.54	0.002389	2.73	85.16	16.00	0.38
Torrente Lota	Lota1	725	Tr30	143.70	238.33	244.61	242.69	244.90	0.002338	2.39	60.05	15.60	0.39
Torrente Lota	Lota1	725	Tr200	232.30	238.33	245.93	243.58	246.35	0.002668	2.88	80.64	15.60	0.40
Torrente Lota	Lota1	653	Tr30	143.70	238.14	244.50	241.99	244.74	0.001804	2.16	66.53	16.70	0.35
Torrente Lota	Lota1	653	Tr200	232.30	238.14	245.81	243.12	246.16	0.002113	2.63	88.38	16.70	0.36
Torrente Lota	Lota1	552	Tr30	143.70	238.41	244.21	242.39	244.51	0.002650	2.44	58.97	17.10	0.42
Torrente Lota	Lota1	552	Tr200	232.30	238.41	245.49	243.43	245.91	0.002790	2.87	80.84	17.10	0.42
Torrente Lota	Lota1	469	Tr30	143.70	238.12	243.94	242.12	244.29	0.002731	2.60	55.32	14.00	0.42
Torrente Lota	Lota1	469	Tr200	232.30	238.12	245.10	243.03	245.64	0.003507	3.25	71.58	14.00	0.46
Torrente Lota	Lota1	369	Tr30	143.70	238.20	243.51	242.17	243.94	0.004284	2.91	49.45	16.00	0.53
Torrente Lota	Lota1	369	Tr200	232.30	238.20	244.63	243.19	245.23	0.004579	3.45	67.35	16.00	0.54
Torrente Lota	Lota1	280	Tr30	143.70	238.33	243.06	242.01	243.52	0.004953	3.03	47.50	16.80	0.57
Torrente Lota	Lota1	280	Tr200	232.30	238.33	244.19	242.92	244.81	0.004822	3.49	66.54	16.80	0.56
Torrente Lota	Lota1	201	Tr30	143.70	238.28	242.74	241.56	243.16	0.003855	2.88	49.98	15.30	0.51
Torrente Lota	Lota1	201	Tr200	232.30	238.28	243.82	242.34	244.44	0.004471	3.50	66.46	15.30	0.54
Torrente Lota	Lota1	145	Tr30	143.70	238.55	242.41	241.48	242.91	0.004969	3.13	45.91	15.20	0.58
Torrente Lota	Lota1	145	Tr200	232.30	238.55	243.42	242.27	244.15	0.005701	3.80	61.13	15.20	0.61
Torrente Lota	Lota1	100	Tr30	143.70	238.17	241.46	241.46	242.50	0.014894	4.53	31.72	15.10	1.00
Torrente Lota	Lota1	100	Tr200	232.30	238.17	242.25	242.25	243.69	0.015086	5.32	43.63	15.10	1.00
Torrente Lota	Lota1	32	Tr30	143.70	234.27	238.75	237.28	239.10	0.003011	2.60	55.34	15.75	0.44
Torrente Lota	Lota1	32	Tr200	232.30	234.27	236.81	238.05	241.33	0.087311	9.42	24.66	15.47	2.38
Fosso Sabbioni	Sabbioni1	614	Tr30	6.70	250.72	252.67	251.26	252.67	0.000157	0.41	18.76	20.59	0.10
Fosso Sabbioni	Sabbioni1	614	Tr200	10.70	250.72	253.04	251.44	253.05	0.000159	0.47	26.66	21.19	0.11
Fosso Sabbioni	Sabbioni1	570		Bridge									
Fosso Sabbioni	Sabbioni1	525	Tr30	6.70	250.60	252.09	251.45	252.13	0.002567	0.88	7.59	12.28	0.36
Fosso Sabbioni	Sabbioni1	525	Tr200	10.70	250.60	252.59	251.68	252.62	0.001006	0.75	14.28	14.56	0.24
Fosso Sabbioni	Sabbioni1	404	Tr30	6.70	250.52	252.02	251.21	252.06	0.001396	0.90	7.47	6.64	0.27
Fosso Sabbioni	Sabbioni1	404	Tr200	10.70	250.52	252.53	251.43	252.57	0.001288	0.92	11.61	9.35	0.26
Fosso Sabbioni	Sabbioni1	400		Bridge									
Fosso Sabbioni	Sabbioni1	395	Tr30	6.70	250.52	252.02	251.21	252.06	0.001407	0.90	7.44	6.62	0.27
Fosso Sabbioni	Sabbioni1	395	Tr200	10.70	250.52	252.48	251.43	252.53	0.001428	0.96	11.17	9.21	0.28
Fosso Sabbioni	Sabbioni1	369	Tr30	6.70	250.57	252.03	251.18	252.04	0.000576	0.61	14.12	30.59	0.18
Fosso Sabbioni	Sabbioni1	369	Tr200	10.70	250.57	252.51	251.37	252.52	0.000218	0.48	29.04	31.48	0.12
Fosso Sabbioni	Sabbioni1	332		Bridge									
Fosso Sabbioni	Sabbioni1	295	Tr30	6.70	250.49	251.92	251.07	251.93	0.000578	0.62	14.34	35.91	0.18
Fosso Sabbioni	Sabbioni1	295	Tr200	10.70	250.49	252.42	251.25	252.43	0.000119	0.36	44.94	63.52	0.09
Fosso Sabbioni	Sabbioni1	170	Tr30	6.70	249.91	251.92	250.55	251.92	0.000074	0.28	35.99	51.89	0.07
Fosso Sabbioni	Sabbioni1	170	Tr200	10.70	249.91	252.42	250.76	252.42	0.000038	0.23	61.92	51.89	0.05
Fosso Sabbioni	Sabbioni1	153		Bridge									
Fosso Sabbioni	Sabbioni1	135	Tr30	6.70	249.92	251.88	250.55	251.88	0.000057	0.24	39.97	50.92	0.06
Fosso Sabbioni	Sabbioni1	135	Tr200	10.70	249.92	252.38	250.76	252.38	0.000032	0.22	65.31	50.92	0.05
Fosso Lungo Rio	Lungo Rio 1	1873	Tr30	14.40	269.61	270.58	270.58	270.97	0.020544	2.77	5.19	6.59	1.00
Fosso Lungo Rio	Lungo Rio 1	1873	Tr200	24.30	269.61	270.91	270.92	271.45	0.020033	3.25	7.48	7.04	1.01
Fosso Lungo Rio	Lungo Rio 1	1638	Tr30	14.40	267.41	268.74	268.84	269.21	0.029459	3.06	4.71	6.70	1.16
Fosso Lungo Rio	Lungo Rio 1	1638	Tr200	24.30	267.41	269.02	269.15	269.65	0.032200	3.50	6.94	8.74	1.26
Fosso Lungo Rio	Lungo Rio 1	1239	Tr30	14.40	265.38	266.98	266.92	267.29	0.015829	2.47	5.82	7.42	0.89
Fosso Lungo Rio	Lungo Rio 1	1239	Tr200	24.30	265.38	267.28	267.24	267.74	0.017161	3.01	8.08	7.88	0.95

HEC-RAS Plan: SG M Tr (Continued)

River	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 Lungo Rio	Lungo Rio 1	1191	Tr30	14.40	265.11	266.95	266.70	267.08	0.007921	1.60	8.98	13.64	0.63
Fosso Lungo Rio	Lungo Rio 1	1191	Tr200	24.30	265.11	267.41	266.98	267.52	0.004182	1.47	16.59	17.87	0.49
Fosso Lungo Rio	Lungo Rio 1	931	Tr30	14.40	264.24	266.02	265.80	266.32	0.011377	2.42	5.95	5.52	0.75
Fosso Lungo Rio	Lungo Rio 1	931	Tr200	24.30	264.24	266.81	266.20	267.09	0.006828	2.36	10.31	5.55	0.55
Fosso Lungo Rio	Lungo Rio 1	585	Tr30	14.40	262.71	265.17	264.57	265.37	0.006883	1.99	7.22	4.51	0.50
Fosso Lungo Rio	Lungo Rio 1	585	Tr200	24.30	262.71	266.26	265.00	266.46	0.004841	2.00	12.14	4.51	0.39
Fosso Lungo Rio	Lungo Rio 1	257	Tr30	14.40	261.60	264.98	263.33	265.05	0.001529	1.17	12.30	4.73	0.23
Fosso Lungo Rio	Lungo Rio 1	257	Tr200	24.30	261.60	266.05	263.77	266.15	0.001808	1.40	17.38	4.73	0.23
Borro Marancione	Marancione1	2796	Tr30	2.50	252.87	253.30	253.27	253.35	0.016159	1.04	2.41	12.91	0.77
Borro Marancione	Marancione1	2796	Tr200	4.20	252.87	253.36	253.33	253.45	0.018848	1.31	3.22	13.64	0.86
Borro Marancione	Marancione1	1922	Tr30	2.50	252.34	252.71	252.64	252.76	0.010231	0.99	2.52	10.20	0.64
Borro Marancione	Marancione1	1922	Tr200	4.20	252.34	252.84	252.72	252.90	0.007955	1.06	3.98	12.00	0.59
Borro Marancione	Marancione1	1917	Tr30	2.50	252.14	252.59	252.38	252.60	0.001412	0.42	5.94	19.50	0.24
Borro Marancione	Marancione1	1917	Tr200	4.20	252.14	252.78	252.45	252.79	0.000839	0.44	9.54	19.50	0.20
Borro Marancione	Marancione1	1904	Tr30	2.50	252.03	252.46	252.40	252.54	0.013664	1.26	1.99	6.70	0.74
Borro Marancione	Marancione1	1904	Tr200	4.20	252.03	252.67	252.50	252.75	0.006826	1.23	3.42	6.70	0.55
Borro Marancione	Marancione1	1872	Tr30	2.50	251.27	252.11	251.79	252.14	0.002811	0.79	3.16	6.48	0.36
Borro Marancione	Marancione1	1872	Tr200	4.20	251.27	252.55	251.93	252.58	0.001023	0.67	6.27	7.00	0.23
Borro Marancione	Marancione2	6721	Tr30	9.20	249.85	251.70	251.13	251.86	0.005955	1.77	5.21	4.12	0.50
Borro Marancione	Marancione2	6721	Tr200	14.90	249.85	252.13	251.51	252.35	0.006885	2.09	7.12	4.65	0.54
Borro Marancione	Marancione2	6436	Tr30	9.90	248.85	250.47	250.47	250.89	0.024007	2.86	3.46	4.18	1.00
Borro Marancione	Marancione2	6436	Tr200	16.00	248.85	250.83	250.83	251.32	0.022101	3.10	5.16	5.26	1.00
Borro Marancione	Marancione2	6104	Tr30	9.90	247.02	249.47	248.15	249.53	0.001689	1.12	8.85	4.69	0.26
Borro Marancione	Marancione2	6104	Tr200	16.00	247.02	250.22	248.53	250.31	0.001784	1.28	12.48	4.93	0.26
Borro Marancione	Marancione2	5866	Tr30	9.90	247.06	249.19	248.50	249.32	0.005299	1.63	6.08	5.07	0.48
Borro Marancione	Marancione2	5866	Tr200	16.00	247.06	250.03	248.90	250.14	0.002852	1.47	10.86	5.76	0.34
Borro Marancione	Marancione3	5684	Tr30	19.40	246.06	249.07	247.79	249.18	0.002792	1.47	13.20	7.41	0.35
Borro Marancione	Marancione3	5684	Tr200	31.20	246.06	249.92	248.23	250.04	0.002311	1.56	19.95	8.01	0.32
Borro Marancione	Marancione3	5443	Tr30	20.20	245.94	248.79	247.88	248.94	0.003484	1.72	11.75	6.55	0.41
Borro Marancione	Marancione3	5443	Tr200	32.40	245.94	249.68	248.31	249.85	0.002881	1.81	17.88	7.29	0.37
Borro Marancione	Marancione3	5373	Tr30	20.20	246.15	248.69	247.87	248.86	0.004042	1.84	10.95	6.13	0.44
Borro Marancione	Marancione3	5373	Tr200	32.40	246.15	249.58	248.30	249.78	0.003469	1.98	16.39	6.13	0.39
Borro Marancione	Marancione3	5126	Tr30	20.20	245.84	248.39	247.65	248.56	0.004052	1.83	11.02	6.38	0.45
Borro Marancione	Marancione3	5126	Tr200	32.40	245.84	249.34	248.04	249.52	0.003117	1.89	17.11	6.38	0.37
Borro Marancione	Marancione3	4996	Tr30	20.20	245.78	248.20	247.56	248.38	0.004847	1.89	10.71	6.61	0.47
Borro Marancione	Marancione3	4996	Tr200	32.40	245.78	249.22	247.93	249.40	0.003170	1.86	17.46	6.61	0.36
Borro Marancione	Marancione3	4655	Tr30	20.20	245.34	247.67	247.07	247.86	0.005076	1.95	10.38	6.54	0.49
Borro Marancione	Marancione3	4655	Tr200	32.40	245.34	248.94	247.44	249.10	0.002554	1.73	18.69	6.54	0.33
Borro Marancione	Marancione3	4324	Tr30	20.20	244.65	247.39	246.29	247.50	0.002355	1.52	13.30	6.71	0.34
Borro Marancione	Marancione3	4324	Tr200	32.40	244.65	248.79	246.73	248.89	0.001441	1.43	22.69	6.71	0.25
Borro Marancione	Marancione3	3982	Tr30	20.20	243.67	247.29	245.24	247.34	0.000903	1.07	18.96	6.36	0.20
Borro Marancione	Marancione3	3982	Tr200	32.40	243.67	248.70	245.69	248.77	0.000861	1.16	27.94	6.36	0.18
Borro Marancione	Marancione3	3826	Tr30	20.20	243.31	245.84	245.84	247.09	0.072136	4.94	4.09	1.65	1.00
Borro Marancione	Marancione3	3826	Tr200	32.40	243.31	246.77	246.77	248.46	0.124566	5.76	5.62	1.65	1.00
Borro Marancione	Marancione4	3195	Tr30	27.20	241.56	244.97	243.40	245.05	0.001481	1.26	21.53	11.80	0.30
Borro Marancione	Marancione4	3195	Tr200	43.30	241.56	245.83	243.99	245.92	0.001180	1.32	32.88	13.94	0.27
Borro Marancione	Marancione4	2974	Tr30	42.00	241.30	244.05	243.40	244.36	0.005620	2.48	16.93	8.50	0.56
Borro Marancione	Marancione4	2974	Tr200	66.70	241.30	244.98	243.90	245.35	0.004872	2.69	24.81	8.50	0.50
Borro Marancione	Marancione4	2915	Tr30	42.00	240.52	243.89	242.78	244.09	0.003182	1.98	21.20	10.03	0.44
Borro Marancione	Marancione4	2915	Tr200	66.70	240.52	244.86	243.34	245.10	0.002708	2.14	31.15	10.20	0.39
Borro Marancione	Marancione4	2852	Tr30	42.00	240.33	243.73	242.60	243.90	0.002588	1.81	23.27	10.77	0.39
Borro Marancione	Marancione4	2852	Tr200	66.70	240.33	244.74	243.09	244.93	0.002140	1.93	34.51	11.20	0.35
Borro Marancione	Marancione4	2803	Tr30	42.00	239.87	243.65	242.19	243.78	0.001899	1.59	26.45	12.00	0.34
Borro Marancione	Marancione4	2803	Tr200	66.70	239.87	244.68	242.78	244.83	0.001581	1.72	38.83	12.00	0.30
Borro Marancione	Marancione4	2733	Tr30	42.00	239.88	243.36	242.15	243.59	0.003599	2.14	19.62	7.20	0.41
Borro Marancione	Marancione4	2733	Tr200	66.70	239.88	244.33	242.69	244.65	0.004044	2.51	26.61	7.20	0.42
Borro Marancione	Marancione4	2687	Tr30	42.00	240.04	243.06	242.15	243.38	0.005463	2.51	16.74	6.70	0.51
Borro Marancione	Marancione4	2687	Tr200	66.70	240.04	243.98	242.72	244.41	0.005991	2.91	22.92	6.70	0.50
Borro Marancione	Marancione4	2646	Tr30	42.00	239.76	242.99	241.78	243.18	0.002970	1.95	21.49	8.30	0.39
Borro Marancione	Marancione4	2646	Tr200	66.70	239.76	243.92	242.27	244.19	0.003225	2.28	29.27	8.30	0.39
Borro Marancione	Marancione4	2599	Tr30	42.00	239.63	242.00	241.95	242.82	0.020439	4.03	10.42	5.80	0.96
Borro Marancione	Marancione4	2599	Tr200	66.70	239.63	242.58	242.58	243.77	0.023905	4.83	13.80	5.80	1.00
Borro Marancione	Marancione4	2449	Tr30	42.00	238.41	241.30	240.40	241.52	0.003861	2.07	20.25	11.36	0.50
Borro Marancione	Marancione4	2449	Tr200	66.70	238.41	241.98	240.96	242.25	0.003823	2.32	28.81	13.10	0.50
Borro Marancione	Marancione4	2379	Tr30	42.00	238.01	240.96	240.28	241.22	0.004697	2.25	18.63	10.12	0.53
Borro Marancione	Marancione4	2379	Tr200	66.70	238.01	241.57	240.75	241.93	0.005206	2.68	24.91	10.67	0.56
Borro Marancione	Marancione4	2321	Tr30	42.00	238.22	240.55	240.07	240.89	0.006961	2.57	16.37	9.83	0.63
Borro Marancione	Marancione4	2321	Tr200	66.70	238.22	241.06	240.56	241.55	0.008088	3.10	21.51	10.40	0.69

HEC-RAS Plan: SG M Tr (Continued)

River	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
Borro Marancione	Marancione4	2265	Tr30	42.00	237.84	239.67	239.67	240.28	0.016809	3.46	12.14	9.96	1.00
Borro Marancione	Marancione4	2285	Tr200	66.70	237.84	240.17	240.17	240.91	0.015823	3.81	17.50	11.81	1.00
Borro Marancione	Marancione4	2249	Tr30	42.00	233.84	239.04	235.06	239.05	0.000112	0.57	73.70	15.30	0.08
Borro Marancione	Marancione4	2249	Tr200	66.70	233.84	239.92	235.42	239.95	0.000178	0.77	87.14	15.30	0.10
Borro Marancione	Marancione5	2228	Tr30	198.20	230.34	238.59	234.20	238.99	0.003175	2.82	70.35	8.60	0.31
Borro Marancione	Marancione5	2228	Tr200	318.30	230.34	238.82	235.60	239.81	0.007642	4.40	72.36	8.60	0.48
Borro Marancione	Marancione5	2225	Tr30	198.20	230.24	238.48	234.35	238.97	0.004201	3.11	63.71	7.80	0.35
Borro Marancione	Marancione5	2225	Tr200	318.30	230.24	238.48	235.86	239.75	0.010836	5.00	63.71	7.80	0.56
Borro della Buca	Borro2	6006	Tr30	5.70	254.40	254.96	254.96	255.16	0.021967	2.02	2.83	6.89	1.00
Borro della Buca	Borro2	6006	Tr200	10.00	254.40	255.16	255.16	255.43	0.019815	2.33	4.29	7.71	1.00
Borro della Buca	Borro2	6005	Tr30	5.70	252.06	253.51	253.07	253.61	0.005383	1.42	4.02	4.84	0.50
Borro della Buca	Borro2	6005	Tr200	10.00	252.06	253.88	253.41	254.02	0.005749	1.65	6.07	6.20	0.53
Borro della Buca	Borro2	6003	Tr30	5.70	250.54	251.52	251.52	251.81	0.021872	2.38	2.40	4.16	1.00
Borro della Buca	Borro2	6003	Tr200	10.00	250.54	251.81	251.81	252.18	0.020392	2.69	3.71	4.98	1.00
Borro della Buca	Borro2	6002	Tr30	5.70	249.75	250.93	250.73	251.10	0.010168	1.80	3.16	4.48	0.69
Borro della Buca	Borro2	6002	Tr200	10.00	249.75	251.32	251.04	251.51	0.008536	1.94	5.15	5.70	0.65
Borro della Buca	Borro2	6001	Tr30	5.70	249.03	250.39	249.90	250.44	0.002537	1.00	5.69	7.42	0.37
Borro della Buca	Borro2	6001	Tr200	10.00	249.03	251.16	250.15	251.19	0.000865	0.78	12.79	10.32	0.22
Aff. AffluenteSx2	Aff. AffluenteSx2	1412	Tr30	4.70	252.19	253.43	252.76	253.44	0.000544	0.51	9.21	10.40	0.17
Aff. AffluenteSx2	Aff. AffluenteSx2	1412	Tr200	7.40	252.19	253.70	252.87	253.72	0.000591	0.62	12.02	10.40	0.18
Aff. AffluenteSx2	Aff. AffluenteSx2	1351	Tr30	4.70	252.09	253.06	253.06	253.32	0.023065	2.25	2.09	4.01	1.00
Aff. AffluenteSx2	Aff. AffluenteSx2	1351	Tr200	7.40	252.09	253.26	253.26	253.58	0.021839	2.51	2.94	4.56	1.00
Aff. AffluenteSx2	Aff. AffluenteSx2	955	Tr30	4.70	249.71	251.07	250.48	251.10	0.001236	0.74	6.35	7.10	0.25
Aff. AffluenteSx2	Aff. AffluenteSx2	955	Tr200	7.40	249.71	251.34	250.62	251.38	0.001401	0.90	8.23	7.10	0.27
Aff. AffluenteSx2	Aff. AffluenteSx2	920	Tr30	4.70	249.41	251.00	250.55	251.04	0.002507	0.87	5.40	8.20	0.34
Aff. AffluenteSx2	Aff. AffluenteSx2	920	Tr200	7.40	249.41	251.27	250.71	251.32	0.002136	0.97	7.60	8.20	0.32
Aff. AffluenteSx2	Aff. AffluenteSx2	893	Tr30	7.00	249.12	250.48	250.48	250.82	0.023540	2.58	2.72	4.00	1.00
Aff. AffluenteSx2	Aff. AffluenteSx2	893	Tr200	10.90	249.12	250.76	250.76	251.12	0.022058	2.67	4.08	5.60	1.00
Aff. AffluenteSx2	Aff. AffluenteSx2	843	Tr30	7.00	248.54	249.85	249.57	249.97	0.006818	1.54	4.55	6.16	0.57
Aff. AffluenteSx2	Aff. AffluenteSx2	843	Tr200	10.90	248.54	250.10	249.77	250.26	0.006868	1.78	6.12	6.30	0.58
Aff. AffluenteSx2	Aff. AffluenteSx2	817	Tr30	7.00	248.25	249.37	249.37	249.65	0.022169	2.37	2.96	5.18	1.00
Aff. AffluenteSx2	Aff. AffluenteSx2	817	Tr200	10.90	248.25	249.57	249.57	249.94	0.021392	2.69	4.05	5.48	1.00
Aff. AffluenteSx2	Aff. AffluenteSx2	724	Tr30	7.00	247.57	248.78	248.47	248.81	0.002599	0.86	8.11	14.07	0.36
Aff. AffluenteSx2	Aff. AffluenteSx2	724	Tr200	10.90	247.57	249.00	248.58	249.05	0.002238	0.95	11.46	15.17	0.35
Aff. AffluenteSx2	Aff. AffluenteSx2	683	Tr30	7.00	247.38	248.57	248.32	248.66	0.005584	1.34	5.21	7.92	0.53
Aff. AffluenteSx2	Aff. AffluenteSx2	683	Tr200	10.90	247.38	248.77	248.48	248.90	0.005968	1.59	6.87	8.36	0.56
Aff. AffluenteSx2	Aff. AffluenteSx2	599	Tr30	7.00	246.48	247.73	247.63	247.94	0.013926	2.02	3.46	5.50	0.81
Aff. AffluenteSx2	Aff. AffluenteSx2	599	Tr200	10.90	246.48	248.05	247.88	248.24	0.010450	1.95	5.59	7.65	0.73
Aff. AffluenteSx2	Aff. AffluenteSx2	546	Tr30	7.00	246.00	247.33	247.00	247.46	0.005984	1.59	4.41	5.13	0.55
Aff. AffluenteSx2	Aff. AffluenteSx2	546	Tr200	10.90	246.00	247.68	247.23	247.83	0.005641	1.69	6.45	6.55	0.54
Aff. AffluenteSx2	Aff. AffluenteSx2	498	Tr30	7.00	245.64	247.20	246.57	247.27	0.002423	1.13	6.18	5.99	0.36
Aff. AffluenteSx2	Aff. AffluenteSx2	498	Tr200	10.90	245.64	247.55	246.80	247.64	0.002538	1.29	8.43	6.83	0.37
Aff. AffluenteSx2	Aff. AffluenteSx2	441	Tr30	7.00	245.29	247.05	246.33	247.13	0.002552	1.18	5.93	5.28	0.36
Aff. AffluenteSx2	Aff. AffluenteSx2	441	Tr200	10.90	245.29	247.38	246.60	247.48	0.003228	1.39	7.85	6.69	0.41
Aff. AffluenteSx2	Aff. AffluenteSx2	388	Tr30	7.00	245.37	246.49	246.49	246.80	0.022250	2.47	2.83	4.54	1.00
Aff. AffluenteSx2	Aff. AffluenteSx2	388	Tr200	10.90	245.37	246.74	246.74	247.10	0.020840	2.66	4.10	5.68	1.00
Aff. AffluenteSx2	Aff. AffluenteSx2	315	Tr30	7.00	244.50	245.79	245.44	245.91	0.005393	1.52	4.61	5.37	0.52
Aff. AffluenteSx2	Aff. AffluenteSx2	315	Tr200	10.90	244.50	246.28	245.66	246.38	0.003498	1.46	7.49	6.54	0.43
Aff. AffluenteSx2	Aff. AffluenteSx2	264	Tr30	7.00	244.12	245.54	245.20	245.64	0.005031	1.39	5.05	6.64	0.51
Aff. AffluenteSx2	Aff. AffluenteSx2	264	Tr200	10.90	244.12	246.19	245.41	246.25	0.001795	1.08	10.08	8.69	0.32
Aff. AffluenteSx2	Aff. AffluenteSx2	195	Tr30	7.00	243.45	245.37	244.64	245.42	0.001843	1.00	7.02	6.37	0.30
Aff. AffluenteSx2	Aff. AffluenteSx2	195	Tr200	10.90	243.45	246.12	244.85	246.15	0.000881	0.81	13.42	9.72	0.22
Aff. AffluenteSx2	Aff. AffluenteSx2	131	Tr30	7.00	243.21	245.31	244.18	245.34	0.000941	0.75	9.32	8.23	0.23
Aff. AffluenteSx2	Aff. AffluenteSx2	131	Tr200	10.90	243.21	246.09	244.43	246.11	0.000460	0.67	16.29	9.42	0.16
Aff. AffluenteSx2	Aff. AffluenteSx2	83	Tr30	7.00	243.50	245.27	244.35	245.29	0.000761	0.69	10.18	9.34	0.21
Aff. AffluenteSx2	Aff. AffluenteSx2	83	Tr200	10.90	243.50	246.07	244.54	246.09	0.000341	0.60	18.29	10.20	0.14
Aff. AffluenteSx1	Aff. AffluenteSx1	213	Tr30	0.95	251.87	252.59	252.32	252.60	0.002410	0.53	1.80	5.99	0.31
Aff. AffluenteSx1	Aff. AffluenteSx1	213	Tr200	1.52	251.87	252.72	252.42	252.74	0.002145	0.56	2.72	7.62	0.30
Aff. AffluenteSx1	Aff. AffluenteSx1	153	Tr30	0.95	251.79	252.17	252.16	252.30	0.024584	1.59	0.60	2.04	0.94
Aff. AffluenteSx1	Aff. AffluenteSx1	153	Tr200	1.52	251.79	252.27	252.27	252.45	0.026325	1.86	0.82	2.27	0.99
Aff. AffluenteSx1	Aff. AffluenteSx1	115	Tr30	0.95	251.14	251.75	251.58	251.78	0.006128	0.76	1.26	4.96	0.48
Aff. AffluenteSx1	Aff. AffluenteSx1	115	Tr200	1.52	251.14	251.93	251.69	251.95	0.003323	0.65	2.34	7.42	0.37
Aff. AffluenteSx1	Aff. AffluenteSx1	78	Tr30	0.95	250.88	251.46	251.28	251.52	0.007782	1.08	0.88	2.07	0.53
Aff. AffluenteSx1	Aff. AffluenteSx1	78	Tr200	1.52	250.88	251.76	251.41	251.81	0.004029	0.96	1.59	2.56	0.39
Aff. AffluenteSx1	Aff. AffluenteSx1	11	Tr30	0.95	249.95	251.26	250.42	251.26	0.000281	0.31	3.04	3.51	0.11
Aff. AffluenteSx1	Aff. AffluenteSx1	11	Tr200	1.52	249.95	251.75	250.54	251.76	0.000205	0.32	4.77	3.51	0.09
AffluenteSx1	AffluenteSx1_1	8161	Tr30	8.55	257.33	259.36	258.33	259.38	0.000535	0.63	13.56	10.00	0.17



HEC-RAS Plan: SG M Tr (Continued)

River	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
AffluenteSx1	AffluenteSx1_1	8161	Tr200	13.68	257.33	260.43	258.55	260.44	0.000246	0.56	24.25	10.00	0.12
AffluenteSx1	AffluenteSx1_1	8087	Tr30	8.55	255.98	259.03	257.69	259.22	0.011648	1.96	4.36	1.57	0.38
AffluenteSx1	AffluenteSx1_1	8087	Tr200	13.68	255.98	260.08	258.22	260.35	0.014459	2.27	6.02	1.57	0.37
AffluenteSx1	AffluenteSx1_1	7930	Tr30	8.55	255.36	257.12	257.12	257.84	0.054108	3.75	2.28	1.58	1.00
AffluenteSx1	AffluenteSx1_1	7930	Tr200	13.68	255.36	257.64	257.64	258.63	0.065381	4.40	3.11	1.58	1.00
AffluenteSx1	AffluenteSx1_1	7714	Tr30	8.55	254.38	256.11	255.95	256.15	0.002489	1.10	11.96	32.44	0.30
AffluenteSx1	AffluenteSx1_1	7714	Tr200	13.68	254.38	257.12	256.06	257.12	0.000025	0.15	107.12	100.14	0.03
AffluenteSx1	AffluenteSx1_1	7517	Tr30	8.55	253.60	256.14	255.05	256.14	0.000007	0.08	121.26	111.51	0.02
AffluenteSx1	AffluenteSx1_1	7517	Tr200	13.68	253.60	257.12	255.11	257.12	0.000002	0.06	231.04	111.51	0.01
AffluenteSx1	AffluenteSx1_1	7498			Bridge								
AffluenteSx1	AffluenteSx1_1	7479	Tr30	8.55	253.48	256.14	254.67	256.14	0.000003	0.05	153.57	108.95	0.01
AffluenteSx1	AffluenteSx1_1	7479	Tr200	13.68	253.48	257.12	254.74	257.12	0.000001	0.05	260.82	108.95	0.01
AffluenteSx1	AffluenteSx1_1	7378	Tr30	8.55	252.88	255.81	254.70	256.11	0.021787	2.41	3.55	1.28	0.46
AffluenteSx1	AffluenteSx1_1	7378	Tr200	13.68	252.88	256.62	255.31	257.08	0.031606	2.98	4.59	1.28	0.50
AffluenteSx1	AffluenteSx1_1	7251	Tr30	8.55	252.50	254.72	253.96	254.89	0.007543	1.84	4.66	2.85	0.46
AffluenteSx1	AffluenteSx1_1	7251	Tr200	13.68	252.50	255.43	254.40	255.64	0.007670	2.04	6.69	2.85	0.43
AffluenteSx1	AffluenteSx1_1	6535	Tr30	8.55	251.64	253.43	253.30	253.93	0.030107	3.12	2.74	2.03	0.86
AffluenteSx1	AffluenteSx1_1	6535	Tr200	13.68	251.64	253.92	253.75	254.61	0.035805	3.67	3.73	2.03	0.86
AffluenteSx1	AffluenteSx1_1	6350	Tr30	8.55	251.25	253.27	252.65	253.42	0.005672	1.68	5.08	3.61	0.45
AffluenteSx1	AffluenteSx1_1	6350	Tr200	13.68	251.25	253.82	253.00	254.01	0.006108	1.94	7.03	3.61	0.44
AffluenteSx1	AffluenteSx1_1	6270	Tr30	8.55	250.29	253.15	251.66	253.19	0.001195	0.94	9.05	4.12	0.20
AffluenteSx1	AffluenteSx1_1	6270	Tr200	13.68	250.29	253.63	251.99	253.71	0.001842	1.24	11.03	4.12	0.24
AffluenteSx1	AffluenteSx1_1	6268			Culvert								
AffluenteSx1	AffluenteSx1_1	6265	Tr30	8.55	250.14	252.18	251.65	252.35	0.007297	1.83	4.68	3.53	0.51
AffluenteSx1	AffluenteSx1_1	6265	Tr200	13.68	250.14	252.71	252.01	252.94	0.007609	2.09	6.55	3.53	0.49
AffluenteSx1	AffluenteSx1_1	6263	Tr30	8.55	249.89	252.00	251.28	252.11	0.004028	1.49	5.74	3.96	0.39
AffluenteSx1	AffluenteSx1_1	6263	Tr200	13.68	249.89	252.51	251.62	252.67	0.004603	1.76	7.77	3.96	0.40
AffluenteSx1	AffluenteSx1_1	5733	Tr30	8.55	249.34	250.70	250.70	251.12	0.023971	2.86	2.99	3.57	1.00
AffluenteSx1	AffluenteSx1_1	5733	Tr200	13.68	249.34	251.02	251.02	251.57	0.024450	3.27	4.18	3.83	1.00
AffluenteSx1	AffluenteSx1_2	5727	Tr30	9.50	248.80	249.91	250.26	251.00	0.077609	4.64	2.05	2.66	1.69
AffluenteSx1	AffluenteSx1_2	5727	Tr200	15.20	248.80	251.11	250.66	251.41	0.010205	2.42	6.29	4.36	0.64
AffluenteSx1	AffluenteSx1_2	5715	Tr30	9.50	248.18	249.91	249.67	250.18	0.011986	2.29	4.15	3.68	0.69
AffluenteSx1	AffluenteSx1_2	5715	Tr200	15.20	248.18	250.48	249.99	250.78	0.010162	2.44	6.23	3.68	0.60
AffluenteSx1	AffluenteSx1_2	5695	Tr30	9.50	247.00	249.18	248.61	249.35	0.007233	1.84	5.16	3.98	0.52
AffluenteSx1	AffluenteSx1_2	5695	Tr200	15.20	247.00	250.01	249.00	250.17	0.004544	1.74	8.72	4.30	0.39