

# Comune di Piombino

Provincia di Livorno



## Campiglia M.ma Piombino Suvereto

# REGOLAMENTO URBANISTICO d' AREA

### Ufficio di Piano:

Coordinatore :

Arch. Alessandro Grassi

Arch. Camilla Cerrina Feroni

Geom. Antonino Micalizzi

Arch. Paolo Danti

Arch. Laura Pescini

Arch. Massimiliano Franci

Arch. Annalisa Giorgetti

Arch. Cristina Guerrieri

Geom. Valerio Buonaccorsi

### Consulente scientifico:

Arch. Silvia Viviani

### Indagini geologiche

#### e calcoli idraulici:

Geol. Alberto Frullini

Geol. Roberto Sinatti

Prof. Ing. Stefano Pagliara

### Consulenti:

Ambiente Italia s.r.l.

Ldp GIS s.r.l.

Tages s.r.l.

### Garante della comunicazione:

Prof. Massimo Morisi

febbraio 2012

Comune di Piombino

RELAZIONE IDRAULICA



# ***Adeguamento delle indagini idrauliche contenute nel Piano Strutturale d'area (Comuni di Campiglia Marittima, Piombino, Suvereto)***

## **Relazione idrologico-idraulica**

### **1.PREMESSA**

Lo studio, ha come scopo la definizione di dettaglio del quadro conoscitivo delle problematiche idrauliche dei corsi d'acqua ricadenti nei comuni di Campiglia, Piombino e Suvereto.

### **CORSI D'ACQUA INDAGATI**

- F.Cornia
- tratto terminale R. Merdancio
- Fosso La corniaccia
- F.sso Verrocchio
- F.sso Cornia Vecchia e affluenti
- F.sso Montegemoli
- F.Acquari
- F.sso Valnera
- F.sso Corniaccia
- F.sso Riotorto
- F.sso Tardo'

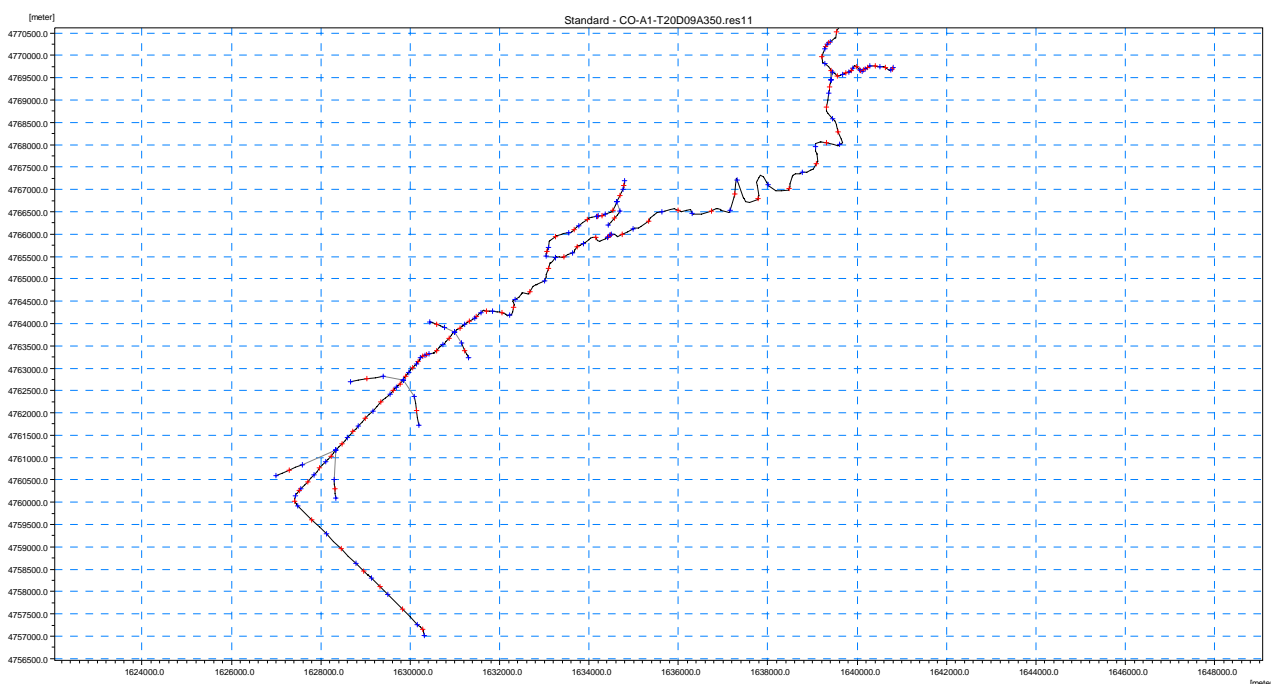
## 1) F.CORNIA: AREE ESONDABILI NELLO STATO ATTUALE

Il calcolo idraulico e delle esondazioni si basa sul lavoro (Ing. S.Pagliara) "Studio idrologico-idraulico finalizzato alla sistemazione del F.Cornia" del dicembre 2004 ed utilizza lo stesso modello. Nello studio idraulico di appoggio alla redazione del piano strutturale (ottobre 2005) si hanno le carte delle esondazione del F.Cornia e Riomerdancio. In Particolare:

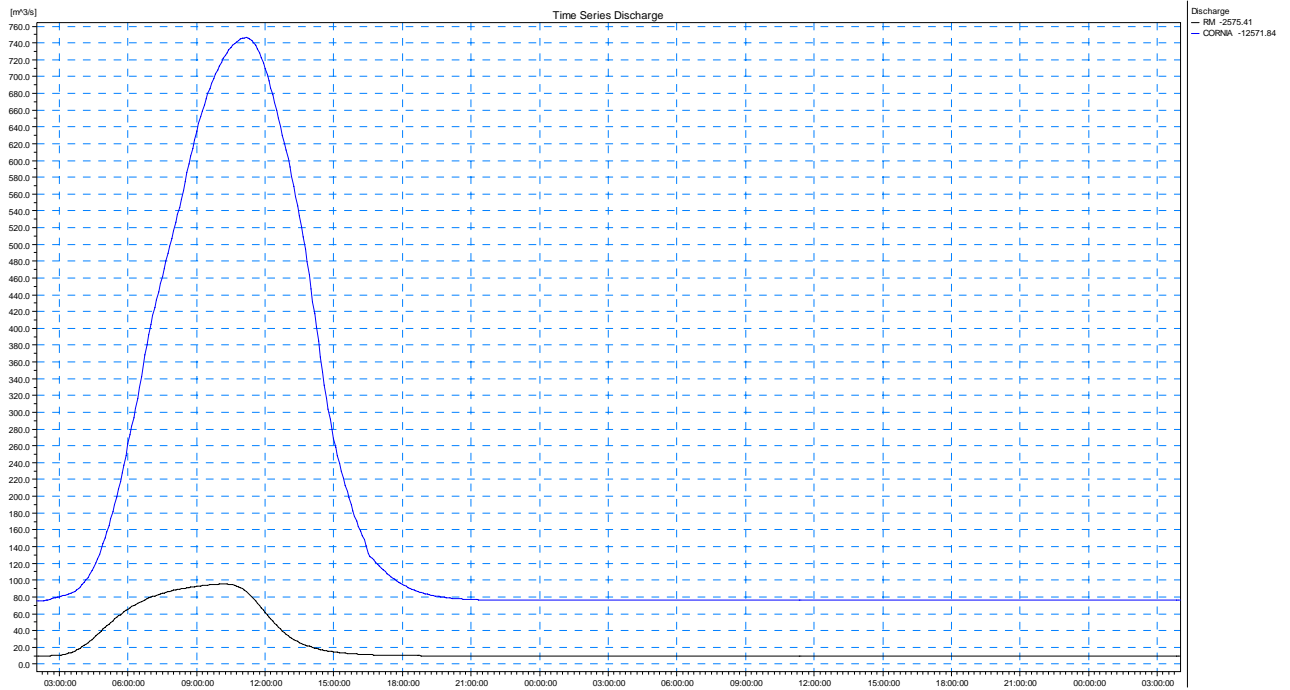
- Tav. E2 = Esondazioni stato attuale F.Cornia e Rio Merdancio per Tr=100 anni;
- Tav. E3 = Esondazioni stato attuale F.Cornia e Rio Merdancio per Tr=30 anni;
- Tav. E1 = Esondazioni stato attuale F.Cornia e Rio Merdancio per Tr=200 anni;
- Tav. E5 = Esondazioni stato attuale Rio Merdancio per Tr=200 anni;
- Per la parte a valle della geodetica, le carte delle esondazioni del F.Cornia derivano dallo studio effettuato dallo scrivente per il Comune di Piombino (Variante al PRG e al PS d'area portualita'. Distretto della nautica , riassetto delle aree industriali e infrastrutture connesse. – gennaio 2009. In particolare:
  - Tav- Int1 – esondazioni f.cornia per Tr=200
  - Tav- Int2 – esondazioni f.cornia per Tr=30
  - Tav- Int3 – esondazioni f.cornia per Tr=20

Per il Rio Merdancio relativamente alla portata per Tr=20 anni, e' stato effettuato il calcolo ad hoc nel presente studio partendo dallo stesso modello utilizzato nello studio generale del 2004.

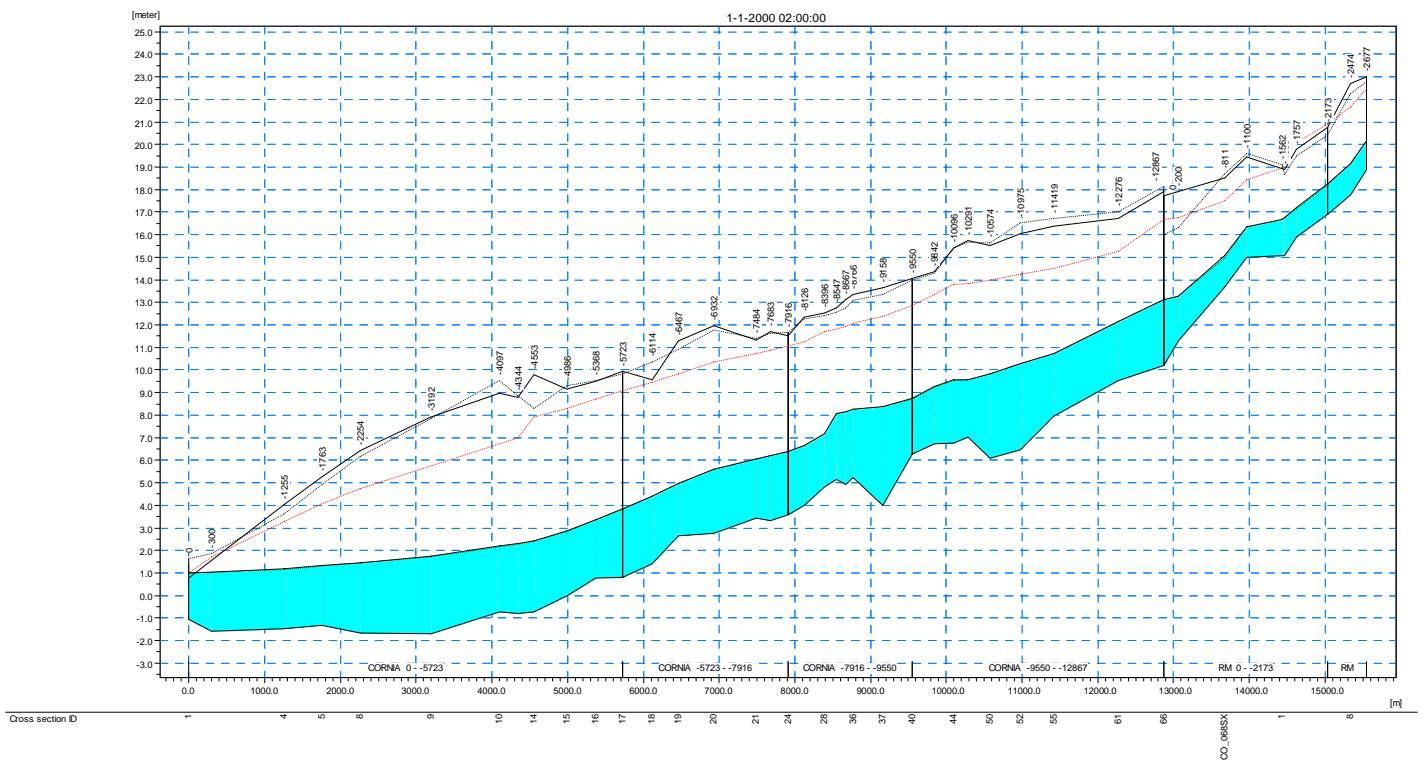
I risultati sono riportati nella tavola n. 8.1.4



*planimetria di calcolo F.Cornia e R.Merdancio*



Idrogrammi di piena per R.Merdancio e a valle della confluenza fra R.Merdancio e Cornia per  $Tr=20$  anni  
 ( $Tp=9$  ore)



Profilo longitudinale per  $Tr=20$  anni (in rosso) F.Cornia e R.Merdancio

## **1.2) F.CORNIA (STATO DI PROGETTO CON ARGINI TRACIMABILI E P. DI FERRO RICOSTRUITO) E TRATTO TERMINALE R.MERDANCIO**

Si riportano i risultati dello studio "Calcolo delle esondazioni per  $T_r=200$  e 30 anni del F.Cornia nell'ipotesi di demolizione del P. di Ferro e di risagomatura e protezione delle arginature come da progetto preliminare del Consorzio Alta Maremma: " Lavori di manutenzione straordinaria alle arginature del Fiume Cornia - II e III categoria idraulica " del settembre 2007 redatto dallo scrivente per il comune di Piombino.

Questa parte ha il solo scopo di evidenziare i miglioramenti, in termini di aree allegate, che saranno effettivi dal momento della fine dei suddetti lavori di sistemazione.

Esso ha lo scopo di valutare gli effetti sia della demolizione di Ponte di Ferro che della risagomatura e protezione delle arginature come da progetto del Consorzio di Bonifica Alta Maremma.

Le presenti simulazioni considerano quanto presente nel Progetto preliminare " Lavori di manutenzione straordinaria alle arginature del Fiume Cornia - II e III categoria idraulica " del settembre 2007 redatto dal Consorzio di Bonifica Alta Maremma, il quale prende in considerazione il rafforzamento delle arginature in Dx e Sx idraulica nel tratto che va da monte del ponte di Ferro a valle di Cafaggio.

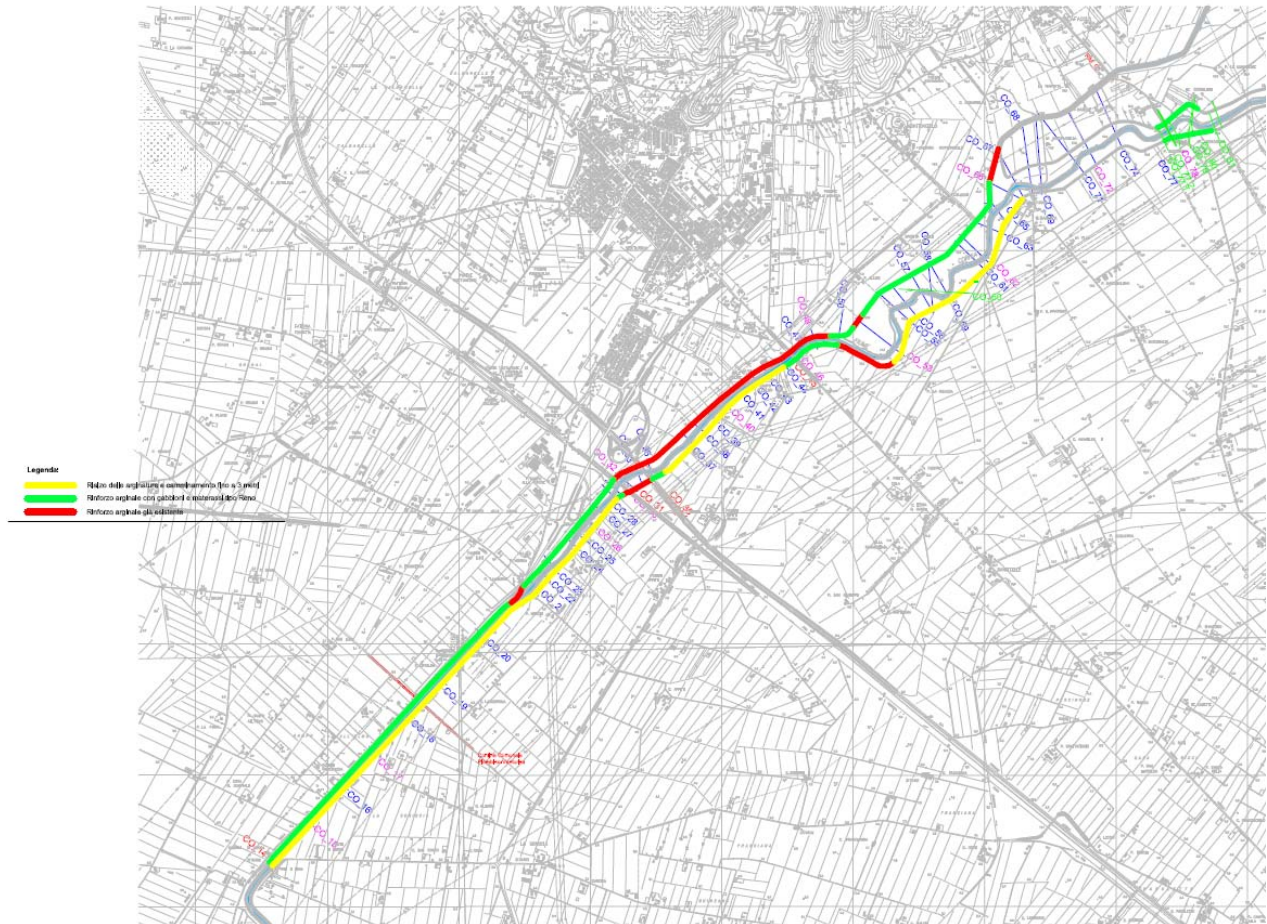


Fig.1 Interventi previsti sulle arginature (stralcio Tav.1 del progetto preliminare del Consorzio)

Con tale progetto viene limitata la possibilità di rottura arginale per tracimazione; risulta quindi giustificato effettuare il calcolo delle esondazioni prevedendo solo la tracimazione arginale per gli argini risagomati e rafforzati.

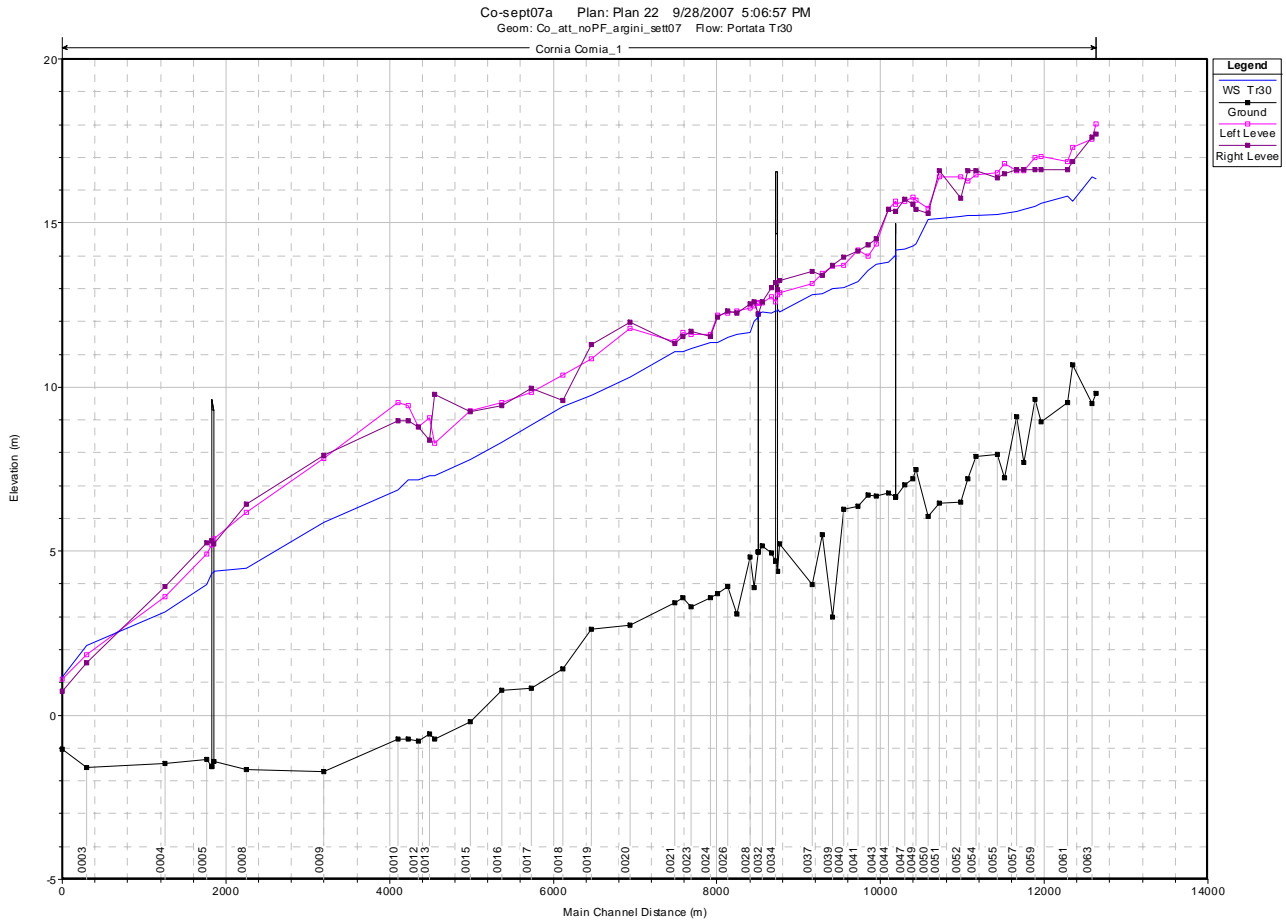
#### CALCOLO IDRAULICO IN ALVEO

Il calcolo idraulico in alveo si basa sul lavoro sopra citato (Ing. S.Pagliara "Studio idrologico-idraulico finalizzato alla sistemazione del F.Cornia" del dicembre 2004) ed utilizza lo stesso modello.

La modellazione è stata realizzata mediante il software Mike11.

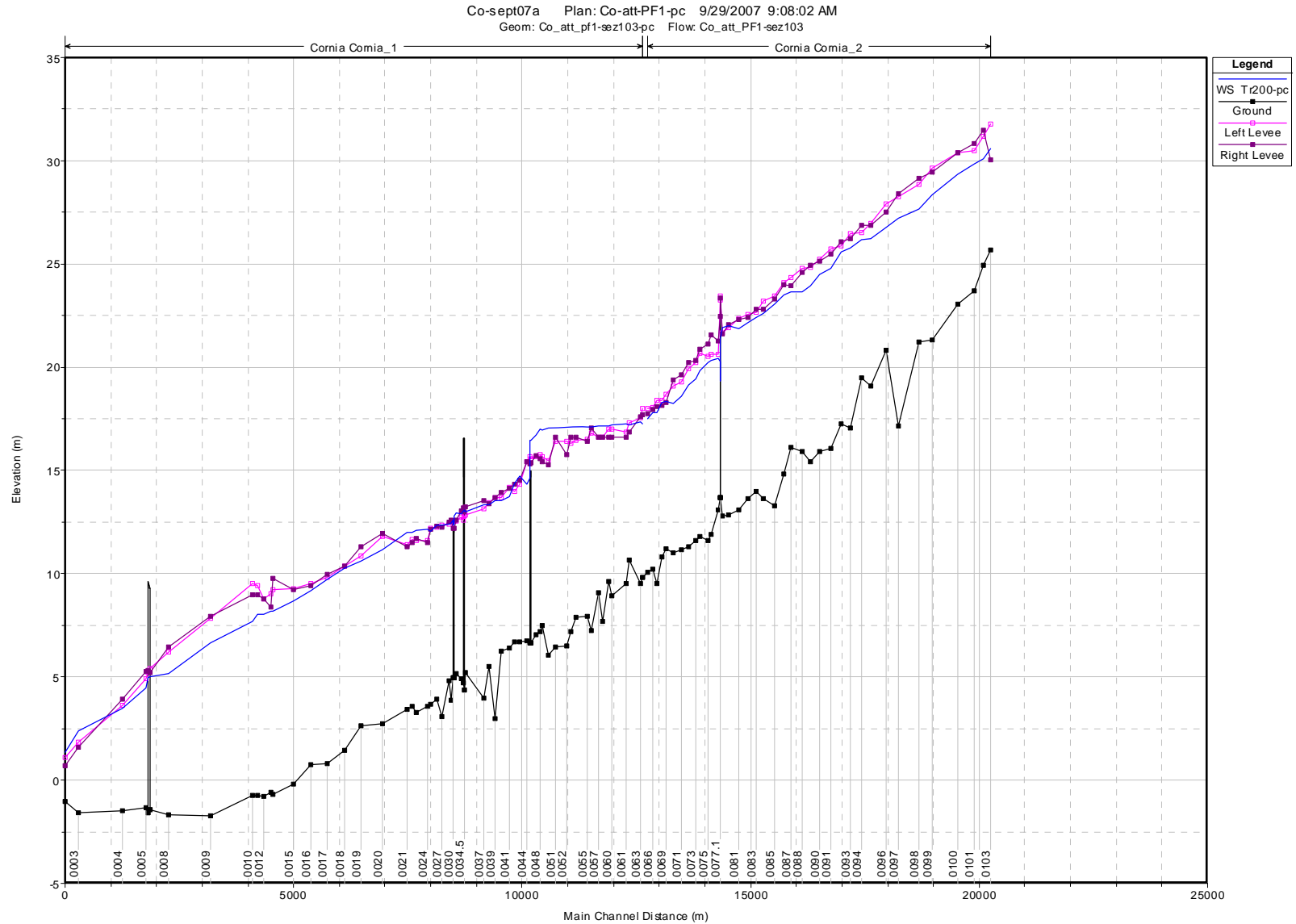
Nel presente studio è stato inoltre tarato, basandosi sul modello di M11, un semplice modello in Hec-Ras al fine di meglio visualizzare le risultanze del calcolo stesso.

Per  $T_r = 30$  anni non si hanno esondazioni nelle condizioni considerate (assenza di ponte di Ferro e arginature risagomate e protette) se non nel tratto subito a monte della foce.



*Profilo per Tr= 30 anni nella situazione con ponte di Ferro demolito  
 (Qmax 890 mc/s a monte, decresce fino a 850 mc/s a valle per la laminazione in alveo)*

Per Tr=200 anni invece le esondazioni persistono, seppur in maniera molto meno grave rispetto allo stato attuale.



Profilo per  $Tr=200$  con demolizione P.Ferro e rafforzamento argini( $Tr200-pc$ ; portate da 1350 a monte a 1100mc/s a valle )

Il profilo longitudinale e' calcolato per una portata di circa 1230 mc/s a monte del ponte di Cafaggio in cui si hanno delle esondazioni; diventa pari al massimo pari a 1350 mc/s e a valle dell'immissione del Rio Merdancio. Dal ponte della ex SS1ne transitano solamente circa 1200 mc/s; a valle del ponte sulla FF.SS ne transitano solamente 1100 mentre a valle del P.di Ferro ne transitano 950 mc/s (che diventano 1100 mc/s nel caso di sua demolizione).

#### SIMULAZIONI EFFETTUATE

Le simulazioni effettuate sono rappresentate nelle seguenti tavole:

Tavola E12: simulazione per Tr=200 anni relativa alle esondazioni del F.Cornia nell'ipotesi di demolizione di ponte di Ferro e risagomatura arginale e protezione arginale come da progetto del Consorzio di Bonifica Alta Maremma (Tav1).

In tali ipotesi non si ha rottura ma solo sormonto arginale.

Tavola E13: simulazione per Tr=30 anni relativa la F.Cornia con demolizione di ponte di Ferro e risagomatura arginale e protezione arginale come da progetto del Consorzio di Bonifica Alta Maremma .

In tali ipotesi non si ha rottura ma solo sormonto arginale.

Di seguito e' riportata la tabella relativa alle simulazioni effettuate:

	<b>n.sim</b>	<b>descrizione</b>
Tav E12	Tr200-D	simulazione stato attuale con demolizione ponte di Ferro e rivestimento degli argini da ponte di Ferro a Ponte Cafaggio (come da progetto Consorzio)
Tav E13	Tr30-D	simulazione stato attuale con demolizione ponte di Ferro e rivestimento degli argini da ponte di Ferro a Ponte Cafaggio (come da progetto Consorzio)

Il risultato, riportato nelle carte, e' l'inviluppo dei massimi delle varie simulazioni effettuate per queste condizioni di calcolo.

I punti di sormonto sono riportati nella tavola E0 del lavoro originario relativo al quadro conoscitivo del piano strutturale.

Tali tavole sono rappresentate nelle nuove tavole 8.1.8.E12 e 8.1.8.E13.

## 2.DESCRIZIONE DEI BACINI OGGETTO DELLO STUDIO

I bacini relativi ai corsi d'acqua studiati sono descritti nello "Studio idrologico-idraulico di supporto al piano regolatore d'area nell'ambito del circondario Val di Cornia, Comuni di Piombino, Campiglia M.Ma e Suvereto (Ing. S.Pagliara, ottobre 2005). La tav.1 riporta i bacini imbriferi dei corsi d'acqua studiati.

## 3.MODELLO IDROLOGICO

Anche questa parte risulta descritta nello studio sopracitato. Viene riportata per le nuove elaborazioni idrologiche rese necessarie per alcuni nuovi sottobacini analizzati nel presente lavoro.

### PLUVIOMETRIA

Per definire il regime pluviometrico della zona in oggetto e trovare quindi gli idrogrammi di piena relativi ai vari tempi di ritorno si e' fatto riferimento ai dati relativi alle piogge intense ( $t < 1$  ora) ed ai dati di durata compresa tra 1 e 24 ore registrate alle stazioni pluviometriche di:

Gerfalco
Canneto
Castagneto Carducci
Gorgo Leccia
serazzano
lago
Molino Balzone
Suvereto
venturina
Montebamboli
Montioni
S.vincenzo
S.Carlo Solvay
Vignarca
Vignale
Follonica
Campiglia
Populonia

Per ciascuna durata sono stati raccolti i valori massimi relativi a ciascun anno del periodo di osservazione che arriva fino all'anno 1996. I dati suddetti sono stati ricavati dall'esame degli Annali Idrologici, parte prima, pubblicati dal Servizio Idrografico Sezione di Pisa.

Tali dati sono stati sottoposti ad analisi statistica utilizzando diverse distribuzioni teoriche.

In particolare l'elaborazione dei dati è stata effettuata con:

- distribuzione di Gumbel;
- distribuzione GEV (Generalized Extreme Value)
- LN3 (Log Normale a 3 parametri)
- LP3 (Log Pearson a 3 parametri)
- P3 (Pearson a 3 parametri)
- Distribuzione TCEV

Tali metodi, nota la serie cronologica dei valori assunti da una certa grandezza (in questo caso le piogge di data durata), consente di individuare sia i valori di tale grandezza corrispondenti ad un prefissato tempo di ritorno  $T_r$ , che cioè hanno probabilità di verificarsi non più di una volta in un dato intervallo di anni, sia il tempo corrispondente ad un dato valore della grandezza in esame

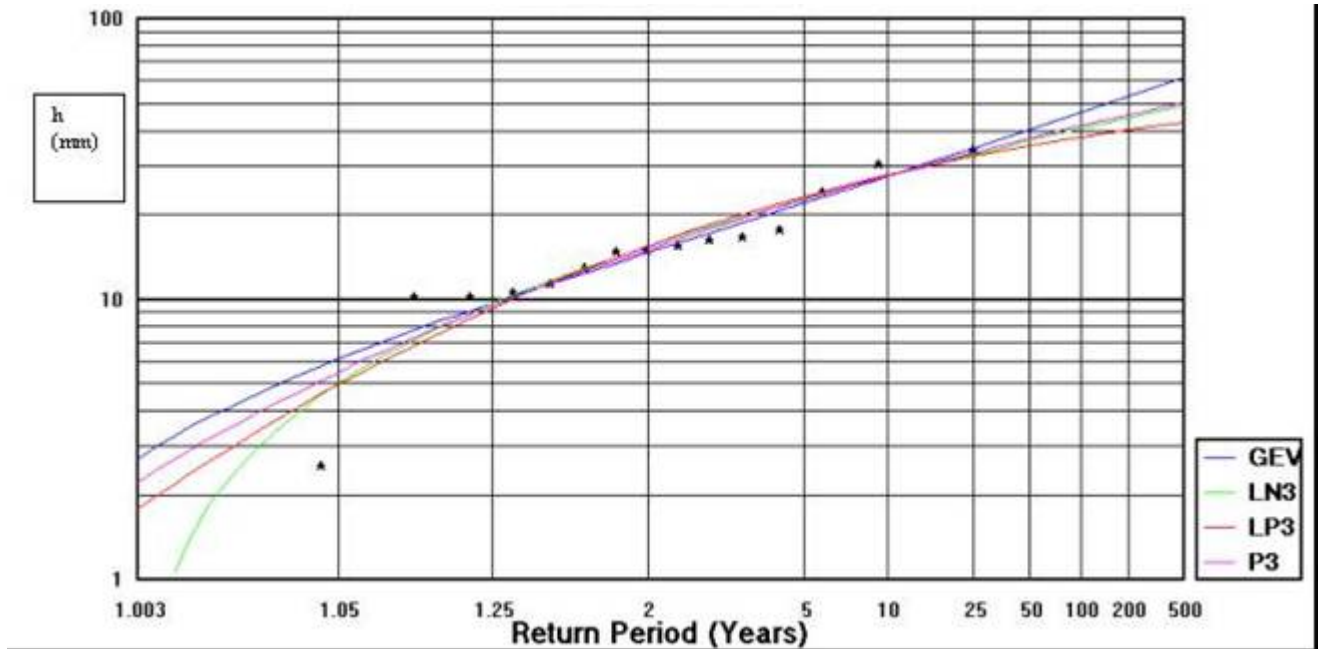
Il valore del tempo di ritorno e' legato a quello della probabilità di superamento (probabilità che l'evento  $X$  assuma un valore maggiore od uguale ad  $x$ ) dalla seguente relazione :

$$P(X > x) = 1/T_r$$

Il valore della probabilità di non superamento risulta:

$$P(X > x) = 1 - P(X < x) = 1 - 1/T_r$$

Nelle figure seguenti sono riportati, come esemplificazione alcune elaborazioni effettuate sulle serie storiche considerate.



Esempio di elaborazione dei dati pluviometrici per t=1 ora

Nel caso della distribuzione tipo GEV i parametri sono stati calcolati con il metodo degli L-Moments (Hosking, 1985). Per la LN3 e LP3 con il metodo della massima verosomiglianza, per la P3 e per Gumbel con il metodo dei momenti.

Le curve di possibilità climatica sono espresse nella forma :

$$h = a t^n Tr^m \quad (\text{Pagliara-Viti, 1990})$$

con t espresso in ore, Tr in anni ed h in millimetri di pioggia.

Tabella Curve segnalatrici per le stazioni considerate.

stazione Pluv.		t<1h	t<1h	t<1h	t>1h	t>1h	t>1h
		a	n	m	a	n	m
2070	Gerfalco	28	0.52	0.16	20.5	0.41	0.2
2170	Canneto	28.5	0.56	0.16	21.5	0.345	0.24
2270	Castagneto Carducci	27	0.49	0.14	26	0.24	0.205

2320	Gorgo Leccia	31.5	0.6	0.172	25	0.3	0.215
2330	serazzano	23.5	0.4	0.15	20	0.4	0.21
2350	Iago	24.5	0.34	0.18	22	0.33	0.21
2480	Montebamboli	26	0.44	0.175	29	0.23	0.2
2390	Molino Balzone	27.6	0.55	0.146	24	0.37	0.2
2290	S.Carlo Solvay	27	0.4	0.2	27	0.28	0.23
2430	venturina	28	0.47	0.175	26	0.27	0.22
2410	Suvereto	26	0.35	0.19	27	0.23	0.22
2300	Populonia	23	0.49	0.15	22	0.37	0.21
2460	Follonica	28	0.5	0.2	28	0.26	0.24
2490	Montioni	27.5	0.44	0.2	22	0.37	0.2

Tabella: individuazione della cpp media areale

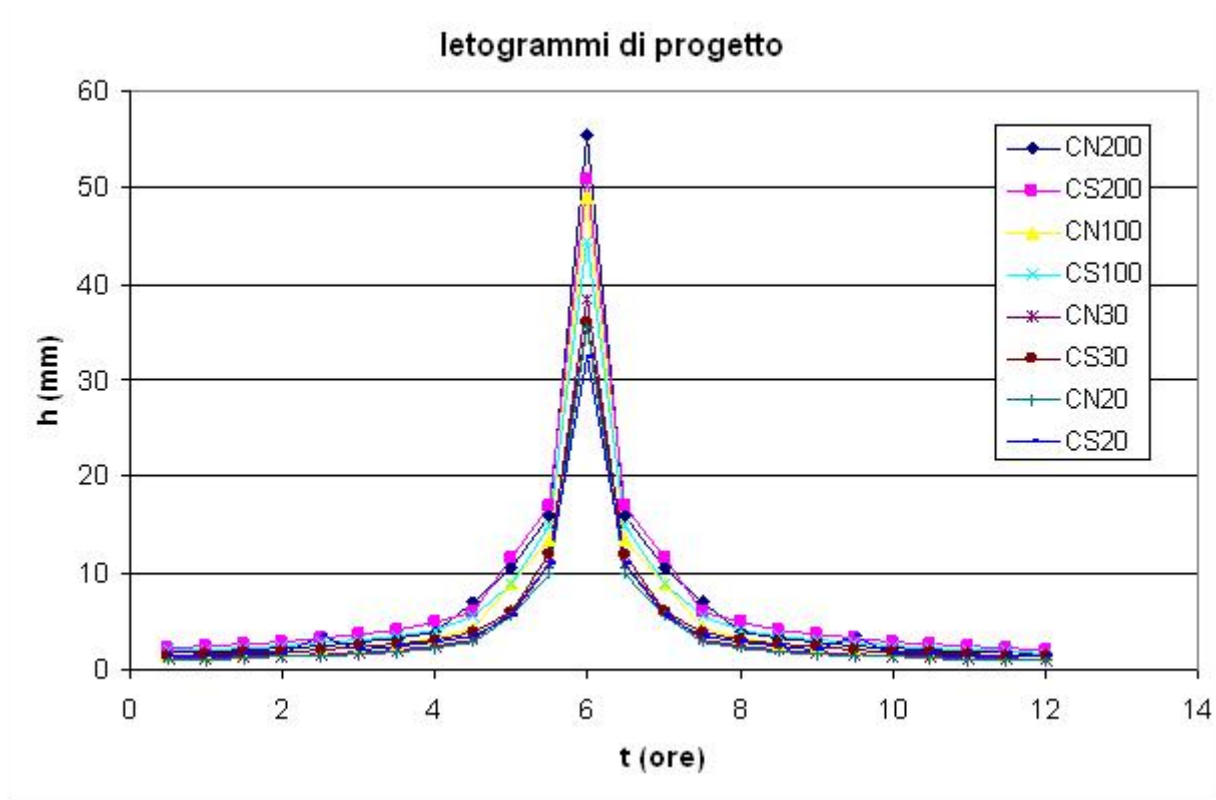
stazione Pluv.		t<1h	t<1h	t<1h	t>1h	t>1h	t>1h
<b>P1</b>	<b>nord-Co</b>	<b>27</b>	<b>0.41</b>	<b>0.19</b>	<b>27</b>	<b>0.25</b>	<b>0.225</b>
<b>P2</b>	<b>Sud-Co</b>	<b>26</b>	<b>0.47</b>	<b>0.19</b>	<b>26</b>	<b>0.31</b>	<b>0.22</b>

## PLUVIOGRAMMA DI PROGETTO

Per quanto riguarda la definizione della pioggia di progetto, nella pratica ingegneristica vengono adottati ietogrammi cosiddetti "sintetici", tali cioè da non rappresentare il reale andamento dell'evento pluviometrico, ma in grado di introdurre nelle procedure di trasformazione afflussi-deflussi una variabilità temporale della pioggia che dia luogo a risultati che si possano ritenere cautelativi. La legge di distribuzione che si introduce rappresenta, in tal modo, quello che si definisce "ietogramma di progetto". Nella letteratura tecnica esistono diverse metodologie per la definizione del suddetto "ietogramma di progetto", mentre in molti paesi la scelta del tipo di ietogramma è fissata da apposite normative, cosa del tutto assente nel nostro paese.

Nel caso in esame, tra le varie procedure disponibili si è utilizzata quella basata su uno ietogramma di tipo Chicago (Keifer, Chu, 1963).

Per arrivare alle cpp finali, le curve relative alle singole stazioni sono state aggregate in modo da rappresentare la pluviometria media dei vari sottobacini considerati.



*Ietogrammi di progetto per vari tempi di ritorno*

#### 4.CALCOLO DEGLI IDROGRAMMI DI PIENA

Per la determinazione degli idrogrammi di piena in corrispondenza delle sezioni di chiusura di tutti i bacini esaminati si è utilizzato un algoritmo di calcolo che, per la trasformazione afflussi-deflussi, si basa sull'impiego dell'idrogramma sintetico tipo SCS (SCS, 1972)

Nel caso specifico è stato adottato, per simulare le perdite di bacino, il metodo SCS- CURVE NUMBER (SCS, 1972), che è basato sulle curve di precipitazione e perdita cumulate ed in cui in funzione del tipo di suolo, del suo uso e del grado di imbibizione dello stesso, viene calcolato istante per istante il quantitativo di pioggia che va a produrre il deflusso.

Tale metodo è molto diffuso, soprattutto grazie alla notevole mole di dati reperibili in letteratura per la sua applicazione, esso permette di calcolare l'altezza di pioggia persa fino ad un dato istante attraverso la valutazione dell'altezza di pioggia massima immagazzinabile nel suolo a saturazione (S), il cui valore viene determinato attraverso un parametro detto CN (Runoff Curve Number) il quale è funzione della natura del terreno, del tipo di copertura vegetale dello stesso e del corrispondente grado di imbibizione.

La classificazione dei suoli secondo la natura del terreno da un punto di vista idrogeologico è riportata nella seguente *tabella A*). Una volta definito il tipo di suolo si determina il valore del CN corrispondente al tipo di copertura (vegetale e non) attraverso l'uso della *tabella B*.

I valori riportati nella *tabella B* sono relativi a condizioni medie di umidità del terreno antecedenti l'evento, definite attraverso il valore della precipitazione totale nei cinque giorni precedenti l'evento stesso (Antecedent Moisture Condition classe II - che in sigla viene indicata come AMC II).

*Tabella A* Classificazione litologica dei suoli secondo SCS

GRUPPO	DESCRIZIONE
A	Scarsa potenzialità di deflusso. Comprende sabbie profonde con scarsissimo limo e argilla, ghiaie profonde molto permeabili.
B	Potenzialità di deflusso moderatamente bassa. Comprende la maggior parte dei suoli sabbiosi meno profondi che nel gruppo A, ma il gruppo nel suo insieme mantiene alte capacità di infiltrazione anche a saturazione.

C	Potenzialità di deflusso moderatamente alta. Comprende suoli sottili e suoli contenenti considerevoli quantità di argilla e colloidali, anche se se meno che nel gruppo D. Il gruppo ha scarsa capacità di infiltrazione a saturazione.
D	Potenzialità di deflusso molto alta. Comprende la maggior parte delle argille con alta capacità di rigonfiamento, ma anche suoli sottili con orizzonti pressoché impermeabili in vicinanza della superficie.

Tabella B Parametri CN relativi a AMC II per le quattro classi litologiche e per vati tipi di uso del suolo

	A	B	C	D
Terreno coltivato				
Senza trattamenti di conservazione	72	81	88	91
Con interventi di conservazione	62	71	78	81
Terreno da pascolo				
Cattive condizioni	68	79	86	89
Buone condizioni	39	61	74	80
Praterie				
Buone condizioni	30	58	71	78
Terreni boscosi o forestati				
Terreno sottile sottobosco povero senza foglie	45	66	77	83
Sottobosco e copertura buoni	25	55	70	77
Spazi aperti, prati rasati, parchi				
Buone condizioni con almeno il 75% dell'area con copertura erbosa	39	61	74	80
Condizioni normali con copertura erbosa intorno al 50%	49	69	79	84
Aree commerciali (impermeabilità 85%)	89	92	94	95
Distretti industriali (impermeabilità 72%)	81	88	91	93
Aree residenziali				
impermeabilità media	77	85	90	92
65%				
38%	61	75	83	87
30%	57	72	81	86
25%	54	70	80	85
20%	51	68	79	84
Parcheggi impermeabilizzati, tetti	98	98	98	98
Strade				

Pavimentate, con cordoli e fognature	98	98	98	98
Inghiaiate o selciate con buche	76	85	89	91
In terra battuta (non asfaltate)	72	82	87	89

Tabella C Condizioni di umidità antecedenti individuate in base alla precipitazione totale nei 5 giorni precedenti (mm)

CLASSE AMC	STAGIONE DI RIPOSO	STAGIONE DI CRESCITA
I	< 12.7	< 35.5
I	12.7 -- 28.0	35.5 -- 53.3
III	>28.0	> 53.3

Tabella D

CLASSE AMC			CLASSE AMC			
I	II	III		I	II	III
100	100	100		40	60	78
87	95	98		35	55	74
78	90	96		31	50	70
70	85	94		22	40	60
63	80	91		15	30	50
57	75	88		9	20	37
51	70	85		4	10	22
45	65	82		0	0	0

L'individuazione della classe AMC viene effettuata con i valori riportati in *tabella C*, mentre la *tabella D* rappresenta la tabella di conversione dal valore del CN valido per AMC II (valore determinato attraverso la *tabella A*) ai valori corrispondenti per AMC I o AMC III.

Per la valutazione dell'uso del suolo si è fatto riferimento alla cartografia regionale in scala 1:25.000. La carta geologica individua gran parte del bacino come permeabile, e quindi è stato assunto un tipo di suolo appartenente al gruppo B-C.

In base alla geologia ed all'uso del suolo come sopra descritti sono stati assunti i valori dei parametri CN che sono risultati pari a quelli riportati in Allegato 1 (condizione AMC=2).

Dai valori del parametro CN, per la determinazione della pioggia netta, è stata utilizzata l'espressione :

$$P_n = (P_g - I_a)^2 / (P_g - I_a + S)$$

dove :

$P_n$  = pioggia netta in mm;

$P_g$  = pioggia grezza in mm;

$I_a$  = perdita iniziale in mm;

$S$  = altezza di pioggia massima immagazzinabile nel suolo in condizioni di saturazione (capacità di ritenzione potenziale) in mm.

Il valore di  $S$  da introdurre viene determinato in funzione del parametro CN secondo l'espressione seguente:

$$S = 25.4 \left( \left( \frac{1000}{CN} \right) - 10 \right)$$

La perdita iniziale  $I_a$  è quella che si manifesta prima dell'inizio dei deflussi superficiali. Nella letteratura tecnica è riconosciuta l'esistenza di una correlazione positiva fra la perdita iniziale  $I_a$  e la capacità di ritenzione potenziale  $S$  tramite la seguente espressione:

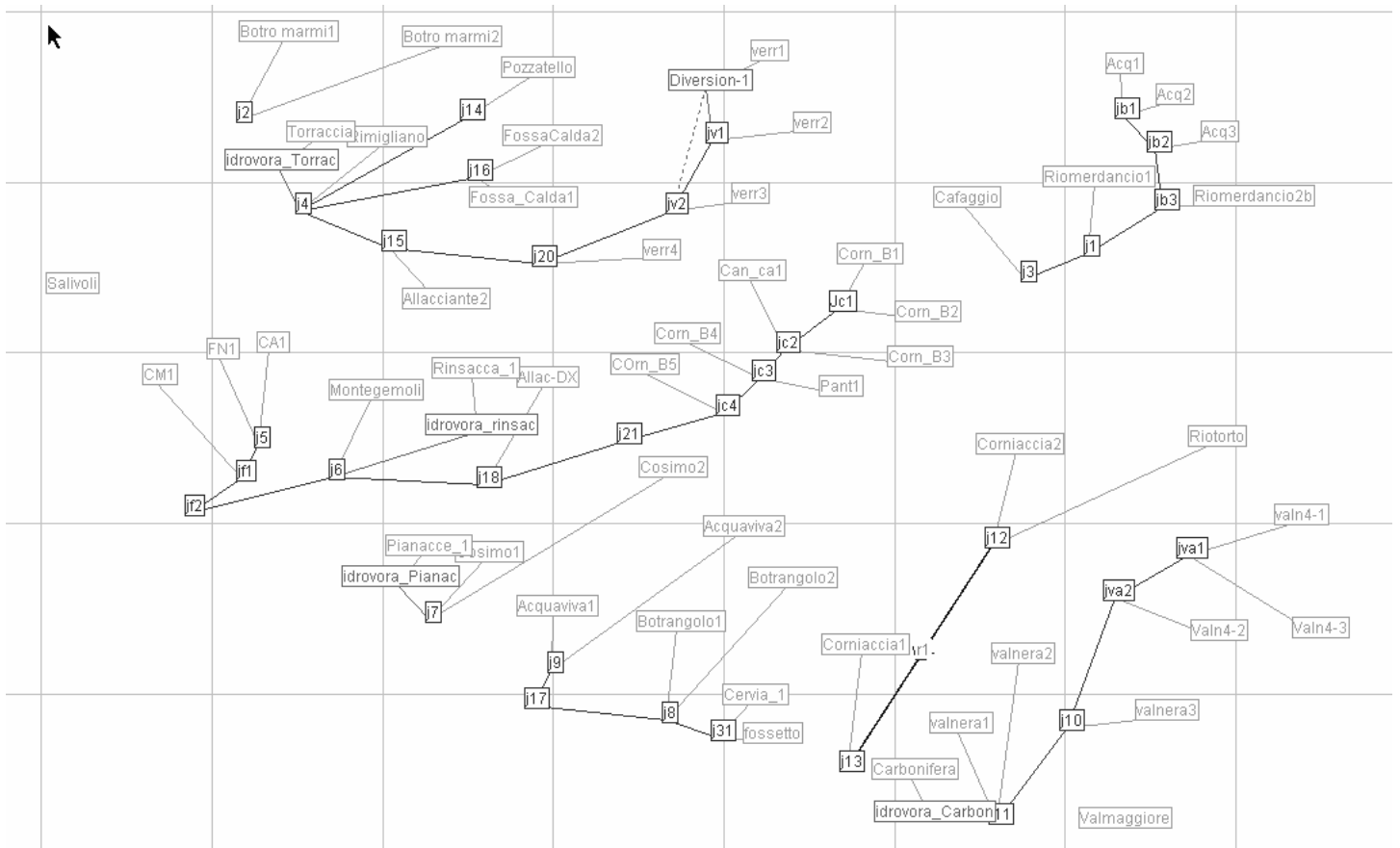
$$I_a = \beta S$$

dove  $\beta$  è un coefficiente adimensionale assunto pari a 0.1.

Il CN considerato è quello in condizione AMC=III.

## IDROGRAMMI DI PIENA

Lo schema dei bacini risulta il seguente:

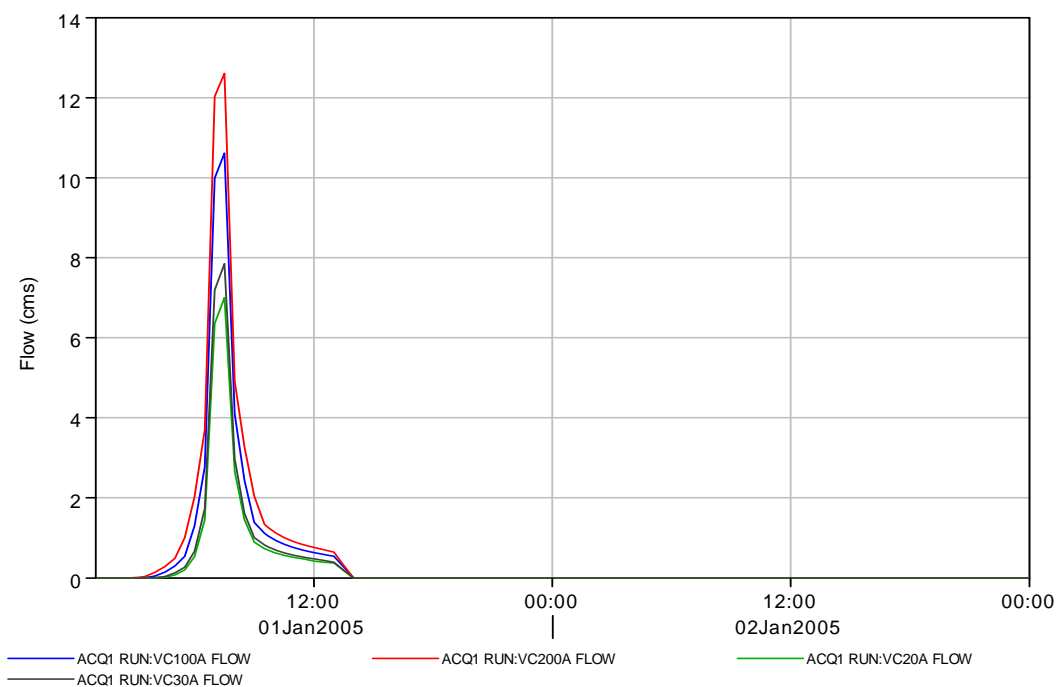


Schema idrologico

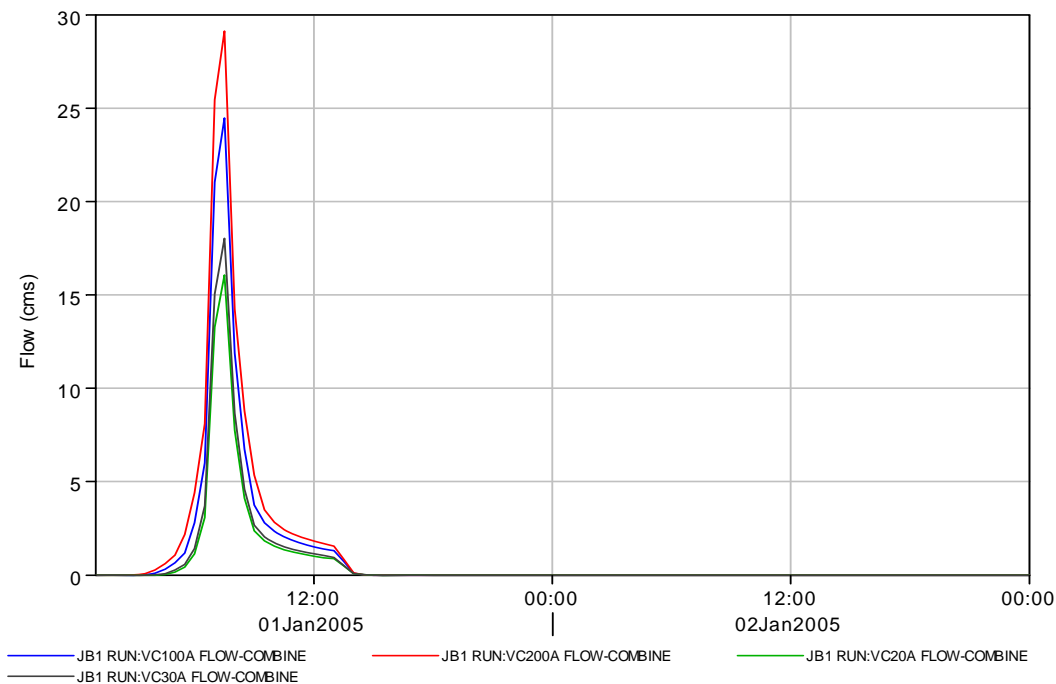
La tavola 1. riporta la corografia con i bacini imbriferi.

Di seguito vengono riportati gli idrogrammi di piena nelle sezioni di interesse del presente studio (ascissa in ore e ordinate in mc/s):

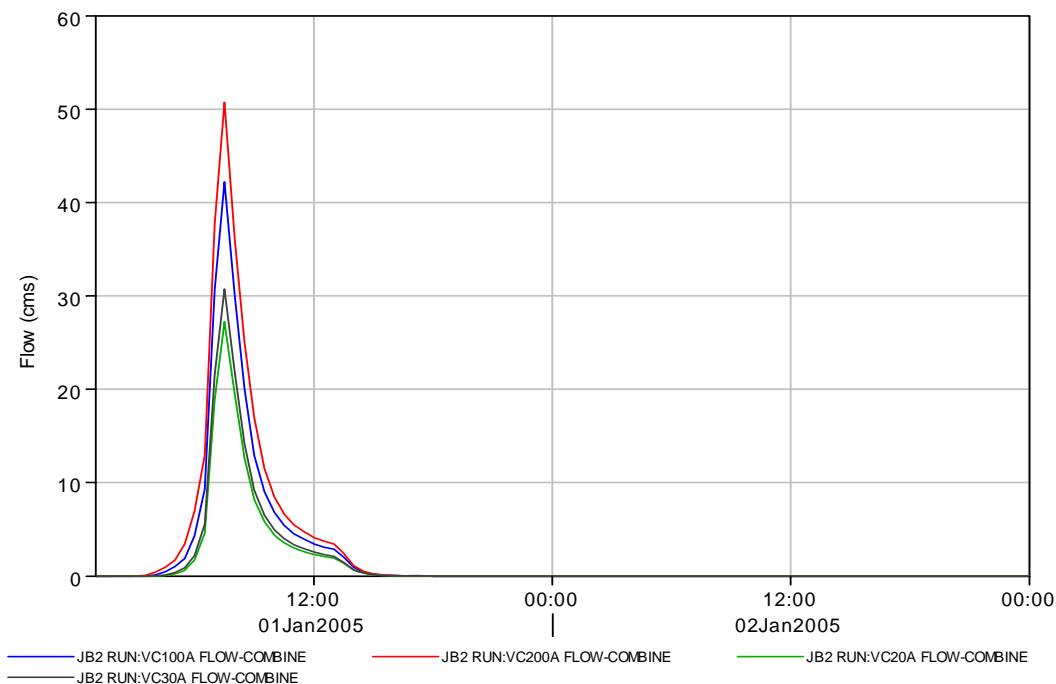
### F.Acquari



*Idrogrammi Acq1 (Tr200, 100, 30 e 20) da sez 3099.71*

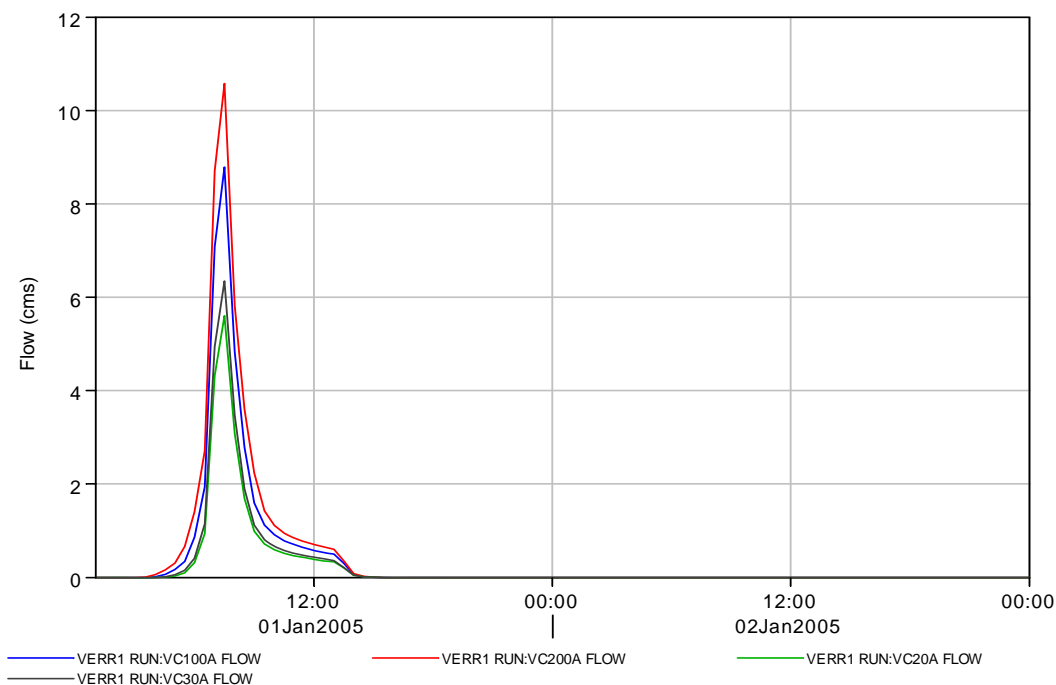


*Idrogrammi Jb1 (Tr200, 100, 30 e 20) – da sez.3096.81*

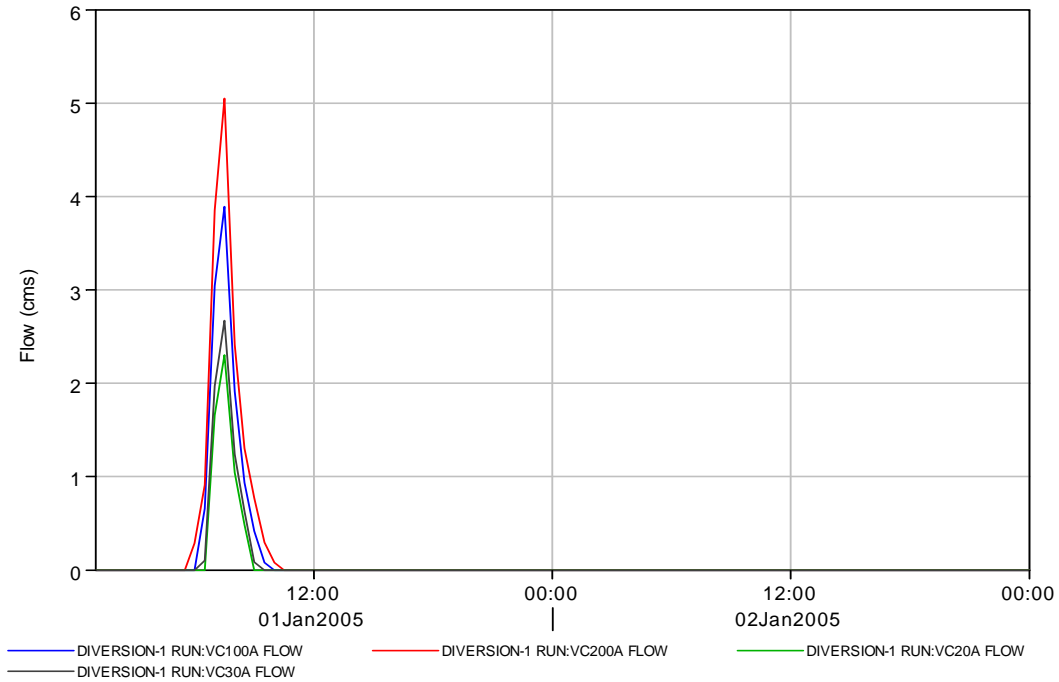


Idrogrammi Jb2 (Tr200, 100, 30 e 20) – da sez.3096.81

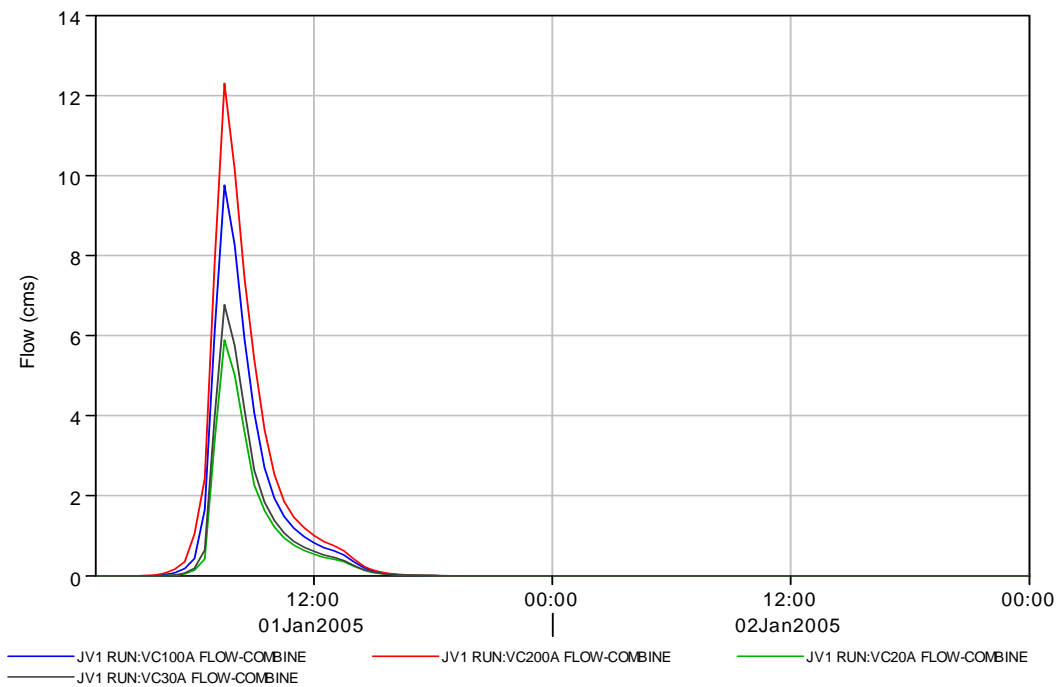
## F. Verrocchio



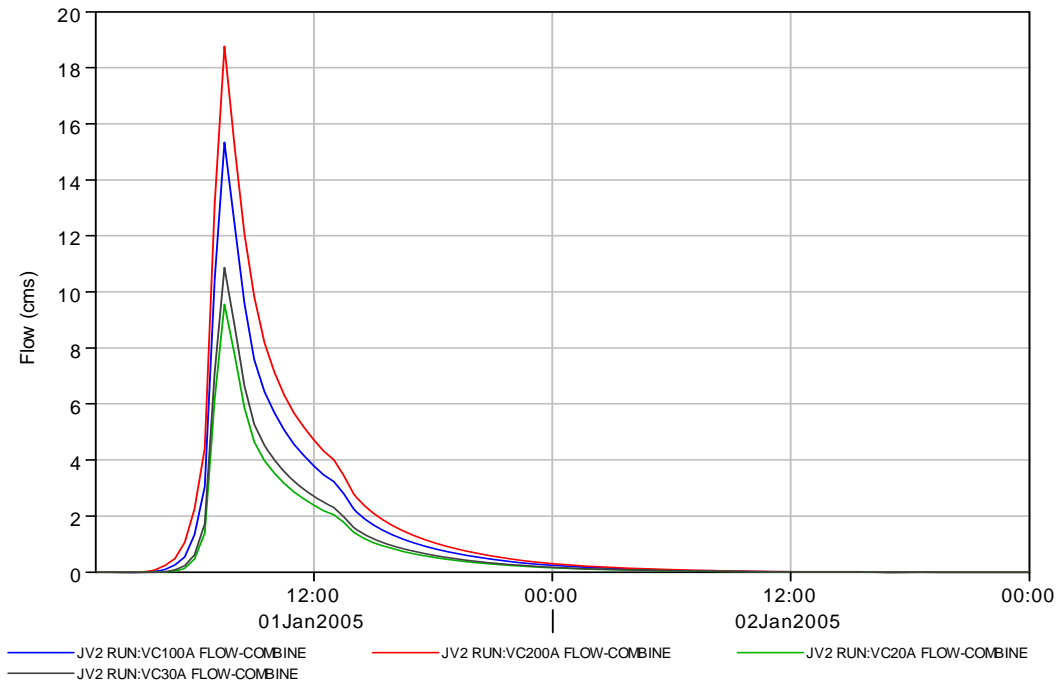
Idrogrammi verr1 (Tr200, 100, 30 e 20) – monte diversione



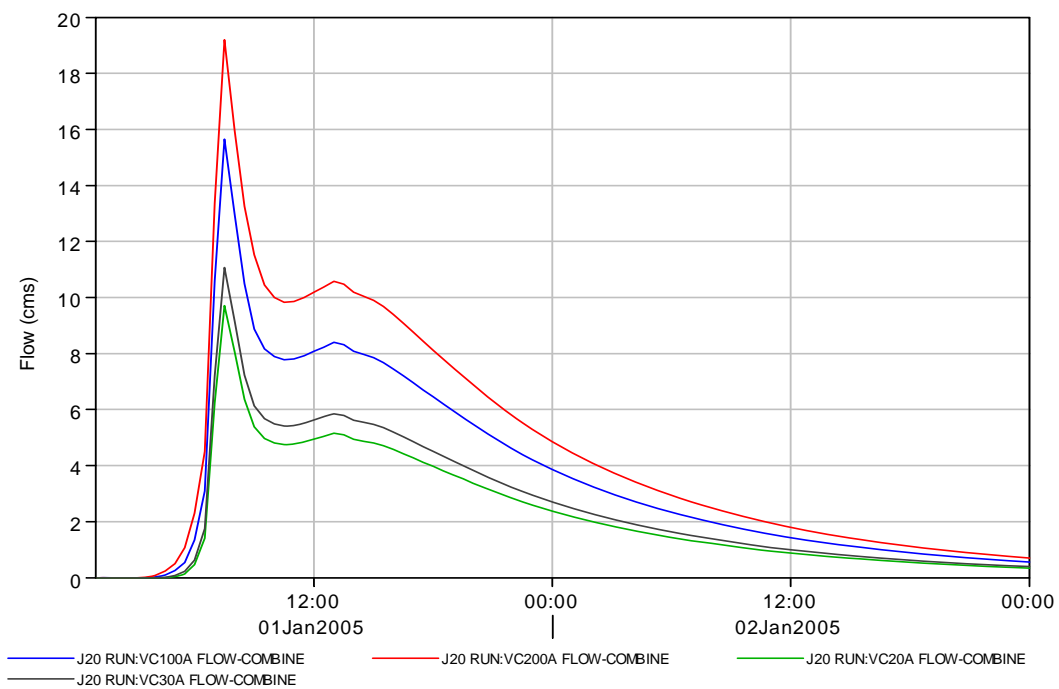
*Idrogrammi verr1 (Tr200, 100, 30 e 20) – da sez.1211.51 (valle diversione)*



*Idrogrammi Jv1 (Tr200, 100, 30 e 20) – a monte di sez.1209.41*

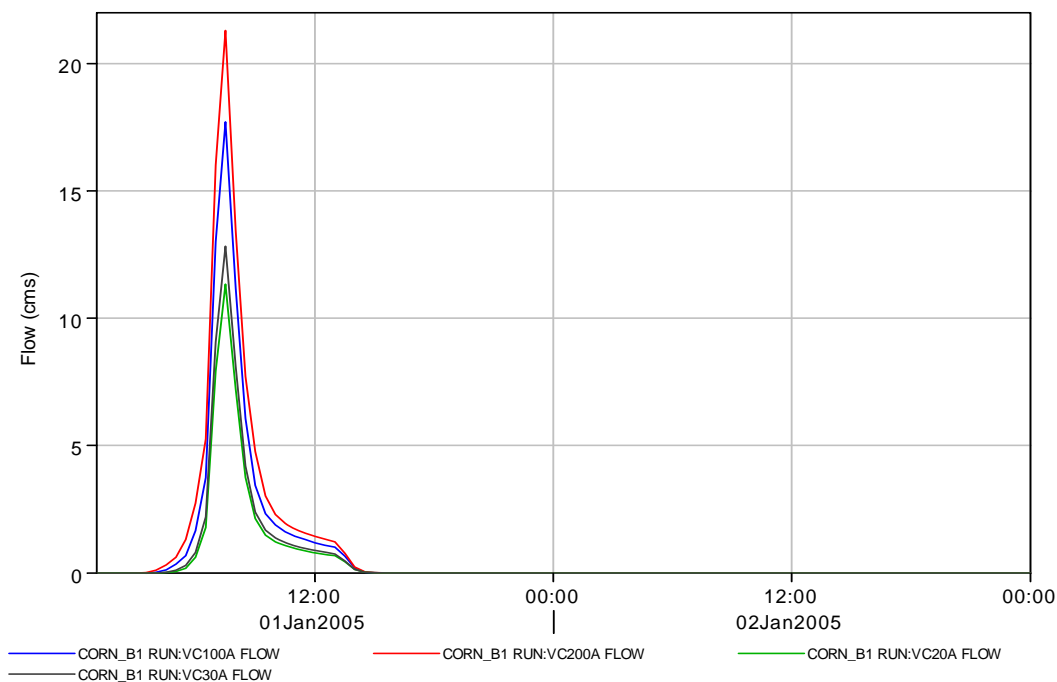


Idrogrammi Jv2 (Tr200, 100, 30 e 20) – a monte di sez.1208.1

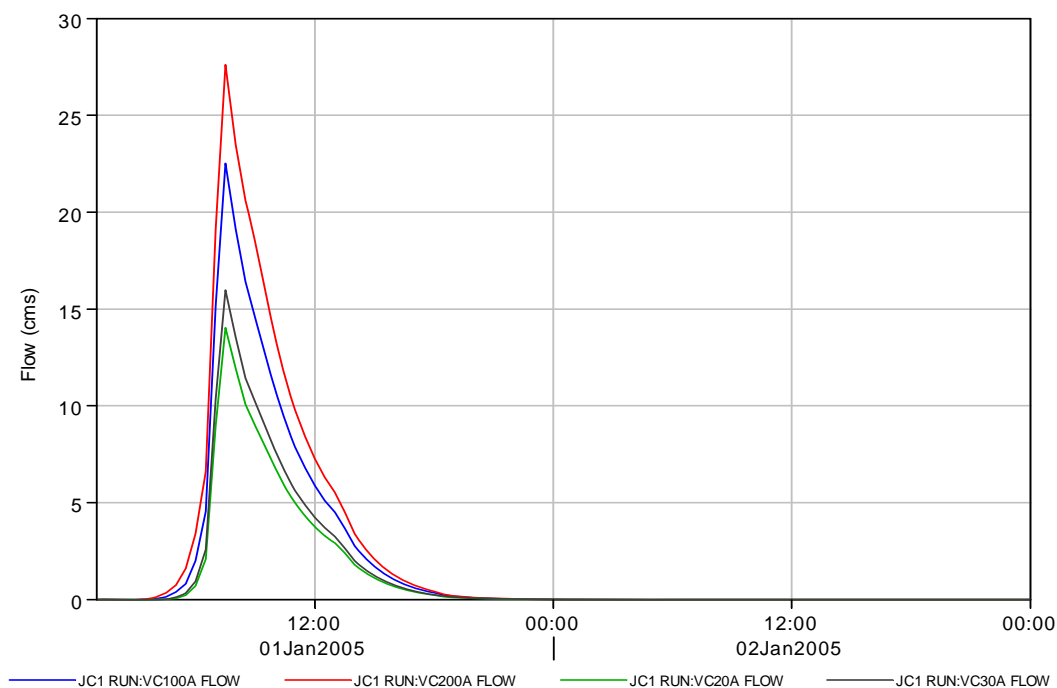


Idrogrammi J20 (Tr200, 100, 30 e 20) – a monte di sez.1204

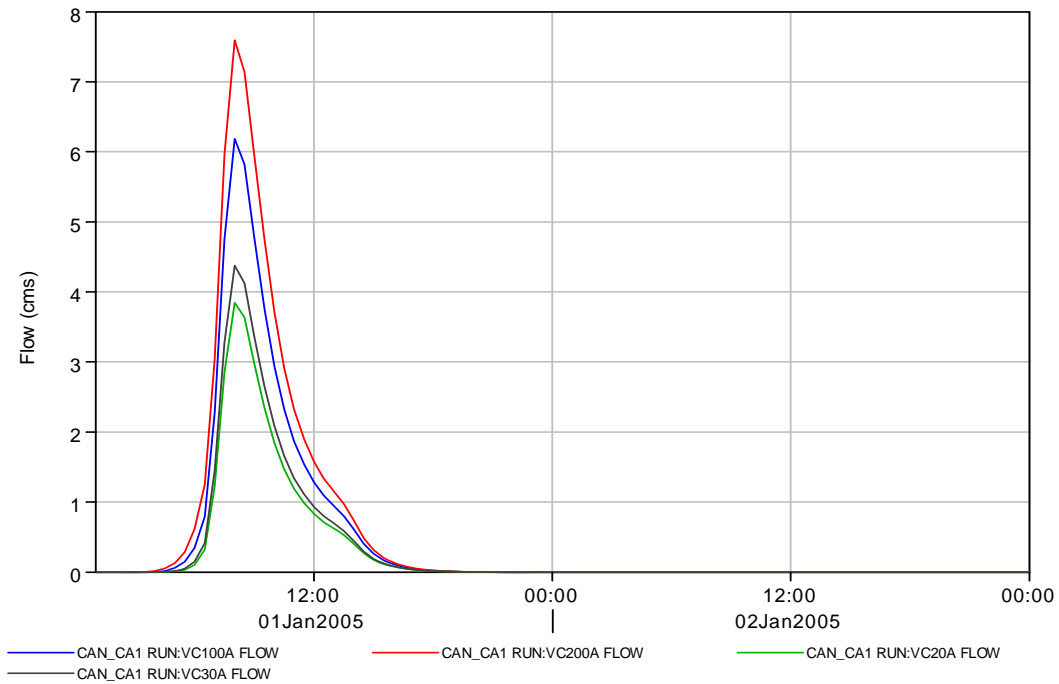
**F.Corniaccia - Venturina**



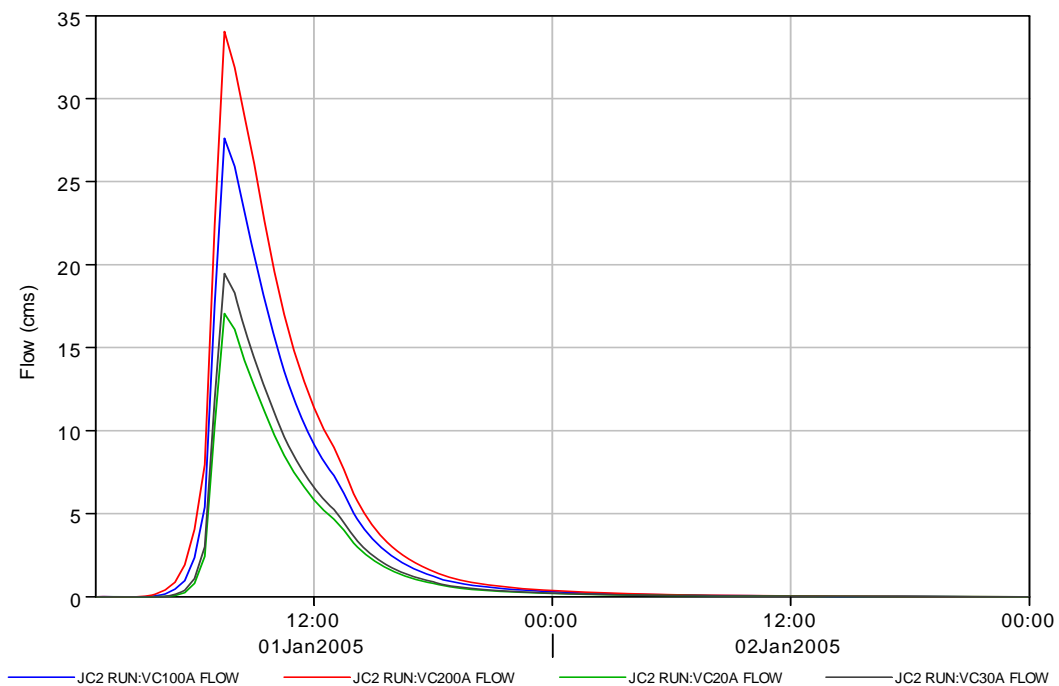
*Idrogrammi Corn\_B1 (Tr200, 100, 30 e 20) – a monte di sez.1529*



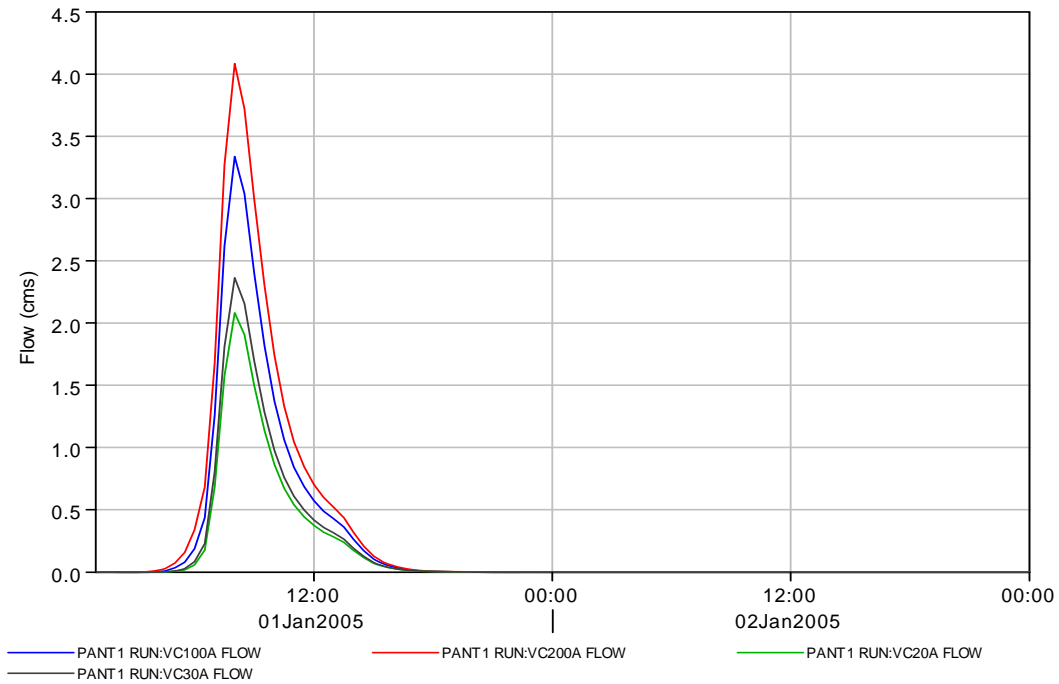
*Idrogrammi Jc1 (Tr200, 100, 30 e 20) – a monte di sez.1521*



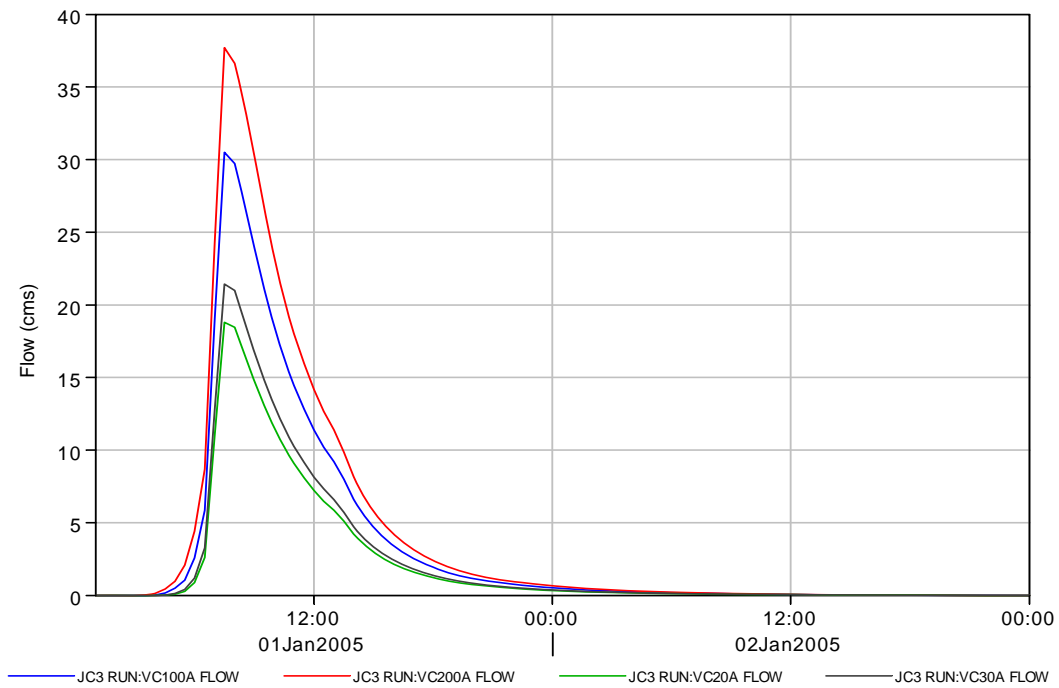
*Idrogrammi Can\_ca1 (Tr200, 100, 30 e 20) – a monte di sez.3309*



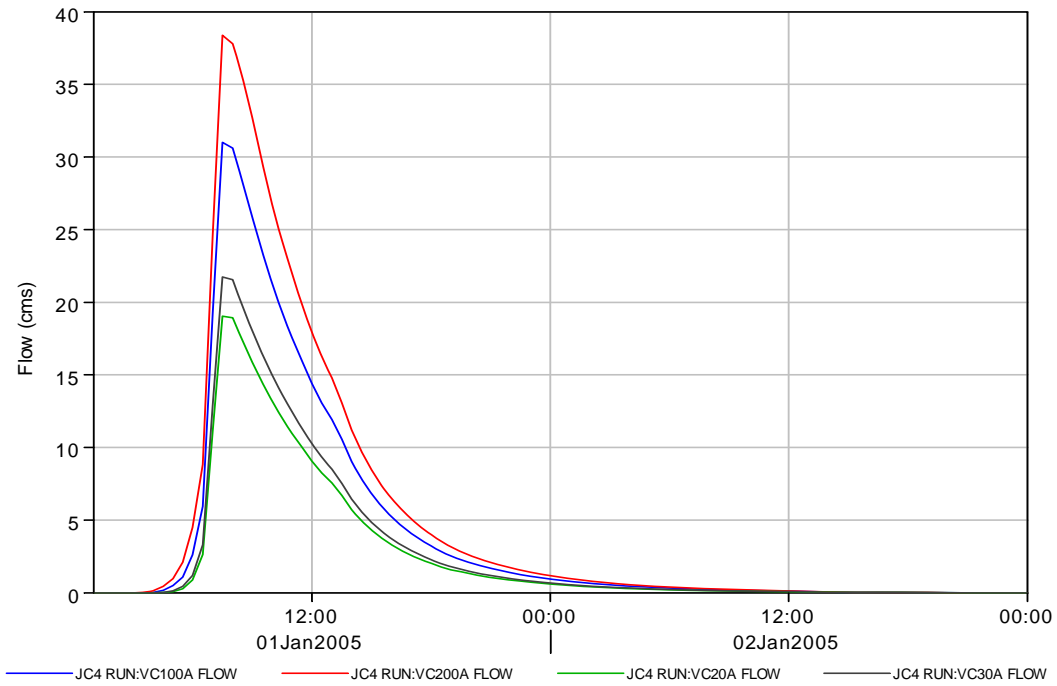
*Idrogrammi Jc2 (Tr200, 100, 30 e 20) – a monte di sez.1519.1*



Idrogrammi Pant1 (Tr200, 100, 30 e 20) – a monte di sez.3209

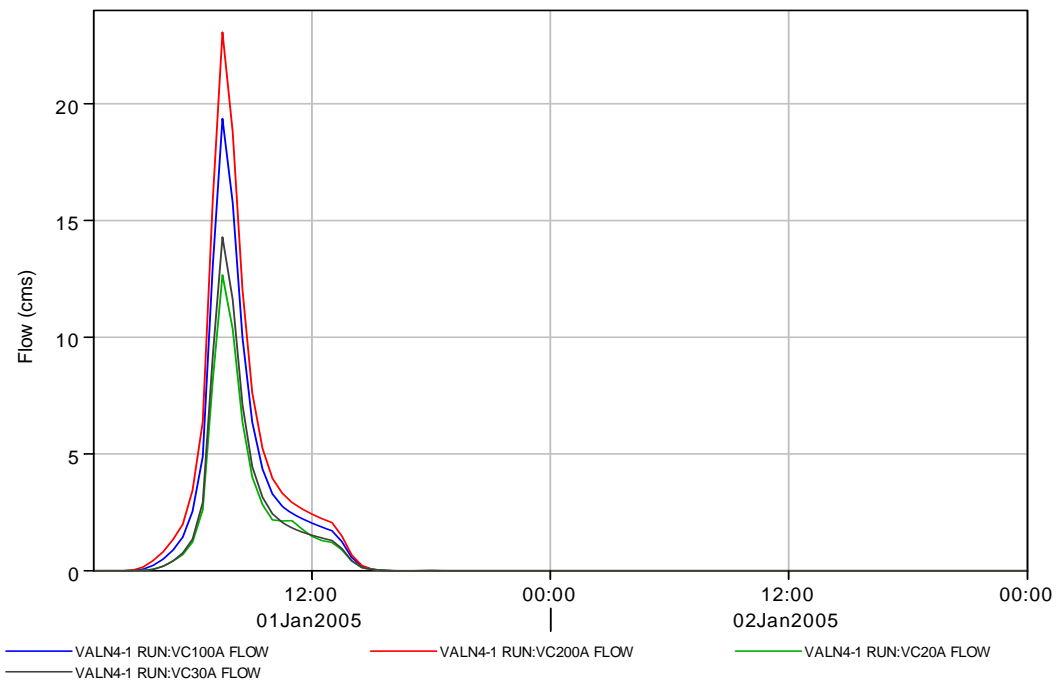


Idrogrammi jc3 (Tr200, 100, 30 e 20) – a monte di sez.1518.1

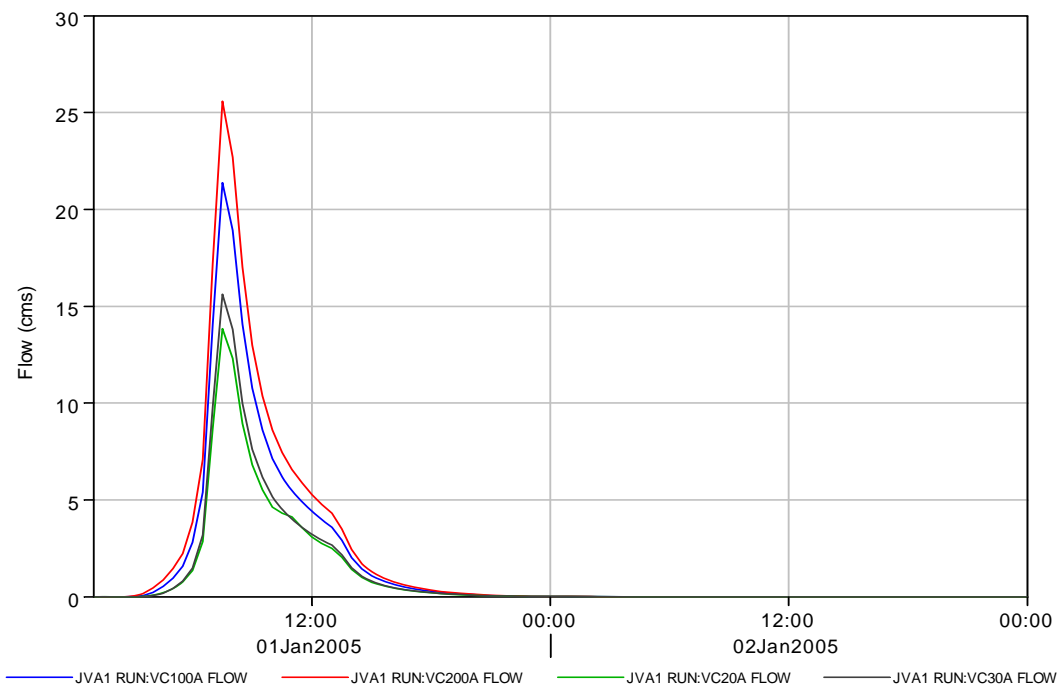


Idrogrammi jc4 (Tr200, 100, 30 e 20) – a monte di sez.1513

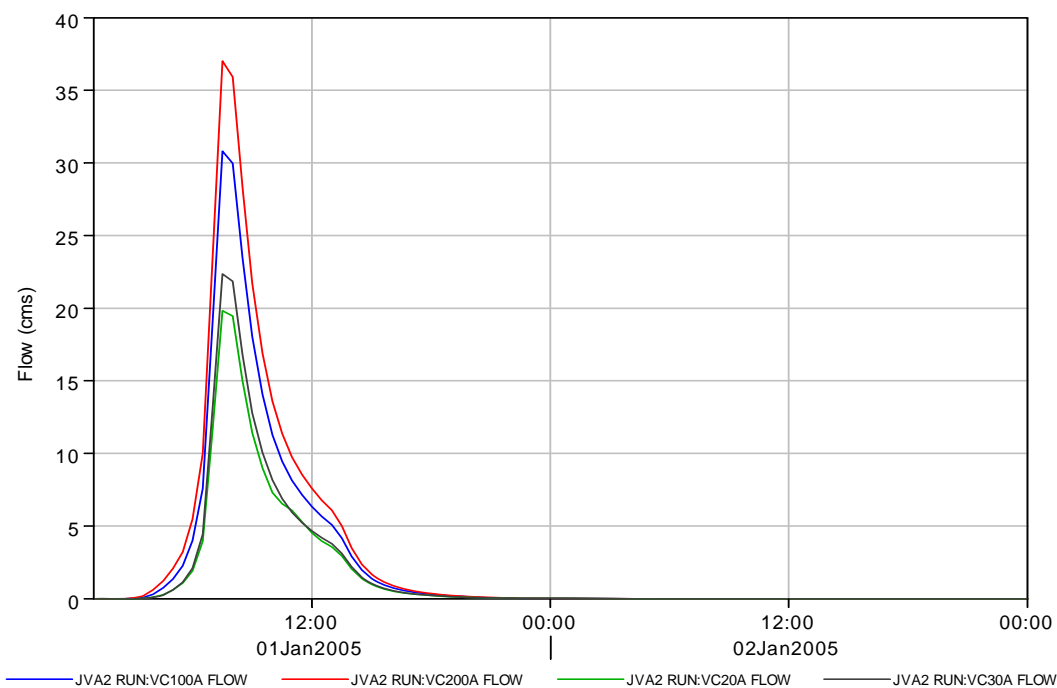
## **F.Valnera**



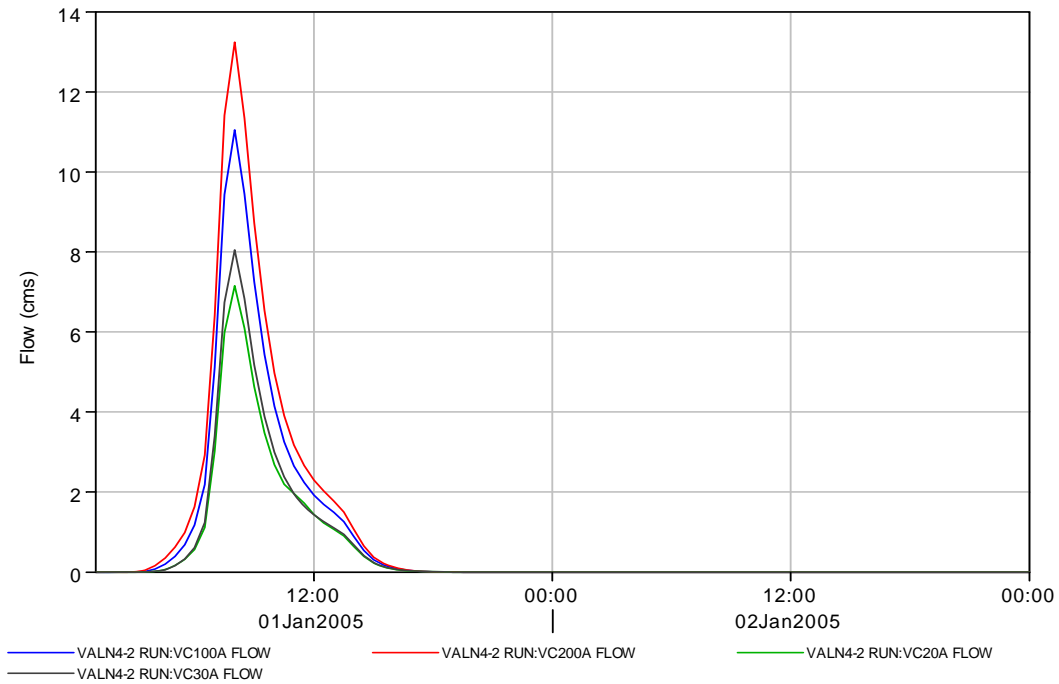
Idrogrammi valn4-1 (Tr200, 100, 30 e 20) – a monte di sez.710



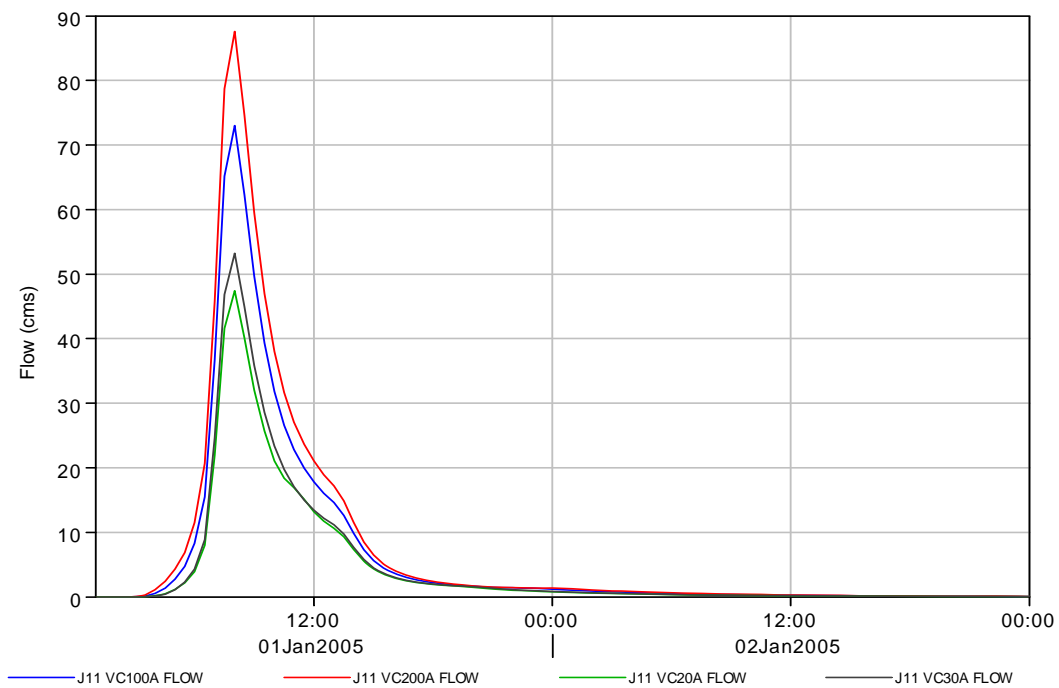
Idrogrammi jva1 (Tr200, 100, 30 e 20) – a monte di sez.705.9



Idrogrammi jva2 (Tr200, 100, 30 e 20) – a monte di sez.704.9

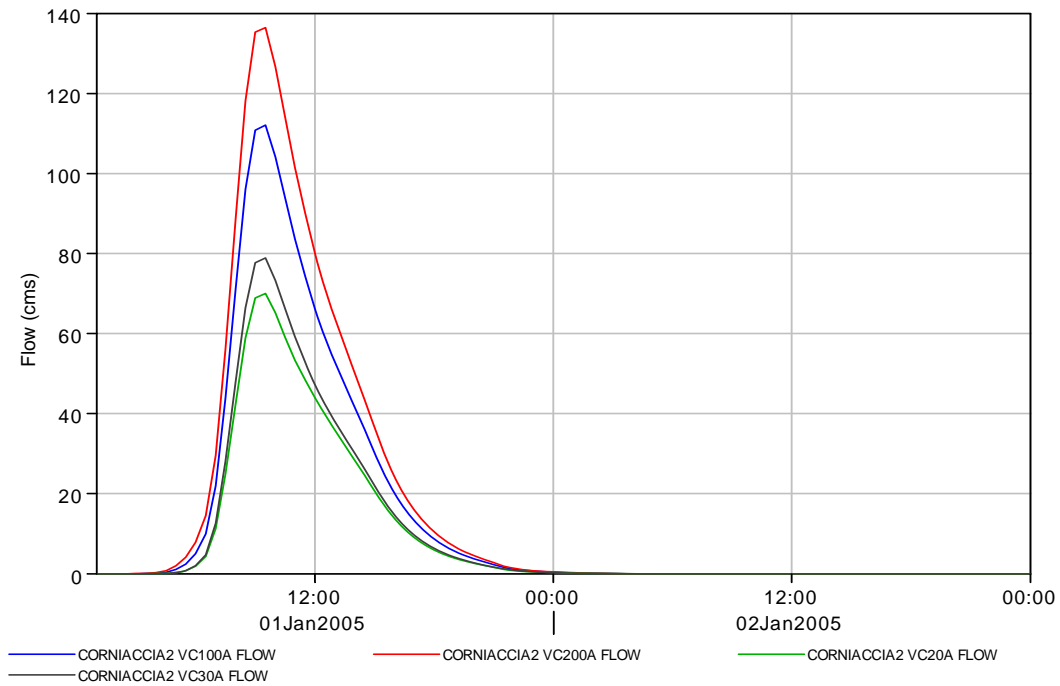


Idrogrammi valn4-2 (Tr200, 100, 30 e 20) – a monte di sez.770.31

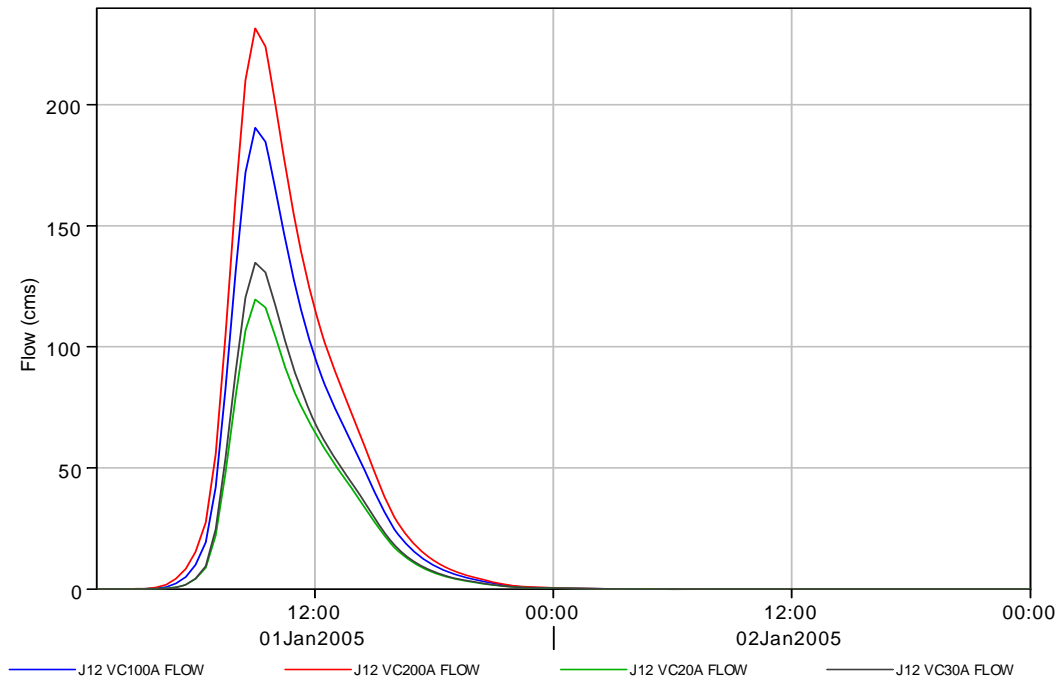


Idrogrammi j11 (Tr200, 100, 30 e 20) – a sez.702

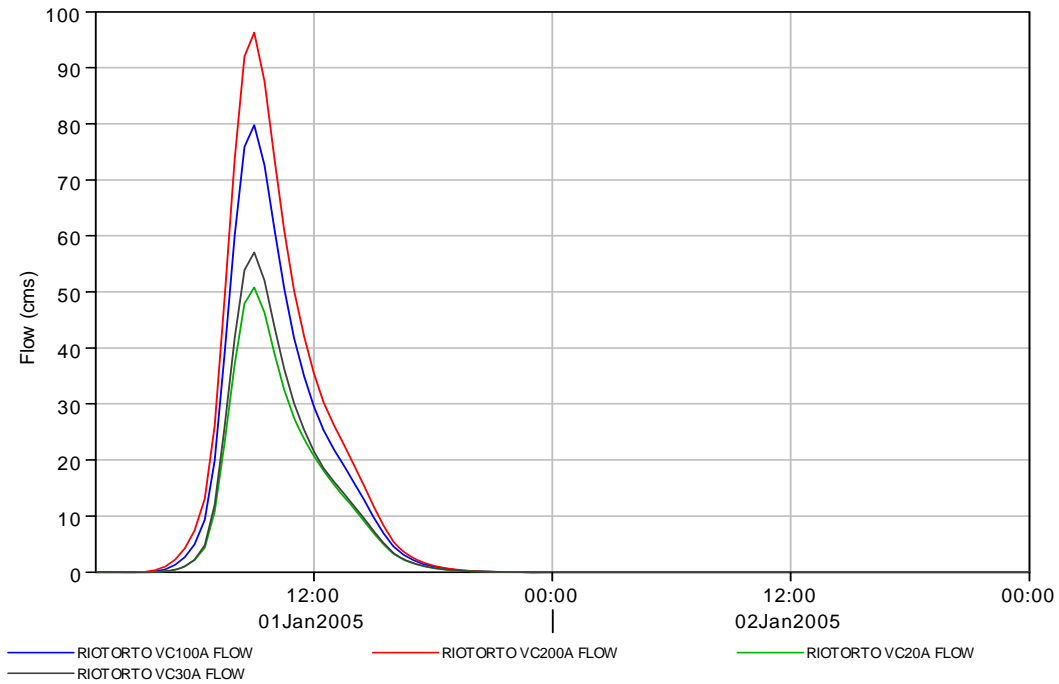
## Corniaccia- Riotorto



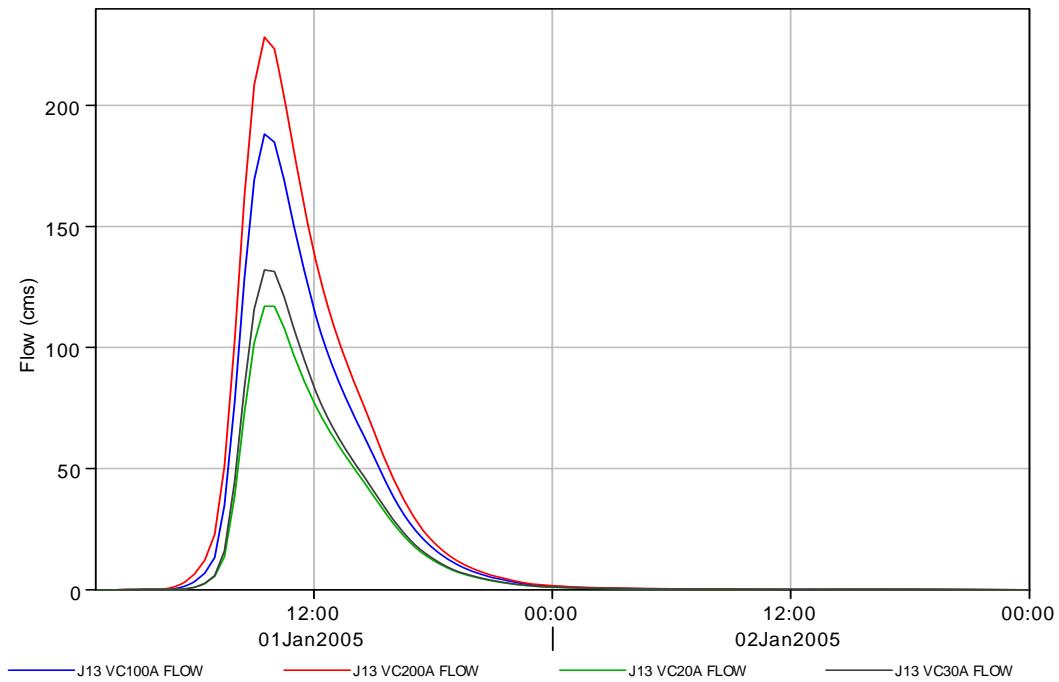
*Idrogrammi Corniaccia2 (Tr200, 100, 30 e 20) – a sez.504.61*



*Idrogrammi j12 (Tr200, 100, 30 e 20) – a valle confl. Riotorto (sez 503)*

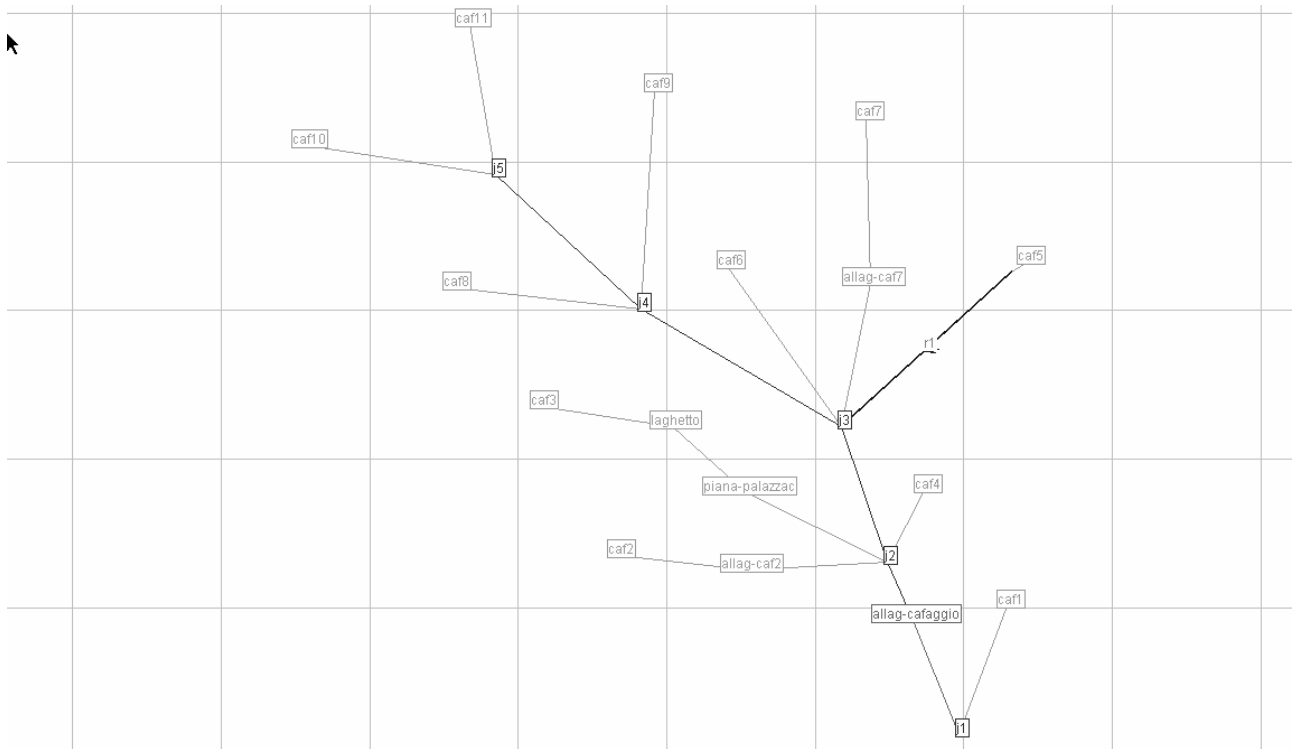


Idrogrammi F.Riotorto (Tr200, 100, 30 e 20) –



Idrogrammi Corniaccia verso la Foce (Tr200, 100, 30 e 20) –

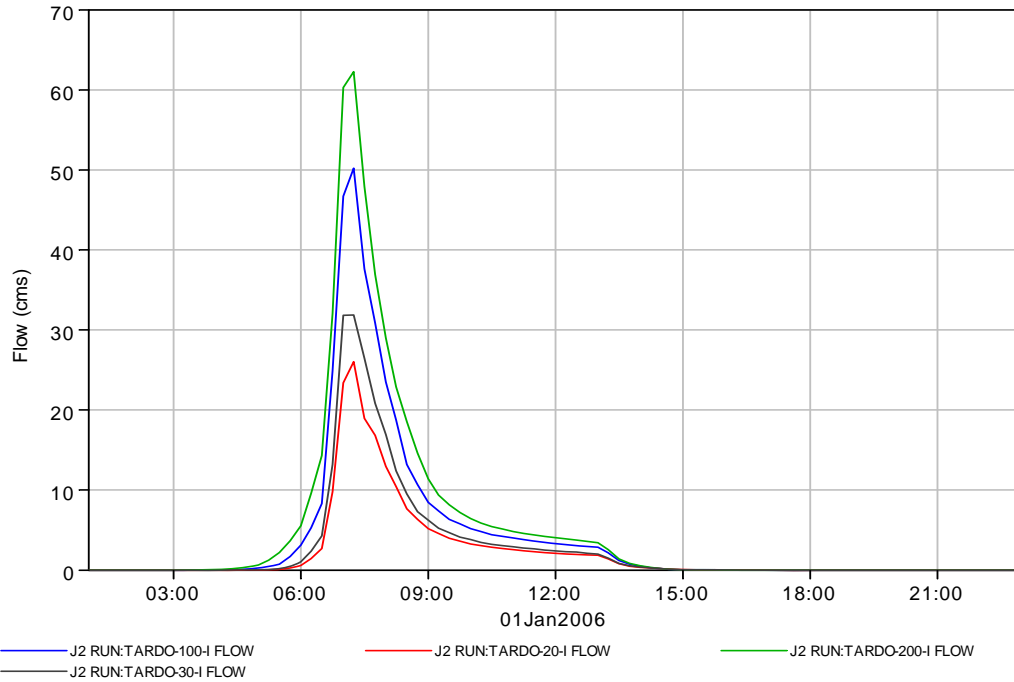
**Fosso Tardo'**



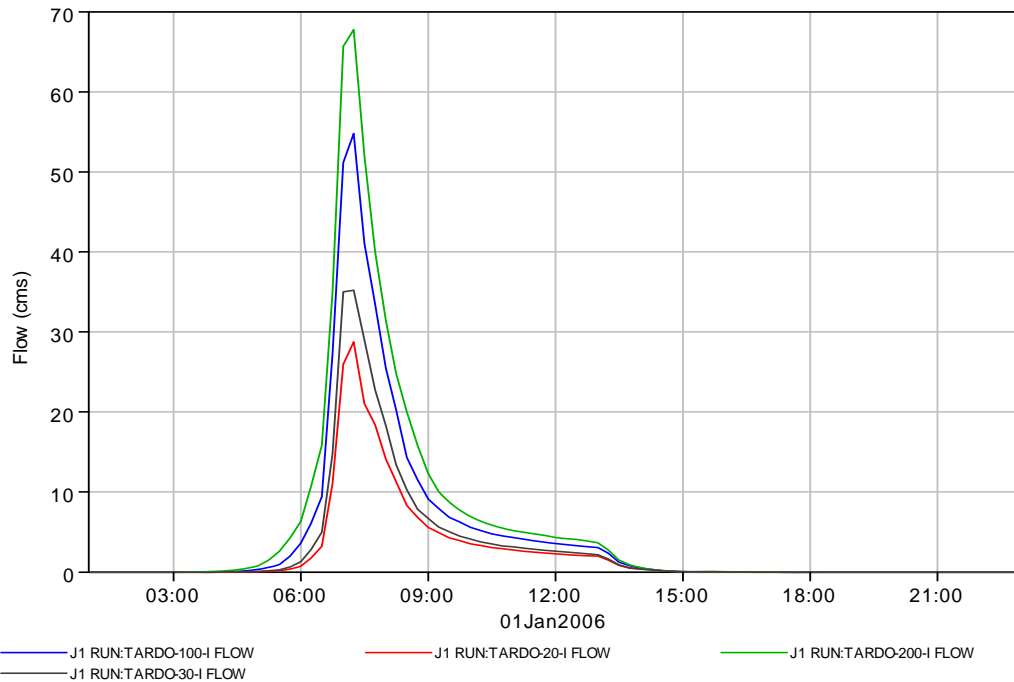
Schema idrologico

Portate modello idraulico

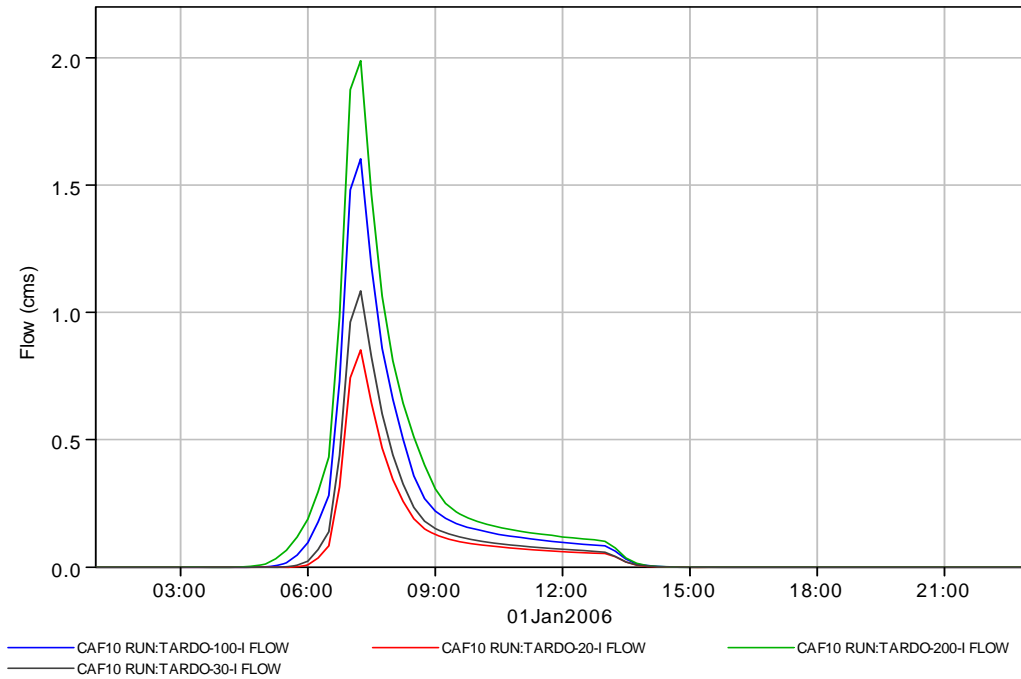
idrol	River	Reach	RS	Tr200-I	Tr100-I	Tr30-I	Tr20-I	
Caf10	cafaggio	caf	6	40	2	1.5	1.1	2
Caf11	cafaggio	caf	7	41.1	12	10	6.5	6
J5	cafaggio	caf	5	37	14	11	7.6	8
J4	cafaggio	caf	5	33	22.9	22.9	11.8	10
	cafaggio	caf	4	55	14	11	8.1	10
	cafaggio	caf	4	52	27	23	15.4	15
J2	cafaggio	caf	3	29.1	62.2	50	31.9	20
Caf3	cafaggio	caf	2	119	11.9	10	6.3	10
J1	cafaggio	caf	1	26	67.7	54	31.9	25.1



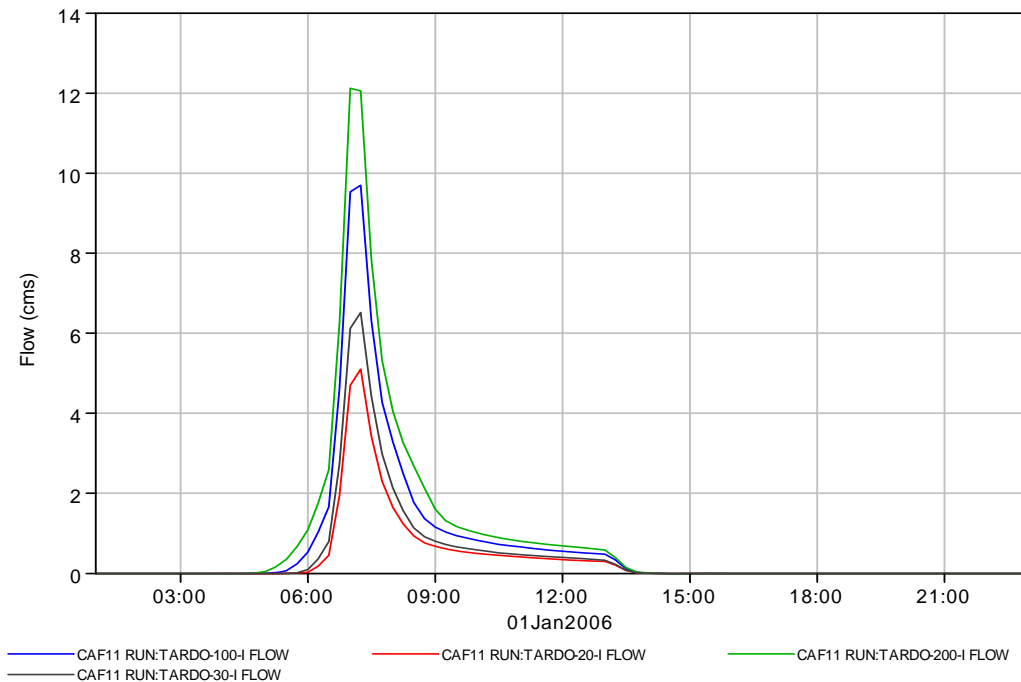
Tardo' nodo J2 (Tr200, 100, 30 e 20)



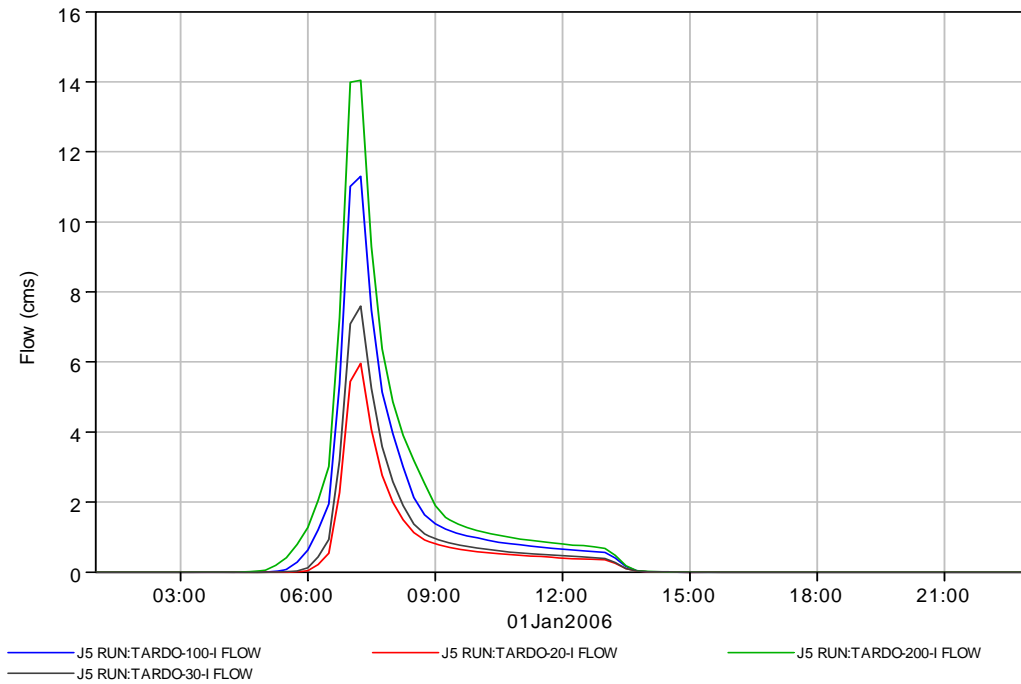
Tardo' nodo J1 (Tr200, 100, 30 e 20)



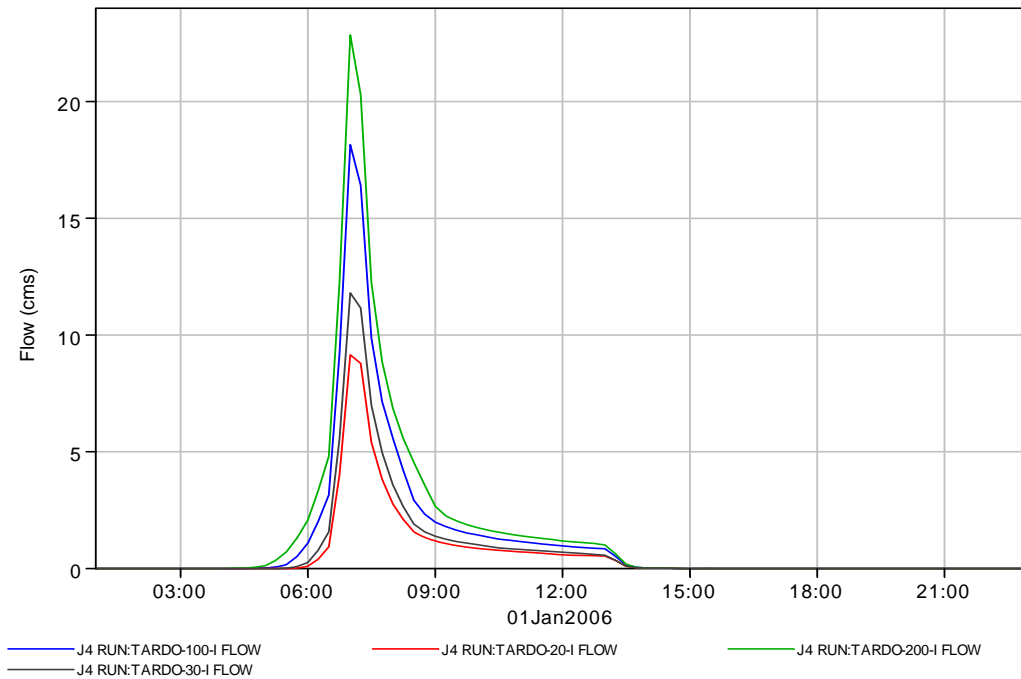
Tardo' caf10 (Tr200, 100, 30 e 20)



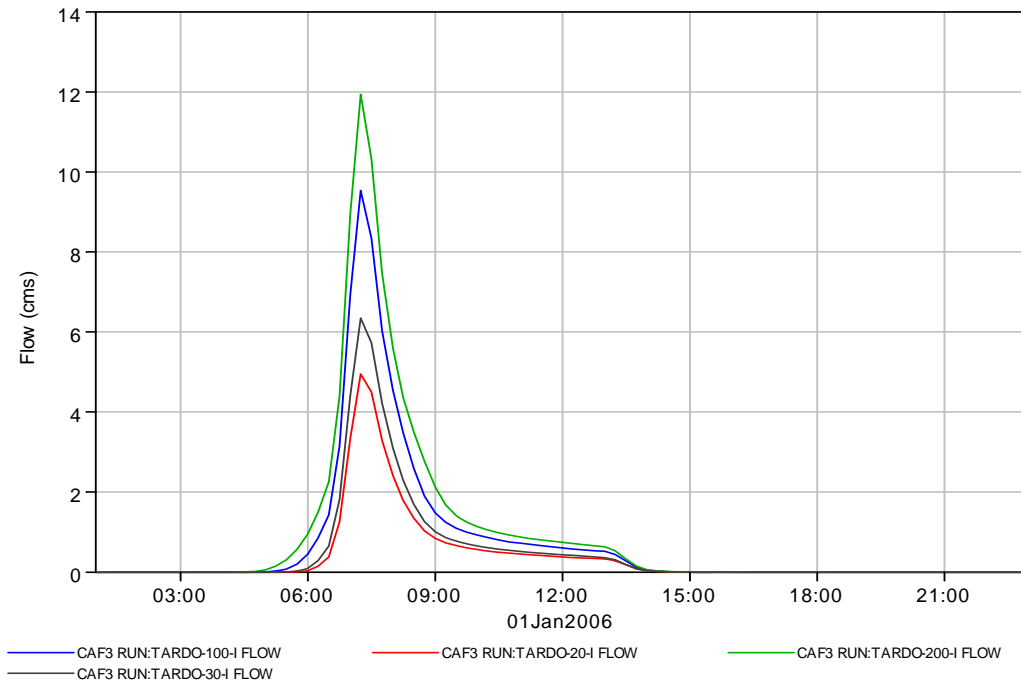
Tardo' caf11 (Tr200, 100, 30 e 20)



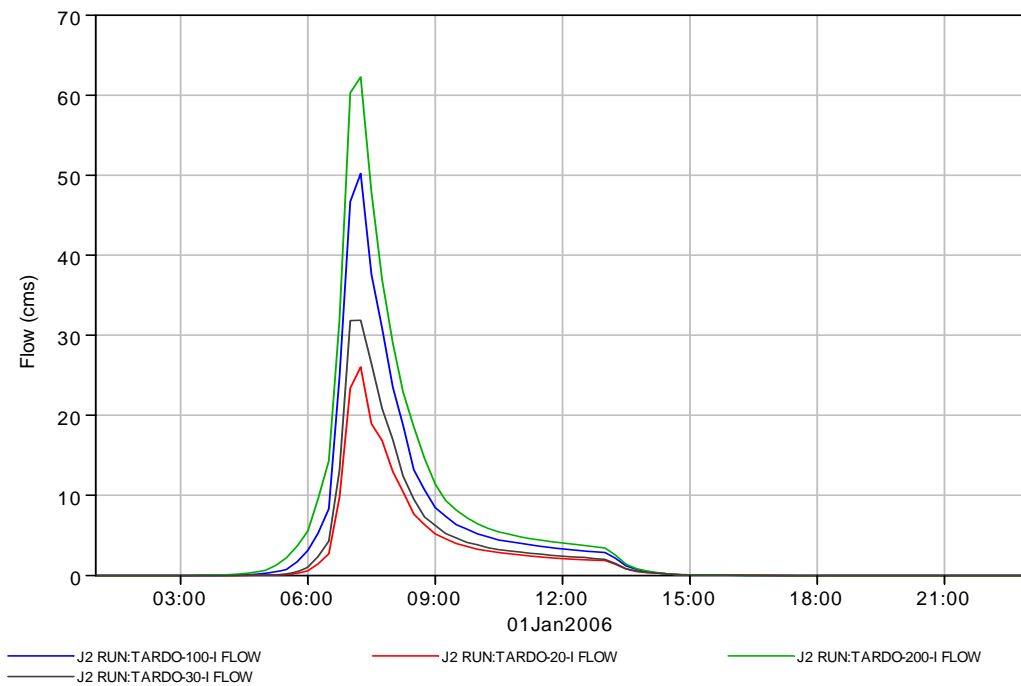
Tardo' j5 (Tr200, 100, 30 e 20)



Tardo' j4 (Tr200, 100, 30 e 20)

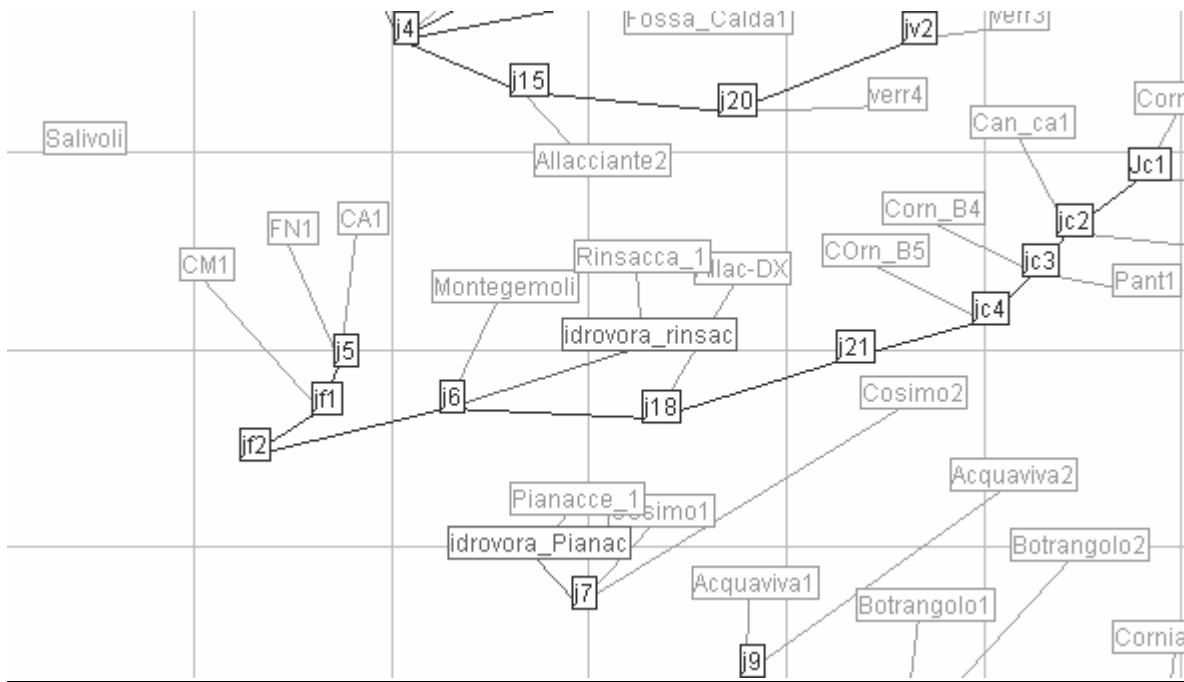


Tardo' caf3 (Tr200, 100, 30 e 20)

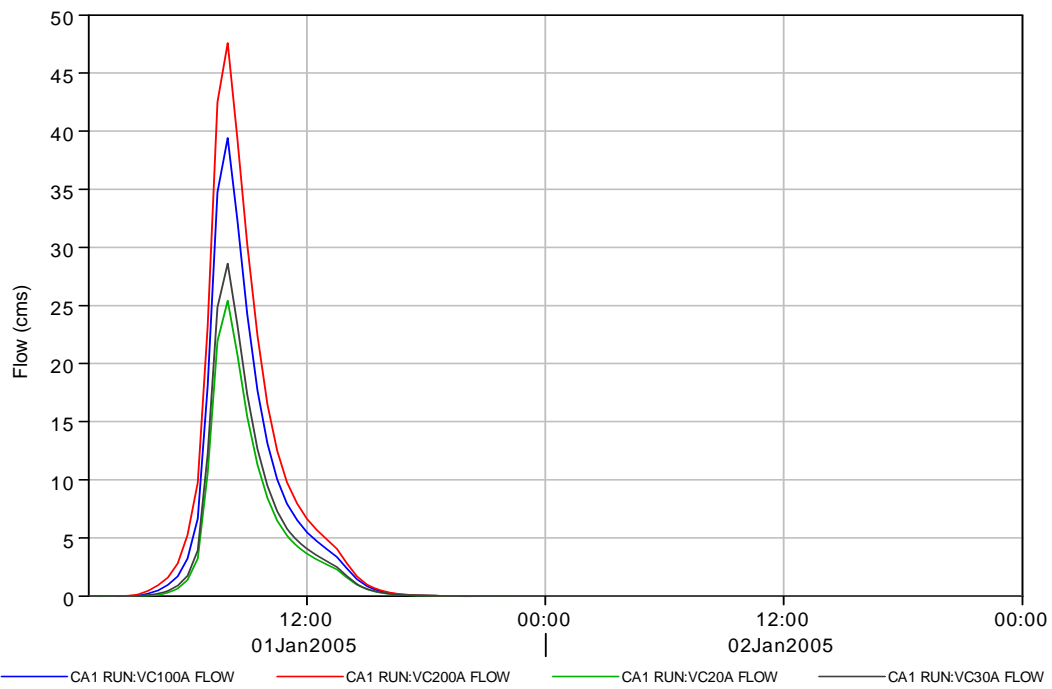


Tardo' j2 (Tr200, 100, 30 e 20)

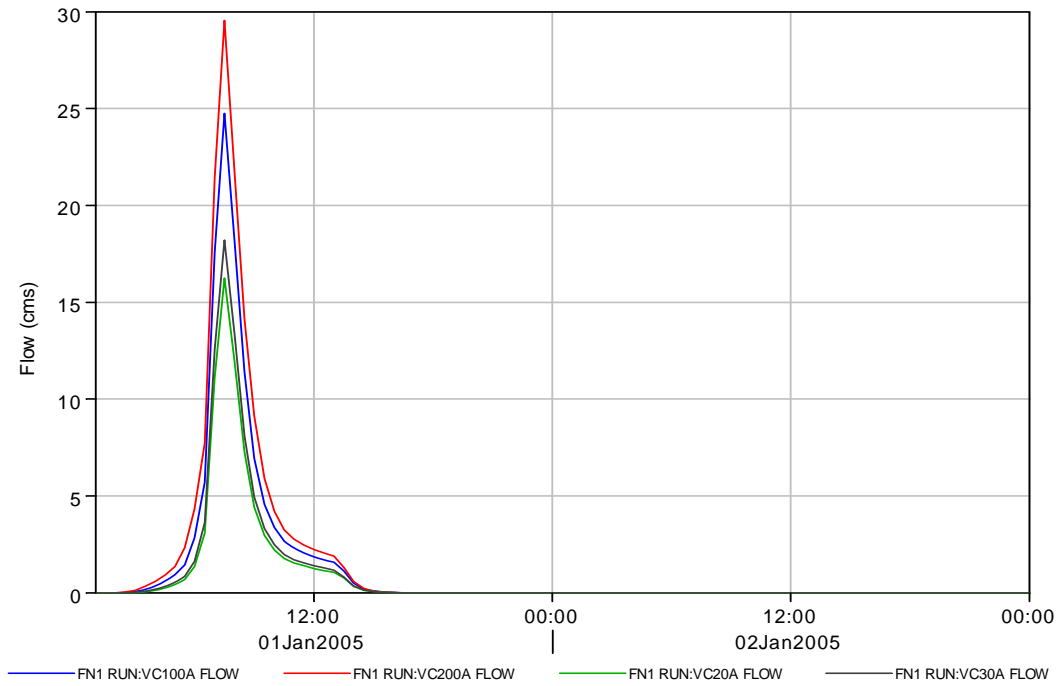
**Zona Fiorentina**



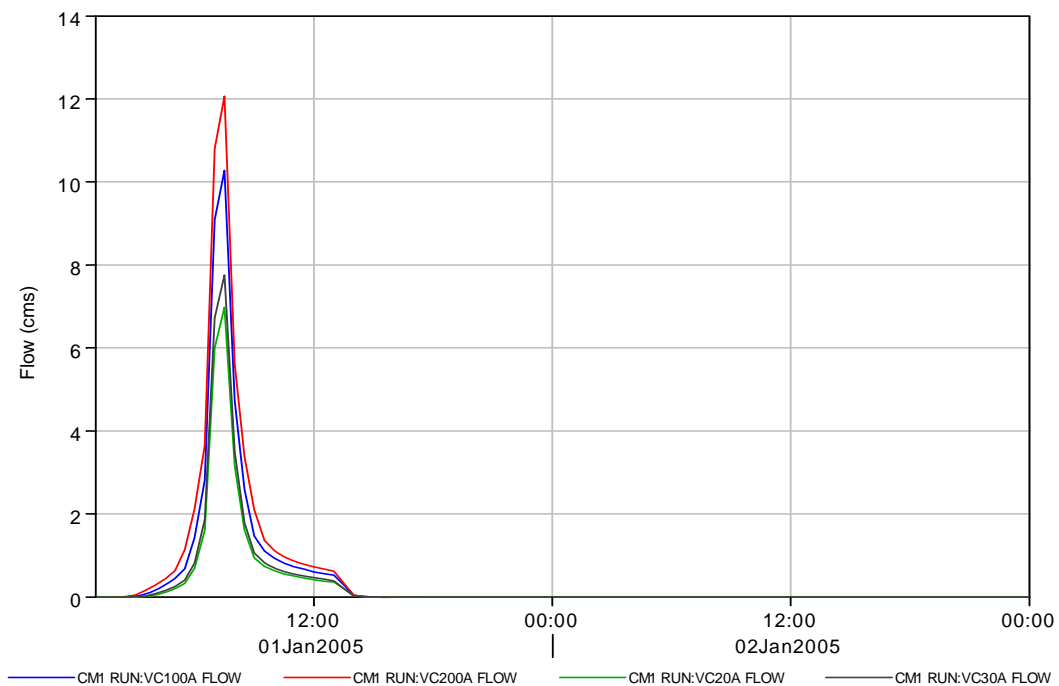
Schema idrologico della zona



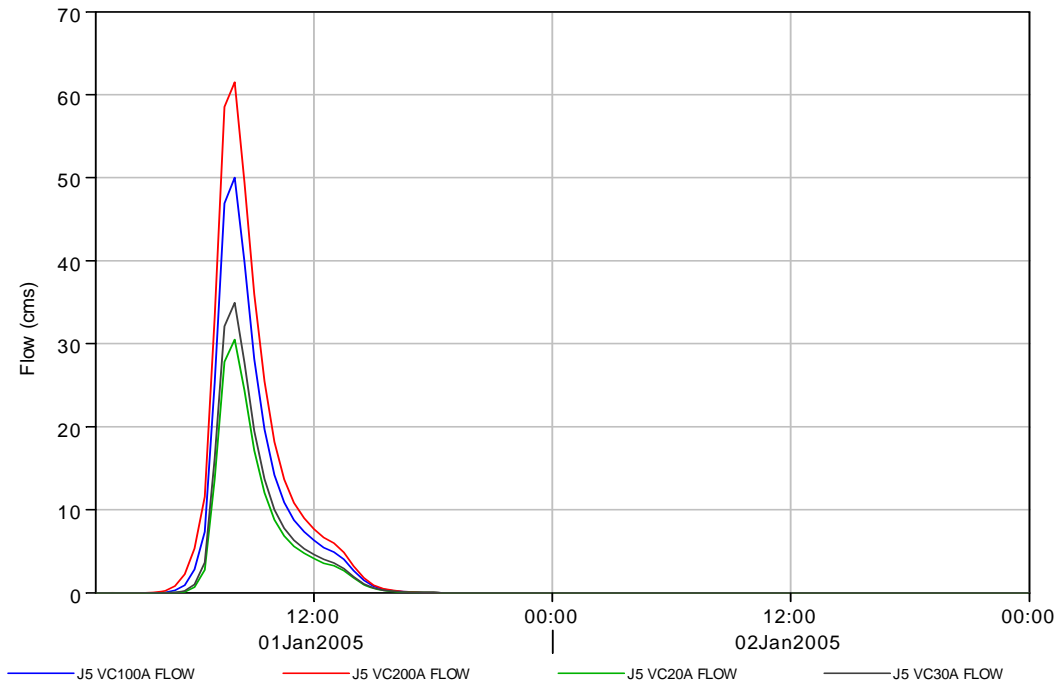
Cagliana CA1 (Tr200, 100, 30 e 20)



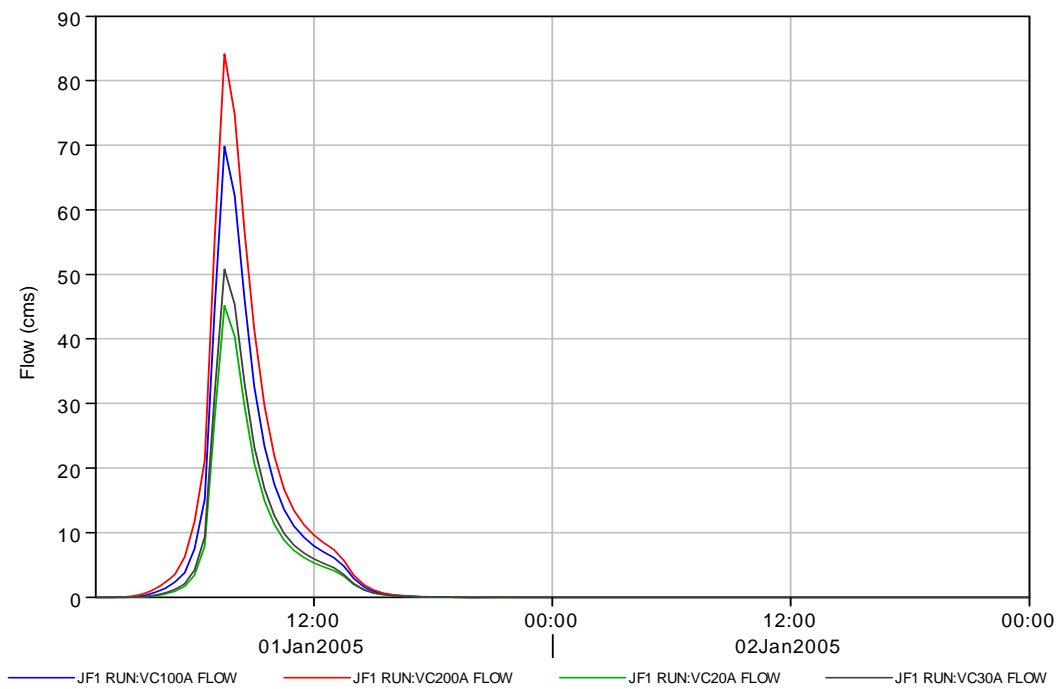
Fossa nuova FN1 (Tr200, 100, 30 e 20)



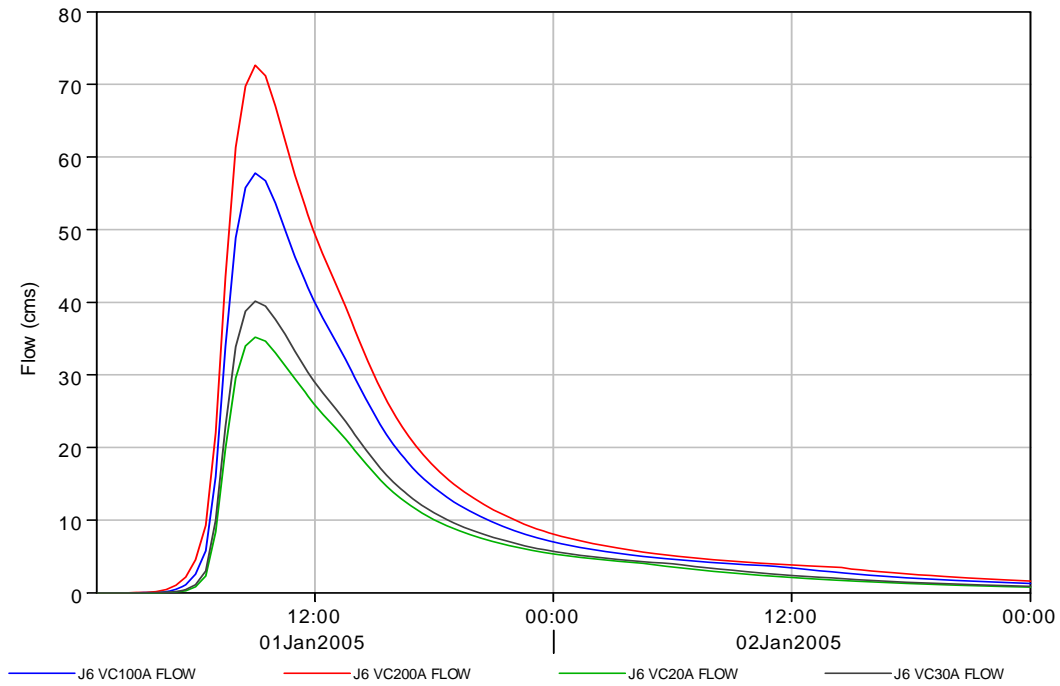
Canale maestro CM1 (Tr200, 100, 30 e 20)



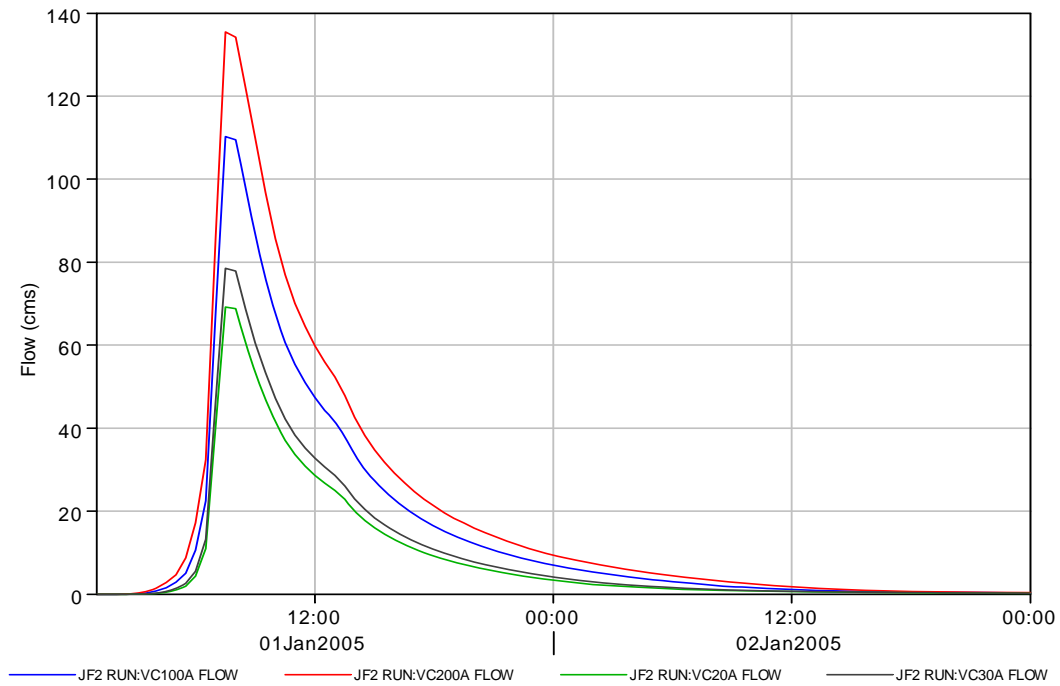
J5 (Tr200, 100, 30 e 20)- (Ca-1 modello idraulico)



Jf1 (Tr200, 100, 30 e 20)- (All\_1 modello idraulico)



J6 (Tr200, 100, 30 e 20)- (Cornia vecchia r4 modello idraulico e Montegemoli)



Jf2 (Tr200, 100, 30 e 20)- (Cornia vecchia r1 modello idraulico)

## 5. CALCOLO IDRAULICO RETICOLO MINORE

In questa parte della relazione saranno descritte le verifiche idrauliche sui vari corsi d'acqua esaminati.

Nella Tav.8.1.2 sono evidenziati in giallo i tratti di corso d'acqua studiati.

### **MATERIALE ACQUISITO (RILIEVI TOPOGRAFICI)**

E' stato utilizzato il materiale già disponibile ed utilizzato per il Piano strutturale, integrato da rilievi specifici nelle aree di interesse per le esondazioni.

Nella Tavola 2 sono riportati i tratti dei corsi d'acqua studiati in dettaglio e le sezioni di calcolo.

### ***CALCOLO IDRAULICO RELATIVO ALLO STATO ATTUALE***

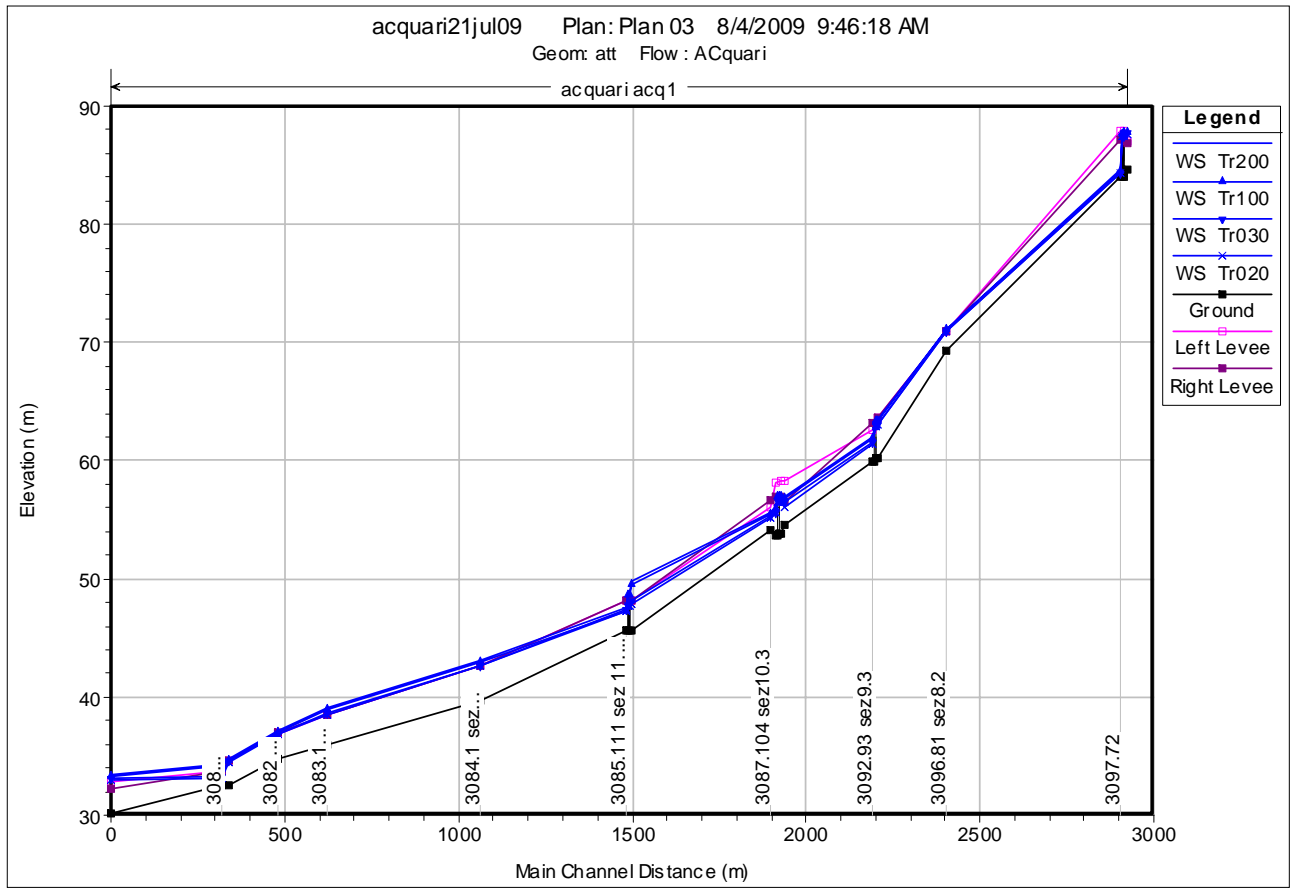
Il calcolo idraulico e' stato effettuato a moto permanente.

I risultati del calcolo idraulico relativo allo stato attuale per le portate massime che si possono verificare (Tr200, 100, 30 e 20) nel reticolo considerato sono riportate nelle Appendici.

#### **01 F.Acquari**

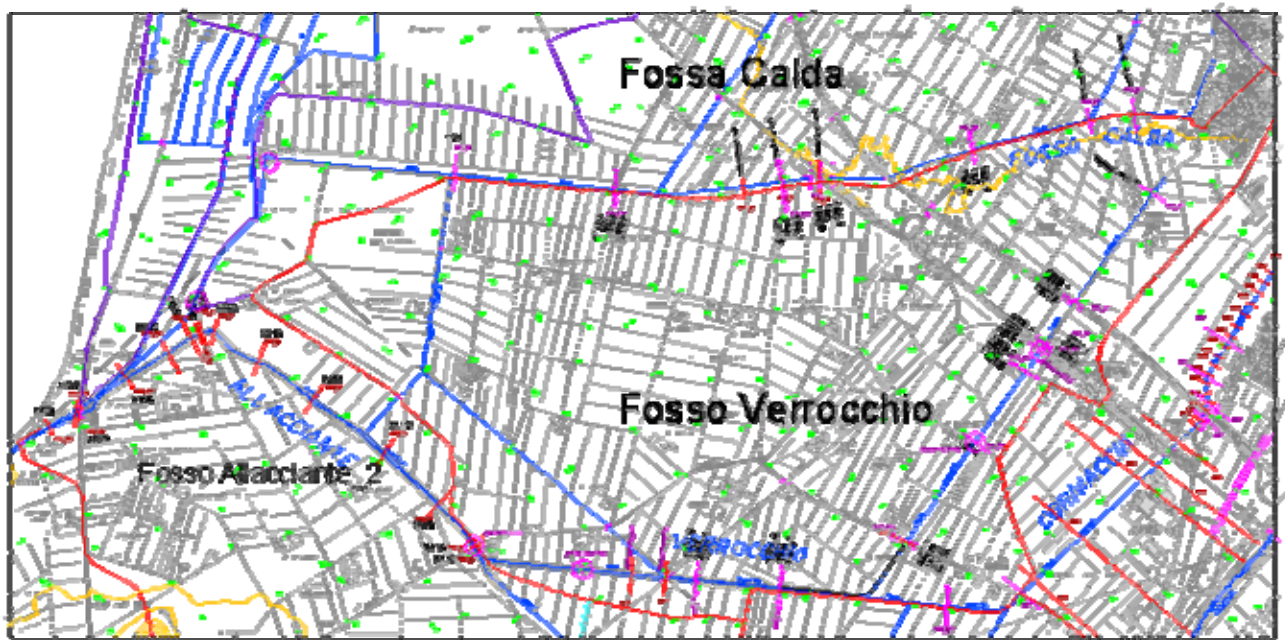
	River	Reach	RS	Tr200	Tr100	Tr030	Tr020
1	acquari	acq1	3099.71	12.6	10.7	7.8	7
2	acquari	acq1	3096.81	28	24	18	16
3	acquari	acq1	3086.111	50	42	31	27

Si hanno alcune insufficienze in corrispondenza di alcuni attraversamenti stradali.



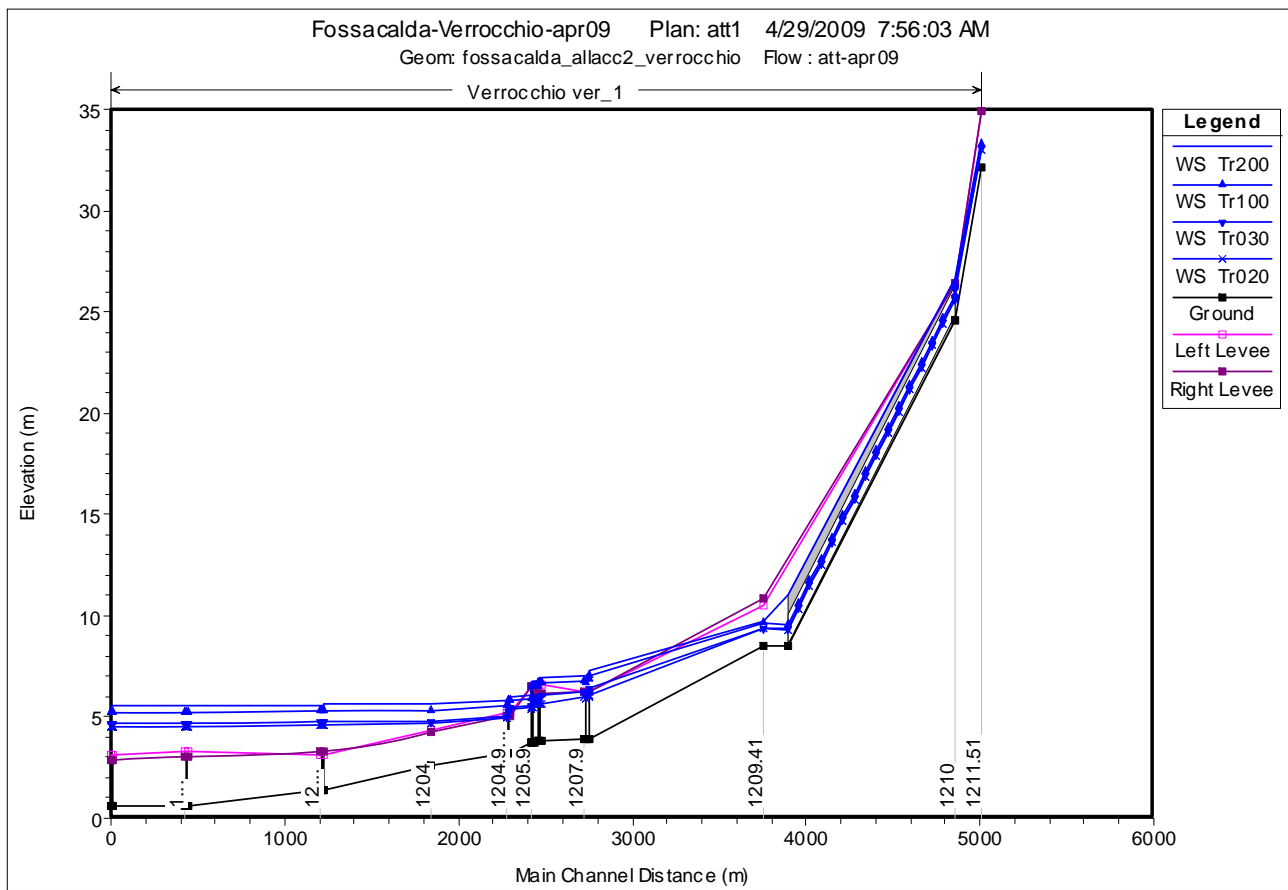
Profilo longitudinale F.Acquari

## 02 F.Verrocchio



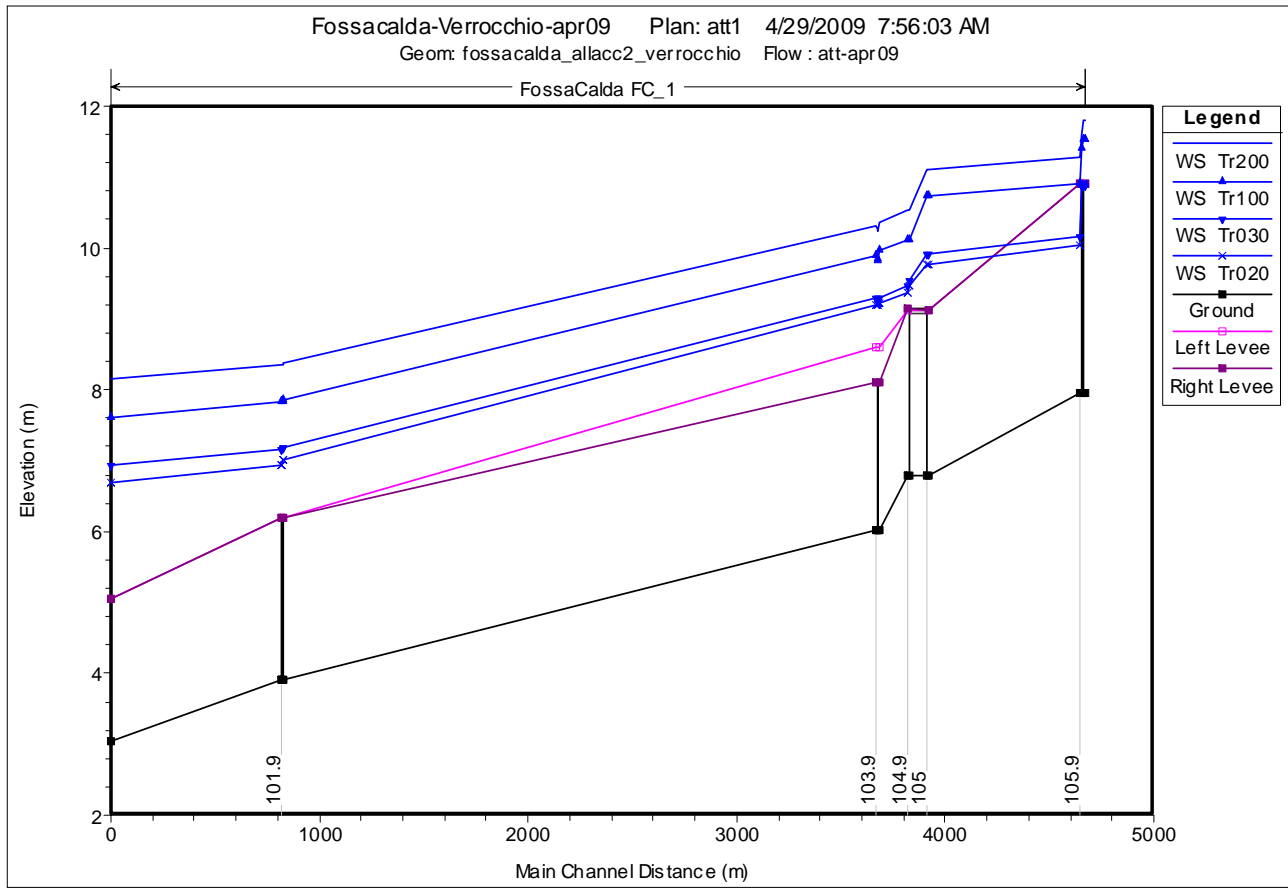
Il verrocchio ha una derivazione a monte dell'abitato di Venturina che deriva acqua per poi restituirla a valle dell'abitato stesso. Tale opera idraulica (diametro 1500 mm) risulta in grado di alleviare il rischio idraulico nell'abitato stesso.

	River	Reach	RS	Tr200	Tr100	Tr030	Tr020
1	Allacciante	All	2	11.029	8.7	5.9903	5.231
2	Allacciante_2	All_2	1115	36.596	29.16	20.449	17.995
3	Allacciante_3	All_3	2	139.53	111.59	79.309	68.776
4	FossaCalda	FC_1	106.1	45.664	37.112	26.202	24.242
5	Verrocchio	ver_1	1211.51	5	3.8	2.7	2.3
6	Verrocchio	ver_1	1209.41	12	9.8	6.6	5.9
7	Verrocchio	ver_1	1208.1	18.4	15.4	10.8	9.8
8	Verrocchio	ver_1	1202.9	18.4	15.4	10.8	9.8



Profilo longitudinale F. Verrocchio

A monte di Venturina si hanno insufficienze per Tr=200 anni, mentre a valle si hanno insufficienze diffuse.

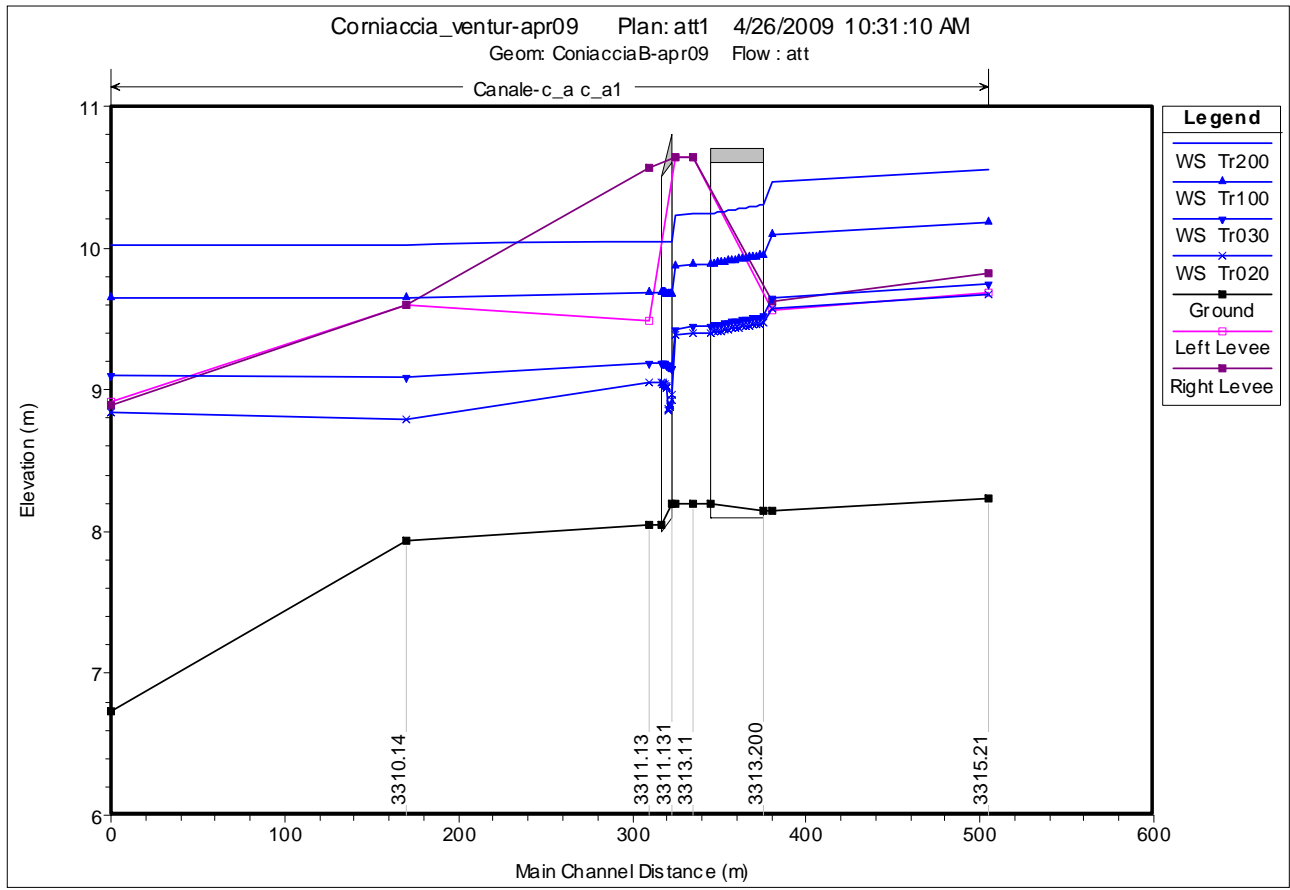


Profilo longitudinale F.Calda

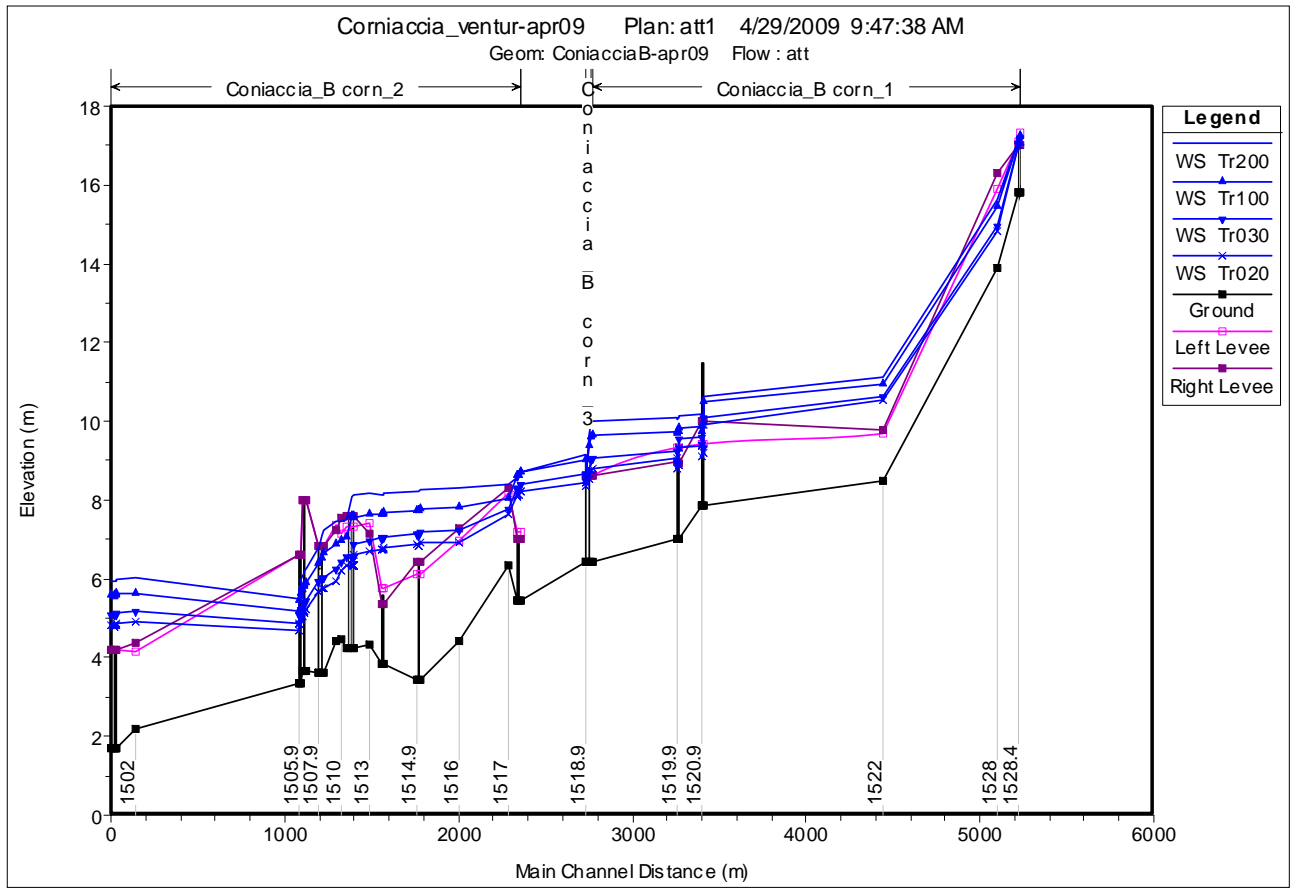
Si hanno insufficienze diffuse.

### 03 Corniaccia Venturina

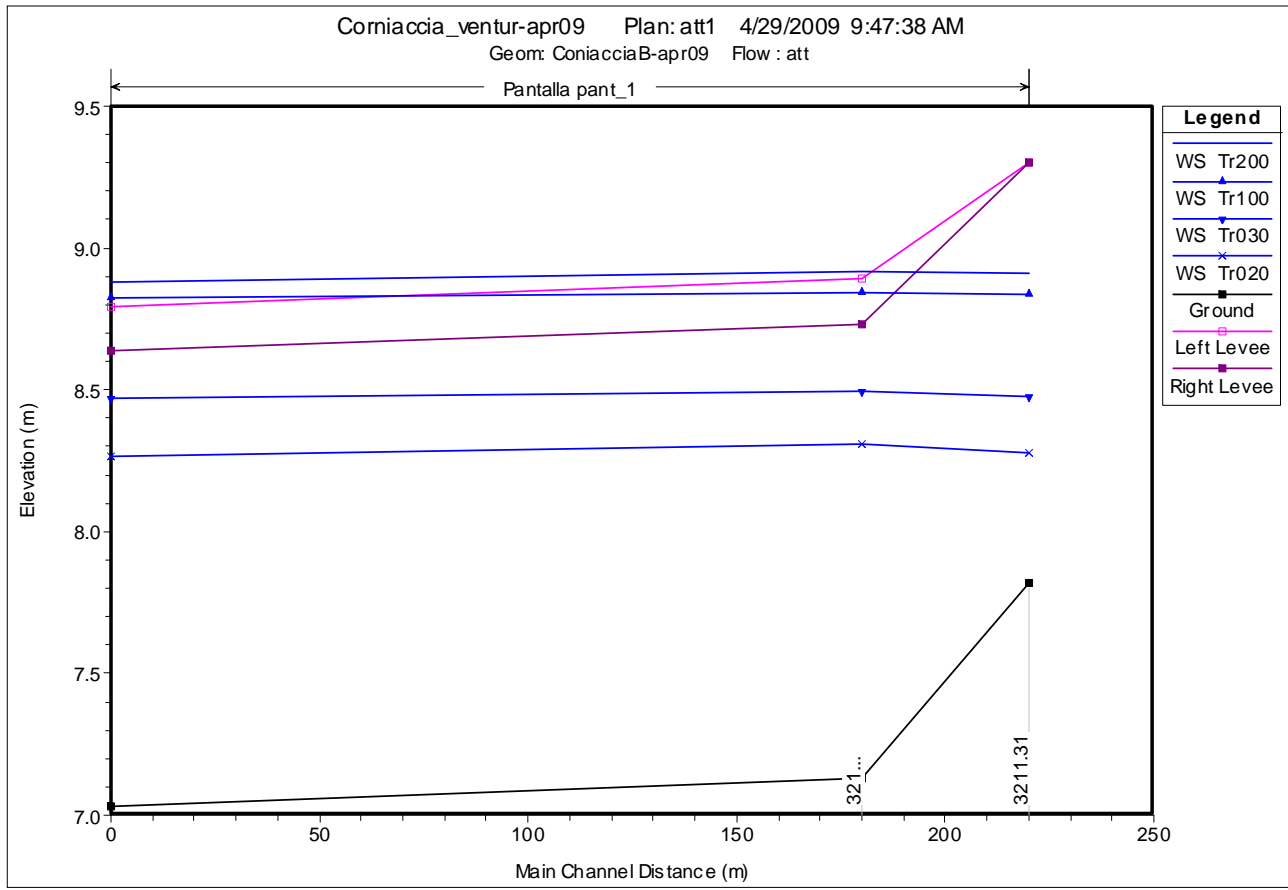
	River	Reach	RS	Tr200	Tr100	Tr030	Tr020
1	Canale-c_a	c_a1	3315.21	7.5	6.1	4.2	3.8
2	Coniaccia_B	corn_1	1529	21	18	13	11.5
3	Coniaccia_B	corn_3	1519.1	34	27	19	17
4	Coniaccia_B	corn_2	1518.1	37	30	22	18
5	Pantalla	pant_1	3211.31	4.1	3.3	2.4	2



Profilo longitudinale canale c.a. (Tr=200,100,30,20 anni).



Profilo longitudinale F.Corniaccia (Tr=200,100,30,20 anni).

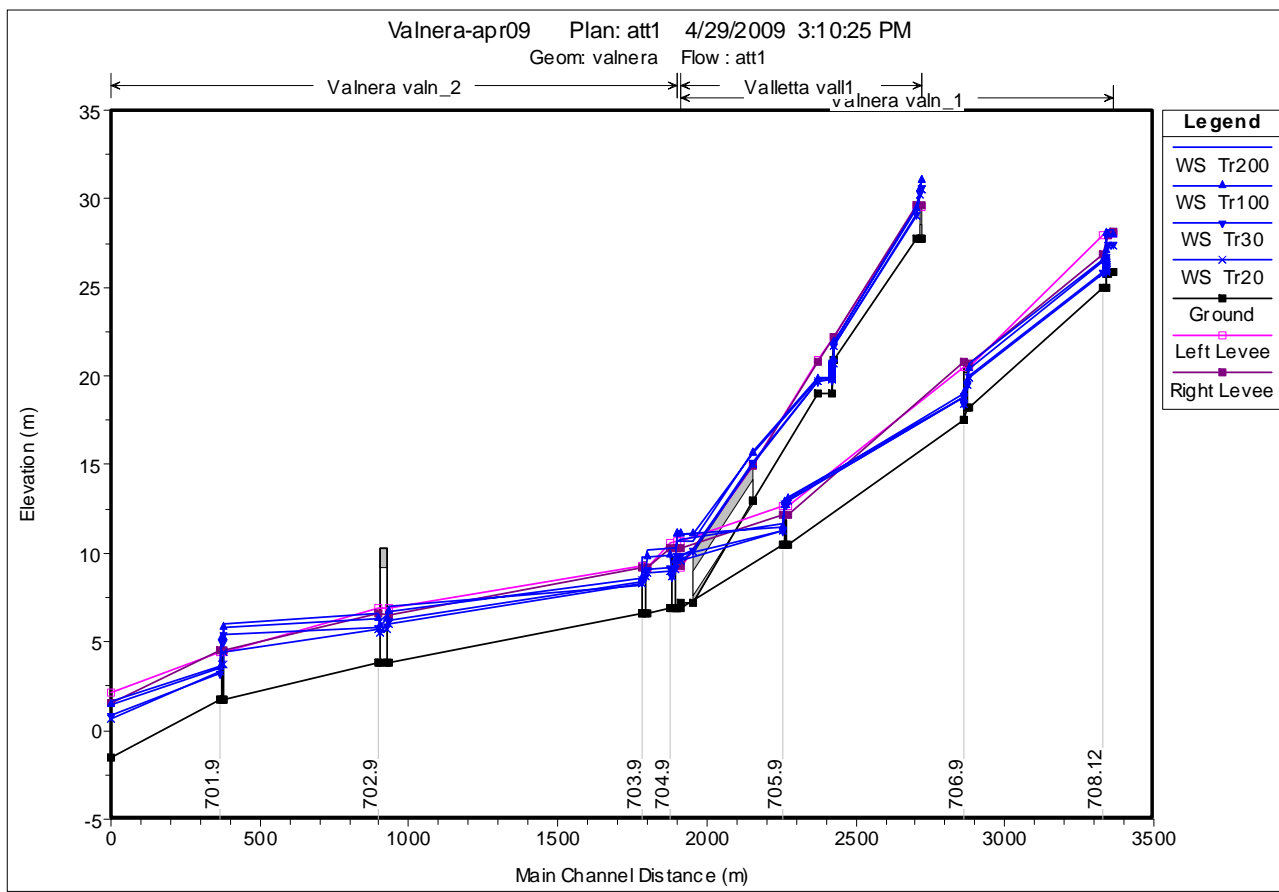


Profilo longitudinale F.Pantalla (Tr=200,100,30,20 anni).

Si hanno esondazioni diffuse per i vari tempi di ritorno. I risultati del calcolo idraulico in dettaglio sono riportati in appendice 3.

#### **04. F.Valnera**

	River	Reach	RS	Tr200	Tr100	Tr30	Tr20
1	Valletta	vall1	770.31	13	11	8	7.2
2	Valnera	valn_1	710	22.5	19	14	13
3	Valnera	valn_1	705.9	25.2	21	15.2	13.5
4	Valnera	valn_2	705.1	37	31	22	19.5
5	Valnera	valn_2	704.9	37	31	22	19.5
6	Valnera	valn_2	702.1	87	73	53	47



Profili longitudinali per Tr=200,100,30,20

Si hanno alcune insufficienze.

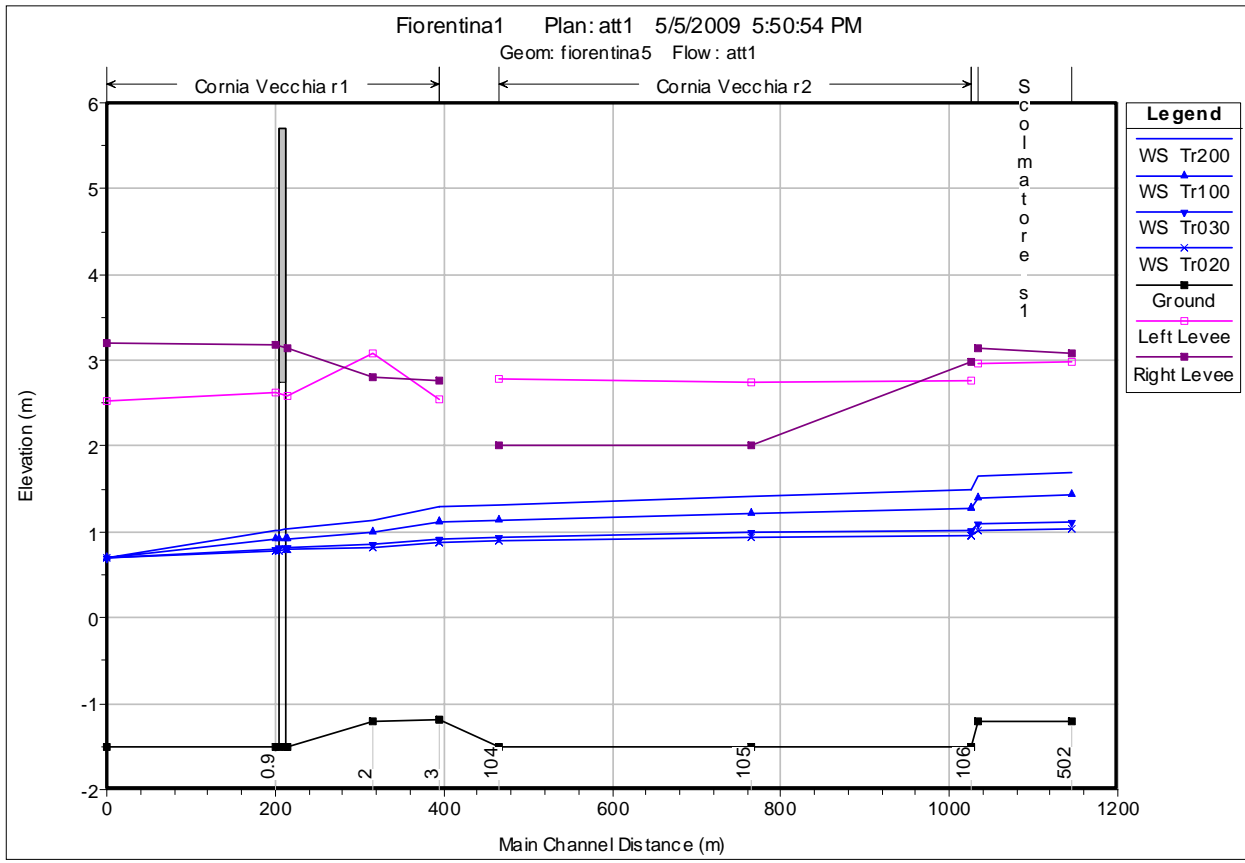
### 05-F.Corniaccia-Riotorto

	River	Reach	RS	Tr200	Tr100	Tr030	Tr020
1	Corniaccia	Corn_2	509.1	70	60	45	40
2	Corniaccia	Corn_1	503	220	190	135	120
3	Riotorto	ri_1	605.1	96.295	79.752	57.089	50.782

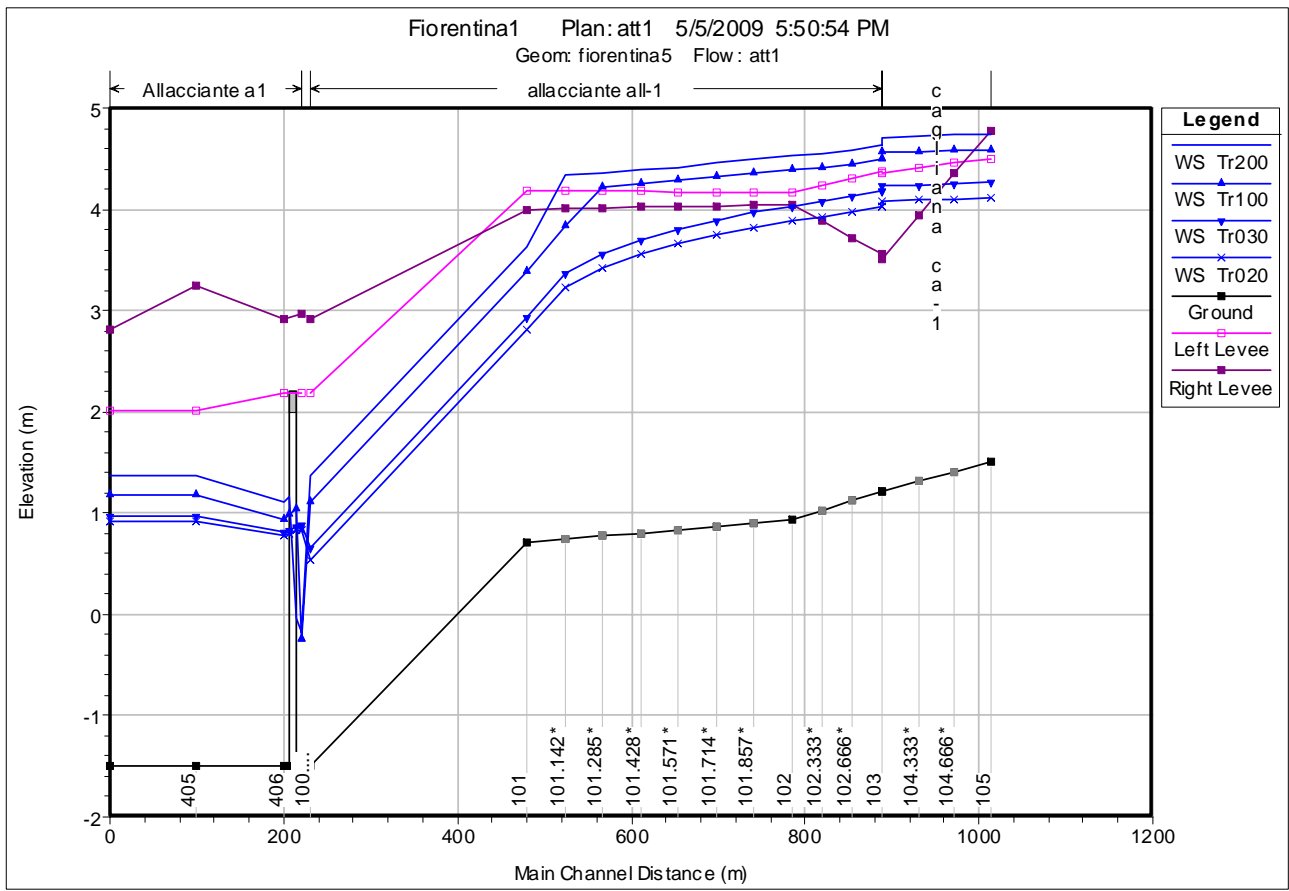
Anche in questo caso si hanno esondazioni abbastanza diffuse.

### 06. Zona Fiorentina

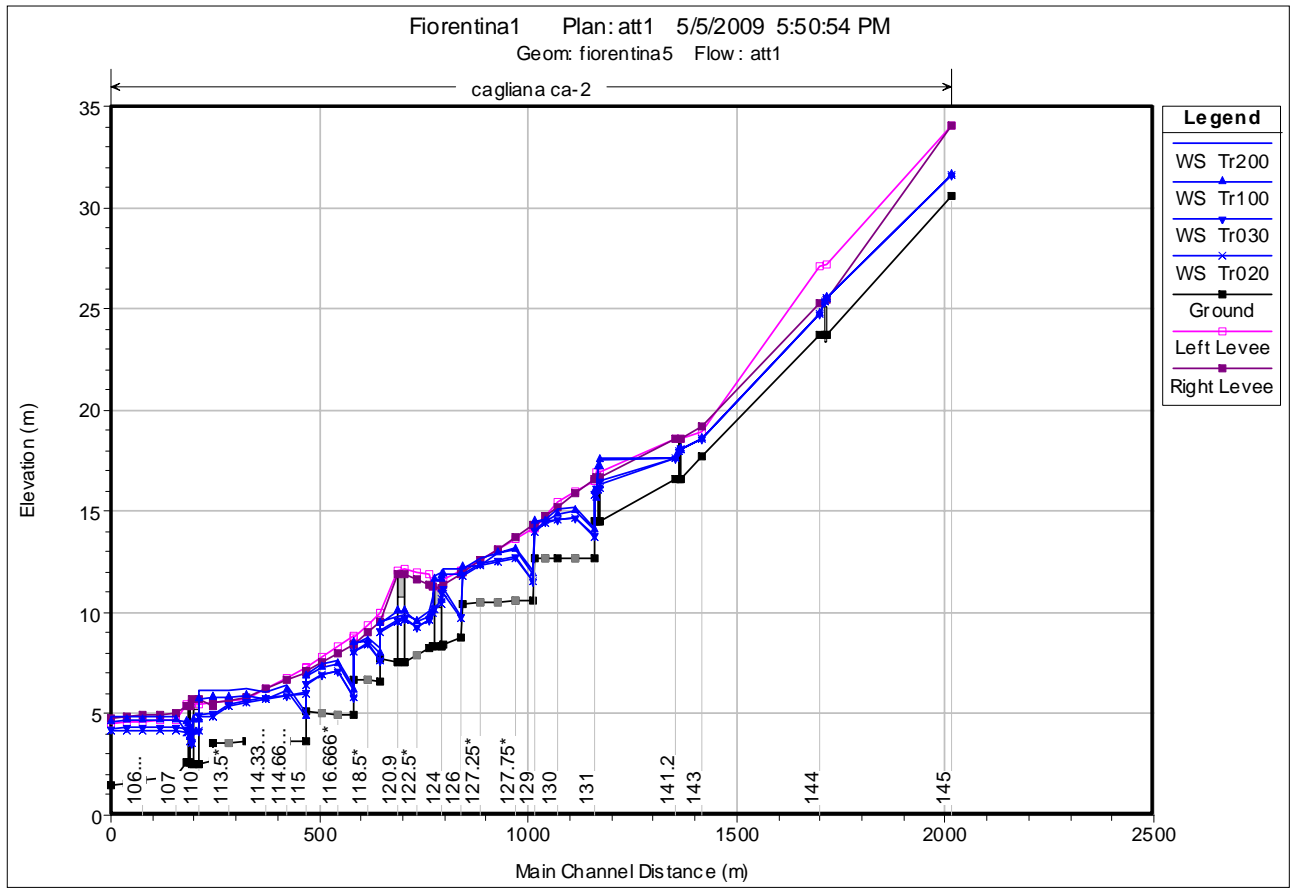
Per questa zona si rimanda agli studi relativi alla Colmata Gagno e alla variante nautica presentati alla competente Autorita' di Bacino da parte del Comune di Piombino.



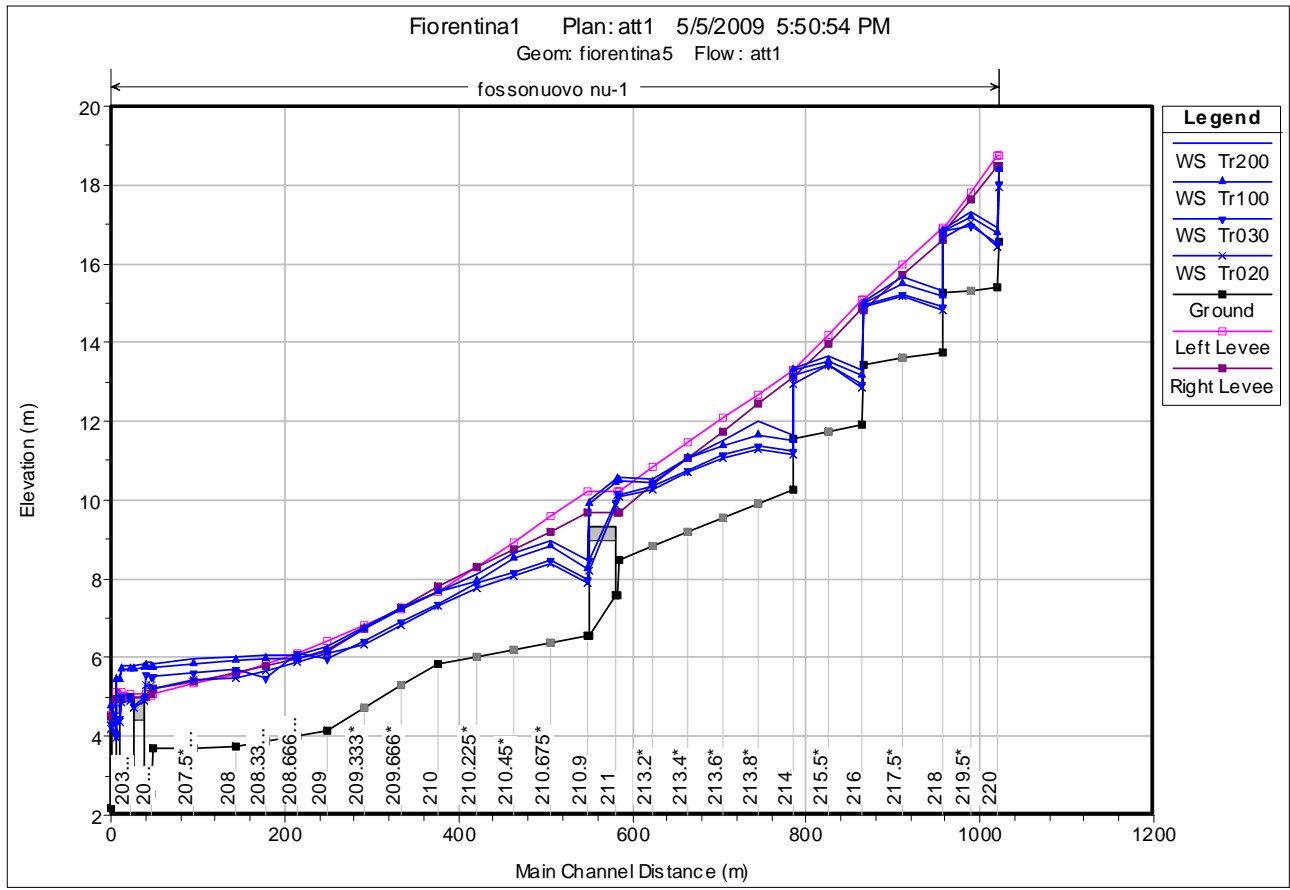
Profilo longitudinale F.Cornia Vecchia (tratti r1, r2 e scolmatore s1)



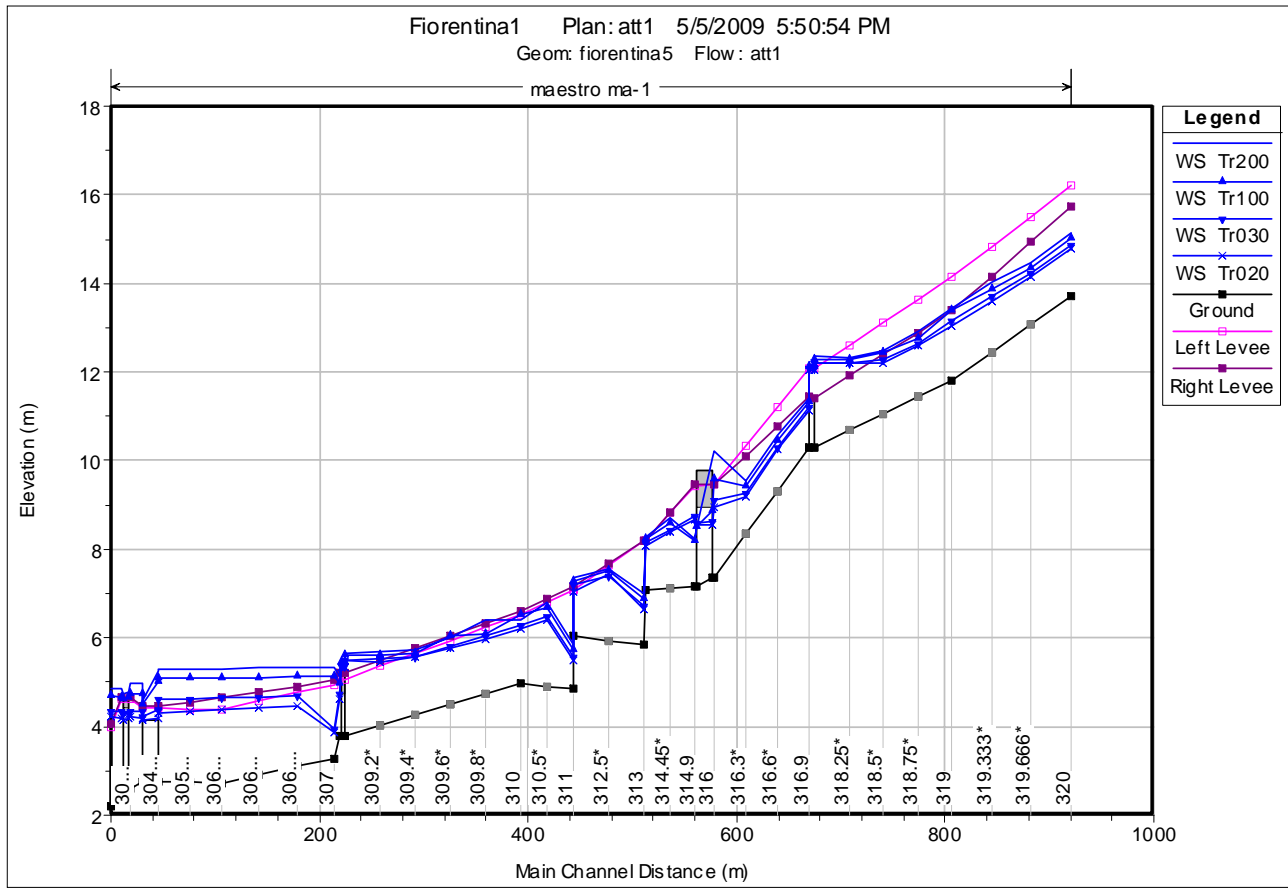
Profilo longitudinale Allacciante (tratti a1, all-1 e ca-1)



Profilo longitudinale F.Cagliana (tratto ca-2)



*Profilo longitudinale F.Nuova (tratto nu-1)*



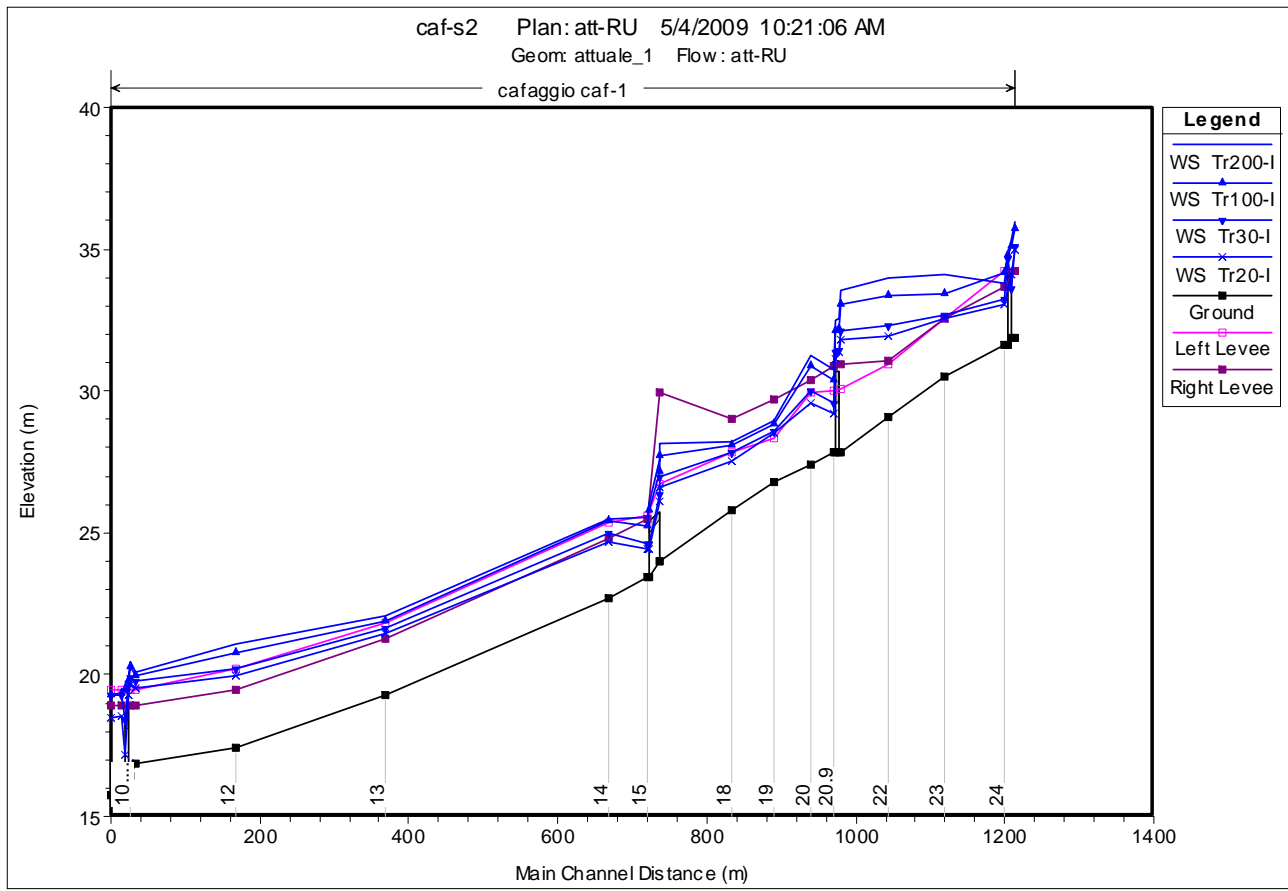
Profilo longitudinale Canale maestro (tratto ma-1)

Si hanno diverse insufficienze.

## 07. Tardo'

Anche per questo corso d'acqua si rimanda allo studio effettuato su tale bacino dallo scrivente per conto del comune di Campiglia e già' in possesso della competente Autorita' di Bacino.

	River	Reach	RS	Tr200-I	Tr100-I	Tr30-I	Tr20-I	
1	cafaggio	caf	6	40	2	1.6	1.1	0.8
2	cafaggio	caf	7	41.1	12	9.8	6.5	5
3	cafaggio	caf	5	37	14	11.2	7.6	6
4	cafaggio	caf	5	33	22.9	20	11.8	10
5	cafaggio	caf	4	55	14	11	8.1	6.5
6	cafaggio	caf	4	52	27	23	15.4	12
7	cafaggio	caf	3	29.1	62.2	50	31.9	25
8	cafaggio	caf	2	119	11.9	9.8	6.3	4.6
9	cafaggio	caf	1	26	67.7	54	31.9	25.1



*Profili longitudinal Fosso Tardo' i per Tr=200,100,30,20*

Si hanno diverse insufficienze.

Nelle appendici 1-7 sono riportati i dettagli del calcolo idraulico dei vari corsi d'acqua.

## 6.ESONDAZIONI

La realizzazione di un DTM dell'area in esame ha avuto come scopo quello di rappresentare il piano di campagna attraverso un dataset di punti georeferenziati (x,y,z) distribuiti regolarmente secondo un reticolo di maglia quadrata e di lato 50 m. E' stato ottenuto dalla ctr regionale 1:2000 e dai rilievi delle sezioni. Il DTM e' stato elaborato in maniera tale da essere idoneo ad una elaborazione di ingegneria idraulica.

### INDIVIDUAZIONE DELLE AREE INONDABILI

Il calcolo e' stato effettuato propagando, per ciascuna sezione risultata idraulicamente insufficiente del tratto preso in considerazione, le acque di esondazione sulla pianura alluvionale.

Il calcolo è stato effettuato mediante un modello di simulazione in moto vario bidimensionale (l'unico che permetta, con un ottimo grado di precisione il calcolo della propagazione delle acque di esondazione). In particolare è stato usato il modello FIM2D (Pagliara 1997-2009).

Il modello matematico usato simula Il flusso bidimensionale a superficie libera mediante il sistema alle derivate parziali, iperbolico, non lineare, delle equazioni complete di De Saint Venant.

Le equazioni di continuita' e del moto nelle due direzioni possono essere scritte,

$$\frac{\partial h}{\partial t} + \frac{\partial M}{\partial x} + \frac{\partial N}{\partial y} = 0 \quad (1)$$

$$\frac{\partial M}{\partial t} + \frac{\partial(uM)}{\partial x} + \frac{\partial(vM)}{\partial y} + gh \frac{\partial H}{\partial x} + \frac{1}{\rho} \tau_x = 0 \quad (2)$$

$$\frac{\partial N}{\partial t} + \frac{\partial(uN)}{\partial x} + \frac{\partial(vN)}{\partial y} + gh \frac{\partial H}{\partial y} + \frac{1}{\rho} \tau_y = 0 \quad (3)$$

con:

$$\tau_x = \frac{\rho g n^2 u \sqrt{u^2 + v^2}}{h^{1/3}} \quad (4)$$

$$\tau_y = \frac{\rho g n^2 v \sqrt{u^2 + v^2}}{h^{1/3}} \quad (5)$$

in cui  $g$  è l'accelerazione di gravità,  $x$  ed  $y$  sono le coordinate spaziali,  $t$  il tempo,  $h$  l'altezza d'acqua,  $u$  e  $v$  le componenti della velocità nelle due direzioni,  $M = u \cdot h =$  flusso nella direzione  $x$ ;  $N = v \cdot h =$  flusso della corrente nella direzione  $y$ ,  $H$  è la quota della superficie libera,  $n$  il coefficiente di scabrezza di Manning,  $\rho$  la densità dell'acqua mentre  $\tau_x$  e  $\tau_y$  sono gli sforzi tangenziali al fondo, rispettivamente nelle direzioni  $x$  ed  $y$ .

Il metodo usato per la formulazione numerica delle equazioni (1)-(3) è quello originariamente proposto da Iwasa (Iwasa et al., 1980) e usa uno schema alle differenze finite di tipo esplicito.

L'equazione di continuità viene scritta nella forma seguente:

$$\frac{h_{i+1/2,j+1/2}^{n+3} - h_{i+1/2,j+1/2}^{n+1}}{2\Delta t} + \frac{M_{i+1,j+1/2}^{n+2} - M_{i,j+1/2}^{n+2}}{\Delta x} + \frac{N_{i+1/2,j+1}^{n+2} - N_{i+1/2,j}^{n+2}}{\Delta y} = 0, \quad (6)$$

i vari termini nella eq.2 sono così esprimibili:

$$a) \frac{\partial M}{\partial t} = \frac{M_{i,j+1/2}^{n+2} - M_{i,j+1/2}^n}{2\Delta t} \quad (7)$$

$$b) \frac{\partial(uM)}{\partial x} = \frac{1}{\Delta x} \frac{1}{h_{i+1/2,j+1/2}^{n+1}} \left( \frac{M_{i+1,j+1/2}^n + M_{i,j+1/2}^n}{2} \right)^2 -$$

(8)

$$\frac{1}{\Delta x} \frac{1}{h_{i-1/2,j+1/2}^{n+1}} \left( \frac{M_{i,j+1/2}^n + M_{i-1,j+1/2}^n}{2} \right)^2$$

$$c) \frac{\partial(vM)}{\partial y} = \frac{1}{\Delta y} \frac{(M_{i,j+1/2}^n + M_{i,j+3/2}^n)(N_{i+1/2,j+1}^n + N_{i-1/2,j+1}^n)}{h_{i-1/2,j+1/2}^{n+1} + h_{i+1/2,j+1/2}^{n+1} + h_{i-1/2,j+3/2}^{n+1} + h_{i-1/2,j+3/2}^{n+1}} -$$

(9)

$$\frac{1}{\Delta y} \frac{(M_{i,j+1/2}^n + M_{i,j-1/2}^n)(N_{i+1/2,j}^n + N_{i-1/2,j}^n)}{h_{i-1/2,j-1/2}^{n+1} + h_{i+1/2,j-1/2}^{n+1} + h_{i+1/2,j+1/2}^{n+1} + h_{i-1/2,j+1/2}^{n+1}}$$

d)

$$gh \frac{\partial H}{\partial x} = g \cdot \left( \frac{h_{i+1/2,j+1/2}^{n+1} + h_{i-1/2,j+1/2}^{n+1}}{2} \right). \quad (10)$$

$$\left( \frac{H_{i+1/2,j+1/2}^{n+1} - H_{i-1/2,j+1/2}^{n+1}}{\Delta x} \right)$$

e)

$$\frac{1}{\rho} \tau_x = \frac{g n_{i,j+1/2}^2 (\bar{u}_{i,j+1/2}) \sqrt{(u_{i,j+1/2}^n)^2 + (v_{i,j+1/2}^n)^2}}{\left( (h_{i+1/2,j+1/2}^{n+1} + h_{i-1/2,j+1/2}^{n+1}) / 2 \right)^{1/3}} \quad (11)$$

i termini della equazione (3) possono essere così' scritti:

$$a) \frac{\partial N}{\partial t} = \frac{N_{i+1/2,j}^{n+2} - N_{i+1/2,j}^n}{2\Delta t} \quad (12)$$

$$b) \frac{\partial(uN)}{\partial x} = \frac{1}{\Delta x} \frac{(M_{i+1,j+1/2}^n + M_{i+1,j-1/2}^n)(N_{i+1/2,j}^n + N_{i+3/2,j}^n)}{h_{i+1/2,j+1/2}^{n+1} + h_{i+1/2,j-1/2}^{n+1} + h_{i+3/2,j-1/2}^{n+1} + h_{i+3/2,j+1/2}^{n+1}} - \quad (13)$$

$$\frac{1}{\Delta x} \frac{(M_{i,j+1/2}^n + M_{i,j-1/2}^n)(N_{i-1/2,j}^n + N_{i+1/2,j}^n)}{h_{i-1/2,j+1/2}^{n+1} + h_{i-1/2,j-1/2}^{n+1} + h_{i+1/2,j-1/2}^{n+1} + h_{i+1/2,j+1/2}^{n+1}}$$

$$c) \frac{\partial(vN)}{\partial y} = \frac{1}{\Delta y} \frac{1}{h_{i+1/2,j+1/2}^{n+1}} \left( \frac{N_{i+1/2,j}^n + N_{i+1/2,j+1}^n}{2} \right)^2 - \quad (14)$$

$$\frac{1}{\Delta y} \frac{1}{h_{i+1/2,j-1/2}^{n+1}} \left( \frac{N_{i+1/2,j-1}^n + N_{i+1/2,j}^n}{2} \right)$$

$$d) gh \frac{\partial H}{\partial y} = g \cdot \left( \frac{h_{i+1/2,j+1/2}^{n+1} + h_{i+1/2,j-1/2}^{n+1}}{2} \right). \quad (15)$$

$$\left( \frac{H_{i+1/2,j+1/2}^{n+1} - H_{i+1/2,j-1/2}^{n+1}}{\Delta y} \right)$$

e')

$$\frac{1}{\rho} \tau_y = \frac{gn_{i+1/2,j}^2 (\bar{v}_{i+1/2,j}) \sqrt{(u_{i+1/2,j}^n)^2 + (v_{i+1/2,j}^n)^2}}{\left( (h_{i+1/2,j+1/2}^{n+1} + h_{i+1/2,j-1/2}^{n+1}) / 2 \right)^{1/3}} \quad (16)$$

in cui:

$$\bar{u}_{i,j+1/2} = \frac{(M_{i,j+1/2}^{n+2} + M_{i,j+1/2}^n) / 2}{(h_{i+1/2,j+1/2}^{n+1} + h_{i-1/2,j+1/2}^{n+1}) / 2}$$

$$\bar{v}_{i+1/2,j} = \frac{(N_{i+1/2,j}^{n+2} + N_{i+1/2,j}^n) / 2}{(h_{i+1/2,j+1/2}^{n+1} + h_{i+1/2,j-1/2}^{n+1}) / 2}$$

Il calcolo procede mediante la soluzione delle equazioni (2) e (3) per le incognite  $M^{n+2}$  e  $N^{n+2}$  in quanto i valori  $M^n$ ,  $N^n$  e  $h^{n+1}$  sono specificati dalle condizioni iniziali o sono conosciuti dal precedente passo temporale. I valori  $M^{n+2}$  ed  $N^{n+2}$  sono sostituiti nella equazione di continuita' e quindi viene ricavata l'incognita  $h^{n+3}$ . La versione piu' recente del codice di calcolo prevede alcune modifiche nei termini non lineari, al fine di ottenere una migliore stabilita' dello schema numerico.

Sono presenti nel modello due diversi tipi di condizioni al contorno. La prima e' quella che considera una condizione al contorno in cui il flusso  $M=N=0$ , mentre la seconda considera la possibilita' di far defluire la portata in arrivo verso l'esterno della mesh considerata.

Il fronte della corrente e' trattato in modo tale che quando l'altezza d'acqua e' minore di un prefissato valore (p.e. 0.001m), il flusso nella rispettiva cella e' assunto pari a zero. Particolari equazioni sono usate nel modello, nel caso in cui si abbia un gradino od un salto di fondo fra due celle adiacenti.

## RISULTATI DEL CALCOLO DELLE ESONDAZIONI

I risultati del calcolo sono riportati nelle tavole 8.1.3.1-8.1.3.4a e b e 8.1.5.1-8.1.5.8.

Nelle tavole 8.1.3.1a-8.1.3.4a si hanno gli inviluppi totali delle altezze d'acqua di tutti i corsi d'acqua studiati relativamente ai tempi di ritorno di 200, 100, 30 e 20 anni. Nelle tavole 8.1.3.1b-8.1.3.4b si hanno inoltre le inondazioni relative alla zona della Fiorentina e sotto la strada geodetica.

Nelle Tavole 8.1.5.1-8.1.5.8 si hanno le esondazioni parziali relativamente ai singoli corsi d'acqua minori studiati. Tali tavole risultano di notevole utilità una volta che il F.Cornia verrà sistemato.

In particolare si hanno le seguenti simulazioni:

<b>Simulazione</b>	<b>Corsi d'acqua</b>
<b>A</b>	F.Riotorto, F.Corniaccia (Riotorto)
<b>B</b>	F.Verrocchio, F.Calda
<b>C</b>	F.Corniaccia (Venturina), F.Pantalla, canale c.a., F.Valnera
<b>D</b>	F.Tardo'
<b>E</b>	Zona Fiorentina (Cornia Vecchia, Allacciante, Cagliana, Fosso Nuovo, Canale Maestro) – area variante nautica
<b>----</b>	F.Acquari (Suvereto)

Le tavole 8.1.5.1, 8.1.5.3, 8.1.5.5, 8.1.5.7 riportano le esondazioni per  $Tr=200, 100, 30$  e 20 anni per le simulazioni A e C.

Le tavole 8.1.5.2, 8.1.5.4, 8.1.5.6, 8.1.5.8 riportano le esondazioni per  $Tr=200, 100, 30$  e 20 anni per le simulazioni B e D.

Per la simulazione E si veda le tavv. 8.1.3.1b-8.1.3.4b

Nelle tav. 8.1.6.E1-E3 sono riportate le esondazioni del F.Cornia come risulta da studi precedenti.

Le tavole 8.1.8.E12 –E13 si riferiscono infine a scenari di progetto.

## **Integrazione**

Di seguito, e nelle tavole allegate, sono riportate le integrazioni richieste dagli uffici competenti.

### **1) Esondazioni**

Sono state modificate le carte delle esondazioni relative alla simulazione B relativamente a 200, 100, 30 e 20 anni (vedere tavole 8.1.5.2, 8.1.5.4 e 8.1.5.6 e 8.1.3.1a, 8.1.3.2a, 8.1.4.3a).

### **2) Sistemazione dei corsi d'acqua**

Le sistemazioni proposte tendono a sistemare il corso d'acqua nei tratti di interesse per il presente RU.

#### **Fossi verrocchio e Fossa Calda:**

- sistemazioni di tratti del corso d'acqua.
- Realizzazione di casse di espansione: C1 o C2; C10 o C3,
- Volume stimato per le casse: circa 70.000 mc

#### **Fosso Corniaccia**

- opere come da studio approvato da AdB a firma ing. Muccetti

#### **Fosso Tardo'**

- opere come da studio a firma ing. S.Pagliara

#### **Fosso Acquari**

- sistemazioni di tratti del corso d'acqua.
- Realizzazione di casse di espansione: A1
- Volume stimato per le casse: 30.000 mc

#### **Fosso Valnera**

- sistemazioni di tratti del corso d'acqua.
- Realizzazione di casse di espansione
- Volume stimato per le casse: 30.000 mc

#### **Fosso Corniaccia di Riotorto**

- sistemazioni di tratti del corso d'acqua.

- Realizzazione di casse di espansione
- Volume stimato per le casse: 60000

## **F.Cornia**

Casse di espansione e interventi così' come programmati dalla competente Adb.

La realizzazione delle casse di laminazione e la contemporanea ricalibratura dei corsi d'acqua interessati permettono la sistemazione del corso d'acqua per i tratti di interesse.

## **CONCLUSIONI**

E' stato eseguito il calcolo idrologico ed idraulico dei bacini relativi ai corsi d'acqua oggetto del presente studio al fine di pervenire ad un quadro conoscitivo di dettaglio delle pericolosità idrauliche nell'area in oggetto.

Le verifiche effettuate con portate aventi tempi di ritorno fino a 200 anni hanno mostrato l'insufficienza di buona parte dell'attuale reticolo idrografico il quale non risulta essere stato dimensionato per tempi di ritorno così' rari.

Le carte dell'involuppo dei tiranti d'acqua vengono fornite per tutti i corsi d'acqua studiati.

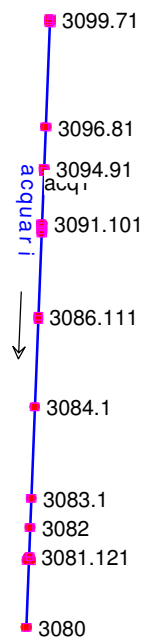
Pisa, aprile 2012

Prof. Ing. Stefano Pagliara



# Appendice 1

## F.Acquari

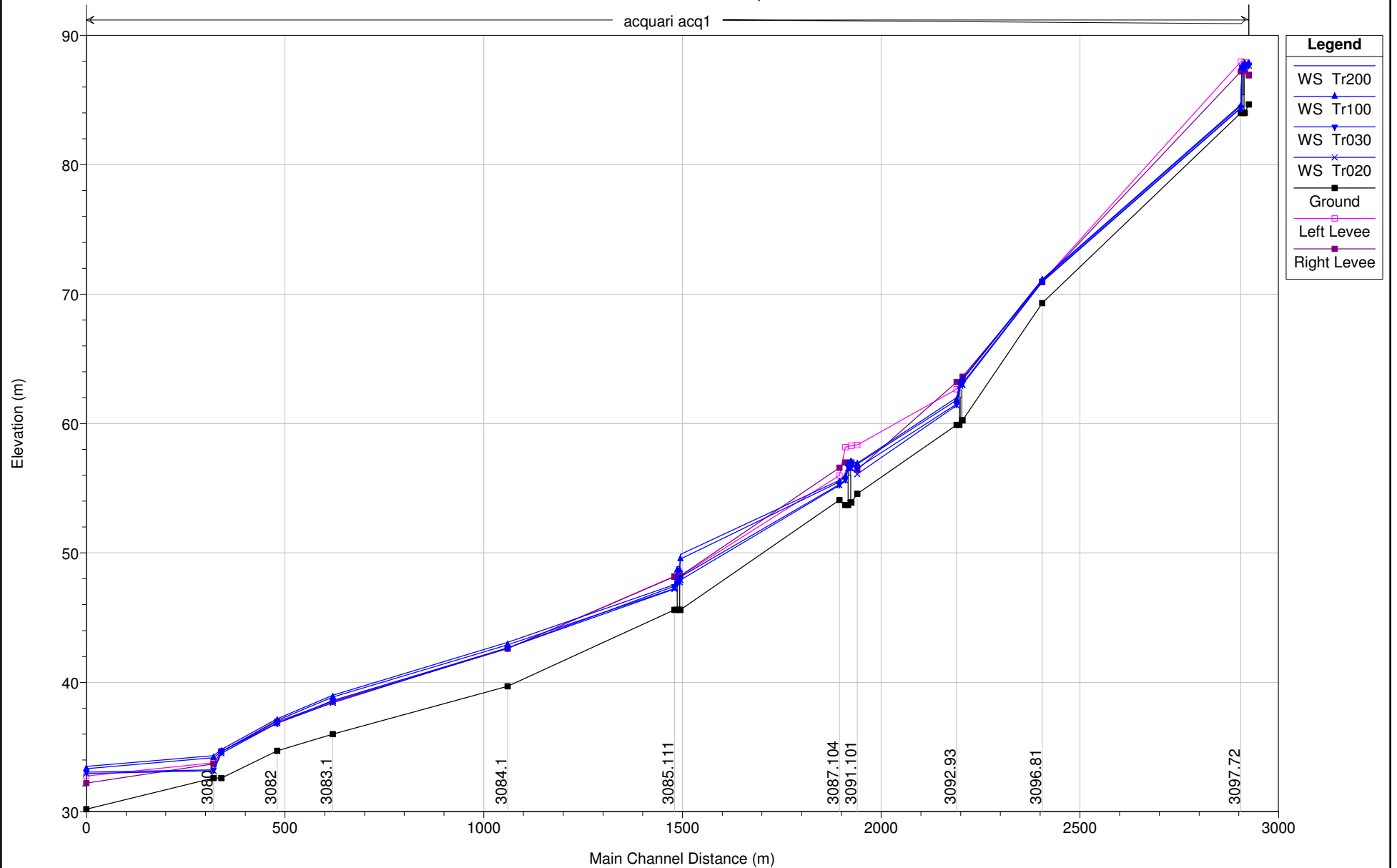


None of the XS's are Geo-Referenced (• Geo-Ref user entered XS • Geo-Ref interpolated XS - Non Geo-Ref user entered XS - Non Geo-Ref interpolated XS)

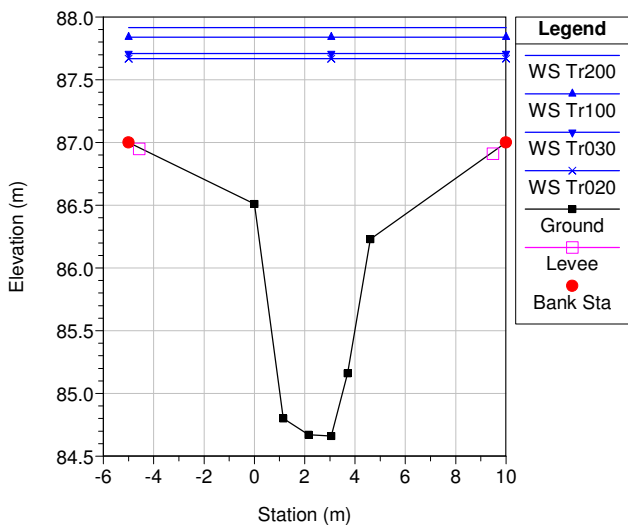
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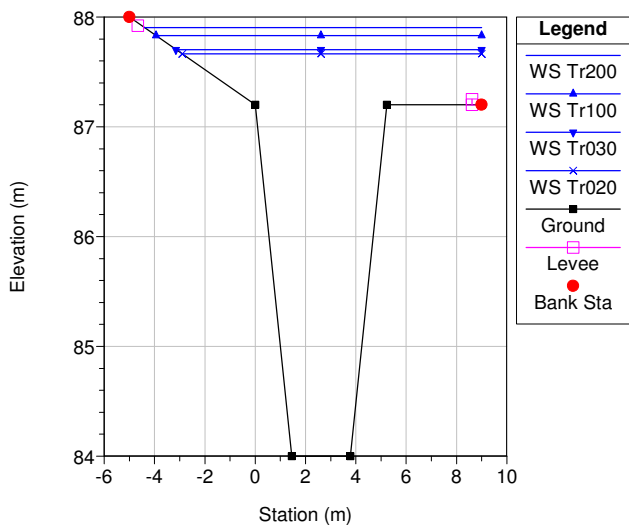
acquari acq1



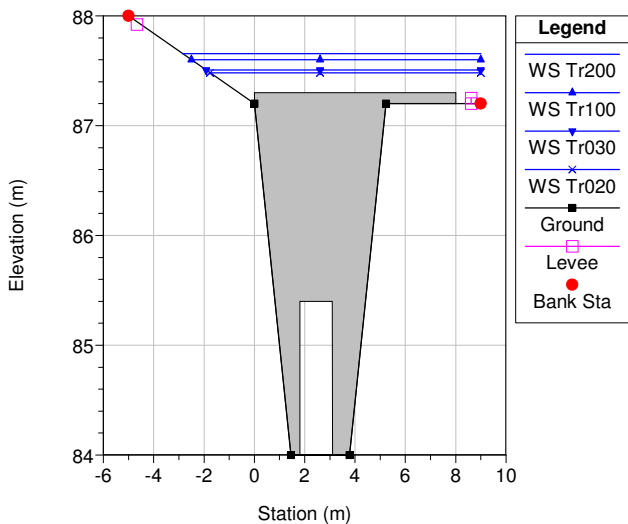
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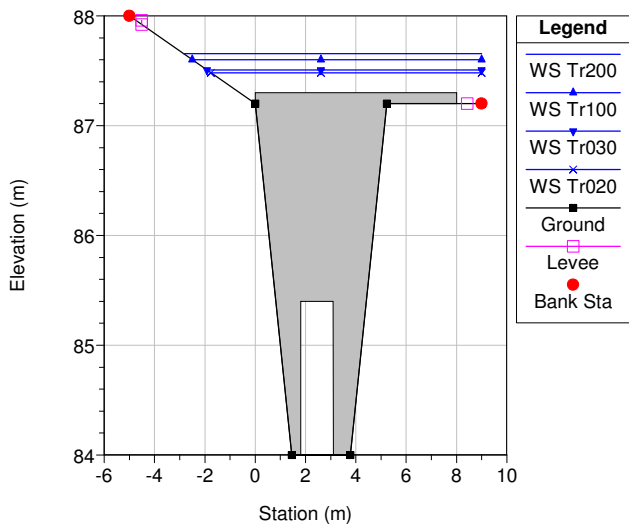
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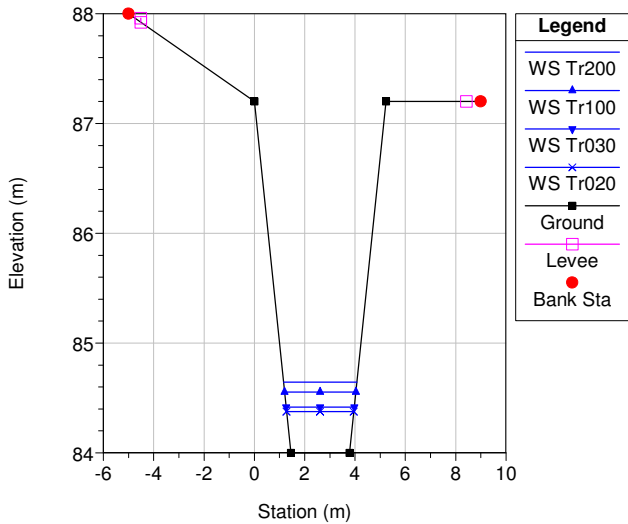
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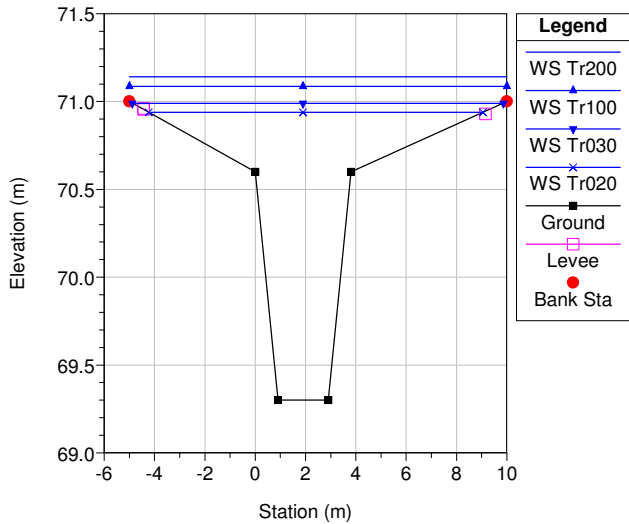
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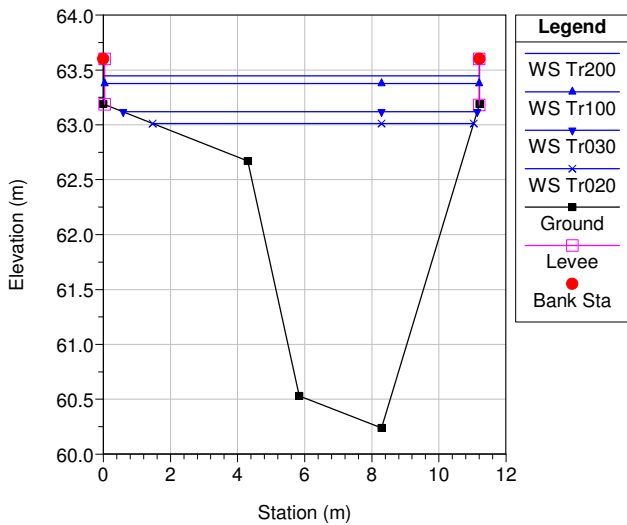
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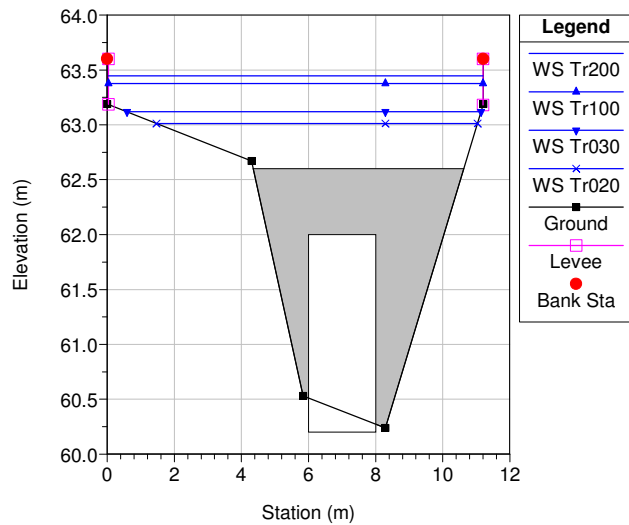
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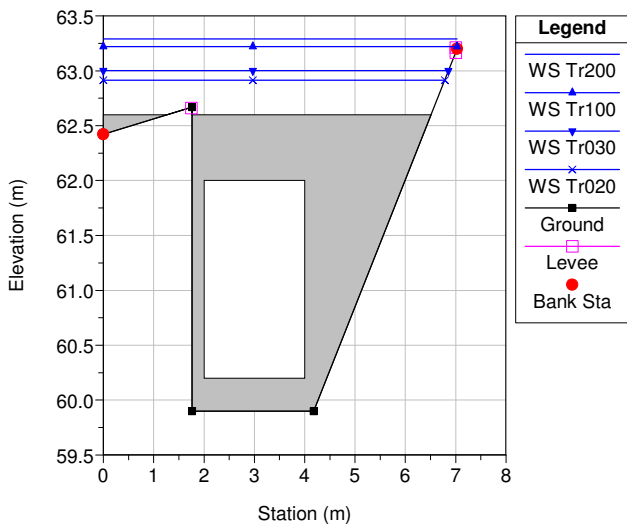
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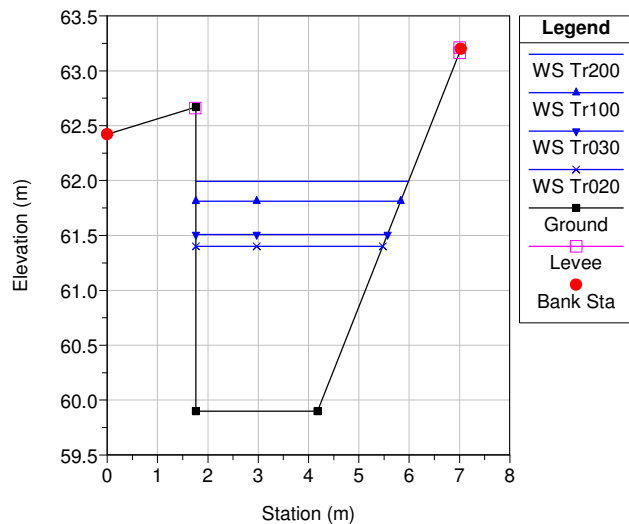
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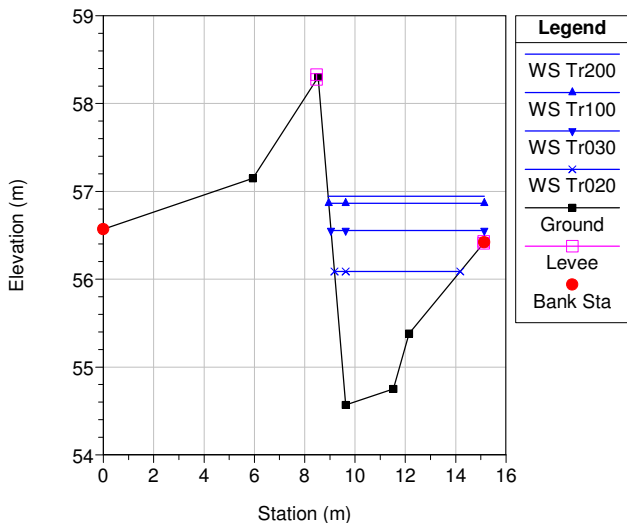
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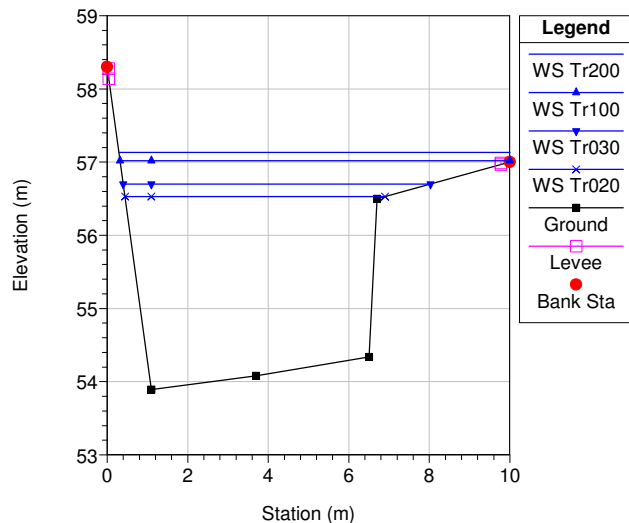
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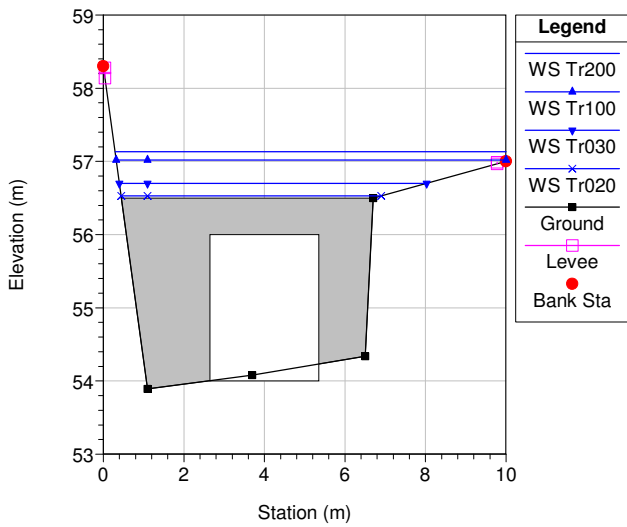
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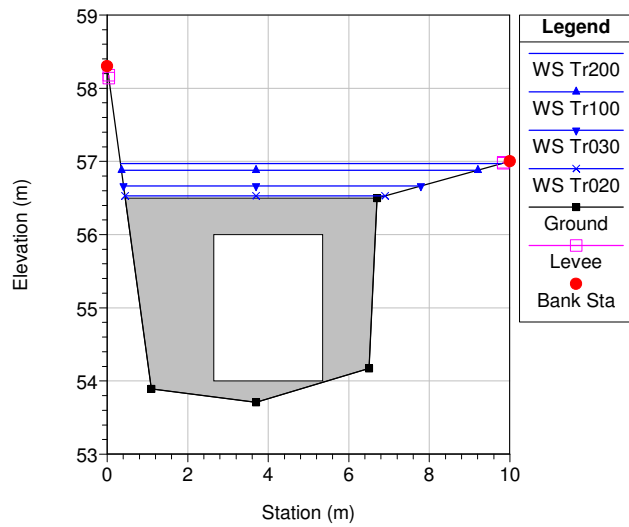
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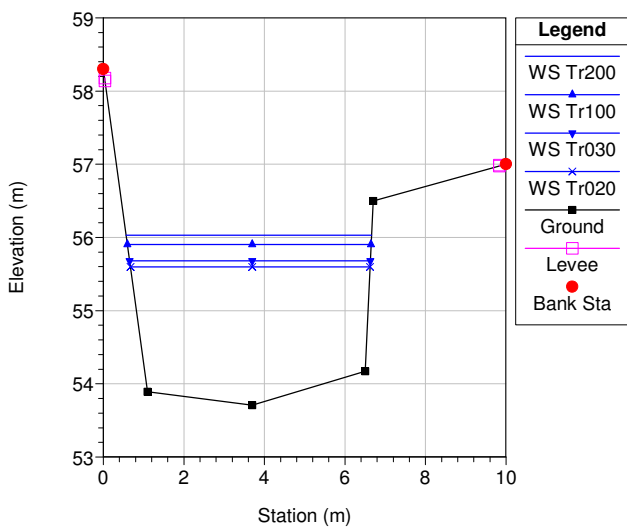
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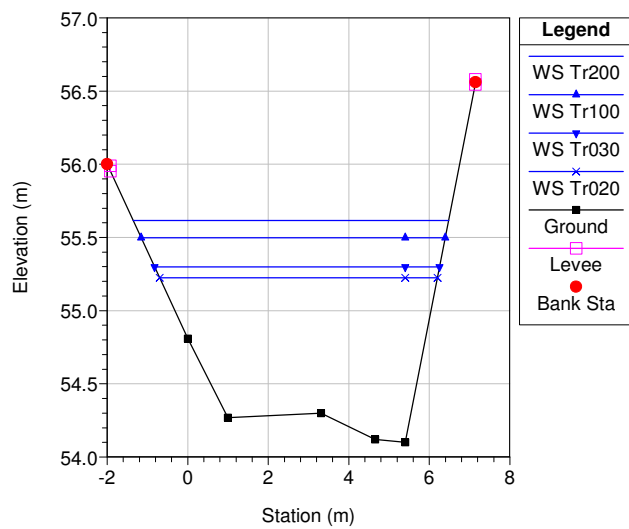
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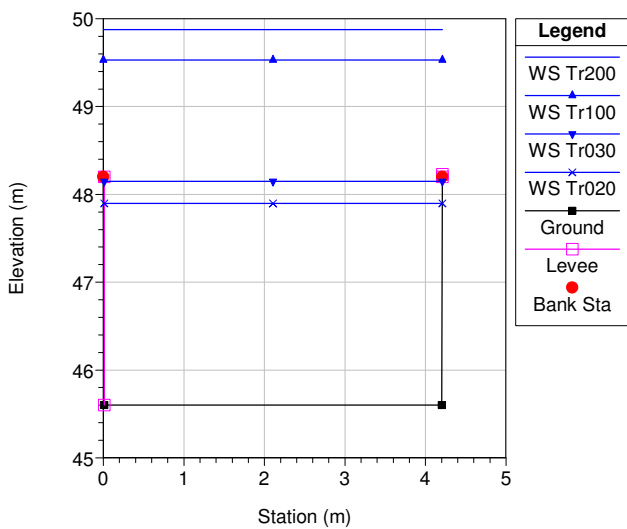
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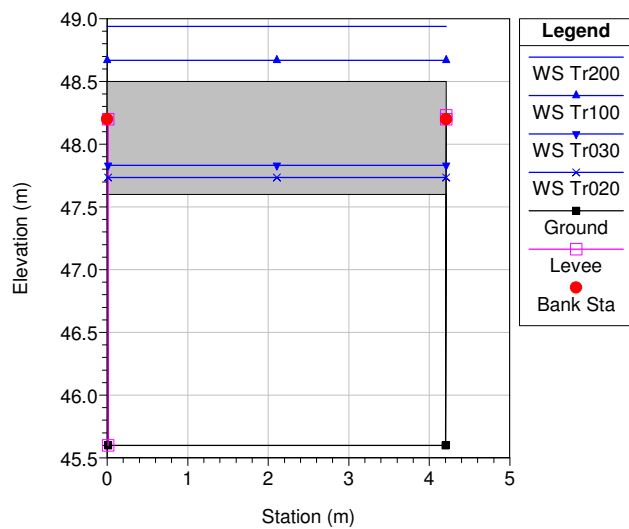
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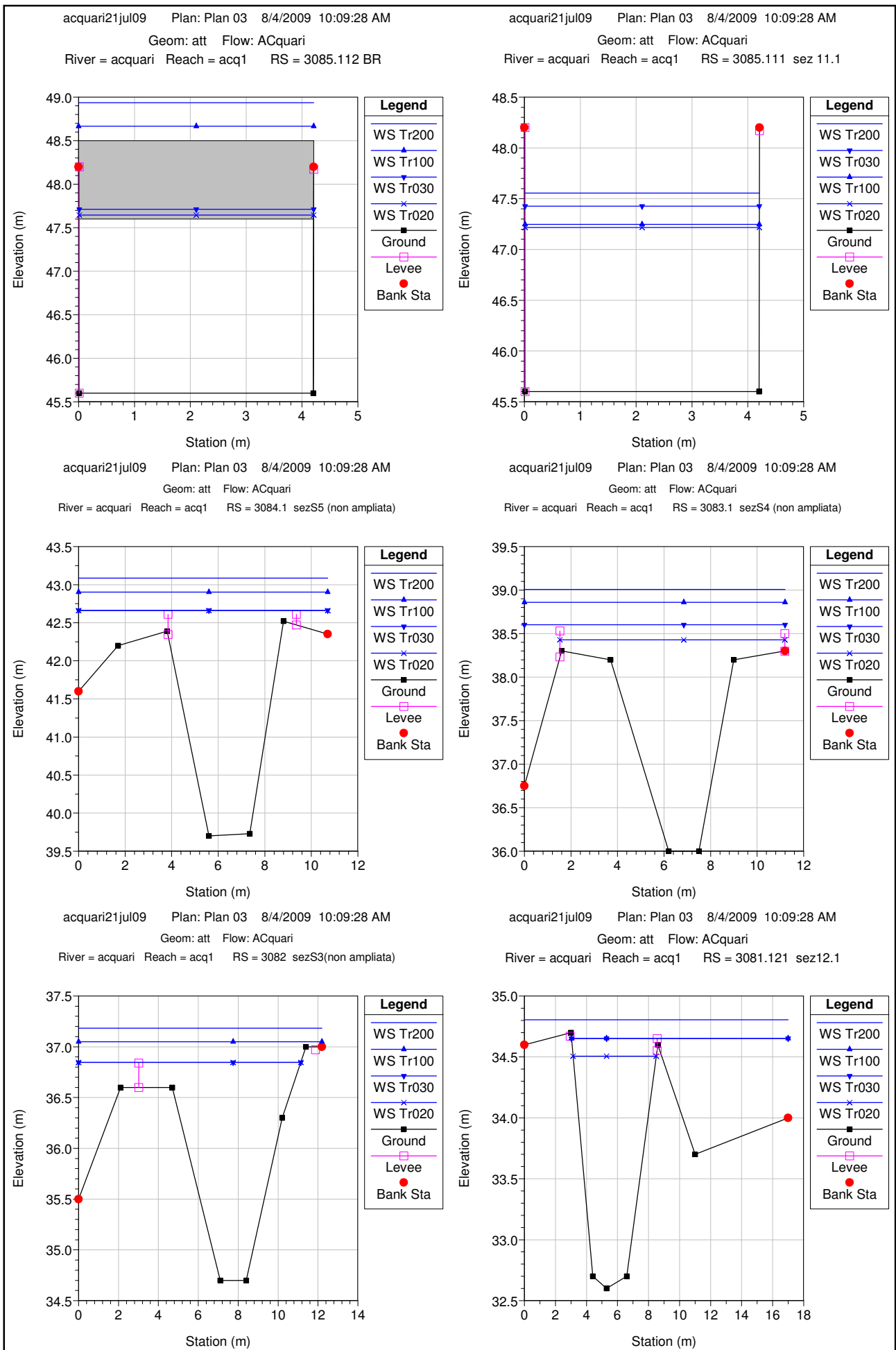


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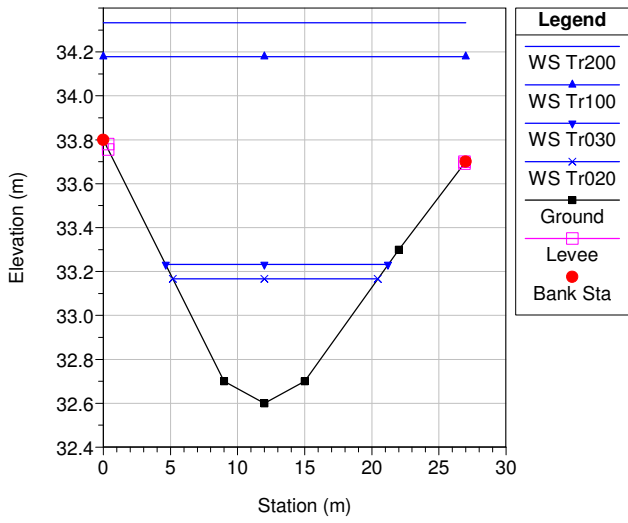


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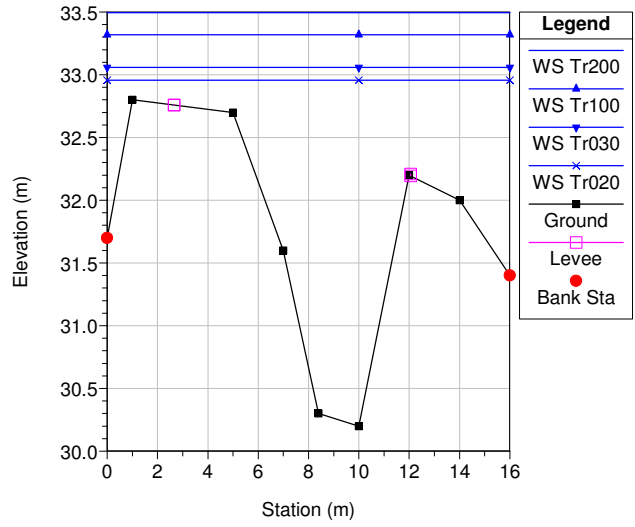




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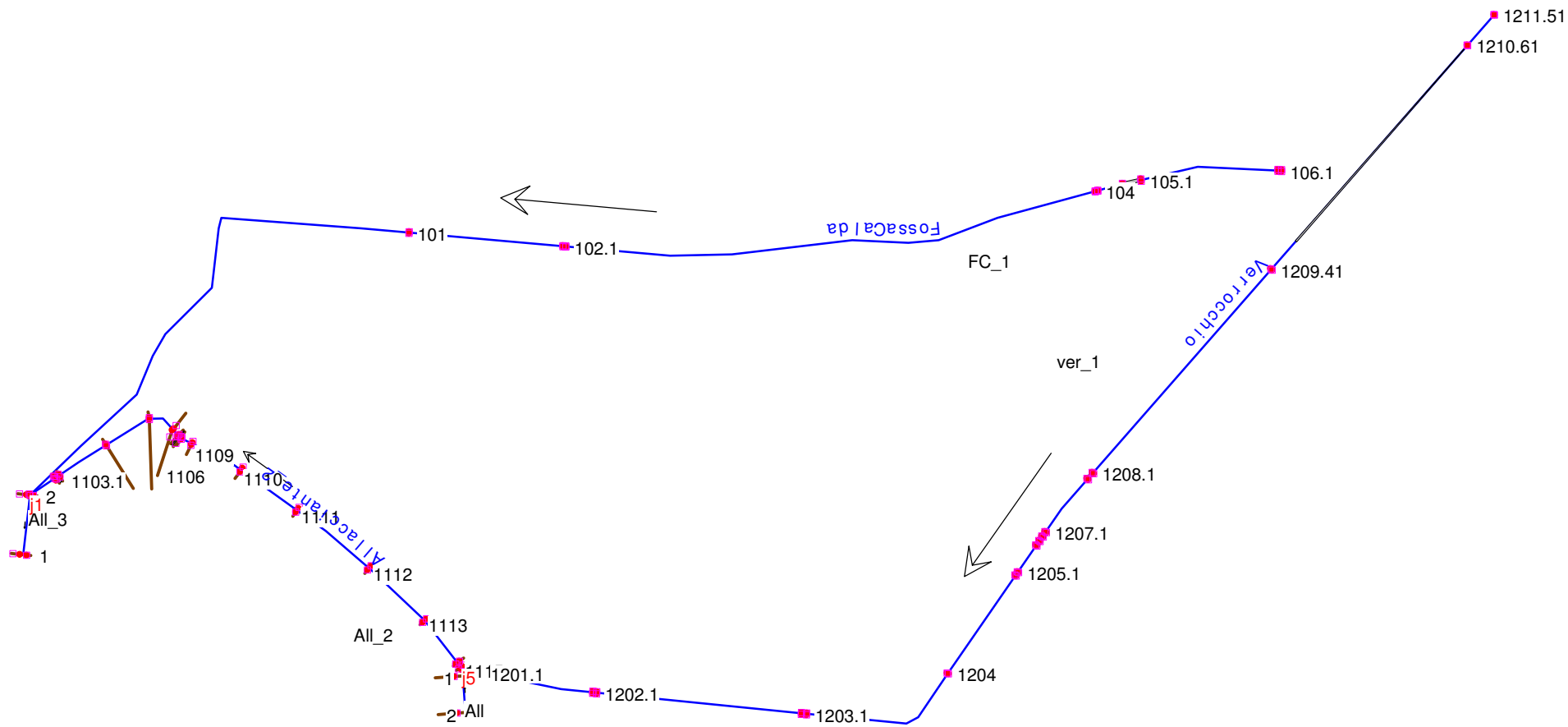


Reach	River Sta	Profile	Q Total (m3/s)	Min Ch El (m)	W.S. Elev (m)	Crit W.S. (m)	E.G. Elev (m)	E.G. Slope (m/m)	Vel Chnl (m/s)	Flow Area (m2)	Top Width (m)	Froude # Chl
acq1	3099.71	Tr200	12.60	84.66	87.91	86.02	87.93	0.000173	0.49	25.49	15.00	0.12
acq1	3099.71	Tr100	10.70	84.66	87.84	85.90	87.85	0.000144	0.44	24.35	15.00	0.11
acq1	3099.71	Tr030	7.80	84.66	87.71	85.70	87.72	0.000099	0.35	22.40	15.00	0.09
acq1	3099.71	Tr020	7.00	84.66	87.67	85.64	87.67	0.000087	0.32	21.80	15.00	0.08
acq1	3098.72	Tr200	12.60	84.00	87.90	85.31	87.92	0.000388	0.63	19.98	13.40	0.16
acq1	3098.72	Tr100	10.70	84.00	87.83	85.19	87.85	0.000317	0.56	19.01	12.94	0.15
acq1	3098.72	Tr030	7.80	84.00	87.70	84.97	87.71	0.000210	0.45	17.42	12.15	0.12
acq1	3098.72	Tr020	7.00	84.00	87.66	84.92	87.67	0.000181	0.41	16.95	11.90	0.11
acq1	3097.721		Bridge									
acq1	3097.72	Tr200	12.60	84.00	84.64	85.31	87.49	0.175851	7.47	1.69	2.91	3.13
acq1	3097.72	Tr100	10.70	84.00	84.55	85.19	87.40	0.204126	7.48	1.43	2.83	3.36
acq1	3097.72	Tr030	7.80	84.00	84.42	84.98	87.24	0.272966	7.45	1.05	2.71	3.82
acq1	3097.72	Tr020	7.00	84.00	84.38	84.92	87.20	0.302591	7.44	0.94	2.67	4.00
acq1	3096.81	Tr200	28.00	69.30	71.14	71.21	71.57	0.019048	2.90	9.65	15.00	1.16
acq1	3096.81	Tr100	24.00	69.30	71.09	71.14	71.46	0.018733	2.72	8.81	15.00	1.13
acq1	3096.81	Tr030	18.00	69.30	70.99	71.02	71.29	0.018295	2.44	7.39	14.73	1.10
acq1	3096.81	Tr020	16.00	69.30	70.94	70.98	71.23	0.018028	2.40	6.65	13.26	1.08
acq1	3094.91	Tr200	28.00	60.24	63.45	62.26	63.57	0.002043	1.59	17.60	11.16	0.40
acq1	3094.91	Tr100	24.00	60.24	63.37	62.11	63.48	0.001726	1.43	16.81	11.16	0.37
acq1	3094.91	Tr030	18.00	60.24	63.12	61.84	63.20	0.001625	1.29	13.97	10.55	0.36
acq1	3094.91	Tr020	16.00	60.24	63.01	61.75	63.09	0.001497	1.24	12.90	9.57	0.34
acq1	3092.931		Culvert									
acq1	3092.93	Tr200	28.00	59.90	61.99	61.99	62.82	0.018779	4.03	6.95	4.23	1.00
acq1	3092.93	Tr100	24.00	59.90	61.81	61.81	62.57	0.018655	3.87	6.20	4.07	1.00
acq1	3092.93	Tr030	18.00	59.90	61.51	61.51	62.17	0.018485	3.59	5.01	3.81	1.00
acq1	3092.93	Tr020	16.00	59.90	61.40	61.40	62.02	0.018324	3.48	4.60	3.72	1.00
acq1	3091.101	Tr200	28.00	54.57	56.95	56.69	57.39	0.008938	2.96	9.46	6.21	0.77
acq1	3091.101	Tr100	24.00	54.57	56.87	56.56	57.23	0.007670	2.68	8.96	6.19	0.71
acq1	3091.101	Tr030	18.00	54.57	56.55	56.34	56.89	0.008691	2.55	7.05	6.10	0.76
acq1	3091.101	Tr020	16.00	54.57	56.09	56.24	56.76	0.024358	3.64	4.40	5.00	1.24
acq1	3090.102	Tr200	28.00	53.89	57.13	55.48	57.24	0.001557	1.45	19.30	9.71	0.33
acq1	3090.102	Tr100	24.00	53.89	57.02	55.35	57.11	0.001370	1.32	18.17	9.68	0.31
acq1	3090.102	Tr030	18.00	53.89	56.70	55.12	56.77	0.001044	1.17	15.41	7.63	0.26
acq1	3090.102	Tr020	16.00	53.89	56.53	55.05	56.60	0.000924	1.13	14.21	6.46	0.24
acq1	3089.103		Culvert									
acq1	3088.103	Tr200	28.00	53.71	56.03	55.26	56.29	0.003923	2.26	12.38	6.09	0.51
acq1	3088.103	Tr100	24.00	53.71	55.91	55.12	56.12	0.003442	2.07	11.61	6.05	0.48
acq1	3088.103	Tr030	18.00	53.71	55.68	54.91	55.84	0.002725	1.75	10.27	5.98	0.43
acq1	3088.103	Tr020	16.00	53.71	55.60	54.83	55.73	0.002483	1.64	9.76	5.95	0.41
acq1	3087.104	Tr200	28.00	54.10	55.62	55.62	56.17	0.012575	3.28	8.53	7.83	1.00
acq1	3087.104	Tr100	24.00	54.10	55.50	55.50	56.00	0.012743	3.15	7.61	7.55	1.00
acq1	3087.104	Tr030	18.00	54.10	55.30	55.30	55.73	0.013133	2.92	6.16	7.07	1.00
acq1	3087.104	Tr020	16.00	54.10	55.23	55.23	55.63	0.013304	2.83	5.65	6.90	1.00
acq1	3086.111	Tr200	50.00	45.60	49.87	48.04	50.27	0.008430	2.78	17.97	4.21	0.43
acq1	3086.111	Tr100	42.00	45.60	49.53	47.77	49.86	0.007474	2.54	16.52	4.21	0.41
acq1	3086.111	Tr030	31.00	45.60	48.15	47.37	48.58	0.007592	2.90	10.69	4.20	0.58
acq1	3086.111	Tr020	27.00	45.60	47.90	47.21	48.30	0.007563	2.80	9.63	4.20	0.59
acq1	3085.112		Bridge									
acq1	3085.111	Tr200	50.00	45.60	47.55	48.04	49.45	0.039852	6.10	8.20	4.20	1.39
acq1	3085.111	Tr100	42.00	45.60	47.25	47.77	49.13	0.044827	6.08	6.91	4.20	1.51
acq1	3085.111	Tr030	31.00	45.60	47.43	47.37	48.26	0.018427	4.05	7.66	4.20	0.96
acq1	3085.111	Tr020	27.00	45.60	47.22	47.22	48.02	0.019533	3.99	6.77	4.20	1.00
acq1	3084.1	Tr200	50.00	39.70	43.08	42.77	43.51	0.008864	2.89	17.31	10.70	0.73
acq1	3084.1	Tr100	42.00	39.70	42.90	42.63	43.28	0.009064	2.74	15.35	10.70	0.73
acq1	3084.1	Tr030	31.00	39.70	42.66	42.13	42.96	0.008735	2.42	12.79	10.70	0.71
acq1	3084.1	Tr020	27.00	39.70	42.66	41.95	42.89	0.006665	2.12	12.76	10.70	0.62
acq1	3083.1	Tr200	50.00	36.00	39.01	38.74	39.44	0.009662	2.91	17.18	11.20	0.75
acq1	3083.1	Tr100	42.00	36.00	38.86	38.60	39.23	0.009350	2.71	15.52	11.20	0.73
acq1	3083.1	Tr030	31.00	36.00	38.60	38.50	38.91	0.009721	2.45	12.63	11.20	0.74
acq1	3083.1	Tr020	27.00	36.00	38.43	38.40	38.86	0.013177	2.92	9.24	9.66	0.95
acq1	3082	Tr200	50.00	34.70	37.18	37.18	37.78	0.014742	3.42	14.61	12.20	1.00
acq1	3082	Tr100	42.00	34.70	37.05	37.05	37.58	0.015023	3.23	13.00	12.20	1.00
acq1	3082	Tr030	31.00	34.70	36.85	36.85	37.28	0.014129	2.91	10.65	11.14	0.95
acq1	3082	Tr020	27.00	34.70	36.85	36.85	37.17	0.010718	2.54	10.65	11.14	0.83
acq1	3081.121	Tr200	50.00	32.60	34.80	34.80	35.28	0.013480	3.06	16.35	17.00	1.00
acq1	3081.121	Tr100	42.00	32.60	34.65	34.65	35.13	0.013206	3.05	13.76	13.97	0.98

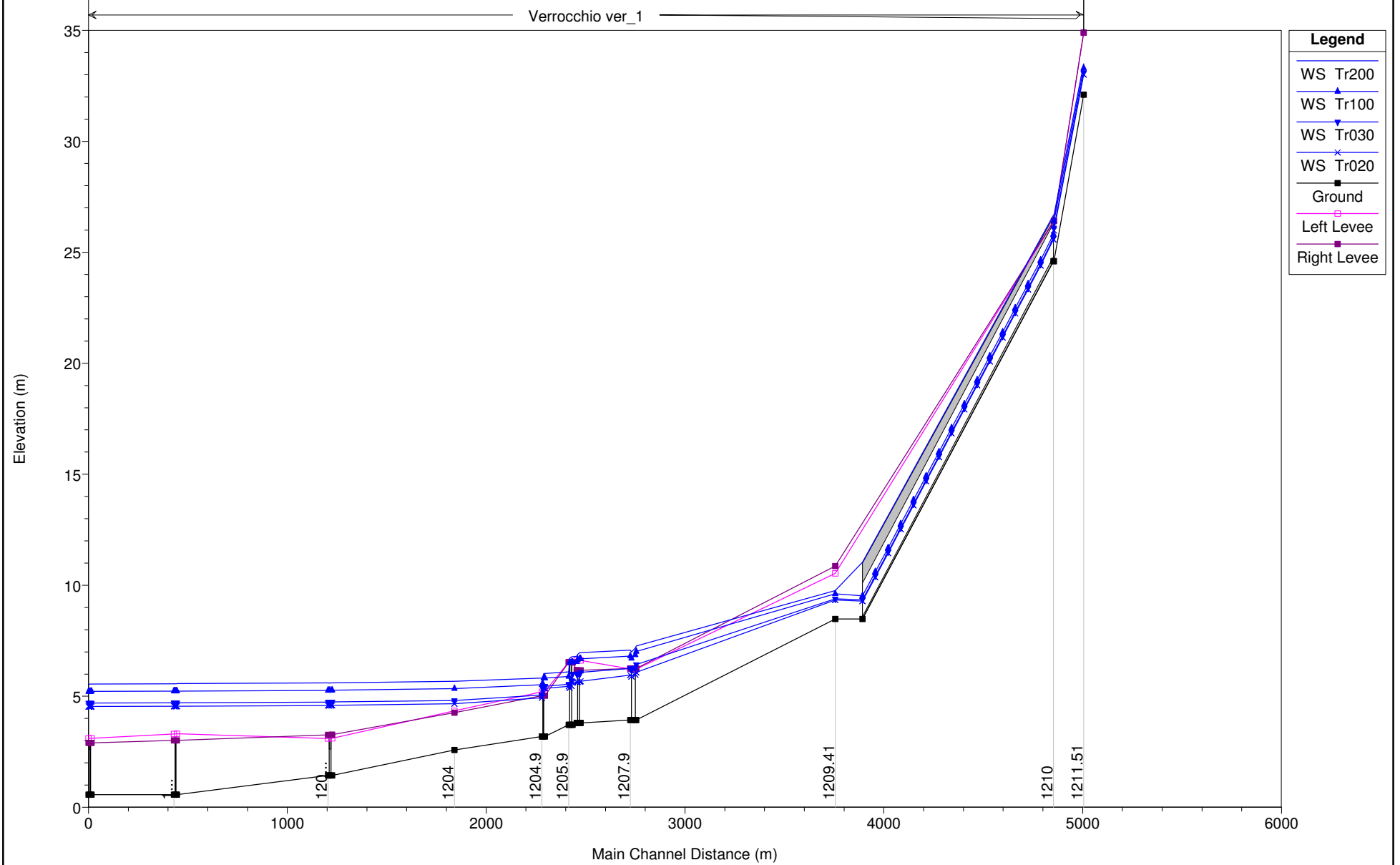
HEC-RAS Plan: att1 River: acquari Reach: acq1 (Continued)

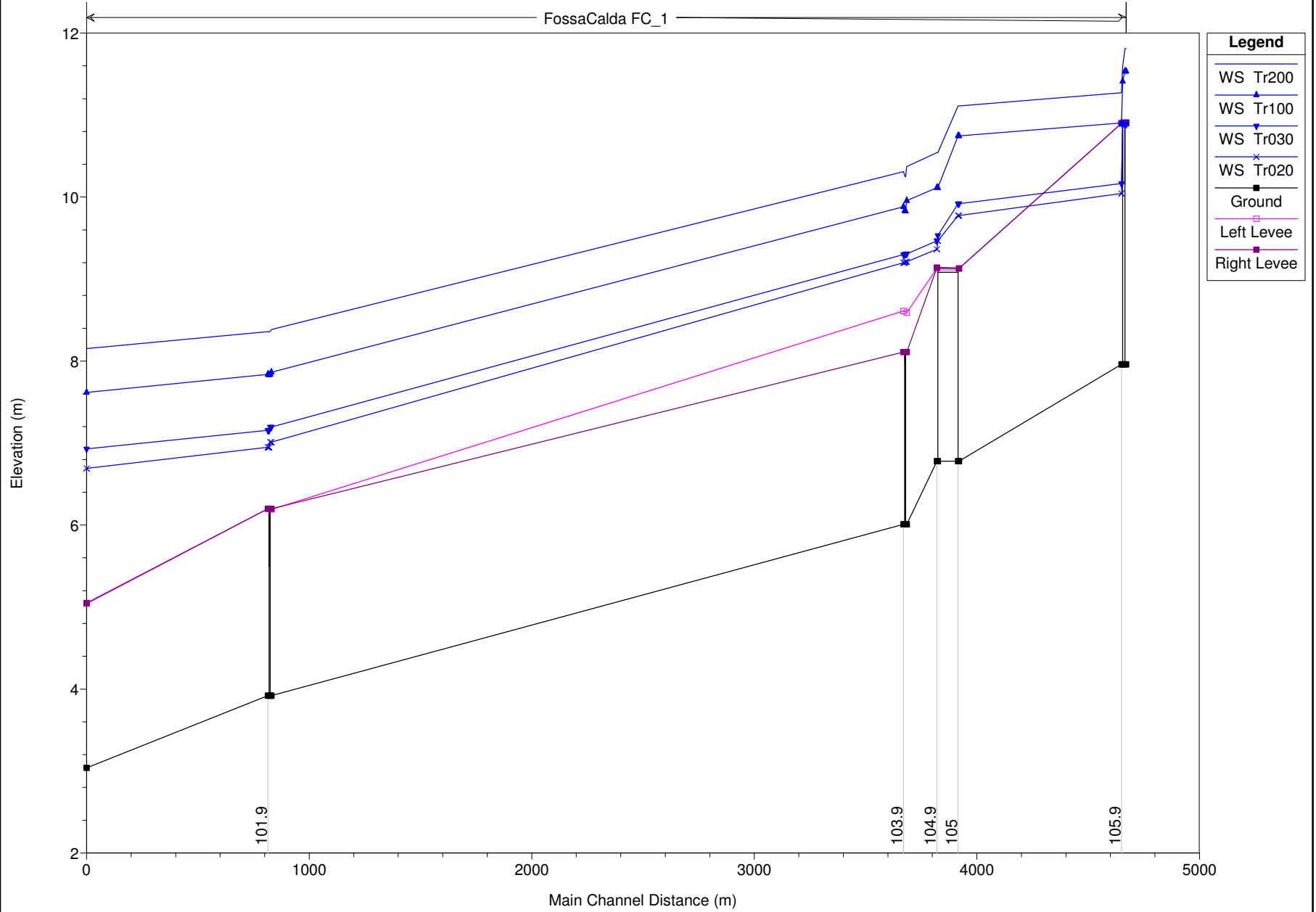
Reach	River Sta	Profile	Q Total (m3/s)	Min Ch El (m)	W.S. Elev (m)	Crit W.S. (m)	E.G. Elev (m)	E.G. Slope (m/m)	Vel Chnl (m/s)	Flow Area (m2)	Top Width (m)	Froude # Chl
acq1	3081.121	Tr030	31.00	32.60	34.65	34.65	34.91	0.007195	2.25	13.76	13.97	0.72
acq1	3081.121	Tr020	27.00	32.60	34.51	34.59	35.28	0.016757	3.89	6.94	5.37	1.09
acq1	3080.122	Tr200	50.00	32.60	34.33	33.80	34.45	0.001969	1.50	33.36	27.00	0.43
acq1	3080.122	Tr100	42.00	32.60	34.18	33.72	34.28	0.002137	1.44	29.19	27.00	0.44
acq1	3080.122	Tr030	31.00	32.60	33.23	33.57	34.46	0.095875	4.92	6.31	16.56	2.54
acq1	3080.122	Tr020	27.00	32.60	33.17	33.52	34.51	0.119466	5.14	5.26	15.26	2.79
acq1	3080	Tr200	50.00	30.20	33.49	32.83	33.67	0.003001	1.88	26.63	16.00	0.46
acq1	3080	Tr100	42.00	30.20	33.32	32.59	33.48	0.003001	1.76	23.83	16.00	0.46
acq1	3080	Tr030	31.00	30.20	33.06	32.36	33.19	0.003005	1.58	19.66	16.00	0.45
acq1	3080	Tr020	27.00	30.20	32.96	32.27	33.07	0.003001	1.50	18.04	16.00	0.45

Appendice 2  
F.Verrocchio e F.Calda

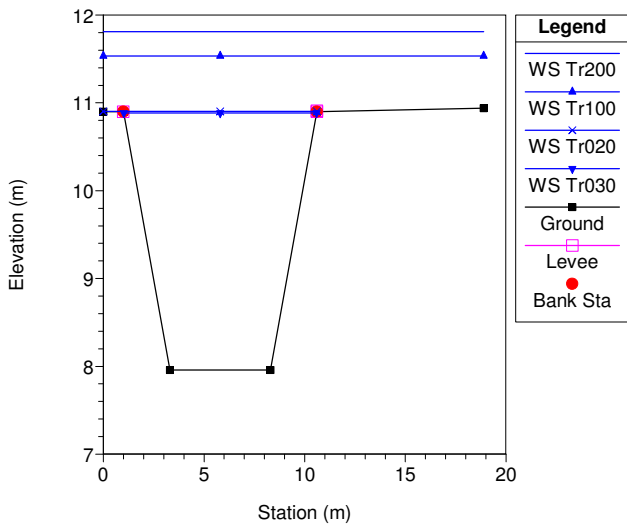


47 of the 48 XS's are not Geo-Referenced (- Geo-Ref user entered XS - Geo-Ref interpolated XS - Non Geo-Ref user entered XS - Non Geo-Ref interpolated XS)

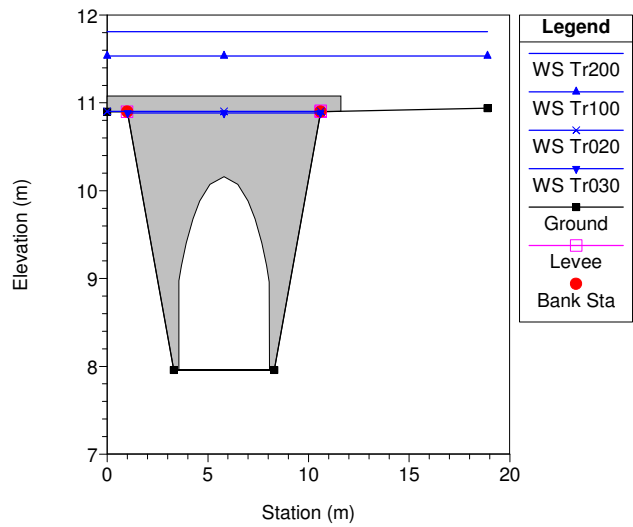




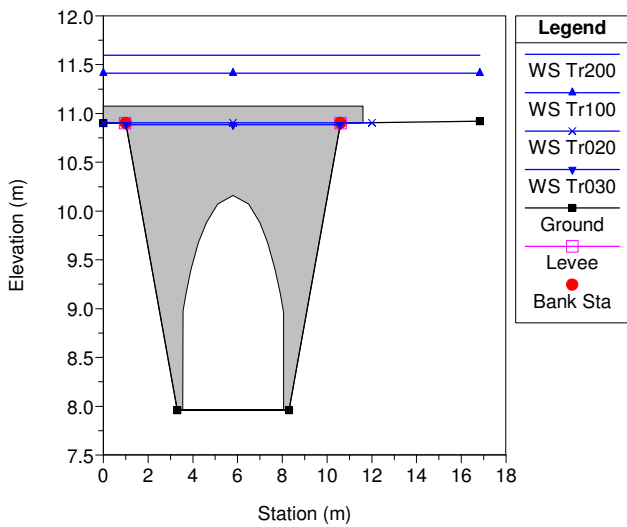
Fossacalda-Verrocchio-apr09 Plan: att1 4/29/2009 7:56:03 AM  
 Geom: fossacalda\_allacc2\_verrocchio Flow: att-apr09  
 River = FossaCalda Reach = FC\_1 RS = 106.1 monte 037\_28



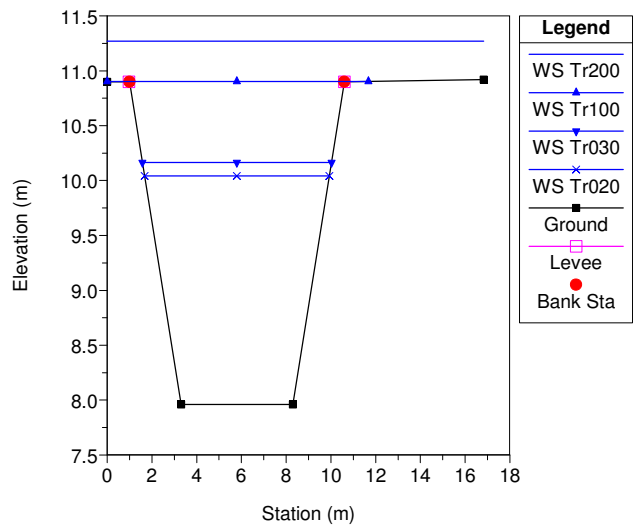
Fossacalda-Verrocchio-apr09 Plan: att1 4/29/2009 7:56:03 AM  
 Geom: fossacalda\_allacc2\_verrocchio Flow: att-apr09  
 River = FossaCalda Reach = FC\_1 RS = 106 BR



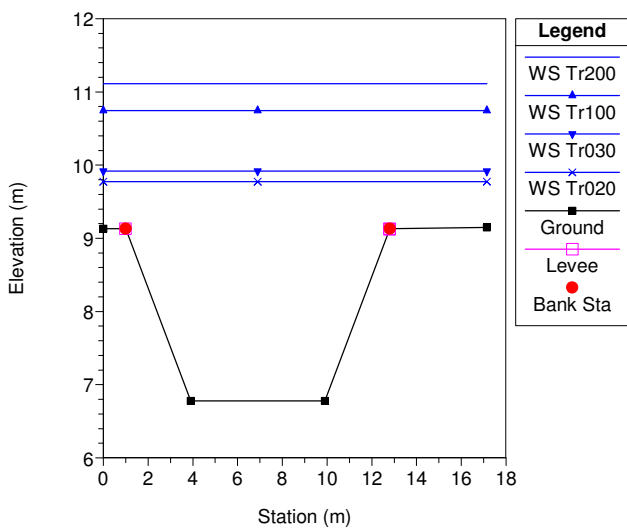
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 Geom: fossacalda\_allacc2\_verrocchio Flow: att-apr09  
 River = FossaCalda Reach = FC\_1 RS = 106 BR



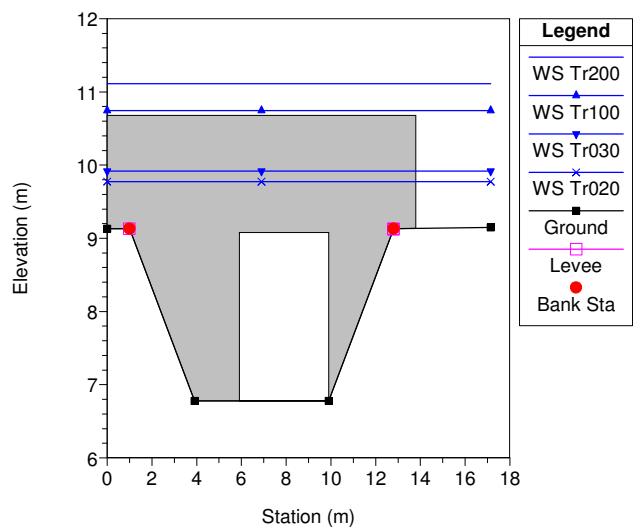
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 Geom: fossacalda\_allacc2\_verrocchio Flow: att-apr09  
 River = FossaCalda Reach = FC\_1 RS = 105.9 valle 037\_28



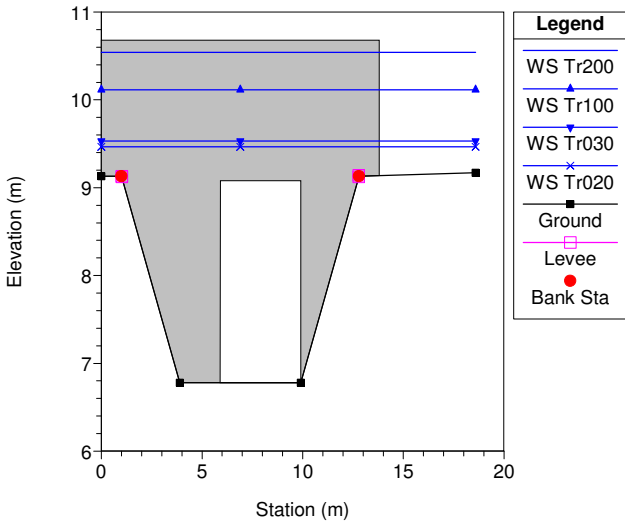
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 River = FossaCalda Reach = FC\_1 RS = 105.1 monte 037\_29 SEZIONE PARZIALE



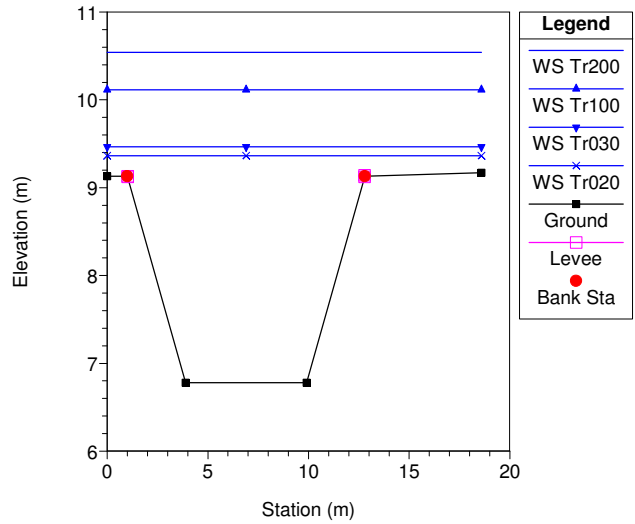
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 Geom: fossacalda\_allacc2\_verrocchio Flow: att-apr09  
 River = FossaCalda Reach = FC\_1 RS = 105 BR



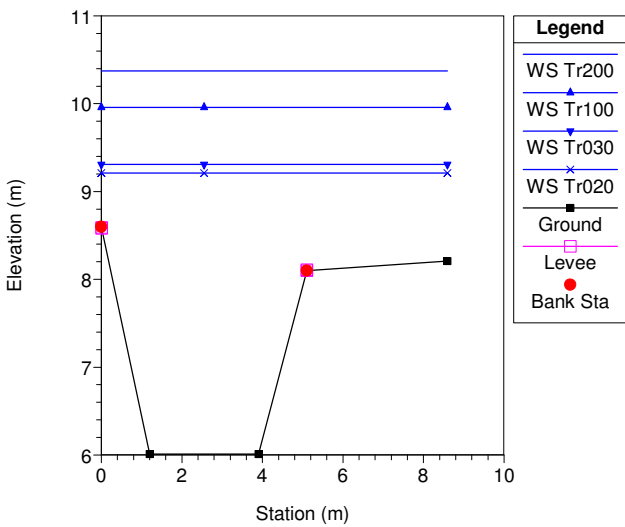
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 Geom: fossacalda\_allacc2\_verrocchio Flow: att-apr09  
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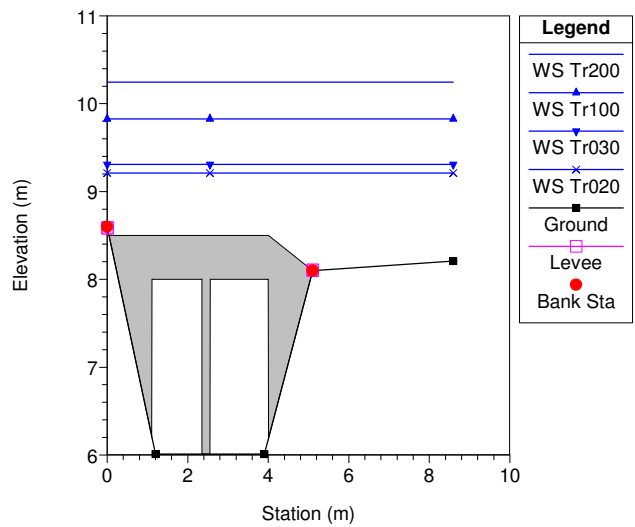
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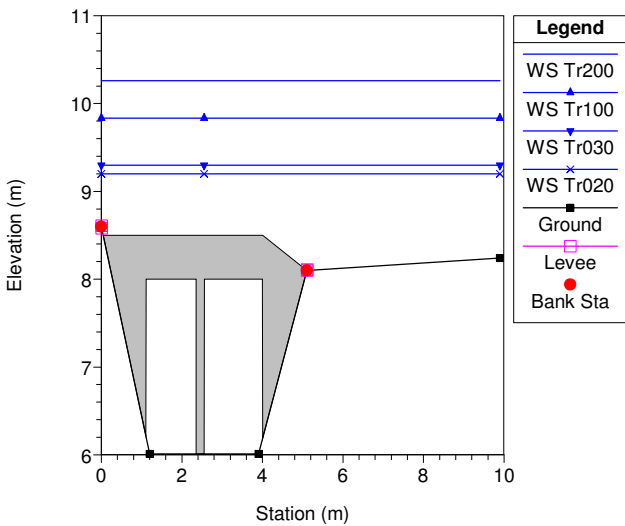
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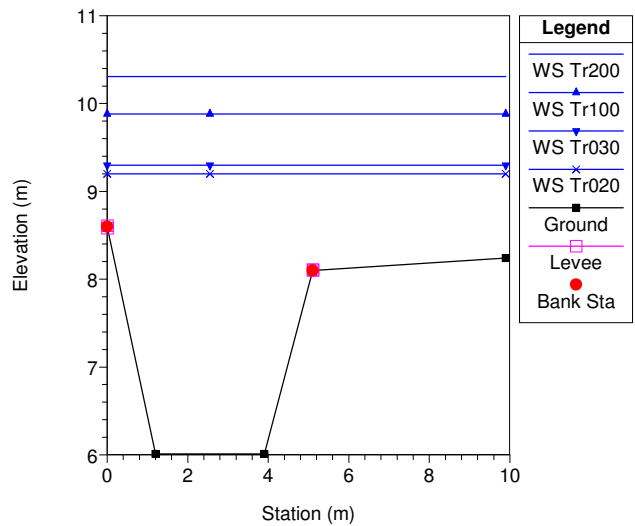
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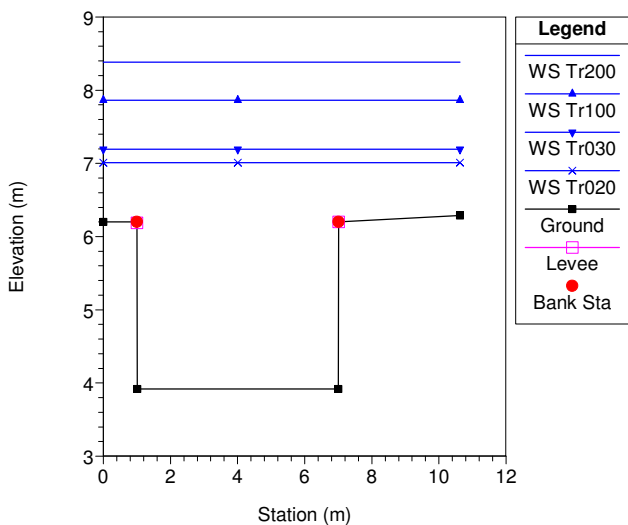
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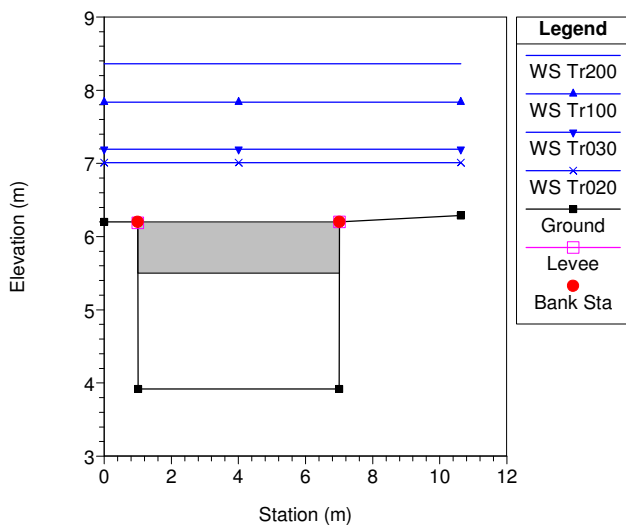
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 Geom: fossacalda\_allacc2\_verrocchio Flow: att-apr09  
 River = FossaCalda Reach = FC\_1 RS = 103.9 valle 037\_30



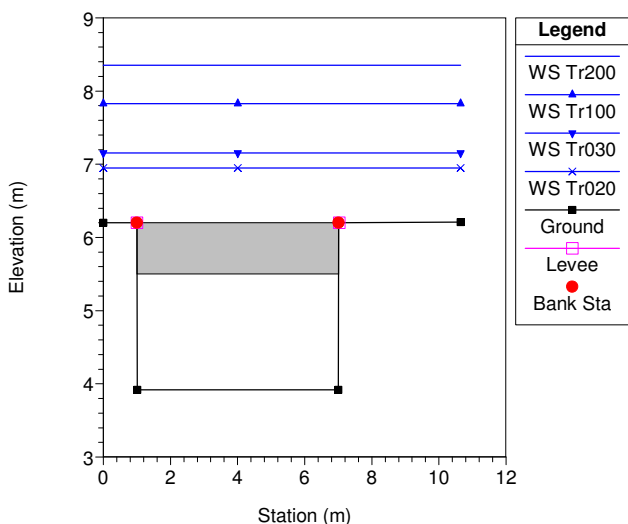
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 Geom: fossacalda\_allacc2\_verrocchio Flow: att-apr09  
 River = FossaCalda Reach = FC\_1 RS = 102.1 sez\_037-31



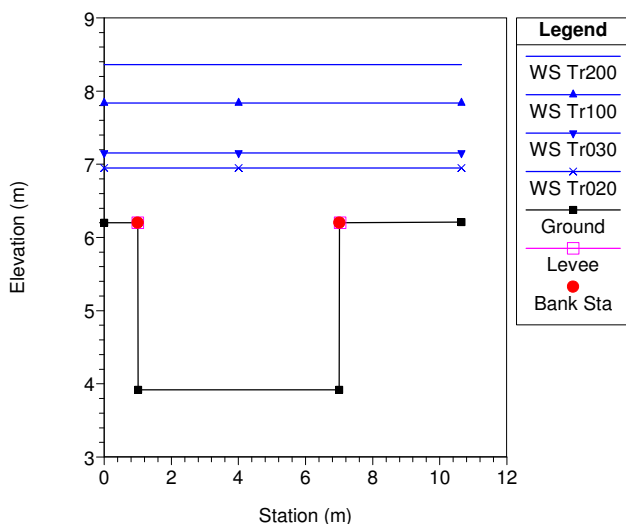
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 River = FossaCalda Reach = FC\_1 RS = 102 BR



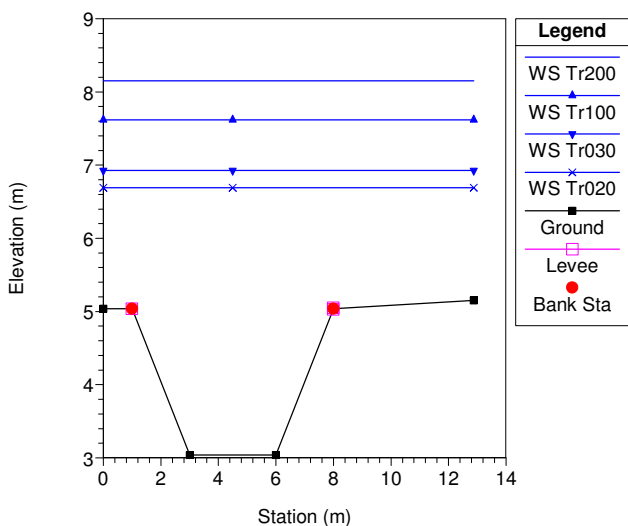
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 River = FossaCalda Reach = FC\_1 RS = 102 BR



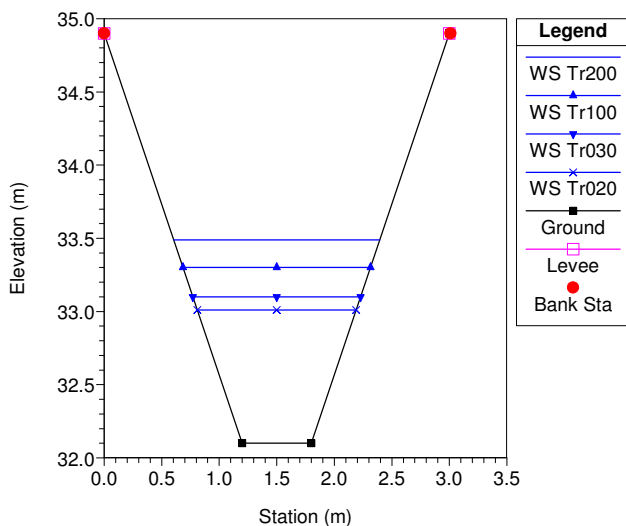
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 Geom: fossacalda\_allacc2\_verrocchio Flow: att-apr09  
 River = FossaCalda Reach = FC\_1 RS = 101.9 sez\_037-31



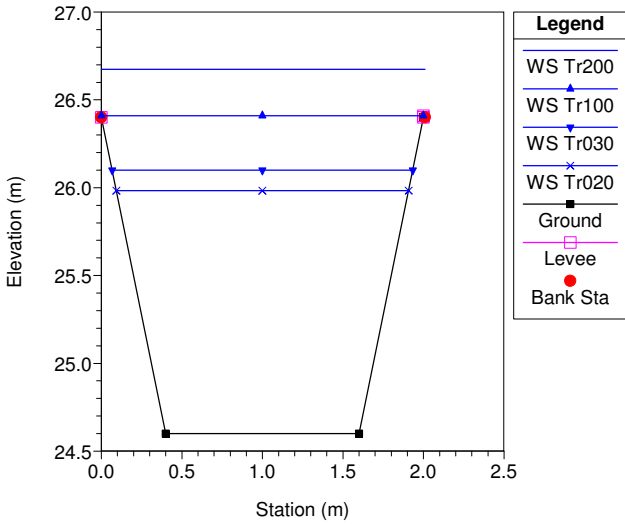
Fossacalda-Verrocchio-apr09 Plan: att1 4/29/2009 7:56:03 AM  
 Geom: fossacalda\_allacc2\_verrocchio Flow: att-apr09  
 River = FossaCalda Reach = FC\_1 RS = 101 sez037\_32 quote indicative



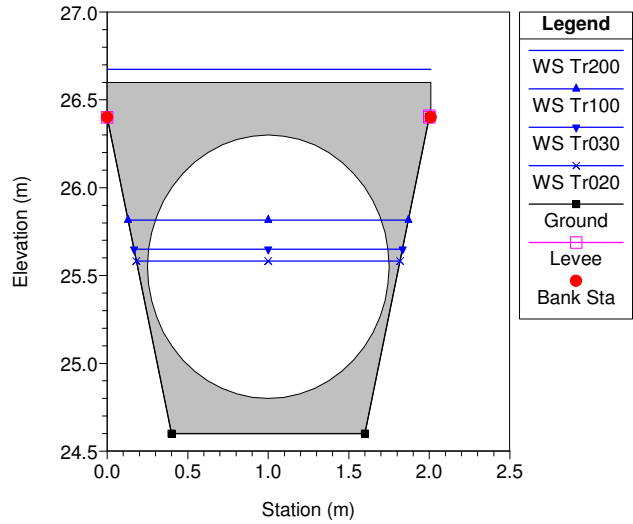
Fossacalda-Verrocchio-apr09 Plan: att1 4/29/2009 7:56:03 AM  
 Geom: fossacalda\_allacc2\_verrocchio Flow: att-apr09  
 River = Verrocchio Reach = ver\_1 RS = 1211.51



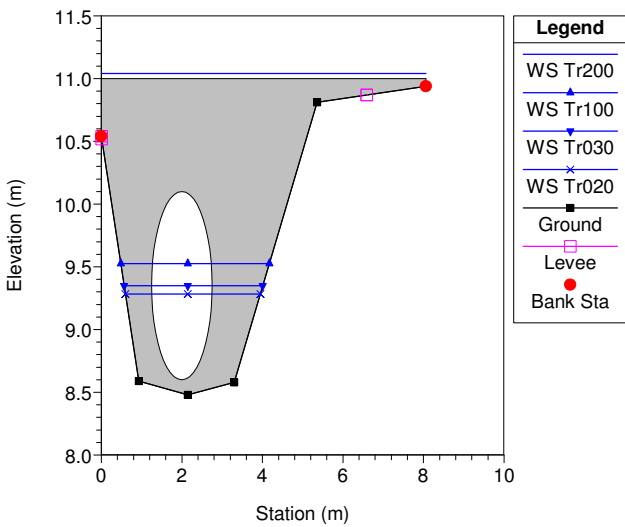
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 Geom: fossacalda\_allacc2\_verrocchio Flow: att-apr09  
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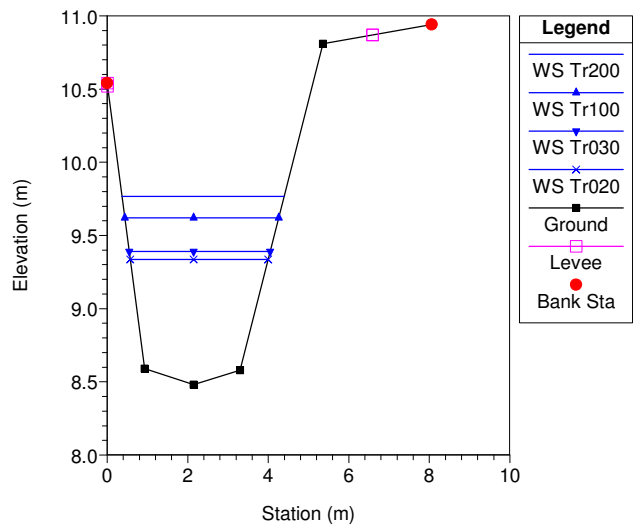
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 River = Verrocchio Reach = ver\_1 RS = 1210 Culv



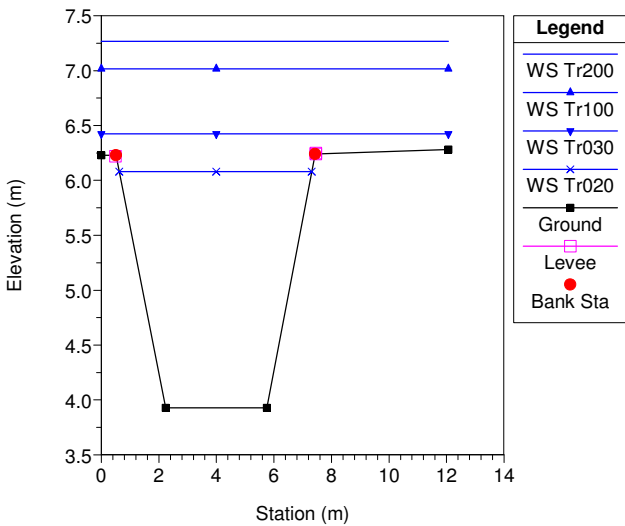
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 Geom: fossacalda\_allacc2\_verrocchio Flow: att-apr09  
 River = Verrocchio Reach = ver\_1 RS = 1210 Culv



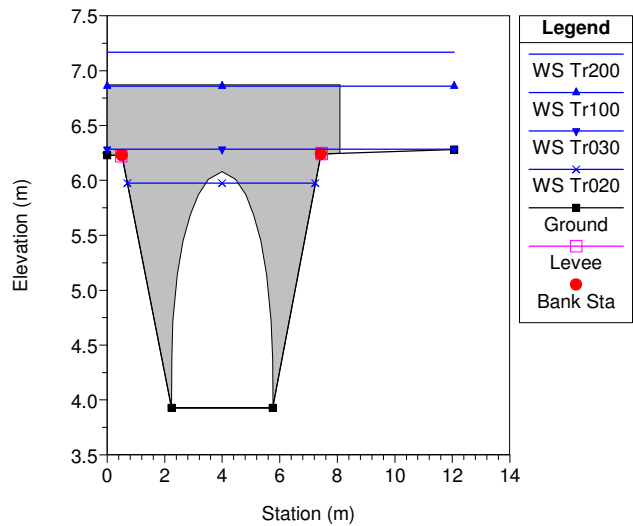
Fossacalda-Verrocchio-apr09 Plan: att1 4/29/2009 7:56:03 AM  
 Geom: fossacalda\_allacc2\_verrocchio Flow: att-apr09  
 River = Verrocchio Reach = ver\_1 RS = 1209.41



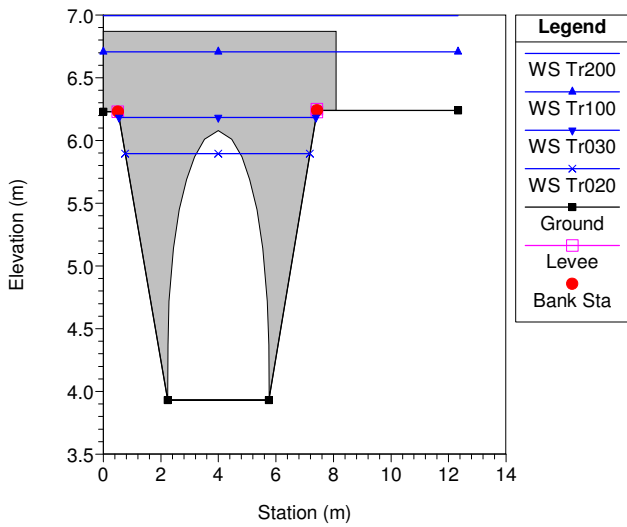
Fossacalda-Verrocchio-apr09 Plan: att1 4/29/2009 7:56:03 AM  
 Geom: fossacalda\_allacc2\_verrocchio Flow: att-apr09  
 River = Verrocchio Reach = ver\_1 RS = 1208.1 lav\_037\_Muccetti\_sez-20



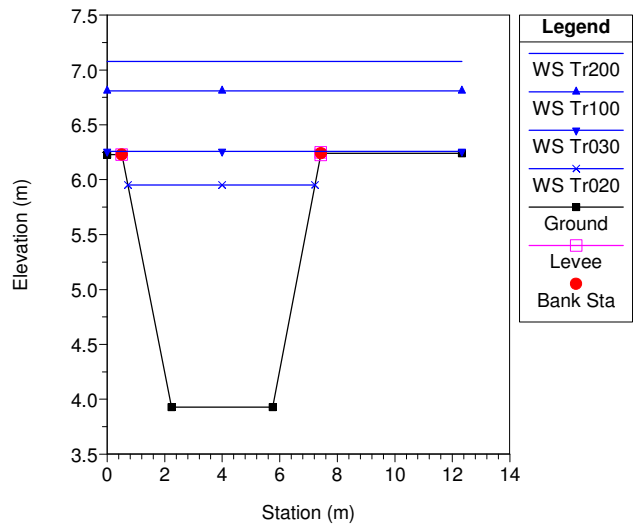
Fossacalda-Verrocchio-apr09 Plan: att1 4/29/2009 7:56:03 AM  
 Geom: fossacalda\_allacc2\_verrocchio Flow: att-apr09  
 River = Verrocchio Reach = ver\_1 RS = 1208 BR SS aurelia



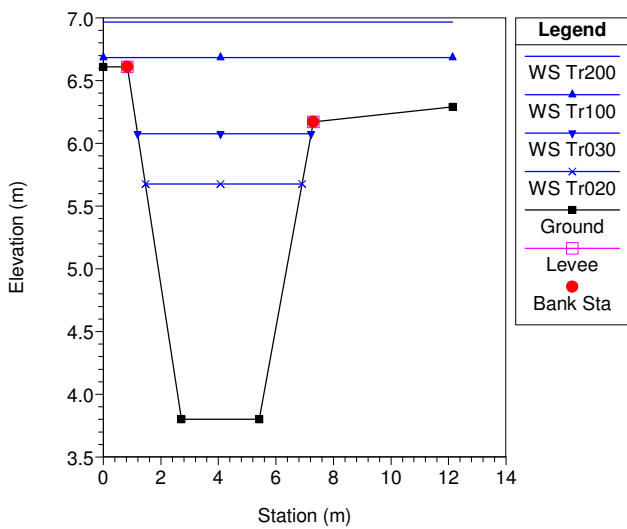
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 Geom: fossacalda\_allacc2\_verrocchio Flow: att-apr09  
 River = Verrocchio Reach = ver\_1 RS = 1208 BR SS aurelia



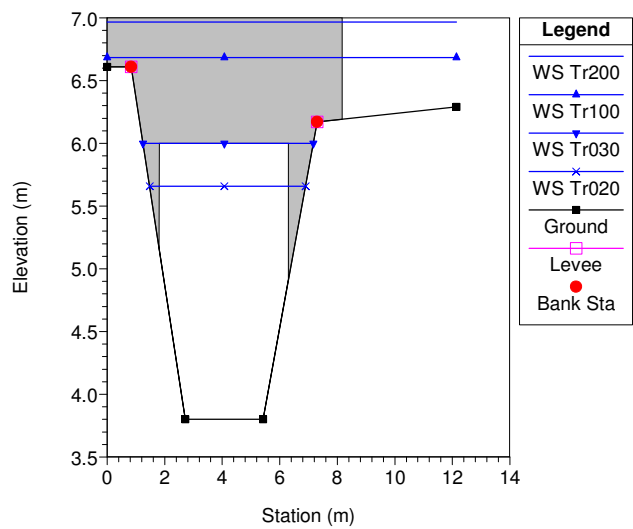
Fossacalda-Verrocchio-apr09 Plan: att1 4/29/2009 7:56:03 AM  
 Geom: fossacalda\_allacc2\_verrocchio Flow: att-apr09  
 River = Verrocchio Reach = ver\_1 RS = 1207.9 lav\_037\_Muccetti\_sez-20



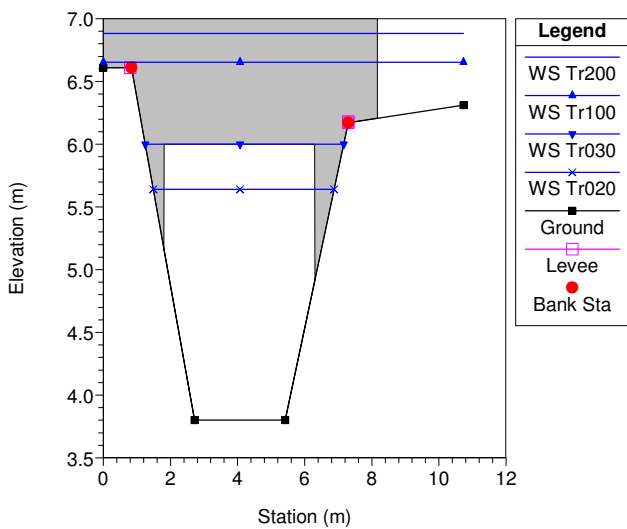
Fossacalda-Verrocchio-apr09 Plan: att1 4/29/2009 7:56:03 AM  
 Geom: fossacalda\_allacc2\_verrocchio Flow: att-apr09  
 River = Verrocchio Reach = ver\_1 RS = 1207.1 lav\_037\_Muccetti\_sez-21



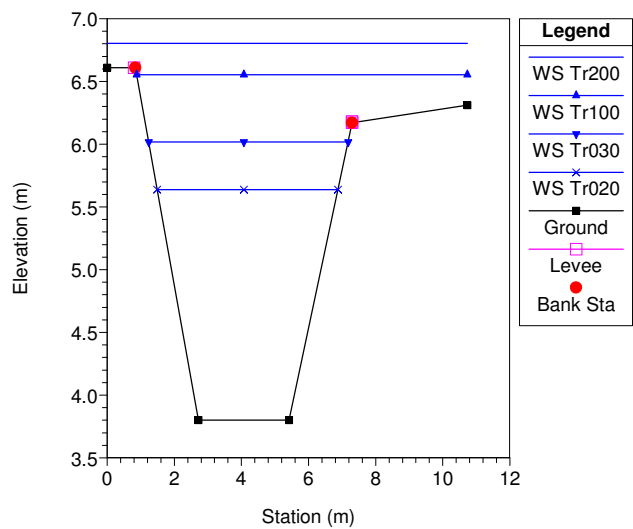
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 Geom: fossacalda\_allacc2\_verrocchio Flow: att-apr09  
 River = Verrocchio Reach = ver\_1 RS = 1207 BR

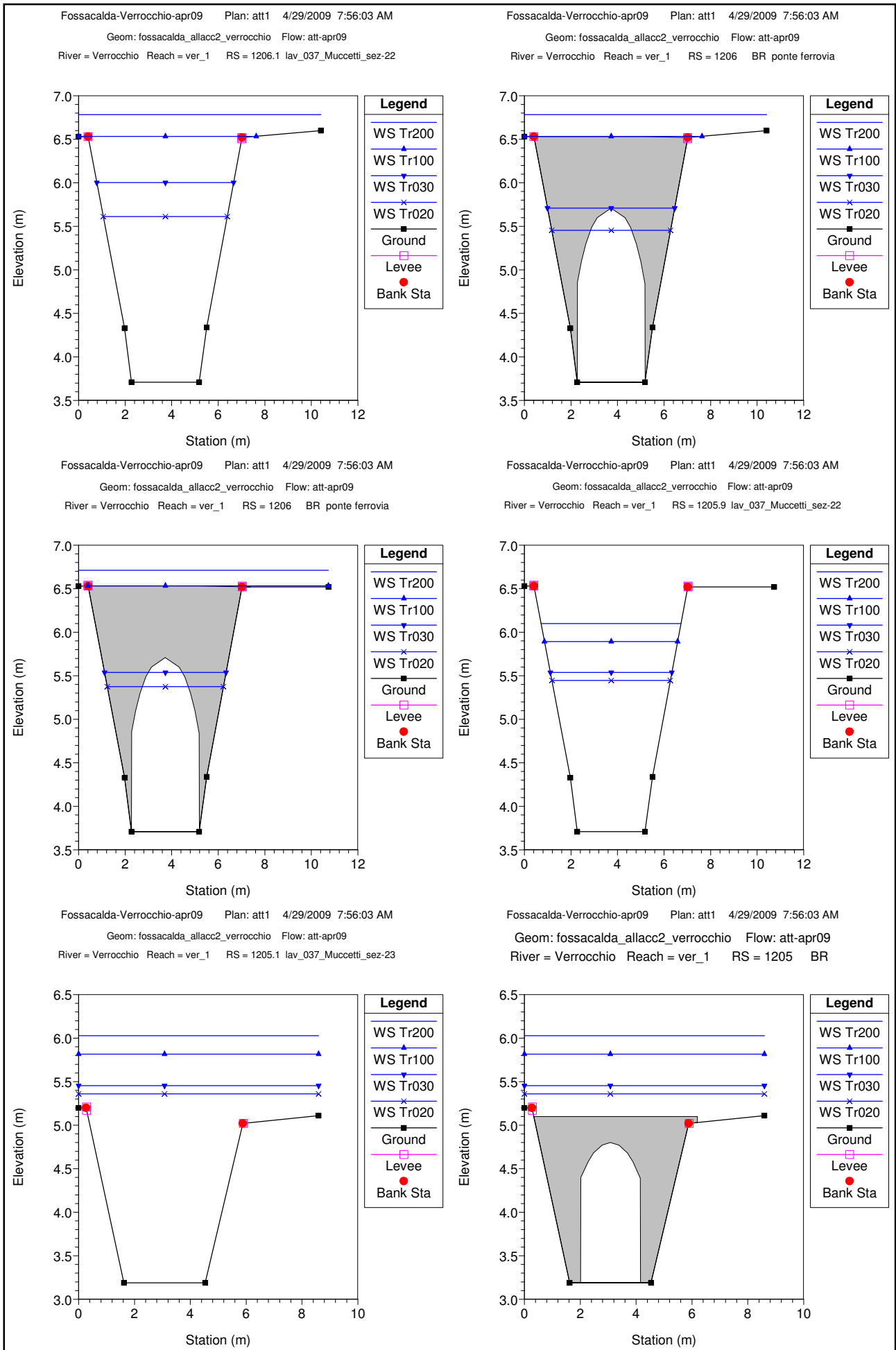


Fossacalda-Verrocchio-apr09 Plan: att1 4/29/2009 7:56:03 AM  
 Geom: fossacalda\_allacc2\_verrocchio Flow: att-apr09  
 River = Verrocchio Reach = ver\_1 RS = 1207 BR

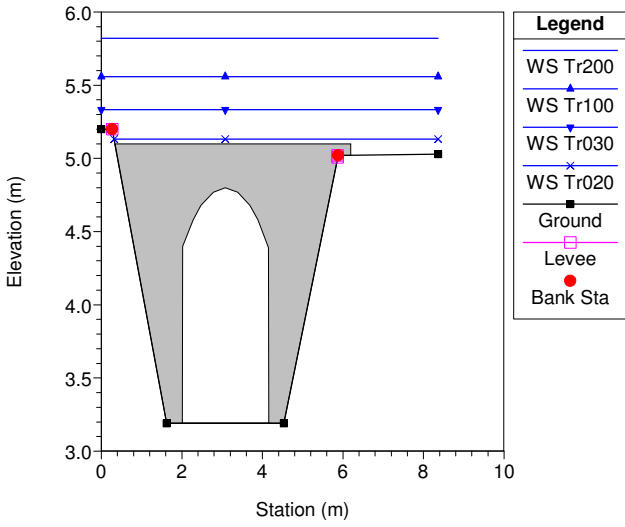


Fossacalda-Verrocchio-apr09 Plan: att1 4/29/2009 7:56:03 AM  
 Geom: fossacalda\_allacc2\_verrocchio Flow: att-apr09  
 River = Verrocchio Reach = ver\_1 RS = 1206.9 lav\_037\_Muccetti\_sez-21

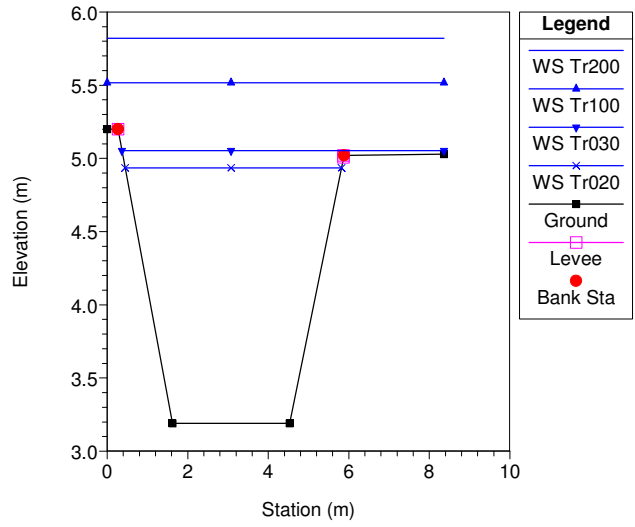




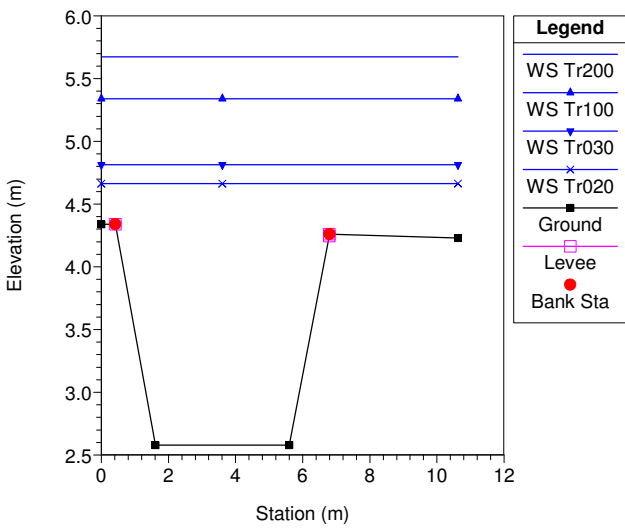
Fossacalda-Verrocchio-apr09 Plan: att1 4/29/2009 7:56:03 AM  
 Geom: fossacalda\_allacc2\_verrocchio Flow: att-apr09  
 River = Verrocchio Reach = ver\_1 RS = 1205 BR



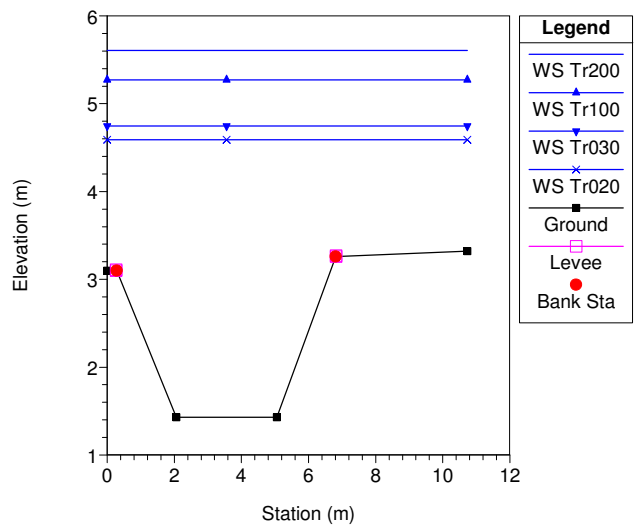
Fossacalda-Verrocchio-apr09 Plan: att1 4/29/2009 7:56:03 AM  
 Geom: fossacalda\_allacc2\_verrocchio Flow: att-apr09  
 River = Verrocchio Reach = ver\_1 RS = 1204.9 lav\_037\_Muccetti\_sez-23



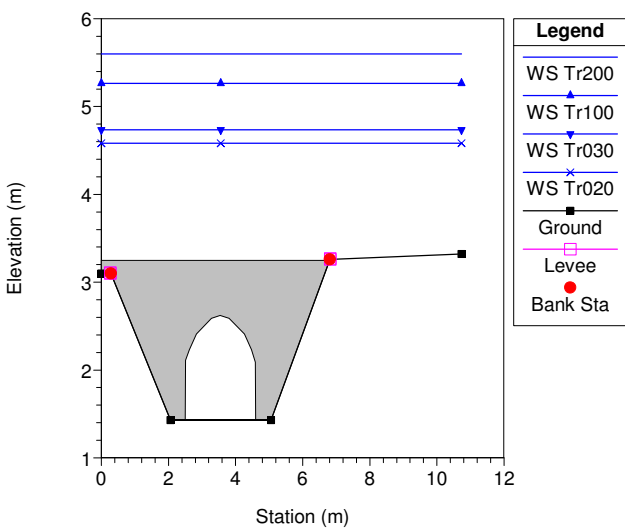
Fossacalda-Verrocchio-apr09 Plan: att1 4/29/2009 7:56:03 AM  
 Geom: fossacalda\_allacc2\_verrocchio Flow: att-apr09  
 River = Verrocchio Reach = ver\_1 RS = 1204 lav\_037\_Muccetti\_sez-24 MANCA IL PONTE???



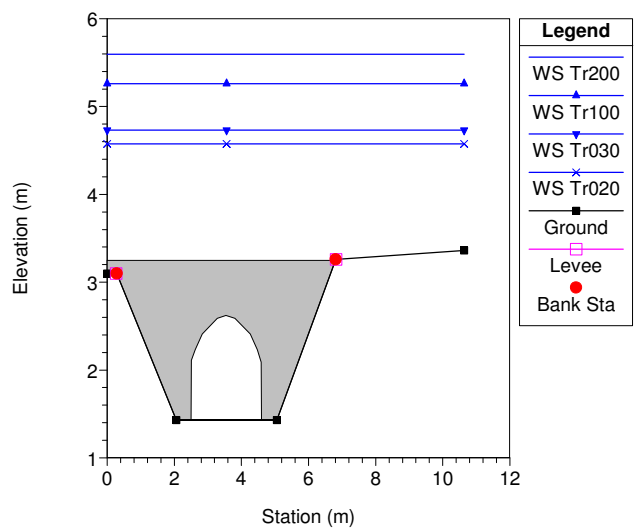
Fossacalda-Verrocchio-apr09 Plan: att1 4/29/2009 7:56:03 AM  
 Geom: fossacalda\_allacc2\_verrocchio Flow: att-apr09  
 River = Verrocchio Reach = ver\_1 RS = 1203.1 lav\_037\_Muccetti\_sez-25



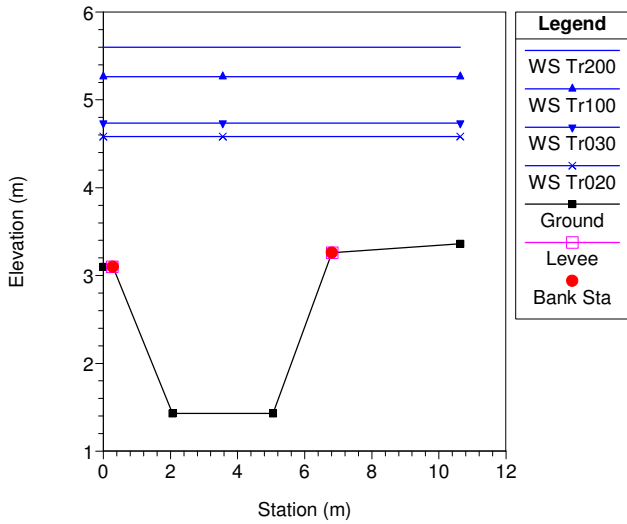
Fossacalda-Verrocchio-apr09 Plan: att1 4/29/2009 7:56:03 AM  
 Geom: fossacalda\_allacc2\_verrocchio Flow: att-apr09  
 River = Verrocchio Reach = ver\_1 RS = 1203 BR la quota della strada non torna con la cartografia



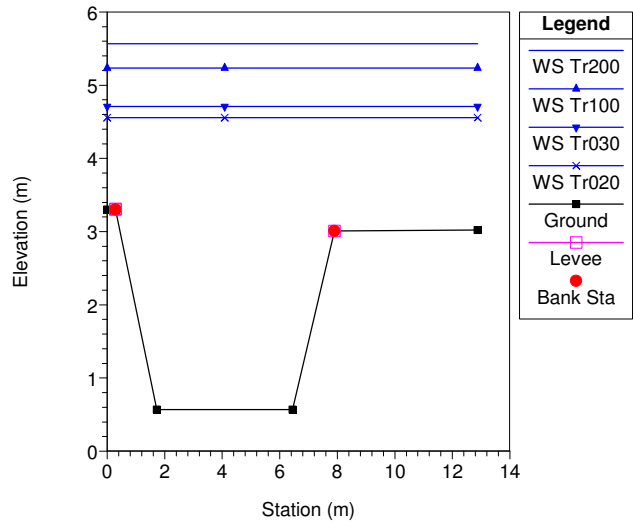
Fossacalda-Verrocchio-apr09 Plan: att1 4/29/2009 7:56:03 AM  
 Geom: fossacalda\_allacc2\_verrocchio Flow: att-apr09  
 River = Verrocchio Reach = ver\_1 RS = 1203 BR la quota della strada non torna con la cartografia



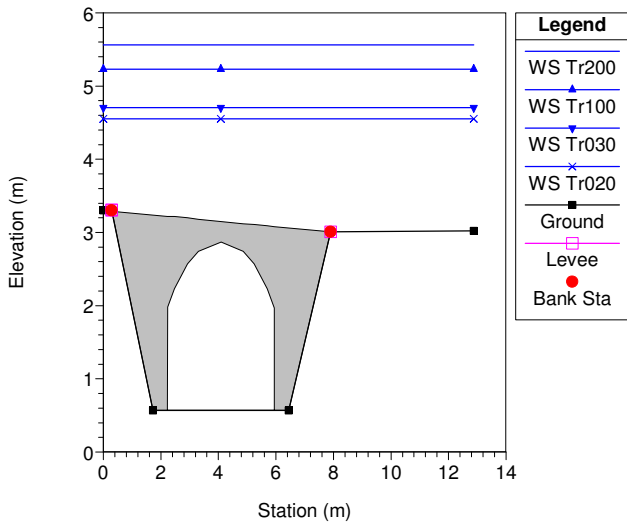
Fossacalda-Verrocchio-apr09 Plan: att1 4/29/2009 7:56:03 AM  
 Geom: fossacalda\_allacc2\_verrocchio Flow: att-apr09  
 River = Verrocchio Reach = ver\_1 RS = 1202.9 lav\_037\_Muccetti\_sez-25



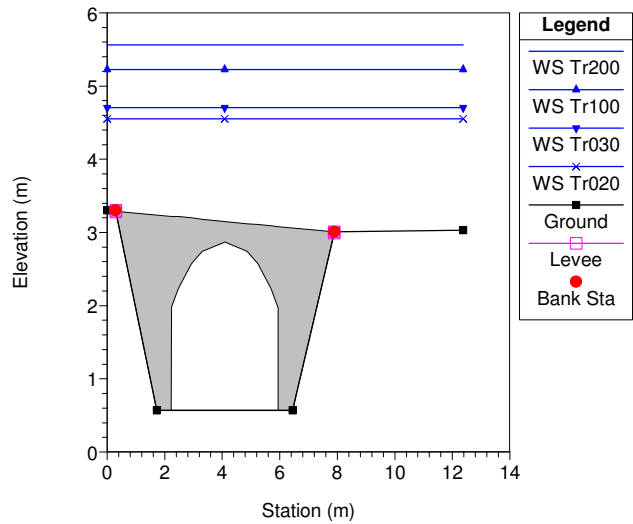
Fossacalda-Verrocchio-apr09 Plan: att1 4/29/2009 7:56:03 AM  
 Geom: fossacalda\_allacc2\_verrocchio Flow: att-apr09  
 River = Verrocchio Reach = ver\_1 RS = 1202.1 lav\_037\_Muccetti\_sez-16



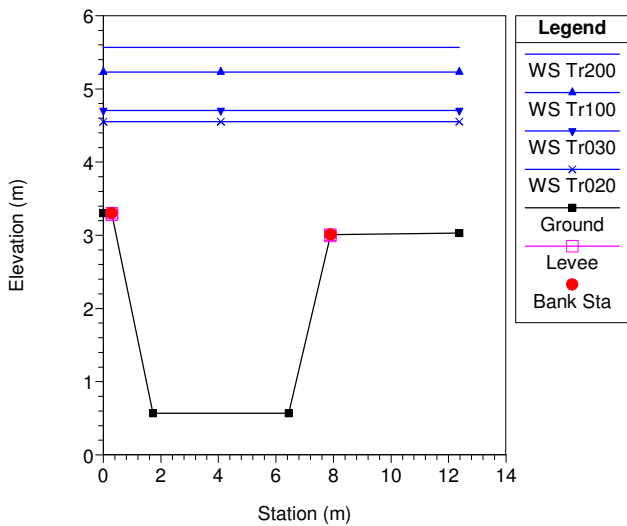
Fossacalda-Verrocchio-apr09 Plan: att1 4/29/2009 7:56:03 AM  
 Geom: fossacalda\_allacc2\_verrocchio Flow: att-apr09  
 River = Verrocchio Reach = ver\_1 RS = 1202 BR



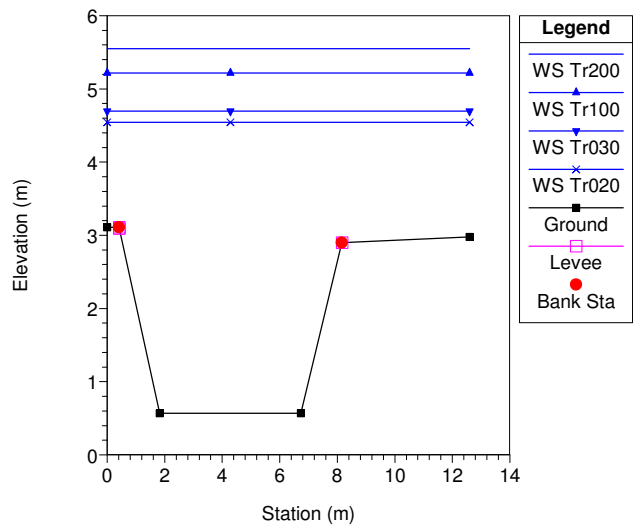
Fossacalda-Verrocchio-apr09 Plan: att1 4/29/2009 7:56:03 AM  
 Geom: fossacalda\_allacc2\_verrocchio Flow: att-apr09  
 River = Verrocchio Reach = ver\_1 RS = 1202 BR



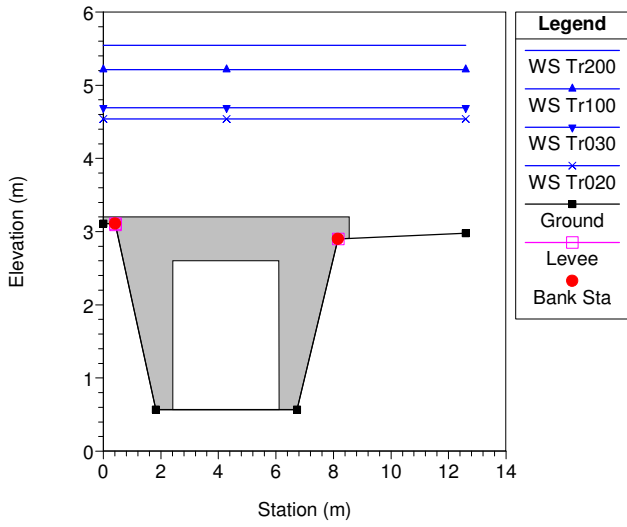
Fossacalda-Verrocchio-apr09 Plan: att1 4/29/2009 7:56:03 AM  
 Geom: fossacalda\_allacc2\_verrocchio Flow: att-apr09  
 River = Verrocchio Reach = ver\_1 RS = 1201.9 lav\_037\_Muccetti\_sez-16



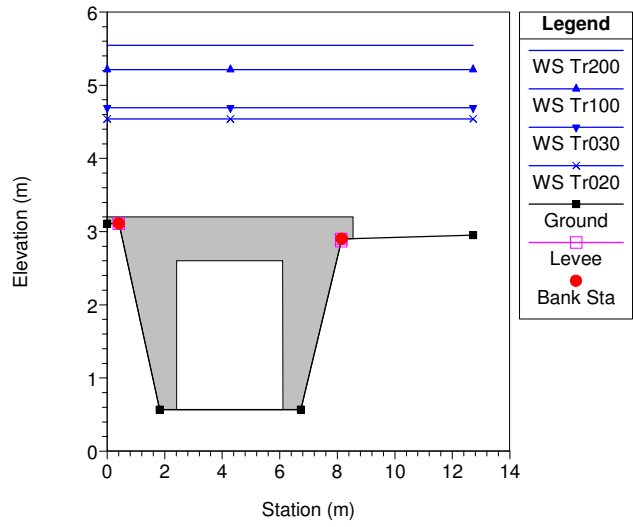
Fossacalda-Verrocchio-apr09 Plan: att1 4/29/2009 7:56:03 AM  
 Geom: fossacalda\_allacc2\_verrocchio Flow: att-apr09  
 River = Verrocchio Reach = ver\_1 RS = 1201.1 lav\_037\_Muccetti\_sez-17



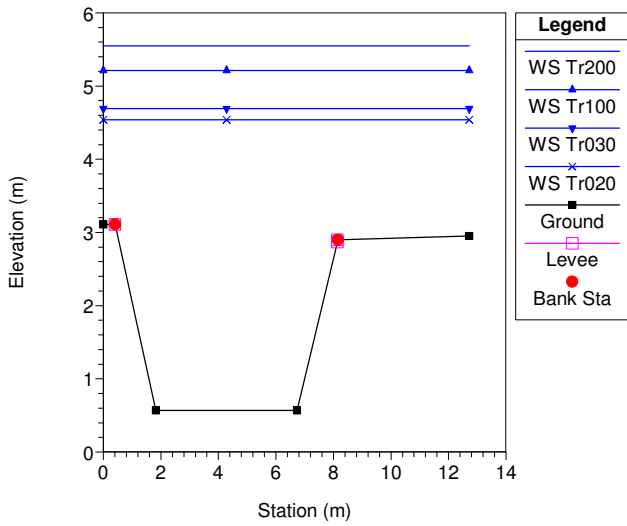
Geom: fossacalda\_allacc2\_verrocchio Flow: att-apr09  
 River = Verrocchio Reach = ver\_1 RS = 1201 BR



Geom: fossacalda\_allacc2\_verrocchio Flow: att-apr09  
 River = Verrocchio Reach = ver\_1 RS = 1201 BR



Geom: fossacalda\_allacc2\_verrocchio Flow: att-apr09  
 River = Verrocchio Reach = ver\_1 RS = 1200.9 lav\_037\_Muccetti\_sez-17



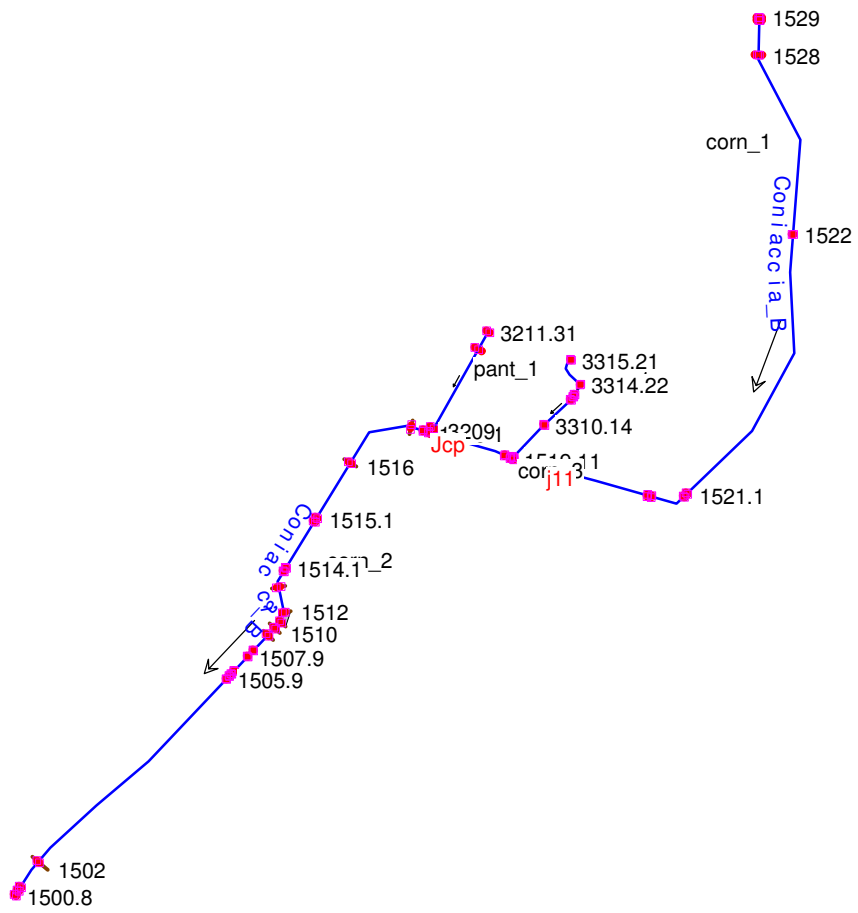
Reach	River Sta	Profile	Q Total (m3/s)	Min Ch El (m)	W.S. Elev (m)	Crit W.S. (m)	E.G. Elev (m)	E.G. Slope (m/m)	Vel Chnl (m/s)	Flow Area (m2)	Top Width (m)	Froude # Chl
ver_1	1211.51	Tr200	5.00	32.10	33.49	33.49	33.95	0.023055	3.01	1.66	1.79	1.00
ver_1	1211.51	Tr100	3.80	32.10	33.30	33.30	33.71	0.023253	2.84	1.34	1.63	1.00
ver_1	1211.51	Tr030	2.70	32.10	33.10	33.10	33.45	0.023290	2.62	1.03	1.46	1.00
ver_1	1211.51	Tr020	2.30	32.10	33.01	33.01	33.34	0.023872	2.55	0.90	1.38	1.01
ver_1	1210.61	Tr200	5.00	24.60	26.67	25.73	26.78	0.003562	1.46	3.43	2.01	0.36
ver_1	1210.61	Tr100	3.80	24.60	26.41	25.55	26.50	0.003117	1.31	2.90	2.00	0.35
ver_1	1210.61	Tr030	2.70	24.60	26.10	25.36	26.17	0.002839	1.17	2.30	1.87	0.34
ver_1	1210.61	Tr020	2.30	24.60	25.98	25.29	26.05	0.002636	1.10	2.09	1.82	0.33
ver_1	1210		Culvert									
ver_1	1209.41	Tr200	12.00	8.48	9.77	9.77	10.25	0.012794	3.08	3.90	4.03	1.00
ver_1	1209.41	Tr100	9.80	8.48	9.62	9.62	10.06	0.013201	2.94	3.33	3.82	1.01
ver_1	1209.41	Tr030	6.60	8.48	9.39	9.39	9.75	0.013359	2.65	2.49	3.50	1.00
ver_1	1209.41	Tr020	5.90	8.48	9.34	9.34	9.67	0.013324	2.56	2.30	3.42	1.00
ver_1	1208.1	Tr200	18.40	3.93	7.27	5.21	7.30	0.000242	0.84	24.34	12.06	0.16
ver_1	1208.1	Tr100	15.40	3.93	7.02	5.08	7.05	0.000247	0.80	21.32	12.06	0.16
ver_1	1208.1	Tr030	10.80	3.93	6.43	4.85	6.46	0.000352	0.80	14.20	12.06	0.18
ver_1	1208.1	Tr020	9.80	3.93	6.08	4.80	6.12	0.000540	0.89	10.97	6.69	0.22
ver_1	1208		Bridge									
ver_1	1207.9	Tr200	18.40	3.93	7.08	5.21	7.12	0.000315	0.91	22.39	12.33	0.18
ver_1	1207.9	Tr100	15.40	3.93	6.81	5.08	6.85	0.000345	0.89	19.08	12.33	0.19
ver_1	1207.9	Tr030	10.80	3.93	6.26	4.85	6.30	0.000493	0.89	12.28	12.33	0.21
ver_1	1207.9	Tr020	9.80	3.93	5.95	4.80	6.00	0.000673	0.97	10.12	6.50	0.25
ver_1	1207.1	Tr200	18.40	3.80	6.97	5.26	7.02	0.000483	1.05	19.47	12.14	0.22
ver_1	1207.1	Tr100	15.40	3.80	6.68	5.11	6.74	0.000569	1.05	16.02	12.14	0.23
ver_1	1207.1	Tr030	10.80	3.80	6.08	4.86	6.14	0.000841	1.09	9.94	6.03	0.27
ver_1	1207.1	Tr020	9.80	3.80	5.68	4.80	5.76	0.001406	1.28	7.64	5.44	0.35
ver_1	1207		Bridge									
ver_1	1206.9	Tr200	18.40	3.80	6.80	5.26	6.87	0.000684	1.19	16.64	10.73	0.25
ver_1	1206.9	Tr100	15.40	3.80	6.55	5.12	6.62	0.000752	1.16	13.99	9.85	0.26
ver_1	1206.9	Tr030	10.80	3.80	6.02	4.86	6.08	0.000927	1.13	9.59	5.94	0.28
ver_1	1206.9	Tr020	9.80	3.80	5.64	4.80	5.73	0.001516	1.32	7.43	5.39	0.36
ver_1	1206.1	Tr200	18.40	3.71	6.78	5.17	6.86	0.000763	1.22	15.68	10.41	0.26
ver_1	1206.1	Tr100	15.40	3.71	6.53	5.02	6.61	0.000815	1.17	13.18	7.63	0.26
ver_1	1206.1	Tr030	10.80	3.71	6.00	4.77	6.06	0.000870	1.10	9.86	5.88	0.27
ver_1	1206.1	Tr020	9.80	3.71	5.61	4.70	5.70	0.001408	1.28	7.67	5.33	0.34
ver_1	1206		Bridge									
ver_1	1205.9	Tr200	18.40	3.71	6.10	5.17	6.26	0.002172	1.76	10.43	6.01	0.43
ver_1	1205.9	Tr100	15.40	3.71	5.89	5.02	6.03	0.002122	1.67	9.21	5.72	0.42
ver_1	1205.9	Tr030	10.80	3.71	5.54	4.77	5.65	0.001974	1.48	7.27	5.22	0.40
ver_1	1205.9	Tr020	9.80	3.71	5.45	4.71	5.55	0.001950	1.44	6.80	5.09	0.40
ver_1	1205.1	Tr200	18.40	3.19	6.03	4.61	6.10	0.000666	1.24	16.15	8.59	0.26
ver_1	1205.1	Tr100	15.40	3.19	5.82	4.46	5.88	0.000662	1.16	14.34	8.59	0.25
ver_1	1205.1	Tr030	10.80	3.19	5.45	4.21	5.51	0.000655	1.02	11.22	8.59	0.24
ver_1	1205.1	Tr020	9.80	3.19	5.36	4.16	5.41	0.000662	0.99	10.41	8.59	0.24
ver_1	1205		Bridge									
ver_1	1204.9	Tr200	18.40	3.19	5.82	4.61	5.91	0.000933	1.39	14.31	8.36	0.30
ver_1	1204.9	Tr100	15.40	3.19	5.52	4.46	5.61	0.001155	1.40	11.76	8.36	0.33
ver_1	1204.9	Tr030	10.80	3.19	5.05	4.21	5.15	0.001576	1.37	7.94	7.99	0.37
ver_1	1204.9	Tr020	9.80	3.19	4.93	4.16	5.03	0.001645	1.36	7.22	5.37	0.37
ver_1	1204	Tr200	18.40	2.58	5.67	3.78	5.71	0.000244	0.87	23.72	10.63	0.17
ver_1	1204	Tr100	15.40	2.58	5.34	3.66	5.37	0.000277	0.85	20.17	10.63	0.17
ver_1	1204	Tr030	10.80	2.58	4.81	3.44	4.84	0.000350	0.81	14.57	10.63	0.19
ver_1	1204	Tr020	9.80	2.58	4.66	3.39	4.69	0.000399	0.82	12.96	10.63	0.20
ver_1	1203.1	Tr200	18.40	1.43	5.61	2.77	5.62	0.000078	0.62	33.97	10.73	0.10
ver_1	1203.1	Tr100	15.40	1.43	5.27	2.64	5.29	0.000077	0.57	30.37	10.73	0.10
ver_1	1203.1	Tr030	10.80	1.43	4.75	2.41	4.76	0.000070	0.49	24.72	10.73	0.09
ver_1	1203.1	Tr020	9.80	1.43	4.59	2.35	4.60	0.000071	0.48	23.06	10.73	0.09
ver_1	1203		Bridge									
ver_1	1202.9	Tr200	18.40	1.43	5.60	2.77	5.62	0.000079	0.62	33.61	10.64	0.10
ver_1	1202.9	Tr100	15.40	1.43	5.26	2.63	5.28	0.000078	0.58	30.03	10.64	0.10
ver_1	1202.9	Tr030	10.80	1.43	4.74	2.41	4.75	0.000072	0.50	24.42	10.64	0.09
ver_1	1202.9	Tr020	9.80	1.43	4.58	2.35	4.59	0.000073	0.48	22.77	10.64	0.09

HEC-RAS Plan: att1 River: Verrocchio Reach: ver\_1 (Continued)

Reach	River Sta	Profile	Q Total (m3/s)	Min Ch El (m)	W.S. Elev (m)	Crit W.S. (m)	E.G. Elev (m)	E.G. Slope (m/m)	Vel Chnl (m/s)	Flow Area (m2)	Top Width (m)	Froude # Chl
ver_1	1202.1	Tr200	18.40	0.57	5.57	1.67	5.58	0.000035	0.43	47.66	12.88	0.06
ver_1	1202.1	Tr100	15.40	0.57	5.23	1.56	5.24	0.000033	0.40	43.35	12.88	0.06
ver_1	1202.1	Tr030	10.80	0.57	4.71	1.36	4.71	0.000027	0.33	36.61	12.88	0.05
ver_1	1202.1	Tr020	9.80	0.57	4.56	1.31	4.56	0.000026	0.31	34.62	12.88	0.05
ver_1	1202		Bridge									
ver_1	1201.9	Tr200	18.40	0.57	5.57	1.67	5.57	0.000037	0.44	46.30	12.37	0.07
ver_1	1201.9	Tr100	15.40	0.57	5.23	1.56	5.24	0.000035	0.40	42.16	12.37	0.06
ver_1	1201.9	Tr030	10.80	0.57	4.71	1.36	4.71	0.000028	0.33	35.69	12.37	0.06
ver_1	1201.9	Tr020	9.80	0.57	4.55	1.31	4.56	0.000027	0.32	33.78	12.37	0.05
ver_1	1201.1	Tr200	18.40	0.57	5.55	1.65	5.56	0.000034	0.43	47.72	12.60	0.06
ver_1	1201.1	Tr100	15.40	0.57	5.22	1.53	5.22	0.000031	0.39	43.52	12.60	0.06
ver_1	1201.1	Tr030	10.80	0.57	4.70	1.34	4.70	0.000025	0.32	36.96	12.60	0.05
ver_1	1201.1	Tr020	9.80	0.57	4.54	1.29	4.55	0.000024	0.31	35.02	12.60	0.05
ver_1	1201		Bridge									
ver_1	1200.9	Tr200	18.40	0.57	5.55	1.65	5.56	0.000034	0.43	48.07	12.72	0.06
ver_1	1200.9	Tr100	15.40	0.57	5.21	1.53	5.22	0.000031	0.39	43.82	12.72	0.06
ver_1	1200.9	Tr030	10.80	0.57	4.69	1.34	4.70	0.000025	0.32	37.21	12.72	0.05
ver_1	1200.9	Tr020	9.80	0.57	4.54	1.29	4.54	0.000024	0.31	35.25	12.72	0.05

Reach	River Sta	Profile	Q Total (m3/s)	Min Ch El (m)	W.S. Elev (m)	Crit W.S. (m)	E.G. Elev (m)	E.G. Slope (m/m)	Vel Chnl (m/s)	Flow Area (m2)	Top Width (m)	Froude # Chl
FC_1	106.1	Tr200	45.66	7.96	11.81	9.80	11.90	0.000497	1.34	38.51	18.89	0.24
FC_1	106.1	Tr100	37.11	7.96	11.53	9.58	11.61	0.000485	1.24	33.28	18.89	0.23
FC_1	106.1	Tr030	26.20	7.96	10.89	9.27	10.96	0.000661	1.23	21.33	9.58	0.26
FC_1	106.1	Tr020	24.24	7.96	10.90	9.21	10.97	0.000553	1.13	21.51	10.60	0.24
FC_1	106	Bridge										
FC_1	105.9	Tr200	45.66	7.96	11.27	9.80	11.43	0.001112	1.77	27.65	16.83	0.35
FC_1	105.9	Tr100	37.11	7.96	10.90	9.59	11.06	0.001297	1.73	21.50	11.68	0.37
FC_1	105.9	Tr030	26.20	7.96	10.17	9.28	10.32	0.001793	1.77	14.84	8.45	0.43
FC_1	105.9	Tr020	24.24	7.96	10.04	9.21	10.20	0.001875	1.76	13.80	8.26	0.43
FC_1	105.1	Tr200	45.66	6.78	11.11	8.39	11.15	0.000155	0.92	54.83	17.14	0.15
FC_1	105.1	Tr100	37.11	6.78	10.74	8.20	10.78	0.000148	0.84	48.55	17.14	0.15
FC_1	105.1	Tr030	26.20	6.78	9.92	7.93	9.95	0.000206	0.82	34.39	17.14	0.16
FC_1	105.1	Tr020	24.24	6.78	9.78	7.88	9.81	0.000218	0.81	31.94	17.14	0.17
FC_1	105	Bridge										
FC_1	104.9	Tr200	45.66	6.78	10.54	8.39	10.60	0.000266	1.07	47.05	18.59	0.19
FC_1	104.9	Tr100	37.11	6.78	10.11	8.20	10.17	0.000303	1.04	39.11	18.59	0.20
FC_1	104.9	Tr030	26.20	6.78	9.46	7.93	9.52	0.000422	1.03	27.02	18.59	0.23
FC_1	104.9	Tr020	24.24	6.78	9.36	7.88	9.41	0.000434	1.01	25.14	18.59	0.23
FC_1	104.1	Tr200	45.66	6.01	10.37	8.69	10.52	0.001157	1.79	27.18	8.59	0.29
FC_1	104.1	Tr100	37.11	6.01	9.96	8.47	10.09	0.001124	1.69	23.61	8.59	0.29
FC_1	104.1	Tr030	26.20	6.01	9.31	7.88	9.42	0.001177	1.57	18.03	8.59	0.30
FC_1	104.1	Tr020	24.24	6.01	9.21	7.80	9.32	0.001146	1.52	17.20	8.59	0.30
FC_1	104	Bridge										
FC_1	103.9	Tr200	45.66	6.01	10.31	8.71	10.43	0.000998	1.65	29.38	9.90	0.27
FC_1	103.9	Tr100	37.11	6.01	9.88	8.51	10.00	0.001017	1.58	25.17	9.90	0.28
FC_1	103.9	Tr030	26.20	6.01	9.30	7.88	9.40	0.001053	1.48	19.37	9.90	0.29
FC_1	103.9	Tr020	24.24	6.01	9.20	7.79	9.30	0.001038	1.44	18.41	9.90	0.28
FC_1	102.1	Tr200	45.66	3.92	8.38	5.73	8.47	0.000503	1.39	36.73	10.63	0.21
FC_1	102.1	Tr100	37.11	3.92	7.86	5.49	7.94	0.000534	1.32	31.20	10.63	0.21
FC_1	102.1	Tr030	26.20	3.92	7.19	5.16	7.26	0.000559	1.19	24.09	10.63	0.21
FC_1	102.1	Tr020	24.24	3.92	7.01	5.11	7.08	0.000606	1.20	22.13	10.63	0.22
FC_1	102	Bridge										
FC_1	101.9	Tr200	45.66	3.92	8.36	5.73	8.45	0.000508	1.39	36.67	10.65	0.21
FC_1	101.9	Tr100	37.11	3.92	7.84	5.49	7.92	0.000544	1.33	31.09	10.65	0.21
FC_1	101.9	Tr030	26.20	3.92	7.15	5.17	7.22	0.000581	1.21	23.83	10.65	0.21
FC_1	101.9	Tr020	24.24	3.92	6.95	5.11	7.02	0.000650	1.22	21.64	10.65	0.22
FC_1	101	Tr200	45.66	3.04	8.15	5.39	8.20	0.000184	1.07	49.83	12.88	0.16
FC_1	101	Tr100	37.11	3.04	7.62	5.03	7.66	0.000191	1.00	42.93	12.88	0.16
FC_1	101	Tr030	26.20	3.04	6.93	4.68	6.96	0.000190	0.88	34.05	12.88	0.16
FC_1	101	Tr020	24.24	3.04	6.69	4.61	6.73	0.000215	0.90	31.00	12.88	0.16

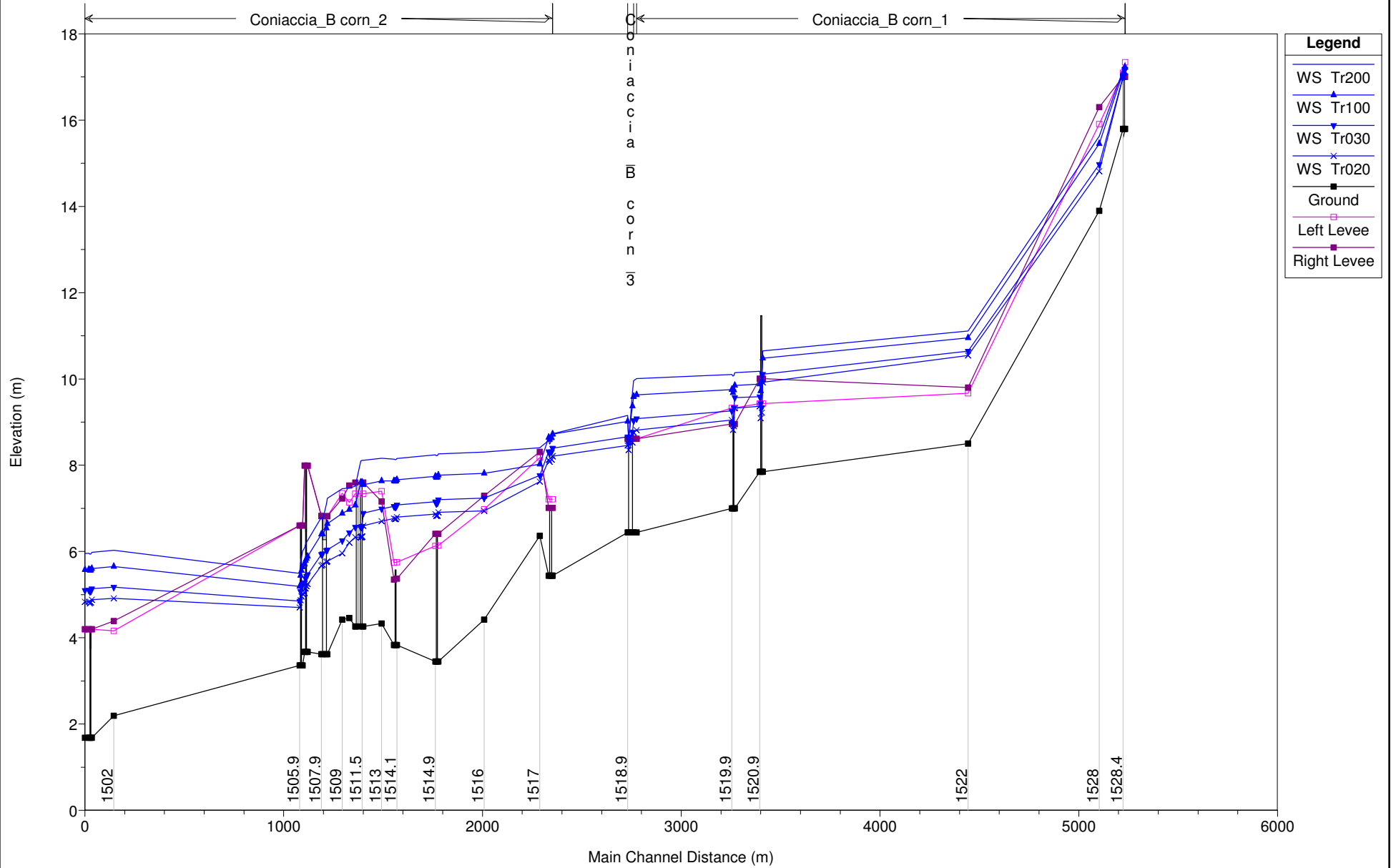
Appendice 3  
F.Corniaccia - Venturina



None of the XSs are Geo-Referenced (• Geo-Ref user entered XS • Geo-Ref interpolated XS - Non Geo-Ref user entered XS - Non Geo-Ref interpolated XS)

Corniaccia\_ventur-apr09 Plan: att1 4/29/2009 9:47:38 AM

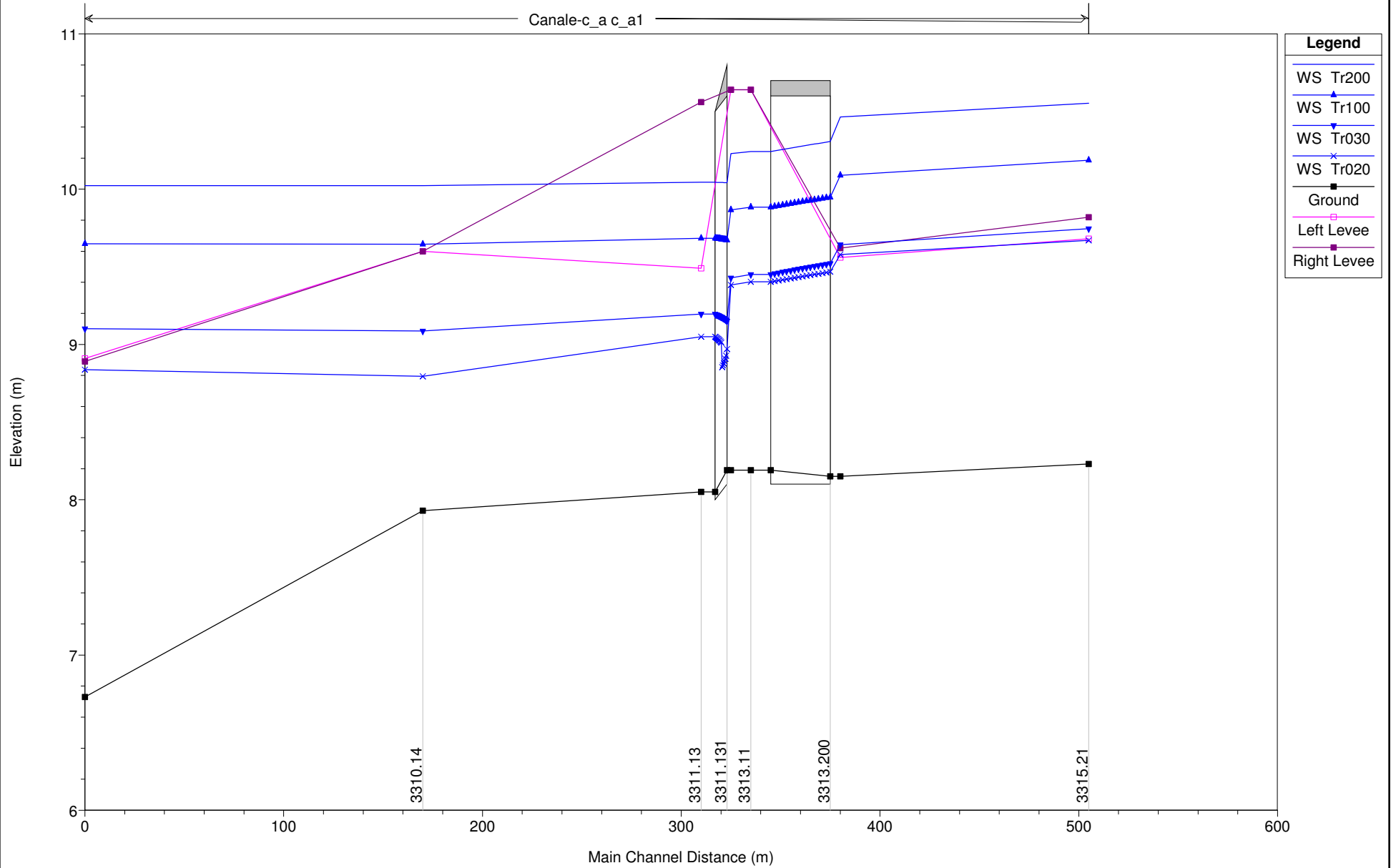
Geom: CorniacciaB-apr09 Flow: att



Corniaccia\_ventur-apr09 Plan: att1 4/29/2009 9:47:38 AM

Geom: ConiacciaB-apr09 Flow: att

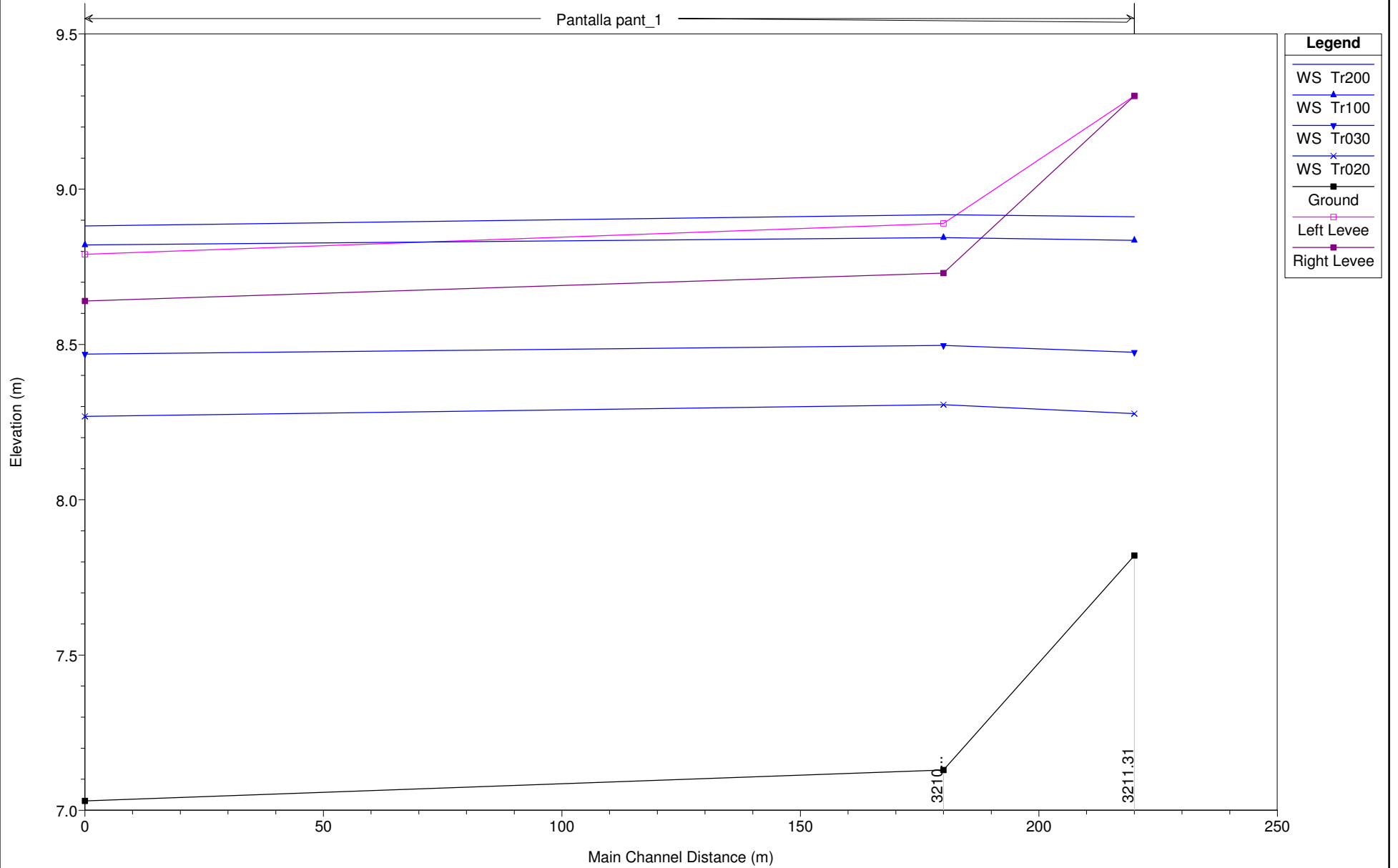
Canale-c\_a\_c\_a1



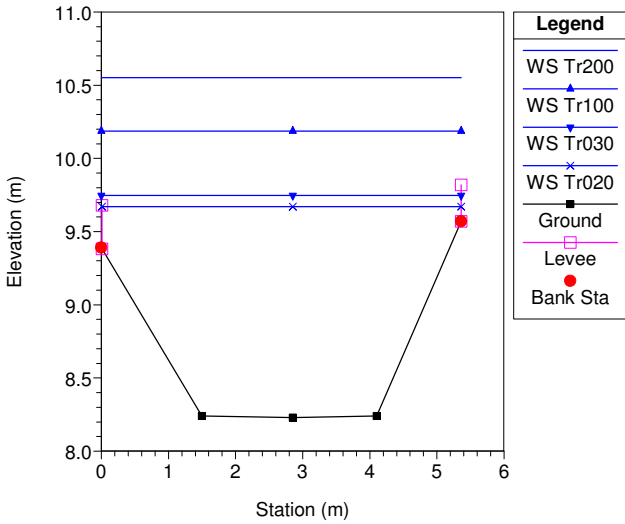
Corniaccia\_ventur-apr09 Plan: att1 4/29/2009 9:47:38 AM

Geom: ConiacciaB-apr09 Flow: att

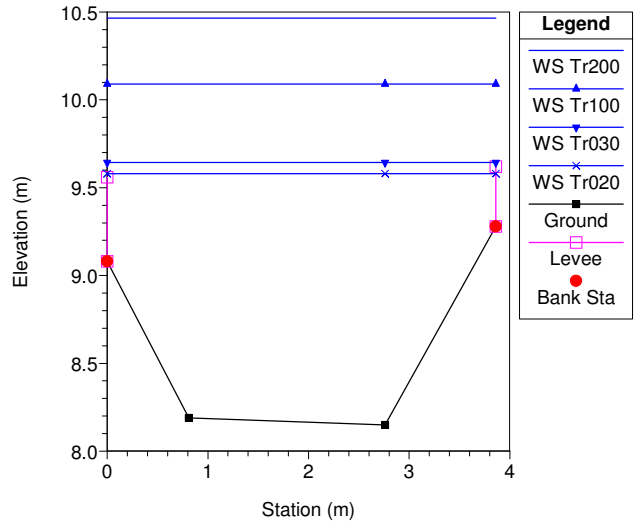
Pantalla pant\_1



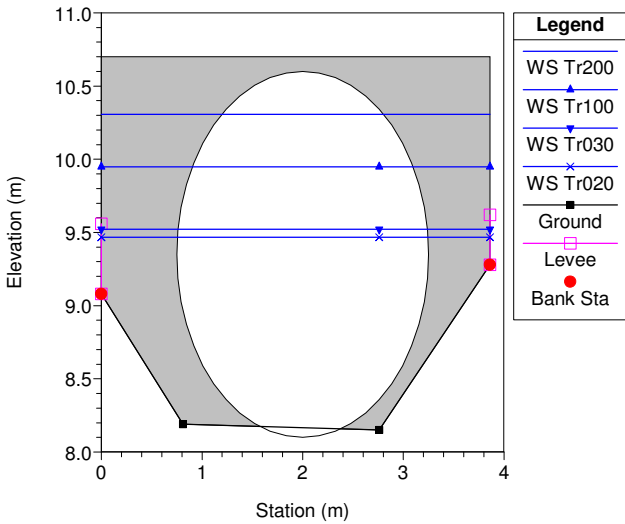
Corniaccia\_ventur-apr09 Plan: att1 4/29/2009 9:47:38 AM  
 Geom: ConiacciaB-apr09 Flow: att  
 River = Canale-c\_a Reach = c\_a1 RS = 3315.21 sez2.1



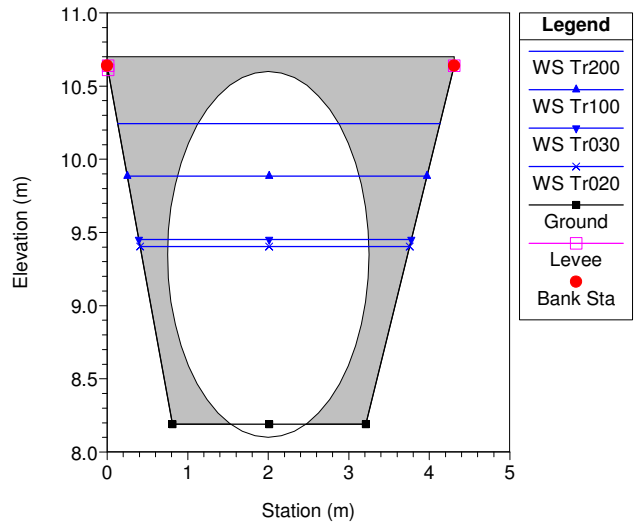
Corniaccia\_ventur-apr09 Plan: att1 4/29/2009 9:47:38 AM  
 Geom: ConiacciaB-apr09 Flow: att  
 River = Canale-c\_a Reach = c\_a1 RS = 3314.22 sez2.2



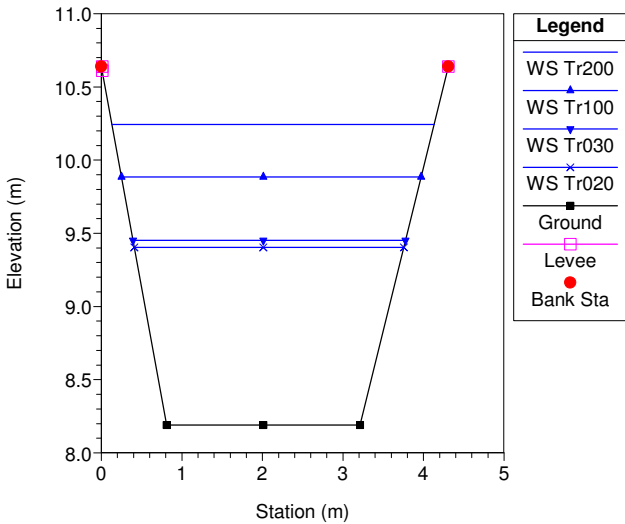
Corniaccia\_ventur-apr09 Plan: att1 4/29/2009 9:47:38 AM  
 Geom: ConiacciaB-apr09 Flow: att  
 River = Canale-c\_a Reach = c\_a1 RS = 3313.200 Culv



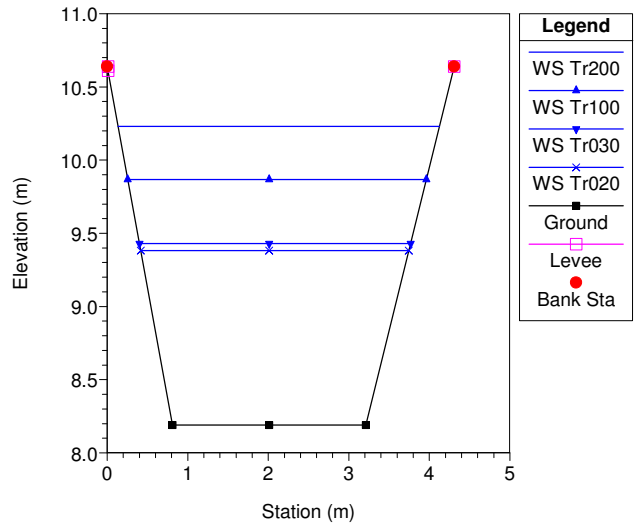
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 Geom: ConiacciaB-apr09 Flow: att  
 River = Canale-c\_a Reach = c\_a1 RS = 3313.200 Culv



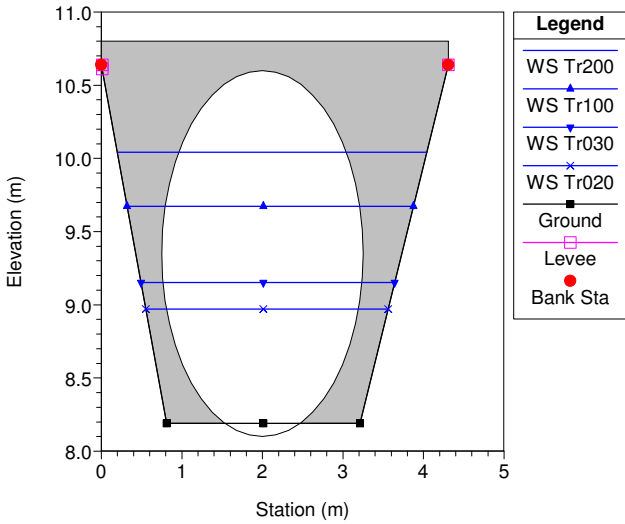
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 Geom: ConiacciaB-apr09 Flow: att  
 River = Canale-c\_a Reach = c\_a1 RS = 3313.11



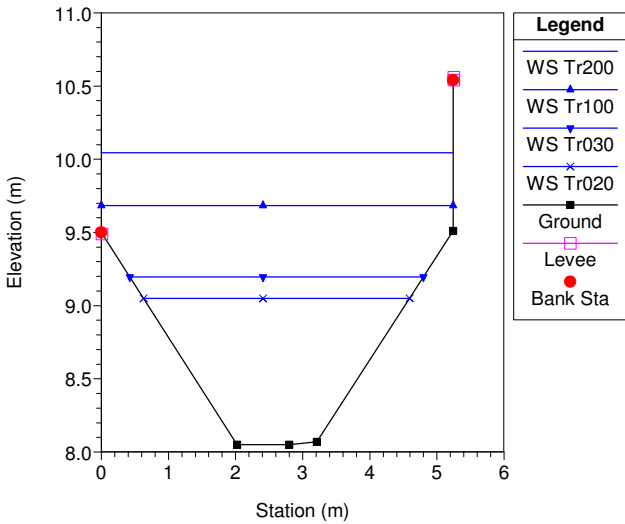
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 Geom: ConiacciaB-apr09 Flow: att  
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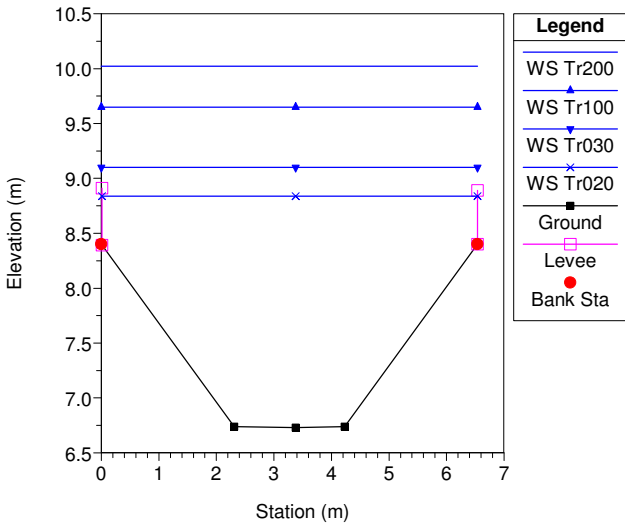
Corniaccia\_ventur-apr09 Plan: att1 4/29/2009 9:47:38 AM  
 Geom: ConiacciaB-apr09 Flow: att  
 River = Canale-c\_a Reach = c\_a1 RS = 3311.131 Culv



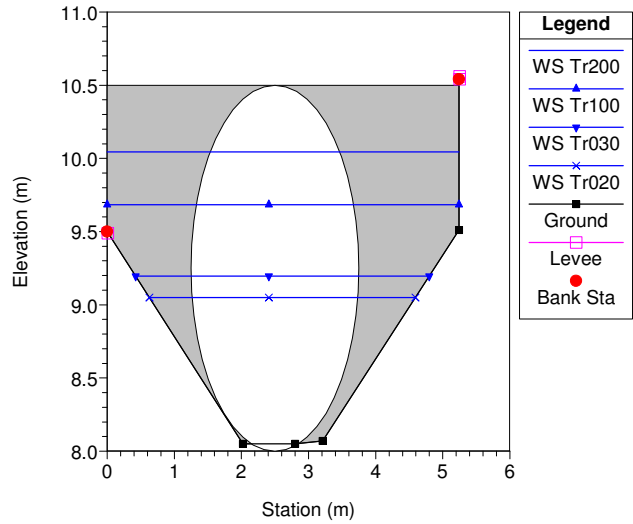
Corniaccia\_ventur-apr09 Plan: att1 4/29/2009 9:47:38 AM  
 Geom: ConiacciaB-apr09 Flow: att  
 River = Canale-c\_a Reach = c\_a1 RS = 3311.13 sez1.3



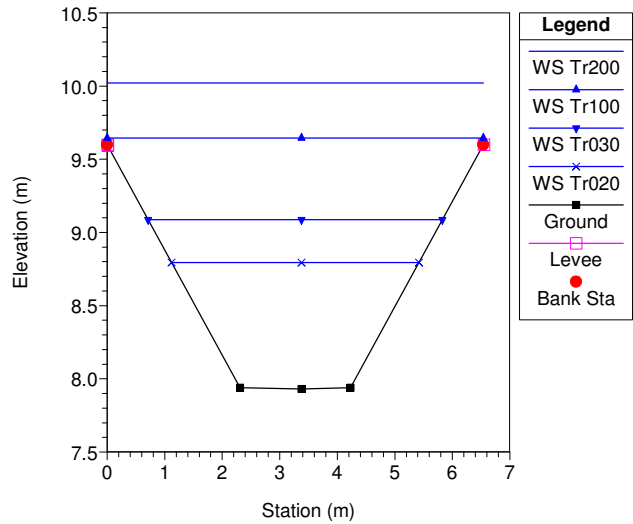
Corniaccia\_ventur-apr09 Plan: att1 4/29/2009 9:47:38 AM  
 Geom: ConiacciaB-apr09 Flow: att  
 River = Canale-c\_a Reach = c\_a1 RS = 3309 sez. 1.4



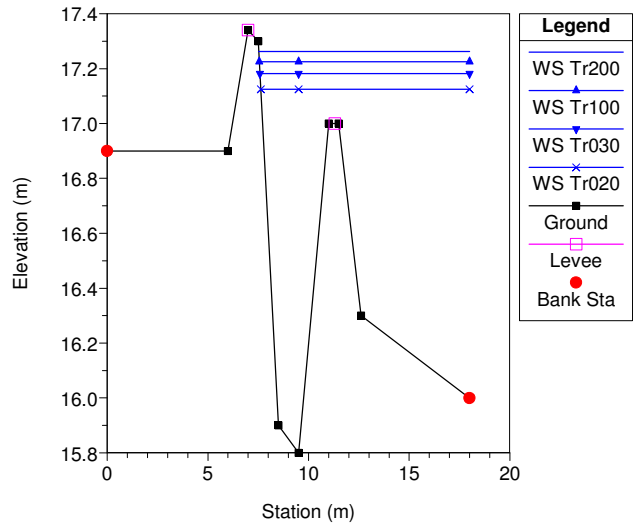
Corniaccia\_ventur-apr09 Plan: att1 4/29/2009 9:47:38 AM  
 Geom: ConiacciaB-apr09 Flow: att  
 River = Canale-c\_a Reach = c\_a1 RS = 3311.131 Culv



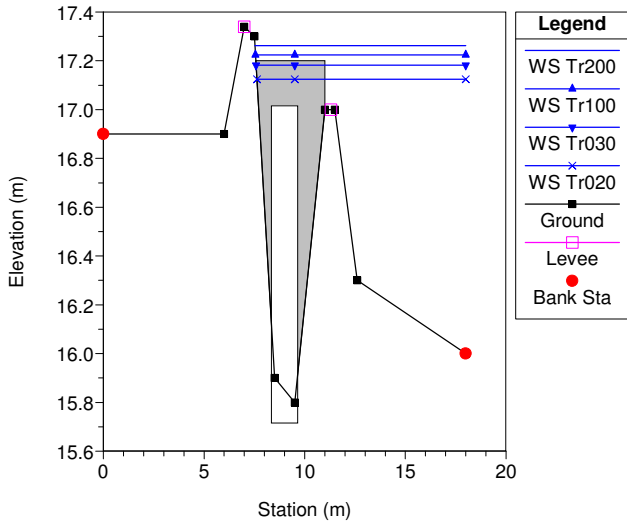
Corniaccia\_ventur-apr09 Plan: att1 4/29/2009 9:47:38 AM  
 Geom: ConiacciaB-apr09 Flow: att  
 River = Canale-c\_a Reach = c\_a1 RS = 3310.14 sez. 1.4



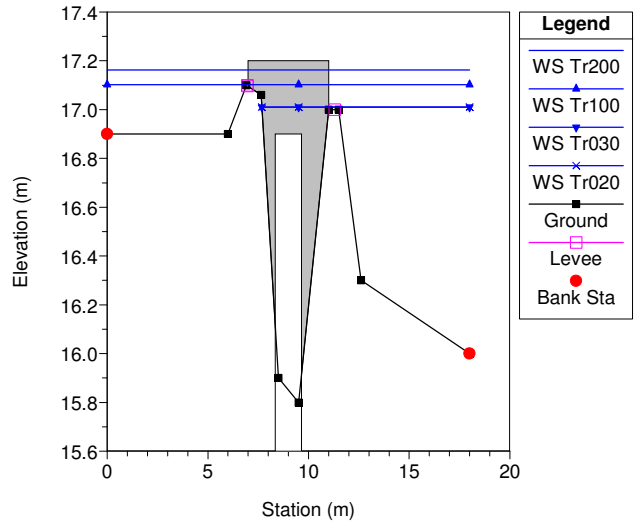
Corniaccia\_ventur-apr09 Plan: att1 4/29/2009 9:47:38 AM  
 Geom: ConiacciaB-apr09 Flow: att  
 River = Coniaccia\_B Reach = corn\_1 RS = 1529



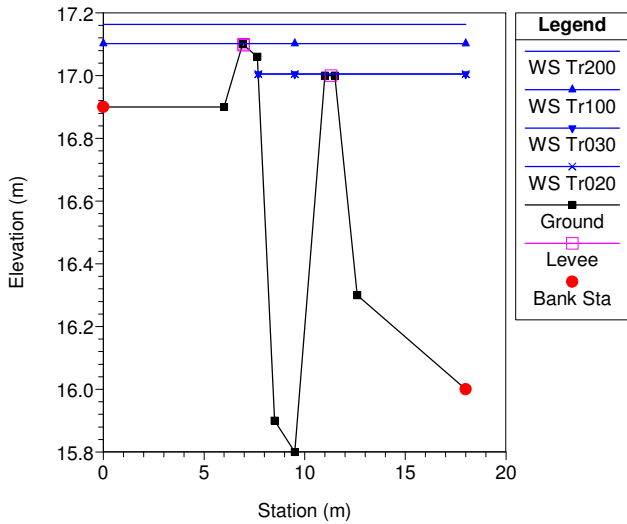
Corniaccia\_ventur-apr09 Plan: att1 4/29/2009 9:47:38 AM  
 Geom: ConiacciaB-apr09 Flow: att  
 River = Coniaccia\_B Reach = corn\_1 RS = 1528.5 Culv



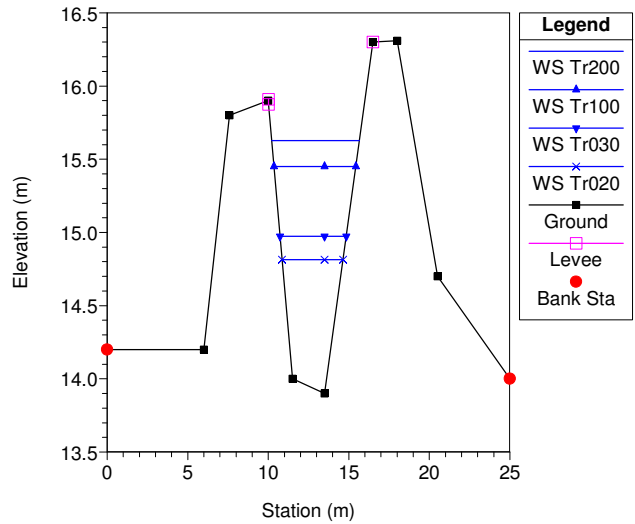
Corniaccia\_ventur-apr09 Plan: att1 4/29/2009 9:47:38 AM  
 Geom: ConiacciaB-apr09 Flow: att  
 River = Coniaccia\_B Reach = corn\_1 RS = 1528.5 Culv



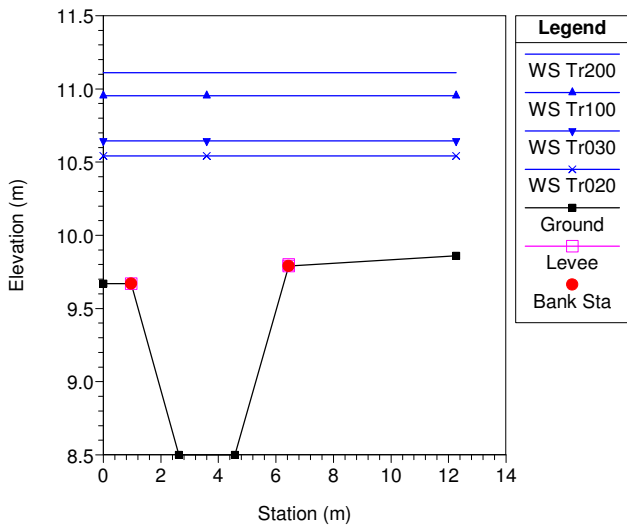
Corniaccia\_ventur-apr09 Plan: att1 4/29/2009 9:47:38 AM  
 Geom: ConiacciaB-apr09 Flow: att  
 River = Coniaccia\_B Reach = corn\_1 RS = 1528.4



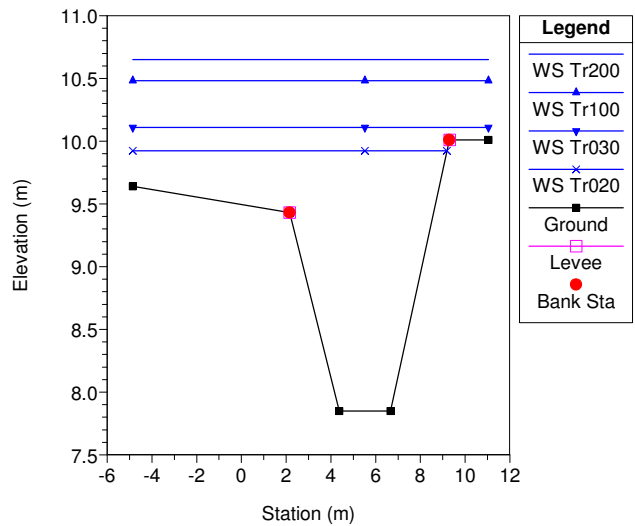
Corniaccia\_ventur-apr09 Plan: att1 4/29/2009 9:47:38 AM  
 Geom: ConiacciaB-apr09 Flow: att  
 River = Coniaccia\_B Reach = corn\_1 RS = 1528



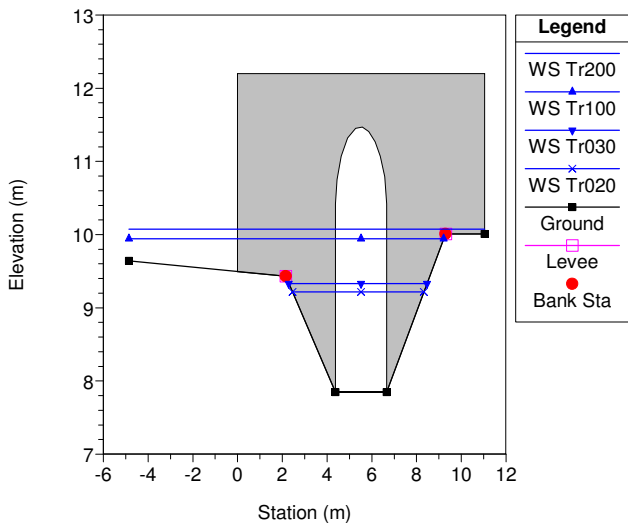
Corniaccia\_ventur-apr09 Plan: att1 4/29/2009 9:47:38 AM  
 Geom: ConiacciaB-apr09 Flow: att  
 River = Coniaccia\_B Reach = corn\_1 RS = 1522 lav\_037 Muccetti\_sez-2



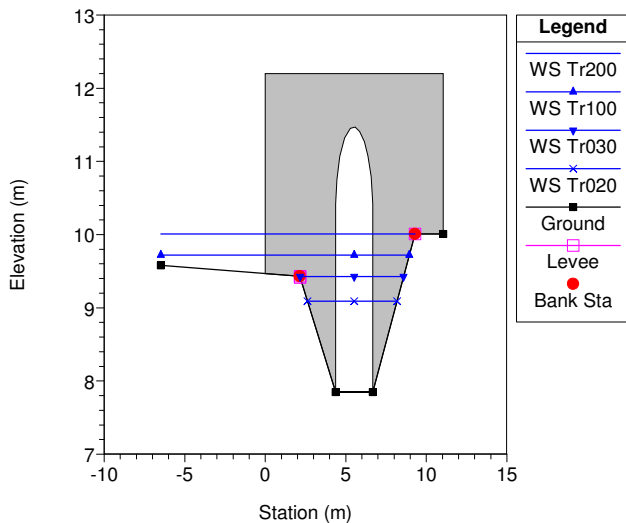
Corniaccia\_ventur-apr09 Plan: att1 4/29/2009 9:47:38 AM  
 Geom: ConiacciaB-apr09 Flow: att  
 River = Coniaccia\_B Reach = corn\_1 RS = 1521.1 lav\_037 Muccetti\_monte sez-3



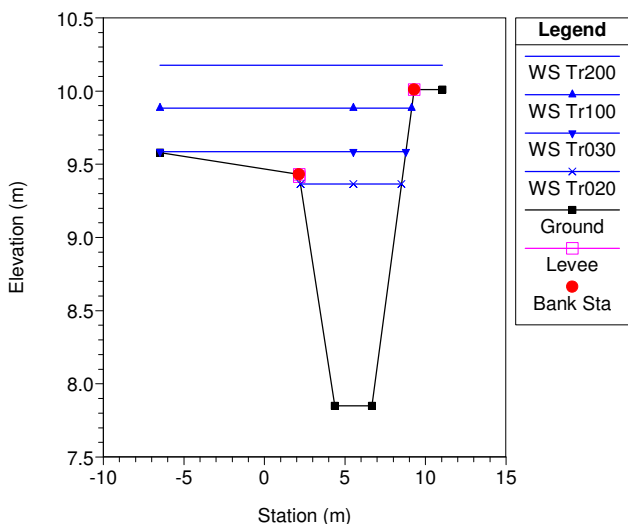
Corniaccia\_ventur-apr09 Plan: att1 4/29/2009 9:47:38 AM  
 Geom: ConiacciaB-apr09 Flow: att  
 River = Coniaccia\_B Reach = corn\_1 RS = 1521 BR



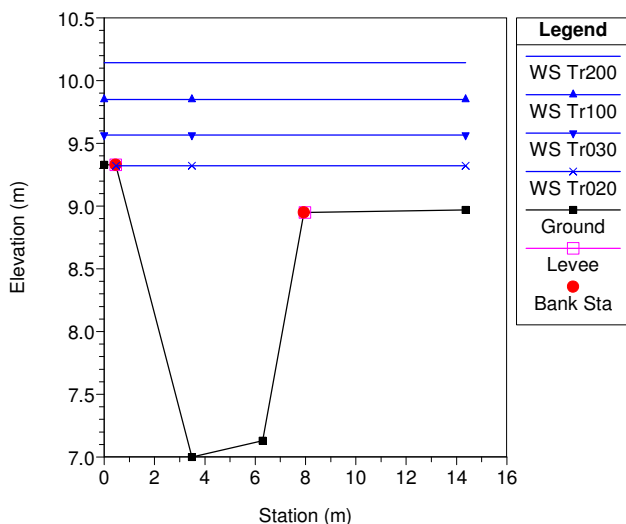
Corniaccia\_ventur-apr09 Plan: att1 4/29/2009 9:47:38 AM  
 Geom: ConiacciaB-apr09 Flow: att  
 River = Coniaccia\_B Reach = corn\_1 RS = 1521 BR



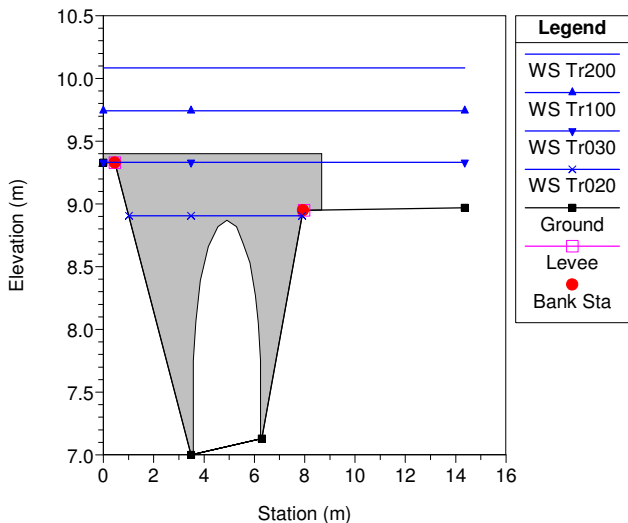
Corniaccia\_ventur-apr09 Plan: att1 4/29/2009 9:47:38 AM  
 Geom: ConiacciaB-apr09 Flow: att  
 River = Coniaccia\_B Reach = corn\_1 RS = 1520.9 lav\_037 Muccetti\_valle sez-3



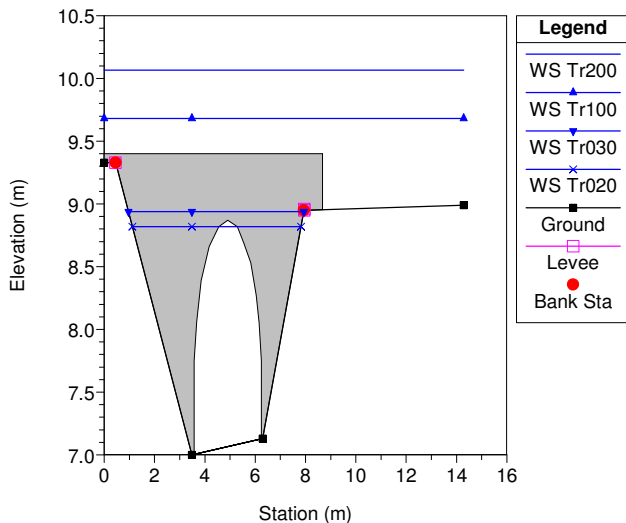
Corniaccia\_ventur-apr09 Plan: att1 4/29/2009 9:47:38 AM  
 Geom: ConiacciaB-apr09 Flow: att  
 River = Coniaccia\_B Reach = corn\_1 RS = 1520.1 lav\_037 Muccetti\_monte sez-4



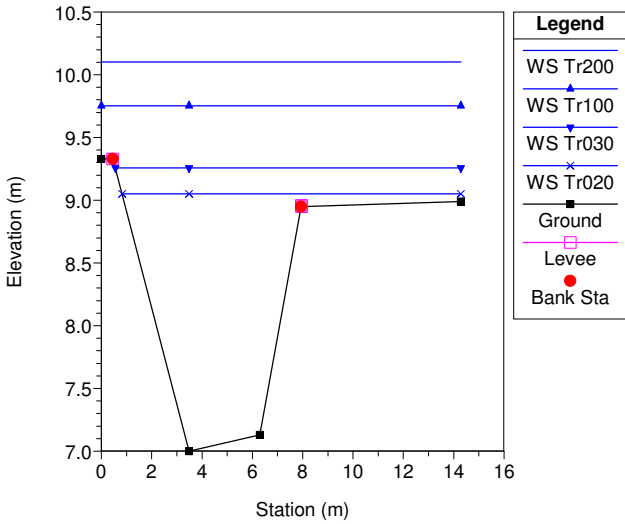
Corniaccia\_ventur-apr09 Plan: att1 4/29/2009 9:47:38 AM  
 Geom: ConiacciaB-apr09 Flow: att  
 River = Coniaccia\_B Reach = corn\_1 RS = 1520 BR



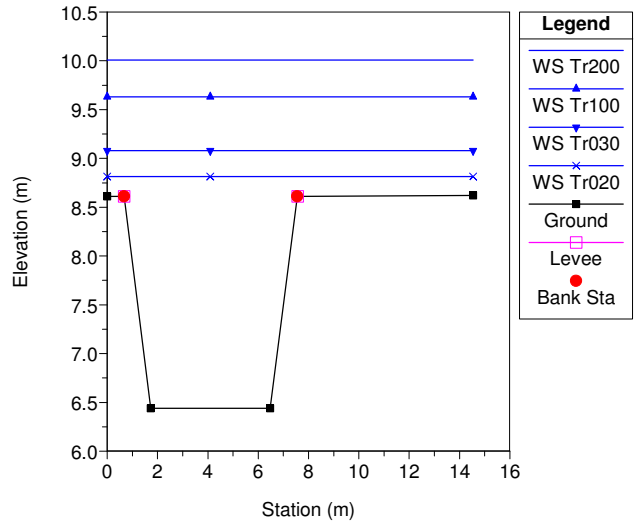
Corniaccia\_ventur-apr09 Plan: att1 4/29/2009 9:47:38 AM  
 Geom: ConiacciaB-apr09 Flow: att  
 River = Coniaccia\_B Reach = corn\_1 RS = 1520 BR



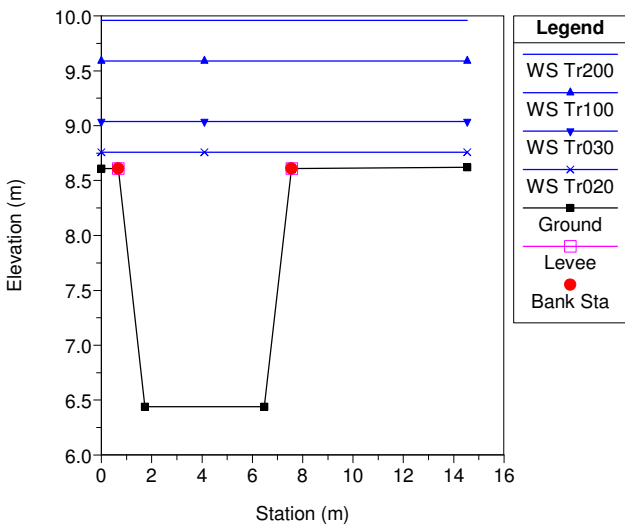
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 Geom: ConiacciaB-apr09 Flow: att  
 River = Coniaccia\_B Reach = corn\_1 RS = 1519.9 lav\_037 Muccetti\_valle sez-4



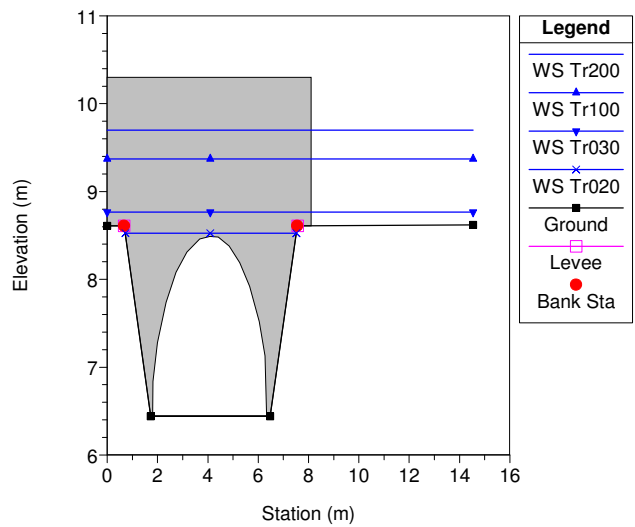
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 Geom: ConiacciaB-apr09 Flow: att  
 River = Coniaccia\_B Reach = corn\_1 RS = 1519.11 lav\_037 Muccetti\_monte sez-5



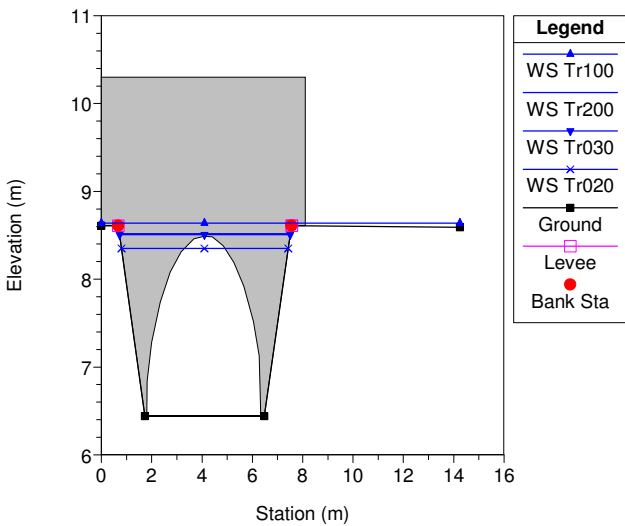
Corniaccia\_ventur-apr09 Plan: att1 4/29/2009 9:47:38 AM  
 Geom: ConiacciaB-apr09 Flow: att  
 River = Coniaccia\_B Reach = corn\_3 RS = 1519.1 lav\_037 Muccetti\_monte sez-5



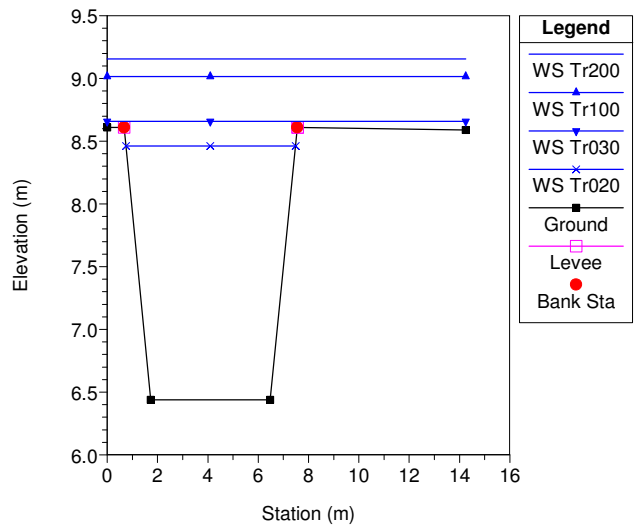
Corniaccia\_ventur-apr09 Plan: att1 4/29/2009 9:47:38 AM  
 Geom: ConiacciaB-apr09 Flow: att  
 River = Coniaccia\_B Reach = corn\_3 RS = 1519 BR



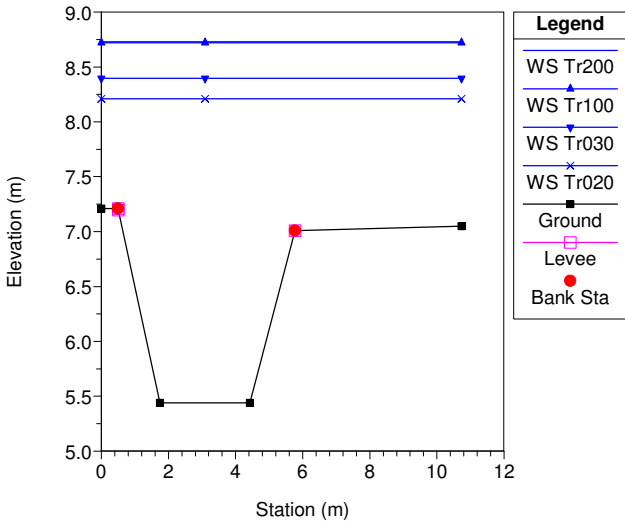
Corniaccia\_ventur-apr09 Plan: att1 4/29/2009 9:47:38 AM  
 Geom: ConiacciaB-apr09 Flow: att  
 River = Coniaccia\_B Reach = corn\_3 RS = 1519 BR



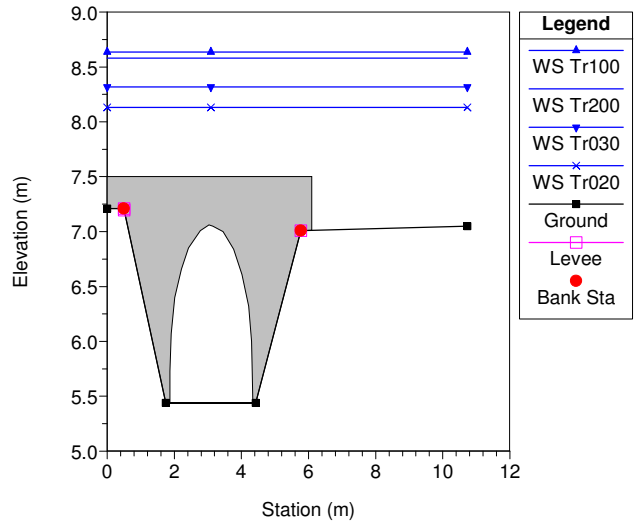
Corniaccia\_ventur-apr09 Plan: att1 4/29/2009 9:47:38 AM  
 Geom: ConiacciaB-apr09 Flow: att  
 River = Coniaccia\_B Reach = corn\_3 RS = 1518.9 lav\_037 Muccetti\_valle sez-5



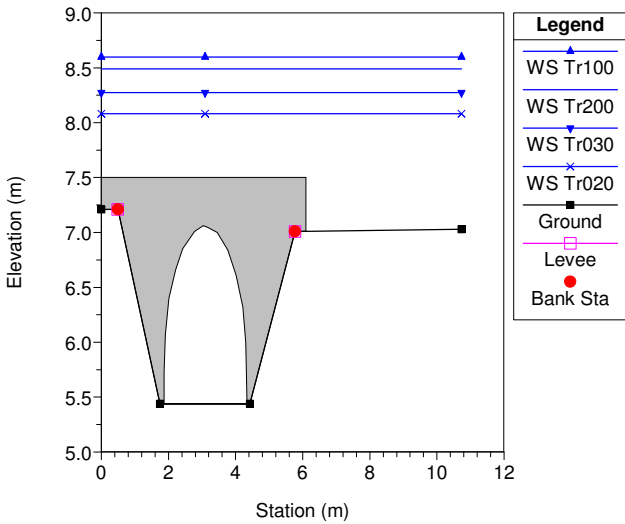
Corniaccia\_ventur-apr09 Plan: att1 4/29/2009 9:47:38 AM  
 Geom: ConiacciaB-apr09 Flow: att  
 River = Coniaccia\_B Reach = corn\_2 RS = 1518.1 lav\_037 Muccetti\_monte sez-6



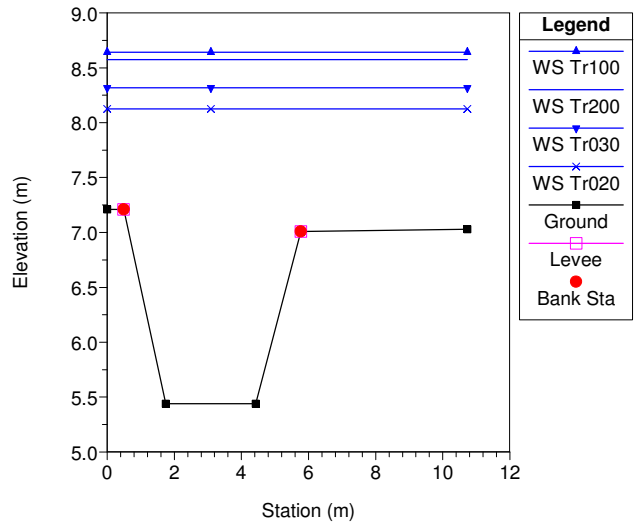
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 Geom: ConiacciaB-apr09 Flow: att  
 River = Coniaccia\_B Reach = corn\_2 RS = 1518 BR



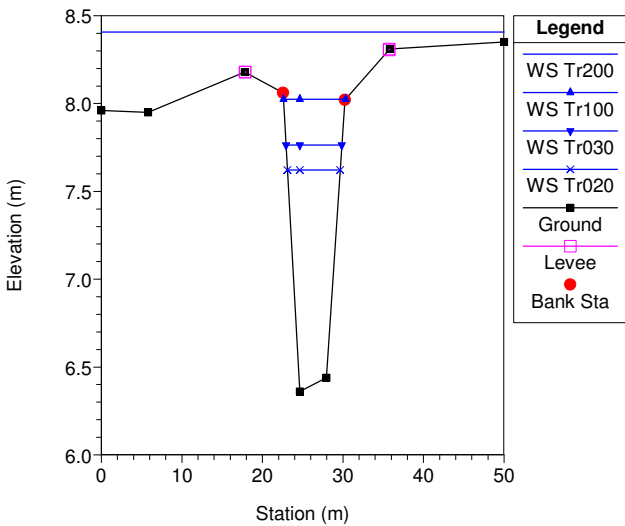
Corniaccia\_ventur-apr09 Plan: att1 4/29/2009 9:47:38 AM  
 Geom: ConiacciaB-apr09 Flow: att  
 River = Coniaccia\_B Reach = corn\_2 RS = 1518 BR



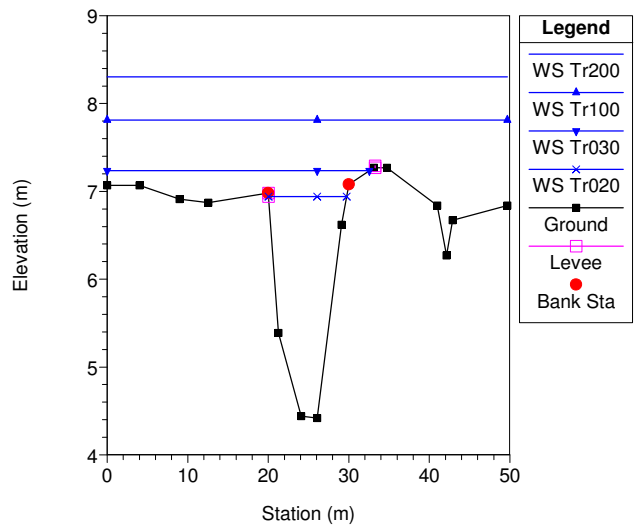
Corniaccia\_ventur-apr09 Plan: att1 4/29/2009 9:47:38 AM  
 Geom: ConiacciaB-apr09 Flow: att  
 River = Coniaccia\_B Reach = corn\_2 RS = 1517.9 lav\_037 Muccetti\_valle sez-6



Corniaccia\_ventur-apr09 Plan: att1 4/29/2009 9:47:38 AM  
 Geom: ConiacciaB-apr09 Flow: att  
 River = Coniaccia\_B Reach = corn\_2 RS = 1517 lav30\_studio Prisma\_s23



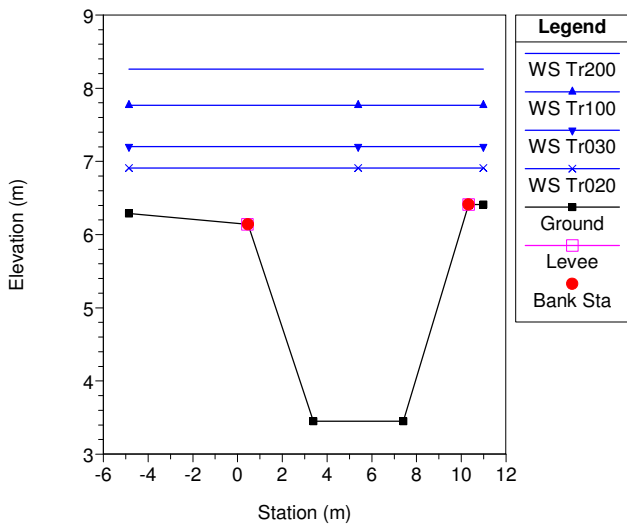
Corniaccia\_ventur-apr09 Plan: att1 4/29/2009 9:47:38 AM  
 Geom: ConiacciaB-apr09 Flow: att  
 River = Coniaccia\_B Reach = corn\_2 RS = 1516 lav30\_studio Prisma\_s16



Corniaccia\_ventur-apr09 Plan: att1 4/29/2009 9:47:38 AM

Geom: ConiacciaB-apr09 Flow: att

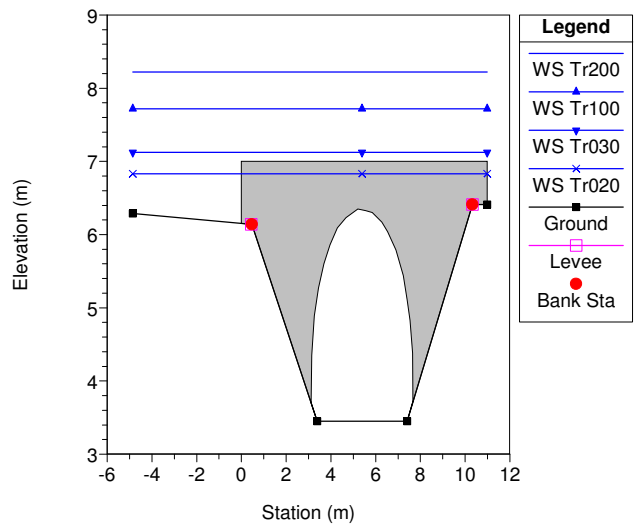
River = Coniaccia\_B Reach = corn\_2 RS = 1515.1 lav\_037 Muccetti\_monte sez-8



Corniaccia\_ventur-apr09 Plan: att1 4/29/2009 9:47:38 AM

Geom: ConiacciaB-apr09 Flow: att

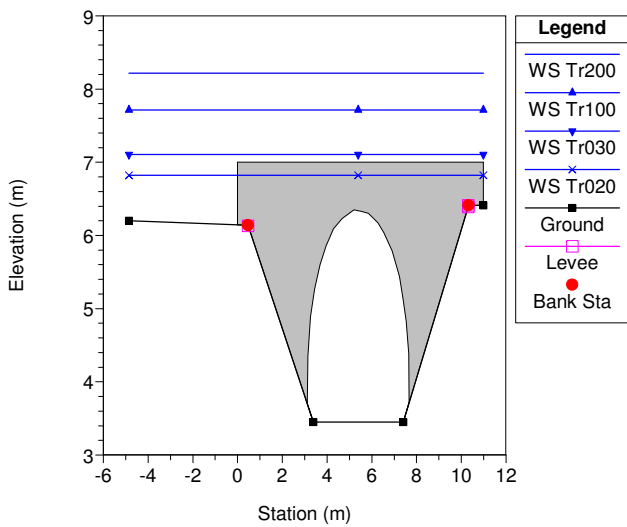
River = Coniaccia\_B Reach = corn\_2 RS = 1515 BR



Corniaccia\_ventur-apr09 Plan: att1 4/29/2009 9:47:38 AM

Geom: ConiacciaB-apr09 Flow: att

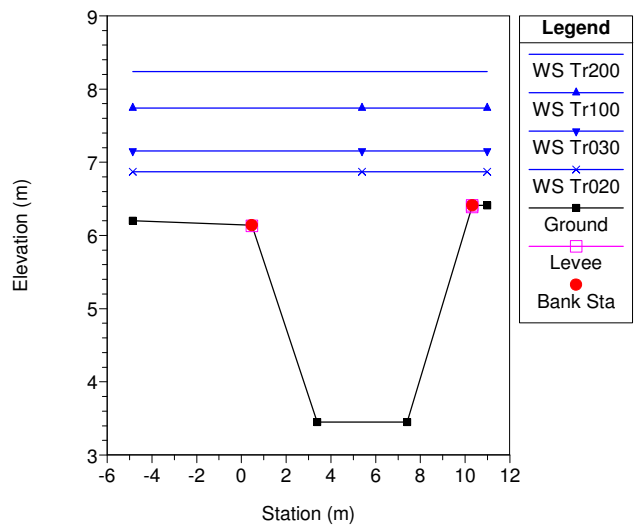
River = Coniaccia\_B Reach = corn\_2 RS = 1515 BR



Corniaccia\_ventur-apr09 Plan: att1 4/29/2009 9:47:38 AM

Geom: ConiacciaB-apr09 Flow: att

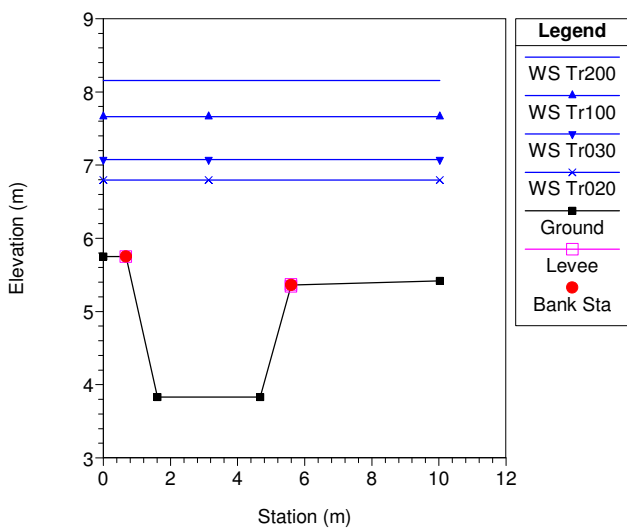
River = Coniaccia\_B Reach = corn\_2 RS = 1514.9 lav\_037 Muccetti\_valle sez-8



Corniaccia\_ventur-apr09 Plan: att1 4/29/2009 9:47:38 AM

Geom: ConiacciaB-apr09 Flow: att

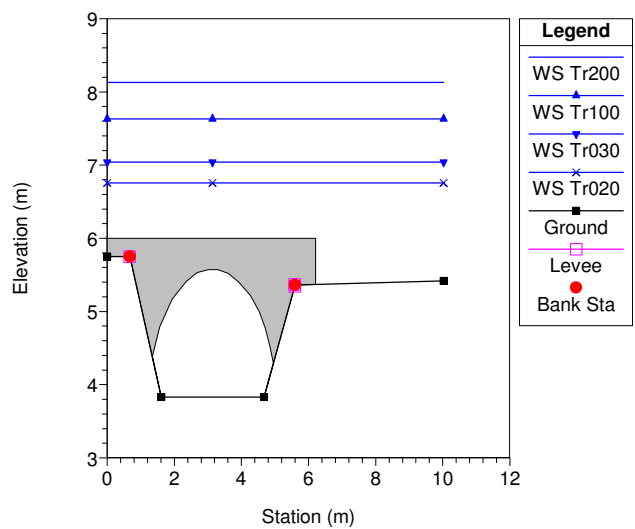
River = Coniaccia\_B Reach = corn\_2 RS = 1514.1 lav\_037 Muccetti\_monte sez-8



Corniaccia\_ventur-apr09 Plan: att1 4/29/2009 9:47:38 AM

Geom: ConiacciaB-apr09 Flow: att

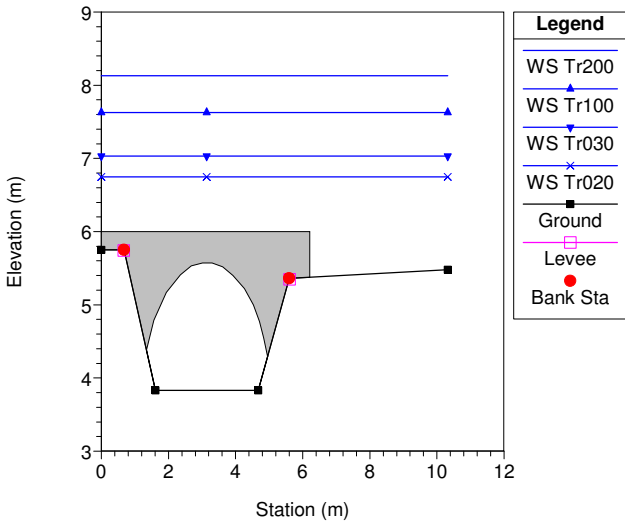
River = Coniaccia\_B Reach = corn\_2 RS = 1514 BR



Corniaccia\_ventur-apr09 Plan: att1 4/29/2009 9:47:38 AM

Geom: ConiacciaB-apr09 Flow: att

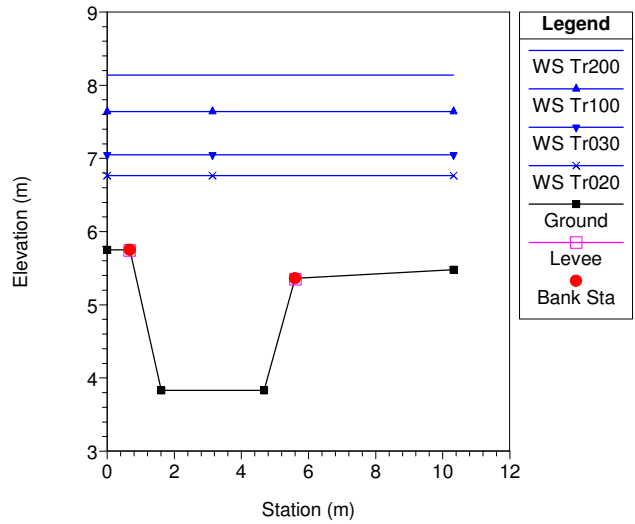
River = Coniaccia\_B Reach = corn\_2 RS = 1514 BR



Corniaccia\_ventur-apr09 Plan: att1 4/29/2009 9:47:38 AM

Geom: ConiacciaB-apr09 Flow: att

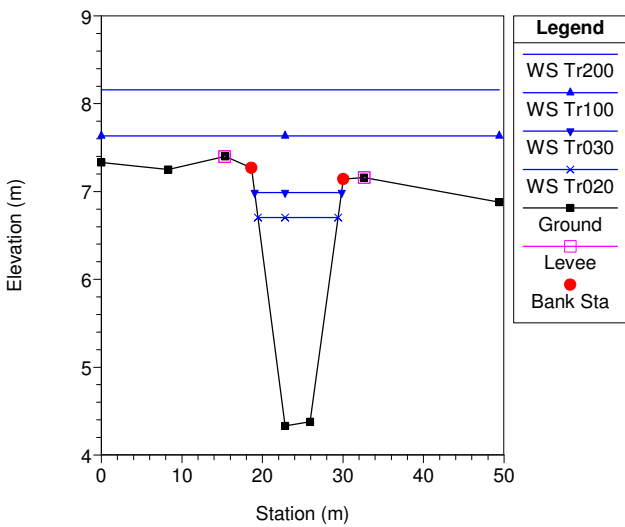
River = Coniaccia\_B Reach = corn\_2 RS = 1513.9 lav\_037 Muccetti\_valle sez-9



Corniaccia\_ventur-apr09 Plan: att1 4/29/2009 9:47:38 AM

Geom: ConiacciaB-apr09 Flow: att

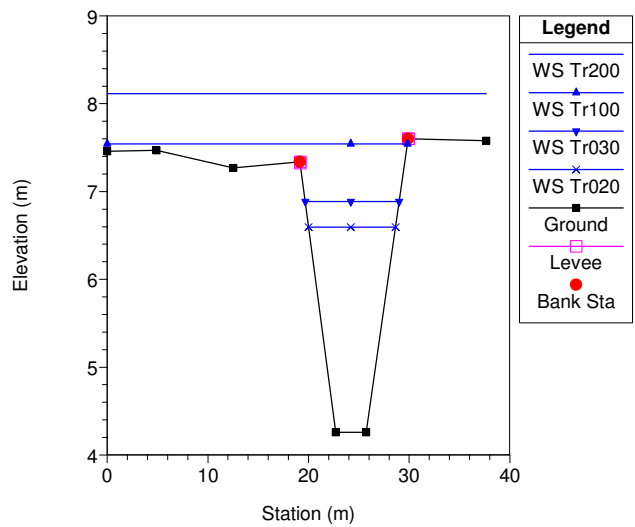
River = Coniaccia\_B Reach = corn\_2 RS = 1513 lav30\_studio Prisma\_s6



Corniaccia\_ventur-apr09 Plan: att1 4/29/2009 9:47:38 AM

Geom: ConiacciaB-apr09 Flow: att

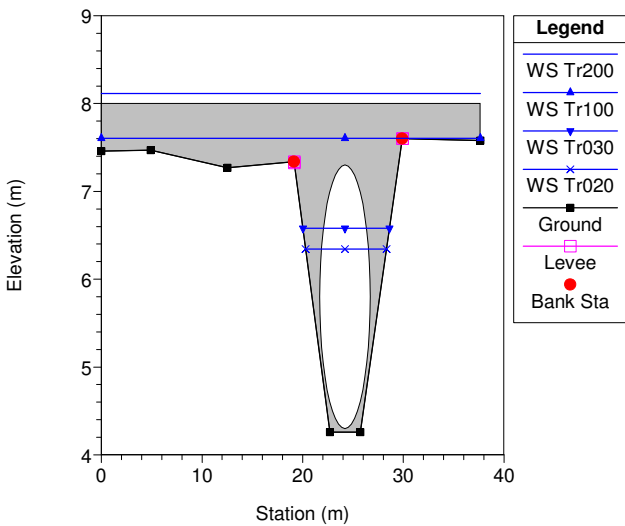
River = Coniaccia\_B Reach = corn\_2 RS = 1512 lav30\_studio Prisma\_s3



Corniaccia\_ventur-apr09 Plan: att1 4/29/2009 9:47:38 AM

Geom: ConiacciaB-apr09 Flow: att

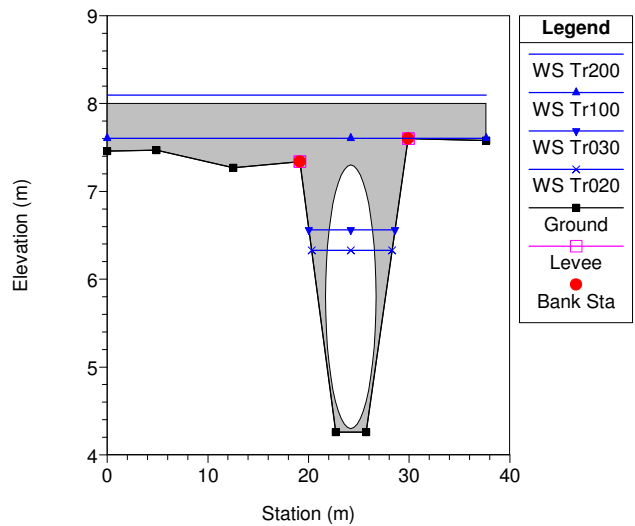
River = Coniaccia\_B Reach = corn\_2 RS = 1511.5 Culv



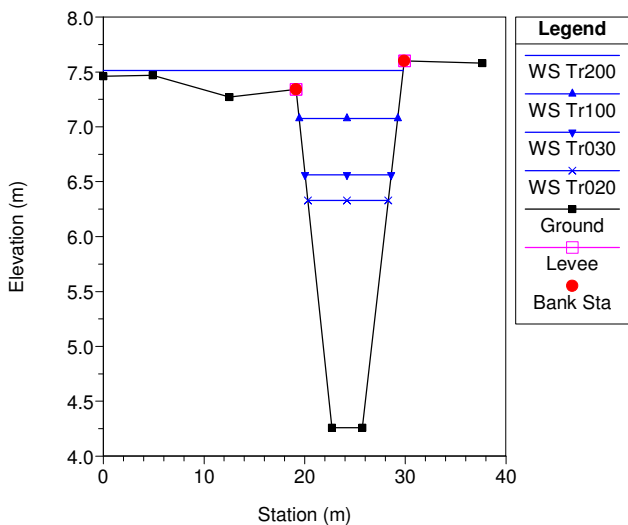
Corniaccia\_ventur-apr09 Plan: att1 4/29/2009 9:47:38 AM

Geom: ConiacciaB-apr09 Flow: att

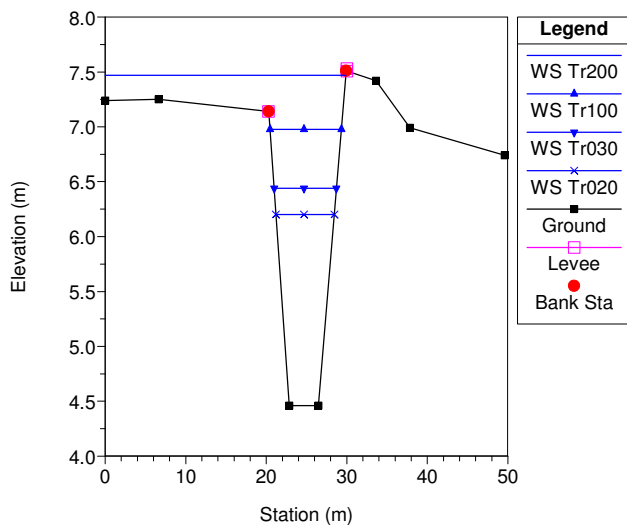
River = Coniaccia\_B Reach = corn\_2 RS = 1511.5 Culv



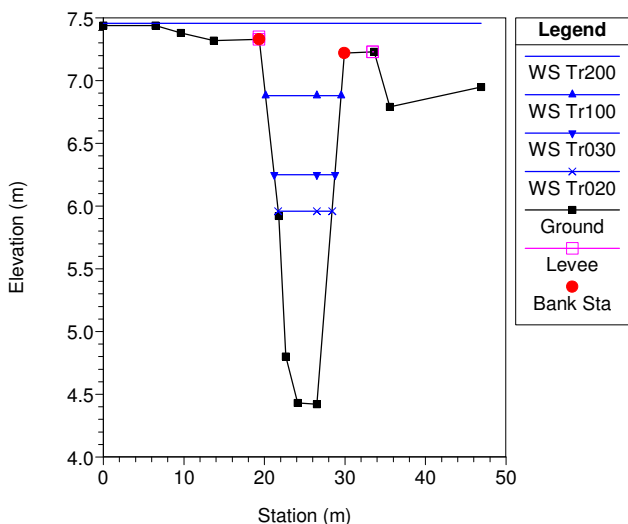
Corniaccia\_ventur-apr09 Plan: att1 4/29/2009 9:47:38 AM  
 Geom: ConiacciaB-apr09 Flow: att  
 River = Coniaccia\_B Reach = corn\_2 RS = 1511 lav30\_studio Prisma\_s3



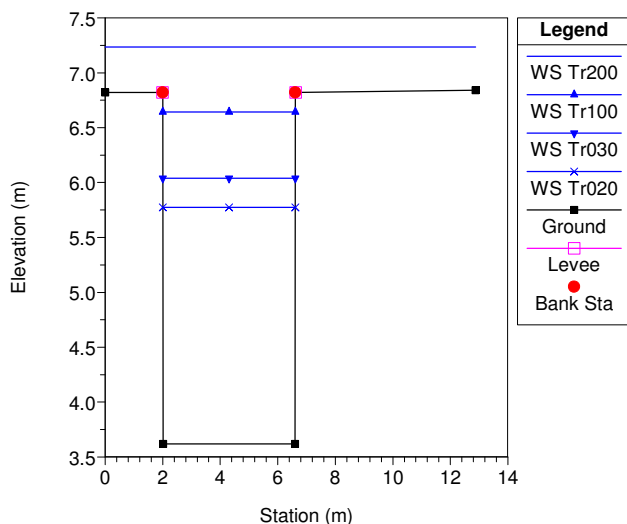
Corniaccia\_ventur-apr09 Plan: att1 4/29/2009 9:47:38 AM  
 Geom: ConiacciaB-apr09 Flow: att  
 River = Coniaccia\_B Reach = corn\_2 RS = 1510 lav30\_studio Prisma\_s2



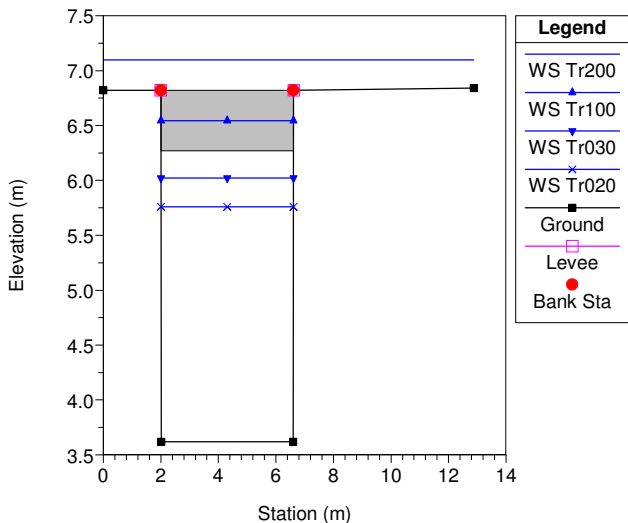
Corniaccia\_ventur-apr09 Plan: att1 4/29/2009 9:47:38 AM  
 Geom: ConiacciaB-apr09 Flow: att  
 River = Coniaccia\_B Reach = corn\_2 RS = 1509 lav30\_studio Prisma\_s1



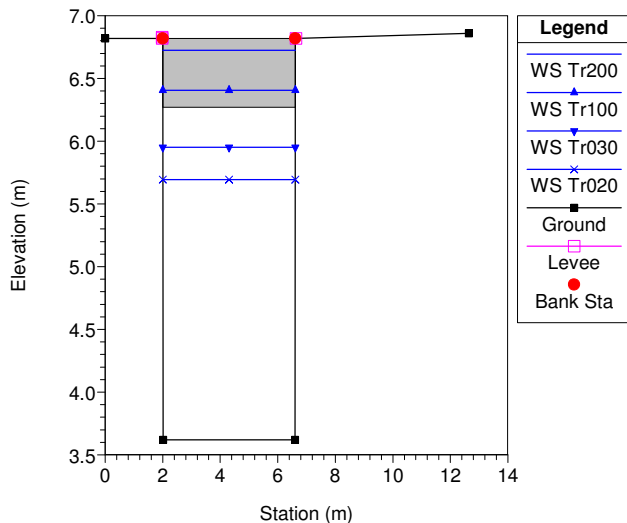
Corniaccia\_ventur-apr09 Plan: att1 4/29/2009 9:47:38 AM  
 Geom: ConiacciaB-apr09 Flow: att  
 River = Coniaccia\_B Reach = corn\_2 RS = 1508.1 lav\_037 Muccetti\_monte sez-10



Corniaccia\_ventur-apr09 Plan: att1 4/29/2009 9:47:38 AM  
 Geom: ConiacciaB-apr09 Flow: att  
 River = Coniaccia\_B Reach = corn\_2 RS = 1508 BR



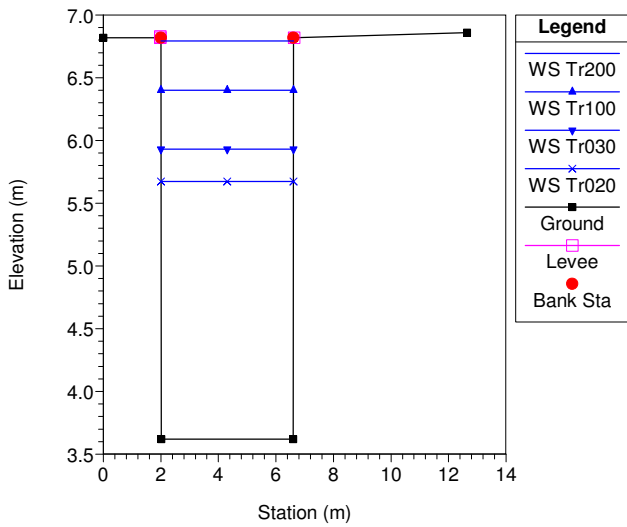
Corniaccia\_ventur-apr09 Plan: att1 4/29/2009 9:47:38 AM  
 Geom: ConiacciaB-apr09 Flow: att  
 River = Coniaccia\_B Reach = corn\_2 RS = 1508 BR



Corniaccia\_ventur-apr09 Plan: att1 4/29/2009 9:47:38 AM

Geom: ConiacciaB-apr09 Flow: att

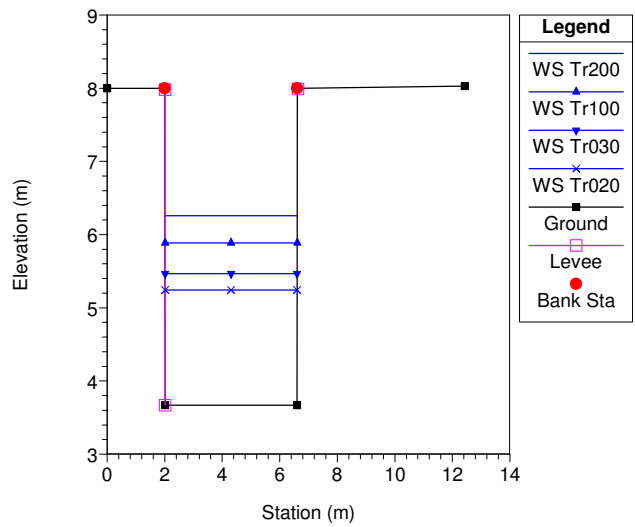
River = Coniaccia\_B Reach = corn\_2 RS = 1507.9 lav\_037 Muccetti\_valle sez-10



Corniaccia\_ventur-apr09 Plan: att1 4/29/2009 9:47:38 AM

Geom: ConiacciaB-apr09 Flow: att

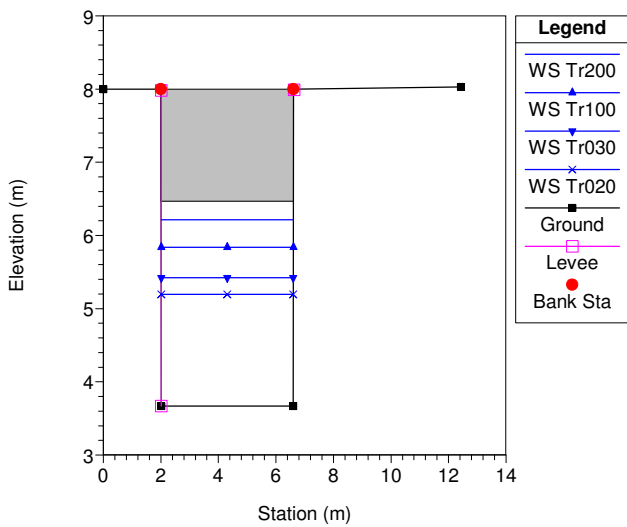
River = Coniaccia\_B Reach = corn\_2 RS = 1507.1 lav\_037 Muccetti\_monte sez-11



Corniaccia\_ventur-apr09 Plan: att1 4/29/2009 9:47:38 AM

Geom: ConiacciaB-apr09 Flow: att

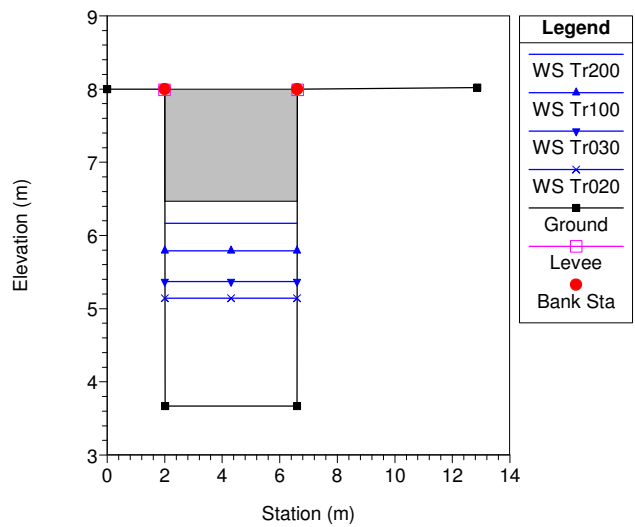
River = Coniaccia\_B Reach = corn\_2 RS = 1507 BR



Corniaccia\_ventur-apr09 Plan: att1 4/29/2009 9:47:38 AM

Geom: ConiacciaB-apr09 Flow: att

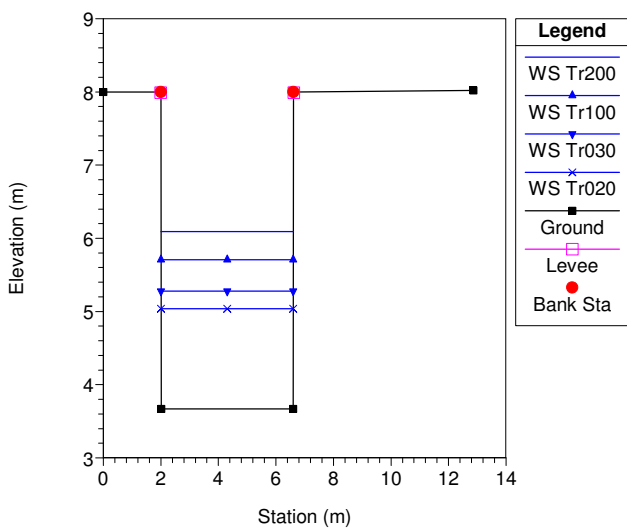
River = Coniaccia\_B Reach = corn\_2 RS = 1507 BR



Corniaccia\_ventur-apr09 Plan: att1 4/29/2009 9:47:38 AM

Geom: ConiacciaB-apr09 Flow: att

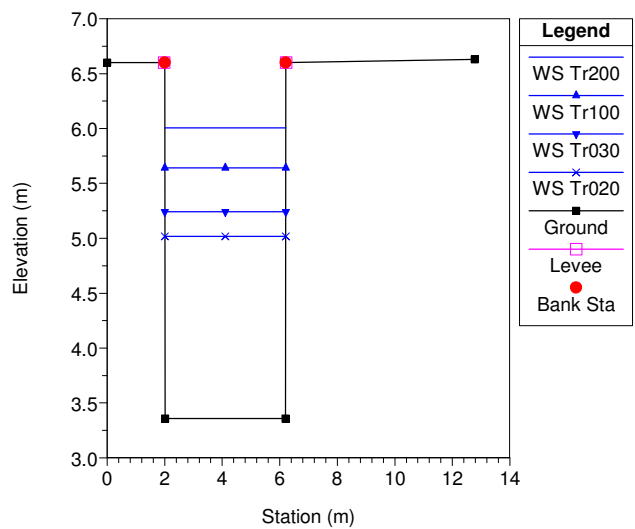
River = Coniaccia\_B Reach = corn\_2 RS = 1506.9 lav\_037 Muccetti\_valle sez-11



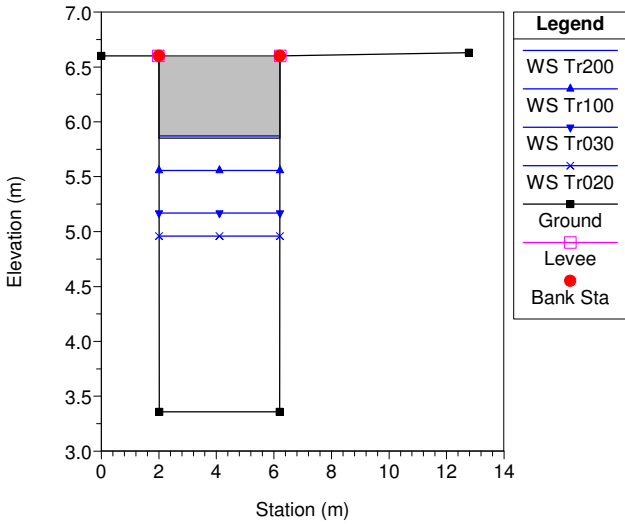
Corniaccia\_ventur-apr09 Plan: att1 4/29/2009 9:47:38 AM

Geom: ConiacciaB-apr09 Flow: att

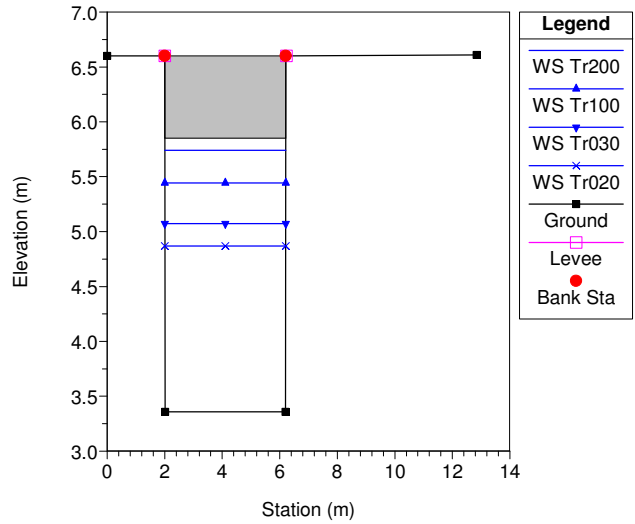
River = Coniaccia\_B Reach = corn\_2 RS = 1506.1 lav\_037 Muccetti\_monte sez-12



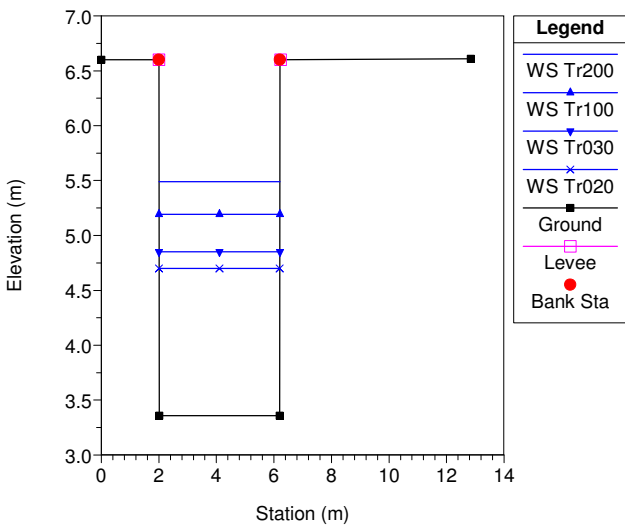
Corniaccia\_ventur-apr09 Plan: att1 4/29/2009 9:47:38 AM  
 Geom: ConiacciaB-apr09 Flow: att  
 River = Coniaccia\_B Reach = corn\_2 RS = 1506 BR



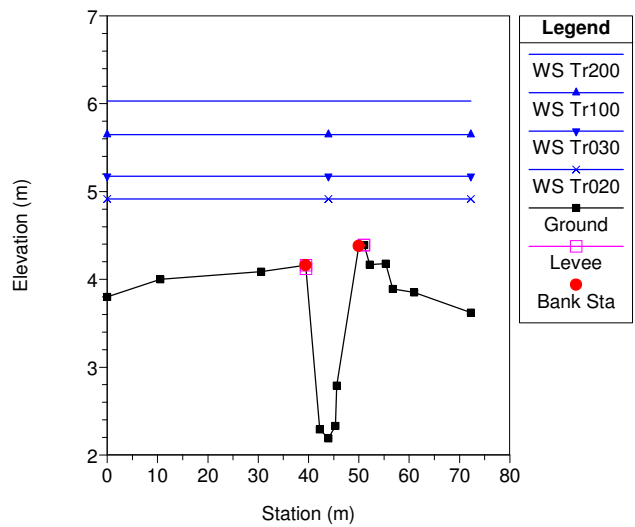
Corniaccia\_ventur-apr09 Plan: att1 4/29/2009 9:47:38 AM  
 Geom: ConiacciaB-apr09 Flow: att  
 River = Coniaccia\_B Reach = corn\_2 RS = 1506 BR



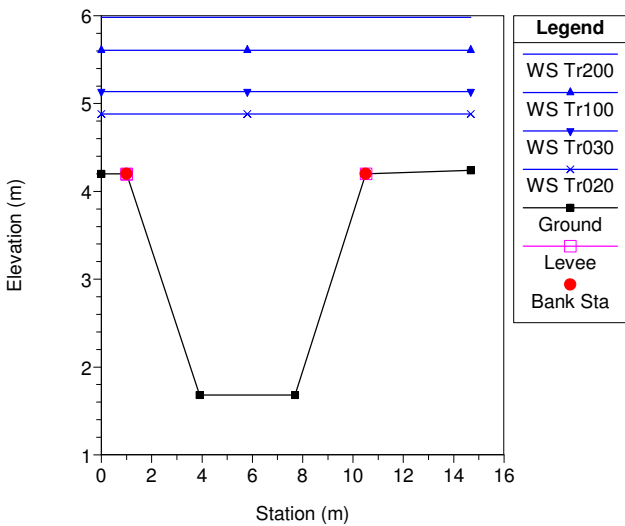
Corniaccia\_ventur-apr09 Plan: att1 4/29/2009 9:47:38 AM  
 Geom: ConiacciaB-apr09 Flow: att  
 River = Coniaccia\_B Reach = corn\_2 RS = 1505.9 lav\_037 Muccetti\_valle sez-12



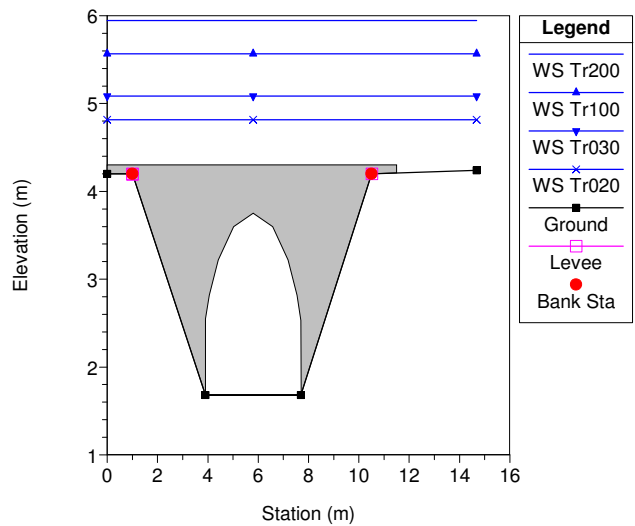
Corniaccia\_ventur-apr09 Plan: att1 4/29/2009 9:47:38 AM  
 Geom: ConiacciaB-apr09 Flow: att  
 River = Coniaccia\_B Reach = corn\_2 RS = 1502 lav036\_Muccetti\_sez\_12



Corniaccia\_ventur-apr09 Plan: att1 4/29/2009 9:47:38 AM  
 Geom: ConiacciaB-apr09 Flow: att  
 River = Coniaccia\_B Reach = corn\_2 RS = 1501.1 lav\_037\_Muccetti\_valle sez-13



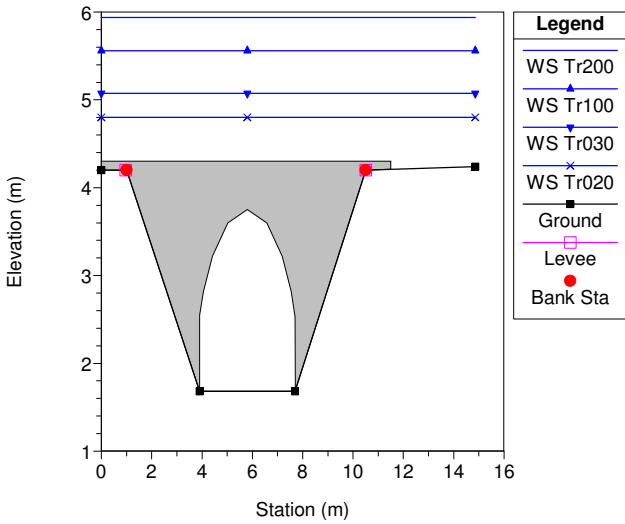
Corniaccia\_ventur-apr09 Plan: att1 4/29/2009 9:47:38 AM  
 Geom: ConiacciaB-apr09 Flow: att  
 River = Coniaccia\_B Reach = corn\_2 RS = 1501 BR



Corniaccia\_ventur-apr09 Plan: att1 4/29/2009 9:47:38 AM

Geom: ConiacciaB-apr09 Flow: att

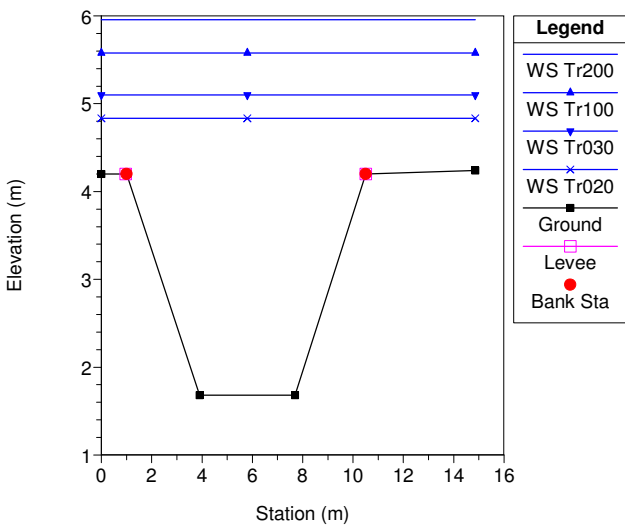
River = Coniaccia\_B Reach = corn\_2 RS = 1501 BR



Corniaccia\_ventur-apr09 Plan: att1 4/29/2009 9:47:38 AM

Geom: ConiacciaB-apr09 Flow: att

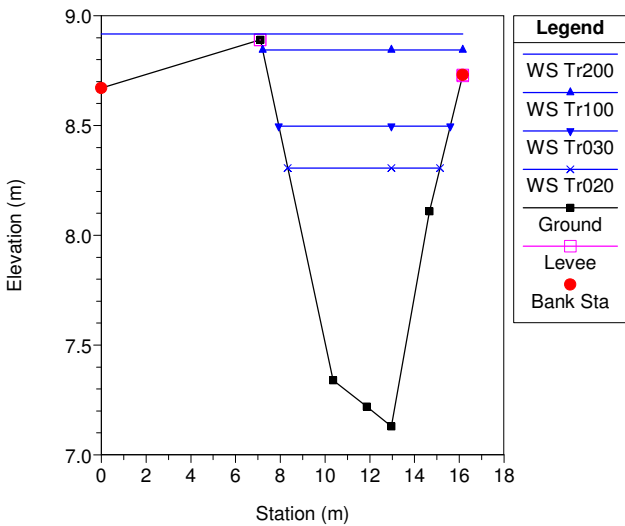
River = Coniaccia\_B Reach = corn\_2 RS = 1500.8 lav\_037\_Muccetti\_monte sez-13



Corniaccia\_ventur-apr09 Plan: att1 4/29/2009 9:47:38 AM

Geom: ConiacciaB-apr09 Flow: att

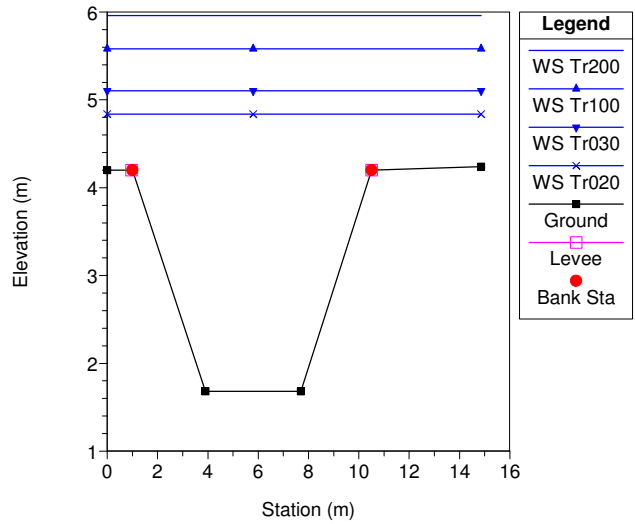
River = Pantalla Reach = pant\_1 RS = 3210.31 sez.3.1



Corniaccia\_ventur-apr09 Plan: att1 4/29/2009 9:47:38 AM

Geom: ConiacciaB-apr09 Flow: att

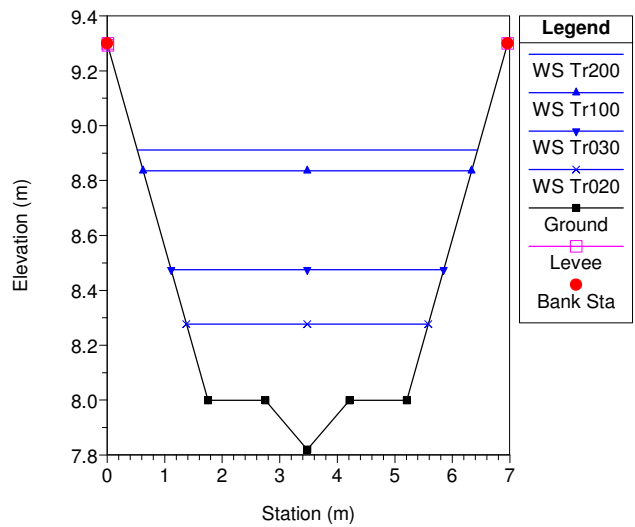
River = Coniaccia\_B Reach = corn\_2 RS = 1500.9 lav\_037\_Muccetti\_monte sez-13



Corniaccia\_ventur-apr09 Plan: att1 4/29/2009 9:47:38 AM

Geom: ConiacciaB-apr09 Flow: att

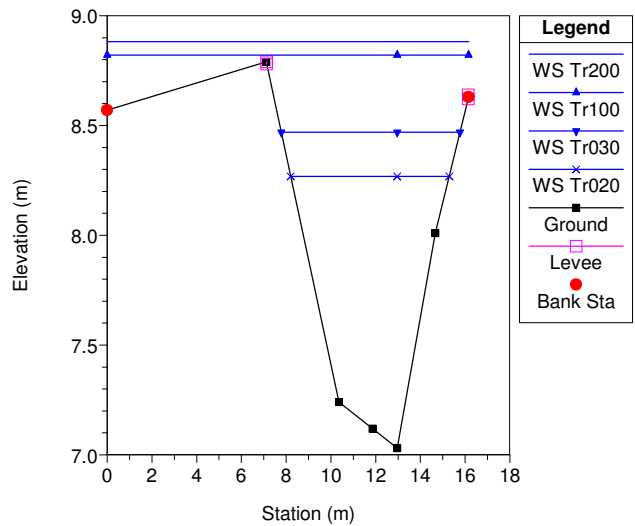
River = Pantalla Reach = pant\_1 RS = 3211.31



Corniaccia\_ventur-apr09 Plan: att1 4/29/2009 9:47:38 AM

Geom: ConiacciaB-apr09 Flow: att

River = Pantalla Reach = pant\_1 RS = 3209 sez.3.1



River	Reach	River Sta	Profile	Q Total (m <sup>3</sup> /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 <sup>2</sup> )	Top Width (m)	Froude # Chl
Pantalla	pant_1	3211.31	Tr200	4.10	7.82	8.91	8.46	8.96	0.001331	0.93	4.40	5.91	0.34
Pantalla	pant_1	3211.31	Tr100	3.30	7.82	8.84	8.40	8.87	0.001161	0.83	3.96	5.71	0.32
Pantalla	pant_1	3211.31	Tr030	2.40	7.82	8.47	8.32	8.54	0.003970	1.15	2.08	4.74	0.56
Pantalla	pant_1	3211.31	Tr020	2.00	7.82	8.28	8.28	8.42	0.014487	1.67	1.19	4.21	1.00
Pantalla	pant_1	3210.31	Tr200	4.10	7.13	8.92	7.79	8.92	0.000235	0.38	10.92	16.16	0.15
Pantalla	pant_1	3210.31	Tr100	3.30	7.13	8.84	7.72	8.85	0.000123	0.36	9.28	8.95	0.11
Pantalla	pant_1	3210.31	Tr030	2.40	7.13	8.50	7.63	8.50	0.000181	0.38	6.37	7.67	0.13
Pantalla	pant_1	3210.31	Tr020	2.00	7.13	8.31	7.59	8.31	0.000242	0.40	4.99	6.81	0.15
Pantalla	pant_1	3209	Tr200	4.10	7.03	8.88	7.69	8.89	0.000176	0.34	11.96	16.16	0.13
Pantalla	pant_1	3209	Tr100	3.30	7.03	8.82	7.62	8.83	0.000150	0.30	10.97	16.16	0.12
Pantalla	pant_1	3209	Tr030	2.40	7.03	8.47	7.53	8.47	0.000145	0.35	6.93	7.99	0.12
Pantalla	pant_1	3209	Tr020	2.00	7.03	8.27	7.49	8.28	0.000194	0.37	5.42	7.09	0.13
Coniaccia_B	corn_1	1529	Tr200	21.00	15.80	17.26	17.03	17.48	0.005337	2.06	10.19	10.47	0.67
Coniaccia_B	corn_1	1529	Tr100	18.00	15.80	17.22	17.00	17.40	0.004442	1.84	9.79	10.45	0.61
Coniaccia_B	corn_1	1529	Tr030	13.00	15.80	17.18	17.00	17.28	0.002680	1.39	9.34	10.42	0.47
Coniaccia_B	corn_1	1529	Tr020	11.50	15.80	17.13	17.00	17.21	0.002574	1.31	8.75	10.37	0.46
Coniaccia_B	corn_1	1528.5		Culvert									
Coniaccia_B	corn_1	1528.4	Tr200	21.00	15.80	17.16	17.03	17.35	0.007742	1.92	10.94	18.00	0.79
Coniaccia_B	corn_1	1528.4	Tr100	18.00	15.80	17.10	17.10	17.27	0.008020	1.83	9.85	18.00	0.79
Coniaccia_B	corn_1	1528.4	Tr030	13.00	15.80	17.00	17.00	17.16	0.005311	1.73	7.52	10.31	0.65
Coniaccia_B	corn_1	1528.4	Tr020	11.50	15.80	17.00	17.00	17.12	0.004156	1.53	7.52	10.31	0.57
Coniaccia_B	corn_1	1528	Tr200	21.00	13.90	15.63	15.63	16.20	0.011370	3.35	6.27	5.44	1.00
Coniaccia_B	corn_1	1528	Tr100	18.00	13.90	15.45	15.49	16.03	0.012854	3.37	5.34	5.09	1.05
Coniaccia_B	corn_1	1528	Tr030	13.00	13.90	14.97	15.24	15.85	0.028275	4.13	3.14	4.11	1.51
Coniaccia_B	corn_1	1528	Tr020	11.50	13.90	14.81	15.15	15.88	0.040996	4.57	2.51	3.79	1.79
Coniaccia_B	corn_1	1522	Tr200	21.00	8.50	11.11	10.12	11.17	0.000524	1.19	20.98	12.26	0.25
Coniaccia_B	corn_1	1522	Tr100	18.00	8.50	10.95	10.03	11.00	0.000516	1.12	19.04	12.26	0.25
Coniaccia_B	corn_1	1522	Tr030	13.00	8.50	10.64	9.74	10.69	0.000521	1.01	15.27	12.26	0.24
Coniaccia_B	corn_1	1522	Tr020	11.50	8.50	10.54	9.65	10.58	0.000524	0.97	14.01	12.26	0.24
Coniaccia_B	corn_1	1521.1	Tr200	21.00	7.85	10.65	9.38	10.69	0.000403	1.00	24.33	15.90	0.22
Coniaccia_B	corn_1	1521.1	Tr100	18.00	7.85	10.48	9.26	10.52	0.000415	0.96	21.68	15.90	0.22
Coniaccia_B	corn_1	1521.1	Tr030	13.00	7.85	10.11	9.03	10.15	0.000529	0.95	15.75	15.90	0.24
Coniaccia_B	corn_1	1521.1	Tr020	11.50	7.85	9.92	8.95	9.97	0.000684	1.00	12.96	14.05	0.27
Coniaccia_B	corn_1	1521		Bridge									
Coniaccia_B	corn_1	1520.9	Tr200	21.00	7.85	10.18	9.38	10.26	0.001036	1.36	18.13	17.52	0.33
Coniaccia_B	corn_1	1520.9	Tr100	18.00	7.85	9.88	9.26	10.00	0.001744	1.58	13.21	15.62	0.42
Coniaccia_B	corn_1	1520.9	Tr030	13.00	7.85	9.59	9.03	9.72	0.002287	1.61	8.63	15.26	0.47
Coniaccia_B	corn_1	1520.9	Tr020	11.50	7.85	9.37	8.95	9.53	0.003300	1.77	6.49	6.27	0.56
Coniaccia_B	corn_1	1520.1	Tr200	21.00	7.00	10.14	8.52	10.18	0.000299	0.91	26.08	14.36	0.19
Coniaccia_B	corn_1	1520.1	Tr100	18.00	7.00	9.85	8.40	9.89	0.000372	0.93	21.84	14.36	0.20
Coniaccia_B	corn_1	1520.1	Tr030	13.00	7.00	9.57	8.17	9.60	0.000350	0.82	17.78	14.36	0.19
Coniaccia_B	corn_1	1520.1	Tr020	11.50	7.00	9.32	8.09	9.36	0.000494	0.89	14.29	13.89	0.22
Coniaccia_B	corn_1	1520		Bridge									
Coniaccia_B	corn_1	1519.9	Tr200	21.00	7.00	10.10	8.52	10.14	0.000324	0.94	25.32	14.28	0.19
Coniaccia_B	corn_1	1519.9	Tr100	18.00	7.00	9.75	8.40	9.80	0.000454	1.00	20.34	14.28	0.22
Coniaccia_B	corn_1	1519.9	Tr030	13.00	7.00	9.26	8.17	9.31	0.000743	1.07	13.31	13.73	0.27
Coniaccia_B	corn_1	1519.9	Tr020	11.50	7.00	9.05	8.10	9.12	0.000969	1.14	10.48	13.46	0.31
Coniaccia_B	corn_1	1519.11	Tr200	21.00	6.44	10.01	7.65	10.03	0.000157	0.73	32.89	14.54	0.13
Coniaccia_B	corn_1	1519.11	Tr100	18.00	6.44	9.63	7.53	9.66	0.000196	0.75	27.40	14.54	0.14
Coniaccia_B	corn_1	1519.11	Tr030	13.00	6.44	9.08	7.33	9.11	0.000260	0.75	19.42	14.54	0.16
Coniaccia_B	corn_1	1519.11	Tr020	11.50	6.44	8.81	7.26	8.85	0.000346	0.80	15.54	14.54	0.18
Coniaccia_B	corn_3	1519.1	Tr200	34.00	6.44	9.96	8.08	10.02	0.000440	1.21	32.17	14.54	0.22
Coniaccia_B	corn_3	1519.1	Tr100	27.00	6.44	9.59	7.86	9.65	0.000470	1.15	26.78	14.54	0.22
Coniaccia_B	corn_3	1519.1	Tr030	19.00	6.44	9.04	7.58	9.10	0.000605	1.13	18.78	14.54	0.24
Coniaccia_B	corn_3	1519.1	Tr020	17.00	6.44	8.76	7.50	8.83	0.000847	1.23	14.72	14.54	0.28
Coniaccia_B	corn_3	1519		Bridge									
Coniaccia_B	corn_3	1518.9	Tr200	34.00	6.44	9.16	8.08	9.32	0.001549	1.87	20.44	14.25	0.39
Coniaccia_B	corn_3	1518.9	Tr100	27.00	6.44	9.02	7.86	9.14	0.001269	1.63	18.46	14.25	0.35
Coniaccia_B	corn_3	1518.9	Tr030	19.00	6.44	8.66	7.58	8.77	0.001288	1.46	13.37	14.25	0.34
Coniaccia_B	corn_3	1518.9	Tr020	17.00	6.44	8.46	7.50	8.57	0.001431	1.47	11.59	6.73	0.36
Coniaccia_B	corn_2	1518.1	Tr200	37.00	5.44	8.73	7.59	8.86	0.000958	1.74	24.37	10.73	0.33
Coniaccia_B	corn_2	1518.1	Tr100	30.00	5.44	8.72	7.44	8.81	0.000638	1.42	24.27	10.73	0.27
Coniaccia_B	corn_2	1518.1	Tr030	22.00	5.44	8.40	7.21	8.46	0.000546	1.21	20.79	10.73	0.24
Coniaccia_B	corn_2	1518.1	Tr020	18.00	5.44	8.21	6.88	8.26	0.000495	1.09	18.79	10.73	0.23
Coniaccia_B	corn_2	1518		Bridge									
Coniaccia_B	corn_2	1517.9	Tr200	37.00	5.44	8.58	7.58	8.73	0.001174	1.86	22.77	10.73	0.36
Coniaccia_B	corn_2	1517.9	Tr100	30.00	5.44	8.64	7.43	8.73	0.000703	1.46	23.48	10.73	0.28
Coniaccia_B	corn_2	1517.9	Tr030	22.00	5.44	8.32	7.21	8.39	0.000614	1.26	19.98	10.73	0.26
Coniaccia_B	corn_2	1517.9	Tr020	18.00	5.44	8.13	6.88	8.18	0.000566	1.15	17.95	10.73	0.24
Coniaccia_B	corn_2	1517	Tr200	37.00	6.36	8.41	8.41	8.63	0.003387	2.37	22.39	50.00	0.61
Coniaccia_B	corn_2	1517	Tr100	30.00	6.36	8.02	8.02	8.61	0.010020	3.38	8.88	7.71	1.00
Coniaccia_B	corn_2	1517	Tr030	22.00	6.36	7.76	7.76	8.27	0.010462	3.15	6.98	6.93	1.00

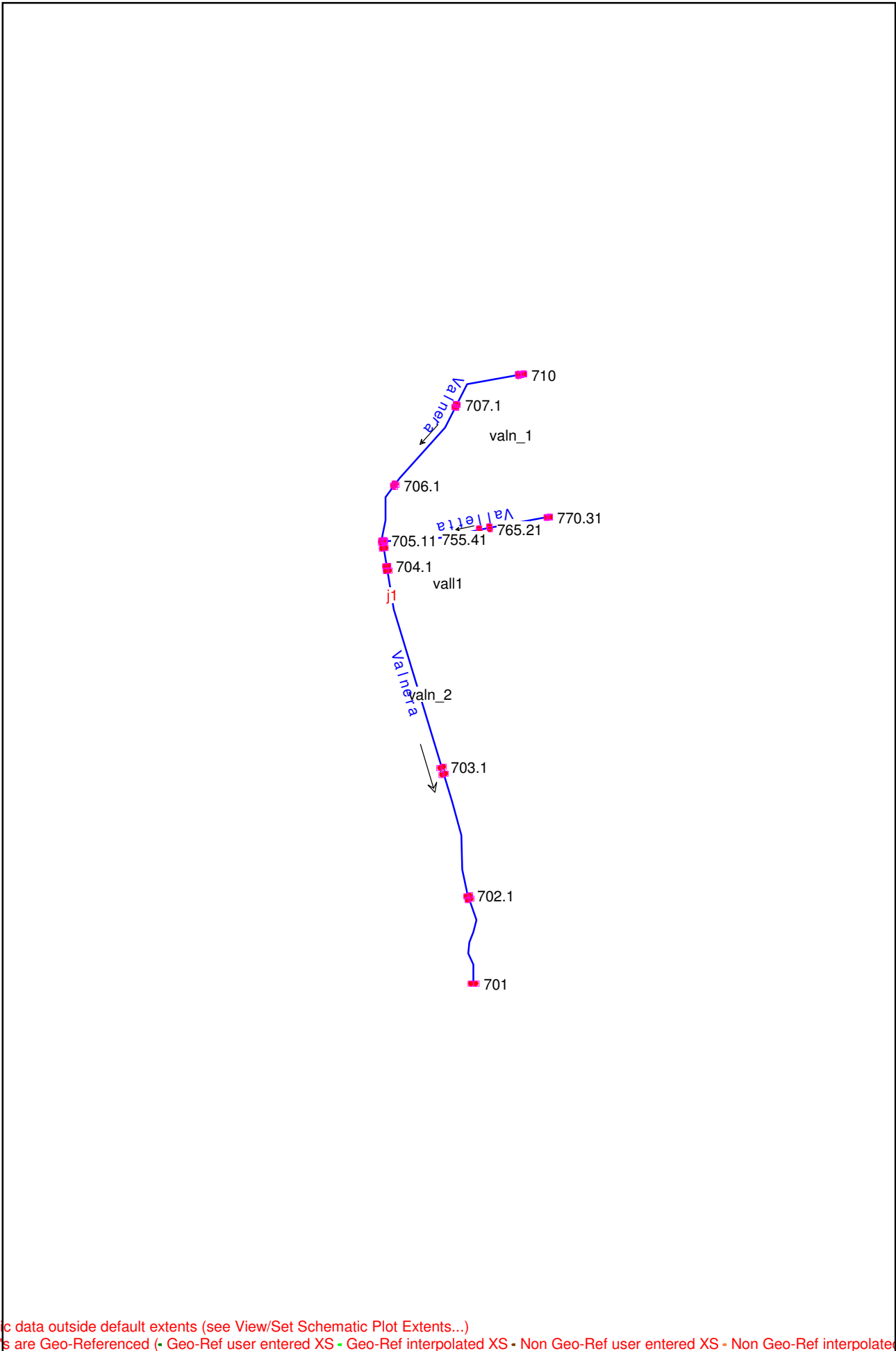
HEC-RAS Plan: att1 (Continued)

River	Reach	River Sta	Profile	Q Total (m3/s)	Min Ch El (m)	W.S. Elev (m)	Crit W.S. (m)	E.G. Elev (m)	E.G. Slope (m/m)	Vel Chnl (m/s)	Flow Area (m2)	Top Width (m)	Froude # Chl
Coniaccia_B	corn_2	1517	Tr020	18.00	6.36	7.62	7.62	8.08	0.010521	2.99	6.02	6.55	0.99
Coniaccia_B	corn_2	1516	Tr200	37.00	4.42	8.30	6.31	8.32	0.000089	0.58	83.41	49.70	0.11
Coniaccia_B	corn_2	1516	Tr100	30.00	4.42	7.81	6.11	7.83	0.000162	0.70	59.03	49.70	0.14
Coniaccia_B	corn_2	1516	Tr030	22.00	4.42	7.24	5.87	7.29	0.000540	1.06	24.65	32.56	0.25
Coniaccia_B	corn_2	1516	Tr020	18.00	4.42	6.94	5.72	7.01	0.000710	1.12	16.10	9.69	0.28
Coniaccia_B	corn_2	1515.1	Tr200	37.00	3.45	8.26	5.20	8.29	0.000122	0.80	51.28	15.84	0.13
Coniaccia_B	corn_2	1515.1	Tr100	30.00	3.45	7.77	5.00	7.80	0.000131	0.76	43.49	15.84	0.13
Coniaccia_B	corn_2	1515.1	Tr030	22.00	3.45	7.20	4.74	7.22	0.000139	0.70	34.50	15.84	0.13
Coniaccia_B	corn_2	1515.1	Tr020	18.00	3.45	6.91	4.59	6.93	0.000140	0.65	29.91	15.84	0.13
Coniaccia_B	corn_2	1515	Bridge										
Coniaccia_B	corn_2	1514.9	Tr200	37.00	3.45	8.24	5.20	8.27	0.000124	0.81	51.19	15.84	0.13
Coniaccia_B	corn_2	1514.9	Tr100	30.00	3.45	7.74	5.00	7.77	0.000134	0.77	43.29	15.84	0.13
Coniaccia_B	corn_2	1514.9	Tr030	22.00	3.45	7.15	4.74	7.18	0.000147	0.71	33.99	15.84	0.13
Coniaccia_B	corn_2	1514.9	Tr020	18.00	3.45	6.87	4.59	6.89	0.000148	0.66	29.48	15.84	0.13
Coniaccia_B	corn_2	1514.1	Tr200	37.00	3.83	8.16	5.98	8.23	0.000370	1.27	33.59	10.03	0.20
Coniaccia_B	corn_2	1514.1	Tr100	30.00	3.83	7.66	5.81	7.72	0.000393	1.20	28.61	10.03	0.20
Coniaccia_B	corn_2	1514.1	Tr030	22.00	3.83	7.08	5.57	7.13	0.000419	1.10	22.74	10.03	0.21
Coniaccia_B	corn_2	1514.1	Tr020	18.00	3.83	6.80	5.22	6.84	0.000416	1.02	19.94	10.03	0.20
Coniaccia_B	corn_2	1514	Bridge										
Coniaccia_B	corn_2	1513.9	Tr200	37.00	3.83	8.14	5.99	8.21	0.000359	1.26	34.06	10.32	0.20
Coniaccia_B	corn_2	1513.9	Tr100	30.00	3.83	7.64	5.83	7.70	0.000386	1.19	28.89	10.32	0.20
Coniaccia_B	corn_2	1513.9	Tr030	22.00	3.83	7.05	5.58	7.10	0.000421	1.10	22.79	10.32	0.21
Coniaccia_B	corn_2	1513.9	Tr020	18.00	3.83	6.76	5.22	6.81	0.000424	1.03	19.87	10.32	0.20
Coniaccia_B	corn_2	1513	Tr200	37.00	4.33	8.16	6.18	8.18	0.000143	0.71	69.16	49.39	0.14
Coniaccia_B	corn_2	1513	Tr100	30.00	4.33	7.63	5.99	7.67	0.000315	0.92	43.22	49.39	0.20
Coniaccia_B	corn_2	1513	Tr030	22.00	4.33	6.99	5.73	7.06	0.000769	1.20	18.36	10.81	0.29
Coniaccia_B	corn_2	1513	Tr020	18.00	4.33	6.70	5.59	6.77	0.000830	1.17	15.38	9.97	0.30
Coniaccia_B	corn_2	1512	Tr200	37.00	4.26	8.12	6.18	8.16	0.000309	0.99	47.30	37.64	0.19
Coniaccia_B	corn_2	1512	Tr100	30.00	4.26	7.54	5.97	7.62	0.000691	1.27	26.13	29.83	0.28
Coniaccia_B	corn_2	1512	Tr030	22.00	4.26	6.89	5.70	6.98	0.001017	1.36	16.21	9.33	0.33
Coniaccia_B	corn_2	1512	Tr020	18.00	4.26	6.59	5.54	6.68	0.001096	1.33	13.58	8.63	0.34
Coniaccia_B	corn_2	1511.5	Culvert										
Coniaccia_B	corn_2	1511	Tr200	37.00	4.26	7.51	6.18	7.64	0.001108	1.61	25.24	29.79	0.35
Coniaccia_B	corn_2	1511	Tr100	30.00	4.26	7.08	5.97	7.22	0.001424	1.67	18.01	9.79	0.39
Coniaccia_B	corn_2	1511	Tr030	22.00	4.26	6.56	5.70	6.70	0.001725	1.65	13.32	8.55	0.42
Coniaccia_B	corn_2	1511	Tr020	18.00	4.26	6.33	5.54	6.46	0.001761	1.58	11.39	7.99	0.42
Coniaccia_B	corn_2	1510	Tr200	37.00	4.46	7.47	6.29	7.61	0.001272	1.70	25.54	29.88	0.37
Coniaccia_B	corn_2	1510	Tr100	30.00	4.46	6.98	6.09	7.16	0.002020	1.91	15.70	8.86	0.46
Coniaccia_B	corn_2	1510	Tr030	22.00	4.46	6.44	5.82	6.63	0.002691	1.96	11.24	7.74	0.52
Coniaccia_B	corn_2	1510	Tr020	18.00	4.46	6.20	5.67	6.39	0.002889	1.90	9.46	7.25	0.53
Coniaccia_B	corn_2	1509	Tr200	37.00	4.42	7.46	6.33	7.56	0.001022	1.50	30.71	46.88	0.34
Coniaccia_B	corn_2	1509	Tr100	30.00	4.42	6.88	6.11	7.08	0.002397	2.00	15.04	9.39	0.50
Coniaccia_B	corn_2	1509	Tr030	22.00	4.42	6.25	5.83	6.51	0.004124	2.27	9.69	7.54	0.64
Coniaccia_B	corn_2	1509	Tr020	18.00	4.42	5.96	5.68	6.24	0.005204	2.36	7.63	6.69	0.71
Coniaccia_B	corn_2	1508.1	Tr200	37.00	3.62	7.23	5.50	7.44	0.002203	2.06	19.99	12.88	0.35
Coniaccia_B	corn_2	1508.1	Tr100	30.00	3.62	6.64	5.26	6.88	0.002930	2.16	13.91	4.61	0.40
Coniaccia_B	corn_2	1508.1	Tr030	22.00	3.62	6.04	4.94	6.24	0.002822	1.98	11.13	4.61	0.41
Coniaccia_B	corn_2	1508.1	Tr020	18.00	3.62	5.77	4.78	5.94	0.002580	1.82	9.90	4.60	0.40
Coniaccia_B	corn_2	1508	Bridge										
Coniaccia_B	corn_2	1507.9	Tr200	37.00	3.62	6.79	5.49	7.12	0.003933	2.53	14.60	4.61	0.45
Coniaccia_B	corn_2	1507.9	Tr100	30.00	3.62	6.40	5.25	6.68	0.003640	2.35	12.79	4.61	0.45
Coniaccia_B	corn_2	1507.9	Tr030	22.00	3.62	5.93	4.95	6.15	0.003193	2.07	10.62	4.60	0.44
Coniaccia_B	corn_2	1507.9	Tr020	18.00	3.62	5.67	4.79	5.86	0.002933	1.91	9.44	4.60	0.42
Coniaccia_B	corn_2	1507.1	Tr200	37.00	3.67	6.26	5.54	6.75	0.006714	3.11	11.88	4.60	0.62
Coniaccia_B	corn_2	1507.1	Tr100	30.00	3.67	5.89	5.30	6.33	0.006666	2.95	10.17	4.60	0.63
Coniaccia_B	corn_2	1507.1	Tr030	22.00	3.67	5.47	5.00	5.83	0.006327	2.67	8.25	4.59	0.63
Coniaccia_B	corn_2	1507.1	Tr020	18.00	3.67	5.24	4.83	5.56	0.006127	2.49	7.22	4.59	0.63
Coniaccia_B	corn_2	1507	Bridge										
Coniaccia_B	corn_2	1506.9	Tr200	37.00	3.67	6.09	5.55	6.66	0.007973	3.32	11.13	4.60	0.68
Coniaccia_B	corn_2	1506.9	Tr100	30.00	3.67	5.71	5.30	6.23	0.008363	3.21	9.35	4.60	0.72
Coniaccia_B	corn_2	1506.9	Tr030	22.00	3.67	5.28	5.00	5.73	0.008581	2.98	7.39	4.60	0.75
Coniaccia_B	corn_2	1506.9	Tr020	18.00	3.67	5.04	4.83	5.46	0.009056	2.86	6.29	4.60	0.78
Coniaccia_B	corn_2	1506.1	Tr200	37.00	3.36	6.01	5.35	6.57	0.008080	3.33	11.11	4.21	0.65
Coniaccia_B	corn_2	1506.1	Tr100	30.00	3.36	5.64	5.09	6.14	0.007848	3.13	9.57	4.20	0.66
Coniaccia_B	corn_2	1506.1	Tr030	22.00	3.36	5.24	4.77	5.64	0.007044	2.78	7.90	4.20	0.65
Coniaccia_B	corn_2	1506.1	Tr020	18.00	3.36	5.02	4.59	5.36	0.006667	2.59	6.96	4.20	0.64
Coniaccia_B	corn_2	1506	Bridge										
Coniaccia_B	corn_2	1505.9	Tr200	37.00	3.36	5.49	5.35	6.36	0.014302	4.14	8.94	4.20	0.91
Coniaccia_B	corn_2	1505.9	Tr100	30.00	3.36	5.19	5.09	5.97	0.014121	3.90	7.68	4.20	0.92
Coniaccia_B	corn_2	1505.9	Tr030	22.00	3.36	4.85	4.77	5.48	0.013381	3.52	6.25	4.20	0.92
Coniaccia_B	corn_2	1505.9	Tr020	18.00	3.36	4.70	4.59	5.22	0.012048	3.20	5.62	4.20	0.88

HEC-RAS Plan: att1 (Continued)

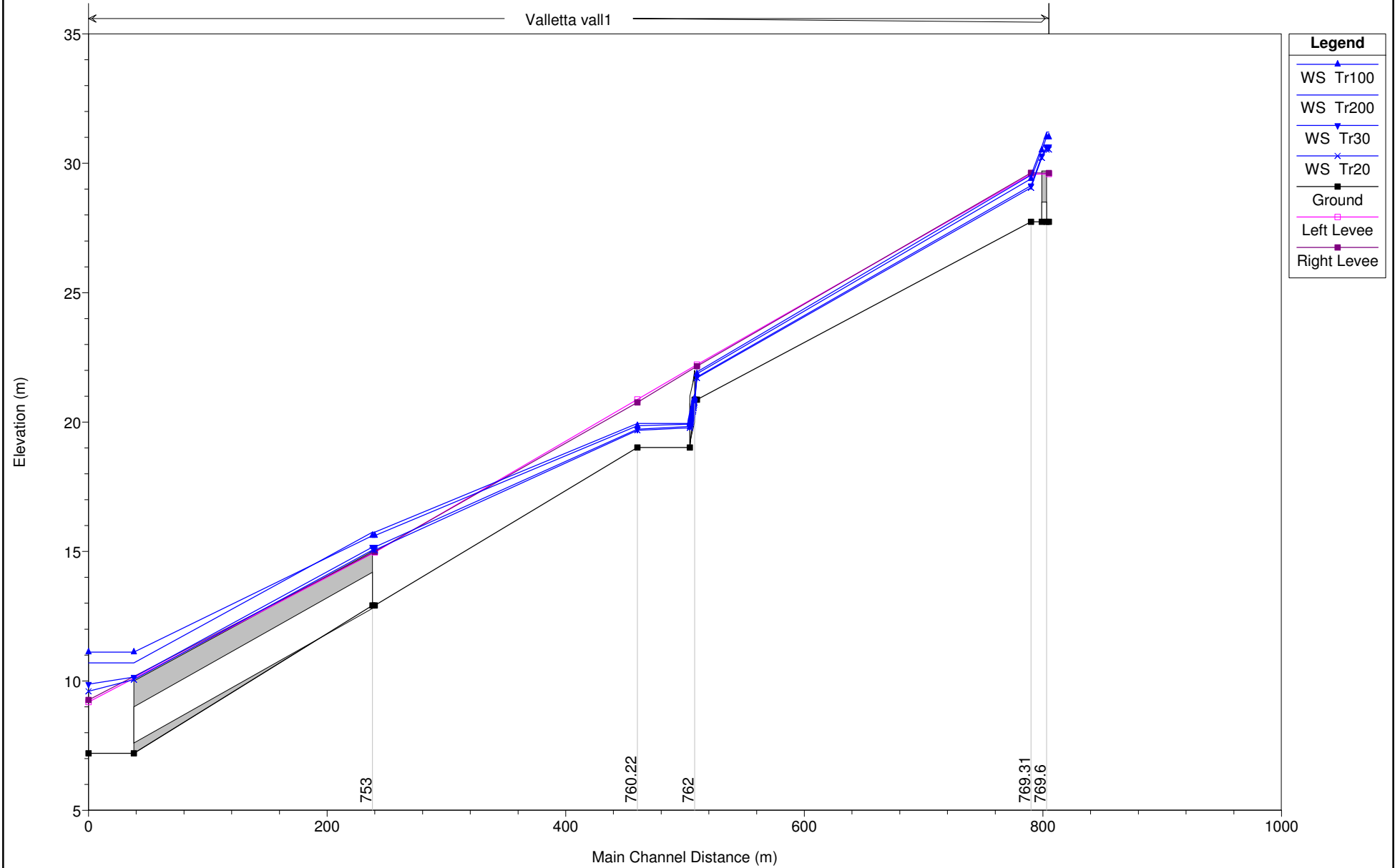
River	Reach	River Sta	Profile	Q Total (m3/s)	Min Ch El (m)	W.S. Elev (m)	Crit W.S. (m)	E.G. Elev (m)	E.G. Slope (m/m)	Vel Chnl (m/s)	Flow Area (m2)	Top Width (m)	Froude # Chl
Coniaccia_B	corn_2	1502	Tr200	37.00	2.19	6.03	4.10	6.03	0.000019	0.28	157.67	72.22	0.05
Coniaccia_B	corn_2	1502	Tr100	30.00	2.19	5.65	3.93	5.65	0.000023	0.28	130.19	72.22	0.06
Coniaccia_B	corn_2	1502	Tr030	22.00	2.19	5.17	3.68	5.18	0.000033	0.29	95.83	72.22	0.06
Coniaccia_B	corn_2	1502	Tr020	18.00	2.19	4.91	3.54	4.92	0.000044	0.31	77.10	72.22	0.07
Coniaccia_B	corn_2	1501.1	Tr200	37.00	1.68	5.98	3.45	6.02	0.000197	0.96	42.82	14.68	0.16
Coniaccia_B	corn_2	1501.1	Tr100	30.00	1.68	5.61	3.26	5.64	0.000195	0.89	37.31	14.68	0.16
Coniaccia_B	corn_2	1501.1	Tr030	22.00	1.68	5.14	2.99	5.17	0.000191	0.79	30.42	14.68	0.15
Coniaccia_B	corn_2	1501.1	Tr020	18.00	1.68	4.88	2.84	4.91	0.000187	0.73	26.66	14.68	0.15
Coniaccia_B	corn_2	1501		Bridge									
Coniaccia_B	corn_2	1500.9	Tr200	37.00	1.68	5.96	3.45	6.00	0.000199	0.96	42.80	14.86	0.16
Coniaccia_B	corn_2	1500.9	Tr100	30.00	1.68	5.58	3.26	5.62	0.000199	0.89	37.18	14.86	0.16
Coniaccia_B	corn_2	1500.9	Tr030	22.00	1.68	5.10	2.99	5.13	0.000199	0.80	30.08	14.86	0.16
Coniaccia_B	corn_2	1500.9	Tr020	18.00	1.68	4.84	2.84	4.86	0.000199	0.75	26.13	14.86	0.15
Coniaccia_B	corn_2	1500.8	Tr200	37.00	1.68	5.95	3.45	6.00	0.000200	0.97	42.74	14.86	0.16
Coniaccia_B	corn_2	1500.8	Tr100	30.00	1.68	5.58	3.26	5.61	0.000200	0.89	37.12	14.86	0.16
Coniaccia_B	corn_2	1500.8	Tr030	22.00	1.68	5.10	2.99	5.13	0.000200	0.80	30.02	14.86	0.16
Coniaccia_B	corn_2	1500.8	Tr020	18.00	1.68	4.83	2.84	4.86	0.000200	0.75	26.06	14.86	0.15
Canale-c_a	c_a1	3315.21	Tr200	7.50	8.23	10.55	9.07	10.58	0.000366	0.70	10.71	5.36	0.16
Canale-c_a	c_a1	3315.21	Tr100	6.10	8.23	10.19	8.97	10.21	0.000427	0.70	8.75	5.36	0.17
Canale-c_a	c_a1	3315.21	Tr030	4.20	8.23	9.75	8.82	9.77	0.000478	0.66	6.39	5.36	0.19
Canale-c_a	c_a1	3315.21	Tr020	3.80	8.23	9.67	8.79	9.69	0.000424	0.64	5.98	5.35	0.19
Canale-c_a	c_a1	3314.22	Tr200	7.50	8.15	10.46	9.14	10.51	0.000782	0.95	7.88	3.86	0.21
Canale-c_a	c_a1	3314.22	Tr100	6.10	8.15	10.09	9.03	10.14	0.000887	0.95	6.43	3.86	0.23
Canale-c_a	c_a1	3314.22	Tr030	4.20	8.15	9.64	8.66	9.68	0.000988	0.89	4.71	3.86	0.26
Canale-c_a	c_a1	3314.22	Tr020	3.80	8.15	9.58	8.82	9.62	0.000868	0.85	4.46	3.86	0.25
Canale-c_a	c_a1	3313.200		Culvert									
Canale-c_a	c_a1	3313.11	Tr200	7.50	8.19	10.24	9.14	10.31	0.001232	1.14	6.57	4.00	0.28
Canale-c_a	c_a1	3313.11	Tr100	6.10	8.19	9.88	9.02	9.95	0.001529	1.18	5.18	3.72	0.32
Canale-c_a	c_a1	3313.11	Tr030	4.20	8.19	9.45	8.84	9.52	0.001874	1.15	3.65	3.38	0.35
Canale-c_a	c_a1	3313.11	Tr020	3.80	8.19	9.40	8.80	9.46	0.001735	1.09	3.48	3.35	0.34
Canale-c_a	c_a1	3312.12	Tr200	7.50	8.19	10.23	9.14	10.30	0.001258	1.15	6.52	3.99	0.29
Canale-c_a	c_a1	3312.12	Tr100	6.10	8.19	9.87	9.02	9.94	0.001580	1.19	5.12	3.71	0.32
Canale-c_a	c_a1	3312.12	Tr030	4.20	8.19	9.43	8.84	9.50	0.001981	1.18	3.57	3.37	0.36
Canale-c_a	c_a1	3312.12	Tr020	3.80	8.19	9.38	8.80	9.45	0.001831	1.11	3.42	3.33	0.35
Canale-c_a	c_a1	3311.131		Culvert									
Canale-c_a	c_a1	3311.13	Tr200	7.50	8.05	10.04	9.13	10.10	0.000386	1.00	7.48	5.24	0.27
Canale-c_a	c_a1	3311.13	Tr100	6.10	8.05	9.68	9.02	9.74	0.000585	1.09	5.59	5.24	0.34
Canale-c_a	c_a1	3311.13	Tr030	4.20	8.05	9.20	8.85	9.28	0.001331	1.33	3.16	4.37	0.50
Canale-c_a	c_a1	3311.13	Tr020	3.80	8.05	9.05	8.81	9.16	0.001931	1.49	2.56	3.96	0.59
Canale-c_a	c_a1	3310.14	Tr200	7.50	7.93	10.02	8.86	10.05	0.000193	0.77	9.79	6.54	0.20
Canale-c_a	c_a1	3310.14	Tr100	6.10	7.93	9.64	8.76	9.68	0.000297	0.83	7.33	6.54	0.25
Canale-c_a	c_a1	3310.14	Tr030	4.20	7.93	9.09	8.60	9.14	0.000706	1.04	4.04	5.11	0.37
Canale-c_a	c_a1	3310.14	Tr020	3.80	7.93	8.80	8.56	8.90	0.001797	1.42	2.67	4.30	0.58
Canale-c_a	c_a1	3309	Tr200	7.50	6.73	10.02	7.66	10.03	0.000045	0.43	17.64	6.54	0.08
Canale-c_a	c_a1	3309	Tr100	6.10	6.73	9.65	7.56	9.66	0.000045	0.40	15.19	6.54	0.08
Canale-c_a	c_a1	3309	Tr030	4.20	6.73	9.10	7.40	9.11	0.000046	0.36	11.62	6.54	0.09
Canale-c_a	c_a1	3309	Tr020	3.80	6.73	8.84	7.37	8.85	0.000048	0.38	9.89	6.53	0.10

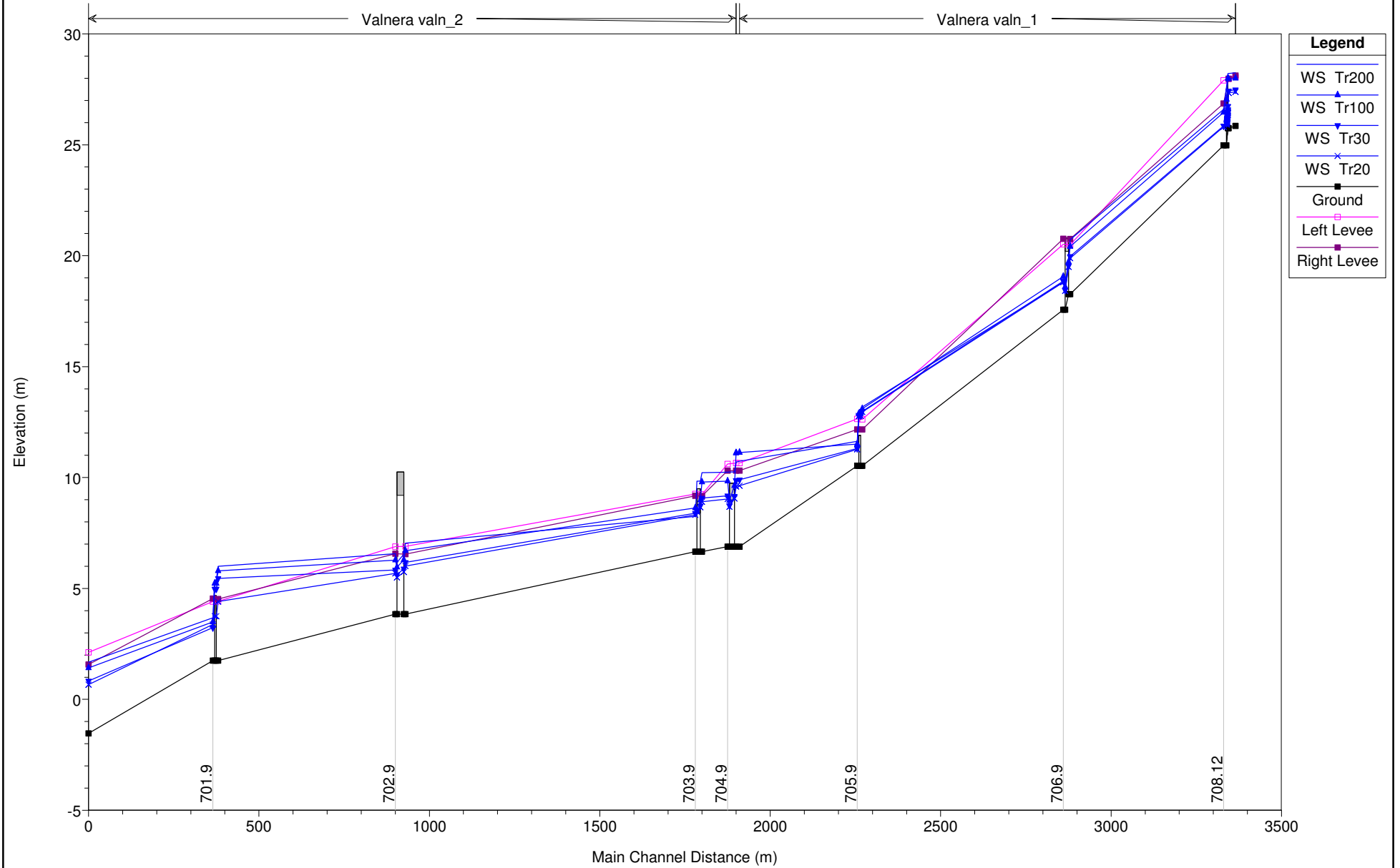
Appendice 4  
F.Valnera



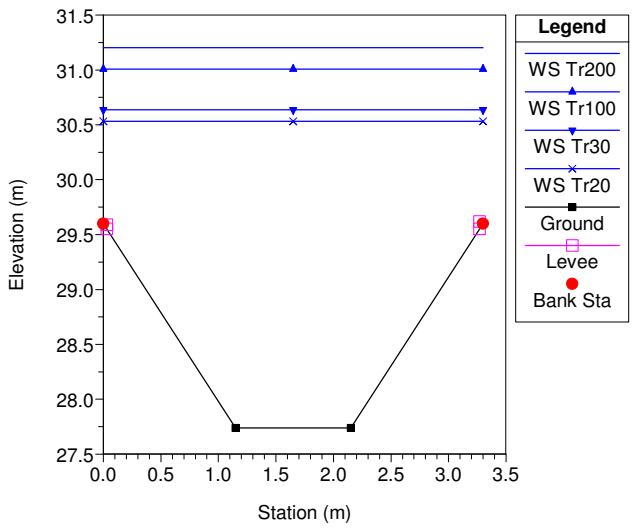
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Geom: valnera Flow: att1

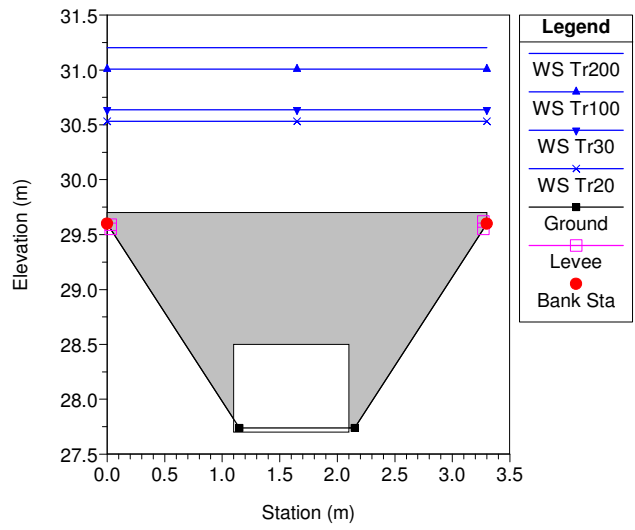




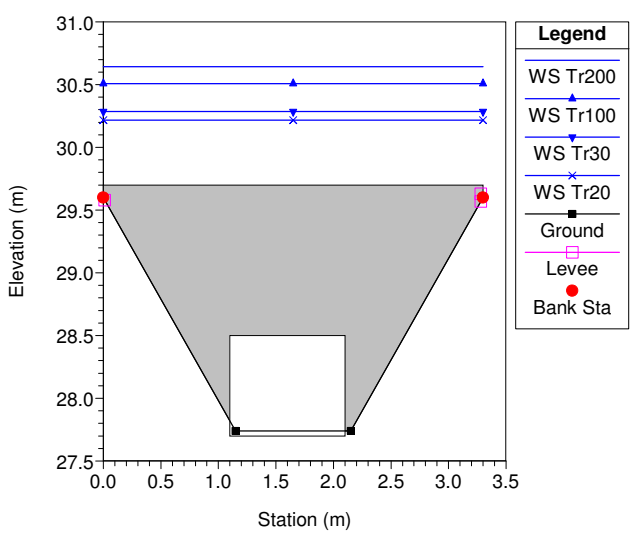
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 River = Valletta Reach = vall1 RS = 770.31 sez3.1



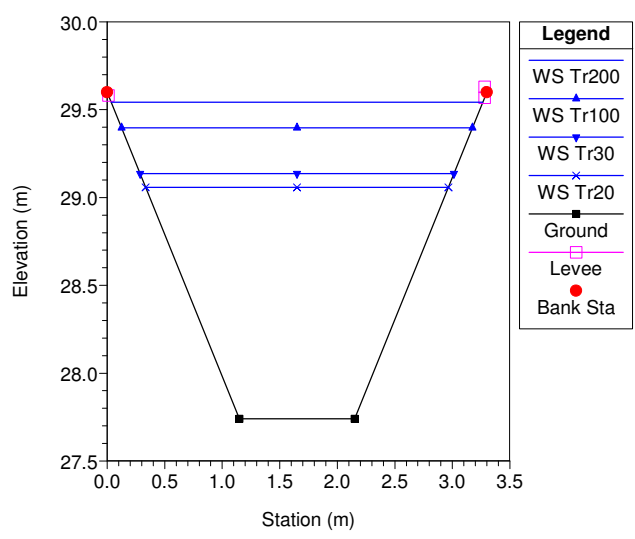
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 River = Valletta Reach = vall1 RS = 769.6 Culv



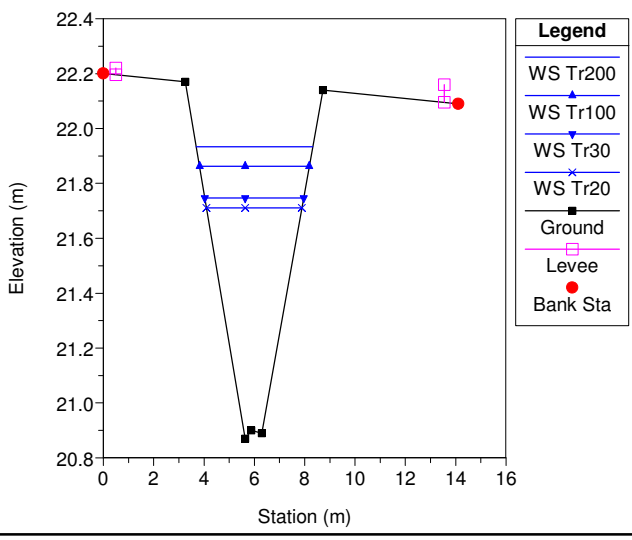
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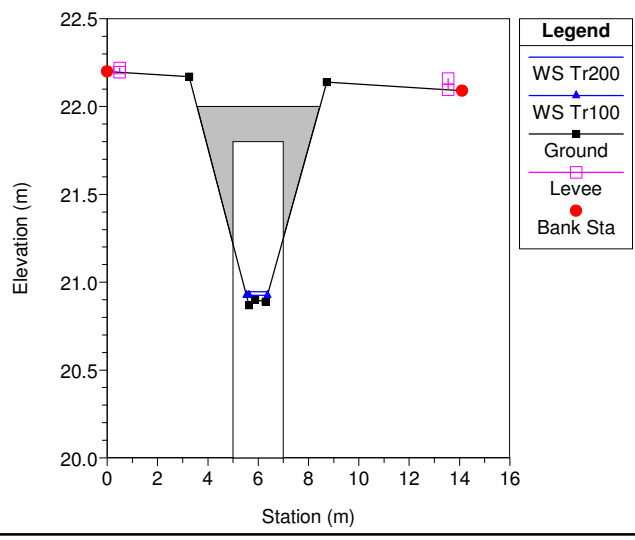
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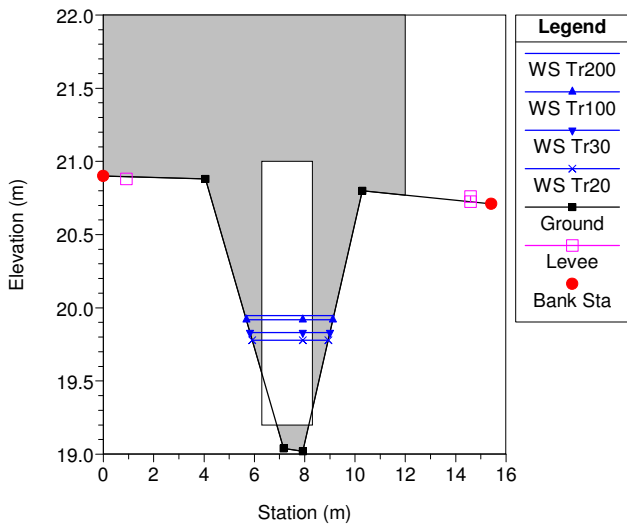
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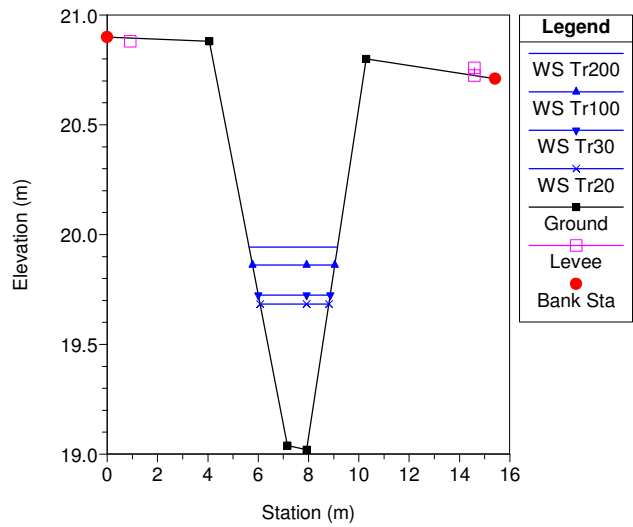
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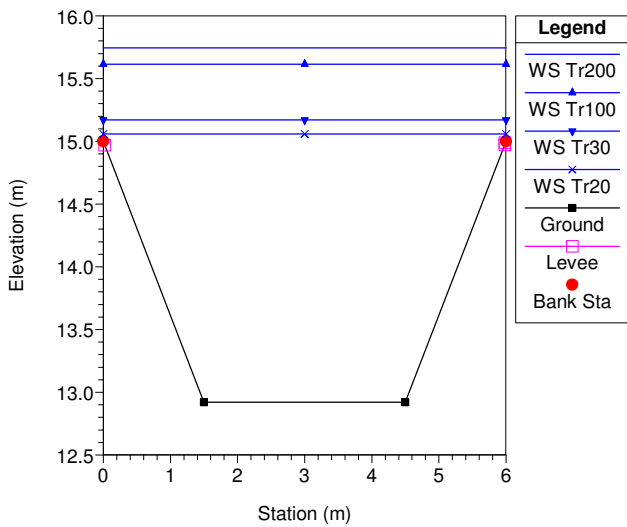
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 Geom: valnera Flow: att1  
 River = Valletta Reach = vall1 RS = 762 Culv



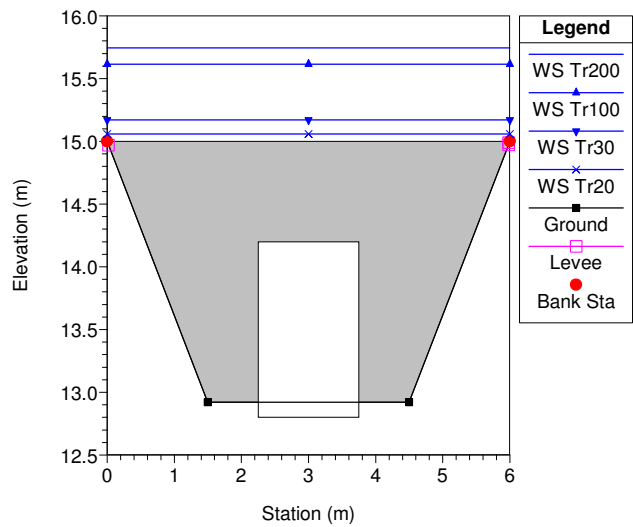
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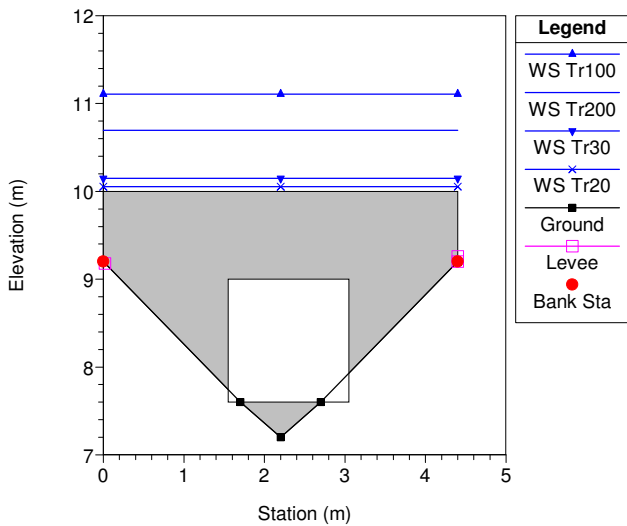
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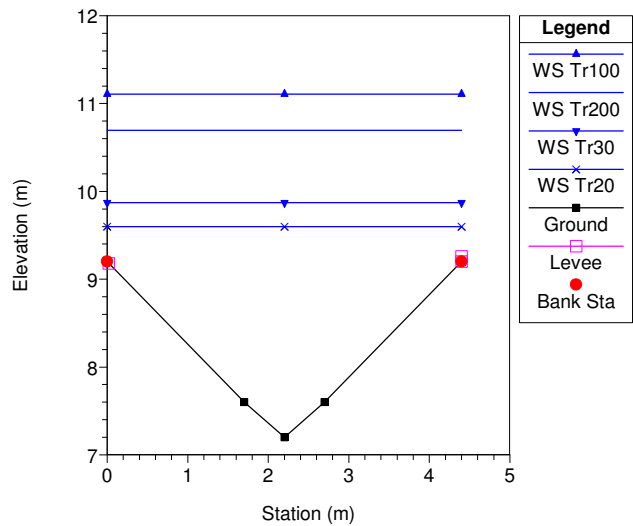
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 Geom: valnera Flow: att1  
 River = Valletta Reach = vall1 RS = 753 Culv



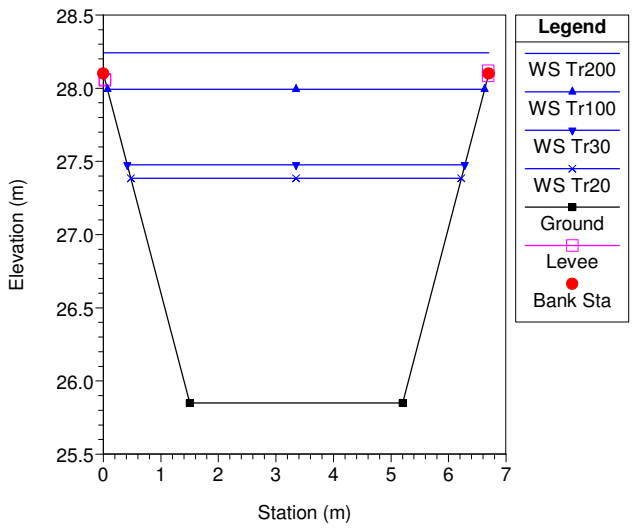
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 Geom: valnera Flow: att1  
 River = Valletta Reach = vall1 RS = 753 Culv



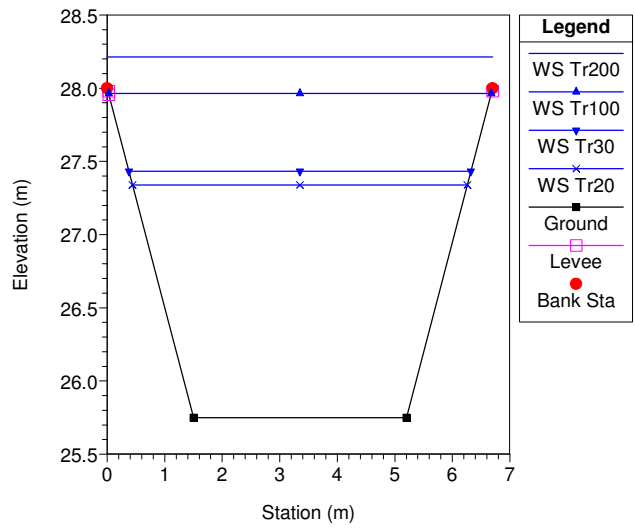
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 Geom: valnera Flow: att1  
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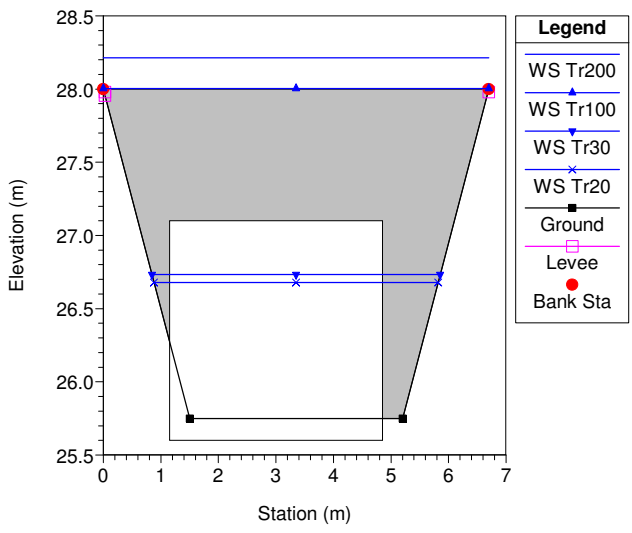
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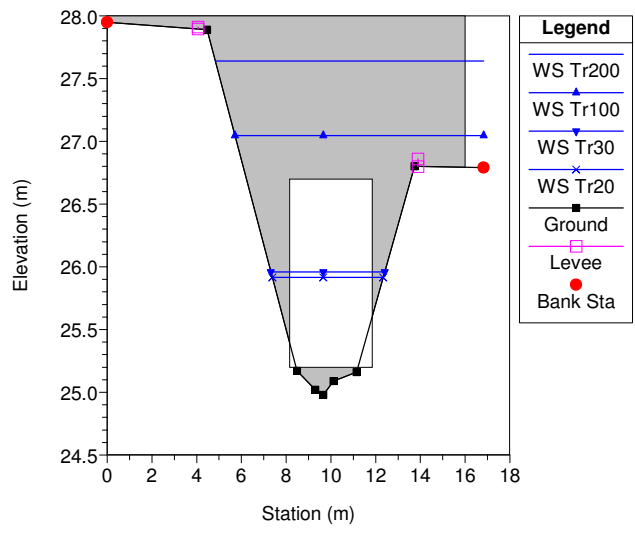
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 Geom: valnera Flow: att1  
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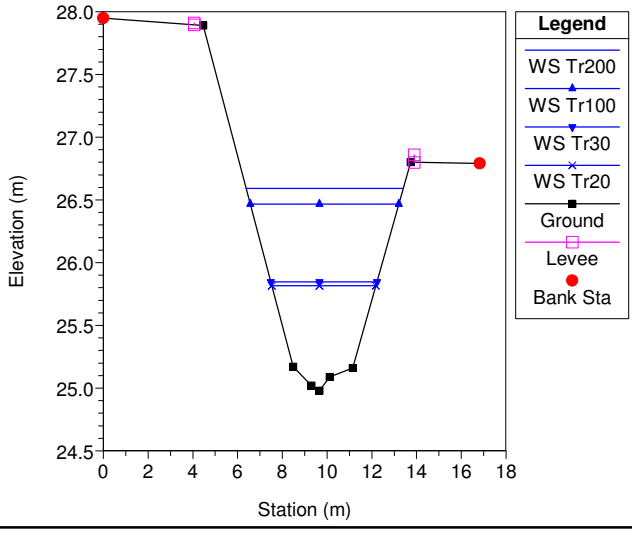
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 River = Valnera Reach = valn\_1 RS = 708.121 Culv



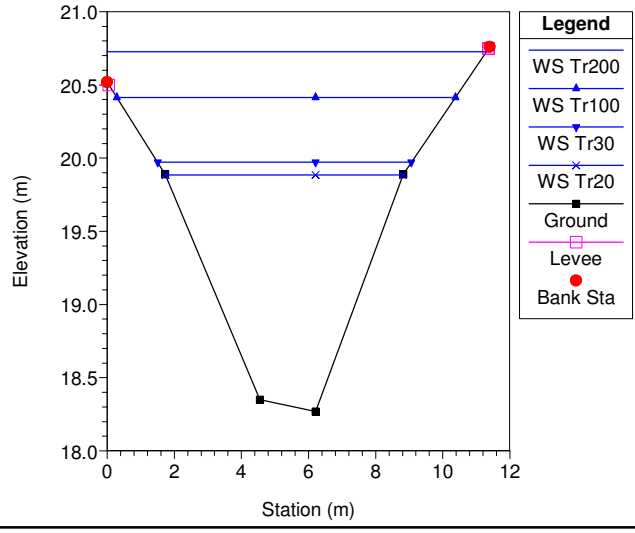
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 River = Valnera Reach = valn\_1 RS = 708.121 Culv



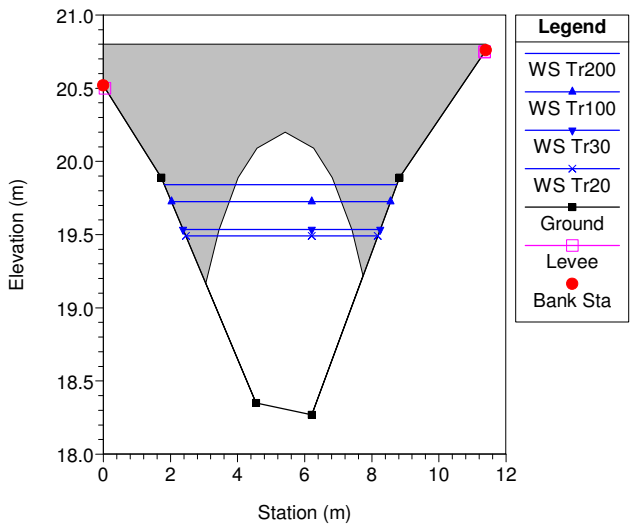
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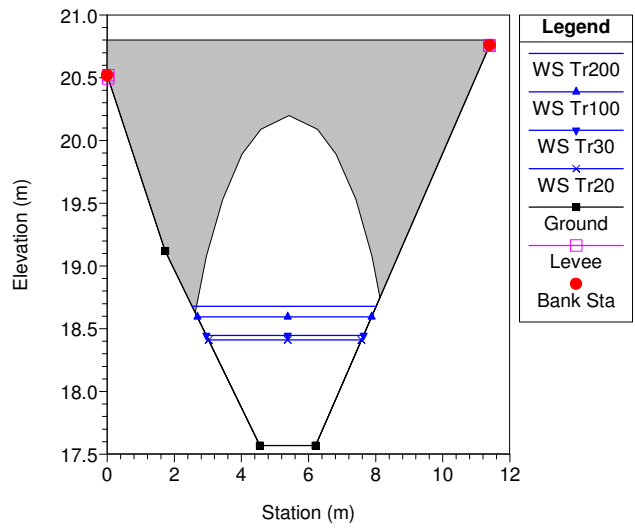
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 Geom: valnera Flow: att1  
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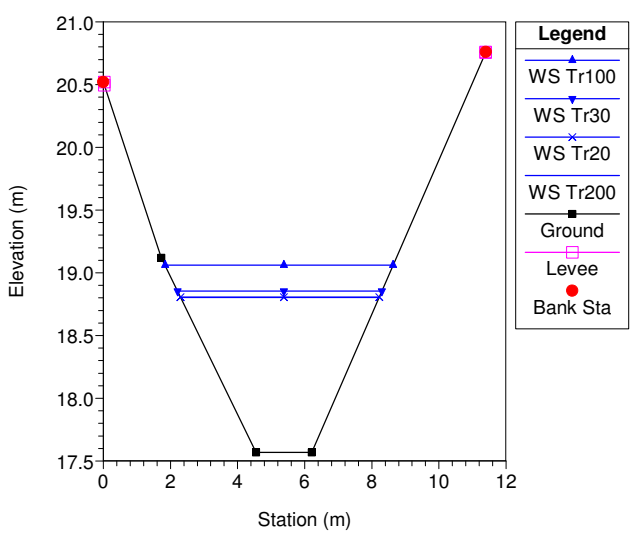
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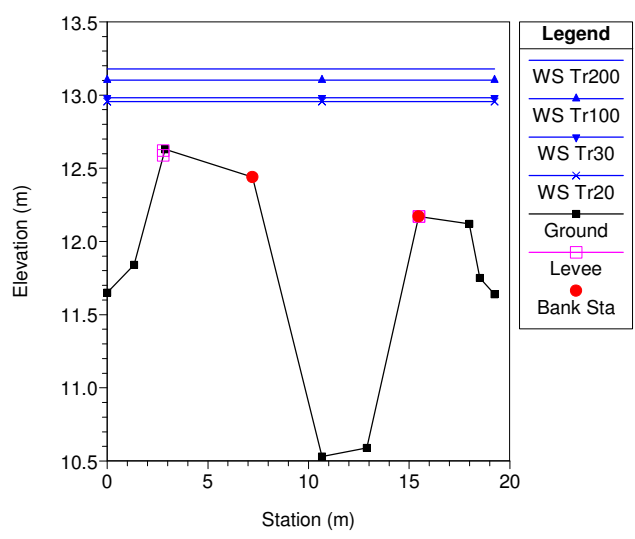
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 River = Valnera Reach = valn\_1 RS = 707 BR



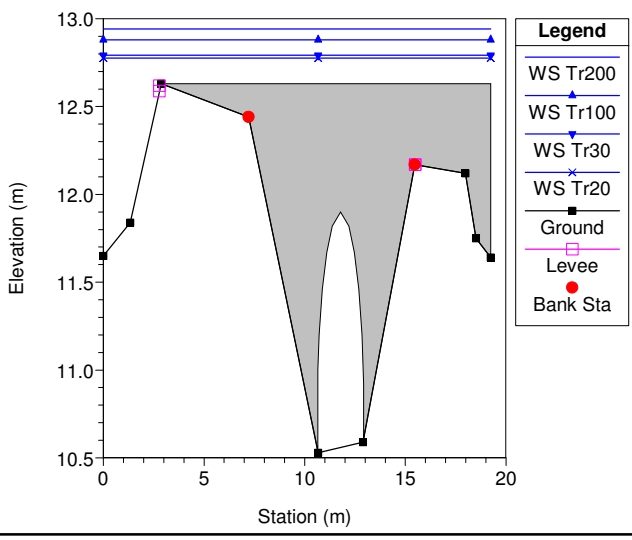
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 River = Valnera Reach = valn\_1 RS = 706.9 prelim piombino valle sez5



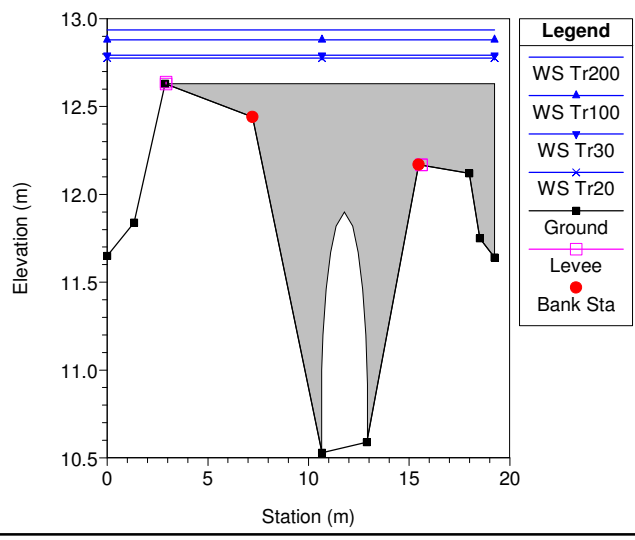
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 Geom: valnera Flow: att1  
 River = Valnera Reach = valn\_1 RS = 706.1 prelim piombino monte sez6

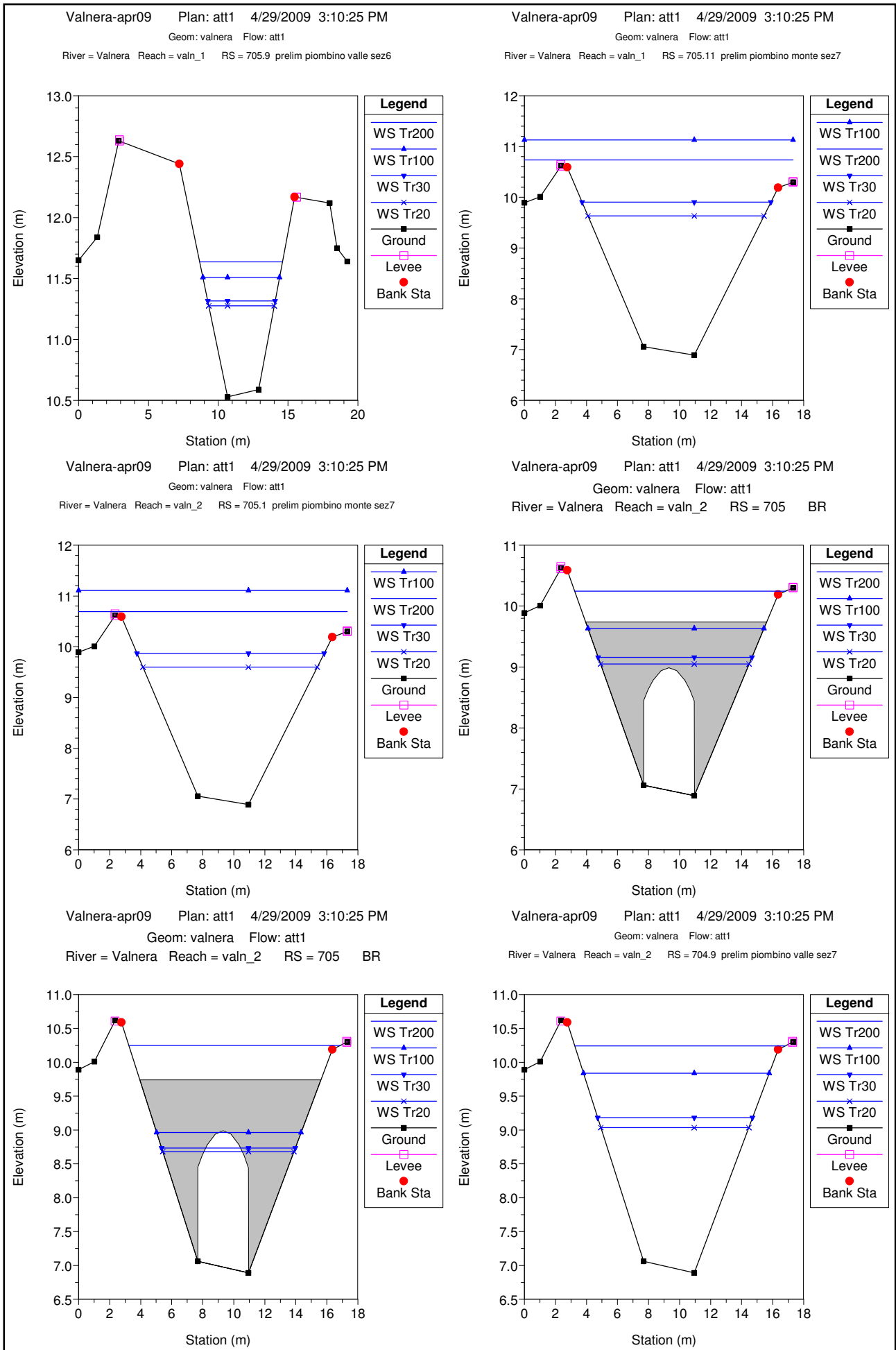


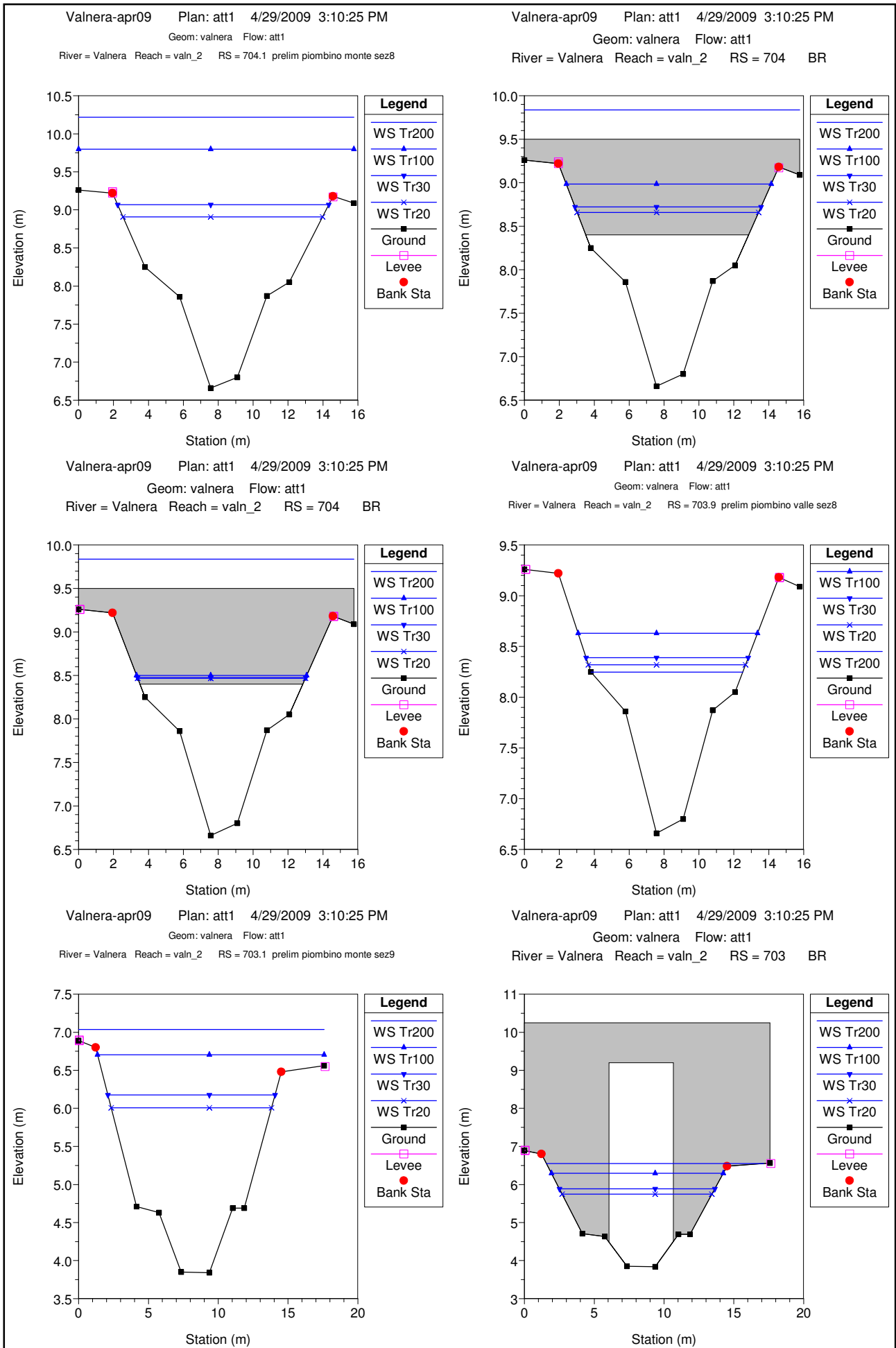
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 River = Valnera Reach = valn\_1 RS = 706 BR



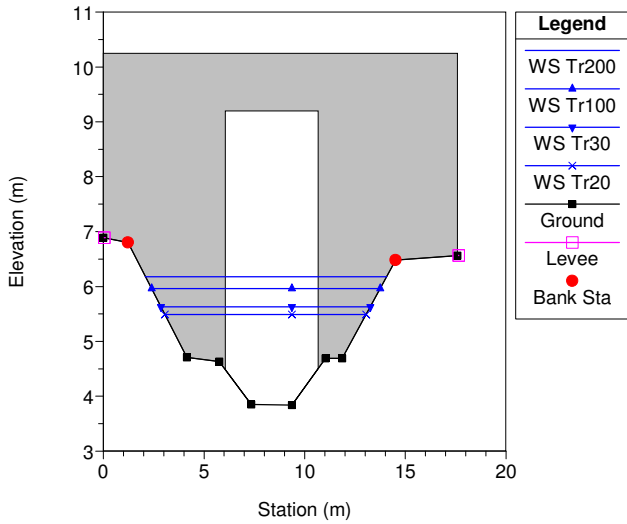
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 River = Valnera Reach = valn\_1 RS = 706 BR



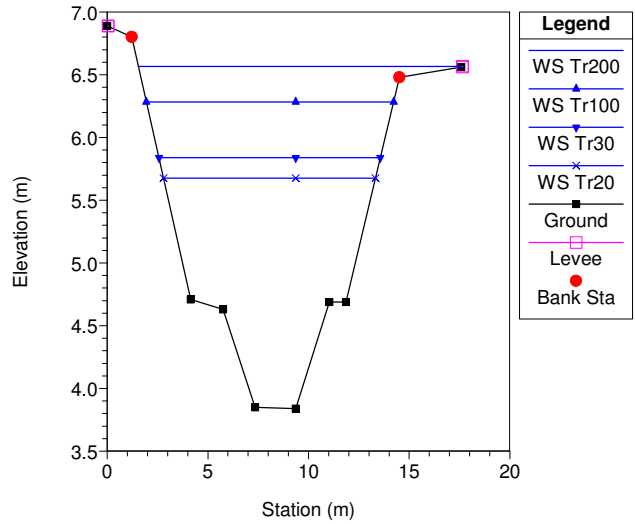




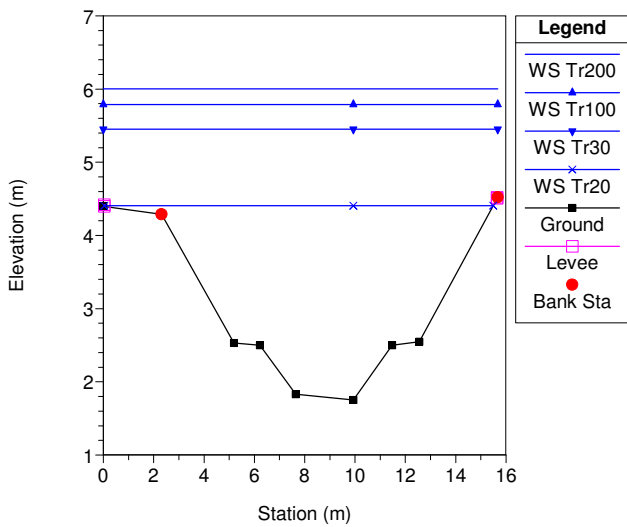
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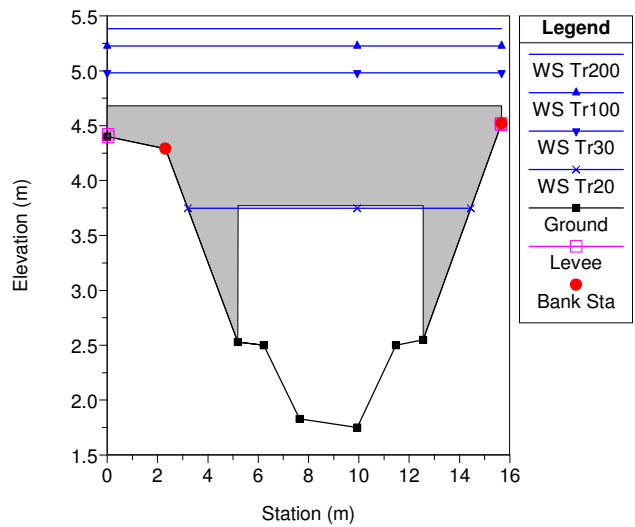
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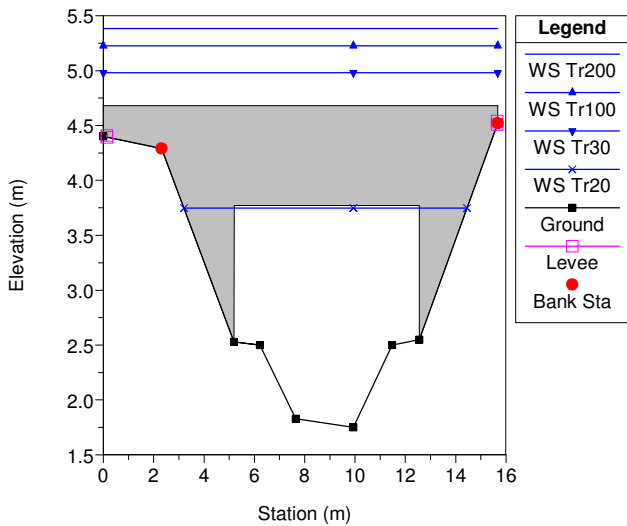
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 River = Valnera Reach = valn\_2 RS = 702.1 prelim piombino monte sez10



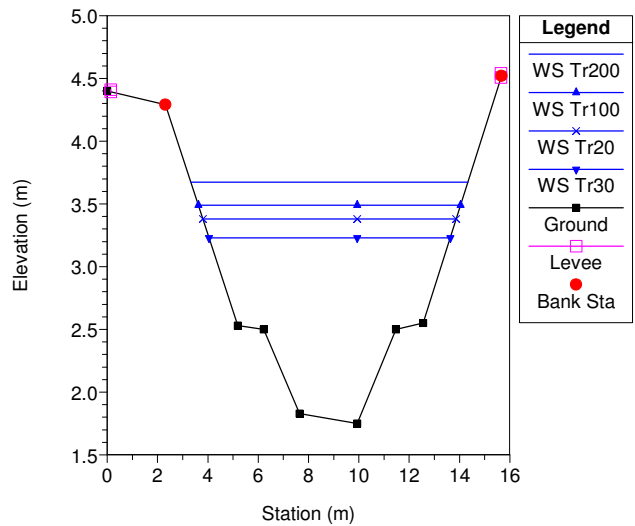
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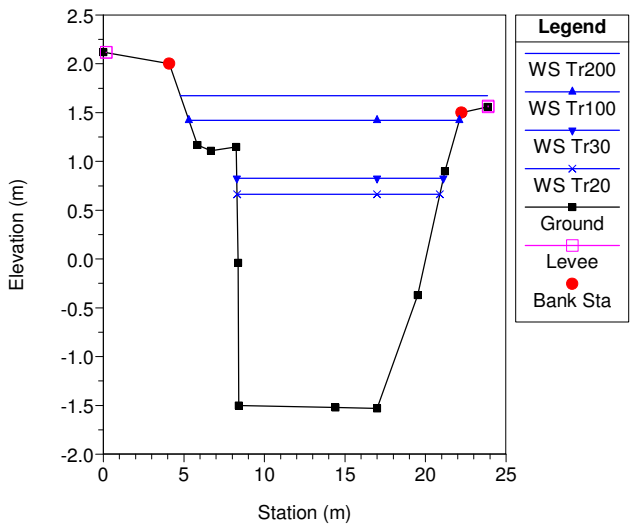
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Valnera-apr09 Plan: att1 4/29/2009 3:10:25 PM  
 Geom: valnera Flow: att1  
 River = Valnera Reach = valn\_2 RS = 701.9 prelim piombino valle sez10



Valnera-apr09 Plan: att1 4/29/2009 3:10:25 PM  
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River = Valnera Reach = valn\_2 RS = 701 prelim piombino sez12

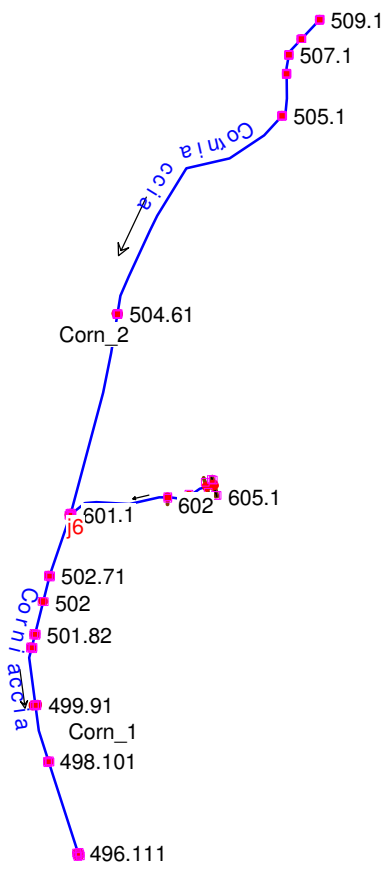


River	Reach	River Sta	Profile	Q Total (m3/s)	Min Ch El (m)	W.S. Elev (m)	Crit W.S. (m)	E.G. Elev (m)	E.G. Slope (m/m)	Vel Chnl (m/s)	Flow Area (m2)	Top Width (m)	Froude # Chl
Valnera	valn_1	710	Tr200	22.50	25.85	28.24	27.27	28.40	0.001933	1.78	12.66	6.70	0.41
Valnera	valn_1	710	Tr100	19.00	25.85	27.99	27.13	28.15	0.002014	1.73	10.99	6.56	0.43
Valnera	valn_1	710	Tr30	14.00	25.85	27.48	26.92	27.64	0.002824	1.80	7.79	5.87	0.50
Valnera	valn_1	710	Tr20	13.00	25.85	27.39	26.86	27.55	0.002968	1.79	7.25	5.75	0.51
Valnera	valn_1	709.11	Tr200	22.50	25.75	28.21	27.17	28.36	0.001736	1.71	13.13	6.70	0.39
Valnera	valn_1	709.11	Tr100	19.00	25.75	27.96	27.04	28.10	0.001799	1.66	11.46	6.65	0.40
Valnera	valn_1	709.11	Tr30	14.00	25.75	27.43	26.81	27.58	0.002516	1.73	8.12	5.94	0.47
Valnera	valn_1	709.11	Tr20	13.00	25.75	27.34	26.76	27.49	0.002643	1.72	7.56	5.82	0.48
Valnera	valn_1	708.121		Culvert									
Valnera	valn_1	708.12	Tr200	22.50	24.98	26.59	26.59	27.10	0.010283	3.16	7.13	7.02	1.00
Valnera	valn_1	708.12	Tr100	19.00	24.98	26.47	26.47	26.93	0.010396	3.03	6.27	6.63	1.00
Valnera	valn_1	708.12	Tr30	14.00	24.98	25.85	26.25	27.17	0.054447	5.09	2.75	4.75	2.14
Valnera	valn_1	708.12	Tr20	13.00	24.98	25.82	26.20	27.09	0.054995	5.00	2.60	4.65	2.14
Valnera	valn_1	707.1	Tr200	22.50	18.27	20.73	19.94	20.85	0.001685	1.52	14.79	11.30	0.42
Valnera	valn_1	707.1	Tr100	19.00	18.27	20.41	19.80	20.56	0.002411	1.67	11.41	10.08	0.50
Valnera	valn_1	707.1	Tr30	14.00	18.27	19.97	19.59	20.15	0.003663	1.87	7.50	7.55	0.60
Valnera	valn_1	707.1	Tr20	13.00	18.27	19.89	19.55	20.07	0.003886	1.89	6.88	7.08	0.61
Valnera	valn_1	707		Bridge									
Valnera	valn_1	706.9	Tr200	22.50	17.57	18.80	19.19	19.99	0.033052	4.82	4.67	5.91	1.73
Valnera	valn_1	706.9	Tr100	19.00	17.57	19.06	19.06	19.52	0.010482	3.01	6.31	6.80	1.00
Valnera	valn_1	706.9	Tr30	14.00	17.57	18.85	18.85	19.26	0.010780	2.82	4.97	6.09	0.99
Valnera	valn_1	706.9	Tr20	13.00	17.57	18.81	18.81	19.20	0.010919	2.78	4.68	5.92	1.00
Valnera	valn_1	706.1	Tr200	22.50	10.53	13.18	12.07	13.22	0.000434	1.02	26.81	19.24	0.23
Valnera	valn_1	706.1	Tr100	19.00	10.53	13.10	11.94	13.14	0.000365	0.91	25.34	19.24	0.21
Valnera	valn_1	706.1	Tr30	14.00	10.53	12.98	11.74	13.01	0.000261	0.74	23.02	19.24	0.18
Valnera	valn_1	706.1	Tr20	13.00	10.53	12.96	11.69	12.98	0.000240	0.70	22.51	19.24	0.17
Valnera	valn_1	706		Bridge									
Valnera	valn_1	705.9	Tr200	22.50	10.53	11.64	12.07	12.97	0.039794	5.12	4.40	5.93	1.90
Valnera	valn_1	705.9	Tr100	19.00	10.53	11.51	11.94	12.88	0.046608	5.18	3.67	5.49	2.02
Valnera	valn_1	705.9	Tr30	14.00	10.53	11.32	11.74	12.72	0.061005	5.25	2.67	4.82	2.26
Valnera	valn_1	705.9	Tr20	13.00	10.53	11.28	11.69	12.68	0.064388	5.24	2.48	4.69	2.30
Valnera	valn_1	705.11	Tr200	25.20	6.89	10.73	8.42	10.76	0.000178	0.74	35.42	17.32	0.15
Valnera	valn_1	705.11	Tr100	21.00	6.89	11.13	8.28	11.14	0.000073	0.52	42.25	17.32	0.10
Valnera	valn_1	705.11	Tr30	15.20	6.89	9.90	8.06	9.93	0.000212	0.67	22.64	12.16	0.16
Valnera	valn_1	705.11	Tr20	13.50	6.89	9.63	7.99	9.66	0.000252	0.69	19.45	11.34	0.17
Valnera	valn_2	705.1	Tr200	37.00	6.89	10.69	8.75	10.76	0.000406	1.10	34.72	17.32	0.23
Valnera	valn_2	705.1	Tr100	31.00	6.89	11.11	8.59	11.14	0.000163	0.78	41.92	17.32	0.15
Valnera	valn_2	705.1	Tr30	22.00	6.89	9.87	8.32	9.92	0.000466	0.99	22.25	12.07	0.23
Valnera	valn_2	705.1	Tr20	19.50	6.89	9.60	8.22	9.65	0.000556	1.02	19.05	11.24	0.25
Valnera	valn_2	705		Bridge									
Valnera	valn_2	704.9	Tr200	37.00	6.89	10.24	8.75	10.34	0.000781	1.37	26.97	13.58	0.31
Valnera	valn_2	704.9	Tr100	31.00	6.89	9.84	8.59	9.94	0.000970	1.42	21.86	11.97	0.33
Valnera	valn_2	704.9	Tr30	22.00	6.89	9.18	8.32	9.30	0.001438	1.50	14.65	9.98	0.40
Valnera	valn_2	704.9	Tr20	19.50	6.89	9.04	8.22	9.15	0.001489	1.47	13.23	9.54	0.40
Valnera	valn_2	704.1	Tr200	37.00	6.66	10.22	8.76	10.29	0.000476	1.20	32.61	15.77	0.25
Valnera	valn_2	704.1	Tr100	31.00	6.66	9.80	8.63	9.87	0.000670	1.25	25.98	15.77	0.29
Valnera	valn_2	704.1	Tr30	22.00	6.66	9.07	8.39	9.18	0.001655	1.47	14.96	12.10	0.42
Valnera	valn_2	704.1	Tr20	19.50	6.66	8.91	8.32	9.02	0.001896	1.49	13.06	11.43	0.45
Valnera	valn_2	704		Bridge									
Valnera	valn_2	703.9	Tr200	37.00	6.66	8.25	8.76	9.94	0.050198	5.76	6.42	8.70	2.14
Valnera	valn_2	703.9	Tr100	31.00	6.66	8.63	8.63	9.11	0.009930	3.08	10.05	10.28	1.00
Valnera	valn_2	703.9	Tr30	22.00	6.66	8.39	8.39	8.81	0.010602	2.86	7.70	9.29	1.00
Valnera	valn_2	703.9	Tr20	19.50	6.66	8.32	8.32	8.71	0.010702	2.77	7.05	9.00	1.00
Valnera	valn_2	703.1	Tr200	37.00	3.84	7.04	5.59	7.12	0.000585	1.25	30.70	17.59	0.27
Valnera	valn_2	703.1	Tr100	31.00	3.84	6.71	5.45	6.79	0.000727	1.26	25.04	16.24	0.30
Valnera	valn_2	703.1	Tr30	22.00	3.84	6.18	5.22	6.26	0.000934	1.24	17.79	11.98	0.32
Valnera	valn_2	703.1	Tr20	19.50	3.84	6.01	5.15	6.09	0.001024	1.23	15.80	11.49	0.34
Valnera	valn_2	703		Bridge									
Valnera	valn_2	702.9	Tr200	37.00	3.84	6.57	5.59	6.70	0.001325	1.63	22.78	16.04	0.39
Valnera	valn_2	702.9	Tr100	31.00	3.84	6.28	5.45	6.42	0.001527	1.63	19.06	12.28	0.42
Valnera	valn_2	702.9	Tr30	22.00	3.84	5.84	5.23	5.97	0.001878	1.58	13.89	11.00	0.45
Valnera	valn_2	702.9	Tr20	19.50	3.84	5.68	5.15	5.81	0.002170	1.61	12.13	10.53	0.48
Valnera	valn_2	702.1	Tr200	87.00	1.75	6.00	4.37	6.18	0.000884	1.91	47.39	15.67	0.34
Valnera	valn_2	702.1	Tr100	73.00	1.75	5.79	4.15	5.94	0.000771	1.72	44.06	15.67	0.31
Valnera	valn_2	702.1	Tr30	53.00	1.75	5.45	3.81	5.55	0.000592	1.42	38.79	15.67	0.27
Valnera	valn_2	702.1	Tr20	47.00	1.75	4.41	3.70	4.63	0.002269	2.11	22.40	15.45	0.52
Valnera	valn_2	702		Bridge									
Valnera	valn_2	701.9	Tr200	87.00	1.75	3.67	4.37	5.84	0.033147	6.52	13.34	11.00	1.89
Valnera	valn_2	701.9	Tr100	73.00	1.75	3.49	4.15	5.59	0.036651	6.42	11.38	10.41	1.96
Valnera	valn_2	701.9	Tr30	53.00	1.75	3.23	3.81	5.09	0.040547	6.03	8.78	9.58	2.01

HEC-RAS Plan: att1 (Continued)

River	Reach	River Sta	Profile	Q Total (m <sup>3</sup> /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 <sup>2</sup> )	Top Width (m)	Froude # Chl
Valnera	valn_2	701.9	Tr20	47.00	1.75	3.38	3.70	4.45	0.020411	4.58	10.26	10.06	1.45
Valnera	valn_2	701	Tr200	87.00	-1.53	1.68	0.47	1.93	0.002001	2.25	38.91	19.06	0.48
Valnera	valn_2	701	Tr100	73.00	-1.53	1.42	0.27	1.65	0.002001	2.13	34.33	16.78	0.47
Valnera	valn_2	701	Tr30	53.00	-1.53	0.83	-0.05	1.04	0.002002	2.07	25.63	12.83	0.47
Valnera	valn_2	701	Tr20	47.00	-1.53	0.66	-0.16	0.87	0.002002	1.99	23.58	12.60	0.46
Valletta	vall1	770.31	Tr200	13.00	27.74	31.20	29.55	31.30	0.001640	1.40	9.28	3.30	0.27
Valletta	vall1	770.31	Tr100	11.00	27.74	31.01	29.40	31.09	0.001404	1.27	8.64	3.30	0.25
Valletta	vall1	770.31	Tr30	8.00	27.74	30.64	29.14	30.70	0.001090	1.08	7.42	3.30	0.23
Valletta	vall1	770.31	Tr20	7.20	27.74	30.53	29.06	30.58	0.001000	1.02	7.07	3.30	0.22
Valletta	vall1	769.6		Culvert									
Valletta	vall1	769.31	Tr200	13.00	27.74	29.54	29.54	30.14	0.015997	3.41	3.81	3.23	1.00
Valletta	vall1	769.31	Tr100	11.00	27.74	29.40	29.40	29.94	0.016009	3.28	3.36	3.05	1.00
Valletta	vall1	769.31	Tr30	8.00	27.74	29.14	29.14	29.62	0.016498	3.07	2.60	2.73	1.00
Valletta	vall1	769.31	Tr20	7.20	27.74	29.06	29.06	29.52	0.016685	3.01	2.39	2.63	1.01
Valletta	vall1	765.21	Tr200	13.00	20.87	21.93	22.31	23.05	0.044980	4.68	2.78	4.63	1.93
Valletta	vall1	765.21	Tr100	11.00	20.87	21.86	22.27	22.88	0.044681	4.48	2.46	4.36	1.90
Valletta	vall1	765.21	Tr30	8.00	20.87	21.75	22.02	22.58	0.042245	4.05	1.98	3.92	1.82
Valletta	vall1	765.21	Tr20	7.20	20.87	21.71	21.96	22.49	0.041476	3.91	1.84	3.79	1.79
Valletta	vall1	762		Culvert									
Valletta	vall1	760.22	Tr200	13.00	19.02	19.94	20.53	22.19	0.105551	6.64	1.96	3.52	2.84
Valletta	vall1	760.22	Tr100	11.00	19.02	19.86	20.41	22.05	0.113681	6.55	1.68	3.27	2.92
Valletta	vall1	760.22	Tr30	8.00	19.02	19.72	20.22	21.79	0.131003	6.37	1.26	2.86	3.06
Valletta	vall1	760.22	Tr20	7.20	19.02	19.68	20.16	21.71	0.136952	6.30	1.14	2.73	3.11
Valletta	vall1	755.41	Tr200	13.00	12.92	15.75	14.05	15.79	0.000492	0.94	13.84	6.00	0.20
Valletta	vall1	755.41	Tr100	11.00	12.92	15.61	13.94	15.65	0.000413	0.84	13.04	6.00	0.18
Valletta	vall1	755.41	Tr30	8.00	12.92	15.17	13.75	15.20	0.000408	0.77	10.39	6.00	0.19
Valletta	vall1	755.41	Tr20	7.20	12.92	15.06	13.70	15.09	0.000399	0.74	9.72	6.00	0.19
Valletta	vall1	753		Culvert									
Valletta	vall1	750.51	Tr200	13.00	7.20	10.70	9.12	10.77	0.000933	1.17	11.10	4.40	0.24
Valletta	vall1	750.51	Tr100	11.00	7.20	11.11	9.00	11.14	0.000453	0.85	12.91	4.40	0.16
Valletta	vall1	750.51	Tr30	8.00	7.20	9.87	8.77	9.93	0.001005	1.07	7.48	4.40	0.26
Valletta	vall1	750.51	Tr20	7.20	7.20	9.60	8.71	9.66	0.001324	1.15	6.27	4.40	0.31

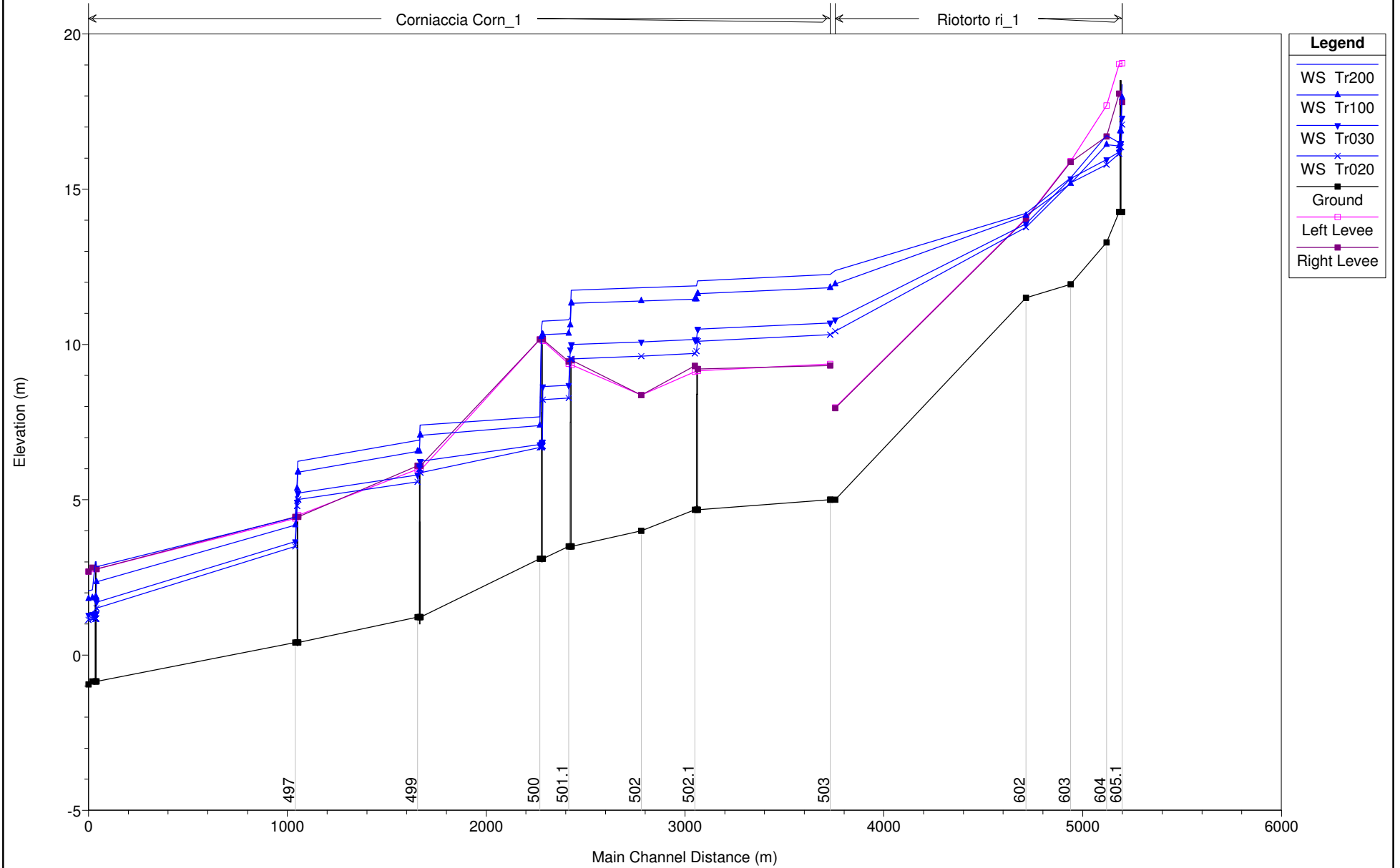
Appendice 5  
F.Corniaccia -Riotorto



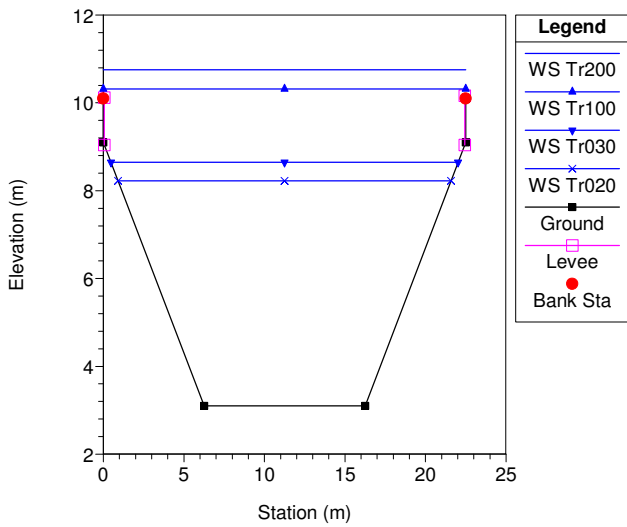
None of the XS's are Geo-Referenced (• Geo-Ref user entered XS • Geo-Ref interpolated XS • Non Geo-Ref user entered XS • Non Geo-Ref interpolated XS)

Corniaccia-Riot-apr09 Plan: att1 4/29/2009 3:24:33 PM

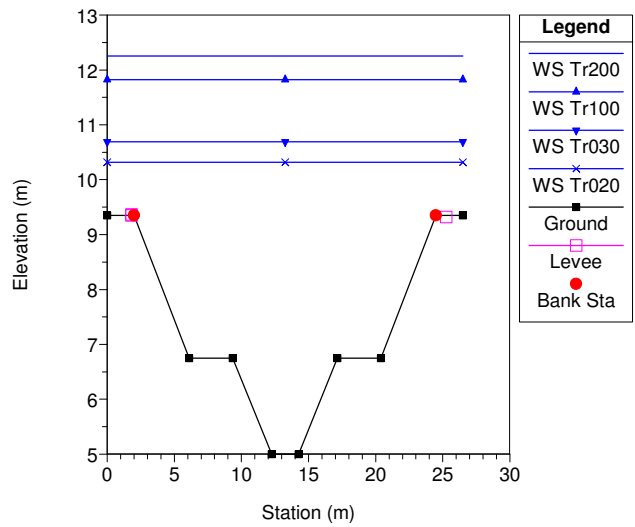
Geom: Corniaccia-Riot-apr09 Flow: riotorto



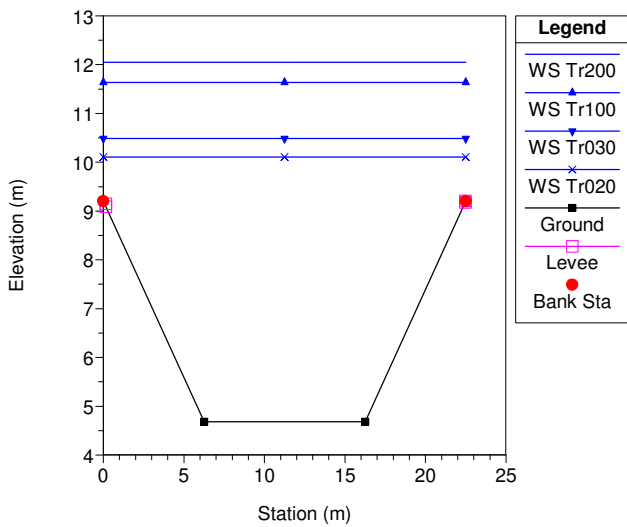
Corniaccia-Riot-apr09 Plan: att1 4/29/2009 3:24:33 PM  
 Geom: Corniaccia-Riot-apr09 Flow: riotorto  
 River = Corniaccia Reach = Corn\_1 RS = 500.81 8.1



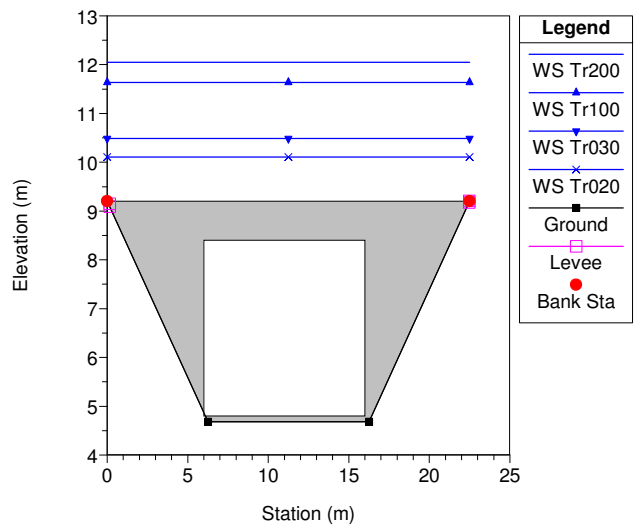
Corniaccia-Riot-apr09 Plan: att1 4/29/2009 3:24:33 PM  
 Geom: Corniaccia-Riot-apr09 Flow: riotorto  
 River = Corniaccia Reach = Corn\_1 RS = 503



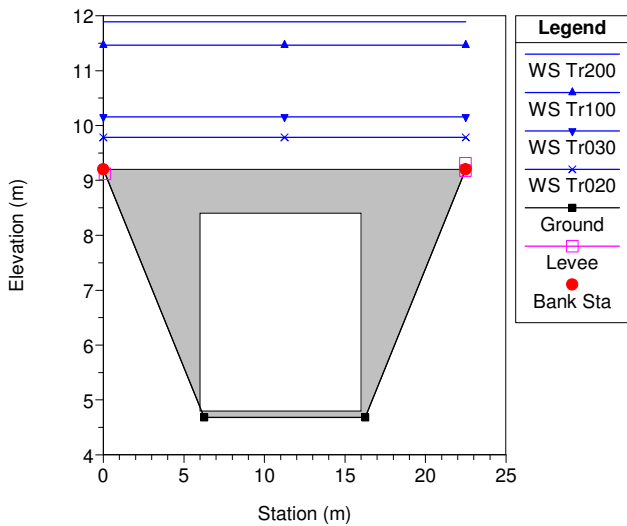
Corniaccia-Riot-apr09 Plan: att1 4/29/2009 3:24:33 PM  
 Geom: Corniaccia-Riot-apr09 Flow: riotorto  
 River = Corniaccia Reach = Corn\_1 RS = 502.71



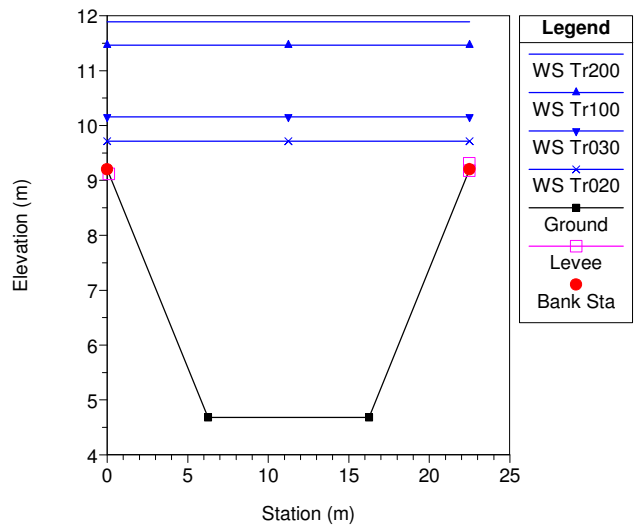
Corniaccia-Riot-apr09 Plan: att1 4/29/2009 3:24:33 PM  
 Geom: Corniaccia-Riot-apr09 Flow: riotorto  
 River = Corniaccia Reach = Corn\_1 RS = 502.5 Culv



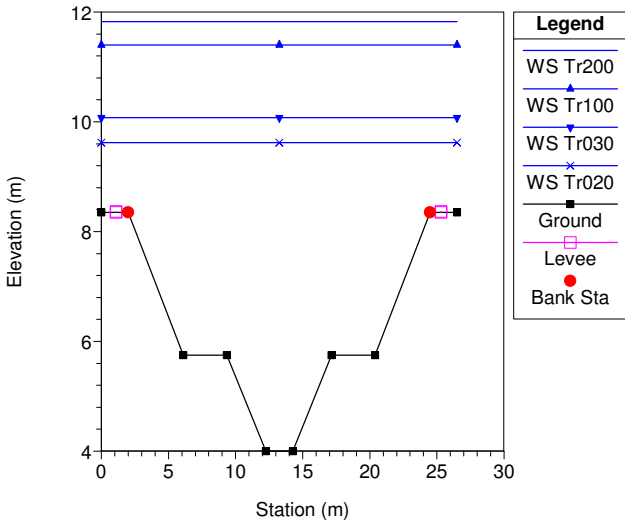
Corniaccia-Riot-apr09 Plan: att1 4/29/2009 3:24:33 PM  
 Geom: Corniaccia-Riot-apr09 Flow: riotorto  
 River = Corniaccia Reach = Corn\_1 RS = 502.5 Culv



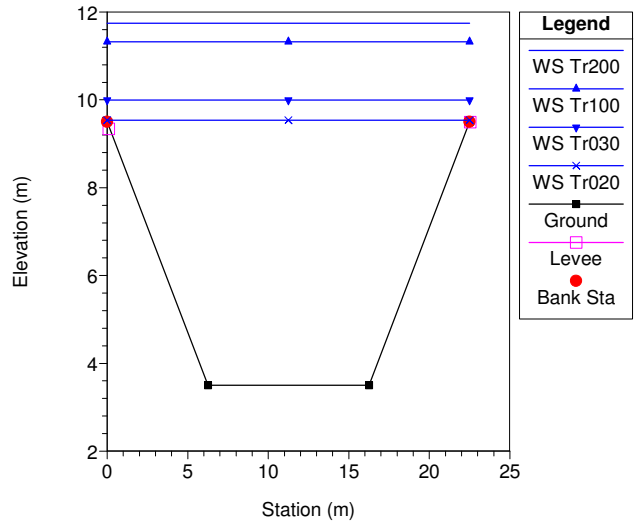
Corniaccia-Riot-apr09 Plan: att1 4/29/2009 3:24:33 PM  
 Geom: Corniaccia-Riot-apr09 Flow: riotorto  
 River = Corniaccia Reach = Corn\_1 RS = 502.1



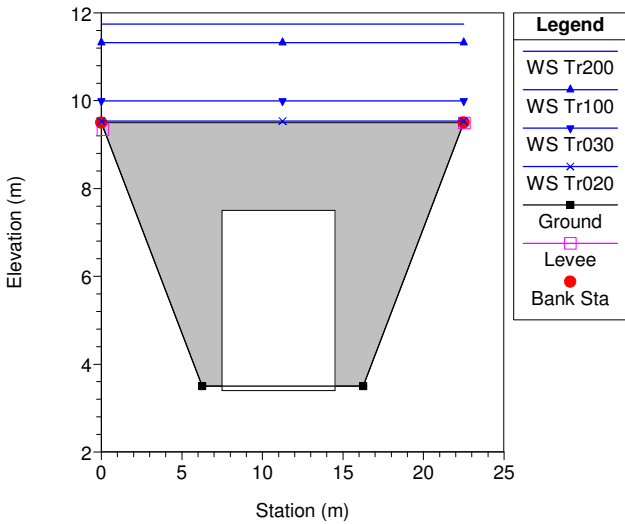
Corniaccia-Riot-apr09 Plan: att1 4/29/2009 3:24:33 PM  
 Geom: Corniaccia-Riot-apr09 Flow: riotorto  
 River = Corniaccia Reach = Corn\_1 RS = 502 sezB



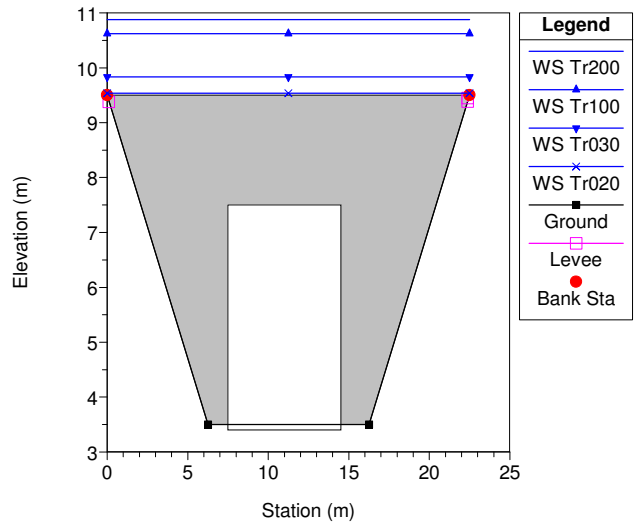
Corniaccia-Riot-apr09 Plan: att1 4/29/2009 3:24:33 PM  
 Geom: Corniaccia-Riot-apr09 Flow: riotorto  
 River = Corniaccia Reach = Corn\_1 RS = 501.82



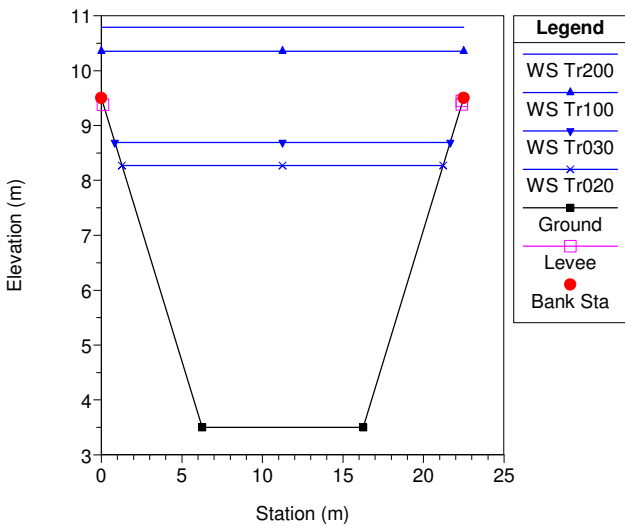
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 Geom: Corniaccia-Riot-apr09 Flow: riotorto  
 River = Corniaccia Reach = Corn\_1 RS = 501.5 Culv



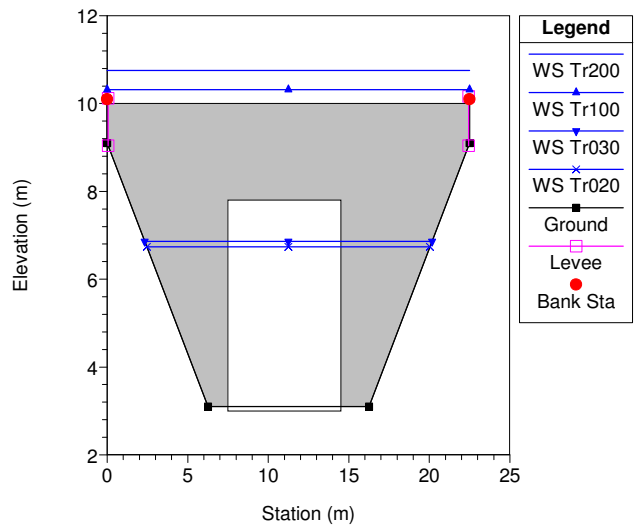
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 Geom: Corniaccia-Riot-apr09 Flow: riotorto  
 River = Corniaccia Reach = Corn\_1 RS = 501.5 Culv



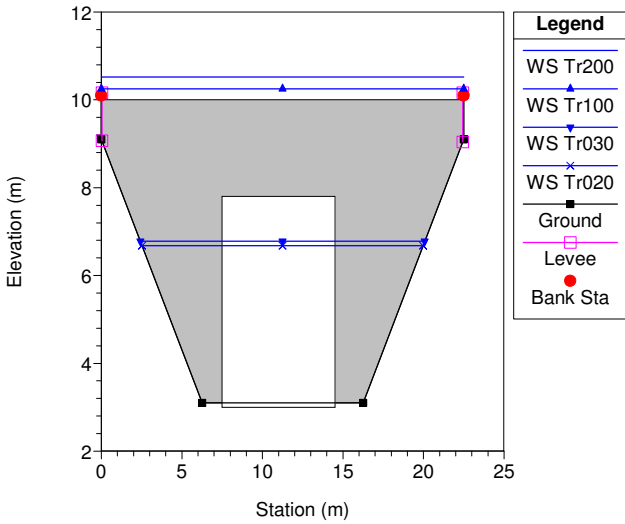
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 Geom: Corniaccia-Riot-apr09 Flow: riotorto  
 River = Corniaccia Reach = Corn\_1 RS = 501.1



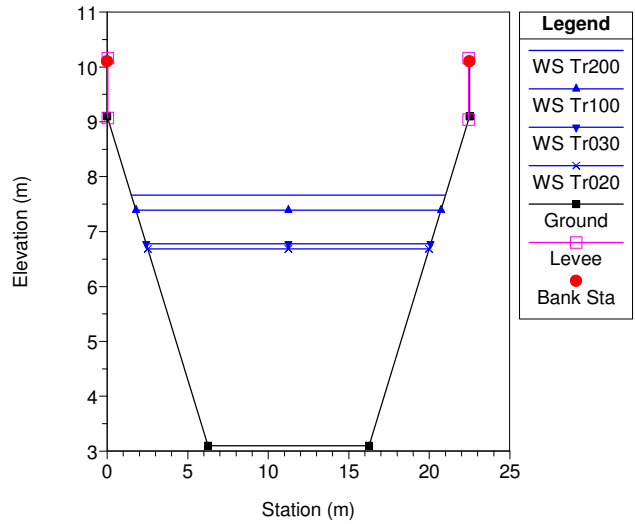
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 Geom: Corniaccia-Riot-apr09 Flow: riotorto  
 River = Corniaccia Reach = Corn\_1 RS = 500.5 Culv



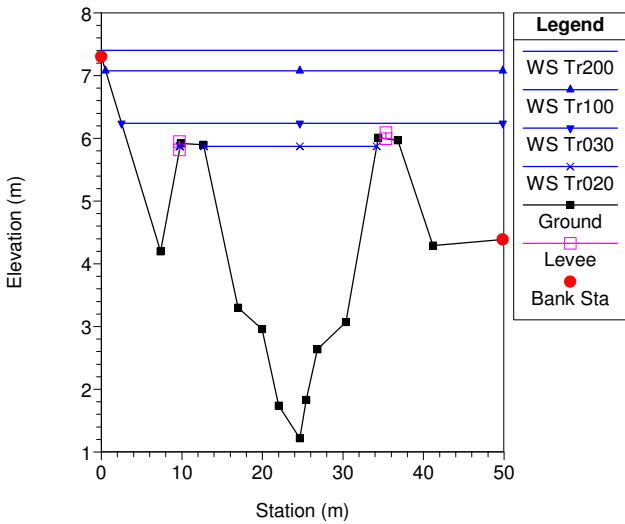
Corniaccia-Riot-apr09 Plan: att1 4/29/2009 3:24:33 PM  
 Geom: Corniaccia-Riot-apr09 Flow: riotorto  
 River = Corniaccia Reach = Corn\_1 RS = 500.5 Culv



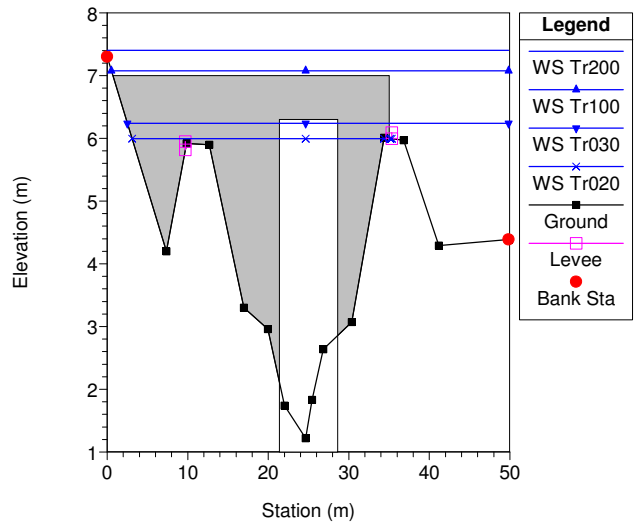
Corniaccia-Riot-apr09 Plan: att1 4/29/2009 3:24:33 PM  
 Geom: Corniaccia-Riot-apr09 Flow: riotorto  
 River = Corniaccia Reach = Corn\_1 RS = 500



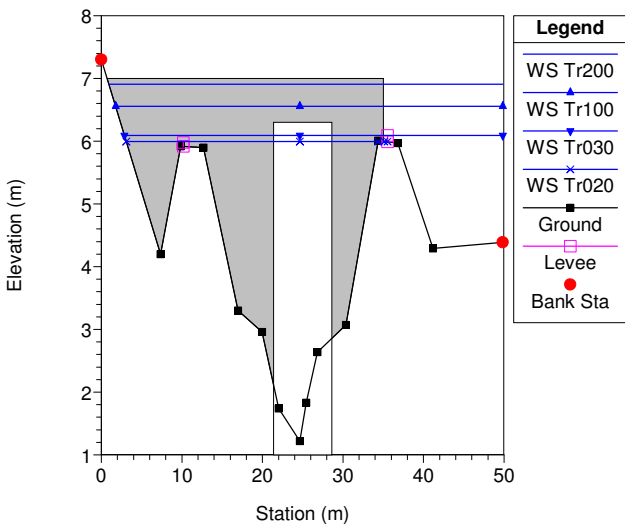
Corniaccia-Riot-apr09 Plan: att1 4/29/2009 3:24:33 PM  
 Geom: Corniaccia-Riot-apr09 Flow: riotorto  
 River = Corniaccia Reach = Corn\_1 RS = 499.91 9.1



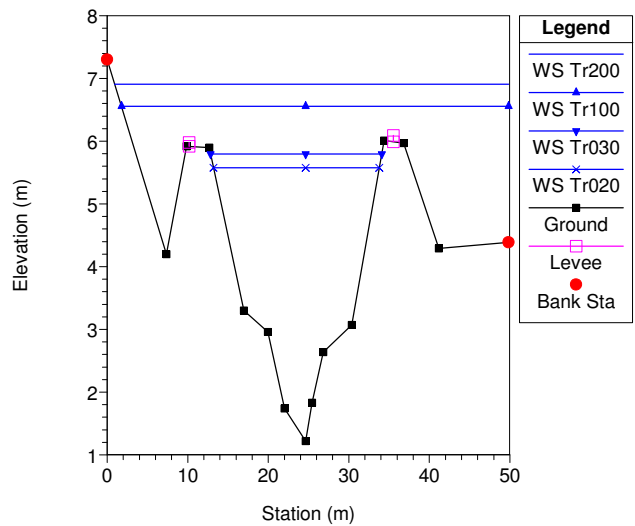
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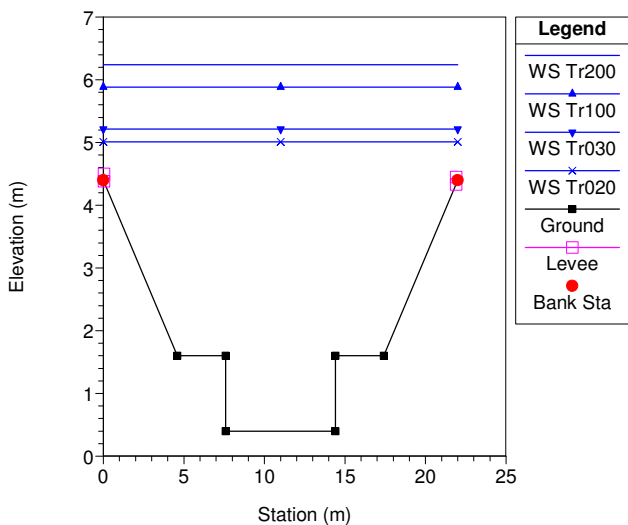
Corniaccia-Riot-apr09 Plan: att1 4/29/2009 3:24:33 PM  
 Geom: Corniaccia-Riot-apr09 Flow: riotorto  
 River = Corniaccia Reach = Corn\_1 RS = 499.5 Culv



Corniaccia-Riot-apr09 Plan: att1 4/29/2009 3:24:33 PM  
 Geom: Corniaccia-Riot-apr09 Flow: riotorto  
 River = Corniaccia Reach = Corn\_1 RS = 499

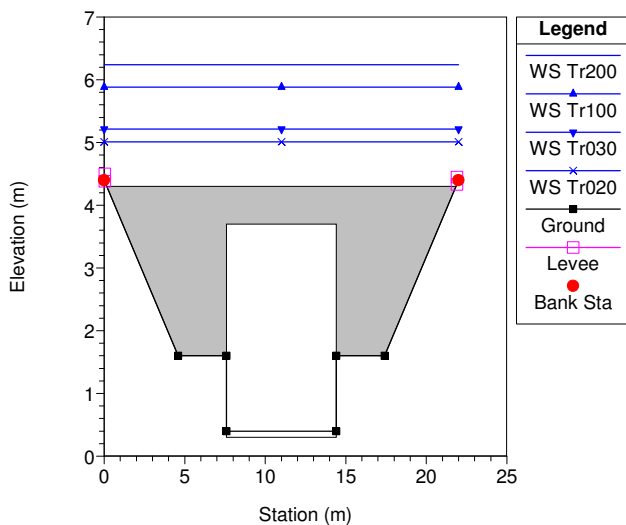


Corniaccia-Riot-apr09 Plan: att1 4/29/2009 3:24:33 PM  
 Geom: Corniaccia-Riot-apr09 Flow: riotorto  
 River = Corniaccia Reach = Corn\_1 RS = 498.101 sez10.1

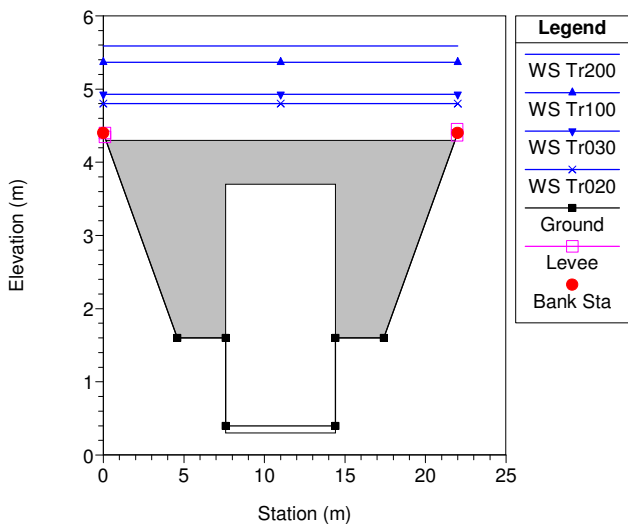


Corniaccia-Riot-apr09 Plan: att1 4/29/2009 3:24:33 PM  
 Geom: Corniaccia-Riot-apr09 Flow: riotorto  
 River = Corniaccia Reach = Corn\_1 RS = 498 Culv

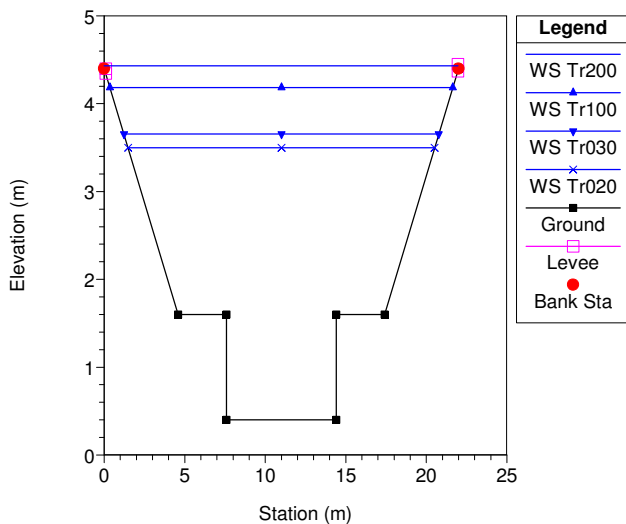
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 Geom: Corniaccia-Riot-apr09 Flow: riotorto  
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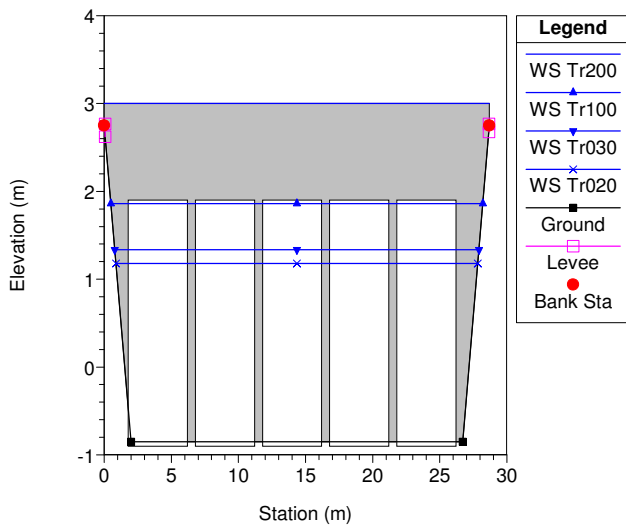
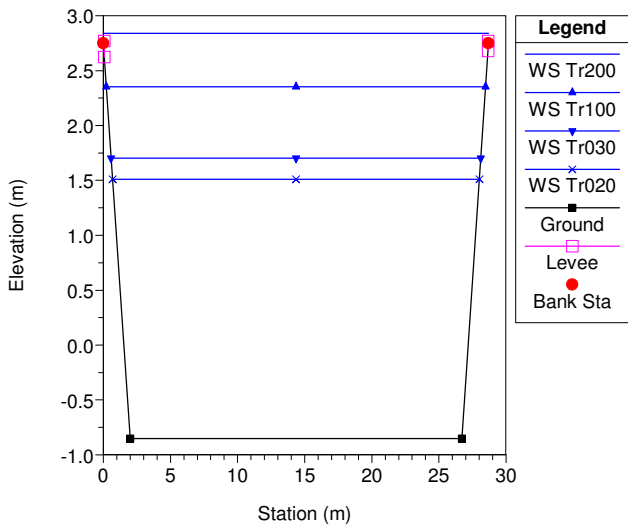
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 River = Corniaccia Reach = Corn\_1 RS = 497 sez10.1



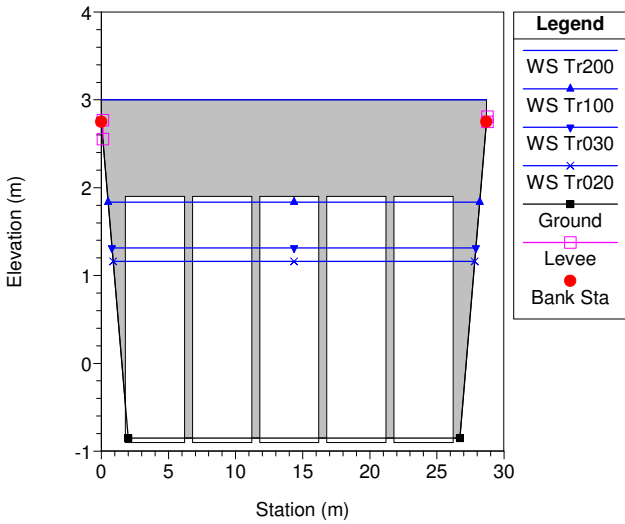
Corniaccia-Riot-apr09 Plan: att1 4/29/2009 3:24:33 PM  
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 River = Corniaccia Reach = Corn\_1 RS = 496.111 11.1



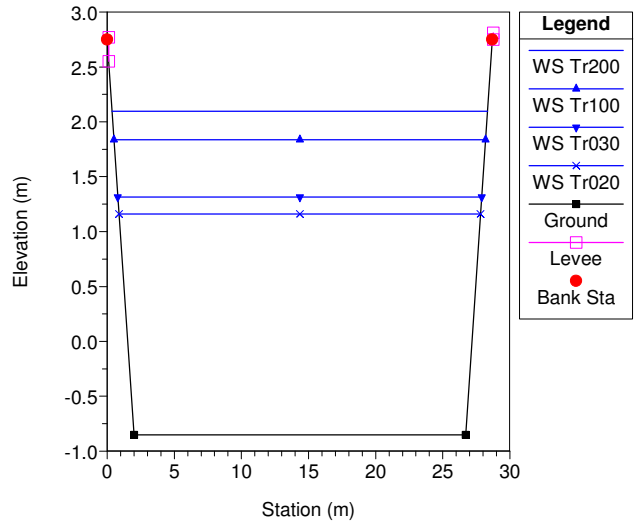
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 Geom: Corniaccia-Riot-apr09 Flow: riotorto  
 River = Corniaccia Reach = Corn\_1 RS = 496 Culv



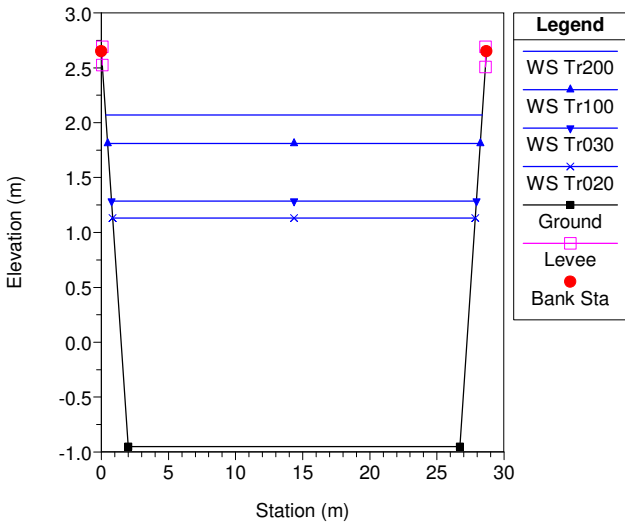
Corniaccia-Riot-apr09 Plan: att1 4/29/2009 3:24:33 PM  
 Geom: Corniaccia-Riot-apr09 Flow: riotorto  
 River = Corniaccia Reach = Corn\_1 RS = 496 Culv



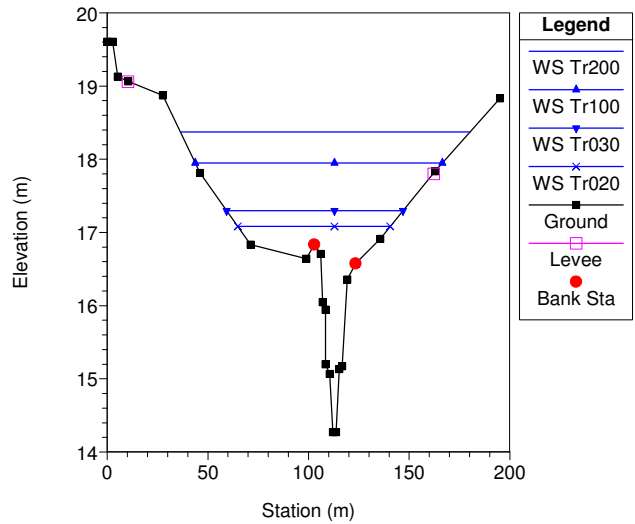
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 Geom: Corniaccia-Riot-apr09 Flow: riotorto  
 River = Corniaccia Reach = Corn\_1 RS = 495



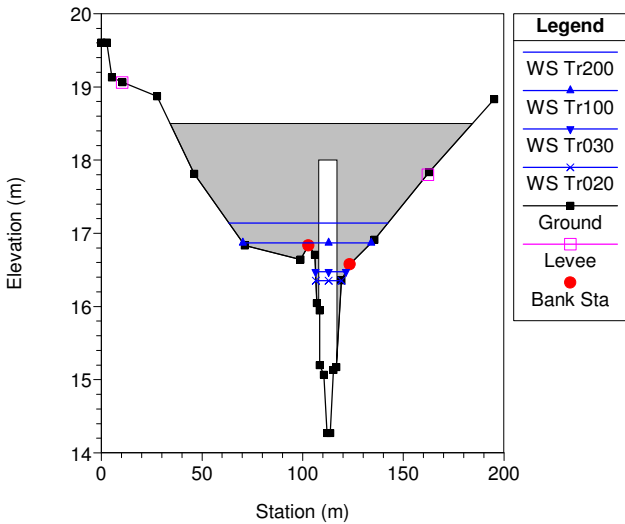
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 Geom: Corniaccia-Riot-apr09 Flow: riotorto  
 River = Corniaccia Reach = Corn\_1 RS = 494



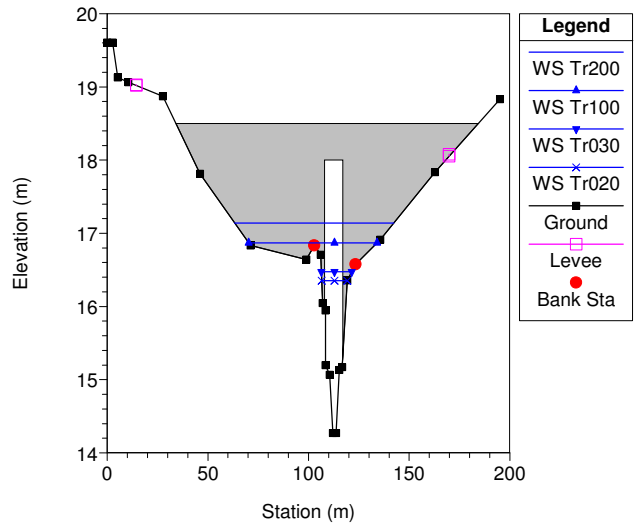
Corniaccia-Riot-apr09 Plan: att1 4/29/2009 3:24:33 PM  
 Geom: Corniaccia-Riot-apr09 Flow: riotorto  
 River = Riotorto Reach = ri\_1 RS = 605.1 sez valle ponte croce-4



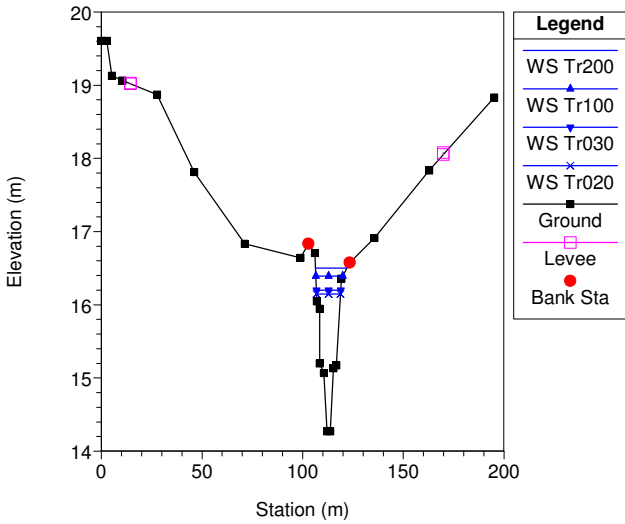
Corniaccia-Riot-apr09 Plan: att1 4/29/2009 3:24:33 PM  
 Geom: Corniaccia-Riot-apr09 Flow: riotorto  
 River = Riotorto Reach = ri\_1 RS = 605 BR



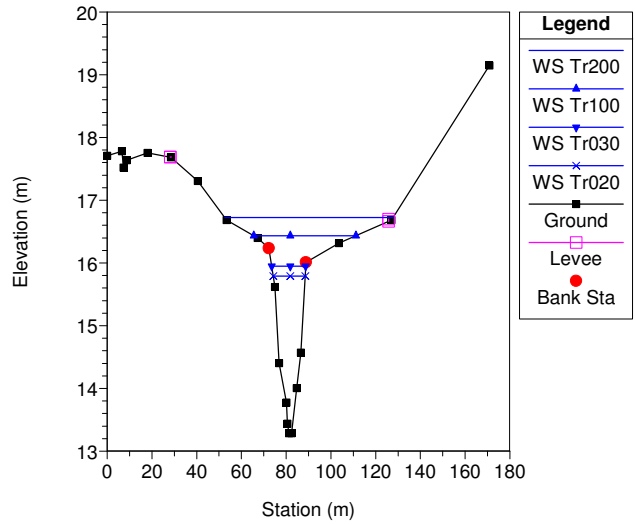
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 Geom: Corniaccia-Riot-apr09 Flow: riotorto  
 River = Riotorto Reach = ri\_1 RS = 605 BR



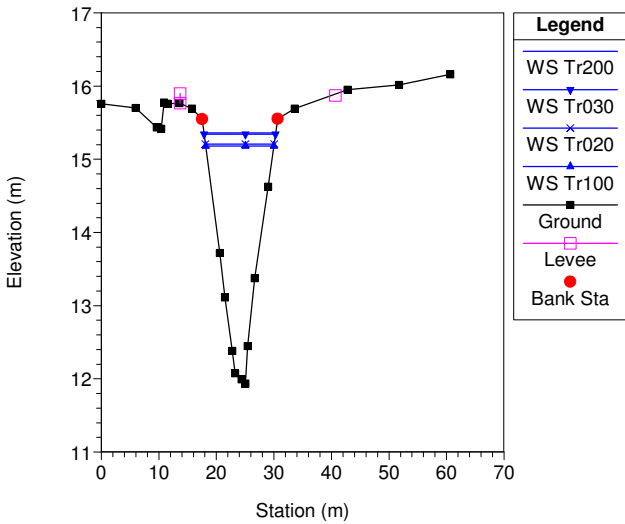
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 Geom: Corniaccia-Riot-apr09 Flow: riotorto  
 River = Riotorto Reach = ri\_1 RS = 604.9 sez valle ponte croce-4



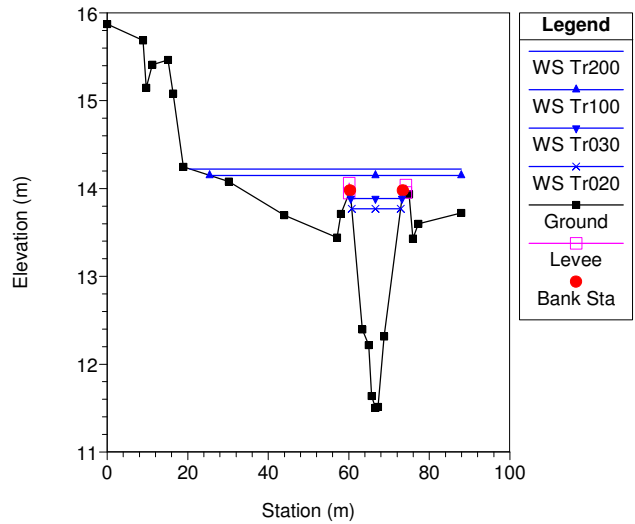
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 Geom: Corniaccia-Riot-apr09 Flow: riotorto  
 River = Riotorto Reach = ri\_1 RS = 604 croce-3



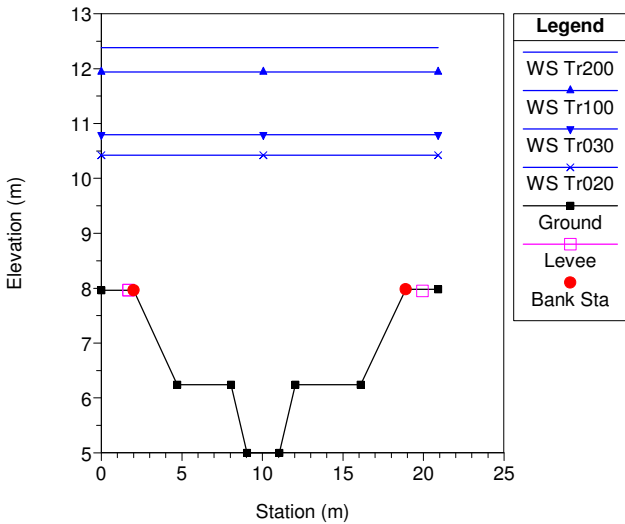
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 Geom: Corniaccia-Riot-apr09 Flow: riotorto  
 River = Riotorto Reach = ri\_1 RS = 603 croce-2



Corniaccia-Riot-apr09 Plan: att1 4/29/2009 3:24:33 PM  
 Geom: Corniaccia-Riot-apr09 Flow: riotorto  
 River = Riotorto Reach = ri\_1 RS = 602 croce-1



Corniaccia-Riot-apr09 Plan: att1 4/29/2009 3:24:33 PM  
 Geom: Corniaccia-Riot-apr09 Flow: riotorto  
 River = Riotorto Reach = ri\_1 RS = 601



River	Reach	River Sta	Profile	Q Total (m3/s)	Min Ch El (m)	W.S. Elev (m)	Crit W.S. (m)	E.G. Elev (m)	E.G. Slope (m/m)	Vel Chnl (m/s)	Flow Area (m2)	Top Width (m)	Froude # Chl
Riotorto	ri_1	605.1	Tr200	96.30	14.27	18.37	17.12	18.39	0.000145	0.73	186.95	143.79	0.14
Riotorto	ri_1	605.1	Tr100	79.75	14.27	17.95	17.02	17.98	0.000254	0.86	130.71	122.72	0.18
Riotorto	ri_1	605.1	Tr030	57.09	14.27	17.30	16.55	17.36	0.000847	1.25	61.79	87.56	0.32
Riotorto	ri_1	605.1	Tr020	50.78	14.27	17.08	16.36	17.18	0.001460	1.49	44.17	75.71	0.41
Riotorto	ri_1	605		Bridge									
Riotorto	ri_1	604.9	Tr200	96.30	14.27	16.50	17.12	18.14	0.029482	5.67	16.97	15.68	1.74
Riotorto	ri_1	604.9	Tr100	79.75	14.27	16.39	17.02	17.76	0.023283	5.19	15.36	13.40	1.55
Riotorto	ri_1	604.9	Tr030	57.09	14.27	16.20	16.54	17.19	0.018560	4.41	12.94	12.13	1.36
Riotorto	ri_1	604.9	Tr020	50.78	14.27	16.15	16.37	17.01	0.016916	4.12	12.32	11.93	1.29
Riotorto	ri_1	604	Tr200	96.30	13.29	16.72	15.98	16.97	0.001841	2.31	54.61	75.23	0.50
Riotorto	ri_1	604	Tr100	79.75	13.29	16.44	15.75	16.73	0.002459	2.43	36.76	45.65	0.56
Riotorto	ri_1	604	Tr030	57.09	13.29	15.95	15.38	16.24	0.003130	2.39	23.85	15.22	0.61
Riotorto	ri_1	604	Tr020	50.78	13.29	15.79	15.27	16.08	0.003204	2.36	21.53	14.28	0.61
Riotorto	ri_1	603	Tr200	96.30	11.93	15.36	15.36	16.27	0.008782	4.23	22.77	12.46	1.00
Riotorto	ri_1	603	Tr100	79.75	11.93	15.18	15.09	15.95	0.007863	3.87	20.60	11.84	0.94
Riotorto	ri_1	603	Tr030	57.09	11.93	15.34	14.67	15.67	0.003172	2.53	22.54	12.39	0.60
Riotorto	ri_1	603	Tr020	50.78	11.93	15.21	14.53	15.51	0.003076	2.43	20.88	11.92	0.59
Riotorto	ri_1	602	Tr200	96.30	11.50	14.22	14.28	14.59	0.005351	3.12	43.81	67.41	0.79
Riotorto	ri_1	602	Tr100	79.75	11.50	14.15	14.15	14.46	0.004762	2.85	39.05	62.51	0.74
Riotorto	ri_1	602	Tr030	57.09	11.50	13.89	13.89	14.52	0.009010	3.53	16.19	12.69	1.00
Riotorto	ri_1	602	Tr020	50.78	11.50	13.77	13.77	14.37	0.009133	3.44	14.77	12.15	1.00
Riotorto	ri_1	601	Tr200	96.30	5.00	12.38	7.77	12.42	0.000073	0.88	120.38	20.90	0.11
Riotorto	ri_1	601	Tr100	79.75	5.00	11.94	7.57	11.97	0.000065	0.78	111.20	20.90	0.11
Riotorto	ri_1	601	Tr030	57.09	5.00	10.80	7.25	10.82	0.000071	0.70	87.29	20.90	0.11
Riotorto	ri_1	601	Tr020	50.78	5.00	10.42	7.16	10.45	0.000075	0.69	79.48	20.90	0.11
Corniaccia	Corn_1	503	Tr200	220.00	5.00	12.25	8.92	12.40	0.000331	1.74	133.30	26.50	0.24
Corniaccia	Corn_1	503	Tr100	190.00	5.00	11.82	8.68	11.96	0.000327	1.64	121.96	26.50	0.23
Corniaccia	Corn_1	503	Tr030	135.00	5.00	10.69	8.20	10.81	0.000398	1.52	91.96	26.50	0.25
Corniaccia	Corn_1	503	Tr020	120.00	5.00	10.32	8.06	10.43	0.000448	1.51	82.05	26.50	0.26
Corniaccia	Corn_1	502.71	Tr200	220.00	4.68	12.05	7.83	12.18	0.000320	1.60	137.55	22.50	0.21
Corniaccia	Corn_1	502.71	Tr100	190.00	4.68	11.63	7.57	11.75	0.000291	1.48	128.20	22.50	0.20
Corniaccia	Corn_1	502.71	Tr030	135.00	4.68	10.49	7.04	10.58	0.000279	1.32	102.49	22.50	0.20
Corniaccia	Corn_1	502.71	Tr020	120.00	4.68	10.10	6.88	10.19	0.000286	1.28	93.79	22.50	0.20
Corniaccia	Corn_1	502.5		Culvert									
Corniaccia	Corn_1	502.1	Tr200	220.00	4.68	11.89	7.83	12.03	0.000346	1.64	133.95	22.50	0.21
Corniaccia	Corn_1	502.1	Tr100	190.00	4.68	11.46	7.57	11.58	0.000319	1.53	124.32	22.50	0.21
Corniaccia	Corn_1	502.1	Tr030	135.00	4.68	10.16	7.04	10.26	0.000350	1.42	94.99	22.50	0.22
Corniaccia	Corn_1	502.1	Tr020	120.00	4.68	9.71	6.87	9.82	0.000383	1.41	85.03	22.50	0.23
Corniaccia	Corn_1	502	Tr200	220.00	4.00	11.82	7.92	11.95	0.000236	1.57	148.45	26.50	0.21
Corniaccia	Corn_1	502	Tr100	190.00	4.00	11.40	7.69	11.50	0.000226	1.46	137.19	26.50	0.20
Corniaccia	Corn_1	502	Tr030	135.00	4.00	10.08	7.21	10.17	0.000287	1.38	102.20	26.50	0.21
Corniaccia	Corn_1	502	Tr020	120.00	4.00	9.62	7.06	9.72	0.000335	1.38	90.13	26.50	0.23
Corniaccia	Corn_1	501.82	Tr200	220.00	3.50	11.74	6.76	11.86	0.000256	1.49	147.98	22.50	0.19
Corniaccia	Corn_1	501.82	Tr100	190.00	3.50	11.33	6.48	11.42	0.000230	1.37	138.58	22.50	0.18
Corniaccia	Corn_1	501.82	Tr030	135.00	3.50	10.00	5.93	10.08	0.000231	1.24	108.73	22.50	0.18
Corniaccia	Corn_1	501.82	Tr020	120.00	3.50	9.54	5.75	9.61	0.000244	1.22	98.32	22.50	0.19
Corniaccia	Corn_1	501.5		Culvert									
Corniaccia	Corn_1	501.1	Tr200	220.00	3.50	10.79	6.76	10.95	0.000400	1.74	126.55	22.50	0.23
Corniaccia	Corn_1	501.1	Tr100	190.00	3.50	10.35	6.48	10.49	0.000375	1.63	116.73	22.50	0.23
Corniaccia	Corn_1	501.1	Tr030	135.00	3.50	8.69	5.93	8.84	0.000544	1.69	79.96	20.81	0.27
Corniaccia	Corn_1	501.1	Tr020	120.00	3.50	8.27	5.75	8.42	0.000585	1.68	71.48	19.95	0.28
Corniaccia	Corn_1	500.81	Tr200	220.00	3.10	10.75	6.36	10.89	0.000399	1.63	134.67	22.50	0.21
Corniaccia	Corn_1	500.81	Tr100	190.00	3.10	10.32	6.08	10.44	0.000370	1.52	124.90	22.50	0.21
Corniaccia	Corn_1	500.81	Tr030	135.00	3.10	8.64	5.53	8.77	0.000426	1.54	87.46	21.55	0.24
Corniaccia	Corn_1	500.81	Tr020	120.00	3.10	8.22	5.35	8.34	0.000451	1.53	78.60	20.68	0.25
Corniaccia	Corn_1	500.5		Culvert									
Corniaccia	Corn_1	500	Tr200	220.00	3.10	7.67	6.36	8.21	0.002314	3.27	67.37	19.51	0.56
Corniaccia	Corn_1	500	Tr100	190.00	3.10	7.39	6.08	7.87	0.002167	3.06	62.05	18.94	0.54
Corniaccia	Corn_1	500	Tr030	135.00	3.10	6.78	5.52	7.14	0.001902	2.65	50.87	17.66	0.50
Corniaccia	Corn_1	500	Tr020	120.00	3.10	6.68	5.36	6.99	0.001650	2.44	49.19	17.46	0.46
Corniaccia	Corn_1	499.91	Tr200	220.00	1.22	7.40	5.34	7.51	0.000510	1.44	152.45	49.84	0.26
Corniaccia	Corn_1	499.91	Tr100	190.00	1.22	7.08	5.10	7.17	0.000542	1.40	136.09	49.31	0.27
Corniaccia	Corn_1	499.91	Tr030	135.00	1.22	6.24	4.59	6.34	0.000825	1.41	95.64	47.32	0.32
Corniaccia	Corn_1	499.91	Tr020	120.00	1.22	5.87	4.44	6.10	0.001266	2.10	57.03	21.57	0.41
Corniaccia	Corn_1	499.5		Culvert									
Corniaccia	Corn_1	499	Tr200	220.00	1.22	6.91	5.34	7.06	0.000877	1.72	127.99	48.92	0.34
Corniaccia	Corn_1	499	Tr100	190.00	1.22	6.55	5.10	6.70	0.001028	1.72	110.71	48.07	0.36
Corniaccia	Corn_1	499	Tr030	135.00	1.22	5.79	4.60	6.10	0.001729	2.44	55.33	21.25	0.48
Corniaccia	Corn_1	499	Tr020	120.00	1.22	5.58	4.44	5.86	0.001739	2.36	50.77	20.59	0.48

HEC-RAS Plan: att1 (Continued)

River	Reach	River Sta	Profile	Q Total (m3/s)	Min Ch El (m)	W.S. Elev (m)	Crit W.S. (m)	E.G. Elev (m)	E.G. Slope (m/m)	Vel Chnl (m/s)	Flow Area (m2)	Top Width (m)	Froude # Chl
Corniaccia	Corn_1	498.101	Tr200	220.00	0.40	6.24	3.91	6.50	0.000962	2.26	97.33	22.00	0.34
Corniaccia	Corn_1	498.101	Tr100	190.00	0.40	5.88	3.66	6.11	0.000919	2.12	89.51	22.00	0.34
Corniaccia	Corn_1	498.101	Tr030	135.00	0.40	5.21	3.16	5.38	0.000795	1.81	74.76	22.00	0.31
Corniaccia	Corn_1	498.101	Tr020	120.00	0.40	5.01	3.01	5.16	0.000754	1.71	70.35	22.00	0.30
Corniaccia	Corn_1	498		Culvert									
Corniaccia	Corn_1	497	Tr200	220.00	0.40	4.43	3.91	5.18	0.004580	3.82	57.57	21.95	0.75
Corniaccia	Corn_1	497	Tr100	190.00	0.40	4.18	3.67	4.86	0.004497	3.64	52.22	21.29	0.74
Corniaccia	Corn_1	497	Tr030	135.00	0.40	3.66	3.16	4.20	0.004395	3.26	41.41	19.55	0.72
Corniaccia	Corn_1	497	Tr020	120.00	0.40	3.50	3.01	4.00	0.004322	3.13	38.37	19.03	0.70
Corniaccia	Corn_1	496.111	Tr200	220.00	-0.85	2.84	1.13	3.09	0.001064	2.23	98.67	28.70	0.38
Corniaccia	Corn_1	496.111	Tr100	190.00	-0.85	2.35	0.95	2.61	0.001234	2.24	84.80	28.26	0.41
Corniaccia	Corn_1	496.111	Tr030	135.00	-0.85	1.70	0.58	1.91	0.001304	2.03	66.66	27.54	0.42
Corniaccia	Corn_1	496.111	Tr020	120.00	-0.85	1.51	0.47	1.70	0.001329	1.95	61.40	27.32	0.42
Corniaccia	Corn_1	496		Culvert									
Corniaccia	Corn_1	495	Tr200	220.00	-0.85	2.10	1.13	2.51	0.002167	2.83	77.62	27.97	0.54
Corniaccia	Corn_1	495	Tr100	190.00	-0.85	1.84	0.95	2.21	0.002184	2.70	70.38	27.69	0.54
Corniaccia	Corn_1	495	Tr030	135.00	-0.85	1.32	0.58	1.61	0.002228	2.41	56.09	27.11	0.53
Corniaccia	Corn_1	495	Tr020	120.00	-0.85	1.16	0.47	1.43	0.002245	2.31	51.90	26.93	0.53
Corniaccia	Corn_1	494	Tr200	220.00	-0.95	2.07	1.03	2.46	0.002002	2.76	79.66	28.06	0.52
Corniaccia	Corn_1	494	Tr100	190.00	-0.95	1.81	0.85	2.16	0.002001	2.62	72.41	27.77	0.52
Corniaccia	Corn_1	494	Tr030	135.00	-0.95	1.29	0.48	1.56	0.002004	2.33	58.04	27.19	0.51
Corniaccia	Corn_1	494	Tr020	120.00	-0.95	1.13	0.37	1.39	0.002000	2.23	53.85	27.01	0.50

## Appendice 6

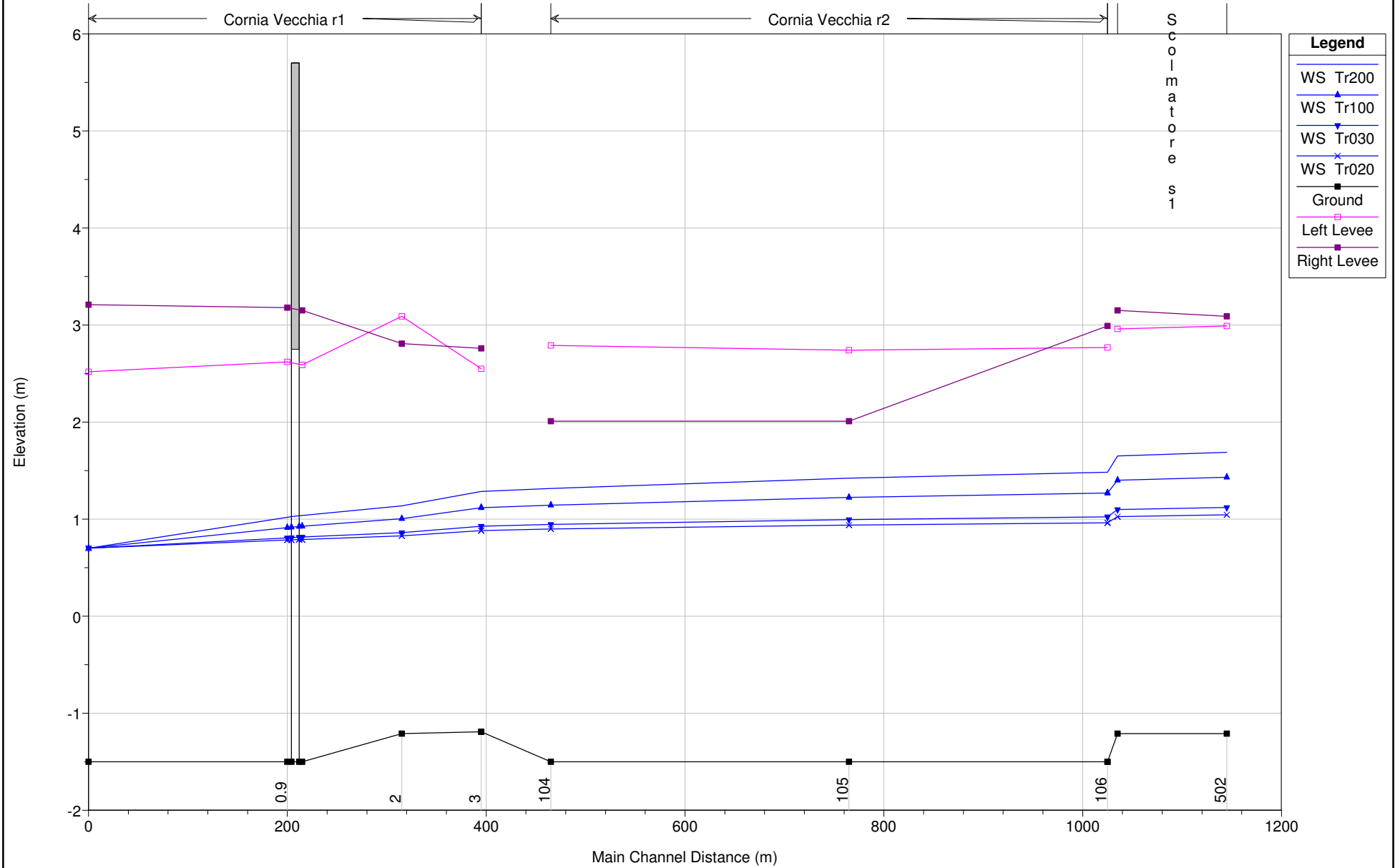
### Zona Fiorentina

	River	Reach	RS	Tr200	Tr100	Tr030	Tr020
1	allacciante	all-1	103	82	70	50	45
2	Allacciante	a1	406.2	45	40	30	27
3	cagliana	ca-2	145	10	10	10	10
4	cagliana	ca-2	134	46	39	27	25
5	cagliana	ca-1	105	61	50	34	30
6	Cornia vecchia	r4	108.9	72	58	40	35
7	Cornia Vecchia	r2	106	109	88	60	53
8	Cornia Vecchia	r1	3	138	112	79	70
9	CorniaVecchia	CV_2	2002	1	1	1	1
10	fossonuovo	nu-1	221	29	25	18	16
11	maestro	ma-1	320	12	10	7.5	6.5
12	Montegemoli	Mont_1	1417	72	58	40	35
13	Scolmatore	s1	502	37	30	20	18



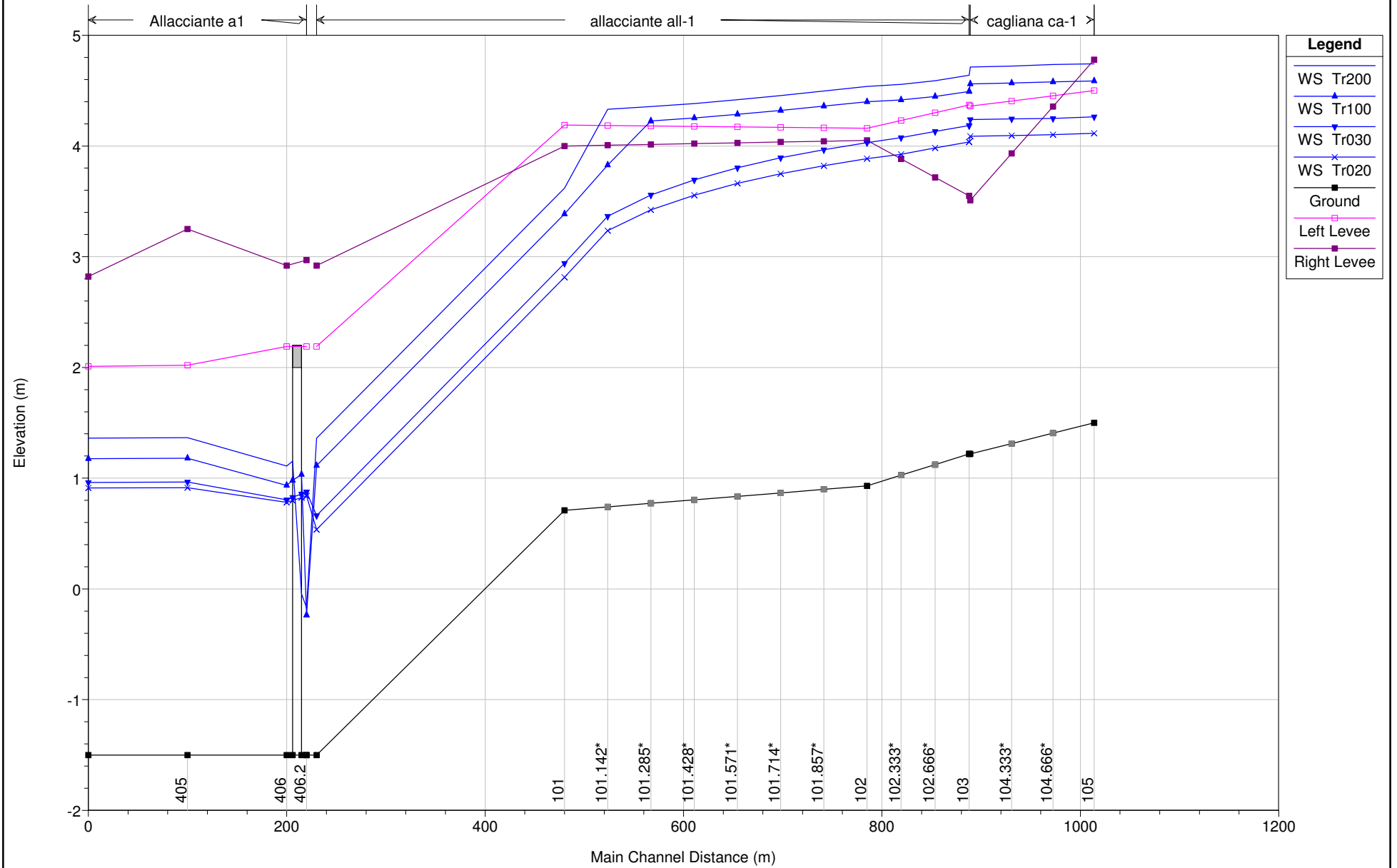
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Geom: fiorentina5 Flow: att1



Fiorentina1 Plan: att1 5/5/2009 5:50:54 PM

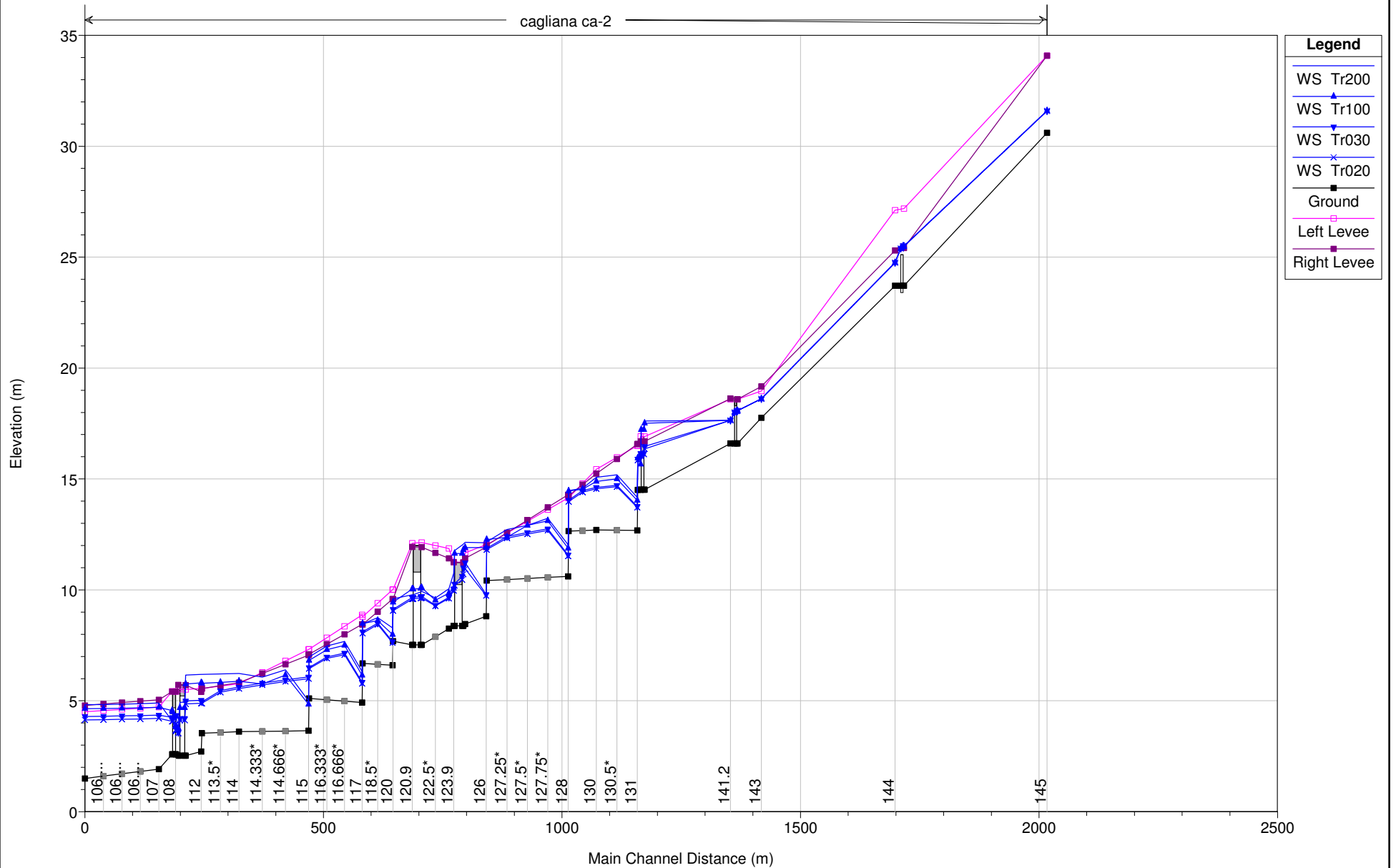
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Fiorentina1 Plan: att1 5/5/2009 5:50:54 PM

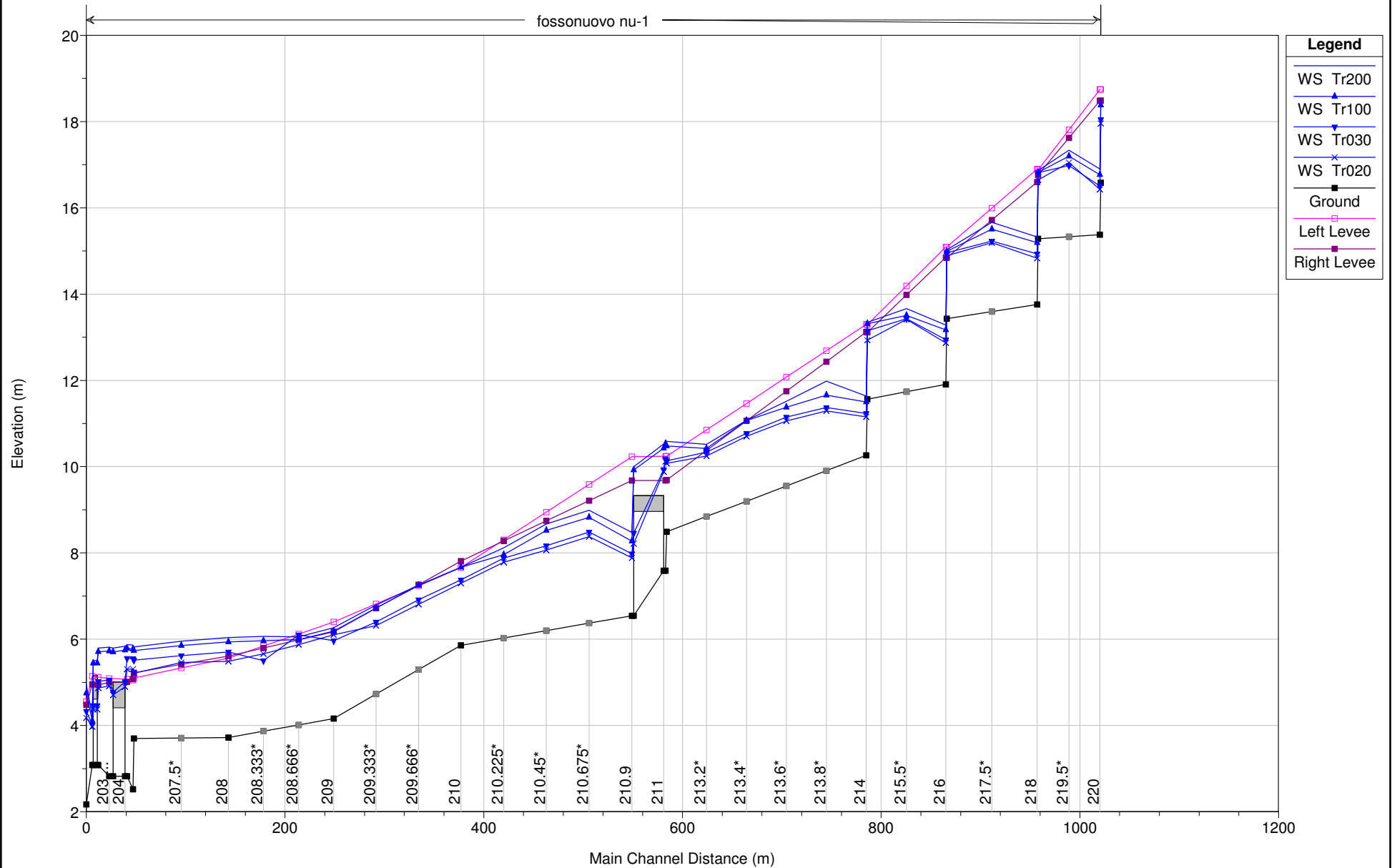
Geom: fiorentina5 Flow: att1

cagliana ca-2



Fiorentina1 Plan: att1 5/5/2009 5:50:54 PM

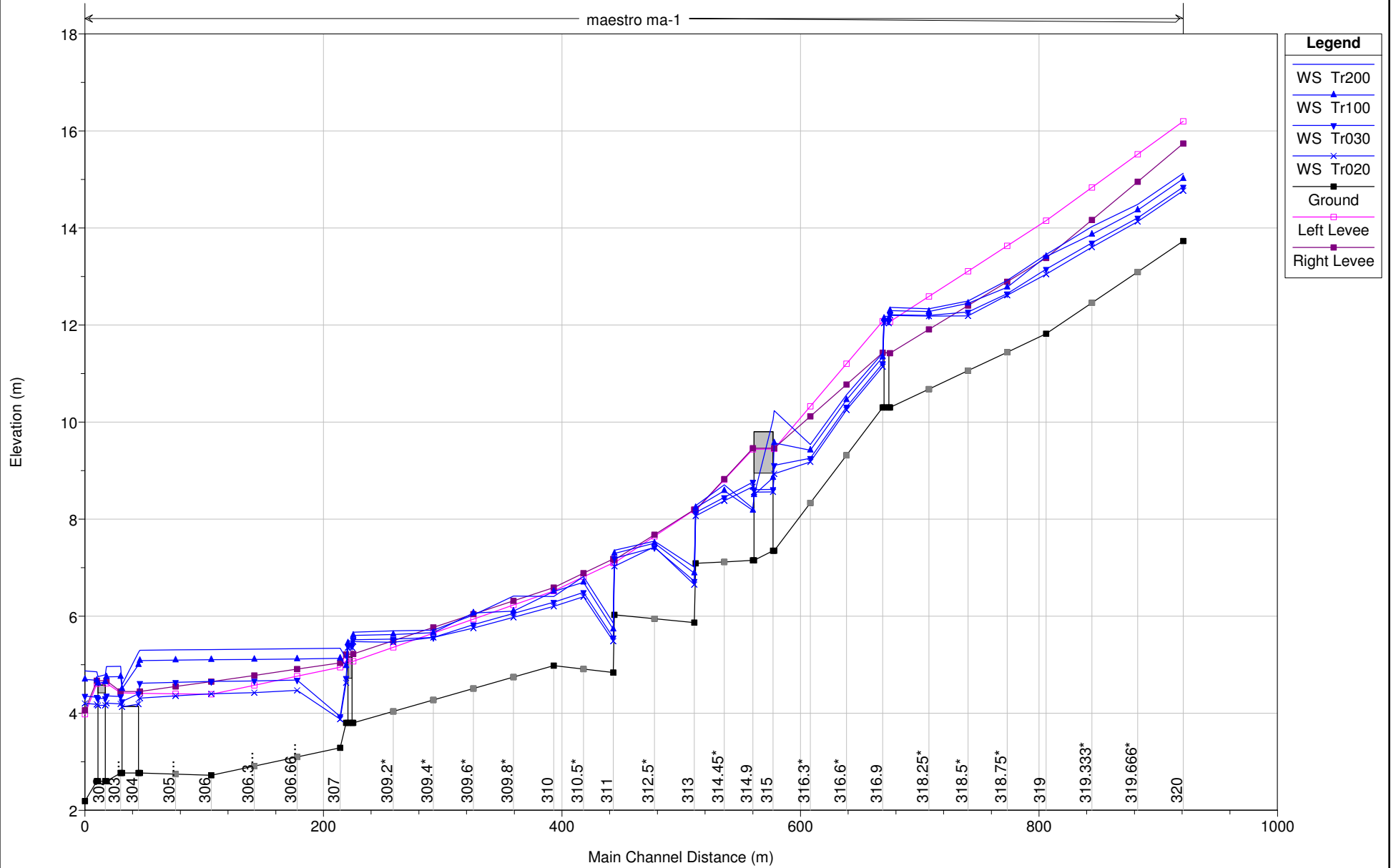
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Fiorentina1 Plan: att1 5/5/2009 5:50:54 PM

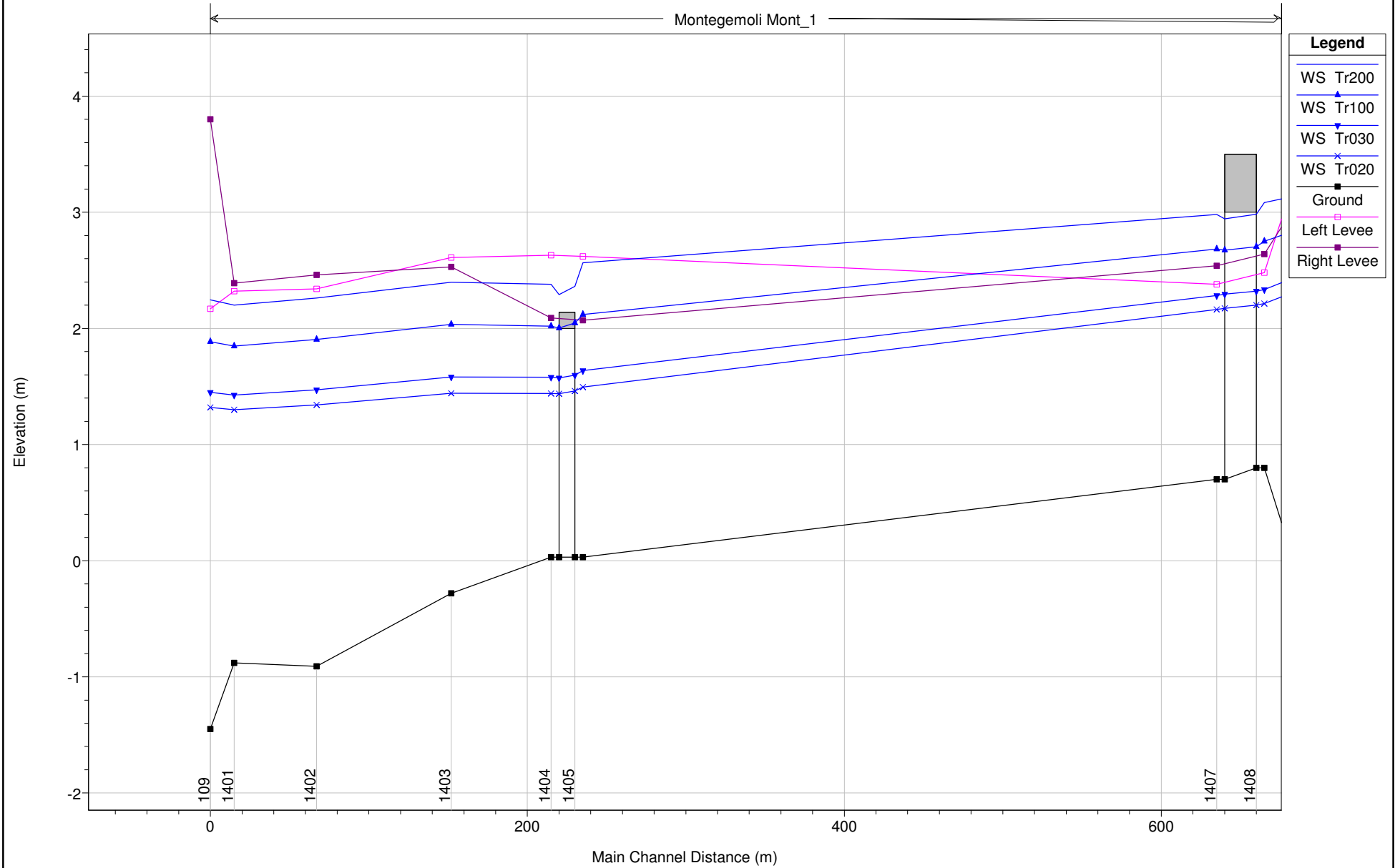
Geom: fiorentina5 Flow: att1

maestro ma-1

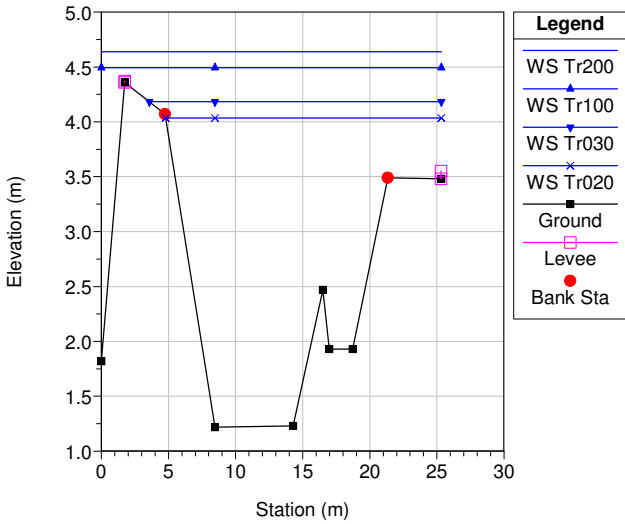


Fiorentina1 Plan: att1 5/5/2009 5:50:54 PM

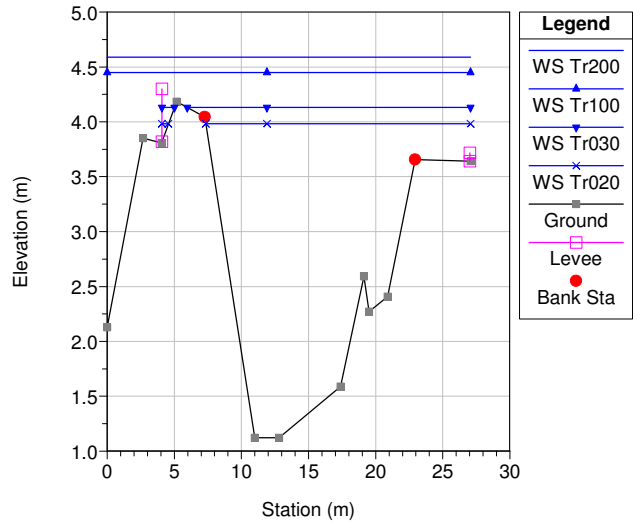
Geom: fiorentina5 Flow: att1



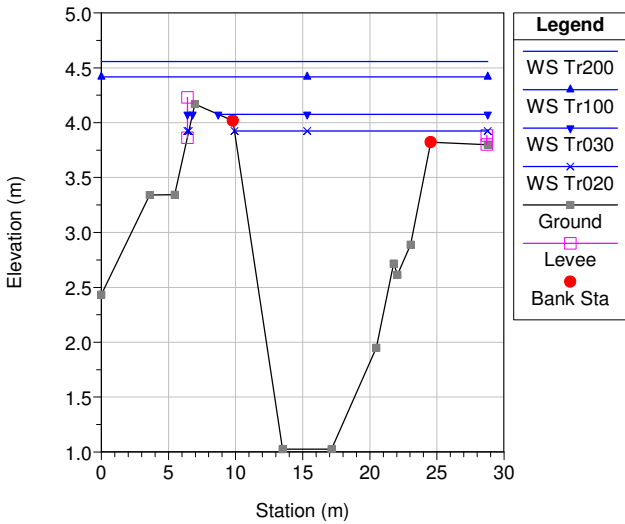
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 Geom: fiorentina5 Flow: att1  
 River = allacciante Reach = all-1 RS = 103 mucetti 012



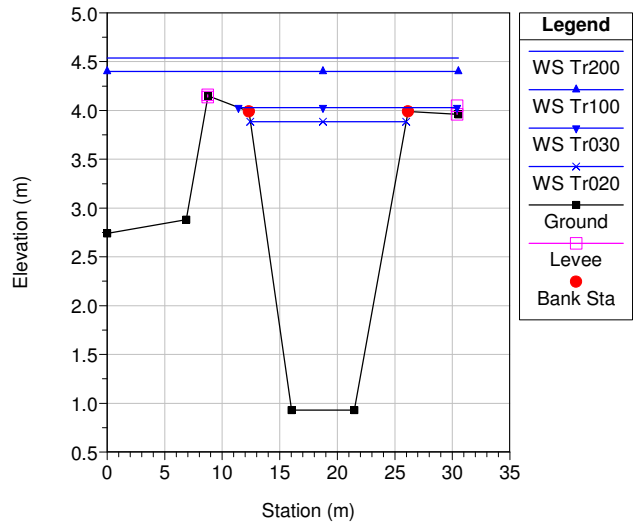
Fiorentina1 Plan: att1 5/5/2009 5:50:54 PM  
 Geom: fiorentina5 Flow: att1  
 River = allacciante Reach = all-1 RS = 102.666\*



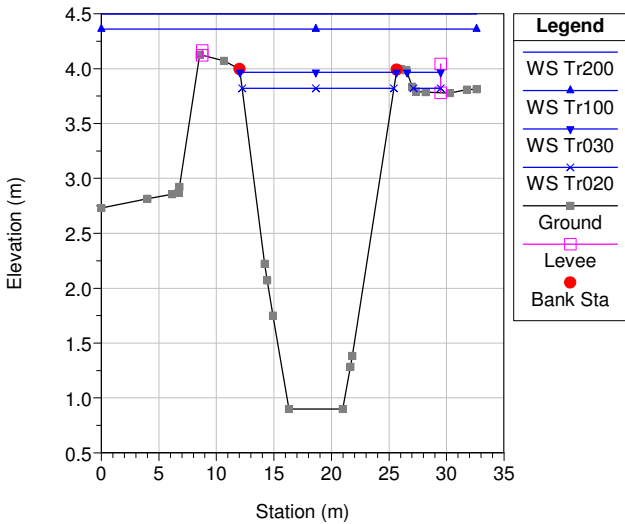
Fiorentina1 Plan: att1 5/5/2009 5:50:54 PM  
 Geom: fiorentina5 Flow: att1  
 River = allacciante Reach = all-1 RS = 102.333\*



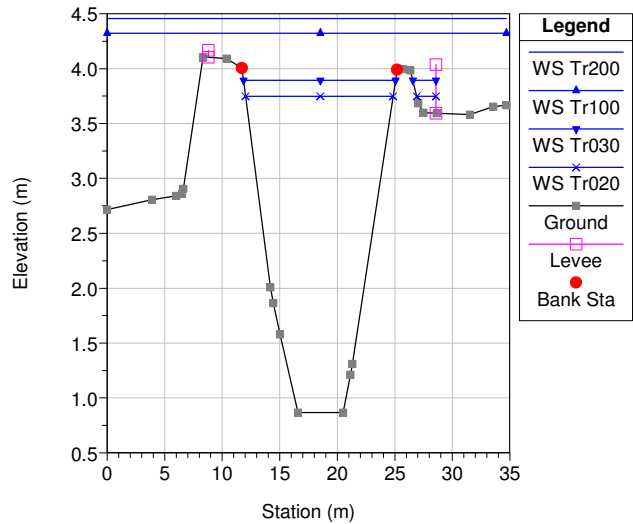
Fiorentina1 Plan: att1 5/5/2009 5:50:54 PM  
 Geom: fiorentina5 Flow: att1  
 River = allacciante Reach = all-1 RS = 102 mucetti 013



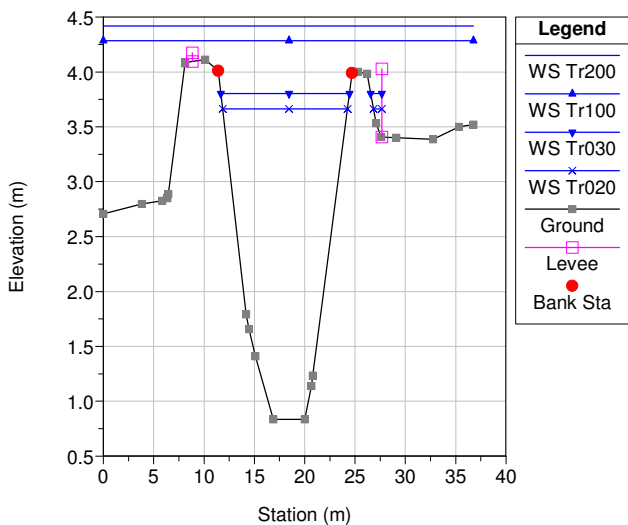
Fiorentina1 Plan: att1 5/5/2009 5:50:54 PM  
 Geom: fiorentina5 Flow: att1  
 River = allacciante Reach = all-1 RS = 101.857\*



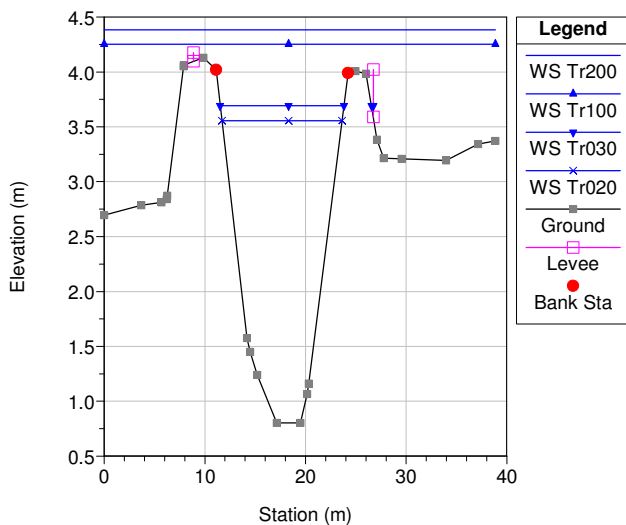
Fiorentina1 Plan: att1 5/5/2009 5:50:54 PM  
 Geom: fiorentina5 Flow: att1  
 River = allacciante Reach = all-1 RS = 101.714\*



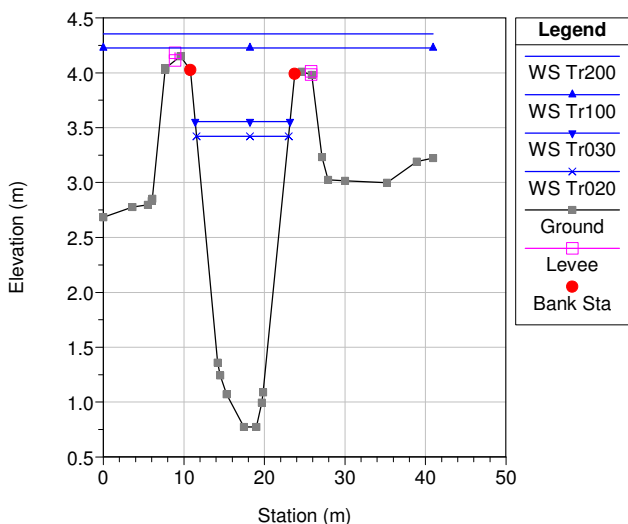
Fiorentina1 Plan: att1 5/5/2009 5:50:54 PM  
 Geom: fiorentina5 Flow: att1  
 River = allacciante Reach = all-1 RS = 101.571\*



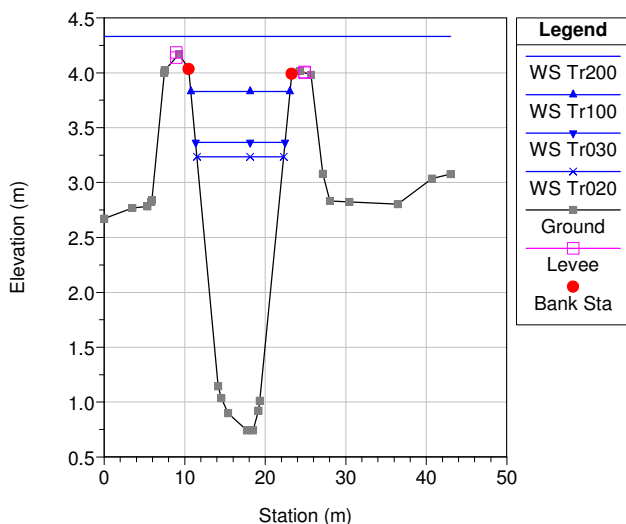
Fiorentina1 Plan: att1 5/5/2009 5:50:54 PM  
 Geom: fiorentina5 Flow: att1  
 River = allacciante Reach = all-1 RS = 101.428\*



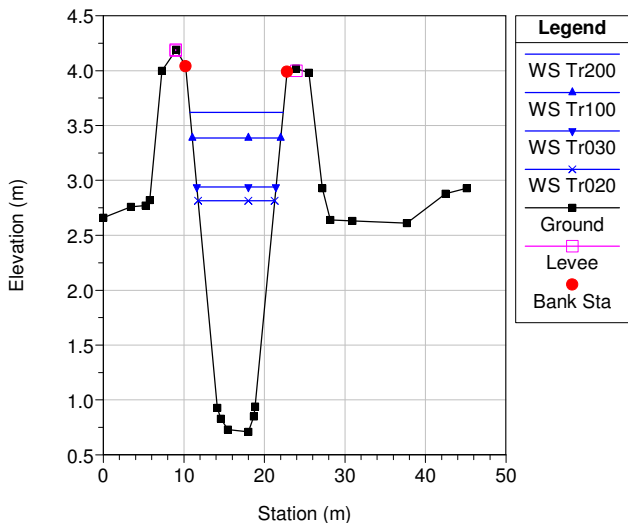
Fiorentina1 Plan: att1 5/5/2009 5:50:54 PM  
 Geom: fiorentina5 Flow: att1  
 River = allacciante Reach = all-1 RS = 101.285\*



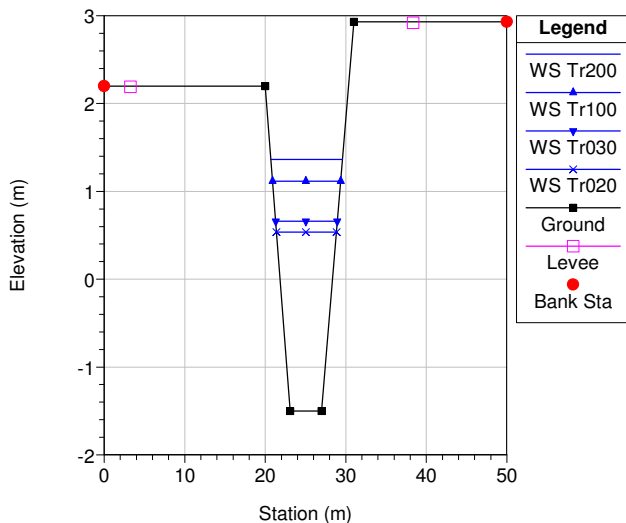
Fiorentina1 Plan: att1 5/5/2009 5:50:54 PM  
 Geom: fiorentina5 Flow: att1  
 River = allacciante Reach = all-1 RS = 101.142\*



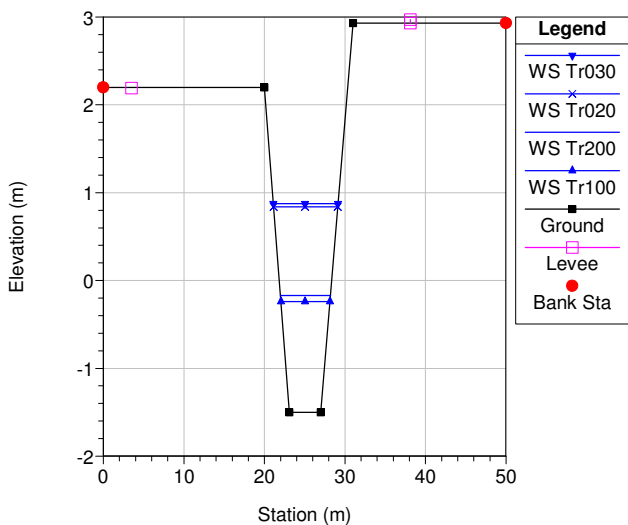
Fiorentina1 Plan: att1 5/5/2009 5:50:54 PM  
 Geom: fiorentina5 Flow: att1  
 River = allacciante Reach = all-1 RS = 101



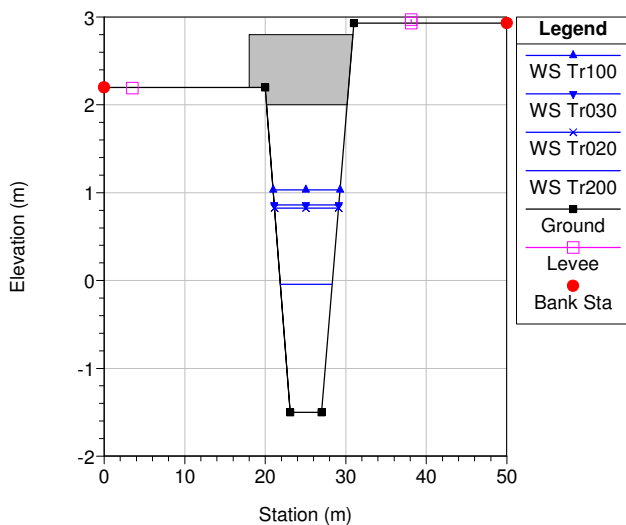
Fiorentina1 Plan: att1 5/5/2009 5:50:54 PM  
 Geom: fiorentina5 Flow: att1  
 River = allacciante Reach = all-1 RS = 100.406



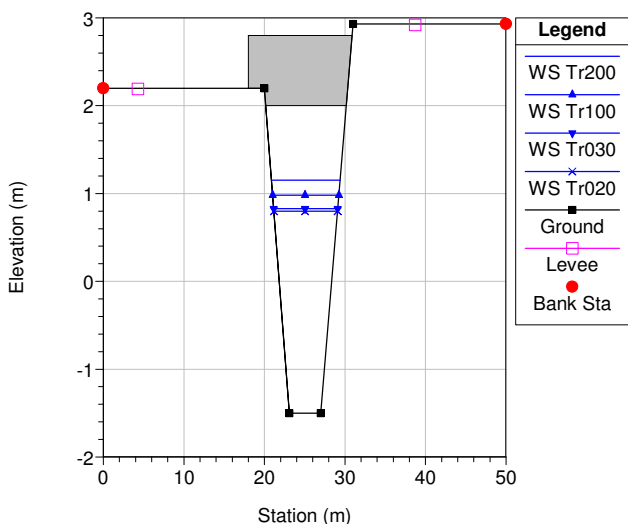
Fiorentina1 Plan: att1 5/5/2009 5:50:54 PM  
 Geom: fiorentina5 Flow: att1  
 River = Allacciante Reach = a1 RS = 406.2



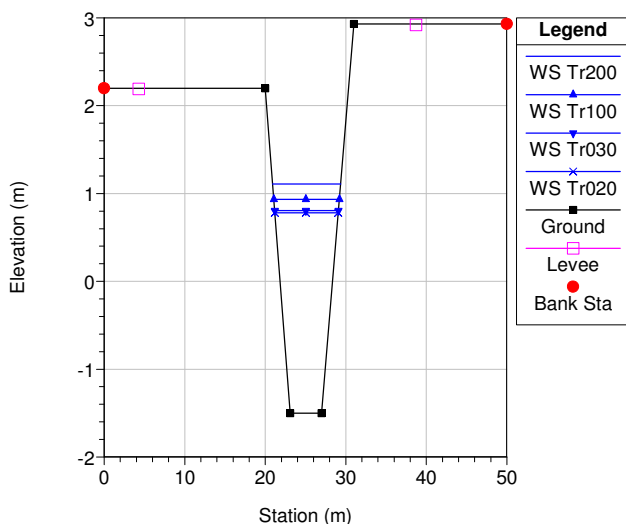
Fiorentina1 Plan: att1 5/5/2009 5:50:54 PM  
 Geom: fiorentina5 Flow: att1  
 River = Allacciante Reach = a1 RS = 406.1 BR



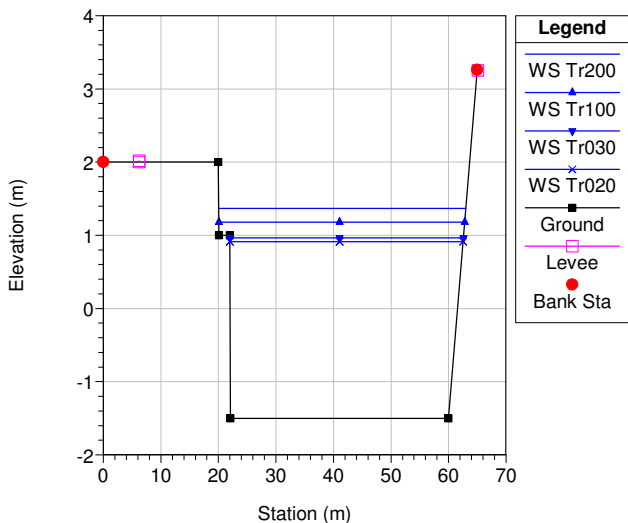
Fiorentina1 Plan: att1 5/5/2009 5:50:54 PM  
 Geom: fiorentina5 Flow: att1  
 River = Allacciante Reach = a1 RS = 406.1 BR



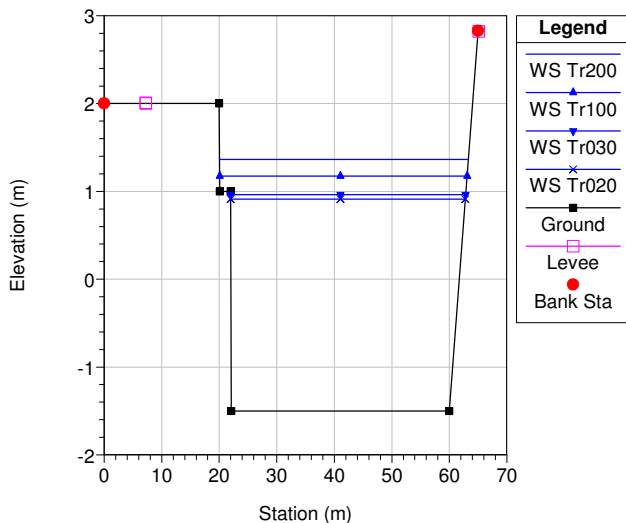
Fiorentina1 Plan: att1 5/5/2009 5:50:54 PM  
 Geom: fiorentina5 Flow: att1  
 River = Allacciante Reach = a1 RS = 406 sez6



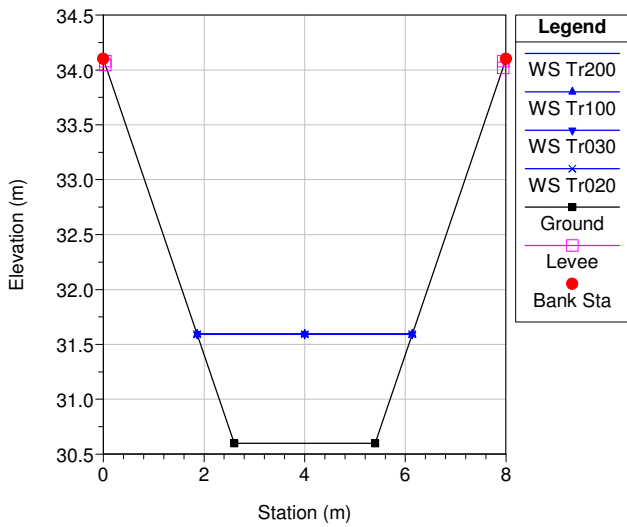
Fiorentina1 Plan: att1 5/5/2009 5:50:54 PM  
 Geom: fiorentina5 Flow: att1  
 River = Allacciante Reach = a1 RS = 405 sez5



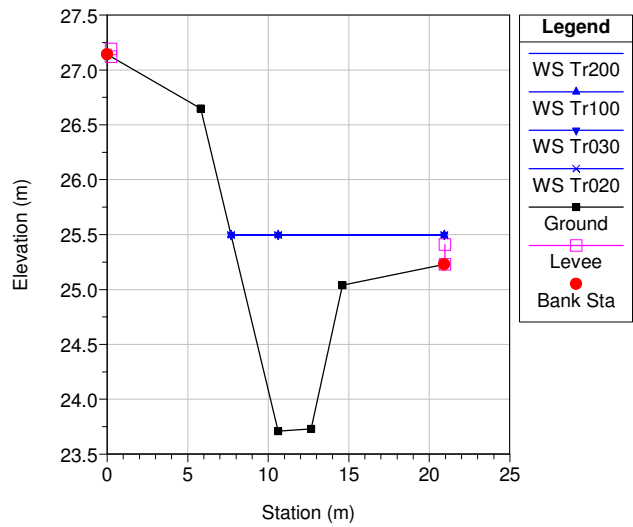
Fiorentina1 Plan: att1 5/5/2009 5:50:54 PM  
 Geom: fiorentina5 Flow: att1  
 River = Allacciante Reach = a1 RS = 404 sez4



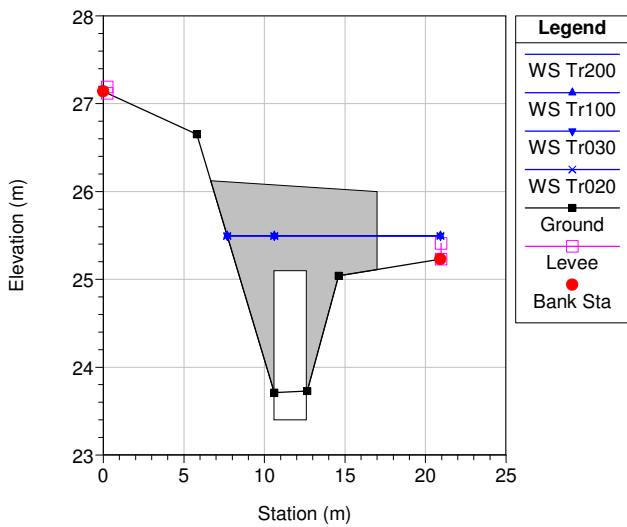
Fiorentina1 Plan: att1 5/5/2009 5:50:54 PM  
 Geom: fiorentina5 Flow: att1  
 River = cagliana Reach = ca-2 RS = 145 sez13.1



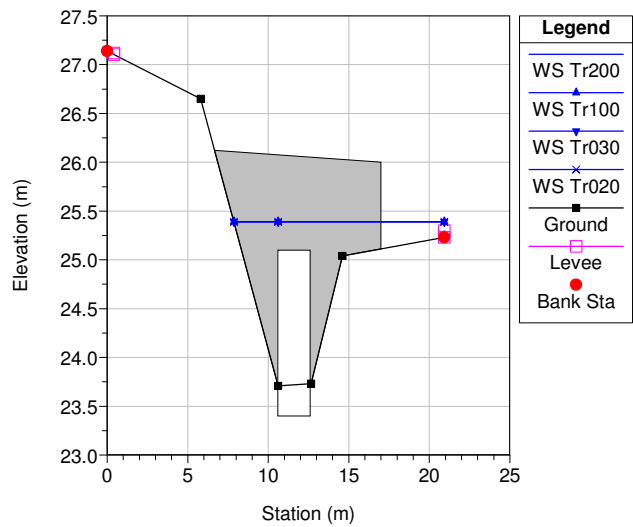
Fiorentina1 Plan: att1 5/5/2009 5:50:54 PM  
 Geom: fiorentina5 Flow: att1  
 River = cagliana Reach = ca-2 RS = 144.2 sez14.1



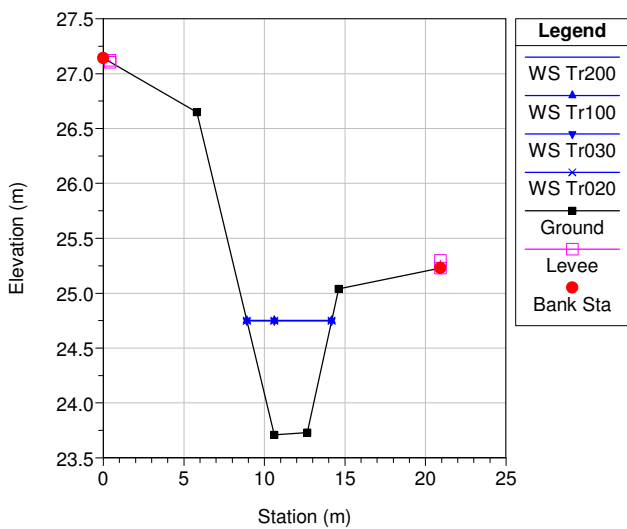
Fiorentina1 Plan: att1 5/5/2009 5:50:54 PM  
 Geom: fiorentina5 Flow: att1  
 River = cagliana Reach = ca-2 RS = 144.1 Culv



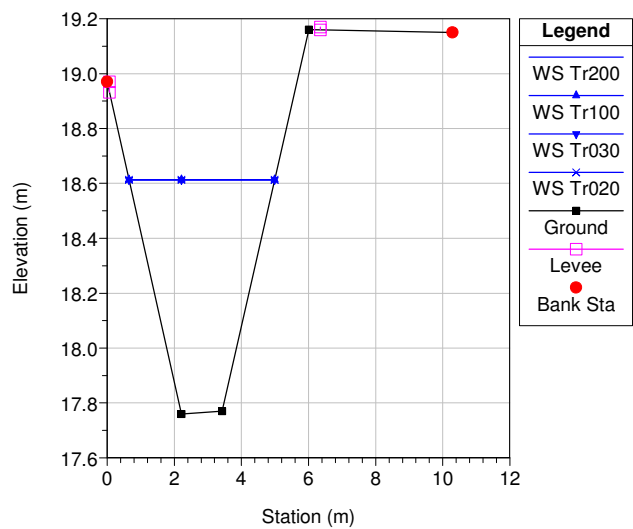
Fiorentina1 Plan: att1 5/5/2009 5:50:54 PM  
 Geom: fiorentina5 Flow: att1  
 River = cagliana Reach = ca-2 RS = 144.1 Culv



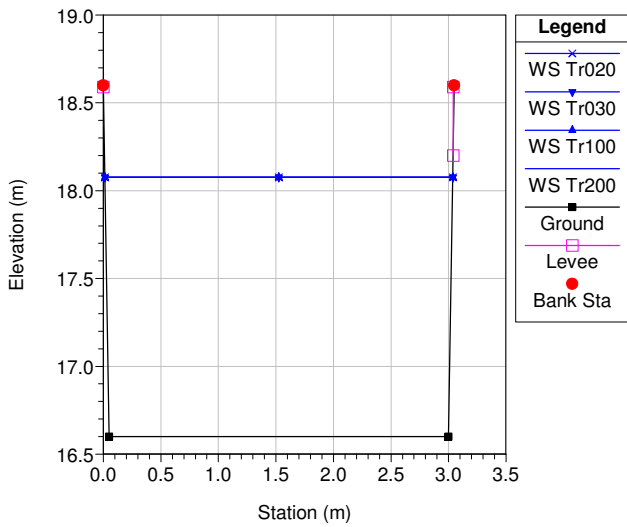
Fiorentina1 Plan: att1 5/5/2009 5:50:54 PM  
 Geom: fiorentina5 Flow: att1  
 River = cagliana Reach = ca-2 RS = 144 sez14.1



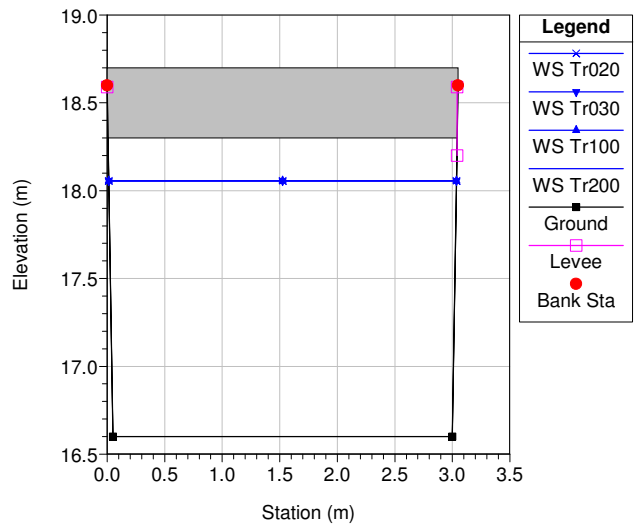
Fiorentina1 Plan: att1 5/5/2009 5:50:54 PM  
 Geom: fiorentina5 Flow: att1  
 River = cagliana Reach = ca-2 RS = 143 sez14bis



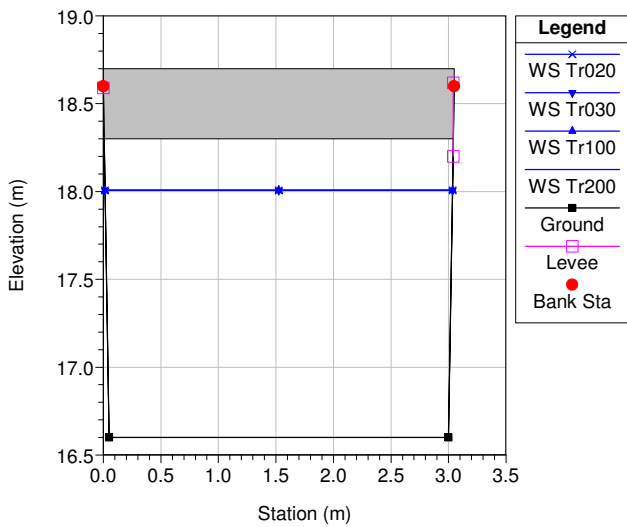
Fiorentina1 Plan: att1 5/5/2009 5:50:54 PM  
 Geom: fiorentina5 Flow: att1  
 River = cagliana Reach = ca-2 RS = 142 sez14.2



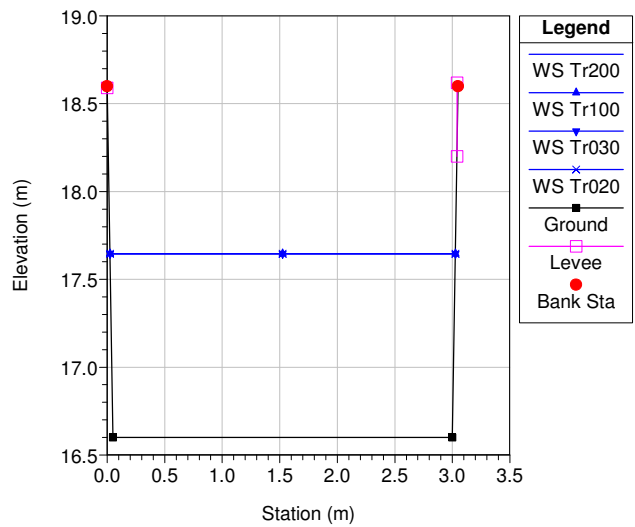
Fiorentina1 Plan: att1 5/5/2009 5:50:54 PM  
 Geom: fiorentina5 Flow: att1  
 River = cagliana Reach = ca-2 RS = 141.5 BR



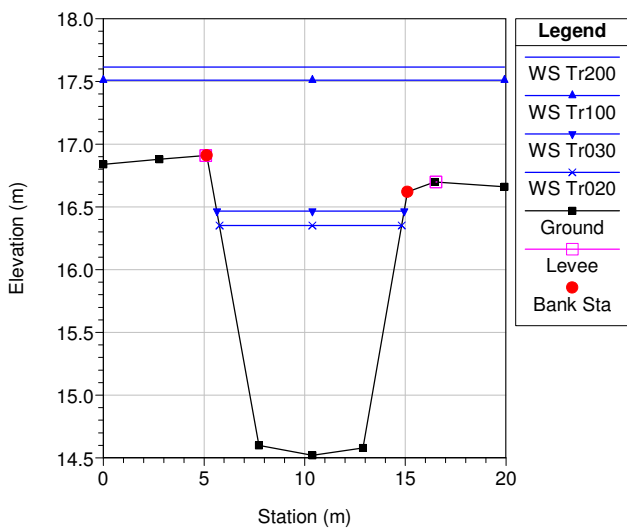
Fiorentina1 Plan: att1 5/5/2009 5:50:54 PM  
 Geom: fiorentina5 Flow: att1  
 River = cagliana Reach = ca-2 RS = 141.5 BR



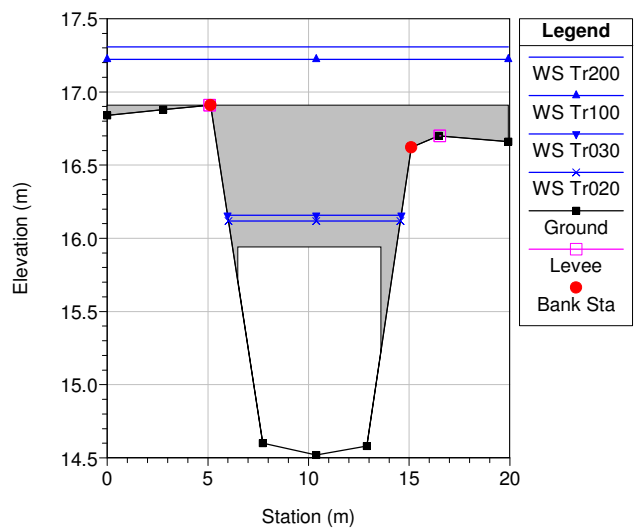
Fiorentina1 Plan: att1 5/5/2009 5:50:54 PM  
 Geom: fiorentina5 Flow: att1  
 River = cagliana Reach = ca-2 RS = 141.2 sez14.2



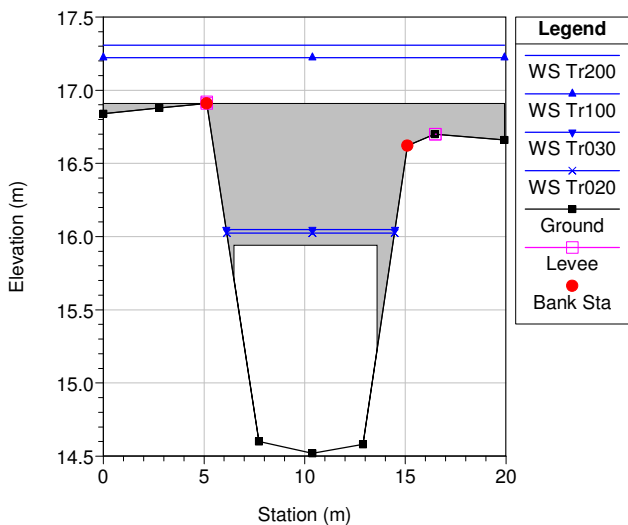
Fiorentina1 Plan: att1 5/5/2009 5:50:54 PM  
 Geom: fiorentina5 Flow: att1  
 River = cagliana Reach = ca-2 RS = 134



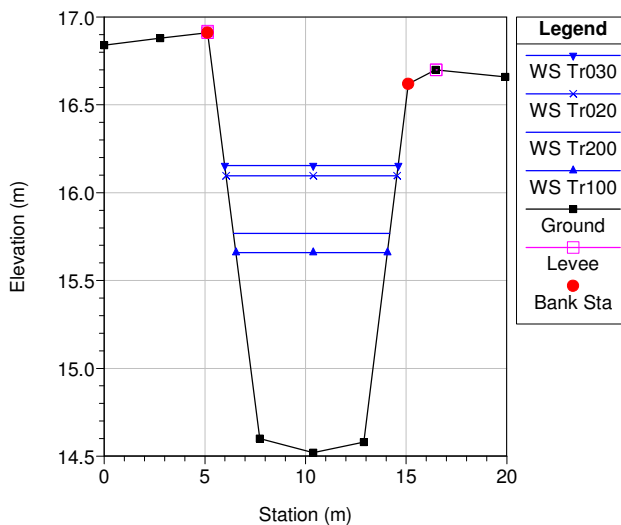
Fiorentina1 Plan: att1 5/5/2009 5:50:54 PM  
 Geom: fiorentina5 Flow: att1  
 River = cagliana Reach = ca-2 RS = 133 BR



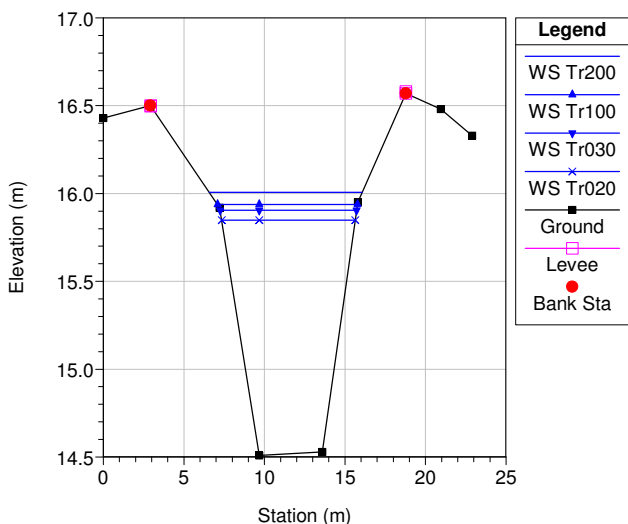
Fiorentina1 Plan: att1 5/5/2009 5:50:54 PM  
 Geom: fiorentina5 Flow: att1  
 River = cagliana Reach = ca-2 RS = 133 BR



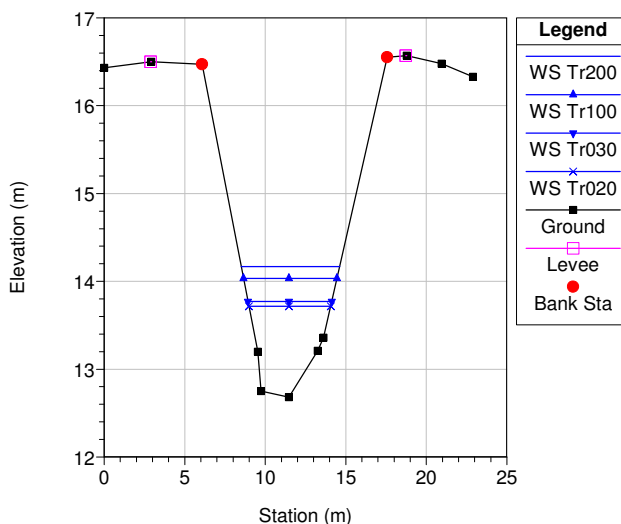
Fiorentina1 Plan: att1 5/5/2009 5:50:54 PM  
 Geom: fiorentina5 Flow: att1  
 River = cagliana Reach = ca-2 RS = 132.9



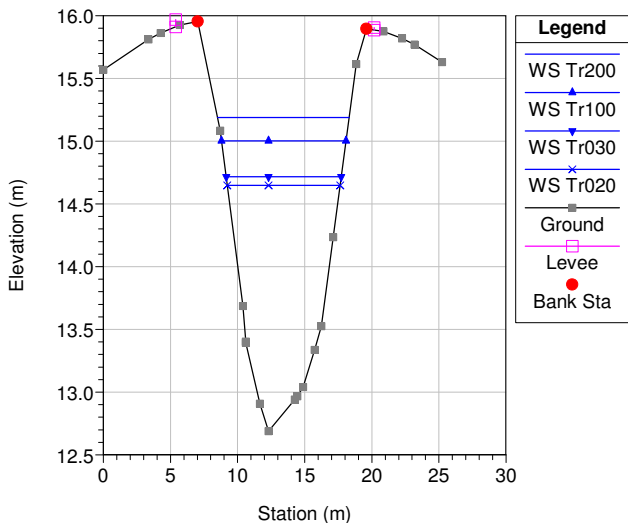
Fiorentina1 Plan: att1 5/5/2009 5:50:54 PM  
 Geom: fiorentina5 Flow: att1  
 River = cagliana Reach = ca-2 RS = 132



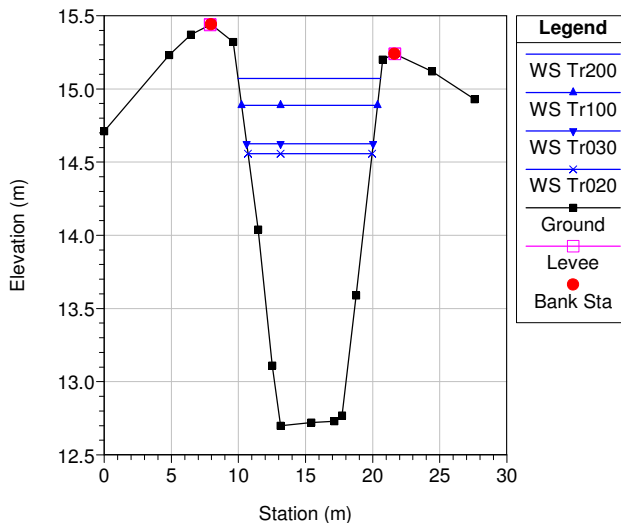
Fiorentina1 Plan: att1 5/5/2009 5:50:54 PM  
 Geom: fiorentina5 Flow: att1  
 River = cagliana Reach = ca-2 RS = 131



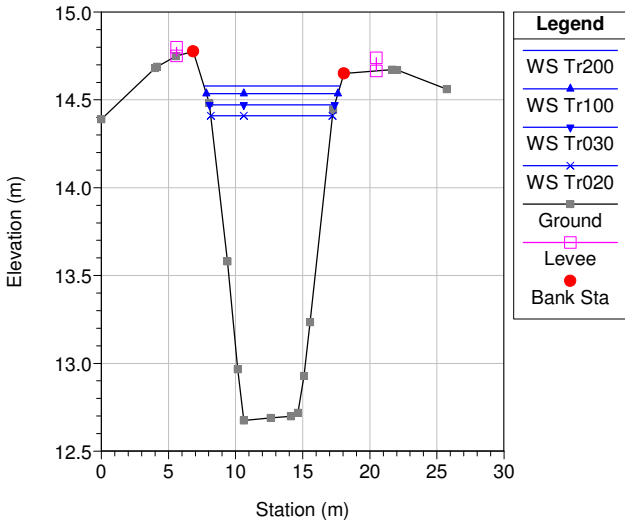
Fiorentina1 Plan: att1 5/5/2009 5:50:54 PM  
 Geom: fiorentina5 Flow: att1  
 River = cagliana Reach = ca-2 RS = 130.5\*



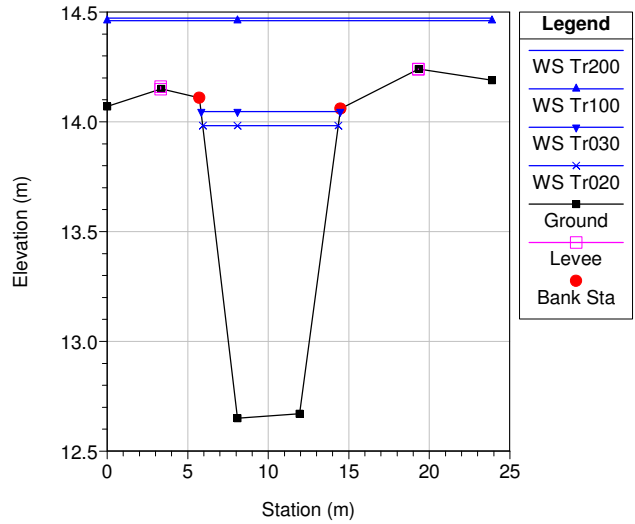
Fiorentina1 Plan: att1 5/5/2009 5:50:54 PM  
 Geom: fiorentina5 Flow: att1  
 River = cagliana Reach = ca-2 RS = 130



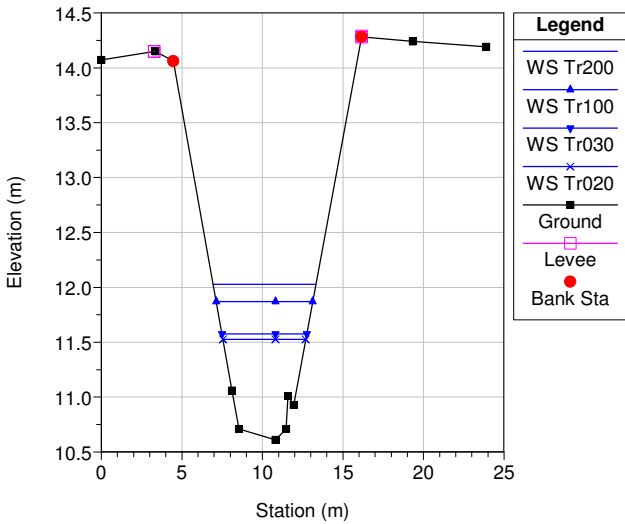
Fiorentina1 Plan: att1 5/5/2009 5:50:54 PM  
 Geom: fiorentina5 Flow: att1  
 River = cagliana Reach = ca-2 RS = 129.5°



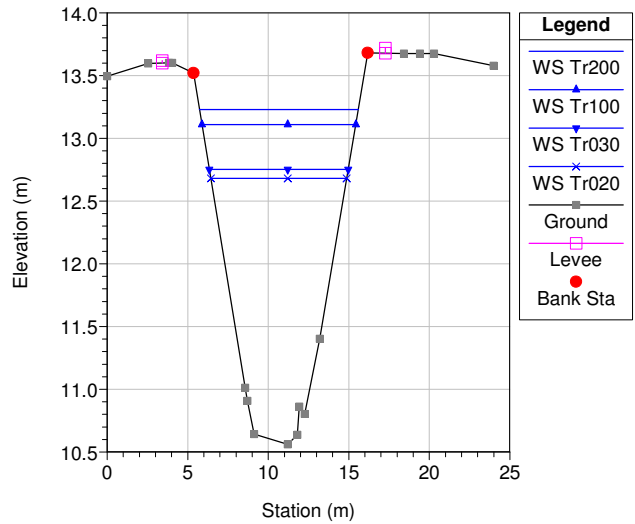
Fiorentina1 Plan: att1 5/5/2009 5:50:54 PM  
 Geom: fiorentina5 Flow: att1  
 River = cagliana Reach = ca-2 RS = 129



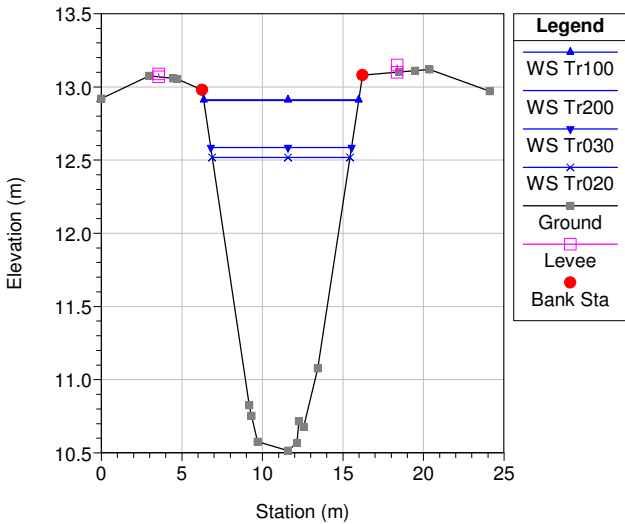
Fiorentina1 Plan: att1 5/5/2009 5:50:54 PM  
 Geom: fiorentina5 Flow: att1  
 River = cagliana Reach = ca-2 RS = 128



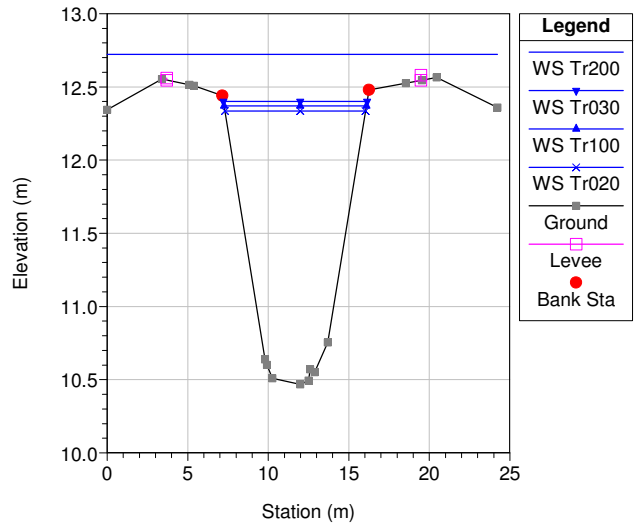
Fiorentina1 Plan: att1 5/5/2009 5:50:54 PM  
 Geom: fiorentina5 Flow: att1  
 River = cagliana Reach = ca-2 RS = 127.75°



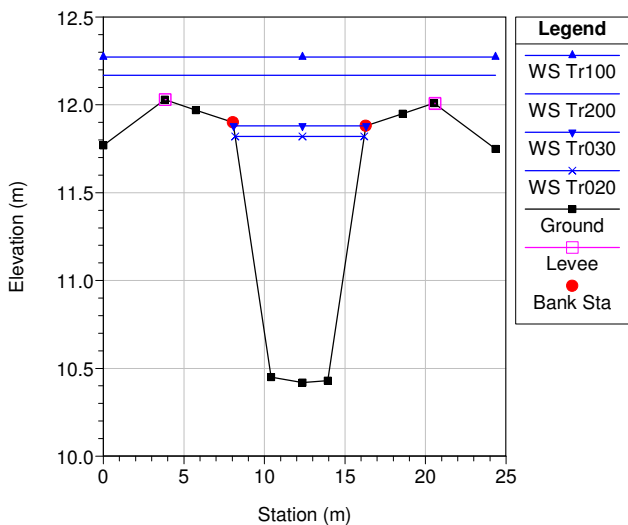
Fiorentina1 Plan: att1 5/5/2009 5:50:54 PM  
 Geom: fiorentina5 Flow: att1  
 River = cagliana Reach = ca-2 RS = 127.5°



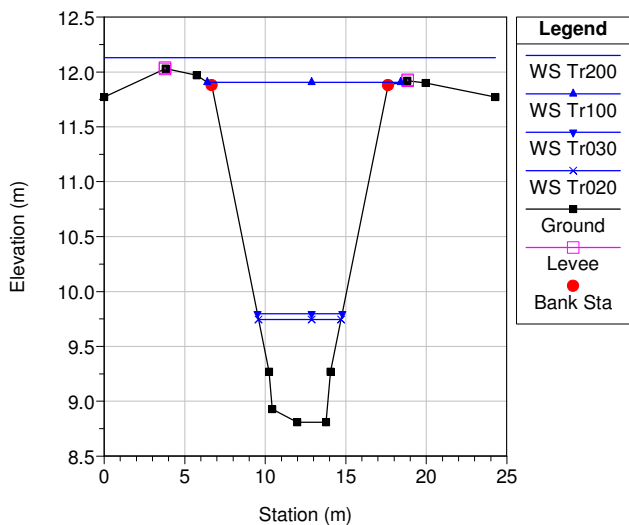
Fiorentina1 Plan: att1 5/5/2009 5:50:54 PM  
 Geom: fiorentina5 Flow: att1  
 River = cagliana Reach = ca-2 RS = 127.25°



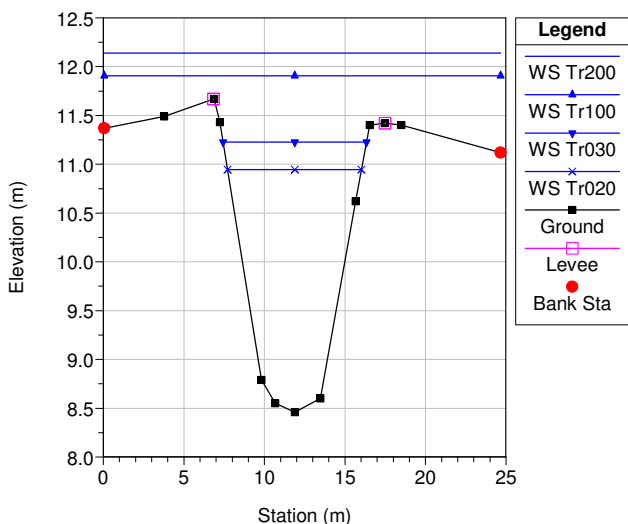
Fiorentina1 Plan: att1 5/5/2009 5:50:54 PM  
 Geom: fiorentina5 Flow: att1  
 River = cagliana Reach = ca-2 RS = 127



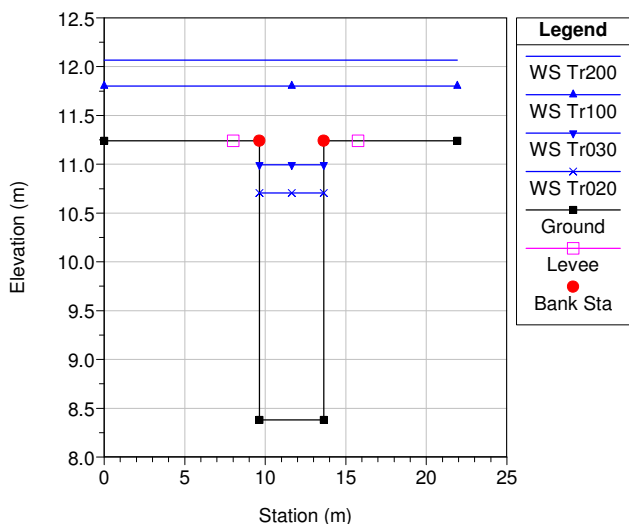
Fiorentina1 Plan: att1 5/5/2009 5:50:54 PM  
 Geom: fiorentina5 Flow: att1  
 River = cagliana Reach = ca-2 RS = 126



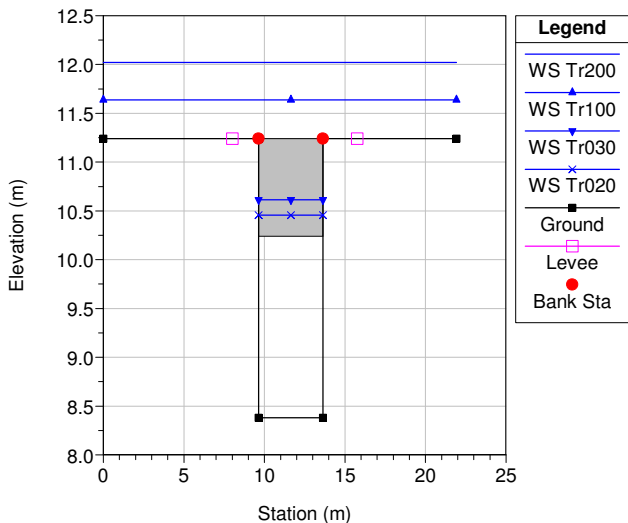
Fiorentina1 Plan: att1 5/5/2009 5:50:54 PM  
 Geom: fiorentina5 Flow: att1  
 River = cagliana Reach = ca-2 RS = 125



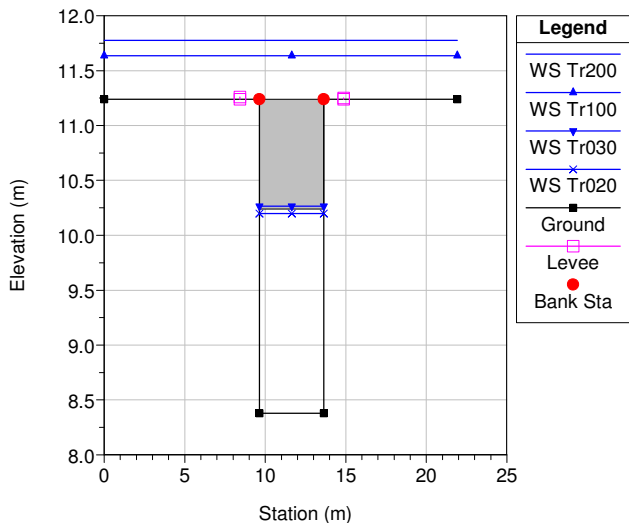
Fiorentina1 Plan: att1 5/5/2009 5:50:54 PM  
 Geom: fiorentina5 Flow: att1  
 River = cagliana Reach = ca-2 RS = 124.1



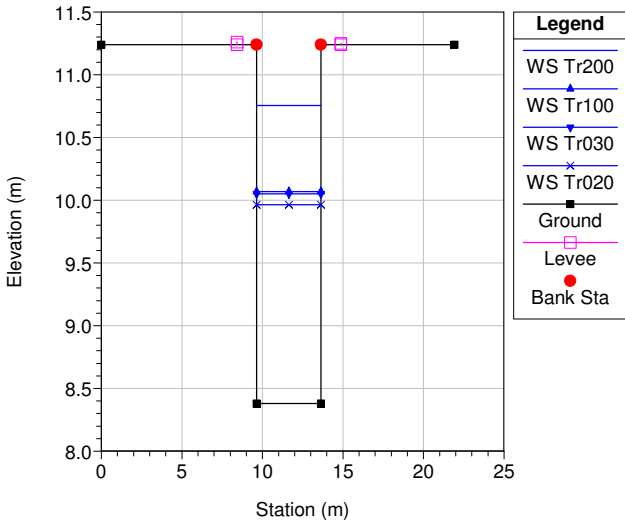
Fiorentina1 Plan: att1 5/5/2009 5:50:54 PM  
 Geom: fiorentina5 Flow: att1  
 River = cagliana Reach = ca-2 RS = 124 BR



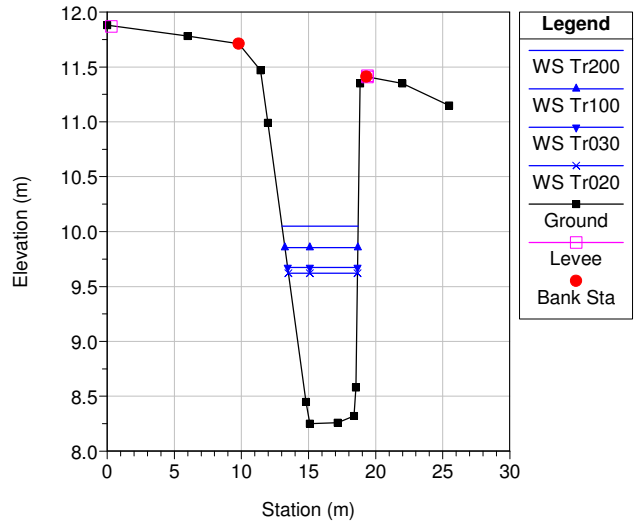
Fiorentina1 Plan: att1 5/5/2009 5:50:54 PM  
 Geom: fiorentina5 Flow: att1  
 River = cagliana Reach = ca-2 RS = 124 BR



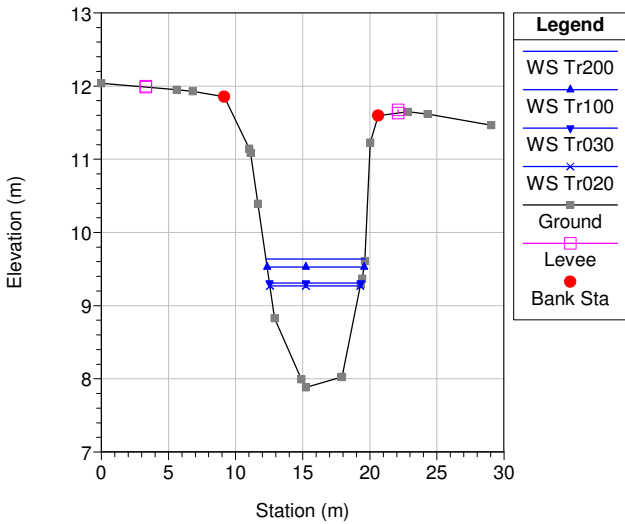
Fiorentina1 Plan: att1 5/5/2009 5:50:54 PM  
 Geom: fiorentina5 Flow: att1  
 River = cagliana Reach = ca-2 RS = 123.9



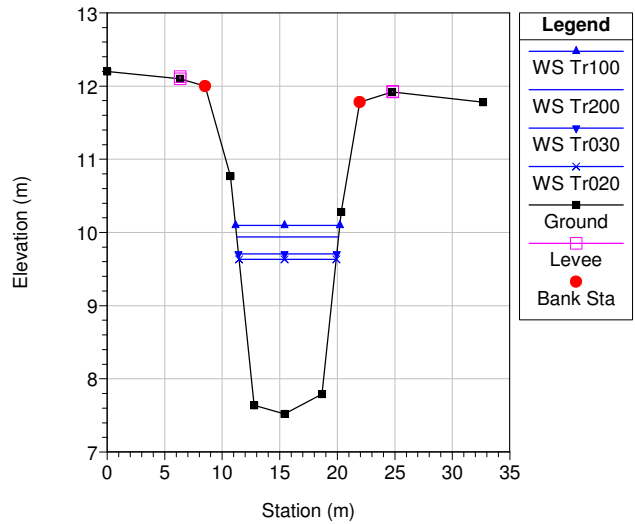
Fiorentina1 Plan: att1 5/5/2009 5:50:54 PM  
 Geom: fiorentina5 Flow: att1  
 River = cagliana Reach = ca-2 RS = 123



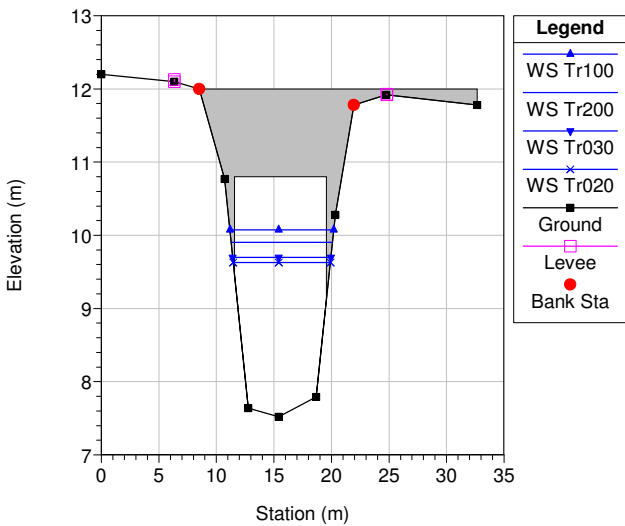
Fiorentina1 Plan: att1 5/5/2009 5:50:54 PM  
 Geom: fiorentina5 Flow: att1  
 River = cagliana Reach = ca-2 RS = 122.5\*



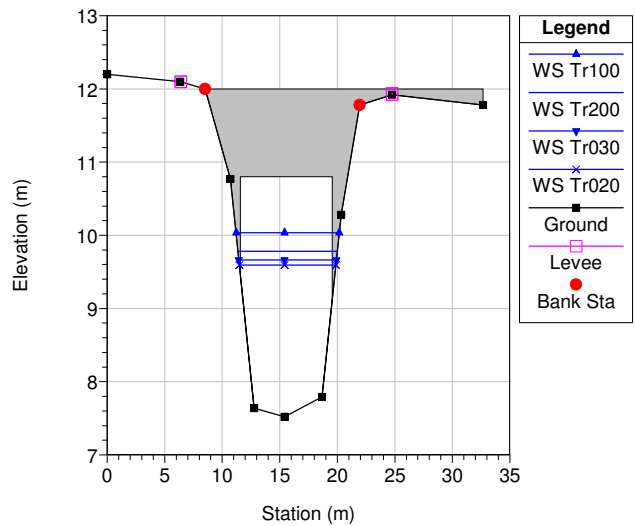
Fiorentina1 Plan: att1 5/5/2009 5:50:54 PM  
 Geom: fiorentina5 Flow: att1  
 River = cagliana Reach = ca-2 RS = 122



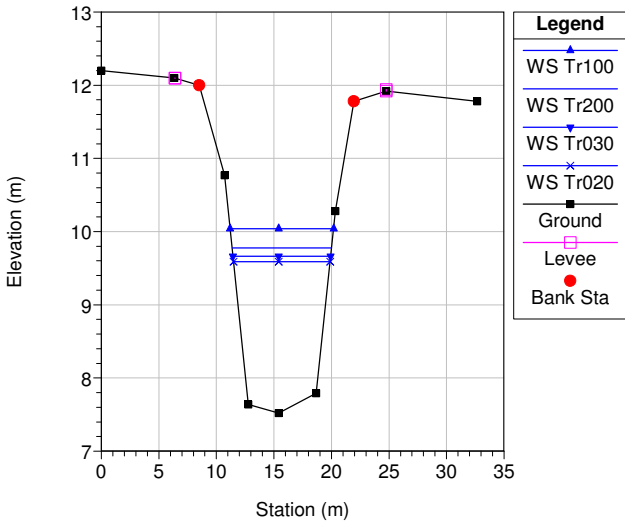
Fiorentina1 Plan: att1 5/5/2009 5:50:54 PM  
 Geom: fiorentina5 Flow: att1  
 River = cagliana Reach = ca-2 RS = 121 BR



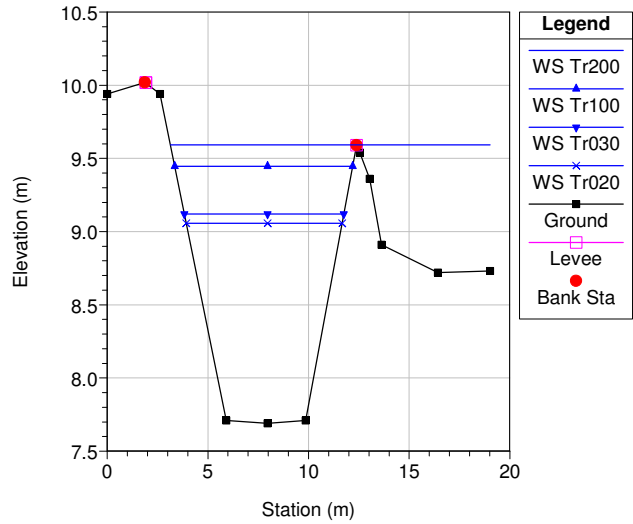
Fiorentina1 Plan: att1 5/5/2009 5:50:54 PM  
 Geom: fiorentina5 Flow: att1  
 River = cagliana Reach = ca-2 RS = 121 BR



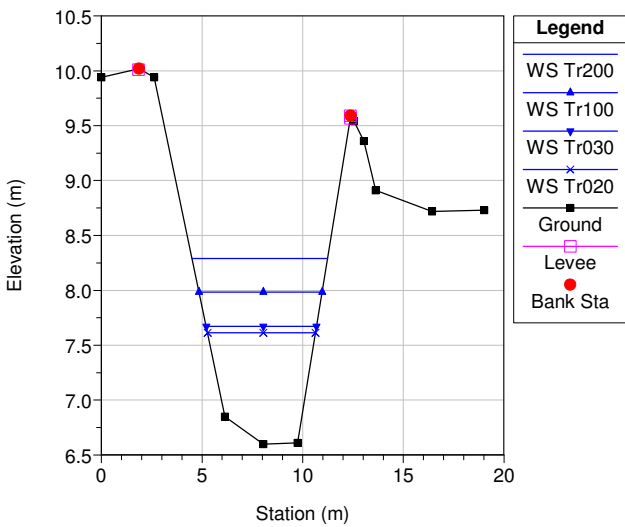
Fiorentina1 Plan: att1 5/5/2009 5:50:54 PM  
 Geom: fiorentina5 Flow: att1  
 River = cagliana Reach = ca-2 RS = 120.9



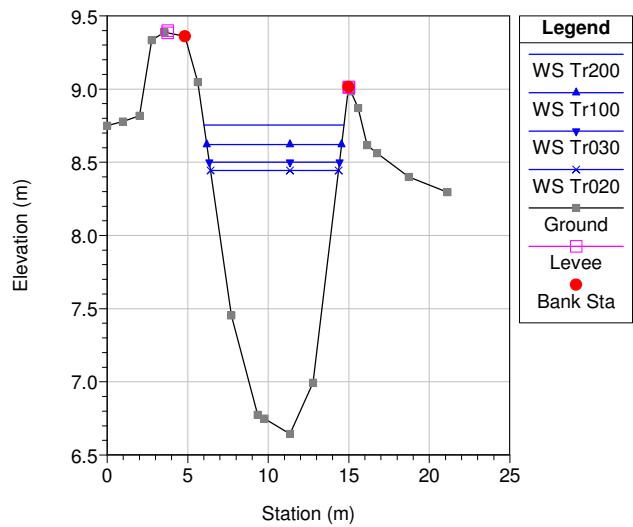
Fiorentina1 Plan: att1 5/5/2009 5:50:54 PM  
 Geom: fiorentina5 Flow: att1  
 River = cagliana Reach = ca-2 RS = 120



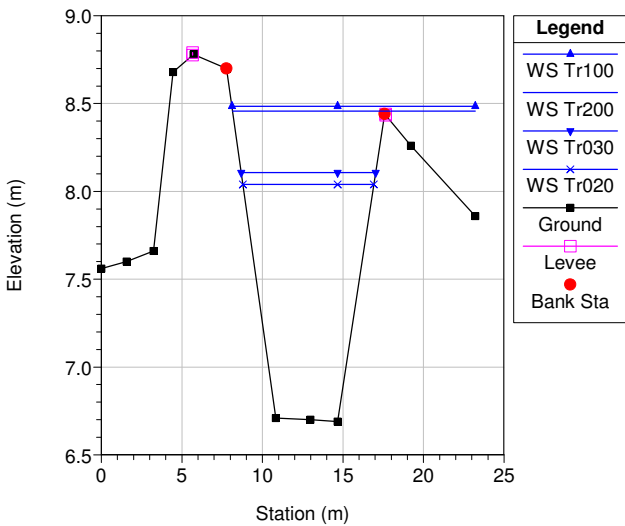
Fiorentina1 Plan: att1 5/5/2009 5:50:54 PM  
 Geom: fiorentina5 Flow: att1  
 River = cagliana Reach = ca-2 RS = 119



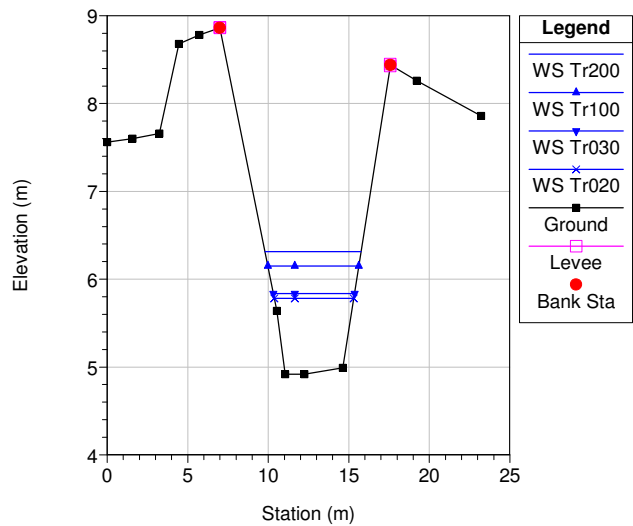
Fiorentina1 Plan: att1 5/5/2009 5:50:54 PM  
 Geom: fiorentina5 Flow: att1  
 River = cagliana Reach = ca-2 RS = 118.5\*



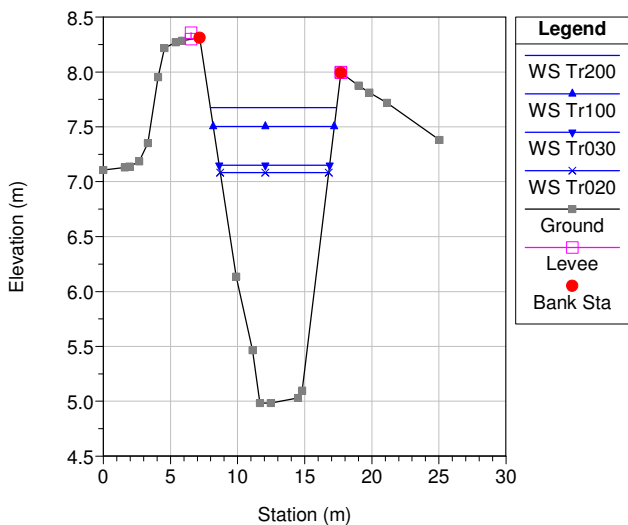
Fiorentina1 Plan: att1 5/5/2009 5:50:54 PM  
 Geom: fiorentina5 Flow: att1  
 River = cagliana Reach = ca-2 RS = 118



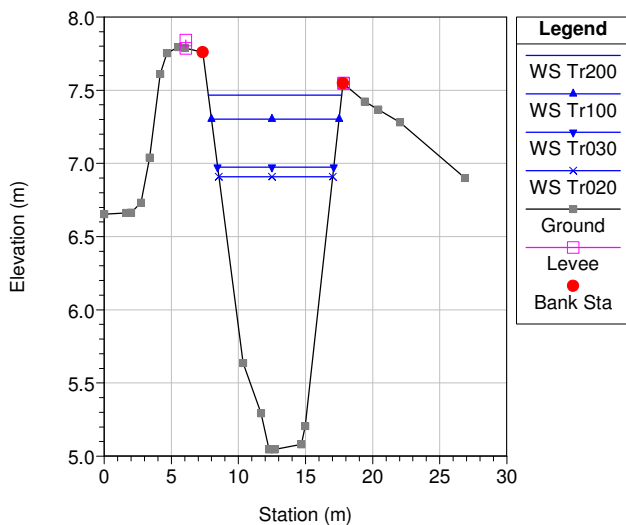
Fiorentina1 Plan: att1 5/5/2009 5:50:54 PM  
 Geom: fiorentina5 Flow: att1  
 River = cagliana Reach = ca-2 RS = 117



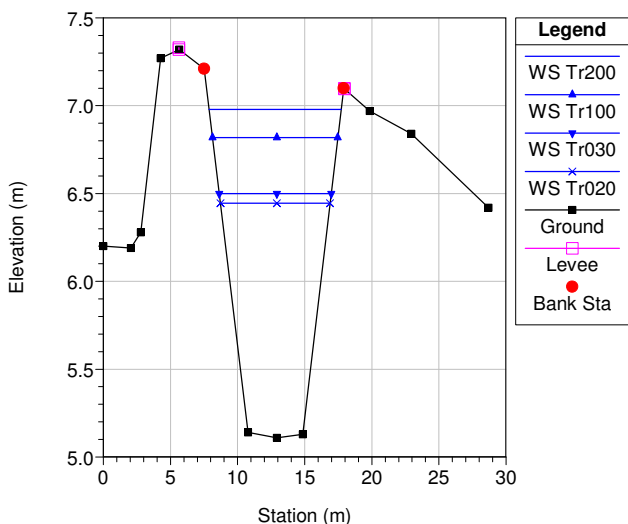
Fiorentina1 Plan: att1 5/5/2009 5:50:54 PM  
 Geom: fiorentina5 Flow: att1  
 River = cagliana Reach = ca-2 RS = 116.666\*



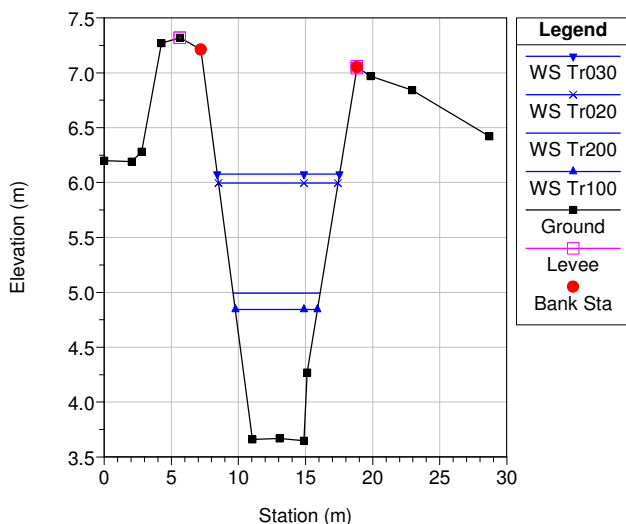
Fiorentina1 Plan: att1 5/5/2009 5:50:54 PM  
 Geom: fiorentina5 Flow: att1  
 River = cagliana Reach = ca-2 RS = 116.333\*



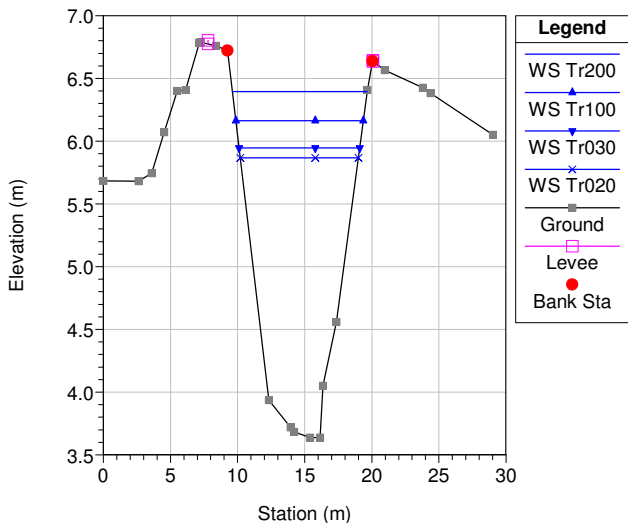
Fiorentina1 Plan: att1 5/5/2009 5:50:54 PM  
 Geom: fiorentina5 Flow: att1  
 River = cagliana Reach = ca-2 RS = 116



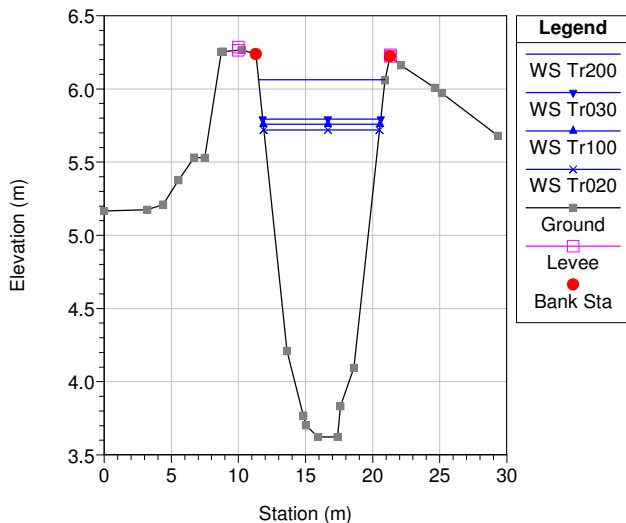
Fiorentina1 Plan: att1 5/5/2009 5:50:54 PM  
 Geom: fiorentina5 Flow: att1  
 River = cagliana Reach = ca-2 RS = 115



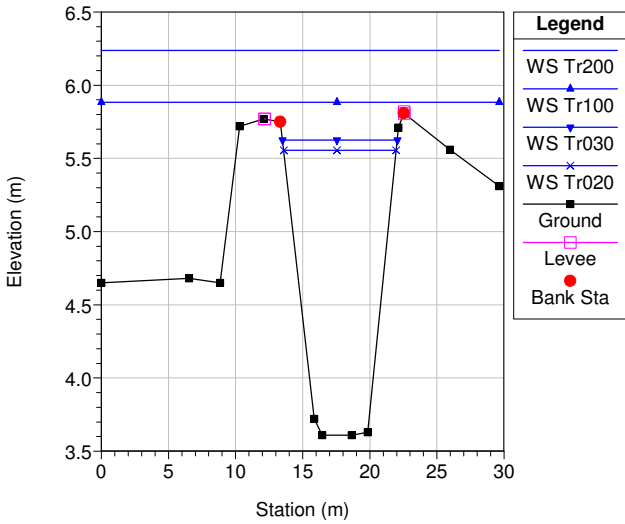
Fiorentina1 Plan: att1 5/5/2009 5:50:54 PM  
 Geom: fiorentina5 Flow: att1  
 River = cagliana Reach = ca-2 RS = 114.666\*



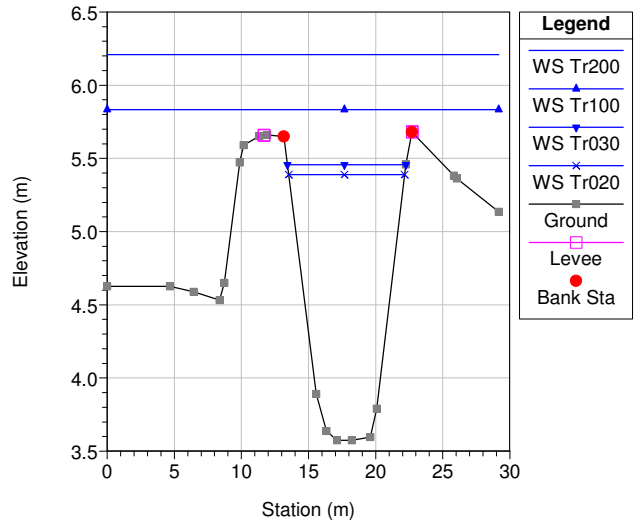
Fiorentina1 Plan: att1 5/5/2009 5:50:54 PM  
 Geom: fiorentina5 Flow: att1  
 River = cagliana Reach = ca-2 RS = 114.333\*



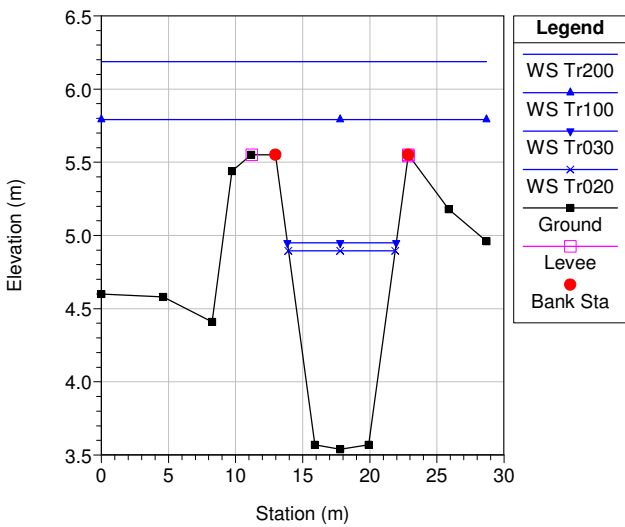
Fiorentina1 Plan: att1 5/5/2009 5:50:54 PM  
 Geom: fiorentina5 Flow: att1  
 River = cagliana Reach = ca-2 RS = 114



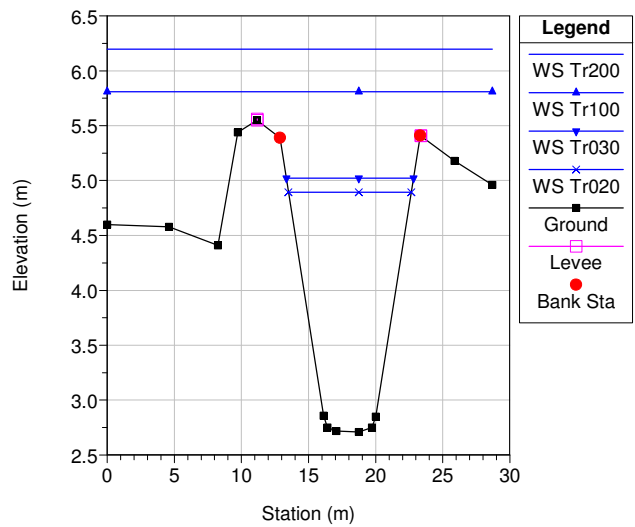
Fiorentina1 Plan: att1 5/5/2009 5:50:54 PM  
 Geom: fiorentina5 Flow: att1  
 River = cagliana Reach = ca-2 RS = 113.5\*



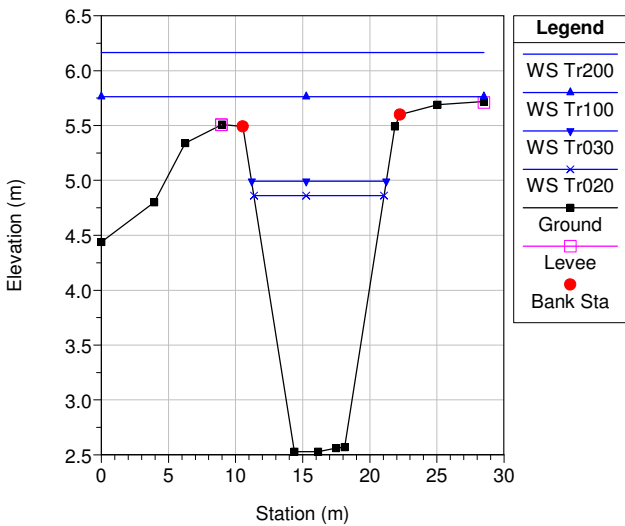
Fiorentina1 Plan: att1 5/5/2009 5:50:54 PM  
 Geom: fiorentina5 Flow: att1  
 River = cagliana Reach = ca-2 RS = 113



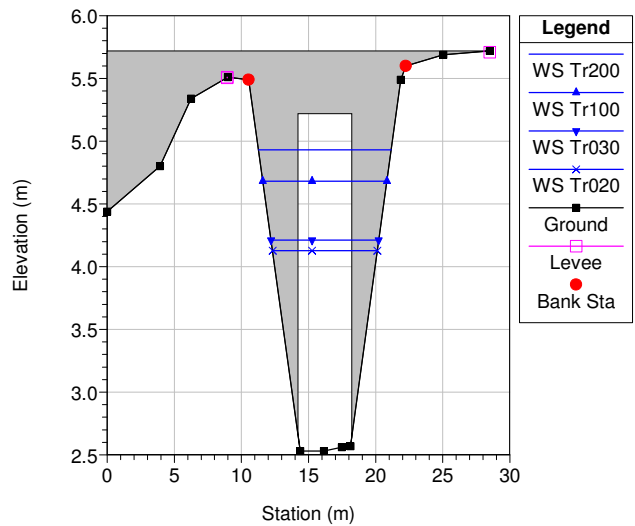
Fiorentina1 Plan: att1 5/5/2009 5:50:54 PM  
 Geom: fiorentina5 Flow: att1  
 River = cagliana Reach = ca-2 RS = 112



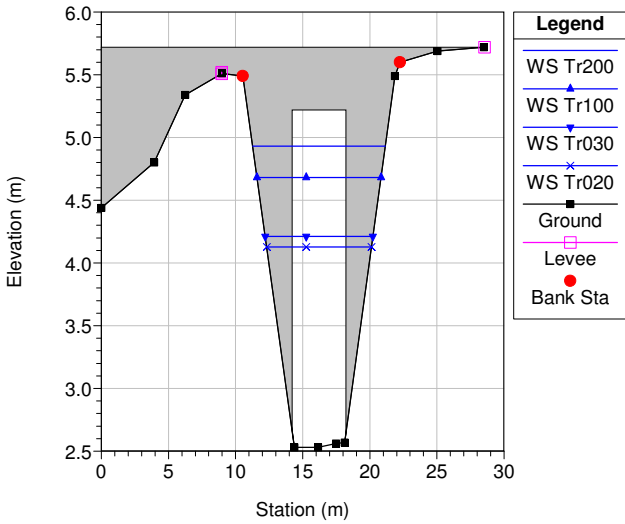
Fiorentina1 Plan: att1 5/5/2009 5:50:54 PM  
 Geom: fiorentina5 Flow: att1  
 River = cagliana Reach = ca-2 RS = 111



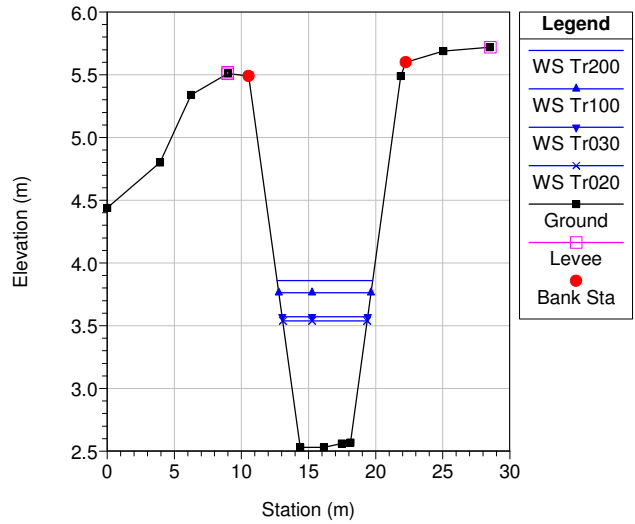
Fiorentina1 Plan: att1 5/5/2009 5:50:54 PM  
 Geom: fiorentina5 Flow: att1  
 River = cagliana Reach = ca-2 RS = 110 BR



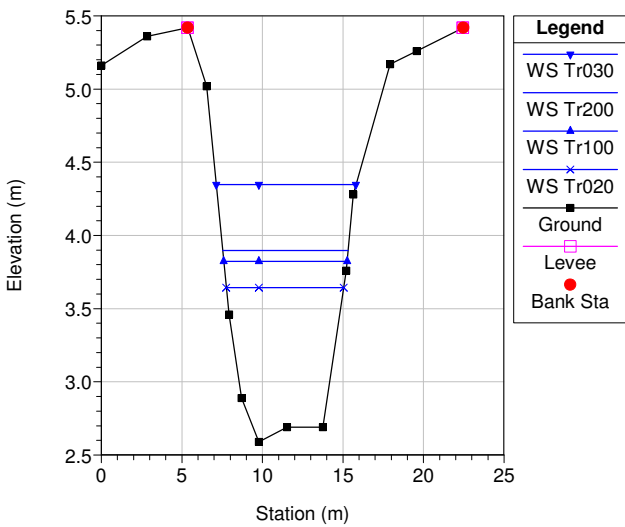
Fiorentina1 Plan: att1 5/5/2009 5:50:54 PM  
 Geom: fiorentina5 Flow: att1  
 River = cagliana Reach = ca-2 RS = 110 BR



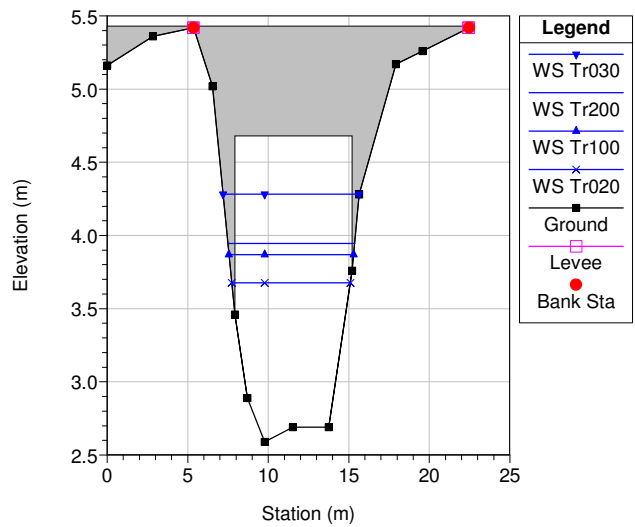
Fiorentina1 Plan: att1 5/5/2009 5:50:54 PM  
 Geom: fiorentina5 Flow: att1  
 River = cagliana Reach = ca-2 RS = 109.9



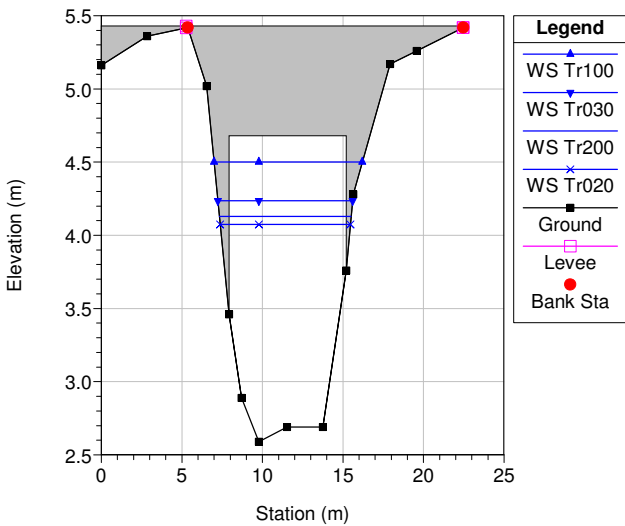
Fiorentina1 Plan: att1 5/5/2009 5:50:54 PM  
 Geom: fiorentina5 Flow: att1  
 River = cagliana Reach = ca-2 RS = 109



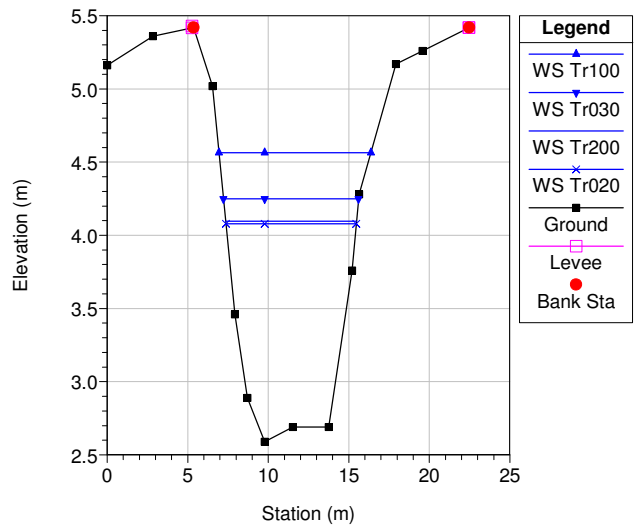
Fiorentina1 Plan: att1 5/5/2009 5:50:54 PM  
 Geom: fiorentina5 Flow: att1  
 River = cagliana Reach = ca-2 RS = 108 BR



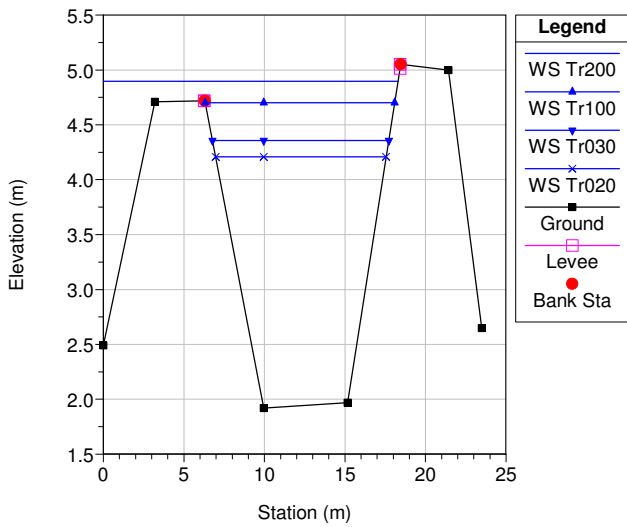
Fiorentina1 Plan: att1 5/5/2009 5:50:54 PM  
 Geom: fiorentina5 Flow: att1  
 River = cagliana Reach = ca-2 RS = 108 BR



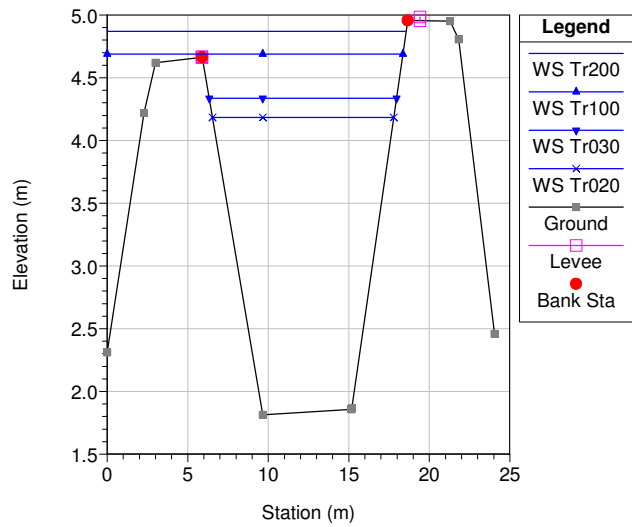
Fiorentina1 Plan: att1 5/5/2009 5:50:54 PM  
 Geom: fiorentina5 Flow: att1  
 River = cagliana Reach = ca-2 RS = 107.9



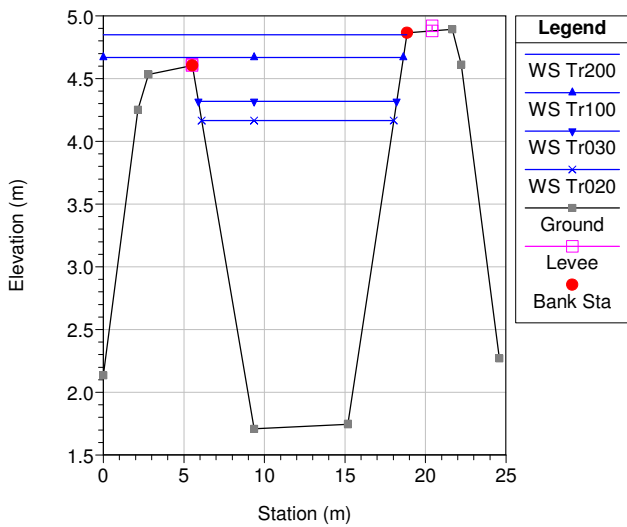
Fiorentina1 Plan: att1 5/5/2009 5:50:54 PM  
 Geom: fiorentina5 Flow: att1  
 River = cagliana Reach = ca-2 RS = 107 muccetti 09



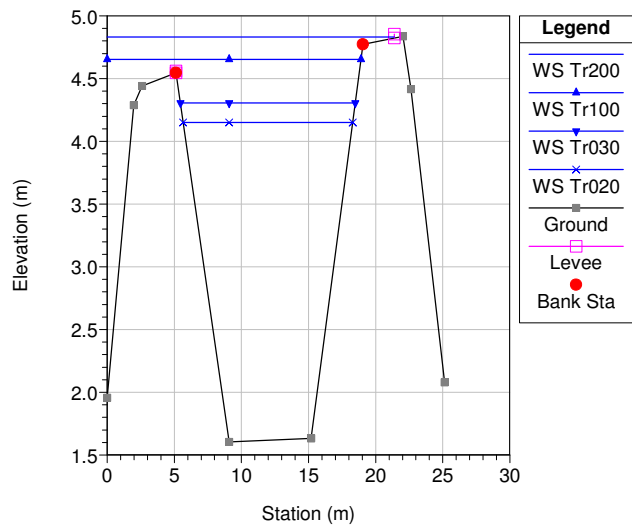
Fiorentina1 Plan: att1 5/5/2009 5:50:54 PM  
 Geom: fiorentina5 Flow: att1  
 River = cagliana Reach = ca-2 RS = 106.75\*



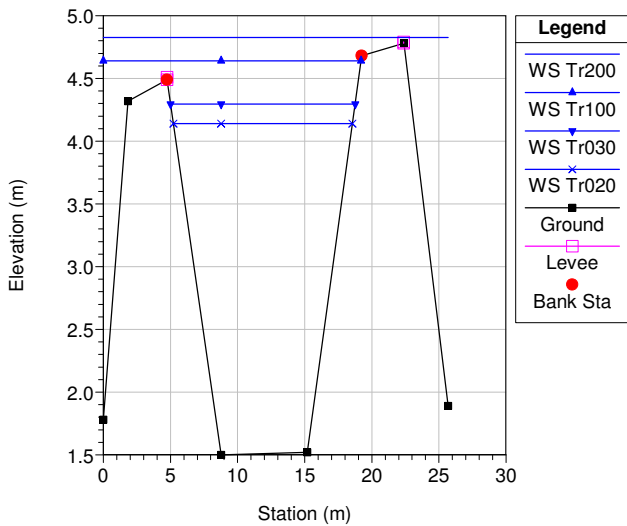
Fiorentina1 Plan: att1 5/5/2009 5:50:54 PM  
 Geom: fiorentina5 Flow: att1  
 River = cagliana Reach = ca-2 RS = 106.5\*



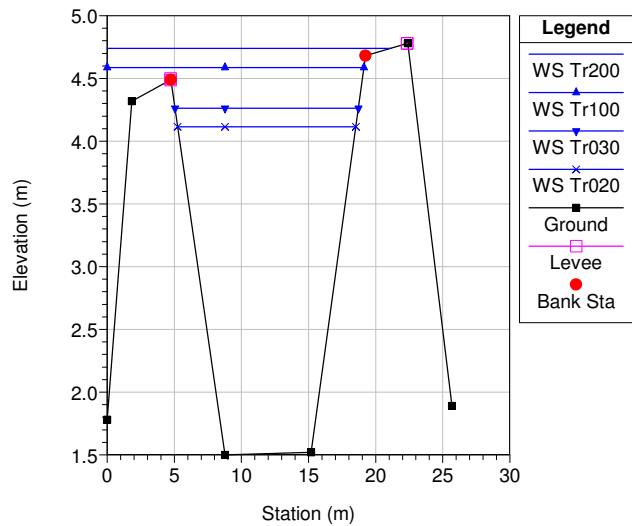
Fiorentina1 Plan: att1 5/5/2009 5:50:54 PM  
 Geom: fiorentina5 Flow: att1  
 River = cagliana Reach = ca-2 RS = 106.25\*



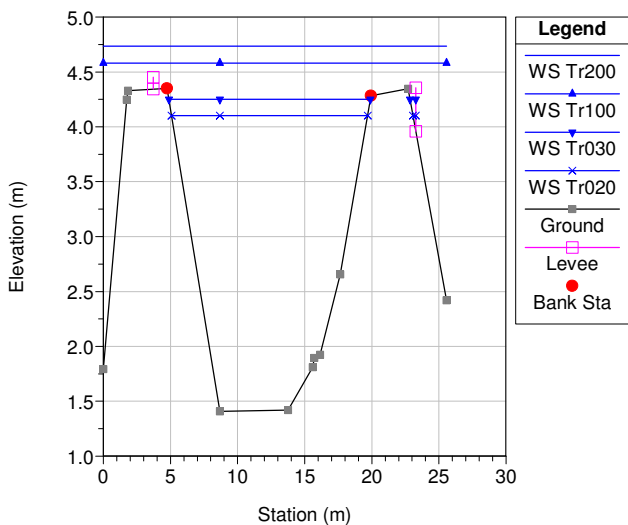
Fiorentina1 Plan: att1 5/5/2009 5:50:54 PM  
 Geom: fiorentina5 Flow: att1  
 River = cagliana Reach = ca-2 RS = 106 muccetti 011



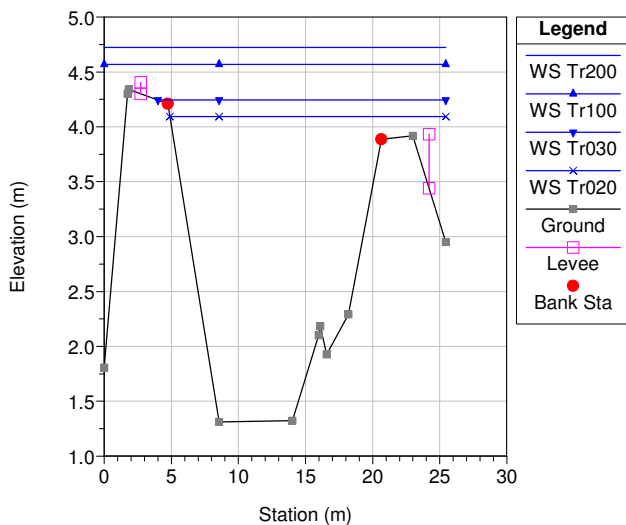
Fiorentina1 Plan: att1 5/5/2009 5:50:54 PM  
 Geom: fiorentina5 Flow: att1  
 River = cagliana Reach = ca-1 RS = 105 muccetti 011



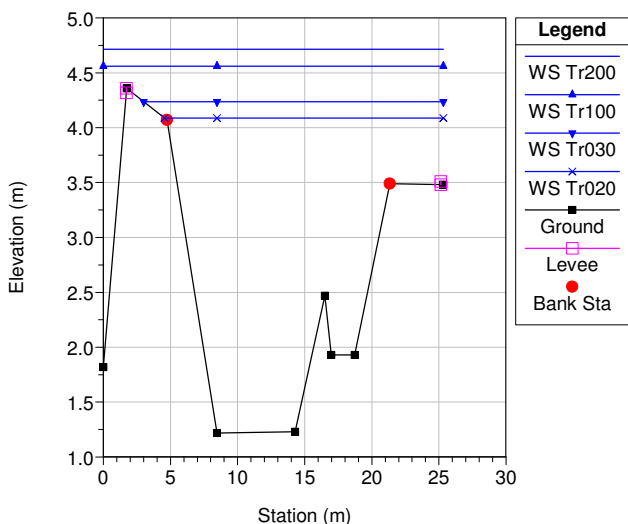
Fiorentina1 Plan: att1 5/5/2009 5:50:54 PM  
 Geom: fiorentina5 Flow: att1  
 River = cagliana Reach = ca-1 RS = 104.666\*



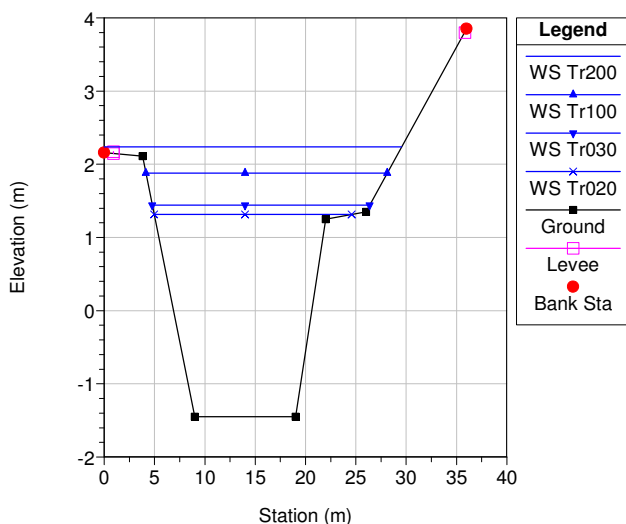
Fiorentina1 Plan: att1 5/5/2009 5:50:54 PM  
 Geom: fiorentina5 Flow: att1  
 River = cagliana Reach = ca-1 RS = 104.333\*



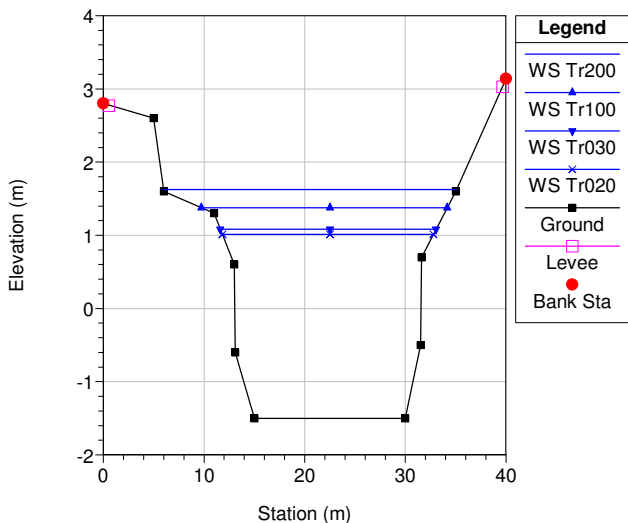
Fiorentina1 Plan: att1 5/5/2009 5:50:54 PM  
 Geom: fiorentina5 Flow: att1  
 River = cagliana Reach = ca-1 RS = 104 mucetti 012



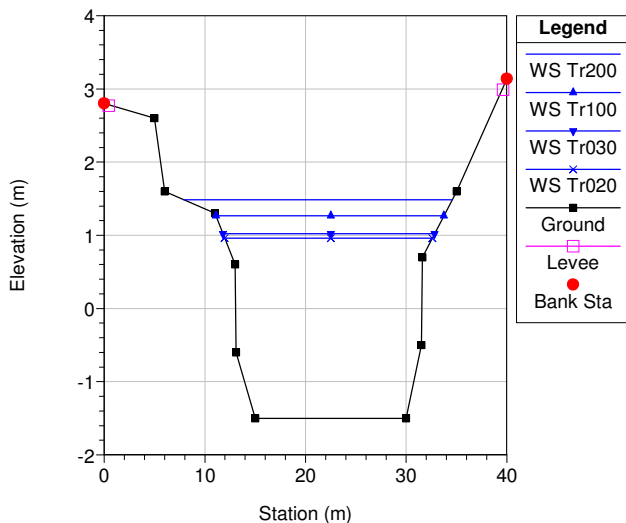
Fiorentina1 Plan: att1 5/5/2009 5:50:54 PM  
 Geom: fiorentina5 Flow: att1  
 River = Cornia vecchia Reach = r4 RS = 108.9



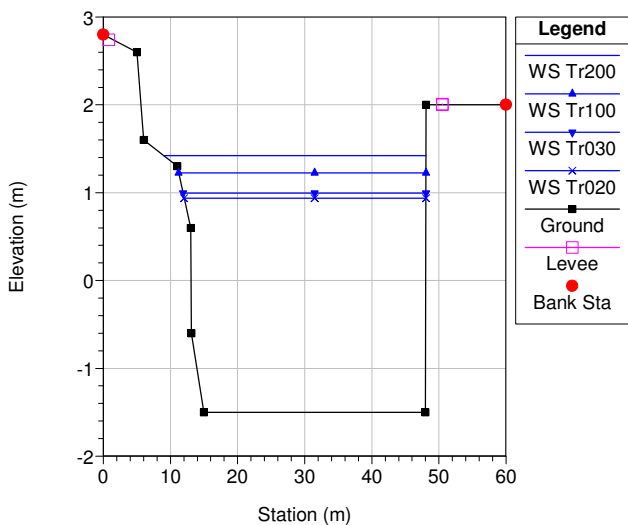
Fiorentina1 Plan: att1 5/5/2009 5:50:54 PM  
 Geom: fiorentina5 Flow: att1  
 River = Cornia vecchia Reach = r4 RS = 106 sez6



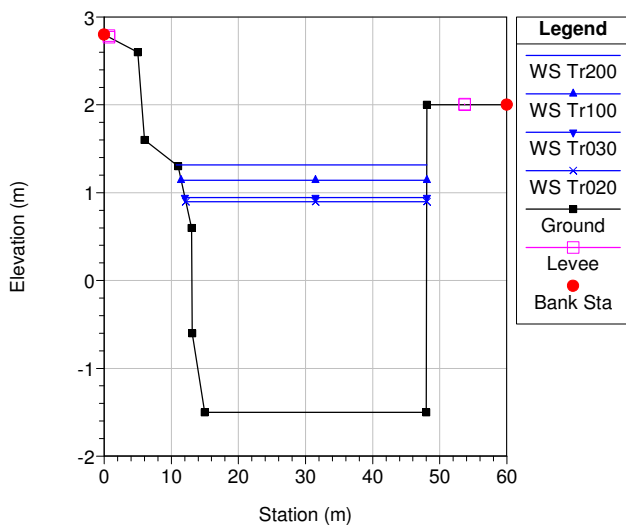
Fiorentina1 Plan: att1 5/5/2009 5:50:54 PM  
 Geom: fiorentina5 Flow: att1  
 River = Cornia Vecchia Reach = r2 RS = 106 sez6



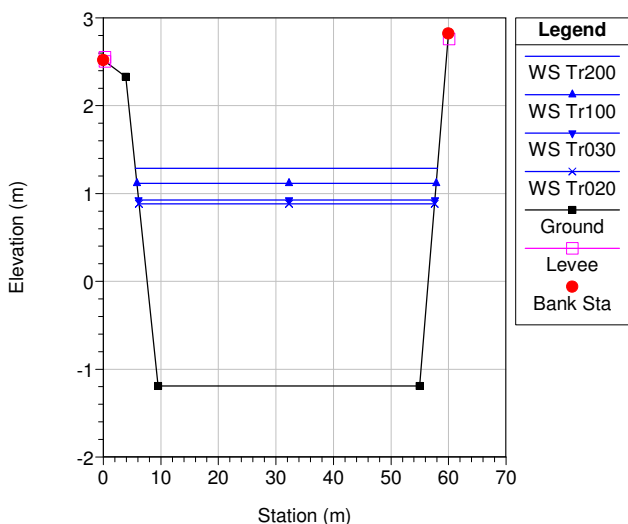
Fiorentina1 Plan: att1 5/5/2009 5:50:54 PM  
 Geom: fiorentina5 Flow: att1  
 River = Cornia Vecchia Reach = r2 RS = 105



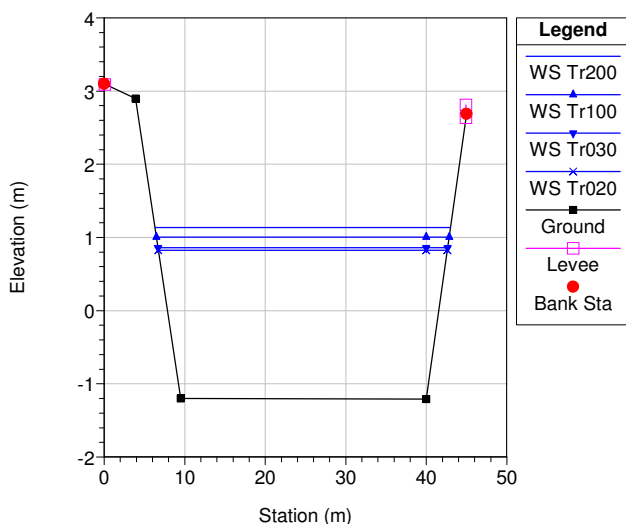
Fiorentina1 Plan: att1 5/5/2009 5:50:54 PM  
 Geom: fiorentina5 Flow: att1  
 River = Cornia Vecchia Reach = r2 RS = 104



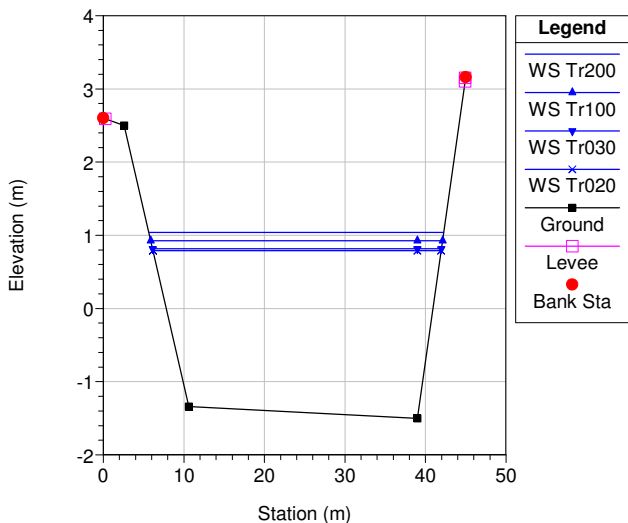
Fiorentina1 Plan: att1 5/5/2009 5:50:54 PM  
 Geom: fiorentina5 Flow: att1  
 River = Cornia Vecchia Reach = r1 RS = 3 sez3



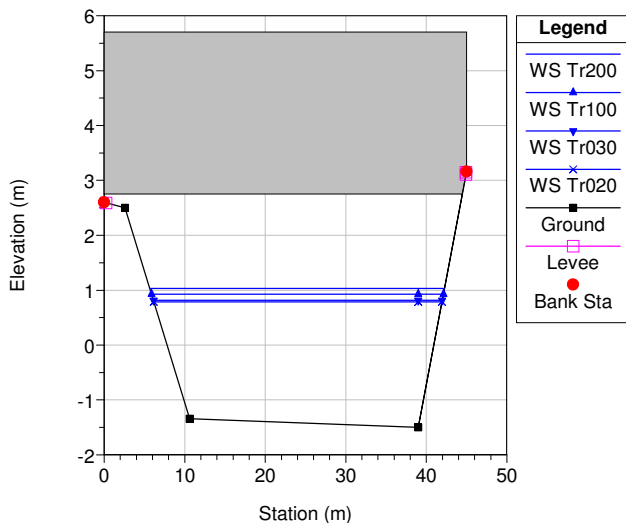
Fiorentina1 Plan: att1 5/5/2009 5:50:54 PM  
 Geom: fiorentina5 Flow: att1  
 River = Cornia Vecchia Reach = r1 RS = 2 sez2



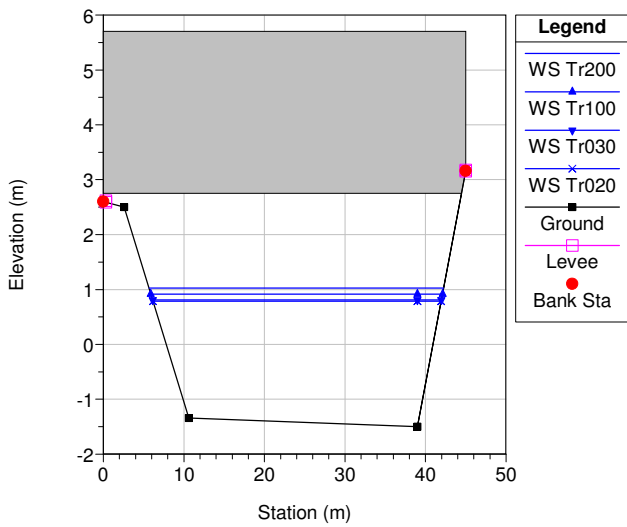
Fiorentina1 Plan: att1 5/5/2009 5:50:54 PM  
 Geom: fiorentina5 Flow: att1  
 River = Cornia Vecchia Reach = r1 RS = 1 sez1



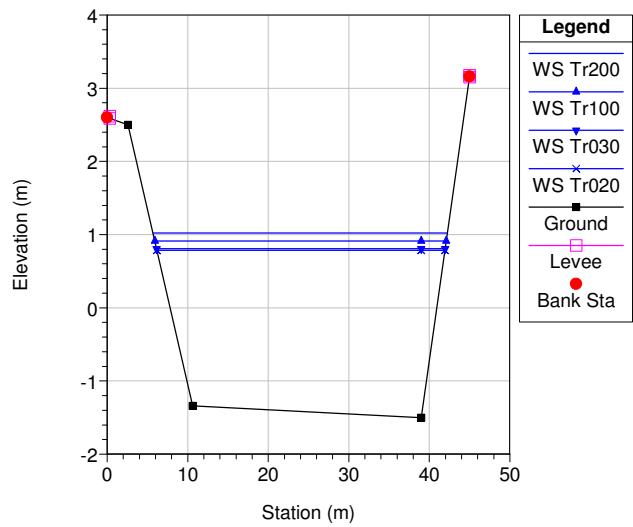
Fiorentina1 Plan: att1 5/5/2009 5:50:54 PM  
 Geom: fiorentina5 Flow: att1  
 River = Cornia Vecchia Reach = r1 RS = 0.95 BR



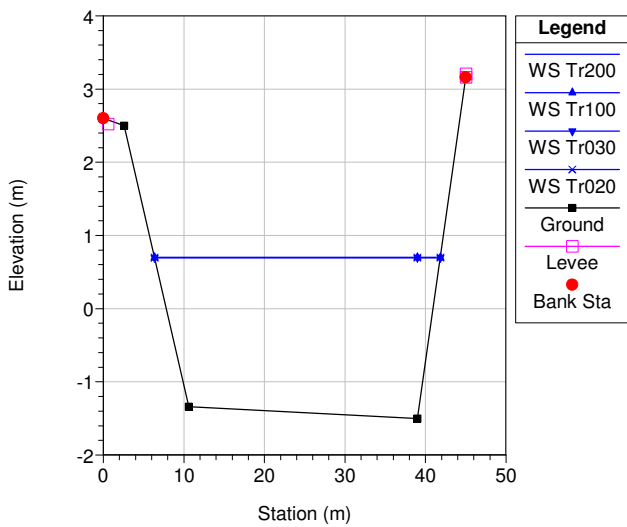
Fiorentina1 Plan: att1 5/5/2009 5:50:54 PM  
 Geom: fiorentina5 Flow: att1  
 River = Cornia Vecchia Reach = r1 RS = 0.95 BR



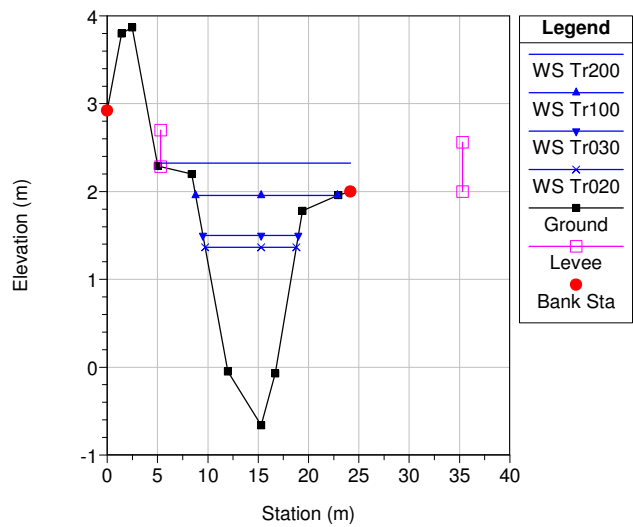
Fiorentina1 Plan: att1 5/5/2009 5:50:54 PM  
 Geom: fiorentina5 Flow: att1  
 River = Cornia Vecchia Reach = r1 RS = 0.9 sez1



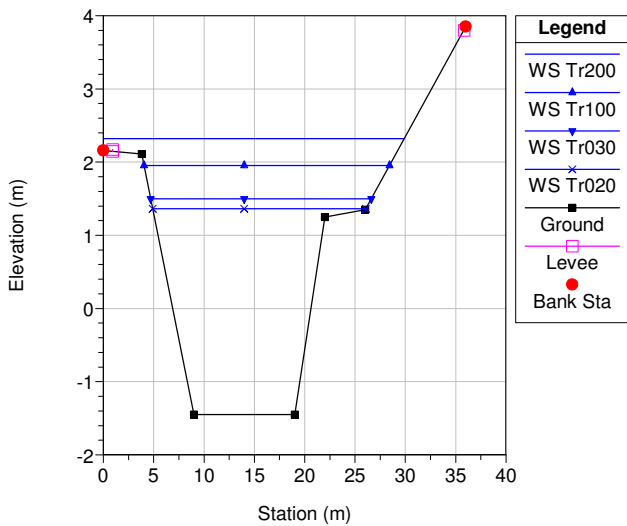
Fiorentina1 Plan: att1 5/5/2009 5:50:54 PM  
 Geom: fiorentina5 Flow: att1  
 River = Cornia Vecchia Reach = r1 RS = .5 sez1



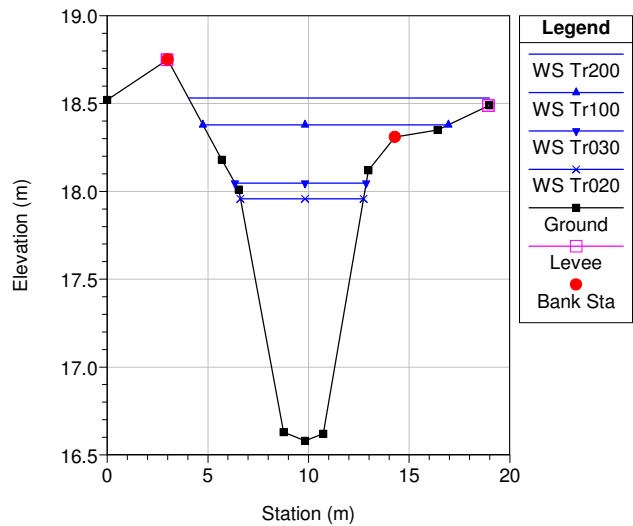
Fiorentina1 Plan: att1 5/5/2009 5:50:54 PM  
 Geom: fiorentina5 Flow: att1  
 River = CorniaVecchia Reach = CV\_2 RS = 2002 sez12.1



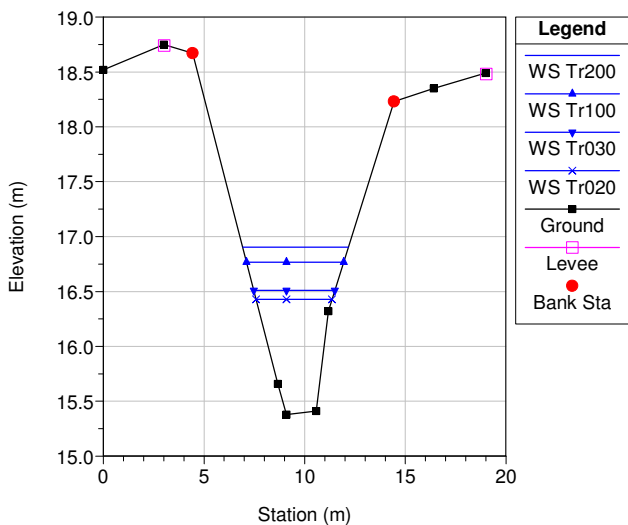
Fiorentina1 Plan: att1 5/5/2009 5:50:54 PM  
 Geom: fiorentina5 Flow: att1  
 River = CorniaVecchia Reach = CV\_2 RS = 2001.1



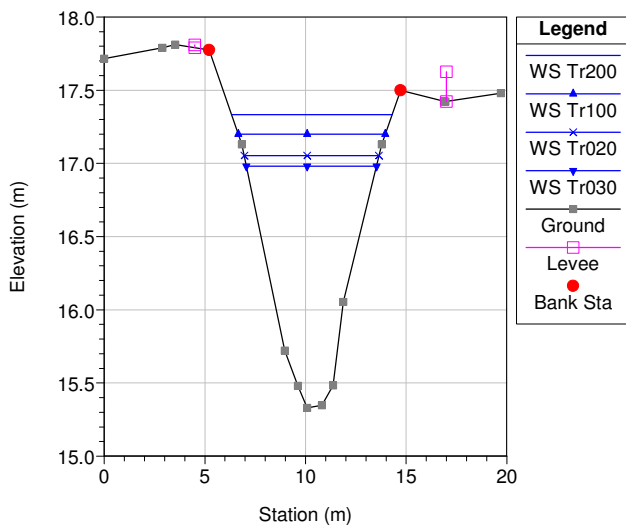
Fiorentina1 Plan: att1 5/5/2009 5:50:54 PM  
 Geom: fiorentina5 Flow: att1  
 River = fossonuovo Reach = nu-1 RS = 221



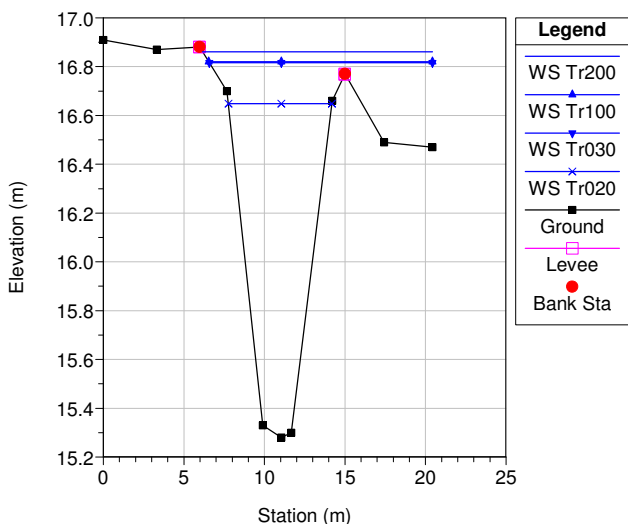
Fiorentina1 Plan: att1 5/5/2009 5:50:54 PM  
 Geom: fiorentina5 Flow: att1  
 River = fossonuovo Reach = nu-1 RS = 220



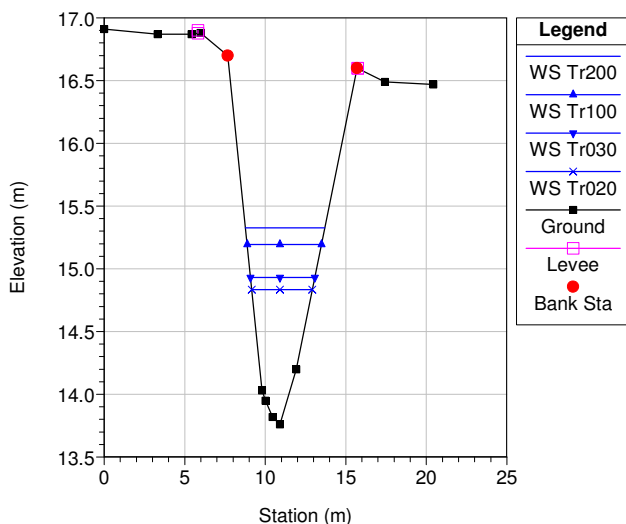
Fiorentina1 Plan: att1 5/5/2009 5:50:54 PM  
 Geom: fiorentina5 Flow: att1  
 River = fossonuovo Reach = nu-1 RS = 219.5\*



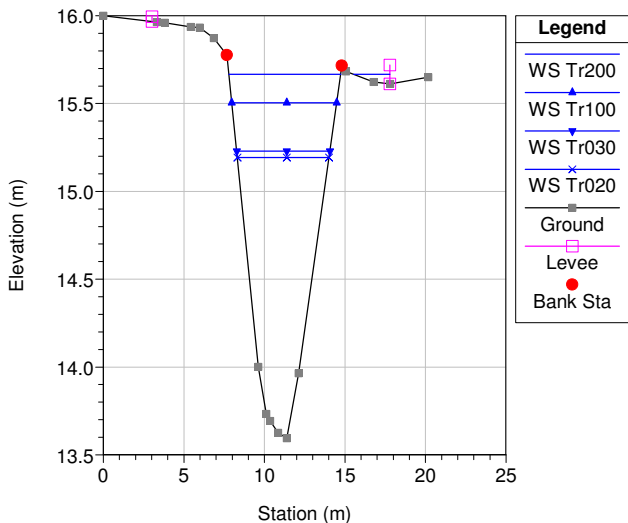
Fiorentina1 Plan: att1 5/5/2009 5:50:54 PM  
 Geom: fiorentina5 Flow: att1  
 River = fossonuovo Reach = nu-1 RS = 219



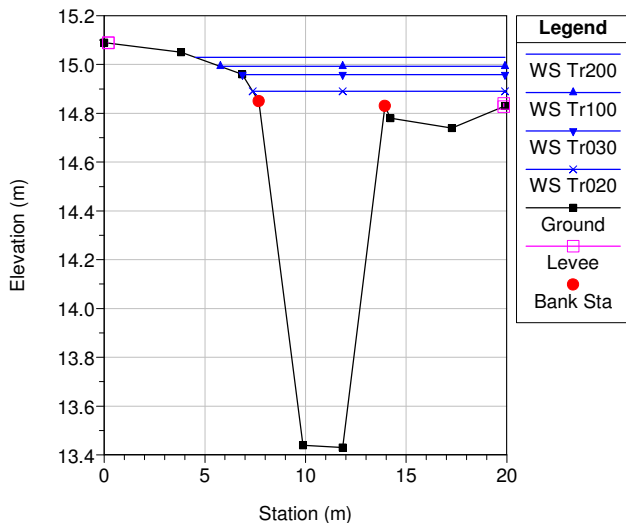
Fiorentina1 Plan: att1 5/5/2009 5:50:54 PM  
 Geom: fiorentina5 Flow: att1  
 River = fossonuovo Reach = nu-1 RS = 218



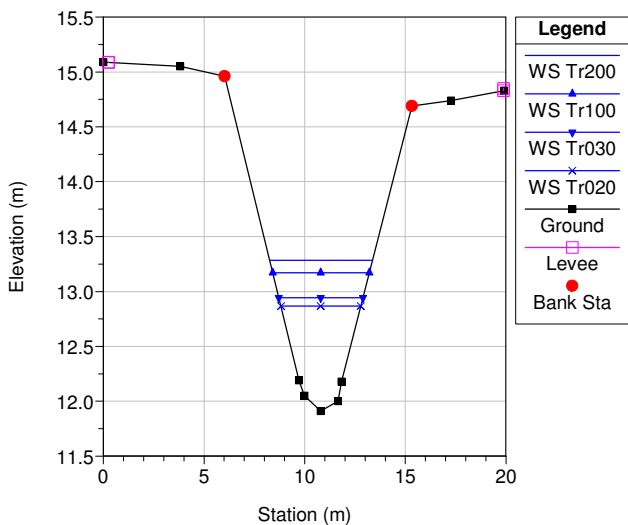
Fiorentina1 Plan: att1 5/5/2009 5:50:54 PM  
 Geom: fiorentina5 Flow: att1  
 River = fossonuovo Reach = nu-1 RS = 217.5\*



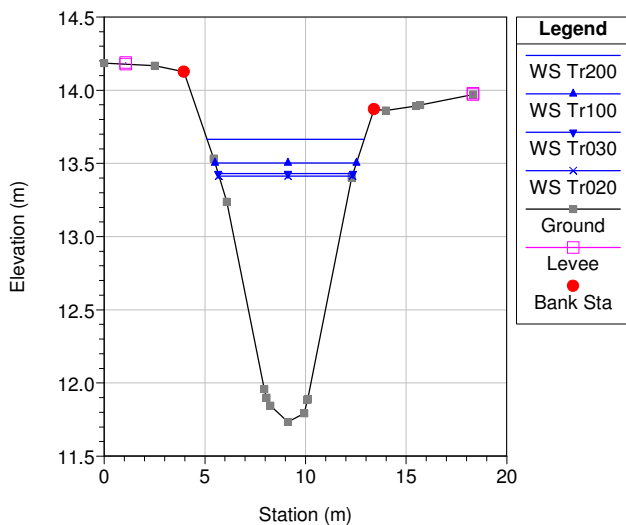
Fiorentina1 Plan: att1 5/5/2009 5:50:54 PM  
 Geom: fiorentina5 Flow: att1  
 River = fossonuovo Reach = nu-1 RS = 217



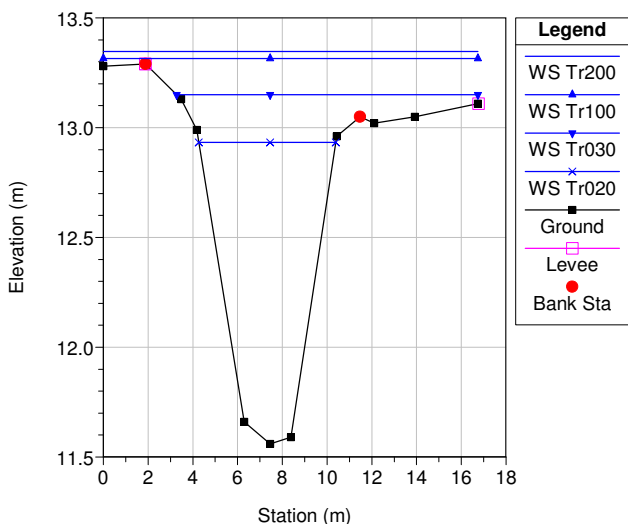
Fiorentina1 Plan: att1 5/5/2009 5:50:54 PM  
 Geom: fiorentina5 Flow: att1  
 River = fossonuovo Reach = nu-1 RS = 216



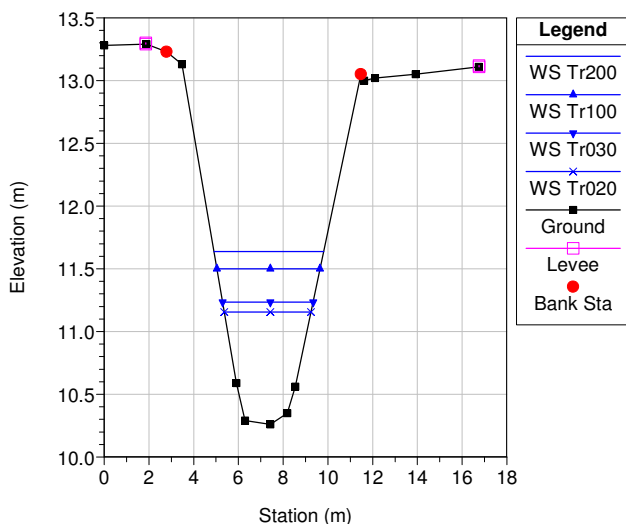
Fiorentina1 Plan: att1 5/5/2009 5:50:54 PM  
 Geom: fiorentina5 Flow: att1  
 River = fossonuovo Reach = nu-1 RS = 215.5\*



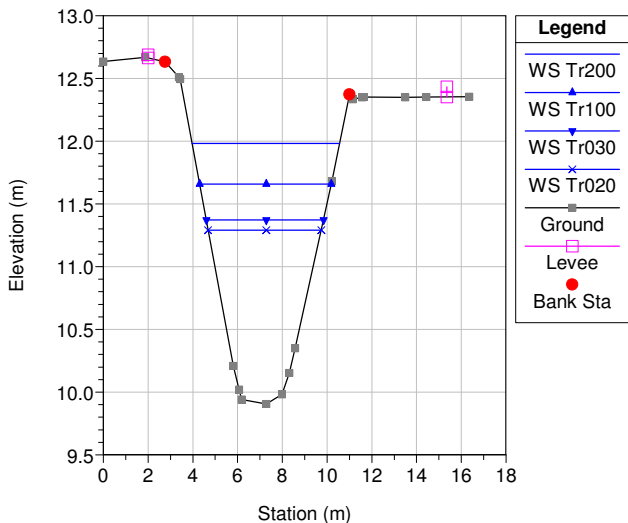
Fiorentina1 Plan: att1 5/5/2009 5:50:54 PM  
 Geom: fiorentina5 Flow: att1  
 River = fossonuovo Reach = nu-1 RS = 215



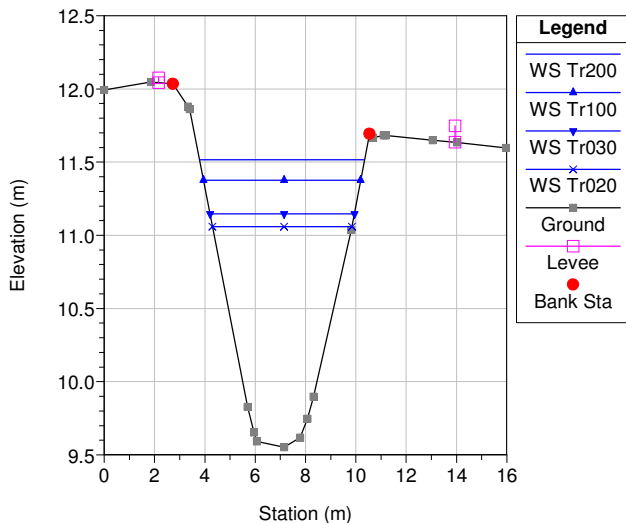
Fiorentina1 Plan: att1 5/5/2009 5:50:54 PM  
 Geom: fiorentina5 Flow: att1  
 River = fossonuovo Reach = nu-1 RS = 214



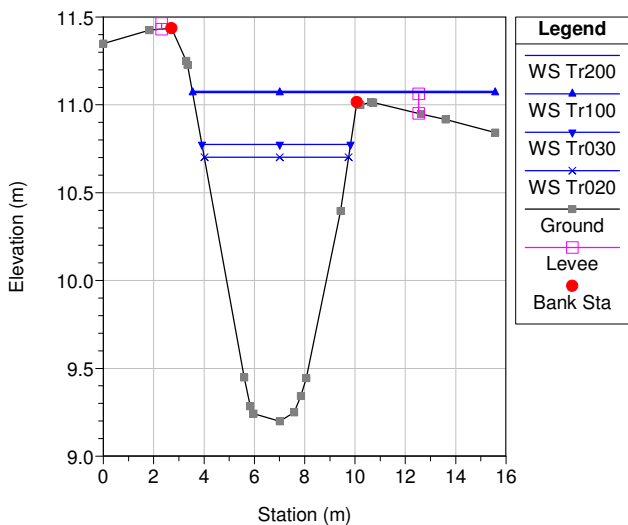
Fiorentina1 Plan: att1 5/5/2009 5:50:54 PM  
 Geom: fiorentina5 Flow: att1  
 River = fossonuovo Reach = nu-1 RS = 213.8\*



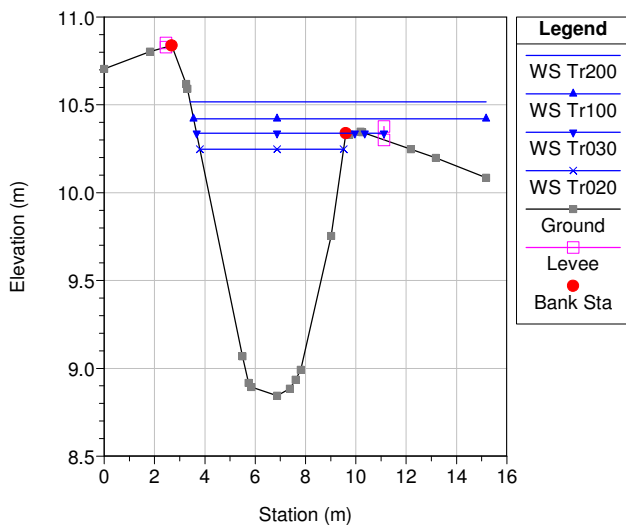
Fiorentina1 Plan: att1 5/5/2009 5:50:54 PM  
 Geom: fiorentina5 Flow: att1  
 River = fossonuovo Reach = nu-1 RS = 213.6\*



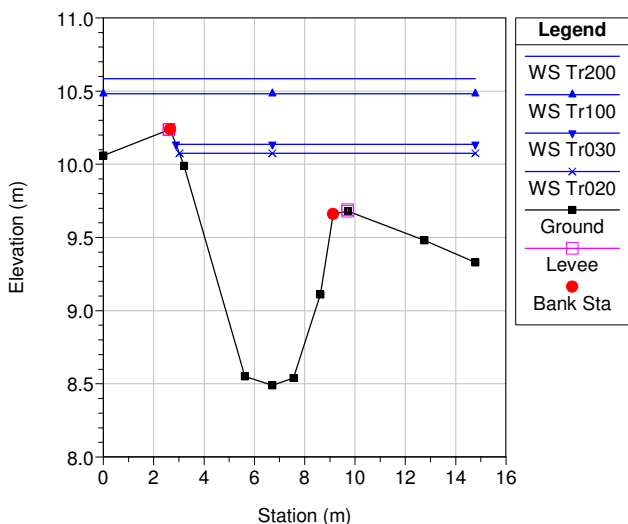
Fiorentina1 Plan: att1 5/5/2009 5:50:54 PM  
 Geom: fiorentina5 Flow: att1  
 River = fossonuovo Reach = nu-1 RS = 213.4\*



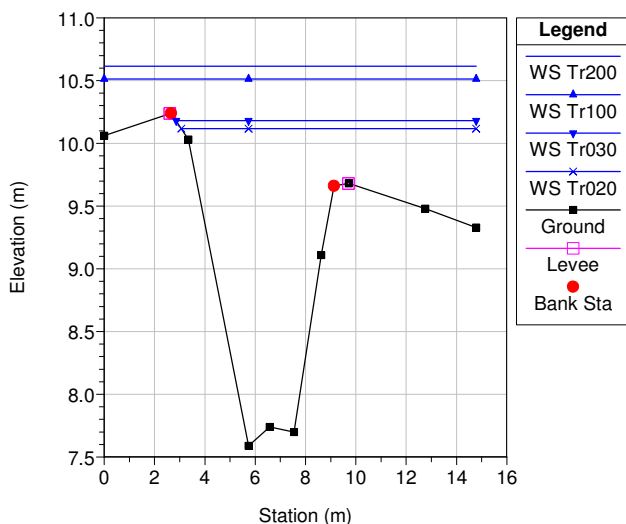
Fiorentina1 Plan: att1 5/5/2009 5:50:54 PM  
 Geom: fiorentina5 Flow: att1  
 River = fossonuovo Reach = nu-1 RS = 213.2\*



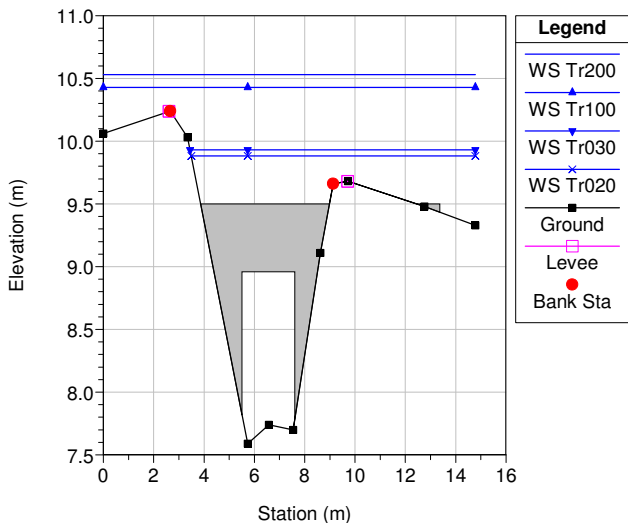
Fiorentina1 Plan: att1 5/5/2009 5:50:54 PM  
 Geom: fiorentina5 Flow: att1  
 River = fossonuovo Reach = nu-1 RS = 213



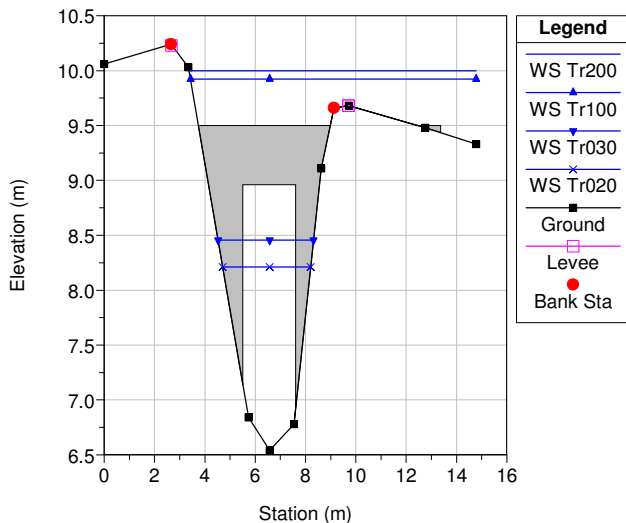
Fiorentina1 Plan: att1 5/5/2009 5:50:54 PM  
 Geom: fiorentina5 Flow: att1  
 River = fossonuovo Reach = nu-1 RS = 212



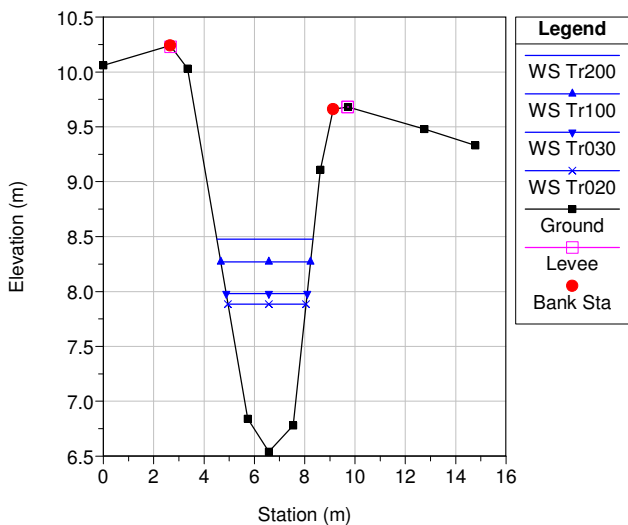
Fiorentina1 Plan: att1 5/5/2009 5:50:54 PM  
 Geom: fiorentina5 Flow: att1  
 River = fossonuovo Reach = nu-1 RS = 211 BR



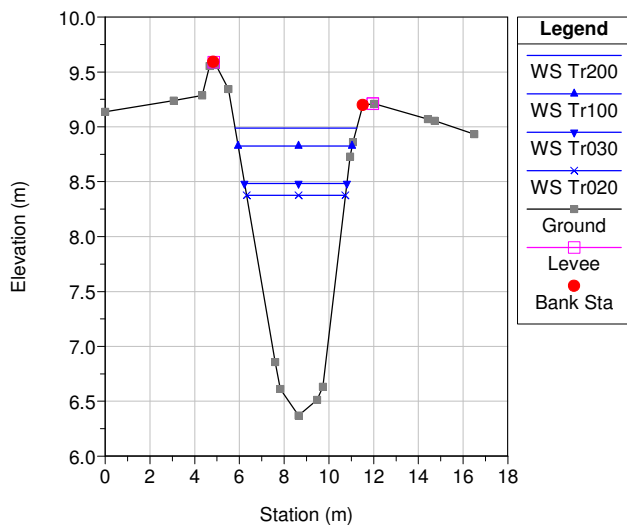
Fiorentina1 Plan: att1 5/5/2009 5:50:54 PM  
 Geom: fiorentina5 Flow: att1  
 River = fossonuovo Reach = nu-1 RS = 211 BR



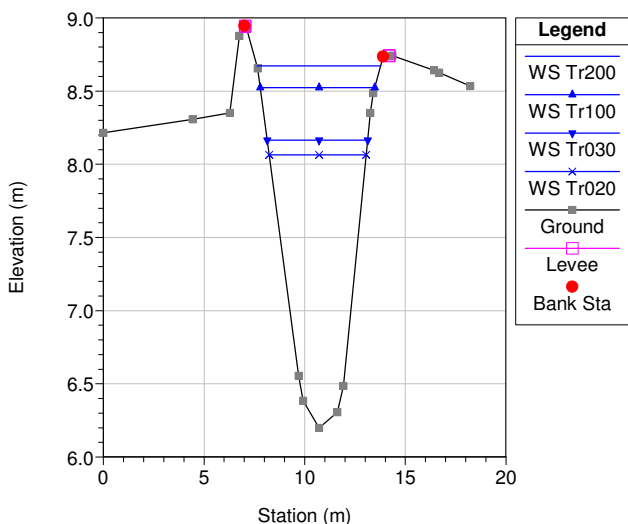
Fiorentina1 Plan: att1 5/5/2009 5:50:54 PM  
 Geom: fiorentina5 Flow: att1  
 River = fossonuovo Reach = nu-1 RS = 210.9



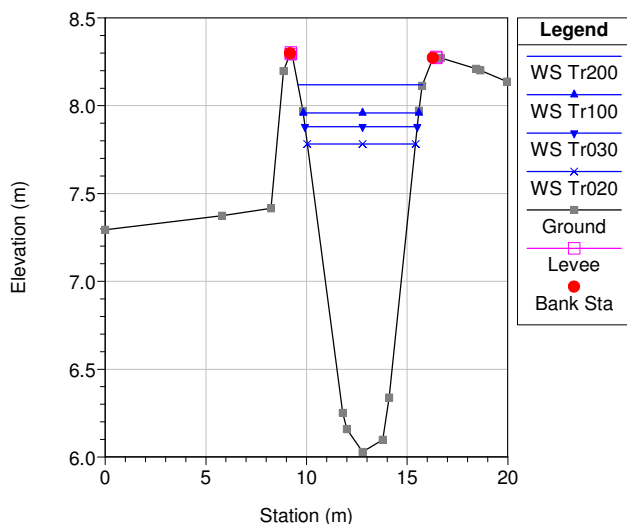
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 Geom: fiorentina5 Flow: att1  
 River = fossonuovo Reach = nu-1 RS = 210.675\*



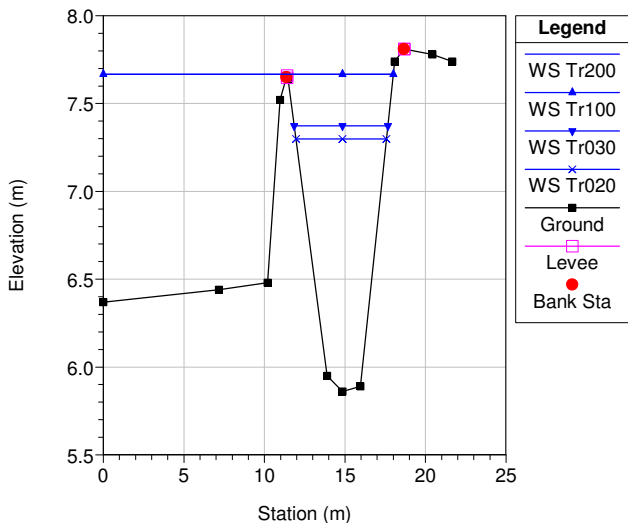
Fiorentina1 Plan: att1 5/5/2009 5:50:54 PM  
 Geom: fiorentina5 Flow: att1  
 River = fossonuovo Reach = nu-1 RS = 210.45\*



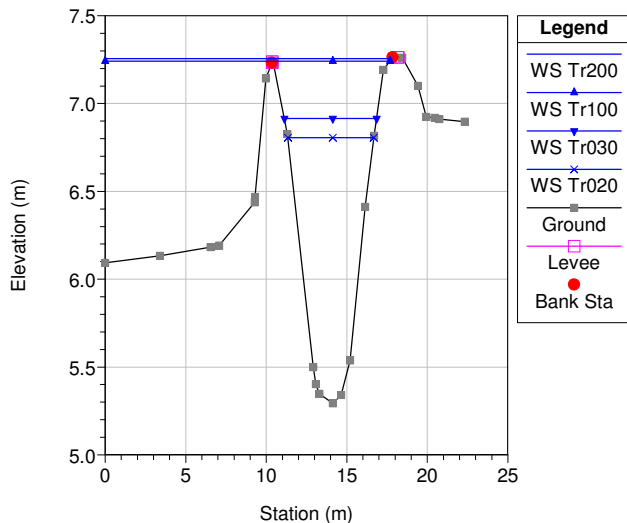
Fiorentina1 Plan: att1 5/5/2009 5:50:54 PM  
 Geom: fiorentina5 Flow: att1  
 River = fossonuovo Reach = nu-1 RS = 210.225\*



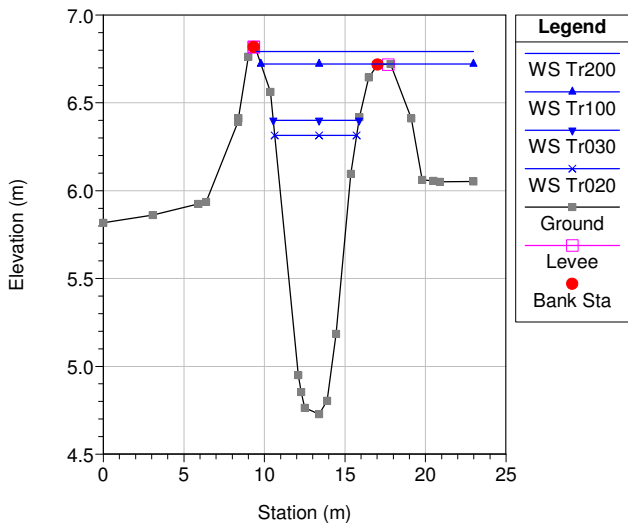
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 Geom: fiorentina5 Flow: att1  
 River = fossonuovo Reach = nu-1 RS = 210



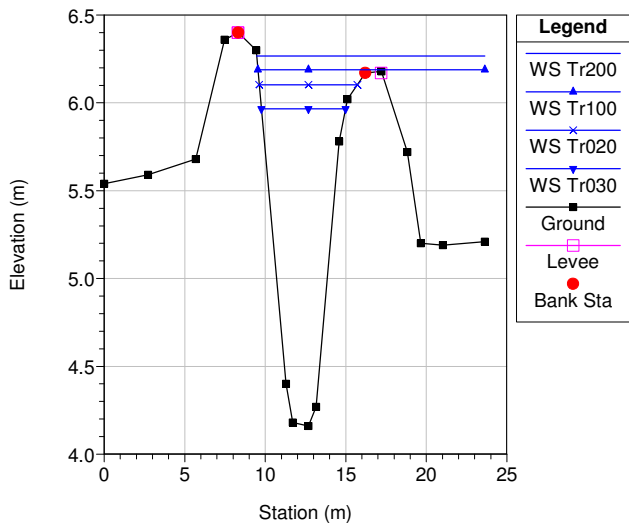
Fiorentina1 Plan: att1 5/5/2009 5:50:54 PM  
 Geom: fiorentina5 Flow: att1  
 River = fossonuovo Reach = nu-1 RS = 209.666\*



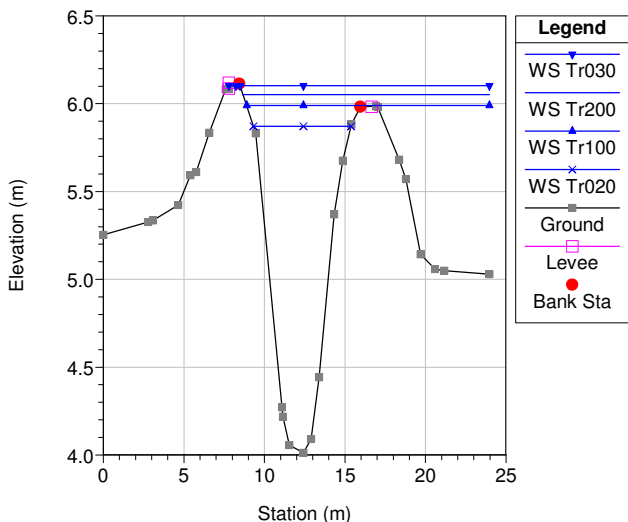
Fiorentina1 Plan: att1 5/5/2009 5:50:54 PM  
 Geom: fiorentina5 Flow: att1  
 River = fossonuovo Reach = nu-1 RS = 209.333\*



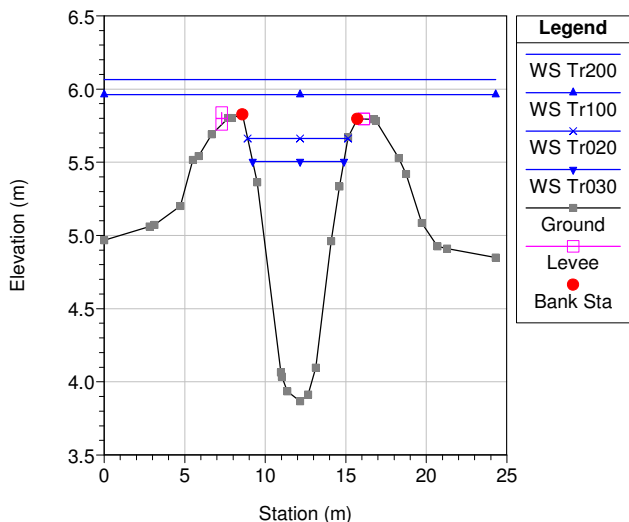
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 Geom: fiorentina5 Flow: att1  
 River = fossonuovo Reach = nu-1 RS = 209



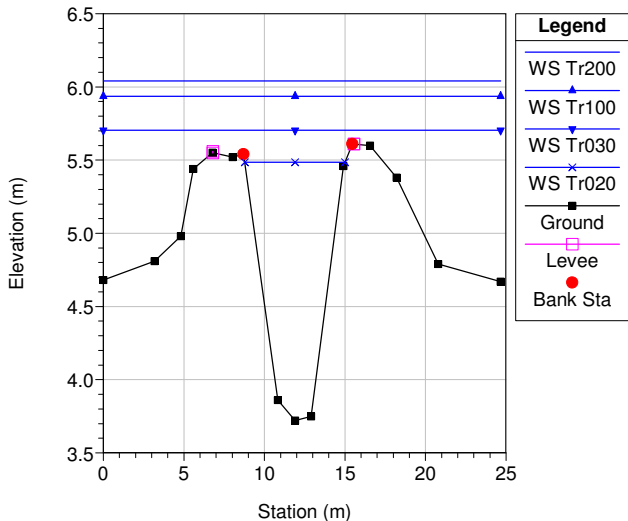
Fiorentina1 Plan: att1 5/5/2009 5:50:54 PM  
 Geom: fiorentina5 Flow: att1  
 River = fossonuovo Reach = nu-1 RS = 208.666\*



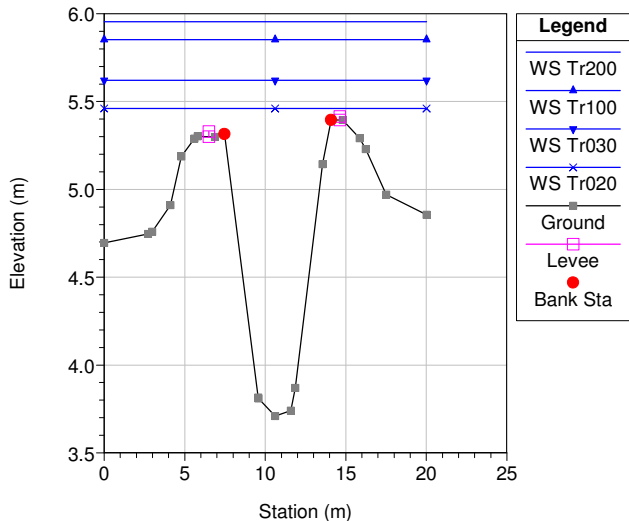
Fiorentina1 Plan: att1 5/5/2009 5:50:54 PM  
 Geom: fiorentina5 Flow: att1  
 River = fossonuovo Reach = nu-1 RS = 208.333\*



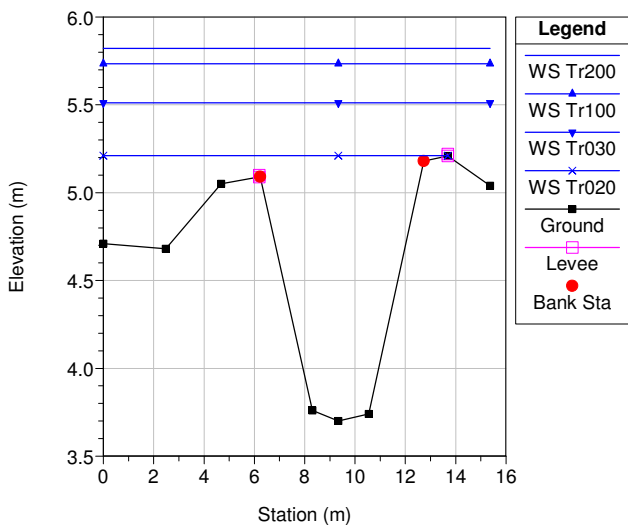
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 Geom: fiorentina5 Flow: att1  
 River = fossonuovo Reach = nu-1 RS = 208



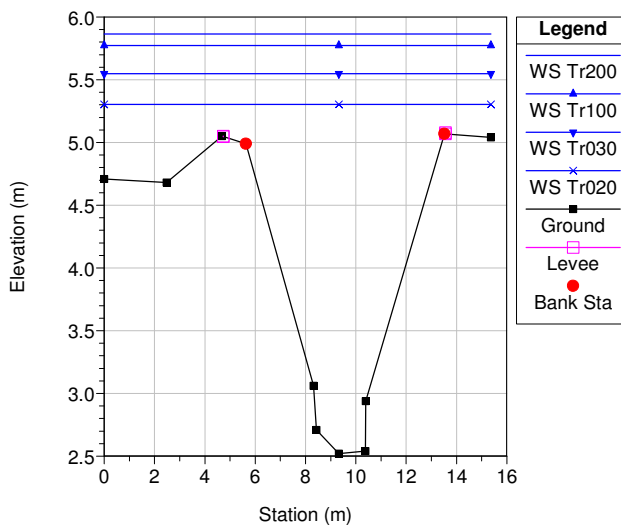
Fiorentina1 Plan: att1 5/5/2009 5:50:54 PM  
 Geom: fiorentina5 Flow: att1  
 River = fossonuovo Reach = nu-1 RS = 207.5\*



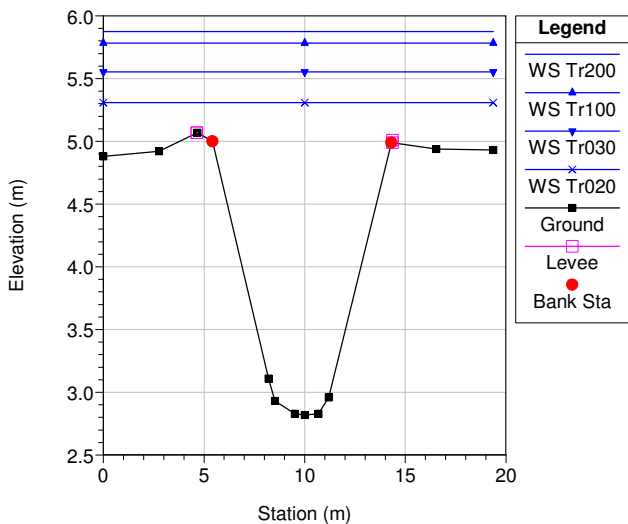
Fiorentina1 Plan: att1 5/5/2009 5:50:54 PM  
 Geom: fiorentina5 Flow: att1  
 River = fossonuovo Reach = nu-1 RS = 207



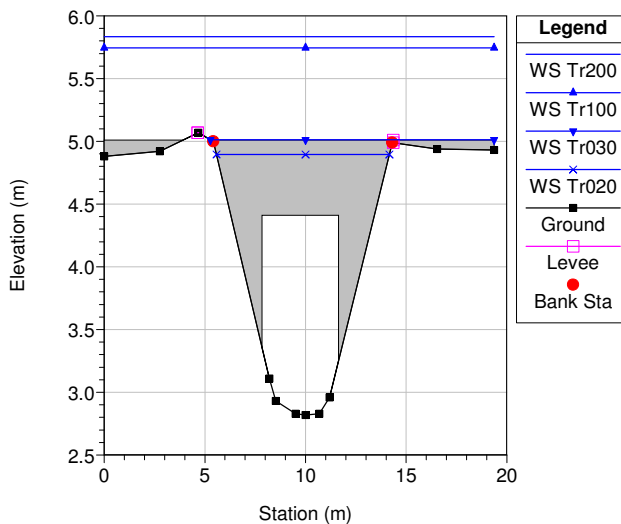
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 Geom: fiorentina5 Flow: att1  
 River = fossonuovo Reach = nu-1 RS = 206



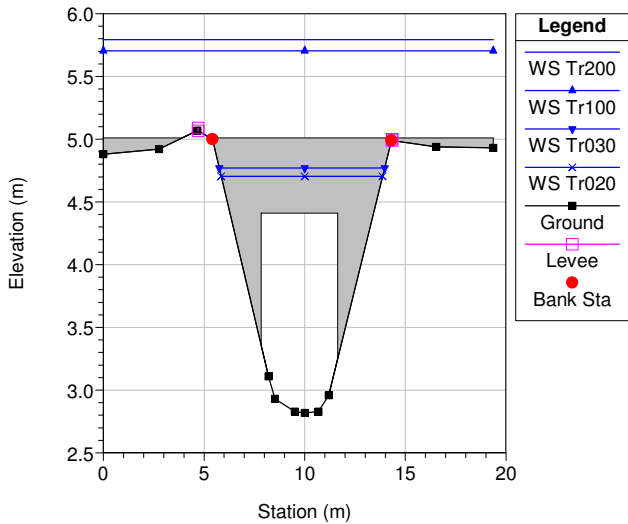
Fiorentina1 Plan: att1 5/5/2009 5:50:54 PM  
 Geom: fiorentina5 Flow: att1  
 River = fossonuovo Reach = nu-1 RS = 205



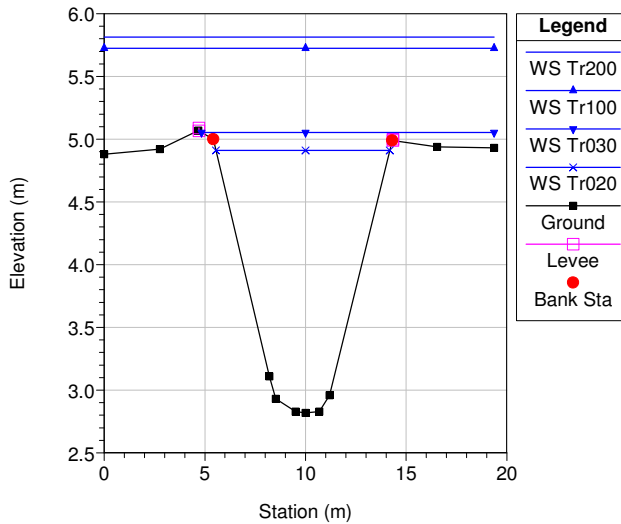
Fiorentina1 Plan: att1 5/5/2009 5:50:54 PM  
 Geom: fiorentina5 Flow: att1  
 River = fossonuovo Reach = nu-1 RS = 204 BR



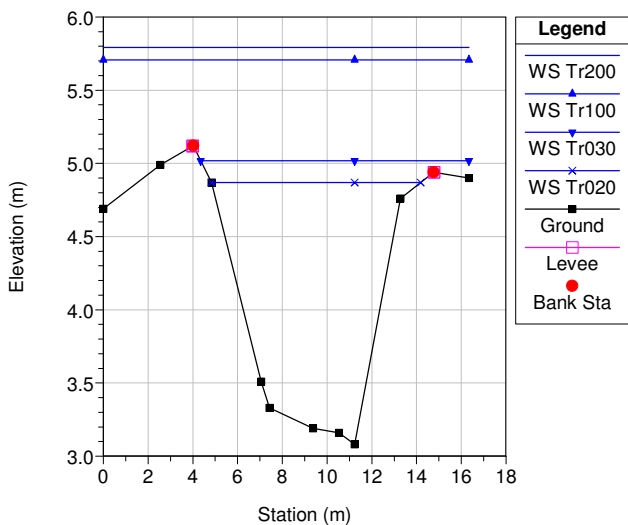
Fiorentina1 Plan: att1 5/5/2009 5:50:54 PM  
 Geom: fiorentina5 Flow: att1  
 River = fossonuovo Reach = nu-1 RS = 204 BR



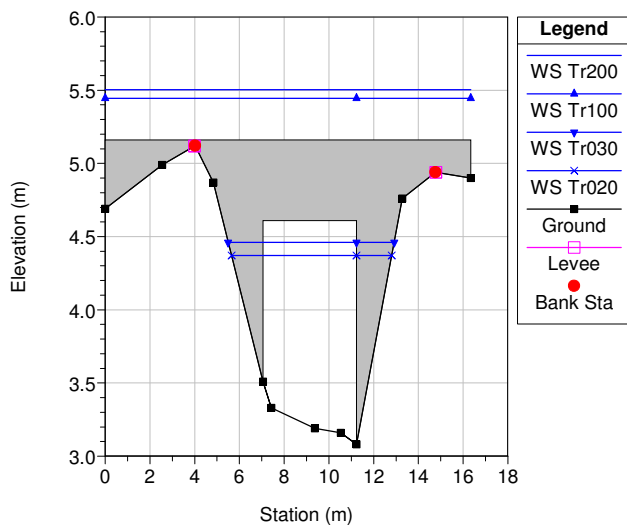
Fiorentina1 Plan: att1 5/5/2009 5:50:54 PM  
 Geom: fiorentina5 Flow: att1  
 River = fossonuovo Reach = nu-1 RS = 203.9



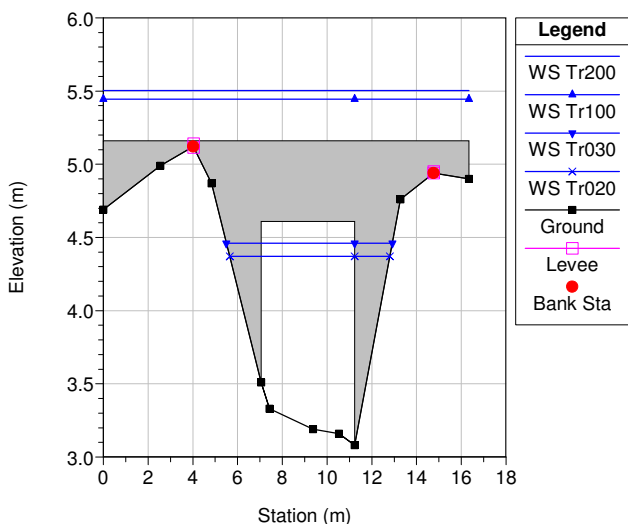
Fiorentina1 Plan: att1 5/5/2009 5:50:54 PM  
 Geom: fiorentina5 Flow: att1  
 River = fossonuovo Reach = nu-1 RS = 203



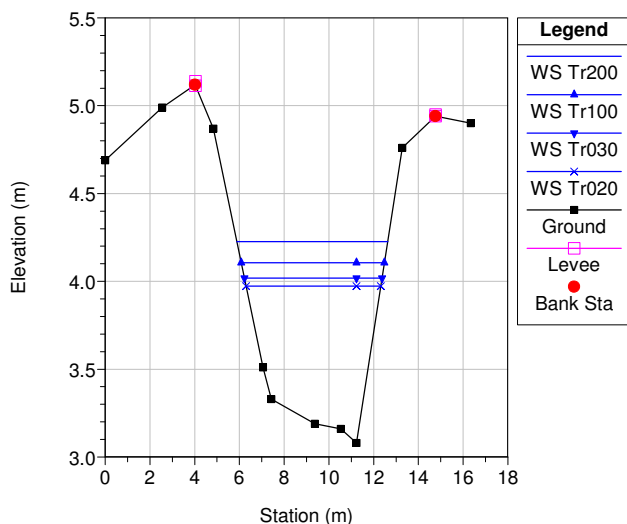
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 Geom: fiorentina5 Flow: att1  
 River = fossonuovo Reach = nu-1 RS = 202 BR



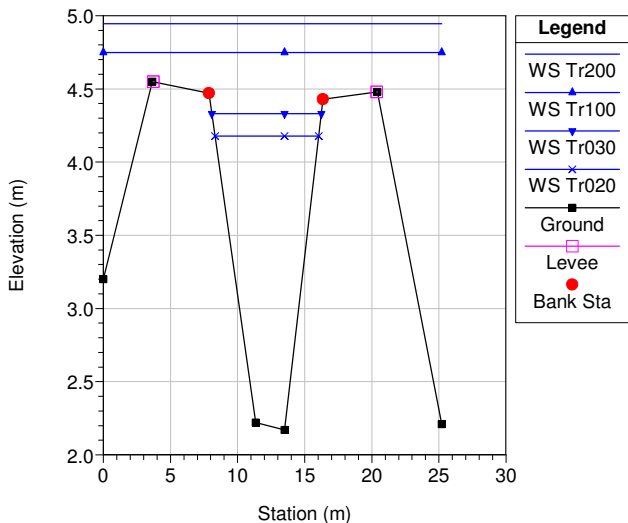
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 Geom: fiorentina5 Flow: att1  
 River = fossonuovo Reach = nu-1 RS = 202 BR



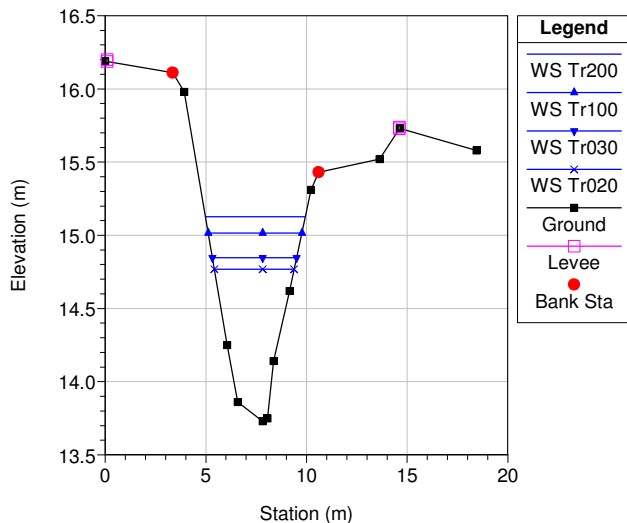
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 Geom: fiorentina5 Flow: att1  
 River = fossonuovo Reach = nu-1 RS = 201.9



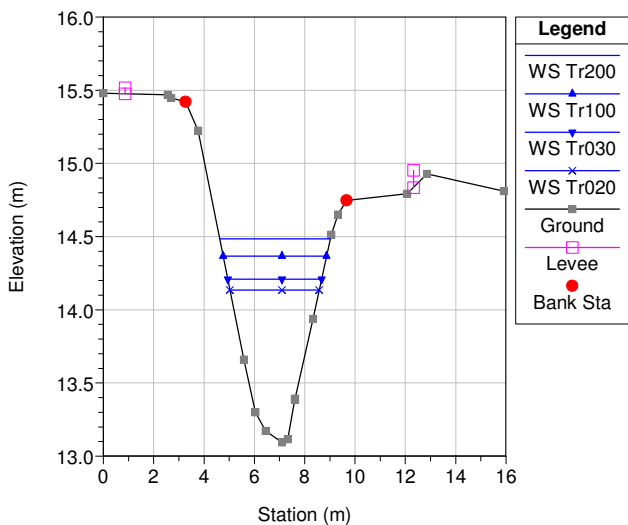
Fiorentina1 Plan: att1 5/5/2009 5:50:54 PM  
 Geom: fiorentina5 Flow: att1  
 River = fossonuovo Reach = nu-1 RS = 201 muccetti 08



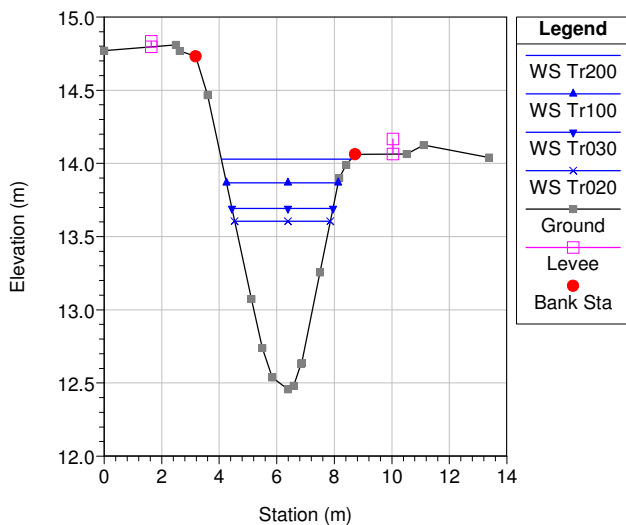
Fiorentina1 Plan: att1 5/5/2009 5:50:54 PM  
 Geom: fiorentina5 Flow: att1  
 River = maestro Reach = ma-1 RS = 320



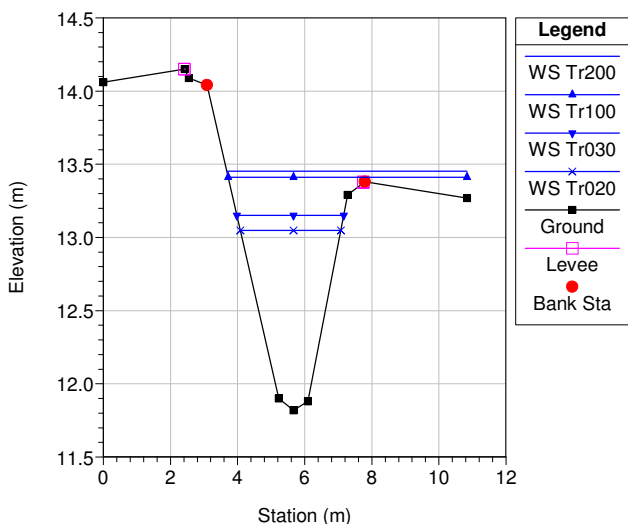
Fiorentina1 Plan: att1 5/5/2009 5:50:54 PM  
 Geom: fiorentina5 Flow: att1  
 River = maestro Reach = ma-1 RS = 319.666\*



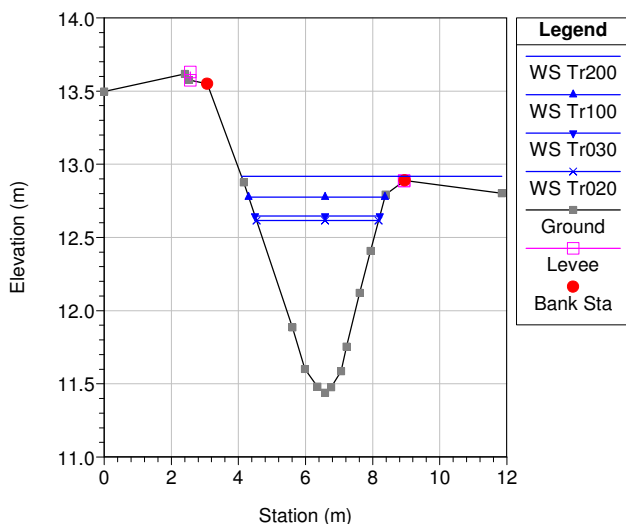
Fiorentina1 Plan: att1 5/5/2009 5:50:54 PM  
 Geom: fiorentina5 Flow: att1  
 River = maestro Reach = ma-1 RS = 319.333\*



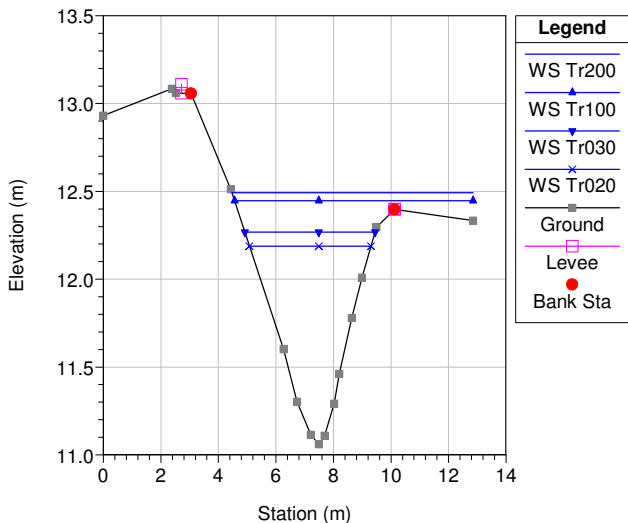
Fiorentina1 Plan: att1 5/5/2009 5:50:54 PM  
 Geom: fiorentina5 Flow: att1  
 River = maestro Reach = ma-1 RS = 319



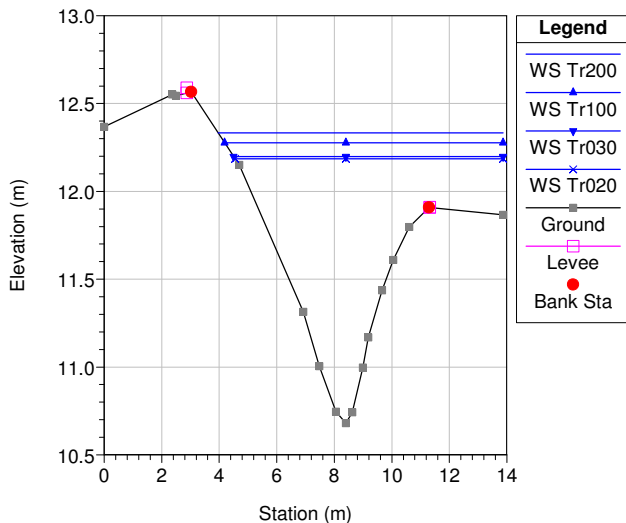
Fiorentina1 Plan: att1 5/5/2009 5:50:54 PM  
 Geom: fiorentina5 Flow: att1  
 River = maestro Reach = ma-1 RS = 318.75\*



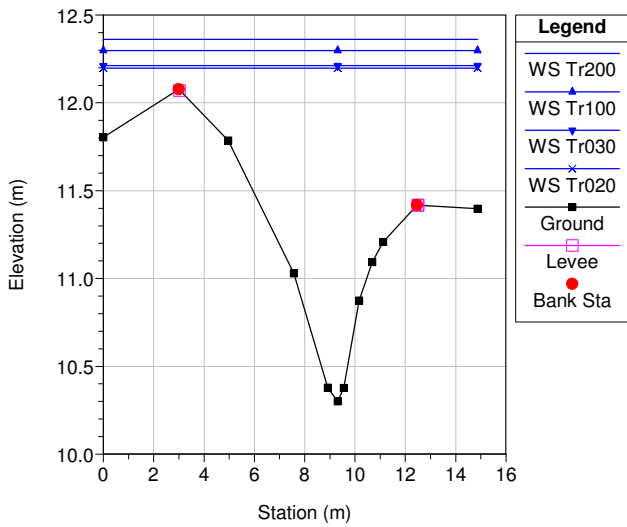
Fiorentina1 Plan: att1 5/5/2009 5:50:54 PM  
 Geom: fiorentina5 Flow: att1  
 River = maestro Reach = ma-1 RS = 318.5\*



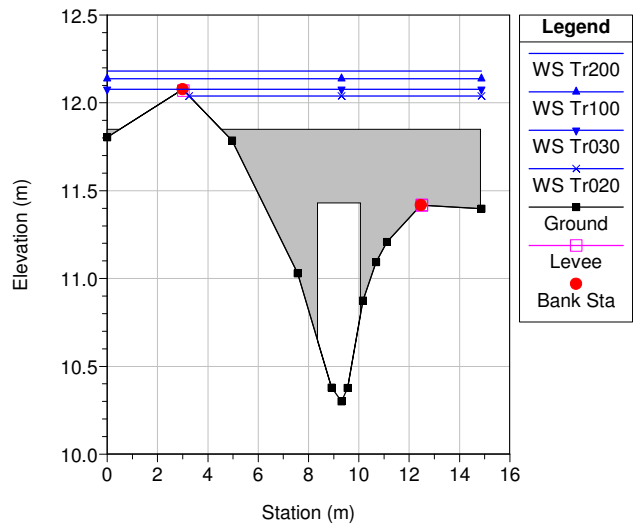
Fiorentina1 Plan: att1 5/5/2009 5:50:54 PM  
 Geom: fiorentina5 Flow: att1  
 River = maestro Reach = ma-1 RS = 318.25\*



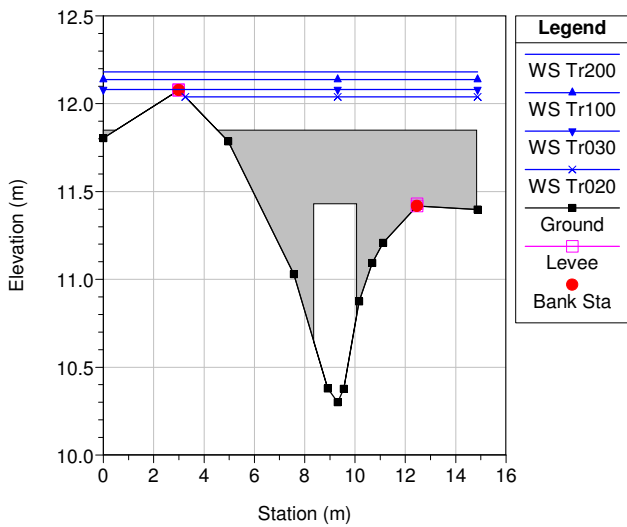
Fiorentina1 Plan: att1 5/5/2009 5:50:54 PM  
 Geom: fiorentina5 Flow: att1  
 River = maestro Reach = ma-1 RS = 318



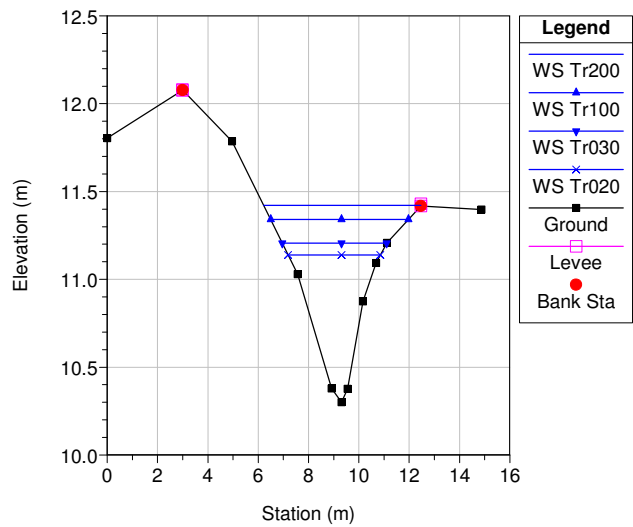
Fiorentina1 Plan: att1 5/5/2009 5:50:54 PM  
 Geom: fiorentina5 Flow: att1  
 River = maestro Reach = ma-1 RS = 317 BR



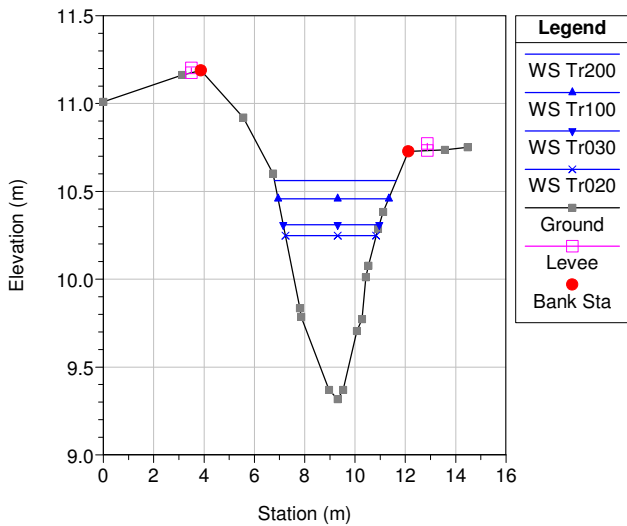
Fiorentina1 Plan: att1 5/5/2009 5:50:54 PM  
 Geom: fiorentina5 Flow: att1  
 River = maestro Reach = ma-1 RS = 317 BR



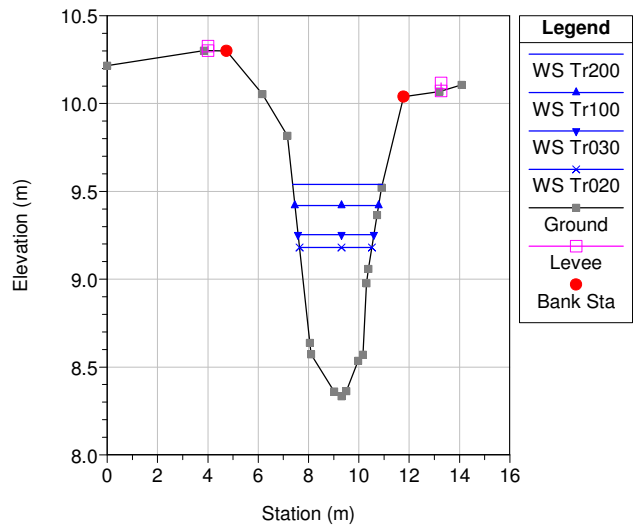
Fiorentina1 Plan: att1 5/5/2009 5:50:54 PM  
 Geom: fiorentina5 Flow: att1  
 River = maestro Reach = ma-1 RS = 316.9



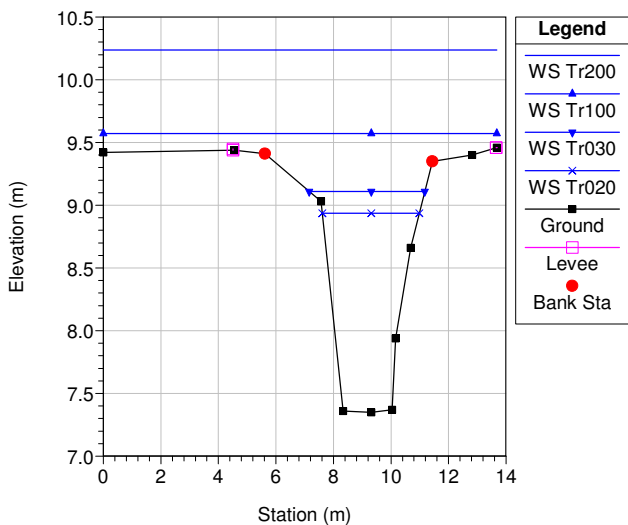
Fiorentina1 Plan: att1 5/5/2009 5:50:54 PM  
 Geom: fiorentina5 Flow: att1  
 River = maestro Reach = ma-1 RS = 316.6\*



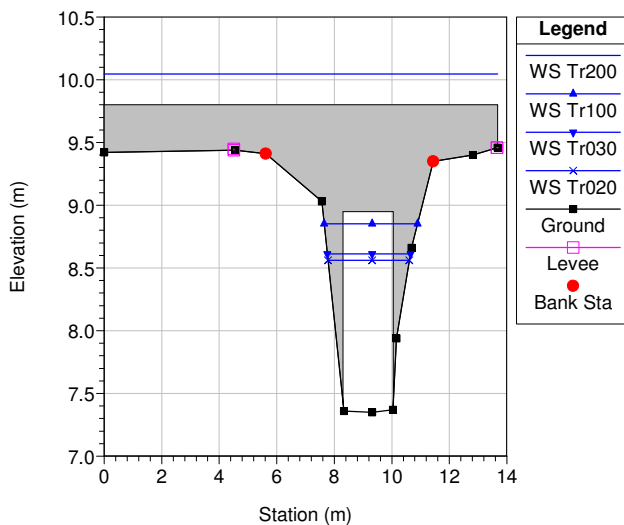
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 Geom: fiorentina5 Flow: att1  
 River = maestro Reach = ma-1 RS = 316.3\*



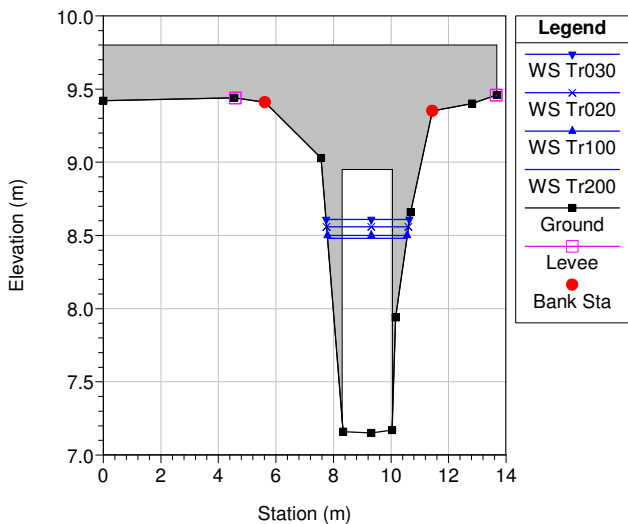
Fiorentina1 Plan: att1 5/5/2009 5:50:54 PM  
 Geom: fiorentina5 Flow: att1  
 River = maestro Reach = ma-1 RS = 316



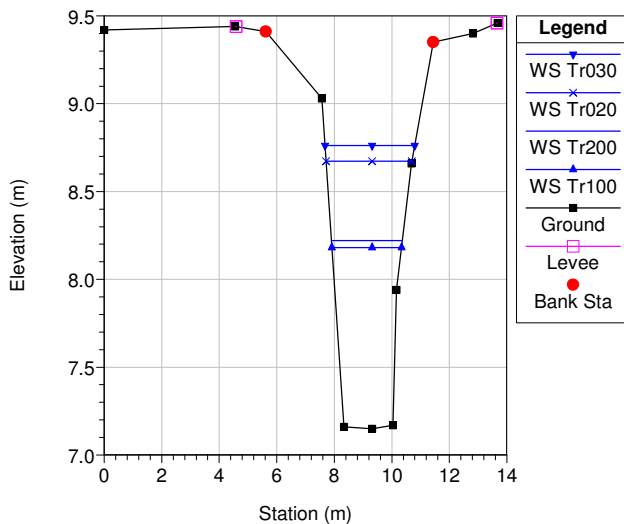
Fiorentina1 Plan: att1 5/5/2009 5:50:54 PM  
 Geom: fiorentina5 Flow: att1  
 River = maestro Reach = ma-1 RS = 315 BR



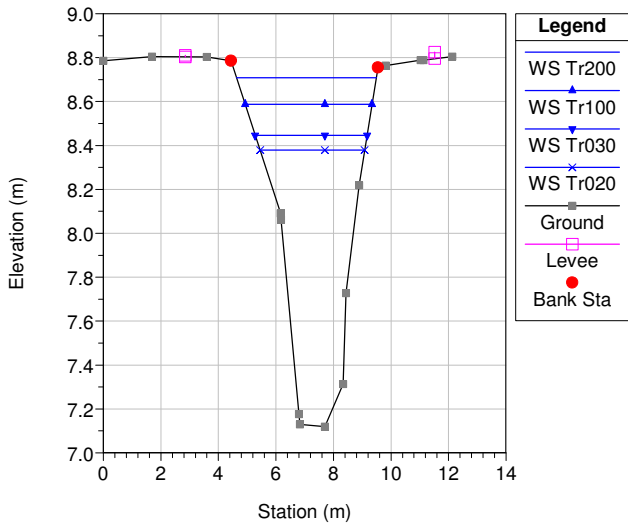
Fiorentina1 Plan: att1 5/5/2009 5:50:54 PM  
 Geom: fiorentina5 Flow: att1  
 River = maestro Reach = ma-1 RS = 315 BR



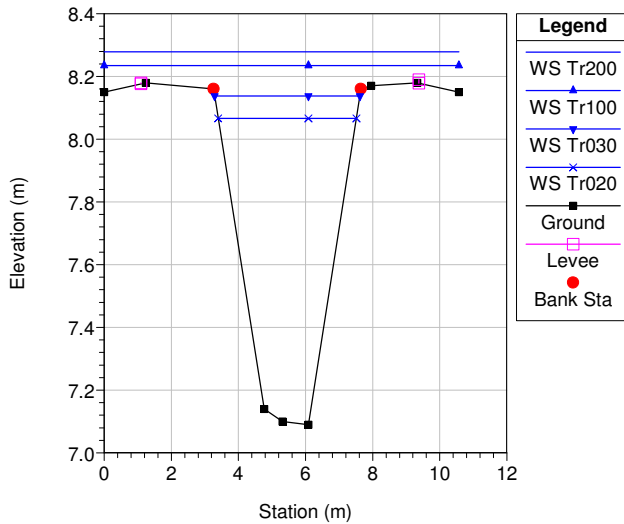
Fiorentina1 Plan: att1 5/5/2009 5:50:54 PM  
 Geom: fiorentina5 Flow: att1  
 River = maestro Reach = ma-1 RS = 314.9



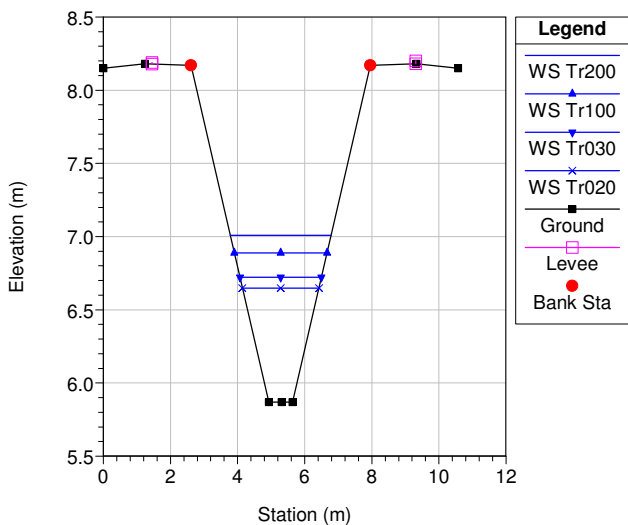
Fiorentina1 Plan: att1 5/5/2009 5:50:54 PM  
 Geom: fiorentina5 Flow: att1  
 River = maestro Reach = ma-1 RS = 314.45\*



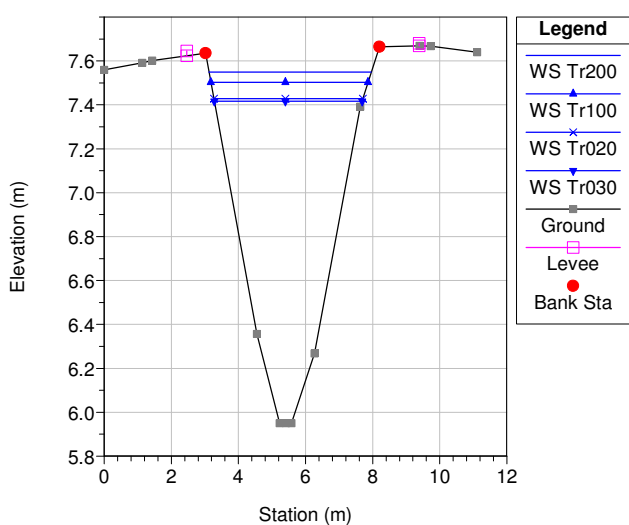
Fiorentina1 Plan: att1 5/5/2009 5:50:54 PM  
 Geom: fiorentina5 Flow: att1  
 River = maestro Reach = ma-1 RS = 314



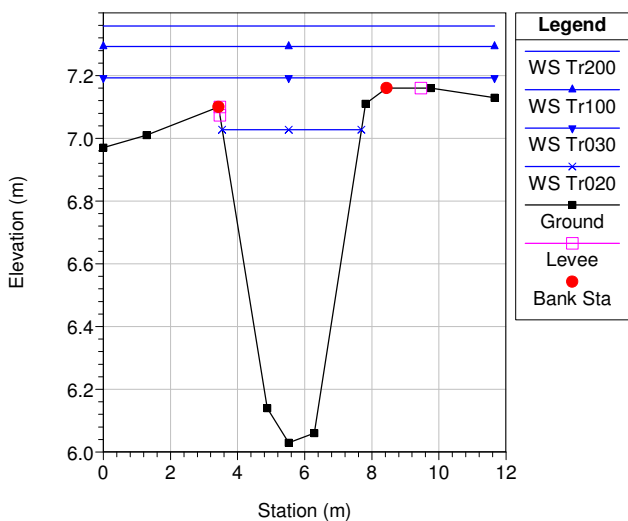
Fiorentina1 Plan: att1 5/5/2009 5:50:54 PM  
 Geom: fiorentina5 Flow: att1  
 River = maestro Reach = ma-1 RS = 313



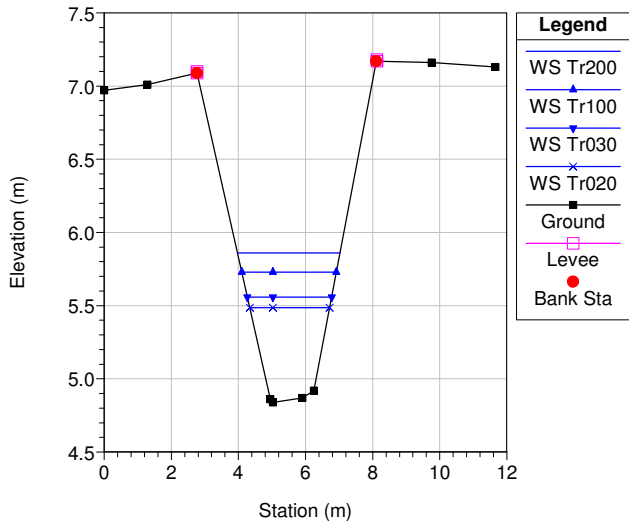
Fiorentina1 Plan: att1 5/5/2009 5:50:54 PM  
 Geom: fiorentina5 Flow: att1  
 River = maestro Reach = ma-1 RS = 312.5\*



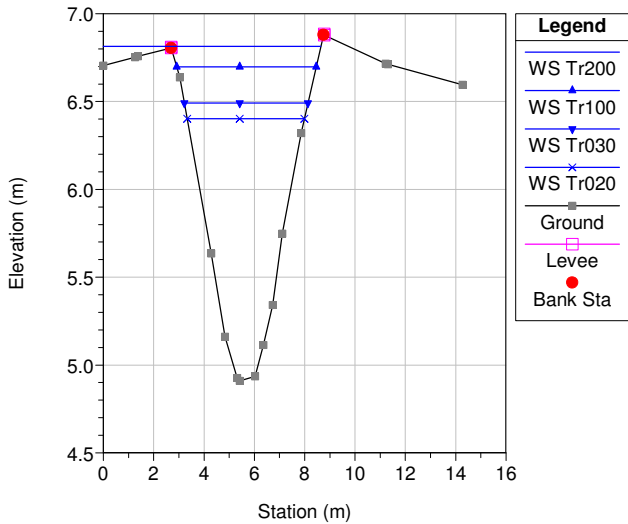
Fiorentina1 Plan: att1 5/5/2009 5:50:54 PM  
 Geom: fiorentina5 Flow: att1  
 River = maestro Reach = ma-1 RS = 312



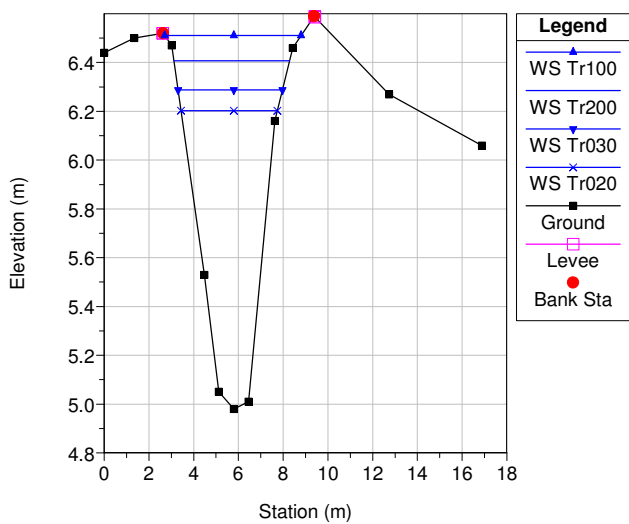
Fiorentina1 Plan: att1 5/5/2009 5:50:54 PM  
 Geom: fiorentina5 Flow: att1  
 River = maestro Reach = ma-1 RS = 311



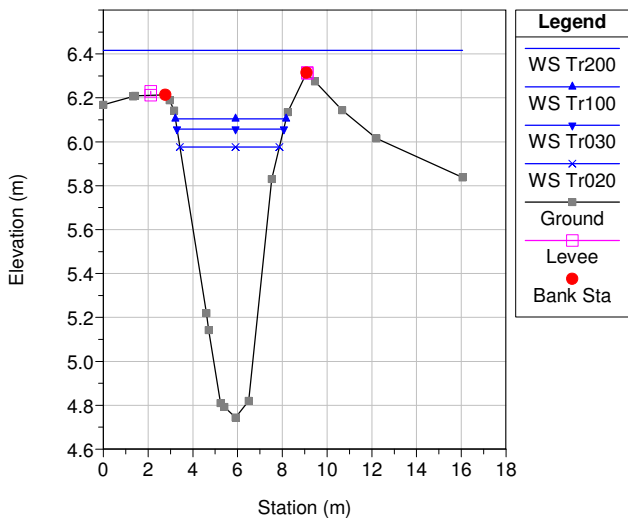
Fiorentina1 Plan: att1 5/5/2009 5:50:54 PM  
 Geom: fiorentina5 Flow: att1  
 River = maestro Reach = ma-1 RS = 310.5\*



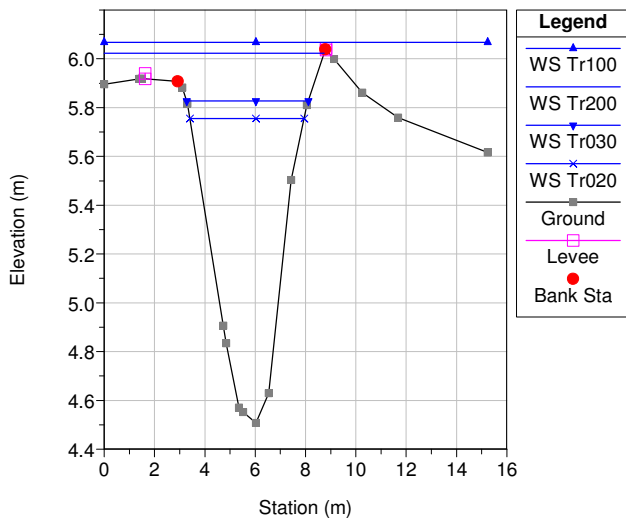
Fiorentina1 Plan: att1 5/5/2009 5:50:54 PM  
 Geom: fiorentina5 Flow: att1  
 River = maestro Reach = ma-1 RS = 310



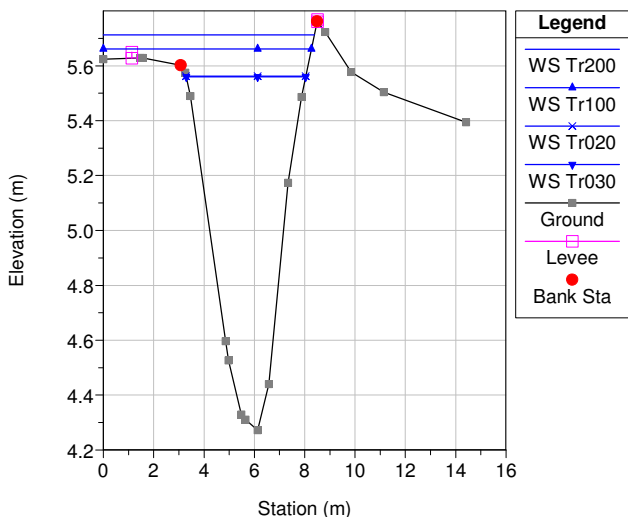
Fiorentina1 Plan: att1 5/5/2009 5:50:54 PM  
 Geom: fiorentina5 Flow: att1  
 River = maestro Reach = ma-1 RS = 309.8\*



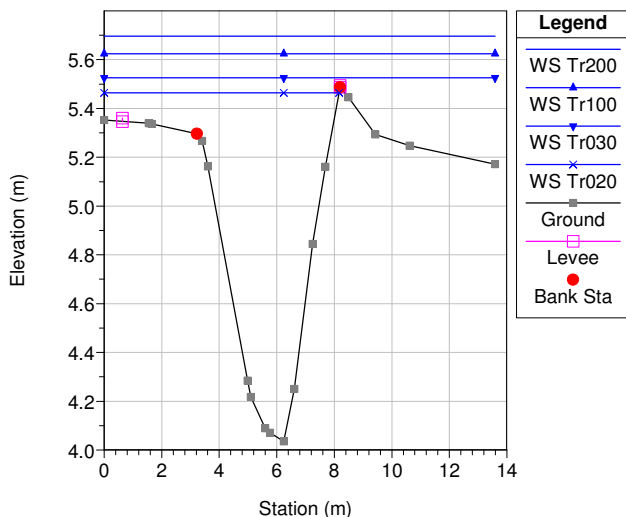
Fiorentina1 Plan: att1 5/5/2009 5:50:54 PM  
 Geom: fiorentina5 Flow: att1  
 River = maestro Reach = ma-1 RS = 309.6\*



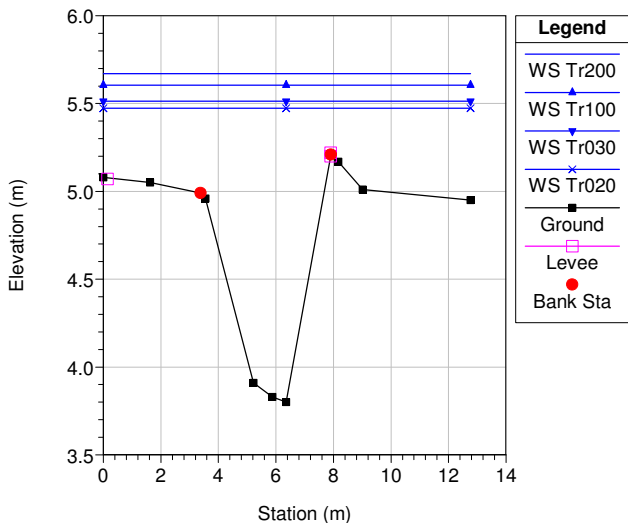
Fiorentina1 Plan: att1 5/5/2009 5:50:54 PM  
 Geom: fiorentina5 Flow: att1  
 River = maestro Reach = ma-1 RS = 309.4\*



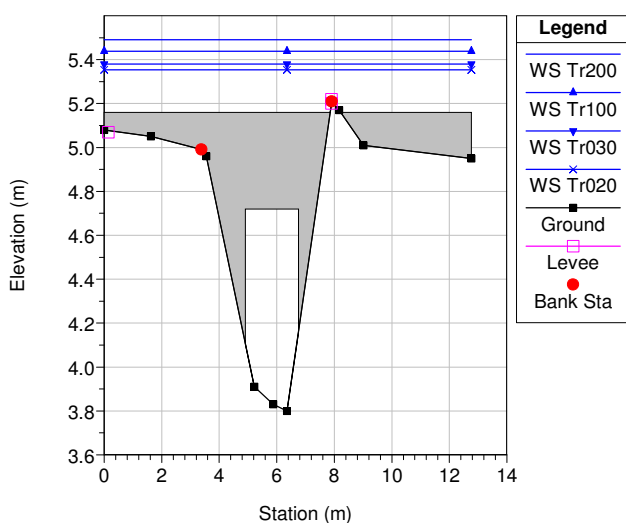
Fiorentina1 Plan: att1 5/5/2009 5:50:54 PM  
 Geom: fiorentina5 Flow: att1  
 River = maestro Reach = ma-1 RS = 309.2\*



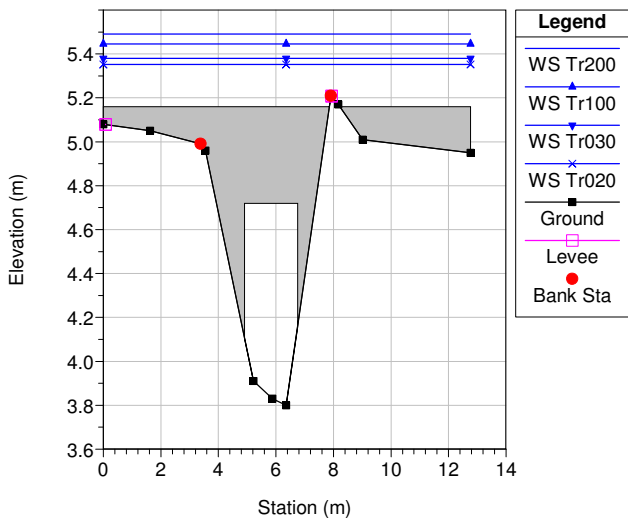
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 Geom: fiorentina5 Flow: att1  
 River = maestro Reach = ma-1 RS = 309



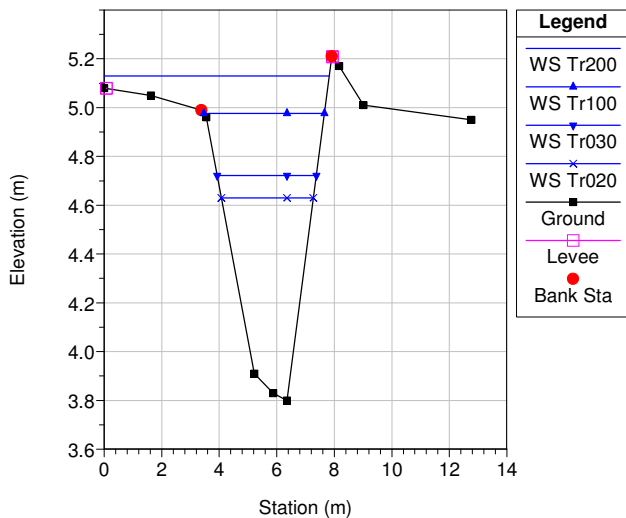
Fiorentina1 Plan: att1 5/5/2009 5:50:54 PM  
 Geom: fiorentina5 Flow: att1  
 River = maestro Reach = ma-1 RS = 308 BR



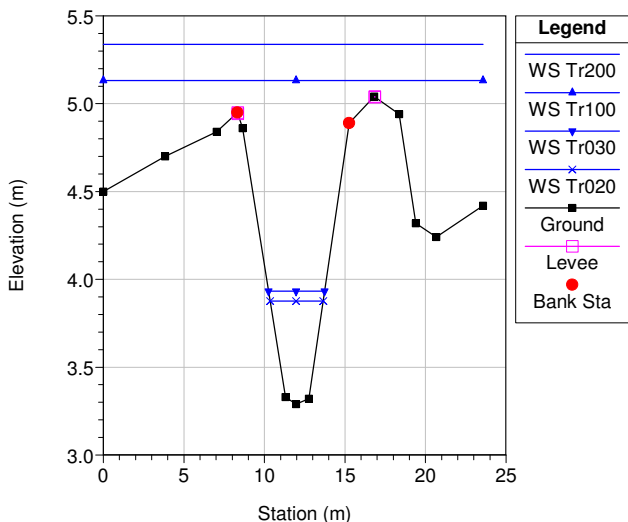
Fiorentina1 Plan: att1 5/5/2009 5:50:54 PM  
 Geom: fiorentina5 Flow: att1  
 River = maestro Reach = ma-1 RS = 308 BR



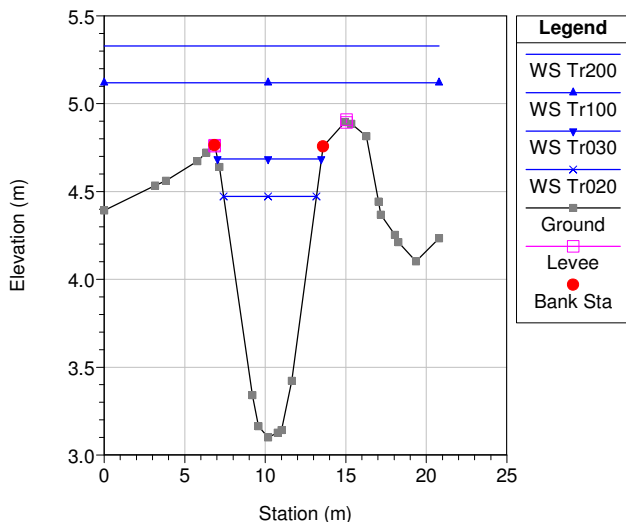
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 Geom: fiorentina5 Flow: att1  
 River = maestro Reach = ma-1 RS = 307.9



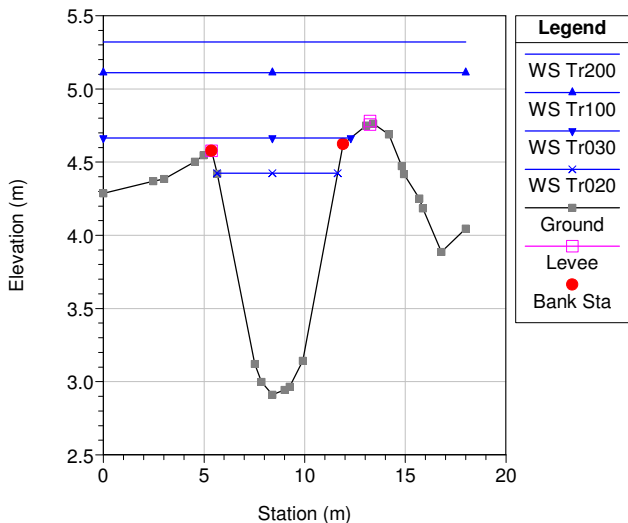
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 Geom: fiorentina5 Flow: att1  
 River = maestro Reach = ma-1 RS = 307



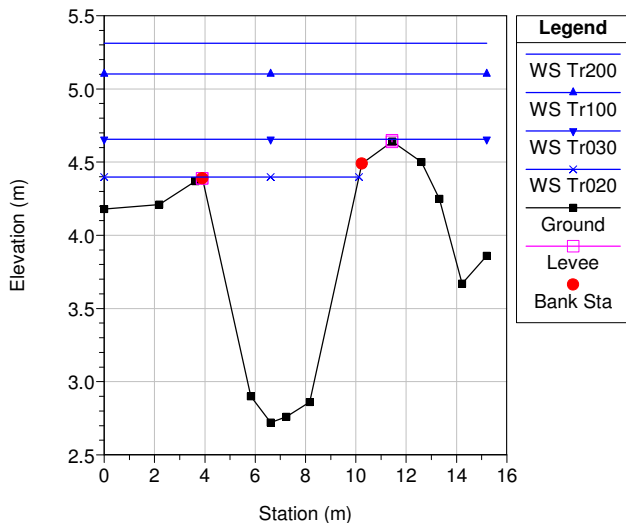
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 Geom: fiorentina5 Flow: att1  
 River = maestro Reach = ma-1 RS = 306.666\*



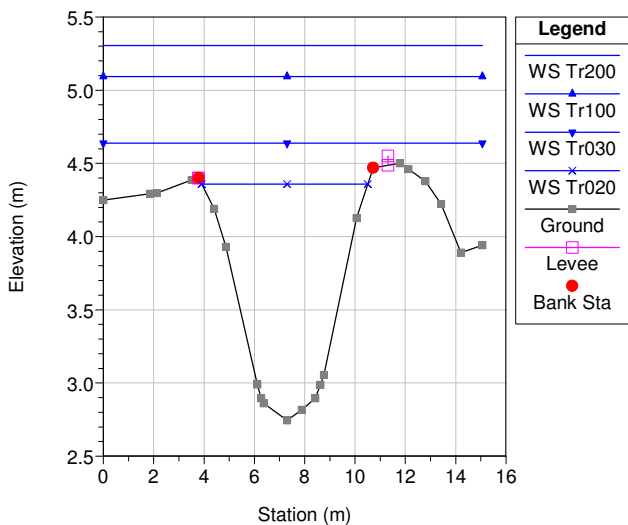
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 Geom: fiorentina5 Flow: att1  
 River = maestro Reach = ma-1 RS = 306.333\*



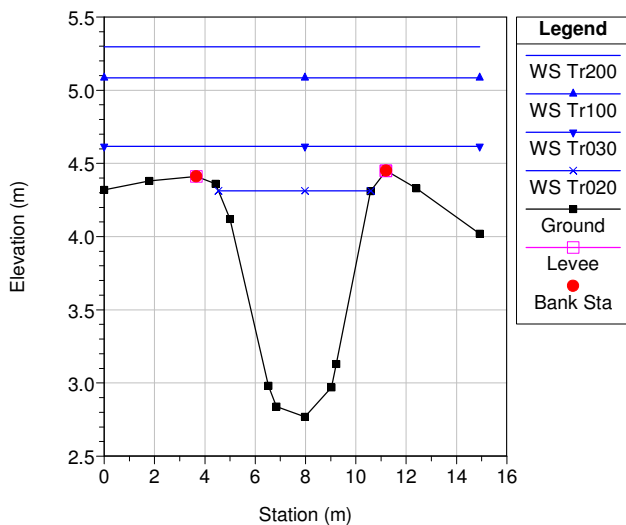
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 Geom: fiorentina5 Flow: att1  
 River = maestro Reach = ma-1 RS = 306



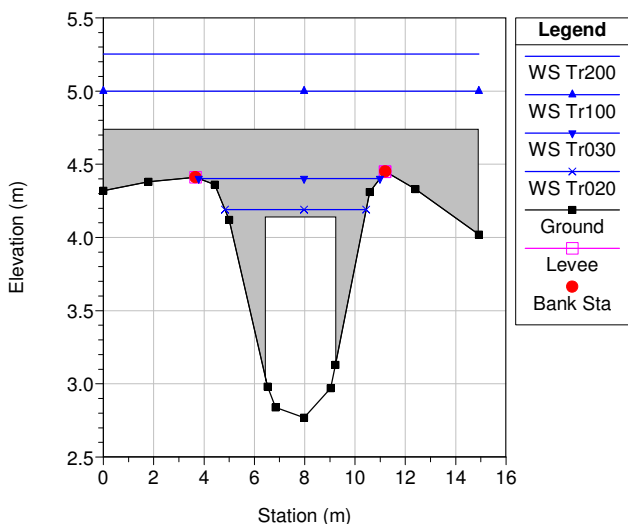
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 Geom: fiorentina5 Flow: att1  
 River = maestro Reach = ma-1 RS = 305.5\*



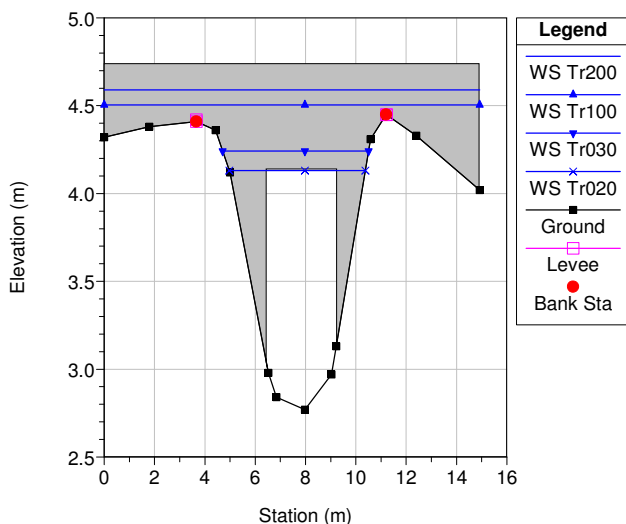
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 Geom: fiorentina5 Flow: att1  
 River = maestro Reach = ma-1 RS = 305



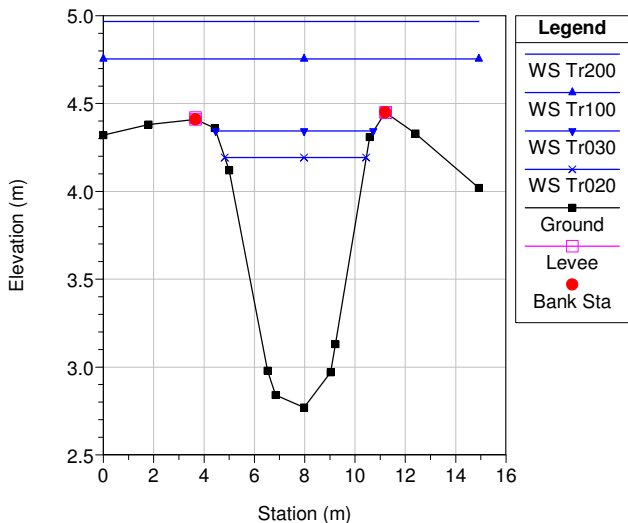
Fiorentina1 Plan: att1 5/5/2009 5:50:54 PM  
 Geom: fiorentina5 Flow: att1  
 River = maestro Reach = ma-1 RS = 304 BR



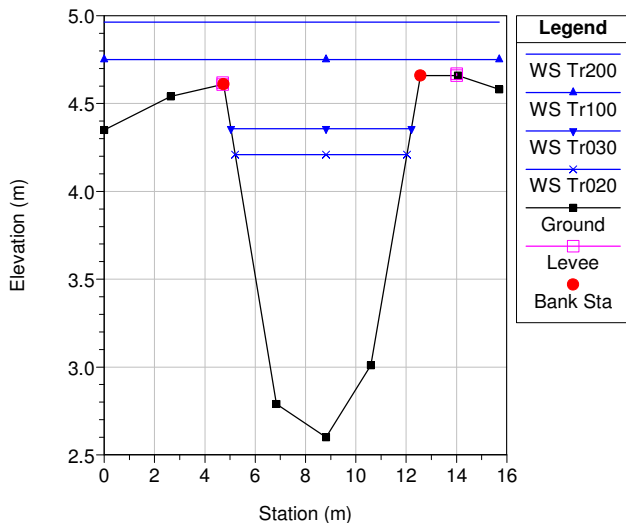
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 Geom: fiorentina5 Flow: att1  
 River = maestro Reach = ma-1 RS = 304 BR



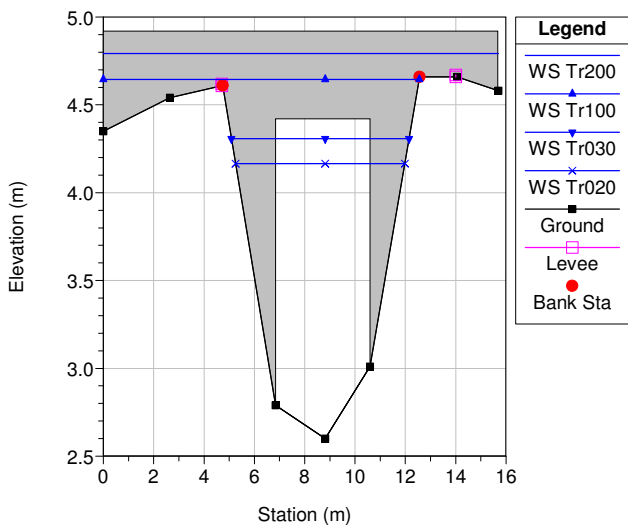
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 Geom: fiorentina5 Flow: att1  
 River = maestro Reach = ma-1 RS = 303.9



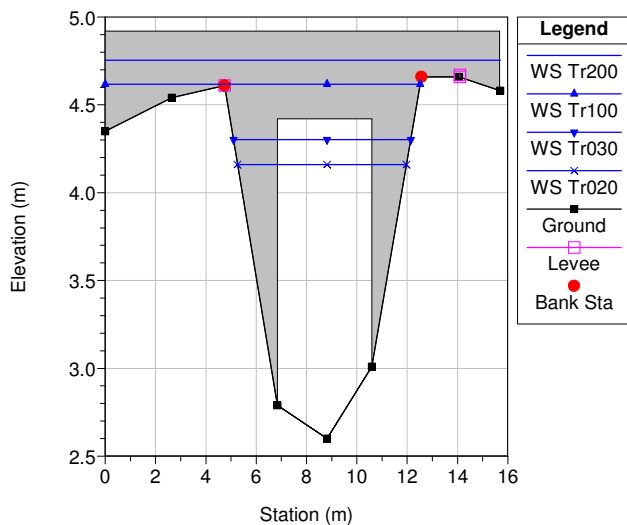
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 Geom: fiorentina5 Flow: att1  
 River = maestro Reach = ma-1 RS = 303



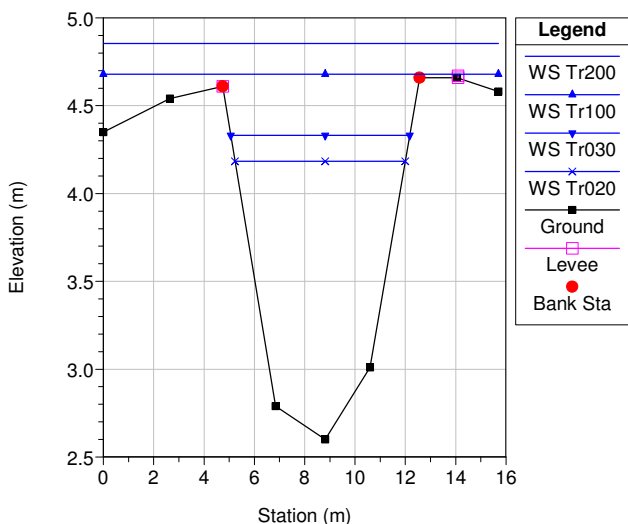
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 Geom: fiorentina5 Flow: att1  
 River = maestro Reach = ma-1 RS = 302 BR



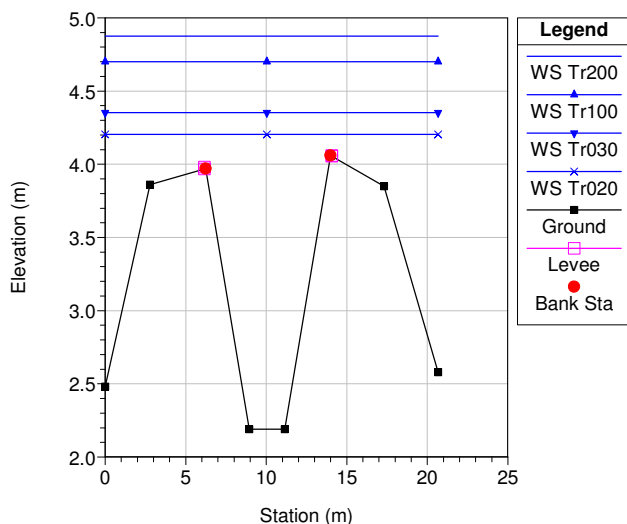
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 Geom: fiorentina5 Flow: att1  
 River = maestro Reach = ma-1 RS = 302 BR



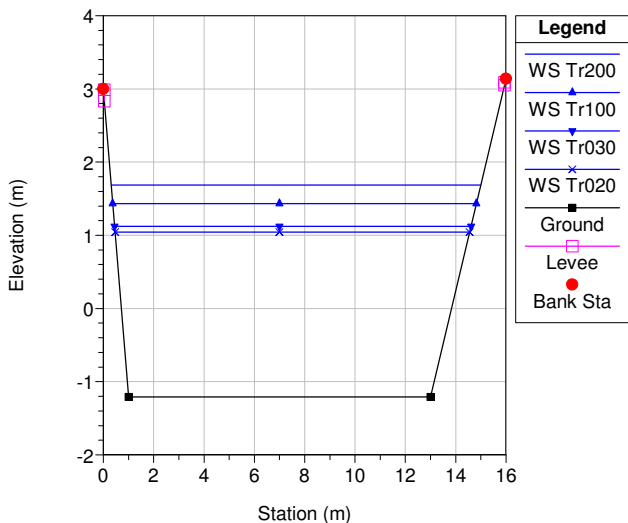
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 Geom: fiorentina5 Flow: att1  
 River = maestro Reach = ma-1 RS = 301.9



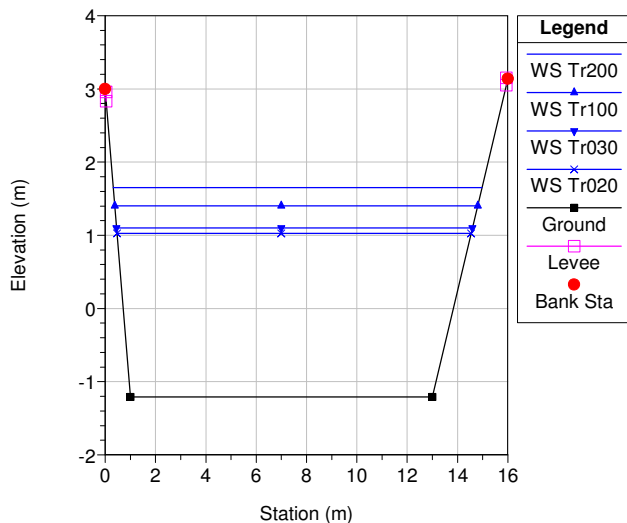
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 Geom: fiorentina5 Flow: att1  
 River = maestro Reach = ma-1 RS = 301 mucetti 08



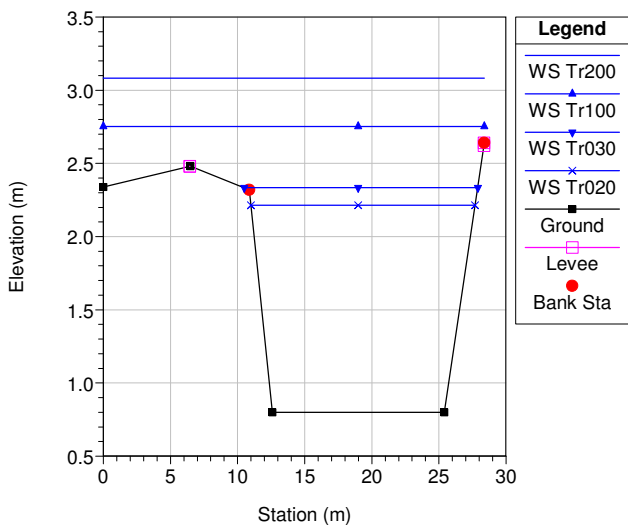
Fiorentina1 Plan: att1 5/5/2009 5:50:54 PM  
 Geom: fiorentina5 Flow: att1  
 River = Scolmatore Reach = s1 RS = 502



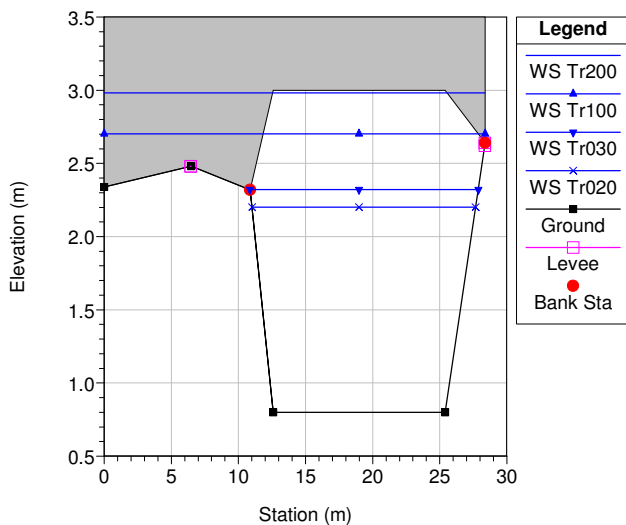
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 Geom: fiorentina5 Flow: att1  
 River = Scolmatore Reach = s1 RS = 501



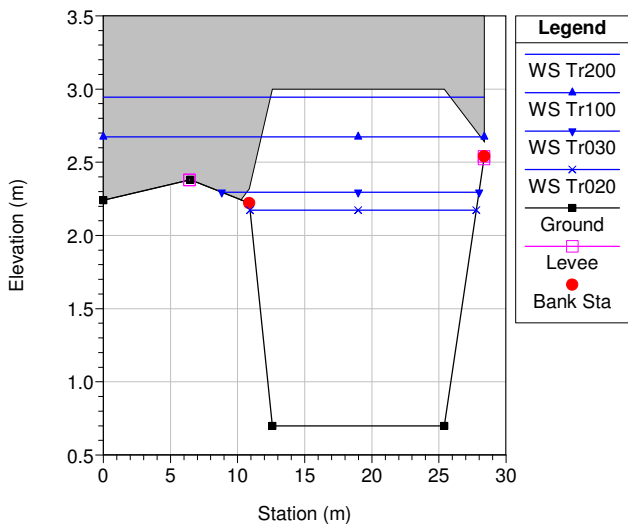
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 Geom: fiorentina5 Flow: att1  
 River = Montegemoli Reach = Mont\_1 RS = 1409 croce\_8



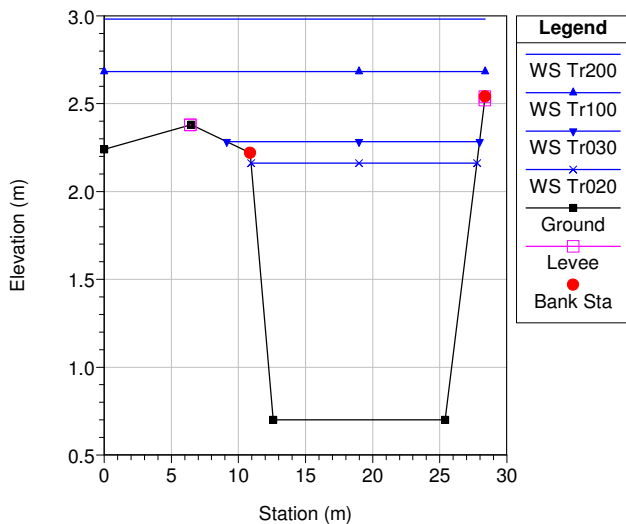
Fiorentina1 Plan: att1 5/5/2009 5:50:54 PM  
 Geom: fiorentina5 Flow: att1  
 River = Montegemoli Reach = Mont\_1 RS = 1408 BR



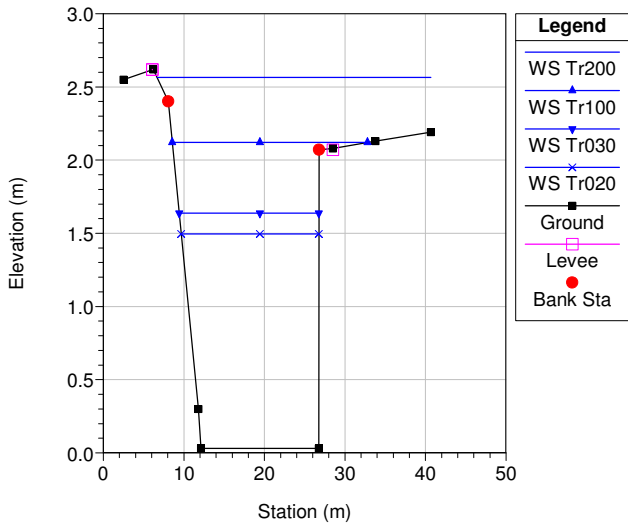
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 Geom: fiorentina5 Flow: att1  
 River = Montegemoli Reach = Mont\_1 RS = 1408 BR



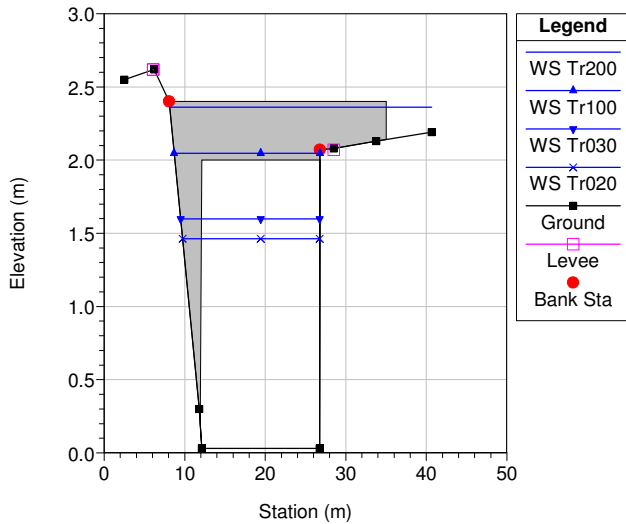
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 Geom: fiorentina5 Flow: att1  
 River = Montegemoli Reach = Mont\_1 RS = 1407 croce\_7



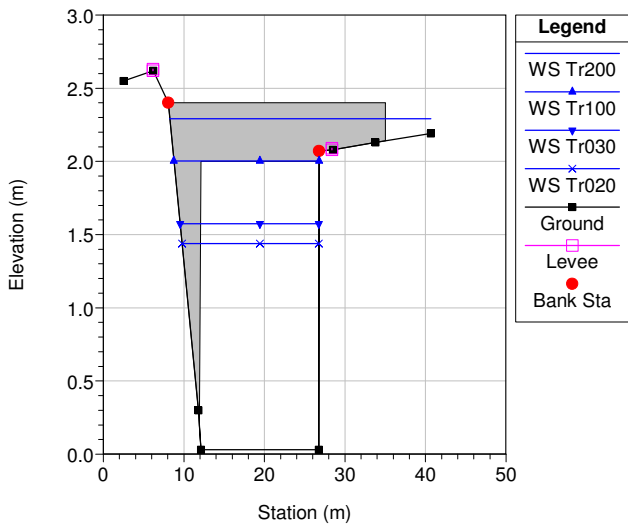
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 Geom: fiorentina5 Flow: att1  
 River = Montegemoli Reach = Mont\_1 RS = 1406 croce\_6.5



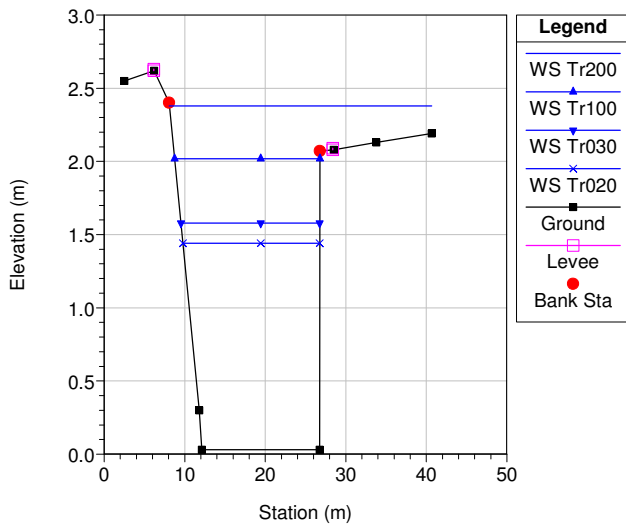
Fiorentina1 Plan: att1 5/5/2009 5:50:54 PM  
 Geom: fiorentina5 Flow: att1  
 River = Montegemoli Reach = Mont\_1 RS = 1405 BR



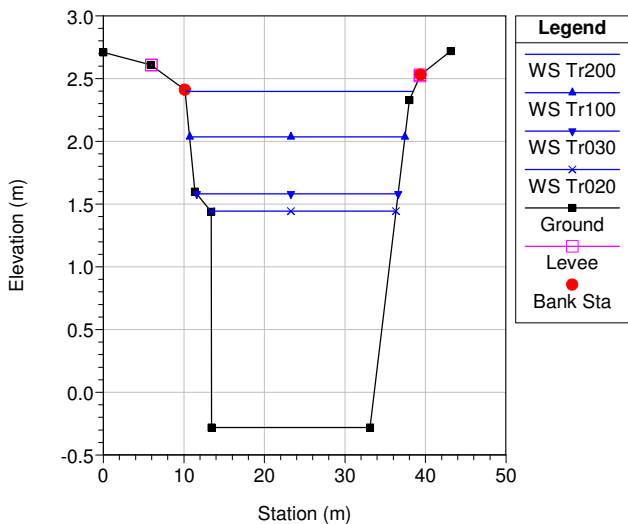
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 Geom: fiorentina5 Flow: att1  
 River = Montegemoli Reach = Mont\_1 RS = 1405 BR



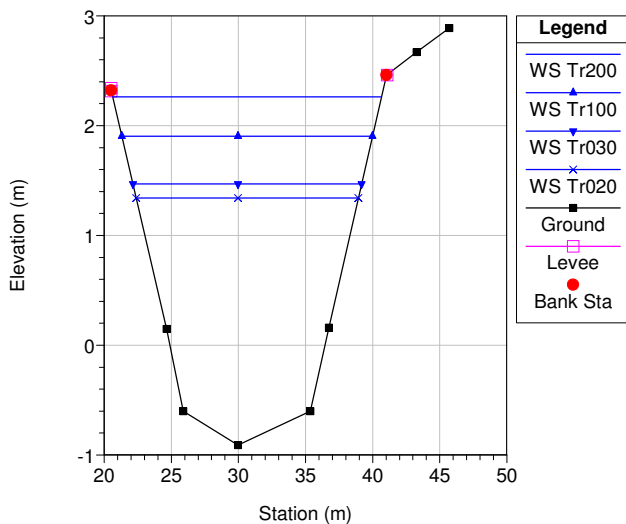
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 Geom: fiorentina5 Flow: att1  
 River = Montegemoli Reach = Mont\_1 RS = 1404 croce\_6



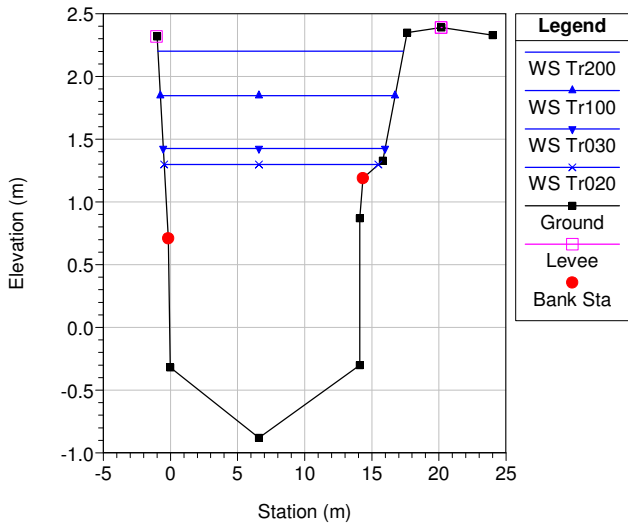
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 Geom: fiorentina5 Flow: att1  
 River = Montegemoli Reach = Mont\_1 RS = 1403 croce\_05



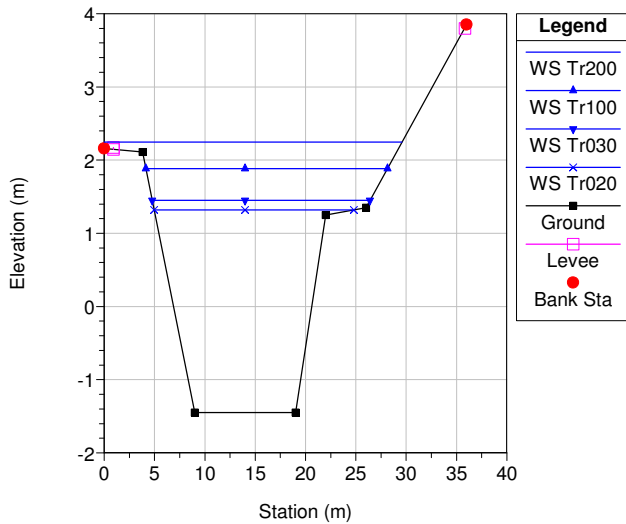
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 Geom: fiorentina5 Flow: att1  
 River = Montegemoli Reach = Mont\_1 RS = 1402 croce\_04



Fiorentina1 Plan: att1 5/5/2009 5:50:54 PM  
 Geom: fiorentina5 Flow: att1  
 River = Montegemoli Reach = Mont\_1 RS = 1401 croce\_3



Fiorentina1 Plan: att1 5/5/2009 5:50:54 PM  
 Geom: fiorentina5 Flow: att1  
 River = Montegemoli Reach = Mont\_1 RS = 109



River	Reach	River Sta	Profile	Q Total (m3/s)	Min Ch El (m)	W.S. Elev (m)	Crit W.S. (m)	E.G. Elev (m)	E.G. Slope (m/m)	Vel Chnl (m/s)	Flow Area (m2)	Top Width (m)	Froude # Chl
Scolmatore	s1	502	Tr200	37.00	-1.21	1.69	-0.23	1.73	0.000308	0.96	38.67	14.69	0.19
Scolmatore	s1	502	Tr100	30.00	-1.21	1.43	-0.36	1.47	0.000272	0.86	34.95	14.45	0.18
Scolmatore	s1	502	Tr030	20.00	-1.21	1.12	-0.56	1.14	0.000181	0.66	30.49	14.16	0.14
Scolmatore	s1	502	Tr020	18.00	-1.21	1.04	-0.61	1.06	0.000163	0.61	29.40	14.09	0.14
Scolmatore	s1	501	Tr200	37.00	-1.21	1.65	-0.23	1.70	0.000321	0.97	38.14	14.65	0.19
Scolmatore	s1	501	Tr100	30.00	-1.21	1.40	-0.36	1.44	0.000283	0.87	34.49	14.42	0.18
Scolmatore	s1	501	Tr030	20.00	-1.21	1.10	-0.56	1.12	0.000186	0.66	30.20	14.14	0.14
Scolmatore	s1	501	Tr020	18.00	-1.21	1.03	-0.61	1.04	0.000168	0.62	29.14	14.07	0.14
maestro	ma-1	320	Tr200	12.00	13.73	15.13	15.13	15.55	0.011772	2.88	4.17	4.97	1.00
maestro	ma-1	320	Tr100	10.00	13.73	15.02	15.02	15.40	0.011795	2.75	3.64	4.66	0.99
maestro	ma-1	320	Tr030	7.50	13.73	14.85	14.85	15.19	0.012348	2.60	2.89	4.18	1.00
maestro	ma-1	320	Tr020	6.50	13.73	14.77	14.77	15.09	0.012706	2.53	2.57	3.97	1.00
maestro	ma-1	319.666*	Tr200	12.00	13.09	14.48	14.57	15.02	0.015586	3.25	3.69	4.40	1.13
maestro	ma-1	319.666*	Tr100	10.00	13.09	14.37	14.45	14.87	0.016020	3.14	3.19	4.11	1.14
maestro	ma-1	319.666*	Tr030	7.50	13.09	14.21	14.27	14.64	0.016054	2.92	2.57	3.73	1.12
maestro	ma-1	319.666*	Tr020	6.50	13.09	14.13	14.19	14.54	0.016298	2.83	2.30	3.54	1.12
maestro	ma-1	319.333*	Tr200	12.00	12.46	14.03	14.06	14.49	0.013059	3.02	3.98	4.51	1.03
maestro	ma-1	319.333*	Tr100	10.00	12.46	13.87	13.90	14.33	0.014003	3.03	3.31	3.88	1.05
maestro	ma-1	319.333*	Tr030	7.50	12.46	13.69	13.71	14.10	0.014022	2.82	2.66	3.52	1.03
maestro	ma-1	319.333*	Tr020	6.50	12.46	13.60	13.63	13.99	0.014508	2.75	2.36	3.33	1.04
maestro	ma-1	319	Tr200	12.00	11.82	13.45	13.58	13.95	0.015118	3.16	4.07	7.16	1.06
maestro	ma-1	319	Tr100	10.00	11.82	13.41	13.48	13.80	0.012464	2.80	3.77	7.12	0.96
maestro	ma-1	319	Tr030	7.50	11.82	13.15	13.17	13.58	0.014968	2.90	2.58	3.18	1.03
maestro	ma-1	319	Tr020	6.50	11.82	13.05	13.08	13.47	0.015885	2.86	2.27	3.00	1.05
maestro	ma-1	318.75*	Tr200	12.00	11.44	12.92	13.06	13.43	0.016535	3.18	3.93	7.76	1.16
maestro	ma-1	318.75*	Tr100	10.00	11.44	12.78	12.97	13.31	0.017767	3.24	3.08	4.06	1.19
maestro	ma-1	318.75*	Tr030	7.50	11.44	12.65	12.71	13.08	0.016121	2.91	2.57	3.72	1.12
maestro	ma-1	318.75*	Tr020	6.50	11.44	12.62	12.63	12.97	0.013620	2.64	2.46	3.64	1.02
maestro	ma-1	318.5*	Tr200	12.00	11.06	12.49	12.58	12.90	0.013524	2.87	4.41	8.39	1.08
maestro	ma-1	318.5*	Tr100	10.00	11.06	12.45	12.50	12.78	0.011714	2.59	4.03	8.30	1.00
maestro	ma-1	318.5*	Tr030	7.50	11.06	12.27	12.29	12.61	0.013077	2.59	2.90	4.53	1.03
maestro	ma-1	318.5*	Tr020	6.50	11.06	12.19	12.21	12.52	0.013802	2.55	2.55	4.23	1.05
maestro	ma-1	318.25*	Tr200	12.00	10.68	12.33	12.13	12.48	0.004004	1.76	7.23	9.90	0.62
maestro	ma-1	318.25*	Tr100	10.00	10.68	12.28	12.05	12.40	0.003450	1.59	6.68	9.68	0.57
maestro	ma-1	318.25*	Tr030	7.50	10.68	12.20	11.93	12.29	0.002664	1.35	5.93	9.36	0.50
maestro	ma-1	318.25*	Tr020	6.50	10.68	12.19	11.83	12.25	0.002110	1.19	5.81	9.31	0.44
maestro	ma-1	318	Tr200	12.00	10.30	12.36	11.69	12.40	0.000728	0.93	14.12	14.87	0.28
maestro	ma-1	318	Tr100	10.00	10.30	12.30	11.62	12.33	0.000622	0.83	13.19	14.87	0.26
maestro	ma-1	318	Tr030	7.50	10.30	12.21	11.52	12.23	0.000475	0.68	11.91	14.87	0.22
maestro	ma-1	318	Tr020	6.50	10.30	12.20	11.46	12.21	0.000379	0.60	11.67	14.87	0.20
maestro	ma-1	317		Bridge									
maestro	ma-1	316.9	Tr200	12.00	10.30	11.42	11.69	12.30	0.047522	4.14	2.90	6.25	1.94
maestro	ma-1	316.9	Tr100	10.00	10.30	11.34	11.62	12.21	0.050858	4.13	2.42	5.47	1.98
maestro	ma-1	316.9	Tr030	7.50	10.30	11.21	11.51	12.12	0.056876	4.23	1.77	4.14	2.06
maestro	ma-1	316.9	Tr020	6.50	10.30	11.14	11.46	12.08	0.062053	4.29	1.51	3.66	2.13
maestro	ma-1	316.6*	Tr200	12.00	9.32	10.56	10.82	11.24	0.023941	3.65	3.29	4.84	1.41
maestro	ma-1	316.6*	Tr100	10.00	9.32	10.46	10.66	11.10	0.024669	3.55	2.82	4.40	1.42
maestro	ma-1	316.6*	Tr030	7.50	9.32	10.31	10.49	10.90	0.025876	3.40	2.21	3.81	1.42
maestro	ma-1	316.6*	Tr020	6.50	9.32	10.25	10.41	10.80	0.025986	3.28	1.98	3.61	1.41
maestro	ma-1	316.3*	Tr200	12.00	8.33	9.54	9.81	10.42	0.028926	4.15	2.89	3.56	1.47
maestro	ma-1	316.3*	Tr100	10.00	8.33	9.42	9.68	10.25	0.030348	4.04	2.48	3.32	1.49
maestro	ma-1	316.3*	Tr030	7.50	8.33	9.25	9.48	10.01	0.032500	3.85	1.95	3.01	1.53
maestro	ma-1	316.3*	Tr020	6.50	8.33	9.18	9.40	9.90	0.033546	3.75	1.73	2.87	1.54
maestro	ma-1	316	Tr200	12.00	7.35	10.24	8.90	10.27	0.000402	0.81	17.14	13.68	0.19
maestro	ma-1	316	Tr100	10.00	7.35	9.57	8.73	9.66	0.002147	1.39	8.03	13.68	0.41
maestro	ma-1	316	Tr030	7.50	7.35	9.11	8.52	9.26	0.003991	1.70	4.42	4.02	0.52
maestro	ma-1	316	Tr020	6.50	7.35	8.94	8.42	9.09	0.004162	1.71	3.79	3.37	0.52
maestro	ma-1	315		Bridge									
maestro	ma-1	314.9	Tr200	12.00	7.15	8.22	8.73	9.80	0.063210	5.57	2.16	2.46	1.90
maestro	ma-1	314.9	Tr100	10.00	7.15	8.18	8.56	9.38	0.049536	4.86	2.06	2.42	1.68
maestro	ma-1	314.9	Tr030	7.50	7.15	8.76	8.34	8.98	0.006137	2.05	3.66	3.11	0.60
maestro	ma-1	314.9	Tr020	6.50	7.15	8.67	8.24	8.86	0.005636	1.92	3.38	2.98	0.58
maestro	ma-1	314.45*	Tr200	12.00	7.12	8.71	8.71	9.14	0.013102	2.90	4.13	4.86	1.01
maestro	ma-1	314.45*	Tr100	10.00	7.12	8.59	8.59	8.99	0.013225	2.80	3.57	4.41	0.99
maestro	ma-1	314.45*	Tr030	7.50	7.12	8.45	8.39	8.77	0.011631	2.51	2.98	3.89	0.92
maestro	ma-1	314.45*	Tr020	6.50	7.12	8.38	8.29	8.67	0.010906	2.38	2.73	3.63	0.88
maestro	ma-1	314	Tr200	12.00	7.09	8.28	8.43	8.79	0.015210	3.24	4.19	10.57	1.15
maestro	ma-1	314	Tr100	10.00	7.09	8.23	8.36	8.66	0.013447	2.93	3.73	10.57	1.08
maestro	ma-1	314	Tr030	7.50	7.09	8.14	8.14	8.48	0.012324	2.59	2.90	4.32	1.01
maestro	ma-1	314	Tr020	6.50	7.09	8.07	8.07	8.39	0.012427	2.50	2.60	4.11	1.01
maestro	ma-1	313	Tr200	12.00	5.87	7.01	7.51	8.65	0.066263	5.67	2.12	3.01	2.16
maestro	ma-1	313	Tr100	10.00	5.87	6.89	7.38	8.52	0.074336	5.66	1.77	2.76	2.26
maestro	ma-1	313	Tr030	7.50	5.87	6.72	7.18	8.33	0.088376	5.62	1.34	2.43	2.42

HEC-RAS Plan: att1 (Continued)

River	Reach	River Sta	Profile	Q Total (m3/s)	Min Ch El (m)	W.S. Elev (m)	Crit W.S. (m)	E.G. Elev (m)	E.G. Slope (m/m)	Vel Chnl (m/s)	Flow Area (m2)	Top Width (m)	Froude # Chl
maestro	ma-1	313	Tr020	6.50	5.87	6.65	7.09	8.24	0.095709	5.58	1.16	2.28	2.49
maestro	ma-1	312.5*	Tr200	12.00	5.95	7.55	7.49	7.93	0.010185	2.75	4.36	4.84	0.93
maestro	ma-1	312.5*	Tr100	10.00	5.95	7.50	7.36	7.80	0.008067	2.42	4.14	4.68	0.82
maestro	ma-1	312.5*	Tr030	7.50	5.95	7.42	7.18	7.62	0.005819	2.00	3.75	4.41	0.69
maestro	ma-1	312.5*	Tr020	6.50	5.95	7.43	7.11	7.58	0.004228	1.71	3.80	4.44	0.59
maestro	ma-1	312	Tr200	12.00	6.03	7.36	7.36	7.60	0.007463	2.36	6.00	11.66	0.82
maestro	ma-1	312	Tr100	10.00	6.03	7.29	7.29	7.52	0.007420	2.23	5.25	11.66	0.81
maestro	ma-1	312	Tr030	7.50	6.03	7.19	7.19	7.40	0.007687	2.07	4.07	11.66	0.80
maestro	ma-1	312	Tr020	6.50	6.03	7.03	7.03	7.34	0.012002	2.47	2.63	4.15	0.99
maestro	ma-1	311	Tr200	12.00	4.84	5.86	6.35	7.45	0.063019	5.60	2.14	3.05	2.13
maestro	ma-1	311	Tr100	10.00	4.84	5.73	6.22	7.37	0.074380	5.68	1.76	2.82	2.29
maestro	ma-1	311	Tr030	7.50	4.84	5.56	6.03	7.23	0.094053	5.74	1.31	2.51	2.54
maestro	ma-1	311	Tr020	6.50	4.84	5.49	5.94	7.17	0.105550	5.76	1.13	2.38	2.67
maestro	ma-1	310.5*	Tr200	12.00	4.91	6.81	6.39	7.00	0.003866	1.90	6.46	8.64	0.59
maestro	ma-1	310.5*	Tr100	10.00	4.91	6.70	6.27	6.86	0.003611	1.78	5.63	5.54	0.56
maestro	ma-1	310.5*	Tr030	7.50	4.91	6.49	6.09	6.63	0.003508	1.65	4.55	4.91	0.55
maestro	ma-1	310.5*	Tr020	6.50	4.91	6.40	6.01	6.53	0.003418	1.58	4.12	4.66	0.54
maestro	ma-1	310	Tr200	12.00	4.98	6.41	6.41	6.82	0.011856	2.84	4.23	5.17	1.00
maestro	ma-1	310	Tr100	10.00	4.98	6.51	6.29	6.73	0.006568	2.09	4.79	6.09	0.75
maestro	ma-1	310	Tr030	7.50	4.98	6.29	6.10	6.50	0.006699	2.06	3.64	4.66	0.74
maestro	ma-1	310	Tr020	6.50	4.98	6.20	6.02	6.41	0.006585	2.00	3.26	4.30	0.73
maestro	ma-1	309.8*	Tr200	12.00	4.74	6.42	6.26	6.52	0.003147	1.60	8.99	16.06	0.54
maestro	ma-1	309.8*	Tr100	10.00	4.74	6.10	6.06	6.45	0.010426	2.59	3.86	4.94	0.94
maestro	ma-1	309.8*	Tr030	7.50	4.74	6.06	5.89	6.28	0.006811	2.06	3.64	4.77	0.75
maestro	ma-1	309.8*	Tr020	6.50	4.74	5.98	5.80	6.18	0.006767	2.00	3.25	4.44	0.74
maestro	ma-1	309.6*	Tr200	12.00	4.51	6.02	6.02	6.34	0.009023	2.51	5.02	8.74	0.89
maestro	ma-1	309.6*	Tr100	10.00	4.51	6.07	5.83	6.19	0.003641	1.64	7.30	15.23	0.57
maestro	ma-1	309.6*	Tr030	7.50	4.51	5.83	5.66	6.04	0.006861	2.06	3.64	4.83	0.76
maestro	ma-1	309.6*	Tr020	6.50	4.51	5.75	5.58	5.95	0.006584	1.97	3.30	4.54	0.74
maestro	ma-1	309.4*	Tr200	12.00	4.27	5.71	5.77	6.10	0.011236	2.78	4.53	8.39	0.99
maestro	ma-1	309.4*	Tr100	10.00	4.27	5.66	5.66	5.98	0.009672	2.50	4.10	8.27	0.91
maestro	ma-1	309.4*	Tr030	7.50	4.27	5.56	5.43	5.80	0.007754	2.16	3.47	4.75	0.81
maestro	ma-1	309.4*	Tr020	6.50	4.27	5.56	5.36	5.74	0.005779	1.86	3.49	4.76	0.70
maestro	ma-1	309.2*	Tr200	12.00	4.04	5.70	5.52	5.81	0.002808	1.66	8.80	13.58	0.51
maestro	ma-1	309.2*	Tr100	10.00	4.04	5.62	5.43	5.73	0.002713	1.56	7.82	13.58	0.50
maestro	ma-1	309.2*	Tr030	7.50	4.04	5.53	5.20	5.61	0.002518	1.40	6.48	13.58	0.47
maestro	ma-1	309.2*	Tr020	6.50	4.04	5.46	5.12	5.58	0.003209	1.52	4.57	8.17	0.53
maestro	ma-1	309	Tr200	12.00	3.80	5.67	5.28	5.74	0.001259	1.27	11.39	12.76	0.35
maestro	ma-1	309	Tr100	10.00	3.80	5.60	5.22	5.66	0.001100	1.15	10.54	12.76	0.33
maestro	ma-1	309	Tr030	7.50	3.80	5.51	4.95	5.55	0.000871	0.98	9.38	12.76	0.29
maestro	ma-1	309	Tr020	6.50	3.80	5.47	4.88	5.51	0.000764	0.89	8.89	12.76	0.27
maestro	ma-1	308		Bridge									
maestro	ma-1	307.9	Tr200	12.00	3.80	5.13	5.28	5.66	0.015638	3.25	3.92	7.82	1.15
maestro	ma-1	307.9	Tr100	10.00	3.80	4.98	5.19	5.56	0.020655	3.39	2.95	4.19	1.29
maestro	ma-1	307.9	Tr030	7.50	3.80	4.72	4.95	5.45	0.033022	3.77	1.99	3.44	1.59
maestro	ma-1	307.9	Tr020	6.50	3.80	4.63	4.87	5.39	0.038870	3.86	1.68	3.20	1.70
maestro	ma-1	307	Tr200	12.00	3.29	5.34	4.55	5.36	0.000360	0.72	20.83	23.57	0.20
maestro	ma-1	307	Tr100	10.00	3.29	5.13	4.45	5.16	0.000550	0.80	15.98	23.57	0.24
maestro	ma-1	307	Tr030	7.50	3.29	3.93	4.29	5.16	0.073417	4.90	1.53	3.48	2.36
maestro	ma-1	307	Tr020	6.50	3.29	3.88	4.22	5.08	0.079401	4.85	1.34	3.30	2.43
maestro	ma-1	306.666*	Tr200	12.00	3.10	5.33	4.36	5.35	0.000268	0.68	21.88	20.78	0.17
maestro	ma-1	306.666*	Tr100	10.00	3.10	5.12	4.24	5.14	0.000361	0.71	17.54	20.78	0.20
maestro	ma-1	306.666*	Tr030	7.50	3.10	4.68	4.09	4.76	0.001611	1.20	6.24	6.44	0.39
maestro	ma-1	306.666*	Tr020	6.50	3.10	4.47	4.03	4.56	0.002239	1.31	4.95	5.76	0.45
maestro	ma-1	306.333*	Tr200	12.00	2.91	5.32	4.16	5.34	0.000219	0.66	22.22	17.99	0.16
maestro	ma-1	306.333*	Tr100	10.00	2.91	5.11	4.05	5.13	0.000266	0.67	18.44	17.99	0.17
maestro	ma-1	306.333*	Tr030	7.50	2.91	4.66	3.89	4.71	0.000858	0.95	8.71	12.29	0.29
maestro	ma-1	306.333*	Tr020	6.50	2.91	4.42	3.82	4.49	0.001453	1.13	5.76	6.00	0.37
maestro	ma-1	306	Tr200	12.00	2.72	5.31	3.96	5.33	0.000197	0.66	21.83	15.20	0.15
maestro	ma-1	306	Tr100	10.00	2.72	5.10	3.84	5.12	0.000218	0.65	18.63	15.20	0.16
maestro	ma-1	306	Tr030	7.50	2.72	4.66	3.69	4.68	0.000442	0.76	11.85	15.20	0.21
maestro	ma-1	306	Tr020	6.50	2.72	4.40	3.62	4.44	0.000893	0.94	7.32	10.12	0.29
maestro	ma-1	305.5*	Tr200	12.00	2.75	5.30	3.99	5.32	0.000209	0.67	21.23	15.06	0.16
maestro	ma-1	305.5*	Tr100	10.00	2.75	5.09	3.87	5.11	0.000236	0.65	18.05	15.06	0.16
maestro	ma-1	305.5*	Tr030	7.50	2.75	4.64	3.72	4.67	0.000519	0.78	11.19	15.06	0.23
maestro	ma-1	305.5*	Tr020	6.50	2.75	4.36	3.64	4.41	0.001176	1.02	6.36	6.60	0.33
maestro	ma-1	305	Tr200	12.00	2.77	5.30	4.00	5.32	0.000228	0.68	20.56	14.92	0.16
maestro	ma-1	305	Tr100	10.00	2.77	5.09	3.89	5.10	0.000262	0.66	17.39	14.92	0.17
maestro	ma-1	305	Tr030	7.50	2.77	4.62	3.73	4.65	0.000647	0.82	10.41	14.92	0.25
maestro	ma-1	305	Tr020	6.50	2.77	4.31	3.66	4.37	0.001356	1.10	5.93	6.05	0.35
maestro	ma-1	304		Bridge									
maestro	ma-1	303.9	Tr200	12.00	2.77	4.97	4.00	5.00	0.000519	0.89	15.63	14.92	0.24

HEC-RAS Plan: att1 (Continued)

River	Reach	River Sta	Profile	Q Total (m3/s)	Min Ch El (m)	W.S. Elev (m)	Crit W.S. (m)	E.G. Elev (m)	E.G. Slope (m/m)	Vel Chnl (m/s)	Flow Area (m2)	Top Width (m)	Froude # Chl
maestro	ma-1	303.9	Tr100	10.00	2.77	4.75	3.89	4.79	0.000697	0.92	12.46	14.92	0.27
maestro	ma-1	303.9	Tr030	7.50	2.77	4.34	3.73	4.42	0.001692	1.23	6.12	6.27	0.40
maestro	ma-1	303.9	Tr020	6.50	2.77	4.19	3.66	4.27	0.001859	1.24	5.24	5.62	0.41
maestro	ma-1	303	Tr200	12.00	2.60	4.96	3.70	5.00	0.000380	0.83	16.39	15.69	0.20
maestro	ma-1	303	Tr100	10.00	2.60	4.75	3.60	4.79	0.000461	0.83	13.06	15.69	0.22
maestro	ma-1	303	Tr030	7.50	2.60	4.36	3.47	4.40	0.000668	0.88	8.54	7.17	0.26
maestro	ma-1	303	Tr020	6.50	2.60	4.21	3.40	4.25	0.000717	0.87	7.50	6.82	0.26
maestro	ma-1	302		Bridge									
maestro	ma-1	301.9	Tr200	12.00	2.60	4.85	3.71	4.89	0.000502	0.91	14.68	15.69	0.23
maestro	ma-1	301.9	Tr100	10.00	2.60	4.68	3.60	4.72	0.000563	0.89	11.93	15.69	0.24
maestro	ma-1	301.9	Tr030	7.50	2.60	4.33	3.47	4.37	0.000710	0.90	8.35	7.11	0.26
maestro	ma-1	301.9	Tr020	6.50	2.60	4.18	3.41	4.22	0.000762	0.89	7.34	6.77	0.27
maestro	ma-1	301	Tr200	12.00	2.19	4.87	3.30	4.88	0.000086	0.45	32.46	20.67	0.10
maestro	ma-1	301	Tr100	10.00	2.19	4.70	3.19	4.71	0.000085	0.43	28.85	20.67	0.10
maestro	ma-1	301	Tr030	7.50	2.19	4.35	3.05	4.36	0.000115	0.43	21.64	20.67	0.11
maestro	ma-1	301	Tr020	6.50	2.19	4.20	2.98	4.21	0.000135	0.44	18.80	20.67	0.12
fossonuovo	nu-1	221	Tr200	29.00	16.58	18.53	18.53	18.92	0.007914	2.79	10.91	14.96	0.89
fossonuovo	nu-1	221	Tr100	25.00	16.58	18.38	18.38	18.80	0.009553	2.88	8.78	12.19	0.96
fossonuovo	nu-1	221	Tr030	18.00	16.58	18.05	18.05	18.51	0.010645	3.00	6.00	6.52	1.00
fossonuovo	nu-1	221	Tr020	16.00	16.58	17.96	17.96	18.40	0.010780	2.95	5.43	6.11	1.00
fossonuovo	nu-1	220	Tr200	29.00	15.38	16.90	17.49	18.75	0.047526	6.02	4.81	5.24	2.01
fossonuovo	nu-1	220	Tr100	25.00	15.38	16.77	17.36	18.63	0.052708	6.05	4.13	4.82	2.09
fossonuovo	nu-1	220	Tr030	18.00	15.38	16.51	17.08	18.35	0.062931	6.01	3.00	4.02	2.22
fossonuovo	nu-1	220	Tr020	16.00	15.38	16.43	16.98	18.25	0.066389	5.97	2.68	3.77	2.26
fossonuovo	nu-1	219.5*	Tr200	29.00	15.33	17.33	17.33	17.89	0.010242	3.30	8.79	7.98	1.00
fossonuovo	nu-1	219.5*	Tr100	25.00	15.33	17.20	17.20	17.73	0.010303	3.22	7.77	7.29	1.00
fossonuovo	nu-1	219.5*	Tr030	18.00	15.33	16.98	16.92	17.40	0.009245	2.87	6.28	6.46	0.93
fossonuovo	nu-1	219.5*	Tr020	16.00	15.33	17.05	16.84	17.34	0.006032	2.37	6.75	6.69	0.75
fossonuovo	nu-1	219	Tr200	29.00	15.28	16.86	17.06	17.47	0.017405	3.60	8.83	14.26	1.28
fossonuovo	nu-1	219	Tr100	25.00	15.28	16.82	16.99	17.34	0.015078	3.33	8.25	13.87	1.19
fossonuovo	nu-1	219	Tr030	18.00	15.28	16.82	16.82	17.09	0.007933	2.42	8.19	13.83	0.86
fossonuovo	nu-1	219	Tr020	16.00	15.28	16.65	16.65	17.08	0.010799	2.91	5.50	6.42	1.00
fossonuovo	nu-1	218	Tr200	29.00	13.76	15.33	15.95	17.30	0.049131	6.23	4.65	4.92	2.05
fossonuovo	nu-1	218	Tr100	25.00	13.76	15.19	15.80	17.16	0.054039	6.22	4.02	4.61	2.13
fossonuovo	nu-1	218	Tr030	18.00	13.76	14.93	15.51	16.91	0.067923	6.23	2.89	3.99	2.33
fossonuovo	nu-1	218	Tr020	16.00	13.76	14.83	15.42	16.90	0.078269	6.36	2.51	3.76	2.48
fossonuovo	nu-1	217.5*	Tr200	29.00	13.59	15.67	15.76	16.25	0.009773	3.38	8.65	9.18	0.97
fossonuovo	nu-1	217.5*	Tr100	25.00	13.59	15.50	15.50	16.07	0.010462	3.34	7.48	6.51	0.99
fossonuovo	nu-1	217.5*	Tr030	18.00	13.59	15.23	15.22	15.72	0.010751	3.11	5.80	5.79	0.99
fossonuovo	nu-1	217.5*	Tr020	16.00	13.59	15.19	15.13	15.61	0.009382	2.86	5.59	5.69	0.92
fossonuovo	nu-1	217	Tr200	29.00	13.43	15.03	15.26	15.72	0.013408	3.81	8.68	15.38	1.15
fossonuovo	nu-1	217	Tr100	25.00	13.43	14.99	15.19	15.56	0.011524	3.46	8.14	14.14	1.06
fossonuovo	nu-1	217	Tr030	18.00	13.43	14.96	14.96	15.29	0.006832	2.61	7.68	13.04	0.81
fossonuovo	nu-1	217	Tr020	16.00	13.43	14.89	14.89	15.21	0.007119	2.54	6.81	12.54	0.82
fossonuovo	nu-1	216	Tr200	29.00	11.91	13.28	13.96	15.54	0.060324	6.65	4.36	5.10	2.30
fossonuovo	nu-1	216	Tr100	25.00	11.91	13.17	13.82	15.38	0.065023	6.58	3.80	4.79	2.36
fossonuovo	nu-1	216	Tr030	18.00	11.91	12.94	13.54	15.08	0.078402	6.48	2.78	4.17	2.54
fossonuovo	nu-1	216	Tr020	16.00	11.91	12.87	13.45	15.01	0.085470	6.49	2.47	3.97	2.63
fossonuovo	nu-1	215.5*	Tr200	29.00	11.74	13.67	13.70	14.25	0.010986	3.40	8.53	7.81	1.04
fossonuovo	nu-1	215.5*	Tr100	25.00	11.74	13.50	13.56	14.10	0.011864	3.41	7.32	7.03	1.07
fossonuovo	nu-1	215.5*	Tr030	18.00	11.74	13.43	13.28	13.79	0.007312	2.64	6.83	6.70	0.83
fossonuovo	nu-1	215.5*	Tr020	16.00	11.74	13.41	13.19	13.70	0.006017	2.38	6.71	6.62	0.76
fossonuovo	nu-1	215	Tr200	29.00	11.56	13.35	13.43	13.79	0.010481	3.05	10.41	16.74	1.02
fossonuovo	nu-1	215	Tr100	25.00	11.56	13.31	13.35	13.68	0.008983	2.75	9.87	16.74	0.93
fossonuovo	nu-1	215	Tr030	18.00	11.56	13.15	13.15	13.47	0.008085	2.53	7.48	13.47	0.87
fossonuovo	nu-1	215	Tr020	16.00	11.56	12.93	12.93	13.38	0.010774	2.95	5.43	6.12	1.00
fossonuovo	nu-1	214	Tr200	29.00	10.26	11.64	12.26	13.62	0.048403	6.24	4.65	4.91	2.05
fossonuovo	nu-1	214	Tr100	25.00	10.26	11.50	12.11	13.50	0.054265	6.26	3.99	4.61	2.15
fossonuovo	nu-1	214	Tr030	18.00	10.26	11.23	11.82	13.28	0.071382	6.34	2.84	4.04	2.41
fossonuovo	nu-1	214	Tr020	16.00	10.26	11.15	11.73	13.20	0.078036	6.34	2.52	3.87	2.50
fossonuovo	nu-1	213.8*	Tr200	29.00	9.91	11.98	11.90	12.54	0.008844	3.31	8.77	6.60	0.92
fossonuovo	nu-1	213.8*	Tr100	25.00	9.91	11.66	11.75	12.36	0.013342	3.71	6.74	5.89	1.11
fossonuovo	nu-1	213.8*	Tr030	18.00	9.91	11.37	11.46	11.99	0.014281	3.50	5.15	5.24	1.13
fossonuovo	nu-1	213.8*	Tr020	16.00	9.91	11.29	11.37	11.87	0.014139	3.38	4.74	5.06	1.11
fossonuovo	nu-1	213.6*	Tr200	29.00	9.55	11.52	11.52	12.15	0.010508	3.51	8.25	6.56	1.00
fossonuovo	nu-1	213.6*	Tr100	25.00	9.55	11.38	11.38	11.96	0.010638	3.40	7.36	6.25	1.00
fossonuovo	nu-1	213.6*	Tr030	18.00	9.55	11.15	11.10	11.61	0.009672	3.01	5.98	5.74	0.94
fossonuovo	nu-1	213.6*	Tr020	16.00	9.55	11.06	11.01	11.49	0.009662	2.91	5.49	5.54	0.93
fossonuovo	nu-1	213.4*	Tr200	29.00	9.20	11.08	11.23	11.71	0.010987	3.56	8.72	12.02	1.03
fossonuovo	nu-1	213.4*	Tr100	25.00	9.20	11.07	11.12	11.55	0.008321	3.09	8.64	12.02	0.89
fossonuovo	nu-1	213.4*	Tr030	18.00	9.20	10.77	10.72	11.22	0.009371	2.96	6.08	5.90	0.93
fossonuovo	nu-1	213.4*	Tr020	16.00	9.20	10.70	10.63	11.11	0.009030	2.83	5.65	5.73	0.91
fossonuovo	nu-1	213.2*	Tr200	29.00	8.84	10.52	10.72	11.21	0.013802	3.83	8.51	11.76	1.15

HEC-RAS Plan: att1 (Continued)

River	Reach	River Sta	Profile	Q Total (m3/s)	Min Ch El (m)	W.S. Elev (m)	Crit W.S. (m)	E.G. Elev (m)	E.G. Slope (m/m)	Vel Chnl (m/s)	Flow Area (m2)	Top Width (m)	Froude # Chl
fossonuovo	nu-1	213.2*	Tr100	25.00	8.84	10.42	10.63	11.10	0.014380	3.74	7.38	11.62	1.17
fossonuovo	nu-1	213.2*	Tr030	18.00	8.84	10.34	10.34	10.82	0.010555	3.08	5.86	7.06	0.99
fossonuovo	nu-1	213.2*	Tr020	16.00	8.84	10.25	10.25	10.71	0.010847	3.01	5.31	5.71	1.00
fossonuovo	nu-1	213	Tr200	29.00	8.49	10.58	10.15	10.75	0.002302	1.96	17.04	14.78	0.51
fossonuovo	nu-1	213	Tr100	25.00	8.49	10.48	10.07	10.63	0.002252	1.85	15.52	14.78	0.49
fossonuovo	nu-1	213	Tr030	18.00	8.49	10.14	9.90	10.30	0.003412	1.94	10.46	11.89	0.58
fossonuovo	nu-1	213	Tr020	16.00	8.49	10.07	9.85	10.23	0.003290	1.86	9.73	11.76	0.57
fossonuovo	nu-1	212	Tr200	29.00	7.59	10.62	9.89	10.73	0.001376	1.64	20.32	14.78	0.37
fossonuovo	nu-1	212	Tr100	25.00	7.59	10.51	9.79	10.61	0.001281	1.53	18.78	14.78	0.35
fossonuovo	nu-1	212	Tr030	18.00	7.59	10.18	9.31	10.28	0.001466	1.46	13.81	11.92	0.37
fossonuovo	nu-1	212	Tr020	16.00	7.59	10.12	9.21	10.20	0.001324	1.38	13.07	11.72	0.35
fossonuovo	nu-1	211		Bridge									
fossonuovo	nu-1	210.9	Tr200	29.00	6.54	8.48	9.05	10.24	0.038745	5.88	4.93	3.82	1.65
fossonuovo	nu-1	210.9	Tr100	25.00	6.54	8.27	8.86	10.10	0.044762	6.00	4.17	3.57	1.77
fossonuovo	nu-1	210.9	Tr030	18.00	6.54	7.98	8.50	9.60	0.047271	5.64	3.19	3.22	1.81
fossonuovo	nu-1	210.9	Tr020	16.00	6.54	7.89	8.39	9.45	0.048823	5.55	2.88	3.10	1.84
fossonuovo	nu-1	210.675*	Tr200	29.00	6.37	8.99	8.73	9.54	0.008396	3.28	8.83	5.44	0.82
fossonuovo	nu-1	210.675*	Tr100	25.00	6.37	8.83	8.56	9.33	0.008082	3.14	7.97	5.10	0.80
fossonuovo	nu-1	210.675*	Tr030	18.00	6.37	8.48	8.22	8.90	0.007694	2.85	6.32	4.57	0.77
fossonuovo	nu-1	210.675*	Tr020	16.00	6.37	8.38	8.11	8.76	0.007502	2.74	5.84	4.42	0.76
fossonuovo	nu-1	210.45*	Tr200	29.00	6.20	8.67	8.43	9.18	0.007752	3.16	9.18	6.14	0.82
fossonuovo	nu-1	210.45*	Tr100	25.00	6.20	8.52	8.26	8.98	0.007340	3.01	8.31	5.69	0.79
fossonuovo	nu-1	210.45*	Tr030	18.00	6.20	8.16	7.94	8.57	0.007524	2.81	6.40	4.99	0.79
fossonuovo	nu-1	210.45*	Tr020	16.00	6.20	8.06	7.84	8.44	0.007349	2.71	5.91	4.82	0.78
fossonuovo	nu-1	210.225*	Tr200	29.00	6.03	8.12	8.12	8.77	0.010916	3.58	8.10	6.20	1.00
fossonuovo	nu-1	210.225*	Tr100	25.00	6.03	7.96	7.96	8.58	0.011140	3.50	7.15	5.74	1.00
fossonuovo	nu-1	210.225*	Tr030	18.00	6.03	7.88	7.67	8.25	0.006867	2.69	6.70	5.58	0.78
fossonuovo	nu-1	210.225*	Tr020	16.00	6.03	7.78	7.57	8.13	0.006794	2.60	6.16	5.38	0.77
fossonuovo	nu-1	210	Tr200	29.00	5.86	7.67	7.67	7.77	0.001772	1.37	20.82	18.00	0.41
fossonuovo	nu-1	210	Tr100	25.00	5.86	7.67	7.67	7.74	0.001317	1.18	20.82	18.00	0.35
fossonuovo	nu-1	210	Tr030	18.00	5.86	7.37	7.37	7.87	0.010886	3.12	5.78	5.81	1.00
fossonuovo	nu-1	210	Tr020	16.00	5.86	7.30	7.29	7.75	0.010624	2.99	5.34	5.61	0.98
fossonuovo	nu-1	209.666*	Tr200	29.00	5.29	7.26	7.24	7.38	0.002628	1.62	18.30	17.79	0.50
fossonuovo	nu-1	209.666*	Tr100	25.00	5.29	7.24	7.24	7.34	0.002023	1.42	18.07	17.68	0.44
fossonuovo	nu-1	209.666*	Tr030	18.00	5.29	6.92	6.90	7.41	0.010653	3.10	5.81	5.72	0.98
fossonuovo	nu-1	209.666*	Tr020	16.00	5.29	6.81	6.81	7.29	0.011099	3.08	5.20	5.33	0.99
fossonuovo	nu-1	209.333*	Tr200	29.00	4.73	6.79	6.79	7.17	0.008631	2.90	11.13	13.47	0.90
fossonuovo	nu-1	209.333*	Tr100	25.00	4.73	6.72	6.72	7.06	0.008143	2.75	10.18	13.20	0.86
fossonuovo	nu-1	209.333*	Tr030	18.00	4.73	6.40	6.40	6.93	0.011466	3.22	5.59	5.32	1.00
fossonuovo	nu-1	209.333*	Tr020	16.00	4.73	6.32	6.31	6.81	0.011237	3.11	5.14	5.09	0.99
fossonuovo	nu-1	209	Tr200	29.00	4.16	6.27	6.18	6.52	0.005828	2.42	13.22	14.16	0.72
fossonuovo	nu-1	209	Tr100	25.00	4.16	6.19	6.18	6.42	0.005667	2.29	12.10	14.08	0.71
fossonuovo	nu-1	209	Tr030	18.00	4.16	5.97	5.89	6.45	0.010011	3.07	5.87	5.23	0.93
fossonuovo	nu-1	209	Tr020	16.00	4.16	6.10	5.78	6.40	0.006272	2.41	6.63	6.09	0.74
fossonuovo	nu-1	208.666*	Tr200	29.00	4.01	6.05	5.99	6.31	0.006171	2.44	13.21	15.30	0.75
fossonuovo	nu-1	208.666*	Tr100	25.00	4.01	5.99	5.99	6.22	0.005680	2.29	12.25	15.07	0.72
fossonuovo	nu-1	208.666*	Tr030	18.00	4.01	6.10	5.71	6.19	0.002010	1.42	14.00	15.90	0.43
fossonuovo	nu-1	208.666*	Tr020	16.00	4.01	5.87	5.61	6.18	0.006314	2.45	6.54	6.06	0.75
fossonuovo	nu-1	208.333*	Tr200	29.00	3.87	6.07	5.80	6.15	0.001719	1.50	23.15	24.31	0.42
fossonuovo	nu-1	208.333*	Tr100	25.00	3.87	5.96	5.80	6.04	0.001835	1.47	20.61	24.31	0.42
fossonuovo	nu-1	208.333*	Tr030	18.00	3.87	5.50	5.50	6.01	0.011145	3.15	5.72	5.66	1.00
fossonuovo	nu-1	208.333*	Tr020	16.00	3.87	5.66	5.41	5.96	0.005985	2.40	6.66	6.24	0.74
fossonuovo	nu-1	208	Tr200	29.00	3.72	6.04	5.59	6.10	0.000961	1.25	27.87	24.66	0.32
fossonuovo	nu-1	208	Tr100	25.00	3.72	5.94	5.56	5.99	0.000969	1.20	25.28	24.66	0.32
fossonuovo	nu-1	208	Tr030	18.00	3.72	5.71	5.27	5.75	0.001103	1.15	19.60	24.66	0.33
fossonuovo	nu-1	208	Tr020	16.00	3.72	5.49	5.18	5.75	0.005144	2.29	6.97	6.22	0.69
fossonuovo	nu-1	207.5*	Tr200	29.00	3.71	5.95	5.46	6.04	0.001310	1.52	23.13	20.01	0.38
fossonuovo	nu-1	207.5*	Tr100	25.00	3.71	5.85	5.40	5.93	0.001287	1.44	21.11	20.01	0.37
fossonuovo	nu-1	207.5*	Tr030	18.00	3.71	5.62	5.20	5.69	0.001409	1.35	16.46	20.01	0.38
fossonuovo	nu-1	207.5*	Tr020	16.00	3.71	5.46	5.11	5.55	0.002090	1.51	13.24	20.01	0.45
fossonuovo	nu-1	207	Tr200	29.00	3.70	5.82	5.39	5.96	0.001907	1.86	18.39	15.36	0.47
fossonuovo	nu-1	207	Tr100	25.00	3.70	5.73	5.31	5.86	0.001777	1.73	17.05	15.36	0.45
fossonuovo	nu-1	207	Tr030	18.00	3.70	5.51	5.14	5.61	0.001780	1.56	13.64	15.36	0.43
fossonuovo	nu-1	207	Tr020	16.00	3.70	5.21	5.03	5.40	0.004393	2.06	8.87	13.69	0.65
fossonuovo	nu-1	206	Tr200	29.00	2.52	5.87	4.68	5.94	0.000729	1.33	24.95	15.36	0.28
fossonuovo	nu-1	206	Tr100	25.00	2.52	5.77	4.54	5.84	0.000642	1.21	23.56	15.36	0.26
fossonuovo	nu-1	206	Tr030	18.00	2.52	5.55	4.26	5.60	0.000525	1.02	20.11	15.36	0.23
fossonuovo	nu-1	206	Tr020	16.00	2.52	5.30	4.16	5.36	0.000738	1.10	16.33	15.36	0.27
fossonuovo	nu-1	205	Tr200	29.00	2.82	5.88	4.58	5.93	0.000484	1.15	29.65	19.36	0.25
fossonuovo	nu-1	205	Tr100	25.00	2.82	5.78	4.45	5.83	0.000431	1.06	27.84	19.36	0.23
fossonuovo	nu-1	205	Tr030	18.00	2.82	5.55	4.20	5.59	0.000361	0.90	23.43	19.36	0.21
fossonuovo	nu-1	205	Tr020	16.00	2.82	5.31	4.12	5.35	0.000519	0.98	18.65	19.36	0.24
fossonuovo	nu-1	204		Bridge									

HEC-RAS Plan: att1 (Continued)

River	Reach	River Sta	Profile	Q Total (m3/s)	Min Ch El (m)	W.S. Elev (m)	Crit W.S. (m)	E.G. Elev (m)	E.G. Slope (m/m)	Vel Chnl (m/s)	Flow Area (m2)	Top Width (m)	Froude # Chl
fossonuovo	nu-1	203.9	Tr200	29.00	2.82	5.81	4.58	5.88	0.000545	1.20	28.45	19.36	0.26
fossonuovo	nu-1	203.9	Tr100	25.00	2.82	5.72	4.45	5.78	0.000484	1.10	26.73	19.36	0.24
fossonuovo	nu-1	203.9	Tr030	18.00	2.82	5.05	4.19	5.15	0.001332	1.41	13.21	14.52	0.38
fossonuovo	nu-1	203.9	Tr020	16.00	2.82	4.91	4.12	5.01	0.001457	1.40	11.40	8.64	0.39
fossonuovo	nu-1	203	Tr200	29.00	3.08	5.79	4.69	5.87	0.000720	1.28	25.05	16.34	0.30
fossonuovo	nu-1	203	Tr100	25.00	3.08	5.71	4.57	5.77	0.000635	1.16	23.66	16.34	0.28
fossonuovo	nu-1	203	Tr030	18.00	3.08	5.02	4.34	5.14	0.001970	1.51	12.03	11.99	0.45
fossonuovo	nu-1	203	Tr020	16.00	3.08	4.87	4.26	4.99	0.002153	1.54	10.36	9.35	0.47
fossonuovo	nu-1	202		Bridge									
fossonuovo	nu-1	201.9	Tr200	29.00	3.08	4.23	4.69	5.70	0.039745	5.38	5.39	6.75	1.92
fossonuovo	nu-1	201.9	Tr100	25.00	3.08	4.11	4.57	5.60	0.046075	5.42	4.61	6.41	2.04
fossonuovo	nu-1	201.9	Tr030	18.00	3.08	4.02	4.34	5.02	0.034431	4.43	4.06	6.16	1.74
fossonuovo	nu-1	201.9	Tr020	16.00	3.08	3.97	4.26	4.89	0.033544	4.24	3.77	6.02	1.71
fossonuovo	nu-1	201	Tr200	29.00	2.17	4.95	4.01	5.00	0.000629	1.16	31.56	25.20	0.27
fossonuovo	nu-1	201	Tr100	25.00	2.17	4.75	3.88	4.81	0.000765	1.19	26.62	25.20	0.29
fossonuovo	nu-1	201	Tr030	18.00	2.17	4.33	3.62	4.47	0.001998	1.64	10.99	8.16	0.45
fossonuovo	nu-1	201	Tr020	16.00	2.17	4.18	3.53	4.31	0.002170	1.64	9.76	7.72	0.47
CorniaVecchia	CV_2	2002	Tr200	1.00	-0.66	2.32	-0.24	2.32	0.000001	0.04	23.32	18.84	0.01
CorniaVecchia	CV_2	2002	Tr100	1.00	-0.66	1.95	-0.24	1.95	0.000003	0.06	17.36	14.06	0.02
CorniaVecchia	CV_2	2002	Tr030	1.00	-0.66	1.50	-0.24	1.50	0.000005	0.08	12.47	9.47	0.02
CorniaVecchia	CV_2	2002	Tr020	1.00	-0.66	1.37	-0.24	1.37	0.000006	0.09	11.21	9.06	0.03
CorniaVecchia	CV_2	2001.1	Tr200	1.00	-1.45	2.32	-1.35	2.32	0.000000	0.02	62.03	29.89	0.00
CorniaVecchia	CV_2	2001.1	Tr100	1.00	-1.45	1.95	-1.35	1.95	0.000000	0.02	52.02	24.39	0.00
CorniaVecchia	CV_2	2001.1	Tr030	1.00	-1.45	1.50	-1.35	1.50	0.000000	0.02	41.51	21.91	0.01
CorniaVecchia	CV_2	2001.1	Tr020	1.00	-1.45	1.36	-1.35	1.36	0.000000	0.03	38.59	21.17	0.01
Cornia Vecchia	r2	106	Tr200	109.00	-1.50	1.48	0.12	1.68	0.001447	1.94	56.10	26.64	0.43
Cornia Vecchia	r2	106	Tr100	88.00	-1.50	1.27	-0.08	1.42	0.001079	1.73	50.82	22.65	0.37
Cornia Vecchia	r2	106	Tr030	60.00	-1.50	1.02	-0.39	1.11	0.000664	1.32	45.45	21.03	0.29
Cornia Vecchia	r2	106	Tr020	53.00	-1.50	0.96	-0.46	1.04	0.000555	1.20	44.20	20.63	0.26
Cornia Vecchia	r2	105	Tr200	109.00	-1.50	1.42	-0.48	1.48	0.000324	1.06	102.47	39.13	0.21
Cornia Vecchia	r2	105	Tr100	88.00	-1.50	1.23	-0.62	1.27	0.000251	0.93	95.04	36.86	0.18
Cornia Vecchia	r2	105	Tr030	60.00	-1.50	0.99	-0.80	1.02	0.000154	0.69	86.61	36.20	0.14
Cornia Vecchia	r2	105	Tr020	53.00	-1.50	0.94	-0.87	0.96	0.000129	0.63	84.58	36.04	0.13
Cornia Vecchia	r2	104	Tr200	109.00	-1.50	1.32	-0.48	1.38	0.000349	1.11	98.41	37.35	0.22
Cornia Vecchia	r2	104	Tr100	88.00	-1.50	1.14	-0.61	1.19	0.000276	0.96	92.02	36.63	0.19
Cornia Vecchia	r2	104	Tr030	60.00	-1.50	0.95	-0.81	0.97	0.000164	0.71	84.85	36.06	0.15
Cornia Vecchia	r2	104	Tr020	53.00	-1.50	0.90	-0.87	0.92	0.000136	0.64	83.13	35.92	0.13
Cornia Vecchia	r1	3	Tr200	138.00	-1.19	1.29	-0.22	1.35	0.000396	1.14	121.36	52.53	0.24
Cornia Vecchia	r1	3	Tr100	112.00	-1.19	1.12	-0.34	1.17	0.000331	1.00	112.53	52.05	0.22
Cornia Vecchia	r1	3	Tr030	79.00	-1.19	0.93	-0.52	0.96	0.000220	0.77	102.68	51.51	0.17
Cornia Vecchia	r1	3	Tr020	70.00	-1.19	0.88	-0.57	0.91	0.000185	0.70	100.37	51.38	0.16
Cornia Vecchia	r1	2	Tr200	138.00	-1.21	1.14	0.05	1.29	0.001058	1.75	78.71	36.70	0.38
Cornia Vecchia	r1	2	Tr100	112.00	-1.21	1.00	-0.11	1.12	0.000850	1.52	73.82	36.35	0.34
Cornia Vecchia	r1	2	Tr030	79.00	-1.21	0.86	-0.34	0.93	0.000530	1.15	68.63	35.97	0.27
Cornia Vecchia	r1	2	Tr020	70.00	-1.21	0.83	-0.40	0.88	0.000439	1.04	67.45	35.88	0.24
Cornia Vecchia	r1	1	Tr200	138.00	-1.50	1.04	-0.12	1.19	0.001001	1.73	79.83	36.62	0.37
Cornia Vecchia	r1	1	Tr100	112.00	-1.50	0.93	-0.28	1.04	0.000772	1.48	75.80	36.25	0.33
Cornia Vecchia	r1	1	Tr030	79.00	-1.50	0.82	-0.51	0.88	0.000453	1.10	71.76	35.87	0.25
Cornia Vecchia	r1	1	Tr020	70.00	-1.50	0.79	-0.58	0.84	0.000370	0.99	70.89	35.79	0.22
Cornia Vecchia	r1	0.95		Bridge									
Cornia Vecchia	r1	0.9	Tr200	138.00	-1.50	1.02	-0.11	1.17	0.001026	1.74	79.18	36.56	0.38
Cornia Vecchia	r1	0.9	Tr100	112.00	-1.50	0.91	-0.28	1.03	0.000787	1.49	75.32	36.20	0.33
Cornia Vecchia	r1	0.9	Tr030	79.00	-1.50	0.81	-0.51	0.87	0.000459	1.10	71.50	35.85	0.25
Cornia Vecchia	r1	0.9	Tr020	70.00	-1.50	0.78	-0.58	0.83	0.000373	0.99	70.68	35.77	0.22
Cornia Vecchia	r1	.5	Tr200	138.00	-1.50	0.70	-0.11	0.91	0.001656	2.04	67.66	35.48	0.47
Cornia Vecchia	r1	.5	Tr100	112.00	-1.50	0.70	-0.27	0.84	0.001091	1.66	67.66	35.48	0.38
Cornia Vecchia	r1	.5	Tr030	79.00	-1.50	0.70	-0.51	0.77	0.000543	1.17	67.66	35.48	0.27
Cornia Vecchia	r1	.5	Tr020	70.00	-1.50	0.70	-0.58	0.75	0.000426	1.03	67.66	35.48	0.24
Cornia vecchia	r4	108.9	Tr200	72.00	-1.45	2.24	0.17	2.31	0.000574	1.21	59.52	29.55	0.27
Cornia vecchia	r4	108.9	Tr100	58.00	-1.45	1.88	-0.04	1.95	0.000504	1.16	50.15	23.97	0.26
Cornia vecchia	r4	108.9	Tr030	40.00	-1.45	1.44	-0.33	1.49	0.000434	0.99	40.26	21.60	0.23
Cornia vecchia	r4	108.9	Tr020	35.00	-1.45	1.31	-0.43	1.36	0.000372	0.93	37.55	19.61	0.22
Cornia vecchia	r4	106	Tr200	72.00	-1.50	1.62	-0.25	1.70	0.000561	1.20	60.04	29.10	0.27
Cornia vecchia	r4	106	Tr100	58.00	-1.50	1.38	-0.41	1.44	0.000436	1.09	53.37	24.44	0.23
Cornia vecchia	r4	106	Tr030	40.00	-1.50	1.08	-0.64	1.12	0.000275	0.86	46.75	21.43	0.18
Cornia vecchia	r4	106	Tr020	35.00	-1.50	1.01	-0.71	1.04	0.000228	0.77	45.26	20.96	0.17
cagliana	ca-2	145	Tr200	10.00	30.60	31.59	31.59	32.01	0.012549	2.85	3.51	4.28	1.00
cagliana	ca-2	145	Tr100	10.00	30.60	31.59	31.59	32.01	0.012549	2.85	3.51	4.28	1.00
cagliana	ca-2	145	Tr030	10.00	30.60	31.59	31.59	32.01	0.012549	2.85	3.51	4.28	1.00
cagliana	ca-2	145	Tr020	10.00	30.60	31.59	31.59	32.01	0.012549	2.85	3.51	4.28	1.00
cagliana	ca-2	144.2	Tr200	10.00	23.71	25.50	24.76	25.54	0.001175	0.94	10.68	13.24	0.33
cagliana	ca-2	144.2	Tr100	10.00	23.71	25.50	24.76	25.54	0.001175	0.94	10.68	13.24	0.33

HEC-RAS Plan: att1 (Continued)

River	Reach	River Sta	Profile	Q Total (m3/s)	Min Ch El (m)	W.S. Elev (m)	Crit W.S. (m)	E.G. Elev (m)	E.G. Slope (m/m)	Vel Chnl (m/s)	Flow Area (m2)	Top Width (m)	Froude # Chl
cagliana	ca-2	144.2	Tr030	10.00	23.71	25.50	24.76	25.54	0.001175	0.94	10.68	13.24	0.33
cagliana	ca-2	144.2	Tr020	10.00	23.71	25.50	24.76	25.54	0.001175	0.94	10.68	13.24	0.33
cagliana	ca-2	144.1		Culvert									
cagliana	ca-2	144	Tr200	10.00	23.71	24.75	24.75	25.11	0.011468	2.66	3.77	5.27	1.00
cagliana	ca-2	144	Tr100	10.00	23.71	24.75	24.75	25.11	0.011468	2.66	3.77	5.27	1.00
cagliana	ca-2	144	Tr030	10.00	23.71	24.75	24.75	25.11	0.011468	2.66	3.77	5.27	1.00
cagliana	ca-2	144	Tr020	10.00	23.71	24.75	24.75	25.11	0.011468	2.66	3.77	5.27	1.00
cagliana	ca-2	143	Tr200	10.00	17.76	18.61	18.92	19.53	0.041592	4.25	2.36	4.34	1.84
cagliana	ca-2	143	Tr100	10.00	17.76	18.61	18.92	19.53	0.041592	4.25	2.36	4.34	1.84
cagliana	ca-2	143	Tr030	10.00	17.76	18.61	18.92	19.53	0.041592	4.25	2.36	4.34	1.84
cagliana	ca-2	143	Tr020	10.00	17.76	18.61	18.92	19.53	0.041592	4.25	2.36	4.34	1.84
cagliana	ca-2	142	Tr200	10.00	16.60	18.08	17.65	18.34	0.006827	2.27	4.41	3.02	0.60
cagliana	ca-2	142	Tr100	10.00	16.60	18.08	17.65	18.34	0.006827	2.27	4.41	3.02	0.60
cagliana	ca-2	142	Tr030	10.00	16.60	18.08	17.65	18.34	0.006826	2.27	4.41	3.02	0.60
cagliana	ca-2	142	Tr020	10.00	16.60	18.08	17.65	18.34	0.006826	2.27	4.41	3.02	0.60
cagliana	ca-2	141.5		Bridge									
cagliana	ca-2	141.2	Tr200	10.00	16.60	17.65	17.65	18.17	0.017632	3.21	3.12	3.00	1.01
cagliana	ca-2	141.2	Tr100	10.00	16.60	17.65	17.65	18.17	0.017632	3.21	3.12	3.00	1.01
cagliana	ca-2	141.2	Tr030	10.00	16.60	17.65	17.65	18.17	0.017632	3.21	3.12	3.00	1.01
cagliana	ca-2	141.2	Tr020	10.00	16.60	17.65	17.65	18.17	0.017632	3.21	3.12	3.00	1.01
cagliana	ca-2	134	Tr200	46.00	14.52	17.61	16.32	17.73	0.000810	1.58	33.39	19.92	0.32
cagliana	ca-2	134	Tr100	39.00	14.52	17.51	16.16	17.60	0.000695	1.42	31.32	19.92	0.29
cagliana	ca-2	134	Tr030	27.00	14.52	16.47	15.85	16.66	0.002497	1.96	13.76	9.30	0.52
cagliana	ca-2	134	Tr020	25.00	14.52	16.35	15.78	16.55	0.002676	1.97	12.70	9.05	0.53
cagliana	ca-2	133		Bridge									
cagliana	ca-2	132.9	Tr200	46.00	14.52	15.77	16.33	17.54	0.035991	5.89	7.81	7.77	1.88
cagliana	ca-2	132.9	Tr100	39.00	14.52	15.66	16.16	17.26	0.036006	5.60	6.96	7.52	1.86
cagliana	ca-2	132.9	Tr030	27.00	14.52	16.15	15.84	16.46	0.004714	2.46	10.97	8.62	0.70
cagliana	ca-2	132.9	Tr020	25.00	14.52	16.10	15.78	16.39	0.004608	2.39	10.47	8.49	0.69
cagliana	ca-2	132	Tr200	46.00	14.51	16.01	16.44	17.20	0.023525	4.84	9.50	9.50	1.55
cagliana	ca-2	132	Tr100	39.00	14.51	15.94	16.28	16.92	0.019035	4.40	8.87	8.68	1.39
cagliana	ca-2	132	Tr030	27.00	14.51	15.91	15.91	16.41	0.009838	3.15	8.58	8.47	1.00
cagliana	ca-2	132	Tr020	25.00	14.51	15.85	15.85	16.33	0.009867	3.08	8.11	8.29	0.99
cagliana	ca-2	131	Tr200	46.00	12.68	14.17	14.99	17.00	0.061053	7.45	6.18	6.11	2.37
cagliana	ca-2	131	Tr100	39.00	12.68	14.04	14.81	16.72	0.064449	7.26	5.38	5.81	2.41
cagliana	ca-2	131	Tr030	27.00	12.68	13.77	14.44	16.19	0.075038	6.90	3.91	5.20	2.54
cagliana	ca-2	131	Tr020	25.00	12.68	13.72	14.38	16.11	0.078555	6.85	3.65	5.08	2.58
cagliana	ca-2	130.5*	Tr200	46.00	12.69	15.19	14.84	15.62	0.004975	2.93	15.72	9.80	0.74
cagliana	ca-2	130.5*	Tr100	39.00	12.69	15.00	14.66	15.40	0.004908	2.79	13.96	9.28	0.73
cagliana	ca-2	130.5*	Tr030	27.00	12.69	14.72	14.34	15.00	0.004112	2.37	11.40	8.57	0.66
cagliana	ca-2	130.5*	Tr020	25.00	12.69	14.65	14.27	14.92	0.004068	2.31	10.82	8.41	0.65
cagliana	ca-2	130	Tr200	46.00	12.70	15.07	14.54	15.41	0.003652	2.59	17.79	10.61	0.64
cagliana	ca-2	130	Tr100	39.00	12.70	14.89	14.38	15.19	0.003585	2.46	15.87	10.12	0.63
cagliana	ca-2	130	Tr030	27.00	12.70	14.63	14.05	14.84	0.002776	2.03	13.31	9.41	0.54
cagliana	ca-2	130	Tr020	25.00	12.70	14.56	13.99	14.76	0.002716	1.97	12.69	9.24	0.54
cagliana	ca-2	129.5*	Tr200	46.00	12.68	14.58	14.58	15.22	0.009442	3.55	12.95	10.14	1.00
cagliana	ca-2	129.5*	Tr100	39.00	12.68	14.54	14.39	15.03	0.007279	3.12	12.52	9.80	0.88
cagliana	ca-2	129.5*	Tr030	27.00	12.68	14.47	14.07	14.73	0.003874	2.27	11.91	9.32	0.64
cagliana	ca-2	129.5*	Tr020	25.00	12.68	14.41	14.01	14.66	0.003775	2.21	11.33	9.07	0.63
cagliana	ca-2	129	Tr200	46.00	12.65	14.47	14.55	14.95	0.006687	3.25	17.13	23.88	0.87
cagliana	ca-2	129	Tr100	39.00	12.65	14.46	14.46	14.82	0.004992	2.79	16.86	23.88	0.75
cagliana	ca-2	129	Tr030	27.00	12.65	14.05	14.05	14.54	0.009749	3.12	8.66	8.63	0.99
cagliana	ca-2	129	Tr020	25.00	12.65	13.98	13.98	14.47	0.010015	3.08	8.11	8.41	1.00
cagliana	ca-2	128	Tr200	46.00	10.61	12.03	12.82	14.71	0.059013	7.26	6.34	6.39	2.33
cagliana	ca-2	128	Tr100	39.00	10.61	11.87	12.64	14.57	0.067490	7.28	5.36	6.00	2.46
cagliana	ca-2	128	Tr030	27.00	10.61	11.58	12.28	14.30	0.092376	7.31	3.69	5.27	2.79
cagliana	ca-2	128	Tr020	25.00	10.61	11.53	12.22	14.22	0.097217	7.28	3.44	5.14	2.84
cagliana	ca-2	127.75*	Tr200	46.00	10.56	13.23	12.74	13.61	0.004142	2.74	16.82	9.86	0.67
cagliana	ca-2	127.75*	Tr100	39.00	10.56	13.11	12.56	13.43	0.003613	2.49	15.65	9.55	0.62
cagliana	ca-2	127.75*	Tr030	27.00	10.56	12.75	12.21	12.99	0.003252	2.18	12.40	8.62	0.58
cagliana	ca-2	127.75*	Tr020	25.00	10.56	12.68	12.14	12.91	0.003198	2.12	11.79	8.44	0.57
cagliana	ca-2	127.5*	Tr200	46.00	10.51	12.91	12.64	13.39	0.005813	3.09	14.90	9.62	0.79
cagliana	ca-2	127.5*	Tr100	39.00	10.51	12.91	12.47	13.26	0.004145	2.61	14.94	9.63	0.67
cagliana	ca-2	127.5*	Tr030	27.00	10.51	12.59	12.13	12.85	0.003638	2.26	11.95	8.74	0.62
cagliana	ca-2	127.5*	Tr020	25.00	10.51	12.52	12.06	12.76	0.003582	2.20	11.36	8.55	0.61
cagliana	ca-2	127.25*	Tr200	46.00	10.47	12.72	12.72	13.14	0.005014	2.97	18.02	24.22	0.75
cagliana	ca-2	127.25*	Tr100	39.00	10.47	12.37	12.35	12.98	0.009084	3.46	11.28	8.84	0.98
cagliana	ca-2	127.25*	Tr030	27.00	10.47	12.40	12.02	12.68	0.004093	2.34	11.54	8.92	0.66
cagliana	ca-2	127.25*	Tr020	25.00	10.47	12.34	11.95	12.60	0.004033	2.28	10.96	8.73	0.65
cagliana	ca-2	127	Tr200	46.00	10.42	12.17	12.36	12.83	0.010133	3.78	14.77	24.34	1.05
cagliana	ca-2	127	Tr100	39.00	10.42	12.27	12.27	12.62	0.005007	2.80	17.30	24.34	0.75
cagliana	ca-2	127	Tr030	27.00	10.42	11.88	11.88	12.40	0.009899	3.18	8.48	8.24	1.00

HEC-RAS Plan: att1 (Continued)

River	Reach	River Sta	Profile	Q Total (m3/s)	Min Ch El (m)	W.S. Elev (m)	Crit W.S. (m)	E.G. Elev (m)	E.G. Slope (m/m)	Vel Chnl (m/s)	Flow Area (m2)	Top Width (m)	Froude # Chl
cagliana	ca-2	127	Tr020	25.00	10.42	11.82	11.82	12.32	0.010019	3.13	7.99	8.01	1.00
cagliana	ca-2	126	Tr200	46.00	8.81	12.13	11.00	12.31	0.001471	1.89	26.67	24.29	0.41
cagliana	ca-2	126	Tr100	39.00	8.81	11.91	10.82	12.08	0.001625	1.85	21.13	12.00	0.42
cagliana	ca-2	126	Tr030	27.00	8.81	9.80	10.47	12.19	0.075154	6.86	3.94	5.27	2.53
cagliana	ca-2	126	Tr020	25.00	8.81	9.74	10.40	12.11	0.078587	6.82	3.67	5.13	2.57
cagliana	ca-2	125	Tr200	46.00	8.46	12.14	10.68	12.22	0.001054	1.27	36.35	24.62	0.33
cagliana	ca-2	125	Tr100	39.00	8.46	11.91	10.49	11.99	0.001321	1.28	30.56	24.62	0.37
cagliana	ca-2	125	Tr030	27.00	8.46	11.23	10.12	11.36	0.001424	1.64	16.43	8.91	0.39
cagliana	ca-2	125	Tr020	25.00	8.46	10.95	10.06	11.11	0.001877	1.79	14.00	8.32	0.44
cagliana	ca-2	124.1	Tr200	46.00	8.38	12.07	10.76	12.21	0.001885	1.91	29.56	21.91	0.32
cagliana	ca-2	124.1	Tr100	39.00	8.38	11.80	10.51	11.97	0.002431	2.06	23.71	21.91	0.36
cagliana	ca-2	124.1	Tr030	27.00	8.38	11.00	10.05	11.33	0.005071	2.58	10.46	4.00	0.51
cagliana	ca-2	124.1	Tr020	25.00	8.38	10.71	9.96	11.07	0.005888	2.69	9.31	4.00	0.56
cagliana	ca-2	124	Bridge										
cagliana	ca-2	123.9	Tr200	46.00	8.38	10.76	10.76	11.95	0.018891	4.84	9.50	4.00	1.00
cagliana	ca-2	123.9	Tr100	39.00	8.38	10.07	10.51	11.77	0.033741	5.77	6.76	4.00	1.42
cagliana	ca-2	123.9	Tr030	27.00	8.38	10.05	10.05	10.88	0.016634	4.04	6.69	4.00	1.00
cagliana	ca-2	123.9	Tr020	25.00	8.38	9.96	9.96	10.76	0.016528	3.95	6.33	4.00	1.00
cagliana	ca-2	123	Tr200	46.00	8.25	10.05	10.53	11.68	0.027273	5.66	8.13	5.67	1.51
cagliana	ca-2	123	Tr100	39.00	8.25	9.85	10.33	11.41	0.028913	5.53	7.05	5.44	1.55
cagliana	ca-2	123	Tr030	27.00	8.25	9.67	9.92	10.68	0.020829	4.44	6.08	5.21	1.31
cagliana	ca-2	123	Tr020	25.00	8.25	9.62	9.84	10.56	0.020227	4.30	5.82	5.15	1.29
cagliana	ca-2	122.5*	Tr200	46.00	7.88	9.64	9.98	10.91	0.020524	5.00	9.20	7.37	1.43
cagliana	ca-2	122.5*	Tr100	39.00	7.88	9.53	9.82	10.62	0.018955	4.63	8.43	7.21	1.37
cagliana	ca-2	122.5*	Tr030	27.00	7.88	9.31	9.48	10.09	0.016250	3.93	6.87	6.80	1.25
cagliana	ca-2	122.5*	Tr020	25.00	7.88	9.27	9.42	10.00	0.015430	3.77	6.62	6.73	1.21
cagliana	ca-2	122	Tr200	46.00	7.52	9.94	9.35	10.31	0.003826	2.71	16.97	8.86	0.63
cagliana	ca-2	122	Tr100	39.00	7.52	10.10	9.18	10.33	0.002201	2.12	18.38	9.07	0.48
cagliana	ca-2	122	Tr030	27.00	7.52	9.71	8.86	9.87	0.001880	1.81	14.95	8.55	0.44
cagliana	ca-2	122	Tr020	25.00	7.52	9.63	8.81	9.79	0.001819	1.75	14.32	8.45	0.43
cagliana	ca-2	121	Bridge										
cagliana	ca-2	120.9	Tr200	46.00	7.52	9.78	9.36	10.22	0.004889	2.96	15.54	8.64	0.70
cagliana	ca-2	120.9	Tr100	39.00	7.52	10.04	9.18	10.28	0.002393	2.19	17.84	8.99	0.50
cagliana	ca-2	120.9	Tr030	27.00	7.52	9.66	8.87	9.84	0.002026	1.85	14.56	8.49	0.45
cagliana	ca-2	120.9	Tr020	25.00	7.52	9.59	8.80	9.75	0.001957	1.79	13.95	8.39	0.44
cagliana	ca-2	120	Tr200	46.00	7.69	9.59	9.59	9.99	0.006252	2.96	17.21	15.88	0.82
cagliana	ca-2	120	Tr100	39.00	7.69	9.45	9.45	10.07	0.009537	3.51	11.12	8.84	1.00
cagliana	ca-2	120	Tr030	27.00	7.69	9.12	9.12	9.65	0.009942	3.22	8.39	7.92	1.00
cagliana	ca-2	120	Tr020	25.00	7.69	9.06	9.06	9.57	0.010113	3.17	7.89	7.74	1.00
cagliana	ca-2	119	Tr200	46.00	6.60	8.29	8.78	9.86	0.026769	5.56	8.28	6.73	1.60
cagliana	ca-2	119	Tr100	39.00	6.60	7.98	8.59	9.93	0.040826	6.18	6.31	6.11	1.94
cagliana	ca-2	119	Tr030	27.00	6.60	7.67	8.23	9.50	0.050485	6.00	4.50	5.48	2.11
cagliana	ca-2	119	Tr020	25.00	6.60	7.61	8.16	9.43	0.053027	5.96	4.19	5.37	2.15
cagliana	ca-2	118.5*	Tr200	46.00	6.64	8.75	8.75	9.46	0.009476	3.73	12.33	8.69	1.00
cagliana	ca-2	118.5*	Tr100	39.00	6.64	8.62	8.58	9.24	0.008884	3.49	11.19	8.37	0.96
cagliana	ca-2	118.5*	Tr030	27.00	6.64	8.50	8.24	8.86	0.005494	2.65	10.20	8.08	0.75
cagliana	ca-2	118.5*	Tr020	25.00	6.64	8.44	8.18	8.78	0.005343	2.57	9.75	7.94	0.74
cagliana	ca-2	118	Tr200	46.00	6.69	8.46	8.60	9.13	0.010695	3.72	13.44	15.06	1.07
cagliana	ca-2	118	Tr100	39.00	6.69	8.49	8.49	8.94	0.007100	3.06	13.86	15.10	0.87
cagliana	ca-2	118	Tr030	27.00	6.69	8.11	8.11	8.61	0.009795	3.16	8.55	8.33	0.99
cagliana	ca-2	118	Tr020	25.00	6.69	8.04	8.04	8.54	0.010123	3.13	8.00	8.12	1.01
cagliana	ca-2	117	Tr200	46.00	4.92	6.31	7.10	8.92	0.053488	7.15	6.44	5.96	2.20
cagliana	ca-2	117	Tr100	39.00	4.92	6.15	6.91	8.72	0.059770	7.10	5.49	5.65	2.30
cagliana	ca-2	117	Tr030	27.00	4.92	5.84	6.54	8.39	0.080189	7.08	3.81	5.03	2.59
cagliana	ca-2	117	Tr020	25.00	4.92	5.78	6.46	8.31	0.084518	7.05	3.55	4.93	2.65
cagliana	ca-2	116.666*	Tr200	46.00	4.98	7.67	7.14	8.06	0.004016	2.74	16.79	9.40	0.65
cagliana	ca-2	116.666*	Tr100	39.00	4.98	7.50	6.96	7.84	0.003777	2.57	15.20	9.01	0.63
cagliana	ca-2	116.666*	Tr030	27.00	4.98	7.15	6.61	7.40	0.003301	2.22	12.19	8.23	0.58
cagliana	ca-2	116.666*	Tr020	25.00	4.98	7.08	6.54	7.32	0.003215	2.15	11.63	8.07	0.57
cagliana	ca-2	116.333*	Tr200	46.00	5.05	7.47	7.10	7.89	0.004822	2.89	15.94	9.94	0.73
cagliana	ca-2	116.333*	Tr100	39.00	5.05	7.30	6.93	7.68	0.004602	2.72	14.36	9.51	0.71
cagliana	ca-2	116.333*	Tr030	27.00	5.05	6.97	6.60	7.26	0.004180	2.37	11.37	8.65	0.66
cagliana	ca-2	116.333*	Tr020	25.00	5.05	6.91	6.53	7.18	0.004115	2.31	10.81	8.48	0.65
cagliana	ca-2	116	Tr200	46.00	5.11	6.98	6.98	7.63	0.009212	3.57	12.88	9.84	1.00
cagliana	ca-2	116	Tr100	39.00	5.11	6.82	6.82	7.42	0.009424	3.44	11.33	9.33	1.00
cagliana	ca-2	116	Tr030	27.00	5.11	6.50	6.50	7.01	0.009914	3.17	8.52	8.34	1.00
cagliana	ca-2	116	Tr020	25.00	5.11	6.45	6.45	6.93	0.009900	3.10	8.07	8.17	1.00
cagliana	ca-2	115	Tr200	46.00	3.65	4.99	5.74	7.43	0.051980	6.91	6.66	6.48	2.18
cagliana	ca-2	115	Tr100	39.00	3.65	4.84	5.55	7.22	0.057161	6.83	5.71	6.11	2.25
cagliana	ca-2	115	Tr030	27.00	3.65	6.08	5.20	6.24	0.001911	1.79	15.08	9.10	0.44
cagliana	ca-2	115	Tr020	25.00	3.65	6.00	5.13	6.15	0.001872	1.74	14.36	8.90	0.44
cagliana	ca-2	114.666*	Tr200	46.00	3.64	6.40	5.75	6.72	0.003275	2.52	18.26	10.05	0.60

HEC-RAS Plan: att1 (Continued)

River	Reach	River Sta	Profile	Q Total (m3/s)	Min Ch El (m)	W.S. Elev (m)	Crit W.S. (m)	E.G. Elev (m)	E.G. Slope (m/m)	Vel Chnl (m/s)	Flow Area (m2)	Top Width (m)	Froude # Chl
cagliana	ca-2	114.666*	Tr100	39.00	3.64	6.16	5.57	6.47	0.003373	2.44	15.99	9.50	0.60
cagliana	ca-2	114.666*	Tr030	27.00	3.64	5.95	5.23	6.14	0.002336	1.93	13.97	8.98	0.49
cagliana	ca-2	114.666*	Tr020	25.00	3.64	5.87	5.17	6.05	0.002301	1.88	13.28	8.80	0.49
cagliana	ca-2	114.333*	Tr200	46.00	3.62	6.06	5.70	6.51	0.005008	2.96	15.54	9.43	0.74
cagliana	ca-2	114.333*	Tr100	39.00	3.62	5.76	5.53	6.23	0.006132	3.05	12.78	8.71	0.80
cagliana	ca-2	114.333*	Tr030	27.00	3.62	5.79	5.19	6.01	0.002756	2.06	13.09	8.79	0.54
cagliana	ca-2	114.333*	Tr020	25.00	3.62	5.72	5.13	5.92	0.002719	2.01	12.43	8.62	0.53
cagliana	ca-2	114	Tr200	46.00	3.61	6.24	5.60	6.31	0.000863	1.38	39.77	29.64	0.32
cagliana	ca-2	114	Tr100	39.00	3.61	5.88	5.42	5.99	0.001520	1.61	29.32	29.64	0.40
cagliana	ca-2	114	Tr030	27.00	3.61	5.63	5.09	5.86	0.003161	2.17	12.45	8.55	0.57
cagliana	ca-2	114	Tr020	25.00	3.61	5.55	5.02	5.78	0.003103	2.11	11.85	8.39	0.57
cagliana	ca-2	113.5*	Tr200	46.00	3.57	6.21	5.54	6.28	0.000753	1.32	41.36	29.17	0.30
cagliana	ca-2	113.5*	Tr100	39.00	3.57	5.83	5.37	5.93	0.001368	1.55	30.40	29.17	0.39
cagliana	ca-2	113.5*	Tr030	27.00	3.57	5.46	5.04	5.73	0.003828	2.30	11.75	8.83	0.64
cagliana	ca-2	113.5*	Tr020	25.00	3.57	5.39	4.98	5.64	0.003792	2.24	11.15	8.64	0.63
cagliana	ca-2	113	Tr200	46.00	3.54	6.19	5.44	6.25	0.000647	1.26	43.28	28.69	0.28
cagliana	ca-2	113	Tr100	39.00	3.54	5.79	5.27	5.88	0.001176	1.47	31.93	28.69	0.37
cagliana	ca-2	113	Tr030	27.00	3.54	4.95	4.95	5.47	0.010048	3.21	8.42	8.11	1.00
cagliana	ca-2	113	Tr020	25.00	3.54	4.90	4.90	5.39	0.009968	3.13	7.99	7.95	1.00
cagliana	ca-2	112	Tr200	46.00	2.71	6.20	4.74	6.25	0.000382	1.10	50.23	28.69	0.22
cagliana	ca-2	112	Tr100	39.00	2.71	5.81	4.57	5.87	0.000571	1.21	39.11	28.69	0.26
cagliana	ca-2	112	Tr030	27.00	2.71	5.02	4.22	5.19	0.001955	1.81	14.94	9.48	0.46
cagliana	ca-2	112	Tr020	25.00	2.71	4.89	4.16	5.06	0.002096	1.82	13.76	9.15	0.47
cagliana	ca-2	111	Tr200	46.00	2.53	6.16	4.52	6.23	0.000470	1.22	44.75	28.49	0.24
cagliana	ca-2	111	Tr100	39.00	2.53	5.76	4.35	5.85	0.000720	1.35	33.28	28.49	0.29
cagliana	ca-2	111	Tr030	27.00	2.53	4.99	4.01	5.12	0.001426	1.60	16.83	10.03	0.40
cagliana	ca-2	111	Tr020	25.00	2.53	4.86	3.95	4.99	0.001515	1.61	15.56	9.70	0.41
cagliana	ca-2	110		Bridge									
cagliana	ca-2	109.9	Tr200	46.00	2.53	3.86	4.52	5.98	0.043644	6.45	7.13	7.11	2.05
cagliana	ca-2	109.9	Tr100	39.00	2.53	3.76	4.35	5.82	0.041384	6.04	6.46	6.86	1.99
cagliana	ca-2	109.9	Tr030	27.00	2.53	3.57	4.01	4.95	0.036713	5.20	5.19	6.37	1.84
cagliana	ca-2	109.9	Tr020	25.00	2.53	3.54	3.95	4.82	0.035555	5.03	4.97	6.28	1.80
cagliana	ca-2	109	Tr200	46.00	2.59	3.90	4.47	5.68	0.036313	5.92	7.77	7.79	1.89
cagliana	ca-2	109	Tr100	39.00	2.59	3.82	4.28	5.32	0.032634	5.42	7.20	7.66	1.78
cagliana	ca-2	109	Tr030	27.00	2.59	4.35	3.97	4.63	0.004134	2.36	11.44	8.67	0.66
cagliana	ca-2	109	Tr020	25.00	2.59	3.64	3.92	4.57	0.024573	4.27	5.85	7.29	1.52
cagliana	ca-2	108		Bridge									
cagliana	ca-2	107.9	Tr200	46.00	2.59	4.10	4.46	5.33	0.021162	4.92	9.35	8.12	1.46
cagliana	ca-2	107.9	Tr100	39.00	2.59	4.56	4.29	5.00	0.005695	2.91	13.42	9.42	0.78
cagliana	ca-2	107.9	Tr030	27.00	2.59	4.25	3.98	4.58	0.005049	2.54	10.62	8.38	0.72
cagliana	ca-2	107.9	Tr020	25.00	2.59	4.08	3.92	4.45	0.006525	2.71	9.21	8.10	0.81
cagliana	ca-2	107	Tr200	46.00	1.92	4.90	3.68	5.03	0.001115	1.66	30.41	18.30	0.36
cagliana	ca-2	107	Tr100	39.00	1.92	4.70	3.52	4.84	0.001238	1.67	23.38	11.76	0.38
cagliana	ca-2	107	Tr030	27.00	1.92	4.36	3.21	4.46	0.000978	1.39	19.48	10.94	0.33
cagliana	ca-2	107	Tr020	25.00	1.92	4.21	3.15	4.31	0.001064	1.40	17.87	10.59	0.34
cagliana	ca-2	106.75*	Tr200	46.00	1.82	4.87	3.52	4.98	0.000912	1.54	32.59	18.56	0.33
cagliana	ca-2	106.75*	Tr100	39.00	1.82	4.69	3.36	4.79	0.000878	1.45	29.24	18.35	0.32
cagliana	ca-2	106.75*	Tr030	27.00	1.82	4.34	3.06	4.42	0.000767	1.26	21.41	11.62	0.30
cagliana	ca-2	106.75*	Tr020	25.00	1.82	4.18	3.01	4.27	0.000832	1.27	19.66	11.25	0.31
cagliana	ca-2	106.5*	Tr200	46.00	1.71	4.85	3.37	4.95	0.000747	1.43	34.92	18.84	0.30
cagliana	ca-2	106.5*	Tr100	39.00	1.71	4.67	3.21	4.76	0.000708	1.33	31.54	18.62	0.29
cagliana	ca-2	106.5*	Tr030	27.00	1.71	4.32	2.92	4.39	0.000604	1.15	23.49	12.31	0.27
cagliana	ca-2	106.5*	Tr020	25.00	1.71	4.16	2.86	4.23	0.000651	1.16	21.62	11.93	0.27
cagliana	ca-2	106.25*	Tr200	46.00	1.61	4.83	3.21	4.92	0.000609	1.33	37.48	21.39	0.28
cagliana	ca-2	106.25*	Tr100	39.00	1.61	4.65	3.06	4.73	0.000572	1.23	34.00	18.90	0.26
cagliana	ca-2	106.25*	Tr030	27.00	1.61	4.31	2.77	4.36	0.000477	1.05	25.72	13.03	0.24
cagliana	ca-2	106.25*	Tr020	25.00	1.61	4.15	2.72	4.21	0.000512	1.05	23.73	12.63	0.25
cagliana	ca-2	106	Tr200	46.00	1.50	4.83	3.06	4.89	0.000444	1.17	45.38	25.68	0.24
cagliana	ca-2	106	Tr100	39.00	1.50	4.64	2.91	4.70	0.000466	1.14	36.58	19.20	0.24
cagliana	ca-2	106	Tr030	27.00	1.50	4.30	2.63	4.34	0.000380	0.96	28.11	13.76	0.21
cagliana	ca-2	106	Tr020	25.00	1.50	4.14	2.58	4.19	0.000404	0.96	25.99	13.34	0.22
cagliana	ca-1	105	Tr200	61.00	1.50	4.74	3.35	4.88	0.000979	1.70	38.59	21.18	0.35
cagliana	ca-1	105	Tr100	50.00	1.50	4.59	3.14	4.70	0.000825	1.50	35.58	19.13	0.32
cagliana	ca-1	105	Tr030	34.00	1.50	4.26	2.80	4.34	0.000630	1.23	27.65	13.67	0.28
cagliana	ca-1	105	Tr020	30.00	1.50	4.11	2.71	4.18	0.000604	1.17	25.65	13.28	0.27
cagliana	ca-1	104.666*	Tr200	61.00	1.41	4.74	3.22	4.84	0.000663	1.47	47.27	25.56	0.30
cagliana	ca-1	104.666*	Tr100	50.00	1.41	4.58	3.02	4.66	0.000568	1.31	43.30	25.56	0.27
cagliana	ca-1	104.666*	Tr030	34.00	1.41	4.25	2.71	4.31	0.000491	1.11	30.75	15.46	0.25
cagliana	ca-1	104.666*	Tr020	30.00	1.41	4.10	2.63	4.16	0.000470	1.05	28.51	14.83	0.24
cagliana	ca-1	104.333*	Tr200	61.00	1.31	4.72	3.09	4.81	0.000516	1.35	51.07	25.45	0.27
cagliana	ca-1	104.333*	Tr100	50.00	1.31	4.57	2.91	4.64	0.000435	1.19	47.17	25.45	0.24
cagliana	ca-1	104.333*	Tr030	34.00	1.31	4.24	2.62	4.29	0.000350	0.97	36.93	21.45	0.21
cagliana	ca-1	104.333*	Tr020	30.00	1.31	4.09	2.53	4.14	0.000347	0.93	33.83	20.55	0.21

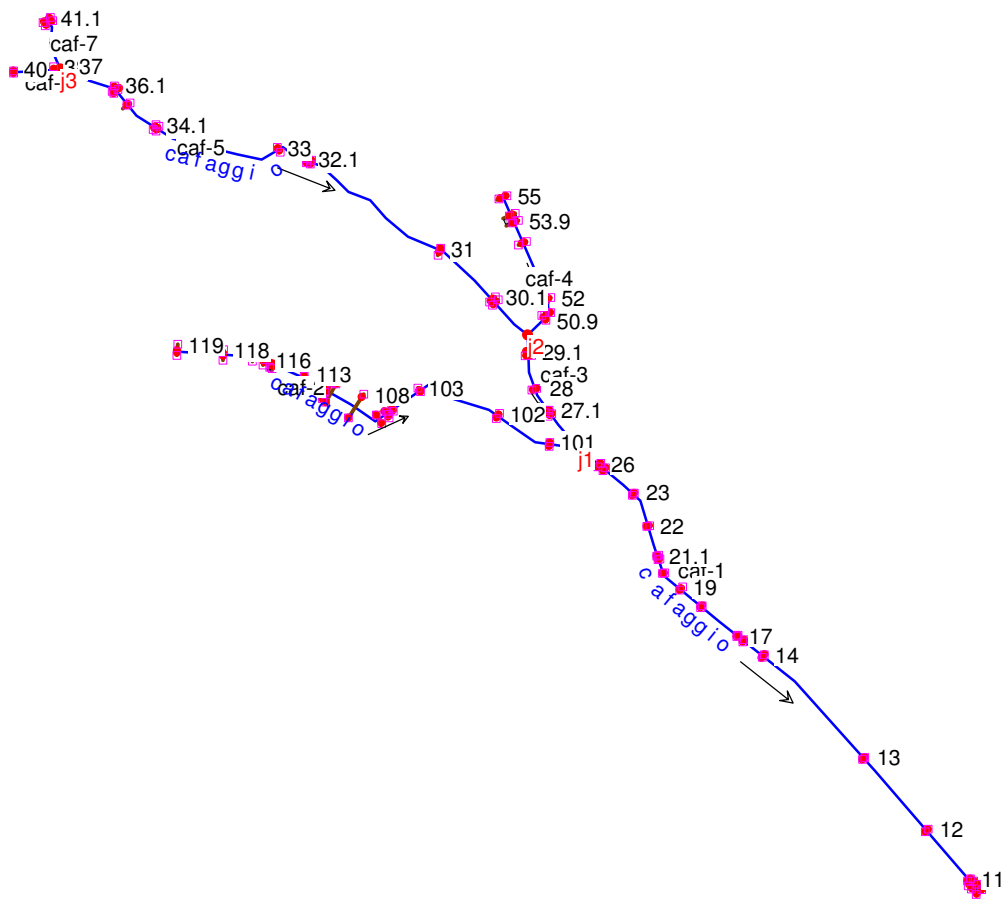
HEC-RAS Plan: att1 (Continued)

River	Reach	River Sta	Profile	Q Total (m3/s)	Min Ch El (m)	W.S. Elev (m)	Crit W.S. (m)	E.G. Elev (m)	E.G. Slope (m/m)	Vel Chnl (m/s)	Flow Area (m2)	Top Width (m)	Froude # Chl
cagliana	ca-1	104	Tr200	61.00	1.22	4.71	2.95	4.79	0.000410	1.23	54.84	25.33	0.24
cagliana	ca-1	104	Tr100	50.00	1.22	4.56	2.79	4.62	0.000340	1.08	51.00	25.33	0.21
cagliana	ca-1	104	Tr030	34.00	1.22	4.24	2.51	4.28	0.000264	0.87	40.87	22.31	0.18
cagliana	ca-1	104	Tr020	30.00	1.22	4.09	2.43	4.12	0.000262	0.83	37.65	20.77	0.18
Allacciante	a1	406.2	Tr200	45.00	-1.50	-0.17	0.53	2.11	0.045995	6.69	6.73	6.21	2.05
Allacciante	a1	406.2	Tr100	40.00	-1.50	-0.24	0.40	1.81	0.043561	6.34	6.31	6.10	1.99
Allacciante	a1	406.2	Tr030	30.00	-1.50	0.88	0.11	1.10	0.002596	2.12	14.18	8.04	0.51
Allacciante	a1	406.2	Tr020	27.00	-1.50	0.84	0.01	1.03	0.002228	1.94	13.88	7.97	0.47
Allacciante	a1	406.1		Bridge									
Allacciante	a1	406	Tr200	45.00	-1.50	1.11	0.54	1.51	0.004139	2.80	16.10	8.44	0.65
Allacciante	a1	406	Tr100	40.00	-1.50	0.93	0.40	1.31	0.004221	2.73	14.65	8.14	0.65
Allacciante	a1	406	Tr030	30.00	-1.50	0.81	0.10	1.05	0.002899	2.20	13.62	7.91	0.54
Allacciante	a1	406	Tr020	27.00	-1.50	0.78	0.01	0.99	0.002442	2.01	13.42	7.87	0.49
Allacciante	a1	405	Tr200	45.00	-1.50	1.37	-0.98	1.37	0.000043	0.40	113.81	42.95	0.08
Allacciante	a1	405	Tr100	40.00	-1.50	1.18	-1.02	1.19	0.000043	0.38	105.82	42.73	0.08
Allacciante	a1	405	Tr030	30.00	-1.50	0.96	-1.10	0.97	0.000030	0.31	96.73	40.59	0.07
Allacciante	a1	405	Tr020	27.00	-1.50	0.91	-1.13	0.92	0.000026	0.29	94.64	40.53	0.06
Allacciante	a1	404	Tr200	45.00	-1.50	1.36	-0.98	1.37	0.000043	0.39	114.06	43.24	0.08
Allacciante	a1	404	Tr100	40.00	-1.50	1.18	-1.02	1.18	0.000043	0.38	106.01	43.01	0.08
Allacciante	a1	404	Tr030	30.00	-1.50	0.96	-1.10	0.97	0.000030	0.31	96.92	40.84	0.06
Allacciante	a1	404	Tr020	27.00	-1.50	0.91	-1.12	0.92	0.000026	0.28	94.84	40.78	0.06
allacciante	all-1	103	Tr200	82.00	1.22	4.64	3.25	4.78	0.000821	1.71	52.95	25.33	0.33
allacciante	all-1	103	Tr100	70.00	1.22	4.49	3.08	4.61	0.000735	1.56	49.28	25.33	0.31
allacciante	all-1	103	Tr030	50.00	1.22	4.18	2.79	4.27	0.000622	1.31	39.69	21.76	0.28
allacciante	all-1	103	Tr020	45.00	1.22	4.04	2.71	4.12	0.000642	1.28	36.57	20.54	0.28
allacciante	all-1	102.666*	Tr200	82.00	1.12	4.59	3.38	4.75	0.000998	1.83	50.88	27.06	0.37
allacciante	all-1	102.666*	Tr100	70.00	1.12	4.45	3.22	4.58	0.000907	1.68	47.06	27.06	0.35
allacciante	all-1	102.666*	Tr030	50.00	1.12	4.13	2.90	4.24	0.000855	1.49	35.06	22.04	0.33
allacciante	all-1	102.666*	Tr020	45.00	1.12	3.98	2.82	4.09	0.000896	1.45	31.93	20.19	0.33
allacciante	all-1	102.333*	Tr200	82.00	1.03	4.56	3.39	4.71	0.001019	1.85	51.56	28.78	0.37
allacciante	all-1	102.333*	Tr100	70.00	1.03	4.42	3.21	4.55	0.000933	1.70	47.55	28.78	0.35
allacciante	all-1	102.333*	Tr030	50.00	1.03	4.07	2.88	4.21	0.001040	1.62	31.71	20.46	0.36
allacciante	all-1	102.333*	Tr020	45.00	1.03	3.93	2.78	4.05	0.001084	1.58	28.81	18.98	0.36
allacciante	all-1	102	Tr200	82.00	0.93	4.54	3.26	4.67	0.000877	1.74	55.04	30.51	0.34
allacciante	all-1	102	Tr100	70.00	0.93	4.40	3.05	4.51	0.000801	1.61	50.81	30.51	0.32
allacciante	all-1	102	Tr030	50.00	0.93	4.03	2.69	4.17	0.001055	1.66	30.35	19.00	0.36
allacciante	all-1	102	Tr020	45.00	0.93	3.89	2.58	4.02	0.001044	1.60	28.09	13.54	0.35
allacciante	all-1	101.857*	Tr200	82.00	0.90	4.50	3.29	4.63	0.000934	1.77	55.14	32.60	0.35
allacciante	all-1	101.857*	Tr100	70.00	0.90	4.36	3.09	4.48	0.000860	1.64	50.70	32.60	0.33
allacciante	all-1	101.857*	Tr030	50.00	0.90	3.97	2.72	4.12	0.001210	1.74	29.06	16.49	0.38
allacciante	all-1	101.857*	Tr020	45.00	0.90	3.82	2.62	3.97	0.001195	1.69	26.73	15.56	0.38
allacciante	all-1	101.714*	Tr200	82.00	0.87	4.46	3.32	4.59	0.000969	1.78	55.99	34.68	0.35
allacciante	all-1	101.714*	Tr100	70.00	0.87	4.32	3.12	4.44	0.000899	1.66	51.35	34.68	0.34
allacciante	all-1	101.714*	Tr030	50.00	0.87	3.89	2.74	4.06	0.001388	1.84	27.57	15.20	0.41
allacciante	all-1	101.714*	Tr020	45.00	0.87	3.75	2.64	3.91	0.001375	1.78	25.43	14.48	0.41
allacciante	all-1	101.571*	Tr200	82.00	0.84	4.42	3.34	4.54	0.000973	1.76	57.62	36.77	0.35
allacciante	all-1	101.571*	Tr100	70.00	0.84	4.29	3.14	4.40	0.000908	1.64	52.77	36.77	0.34
allacciante	all-1	101.571*	Tr030	50.00	0.84	3.80	2.76	4.00	0.001632	1.96	25.76	13.88	0.44
allacciante	all-1	101.571*	Tr020	45.00	0.84	3.66	2.65	3.84	0.001613	1.89	23.85	13.23	0.44
allacciante	all-1	101.428*	Tr200	82.00	0.80	4.38	3.36	4.50	0.000929	1.70	60.13	38.85	0.34
allacciante	all-1	101.428*	Tr100	70.00	0.80	4.25	3.16	4.36	0.000873	1.59	55.06	38.85	0.33
allacciante	all-1	101.428*	Tr030	50.00	0.80	3.69	2.77	3.92	0.001959	2.10	23.84	12.49	0.48
allacciante	all-1	101.428*	Tr020	45.00	0.80	3.56	2.66	3.77	0.001933	2.03	22.16	11.94	0.48
allacciante	all-1	101.285*	Tr200	82.00	0.77	4.36	3.37	4.46	0.000842	1.61	63.56	40.94	0.33
allacciante	all-1	101.285*	Tr100	70.00	0.77	4.23	3.16	4.32	0.000792	1.51	58.29	40.94	0.31
allacciante	all-1	101.285*	Tr030	50.00	0.77	3.56	2.77	3.82	0.002420	2.27	21.99	11.77	0.53
allacciante	all-1	101.285*	Tr020	45.00	0.77	3.42	2.66	3.67	0.002394	2.20	20.43	11.42	0.53
allacciante	all-1	101.142*	Tr200	82.00	0.74	4.33	3.35	4.42	0.000739	1.50	67.93	43.02	0.30
allacciante	all-1	101.142*	Tr100	70.00	0.74	4.23	3.15	4.22	0.003271	2.78	25.15	12.30	0.62
allacciante	all-1	101.142*	Tr030	50.00	0.74	3.37	2.75	3.69	0.003220	2.53	19.74	11.10	0.61
allacciante	all-1	101.142*	Tr020	45.00	0.74	3.24	2.65	3.54	0.003201	2.46	18.31	10.76	0.60
allacciante	all-1	101	Tr200	82.00	0.71	4.32	3.34	4.29	0.005916	3.62	22.64	11.58	0.83
allacciante	all-1	101	Tr100	70.00	0.71	4.23	3.13	4.01	0.006033	3.50	20.00	10.98	0.83
allacciante	all-1	101	Tr030	50.00	0.71	2.94	2.73	3.48	0.006317	3.26	15.35	9.83	0.83
allacciante	all-1	101	Tr020	45.00	0.71	2.81	2.61	3.33	0.006408	3.18	14.14	9.51	0.83
allacciante	all-1	100.406	Tr200	82.00	-1.50	1.36	1.36	2.39	0.009725	4.48	18.30	8.88	1.00
allacciante	all-1	100.406	Tr100	70.00	-1.50	1.12	1.12	2.07	0.009929	4.33	16.15	8.45	1.00
allacciante	all-1	100.406	Tr030	50.00	-1.50	0.66	0.66	1.48	0.010178	4.00	12.50	7.66	1.00
allacciante	all-1	100.406	Tr020	45.00	-1.50	0.54	0.54	1.31	0.010229	3.90	11.55	7.45	1.00

# Appendice 7

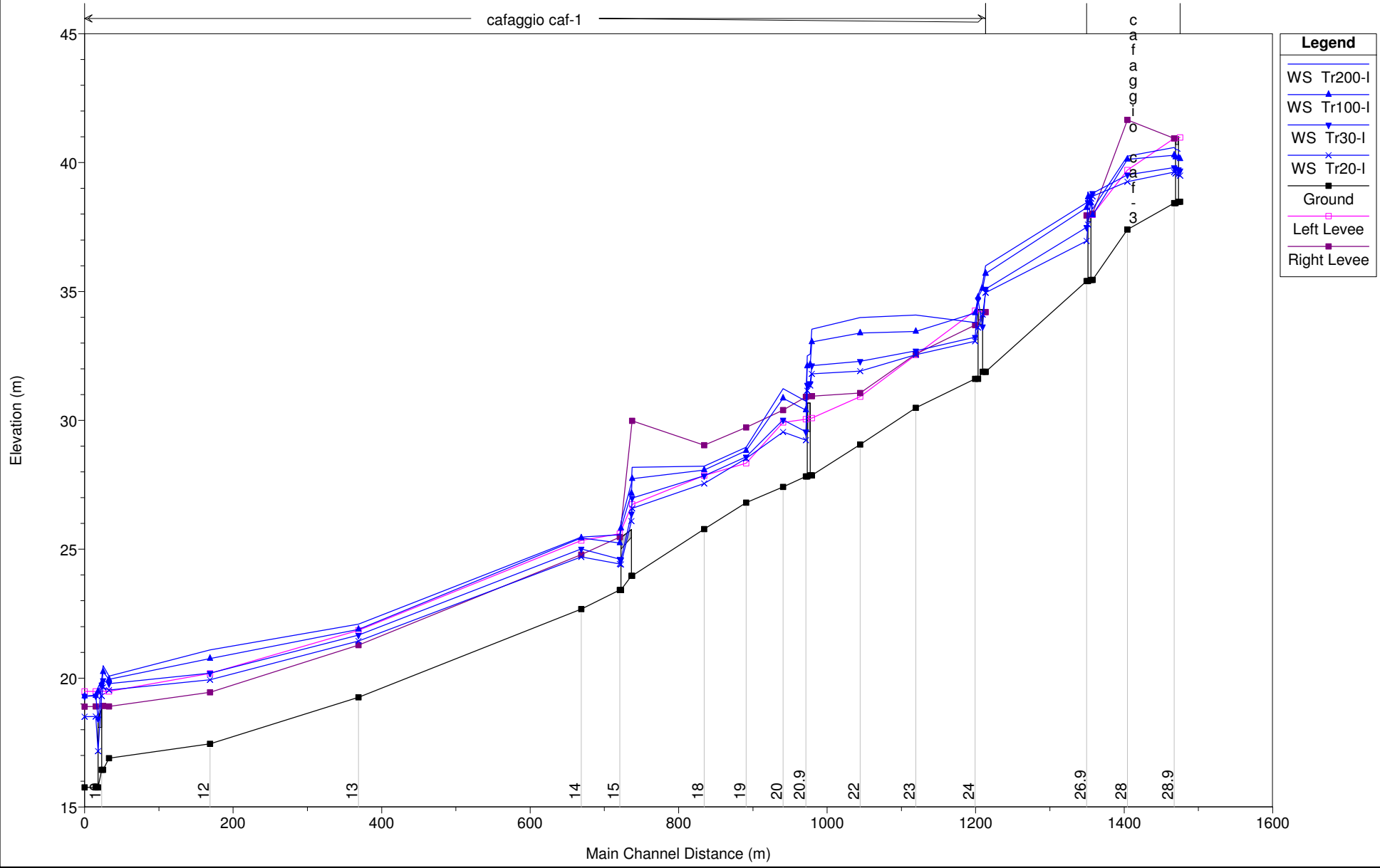
## F.Tardo

	River	Reach	RS	Tr200-I	Tr100-I	Tr30-I	Tr20-I
1	cafaggio	caf-6	40	2	1.6	1.1	0.8
2	cafaggio	caf-7	41.1	12	9.8	6.5	5
3	cafaggio	caf-5	37	14	11.2	7.6	6
4	cafaggio	caf-5	33	22.9	20	11.8	10
5	cafaggio	caf-4	55	14	11	8.1	6.5
6	cafaggio	caf-4	52	27	23	15.4	12
7	cafaggio	caf-3	29.1	62.2	50	31.9	25
8	cafaggio	caf-2	119	11.9	9.8	6.3	4.6
9	cafaggio	caf-1	26	67.7	54	31.9	25.1



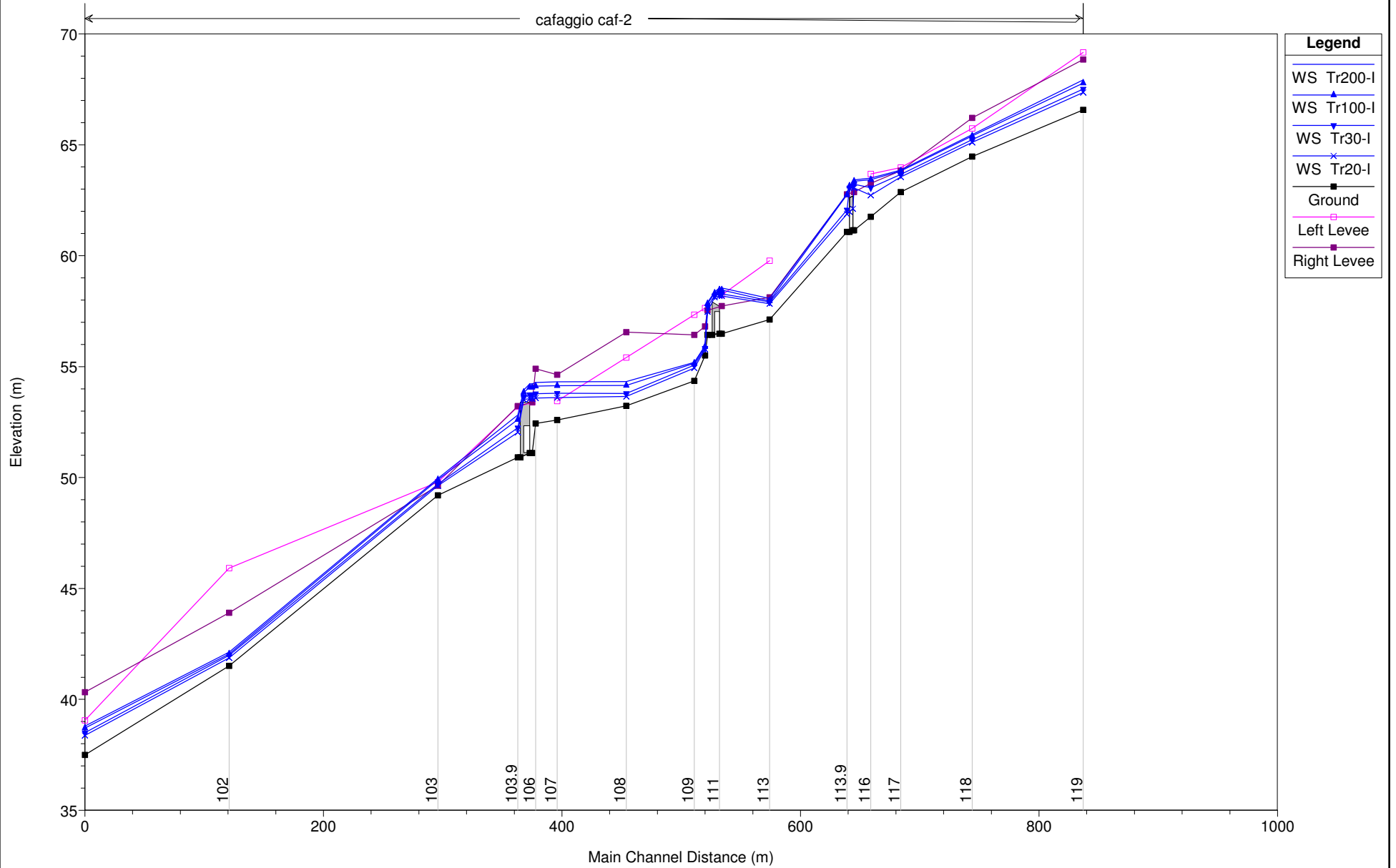
None of the XS's are Geo-Referenced (• Geo-Ref user entered XS • Geo-Ref interpolated XS • Non Geo-Ref user entered XS • Non Geo-Ref interpolated XS)

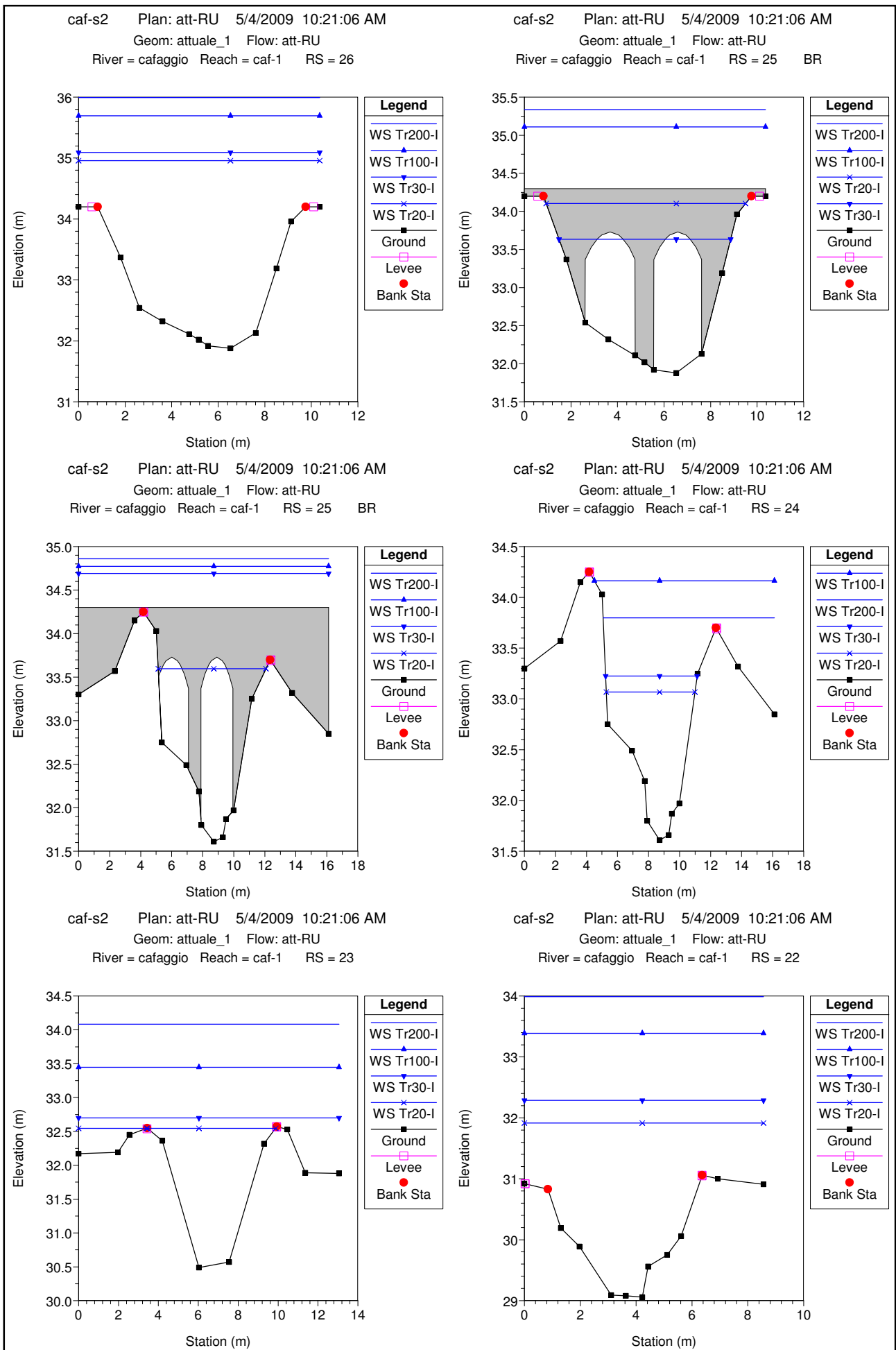
caf-s2 Plan: att-RU 5/4/2009 10:21:06 AM  
 Geom: attuale\_1 Flow: att-RU

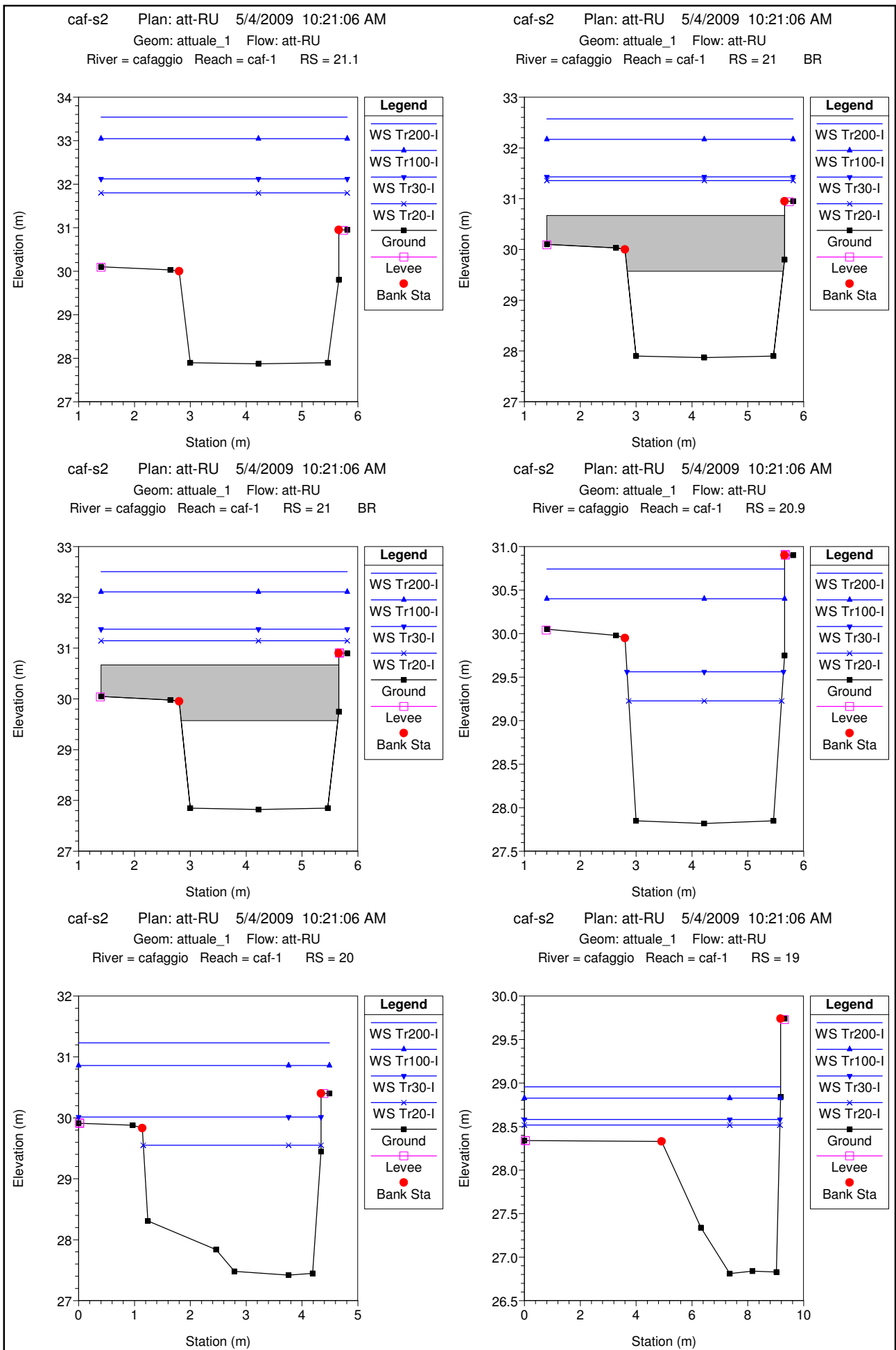


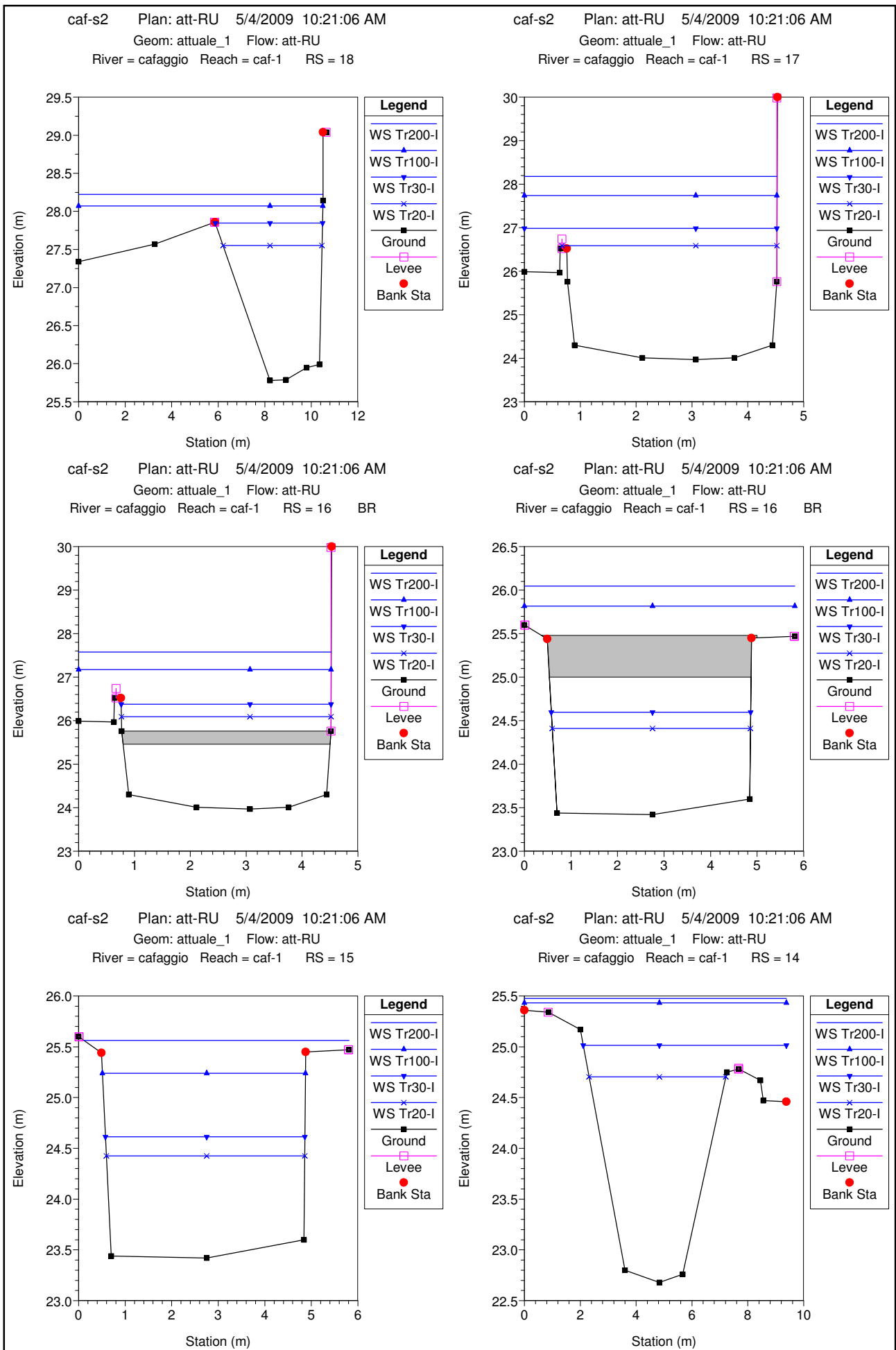
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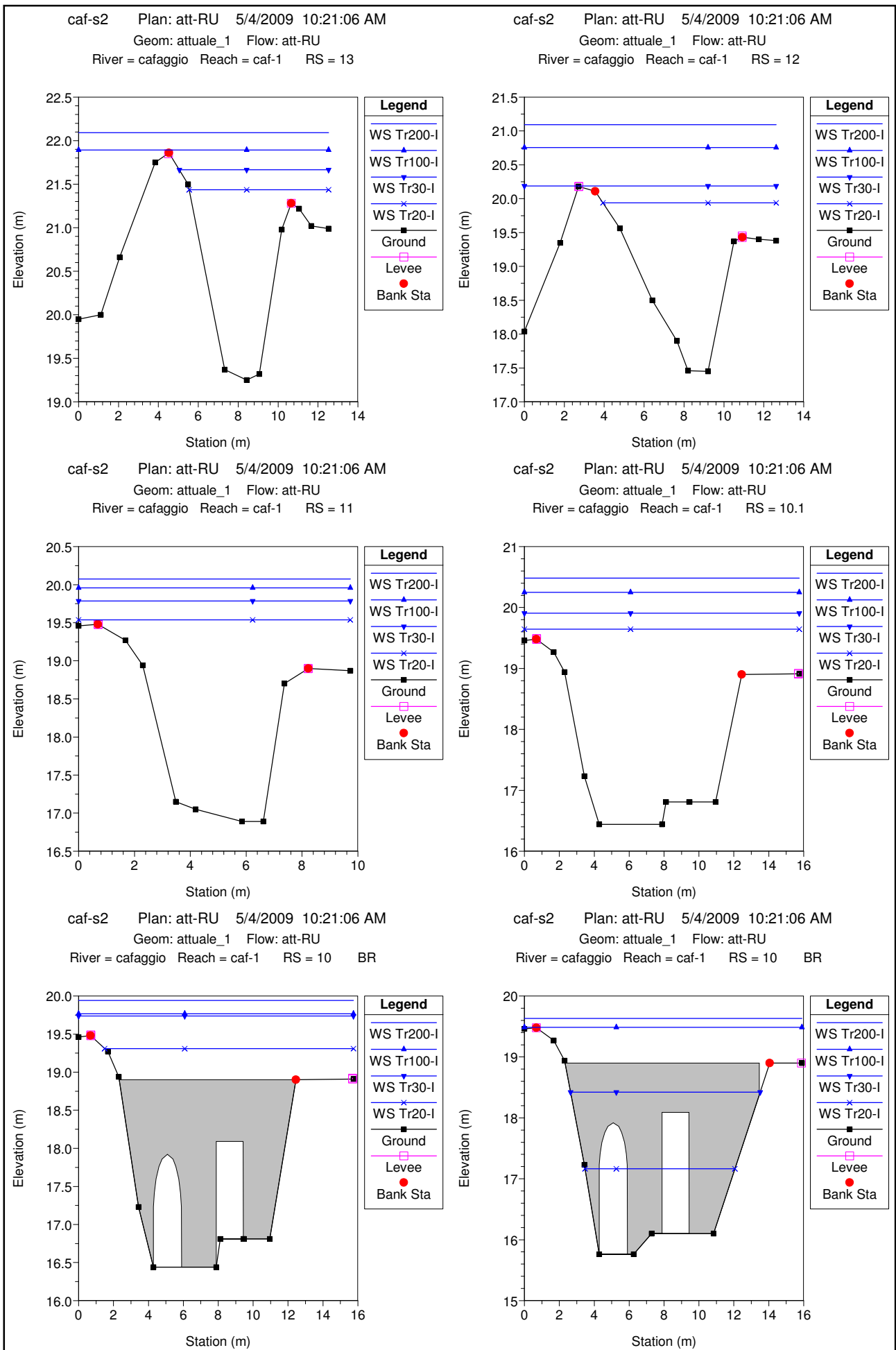
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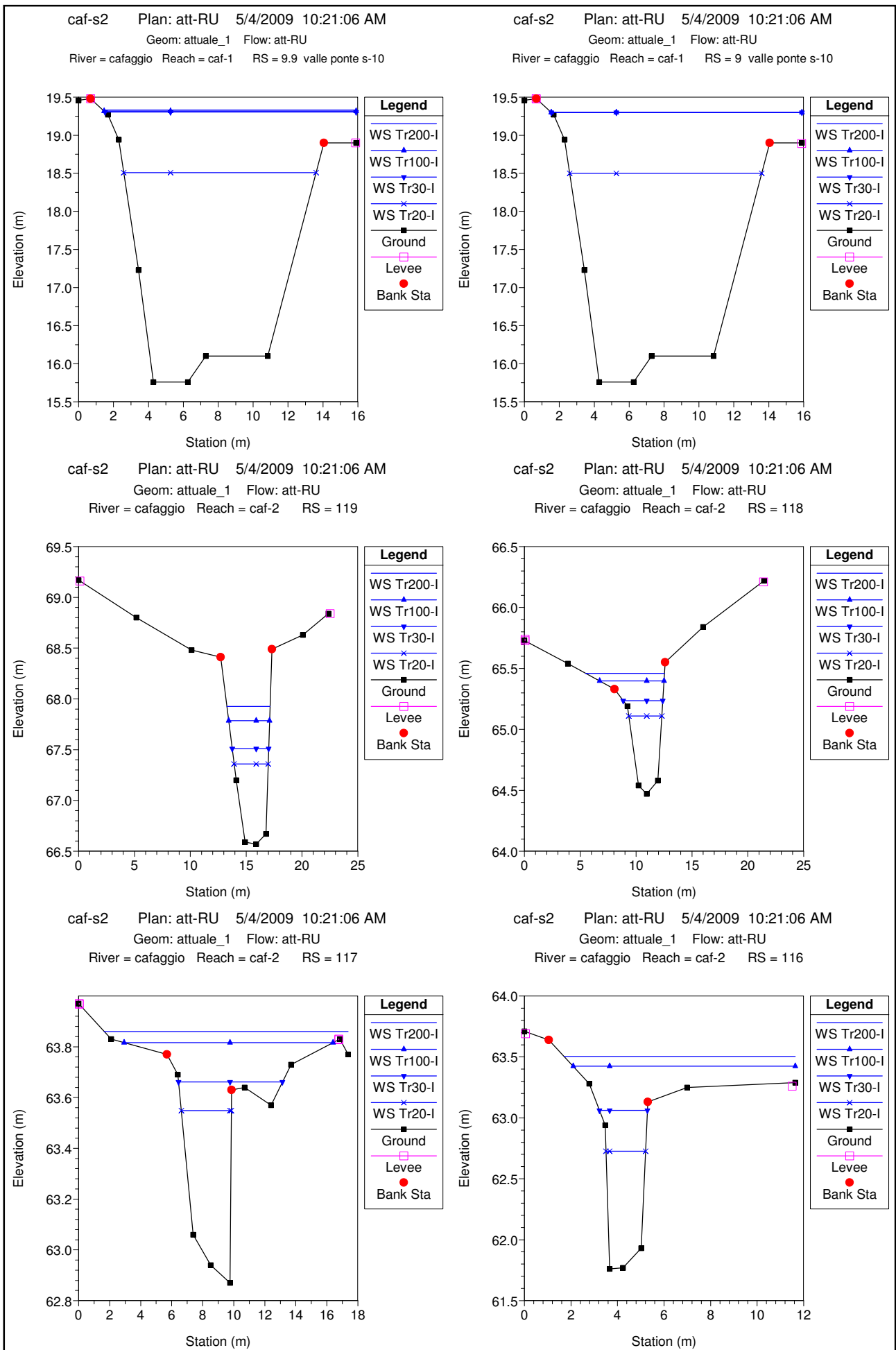


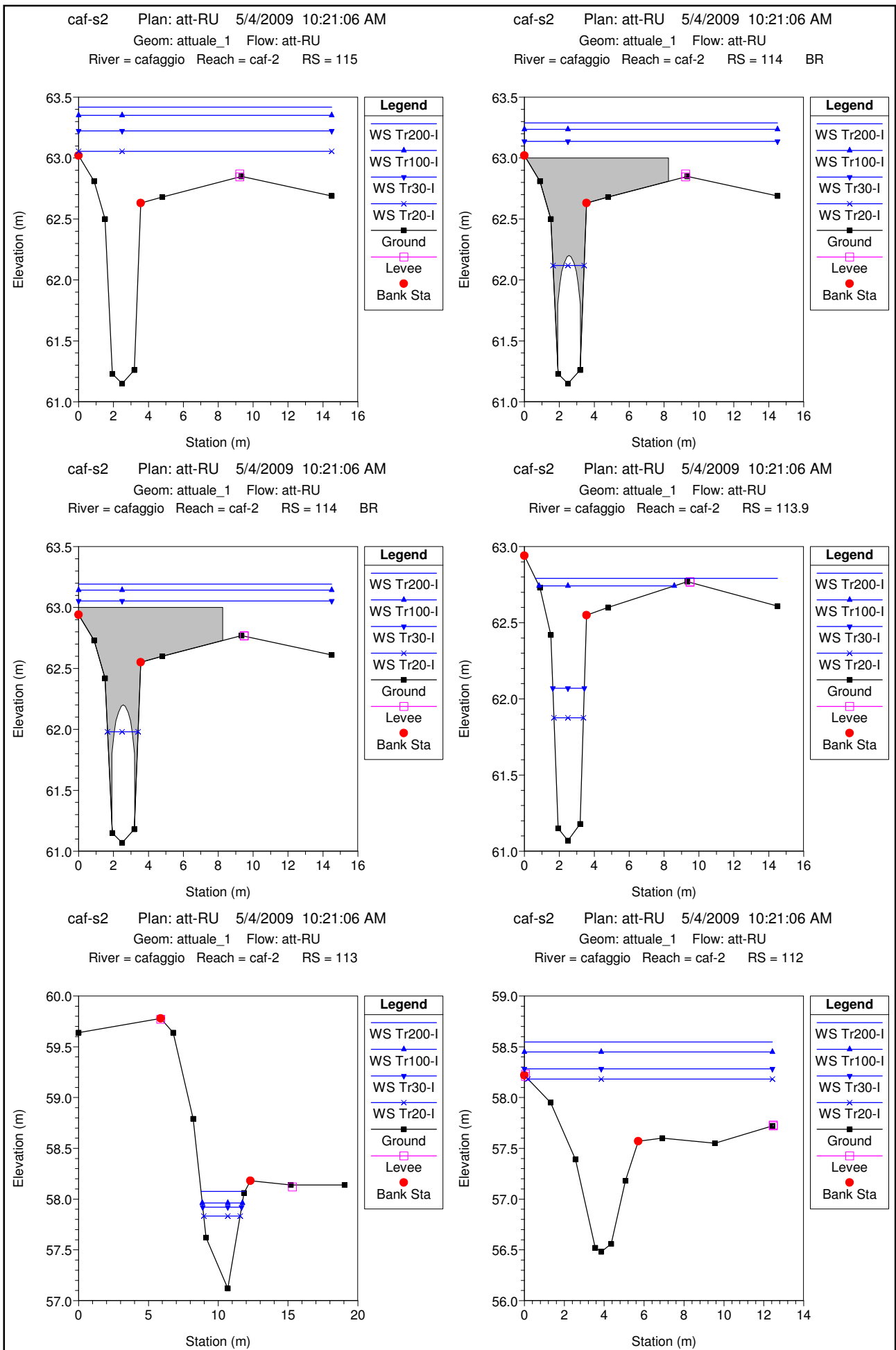


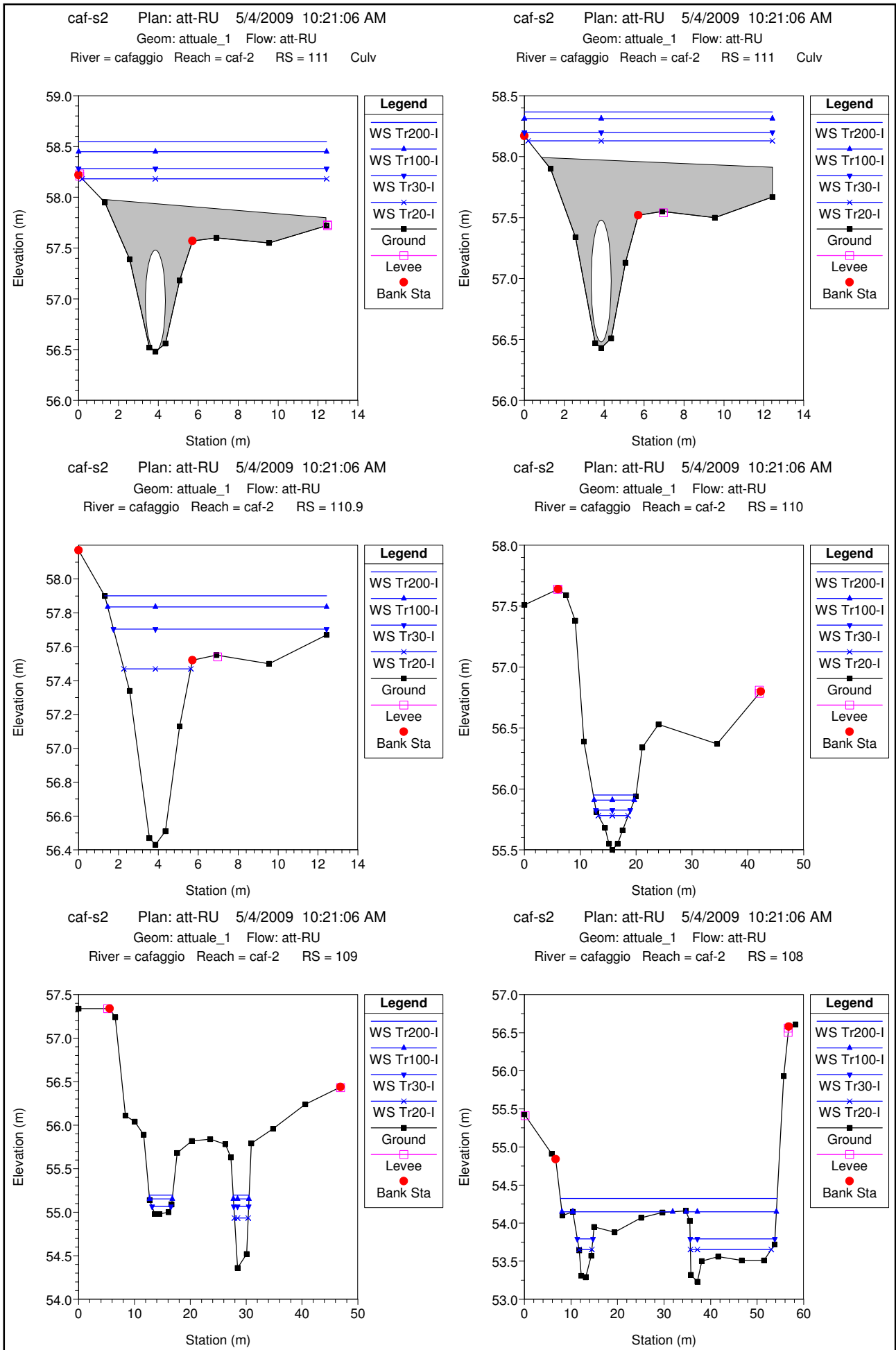


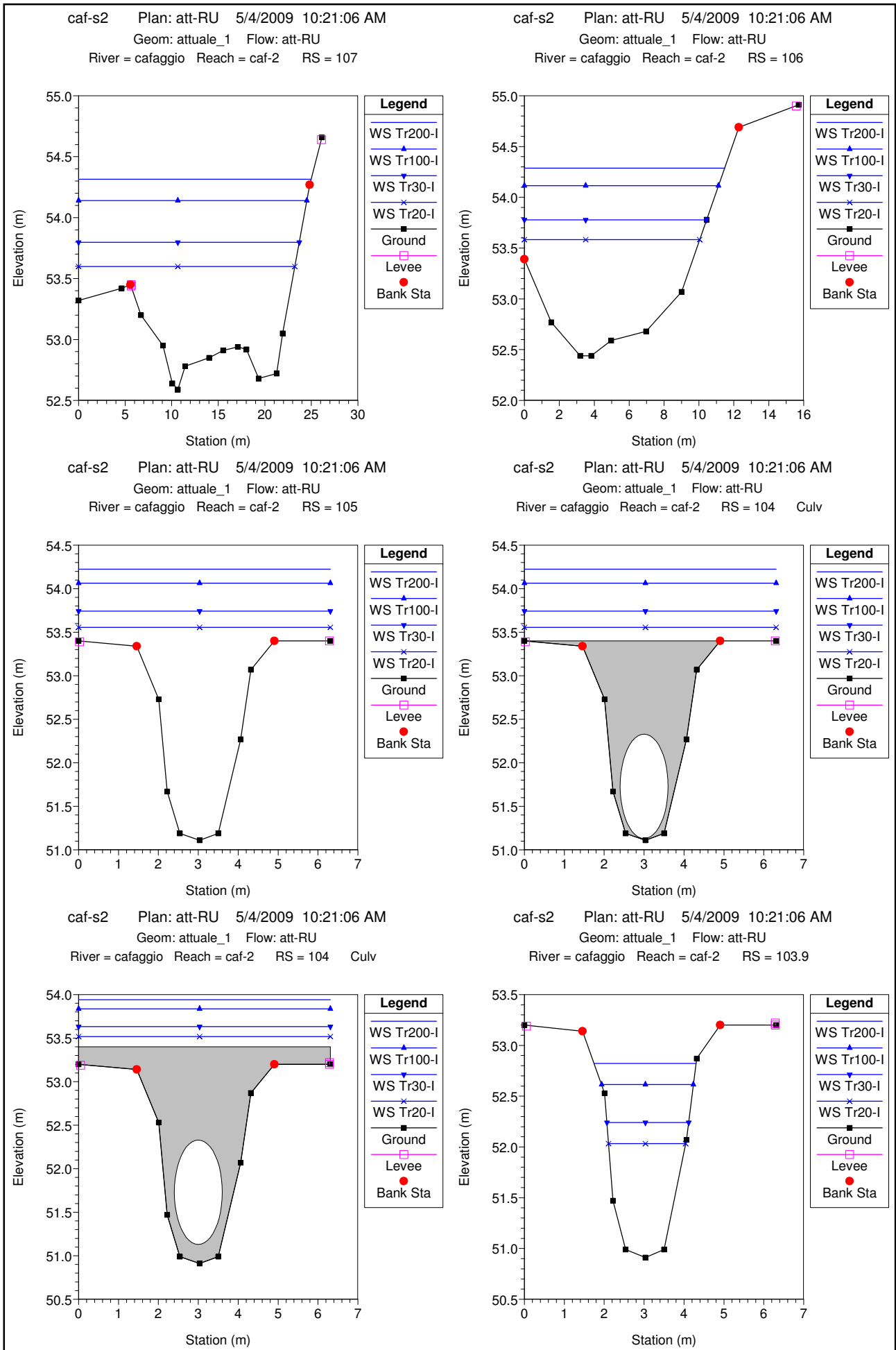


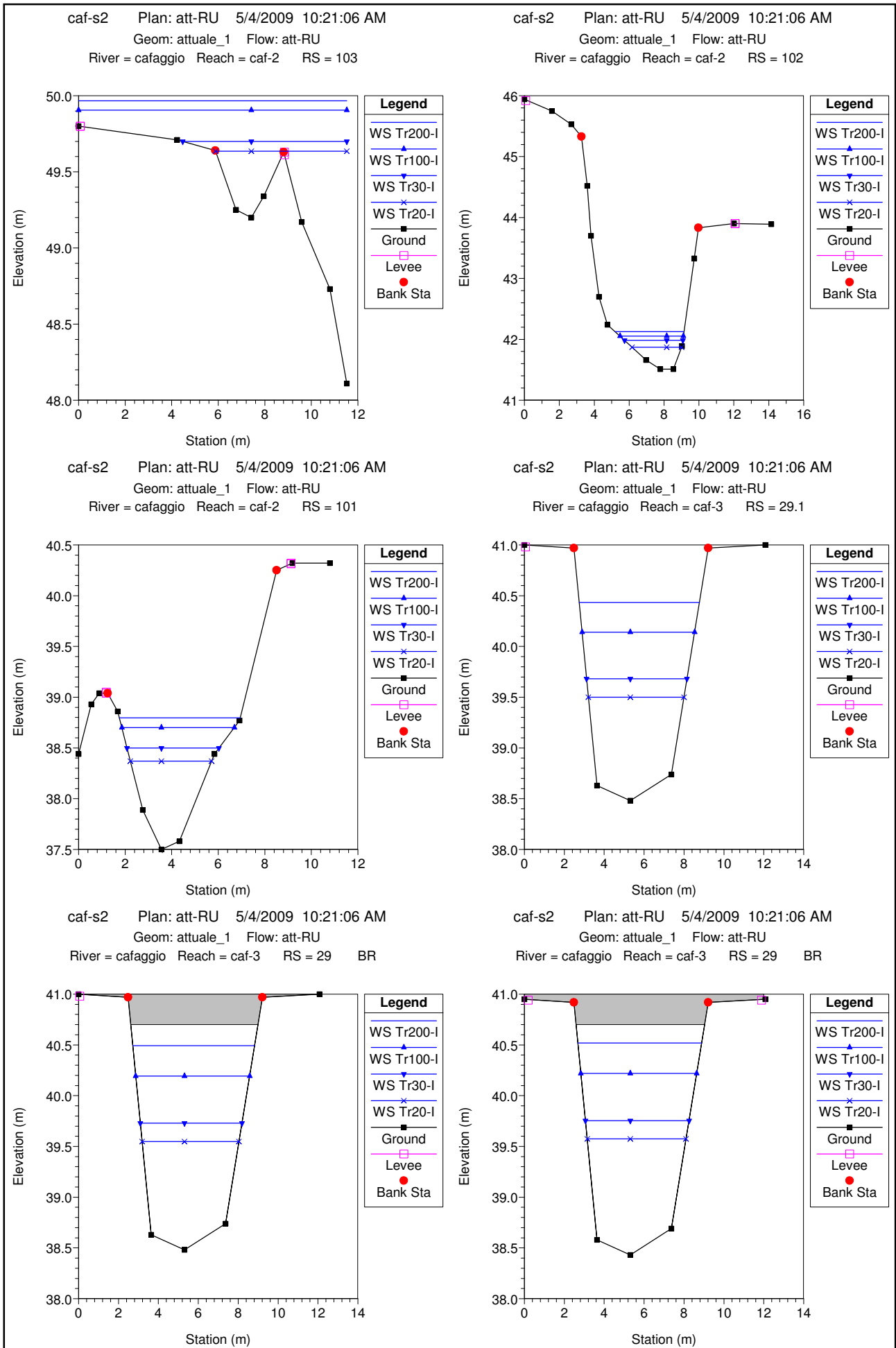


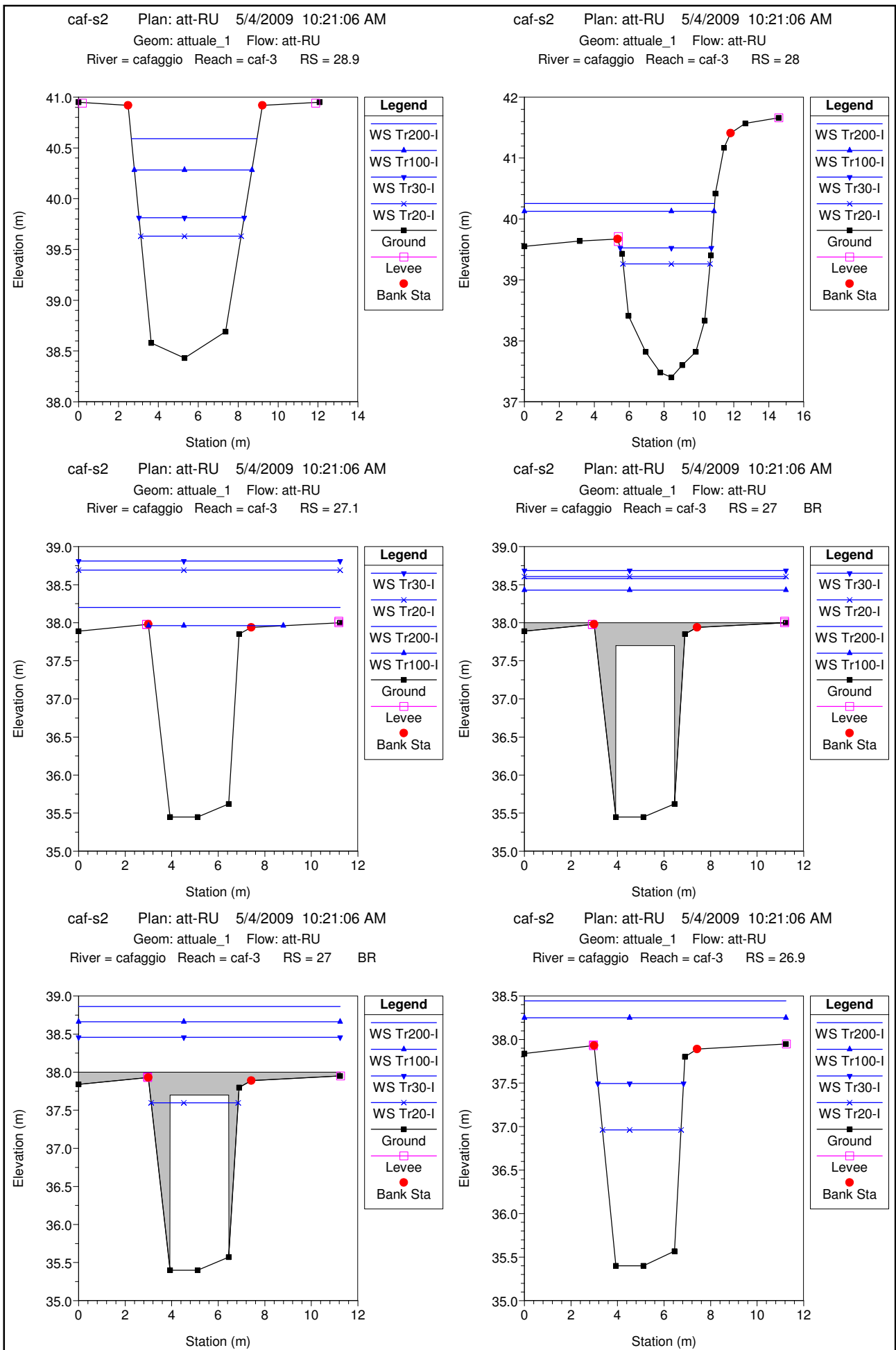












HEC-RAS Plan: att-RU

Reach	River Sta	Profile	Q Total (m3/s)	Min Ch El (m)	W.S. Elev (m)	Crit W.S. (m)	E.G. Elev (m)	E.G. Slope (m/m)	Vel Chnl (m/s)	Flow Area (m2)	Top Width (m)	Froude # Chl
caf-3	29.1	Tr200-I	62.20	38.48	40.43	41.38	42.93	0.037994	6.99	8.90	6.03	1.84
caf-3	29.1	Tr100-I	50.00	38.48	40.14	40.92	42.61	0.044234	6.96	7.18	5.64	1.97
caf-3	29.1	Tr30-I	31.90	38.48	39.68	40.37	42.00	0.058082	6.74	4.73	5.03	2.22
caf-3	29.1	Tr20-I	25.00	38.48	39.50	40.13	41.66	0.064604	6.50	3.84	4.79	2.32
caf-3	29	Bridge										
caf-3	28.9	Tr200-I	62.20	38.43	40.59	41.33	42.50	0.026422	6.12	10.16	6.30	1.54
caf-3	28.9	Tr100-I	50.00	38.43	40.28	40.86	42.14	0.029791	6.03	8.29	5.90	1.62
caf-3	28.9	Tr30-I	31.90	38.43	39.81	40.32	41.43	0.035002	5.64	5.66	5.27	1.74
caf-3	28.9	Tr20-I	25.00	38.43	39.63	40.08	41.05	0.035640	5.28	4.73	5.03	1.74
caf-3	28	Tr200-I	62.20	37.40	40.25	40.42	41.17	0.011118	4.46	15.51	10.90	0.96
caf-3	28	Tr100-I	50.00	37.40	40.13	40.20	40.85	0.009098	3.92	14.15	10.87	0.87
caf-3	28	Tr30-I	31.90	37.40	39.52	39.52	40.30	0.012003	3.91	8.15	5.22	1.00
caf-3	28	Tr20-I	25.00	37.40	39.26	39.26	39.95	0.011956	3.67	6.82	4.98	1.00
caf-3	27.1	Tr200-I	62.20	35.45	38.20	38.81	40.23	0.032449	6.49	10.69	11.24	1.45
caf-3	27.1	Tr100-I	50.00	35.45	37.96	38.61	39.97	0.035782	6.28	7.98	5.79	1.49
caf-3	27.1	Tr30-I	31.90	35.45	38.81	38.22	39.00	0.002396	2.10	17.54	11.24	0.41
caf-3	27.1	Tr20-I	25.00	35.45	38.69	37.49	38.83	0.001835	1.78	16.19	11.24	0.36
caf-3	27	Bridge										
caf-3	26.9	Tr200-I	62.20	35.40	38.44	38.76	39.62	0.016832	5.11	13.99	11.24	1.07
caf-3	26.9	Tr100-I	50.00	35.40	38.25	38.55	39.33	0.016591	4.79	11.83	11.24	1.05
caf-3	26.9	Tr30-I	31.90	35.40	37.50	38.17	38.78	0.024567	5.03	6.35	3.68	1.22
caf-3	26.9	Tr20-I	25.00	35.40	36.96	37.44	38.56	0.038367	5.60	4.46	3.37	1.56
caf-2	119	Tr200-I	11.90	66.57	67.93	67.93	68.42	0.013260	3.10	3.84	3.87	0.99
caf-2	119	Tr100-I	9.80	66.57	67.78	67.78	68.23	0.013475	2.96	3.31	3.67	1.00
caf-2	119	Tr30-I	6.30	66.57	67.51	67.51	67.87	0.014081	2.68	2.35	3.27	1.01
caf-2	119	Tr20-I	4.60	66.57	67.36	67.36	67.67	0.014060	2.45	1.88	3.05	1.00
caf-2	118	Tr200-I	11.90	64.47	65.46	65.80	66.39	0.039264	4.31	2.89	7.07	1.77
caf-2	118	Tr100-I	9.80	64.47	65.40	65.70	66.21	0.038551	4.01	2.48	5.77	1.73
caf-2	118	Tr30-I	6.30	64.47	65.24	65.48	65.88	0.035113	3.56	1.77	3.55	1.61
caf-2	118	Tr20-I	4.60	64.47	65.11	65.32	65.69	0.034526	3.36	1.37	2.96	1.58
caf-2	117	Tr200-I	11.90	62.87	63.86	64.04	64.42	0.025026	3.56	4.19	15.72	1.39
caf-2	117	Tr100-I	9.80	62.87	63.82	63.97	64.32	0.023924	3.33	3.51	13.46	1.34
caf-2	117	Tr30-I	6.30	62.87	63.66	63.88	64.14	0.023309	3.08	2.16	6.69	1.28
caf-2	117	Tr20-I	4.60	62.87	63.55	63.73	63.95	0.023140	2.81	1.64	3.23	1.26
caf-2	116	Tr200-I	11.90	61.76	63.50	63.60	63.87	0.016283	2.89	4.80	9.93	0.98
caf-2	116	Tr100-I	9.80	61.76	63.42	63.53	63.79	0.016402	2.87	4.01	9.54	0.96
caf-2	116	Tr30-I	6.30	61.76	63.06	63.08	63.57	0.022690	3.16	2.00	2.06	1.02
caf-2	116	Tr20-I	4.60	61.76	62.73	62.82	63.28	0.029613	3.31	1.39	1.70	1.17
caf-2	115	Tr200-I	11.90	61.15	63.42	63.04	63.47	0.001392	1.08	12.18	14.50	0.29
caf-2	115	Tr100-I	9.80	61.15	63.35	62.99	63.39	0.001228	0.99	11.19	14.50	0.28
caf-2	115	Tr30-I	6.30	61.15	63.22	62.45	63.25	0.000879	0.80	9.33	14.50	0.23
caf-2	115	Tr20-I	4.60	61.15	63.05	62.23	63.08	0.001122	0.83	6.90	14.50	0.26
caf-2	114	Bridge										
caf-2	113.9	Tr200-I	11.90	61.07	62.79	62.96	63.34	0.021123	3.46	4.29	13.87	1.09
caf-2	113.9	Tr100-I	9.80	61.07	62.74	62.91	63.26	0.018702	3.25	3.35	7.75	1.01
caf-2	113.9	Tr30-I	6.30	61.07	62.07	62.36	63.04	0.048550	4.36	1.45	1.80	1.55
caf-2	113.9	Tr20-I	4.60	61.07	61.88	62.15	62.76	0.052609	4.16	1.11	1.69	1.64
caf-2	113	Tr200-I	11.90	57.12	58.08	58.51	60.45	0.117129	6.82	1.74	3.14	2.92
caf-2	113	Tr100-I	9.80	57.12	57.96	58.45	60.44	0.142856	6.98	1.40	2.87	3.18
caf-2	113	Tr30-I	6.30	57.12	57.92	58.33	59.14	0.075054	4.89	1.29	2.79	2.29
caf-2	113	Tr20-I	4.60	57.12	57.83	58.25	58.81	0.070740	4.37	1.05	2.61	2.20
caf-2	112	Tr200-I	11.90	56.48	58.55	57.94	58.59	0.000819	0.95	13.20	12.43	0.28
caf-2	112	Tr100-I	9.80	56.48	58.45	57.88	58.48	0.000751	0.87	11.99	12.43	0.26
caf-2	112	Tr30-I	6.30	56.48	58.28	57.76	58.30	0.000562	0.68	9.91	12.43	0.23
caf-2	112	Tr20-I	4.60	56.48	58.18	57.51	58.20	0.000445	0.58	8.67	12.25	0.20
caf-2	111	Culvert										
caf-2	110.9	Tr200-I	11.90	56.43	57.90	57.90	58.13	0.008023	2.35	5.97	11.12	0.83
caf-2	110.9	Tr100-I	9.80	56.43	57.84	57.84	58.05	0.007689	2.22	5.25	10.98	0.80
caf-2	110.9	Tr30-I	6.30	56.43	57.70	57.70	57.88	0.006882	1.96	3.83	10.68	0.74
caf-2	110.9	Tr20-I	4.60	56.43	57.47	57.47	57.76	0.013474	2.37	1.94	3.35	0.99
caf-2	110	Tr200-I	11.90	55.50	55.95	56.33	57.92	0.222291	6.21	1.92	7.65	3.96
caf-2	110	Tr100-I	9.80	55.50	55.91	56.26	57.83	0.255163	6.14	1.59	7.18	4.16
caf-2	110	Tr30-I	6.30	55.50	55.83	56.12	57.67	0.349520	6.02	1.05	6.17	4.66

HEC-RAS Plan: att-RU (Continued)

Reach	River Sta	Profile	Q Total (m3/s)	Min Ch El (m)	W.S. Elev (m)	Crit W.S. (m)	E.G. Elev (m)	E.G. Slope (m/m)	Vel Chnl (m/s)	Flow Area (m2)	Top Width (m)	Froude # Chl
caf-2	110	Tr20-I	4.60	55.50	55.78	56.04	57.54	0.405650	5.87	0.78	5.35	4.90
caf-2	109	Tr200-I	11.90	54.36	55.20	55.52	56.39	0.100002	4.85	2.45	7.07	2.63
caf-2	109	Tr100-I	9.80	54.36	55.15	55.44	56.21	0.100787	4.56	2.15	6.87	2.60
caf-2	109	Tr30-I	6.30	54.36	55.07	55.29	55.87	0.096168	3.98	1.58	6.03	2.48
caf-2	109	Tr20-I	4.60	54.36	54.93	55.20	55.99	0.076352	4.55	1.01	2.44	2.26
caf-2	108	Tr200-I	11.90	53.23	54.32	53.82	54.34	0.000507	0.48	24.65	46.54	0.21
caf-2	108	Tr100-I	9.80	53.23	54.15	53.78	54.17	0.001163	0.59	16.58	43.12	0.30
caf-2	108	Tr30-I	6.30	53.23	53.79	53.70	53.84	0.004948	1.01	6.25	21.54	0.60
caf-2	108	Tr20-I	4.60	53.23	53.65	53.66	53.75	0.019312	1.38	3.34	20.11	1.08
caf-2	107	Tr200-I	11.90	52.59	54.31	53.25	54.32	0.000109	0.41	30.47	24.98	0.11
caf-2	107	Tr100-I	9.80	52.59	54.14	53.20	54.15	0.000118	0.39	26.16	24.52	0.12
caf-2	107	Tr30-I	6.30	52.59	53.80	53.11	53.80	0.000157	0.37	17.88	23.70	0.13
caf-2	107	Tr20-I	4.60	52.59	53.60	53.05	53.61	0.000205	0.37	13.26	23.23	0.14
caf-2	106	Tr200-I	11.90	52.44	54.29	53.29	54.32	0.000413	0.77	15.51	11.47	0.21
caf-2	106	Tr100-I	9.80	52.44	54.12	53.22	54.14	0.000411	0.72	13.57	11.12	0.21
caf-2	106	Tr30-I	6.30	52.44	53.78	53.08	53.80	0.000426	0.63	9.92	10.43	0.21
caf-2	106	Tr20-I	4.60	52.44	53.58	52.99	53.60	0.000443	0.58	7.93	10.04	0.21
caf-2	105	Tr200-I	11.90	51.11	54.22	53.02	54.31	0.001341	1.36	9.71	6.31	0.30
caf-2	105	Tr100-I	9.80	51.11	54.06	52.81	54.14	0.001246	1.25	8.70	6.31	0.28
caf-2	105	Tr30-I	6.30	51.11	53.74	52.44	53.79	0.001078	1.03	6.67	6.31	0.26
caf-2	105	Tr20-I	4.60	51.11	53.56	52.23	53.60	0.000945	0.89	5.50	6.31	0.24
caf-2	104		Culvert									
caf-2	103.9	Tr200-I	11.90	50.91	52.82	52.82	53.47	0.019898	3.57	3.33	2.56	1.00
caf-2	103.9	Tr100-I	9.80	50.91	52.61	52.61	53.23	0.020269	3.47	2.83	2.30	1.00
caf-2	103.9	Tr30-I	6.30	50.91	52.24	52.24	52.73	0.019741	3.11	2.02	2.05	1.00
caf-2	103.9	Tr20-I	4.60	50.91	52.03	52.03	52.45	0.019097	2.86	1.61	1.93	1.00
caf-2	103	Tr200-I	11.90	49.20	49.97	49.97	50.20	0.010034	2.27	5.89	11.52	0.94
caf-2	103	Tr100-I	9.80	49.20	49.90	49.90	50.11	0.009609	2.07	5.18	11.52	0.91
caf-2	103	Tr30-I	6.30	49.20	49.70	49.70	49.93	0.013623	1.78	3.06	7.04	1.00
caf-2	103	Tr20-I	4.60	49.20	49.64	49.64	49.80	0.010757	1.37	2.65	5.63	0.85
caf-2	102	Tr200-I	11.90	41.51	42.12	42.69	45.18	0.212641	7.75	1.54	3.95	3.96
caf-2	102	Tr100-I	9.80	41.51	42.05	42.59	45.13	0.247650	7.78	1.26	3.63	4.21
caf-2	102	Tr30-I	6.30	41.51	41.99	42.38	43.90	0.179536	6.13	1.03	3.35	3.53
caf-2	102	Tr20-I	4.60	41.51	41.87	42.26	44.24	0.306519	6.82	0.67	2.84	4.47
caf-2	101	Tr200-I	11.90	37.50	38.80	38.91	39.32	0.017426	3.21	3.70	5.20	1.22
caf-2	101	Tr100-I	9.80	37.50	38.70	38.80	39.17	0.017046	3.04	3.22	4.84	1.19
caf-2	101	Tr30-I	6.30	37.50	38.50	38.56	38.87	0.015865	2.70	2.33	3.95	1.12
caf-2	101	Tr20-I	4.60	37.50	38.37	38.40	38.68	0.015280	2.48	1.86	3.49	1.09
caf-1	26	Tr200-I	67.70	31.88	35.99	34.51	36.24	0.001121	2.22	32.24	10.36	0.39
caf-1	26	Tr100-I	54.00	31.88	35.69	34.23	35.88	0.000980	1.95	29.14	10.36	0.36
caf-1	26	Tr30-I	31.90	31.88	35.09	33.64	35.20	0.000726	1.45	22.90	10.36	0.30
caf-1	26	Tr20-I	25.10	31.88	34.96	33.43	35.03	0.000548	1.21	21.49	10.36	0.26
caf-1	25		Bridge									
caf-1	24	Tr200-I	67.70	31.61	33.80	34.34	35.69	0.034505	6.35	11.59	11.03	1.77
caf-1	24	Tr100-I	54.00	31.61	34.16	34.16	34.81	0.009435	3.72	15.68	11.60	0.95
caf-1	24	Tr30-I	31.90	31.61	33.22	33.73	34.82	0.039044	5.60	5.70	5.90	1.82
caf-1	24	Tr20-I	25.10	31.61	33.07	33.52	34.47	0.040364	5.25	4.78	5.71	1.83
caf-1	23	Tr200-I	67.70	30.49	34.08	33.28	34.38	0.002360	2.67	29.55	13.05	0.53
caf-1	23	Tr100-I	54.00	30.49	33.45	33.08	33.81	0.004121	2.94	21.22	13.05	0.66
caf-1	23	Tr30-I	31.90	30.49	32.70	32.72	33.15	0.009114	3.20	11.46	13.05	0.91
caf-1	23	Tr20-I	25.10	30.49	32.55	32.59	33.09	0.011563	3.33	8.06	9.83	1.01
caf-1	22	Tr200-I	67.70	29.06	33.99	32.09	34.26	0.001097	2.44	32.63	8.56	0.38
caf-1	22	Tr100-I	54.00	29.06	33.39	31.83	33.62	0.001173	2.27	27.48	8.56	0.38
caf-1	22	Tr30-I	31.90	29.06	32.29	31.32	32.47	0.001444	1.98	18.06	8.56	0.40
caf-1	22	Tr20-I	25.10	29.06	31.91	31.13	32.08	0.001595	1.87	14.86	8.56	0.41
caf-1	21.1	Tr200-I	67.70	27.87	33.54	31.68	34.13	0.001961	3.59	21.03	4.41	0.49
caf-1	21.1	Tr100-I	54.00	27.87	33.05	31.28	33.51	0.001720	3.16	18.85	4.41	0.45
caf-1	21.1	Tr30-I	31.90	27.87	32.12	30.51	32.37	0.001230	2.33	14.77	4.41	0.37
caf-1	21.1	Tr20-I	25.10	27.87	31.80	30.02	31.99	0.001020	2.01	13.37	4.41	0.33
caf-1	21		Bridge									
caf-1	20.9	Tr200-I	67.70	27.82	30.74	31.63	33.81	0.023397	7.94	8.94	4.26	1.52
caf-1	20.9	Tr100-I	54.00	27.82	30.40	31.22	33.20	0.023451	7.51	7.48	4.26	1.54
caf-1	20.9	Tr30-I	31.90	27.82	29.56	30.47	32.07	0.027976	7.02	4.54	2.80	1.76

HEC-RAS Plan: att-RU (Continued)

Reach	River Sta	Profile	Q Total (m3/s)	Min Ch El (m)	W.S. Elev (m)	Crit W.S. (m)	E.G. Elev (m)	E.G. Slope (m/m)	Vel Chnl (m/s)	Flow Area (m2)	Top Width (m)	Froude # Chl
caf-1	20.9	Tr20-I	25.10	27.82	29.23	29.97	31.68	0.031586	6.95	3.61	2.74	1.93
caf-1	20	Tr200-I	67.70	27.42	31.23	31.30	32.81	0.018223	5.71	12.62	4.49	0.98
caf-1	20	Tr100-I	54.00	27.42	30.86	30.90	32.18	0.017588	5.19	10.95	4.49	0.95
caf-1	20	Tr30-I	31.90	27.42	30.01	30.10	31.04	0.018914	4.49	7.21	4.34	0.96
caf-1	20	Tr20-I	25.10	27.42	29.55	29.65	30.58	0.022371	4.49	5.59	3.18	1.08
caf-1	19	Tr200-I	67.70	26.81	28.96	29.64	31.37	0.043897	7.37	10.29	9.17	1.80
caf-1	19	Tr100-I	54.00	26.81	28.83	29.41	30.84	0.039147	6.68	9.10	9.17	1.70
caf-1	19	Tr30-I	31.90	26.81	28.58	28.98	29.86	0.028196	5.20	6.85	9.15	1.44
caf-1	19	Tr20-I	25.10	26.81	28.52	28.81	29.46	0.021359	4.41	6.28	9.15	1.25
caf-1	18	Tr200-I	67.70	25.78	28.22	28.72	29.92	0.013082	6.20	12.33	10.50	1.46
caf-1	18	Tr100-I	54.00	25.78	28.07	28.51	29.54	0.012174	5.72	10.73	10.50	1.41
caf-1	18	Tr30-I	31.90	25.78	27.85	28.10	28.98	0.009564	4.72	6.76	4.61	1.24
caf-1	18	Tr20-I	25.10	25.78	27.55	27.82	28.63	0.010493	4.61	5.45	4.25	1.30
caf-1	17	Tr200-I	67.70	23.97	28.18	27.34	29.08	0.004031	4.27	16.80	4.52	0.68
caf-1	17	Tr100-I	54.00	23.97	27.74	26.92	28.47	0.003580	3.84	14.82	4.52	0.65
caf-1	17	Tr30-I	31.90	23.97	26.98	26.08	27.41	0.002517	2.91	11.40	4.52	0.55
caf-1	17	Tr20-I	25.10	23.97	26.59	25.79	26.97	0.002521	2.72	9.22	3.85	0.56
caf-1	16	Bridge										
caf-1	15	Tr200-I	67.70	23.42	25.56	26.42	28.46	0.019719	7.56	9.06	5.70	1.69
caf-1	15	Tr100-I	54.00	23.42	25.24	26.08	27.87	0.020890	7.18	7.52	4.36	1.75
caf-1	15	Tr30-I	31.90	23.42	24.61	25.28	26.85	0.025357	6.63	4.81	4.28	2.00
caf-1	15	Tr20-I	25.10	23.42	24.43	25.01	26.42	0.026499	6.25	4.02	4.26	2.06
caf-1	14	Tr200-I	67.70	22.68	25.48	25.84	26.87	0.024461	5.23	12.95	9.38	1.42
caf-1	14	Tr100-I	54.00	22.68	25.43	25.60	26.38	0.017140	4.30	12.55	9.38	1.19
caf-1	14	Tr30-I	31.90	22.68	25.02	25.00	25.63	0.012278	3.46	9.21	7.28	0.98
caf-1	14	Tr20-I	25.10	22.68	24.70	24.70	25.40	0.012359	3.69	6.81	4.90	1.00
caf-1	13	Tr200-I	67.70	19.25	22.09	22.09	22.83	0.010670	4.18	18.59	12.53	1.00
caf-1	13	Tr100-I	54.00	19.25	21.89	21.89	22.52	0.010617	3.86	16.08	12.53	0.98
caf-1	13	Tr30-I	31.90	19.25	21.67	21.67	22.29	0.010143	3.58	9.43	7.48	0.94
caf-1	13	Tr20-I	25.10	19.25	21.44	21.44	22.00	0.010171	3.39	7.78	6.98	0.92
caf-1	12	Tr200-I	67.70	17.45	21.09	20.43	21.45	0.003001	2.89	27.40	12.62	0.59
caf-1	12	Tr100-I	54.00	17.45	20.75	20.22	21.07	0.003220	2.71	23.12	12.62	0.59
caf-1	12	Tr30-I	31.90	17.45	20.19	19.83	20.42	0.003474	2.29	15.97	12.62	0.58
caf-1	12	Tr20-I	25.10	17.45	19.94	19.63	20.24	0.004721	2.46	10.65	8.68	0.67
caf-1	11	Tr200-I	67.70	16.89	20.08	19.90	20.82	0.007085	3.91	18.41	9.73	0.85
caf-1	11	Tr100-I	54.00	16.89	19.96	19.66	20.49	0.005490	3.31	17.26	9.73	0.74
caf-1	11	Tr30-I	31.90	16.89	19.79	19.06	20.01	0.002612	2.15	15.59	9.73	0.50
caf-1	11	Tr20-I	25.10	16.89	19.54	18.69	19.73	0.002670	1.98	13.19	9.73	0.50
caf-1	10.1	Tr200-I	67.70	16.44	20.48	18.60	20.62	0.000695	1.67	43.49	15.75	0.30
caf-1	10.1	Tr100-I	54.00	16.44	20.25	18.33	20.35	0.000579	1.45	39.79	15.75	0.27
caf-1	10.1	Tr30-I	31.90	16.44	19.91	17.84	19.95	0.000314	0.98	34.39	15.75	0.19
caf-1	10.1	Tr20-I	25.10	16.44	19.64	17.67	19.68	0.000285	0.87	30.25	15.75	0.18
caf-1	10	Bridge										
caf-1	9.9	Tr200-I	67.70	15.76	19.33	17.99	19.55	0.001542	2.11	32.68	14.50	0.42
caf-1	9.9	Tr100-I	54.00	15.76	19.32	17.73	19.46	0.000993	1.69	32.50	14.44	0.34
caf-1	9.9	Tr30-I	31.90	15.76	19.31	17.24	19.36	0.000350	1.00	32.33	14.39	0.20
caf-1	9.9	Tr20-I	25.10	15.76	18.51	17.06	18.57	0.000590	1.13	22.25	11.03	0.25
caf-1	9	Tr200-I	67.70	15.76	19.30	17.99	19.53	0.001587	2.13	32.25	14.36	0.43
caf-1	9	Tr100-I	54.00	15.76	19.30	17.73	19.45	0.001010	1.70	32.25	14.36	0.34
caf-1	9	Tr30-I	31.90	15.76	19.30	17.23	19.35	0.000352	1.01	32.25	14.36	0.20
caf-1	9	Tr20-I	25.10	15.76	18.50	17.06	18.57	0.000597	1.13	22.14	11.01	0.26