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COMUNE DI MONTOPOLI IN VAL D'ARNO

TAV.

B.2

**PIANO ATTUATIVO "COMPARTO FONTANELLE
CENTRALE" CON MODIFICA ALLE AREE PUBBLICHE
E RIORGANIZZAZIONE DELLA VIABILITA' DI
ACCESSO ALL'AREA A SERVIZI COLLETTIVI**

UTOE 3 Fontanelle

Richiedente: Conad Del Tirreno s.c.

Proprietà: Conad Del Tirreno s.c.

Località: CAPANNE - Via J F Kennedy

RELAZIONE IDRAULICA

**IV. Relazione Verifica Idraulica Torrente Vaghera TR=30 anni
- stato originario -**

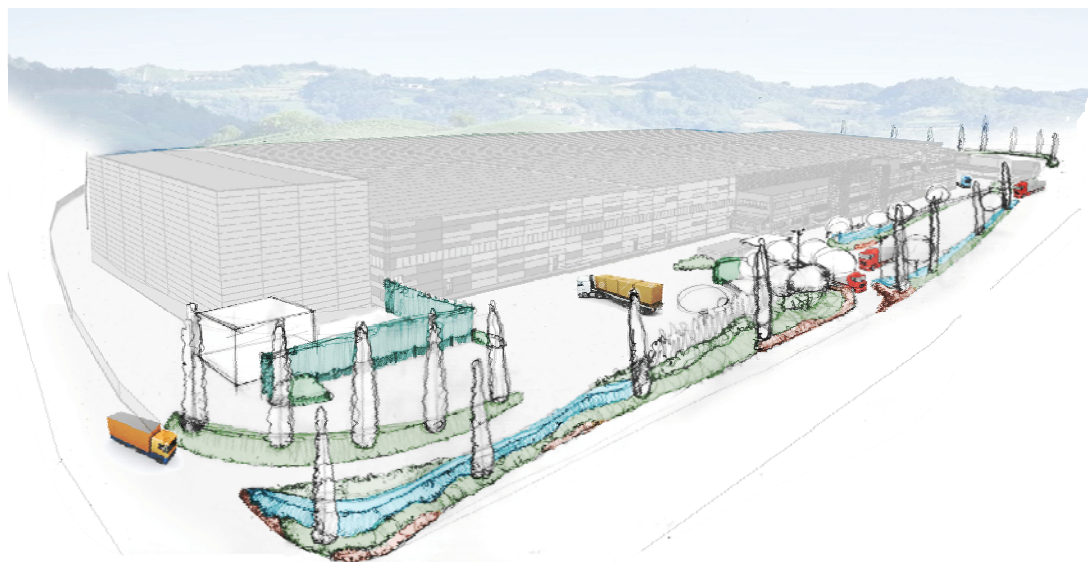
Progettista capogruppo responsabile: Ing. Augusto Bottai

Co Progettisti: Arch. Paolo Forgione, Geom. Stefano Bertoncini,
Dr. Agrotecnico Biagini Francesco (studio del verde e paesaggio)

Aspetti Geologici: Geol. Paolo Giani, Geol. Giuseppe Lotti

Data: Ottobre 2015

Edizione definitiva del progetto: Settembre 2017



SOMMARIO

INTRODUZIONE E PREMESSE	pag	02
MODIFICHE AL MODELLO IDROLOGICO	pag	02
MODIFICHE AL MODELLO IDRAULICO	pag	02
CONCLUSIONI	pag	03

Appendice:

Appendice a) - Risultati simulazioni HEC HMS

Appendice b) - Risultati Analisi Idrauliche Modello di Calcolo HEC RAS

Aggiornamento tavole grafiche di rilievo

INTRODUZIONE e PREMESSE

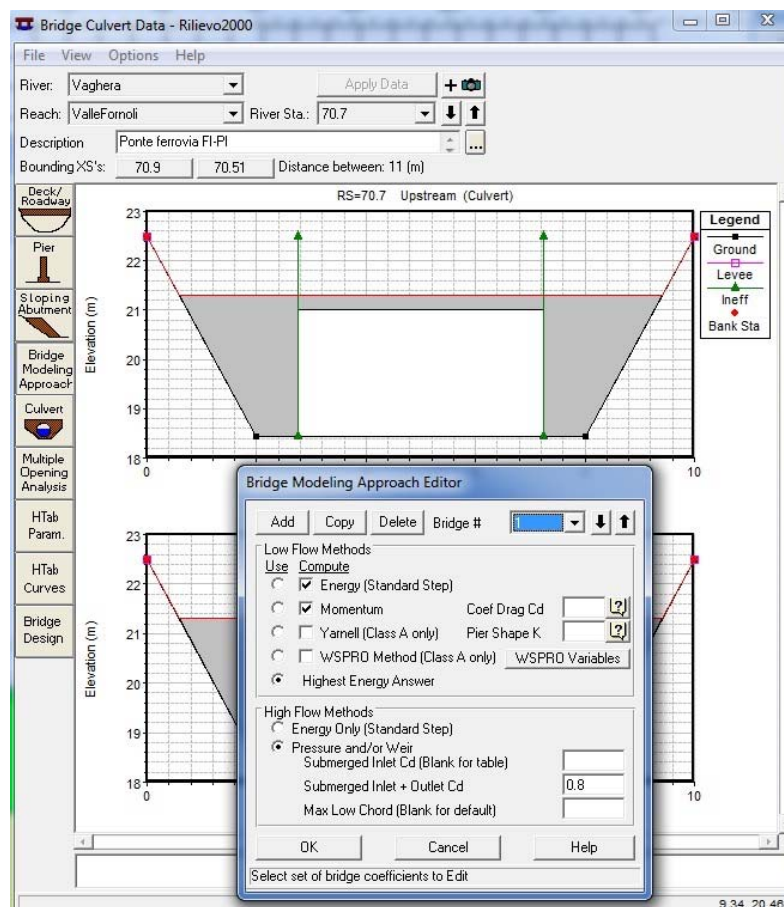
La presente relazione di calcolo idraulico, aggiorna la relazione emessa in data Aprile 2017, All. B3-IV, in conseguenza alla conferenza di servizi tenuta nella sede del Comune di Montopoli in Val D'Arno del 11.04.2017; di seguito vengono illustrate le modifiche introdotte sia al modello idrologico che a quello idraulico ed infine vengono riportati i risultati delle elaborazioni di calcolo:

MODIFICHE AL MODELLO IDROLOGICO

- Sono state eliminate le aree di laminazione Santa Marta 1 e 2 quantunque il modello idrologico precedente risultasse a nostro avviso corretto e rispondente alla realtà dei luoghi per i tempi di ritorno presi in considerazione, ma a favore di sicurezza si è ritenuto di eseguire la modellazione astruendo dalla presenza di queste due aree;
- Sono stati aggiornati i valori dei CN;
- Il valore del coefficiente la è stato ridotto a 0,20.

MODIFICHE AL MODELLO IDRAULICO

- Sono state aggiornate le tavole di rilievo con le sezioni principali di rilievo A, B, C, D, E, F, G, H, I ed L (vedasi grafici allegati);
- E' stata corretta la sezione 67 così come la pendenza dell'alveo nella condizione di valle ed i parametri al ponte ferroviario "momentum" e "pressure and/or weir";



- Nel tratto principale dell'alveo, tra il sottopasso su Via Fontanelle e la Ferrovia FI-PI sono state interpolate ulteriori sezioni con interdistanza non superiore a 30-35 m;
- La quota del rilevato ferroviario è riscontabile dalla tav. 8 e risulta pari a 21,30 m slm e quindi superiore di 30 cm alla quota della CTR di 21,00 m slm, pertanto nella condizione di valle "Arno High" è stata considerata il livello dell'Arno pari a 20,70 m slm anziché 21,00 m slm come risulta dagli atti di verifica del Fiume Arno di ADB per TR=30;
- Il valore di scabrezza dei sottopassi è stato reso omogeneo con quello utilizzato nel modello idrologico.

CONCLUSIONI

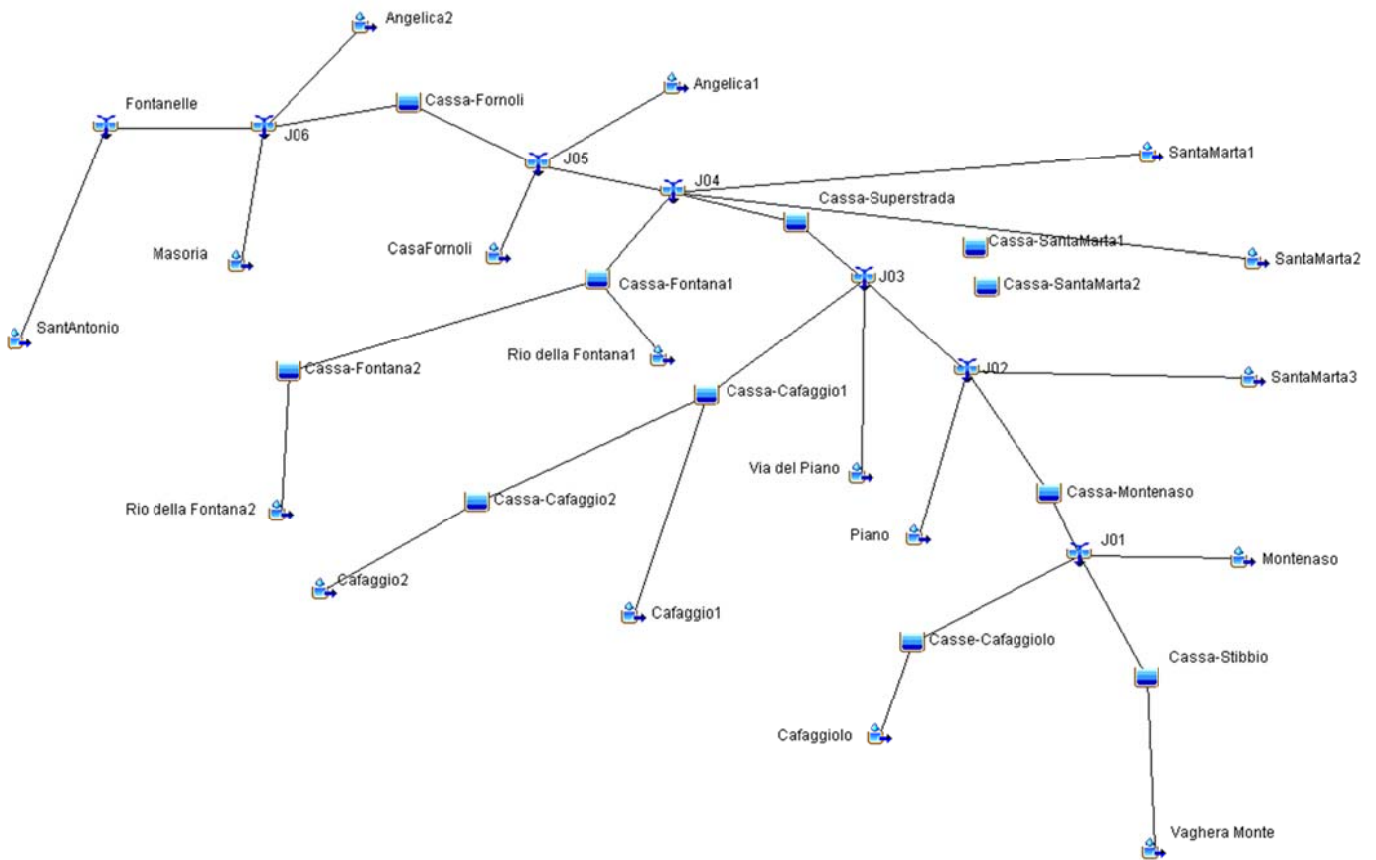
Si riportano di seguito gli adeguamenti delle elaborazioni già effettuate con la precedente relazione verificando ancora una volta la generale sufficienza della porzione di corso d'acqua (zona industriale Fontanelle) a contenere le portate aggiornate con il nuovo modello idrologico all'interno dell'alveo.

Il Progettista



Appendice a) Modello idrologico HMS

Planimetria di riferimento modello HMS



Valori CN e Perdite iniziali

Curve Number Loss [Vaghera]

Show Elements: All Elements Sorting: Hydrologic

Subbasin	Initial Abstraction (MM)	Curve Number	Impervious (%)
Vaghera Monte		56	0
Cafaggiolo		59	0
Montenaso		72	0
Piano		82	0
SantaMarta3		76	0
Cafaggio2		61	0
Cafaggio1		76	0
Via del Piano		78	0
Rio della Fontana 1		74	0
Rio della Fontana 2		59	0
SantaMarta1		84	0
SantaMarta2		83	0
Angelica 1		85	0
CasaFornoli		81	0
Masoria		80	0
Angelica2		84	0
SantAntonio		79	0

Apply Close

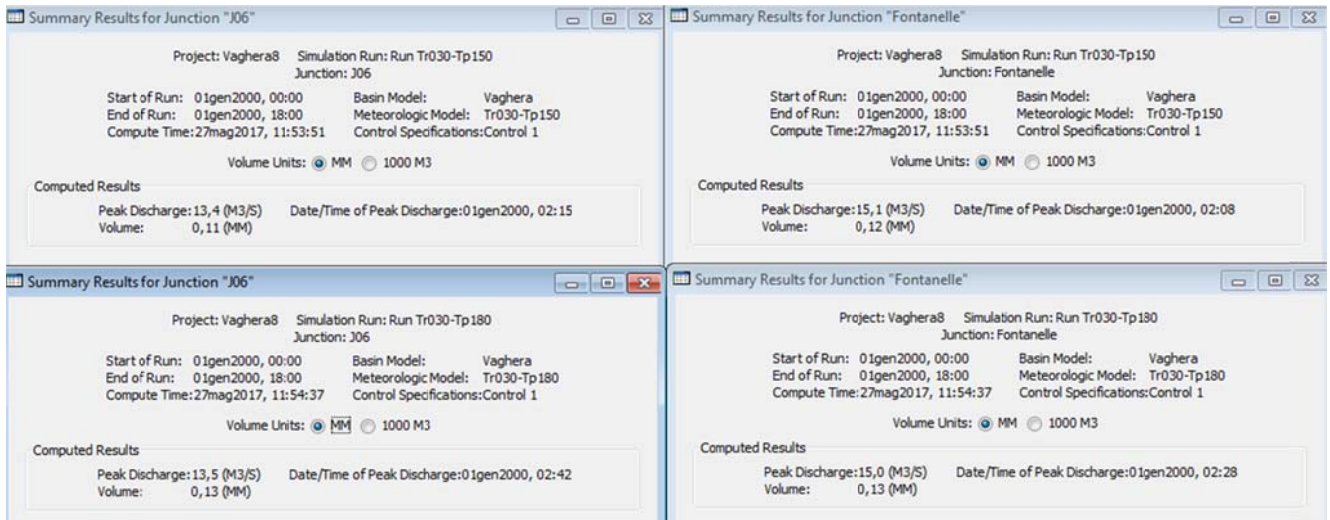
Riepilogo simulazioni per i tempi di pioggia 30, 60, 90, 120, 150 e 180 min, con il software HMS pervenendo alla determinazione degli idrogrammi di piena in uscita da ciascun sottobacino con particolare riferimento agli idrogrammi di portata in uscita dal sottobacino di Via Fornoli (nodo J06) e dal sottobacino Fontanelle che tiene conto dell'ingresso nel Vaghera del bacino S. Antonio dopo il sottopasso su Via Fontanelle (utilizzati nella modellazione a moto permanente HEC-RAS sul tratto terminale del Torrente che attraversa la zona industriale di Fontanelle).

Si riportano di seguito le tabelle riepilogative dei risultati più significativi per le seguenti condizioni:

1. uscita da Via Fornoli (J06), ingresso sez 87 HECRAS, Tr=30 anni, Tp=30, 60, 90, 120, 150 e 180 min,
2. uscita da Fontanelle, ingresso sez 80 HECRAS, Tr=30 anni, Tp=30, 60, 90, 120, 150 e 180 min,

utilizzati nella successiva modellazione idraulica:

Condizione	Location	Peak Discharge (M3/S)	Volume (MM)	Date/Time of Peak Discharge
1. uscita da Via Fornoli (J06), ingresso sez 87 HECRAS, Tr=30 anni, Tp=30, 60, 90, 120, 150 e 180 min	J06	11,4	0,04	01gen2000, 00:41
	Fontanelle	13,6	0,04	01gen2000, 00:40
2. uscita da Fontanelle, ingresso sez 80 HECRAS, Tr=30 anni, Tp=30, 60, 90, 120, 150 e 180 min	J06	13,1	0,06	01gen2000, 01:05
	Fontanelle	15,4	0,06	01gen2000, 01:03
3. uscita da Via Fornoli (J06), ingresso sez 87 HECRAS, Tr=30 anni, Tp=90	J06	13,4	0,08	01gen2000, 01:27
	Fontanelle	15,6	0,09	01gen2000, 01:23
4. uscita da Via Fornoli (J06), ingresso sez 87 HECRAS, Tr=30 anni, Tp=120	J06	13,5	0,10	01gen2000, 01:51
	Fontanelle	15,4	0,10	01gen2000, 01:45



STUDIO IDROLOGICO

RIEPILOGO DATI

MODELLO DI BACINO: Vaghera
DESCRIZIONE:
VERSIONE: 4.2.1
UNITA' DI MISURA: Metric

TABELLA SOTTOBACINI

Nome	Area (kmq)	Met. sep. piogge	% imper.	CN	Met. Formazione	SCS lag (min)
Vaghera Monte	2.75	SCS	0	56	SCS	39
Cafaggiolo	0.81	SCS	0	59	SCS	18
Montenaso	0.38	SCS	0	72	SCS	27
Piano	0.24	SCS	0	82	SCS	22
SantaMarta3	0.12	SCS	0	76	SCS	6
Cafaggio2	0.82	SCS	0	61	SCS	27
Cafaggio1	0.14	SCS	0	76	SCS	14
Via del Piano	0.14	SCS	0	78	SCS	14
Rio della Fontana1	0.68	SCS	0	74	SCS	29
Rio della Fontana2	0.45	SCS	0	59	SCS	13
SantaMarta1	0.19	SCS	0	84	SCS	10
SantaMarta2	0.13	SCS	0	83	SCS	7
Angelica1	0.24	SCS	0	85	SCS	22
CasaFormoli	0.11	SCS	0	81	SCS	4
Masoria	0.36	SCS	0	80	SCS	15
Angelica2	0.08	SCS	0	84	SCS	19
SantAntonio	0.34	SCS	0	79	SCS	15

TABELLA TRONCHI - METODO PROPAGAZIONE MUSKINGUM-CUNGE

Nome	Met. prop.	Tipo sez.	Lung. (m)	Pend. (m/m)	Larg. base (m)	Pend. sp.	K	Cross Sec.	K_LOB	K_CHAN	K_ROB
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TABELLA TRONCHI - METODO PROPAGAZIONE RITARDO (LAG)

Nome	Met. prop.	Lag (min)
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STUDIO IDROLOGICO

RIEPILOGO RISULTATI

Simulazione : "Run Tr030-Tp030"
 Descrizione : "Basin: Vaghera & Met: Tr030-Tp030 & Control: Control 1"
 Modello di Bacino : "Vaghera"
 Modello Meteo : "Tr030-Tp030"
 Condizioni Controllo : "Control 1"
 Inizio simulazione : "31Dec1999, 24:00"
 Fine simulazione : "01Jan2000, 18:00"

TABELLA SOTTOBACINI

Sottobacino	Area (kmq)	H_pioggia (mm)	H_perdite (mm)	H_netta (mm)	C_def	Q_max (mc/s)	Q_spec (mc/s/kmq)	T_Q_max
Vaghera Monte	275	44,61	44,50	0,11	NaN	0,1	NaN	01Jan2000, 01:10
Cafaggiolo	81	44,61	44,14	0,47	NaN	0,2	NaN	01Jan2000, 00:48
Montenaso	38	44,61	39,61	5,00	NaN	0,8	NaN	01Jan2000, 00:53
Piano	24	44,61	32,06	12,55	NaN	1,5	NaN	01Jan2000, 00:46
SantaMarta3	12	44,61	37,11	7,50	NaN	0,9	NaN	01Jan2000, 00:31
Cafaggio2	82	44,61	43,77	0,84	NaN	0,3	NaN	01Jan2000, 00:56
Cafaggio1	14	44,61	37,11	7,50	NaN	0,8	NaN	01Jan2000, 00:39
Via del Piano	14	44,61	35,61	9,00	NaN	0,9	NaN	01Jan2000, 00:39
Rio della Fontana1	68	44,61	38,44	6,17	NaN	1,7	NaN	01Jan2000, 00:54
Rio della Fontana2	45	44,61	44,14	0,47	NaN	0,2	NaN	01Jan2000, 00:43
SantaMarta1	19	44,61	29,96	14,65	NaN	2,3	NaN	01Jan2000, 00:34
SantaMarta2	13	44,61	31,04	13,57	NaN	1,6	NaN	01Jan2000, 00:30
Angelica1	24	44,61	28,82	15,79	NaN	1,9	NaN	01Jan2000, 00:45
CasaFornoli	11	44,61	33,03	11,58	NaN	1,4	NaN	01Jan2000, 00:27
Masoria	36	44,61	33,94	10,67	NaN	2,6	NaN	01Jan2000, 00:39
Angelica2	8	44,61	29,96	14,65	NaN	0,7	NaN	01Jan2000, 00:43
SantAntonio	34	44,61	34,80	9,81	NaN	2,3	NaN	01Jan2000, 00:40

TABELLA GIUNZIONI

Giunzione	Area (kmq)	Q_max (mc/s)	Q_spec (mc/s/kmq)	T_Q_max	V_def (mm)
J01	394	1,1	NaN	01Jan2000, 00:52	0,01
J02	430	2,5	NaN	01Jan2000, 00:48	0,02
J03	540	4,0	NaN	01Jan2000, 00:42	0,02
J04	685	7,2	NaN	01Jan2000, 00:39	0,03
J05	720	9,1	NaN	01Jan2000, 00:39	0,03
J06	764	11,4	NaN	01Jan2000, 00:41	0,04
Fontanelle	798	13,6	NaN	01Jan2000, 00:40	0,04

STUDIO IDROLOGICO

RIEPILOGO RISULTATI

Simulazione : "Run Tr030-Tp060"
 Descrizione : "Basin: Vaghera & Met: Tr030-Tp060 & Control: Control 1"
 Modello di Bacino : "Vaghera"
 Modello Meteo : "Tr030-Tp060"
 Condizioni Controllo : "Control 1"
 Inizio simulazione : "31Dec1999, 24:00"
 Fine simulazione : "01Jan2000, 18:00"

TABELLA SOTTOBACINI

Sottobacino	Area (kmq)	H_pioggia (mm)	H_perdite (mm)	H_netta (mm)	C_def	Q_max (mc/s)	Q_spec (mc/s/kmq)	T_Q_max
Vaghera Monte	275	53,34	52,49	0,85	NaN	0,7	NaN	01Jan2000, 01:32
Cafaggiolo	81	53,34	51,67	1,67	NaN	0,8	NaN	01Jan2000, 01:10
Montenaso	38	53,34	44,82	8,52	NaN	1,3	NaN	01Jan2000, 01:13
Piano	24	53,34	35,17	18,17	NaN	1,8	NaN	01Jan2000, 01:05
SantaMarta3	12	53,34	41,50	11,84	NaN	0,9	NaN	01Jan2000, 00:49
Cafaggio2	82	53,34	50,97	2,37	NaN	0,8	NaN	01Jan2000, 01:18
Cafaggio1	14	53,34	41,50	11,84	NaN	0,9	NaN	01Jan2000, 00:59
Via del Piano	14	53,34	39,59	13,75	NaN	1,0	NaN	01Jan2000, 00:58
Rio della Fontana1	68	53,34	43,24	10,10	NaN	2,5	NaN	01Jan2000, 01:15
Rio della Fontana2	45	53,34	51,67	1,67	NaN	0,5	NaN	01Jan2000, 01:05
SantaMarta1	19	53,34	32,63	20,71	NaN	2,1	NaN	01Jan2000, 00:51
SantaMarta2	13	53,34	33,93	19,41	NaN	1,4	NaN	01Jan2000, 00:48
Angelica1	24	53,34	31,26	22,08	NaN	2,2	NaN	01Jan2000, 01:04
CasaFornoli	11	53,34	36,35	16,99	NaN	1,2	NaN	01Jan2000, 00:44
Masoria	36	53,34	37,48	15,86	NaN	2,8	NaN	01Jan2000, 00:58
Angelica2	8	53,34	32,63	20,71	NaN	0,7	NaN	01Jan2000, 01:01
SantAntonio	34	53,34	38,56	14,78	NaN	2,5	NaN	01Jan2000, 00:59

TABELLA GIUNZIONI

Giunzione	Area (kmq)	Q_max (mc/s)	Q_spec (mc/s/kmq)	T_Q_max	V_def (mm)
J01	394	2,4	NaN	01Jan2000, 01:14	0,02
J02	430	4,0	NaN	01Jan2000, 01:11	0,03
J03	540	5,9	NaN	01Jan2000, 01:08	0,03
J04	685	9,5	NaN	01Jan2000, 01:06	0,05
J05	720	12,1	NaN	01Jan2000, 01:02	0,05
J06	764	13,1	NaN	01Jan2000, 01:05	0,06
Fontanelle	798	15,4	NaN	01Jan2000, 01:03	0,06

STUDIO IDROLOGICO

RIEPILOGO RISULTATI

Simulazione : "Run Tr030-Tp090"
 Descrizione : "Basin: Vaghera & Met: Tr030-Tp090 & Control: Control 1"
 Modello di Bacino : "Vaghera"
 Modello Meteo : "Tr030-Tp090"
 Condizioni Controllo : "Control 1"
 Inizio simulazione : "31Dec1999, 24:00"
 Fine simulazione : "01Jan2000, 18:00"

TABELLA SOTTOBACINI

Sottobacino	Area (kmq)	H_pioggia (mm)	H_perdite (mm)	H_netta (mm)	C_def	Q_max (mc/s)	Q_spec (mc/s/kmq)	T_Q_max
Vaghera Monte	275	59,20	57,50	1,70	NaN	1,4	NaN	01Jan2000, 01:55
Cafaggiolo	81	59,20	56,35	2,85	NaN	1,0	NaN	01Jan2000, 01:32
Montenaso	38	59,20	47,94	11,26	NaN	1,4	NaN	01Jan2000, 01:34
Piano	24	59,20	36,96	22,24	NaN	1,8	NaN	01Jan2000, 01:24
SantaMarta3	12	59,20	44,10	15,10	NaN	0,8	NaN	01Jan2000, 01:06
Cafaggio2	82	59,20	55,42	3,78	NaN	1,1	NaN	01Jan2000, 01:39
Cafaggio1	14	59,20	44,10	15,10	NaN	0,8	NaN	01Jan2000, 01:17
Via del Piano	14	59,20	41,92	17,28	NaN	0,9	NaN	01Jan2000, 01:16
Rio della Fontana1	68	59,20	46,11	13,09	NaN	2,8	NaN	01Jan2000, 01:35
Rio della Fontana2	45	59,20	56,35	2,85	NaN	0,6	NaN	01Jan2000, 01:26
SantaMarta1	19	59,20	34,15	25,05	NaN	1,9	NaN	01Jan2000, 01:08
SantaMarta2	13	59,20	35,58	23,62	NaN	1,3	NaN	01Jan2000, 01:04
Angelca1	24	59,20	32,65	26,55	NaN	2,1	NaN	01Jan2000, 01:22
CasaFormoli	11	59,20	38,28	20,92	NaN	1,0	NaN	01Jan2000, 01:01
Masoria	36	59,20	39,54	19,66	NaN	2,6	NaN	01Jan2000, 01:18
Angelca2	8	59,20	34,15	25,05	NaN	0,7	NaN	01Jan2000, 01:19
SantAntonio	34	59,20	40,76	18,44	NaN	2,4	NaN	01Jan2000, 01:17

TABELLA GIUNZIONI

Giunzione	Area (kmq)	Q_max (mc/s)	Q_spec (mc/s/kmq)	T_Q_max	V_def (mm)
J01	394	3,3	NaN	01Jan2000, 01:39	0,03
J02	430	4,8	NaN	01Jan2000, 01:33	0,04
J03	540	6,9	NaN	01Jan2000, 01:32	0,05
J04	685	10,8	NaN	01Jan2000, 01:33	0,06
J05	720	13,0	NaN	01Jan2000, 01:28	0,07
J06	764	13,4	NaN	01Jan2000, 01:27	0,08
Fontanelle	798	15,6	NaN	01Jan2000, 01:23	0,09

STUDIO IDROLOGICO

RIEPILOGO RISULTATI

Simulazione : "Run Tr030-Tp120"
 Descrizione : "Basin: Vaghera & Met: Tr030-Tp120 & Control: Control 1"
 Modello di Bacino : "Vaghera"
 Modello Meteo : "Tr030-Tp120"
 Condizioni Controllo : "Control 1"
 Inizio simulazione : "31Dec1999, 24:00"
 Fine simulazione : "01Jan2000, 18:00"

TABELLA SOTTOBACINI

Sottobacino	Area (kmq)	H_pioggia (mm)	H_perdite (mm)	H_netta (mm)	C_def	Q_max (mc/s)	Q_spec (mc/s/kmq)	T_Q_max
Vaghera Monte	275	63,79	61,24	2,55	NaN	1,9	NaN	01Jan2000, 02:17
Cafaggiolo	81	63,79	59,83	3,96	NaN	1,2	NaN	01Jan2000, 01:53
Montenaso	38	63,79	50,21	13,58	NaN	1,4	NaN	01Jan2000, 01:53
Piano	24	63,79	38,23	25,56	NaN	1,7	NaN	01Jan2000, 01:41
SantaMarta3	12	63,79	45,97	17,82	NaN	0,7	NaN	01Jan2000, 01:23
Cafaggio2	82	63,79	58,73	5,06	NaN	1,3	NaN	01Jan2000, 02:01
Cafaggio1	14	63,79	45,97	17,82	NaN	0,8	NaN	01Jan2000, 01:35
Via del Piano	14	63,79	43,59	20,20	NaN	0,9	NaN	01Jan2000, 01:33
Rio della Fontana1	68	63,79	48,18	15,61	NaN	2,8	NaN	01Jan2000, 01:54
Rio della Fontana2	45	63,79	59,83	3,96	NaN	0,7	NaN	01Jan2000, 01:47
SantaMarta1	19	63,79	35,22	28,57	NaN	1,7	NaN	01Jan2000, 01:24
SantaMarta2	13	63,79	36,75	27,04	NaN	1,1	NaN	01Jan2000, 01:20
Angelica1	24	63,79	33,63	30,16	NaN	1,9	NaN	01Jan2000, 01:39
CasaFormoli	11	63,79	39,65	24,14	NaN	0,9	NaN	01Jan2000, 01:17
Masoria	36	63,79	41,01	22,78	NaN	2,4	NaN	01Jan2000, 01:33
Angelica2	8	63,79	35,22	28,57	NaN	0,6	NaN	01Jan2000, 01:36
SantAntonio	34	63,79	42,33	21,47	NaN	2,2	NaN	01Jan2000, 01:34

TABELLA GIUNZIONI

Giunzione	Area (kmq)	Q_max (mc/s)	Q_spec (mc/s/kmq)	T_Q_max	V_def (mm)
J01	394	3,9	NaN	01Jan2000, 02:03	0,04
J02	430	5,2	NaN	01Jan2000, 02:04	0,05
J03	540	7,4	NaN	01Jan2000, 02:03	0,06
J04	685	11,3	NaN	01Jan2000, 01:54	0,08
J05	720	13,5	NaN	01Jan2000, 01:49	0,09
J06	764	13,5	NaN	01Jan2000, 01:51	0,10
Fontanelle	798	15,4	NaN	01Jan2000, 01:45	0,10

STUDIO IDROLOGICO

RIEPILOGO RISULTATI

Simulazione : "Run Tr030-Tp150"

Descrizione : "Basin: Vaghera & Met: Tr030-Tp150 & Control: Control 1"

Modello di Bacino : "Vaghera"

Modello Meteo : "Tr030-Tp150"

Condizioni Controllo : "Control 1"

Inizio simulazione : "31Dec1999, 24:00"

Fine simulazione : "01Jan2000, 18:00"

TABELLA SOTTOBACINI

Sottobacino	Area (kmq)	H_pioggia (mm)	H_perdite (mm)	H_netta (mm)	C_def	Q_max (mc/s)	Q_spec (mc/s/kmq)	T_Q_max
Vaghera Monte	275	67,57	64,20	3,37	NaN	2,2	NaN	01Jan2000, 02:39
Cafaggiolo	81	67,57	62,58	4,99	NaN	1,2	NaN	01Jan2000, 02:13
Montenaso	38	67,57	51,97	15,60	NaN	1,4	NaN	01Jan2000, 02:12
Piano	24	67,57	39,19	28,38	NaN	1,6	NaN	01Jan2000, 01:58
Santallarta3	12	67,57	47,42	20,15	NaN	0,6	NaN	01Jan2000, 01:40
Cafaggio2	82	67,57	61,33	6,24	NaN	1,3	NaN	01Jan2000, 02:22
Cafaggio1	14	67,57	47,42	20,15	NaN	0,7	NaN	01Jan2000, 01:52
Via del Piano	14	67,57	44,87	22,70	NaN	0,8	NaN	01Jan2000, 01:50
Rio della Fontana1	68	67,57	49,78	17,79	NaN	2,7	NaN	01Jan2000, 02:13
Rio della Fontana2	45	67,57	62,58	4,99	NaN	0,7	NaN	01Jan2000, 02:07
Santallarta1	19	67,57	36,03	31,54	NaN	1,5	NaN	01Jan2000, 01:39
Santallarta2	13	67,57	37,64	29,93	NaN	1,0	NaN	01Jan2000, 01:35
Angelica1	24	67,57	34,36	33,21	NaN	1,8	NaN	01Jan2000, 01:55
CasaFornoli	11	67,57	40,69	26,88	NaN	0,8	NaN	01Jan2000, 01:32
Masoria	36	67,57	42,13	25,43	NaN	2,3	NaN	01Jan2000, 01:50
Angelica2	8	67,57	36,03	31,54	NaN	0,6	NaN	01Jan2000, 01:52
SantAntonio	34	67,57	43,53	24,04	NaN	2,0	NaN	01Jan2000, 01:51

TABELLA GIUNZIONI

Giunzione	Area (kmq)	Q_max (mc/s)	Q_spec (mc/s/kmq)	T_Q_max	V_def (mm)
J01	394	4,2	NaN	01Jan2000, 02:27	0,05
J02	430	5,7	NaN	01Jan2000, 02:19	0,07
J03	540	8,0	NaN	01Jan2000, 02:19	0,07
J04	685	11,6	NaN	01Jan2000, 02:21	0,09
J05	720	13,5	NaN	01Jan2000, 02:08	0,10
J06	764	13,4	NaN	01Jan2000, 02:15	0,11
Fontanelle	798	15,1	NaN	01Jan2000, 02:08	0,12

STUDIO IDROLOGICO

RIEPILOGO RISULTATI

Simulazione : "Run Tr030-Tp180"

Descrizione : "Basin: Vaghera & Met: Tr030-Tp180 & Control: Control 1"

Modello di Bacino : "Vaghera"

Modello Meteo : "Tr030-Tp180"

Condizioni Controllo : "Control 1"

Inizio simulazione : "31Dec1999, 24:00"

Fine simulazione : "01Jan2000, 18:00"

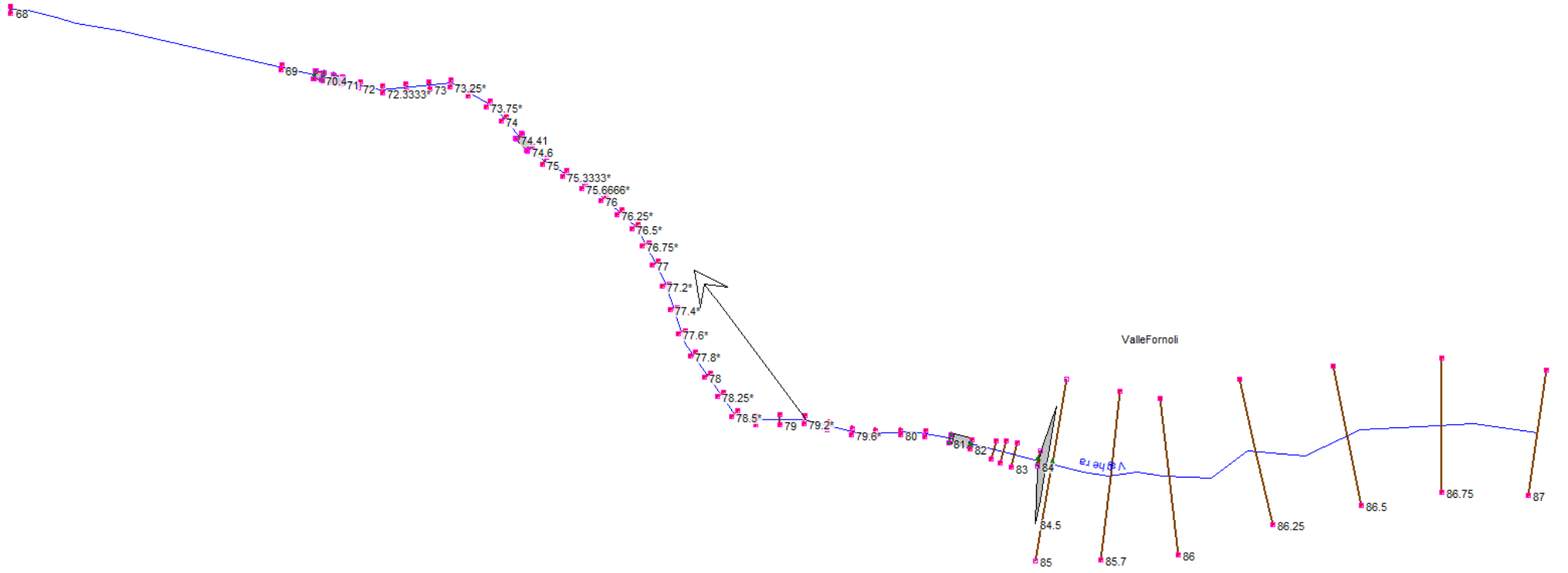
TABELLA SOTTOBACINI

Sottobacino	Area (kmq)	H_pioggia (mm)	H_perdite (mm)	H_netta (mm)	C_def	Q_max (mc/s)	Q_spec (mc/s/kmq)	T_Q_max
Vaghera Monte	275	71,03	66,83	4,20	NaN	2,5	NaN	01Jan2000, 03:01
Cafaggiolo	81	71,03	65,01	6,01	NaN	1,2	NaN	01Jan2000, 02:33
Montenaso	38	71,03	53,51	17,52	NaN	1,4	NaN	01Jan2000, 02:30
Piano	24	71,03	40,02	31,01	NaN	1,5	NaN	01Jan2000, 02:14
Santallarta3	12	71,03	48,66	22,36	NaN	0,6	NaN	01Jan2000, 01:57
Cafaggio2	82	71,03	63,63	7,40	NaN	1,4	NaN	01Jan2000, 02:42
Cafaggio1	14	71,03	48,66	22,36	NaN	0,7	NaN	01Jan2000, 02:08
Via del Piano	14	71,03	45,98	25,05	NaN	0,7	NaN	01Jan2000, 02:06
Rio della Fontana1	68	71,03	51,17	19,86	NaN	2,7	NaN	01Jan2000, 02:31
Rio della Fontana2	45	71,03	65,01	6,01	NaN	0,7	NaN	01Jan2000, 02:26
Santallarta1	19	71,03	36,73	34,30	NaN	1,4	NaN	01Jan2000, 01:55
Santallarta2	13	71,03	38,40	32,63	NaN	0,9	NaN	01Jan2000, 01:51
Angelica1	24	71,03	34,99	36,04	NaN	1,7	NaN	01Jan2000, 02:11
CasaFornoli	11	71,03	41,59	29,44	NaN	0,7	NaN	01Jan2000, 01:47
Masoria	36	71,03	43,10	27,93	NaN	2,1	NaN	01Jan2000, 02:06
Angelica2	8	71,03	36,73	34,30	NaN	0,5	NaN	01Jan2000, 02:08
SantAntonio	34	71,03	44,56	26,46	NaN	1,9	NaN	01Jan2000, 02:07

TABELLA GIUNZIONI

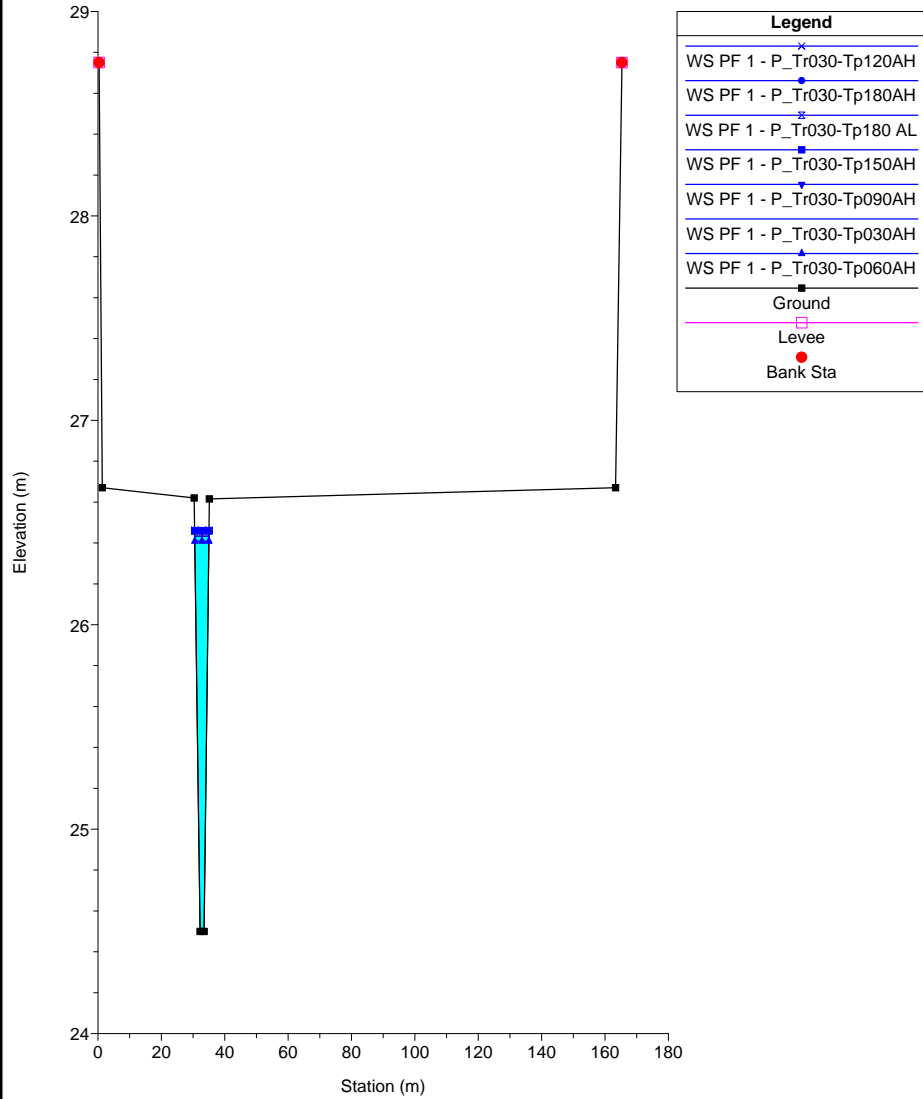
Giunzione	Area (kmq)	Q_max (mc/s)	Q_spec (mc/s/kmq)	T_Q_max	V_def (mm)
J01	394	4,5	NaN	01Jan2000, 02:52	0,06
J02	430	5,8	NaN	01Jan2000, 02:42	0,08
J03	540	8,1	NaN	01Jan2000, 02:42	0,08
J04	685	11,8	NaN	01Jan2000, 02:43	0,11
J05	720	13,5	NaN	01Jan2000, 02:37	0,12
J06	764	13,5	NaN	01Jan2000, 02:42	0,13
Fontanelle	798	15,0	NaN	01Jan2000, 02:28	0,13

Appendice b) Modello idraulico HEC RAS

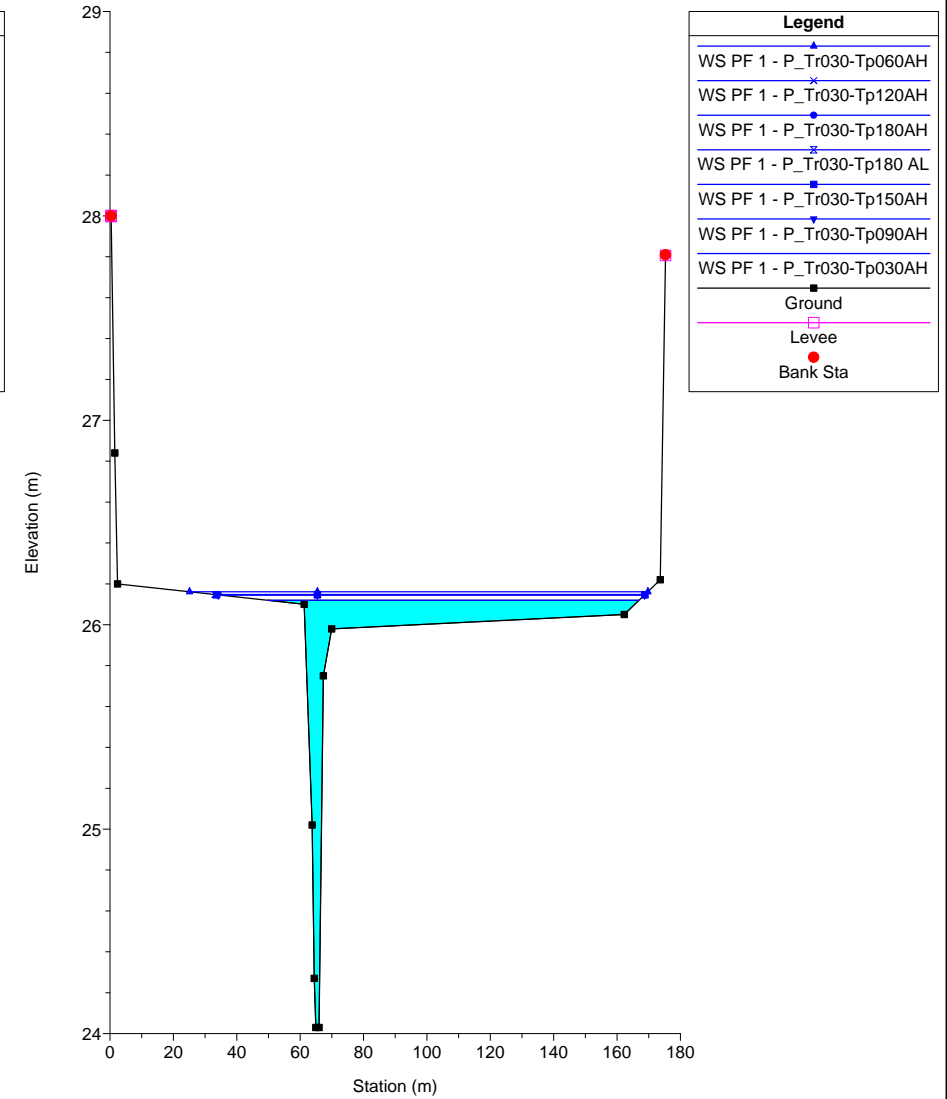


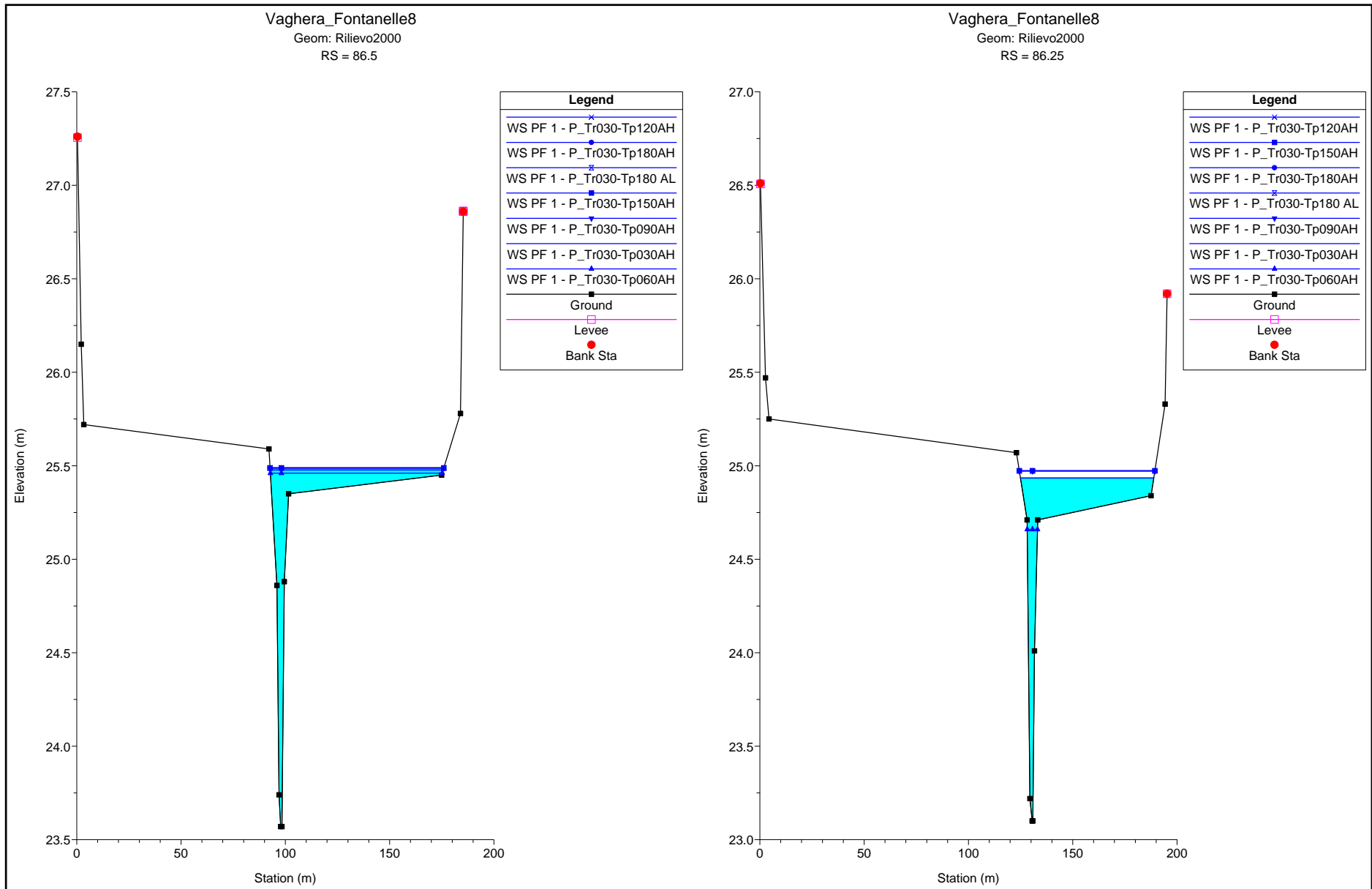
Planimetria di riferimento modello HEC RAS

Vaghera_Fontanelle8
 Geom: Rilievo2000
 RS = 87 Valle ponte Via Fornoli

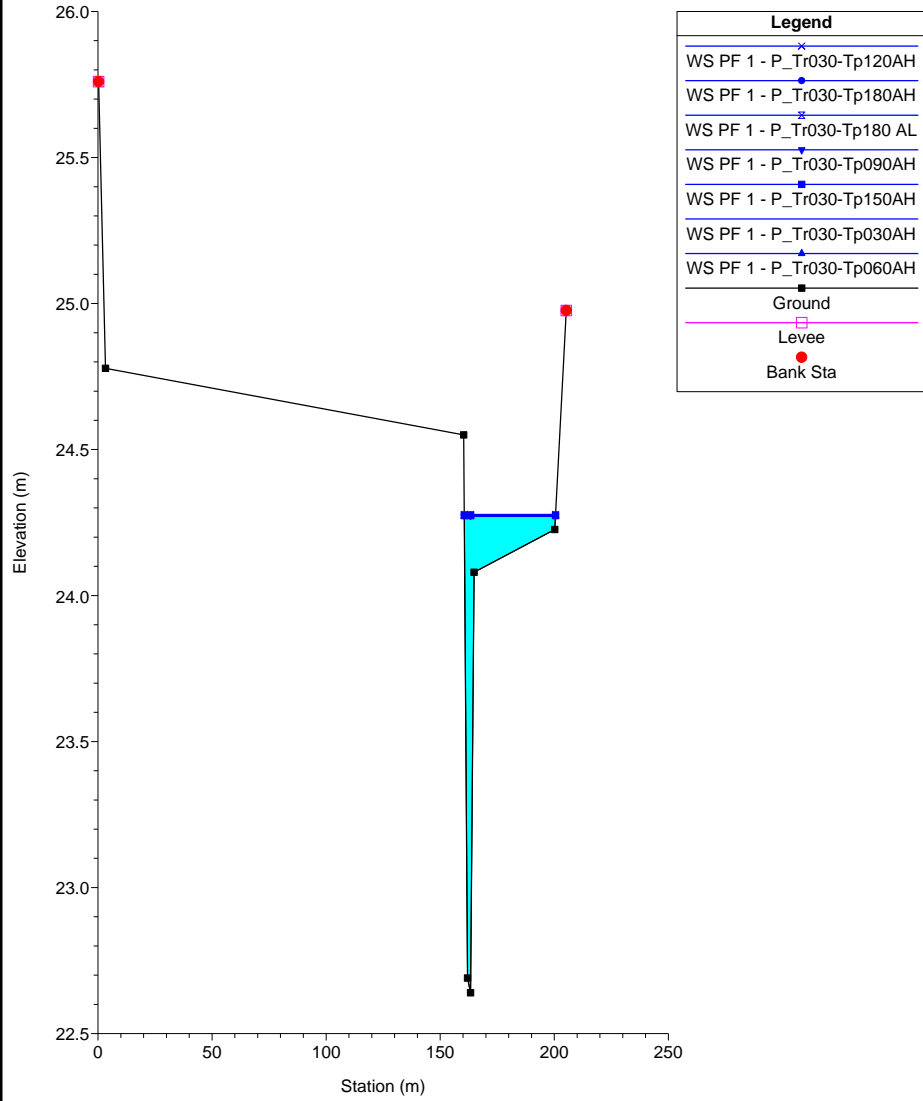


Vaghera_Fontanelle8
 Geom: Rilievo2000
 RS = 86.75

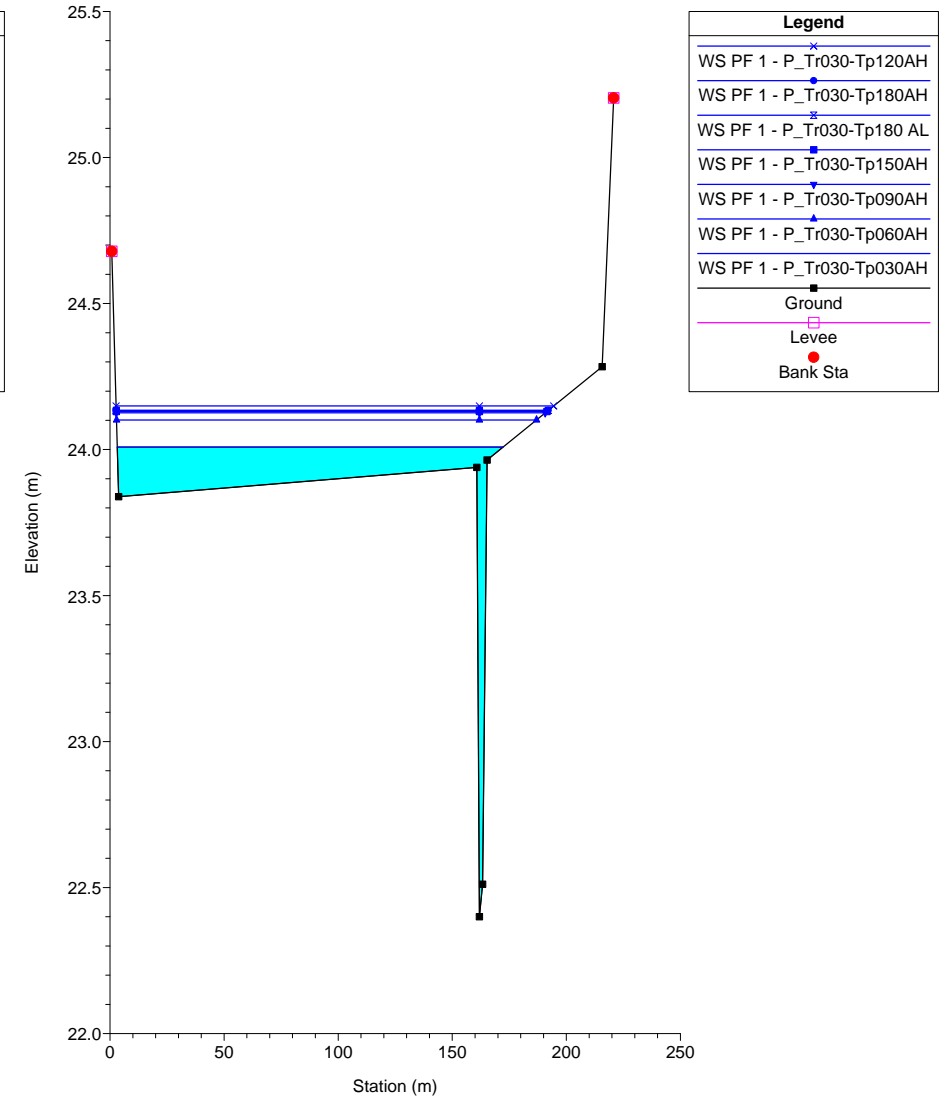




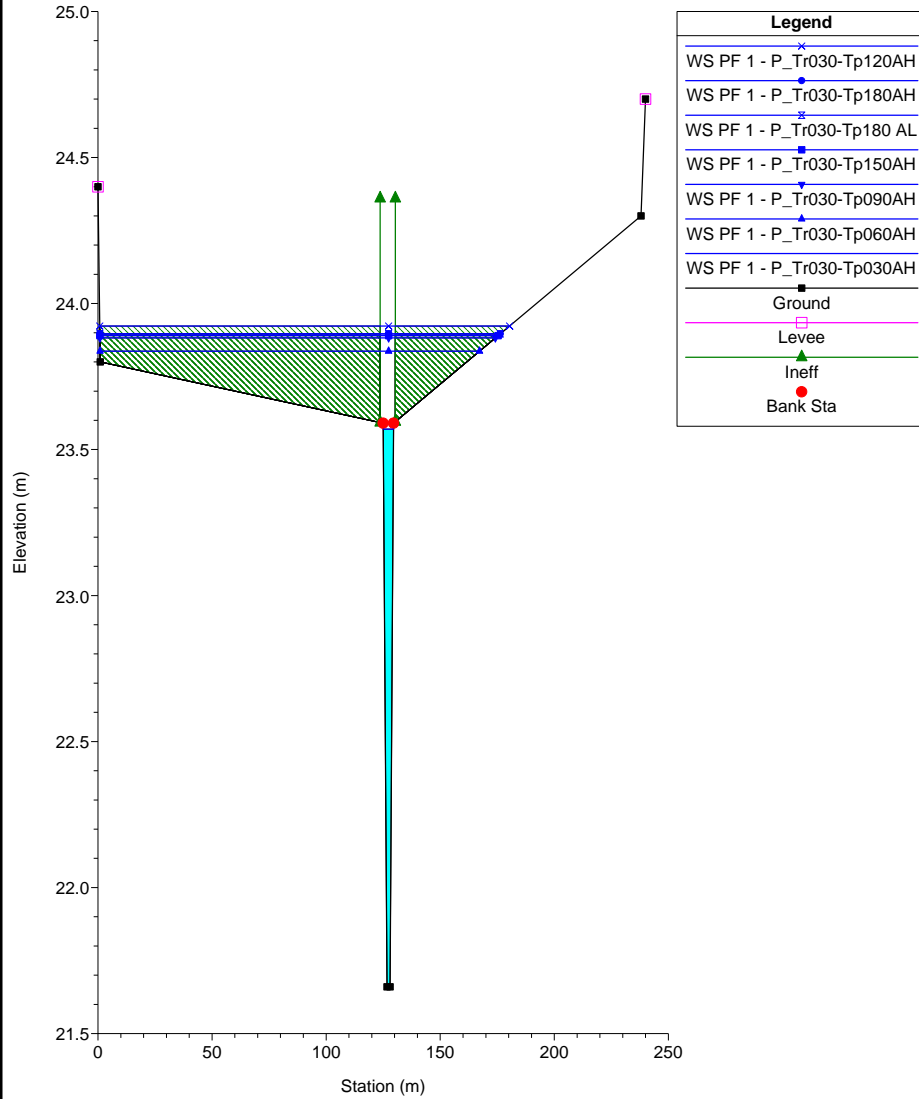
Vaghera_Fontanelle8
 Geom: Rilievo2000
 RS = 86 Area agricola Masoria



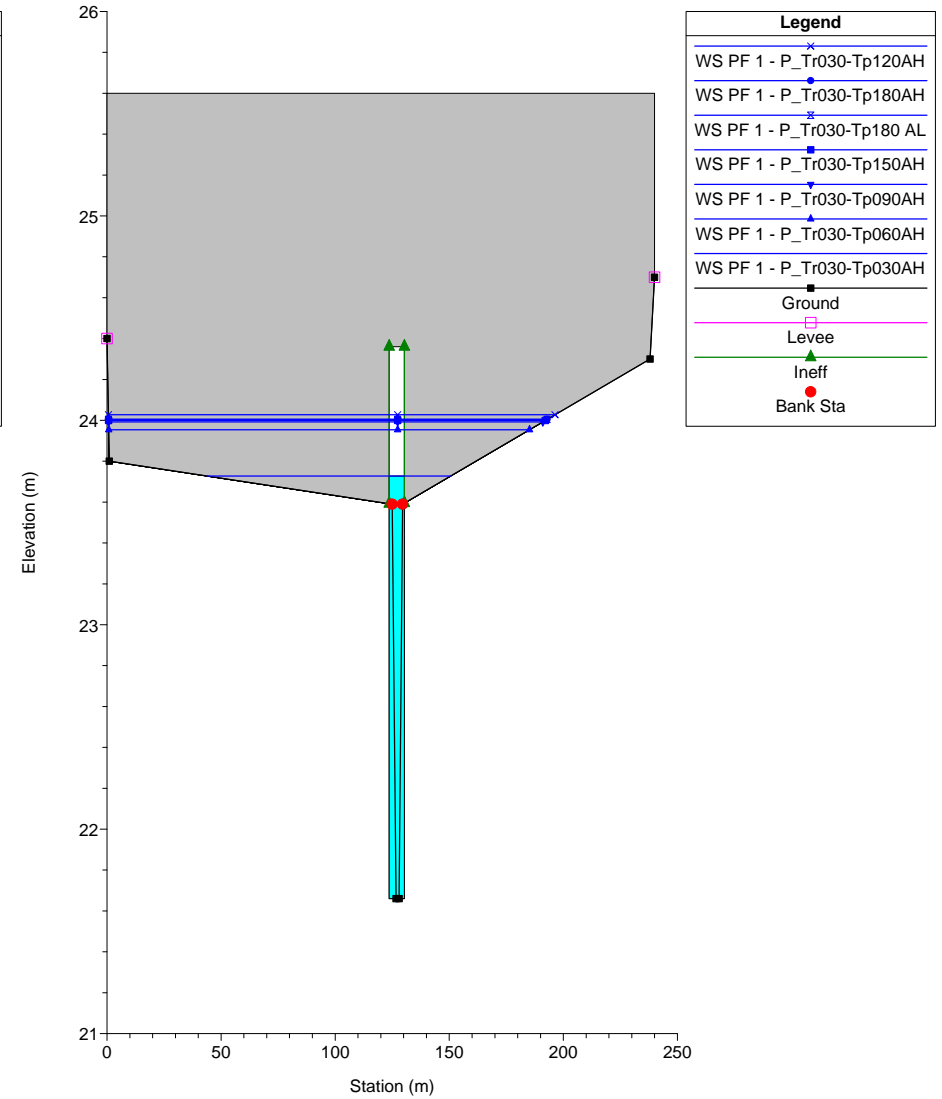
Vaghera_Fontanelle8
 Geom: Rilievo2000
 RS = 85.7 Area agricola Masoria



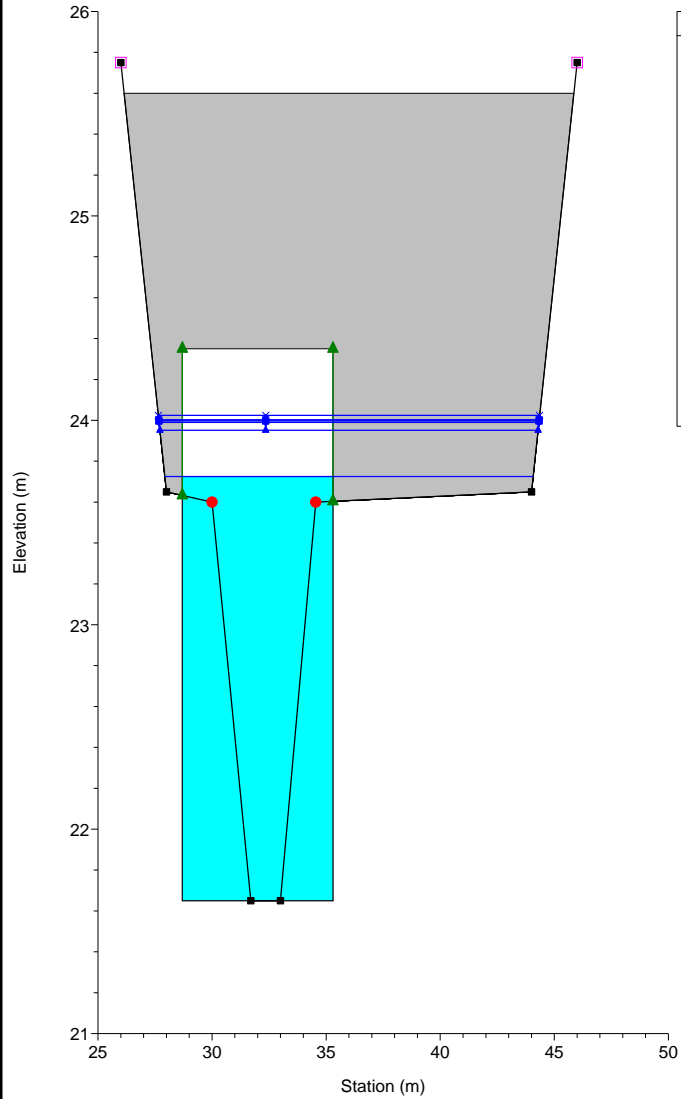
Vaghera_Fontanelle8
 Geom: Rilievo2000
 RS = 85 Inizio ponte s.s. 67



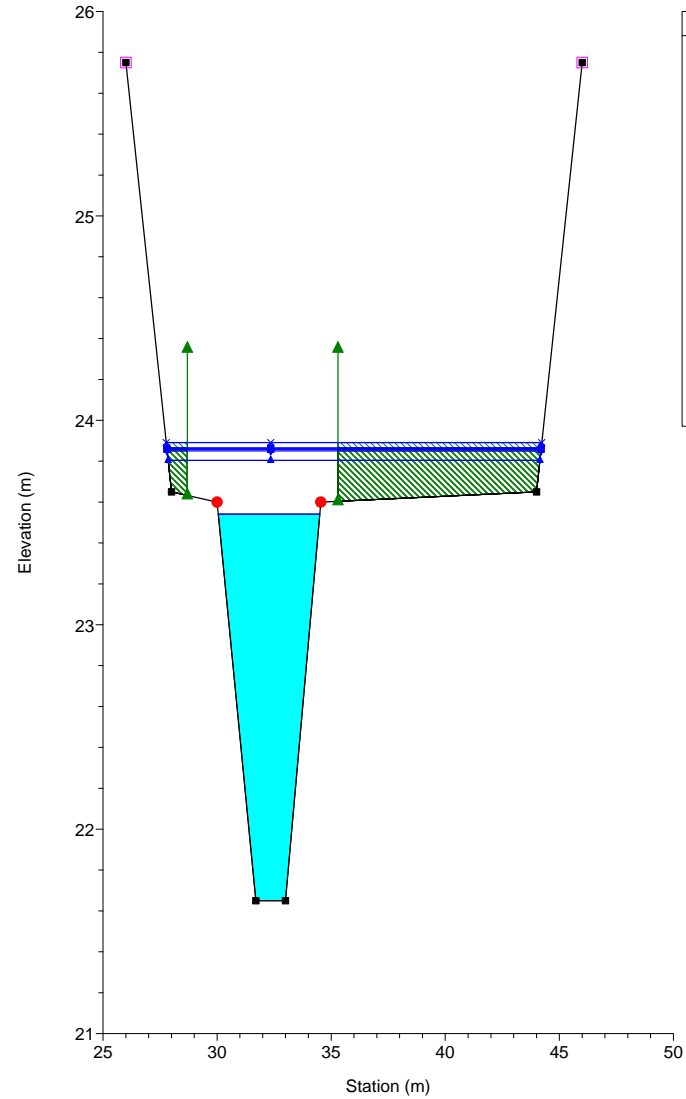
Vaghera_Fontanelle8
 Geom: Rilievo2000
 RS = 84.5 Culv Ponte s.s. 67



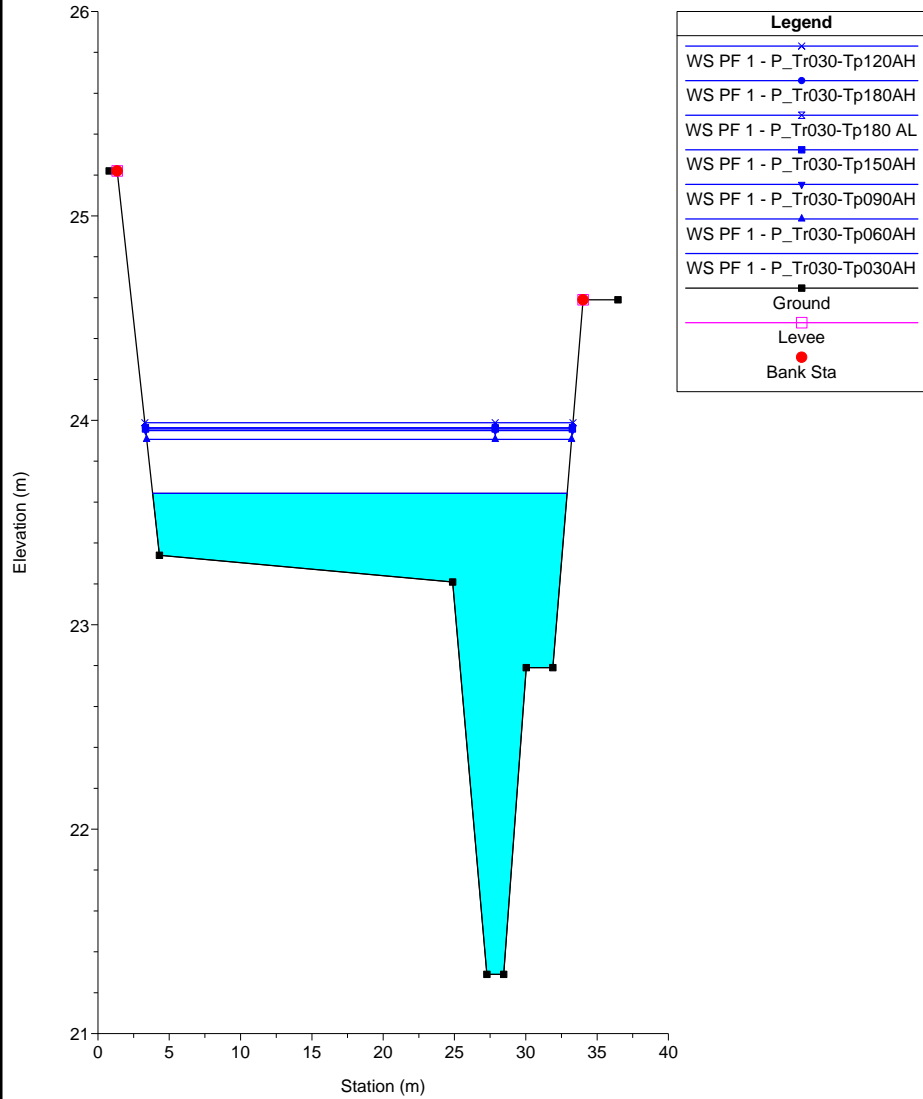
Vaghera_Fontanelle8
 Geom: Rilievo2000
 RS = 84.5 Culv Ponte s.s. 67



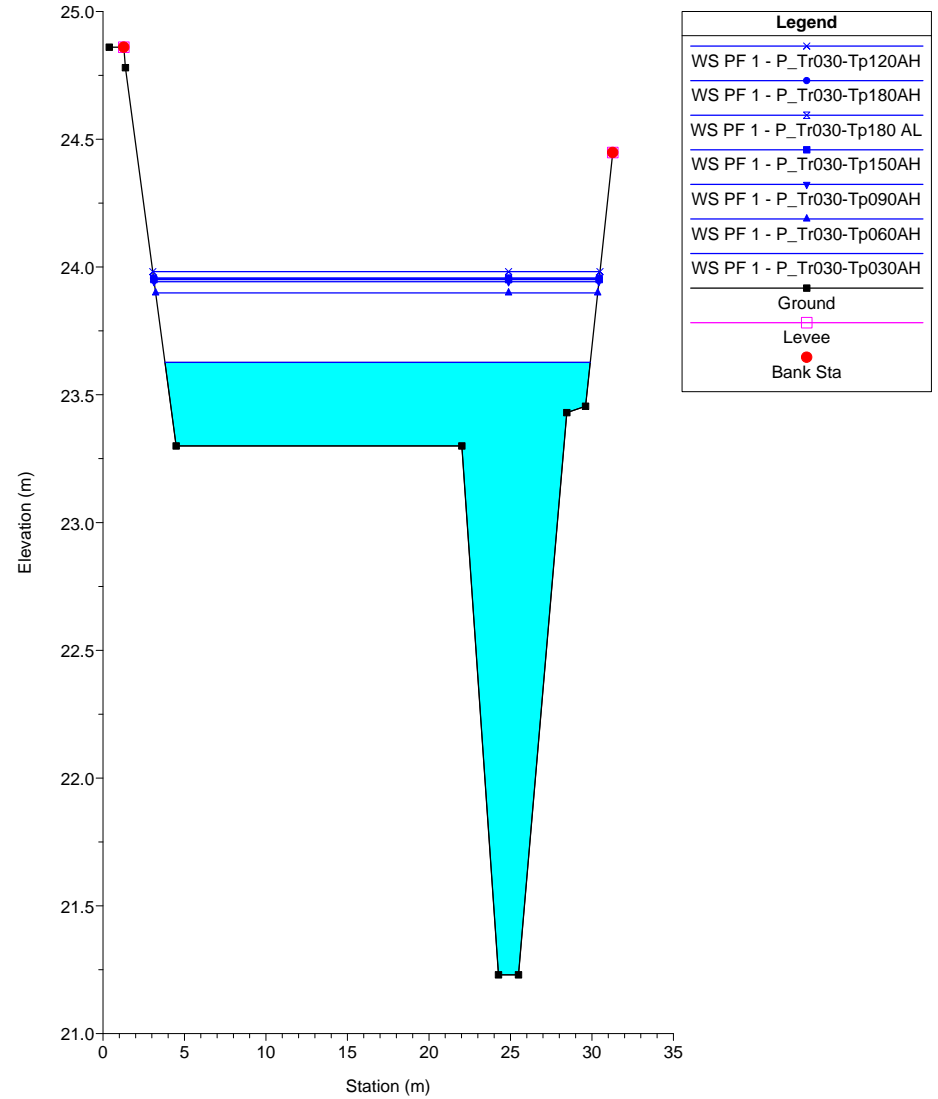
Vaghera_Fontanelle8
 Geom: Rilievo2000
 RS = 84 Fine ponte s.s. 67



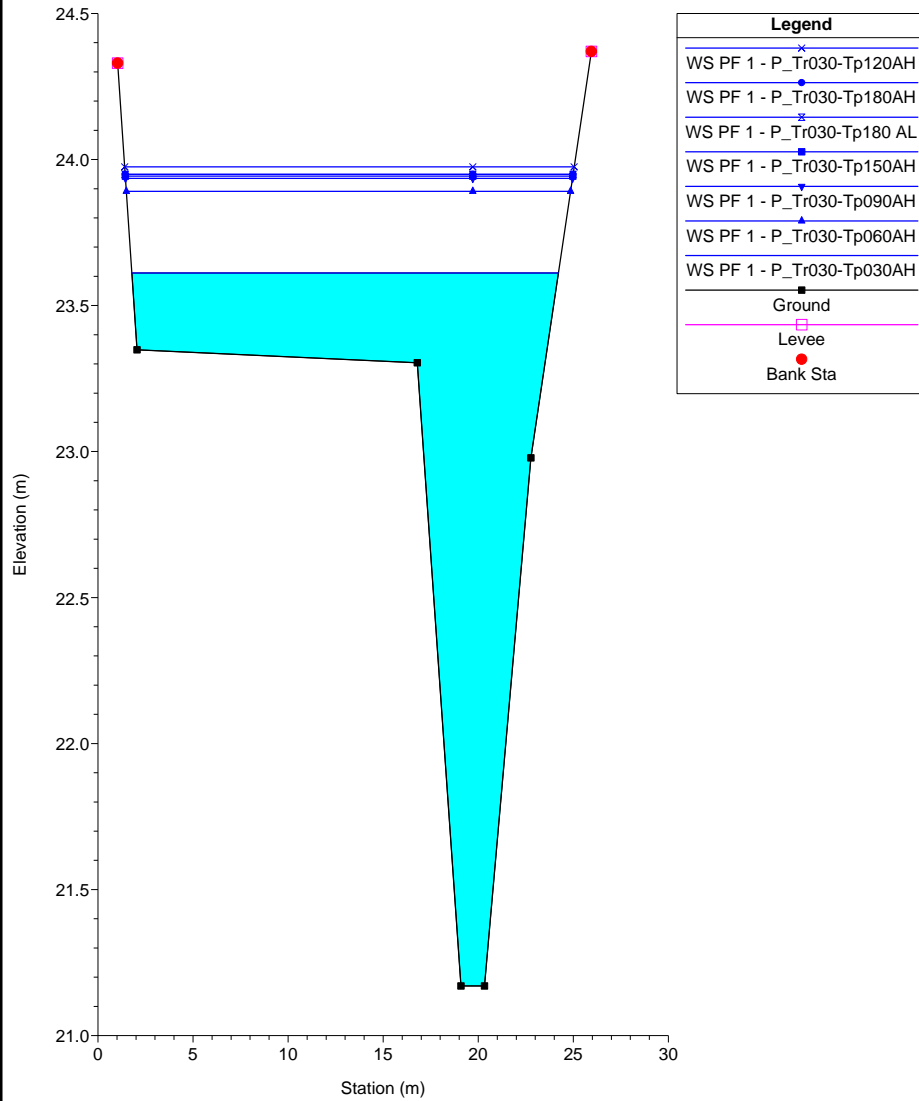
Vaghera_Fontanelle8
 Geom: Rilievo2000
 RS = 83 Ingresso ZI Fontanelle



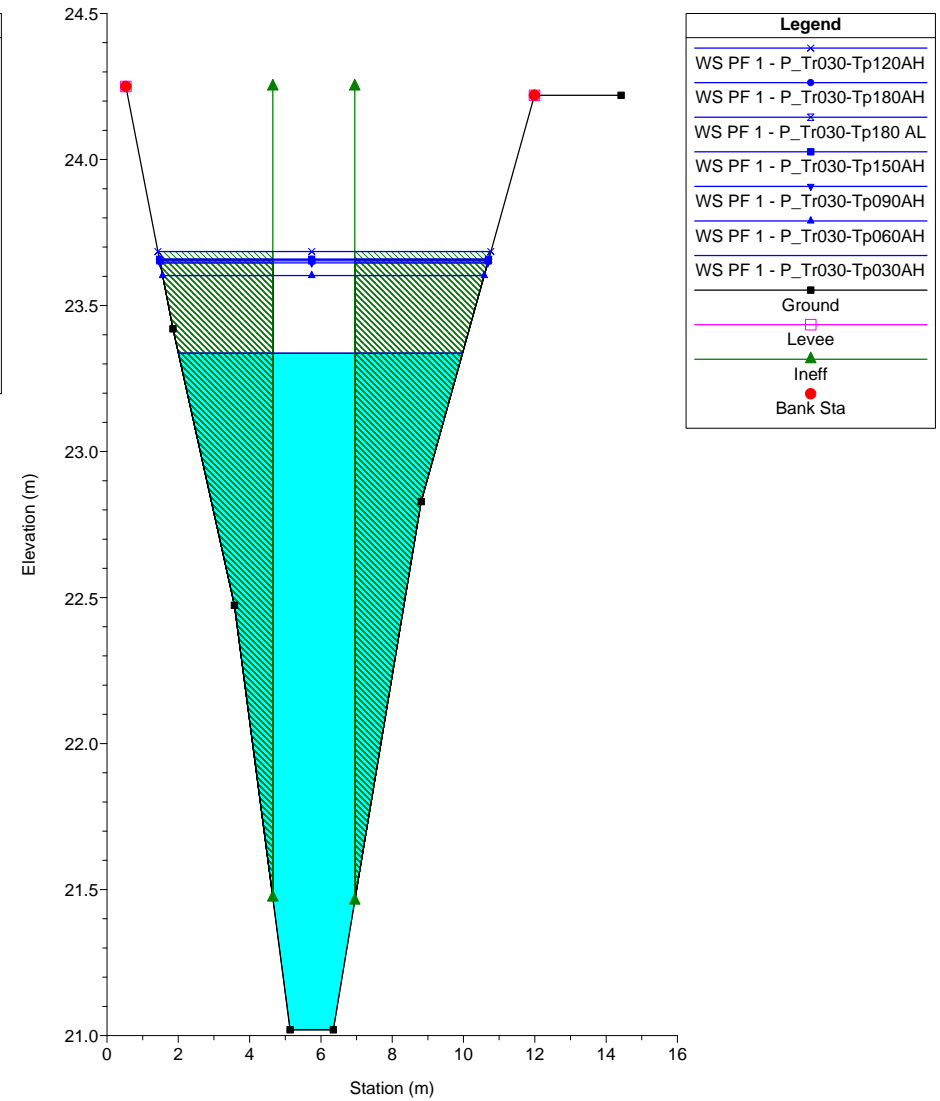
Vaghera_Fontanelle8
 Geom: Rilievo2000
 RS = 82.6 Ingresso ZI Fontanelle

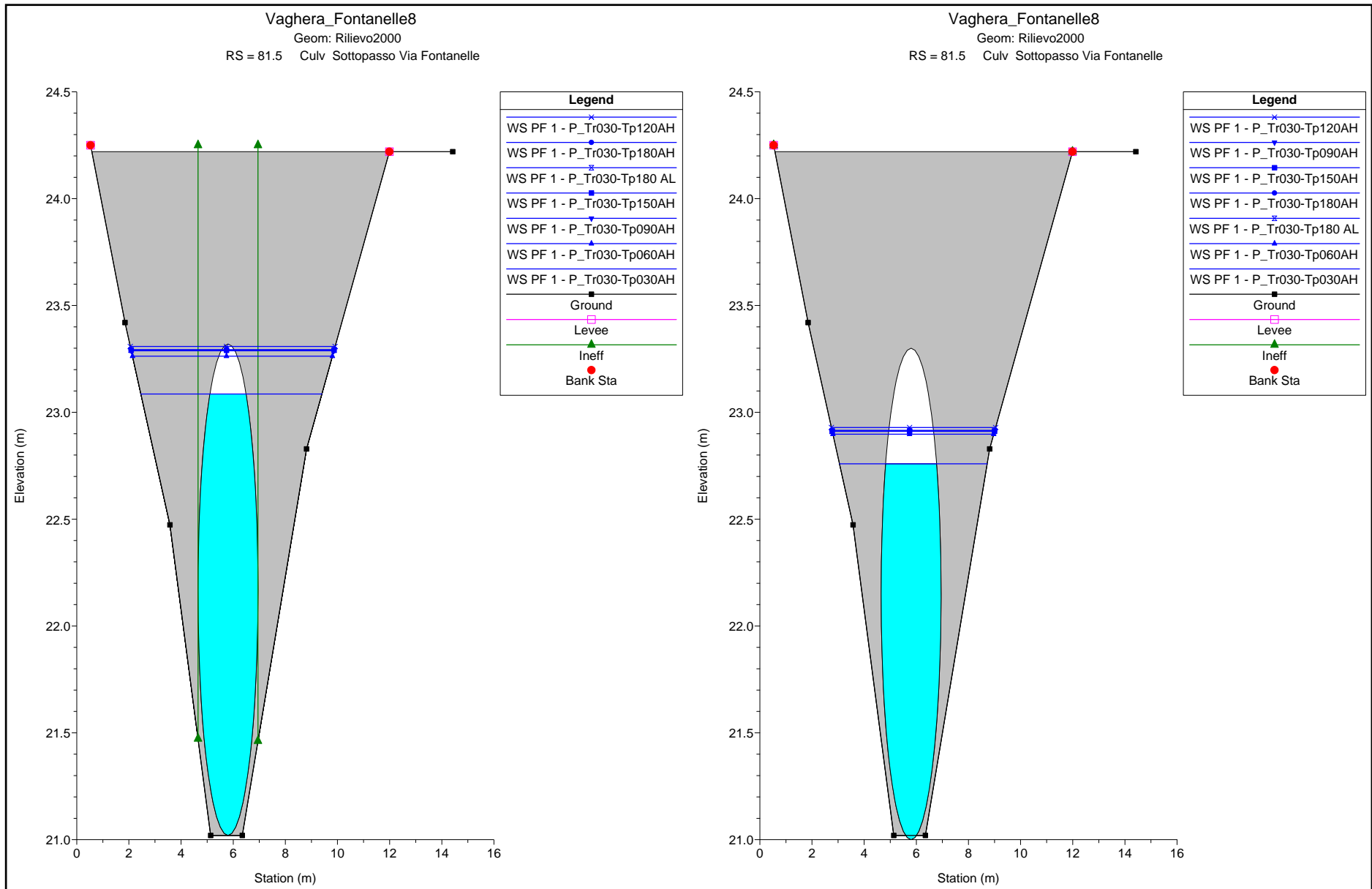


Vaghera_Fontanelle8
 Geom: Rilievo2000
 RS = 82.3 Ingresso ZI Fontanelle

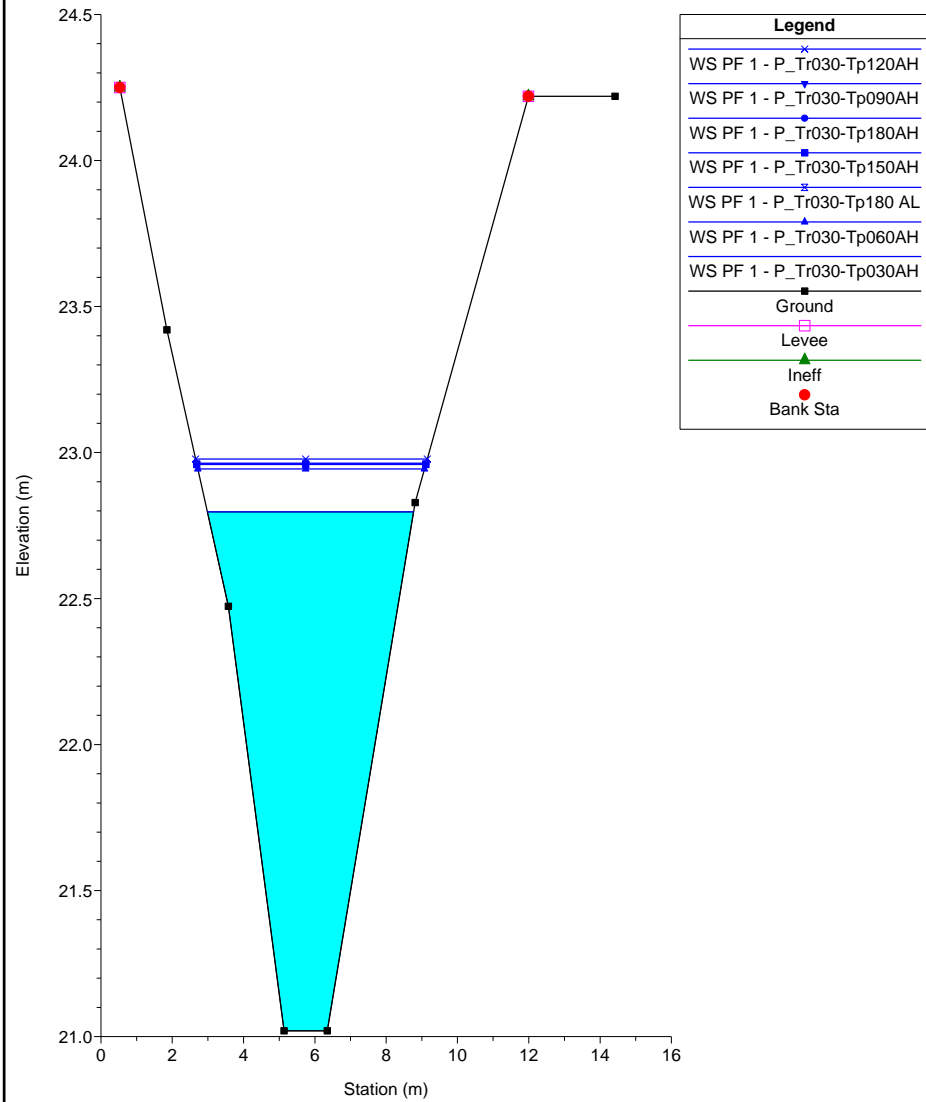


Vaghera_Fontanelle8
 Geom: Rilievo2000
 RS = 82 Inizio Sottopasso Via Fontanelle

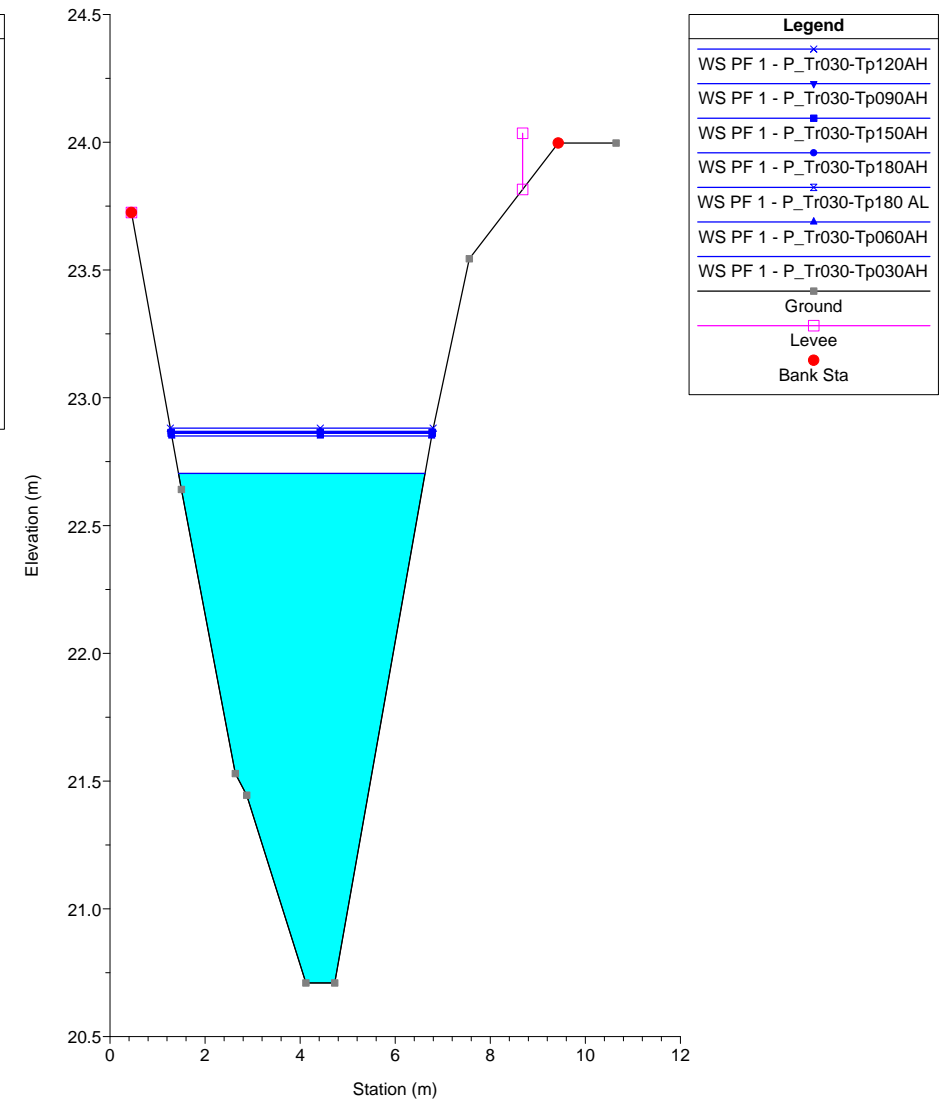




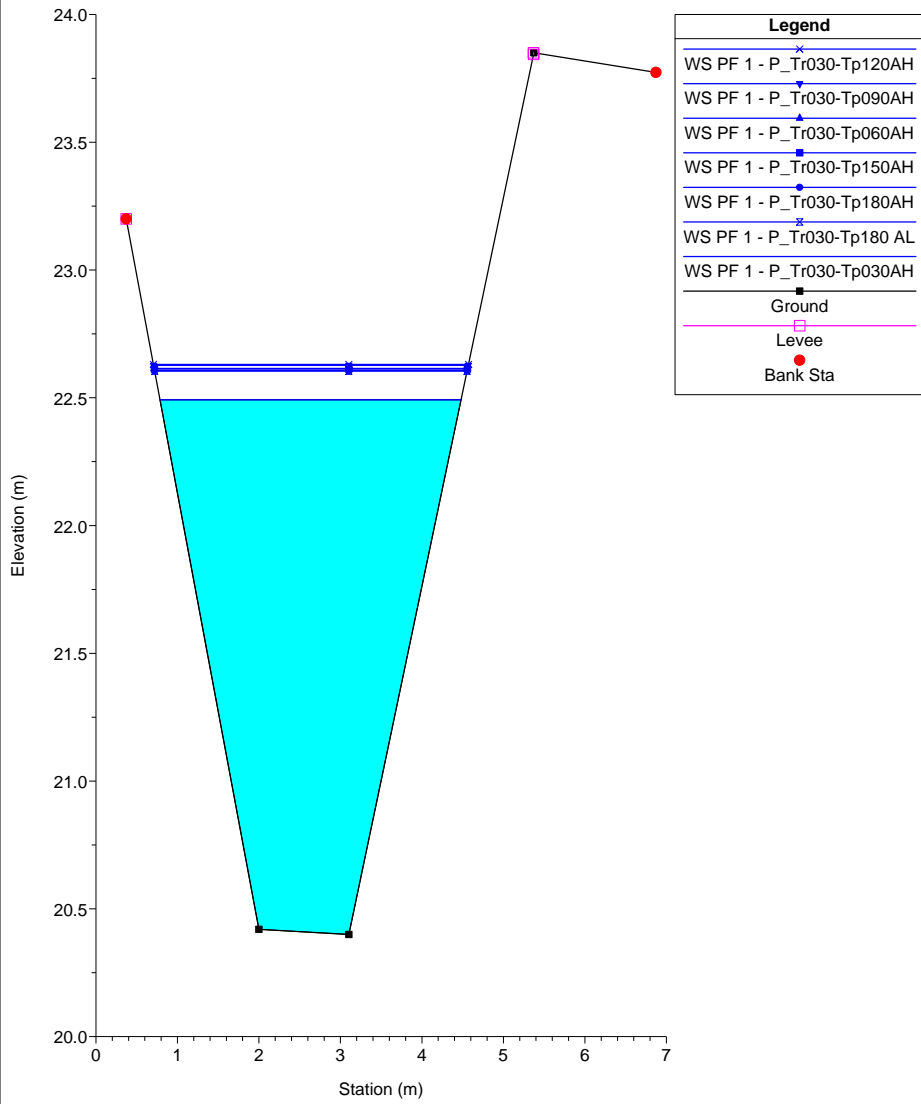
Vaghera_Fontanelle8
 Geom: Rilievo2000
 RS = 81 Fine Sottopasso Via Fontanelle



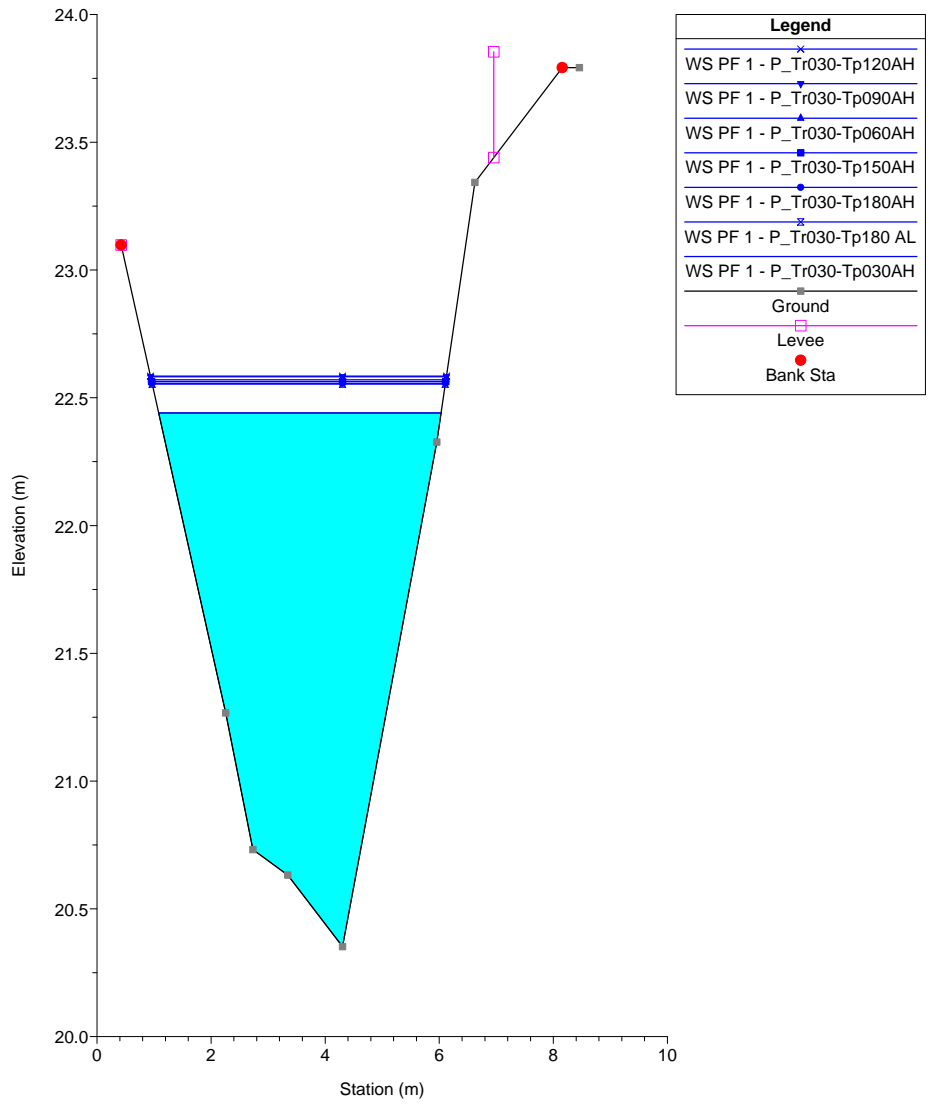
Vaghera_Fontanelle8
 Geom: Rilievo2000
 RS = 80.5*

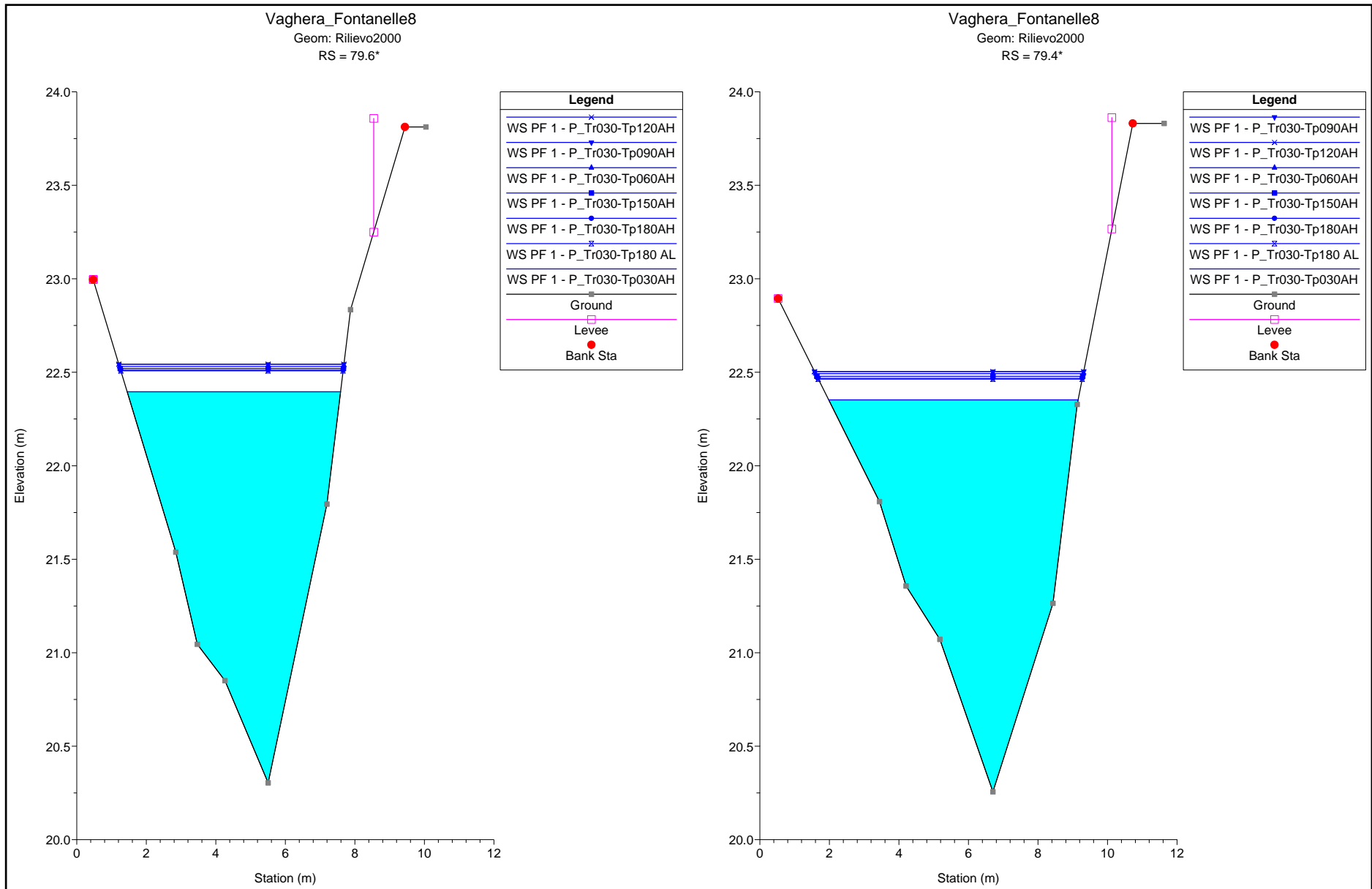


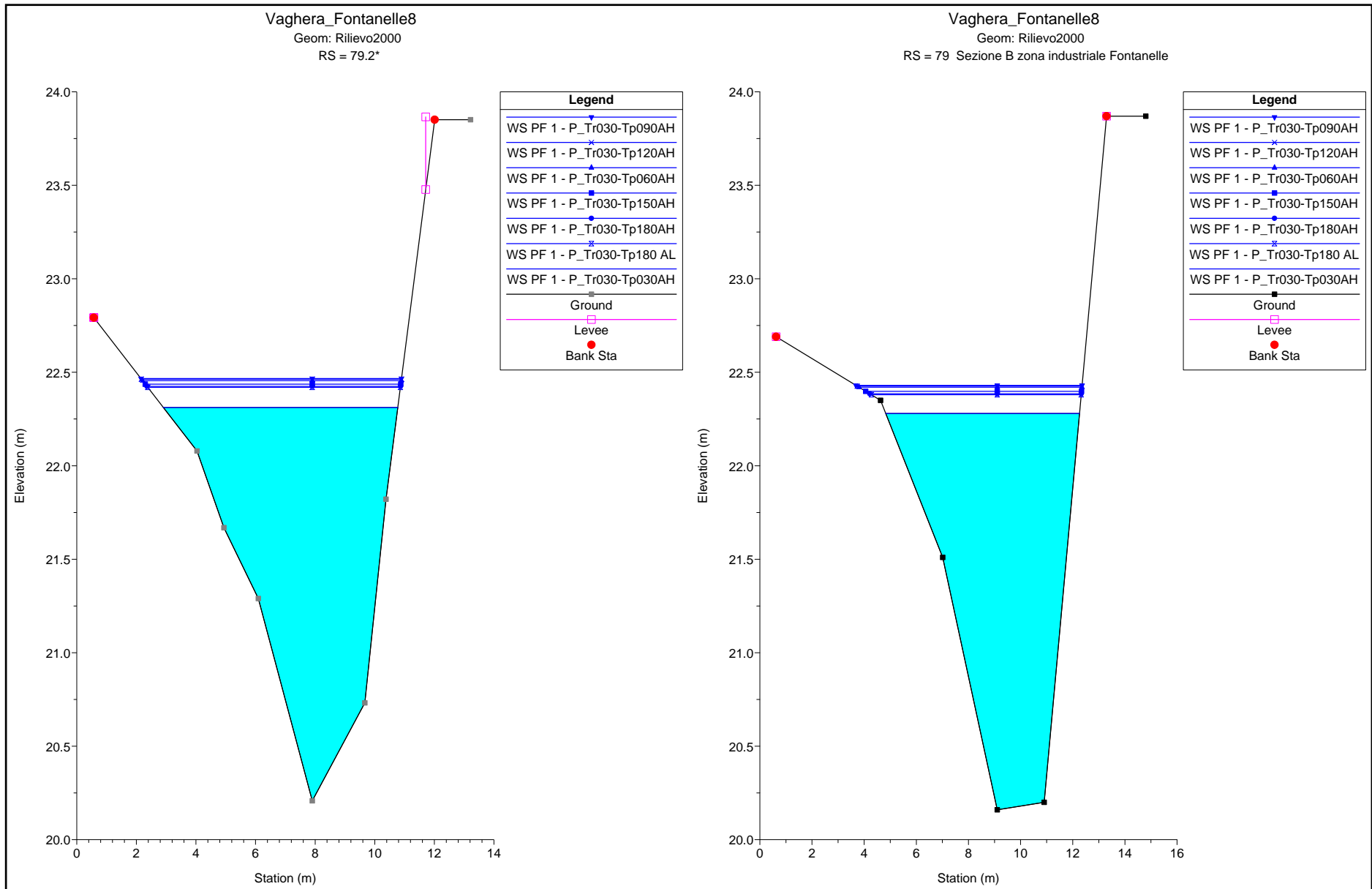
Vaghera_Fontanelle8
 Geom: Rilievo2000
 RS = 80 Sezione A zona industriale Fontanelle

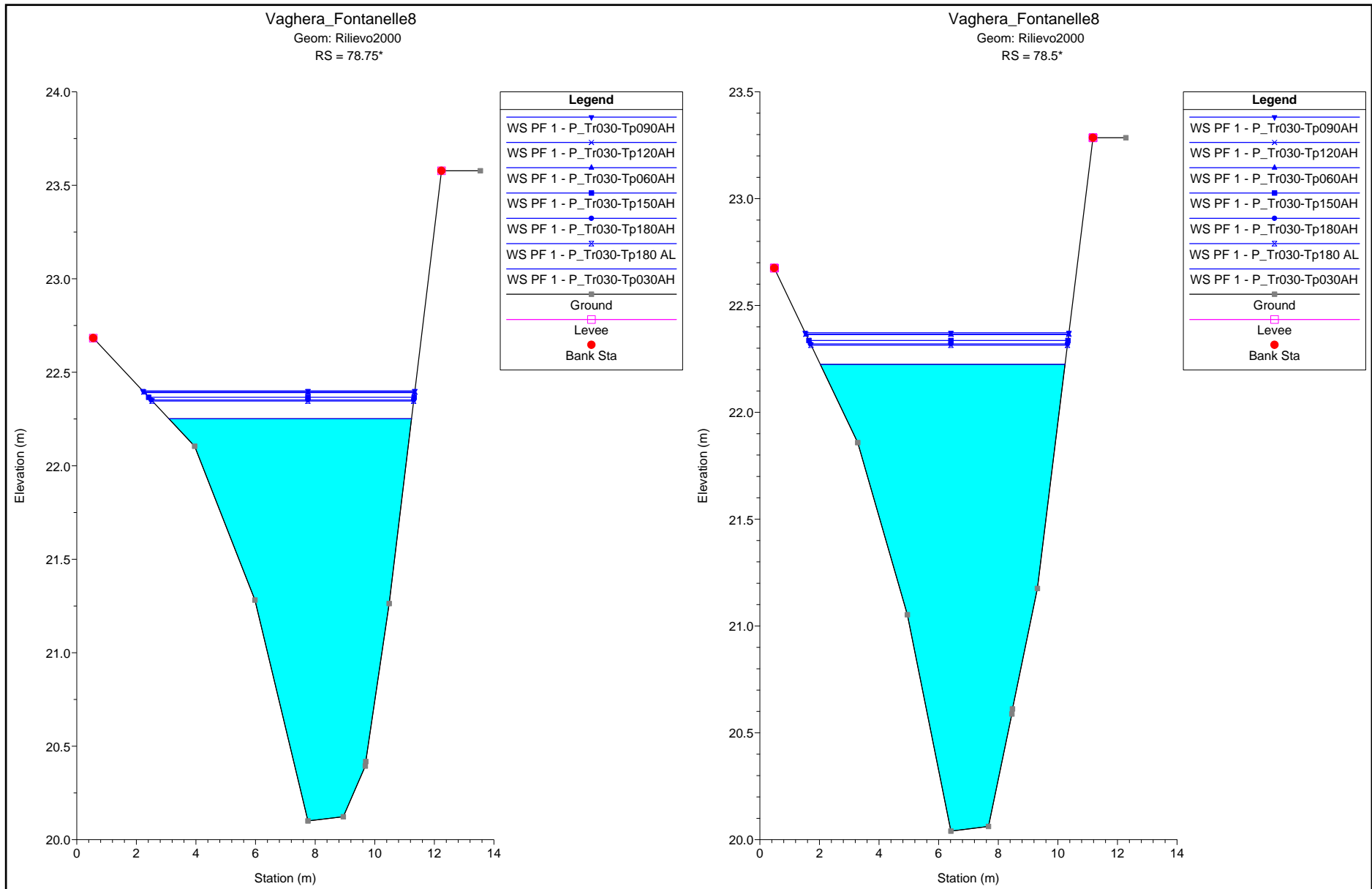


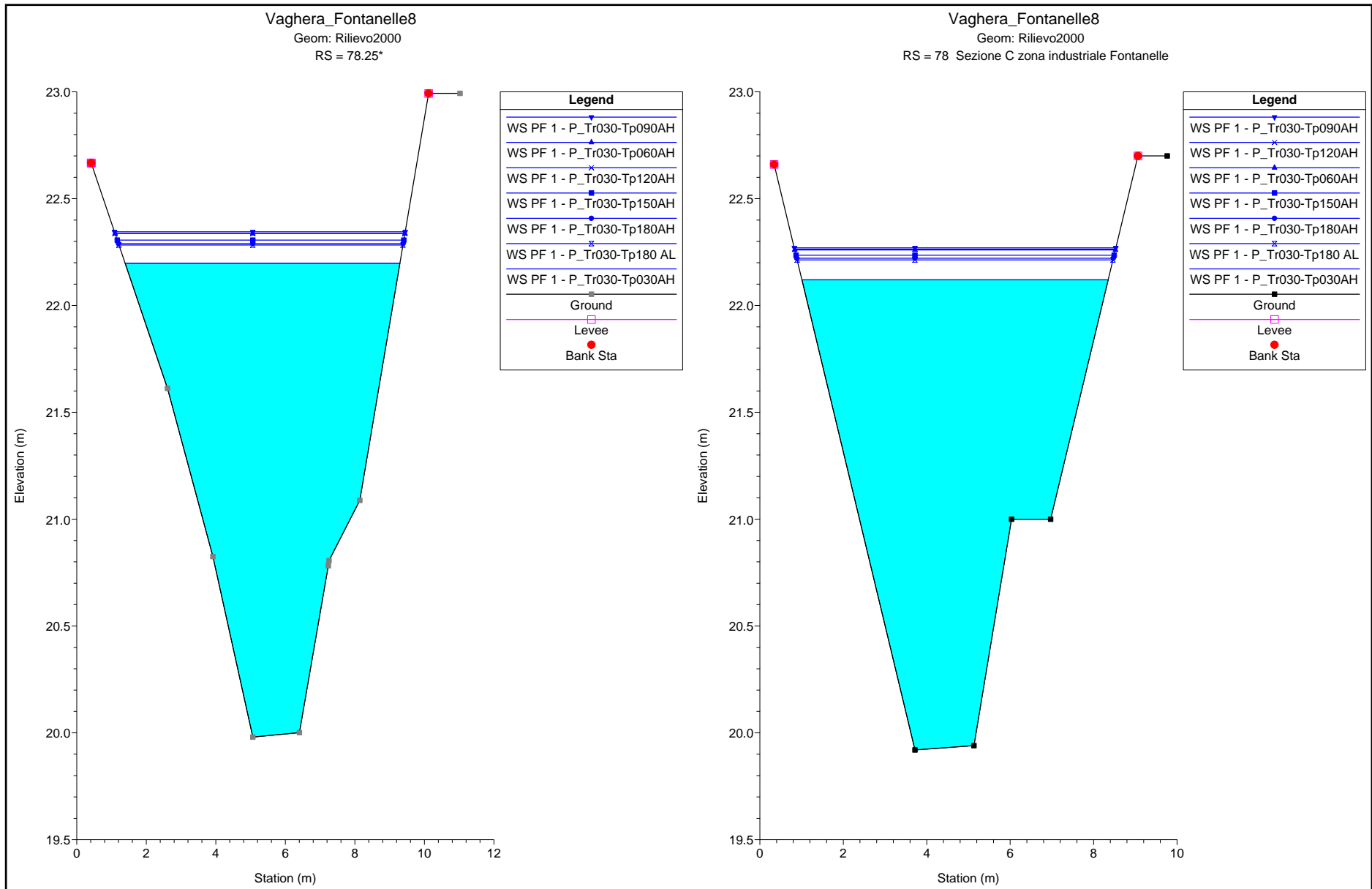
Vaghera_Fontanelle8
 Geom: Rilievo2000
 RS = 79.8*

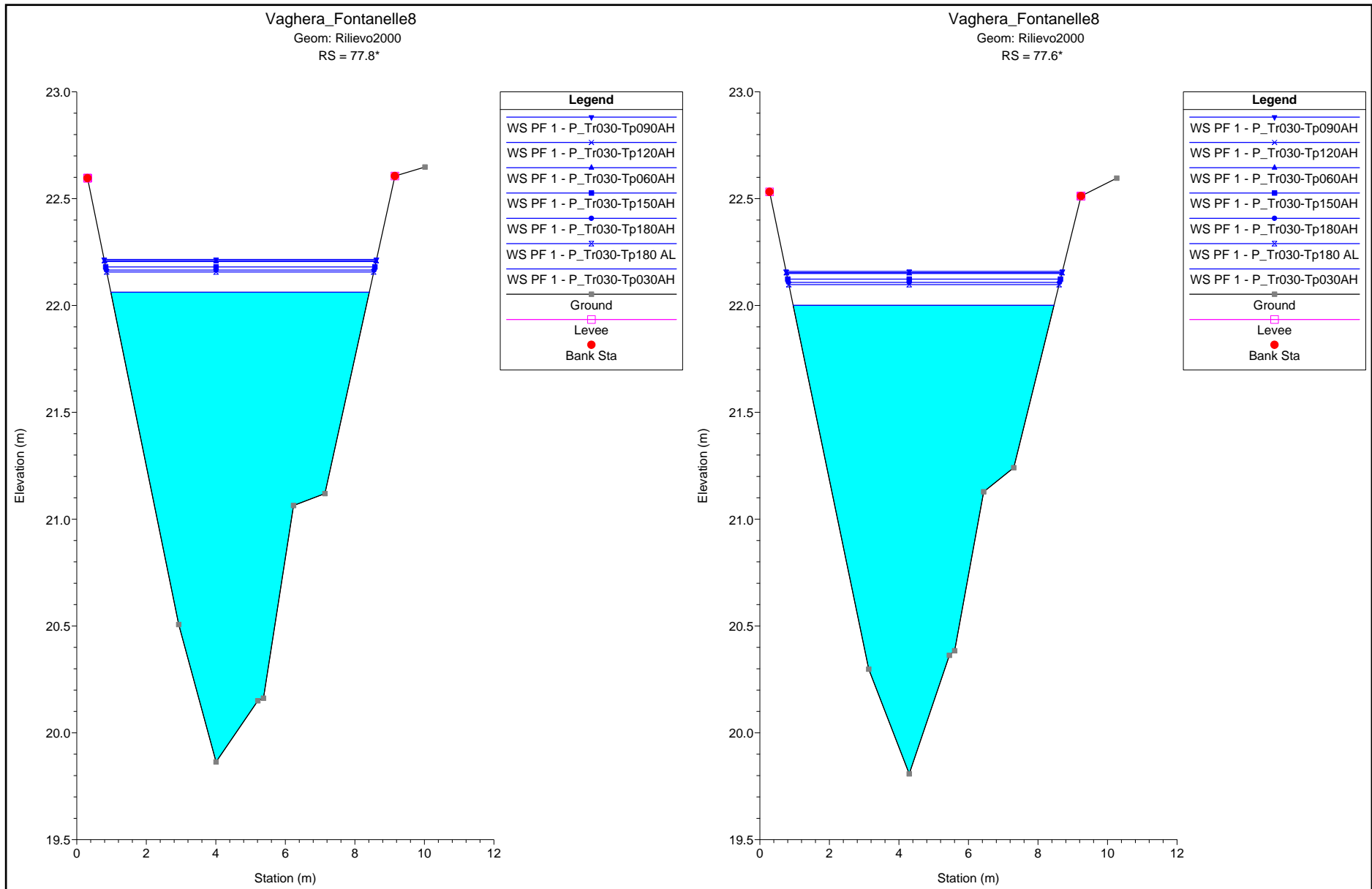


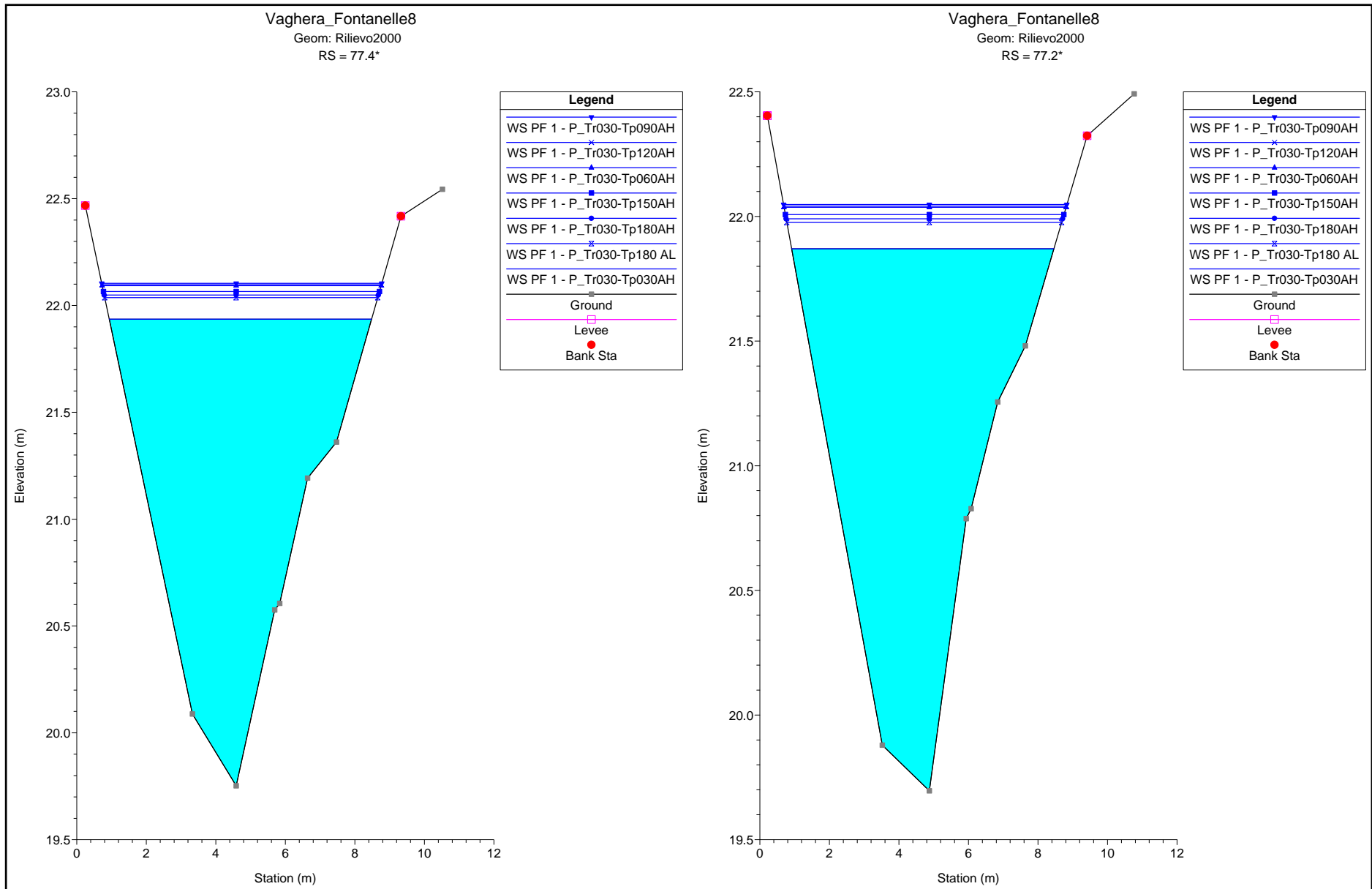


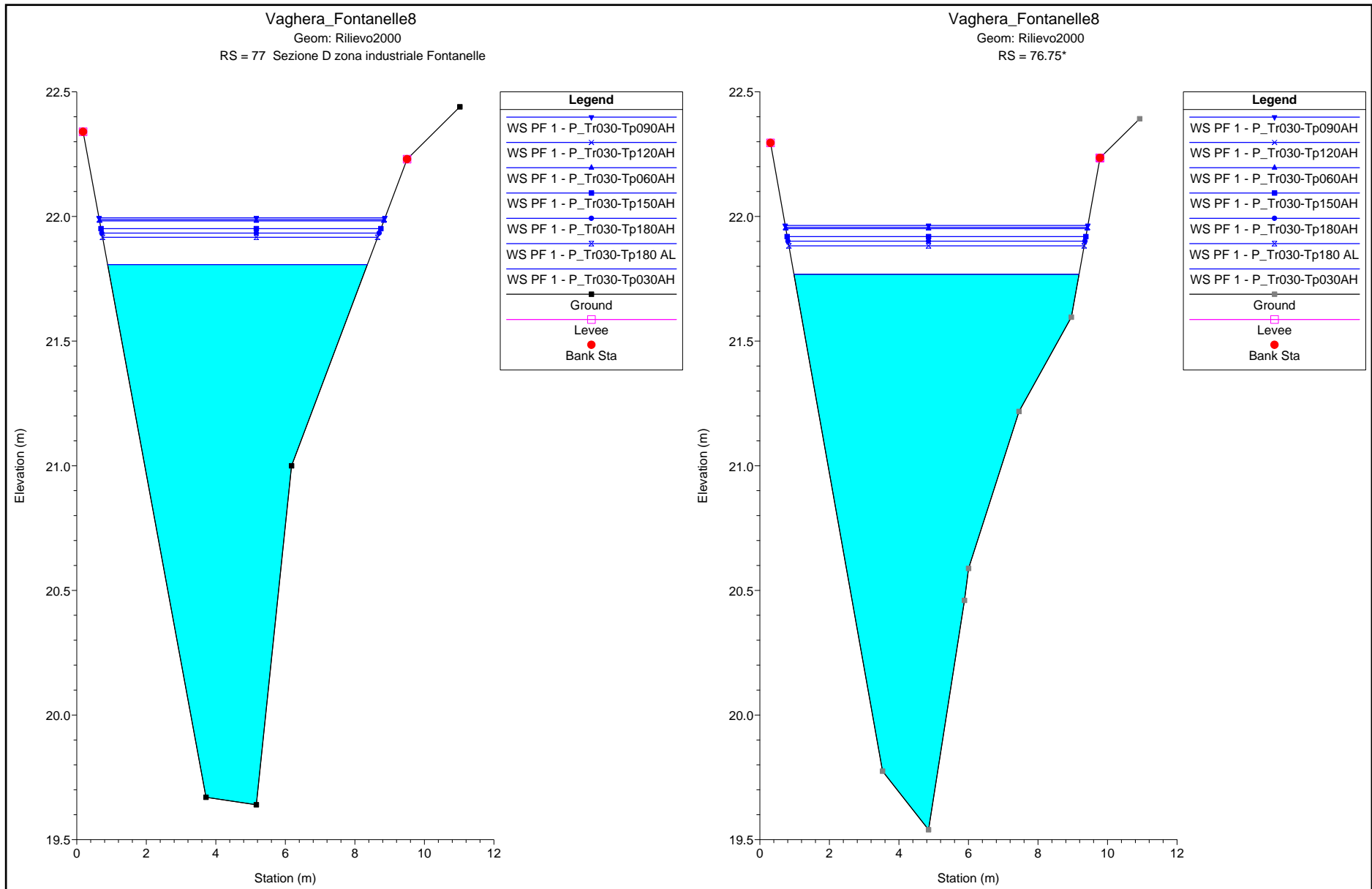


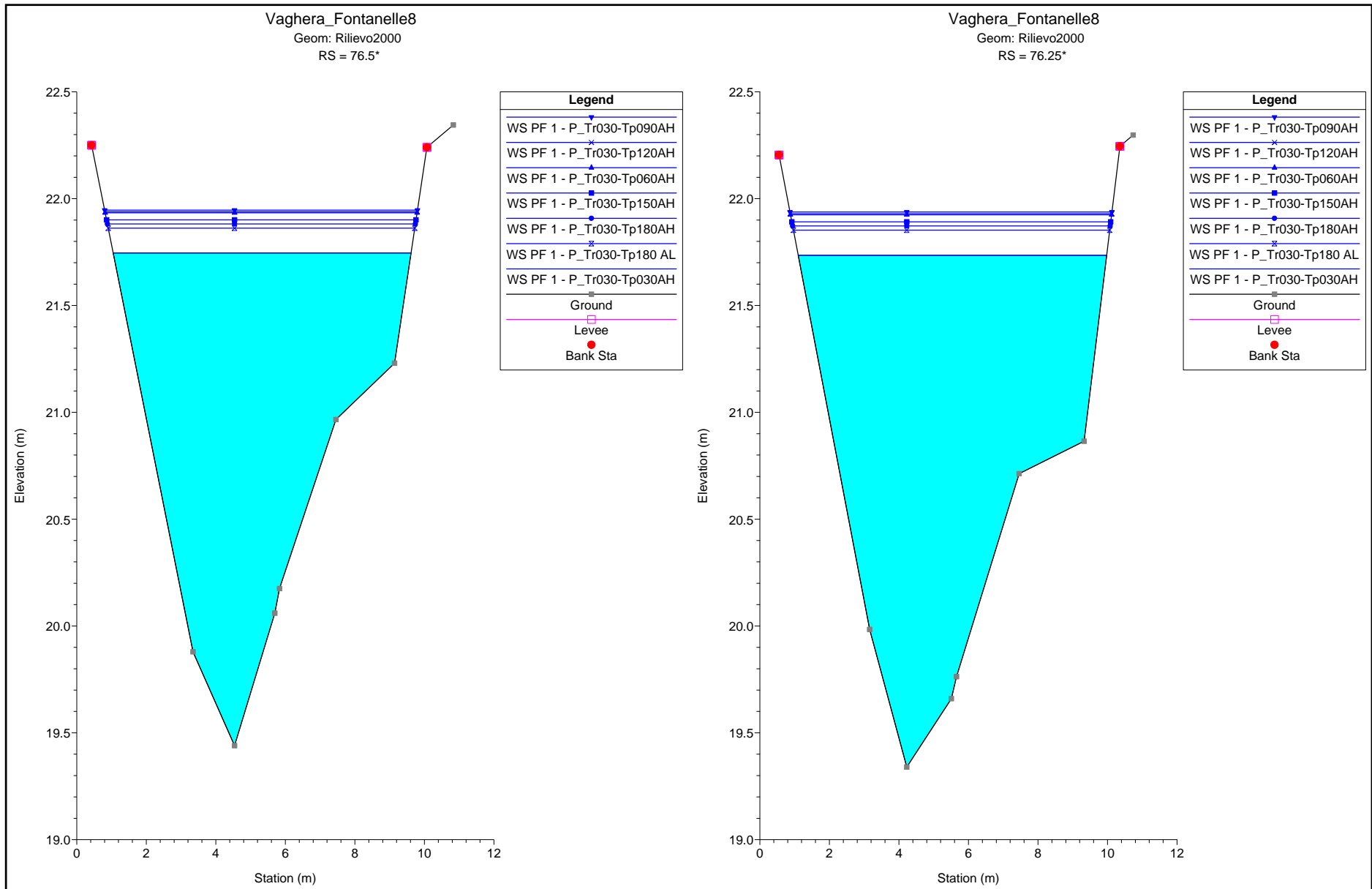




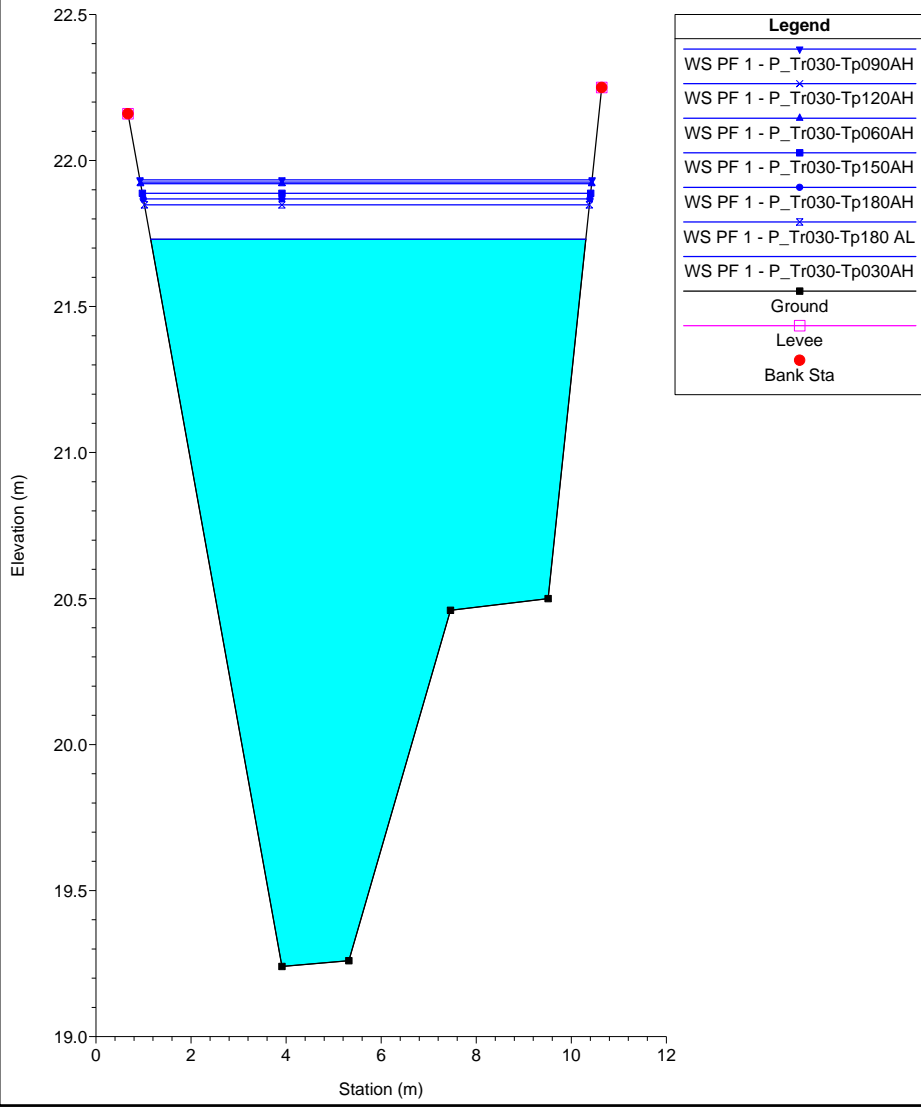




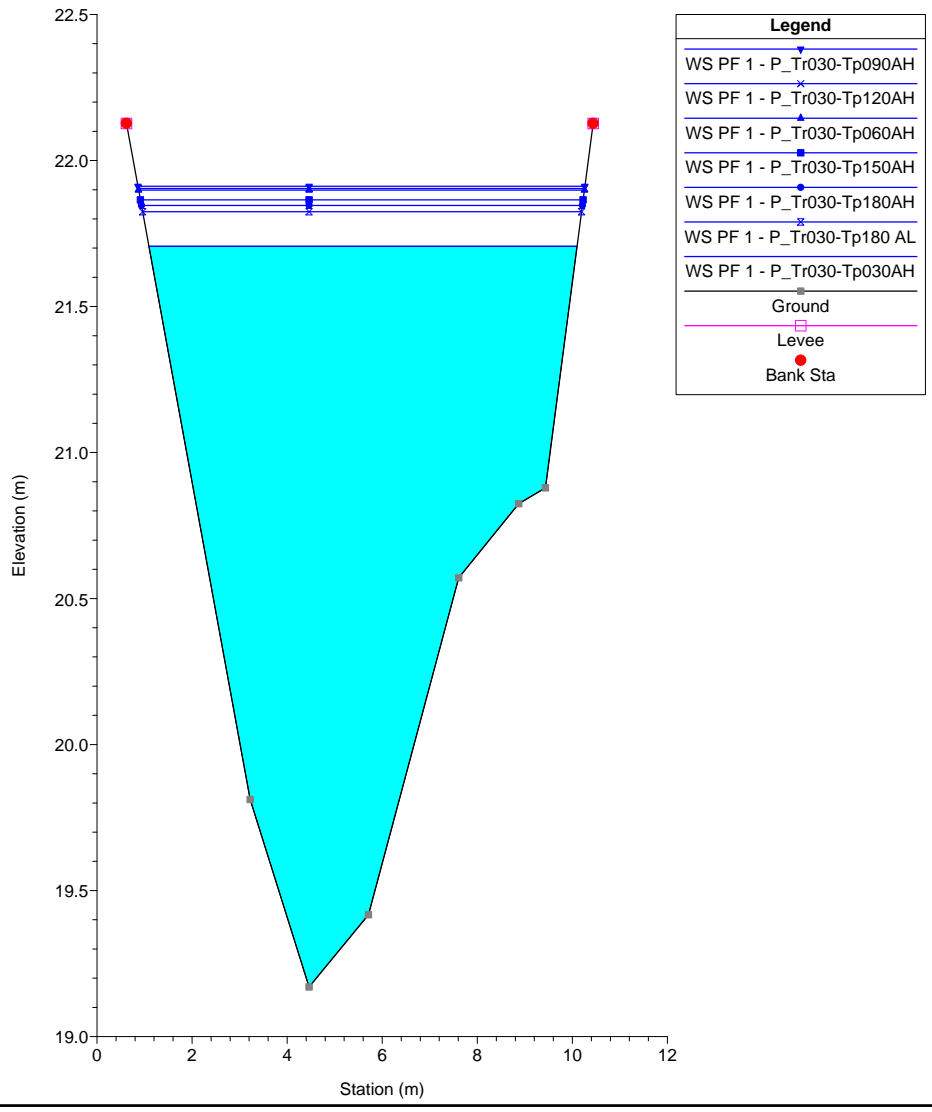




Vaghera_Fontanelle8
 Geom: Rilievo2000
 RS = 76 Sezione E zona industriale Fontanelle



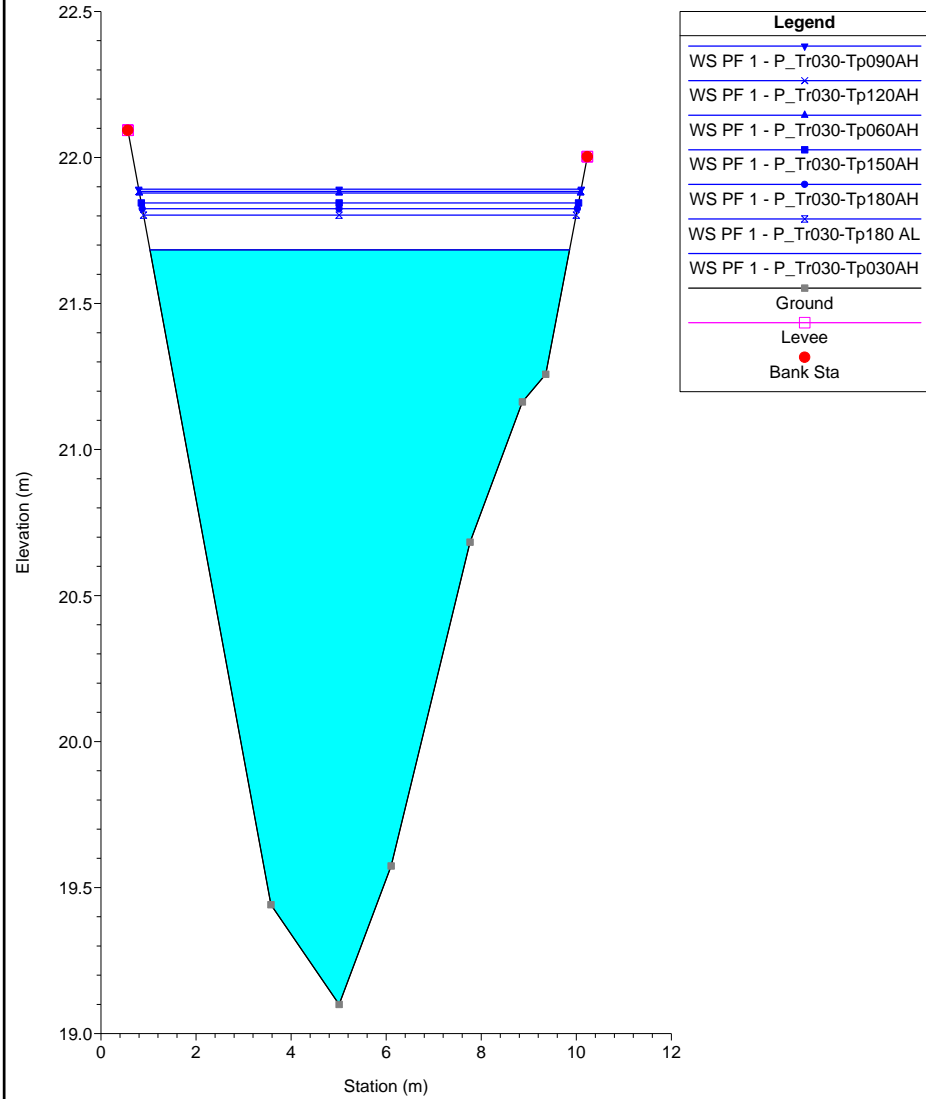
Vaghera_Fontanelle8
 Geom: Rilievo2000
 RS = 75.6666*



Vaghera_Fontanelle8

Geom: Rilievo2000

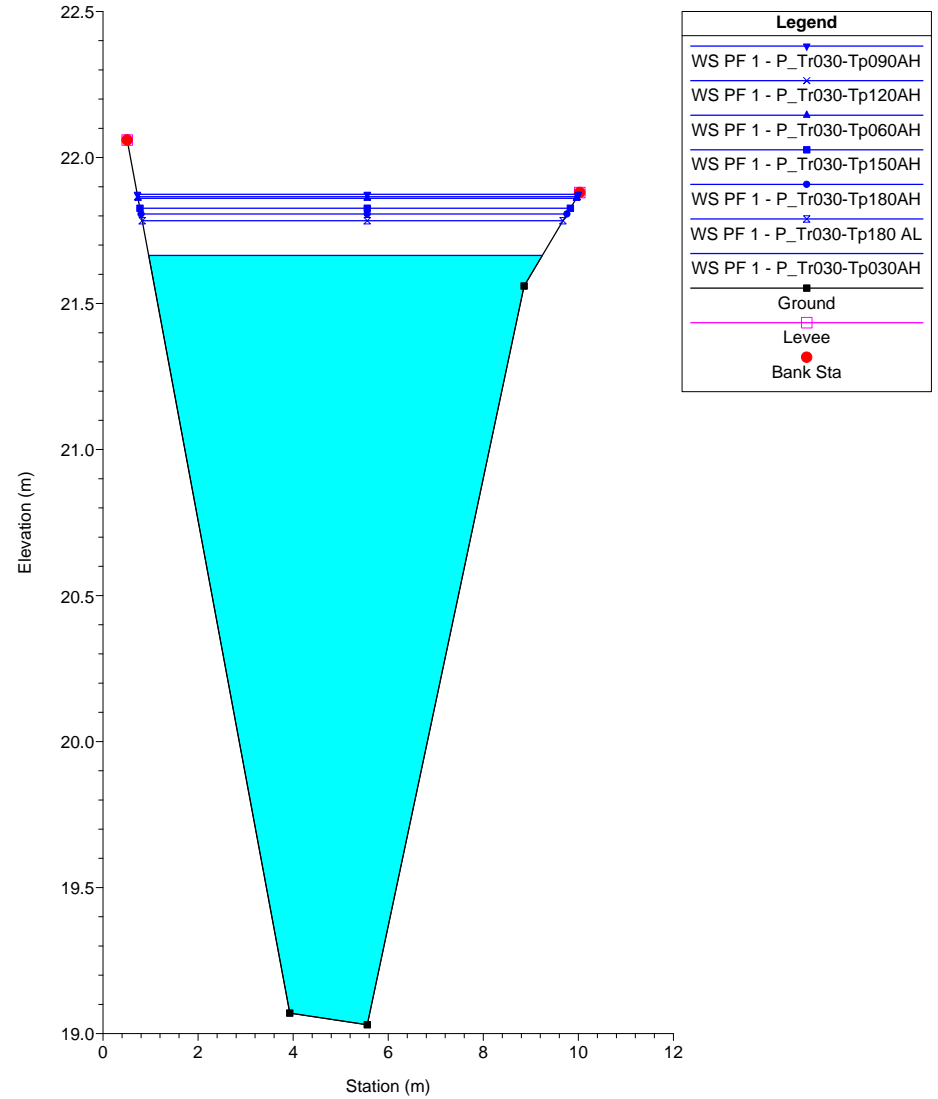
RS = 75.3333*



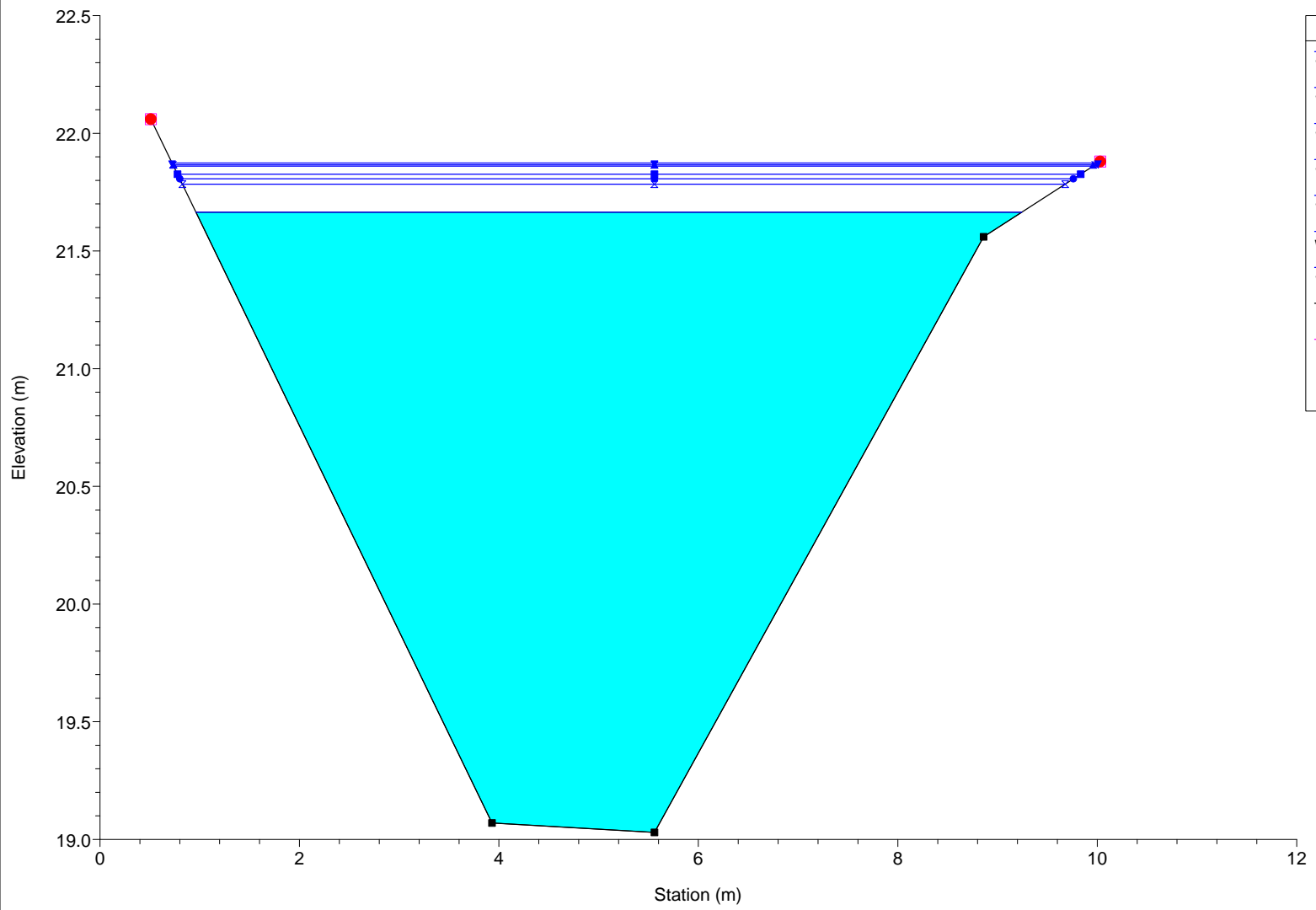
Vaghera_Fontanelle8

Geom: Rilievo2000

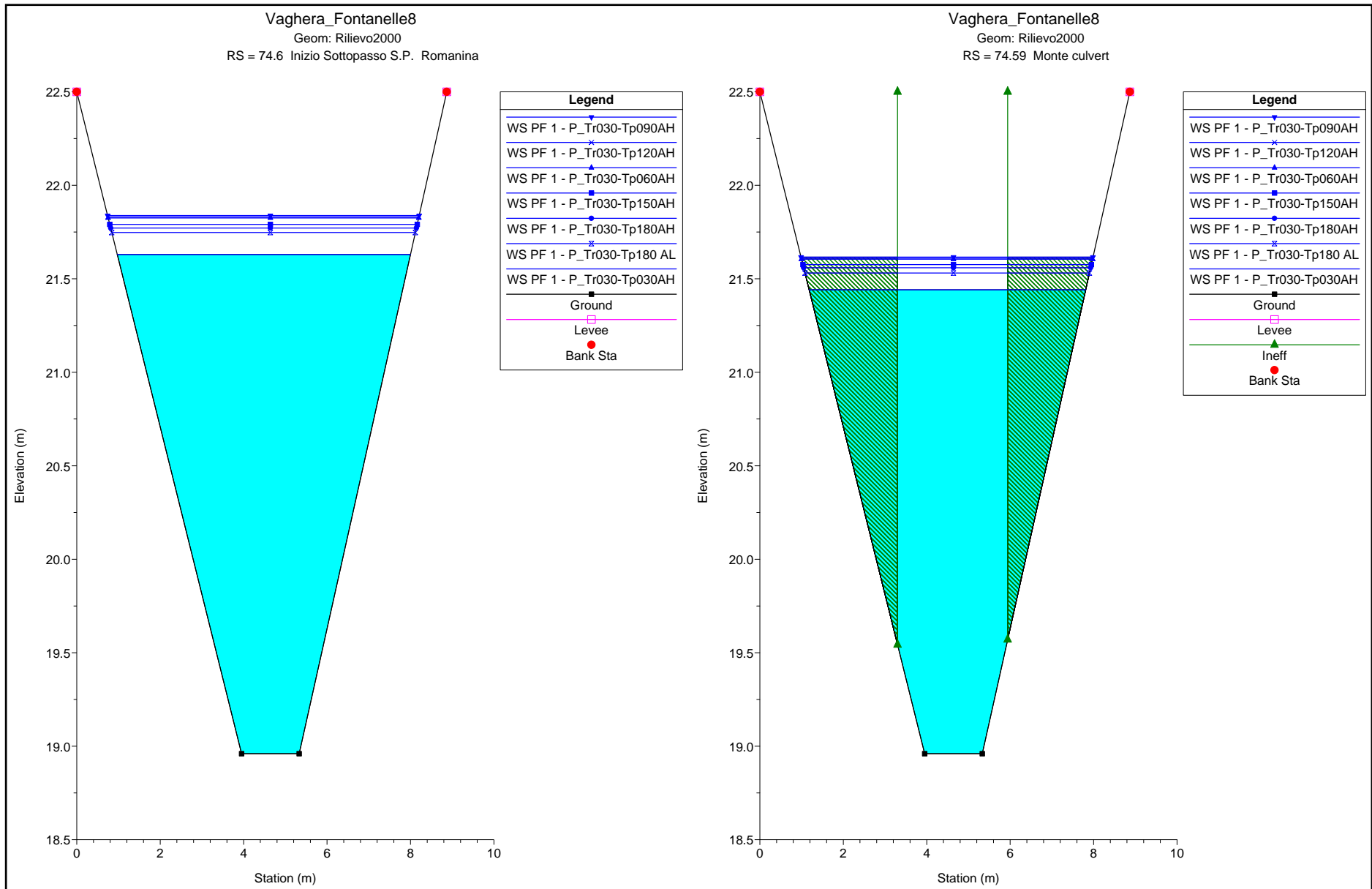
RS = 75 Sezione F zona industriale Fontanelle

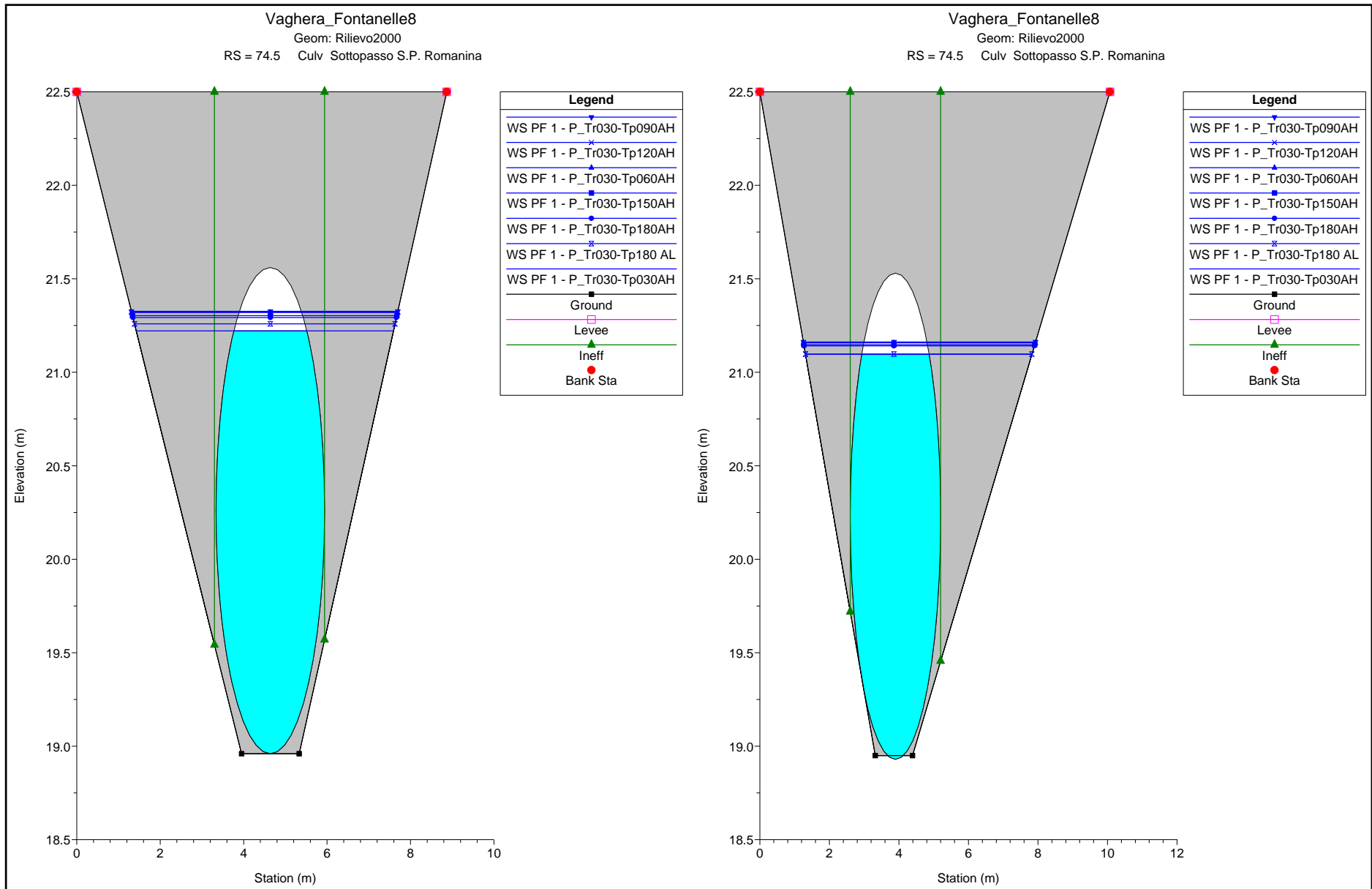


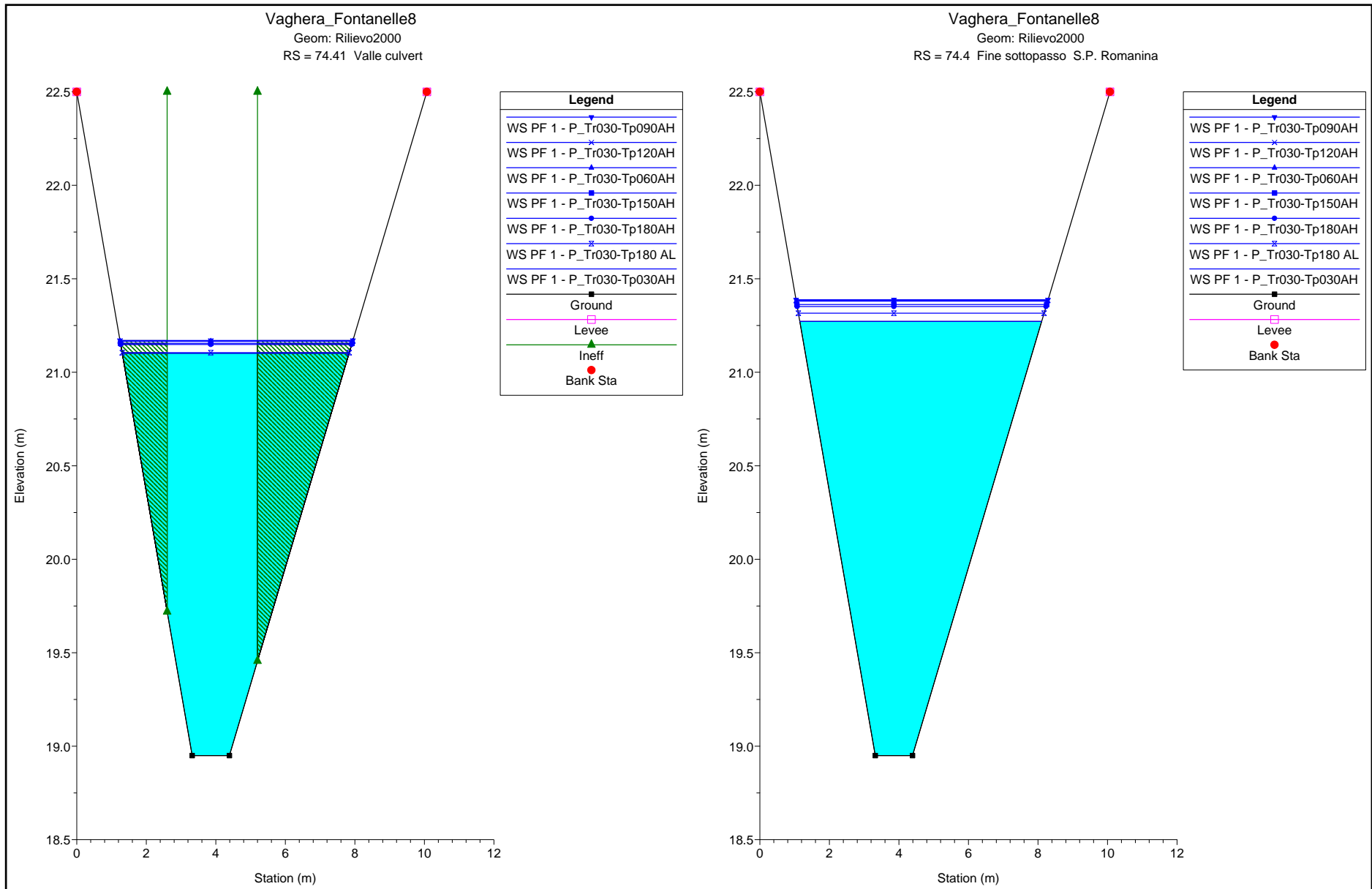
Vaghera_Fontanelle8
Geom: Rilievo2000
RS = 75 Sezione F zona industriale Fontanelle



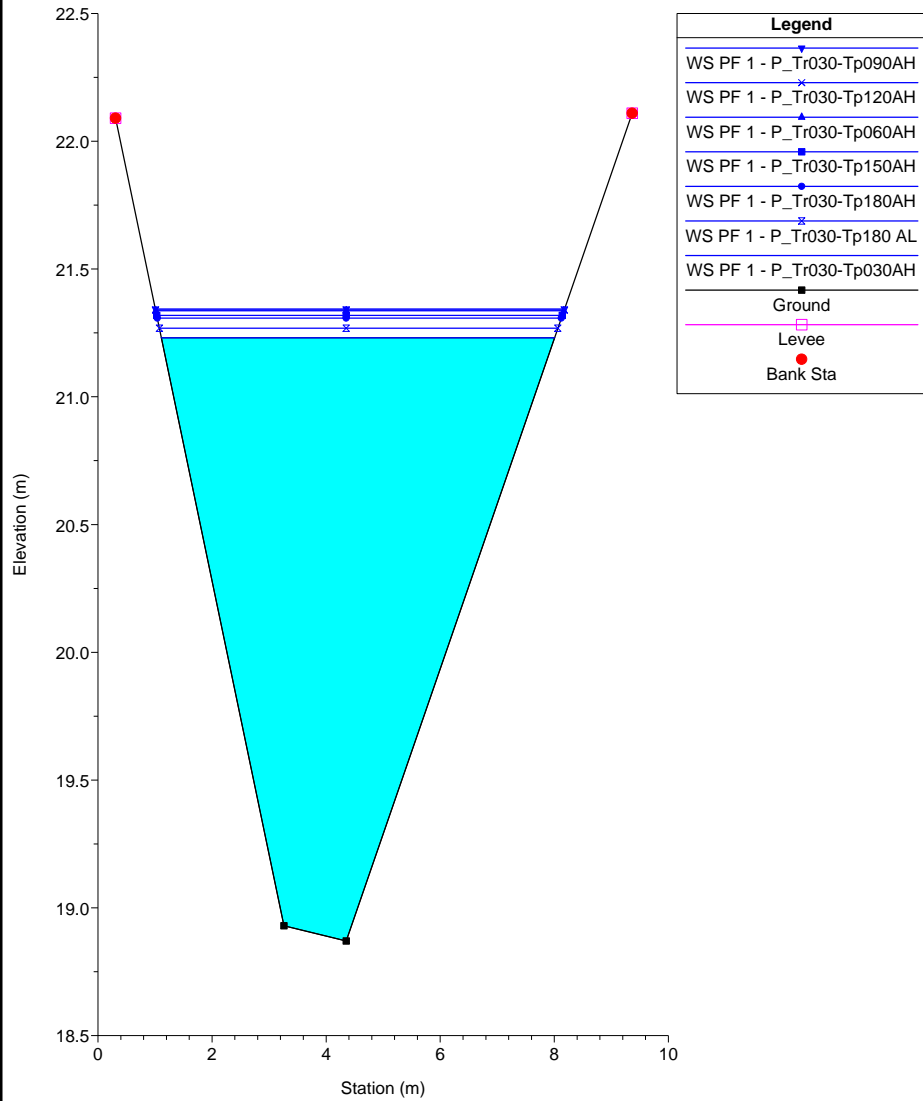
Legend	
WS PF 1 - P_Tr030-Tp090AH	▼
WS PF 1 - P_Tr030-Tp120AH	×
WS PF 1 - P_Tr030-Tp060AH	▲
WS PF 1 - P_Tr030-Tp150AH	■
WS PF 1 - P_Tr030-Tp180AH	●
WS PF 1 - P_Tr030-Tp180 AL	×
WS PF 1 - P_Tr030-Tp030AH	—
Ground	■
Levee	□
Bank Sta	●



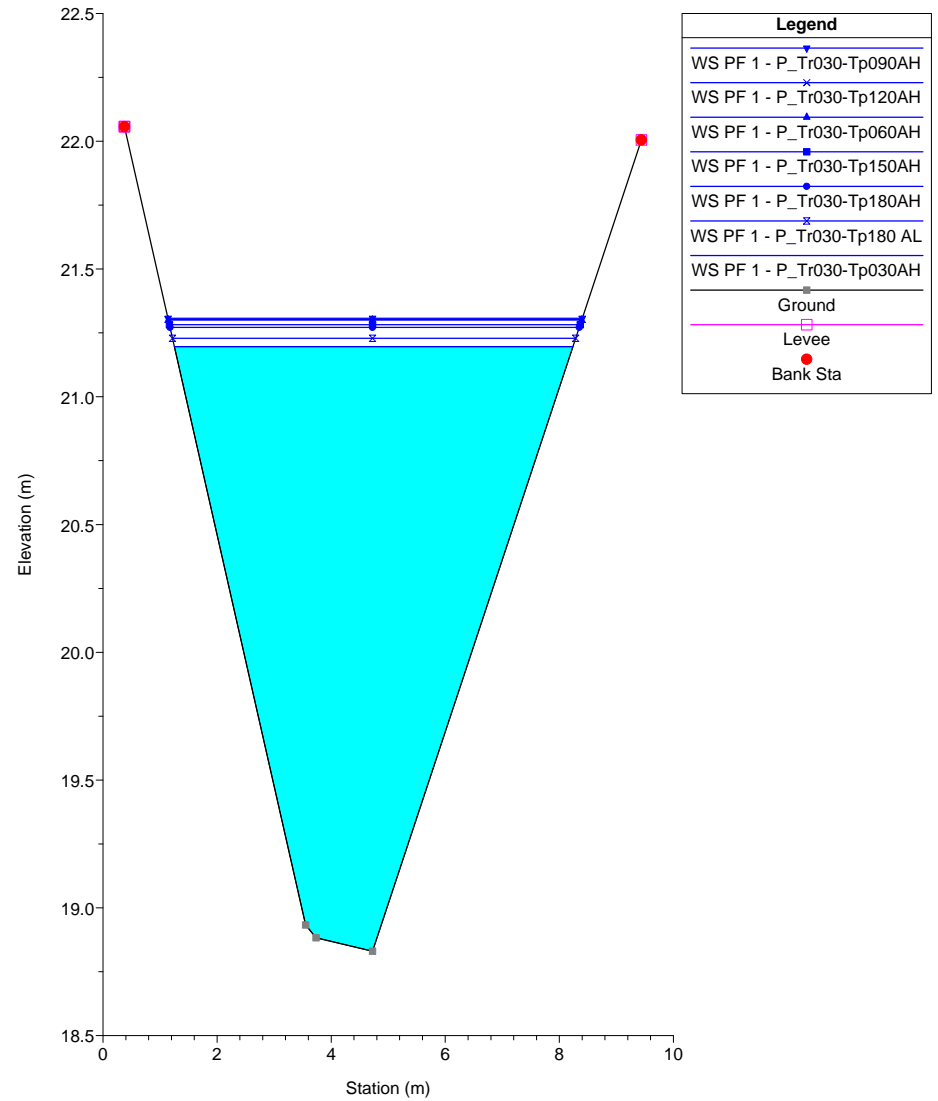


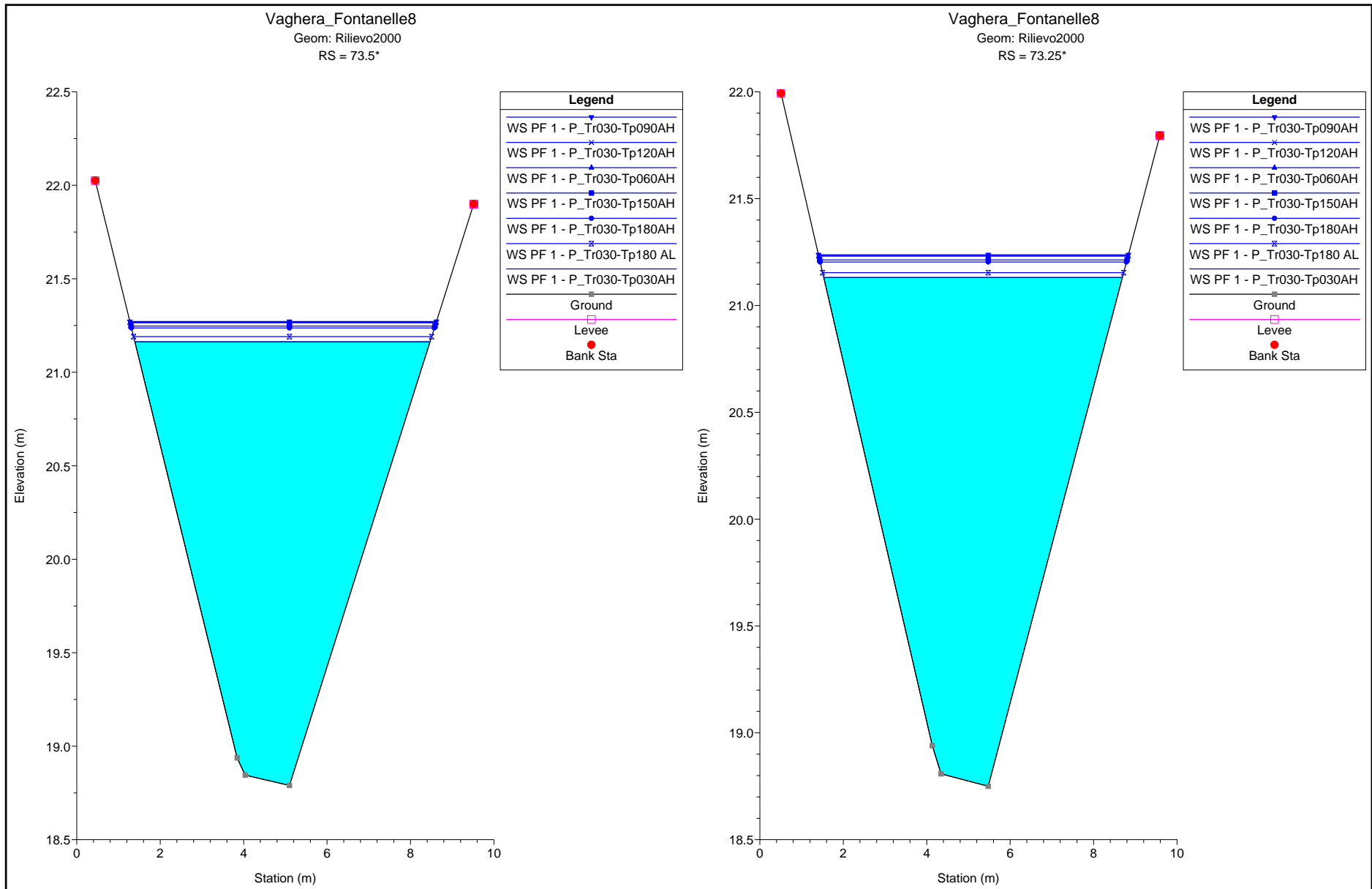


Vaghera_Fontanelle8
 Geom: Rilievo2000
 RS = 74 Sezione G zona industriale P.I.P.

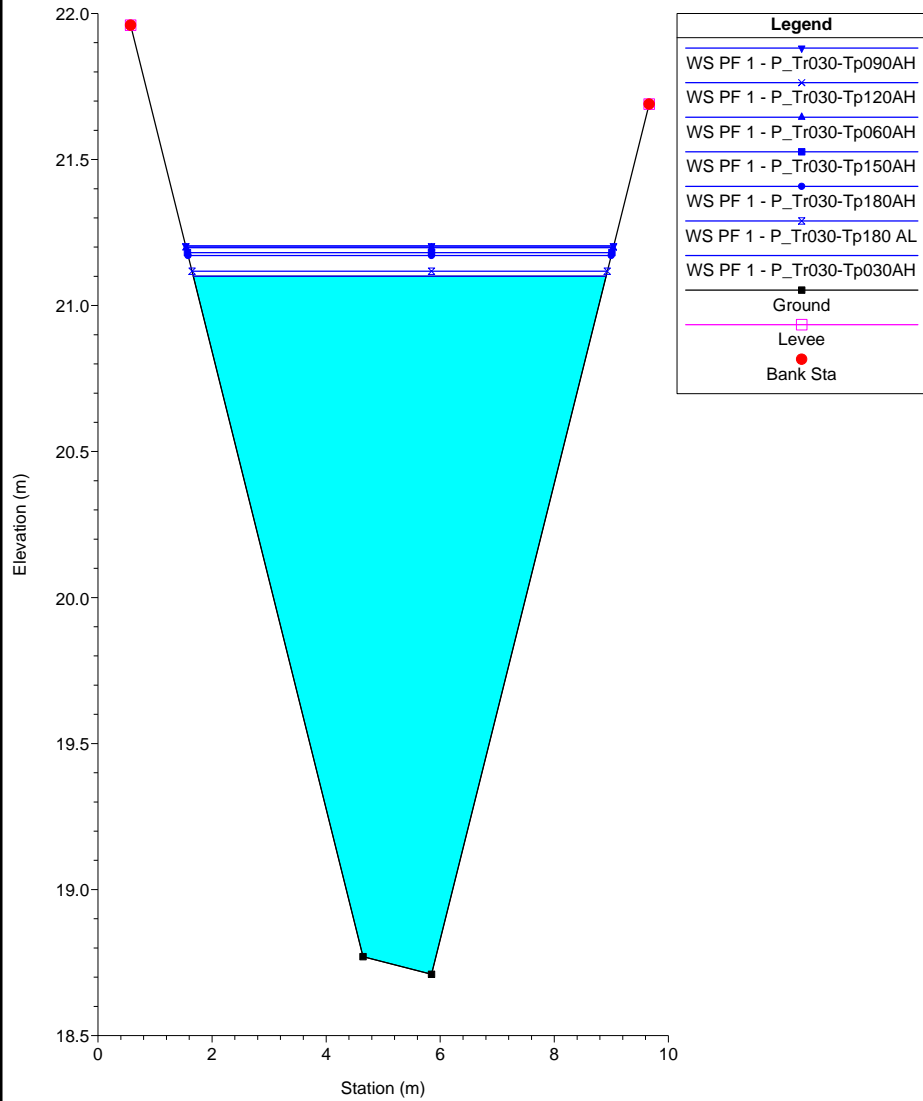


Vaghera_Fontanelle8
 Geom: Rilievo2000
 RS = 73.75°

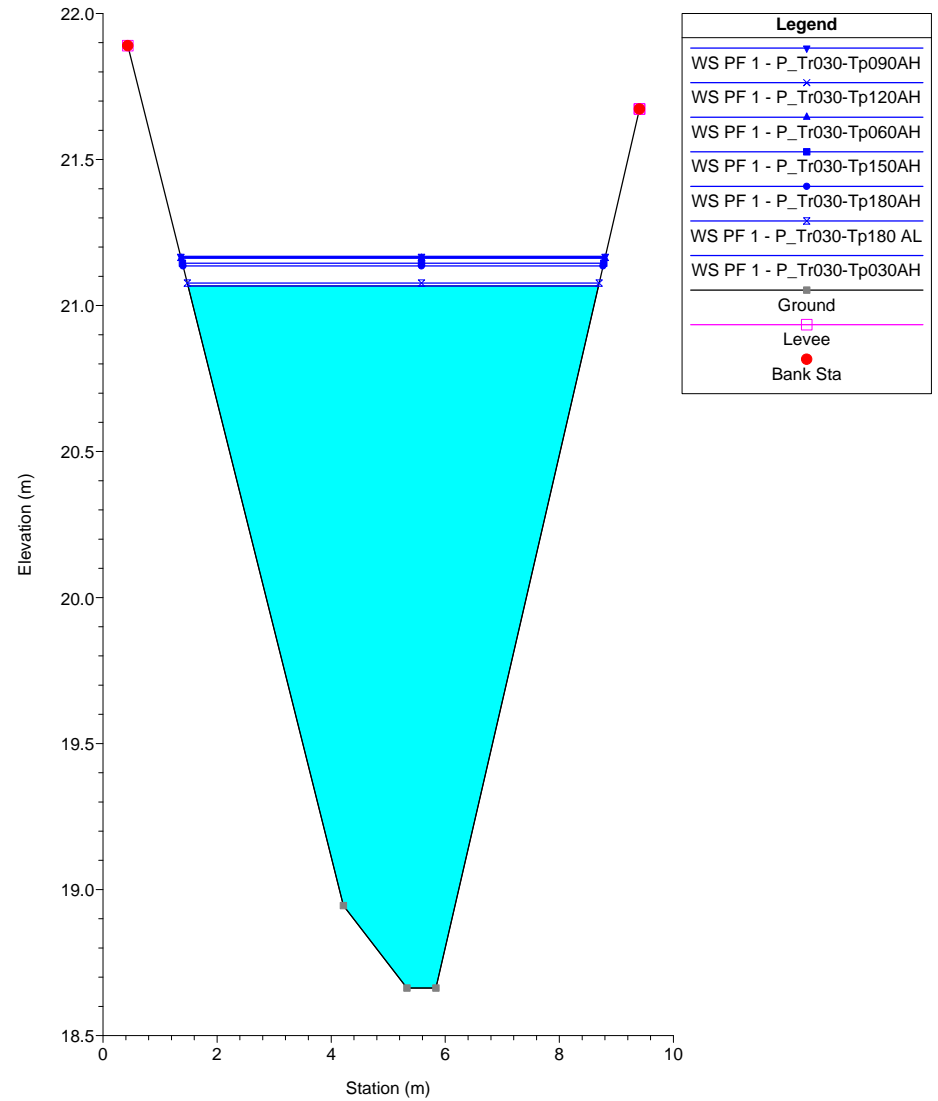


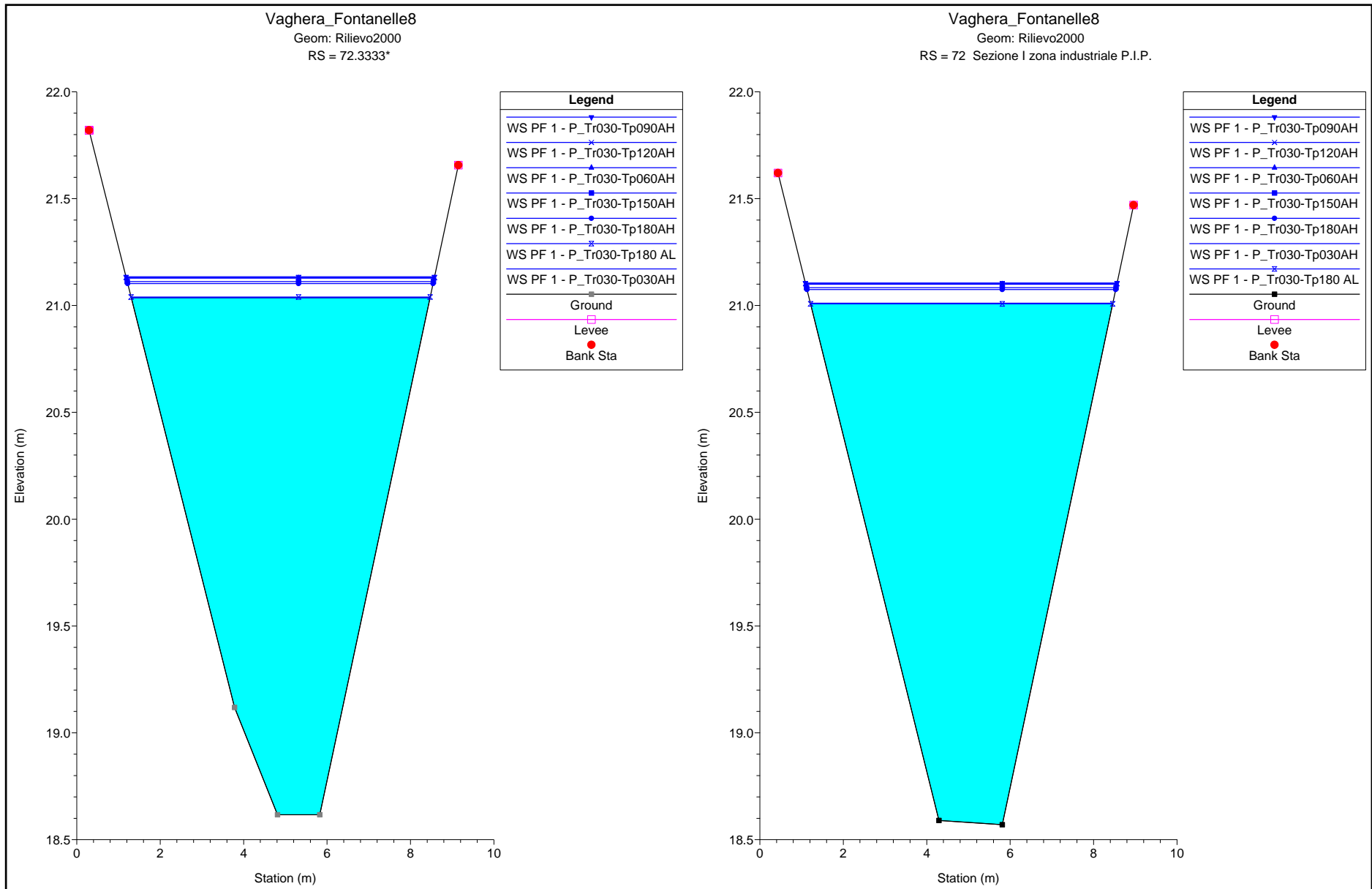


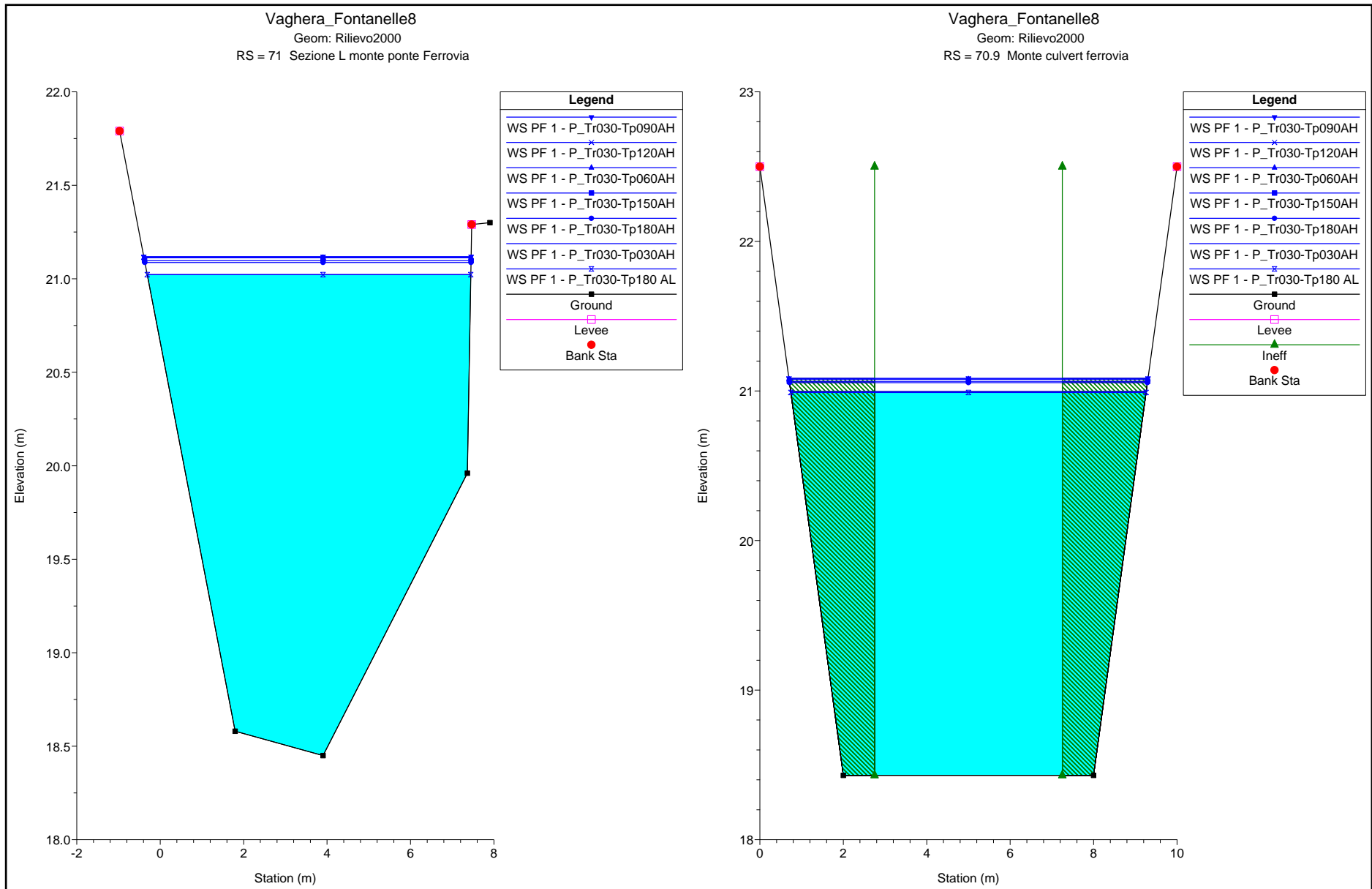
Vaghera_Fontanelle8
 Geom: Rilievo2000
 RS = 73 Sezione H zona industriale P.I.P.



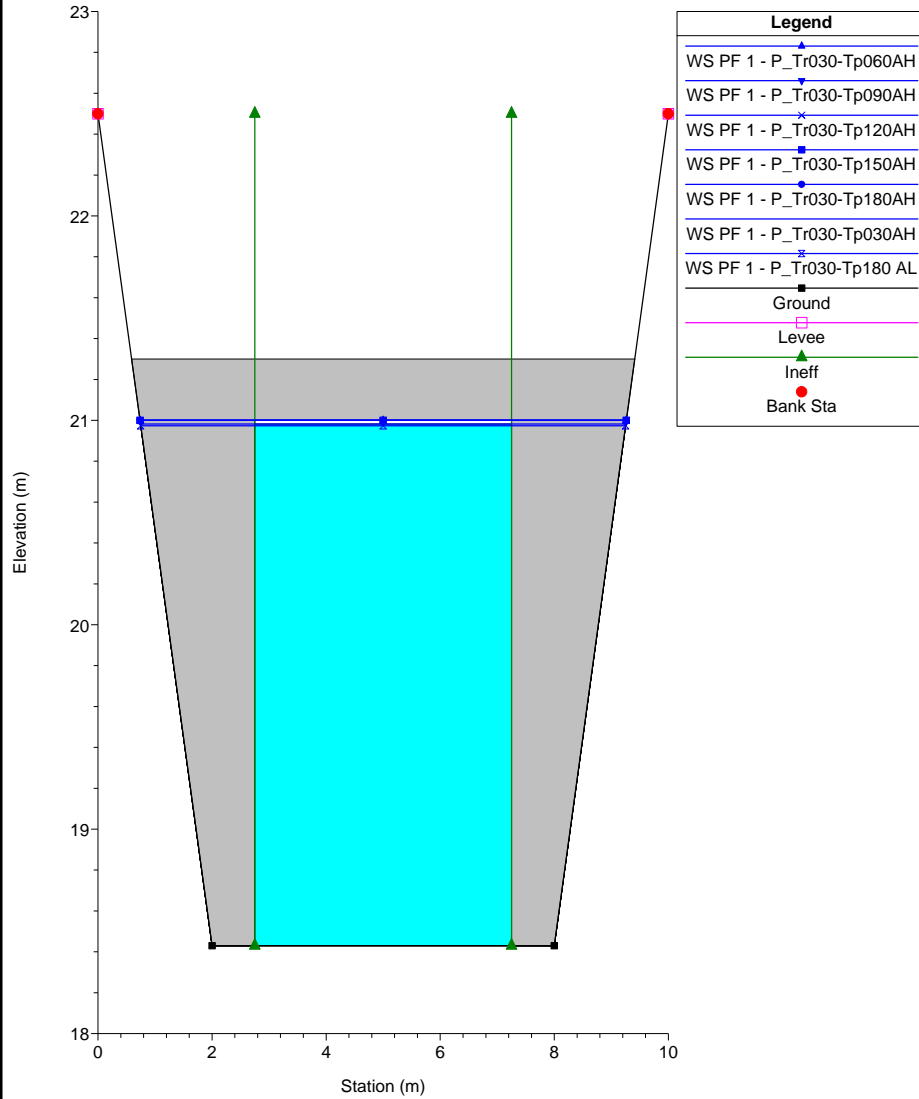
Vaghera_Fontanelle8
 Geom: Rilievo2000
 RS = 72.6666*



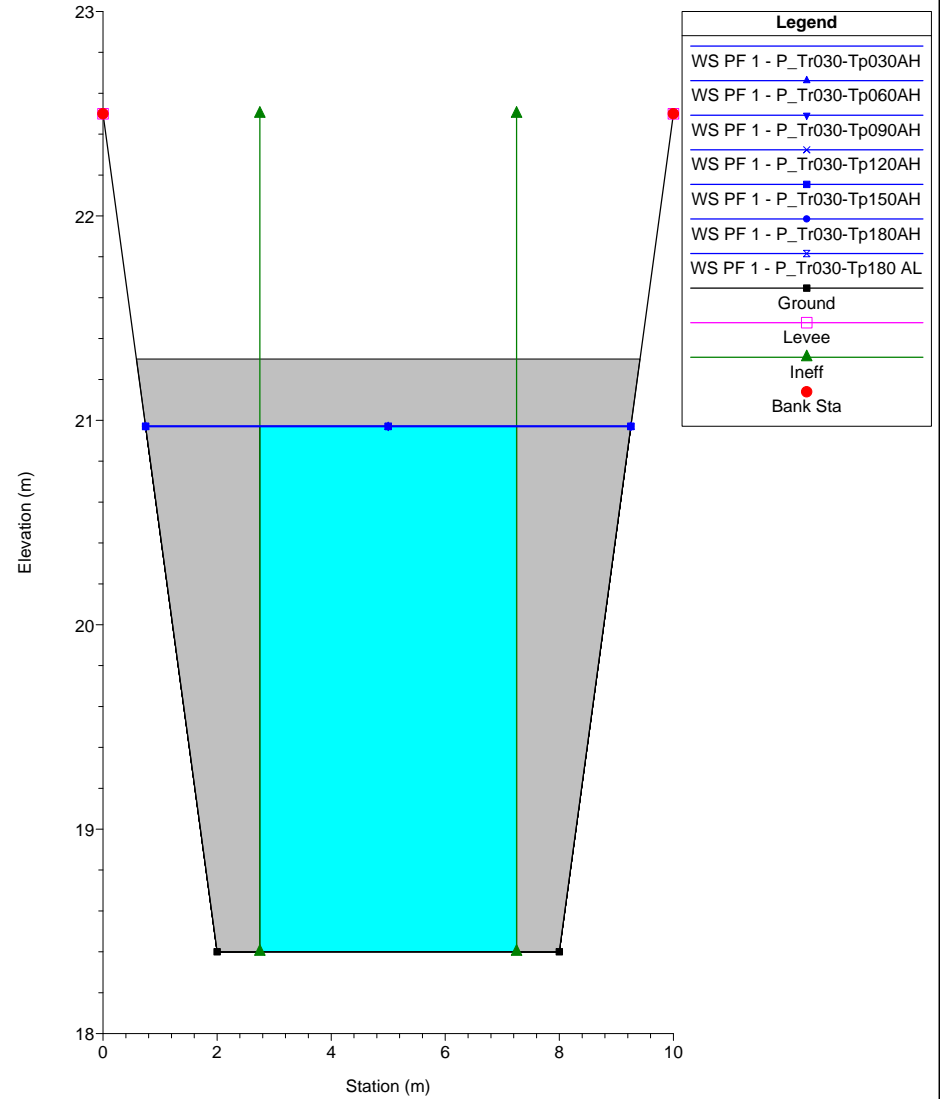




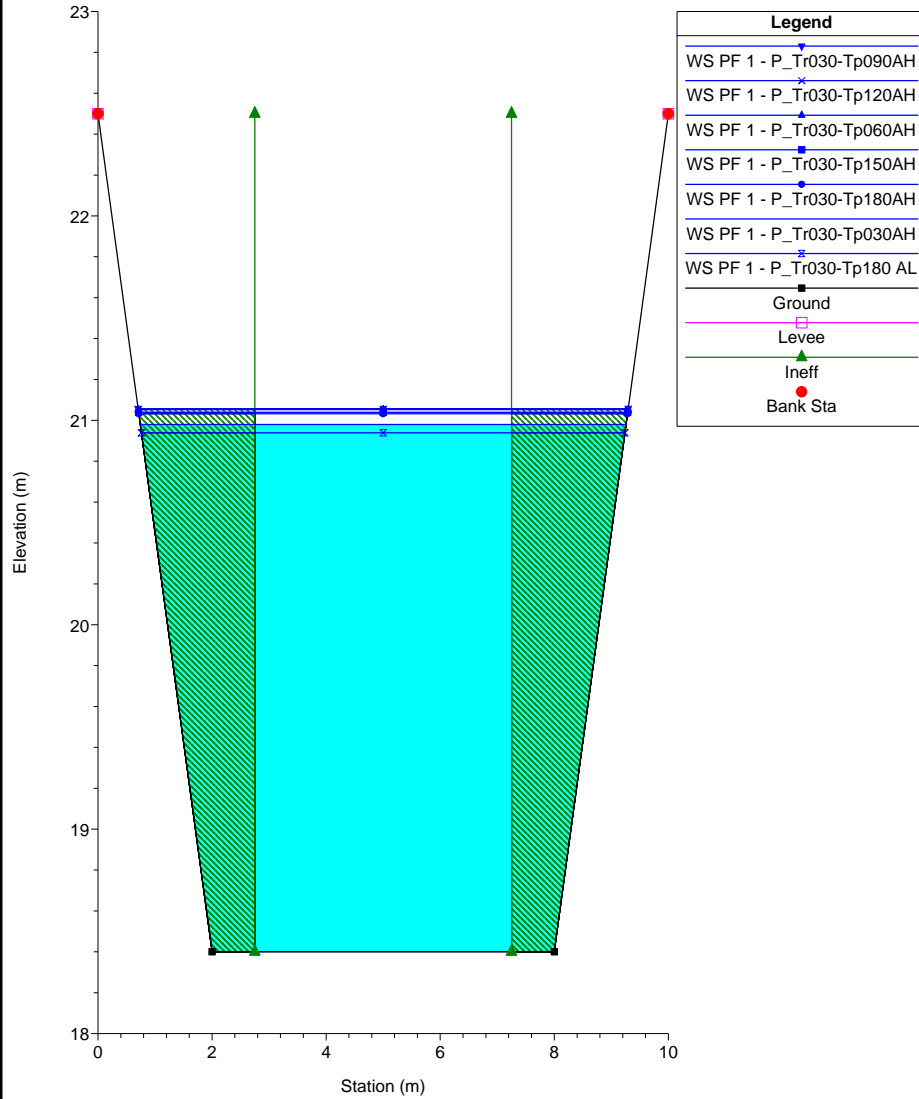
Vaghera_Fontanelle8
 Geom: Rilievo2000
 RS = 70.7 Culv Ponte ferrovia FI-PI



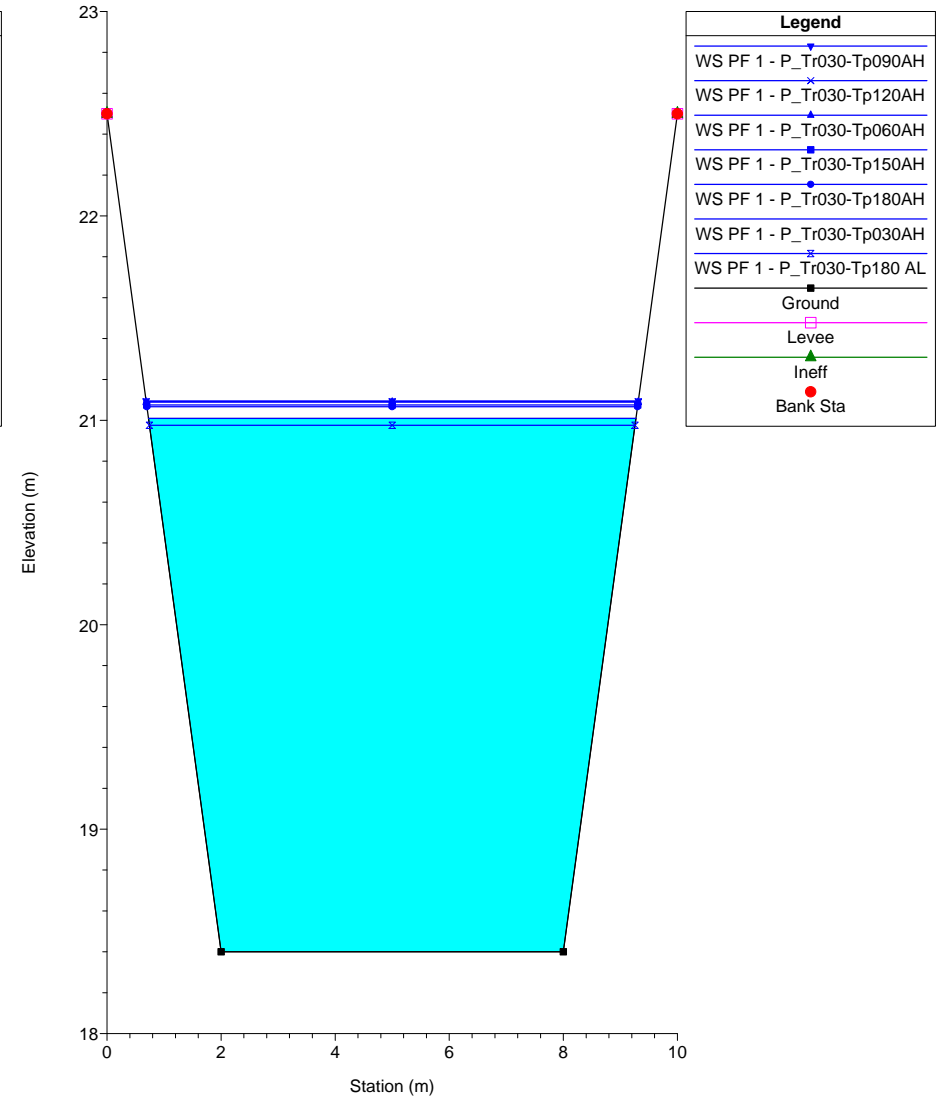
Vaghera_Fontanelle8
 Geom: Rilievo2000
 RS = 70.7 Culv Ponte ferrovia FI-PI



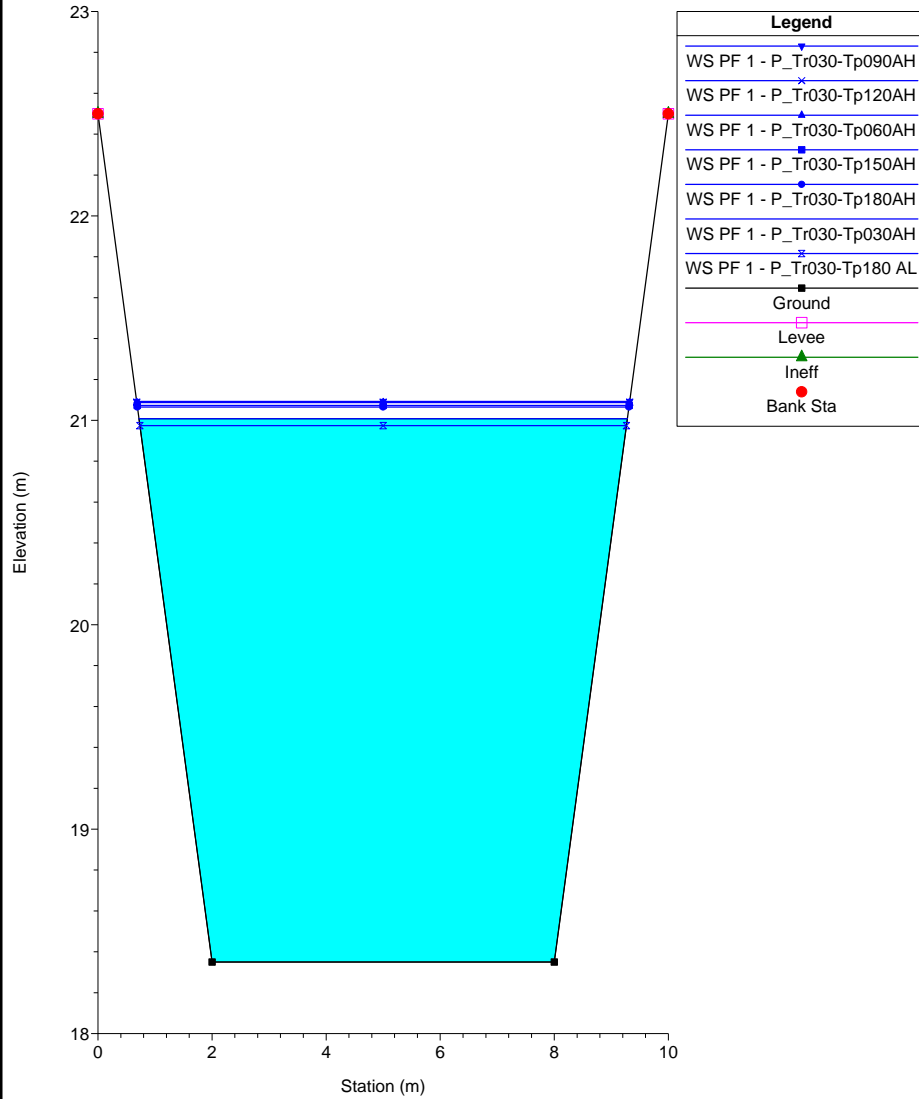
Vaghera_Fontanelle8
 Geom: Rilievo2000
 RS = 70.51 Valle culvert ferrovia



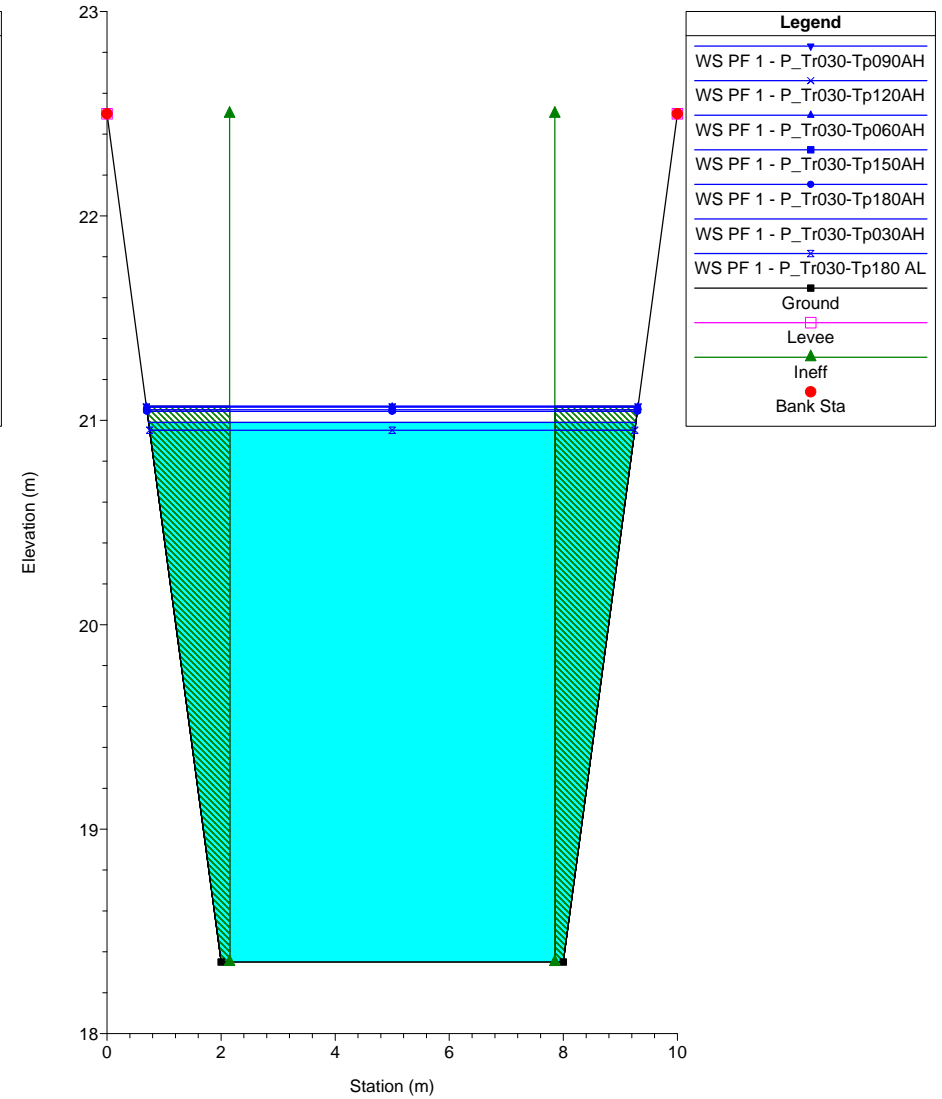
Vaghera_Fontanelle8
 Geom: Rilievo2000
 RS = 70.5 Valle ponte ferrovia



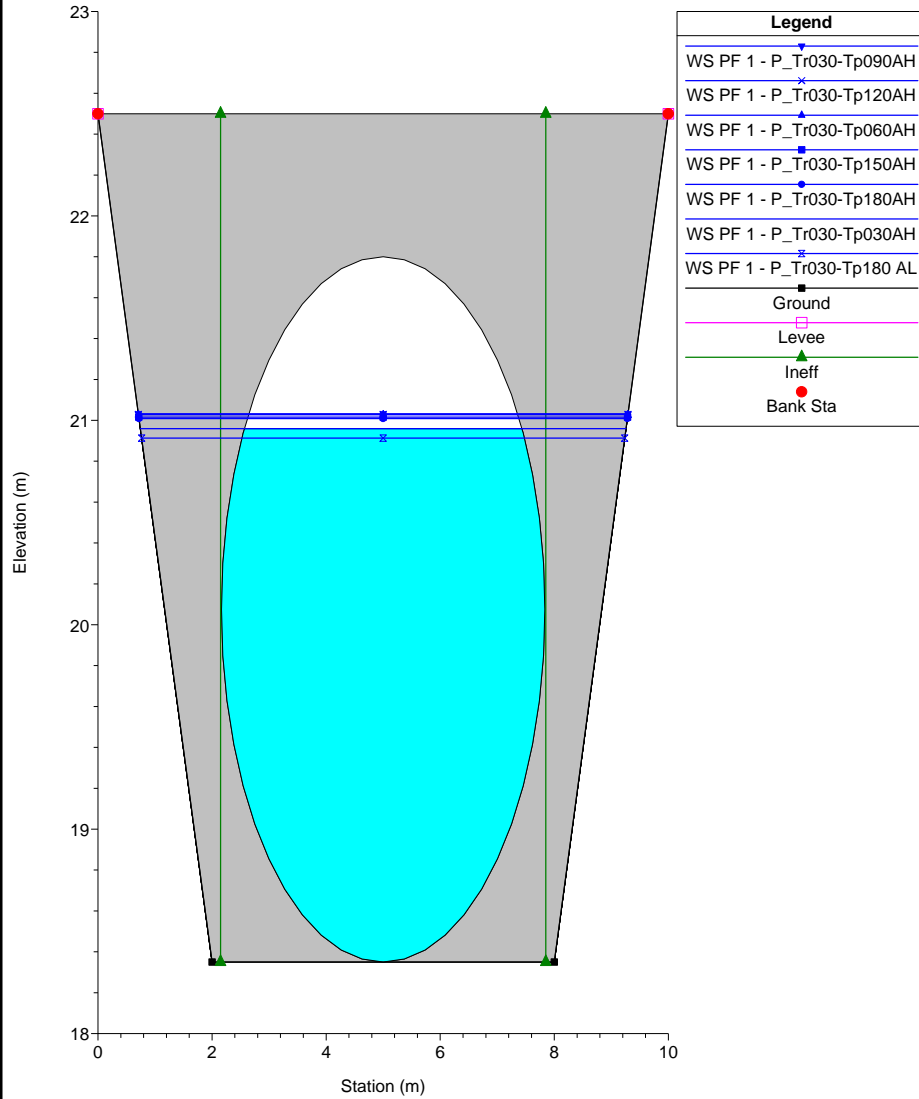
Vaghera_Fontanelle8
 Geom: Rilievo2000
 RS = 70.41 Monte ponte via dei Girasoli



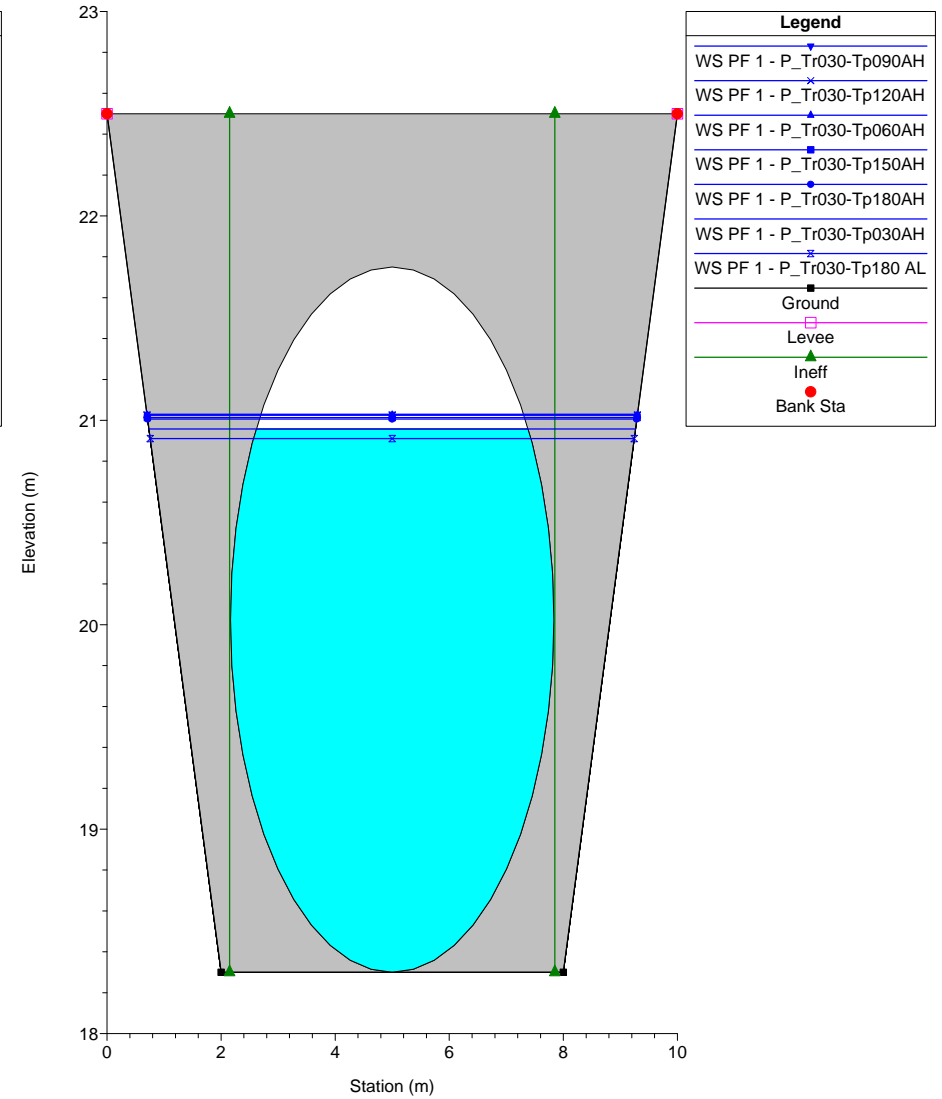
Vaghera_Fontanelle8
 Geom: Rilievo2000
 RS = 70.4 Monte culvert via dei Girasoli



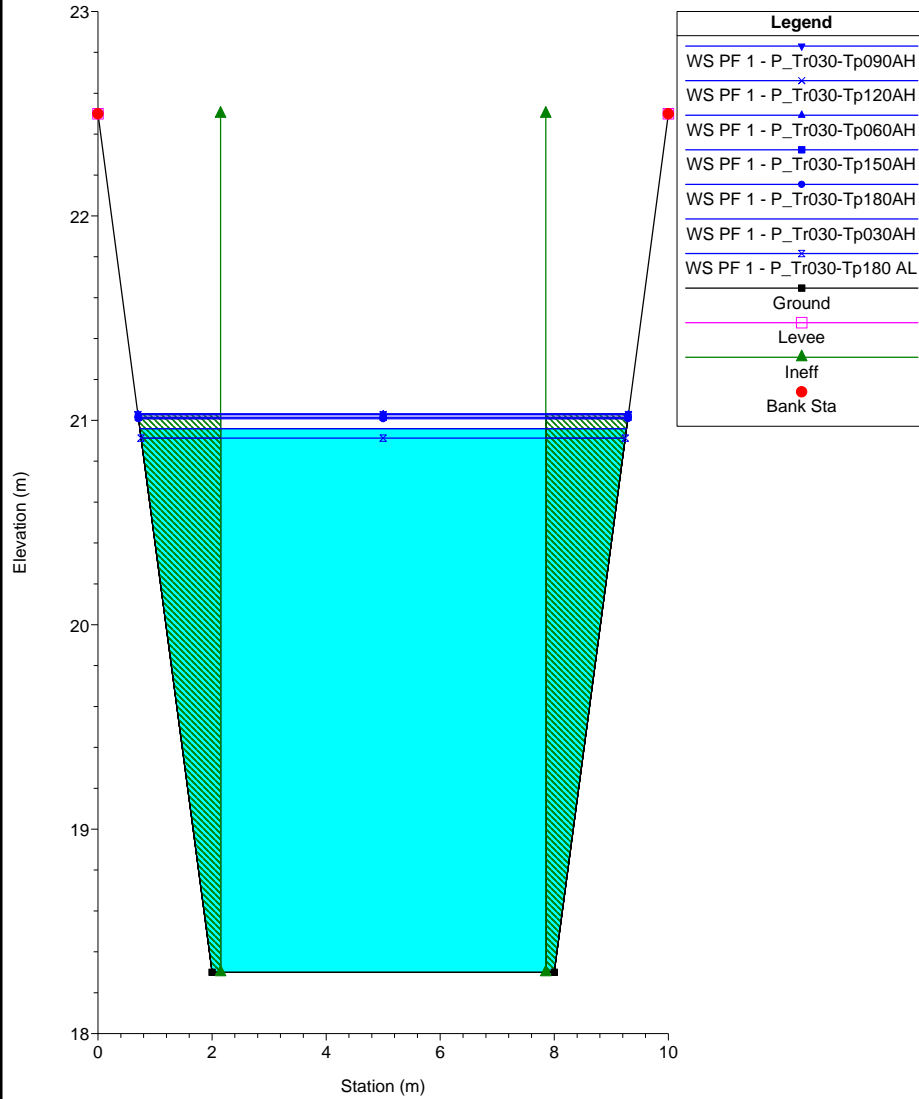
Vaghera_Fontanelle8
 Geom: Rilievo2000
 RS = 70.3 Culv Sottopasso via dei girasoli



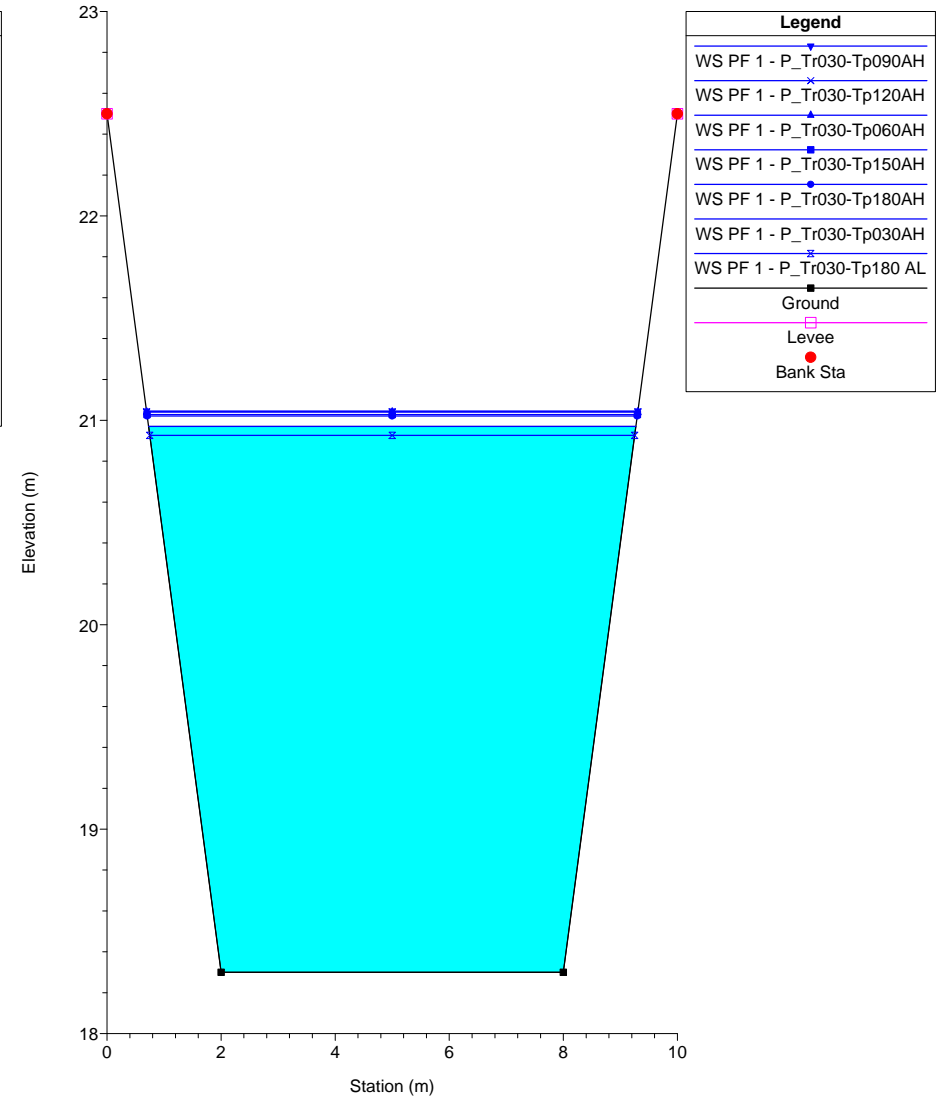
Vaghera_Fontanelle8
 Geom: Rilievo2000
 RS = 70.3 Culv Sottopasso via dei girasoli



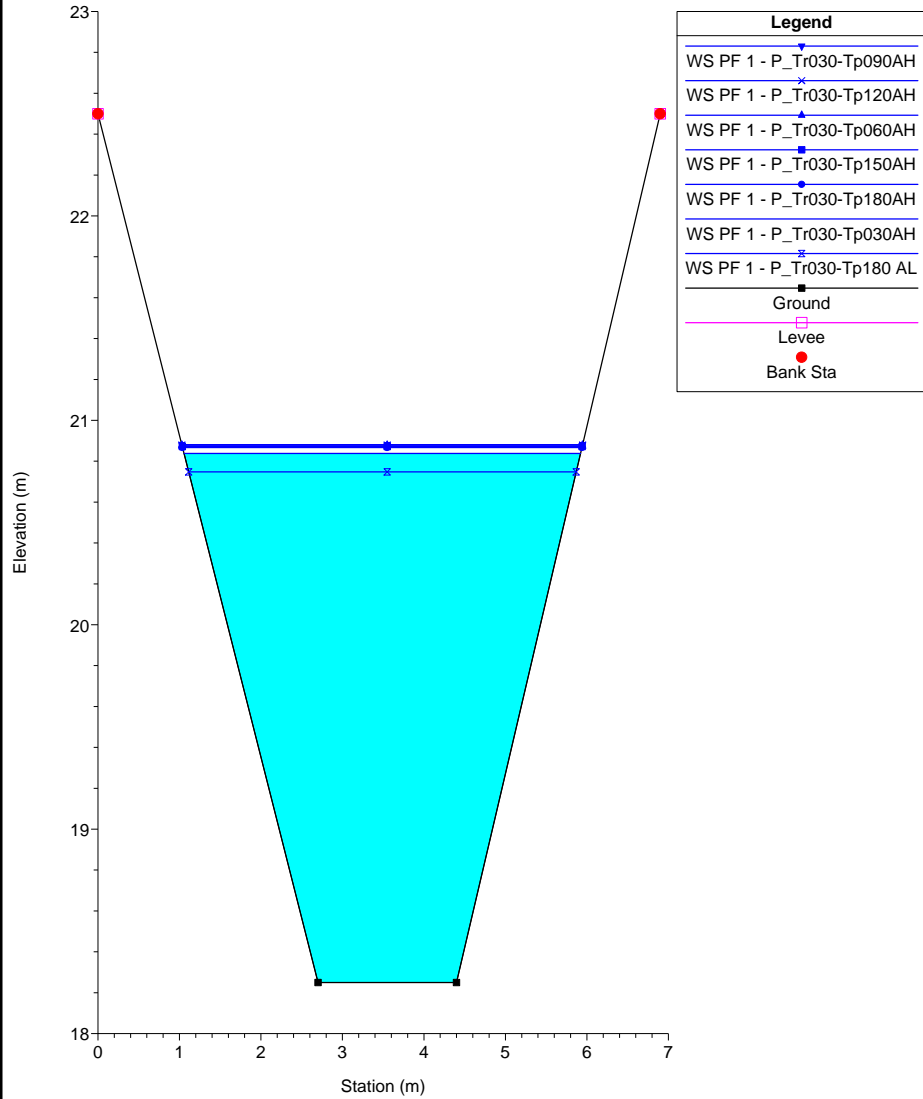
Vaghera_Fontanelle8
 Geom: Rilievo2000
 RS = 70.1 Valle culvert via dei Girasoli



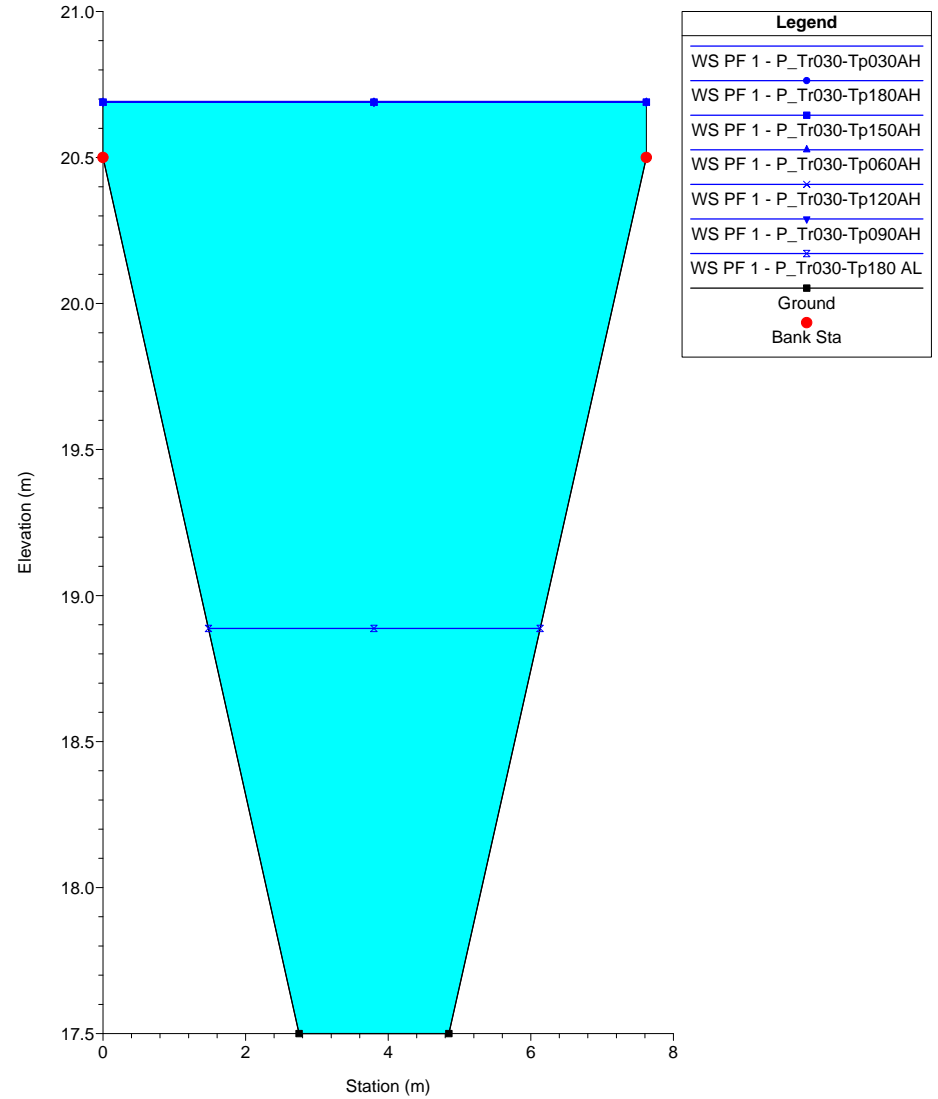
Vaghera_Fontanelle8
 Geom: Rilievo2000
 RS = 70 Fine ponte via dei Girasoli



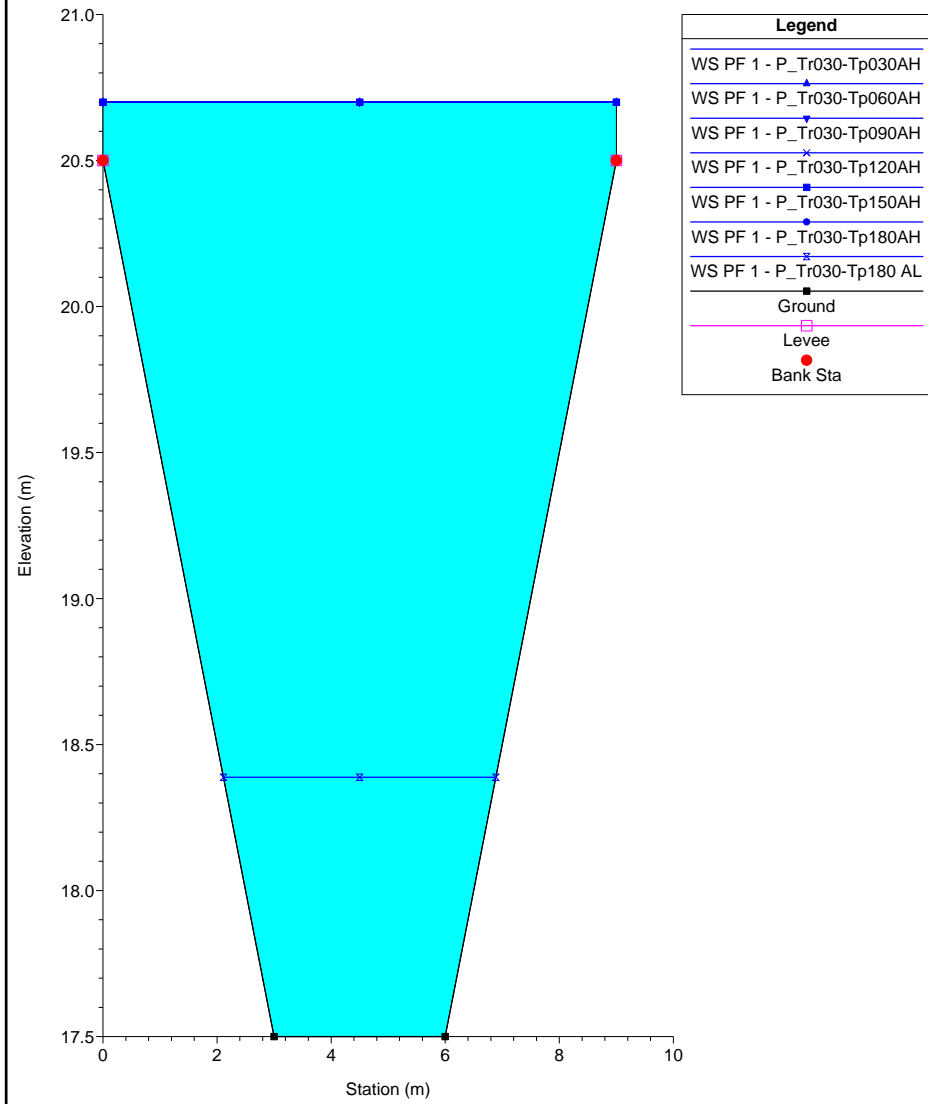
Vaghera_Fontanelle8
 Geom: Rilievo2000
 RS = 69 Discarica Le Conche



Vaghera_Fontanelle8
 Geom: Rilievo2000
 RS = 68 Cascina Ponticelli



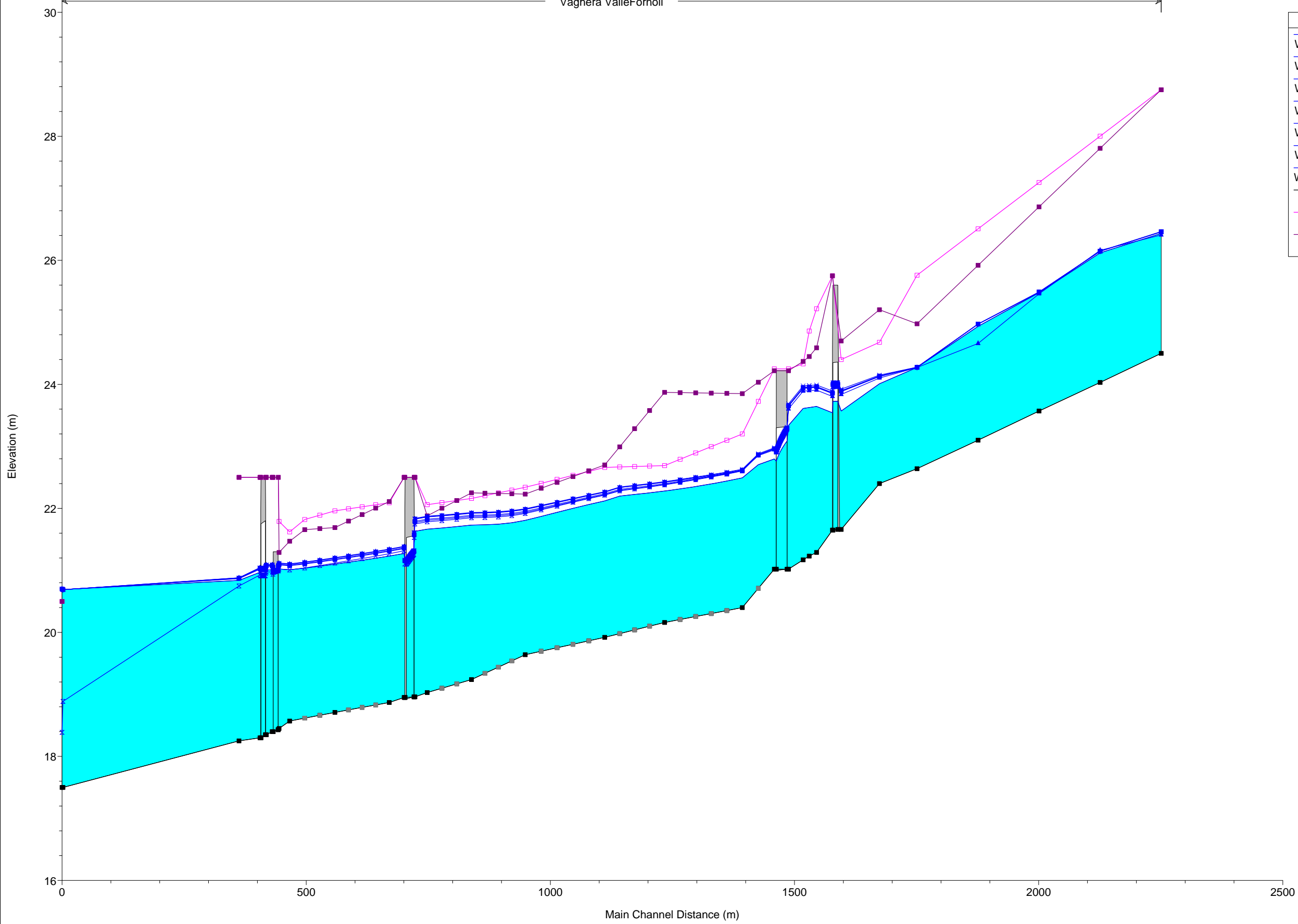
Vaghera_Fontanelle8
Geom: Rilievo2000
RS = 67 Sbocco in Arno



Vaghera_Fontanelle8

Geom: Rilievo2000

Vaghera ValleFornoli



Legend	
WS PF 1 - P_Tr030-Tp030AH	▲
WS PF 1 - P_Tr030-Tp060AH	▼
WS PF 1 - P_Tr030-Tp090AH	×
WS PF 1 - P_Tr030-Tp120AH	○
WS PF 1 - P_Tr030-Tp150AH	■
WS PF 1 - P_Tr030-Tp180AH	●
WS PF 1 - P_Tr030-Tp180 AL	×
Ground	■
Left Levee	□
Right Levee	■

Reach	River Sta	Profile	Plan	Q Total (m3/s)	Min Ch El (m)	W.S. Elev (m)	Crit W.S. (m)	E.G. Elev (m)	E.G. Slope (m/m)	Vel Chnl (m/s)	Flow Area (m2)	Top Width (m)	Froude # Chl
ValleFomoli	87	PF 1	P_Tr030-Tp030AH	11.26	24.50	26.43	25.95	26.64	0.003434	2.00	5.62	4.51	0.57
ValleFomoli	87	PF 1	P_Tr030-Tp060AH	12.98	24.50	26.41	26.06	26.69	0.004813	2.36	5.50	4.47	0.68
ValleFomoli	87	PF 1	P_Tr030-Tp090AH	13.24	24.50	26.46	26.08	26.73	0.004504	2.31	5.73	4.55	0.66
ValleFomoli	87	PF 1	P_Tr030-Tp120AH	13.47	24.50	26.46	26.09	26.74	0.004613	2.34	5.75	4.56	0.67
ValleFomoli	87	PF 1	P_Tr030-Tp150AH	13.30	24.50	26.46	26.08	26.73	0.004542	2.32	5.73	4.55	0.66
ValleFomoli	87	PF 1	P_Tr030-Tp180AH	13.34	24.50	26.46	26.08	26.74	0.004555	2.33	5.74	4.55	0.66
ValleFomoli	87	PF 1	P_Tr030-Tp180 AL	13.34	24.50	26.46	26.08	26.74	0.004555	2.33	5.74	4.55	0.66
ValleFomoli	86.75	PF 1	P_Tr030-Tp030AH	11.26	24.03	26.12	25.50	26.14	0.003668	0.63	17.79	117.22	0.52
ValleFomoli	86.75	PF 1	P_Tr030-Tp060AH	12.98	24.03	26.16	25.61	26.18	0.002632	0.56	23.25	144.60	0.44
ValleFomoli	86.75	PF 1	P_Tr030-Tp090AH	13.24	24.03	26.15	25.62	26.17	0.003433	0.63	21.12	134.56	0.51
ValleFomoli	86.75	PF 1	P_Tr030-Tp120AH	13.47	24.03	26.15	25.63	26.17	0.003471	0.63	21.33	135.61	0.51
ValleFomoli	86.75	PF 1	P_Tr030-Tp150AH	13.30	24.03	26.15	25.62	26.17	0.003422	0.63	21.23	135.11	0.50
ValleFomoli	86.75	PF 1	P_Tr030-Tp180AH	13.34	24.03	26.15	25.63	26.17	0.003441	0.63	21.23	135.13	0.51
ValleFomoli	86.75	PF 1	P_Tr030-Tp180 AL	13.34	24.03	26.15	25.63	26.17	0.003441	0.63	21.23	135.13	0.51
ValleFomoli	86.5	PF 1	P_Tr030-Tp030AH	11.26	23.57	25.48	25.11	25.52	0.007061	0.88	12.74	82.98	0.72
ValleFomoli	86.5	PF 1	P_Tr030-Tp060AH	12.98	23.57	25.46	25.46	25.53	0.014068	1.15	11.25	82.40	1.00
ValleFomoli	86.5	PF 1	P_Tr030-Tp090AH	13.24	23.57	25.49	25.46	25.54	0.008090	0.98	13.50	83.28	0.78
ValleFomoli	86.5	PF 1	P_Tr030-Tp120AH	13.47	23.57	25.49	25.46	25.54	0.007943	0.98	13.72	83.37	0.77
ValleFomoli	86.5	PF 1	P_Tr030-Tp150AH	13.30	23.57	25.49	25.46	25.54	0.008158	0.98	13.50	83.28	0.78
ValleFomoli	86.5	PF 1	P_Tr030-Tp180AH	13.34	23.57	25.49	25.46	25.54	0.008060	0.98	13.58	83.31	0.78
ValleFomoli	86.5	PF 1	P_Tr030-Tp180 AL	13.34	23.57	25.49	25.46	25.54	0.008060	0.98	13.58	83.31	0.78
ValleFomoli	86.25	PF 1	P_Tr030-Tp030AH	11.26	23.10	24.93	24.56	24.96	0.003003	0.76	14.86	63.93	0.50
ValleFomoli	86.25	PF 1	P_Tr030-Tp060AH	12.98	23.10	24.66	24.66	25.11	0.009965	2.96	4.39	4.93	1.00
ValleFomoli	86.25	PF 1	P_Tr030-Tp090AH	13.24	23.10	24.97	24.68	25.00	0.002581	0.77	17.25	64.96	0.48
ValleFomoli	86.25	PF 1	P_Tr030-Tp120AH	13.47	23.10	24.97	24.66	25.00	0.002611	0.78	17.37	65.02	0.48
ValleFomoli	86.25	PF 1	P_Tr030-Tp150AH	13.30	23.10	24.97	24.66	25.00	0.002561	0.77	17.34	65.00	0.47
ValleFomoli	86.25	PF 1	P_Tr030-Tp180AH	13.34	23.10	24.97	24.66	25.00	0.002585	0.77	17.32	65.00	0.48
ValleFomoli	86.25	PF 1	P_Tr030-Tp180 AL	13.34	23.10	24.97	24.66	25.00	0.002585	0.77	17.32	65.00	0.48
ValleFomoli	86	PF 1	P_Tr030-Tp030AH	11.26	22.64	24.27	24.25	24.35	0.009061	1.27	8.89	39.99	0.86
ValleFomoli	86	PF 1	P_Tr030-Tp060AH	12.98	22.64	24.27	24.27	24.38	0.012354	1.47	8.82	39.98	1.00
ValleFomoli	86	PF 1	P_Tr030-Tp090AH	13.24	22.64	24.27	24.27	24.39	0.012308	1.48	8.94	40.00	1.00
ValleFomoli	86	PF 1	P_Tr030-Tp120AH	13.47	22.64	24.28	24.28	24.39	0.012108	1.48	8.98	40.02	0.99
ValleFomoli	86	PF 1	P_Tr030-Tp150AH	13.30	22.64	24.27	24.27	24.39	0.012520	1.49	8.91	39.99	1.01
ValleFomoli	86	PF 1	P_Tr030-Tp180AH	13.34	22.64	24.28	24.28	24.39	0.012241	1.48	8.99	40.01	1.00
ValleFomoli	86	PF 1	P_Tr030-Tp180 AL	13.34	22.64	24.28	24.28	24.39	0.012241	1.48	8.99	40.01	1.00
ValleFomoli	85.7	PF 1	P_Tr030-Tp030AH	11.26	22.40	24.01	23.94	24.02	0.002304	0.48	23.64	169.14	0.41
ValleFomoli	85.7	PF 1	P_Tr030-Tp060AH	12.98	22.40	24.10	23.95	24.11	0.000592	0.32	40.03	184.11	0.22
ValleFomoli	85.7	PF 1	P_Tr030-Tp090AH	13.24	22.40	24.13	23.95	24.13	0.000443	0.30	44.54	188.02	0.19
ValleFomoli	85.7	PF 1	P_Tr030-Tp120AH	13.47	22.40	24.15	23.95	24.15	0.000343	0.27	49.02	191.81	0.17
ValleFomoli	85.7	PF 1	P_Tr030-Tp150AH	13.30	22.40	24.13	23.95	24.13	0.000421	0.29	45.44	188.79	0.19
ValleFomoli	85.7	PF 1	P_Tr030-Tp180AH	13.34	22.40	24.13	23.95	24.14	0.000405	0.29	46.12	189.37	0.19
ValleFomoli	85.7	PF 1	P_Tr030-Tp180 AL	13.34	22.40	24.13	23.95	24.14	0.000405	0.29	46.09	189.34	0.19
ValleFomoli	85	PF 1	P_Tr030-Tp030AH	11.26	21.66	23.57	23.11	23.78	0.003542	2.03	5.55	4.52	0.58
ValleFomoli	85	PF 1	P_Tr030-Tp060AH	12.98	21.66	23.84	23.22	24.01	0.002330	1.87	7.27	166.28	0.49
ValleFomoli	85	PF 1	P_Tr030-Tp090AH	13.24	21.66	23.88	23.23	24.05	0.002161	1.83	7.57	173.34	0.47
ValleFomoli	85	PF 1	P_Tr030-Tp120AH	13.47	21.66	23.92	23.25	24.08	0.002024	1.81	7.84	179.62	0.46
ValleFomoli	85	PF 1	P_Tr030-Tp150AH	13.30	21.66	23.89	23.24	24.06	0.002138	1.83	7.62	174.56	0.47
ValleFomoli	85	PF 1	P_Tr030-Tp180AH	13.34	21.66	23.90	23.24	24.06	0.002119	1.83	7.66	175.50	0.47
ValleFomoli	85	PF 1	P_Tr030-Tp180 AL	13.34	21.66	23.90	23.24	24.06	0.002121	1.83	7.66	175.44	0.47
ValleFomoli	84.5		Culvert										
ValleFomoli	84	PF 1	P_Tr030-Tp030AH	11.26	21.65	23.54	23.10	23.76	0.003741	2.07	5.44	4.45	0.60
ValleFomoli	84	PF 1	P_Tr030-Tp060AH	12.98	21.65	23.80	23.21	23.99	0.002550	1.92	7.03	16.29	0.51
ValleFomoli	84	PF 1	P_Tr030-Tp090AH	13.24	21.65	23.85	23.23	24.03	0.002359	1.89	7.33	16.38	0.49
ValleFomoli	84	PF 1	P_Tr030-Tp120AH	13.47	21.65	23.89	23.24	24.06	0.002203	1.86	7.61	16.46	0.48
ValleFomoli	84	PF 1	P_Tr030-Tp150AH	13.30	21.65	23.86	23.23	24.03	0.002333	1.88	7.39	16.40	0.49
ValleFomoli	84	PF 1	P_Tr030-Tp180AH	13.34	21.65	23.86	23.23	24.04	0.002312	1.88	7.43	16.41	0.49
ValleFomoli	84	PF 1	P_Tr030-Tp180 AL	13.34	21.65	23.86	23.23	24.04	0.002314	1.88	7.42	16.41	0.49
ValleFomoli	83	PF 1	P_Tr030-Tp030AH	11.26	21.29	23.64	22.67	23.66	0.000548	0.61	18.33	29.07	0.25
ValleFomoli	83	PF 1	P_Tr030-Tp060AH	12.98	21.29	23.91	22.86	23.92	0.000234	0.50	26.08	29.79	0.17
ValleFomoli	83	PF 1	P_Tr030-Tp090AH	13.24	21.29	23.95	22.88	23.96	0.000208	0.48	27.37	29.91	0.16
ValleFomoli	83	PF 1	P_Tr030-Tp120AH	13.47	21.29	23.99	22.88	24.00	0.000189	0.47	28.53	30.02	0.15
ValleFomoli	83	PF 1	P_Tr030-Tp150AH	13.30	21.29	23.96	22.88	23.97	0.000205	0.48	27.60	29.93	0.16
ValleFomoli	83	PF 1	P_Tr030-Tp180AH	13.34	21.29	23.96	22.88	23.97	0.000202	0.48	27.78	29.95	0.16
ValleFomoli	83	PF 1	P_Tr030-Tp180 AL	13.34	21.29	23.96	22.88	23.97	0.000202	0.48	27.76	29.95	0.16
ValleFomoli	82.6	PF 1	P_Tr030-Tp030AH	11.26	21.23	23.63	22.58	23.65	0.000767	0.71	15.91	26.09	0.29
ValleFomoli	82.6	PF 1	P_Tr030-Tp060AH	12.98	21.23	23.90	22.68	23.91	0.000308	0.56	23.16	27.13	0.19
ValleFomoli	82.6	PF 1	P_Tr030-Tp090AH	13.24	21.23	23.94	22.69	23.96	0.000273	0.54	24.35	27.29	0.18
ValleFomoli	82.6	PF 1	P_Tr030-Tp120AH	13.47	21.23	23.98	22.71	24.00	0.000247	0.53	25.42	27.44	0.18
ValleFomoli	82.6	PF 1	P_Tr030-Tp150AH	13.30	21.23	23.95	22.70	23.97	0.000268	0.54	24.56	27.32	0.18
ValleFomoli	82.6	PF 1	P_Tr030-Tp180AH	13.34	21.23	23.96	22.70	23.97	0.000264	0.54	24.73	27.34	0.18
ValleFomoli	82.6	PF 1	P_Tr030-Tp180 AL	13.34	21.23	23.96	22.70	23.97	0.000265	0.54	24.72	27.34	0.18
ValleFomoli	82.3	PF 1	P_Tr030-Tp030AH	11.26	21.17	23.61	22.52	23.64	0.000843	0.77	14.61	22.43	0.30
ValleFomoli	82.3	PF 1	P_Tr030-Tp060AH	12.98	21.17	23.89	22.62	23.91	0.000354	0.62	21.02	23.36	0.21
ValleFomoli	82.3	PF 1	P_Tr030-Tp090AH	13.24	21.17	23.94	22.64	23.95	0.000317	0.60	22.06	23.51	0.20
ValleFomoli	82.3	PF 1	P_Tr030-Tp120AH	13.47	21.17	23.97	22.65	23.99	0.000288	0.59	22.99	23.64	0.19
ValleFomoli	82.3	PF 1	P_Tr030-Tp150AH	13.30	21.17	23.94	22.64	23.96	0.000311	0.60	22.25	23.53	0.20
ValleFomoli	82.3	PF 1	P_Tr030-Tp180AH	13.34	21.17	23.95	22.64	23.97	0.000307	0.60	22.39	23.55	0.20
ValleFomoli	82.3	PF 1	P_Tr030-Tp180 AL	13.34	21.17	23.95	22.64	23.97	0.000307	0.60	22.38	23.55	0.20
ValleFomoli	82	PF 1	P_Tr030-Tp030AH	11.26	21.02	23.34	22.47	23.59	0.001478	2.21	5.09	7.97	0.48
ValleFomoli	82	PF 1	P_Tr030-Tp060AH	12.98	21.02	23.60	22.61	23.87	0.001345	2.28	5.70	9.02	0.46
ValleFomoli	82	PF 1	P_Tr030-Tp090AH	13.24	21.02	23.65	22.63	23.91	0.001321	2.28	5.80	9.19	0.46
ValleFomoli	82	PF 1	P_Tr030-Tp120AH	13.47	21.02	23.68	22.64	23.95	0.001300	2.29	5.89	9.34	0.46
ValleFomoli	82	PF 1	P_Tr030-Tp150AH	13.30	21.02	23.65	22.63	23.92	0.001321	2.29	5.81	9.22	0.46

HEC-RAS River: Vaghera Reach: ValleFomoli Profile: PF 1 (Continued)

Reach	River Sta	Profile	Plan	Q Total (m3/s)	Min Ch El (m)	W.S. Elev (m)	Crit W.S. (m)	E.G. Elev (m)	E.G. Slope (m/m)	Vel Chnl (m/s)	Flow Area (m2)	Top Width (m)	Froude # Chl
ValleFomoli	81.5			Culvert									
ValleFomoli	81	PF 1	P_Tr030-Tp030AH	11.26	21.02	22.80	22.37	22.97	0.003096	1.86	6.04	5.78	0.58
ValleFomoli	81	PF 1	P_Tr030-Tp060AH	12.98	21.02	22.94	22.47	23.12	0.002925	1.87	6.93	6.36	0.57
ValleFomoli	81	PF 1	P_Tr030-Tp090AH	13.24	21.02	22.96	22.49	23.14	0.002913	1.88	7.06	6.44	0.57
ValleFomoli	81	PF 1	P_Tr030-Tp120AH	13.47	21.02	22.98	22.50	23.16	0.002920	1.88	7.15	6.50	0.57
ValleFomoli	81	PF 1	P_Tr030-Tp150AH	13.30	21.02	22.96	22.49	23.14	0.002960	1.89	7.04	6.43	0.58
ValleFomoli	81	PF 1	P_Tr030-Tp180AH	13.34	21.02	22.96	22.50	23.14	0.002977	1.90	7.04	6.43	0.58
ValleFomoli	81	PF 1	P_Tr030-Tp180 AL	13.34	21.02	22.96	22.50	23.14	0.002985	1.90	7.03	6.42	0.58
ValleFomoli	80.5"	PF 1	P_Tr030-Tp030AH	11.26	20.71	22.70	22.21	22.88	0.002797	1.84	6.12	5.19	0.54
ValleFomoli	80.5"	PF 1	P_Tr030-Tp060AH	12.98	20.71	22.85	22.31	23.03	0.002695	1.88	6.90	5.47	0.53
ValleFomoli	80.5"	PF 1	P_Tr030-Tp090AH	13.24	20.71	22.87	22.33	23.05	0.002699	1.89	7.00	5.50	0.53
ValleFomoli	80.5"	PF 1	P_Tr030-Tp120AH	13.47	20.71	22.88	22.34	23.07	0.002723	1.90	7.07	5.53	0.54
ValleFomoli	80.5"	PF 1	P_Tr030-Tp150AH	13.30	20.71	22.86	22.33	23.05	0.002754	1.91	6.98	5.49	0.54
ValleFomoli	80.5"	PF 1	P_Tr030-Tp180AH	13.34	20.71	22.86	22.33	23.05	0.002777	1.91	6.97	5.49	0.54
ValleFomoli	80.5"	PF 1	P_Tr030-Tp180 AL	13.34	20.71	22.86	22.33	23.05	0.002784	1.92	6.96	5.49	0.54
ValleFomoli	80	PF 1	P_Tr030-Tp030AH	11.26	20.40	22.49	22.03	22.75	0.004736	2.25	5.00	3.69	0.62
ValleFomoli	80	PF 1	P_Tr030-Tp060AH	12.98	20.40	22.61	22.16	22.90	0.004986	2.38	5.46	3.85	0.64
ValleFomoli	80	PF 1	P_Tr030-Tp090AH	13.24	20.40	22.63	22.18	22.92	0.005072	2.40	5.51	3.86	0.64
ValleFomoli	80	PF 1	P_Tr030-Tp120AH	13.47	20.40	22.63	22.19	22.93	0.005212	2.44	5.52	3.87	0.65
ValleFomoli	80	PF 1	P_Tr030-Tp150AH	13.30	20.40	22.61	22.18	22.92	0.005261	2.44	5.45	3.84	0.65
ValleFomoli	80	PF 1	P_Tr030-Tp180AH	13.34	20.40	22.61	22.18	22.91	0.005346	2.46	5.43	3.84	0.66
ValleFomoli	80	PF 1	P_Tr030-Tp180 AL	13.34	20.40	22.60	22.18	22.91	0.005372	2.46	5.42	3.83	0.66
ValleFomoli	79.8"	PF 1	P_Tr030-Tp030AH	11.26	20.35	22.44	21.90	22.61	0.002747	1.83	6.15	4.95	0.52
ValleFomoli	79.8"	PF 1	P_Tr030-Tp060AH	12.98	20.35	22.57	22.00	22.76	0.002779	1.91	6.80	5.17	0.53
ValleFomoli	79.8"	PF 1	P_Tr030-Tp090AH	13.24	20.35	22.58	22.02	22.77	0.002821	1.93	6.87	5.19	0.53
ValleFomoli	79.8"	PF 1	P_Tr030-Tp120AH	13.47	20.35	22.58	22.03	22.78	0.002906	1.96	6.88	5.19	0.54
ValleFomoli	79.8"	PF 1	P_Tr030-Tp150AH	13.30	20.35	22.56	22.02	22.76	0.002958	1.96	6.77	5.16	0.55
ValleFomoli	79.8"	PF 1	P_Tr030-Tp180AH	13.34	20.35	22.56	22.02	22.76	0.003020	1.98	6.73	5.14	0.55
ValleFomoli	79.8"	PF 1	P_Tr030-Tp180 AL	13.34	20.35	22.55	22.02	22.75	0.003041	1.99	6.72	5.14	0.55
ValleFomoli	79.6"	PF 1	P_Tr030-Tp030AH	11.26	20.30	22.40	21.83	22.52	0.002014	1.59	7.09	6.14	0.47
ValleFomoli	79.6"	PF 1	P_Tr030-Tp060AH	12.98	20.30	22.53	21.92	22.67	0.001971	1.64	7.94	6.45	0.47
ValleFomoli	79.6"	PF 1	P_Tr030-Tp090AH	13.24	20.30	22.54	21.93	22.68	0.001998	1.65	8.01	6.47	0.47
ValleFomoli	79.6"	PF 1	P_Tr030-Tp120AH	13.47	20.30	22.54	21.95	22.69	0.002064	1.68	8.02	6.48	0.48
ValleFomoli	79.6"	PF 1	P_Tr030-Tp150AH	13.30	20.30	22.52	21.94	22.67	0.002118	1.69	7.87	6.42	0.49
ValleFomoli	79.6"	PF 1	P_Tr030-Tp180AH	13.34	20.30	22.51	21.94	22.66	0.002172	1.71	7.81	6.40	0.49
ValleFomoli	79.6"	PF 1	P_Tr030-Tp180 AL	13.34	20.30	22.51	21.94	22.66	0.002191	1.71	7.79	6.39	0.50
ValleFomoli	79.4"	PF 1	P_Tr030-Tp030AH	11.26	20.26	22.35	21.74	22.46	0.001696	1.44	7.81	7.18	0.44
ValleFomoli	79.4"	PF 1	P_Tr030-Tp060AH	12.98	20.26	22.49	21.83	22.60	0.001628	1.47	8.85	7.70	0.44
ValleFomoli	79.4"	PF 1	P_Tr030-Tp090AH	13.24	20.26	22.50	21.85	22.62	0.001650	1.48	8.94	7.74	0.44
ValleFomoli	79.4"	PF 1	P_Tr030-Tp120AH	13.47	20.26	22.50	21.86	22.62	0.001710	1.51	8.94	7.74	0.45
ValleFomoli	79.4"	PF 1	P_Tr030-Tp150AH	13.30	20.26	22.48	21.85	22.60	0.001766	1.52	8.74	7.65	0.45
ValleFomoli	79.4"	PF 1	P_Tr030-Tp180AH	13.34	20.26	22.47	21.85	22.59	0.001820	1.54	8.66	7.61	0.46
ValleFomoli	79.4"	PF 1	P_Tr030-Tp180 AL	13.34	20.26	22.46	21.85	22.58	0.001838	1.55	8.63	7.59	0.46
ValleFomoli	79.2"	PF 1	P_Tr030-Tp030AH	11.26	20.21	22.31	21.63	22.40	0.001488	1.34	8.40	7.87	0.41
ValleFomoli	79.2"	PF 1	P_Tr030-Tp060AH	12.98	20.21	22.46	21.72	22.55	0.001440	1.35	9.58	8.68	0.41
ValleFomoli	79.2"	PF 1	P_Tr030-Tp090AH	13.24	20.21	22.47	21.73	22.56	0.001462	1.37	9.68	8.74	0.41
ValleFomoli	79.2"	PF 1	P_Tr030-Tp120AH	13.47	20.21	22.46	21.74	22.56	0.001523	1.39	9.66	8.73	0.42
ValleFomoli	79.2"	PF 1	P_Tr030-Tp150AH	13.30	20.21	22.44	21.73	22.54	0.001576	1.41	9.42	8.57	0.43
ValleFomoli	79.2"	PF 1	P_Tr030-Tp180AH	13.34	20.21	22.42	21.73	22.53	0.001628	1.43	9.32	8.51	0.44
ValleFomoli	79.2"	PF 1	P_Tr030-Tp180 AL	13.34	20.21	22.42	21.73	22.52	0.001646	1.44	9.28	8.48	0.44
ValleFomoli	79	PF 1	P_Tr030-Tp030AH	11.26	20.16	22.28	21.41	22.36	0.001133	1.24	9.05	7.43	0.36
ValleFomoli	79	PF 1	P_Tr030-Tp060AH	12.98	20.16	22.42	21.50	22.50	0.001213	1.28	10.15	8.55	0.37
ValleFomoli	79	PF 1	P_Tr030-Tp090AH	13.24	20.16	22.43	21.52	22.52	0.001248	1.29	10.24	8.68	0.38
ValleFomoli	79	PF 1	P_Tr030-Tp120AH	13.47	20.16	22.43	21.53	22.51	0.001298	1.32	10.20	8.62	0.39
ValleFomoli	79	PF 1	P_Tr030-Tp150AH	13.30	20.16	22.40	21.52	22.49	0.001304	1.33	9.97	8.28	0.39
ValleFomoli	79	PF 1	P_Tr030-Tp180AH	13.34	20.16	22.39	21.52	22.48	0.001330	1.35	9.86	8.11	0.39
ValleFomoli	79	PF 1	P_Tr030-Tp180 AL	13.34	20.16	22.38	21.52	22.47	0.001337	1.36	9.82	8.05	0.39
ValleFomoli	78.75"	PF 1	P_Tr030-Tp030AH	11.26	20.10	22.25	21.37	22.32	0.001042	1.19	9.49	8.14	0.35
ValleFomoli	78.75"	PF 1	P_Tr030-Tp060AH	12.98	20.10	22.39	21.47	22.47	0.001063	1.21	10.69	9.07	0.36
ValleFomoli	78.75"	PF 1	P_Tr030-Tp090AH	13.24	20.10	22.40	21.48	22.48	0.001086	1.23	10.77	9.13	0.36
ValleFomoli	78.75"	PF 1	P_Tr030-Tp120AH	13.47	20.10	22.39	21.49	22.48	0.001137	1.26	10.72	9.09	0.37
ValleFomoli	78.75"	PF 1	P_Tr030-Tp150AH	13.30	20.10	22.37	21.49	22.45	0.001170	1.27	10.47	8.91	0.37
ValleFomoli	78.75"	PF 1	P_Tr030-Tp180AH	13.34	20.10	22.35	21.49	22.44	0.001210	1.29	10.34	8.81	0.38
ValleFomoli	78.75"	PF 1	P_Tr030-Tp180 AL	13.34	20.10	22.35	21.49	22.43	0.001223	1.30	10.29	8.77	0.38
ValleFomoli	78.5"	PF 1	P_Tr030-Tp030AH	11.26	20.04	22.22	21.33	22.29	0.000925	1.15	9.83	8.22	0.33
ValleFomoli	78.5"	PF 1	P_Tr030-Tp060AH	12.98	20.04	22.36	21.42	22.43	0.000922	1.18	11.02	8.82	0.34
ValleFomoli	78.5"	PF 1	P_Tr030-Tp090AH	13.24	20.04	22.37	21.44	22.45	0.000942	1.19	11.09	8.85	0.34
ValleFomoli	78.5"	PF 1	P_Tr030-Tp120AH	13.47	20.04	22.37	21.45	22.44	0.000990	1.22	11.03	8.82	0.35
ValleFomoli	78.5"	PF 1	P_Tr030-Tp150AH	13.30	20.04	22.34	21.44	22.41	0.001024	1.23	10.77	8.70	0.35
ValleFomoli	78.5"	PF 1	P_Tr030-Tp180AH	13.34	20.04	22.32	21.44	22.40	0.001063	1.25	10.64	8.63	0.36
ValleFomoli	78.5"	PF 1	P_Tr030-Tp180 AL	13.34	20.04	22.31	21.44	22.40	0.001076	1.26	10.59	8.60	0.36
ValleFomoli	78.25"	PF 1	P_Tr030-Tp030AH	11.26	19.98	22.20	21.30	22.26	0.000863	1.13	9.94	7.91	0.32
ValleFomoli	78.25"	PF 1	P_Tr030-Tp060AH	12.98	19.98	22.34	21.39	22.41	0.000861	1.17	11.06	8.34	0.33
ValleFomoli	78.25"	PF 1	P_Tr030-Tp090AH	13.24	19.98	22.34	21.40	22.42	0.000882	1.19	11.13	8.36	0.33
ValleFomoli	78.25"	PF 1	P_Tr030-Tp120AH	13.47	19.98	22.34	21.41	22.41	0.000929	1.22	11.06	8.34	0.34
ValleFomoli	78.25"	PF 1	P_Tr030-Tp150AH	13.30	19.98	22.31							

HEC-RAS River: Vaghera Reach: ValleFomoli Profile: PF 1 (Continued)

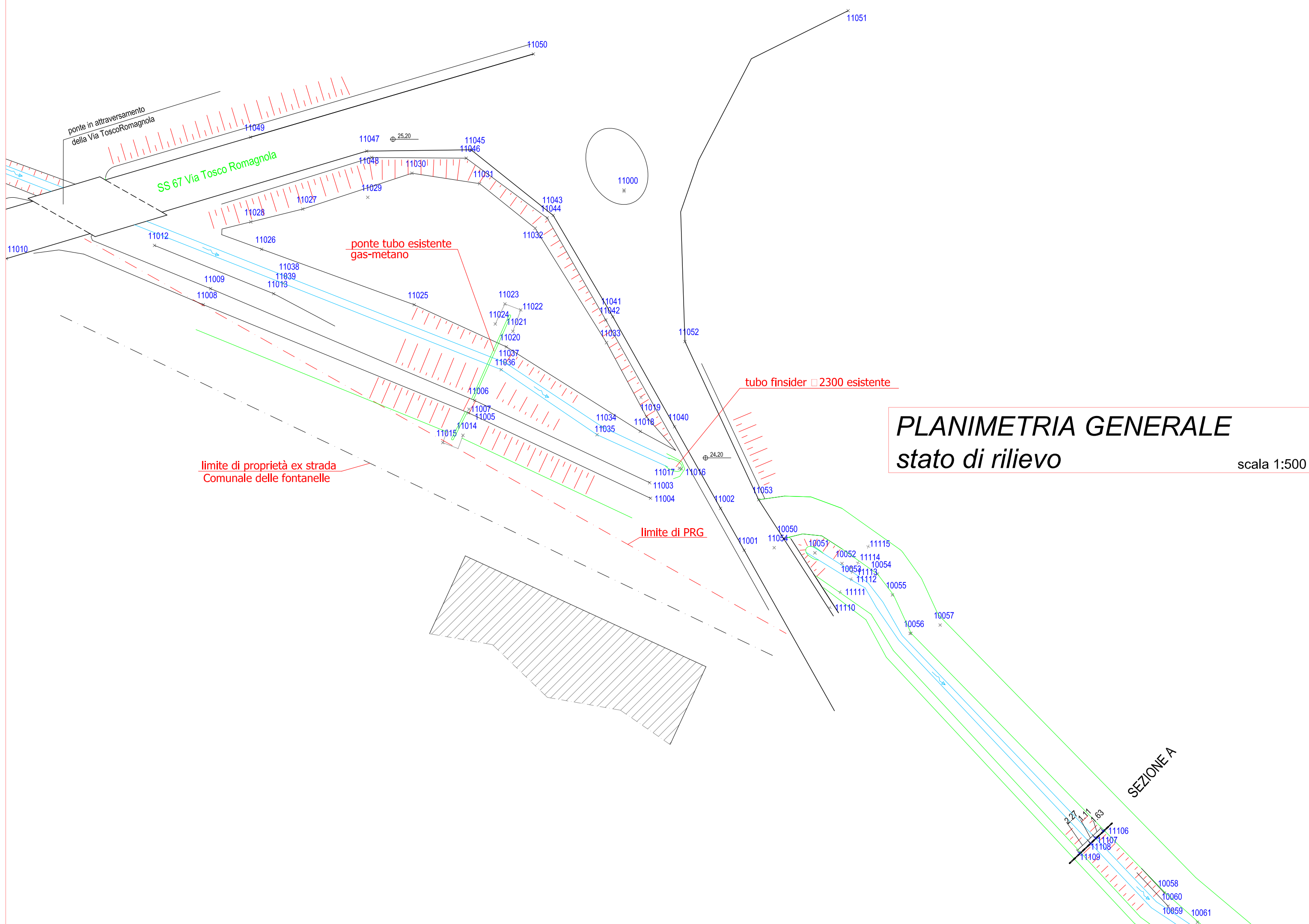
Reach	River Sta	Profile	Plan	Q Total (m ³ /s)	Min Ch El (m)	W.S. Elev (m)	Crit W.S. (m)	E.G. Elev (m)	E.G. Slope (m/m)	Vel Chnl (m/s)	Flow Area (m ²)	Top Width (m)	Froude # Chl
ValleFomoli	78	PF 1	P_Tr030-Tp180 AL	14.82	19.92	22.21	21.45	22.32	0.001415	1.47	10.08	7.57	0.41
ValleFomoli	77.8*	PF 1	P_Tr030-Tp030AH	13.50	19.86	22.06	21.41	22.18	0.001589	1.49	9.04	7.43	0.43
ValleFomoli	77.8*	PF 1	P_Tr030-Tp060AH	15.31	19.86	22.21	21.49	22.32	0.001497	1.51	10.13	7.81	0.42
ValleFomoli	77.8*	PF 1	P_Tr030-Tp090AH	15.43	19.86	22.22	21.50	22.33	0.001489	1.51	10.21	7.83	0.42
ValleFomoli	77.8*	PF 1	P_Tr030-Tp120AH	15.36	19.86	22.21	21.49	22.33	0.001493	1.51	10.16	7.82	0.42
ValleFomoli	77.8*	PF 1	P_Tr030-Tp150AH	15.00	19.86	22.18	21.48	22.30	0.001515	1.51	9.94	7.74	0.43
ValleFomoli	77.8*	PF 1	P_Tr030-Tp180AH	14.82	19.86	22.17	21.47	22.28	0.001526	1.51	9.82	7.70	0.43
ValleFomoli	77.8*	PF 1	P_Tr030-Tp180 AL	14.82	19.86	22.16	21.47	22.27	0.001555	1.52	9.76	7.68	0.43
ValleFomoli	77.6*	PF 1	P_Tr030-Tp030AH	13.50	19.81	22.00	21.40	22.12	0.001749	1.54	8.76	7.50	0.45
ValleFomoli	77.6*	PF 1	P_Tr030-Tp060AH	15.31	19.81	22.15	21.48	22.27	0.001608	1.54	9.91	7.92	0.44
ValleFomoli	77.6*	PF 1	P_Tr030-Tp090AH	15.43	19.81	22.16	21.48	22.28	0.001597	1.54	10.00	7.95	0.44
ValleFomoli	77.6*	PF 1	P_Tr030-Tp120AH	15.36	19.81	22.15	21.48	22.28	0.001603	1.54	9.95	7.93	0.44
ValleFomoli	77.6*	PF 1	P_Tr030-Tp150AH	15.00	19.81	22.12	21.47	22.24	0.001635	1.55	9.71	7.85	0.44
ValleFomoli	77.6*	PF 1	P_Tr030-Tp180AH	14.82	19.81	22.11	21.46	22.23	0.001650	1.55	9.59	7.80	0.45
ValleFomoli	77.6*	PF 1	P_Tr030-Tp180 AL	14.82	19.81	22.10	21.46	22.22	0.001688	1.56	9.51	7.78	0.45
ValleFomoli	77.4*	PF 1	P_Tr030-Tp030AH	13.50	19.75	21.94	21.36	22.06	0.001886	1.57	8.58	7.54	0.47
ValleFomoli	77.4*	PF 1	P_Tr030-Tp060AH	15.31	19.75	22.09	21.45	22.22	0.001691	1.56	9.80	8.02	0.45
ValleFomoli	77.4*	PF 1	P_Tr030-Tp090AH	15.43	19.75	22.10	21.45	22.23	0.001677	1.56	9.89	8.06	0.45
ValleFomoli	77.4*	PF 1	P_Tr030-Tp120AH	15.36	19.75	22.10	21.45	22.22	0.001686	1.56	9.83	8.04	0.45
ValleFomoli	77.4*	PF 1	P_Tr030-Tp150AH	15.00	19.75	22.07	21.43	22.19	0.001727	1.57	9.58	7.94	0.46
ValleFomoli	77.4*	PF 1	P_Tr030-Tp180AH	14.82	19.75	22.05	21.42	22.17	0.001747	1.57	9.45	7.89	0.46
ValleFomoli	77.4*	PF 1	P_Tr030-Tp180 AL	14.82	19.75	22.04	21.42	22.16	0.001796	1.58	9.35	7.85	0.46
ValleFomoli	77.2*	PF 1	P_Tr030-Tp030AH	13.50	19.70	21.87	21.26	22.00	0.001975	1.59	8.48	7.54	0.48
ValleFomoli	77.2*	PF 1	P_Tr030-Tp060AH	15.31	19.70	22.04	21.37	22.16	0.001736	1.56	9.79	8.11	0.45
ValleFomoli	77.2*	PF 1	P_Tr030-Tp090AH	15.43	19.70	22.05	21.37	22.17	0.001719	1.56	9.88	8.15	0.45
ValleFomoli	77.2*	PF 1	P_Tr030-Tp120AH	15.36	19.70	22.04	21.37	22.17	0.001729	1.56	9.83	8.13	0.45
ValleFomoli	77.2*	PF 1	P_Tr030-Tp150AH	15.00	19.70	22.01	21.35	22.13	0.001779	1.57	9.55	8.01	0.46
ValleFomoli	77.2*	PF 1	P_Tr030-Tp180AH	14.82	19.70	21.99	21.34	22.12	0.001803	1.57	9.42	7.95	0.46
ValleFomoli	77.2*	PF 1	P_Tr030-Tp180 AL	14.82	19.70	21.98	21.34	22.11	0.001864	1.59	9.30	7.90	0.47
ValleFomoli	77	PF 1	P_Tr030-Tp030AH	13.50	19.64	21.81	21.15	21.93	0.001971	1.58	8.52	7.47	0.47
ValleFomoli	77	PF 1	P_Tr030-Tp060AH	15.31	19.64	21.98	21.25	22.10	0.001726	1.55	9.89	8.18	0.45
ValleFomoli	77	PF 1	P_Tr030-Tp090AH	15.43	19.64	21.99	21.26	22.12	0.001708	1.54	9.99	8.22	0.45
ValleFomoli	77	PF 1	P_Tr030-Tp120AH	15.36	19.64	21.99	21.26	22.11	0.001718	1.55	9.94	8.20	0.45
ValleFomoli	77	PF 1	P_Tr030-Tp150AH	15.00	19.64	21.95	21.24	22.07	0.001770	1.56	9.64	8.05	0.45
ValleFomoli	77	PF 1	P_Tr030-Tp180AH	14.82	19.64	21.93	21.22	22.06	0.001795	1.56	9.50	7.98	0.46
ValleFomoli	77	PF 1	P_Tr030-Tp180 AL	14.82	19.64	21.92	21.22	22.04	0.001863	1.58	9.37	7.91	0.46
ValleFomoli	76.75*	PF 1	P_Tr030-Tp030AH	13.50	19.54	21.77	21.12	21.88	0.001699	1.48	9.12	8.20	0.45
ValleFomoli	76.75*	PF 1	P_Tr030-Tp060AH	15.31	19.54	21.95	21.21	22.06	0.001405	1.44	10.67	8.67	0.41
ValleFomoli	76.75*	PF 1	P_Tr030-Tp090AH	15.43	19.54	21.96	21.22	22.07	0.001387	1.43	10.78	8.71	0.41
ValleFomoli	76.75*	PF 1	P_Tr030-Tp120AH	15.36	19.54	21.96	21.21	22.06	0.001398	1.43	10.71	8.69	0.41
ValleFomoli	76.75*	PF 1	P_Tr030-Tp150AH	15.00	19.54	21.92	21.20	22.03	0.001452	1.44	10.39	8.59	0.42
ValleFomoli	76.75*	PF 1	P_Tr030-Tp180AH	14.82	19.54	21.90	21.19	22.01	0.001480	1.45	10.23	8.54	0.42
ValleFomoli	76.75*	PF 1	P_Tr030-Tp180 AL	14.82	19.54	21.88	21.19	21.99	0.001547	1.47	10.07	8.50	0.43
ValleFomoli	76.5*	PF 1	P_Tr030-Tp030AH	13.50	19.44	21.75	21.02	21.83	0.001199	1.31	10.29	8.57	0.38
ValleFomoli	76.5*	PF 1	P_Tr030-Tp060AH	15.31	19.44	21.93	21.13	22.02	0.001010	1.28	11.93	8.97	0.36
ValleFomoli	76.5*	PF 1	P_Tr030-Tp090AH	15.43	19.44	21.95	21.13	22.03	0.000998	1.28	12.05	9.00	0.35
ValleFomoli	76.5*	PF 1	P_Tr030-Tp120AH	15.36	19.44	21.94	21.13	22.02	0.001005	1.28	11.98	8.98	0.35
ValleFomoli	76.5*	PF 1	P_Tr030-Tp150AH	15.00	19.44	21.90	21.11	21.99	0.001040	1.29	11.64	8.90	0.36
ValleFomoli	76.5*	PF 1	P_Tr030-Tp180AH	14.82	19.44	21.88	21.10	21.97	0.001058	1.29	11.47	8.86	0.36
ValleFomoli	76.5*	PF 1	P_Tr030-Tp180 AL	14.82	19.44	21.86	21.10	21.95	0.001105	1.31	11.30	8.82	0.37
ValleFomoli	76.25*	PF 1	P_Tr030-Tp030AH	13.50	19.34	21.74	20.89	21.80	0.000783	1.13	11.93	8.87	0.31
ValleFomoli	76.25*	PF 1	P_Tr030-Tp060AH	15.31	19.34	21.92	20.96	21.99	0.000687	1.12	13.64	9.24	0.29
ValleFomoli	76.25*	PF 1	P_Tr030-Tp090AH	15.43	19.34	21.94	20.96	22.00	0.000681	1.12	13.76	9.26	0.29
ValleFomoli	76.25*	PF 1	P_Tr030-Tp120AH	15.36	19.34	21.93	20.96	21.99	0.000684	1.12	13.69	9.25	0.29
ValleFomoli	76.25*	PF 1	P_Tr030-Tp150AH	15.00	19.34	21.89	20.95	21.96	0.000703	1.12	13.34	9.17	0.30
ValleFomoli	76.25*	PF 1	P_Tr030-Tp180AH	14.82	19.34	21.87	20.94	21.94	0.000712	1.13	13.16	9.14	0.30
ValleFomoli	76.25*	PF 1	P_Tr030-Tp180 AL	14.82	19.34	21.85	20.94	21.92	0.000741	1.14	12.98	9.10	0.31
ValleFomoli	76	PF 1	P_Tr030-Tp030AH	13.50	19.24	21.73	20.65	21.78	0.000499	0.96	13.99	9.16	0.25
ValleFomoli	76	PF 1	P_Tr030-Tp060AH	15.31	19.24	21.92	20.72	21.97	0.000457	0.97	15.76	9.49	0.24
ValleFomoli	76	PF 1	P_Tr030-Tp090AH	15.43	19.24	21.93	20.72	21.98	0.000455	0.97	15.88	9.51	0.24
ValleFomoli	76	PF 1	P_Tr030-Tp120AH	15.36	19.24	21.93	20.72	21.97	0.000456	0.97	15.81	9.50	0.24
ValleFomoli	76	PF 1	P_Tr030-Tp150AH	15.00	19.24	21.89	20.71	21.94	0.000465	0.97	15.45	9.43	0.24
ValleFomoli	76	PF 1	P_Tr030-Tp180AH	14.82	19.24	21.87	20.70	21.92	0.000469	0.97	15.27	9.40	0.24
ValleFomoli	76	PF 1	P_Tr030-Tp180 AL	14.82	19.24	21.85	20.70	21.90	0.000486	0.98	15.08	9.36	0.25
ValleFomoli	75.6666*	PF 1	P_Tr030-Tp030AH	13.50	19.17	21.71	20.65	21.76	0.000594	1.03	13.06	9.01	0.27
ValleFomoli	75.6666*	PF 1	P_Tr030-Tp060AH	15.31	19.17	21.90	20.72	21.95	0.000534	1.03	14.83	9.38	0.26
ValleFomoli	75.6666*	PF 1	P_Tr030-Tp090AH	15.43	19.17	21.91	20.72	21.97	0.000530	1.03	14.95	9.40	0.26
ValleFomoli	75.6666*	PF 1	P_Tr030-Tp120AH	15.36	19.17	21.90	20.72	21.96	0.000532	1.03	14.88	9.39	0.26
ValleFomoli	75.6666*	PF 1	P_Tr030-Tp150AH	15.00	19.17	21.87	20.71	21.92	0.000544	1.03	14.52	9.31	0.26
ValleFomoli	75.6666*	PF 1	P_Tr030-Tp180AH	14.82	19.17	21.85	20.70	21.90	0.000550	1.03	14.34	9.28	0.27
ValleFomoli	75.6666*	PF 1	P_Tr030-Tp180 AL	14.82	19.17	21.82	20.70	21.88	0.000572	1.05	14.14	9.23	0.27
ValleFomoli	75.3333*	PF 1	P_Tr030-Tp030AH	13.50	19.10	21.68	20.56	21.74	0.000642	1.07	12.64	8.83	0.28
ValleFomoli	75.3333*	PF 1	P_Tr030-Tp060AH	15.31	19.10	21.88	20.65	21.94	0.000575	1.06	14.41	9.28	0.27
ValleFomoli	75.3333*	PF 1	P_Tr030-Tp090AH	15.43	19.10	21.89	20.65	21.95	0.000571	1.06	14.53	9.31	0.27
ValleFomoli	75.3333*	PF 1	P_Tr030-Tp120AH	15.36	19.10	21.88	20.65	21.94	0.000573	1.06	14.46	9.29	0.27
ValleFomoli	75.3333*	PF 1	P_Tr030-Tp150AH	15.00	19.10	21.84	20.63	21.90	0.000587	1.06	14.09	9.20	0.27
ValleFomoli	75.3333*	PF 1	P_Tr030-Tp180AH	14.82	19.10	21.82	20.62	21.88	0.000594	1.07	13.91	9.15	0.28
ValleFomoli	75.3333*	PF 1	P_Tr030-Tp180 AL	14.82	19.10	21.80	20.62	21.86	0.000618	1.08	13.71	9.10	0.28
ValleFomoli	75	PF 1	P_Tr030-Tp030AH	13.50	19.03	21.66	20.42	21.72	0.000617	1.07	12.65	8.28	0.28
ValleFomoli	75	PF 1	P_Tr030-Tp060AH	15.31	19.03	21.86	20.51	21.92	0.000592	1.07	14.36	9.22	0.27
ValleFomoli	75	PF 1	P_Tr030-Tp090AH	15.43	19.03	21.87	20.52	21.93	0.000589	1.06	14.49	9.28	0.27
ValleFomoli	75	PF 1	P_Tr030-Tp120AH	15.36	19.03	21.87	20.51	21.92	0.000591	1.07	14.42	9.25	0.27
ValleFomoli	75	PF 1	P_Tr030-Tp150AH	15.00	19.								

HEC-RAS River: Vaghera Reach: ValleFomoli Profile: PF 1 (Continued)

Reach	River Sta	Profile	Plan	Q Total (m3/s)	Min Ch El (m)	W.S. Elev (m)	Crit W.S. (m)	E.G. Elev (m)	E.G. Slope (m/m)	Vel Chnl (m/s)	Flow Area (m2)	Top Width (m)	Froude # Chl
ValleFomoli	74.6	PF 1	P_Tr030-Tp030AH	13.50	18.96	21.63	20.44	21.70	0.000803	1.20	11.23	7.03	0.30
ValleFomoli	74.6	PF 1	P_Tr030-Tp060AH	15.31	18.96	21.83	20.54	21.90	0.000754	1.21	12.64	7.44	0.30
ValleFomoli	74.6	PF 1	P_Tr030-Tp090AH	15.43	18.96	21.84	20.55	21.91	0.000750	1.21	12.74	7.47	0.30
ValleFomoli	74.6	PF 1	P_Tr030-Tp120AH	15.36	18.96	21.83	20.55	21.91	0.000753	1.21	12.68	7.45	0.30
ValleFomoli	74.6	PF 1	P_Tr030-Tp150AH	15.00	18.96	21.79	20.53	21.87	0.000764	1.21	12.39	7.37	0.30
ValleFomoli	74.6	PF 1	P_Tr030-Tp180AH	14.82	18.96	21.77	20.52	21.85	0.000770	1.21	12.24	7.33	0.30
ValleFomoli	74.6	PF 1	P_Tr030-Tp180 AL	14.82	18.96	21.75	20.52	21.82	0.000799	1.23	12.07	7.28	0.30
ValleFomoli	74.59	PF 1	P_Tr030-Tp030AH	13.50	18.96	21.44	20.49	21.68	0.001399	2.19	6.18	6.63	0.46
ValleFomoli	74.59	PF 1	P_Tr030-Tp060AH	15.31	18.96	21.60	20.61	21.88	0.001437	2.32	6.61	6.98	0.47
ValleFomoli	74.59	PF 1	P_Tr030-Tp090AH	15.43	18.96	21.62	20.62	21.89	0.001438	2.33	6.64	7.00	0.47
ValleFomoli	74.59	PF 1	P_Tr030-Tp120AH	15.36	18.96	21.61	20.61	21.88	0.001437	2.32	6.62	6.99	0.47
ValleFomoli	74.59	PF 1	P_Tr030-Tp150AH	15.00	18.96	21.58	20.59	21.84	0.001434	2.30	6.53	6.91	0.47
ValleFomoli	74.59	PF 1	P_Tr030-Tp180AH	14.82	18.96	21.56	20.58	21.83	0.001432	2.28	6.49	6.88	0.47
ValleFomoli	74.59	PF 1	P_Tr030-Tp180 AL	14.82	18.96	21.53	20.58	21.80	0.001488	2.31	6.41	6.82	0.47
ValleFomoli	74.5		Culvert										
ValleFomoli	74.41	PF 1	P_Tr030-Tp030AH	13.50	18.95	21.10	20.54	21.46	0.002585	2.64	5.11	6.53	0.60
ValleFomoli	74.41	PF 1	P_Tr030-Tp060AH	15.31	18.95	21.17	20.66	21.59	0.002988	2.90	5.28	6.69	0.65
ValleFomoli	74.41	PF 1	P_Tr030-Tp090AH	15.43	18.95	21.17	20.67	21.60	0.003015	2.92	5.29	6.70	0.65
ValleFomoli	74.41	PF 1	P_Tr030-Tp120AH	15.36	18.95	21.17	20.66	21.60	0.002999	2.91	5.28	6.69	0.65
ValleFomoli	74.41	PF 1	P_Tr030-Tp150AH	15.00	18.95	21.16	20.64	21.57	0.002920	2.86	5.25	6.66	0.64
ValleFomoli	74.41	PF 1	P_Tr030-Tp180AH	14.82	18.95	21.15	20.63	21.56	0.002880	2.83	5.23	6.64	0.64
ValleFomoli	74.41	PF 1	P_Tr030-Tp180 AL	14.82	18.95	21.10	20.63	21.53	0.003100	2.89	5.12	6.53	0.66
ValleFomoli	74.4	PF 1	P_Tr030-Tp030AH	13.50	18.95	21.27	20.46	21.38	0.001380	1.45	9.32	6.96	0.40
ValleFomoli	74.4	PF 1	P_Tr030-Tp060AH	15.31	18.95	21.38	20.55	21.50	0.001438	1.52	10.09	7.23	0.41
ValleFomoli	74.4	PF 1	P_Tr030-Tp090AH	15.43	18.95	21.39	20.56	21.51	0.001440	1.52	10.14	7.25	0.41
ValleFomoli	74.4	PF 1	P_Tr030-Tp120AH	15.36	18.95	21.38	20.56	21.50	0.001439	1.52	10.11	7.24	0.41
ValleFomoli	74.4	PF 1	P_Tr030-Tp150AH	15.00	18.95	21.36	20.54	21.48	0.001430	1.51	9.96	7.19	0.41
ValleFomoli	74.4	PF 1	P_Tr030-Tp180AH	14.82	18.95	21.35	20.53	21.47	0.001425	1.50	9.88	7.16	0.41
ValleFomoli	74.4	PF 1	P_Tr030-Tp180 AL	14.82	18.95	21.32	20.53	21.44	0.001526	1.54	9.63	7.07	0.42
ValleFomoli	74	PF 1	P_Tr030-Tp030AH	13.50	18.87	21.23	20.40	21.34	0.001369	1.45	9.33	6.89	0.40
ValleFomoli	74	PF 1	P_Tr030-Tp060AH	15.31	18.87	21.34	20.50	21.45	0.001436	1.52	10.07	7.15	0.41
ValleFomoli	74	PF 1	P_Tr030-Tp090AH	15.43	18.87	21.34	20.50	21.46	0.001440	1.52	10.12	7.17	0.41
ValleFomoli	74	PF 1	P_Tr030-Tp120AH	15.36	18.87	21.34	20.50	21.46	0.001438	1.52	10.09	7.16	0.41
ValleFomoli	74	PF 1	P_Tr030-Tp150AH	15.00	18.87	21.32	20.48	21.43	0.001427	1.51	9.94	7.11	0.41
ValleFomoli	74	PF 1	P_Tr030-Tp180AH	14.82	18.87	21.31	20.47	21.42	0.001421	1.50	9.86	7.08	0.41
ValleFomoli	74	PF 1	P_Tr030-Tp180 AL	14.82	18.87	21.27	20.47	21.39	0.001533	1.55	9.59	6.99	0.42
ValleFomoli	73.75*	PF 1	P_Tr030-Tp030AH	13.50	18.83	21.20	20.35	21.30	0.001300	1.42	9.49	6.99	0.39
ValleFomoli	73.75*	PF 1	P_Tr030-Tp060AH	15.31	18.83	21.30	20.45	21.41	0.001370	1.50	10.23	7.25	0.40
ValleFomoli	73.75*	PF 1	P_Tr030-Tp090AH	15.43	18.83	21.31	20.45	21.42	0.001374	1.50	10.28	7.26	0.40
ValleFomoli	73.75*	PF 1	P_Tr030-Tp120AH	15.36	18.83	21.30	20.45	21.42	0.001372	1.50	10.26	7.25	0.40
ValleFomoli	73.75*	PF 1	P_Tr030-Tp150AH	15.00	18.83	21.28	20.43	21.39	0.001361	1.48	10.10	7.20	0.40
ValleFomoli	73.75*	PF 1	P_Tr030-Tp180AH	14.82	18.83	21.27	20.42	21.38	0.001354	1.48	10.03	7.18	0.40
ValleFomoli	73.75*	PF 1	P_Tr030-Tp180 AL	14.82	18.83	21.23	20.42	21.35	0.001470	1.52	9.73	7.07	0.41
ValleFomoli	73.5*	PF 1	P_Tr030-Tp030AH	13.50	18.79	21.16	20.30	21.26	0.001241	1.40	9.66	7.08	0.38
ValleFomoli	73.5*	PF 1	P_Tr030-Tp060AH	15.31	18.79	21.26	20.40	21.38	0.001314	1.47	10.39	7.33	0.40
ValleFomoli	73.5*	PF 1	P_Tr030-Tp090AH	15.43	18.79	21.27	20.40	21.38	0.001317	1.48	10.44	7.35	0.40
ValleFomoli	73.5*	PF 1	P_Tr030-Tp120AH	15.36	18.79	21.27	20.40	21.38	0.001315	1.48	10.41	7.34	0.40
ValleFomoli	73.5*	PF 1	P_Tr030-Tp150AH	15.00	18.79	21.25	20.38	21.36	0.001304	1.46	10.26	7.29	0.39
ValleFomoli	73.5*	PF 1	P_Tr030-Tp180AH	14.82	18.79	21.24	20.37	21.34	0.001297	1.45	10.19	7.26	0.39
ValleFomoli	73.5*	PF 1	P_Tr030-Tp180 AL	14.82	18.79	21.19	20.37	21.31	0.001418	1.50	9.85	7.15	0.41
ValleFomoli	73.25*	PF 1	P_Tr030-Tp030AH	13.50	18.75	21.13	20.25	21.23	0.001191	1.38	9.81	7.16	0.38
ValleFomoli	73.25*	PF 1	P_Tr030-Tp060AH	15.31	18.75	21.23	20.35	21.34	0.001266	1.45	10.54	7.41	0.39
ValleFomoli	73.25*	PF 1	P_Tr030-Tp090AH	15.43	18.75	21.24	20.35	21.35	0.001270	1.46	10.59	7.43	0.39
ValleFomoli	73.25*	PF 1	P_Tr030-Tp120AH	15.36	18.75	21.23	20.35	21.34	0.001268	1.45	10.56	7.42	0.39
ValleFomoli	73.25*	PF 1	P_Tr030-Tp150AH	15.00	18.75	21.21	20.33	21.32	0.001256	1.44	10.41	7.37	0.39
ValleFomoli	73.25*	PF 1	P_Tr030-Tp180AH	14.82	18.75	21.20	20.32	21.31	0.001249	1.43	10.34	7.34	0.39
ValleFomoli	73.25*	PF 1	P_Tr030-Tp180 AL	14.82	18.75	21.15	20.32	21.27	0.001374	1.49	9.97	7.22	0.40
ValleFomoli	73	PF 1	P_Tr030-Tp030AH	13.50	18.71	21.10	20.21	21.19	0.001146	1.36	9.96	7.24	0.37
ValleFomoli	73	PF 1	P_Tr030-Tp060AH	15.31	18.71	21.20	20.30	21.30	0.001225	1.43	10.68	7.49	0.38
ValleFomoli	73	PF 1	P_Tr030-Tp090AH	15.43	18.71	21.20	20.31	21.31	0.001229	1.44	10.73	7.50	0.38
ValleFomoli	73	PF 1	P_Tr030-Tp120AH	15.36	18.71	21.20	20.31	21.31	0.001227	1.44	10.70	7.49	0.38
ValleFomoli	73	PF 1	P_Tr030-Tp150AH	15.00	18.71	21.18	20.28	21.28	0.001214	1.42	10.55	7.44	0.38
ValleFomoli	73	PF 1	P_Tr030-Tp180AH	14.82	18.71	21.17	20.28	21.27	0.001208	1.41	10.48	7.42	0.38
ValleFomoli	73	PF 1	P_Tr030-Tp180 AL	14.82	18.71	21.12	20.28	21.23	0.001338	1.47	10.08	7.28	0.40
ValleFomoli	72.6666*	PF 1	P_Tr030-Tp030AH	13.50	18.66	21.07	20.08	21.16	0.001106	1.34	10.06	7.19	0.36
ValleFomoli	72.6666*	PF 1	P_Tr030-Tp060AH	15.31	18.66	21.16	20.17	21.27	0.001191	1.42	10.75	7.43	0.38
ValleFomoli	72.6666*	PF 1	P_Tr030-Tp090AH	15.43	18.66	21.17	20.18	21.27	0.001196	1.43	10.80	7.44	0.38
ValleFomoli	72.6666*	PF 1	P_Tr030-Tp120AH	15.36	18.66	21.16	20.17	21.27	0.001193	1.43	10.77	7.43	0.38
ValleFomoli	72.6666*	PF 1	P_Tr030-Tp150AH	15.00	18.66	21.15	20.15	21.25	0.001179	1.41	10.63	7.39	0.38
ValleFomoli	72.6666*	PF 1	P_Tr030-Tp180AH	14.82	18.66	21.14	20.14	21.24	0.001172	1.40	10.55	7.36	0.37
ValleFomoli	72.6666*	PF 1	P_Tr030-Tp180 AL	14.82	18.66	21.08	20.15	21.19	0.001308	1.46	10.13	7.22	0.39
ValleFomoli	72.3333*	PF 1	P_Tr030-Tp030AH	13.50	18.62	21.04	20.08	21.12	0.001042	1.32	10.25	7.16	0.35
ValleFomoli	72.3333*	PF 1	P_Tr030-Tp060AH	15.31	18.62	21.13	20.17	21.23	0.001133	1.40	10.92	7.38	0.37
ValleFomoli	72.3333*	PF 1	P_Tr030-Tp090AH	15.43	18.62	21.13	20.18	21.24	0.001138	1.41	10.97	7.40	0.37
ValleFomoli	72.3333*	PF 1	P_Tr030-Tp120AH	15.36	18.62	21.13	20.18	21.23	0.001135	1.40	10.94	7.39	0.37
ValleFomoli	72.3333*	PF 1	P_Tr030-Tp150AH	15.00	18.62	21.11	20.16	21.21	0.001120	1.39	10.80	7.34	0.37
ValleFomoli	72.3333*	PF 1	P_Tr030-Tp180AH	14.82	18.62	21.10	20.15	21.20	0.001112	1.38	10.73	7.32	0.36
ValleFomoli	72.3333*	PF 1	P_Tr030-Tp180 AL	14.82	18.62	21.04	20.15	21.15	0.001248	1.44	10.28	7.17	0.38
ValleFomoli	72	PF 1	P_Tr030-Tp030AH	13.50	18.57	21.01	19.99	21.09	0.000941	1.27	10.65	7.25	0.33
ValleFomoli	72	PF 1	P_Tr030-Tp060AH	15.31	18.57	21.10	20.08	21.19	0.001032	1.35	11.31	7.46	0.35
ValleFomoli	72	PF 1	P_Tr030-Tp090AH	15.43	18.57	21.11	20.09	21.20	0.001037	1.36	11.35	7.47	0.35
ValleFomoli	72	PF 1	P_Tr030-Tp120AH	15.36	18.57	21.10	20.09	21.20	0.001034	1.36	11.33	7.46	0.35
ValleFomoli	72	PF 1	P_Tr030-Tp150AH	15.00	18.57	21.08	20.07	21.18	0.001019	1.34	11.19</		

HEC-RAS River: Vaghera Reach: ValleFomoli Profile: PF 1 (Continued)


Reach	River Sta	Profile	Plan	Q Total (m ³ /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 (m ²)	Top Width (m)	Froude # Chl
ValleFomoli	72	PF 1	P_Tr030-Tp180 AL	14.82	18.57	21.01	20.06	21.11	0.001139	1.39	10.63	7.24	0.37
ValleFomoli	71	PF 1	P_Tr030-Tp030AH	13.50	18.45	21.02	19.69	21.07	0.000424	0.95	14.19	7.76	0.22
ValleFomoli	71	PF 1	P_Tr030-Tp060AH	15.31	18.45	21.11	19.78	21.17	0.000477	1.03	14.89	7.84	0.24
ValleFomoli	71	PF 1	P_Tr030-Tp090AH	15.43	18.45	21.12	19.78	21.17	0.000480	1.03	14.94	7.85	0.24
ValleFomoli	71	PF 1	P_Tr030-Tp120AH	15.36	18.45	21.12	19.78	21.17	0.000478	1.03	14.91	7.84	0.24
ValleFomoli	71	PF 1	P_Tr030-Tp150AH	15.00	18.45	21.10	19.76	21.15	0.000468	1.02	14.77	7.83	0.24
ValleFomoli	71	PF 1	P_Tr030-Tp180AH	14.82	18.45	21.09	19.75	21.14	0.000463	1.01	14.70	7.82	0.23
ValleFomoli	71	PF 1	P_Tr030-Tp180 AL	14.82	18.45	21.02	19.75	21.08	0.000511	1.04	14.19	7.76	0.25
ValleFomoli	70.9	PF 1	P_Tr030-Tp030AH	13.50	18.43	21.00	19.40	21.07	0.000284	1.17	11.55	8.52	0.23
ValleFomoli	70.9	PF 1	P_Tr030-Tp060AH	15.31	18.43	21.08	19.49	21.16	0.000328	1.28	11.92	8.60	0.25
ValleFomoli	70.9	PF 1	P_Tr030-Tp090AH	15.43	18.43	21.08	19.49	21.17	0.000331	1.29	11.94	8.61	0.25
ValleFomoli	70.9	PF 1	P_Tr030-Tp120AH	15.36	18.43	21.08	19.49	21.17	0.000329	1.29	11.93	8.61	0.25
ValleFomoli	70.9	PF 1	P_Tr030-Tp150AH	15.00	18.43	21.06	19.47	21.15	0.000321	1.27	11.85	8.59	0.25
ValleFomoli	70.9	PF 1	P_Tr030-Tp180AH	14.82	18.43	21.06	19.46	21.14	0.000317	1.25	11.81	8.58	0.25
ValleFomoli	70.9	PF 1	P_Tr030-Tp180 AL	14.82	18.43	20.99	19.46	21.07	0.000345	1.29	11.52	8.52	0.26
ValleFomoli	70.7		Culvert										
ValleFomoli	70.51	PF 1	P_Tr030-Tp030AH	13.50	18.40	20.98	19.37	21.05	0.000279	1.16	11.61	8.52	0.23
ValleFomoli	70.51	PF 1	P_Tr030-Tp060AH	15.31	18.40	21.05	19.46	21.14	0.000327	1.28	11.94	8.59	0.25
ValleFomoli	70.51	PF 1	P_Tr030-Tp090AH	15.43	18.40	21.06	19.46	21.14	0.000330	1.29	11.96	8.59	0.25
ValleFomoli	70.51	PF 1	P_Tr030-Tp120AH	15.36	18.40	21.05	19.46	21.14	0.000328	1.29	11.95	8.59	0.25
ValleFomoli	70.51	PF 1	P_Tr030-Tp150AH	15.00	18.40	21.04	19.44	21.12	0.000319	1.26	11.88	8.58	0.25
ValleFomoli	70.51	PF 1	P_Tr030-Tp180AH	14.82	18.40	21.03	19.43	21.11	0.000314	1.25	11.85	8.57	0.25
ValleFomoli	70.51	PF 1	P_Tr030-Tp180 AL	14.82	18.40	20.94	19.43	21.02	0.000354	1.30	11.42	8.48	0.26
ValleFomoli	70.5	PF 1	P_Tr030-Tp030AH	13.50	18.40	21.01	19.18	21.04	0.000196	0.71	18.98	8.55	0.15
ValleFomoli	70.5	PF 1	P_Tr030-Tp060AH	15.31	18.40	21.09	19.25	21.12	0.000228	0.78	19.66	8.62	0.16
ValleFomoli	70.5	PF 1	P_Tr030-Tp090AH	15.43	18.40	21.09	19.26	21.13	0.000230	0.78	19.71	8.63	0.17
ValleFomoli	70.5	PF 1	P_Tr030-Tp120AH	15.36	18.40	21.09	19.25	21.12	0.000229	0.78	19.68	8.63	0.16
ValleFomoli	70.5	PF 1	P_Tr030-Tp150AH	15.00	18.40	21.07	19.24	21.10	0.000223	0.77	19.54	8.61	0.16
ValleFomoli	70.5	PF 1	P_Tr030-Tp180AH	14.82	18.40	21.07	19.23	21.10	0.000220	0.76	19.47	8.60	0.16
ValleFomoli	70.5	PF 1	P_Tr030-Tp180 AL	14.82	18.40	20.98	19.23	21.01	0.000246	0.79	18.69	8.51	0.17
ValleFomoli	70.41	PF 1	P_Tr030-Tp030AH	13.50	18.35	21.01	19.13	21.03	0.000185	0.70	19.35	8.56	0.15
ValleFomoli	70.41	PF 1	P_Tr030-Tp060AH	15.31	18.35	21.09	19.20	21.12	0.000217	0.76	20.03	8.64	0.16
ValleFomoli	70.41	PF 1	P_Tr030-Tp090AH	15.43	18.35	21.09	19.21	21.12	0.000219	0.77	20.08	8.64	0.16
ValleFomoli	70.41	PF 1	P_Tr030-Tp120AH	15.36	18.35	21.09	19.20	21.12	0.000218	0.77	20.05	8.64	0.16
ValleFomoli	70.41	PF 1	P_Tr030-Tp150AH	15.00	18.35	21.07	19.19	21.10	0.000212	0.75	19.91	8.62	0.16
ValleFomoli	70.41	PF 1	P_Tr030-Tp180AH	14.82	18.35	21.07	19.18	21.09	0.000209	0.75	19.84	8.62	0.16
ValleFomoli	70.41	PF 1	P_Tr030-Tp180 AL	14.82	18.35	20.97	19.18	21.00	0.000233	0.78	19.06	8.53	0.17
ValleFomoli	70.4	PF 1	P_Tr030-Tp030AH	13.50	18.35	20.99	19.18	21.03	0.000161	0.90	15.05	8.54	0.18
ValleFomoli	70.4	PF 1	P_Tr030-Tp060AH	15.31	18.35	21.06	19.25	21.11	0.000188	0.99	15.47	8.62	0.19
ValleFomoli	70.4	PF 1	P_Tr030-Tp090AH	15.43	18.35	21.07	19.26	21.12	0.000190	1.00	15.50	8.62	0.19
ValleFomoli	70.4	PF 1	P_Tr030-Tp120AH	15.36	18.35	21.07	19.26	21.12	0.000189	0.99	15.49	8.62	0.19
ValleFomoli	70.4	PF 1	P_Tr030-Tp150AH	15.00	18.35	21.05	19.24	21.10	0.000184	0.97	15.40	8.60	0.19
ValleFomoli	70.4	PF 1	P_Tr030-Tp180AH	14.82	18.35	21.04	19.23	21.09	0.000181	0.97	15.36	8.60	0.19
ValleFomoli	70.4	PF 1	P_Tr030-Tp180 AL	14.82	18.35	20.95	19.23	21.00	0.000204	1.00	14.83	8.51	0.20
ValleFomoli	70.3		Culvert										
ValleFomoli	70.1	PF 1	P_Tr030-Tp030AH	13.50	18.30	20.96	19.13	21.00	0.000157	0.89	15.16	8.53	0.17
ValleFomoli	70.1	PF 1	P_Tr030-Tp060AH	15.31	18.30	21.03	19.20	21.08	0.000186	0.98	15.55	8.60	0.19
ValleFomoli	70.1	PF 1	P_Tr030-Tp090AH	15.43	18.30	21.03	19.21	21.08	0.000187	0.99	15.57	8.60	0.19
ValleFomoli	70.1	PF 1	P_Tr030-Tp120AH	15.36	18.30	21.03	19.20	21.08	0.000186	0.99	15.56	8.60	0.19
ValleFomoli	70.1	PF 1	P_Tr030-Tp150AH	15.00	18.30	21.02	19.19	21.06	0.000181	0.97	15.48	8.59	0.19
ValleFomoli	70.1	PF 1	P_Tr030-Tp180AH	14.82	18.30	21.01	19.18	21.06	0.000178	0.96	15.44	8.58	0.19
ValleFomoli	70.1	PF 1	P_Tr030-Tp180 AL	14.82	18.30	20.91	19.18	20.96	0.000201	0.99	14.89	8.49	0.20
ValleFomoli	70	PF 1	P_Tr030-Tp030AH	13.50	18.30	20.97	19.09	20.99	0.000184	0.70	19.42	8.54	0.15
ValleFomoli	70	PF 1	P_Tr030-Tp060AH	15.31	18.30	21.04	19.15	21.07	0.000217	0.76	20.02	8.61	0.16
ValleFomoli	70	PF 1	P_Tr030-Tp090AH	15.43	18.30	21.05	19.16	21.08	0.000219	0.77	20.06	8.61	0.16
ValleFomoli	70	PF 1	P_Tr030-Tp120AH	15.36	18.30	21.04	19.15	21.07	0.000218	0.77	20.04	8.61	0.16
ValleFomoli	70	PF 1	P_Tr030-Tp150AH	15.00	18.30	21.03	19.14	21.06	0.000212	0.75	19.91	8.60	0.16
ValleFomoli	70	PF 1	P_Tr030-Tp180AH	14.82	18.30	21.02	19.13	21.05	0.000208	0.75	19.85	8.59	0.16
ValleFomoli	70	PF 1	P_Tr030-Tp180 AL	14.82	18.30	20.93	19.13	20.96	0.000234	0.78	19.04	8.50	0.17
ValleFomoli	69	PF 1	P_Tr030-Tp030AH	13.50	18.25	20.84	19.78	20.97	0.001632	1.59	8.50	4.87	0.38
ValleFomoli	69	PF 1	P_Tr030-Tp060AH	15.31	18.25	20.88	19.90	21.04	0.001976	1.76	8.70	4.92	0.42
ValleFomoli	69	PF 1	P_Tr030-Tp090AH	15.43	18.25	20.88	19.90	21.04	0.001999	1.77	8.71	4.92	0.42
ValleFomoli	69	PF 1	P_Tr030-Tp120AH	15.36	18.25	20.88	19.90	21.04	0.001986	1.77	8.70	4.92	0.42
ValleFomoli	69	PF 1	P_Tr030-Tp150AH	15.00	18.25	20.87	19.88	21.02	0.001918	1.73	8.66	4.91	0.42
ValleFomoli	69	PF 1	P_Tr030-Tp180AH	14.82	18.25	20.87	19.87	21.02	0.001884	1.72	8.64	4.90	0.41
ValleFomoli	69	PF 1	P_Tr030-Tp180 AL	14.82	18.25	20.75	19.87	20.92	0.002258	1.84	8.06	4.76	0.45
ValleFomoli	68	PF 1	P_Tr030-Tp030AH	13.50	17.50	20.69		20.73	0.000299	0.84	16.04	7.62	0.19
ValleFomoli	68	PF 1	P_Tr030-Tp060AH	15.31	17.50	20.69		20.74	0.000385	0.96	16.02	7.62	0.21
ValleFomoli	68	PF 1	P_Tr030-Tp090AH	15.43	17.50	20.69		20.74	0.000391	0.96	16.02	7.62	0.21
ValleFomoli	68	PF 1	P_Tr030-Tp120AH	15.36	17.50	20.69		20.74	0.000388	0.96	16.02	7.62	0.21
ValleFomoli	68	PF 1	P_Tr030-Tp150AH	15.00	17.50	20.69		20.73	0.000370	0.94	16.02	7.62	0.21
ValleFomoli	68	PF 1	P_Tr030-Tp180AH	14.82	17.50	20.69		20.73	0.000361	0.92	16.03	7.62	0.20
ValleFomoli	68	PF 1	P_Tr030-Tp180 AL	14.82	17.50	18.89	18.89	19.40	0.009863	3.16	4.68	4.65	1.01
ValleFomoli	67	PF 1	P_Tr030-Tp030AH	13.50	17.50	20.70		20.72	0.000172	0.68	19.80	9.00	0.15
ValleFomoli	67	PF 1	P_Tr030-Tp060AH	15.31	17.50	20.70		20.73	0.000221	0.77	19.80	9.00	0.17
ValleFomoli	67	PF 1	P_Tr030-Tp090AH	15.43	17.50	20.70		20.73	0.000224	0.78			



Punti	Coordinate	Quote	Punti	Coordinate	Quote		
9040	-105.6432	499.2275	22.2385	8005	-715.0709	587.068	22.7183
9050	-105.6274	503.6378	28.8827	8009	-224.5192	582.6448	22.6331
9051	-100.3571	504.4907	21.8196	8007	-329.8073	573.8025	21.2611
9052	-113.2894	509.7823	21.055	8008	-229.2715	561.8613	21.4
9054	88.36	487.7202	22.1761	8009	243.8729	572.9613	21.287
9055	-83.3474	499.23	22.1428	8010	-104.7563	555.3652	21.0119
9056	-85.4985	494.5774	22.0457	8011	-196.5682	575.4267	22.5858
9057	-84.1058	489.8728	22.2711	8012	-196.1937	585.5641	22.5919
9058	-78.8998	489.8143	22.2391	8013	-185.3879	581.2732	22.5211
9059	-77.2973	490.703	22.1307	8014	-181.8783	582.459	22.6075
9060	-70.0425	483.6488	21.8027	8015	-100.5001	684.0877	22.6273
9061	-70.0523	494.9049	22.1956	8016	-188.0572	580.6055	22.7105
9062	84.0182	500.9427	22.1367	8015	-177.1538	574.445	22.5056
9063	-82.8662	502.1969	22.2391	8020	-181.3481	577.1131	22.5319
9064	-101.7925	508.9402	22.1732	8021	-189.6366	580.8896	22.6367
9065	-100.7105	507.9823	22.2471	8022	-189.8354	579.7249	22.6115
9066	-106.5406	511.0018	22.3684	8023	-203.66	755.8214	31.4216
9067	-105.8019	511.9416	22.3982	8024	-234.8349	730.0479	26.8663
9068	-111.2007	514.8381	22.3460	9000	-207.8649	685.526	21.0431
9069	-108.4514	515.037	22.3558	9001	-212.0107	588.1659	21.0701
9070	-111.5999	516.7397	22.4988	9002	-213.9423	590.1504	19.8423
9071	-107.2623	517.1795	21.2196	9003	-212.319	591.6991	19.9181
9072	-88.8768	509.9023	21.4468	9004	-212.5989	590.5993	19.8526
9073	-89.2103	501.7296	20.8542	9005	-227.0346	597.6931	20.7737
9074	-74.14671	491.3788	21.0310	9006	-233.1564	602.8678	19.9575
9075	-58.7133	497.4101	20.9052	9007	-232.2277	603.702	19.9424
9076	-69.7985	491.2317	20.9411	9008	-232.6117	603.1515	19.9197
9077	-85.7338	502.8885	21.8334	9009	-248.7465	612.9082	20.0914
9078	-105.1655	518.0812	21.3372	9010	-249.5282	611.6138	20.1499
9080	-149.2573	541.5336	21.1044	9011	-249.2207	612.2481	20.0893
9081	-88.5474	498.4829	21.2154	9012	-258.5054	616.4884	20.0811
9082	-149.2573	541.5336	21.1044	9013	-267.5627	618.8184	20.1342
9083	-145.8482	540.8327	19.9094	9014	-268.0244	615.0554	20.0917
9084	-110.4878	538.5656	21.0488	9015	-268.8037	615.1745	20.0737
9085	-131.2885	534.46	21.5739	10000	-202.1284	719.9167	25.3963
9084	-146.1733	524.0607	22.5203	10001	-185.8932	580.8518	21.0399
9085	-141.9525	542.4626	22.6218	10002	-181.9994	580.9645	21.3779
9086	-149.2297	544.486	19.867	10003	-181.0592	577.9133	22.3806
9087	-149.2215	544.5169	19.8578	10004	-151.131	567.3336	20.960
9088	-149.2487	544.5146	19.8426	10005	-151.2177	553.1179	22.404
9089	-149.545	544.0557	19.7823	10006	-212.8024	601.4419	21.1201
9090	-100.0975	543.8102	19.8695	10007	-213.8855	597.9569	22.6056
9091	-188.163	561.934	20.0458	10008	-236.381	615.1381	21.4374
9092	-188.4914	561.9038	19.8389	10009	-238.1285	612.9144	22.614
9093	-188.5575	560.4543	19.9645	10010	-238.1508	611.1742	22.5335
9094	-179.2979	570.8576	19.9514	10011	-253.9186	623.7905	21.7225
9095	-179.4774	570.8988	19.9122	10012	-254.8674	621.4644	22.6658
9096	-179.5828	570.8383	19.9837	10013	-255.3683	619.609	22.5347
9097	-184.3371	573.221	19.8952	10014	-262.3578	633.1043	21.6117
9098	-183.8897	573.8554	20.0293	10015	-275.7641	629.9738	21.9409
9099	-188.384	578.8987	20.0137	10016	-293.5665	735.8915	31.293
9100	-198.1973	587.4282	22.7116	10017	-290.3759	763.6956	34.234
9101	-198.0854	586.8685	22.586	10018	-295.1172	736.7917	26.9983
9102	-207.8373	590.2806	22.5019	10019	-177.3889	743.7941	31.2935
9103	-207.8891	581.4347	22.5456	10020	-515.4481	879.4121	25.1157

Punti	Coordinate	Quote	Punti	Coordinate	Quote		
11000	-292.1284	719.9167	25.3963	11027	-546.079	876.6886	23.7769
11050	-490.7913	825.7825	24.3449	11028	-579.1164	874.7662	24.1156
11051	-485.9489	823.5689	23.5561	11029	-555.0445	878.4995	23.6943
11052	-481.7676	821.9008	22.665	11030	-549.2172	882.2244	23.332
11053	-480.368	821.2939	22.3408	11031	-537.765	880.6208	23.4203
11054	-476.2899	820.2927	23.2417	11032	-528.1873	873.7255	23.4331
11055	-473.9841	817.8988	23.2423	11033	-518.1556	869.0407	23.5507
11056	-471.2354	811.1155	22.9822	11034	-518.7823	843.0204	21.1754
11057	-466.8034	812.4108	23.3056	11035	-519.6158	841.8266	21.2818
11058	-451.6657	771.0105	23.201	11036	-514.4207	851.8758	21.3428
11059	-430.7832	768.3298	21.627	11037	-533.8208	852.9542	21.2668
11060	-431.3825	768.9722	20.3921	11038	-567.7985	866.3223	21.1939
11061	-428.463	769.4864	23.1541	11039	-568.0887	865.289	21.2961
11062	-422.6167	762.5776	23.0189	11040	-507.6335	843.0539	24.2454
11063	-422.4783	762.5506	23.0101	11041	-517.1721	860.0465	24.4121
11064	-414.1094	759.2751	23.0007	11042	-518.2818	859.5501	24.3438
11065	-402.5351	746.3682	23.0204	11043	-526.3933	875.7141	24.816
11066	-390.6413	736.3939	22.8245	11044	-527.3238	876.314	24.7414
11067	-380.6554	736.3158	22.7748	11045	-530.0837	885.8447	25.2138
11068	-381.4677	727.1416	22.8707	11046	-539.8316	884.5432	25.1784
11069	-387.8703	714.4459	22.8015	11047	-565.2048	885.6501	25.3885
11070	-358.0298	704.7556	22.814	11048	-554.4486	884.6649	25.3786
11071	-349.8778	697.2611	22.4602	11049	-573.1529	887.7952	25.5266
11072	-342.8626	690.1383	22.48	11050	-529.4491	900.6586	25.3424
11073	-332.3317	682.4396	22.3463	11051	-480.8162	907.3482	25.2341
11074	-333.9699	680.7122	21.5116	11052	-509.0417	895.2262	24.3056
11075	-308.0607	655.6272	22.5206	11053	-484.6489	831.7829	24.1243
11076	-282.9621	634.9245	22.002	11054	-492.2486	824.3846	24.2075
11077	-280.2987	632.6025	22.4884	11055	-336.7182	684.7441	21.5112
11078	-281.4711	638.4763	22.7136	11056	-339.3680	681.9385	20.1964
11079	-279.9498	640.7432	20.4405	11102	-339.0857	683.2027	20.1567
11103	-278.854	635.7508	20.4382	11103	-336.7182	684.7441	21.5112
11081	-278.0666	628.8156	20.1236	11104	-335.3738	686.7776	22.3544
11082	-278.9773	643.2531	22.3058	11106	-332.6102	689.6745	22.6894
11083	-280.4551	648.1614	22.1303	11108	-441.4620	780.5989	23.2019
11084	-284.3182	663.8975	22.1685	11107	-442.6302	779.5208	20.4286
11085	-285.9205	665.0418	21.0503	11108	-443.3145	778.6401	20.4047
11086	-329.8144	685.5649	22.6889	11109	-445.0715	777.1032	23.8489
11087	-315.4465	679.6206	25.0839	11110	-443.8699	815.0626	24.2210
11088	-496.8848	823.9884	24.1988	11111	-482.0550	817.5141	22.8265
11102	-500.3559	830.4475	24.2163	11112	-480.3396	819.4940	21.0224
11089	-511.4738	834.3977	24.2173	11113	-480.2655	820.6872	21.0187
11104	-511.3554	831.9959	24.2625	11114	-479.3127	822.0183	22.4749
11105	-539.485	845.2008	24.3502	11115	-477.7095	824.5399	24.2483
11089	-538.1887	847.1169	24.4217				
11007	-539.3846	845.7582	24.8958				
11008	-580.4649	861.9153	24.7156				
11009	-579.3295	864.461	24.7004				
11010	-610.8748	899.0319	26.6215				
11012	-587.9962	871.078	23.3066				
11013	-569.5758	863.6982	22.7659				
11014	-540.333	841.7317	22.2158				
11015	-543.4547	840.59	21.8996				
11016	-508.8143	836.5689	23.3496				
11017	-508.8534	836.6393	21.0176				
11018	-512.9292	842.3424	22.4475				
11019	-511.972	844.5794	23.4155				
11020	-533.8429	855.4929	23.2003				
11021	-532.6186	857.7991	23.3714				
11022	-531.4092	861.1084	23.35				
11023	-533.8534	862.2096	23.5122				
11024	-535.3476	858.9329	23.6237				
11026	-547.8724	861.9096	23.5388				
11028	-571.4412	870.4858	23.7615				


pagina 8/8



Comune di Montopoli in Val d'Arno
(Provincia di Pisa)

LAVORI DI URBANIZZAZIONE DELLE AREE INDUSTRIALI Zia, Zib e Zic NELLA FRAZIONE DI CAPANNE, LOCALITA' Fontanelle
OPERE DI SALVAGUARDIA IDRAULICA DEL TORRENTE VAGHERA - FASE I° -

- lavori di costruzione delle casse di laminazione delle piene
- lavori di adeguamento e consolidamento degli argini nella tratta compresa tra la linea F.S. e la ss. 67 Tosco Romagnola
- lavori di ricablatura in alveo nella tratta compresa tra la ss. 67 Tosco Romagnola e la Via Fornoli

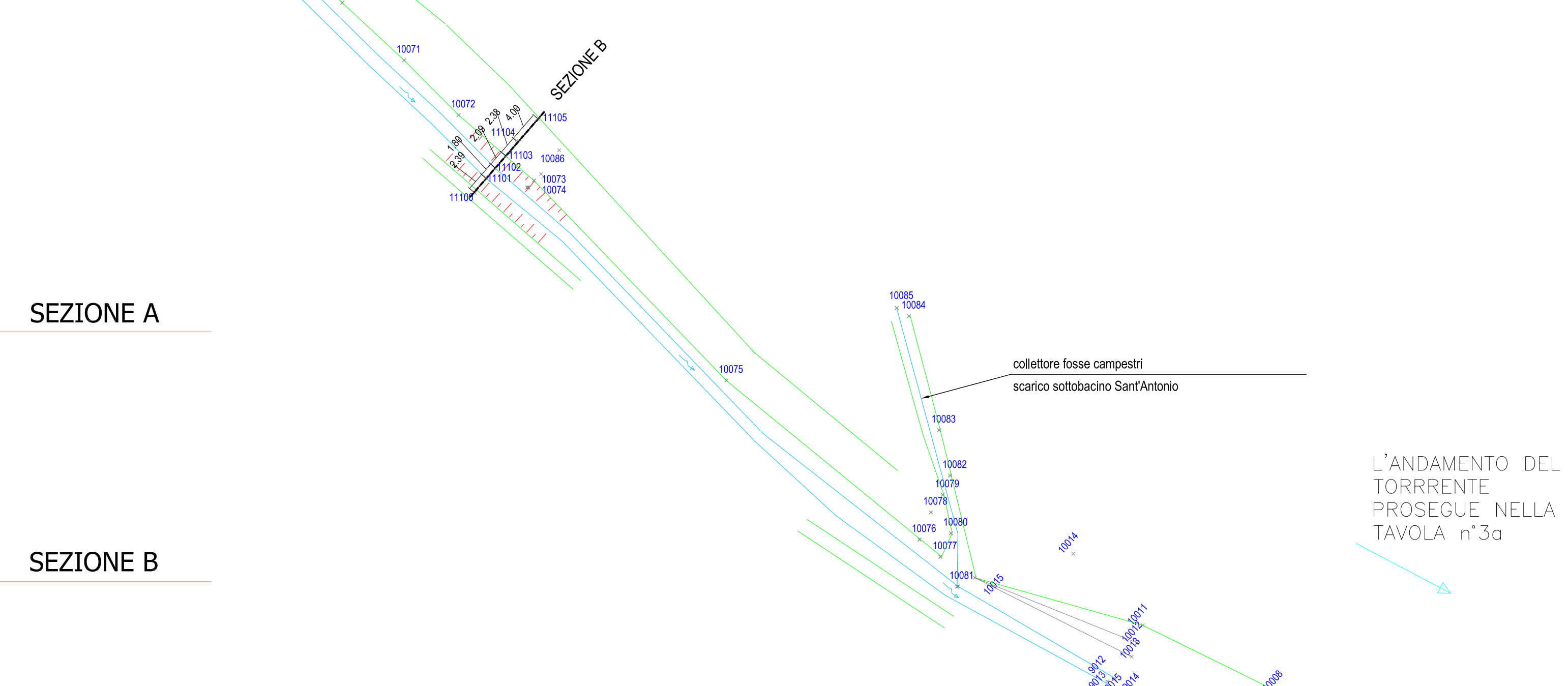
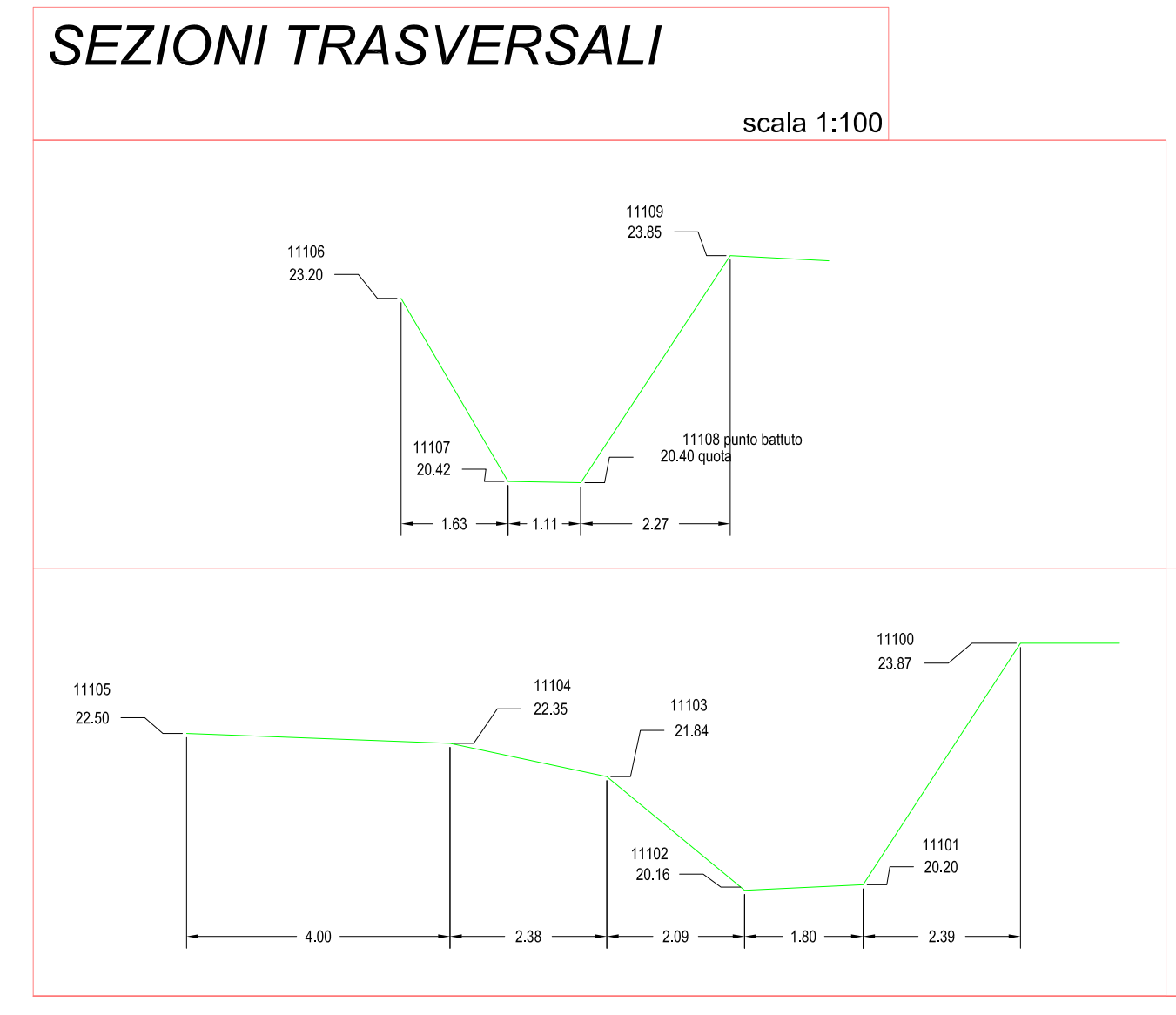


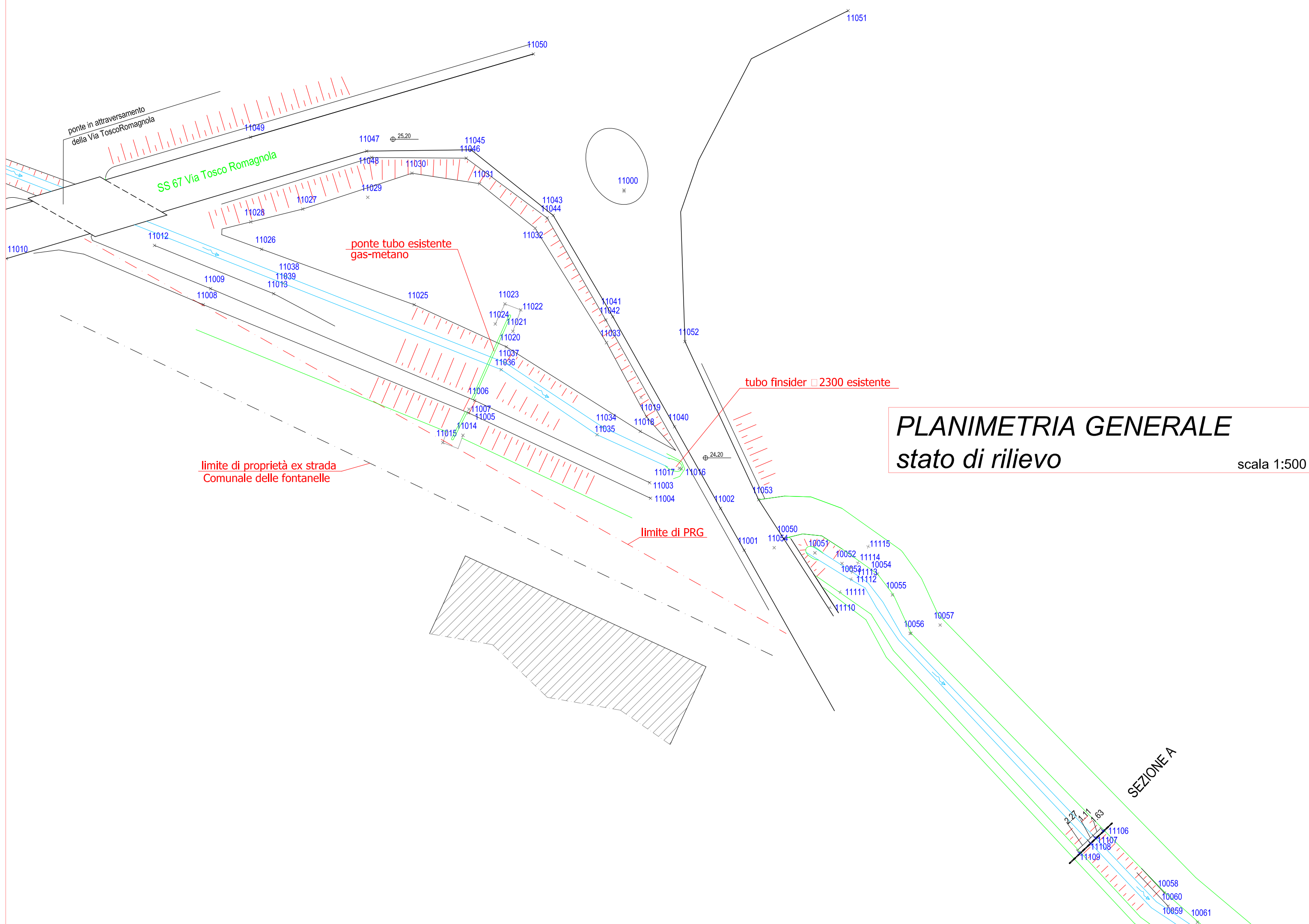
as built

Tav. 2a) PLANIMETRIA STATO DI RILIEVO
- dalla sez. A alla sez. B -

Progetto: Ing. Bottai & Associati
Ing. AUGUSTO BOTTAI Responsabile del progetto
Geom. Bertoncini Stefano collaboratore

Giugno 2016 - Agg Maggio 2017





PLANIMETRIA GENERALE
stato di rilievo
scala 1:500

Punti	Coordinate	Quote	Punti	Coordinate	Quote		
9040	-105.6432	499.2275	22.2385	8005	-715.0709	587.968	22.7183
9050	-105.6274	503.6378	28.9827	8009	-224.5192	582.6448	22.6331
9051	-100.3571	504.4907	21.9156	8007	-209.8073	573.8025	21.2611
9052	-113.2894	509.7823	21.055	8008	-229.2715	561.8613	21.4
9054	88.36	487.7202	22.1761	8009	243.8729	572.9613	21.287
9055	-83.3474	499.23	22.1428	8010	-104.7563	555.3652	21.0119
9056	-85.4985	494.5774	22.0457	8011	-196.5682	575.4267	22.5858
9057	-84.1058	489.8728	22.2711	8012	-196.1937	585.5641	22.5919
9058	-78.8998	489.8143	22.2391	8013	-186.3879	581.2732	22.5211
9059	-77.2973	490.703	22.1307	8014	-181.8793	582.459	22.6075
9060	-70.0425	483.6488	21.8027	8015	-100.5001	684.0877	22.6273
9061	-70.0523	494.9049	22.1956	8016	-188.0572	580.6055	22.7105
9062	84.0182	500.9427	22.1367	8015	-177.1538	574.445	22.5056
9063	-82.8662	502.1969	22.2391	8020	-181.3481	577.1131	22.5319
9064	-101.7925	508.9402	22.1732	8021	-186.6366	580.8896	22.6367
9065	-100.7105	507.9823	22.2471	8022	-188.8354	579.7249	22.6115
9066	-106.5406	511.0018	22.3684	8023	-203.66	755.8214	31.4216
9067	-105.8019	511.9416	22.3982	8024	-234.8349	730.0479	26.8663
9068	-111.2007	514.8381	22.3460	9000	-207.8649	685.526	21.0431
9069	-108.4514	515.037	22.3558	9001	-212.0107	588.1659	21.0701
9070	-111.5999	516.7397	22.4988	9002	-213.9423	590.1504	19.8423
9071	-107.2623	517.1795	21.2196	9003	-212.319	591.6991	19.9181
9072	-88.8768	509.9023	21.4468	9004	-212.5989	590.5993	19.8526
9073	-89.2103	501.7296	20.8542	9005	-227.0346	597.6931	20.7737
9074	-74.14671	491.3788	21.0310	9006	-233.1564	602.8678	19.9575
9075	-58.7133	497.4101	20.9052	9007	-232.2277	603.702	19.9424
9076	-69.7985	491.2717	20.9411	9008	-232.6117	603.1515	19.9197
9077	-85.7538	502.8885	21.8334	9009	-248.7465	612.9082	20.0914
9078	-105.1655	518.0812	21.3372	9010	-249.5282	611.6138	20.1499
9080	-149.2573	541.5336	21.1044	9011	-249.2207	612.2481	20.0893
9081	-88.5474	498.4829	21.2154	9012	-258.5054	616.4884	20.0811
9082	-149.2573	541.5336	21.1044	9013	-267.5627	618.8184	20.1342
9083	-145.8482	540.8327	19.9094	9014	-268.0244	615.0554	20.0917
9084	-110.4878	538.5656	21.0488	9015	-268.8037	615.1745	20.0737
9085	-131.2885	534.46	21.5739	10000	-202.1284	719.9167	25.3963
9084	-146.1733	524.0607	22.5203	10001	-185.8932	580.8518	21.0399
9085	-141.9525	542.4626	22.6218	10002	-181.9994	580.9645	21.3779
9086	-149.2297	544.496	19.867	10003	-181.0592	577.9133	22.3806
9087	-149.2215	544.5169	19.8578	10004	-151.131	567.3336	20.960
9088	-149.2487	544.5146	19.8426	10005	-151.2177	553.1179	22.404
9089	-149.545	544.0557	19.7820	10006	-212.8024	601.4419	21.1201
9090	-100.0975	543.8102	19.8695	10007	-213.8955	597.9569	22.6056
9091	-188.163	561.934	20.0458	10008	-236.381	615.1381	21.4374
9092	-188.4914	561.9038	19.8389	10009	-238.1285	612.9144	22.674
9093	-188.5575	560.4543	19.9645	10010	-238.1508	611.1742	22.5335
9094	-179.2979	570.8576	19.9574	10011	-253.9186	623.7905	21.7225
9095	-179.4774	570.8988	19.9122	10012	-254.8674	621.4644	22.6658
9096	-179.5826	570.8383	19.9837	10013	-255.3683	619.609	22.5347
9097	-184.3371	573.221	19.8952	10014	-262.3578	633.1043	21.6117
9098	-183.8897	573.8554	20.0293	10015	-275.7641	629.9738	21.9409
9099	-188.384	578.8987	20.0137	10016	-293.5665	735.8916	31.293
9100	-198.1973	587.4282	22.7116	10017	-290.3759	763.6956	34.234
9101	-198.0854	586.8665	22.586	10018	-295.1172	736.7917	26.9983
9102	-207.8373	590.2806	22.5019	10019	-177.3889	743.7941	31.2935
9103	-207.8891	581.4347	22.5456	10020	-515.4481	879.4121	25.1157

pagina 7/8

Punti	Coordinate	Quote	Punti	Coordinate	Quote		
10000	-292.1284	719.9167	25.3963	11027	-546.079	876.6886	23.7769
10050	-490.7913	825.7825	24.3449	11028	-579.1134	874.7662	24.1156
10051	-485.9489	823.5689	23.5561	11029	-555.0445	878.4995	23.6943
10052	-481.7676	821.9008	22.665	11030	-549.2172	882.2244	23.332
10053	-480.368	821.2939	22.3408	11031	-537.765	880.6208	23.4203
10054	-476.2899	820.2927	23.2417	11032	-528.1873	873.7255	23.4331
10055	-473.9841	817.6988	23.2423	11033	-518.1556	869.0407	23.5507
10056	-471.2354	811.1155	22.9822	11034	-518.7823	843.0204	21.1754
10057	-466.8034	812.4108	23.3058	11035	-519.6158	841.8266	21.2818
10058	-451.6657	771.0105	23.201	11036	-514.4207	851.8758	21.3428
10059	-430.7832	768.3298	21.627	11037	-533.8208	852.9542	21.2668
10060	-431.3825	768.9722	20.3921	11038	-567.7985	866.3223	21.1939
10061	-428.463	769.4864	23.1541	11039	-568.0887	865.289	21.2961
10062	-422.6167	762.5776	23.0189	11040	-507.6335	843.0539	24.2454
10063	-422.4783	762.5506	23.0101	11041	-517.1721	860.0465	24.4121
10064	-414.1094	756.2751	23.0007	11042	-518.2618	859.5501	24.3438
10065	-422.5351	746.3682	23.0204	11043	-526.3933	875.7141	24.816
10066	-390.6413	736.3939	22.8245	11044	-527.3238	876.314	24.7414
10067	-390.6554	736.3158	22.7748	11045	-530.0837	885.8447	25.2138
10068	-381.4677	727.1416	22.8707	11046	-539.8316	884.5432	25.1784
10069	-387.8703	714.4459	22.8015	11047	-565.2048	885.6501	25.3885
10070	-358.0298	704.7556	22.814	11048	-554.4486	884.6649	25.3786
10071	-349.8778	697.2611	22.4602	11049	-573.1529	887.7952	25.5266
10072	-342.8626	690.1383	22.48	11050	-529.4491	900.6586	25.3424
10073	-332.3317	682.4396	22.3463	11051	-480.8162	907.3482	25.2341
10074	-333.9699	680.7122	21.5116	11052	-509.0417	895.2262	24.3056
10075	-308.0607	655.6272	22.5296	11053	-484.6489	831.7829	24.1243
10076	-282.9621	634.9245	22.0202	11054	-492.2486	824.3846	24.2075
10077	-280.2987	632.6025	22.4884	11055	-336.7182	684.7441	21.5112
10078	-281.4711	638.4763	22.7136	11056	-339.3680	681.9385	20.1964
10079	-279.9498	640.7432	20.4405	11102	-339.0857	683.2027	20.1567
11103	-278.8754	635.7508	20.4382	11103	-336.7182	684.7441	21.5112
10081	-278.0666	628.8156	20.1236	11104	-335.3738	686.7776	22.3544
10082	-278.9773	643.2531	22.3058	11106	-332.6102	689.6745	22.6894
10083	-280.4551	648.1614	22.1303	11108	-441.4620	780.5989	23.2019
10084	-284.3182	663.8975	22.1685	11107	-442.6302	779.5208	20.4286
10085	-285.9205	665.0418	21.0503	11108	-443.3145	778.6401	20.4047
10086	-329.8144	685.5649	22.6889	11109	-445.0715	777.1032	23.8469
10087	-315.4465	679.6206	25.0839	11110	-443.8699	815.0626	24.2210
10088	-496.8848	823.9884	24.1988	11111	-482.0550	817.5141	22.8265
10089	-500.3559	830.4475	24.2163	11112	-480.3396	819.4940	21.0224
10090	-511.4738	834.3977	24.2173	11113	-480.2655	820.6872	21.0187
10094	-511.3554	831.9959	24.2625	11114	-479.3127	822.0183	22.4749
10095	-539.485	845.2008	24.3562	11115	-477.7095	824.5399	24.2483
10096	-538.1887	847.1169	24.4217				
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10098	-580.4649	861.9153	24.7156				
10099	-579.3295	864.461	24.7004				
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10102	-587.9962	871.078	23.3066				
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10104	-540.333	841.7317	22.2158				
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10106	-508.8143	836.5689	23.3496				
10107	-508.8534	836.6393	21.0176				
10108	-512.9292	842.3424	22.4475				
10109	-511.9722	844.5794	23.4155				
10110	-533.8429	855.4929	23.2003				
10111	-532.6186	857.7991	23.3714				
10112	-531.4092	861.1084	23.35				
10113	-533.8534	862.2096	23.5122				
10114	-535.3476	858.9329	23.6237				
10115	-547.8724	861.9096	23.5388				
10116	-571.4412	870.4858	23.7615				

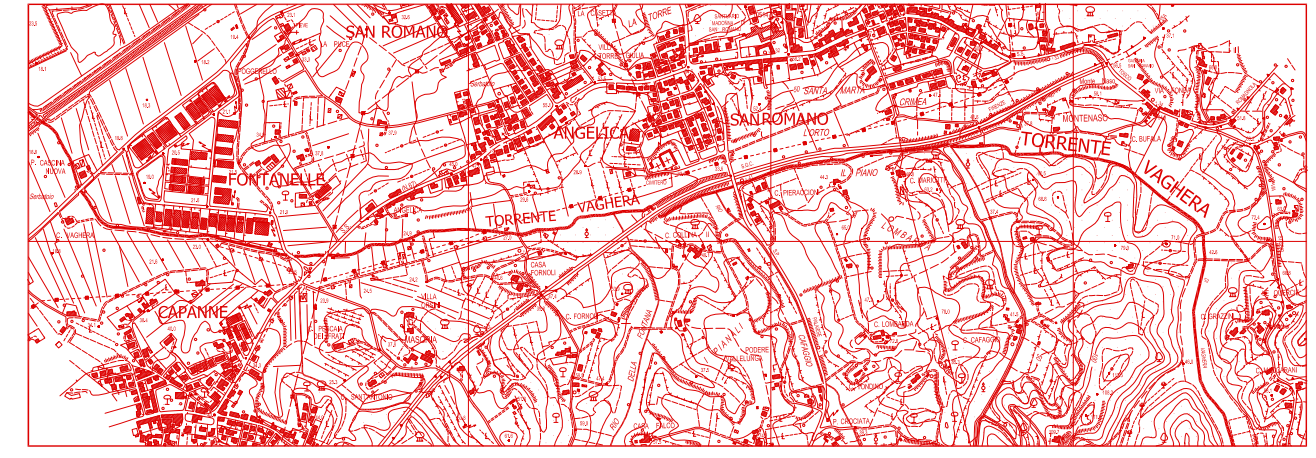
pagina 8/8



Comune di Montopoli in Val d'Arno
(Provincia di Pisa)

LAVORI DI URBANIZZAZIONE DELLE AREE INDUSTRIALI Zia, Zib e Zic NELLA FRAZIONE DI CAPANNE, LOCALITA' Fontanelle
OPERE DI SALVAGUARDIA IDRAULICA DEL TORRENTE VAGHERA - FASE I° -

- lavori di costruzione delle casse di laminazione delle piene
- lavori di adeguamento e consolidamento degli argini nella tratta compresa tra la linea F.S. e la ss. 67 Tosco Romagnola
- lavori di ricalibratura in alveo nella tratta compresa tra la ss. 67 Tosco Romagnola e la Via Fornoli



as built

SEZIONI TRASVERSALI

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