



Consorzio di Bonifica Vulture - Alto Bradano
Gaudioiano di Lavello

REGIONE BASILICATA



COMPLETAMENTO DEI DISTRETTI IRRIGUI IN AGRO DI MONTEMILONE ED INTEGRAZIONE RISORSE IDRICHE

PROGETTO ESECUTIVO

A-ELABORATI DESCRITTIVI

A8.3

**Output modellazione HEC RAS -
attraversamenti impluvi**

Giugno 2014

IL PROGETTISTA

Prof. Ing. A.F. PICCINNI

Ordine degli Ingegneri della Provincia di Bari n.7288



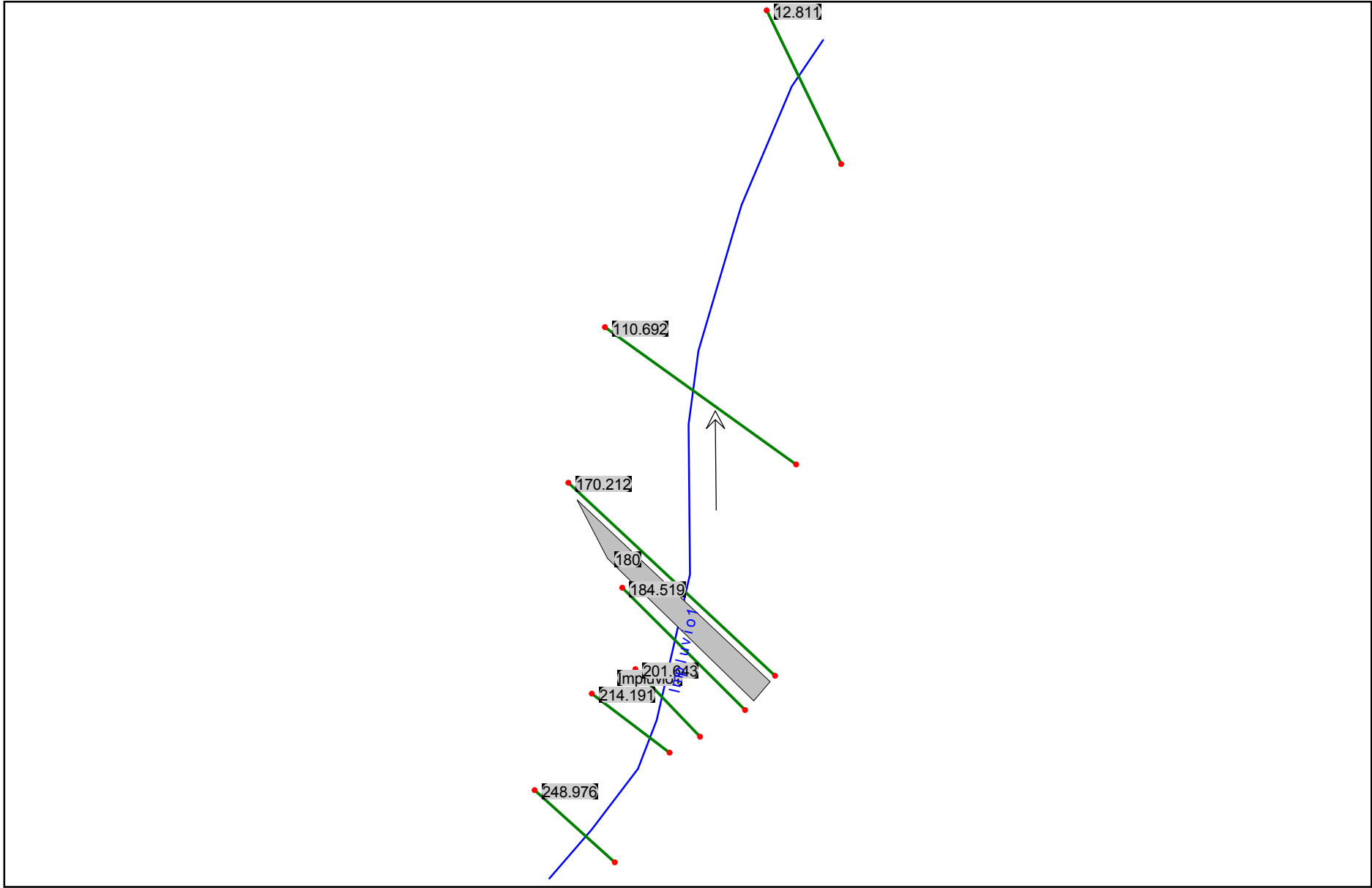
IL RESPONSABILE DEL PROCEDIMENTO

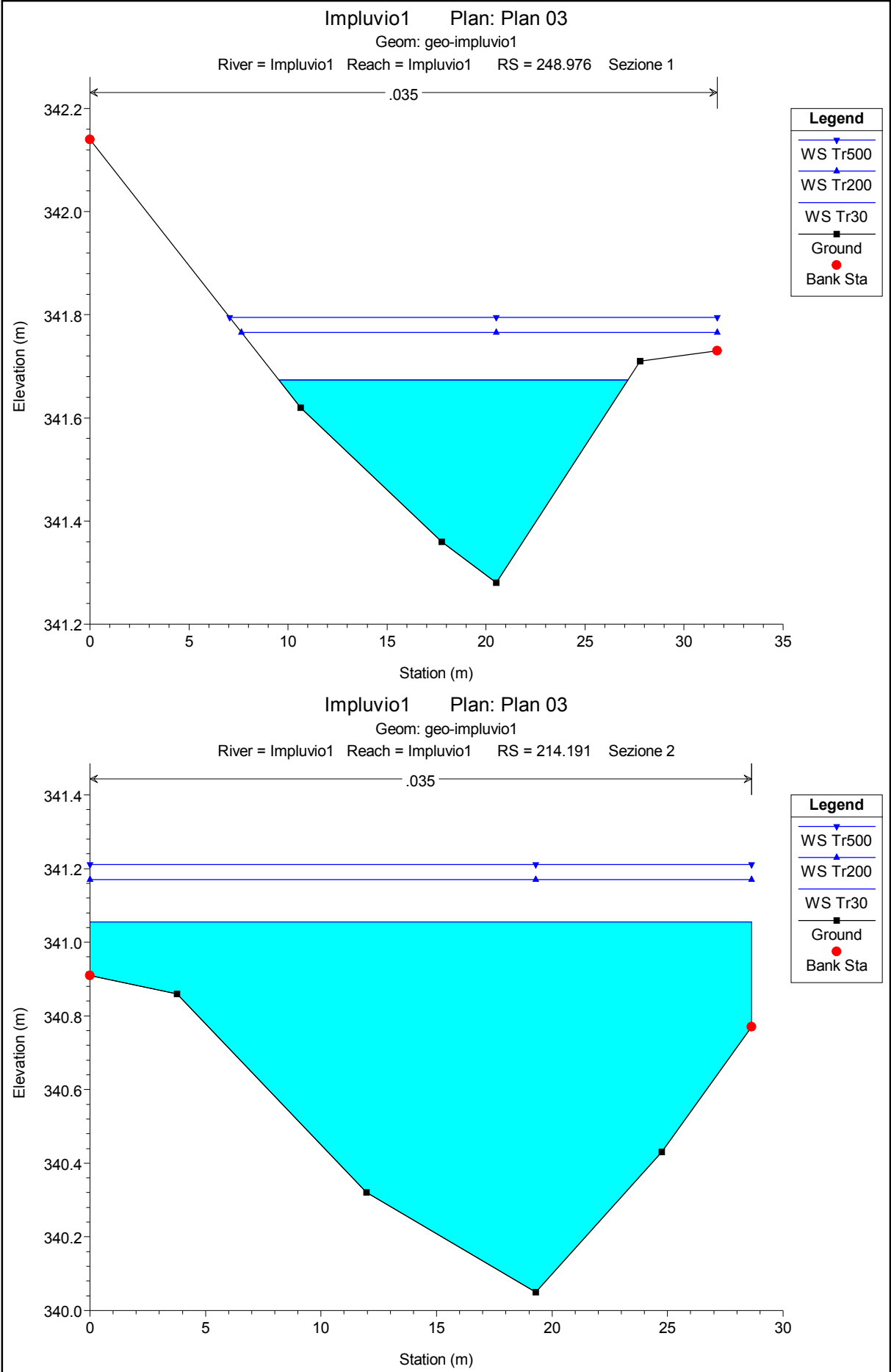
Dott. Fileno PENNACCHIO

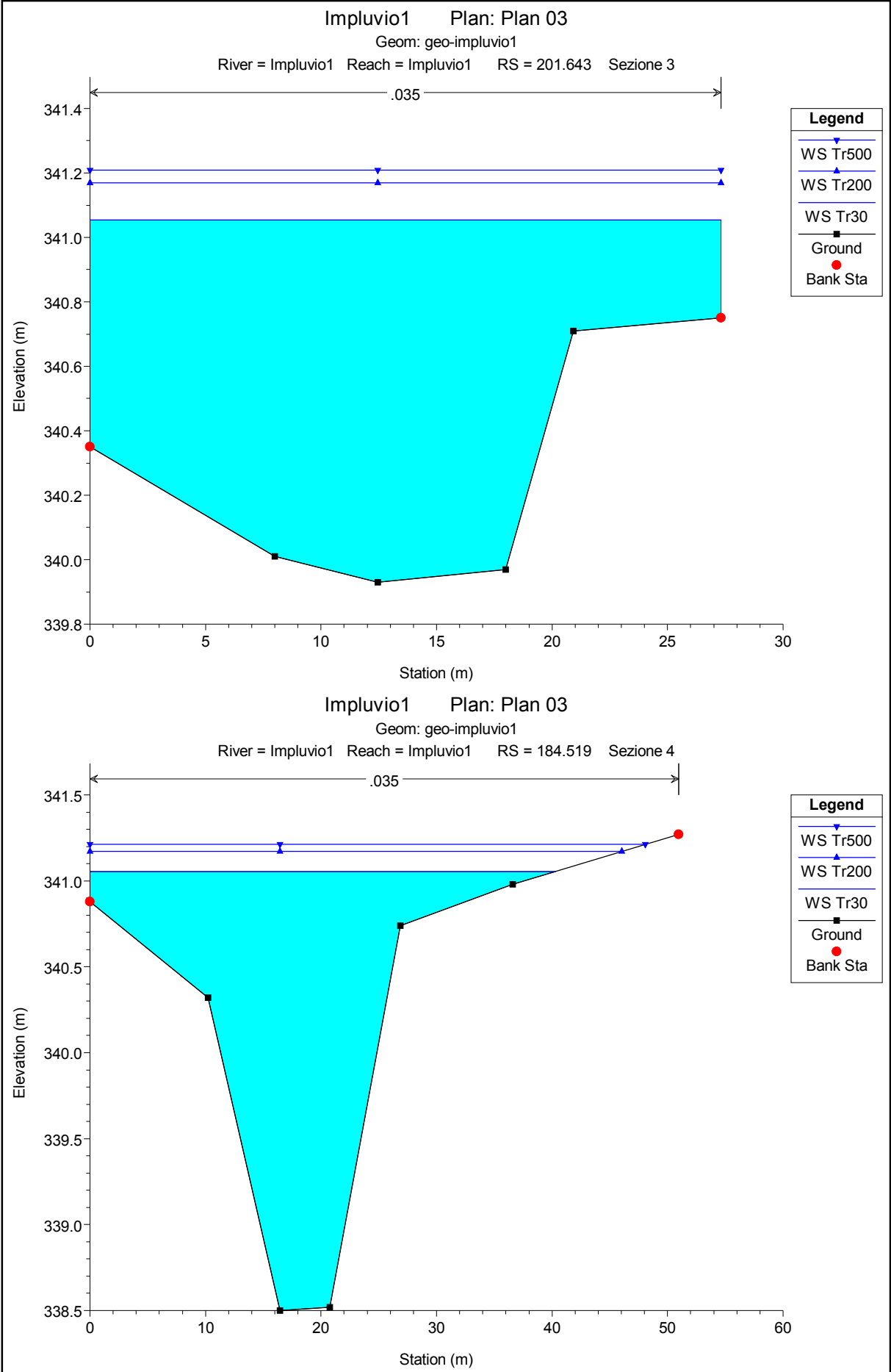
IL COMMISSARIO STRAORDINARIO

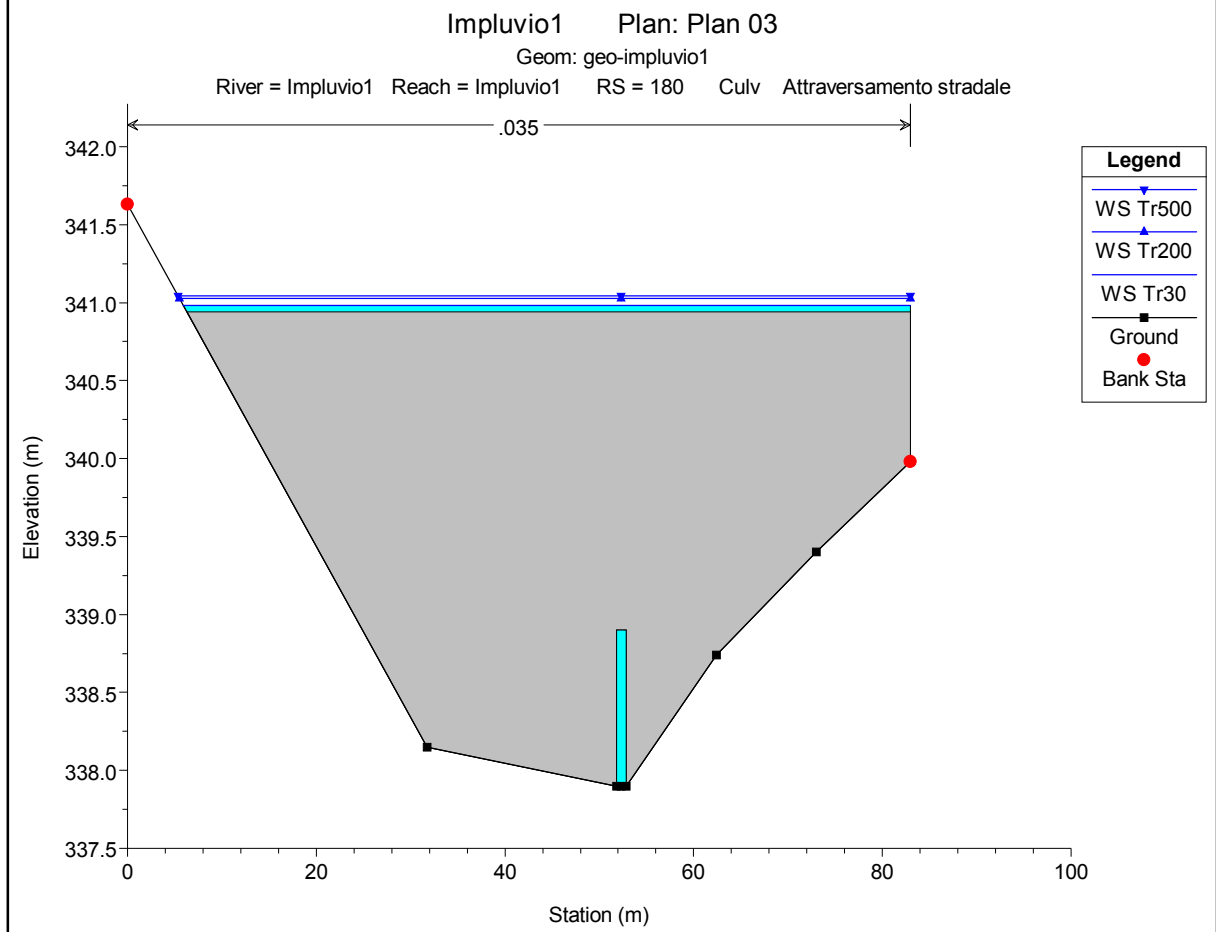
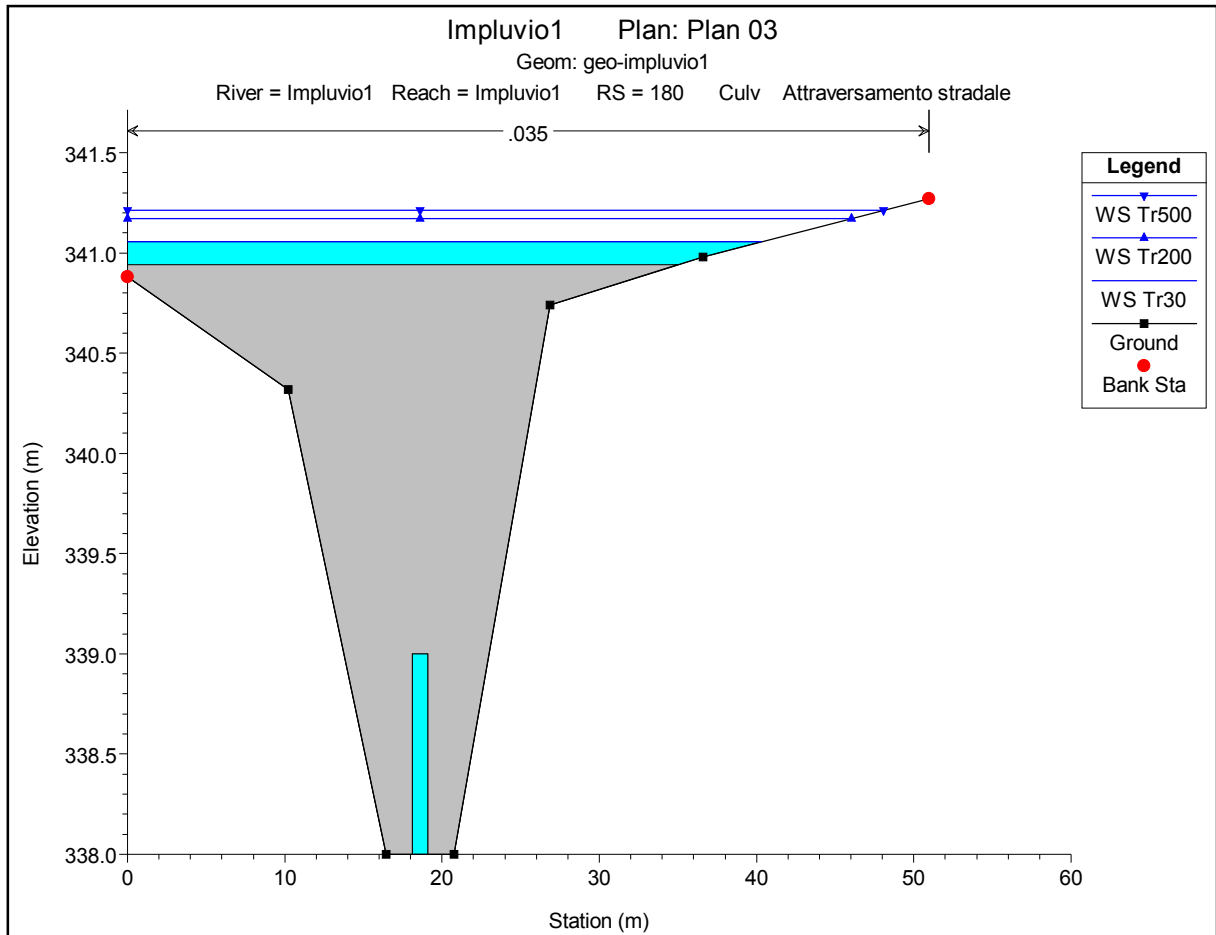
Avv. G. MUSACCHIO

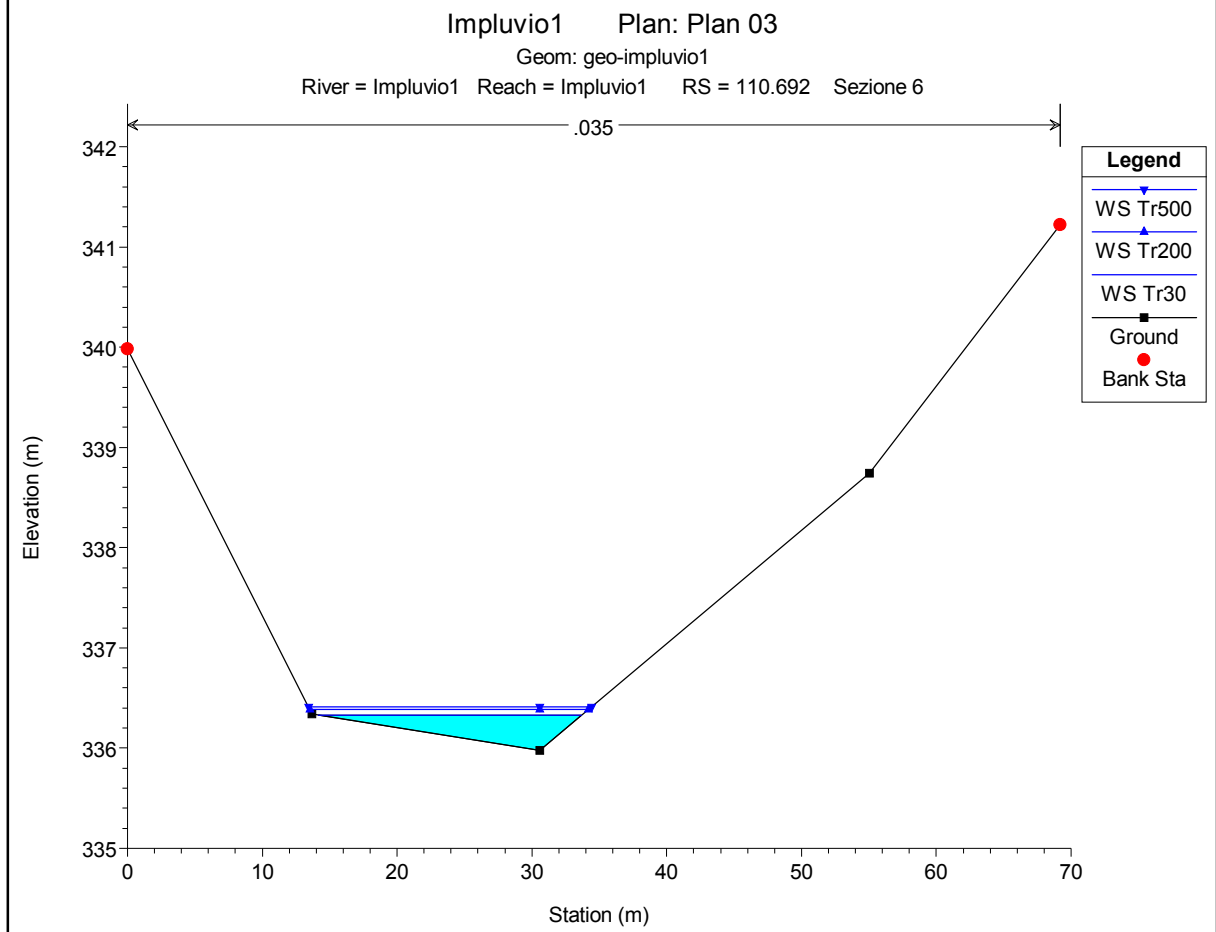
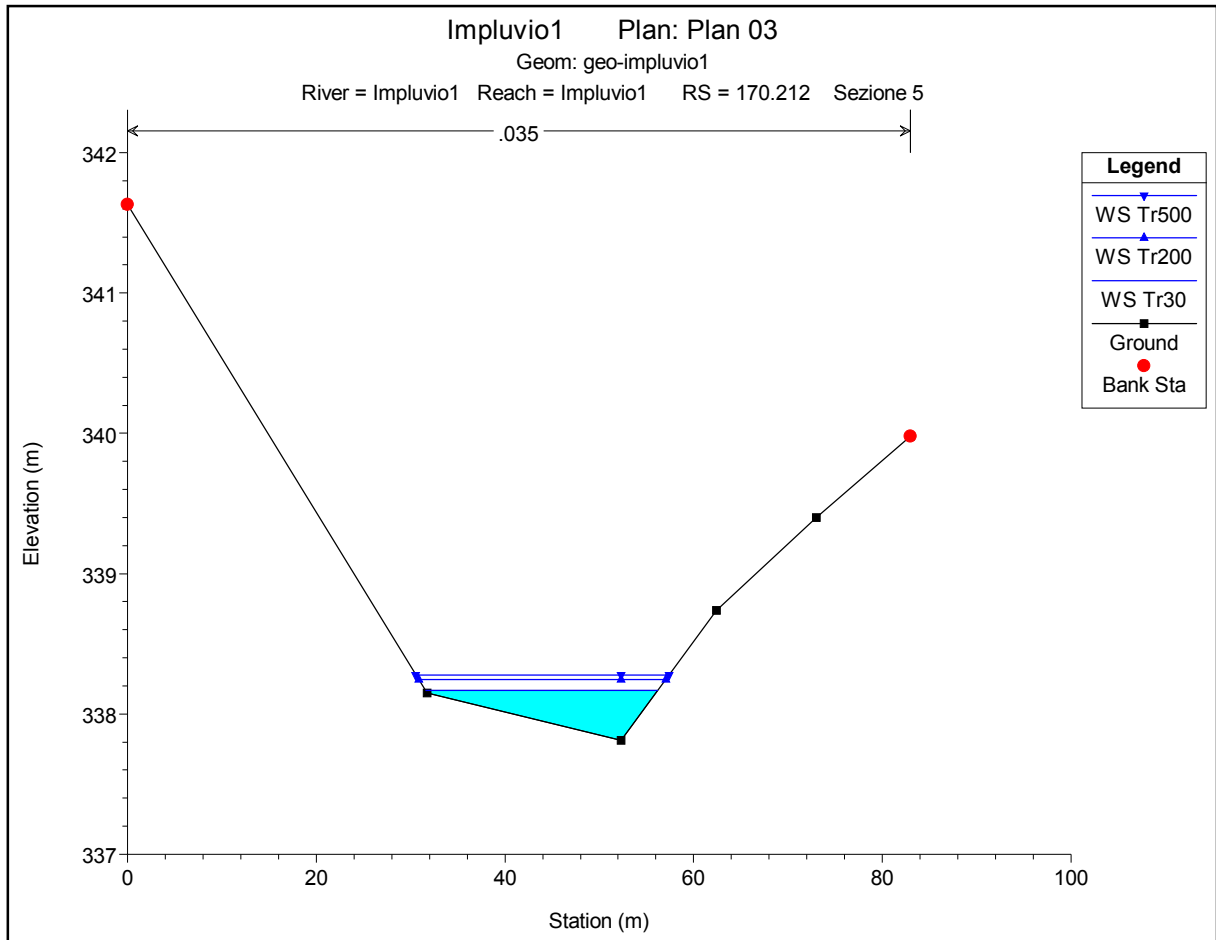
IMPLUVIO 1







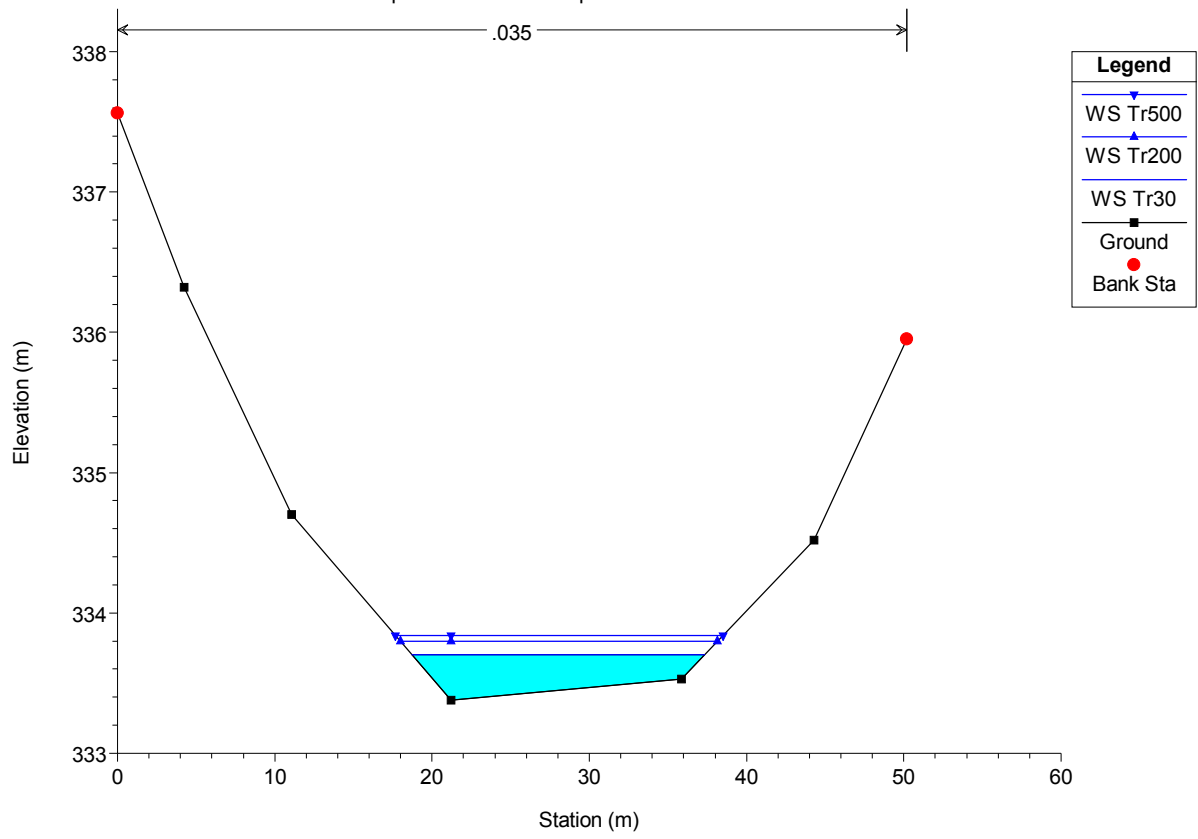




Impluvio1 Plan: Plan 03

Geom: geo-impluvio1

River = Impluvio1 Reach = Impluvio1 RS = 12.811 Sezione 7

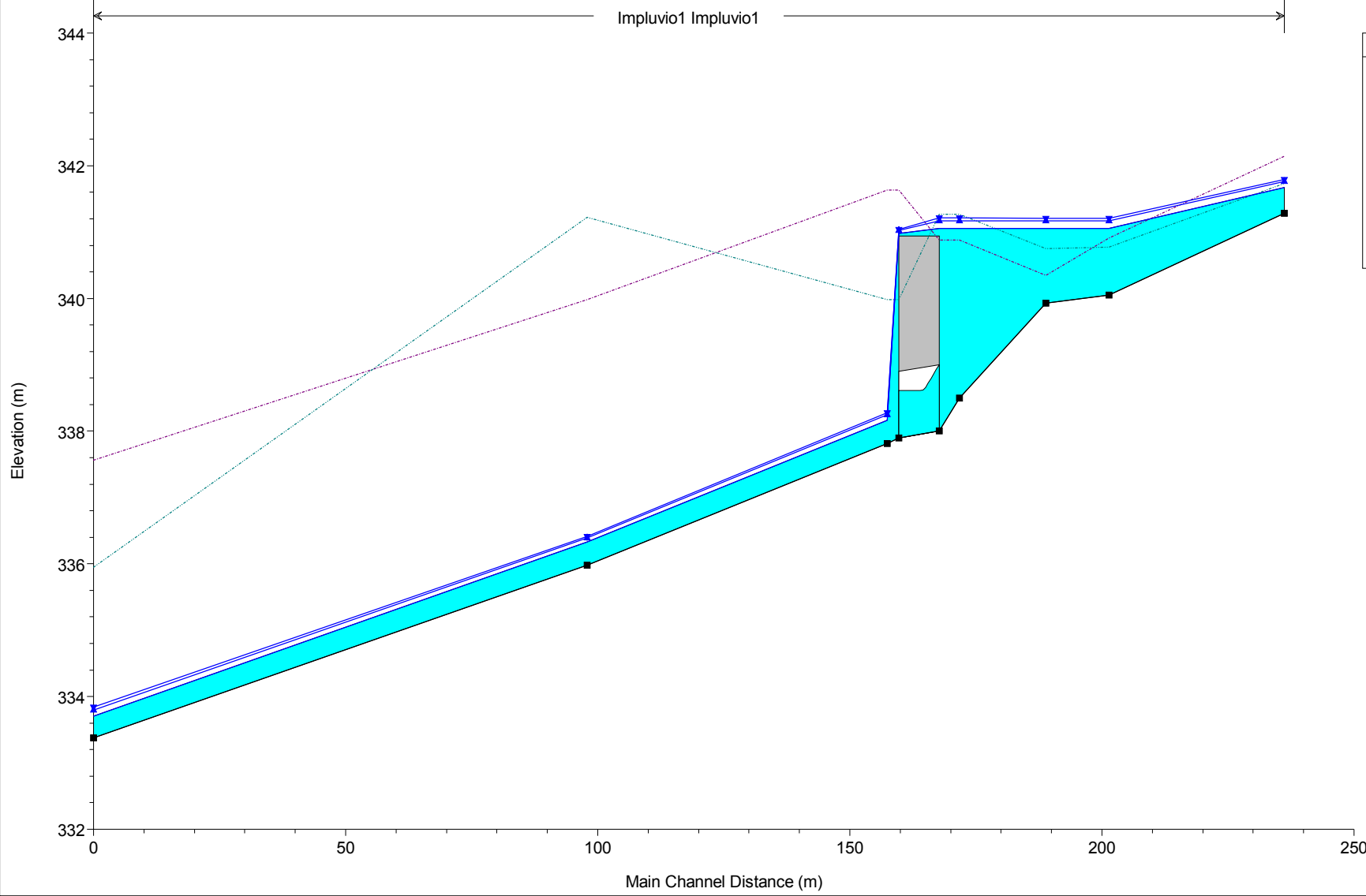


Legend	
WS Tr500	Blue line with downward triangle
WS Tr200	Blue line with upward triangle
WS Tr30	Blue line with square
Ground	Black line with square
Bank Sta	Red dot

Impluvio1 Plan: Plan 03

Geom: geo-impluvio1

Impluvio1 Impluvio1

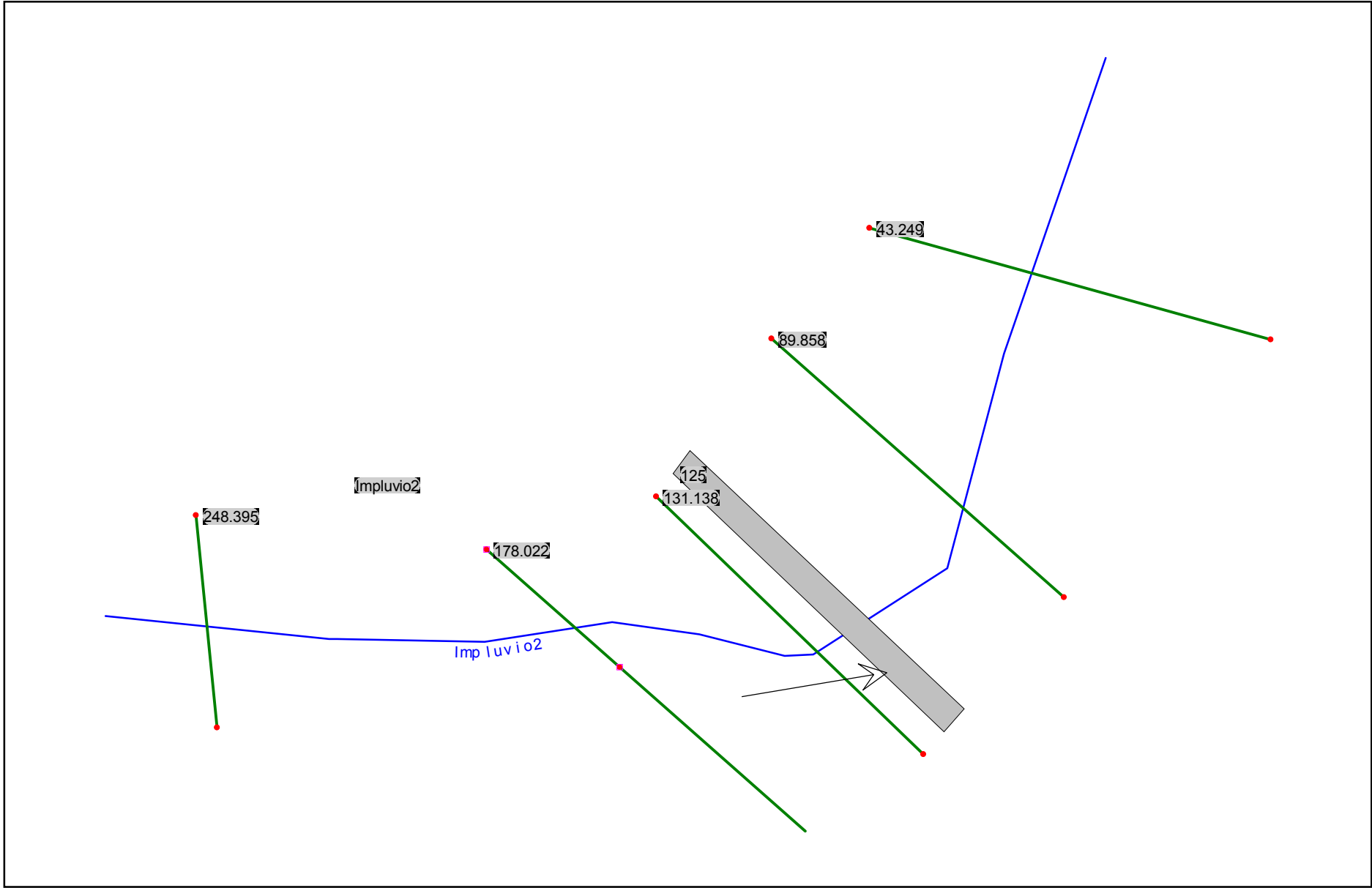


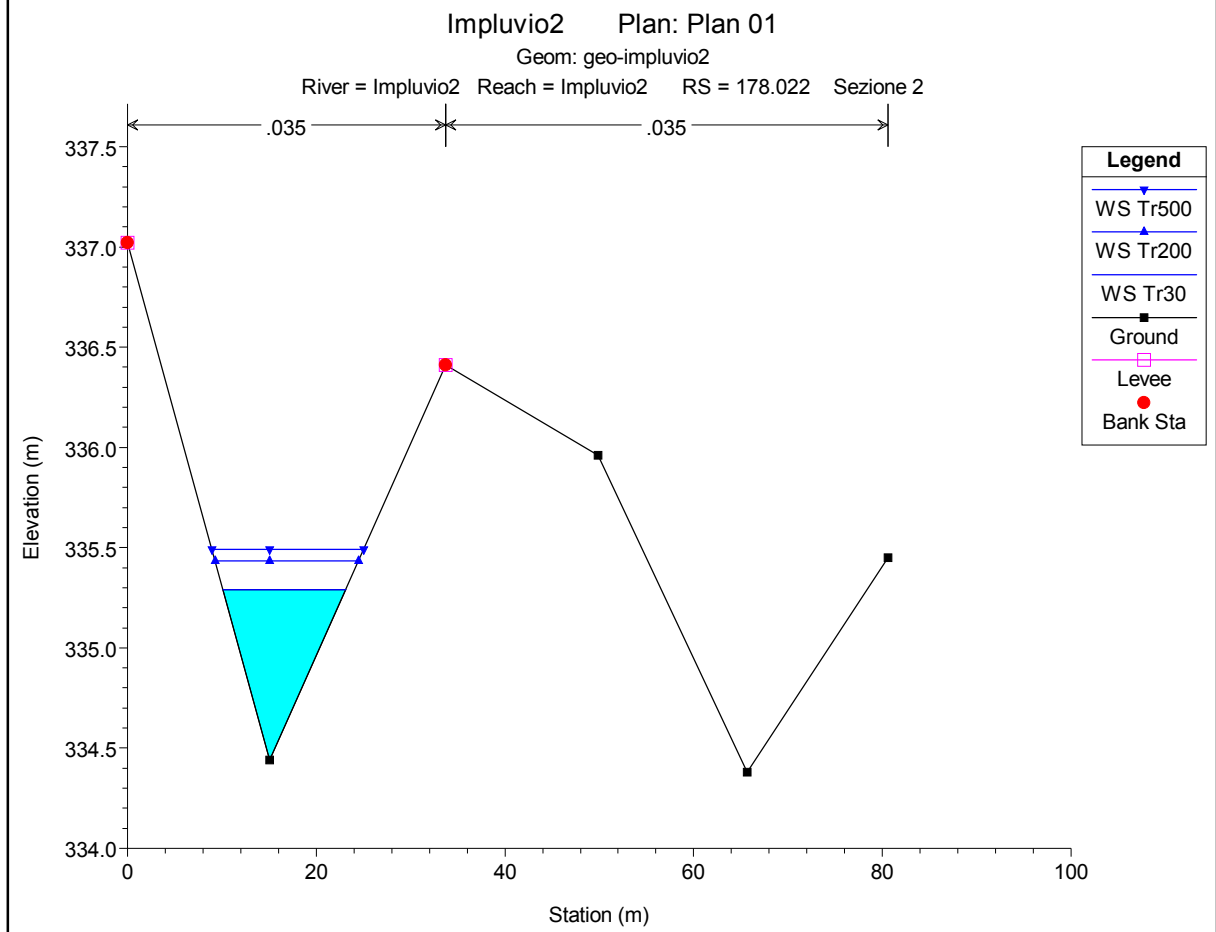
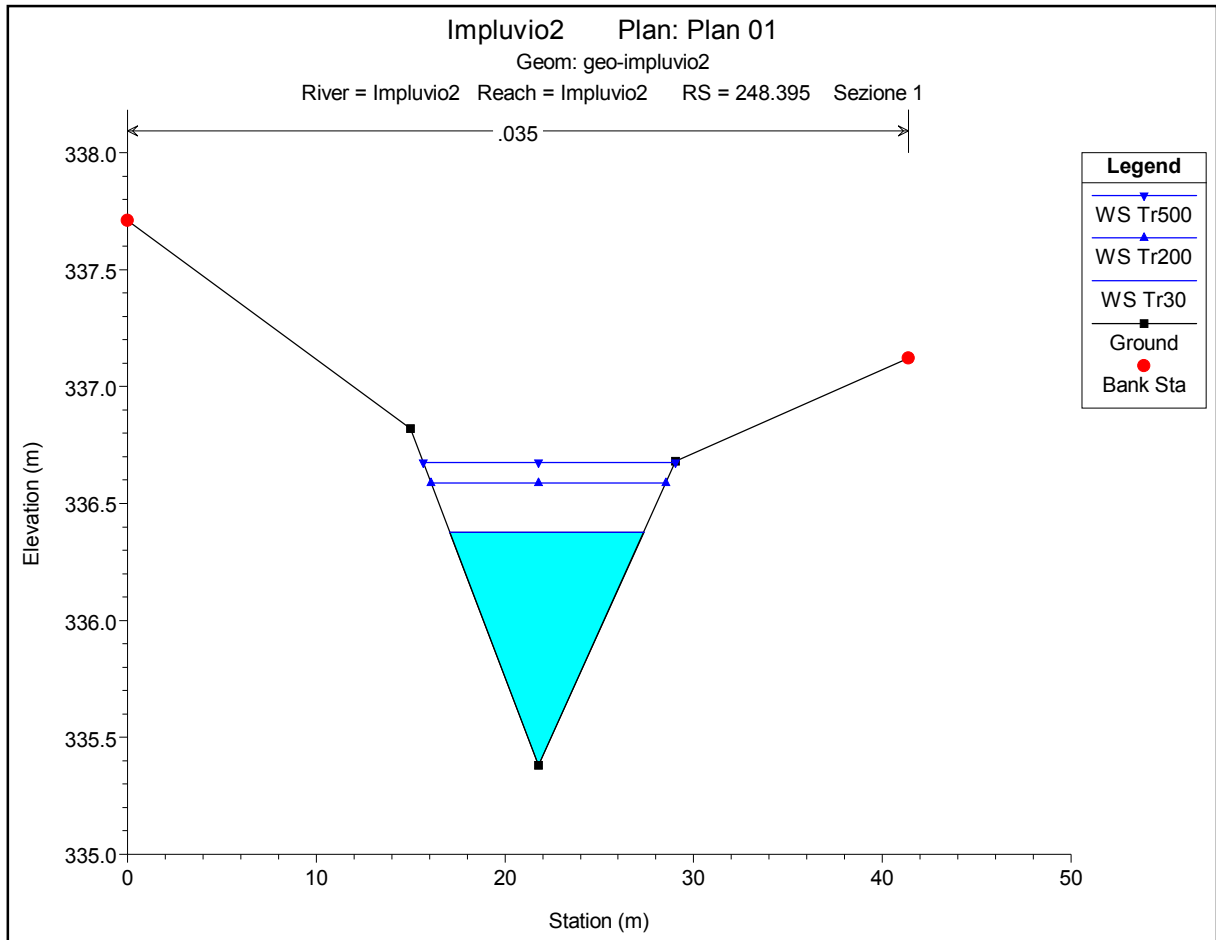
Legend	
WS Tr500	Blue line with downward triangle
WS Tr200	Red line with upward triangle
WS Tr30	Green line with square
Ground	Black line with square
LOB	Magenta dotted line
ROB	Cyan dotted line

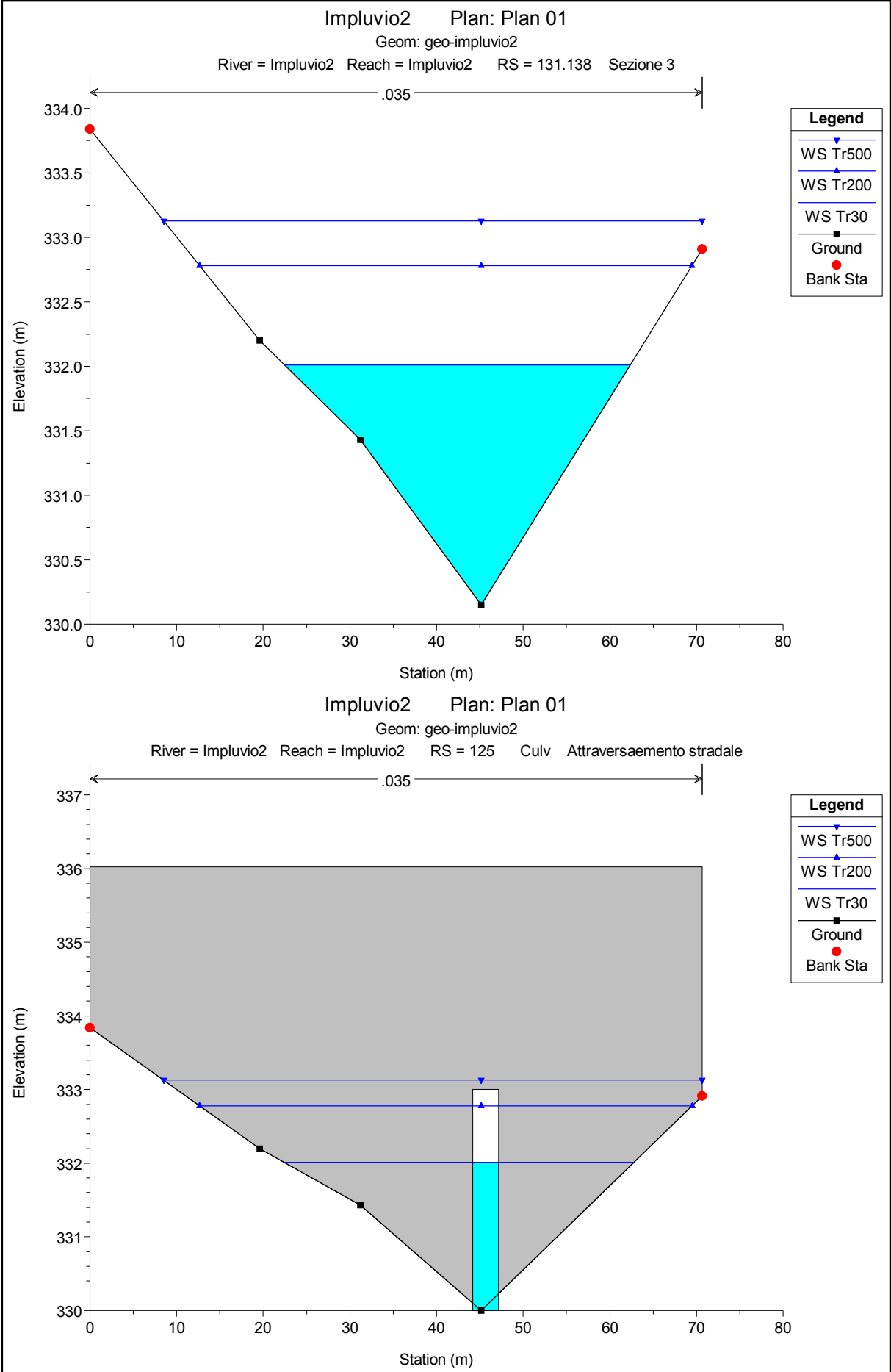
HEC-RAS Plan: Plan 02 River: Impluvio1 Reach: Impluvio1

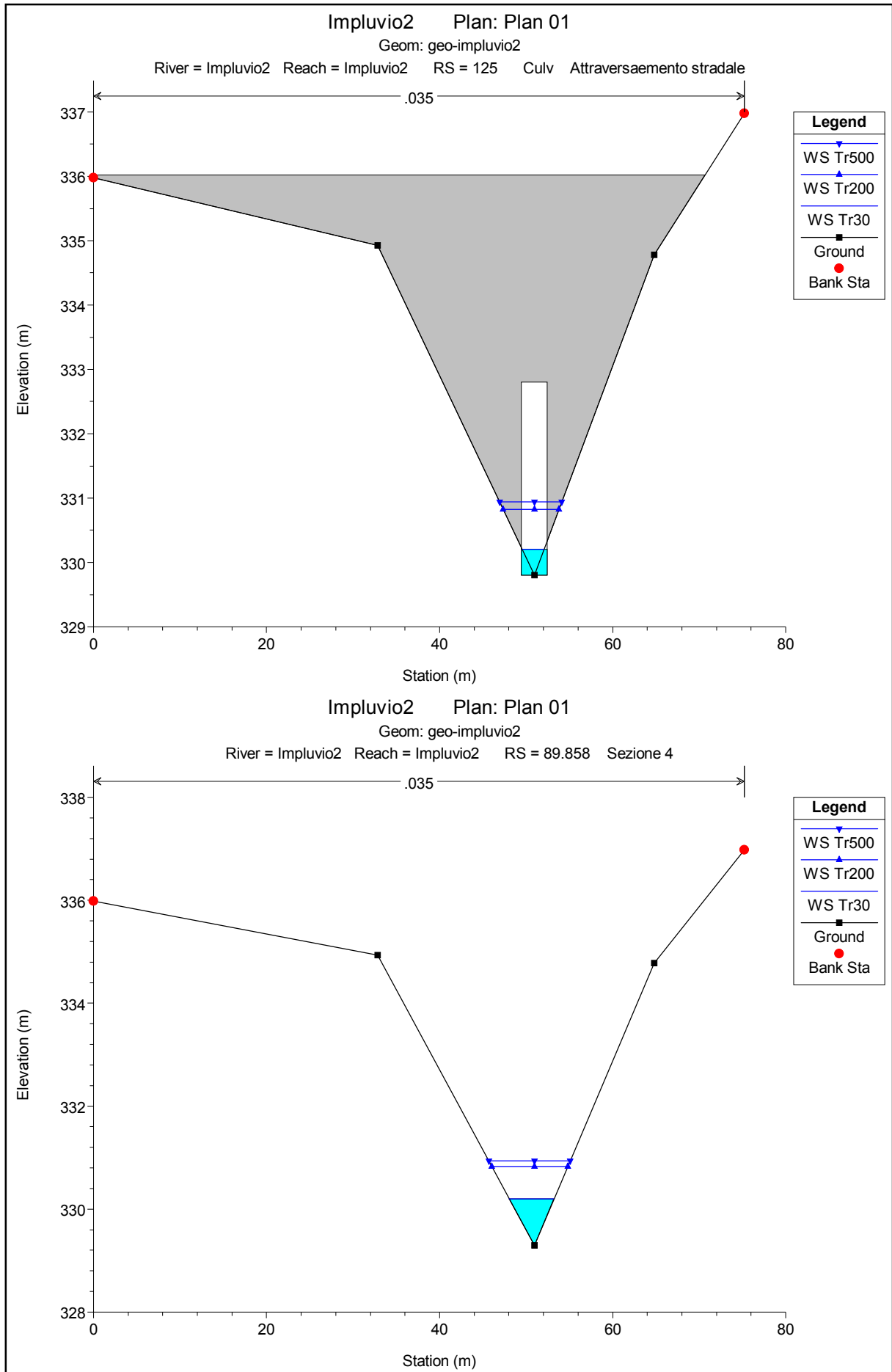
Reach	River Sta	Profile	Q Total (m3/s)	Min Ch El (m)	W.S. Elev (m)	Crit W.S. (m)	E.G. Elev (m)	E.G. Slope (m/m)	Vel Chnl (m/s)	Flow Area (m2)	Top Width (m)	Froude # Chl
Impluvio1	248.976	Tr30	6.22	341.28	341.67	341.71	341.82	0.030006	1.72	3.62	17.62	1.21
Impluvio1	248.976	Tr200	10.34	341.28	341.77	341.80	341.94	0.030009	1.86	5.55	24.01	1.24
Impluvio1	248.976	Tr500	12.41	341.28	341.80	341.84	342.00	0.030008	1.98	6.26	24.61	1.25
Impluvio1	214.191	Tr30	6.22	340.05	341.06	340.50	341.06	0.000333	0.36	17.04	28.64	0.15
Impluvio1	214.191	Tr200	10.34	340.05	341.17	340.61	341.18	0.000515	0.51	20.35	28.64	0.19
Impluvio1	214.191	Tr500	12.41	340.05	341.21	340.65	341.23	0.000620	0.58	21.50	28.64	0.21
Impluvio1	201.643	Tr30	6.22	339.93	341.05		341.06	0.000135	0.28	22.12	27.32	0.10
Impluvio1	201.643	Tr200	10.34	339.93	341.17		341.18	0.000243	0.41	25.26	27.32	0.14
Impluvio1	201.643	Tr500	12.41	339.93	341.21		341.22	0.000305	0.47	26.35	27.32	0.15
Impluvio1	184.519	Tr30	6.22	338.50	341.06	339.03	341.06	0.000041	0.17	36.63	40.31	0.06
Impluvio1	184.519	Tr200	10.34	338.50	341.17	339.21	341.17	0.000089	0.25	41.63	46.05	0.08
Impluvio1	184.519	Tr500	12.41	338.50	341.21	339.28	341.22	0.000117	0.29	43.54	48.06	0.10
Impluvio1	180		Culvert									
Impluvio1	170.212	Tr30	6.22	337.81	338.17	338.17	338.26	0.021897	1.37	4.54	24.62	1.02
Impluvio1	170.212	Tr200	10.34	337.81	338.24	338.24	338.37	0.019706	1.59	6.52	26.17	1.01
Impluvio1	170.212	Tr500	12.41	337.81	338.28	338.28	338.42	0.018949	1.67	7.44	26.86	1.01
Impluvio1	110.692	Tr30	6.22	335.98	336.33	336.37	336.50	0.041657	1.82	3.41	19.51	1.39
Impluvio1	110.692	Tr200	10.34	335.98	336.39	336.46	336.65	0.046076	2.25	4.60	20.68	1.52
Impluvio1	110.692	Tr500	12.41	335.98	336.41	336.50	336.71	0.047323	2.42	5.12	21.00	1.57
Impluvio1	12.811	Tr30	6.22	333.38	333.70	333.70	333.82	0.020224	1.50	4.16	18.60	1.01
Impluvio1	12.811	Tr200	10.34	333.38	333.80	333.80	333.95	0.018428	1.73	5.99	20.13	1.01
Impluvio1	12.811	Tr500	12.41	333.38	333.84	333.84	334.01	0.017705	1.81	6.86	20.82	1.01

IMPLUVIO 2





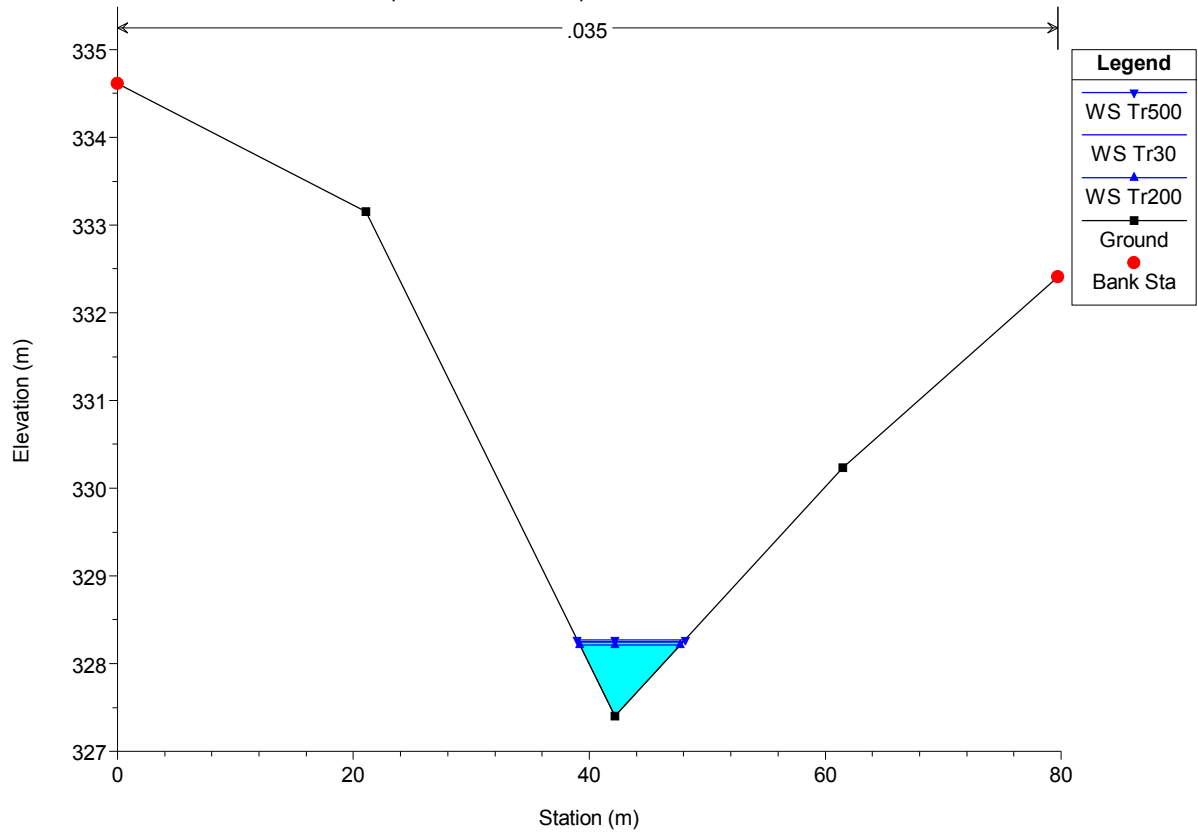




Impluvio2 Plan: Plan 01

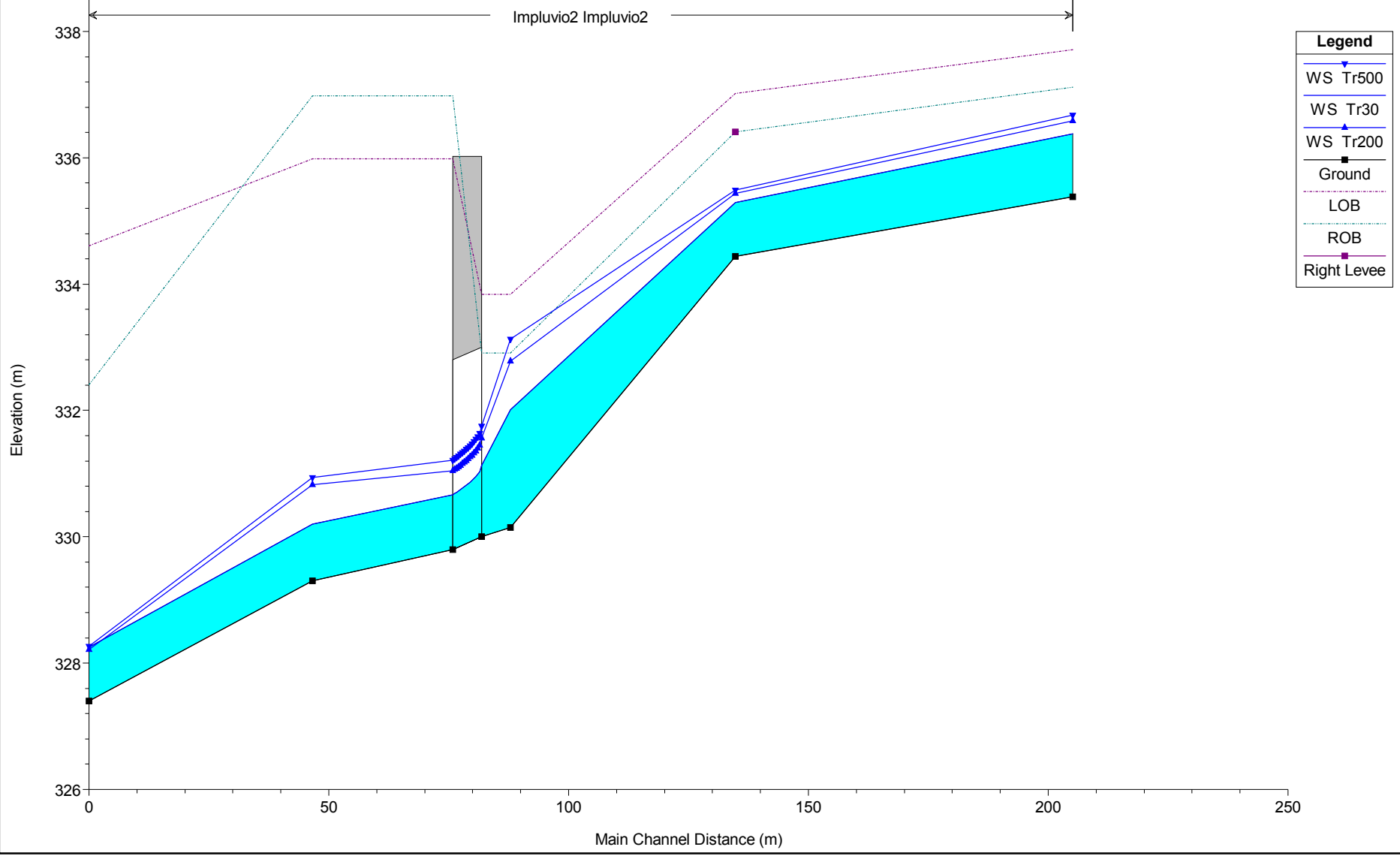
Geom: geo-impluvio2

River = Impluvio2 Reach = Impluvio2 RS = 43.249 Sezione 5



Impluvio2 Plan: Plan 01

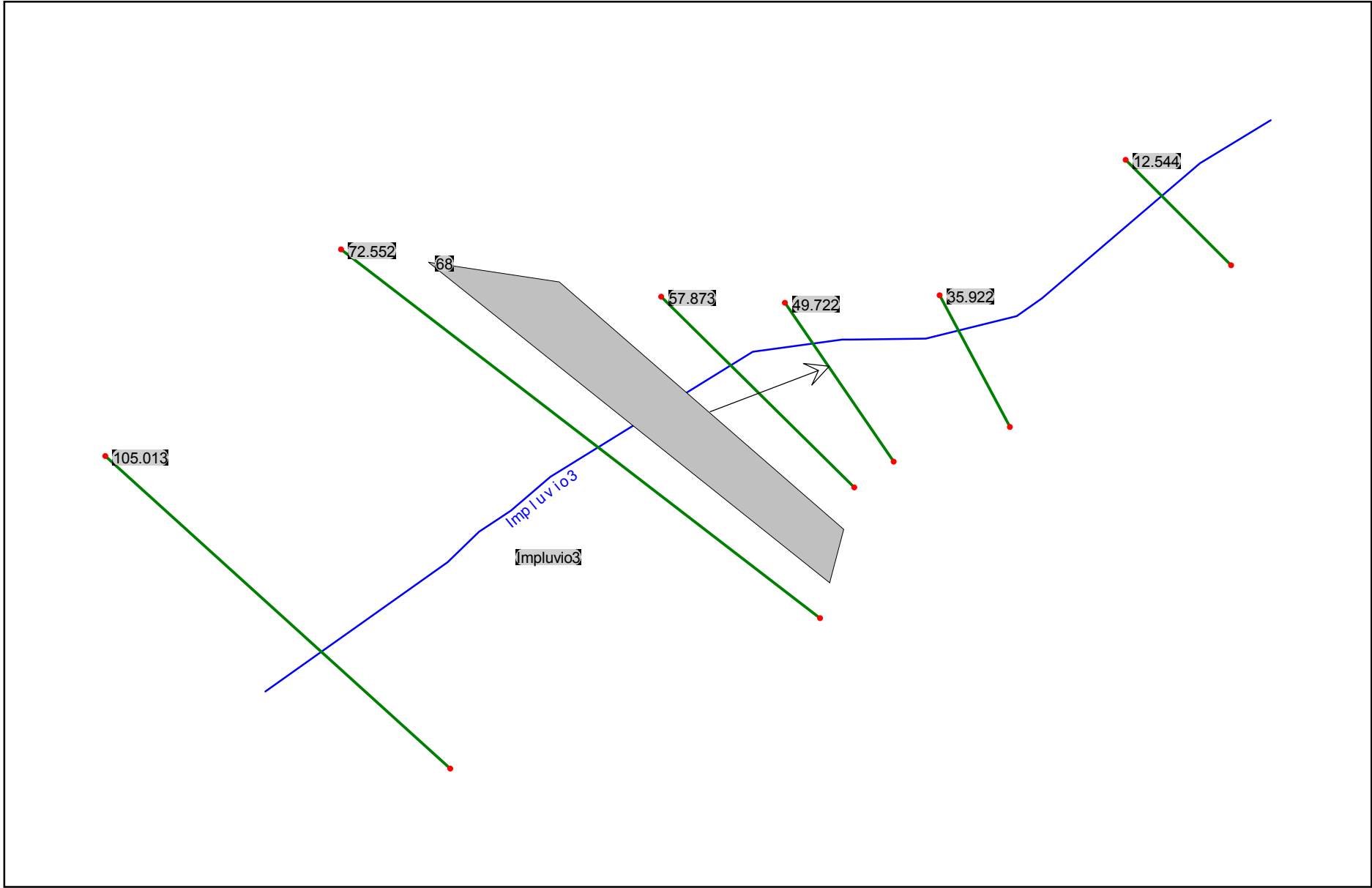
Geom: geo-impluvio2

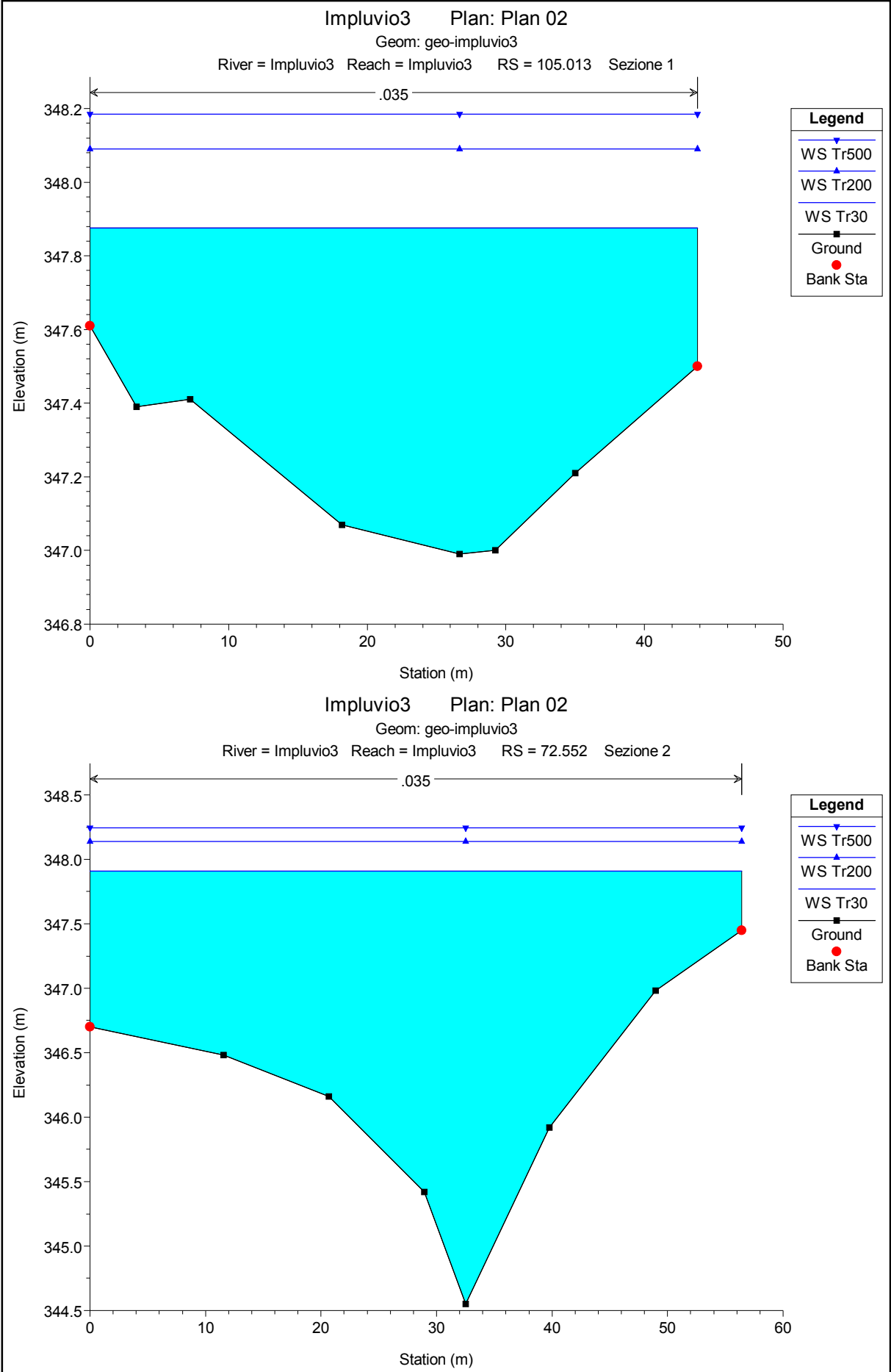


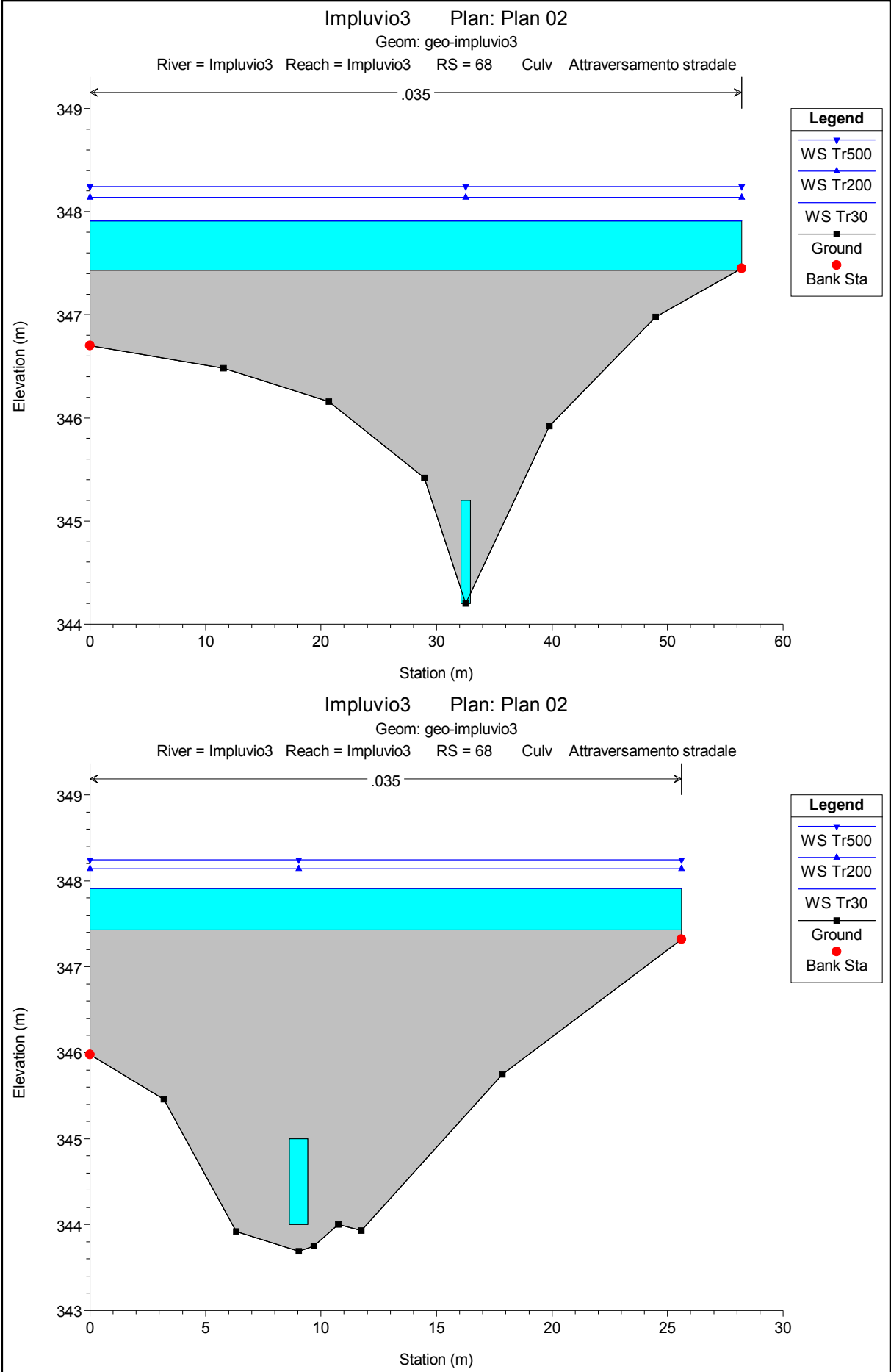
HEC-RAS Plan: Plan 01 River: Impluvio2 Reach: Impluvio2

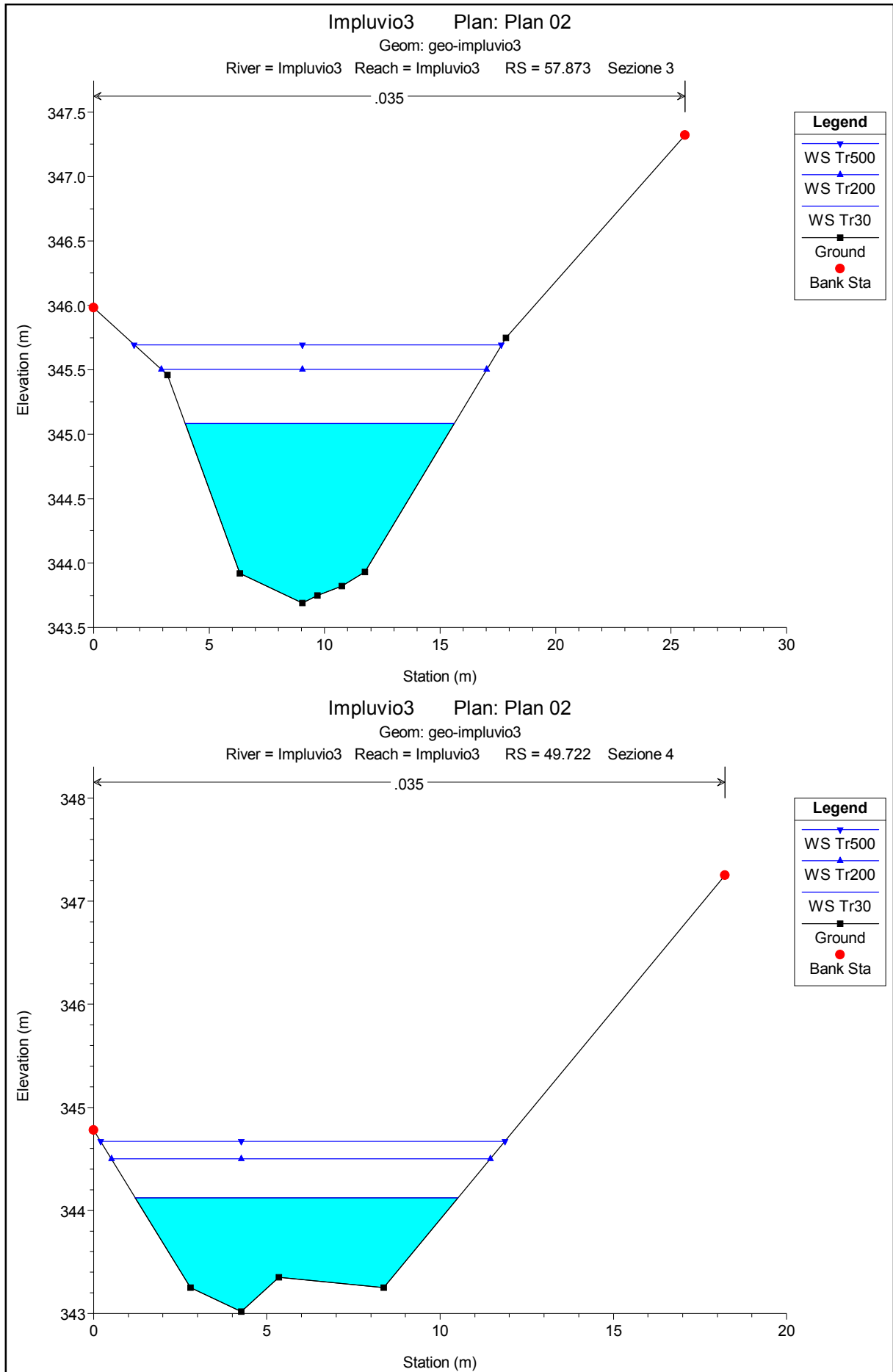
Reach	River Sta	Profile	Q Total (m3/s)	Min Ch El (m)	W.S. Elev (m)	Crit W.S. (m)	E.G. Elev (m)	E.G. Slope (m/m)	Vel Chnl (m/s)	Flow Area (m2)	Top Width (m)	Froude # Chl
Impluvio2	248.395	Tr30	11.30	335.38	336.38	336.38	336.62	0.015361	2.20	5.13	10.29	0.99
Impluvio2	248.395	Tr200	18.36	335.38	336.59	336.59	336.89	0.014688	2.44	7.51	12.45	1.00
Impluvio2	248.395	Tr500	21.88	335.38	336.68	336.68	337.00	0.014302	2.53	8.66	13.36	1.00
Impluvio2	178.022	Tr30	11.30	334.44	335.29	335.29	335.50	0.016241	2.05	5.52	13.00	1.00
Impluvio2	178.022	Tr200	18.36	334.44	335.43	335.47	335.73	0.018568	2.43	7.56	15.20	1.10
Impluvio2	178.022	Tr500	21.88	334.44	335.49	335.55	335.83	0.019486	2.58	8.47	16.09	1.14
Impluvio2	131.138	Tr30	11.30	330.15	332.01	330.91	332.01	0.000146	0.32	35.50	39.87	0.11
Impluvio2	131.138	Tr200	18.36	330.15	332.78	331.07	332.78	0.000056	0.25	73.01	56.83	0.07
Impluvio2	131.138	Tr500	21.88	330.15	333.13	331.14	333.13	0.000039	0.23	93.72	62.15	0.06
Impluvio2	125											
		Culvert										
Impluvio2	89.858	Tr30	11.30	329.30	330.20	330.56	331.40	0.090079	4.85	2.33	5.17	2.31
Impluvio2	89.858	Tr200	18.36	329.30	330.82	330.82	331.21	0.014371	2.75	6.68	8.75	1.01
Impluvio2	89.858	Tr500	21.88	329.30	330.94	330.94	331.35	0.013922	2.84	7.71	9.41	1.00
Impluvio2	43.249	Tr30	11.30	327.40	328.25	328.38	328.70	0.034856	2.98	3.80	8.92	1.46
Impluvio2	43.249	Tr200	18.36	327.40	328.21	328.60	329.64	0.116667	5.29	3.47	8.54	2.65
Impluvio2	43.249	Tr500	21.88	327.40	328.27	328.68	329.81	0.114857	5.49	3.98	9.14	2.66

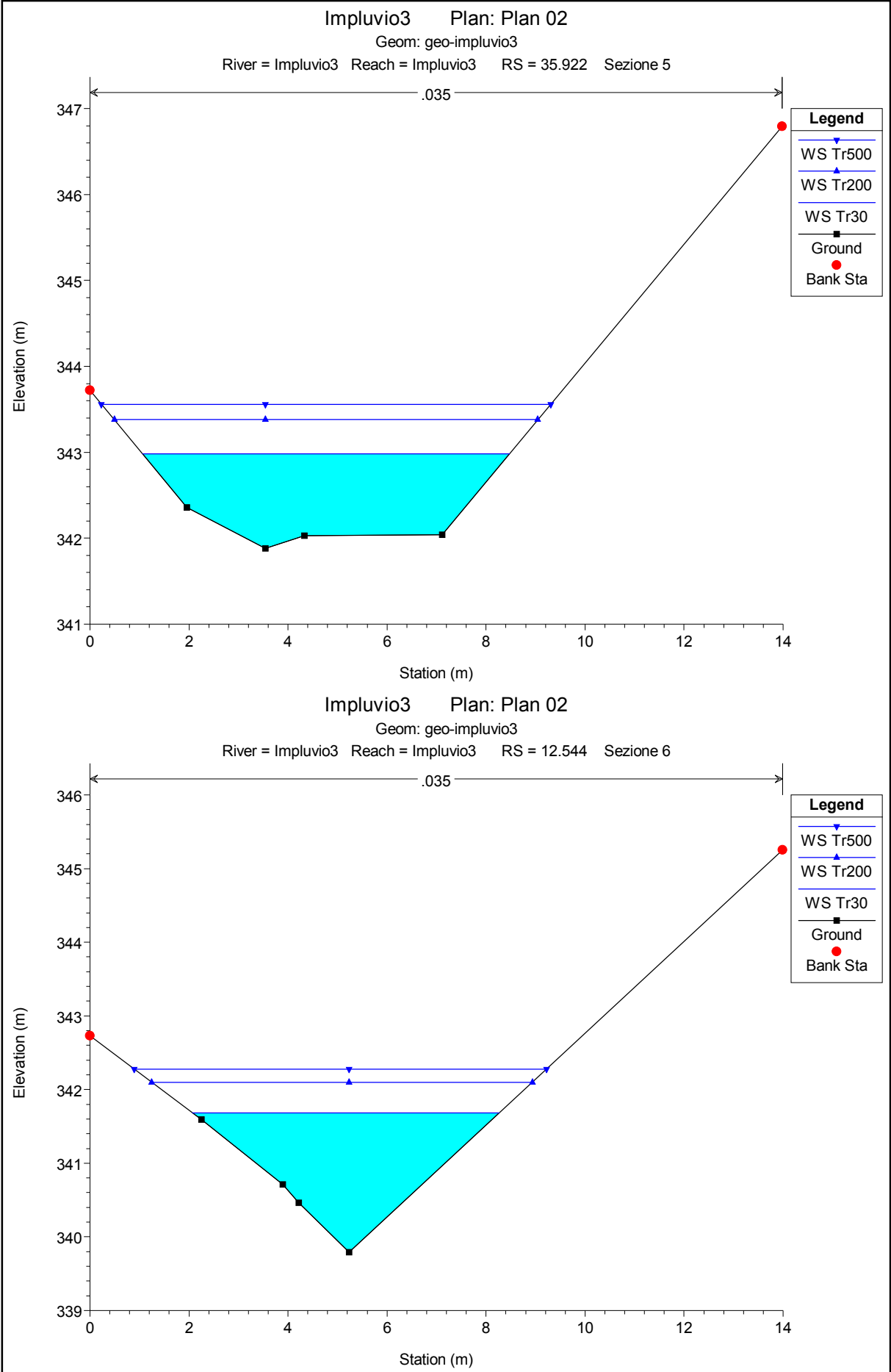
IMPLUVIO 3







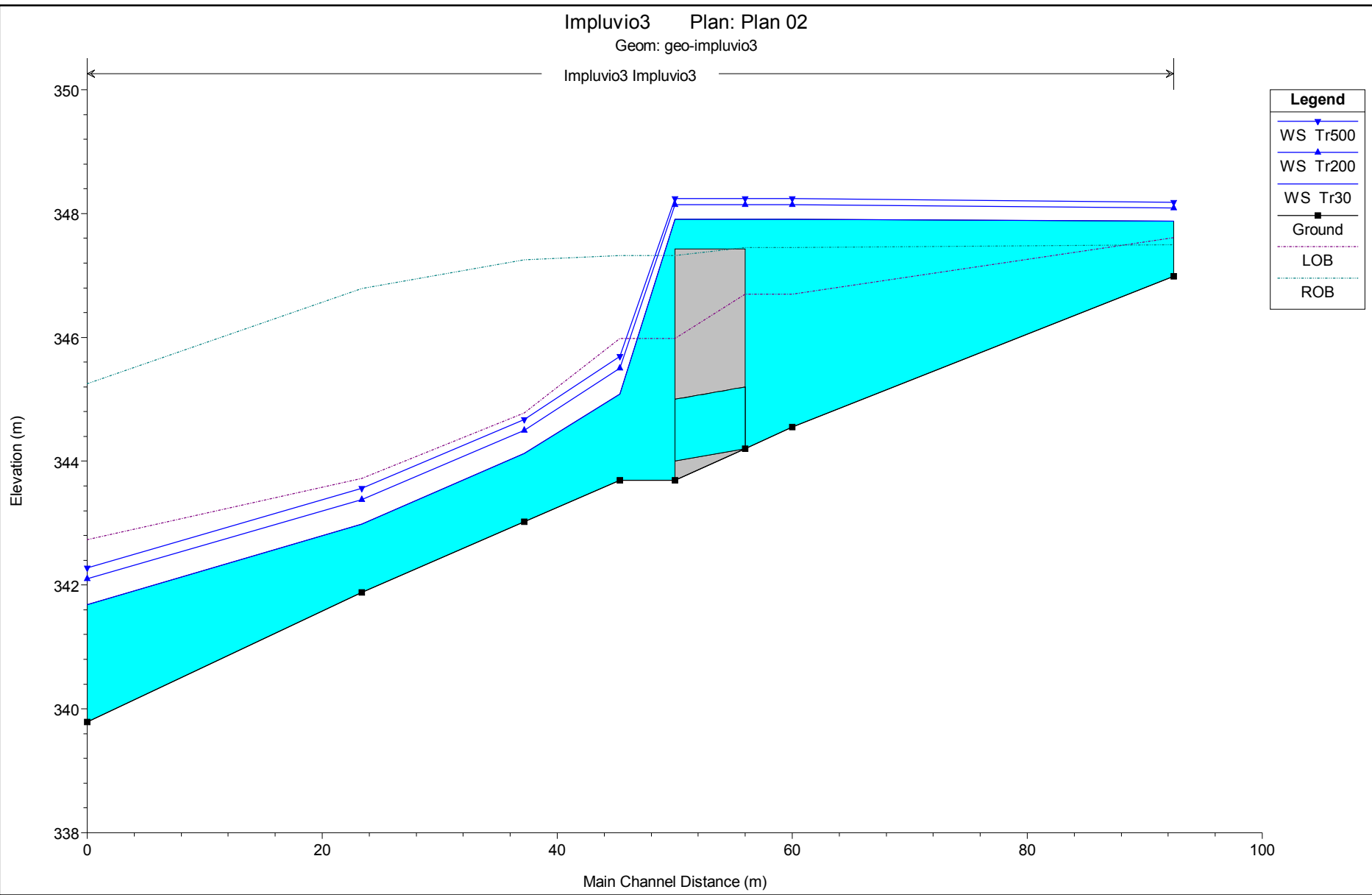




Impluvio3 Plan: Plan 02

Geom: geo-impluvio3

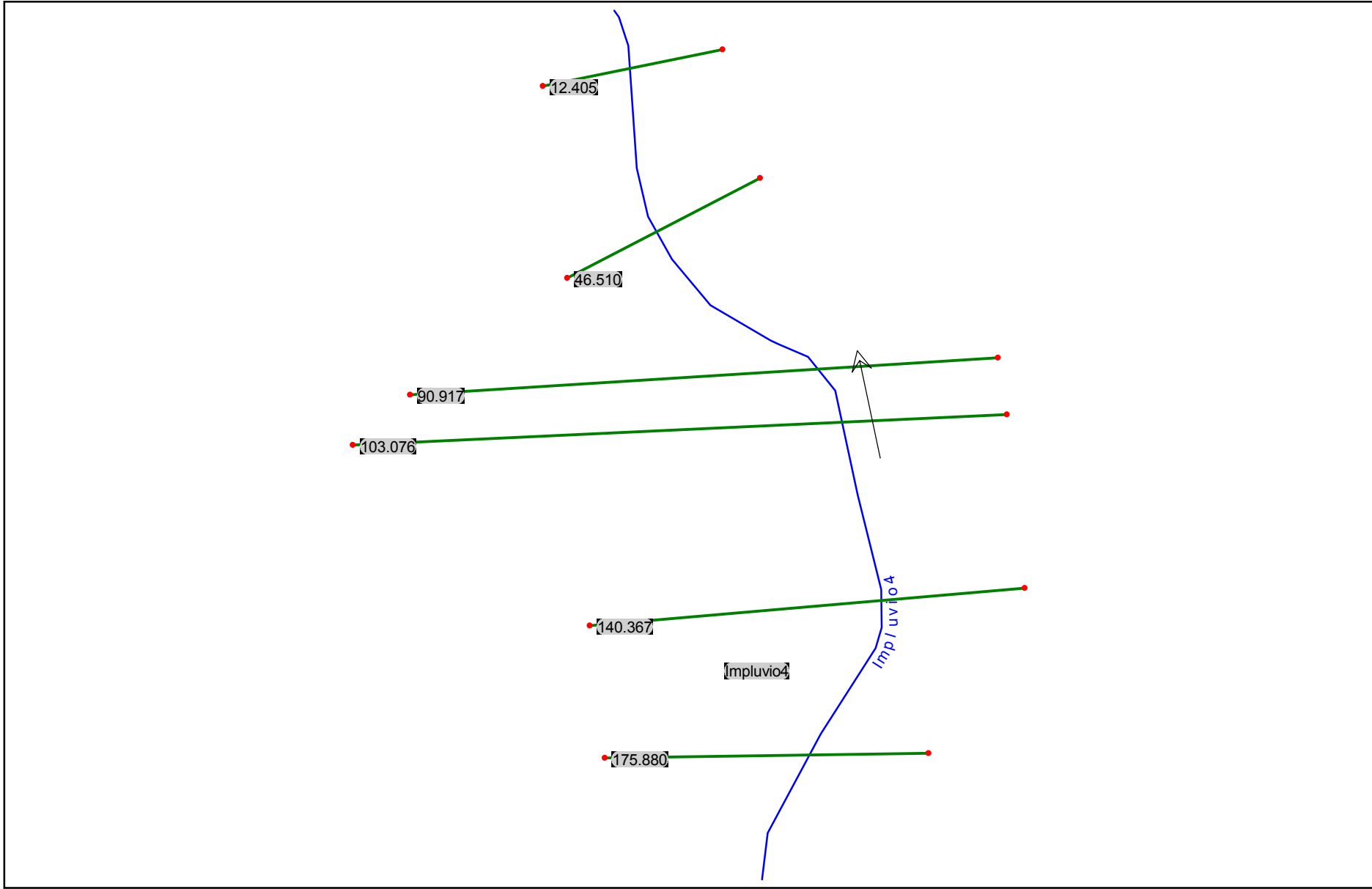
Impluvio3 Impluvio3

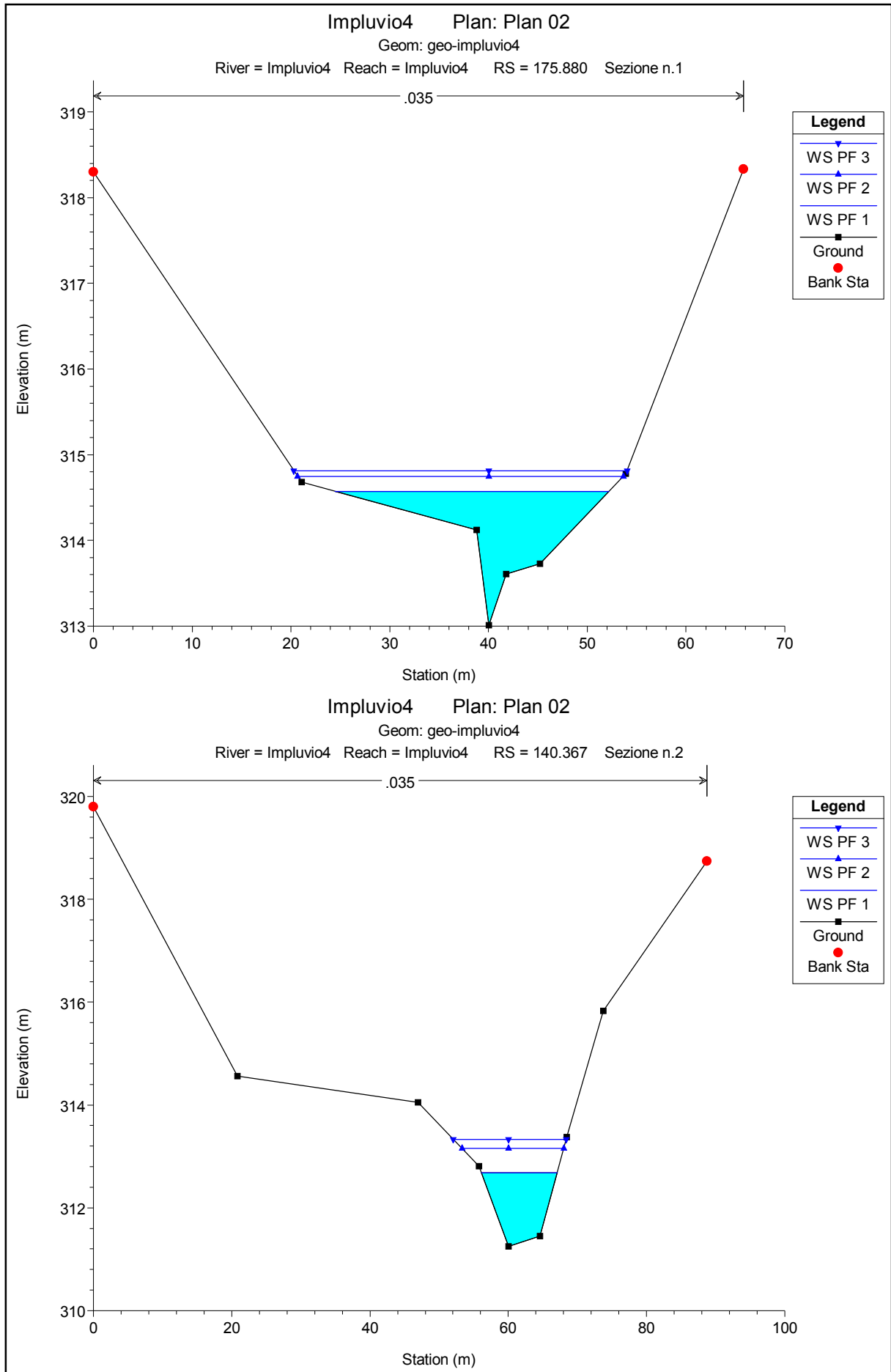


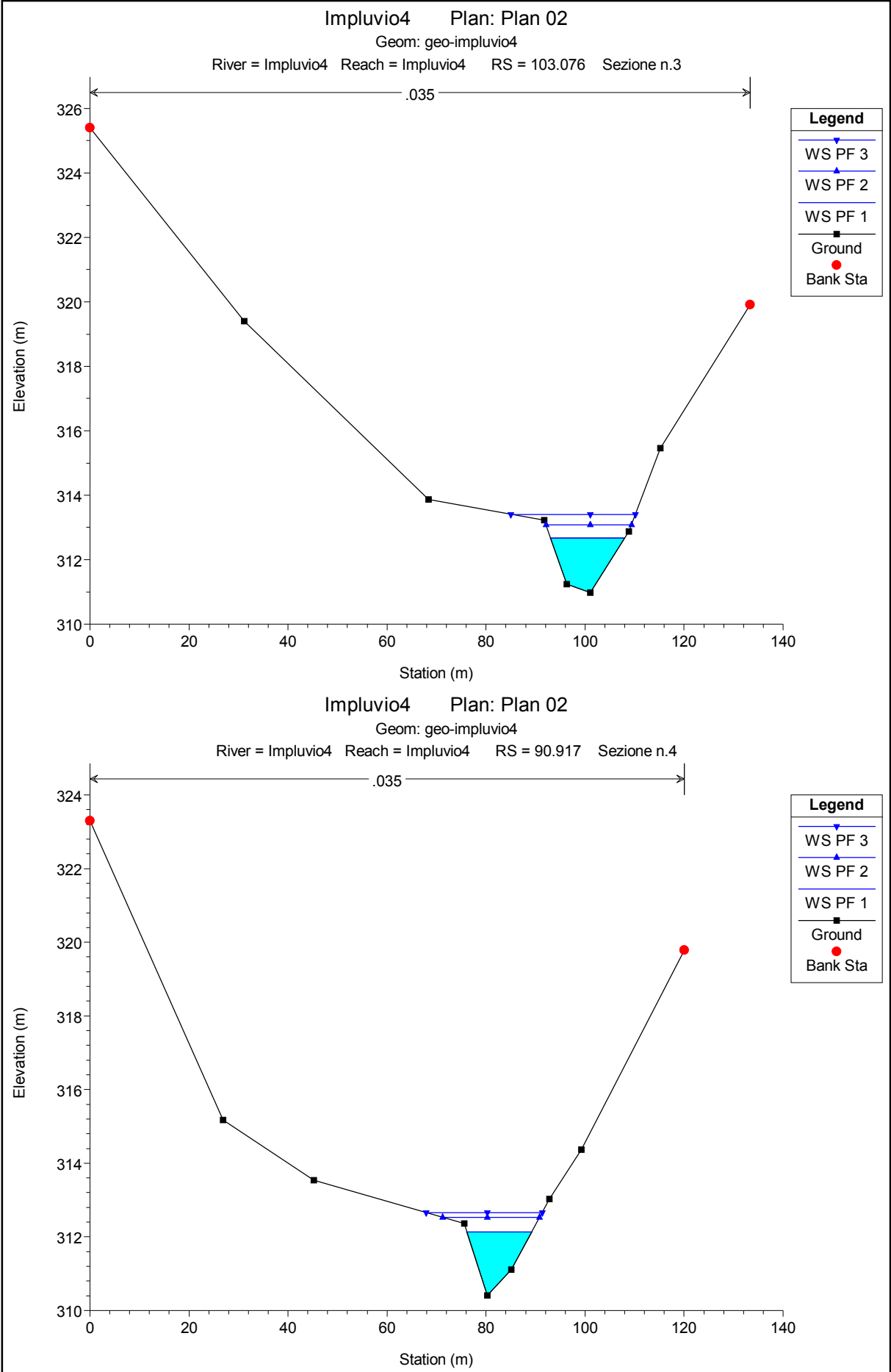
HEC-RAS Plan: Plan 02 River: Impluvio3 Reach: Impluvio3

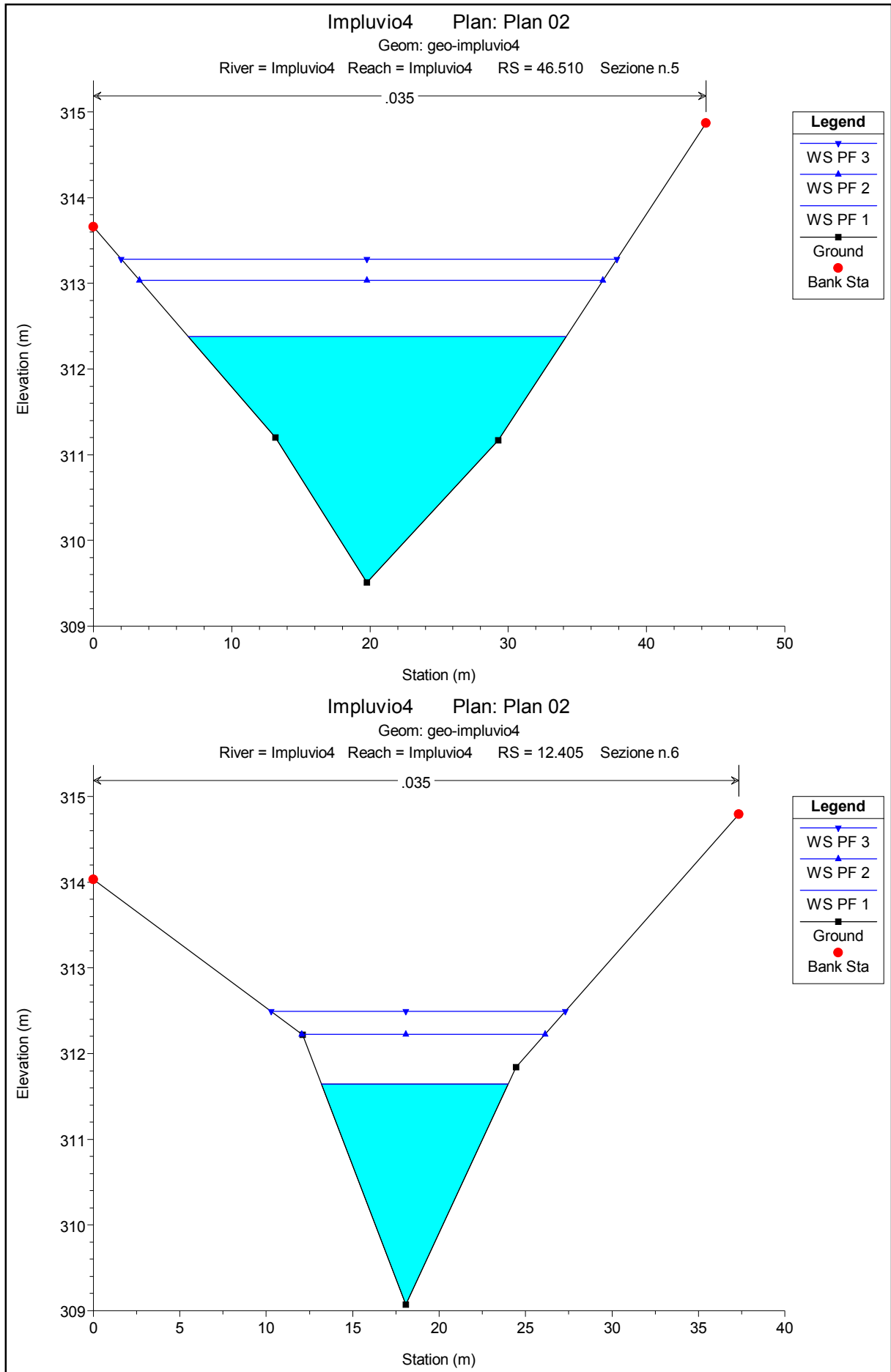
Reach	River Sta	Profile	Q Total (m3/s)	Min Ch El (m)	W.S. Elev (m)	Crit W.S. (m)	E.G. Elev (m)	E.G. Slope (m/m)	Vel Chnl (m/s)	Flow Area (m2)	Top Width (m)	Froude # Chl
Impluvio3	105.013	Tr30	31.50	346.99	347.88	347.60	347.94	0.002701	1.10	28.52	43.81	0.44
Impluvio3	105.013	Tr200	53.30	346.99	348.09	347.75	348.19	0.003037	1.41	37.90	43.81	0.48
Impluvio3	105.013	Tr500	64.39	346.99	348.19	347.83	348.30	0.003144	1.53	42.09	43.81	0.50
Impluvio3	72.552	Tr30	31.50	344.55	347.91	346.07	347.91	0.000069	0.33	95.67	56.42	0.08
Impluvio3	72.552	Tr200	53.30	344.55	348.14	346.40	348.15	0.000130	0.49	108.73	56.42	0.11
Impluvio3	72.552	Tr500	64.39	344.55	348.24	346.54	348.26	0.000160	0.56	114.57	56.42	0.13
Impluvio3	68		Culvert									
Impluvio3	57.873	Tr30	31.50	343.69	345.08	345.08	345.54	0.013111	2.98	10.55	11.65	1.00
Impluvio3	57.873	Tr200	53.30	343.69	345.50	345.50	346.07	0.012363	3.35	15.91	14.08	1.01
Impluvio3	57.873	Tr500	64.39	343.69	345.69	345.69	346.29	0.012185	3.43	18.77	15.89	1.01
Impluvio3	49.722	Tr30	31.50	343.02	344.12	344.49	345.28	0.047169	4.77	6.60	9.33	1.81
Impluvio3	49.722	Tr200	53.30	343.02	344.50	344.92	345.84	0.036967	5.12	10.41	10.94	1.68
Impluvio3	49.722	Tr500	64.39	343.02	344.67	345.09	346.06	0.033557	5.22	12.33	11.67	1.62
Impluvio3	35.922	Tr30	31.50	341.88	342.98	343.46	344.52	0.057819	5.50	5.72	7.41	2.00
Impluvio3	35.922	Tr200	53.30	341.88	343.38	343.95	345.21	0.047214	5.99	8.89	8.55	1.88
Impluvio3	35.922	Tr500	64.39	341.88	343.56	344.15	345.48	0.043458	6.14	10.48	9.08	1.82
Impluvio3	12.544	Tr30	31.50	339.79	341.68	342.19	343.24	0.051959	5.53	5.69	6.20	1.84
Impluvio3	12.544	Tr200	53.30	339.79	342.10	342.73	344.06	0.050001	6.20	8.59	7.69	1.87
Impluvio3	12.544	Tr500	64.39	339.79	342.28	342.94	344.39	0.048770	6.44	10.00	8.32	1.87

IMPLUVIO 4





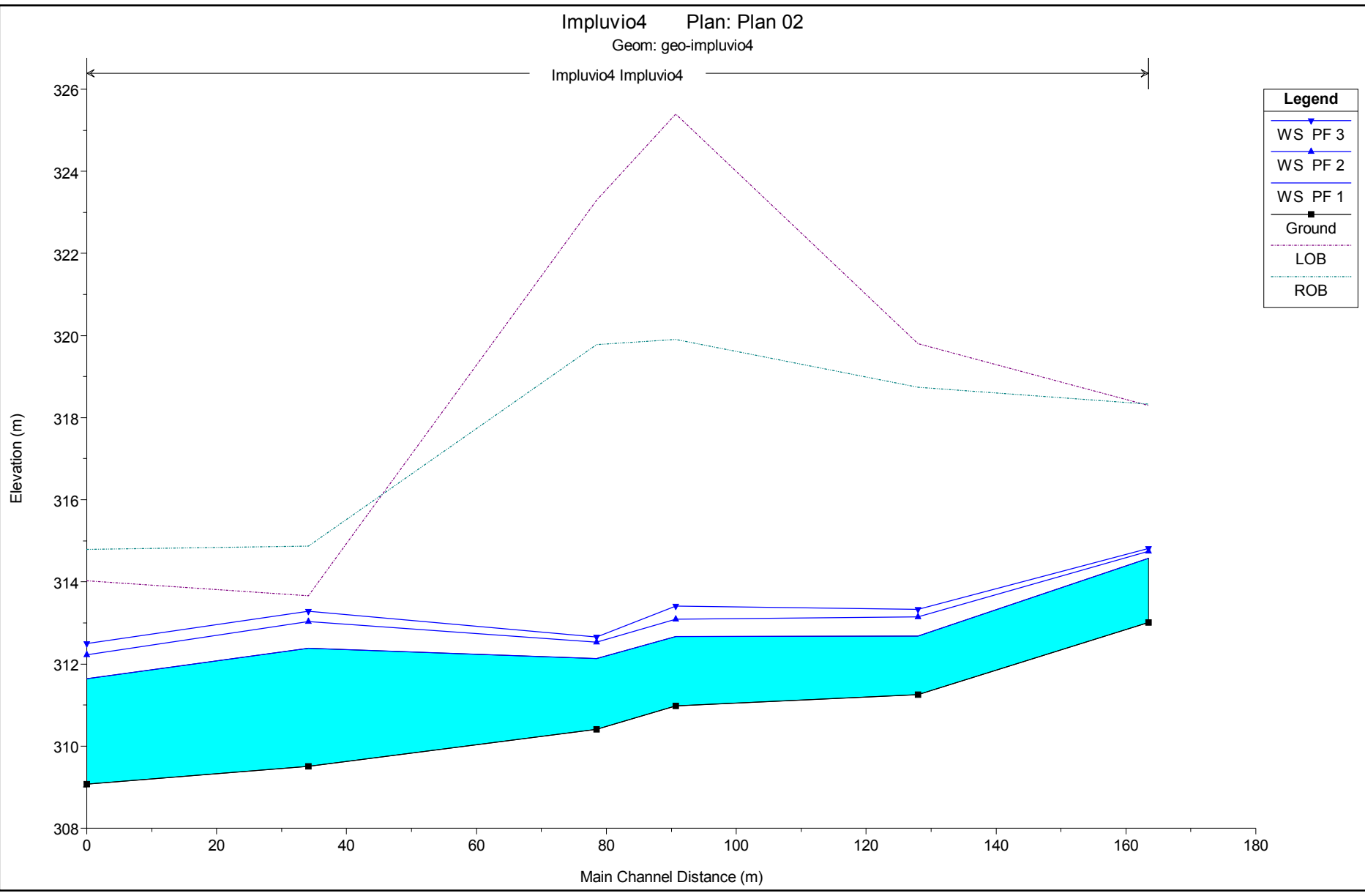




Impluvio4 Plan: Plan 02

Geom: geo-impluvio4

Impluvio4 Impluvio4



Legend	
WS PF 3	▼
WS PF 2	▲
WS PF 1	—
Ground	■
LOB	⋯
ROB	⋯

HEC-RAS Plan: Plan 01 River: Impluvio4 Reach: Impluvio4

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
Impluvio4	175.880	PF 1	50.06	313.01	314.57	314.81	315.36	0.055034	3.93	12.73	27.73	1.85
Impluvio4	175.880	PF 2	80.85	313.01	314.75	315.05	315.76	0.055103	4.45	18.16	32.97	1.91
Impluvio4	175.880	PF 3	96.19	313.01	314.81	315.16	315.95	0.055048	4.73	20.34	33.73	1.94
Impluvio4	140.367	PF 1	50.06	311.25	312.68	313.07	313.85	0.032173	4.80	10.44	10.98	1.57
Impluvio4	140.367	PF 2	80.85	311.25	313.15	313.55	314.39	0.027503	4.94	16.38	14.71	1.49
Impluvio4	140.367	PF 3	96.19	311.25	313.33	313.74	314.62	0.026694	5.03	19.11	16.31	1.48
Impluvio4	103.076	PF 1	50.06	310.98	312.67	312.67	313.19	0.012409	3.20	15.64	14.99	1.00
Impluvio4	103.076	PF 2	80.85	310.98	313.09	313.10	313.75	0.011939	3.61	22.37	17.29	1.01
Impluvio4	103.076	PF 3	96.19	310.98	313.41	313.41	313.98	0.011904	3.34	28.77	25.15	1.00
Impluvio4	90.917	PF 1	50.06	310.41	312.14	312.37	312.96	0.022563	4.03	12.43	13.16	1.32
Impluvio4	90.917	PF 2	80.85	310.41	312.53	312.88	313.51	0.026831	4.40	18.39	19.58	1.45
Impluvio4	90.917	PF 3	96.19	310.41	312.66	313.02	313.71	0.030002	4.54	21.17	23.43	1.53
Impluvio4	46.510	PF 1	50.06	309.51	312.38	311.36	312.46	0.001246	1.27	39.44	27.33	0.34
Impluvio4	46.510	PF 2	80.85	309.51	313.04	311.75	313.13	0.001088	1.36	59.43	33.51	0.33
Impluvio4	46.510	PF 3	96.19	309.51	313.28	311.92	313.38	0.001075	1.41	68.01	35.84	0.33
Impluvio4	12.405	PF 1	50.06	309.07	311.65	311.65	312.30	0.012961	3.59	13.93	10.81	1.01
Impluvio4	12.405	PF 2	80.85	309.07	312.23	312.23	312.98	0.011962	3.84	21.07	14.08	1.00
Impluvio4	12.405	PF 3	96.19	309.07	312.49	312.49	313.23	0.011786	3.82	25.21	17.02	1.00